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IDEC 2010 AWARDS OF EXCELLENCE

BEST PRESENTATION: PAPER

230 Assessing E-light : A Photometrically Accurate Lighting Design Learning Module in the Undergraduate Design Curriculum
TINA SARAWGI

BEST PRESENTATION: TEACHING FORUM

134 A service-learning case study: Collaboration between students, faculty and small local retailers
MEGAN LEE / KATALIN MEDVEDEV / DINA SMITH

BEST PRESENTATION: MEMBER'S CHOICE

432 Interior Decoration and Architecture in the United States: Selected Parallels, Oppositions, and Collaborations
BRIDGET MAY / ERIC WIEDEGREEN

BEST POSTER

644 Palestine revisited: An exploration of the cultural forces and identity that define the interior design of a Palestinian house.
MAY SAYRAFI / DR. JOHN TURPIN

CREATIVE SCHOLARSHIP:
BEST IN SHOW

684 Little Building Cafe
ANNIE COGGAN-CRAWFORD

CREATIVE SCHOLARSHIP:
MERIT OF DISTINCTION

698 drawings of earth, mud, or nothing
JOHN HUMPHRIES

CREATIVE SCHOLARSHIP:
FIRST PLACE
VISUAL ARTS CATEGORY

732 The Visions of Spaces
SARAL SURAKUL

CREATIVE SCHOLARSHIP:
FIRST PLACE
INTERIOR DESIGN CATEGORY

722 Fabrication
CHARLOTTE PEASE

CREATIVE SCHOLARSHIP:
SECOND PLACE
VISUAL ARTS CATEGORY

690 Record Values – Project Description and Identification Process
TAD GLOECKLER

CREATIVE SCHOLARSHIP:
SECOND PLACE
INTERIOR DESIGN CATEGORY

670 Bianco Ristorante Italiano
TOM ALLISMA

CONTENTS AT A GLANCE

1 **PRESENTATIONS:** TEACHING

297 **PRESENTATIONS:** SCHOLARSHIP

525 **PRESENTATIONS:** SERIVCE

567 **PANELS:** TEACHING

583 **PANELS:** SCHOLARSHIP

591 **POSTERS:** TEACHING

605 **POSTERS:** SCHOLARSHIP

663 **POSTERS:** SERIVCE

669 **CREATIVE SCHOLARSHIP**

737 **AUTHOR INDEX**

EXTENDED CONTENTS

PRESENTATIONS: TEACHING

2 **Transforming the Interior Design Profession for Leadership in an Ecologically-Benign Future**
BARBARA G. ANDERSON

8 **Three-Year Interior Design Bachelors Degree: Rethinking the Traditional Four or Five Year Approach**
LORI ANTHONY / KATHLEEN SULLIVAN

12 **Spatial Storyboards: Conceptualizing the Human Experience of Interior Environments through Light and Language**
MEAGHAN BEEVER

16 **Multifaceted Benefits of Studio Based Service Learning**
JENNIFER BLANCHARD BELK

22 **Patterns in Context: Home Design and Sense of Place Cultivating Critical Thinking Skills in the Residential Studio**
ADAIR BOWEN / STAN LOVE

32 **Entry Student Personal Discovery of the Impact of Culture and Technology**
JANIS BRICKEY

38 **Reality Studio: Design Lessons from Angela Adams**
DARRIN BROOKS, MFA / SUSIE TIBBITTS, MS / JOSLYN OLSEN, BS

48 **A Critical Assessment of the Need For Manual Drafting Skills for Interior Design Students**
DAVID A. BROTHERS

52 **The StrengthsQuest™ Program Application in Interior Design Education Preparing for the Profession: The Internship Seminar**
MICHELLE R. BROWN / ADAIR BOWEN

58 **[b]logging on : the opus project in a first-year design program**
SUZANNE CABRERA / PATRICK LEE LUCAS

62 **Scaffolds and Separations: Insights into the minds of developing interior design and architecture students**
CANDY CARMEL-GILFILEN / DR. MARGARET PORTILLO

68 **Junior Certificate in Interior Design: Rationale, Development, Status**
STEPHANIE A. CLEMONS, PH.D.

74 **Enabling Exploration: Educating Future Leaders in Extreme Design**
BRIAN F. DAVIES

80 **Process + Strategy | The Future of Design Thinking and Hybrid Innovation**
AUDREY DE FILIPPIS

86 **Evidence-based Design: Conception and Application by Interior Design Students**
SARAJANE L. EISEN, PH.D.

90 **Utilizing Light as Material: A Case Study of an Interdisciplinary Student Collaboration Between Interior Design, Engineering and Art**
CASSANDRA M. FAULKNER, M.S. / MARCUS BROWN, PH.D. /CRAIG WEDDERSPOON, M.F.A.

94 **Affording PREceptions as an Interior Design Methodology**
CLIFFORD GENTRY

100 **Voices: Documenting Multiple User Group Interpretations**
TAMIE GLASS

106 **Developing interior design student studio projects through site assessment and analysis**
JESSICA GOLDSMITH

112 **Stimulating Learning and Engagement: The Relevance of Creativity to Interior Design History**
TASOULLA HADJIYANNI, PH.D. / STEPHANIE WATSON ZOLLINGER, ED.D.

118 **Practice Driven Teaching: A Collaborative Model for the Interior Design and Graphic Design Studio**
MARGARET KONKEL / BRIDGET MURPHY

128 **An Interdisciplinary Model for Teaching Color**
NANCY KWALLEK, PH.D. / LUANNE STOVALL, MFA

134 **A service-learning case study: Collaboration between students, faculty and small local retailers**
MEGAN LEE / KATALIN MEDVEDEV / DINA SMITH

140 **Effect of Different Meadia on Student Learning in Interior Space Design**
JIANG LU, PHD / MARIA SIPOS, MS

148 **foundations : alternatives : reflections : explorations : abstractions constructing maps of meaning in design history**
PATRICK LEE LUCAS

154 **Practitioners + Academics: A Team-Teaching Approach to Interior Design Studios**
CARL MATTHEWS / CAROLINE HILL

164 **A Second Look at Second Life: Relevance for Interior Design Pedagogy**
SUSAN MARTIN MEGGS / ANNETTE G. GREER

170 **In Search of the Digital Muse: Divining the Role of` Digital Sketching in Interior Design Education**
JASON MENEELY, M.S.

178 **Blogging Through the Curriculum: A Tool for Assessment, Self Reflection and Writing Across the Curriculum**
MAUREEN MITTON / SHELLEY PECHA

184 **The Instruction of Transformational Learning Pedagogy for Ethical Dilemmas in Interior Design**
ALEKSANDRA CYBULSKI MOORE

190 **Student Assembly of a Personal Design Philosophy**
HELENA MOUSSATCHE, PHD / DEBORAH BROOKS, MS / LISET ROBINSON, MARCH

198 **Image-Based Inquiry: Creative Survey Techniques for Eliminating Assumptions**
ALEXANDRA PARMAN / LILY ROBINSON

206 **Design Scholars: Using online communication to enhance creative thinking about design research.**
MARLO RANSDELL

210 **The Toy Design Project: An Innovative Research Application to Produce Creative and Effective Design Solutions for an Early Childhood Education Center**
SANDRA REICIS

214 **Center for Hope, Health and Healing: A Community Studio**
DEBRA H. RUBEN

224 **The Design Charrette: A Bridge for Collaboration Between University and High-School Students**
KATHLEEN RYAN / REBECCA BUNKER-HERMANCE

230 **Assessing E-light : A Photometrically Accurate Lighting Design Learning Module in the Undergraduate Design Curriculum**
TINA SARAWGI

238 **Adaptive Reuse, Sustainability and Experiential Learning in an Industry Sponsored Interior Design Studio**
DEBORAH SCHNEIDERMAN / ANNE LITTLEJOHN

246 **The Prefabricated Interior Studio: History and Design**
DEBORAH SCHNEIDERMAN / KARA FREIHOEFER

254 **Contextually Responsive Interiors: Journey Through Light and Space**
S. DOROTHEA SCOTT-FUNDLING

260 **The Material Project: A Call for Collaboration**
DOUGLAS R. SEIDLER

268 **Teaching sustainability: A hybrid approach.**
IRINA SOLOVYOVA / HAZEM RASHID-ALI / DARRYL OHLENBUSCH /MICHELLE CLARK

272 **Food for Design: Re-Conceptualizing the Grocery Store Cultivates Ecological Literacy (And Reaps Design Awards)**
JUDY THEODORSON

276 **Integrating Theory and Research into Third Year Studios**
JO ANN ASHER THOMPSON

282 **Empowering Students: The Application of Experiential Learning Theory, Open Space Technology, and "Student Voice" to a Vertical, Multidisciplinary Charette**
JOHN C. TURPIN, PH.D. / RENA KLEIN / KERRY BROOKS, PH.D.

290 **Addressing the Present While Including the Past: A Typological Approach to Interior Design History**
JULIE WOLFE

PRESENTATIONS: SCHOLARSHIP

298 Toward Developing a Meta-View of Design Thinking
CINDY V. BEACHAM, PH.D. / NEAL SHAMBAUGH, PH.D.

302 The Impact of Pattern Scale on Preschool Environment Play Behavior
JANIS BRICKEY

308 Political Decorating: Leadership Styles from Presidents Franklin D. Roosevelt to Barack Obama Compared to their Oval Offices
DARRIN BROOKS, MFA / JANETTA MCCOY PH.D

314 Skins and Layers: Constructing Meaningful Concepts
DEBORAH BROOKS

318 The role of personality traits and The Big Five in predicting future success of interior design students
LORI A. BRUNNER, PH.D.

324 Intertwined: Corsets, Divans and Promiscuity
GÜLEN ÇEVIK

328 An Analysis on Topics of Sustainability during the Past Three Years: Reviewing Trends from Recent Conference Proceedings
JI YOUNG CHO / SO-YEON YOON / KYUNG-SOOK NAM

334 Our symbols, our space: A content analysis of symbolic motifs in the built environment
LINDSAY CLARK

338 Environmental design and emerging technologies: Today and the near future
LINDSAY CLARK / JOSEPH CLARK

342 Interior Design Practitioner Attitudes toward Research and Graduate Education
JOAN DICKINSON / LORI ANTHONY / JOHN MARSDEN

346 Accessory Apartments in the Existing Urban Home: Utilizing Co-residency to address Social, Economic and Environmental issues.
SHELLY DUFF / CAROLYN GIBBS

356 The Interior Design Studio Environment: Value vs. Reality
CONNIE S. DYAR / WENDY S. VANDERNOORDAA

360 The Maison de Verre: Modernism and the Parisian Urban Hôtel
M. JEAN EDWARDS

368 Neo-vernacular Architecture – a Case Study in Yunnan Province of China
JIN FENG / JIANG LU

374 Interior Design of the K-5 Classroom Environment for Literacy
ELLEN FISHER

378 The Role of Building Information Modeling (BIM) In Education and Practice
LAURA DEGROOT FLOYD / DOUGLAS SEIDLER

388 Brain Compatible Learning Environments for Students with Autism Spectrum Disorders
KRISTI GAINES, PH.D. / ZANE CURRY, PH.D. / JOANN SHROYER, PH.D. / CHERIF AMOR, PH.D

396 Occupants' Satisfaction, Performance, and Sustainable Design Criteria
DENISE A. GUERIN, PHD / HYE-YOUNG KIM, PHD / JONEE KULMAN BRIGHAM, MARCH

404 **Human Connection to Nature: An Exploration of Office Users' Perception of Nature Connectedness**
CHRISTY GULLIKSON / JILL B. PABLE, PH.D.

410 **Dimensions of Creativity: How Do Practitioners Evaluate Entry-Level Interior Design Portfolios?**
SIRIPORN KOBNITHIKULWONG, MID / MARGARET PORTILLO, PHD

416 **A House is Not Always a Home: Building a Home on the Hamilton Grange**
TIFFANY LANG

424 **Female Residents' Preferences for Interior Design Elements and Principles**
MELINDA LYON / SHIRETTA OWNBEY / RANDALL RUSS / THEODORE DRAB

428 **Millennial Learning Styles and the Design Studio Model**
K.M. MAKI, M.F.A / SHIRLEY P. FOSTER, PH.D.

432 **Interior Decoration and Architecture in the United States: Selected Parallels, Oppositions, and Collaborations**
BRIDGET MAY / ERIC

436 **The Millenials: Assessing Suburban Housing Design and Development for a Unique Demographic**
EMILY A. MCLAUGHLIN, MA / MICHELLE HELTZEL

440 **The Psychology of Space in a Culture of Fear: Unmasking Residential Interiors in Saõ Paulo, Brazil**
HANNAH ROSE MENDOZA / MATTHEW R. DUDZIK

446 **Growing Home and Neomorphism: Creating living structures and a new design language**
ELENA VEE MYHRE / ERIC WIEDEGREEN

450 **Effects of Interior Spatial Features on Use and Perception of Space in Assisted Living Facilities**
ROCHELLE NEUMEYER / CAROL CAUGHEY / ATIYA MAHMOOD

454 **Cultural Preferences in Hotel Guestroom Lighting Design**
NAM-KYU PARK / JASON MENEELY / JOO YOUL PAE

458 **Aesthetic meaning-making as design thinking: Communicating within the design process**
TIIU POLDMA

464 **The Residential Appropriation and Well-being of People with Trauma Due to Paralysis and Their Families: A Multi-Disciplinary Research Study**
TIIU POLDMA / SYLVIE JUTRAS / VIRGINIE LASALLE / LEILA TISSAOUI

470 **Interior Design Identity: Professionalization, Professionalism and Profession**
SUSAN SHERRINGHAM

476 **The Tessellated Interior: Continuous Surface and the Material Seam**
IGOR SIDDIQUI

480 **Adapting Atmosphere: Today's Small Synagogues**
ALISON B. SNYDER

488 **Occupant Perceptions of Daylit Classrooms: A Comparison of North and South Orientation**
JUDY THEODORSON / JULIA DAY

494 **Building Place Attachment in Assisted Living Facilities Through the Designed Environment**
JULIE TORELLI

502 **LEEDing Behavior: Sustainable Lifestyle Practices in Green Student Housing**
MARUJA TORRES-ANTONINI / NAM-KYU PARK

506 **Four Approaches to the Cradle-to-Cradle House Design Competition**
LISA M. TUCKER, PHD

512 **Challenging the Meta-Narrative to Read Again the Mini-Narratives of the Field of Interior Design**
JOHN C. TURPIN, PH.D. / NANCY BLOSSOM, MA

516 **Baba: Inside the Czechoslovakian Werkbund Housing Estate**
KHOI VO / KRISTEN RAIZADA

520 **Unraveling A Master Weavers Process: Contributions From Jack Lenor Larsen**
STEPHANIE WATSON ZOLLINGER, ED.D.

PRESENTATIONS: SERIVCE

526 **Re-Design: Developing a Material Recovery Model for Campus Design Programs**
MIRANDA ANDERSON / MINDY

534 **Service-Learning as Strategy in the Study of Aging and Environment: Developing Generations of Evidence-Based Interior Designers**
LISA BATES / CIGDEM AKKURT

538 **The Endangered Historic Interior: Perspectives on Preserving these Unique Environments**
PETER B. DEDEK

542 **"And the winner is…" The unfulfilled potential of interior design competitions**
THEODORE DRAB

546 **In Search of the 4th 'E': IDEC's Role in Fostering Professional Empowerment as a Strategic Response to the Anti-Regulation Effort**
MICHAEL DUDEK

552 **Interior Design and Interior Architecture: Why Not?**
ANNA MARSHALL-BAKER

562 **Hard Times: Using Education to Sustain Practitioners in a Fractious Economy**
EMILY MCLAUGHLIN, MA / BEKIR KELCEOGLU, MFA

PANELS: TEACHING

568 **Reach Out – Pull In: The Pros and Cons of Teaching Interior Design Online**
ELLEN FISHER

572 **Experiencing Both Sides of Education: Interior Design Educators as Online Graduate Students**
DIANA INGHAM

576 **Impact of the 2009 Accreditation Requirements: Comparison of CIDA and NAAB**
CAREN S. MARTIN, PHD / MICHAEL D. KROELINGER, PHD

PANELS: SCHOLARSHIP

584 **Taste and the Modern Interior, a Seminar**
KARIN I. TEHVE / ANTONIO FURGIUELE

POSTERS: TEACHING

592 **Collaborative Learning Experiences: Pedagogical Models from Interior Design Senior Capstone Studio**
ABIMBOLA O. ASOJO

600 **Changing the Paradigm: Multidisciplinary Teaching in Design**
HANS-PETER (HEPI) WACHTER / DAVE BOECK

POSTERS: SCHOLARSHIP

606 **Building a community in a cultural district as a medium for creating intimacy and social affiliation with interiors; case study of the Ames train depot as a community building**
KYOUNGMEE BYUN / CIGDEM AKKURT

610 **The Effects of the Physical, Social, and Organizational Environments in Creating Homelike Characteristics for Assisted Living Facilities**
JOAN DICKINSON / RASHIDA MADRASWALA

616 **The Symbolist Aesthetic: Exploring Charles Rennie Mackintosh's Creation of Spatial Narratives in the Modern Interior**
LAUREL A. HARBIN

620 **Contemporary Relevance of Traditional Internal Courtyard in Urban Indian Housing**
ANUPAMA KAKARALA / KYUHO AHN

624 **The Articulation of Sustainability: A New Beauty?**
DAVID LEWIS / JENNIFER WEBB

628 **Library Renovation: Designing to Accommodate Multiple Intelligences and Learning Styles**
ROSIE KOENIG / LISA K. WAXMAN

636 **The effects of music on creativity in the design process**
PREDRAG MAKSIC / MATTHEW MELCHER

644 **Palestine revisited: An exploration of the cultural forces and identity that define the interior design of a Palestinian house.**
MAY SAYRAFI / DR. JOHN TURPIN

650 Investigating Interior Design Student Awareness of Sustainable Design: An Interdisciplinary Undergraduate Research Experience
JOHNNIE STARK / RON REED / JIN GYU PARK, PH.D. / CYNTHIA MOHR

656 Emotional Responses to the Design of Conference Rooms Located in a LEED-Certified Building and a non-LEED-Certified Building
READE B. WEBER / MARILYN A. READ

POSTERS: SERIVCE

664 Service-Learning as Strategy in the Study of Aging and Environment: Developing Generations of Evidence-Based Interior Designers
LISA BATES / CIGDEM AKKURT

CREATIVE SCHOLARSHIP

670 Bianco Ristorante Italiano
TOM ALLISMA

674 Parliament Pub
TOM ALLISMA

680 The Silk Road Series Pendants
GÜLEN ÇEVIK

684 Little Building Cafe
ANNIE COGGAN-CRAWFORD

690 Record Values – Project Description and Identification Process
TAD GLOECKLER

694 Folia
CHARLES F GUSTINA, MFA

698 drawings of earth, mud, or nothing
JOHN HUMPHRIES

708 INTROSPECTION / projection
CHRIS JOHNSON

712 Memorial: Paying Homage to our Heroes
ZAMILA KARIM

718 Contempo: Interior Design as Inspiration for Fine Art
SELENA NAWROCKI, PH.D., M.F.A.

722 Fabrication
CHARLOTTE PEASE

728 SHEAR: SWELL
JULIEANNA PRESTON

732 The Visions of Spaces
SARAL SURAKUL

PRESENTATIONS: TEACHING

Transforming the Interior Design Profession for Leadership in an Ecologically-Benign Future

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ABSTRACT

This narrative uses logical argumentation to establish the following position: *to meet the challenge of sustaining quality of life in human existence, design professionals must perceive management of the existing built environment to be at least as important as constructing new high-technology buildings and that this shift in perspectives provides a transformative opportunity for the interior design profession.*

The design professions and our professional schools are being reformed in response to the challenges posed by the environmental crisis. Unfortunately, the design professions in the United States are predisposed to new, high-technology solutions to built environment problems. Building industry design professionals in the United States have focused nearly exclusively on new technologies for new construction for so long that they are unable to see the potential role the existing built environment must play in an ecologically-benign human future. This bias will cause the reforms currently underway in the design professions to fail.

A successful transformation of the design professions will be possible when the academy and design professions reframe their perspective of how to respond to the needs of our time. Interior designers, who have historically been the primary design profession responsible for adapting existing interior space to more productive and useful conditions, have a great potential to lead this transformation. Design professionals must begin to see the way to an ecologically-benign human future as being a wise balance between constructing new high-technology buildings and adapting and managing existing buildings to greater eco-effectiveness.

NARRATIVE

ISSUE

Society entrusts building industry design professionals with the responsibility to make wise decisions in managing the built environment. However, the bias of the United

States design professions toward new construction is compromising their capacity to act wisely and in the best interest of humanity as we seek to meet the ecological, economic, social, and cultural challenges of our times. This narrative identifies the opportunity interior designers have to lead a transformation in the way United States design professionals perceive their obligations to society thus changing the professional expectations of social responsibility and the professional and educational competencies necessary to meet these responsibilities.

RELEVANCE

All professions have an obligation to provide socially meaningful services. This obligation is the basis for each profession's social compact. Through social compacts, professions are bestowed the right to define their body of knowledge and systems for education, apprenticeship, and licensure in return for providing meaningful service to society.[1] In earlier work with colleagues, this author described the obligations of the design professions in general, and prescribed an exclusive and specific obligation as the basis for interior design's social compact:"… designing physiologically and psychologically supportive interior environments that enhance quality of life."[2]

There are multiple indicators that the building industry and the building design professions are changing to meet the sustainability challenges of our times. As a professional who experienced the earlier and weaker impact of the environmental movement on building design while a student of architecture in the 1970s, it is clear that the transition currently underway in the design professions is fundamentally different than earlier efforts in ecological design. The primary advantage of the contemporary effort is that sustainability is not viewed as an optional area of expertise for the design professionals who choose it, but is a general expectation of all design professionals.[3]

The aspect of the current sustainability movement in architecture and design in the United States that is of most concern to this author is the nearly exclusive expectation that sustainability will be achieved by using new technologies to create high performance new buildings.[4] Although high performance expectations are important in all new construction, as Carl Elefante put it, "We cannot *build* our way to sustainability; we must *conserve* our way to it".[5] Continuing the usefulness of existing buildings will be essential to a sustainable future for many reasons, some of which are described toward the end of this narrative, but first an examination of the reason for the existing bias is in order.

This bias toward new construction among architects and designers comes naturally from a number of influences. The three most important influences are 1) the propensity to disposability that is deeply rooted in our consumer culture, 2) the disregard for historicism that has been present since the early twentieth century embrace of the modern movement by architects and designers, and 3) the deeply held cultural value among Americans that new is better than old.

To fill a need that resulted from the American architecture and design professions' focus on new construction, those with expert knowledge of historic and existing buildings created the specialization that is known as "historic preservation" in the United States and "heritage conservation" in most other English-speaking countries. These historic preservation specialists, with expert knowledge of archaic materials and assemblies and the effective treatments for extending their useful life, have

1 . William M. Sullivan, *Work and Integrity: The Crisis and Promise of Professionalism in America, 2nd ed. (*San Francisco: Jossey-Bass, 2005): 2.

2 . Barbara G. Anderson, Peggy L. Honey, and Michael T. Dudek, "Interior Design's Social Compact: Key to the Quest for Professional Status," Journal of Interior Design 33, no. 2 (2007): v.

3 . That being said, there are still great efforts (such as the LEED Accredited Professional designation) made to help both clients and other professionals distinguish between experts and non-experts in sustainable design. Both NAAB and CIDA accreditation standards include the expectation that students understand sustainable design principles evidencing the fact that all entry-level professionals in architecture and interior design are expected to have knowledge of sustainability.

4 . Europeans see the interdependency of historic preservation and sustainability, but we don't. See Donovan D. Rypkema, "Economics, Sustainability and Historic Preservation." Forum Journal 20, no. 2, (2006): 27-38.

5 . See Carl Elefante, "The Greenest Building Is…One That Is Already Built," Forum Journal 21, no. 4 (2007): 27.

practiced in an area of expertise that was of little concern or interest to mainstream architects and designers.[6] The divide, however, between these experts and the mainstream professionals is part of the cause for the current and inappropriate bias toward new construction in the sustainability movement.

Most architecture and design professionals do not recognize the value of historic preservation in the sustainability movement. Stewart Brand, however, characterized the historic preservation and environmental movements, which both took root in the 1960s and 1970s, as "sibling" movements.[7] Brand, an early environmentalist, understood the movements not simply as temporally related but also as ideologically related. The historic preservation movement shares several common objectives with the environmental movement, the most important of which are: 1) conserving natural resources by keeping buildings and building materials in use, 2) conserving embodied energy, 3) reducing environmental and monetary costs for infrastructure and transportation, 4) creating local economic development, 5) creating social equity, and 6) enhancing quality of life.

DISCUSSION

Now that the mainstream of architecture and design is embracing sustainability, the bias toward new construction is defining the American sustainability movement in architecture and design as primarily an issue of high-technology new construction. The experts in maintaining and adapting existing and historic buildings were on the margins during the formation of the sustainable design movement and thus their specialized knowledge has not been incorporated into the value system and metrics of the emerging sustainability movement. An effort is being made by preservationists to rectify this bias, but awareness among mainstream architects and designers is still inadequate.

There are historic preservationists who are also experts in sustainable design and they are beginning to have an impact both through exemplary projects and outreach to educate other professionals. Increasing numbers of preservation professionals are recognizing the importance of bridging the gap between the dominant understanding of sustainability and the more inclusive perspective held by preservationists.

The National Trust for Historic Preservation and professional organizations such as the Association for Preservation Technology International (APTI) have been working diligently to inform the sustainability specialists in the building industry about the need to think broadly about not just new construction but also continued use of the existing built environment as the path to sustainability. There is a current effort to address changes in both the Leadership in Energy and Environmental Design Rating System (LEED) criteria established by the U.S. Green Building Council and the Secretary of the Interior's Standards for Rehabilitation of Historic Properties so that they can be used together in greater harmony.[8]

Although maintaining existing buildings is not commonly understood by Americans as a component of the sustainability movement, the evidence is compelling. Some of the most compelling facts are listed follow:

Continuing the productive life of existing buildings conserves energy the embodied energy in the building.[9]

the energy required to produce replacement buildings when we don't reuse existing buildings.[10]

energy for transportation required in sprawling new developments without public transit.[11]

6 . See Hugh C. Miller, "Preservation Technology Comes of Age in North America: Part 1," APT Bulletin: Journal of Preservation Technology 37, no. 1 (2006): 55-59 and Hugh C. Miller, "Preservation Technology Comes of Age in North America: Part 2," APT Bulletin: Journal of Preservation Technology 37, no. 2-3 (2006): 61-65.

7 . Stewart Brand, *How Buildings Learn: What Happens After They're Built*, (New York: Viking Press, 1994): 88.

8 A coalition of preservation and sustainability professionals and organizations has emerged, see the following: James J. Malanaphy III, "NTHP Sustainable Preservation Coalition Meeting with USGBC," in AIA Preservation Architect: The Newsletter of The Historic Resources Committee, July 25, 2007. http://www.aia.org/nwsltr_hrc.cfm?pagename=hrc_a_20070725_nthp (accessed August 23, 2007) John D. Lesak, "APT and Sustainability: The Halifax Symposium," APT Bulletin: Journal of Preservation Technology 36, no. 4 (2005): 3-4. Barbara A. Campagna, "How Changes to LEED Will Benefit Existing and Historic Buildings," Forum News 15, no. 2 (Nov/Dec 2008): 1, 2 & 6.

9 See Mike Jackson, "Embodied Energy and Historic Preservation: A Needed Reassessment," APT Bulletin: Journal of Preservation Technology 36, no. 4 (2005): 47-52.

10 See Richard Moe, "Historic Preservation and Green Building: Finding Common Ground," Forum Journal 23, no. 3 (Spring 2009): 8-16.

11 See Donovan D. Rypkema, "Historic Preservation and Affordable Housing: The Missed Connection," Forum Journal 17, no. 3 (Spring 2003): 4-19.

the energy required to operate historic buildings, which is typically less than that of buildings built in the last few decades of the 20th Century.[12]

Continuing the productive life of existing buildings conserves material resources the reuse of existing buildings with only slight modification retains the material resources harvested/extracted generations ago and reduces waste.[13]

Continuing the productive life of existing buildings is economically advantageous the operating costs for historic buildings are typically lower than for non-historic buildings.[14]

maintenance and repair costs typically have greater impact on local economies than new construction.[15]

Continuing the productive life of existing buildings contributes to social equity

the reuse of existing buildings provides affordable housing.[16]

the reuse of existing buildings maintains culturally and economically diverse neighborhoods.[17]

historic preservation is an intergenerational responsibility.[18]

THE OPPORTUNITY

Every problem presents an opportunity. There is a tremendous opportunity for design professionals in the problem presented here as *"a lack of recognition among American architects and designers that to meet the challenge of sustaining quality of life in human existence, we must perceive management of the existing built environment to be at least as important as constructing new high-technology buildings."* If we recognize this opportunity and transform our expectations of both education and practice we will be leaders in making a change that will have immense value to humanity. What will it take? It will require most design professionals to know much more about historic buildings and it will require a change in values.

One of the reasons the sustainability movement advanced so far without adequate consideration for the role of the existing built environment is that few architects and designers have knowledge of historic materials and assemblies and the best treatments for continued performance. It is critical that more architects and designers learn the competencies required to continue the usefulness and eco-efficient operation of existing buildings. Preservationists have already partially examined this need for the architectural profession.[19] The same must be done for the interior design profession. The competencies for interior design are explicitly defined through both standards for accredited education and examination for competency. Currently, historic preservation competencies, especially those related to materials and treatments, are not required in the interior design profession.

As a first step in the process, interior design programs must transform the design curricula to be inclusive not only of high technology and new construction solutions to ecological problems, but also the theory and knowledge necessary to work skillfully with existing buildings. Design professionals and others with expertise in historic preservation have much to offer the collective body of design professionals as they transform their educational programs and their professional work to meet the ecological challenges of our time.

12 See Constance Ramirez, Donald R. Horn, and Bradley Wolf, "The Economics of Preserving Historic Federal Buildings," Forum News 6, no. 1 (Sept./Oct. 1999): 1, 2 & 6.

13 See May Cassar, "Sustainable Heritage: Challenges and Strategies for the Twenty-First Century," APT Bulletin: Journal of Preservation Technology 40, no. 1 (2009): 3-11.

14 See Ramirez, Horn and Wolf, 1, 2 &6.

15 See Donovan D. Rypkema, The Economics of Historic Preservation: A Community Leader's Guide, 2nd ed, (Washington, D.C.: National Trust for Historic Preservation, 2005).

16 See Rypkema, "Housing," 4-19.

17 See Rypkema, "Housing," 4-19.

18 David Lowenthal, "Stewarding the Future," CRM: The Journal of Heritage Stewardship 2, no.2 (Summer 2005): 20-39.

19 See David G. Woodcock, "Academic Preparation for Preservation Practice." APT Bulletin: Journal of Preservation Technology 40, no. 3-4 (2009): 43-49.

REFERENCE LIST (CHICAGO)

Anderson, Barbara G., Peggy L. Honey and Michael T. Dudek. "Interior Design's Social Compact: Key to the Quest for Professional Status." *Journal of Interior Design* 33, no. 2 (2007): v-xiii.

Brand, Stewart. How Buildings Learn: What Happens After They're Built, New York: Viking Press, 1994.

Campagna, Barbara A. "How Changes to LEED Will Benefit Existing and Historic Buildings," *Forum News* 15, no. 2 (Nov/Dec 2008): 1, 2 & 6.

Cassar, May. "Sustainable Heritage: Challenges and Strategies for the Twenty-First Century." *APT Bulletin: Journal of Preservation Technology* 40, no.1 (2009): 3-11.

Elefante, Carl. "The Greenest Building Is…One That Is Already Built," *Forum Journal* 21, no. 4 (2007): 26-38.

Jackson, Mike. "Embodied Energy and Historic Preservation: A Needed Reassessment." *APT Bulletin: Journal of Preservation Technology* 36, no.4 (2005): 47-52.

Lesak, John D. "APT and Sustainability: The Halifax Symposium," *APT Bulletin: Journal of Preservation Technology* 36, no. 4 (2005): 3-4.

Lowenthal, David. "Stewarding the Future." *CRM: The Journal of Heritage Stewardship 2*, no.2 (2005): 20-39.

Malanaphy III, James J. "NTHP Sustainable Preservation Coalition Meeting with USGBC," in *AIA Preservation Architect: The Newsletter of The Historic Resources Committee* (July 25, 2007). http://www.aia.org/nwsltr_hrc.cfm?pagename=hrc_a_20070725_nthp (accessed August 23, 2007)

Miller, Hugh C. "Preservation Technology Comes of Age in North America: Part 1." *APT Bulletin: Journal of Preservation Technology* 37, no. 1 (2006): 55-59.

___. "Preservation Technology Comes of Age in North America: Part 2." *APT Bulletin: Journal of Preservation Technology* 37, no. 2-3 (2006): 61-65.

Moe, Richard. "Historic Preservation and Green Building: Finding Common Ground." *Forum Journal* 23. no.3 (2009): 8-16.

Ramirez, Constance, Donald R. Horn, and Bradley Wolf. "The Economics of Preserving Historic Federal Buildings." *Forum News* 6, no.1 (1999): 1-2 & 6.

Rypkema, Donovan D. "Historic Preservation and Affordable Housing: The Missed Connection. *Forum Journal* 17, no. 3 (2003): 4-19.

___. *The Economics of Historic Preservation: A Community Leader's Guide.* 2nd ed. Washington, D.C.: National Trust for Historic Preservation, 2005

___. "Economics, Sustainability and Historic Preservation." *Forum Journal* 20, no. 2 (2006): 27-38.

Sullivan, William M. *Work and Integrity: The Crisis and Promise of Professionalism in America.* 2nd ed. San Francisco: Jossey-Bass, 2005.

Woodcock, David. G. "Academic Preparation for Preservation Practice." *APT Bulletin: Journal of Preservation Technology 40*, no. 3-4 (2009): 43-49.

Three-Year Interior Design Bachelors Degree: Rethinking the Traditional Four or Five Year Approach

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ABSTRACT

The economic downturn in the United States has forced colleges and universities to re-think traditional educational modalities. At a time when the economy is at the forefront in the minds of students and parents, educators and administrators at private US colleges and universities grapple with how to keep enrollment up and quality high. In attempts to curb rising costs, administrators have called on faculty to develop innovative solutions to these problems. While some institutions are implementing hiring freezes, layoffs and minimal raises for faculty and staff, others are investigating alternative modes of educational delivery as a strategy. Some are even revisiting the idea of a three-year bachelor's degree where students can save as much as 19% of the cost of a college education (Carlson & Lipka, 2009).

Implemented with varying degrees of success in the United States, the three-year degree has been employed by institutions such as Hartwick and Ball State (Frey, 2009). State institutions in Rhode Island are mandated to offer three-year degree programs beginning fall 2010 (Strauss, 2009).

There are varying ways institutions offer an accelerated program. Many require summer classes; others shorten the required number of credits. Regardless of the method, the three-year degree offers students the opportunity to save one-year of tuition, room and board as well as enter the work force earlier.

In 1996, the Carnegie Foundation for the Advancement of Teaching sponsored a report conducted by Earnest Boyer and Lee Mitgang to assess architecture and practice. As reported by Guerin and Thompson (2004), this assessment can serve as a valuable tool for appraising interior design curriculums in the 21st century. Used as a framework for this research, the recommendations outlined in the report guided the restructuring of a four-year interior design program to a three-year degree.

Is it possible to re-configure an interior design curriculum into a three year offering without compromising outcomes? The purpose of this study was to develop a pedagogically sound three-year interior design degree that retains the necessary opportunities for student outcomes as defined by the profession. In addition to addressing the economy of education, the transformation of this degree compliments the proposed need for a Masters of Interior Design degree as the minimum degree to practice (Guerin & Thompson, 2004). The three-year bachelor degree provides graduates with necessary skills and knowledge while continued studies leading to a master's degree would focus on research and theory.

In the spring of 2009, the interior design program at the researchers' institution converted from a four-year degree to a three-year degree offering. Evaluation of the existing curriculum was conducted by faculty using the benchmarks established by Boyer and Mitgang. A curriculum map was developed for each semester of the four-year degree and courses were assessed against the framework. The underlying transformation took place in the studio sequencing; moving from a traditional 14-week offering to intensive 7-week successive studios. The resulting curriculum afforded opportunities for innovation and a cutting edge approach to design education.

NARRATIVE

Although four-year bachelor's degrees have long been the standard in the United States, the average amount of time it now takes students to graduate with an undergraduate degree is six years and seven months (Alexander, 2009). At a time when the economy is at the forefront of the minds of students and parents, educators and administrators at private US colleges and universities grapple with how to keep enrollment up and quality high.

While some institutions are implementing hiring freezes, layoffs and minimal raises for faculty and staff, others are investigating alternative modes of educational delivery. Some are even revisiting the idea of a three-year bachelor's degree –a common model employed by European institutions such as the University of Cambridge and Oxford University where students can save as much as 19% off the cost of a college education (Carlson & Lipka, 2009; Strauss, 2009). Students completing a degree in three years are often required to attend classes in the summer, take courses that meet for a shorter length of time or complete programs with a reduced number of required credit hours. Regardless of the structure, the three-year degree offers ambitious students with a clear understanding of what they want to study, the opportunity to save one-year of tuition, room and board as well as enter the work force or graduate school earlier (Strauss). Robert Zemsky, chairman of the Learning Alliance for Higher Education has studied the struggle institutions have between their mission to educate students and their goal to remain financially healthy. He proposes the three-year bachelor's degree as the "big, potential agent of change" (Calefati, 2009).

Faculty at a small liberal arts university initially explored the idea of converting a traditional four-year interior design degree into a three-year offering after receiving a directive from administration. They questioned the possibility of re-configuring a credit heavy interior design curriculum into a three-year offering without compromising outcomes. The purpose of this study was to document the development of a pedagogically sound three-year interior design degree that retained the necessary opportunities for student outcomes as defined by the profession.

In 1996, the Carnegie Foundation for the Advancement of Teaching sponsored a report conducted by Earnest Boyer and Lee Mitgang to assess architecture and practice. As reported by Guerin and Thompson (2004), this assessment can serve as a valuable tool for appraising interior design curriculums in the 21st century. Used as a framework for this study, the recommendations outlined in the report guided the restructuring of the four-year interior design program to a three-year bachelor's degree.

FRAMEWORK AND CRITERIA

Six benchmarks from Boyer and Mitgang were used to pedagogically guide the transformation: An Enriched Mission, Standards without Standardization & Connected Curriculum, Climate for Learning, Unified Profession, Economic and Technological Changes and Service to the Nation (1996).

An Enriched Mission

The curriculum was structured so that students assumed a leadership role in examining the impact of the environment on the health, welfare and happiness of human beings (Boyer & Mitgang, 1996). Faculty utilized suggestions from Guerin and Thompson (2004) and focused on courses such as Environment & Behavior and Green & Sustainable Design to integrate content from emerging areas. These courses are fourteen-week foundation courses required during the first and second semester respectively. They are key courses that inform and guide work completed in the studio courses.

Standards without Standardization & Connected Curriculum

The non-traditional approach of offering an interior design bachelor's program in three years inherently integrates this paradigm. Additionally, throughout the transformation, faculty were particularly mindful of incorporating the Council for Interior Design Accreditation standards into the curriculum. Recommendations by Boyer and Mitgang (1996) to share accreditation standards with students and the design community were achieved by posting the standards in every studio, indicating where each standard is met within a given course, and defining expected outcomes in course syllabi.

During brainstorming discussions, faculty realized that a connected curriculum was essential to the success of

the three-year degree. It was determined that because of the shorter timeframe, students must experience a cohesive and fluid curriculum through integrated course content and student learning experiences.

Climate for Learning

"Healthy learning communities share certain unmistakable characteristics - openness, fair play, clarity of communication, inclusiveness, tolerance, caring joyfulness, and commonly-held purposes." (Boyer & Mitgang, 1996, p. 91). Before the transformation to the three-year degree, faculty observed the tendency for students to work at home or in the dormitory – not in the studio. With the new three-year structure, students now work collectively in the studio, interact continually and collaborate with their peers. Faculty believe the pace of the program has fostered a "we are in this together" stance and students have created a healthy learning community.

Unified Profession

Although not unique to a three or four year program, during the transformation, faculty were mindful of continuing to foster the relationships with the professional design community. Practicing designers, architects, manufacturer's representatives, business owners, and trades people routinely participate in the students' education, serving as visiting critics, guest lecturers, adjunct instructors, and participating in program hosted trade shows.

Economic and Technological Changes Transforming the Profession

Entrepreneurial ambitions are fostered and programs are in place in the university to mentor students who wish to pursue these ventures. Technological advances continually impact the profession and incorporating technology into the curriculum was an important factor in the program transformation.

Service to Nation

Opportunities of engagement are actively pursued and applauded. The new curriculum modified the six credit internship requirement to three credits of internship and three credits of community or environmental service. This change connects students with the community in two distinct ways: practice and service.

PROCESS

Once faculty determined that the curriculum was pedagogically sound, the logistics of reducing the number of semesters became the challenge. Faculty prepared a curriculum map for each semester of the four-year degree and identified redundancies in course content, gaps in student learning and opportunities for enrichment. The challenge was to incorporate a comprehensive studio sequence within a shorter curriculum timeframe. The underlying transformation took place by moving from a traditional 14-week offering to intensive 7-week successive studios. The resulting curriculum afforded opportunities for an innovative approach to design education.

Although the fourteen-week term had been standard for all courses offered in the four-year interior design program, the University, offers seven-week units for other majors. The faculty had never considered this shortened term as an option in the interior design program until it was examined within the context of the studio sequence. As it was crafted for the program, the seven-week sequencing works in the following way - students attend studio courses twice a week for three hours each session, while they attend their major and general education requirements on the regular fourteen-week cycle. At no time do students take more than sixteen credits, yet at the conclusion of the semester they have earned nineteen credits because of the two successive studios. Faculty teaching the two seven-week studio courses within one term are expected to integrate learning objectives, student outcomes and course content.

DISCUSSION

Students need time to develop both socially and academically. In transforming the four-year degree to three, faculty were mindful of balancing the academic expectations with the institutional and departmental opportunities that foster social interaction. Students are encouraged to attend functions outside the classroom, participate in organizations and student government, be active in sports and engage in social activities. The faculty determined that the program could best foster academic growth through general education requirements which afford students learning experiences outside of the major, study abroad, community service, and internship opportunities. Guerin and Thompson (2004) stress the importance of time spent on problem solving, critical

thinking and design communication. These issues become increasingly complex as students move through the program and are tracked with a matrix. Student outcomes are reviewed regularly during presentations and portfolio reviews.

Although the University has established the three-year degree in interior design as the norm, it is not mandatory. Students may choose to complete the degree at a slower pace, minor in another subject, or take additional courses outside of the major.

In addition to addressing the economy of education, the transformation of this degree compliments the proposed need for a Masters of Interior Design degree as the minimum degree to practice (Guerin & Thompson, 2004). The three-year bachelor's degree provides graduates with necessary skills and knowledge while continued studies leading to a master's degree would focus on research and theory.

The interior design program for this study officially converted from a four-year degree to a three-year degree offering in the fall of 2009. Students have had few issues regarding the intense studio sequencing. Studio faculty monitor expectations and remind themselves that they are not "cramming" fourteen weeks into seven. They examine expendable redundancies and view student outcomes holistically.

To date, evidence suggests that it is possible to craft a pedagogically sound three-year program that incorporates accreditation standards, meets institutional goals and keeps pace with the expectations of today's I-gen student.

REFERENCE LIST (APA)

Alexander, L. (2009, October 26). The three-year solution. Newsweek. Retrieved January 31, 2010, from http://www.newsweek.com/id/218183

Boyer, E., & Mitgang, L. (1996). *Building community: A new future for architecture education and practice*. Princeton: The Carnegie Foundation for the Advancement of Teaching.

Calefati, J. (2009, October 6). Education expert touts a three-year degree. *U.S. News & World Report*, Retrieved February 1, 2010, from http://www.usnews.com/education/articles/2009/10/06

Carlson, S., & Lipka, S. (2009). Colleges offer a degree in 3. *Chronicle of Higher Education*, 55(39), pA20-A21.

Guerin, D.A. & Thompson, J.A. (2004). Interior design education in the 21st century: An educational transformation. *Journal of Interior Design*, *30*(1), 1-12.

Strauss, V. (2009, May 23). Colleges consider 3-year degrees to save undergrads time, money. *Washington Post*. Retrieved June 1, 2009 from http://www.washingtonpost.com

Spatial Storyboards: Conceptualizing the Human Experience of Interior Environments through Light and Language

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ABSTRACT

This teaching forum describes a developing method intended to immerse students in an awareness of human experience in interior environments. Utilized in a studio setting, the spatial storyboard seeks to combine the strengths of two conceptualization techniques—narrative inquiry and light box models—to establish a more human-centered approach to design, particularly in the early stages of the design process.

Creating the storyboard is a two-part process that involves composing a written narrative while simultaneously exploring spatial relationships through light box models.

This method of conceptualization combines both written and visual approaches to developing space. Concurrent with crafting a narrative that conveys the experience of being in their space from the user's point of view, students are challenged to visually capture the physical environment as described in their narratives. This is achieved by building "boxes of light". Each box is constructed out of black or white foam core and provides the context for exploration of space, form, or simply ways in which to manipulate the interaction between light and materials. The only requirement is that it abstractly represent the experiences described in their narratives. The resulting artifact is a storyboard—a series of significant snapshots of experiential environments expressed with light and language.

Preliminary observation of project outcomes indicates a trend in enhanced sensory awareness. However early these findings may be, they are exciting as they begin to suggest the potential for the storyboard to initiate a more holistic, human-centered approach to designing interior environments. Occurring during the conceptual phase of the design process, the storyboard has the additional benefit of providing opportunities for critical discoveries, often facilitating the development of a cohesive formal language that the student is able to realize throughout the remaining phases of the design process.

NARRATIVE

CONTEXT

As post-modern society's sensitivity to engaging experiences continues to heighten, designing for the complex interactions between humans and their environments becomes increasingly important and challenging (Pine & Gilmore, 1998). Processes that enable designers—especially novice designers—to investigate and articulate the way space is "psychologically inhabited" are needed (Ganoe, 1999, p. 4). The purpose of the method presented here is to immerse students in an awareness of human experience in interior environments.

PROCESS AND RATIONALE

Narrative, as a means for communicating and interpreting meaningful experiences, is perhaps the most basic form of expression. The way in which narrative structure naturally organizes events and interactions lends itself to studies in human experiences. Designers have adopted the narrative approach to design, or "narrative inquiry," as a tool for understanding designed environments from the user's point of view. This approach prompts the designer to understand the space in a less ego-centric way. For example, in an exploratory study investigating the effectiveness of narrative inquiry in a studio setting, Danko, Meneely and Portillo (2006) found that the use of narrative "encouraged a deeply humanized design process by nurturing empathy, enhancing multi-sensory conceptualization and visualization, and facilitating holistic designing" (p. 10).

An additional benefit of narrative inquiry is that it forces visualization of a space as a series of experiences that are linked together in a continuous way. The continuity of the journey through space is necessarily maintained due to the inherently sequential nature of narrative structure. This process of writing the story is in many ways analogous to sketching; ambiguous concepts are crystallized with words and those words become the mechanism for transforming and modifying ideas in imagery (Fulweiler, 1986).

While narratives are used with great effectiveness, in their 2006 study Danko et al. (2006) discovered an unexpected tendency for students to embrace narrative inquiry at the expense of 3-dimensional visual thinking. This apparent imbalance suggests the potential benefit of a method of conceptualization that could combine both written and visual approaches to developing space. The storyboard method outlined here was developed in response. Creating the storyboard is a two-part process that involves composing a written narrative while simultaneously exploring spatial relationships through light box models.

Demonstrated to be similarly effective at facilitating visualization, study models are an important design tool for exploring spatial relationships. In particular, light box models take advantage of the expressive nature of light as it interacts with space and materials. In the process of collecting, distributing, and manipulating light within the controlled boundaries of a light box model, the designer seems to uncover almost unlimited potential to shape the visual and affective experience of space (Theodorson, 2006).

Utilized in a studio setting, students are assigned the spatial storyboard as a two-part process. The first step is to explore design ideas by crafting a written narrative. They are encouraged to write the narrative from the point of view of a potential user and are told that their narrative should describe the experience of moving through the space.

Concurrent with crafting a narrative that verbally conveys the experience of being in their space, students are challenged to visually capture the physical environment as described in their narratives. This is achieved by building "boxes of light". For this second step, the student constructs his/her box out of black or white foam core. Then, using a variety of materials and light sources, they experiment with composing form and space in a way that captures the experiences/moods expressed in their narratives. Each box provides the context for exploration of space, form, or simply ways in which to manipulate the interaction between light and materials. The only requirement is that the resulting compositions must abstractly represent the experiences described in their narratives. As they work, students record a specified number of compositions using a digital camera. From those images, they select the most significant to pair with their narrative. The resulting artifact is a storyboard—a series of significant snapshots of experiential environments expressed with light and language (see Figures 1-3).

IMPLICATIONS FOR DESIGN EDUCATION

The spatial storyboard seeks to combine the strengths of two conceptualization techniques—narrative inquiry and light box models—to establish a more human-centered approach to design, particularly in the early stages of the design process. Preliminary observation of project outcomes suggests a certain level of success. In particular, analysis of a very small sample (n=15) indicates a trend toward enhanced sensory awareness. For example, in just a single page of one student's 6-page storyboard, over twenty references were made to non-visual sensory experiences. Only five were visual-based experiences. This is significant in light of the common critique that environmental designers are biased toward the visual experience (Pallasmaa, 2000). Interestingly, while the storyboard is used in part as an effort to facilitate young designers' ability to visualize the spaces they propose to create, it appears to be simultaneously encouraging conceptualization of a much more comprehensive sensory experience.

However early these findings may be, they are exciting as they begin to suggest the potential for the storyboard to initiate a more holistic, human-centered approach to designing interior environments. Occurring during the conceptual phase of the design process, the storyboard has the additional benefit of providing opportunities for critical discoveries, often facilitating the development of a cohesive formal language that the student is able to realize throughout the remaining phases of the design process.

REFERENCE LIST (APA STYLE)

Danko, S., Meneely, J. & Portillo, M. (2006). Humanizing design through narrative inquiry. Journal of Interior Design, 31(2), 10-28.

Fulwiler, T. (1986). The argument for writing across the curriculum. In A. Young and T. Fulwiler (Eds). Writing Across the Disciplines: Research into Practice, pp 21-32. Portsmouth, NH: Boynton/Cook Publishers, Inc.

Ganoe, C.J. (1999). Design as narrative: A theory of inhabiting interior space. Journal of Interior Design, 25(2), 1-15.

Pallasmaa, J. (2000). Hapticity and time. Architectural Review, 207, 78-84

Pine II, B.J. & Gilmore, J.H. (1998). Welcome to the experience economy. Harvard Business Review, Jul-Aug, 97-105.

Theodorson, J. (2006, April). Loving light: At the intersection of design and technology. Paper presented at the National Conference on the Beginning Design Student.

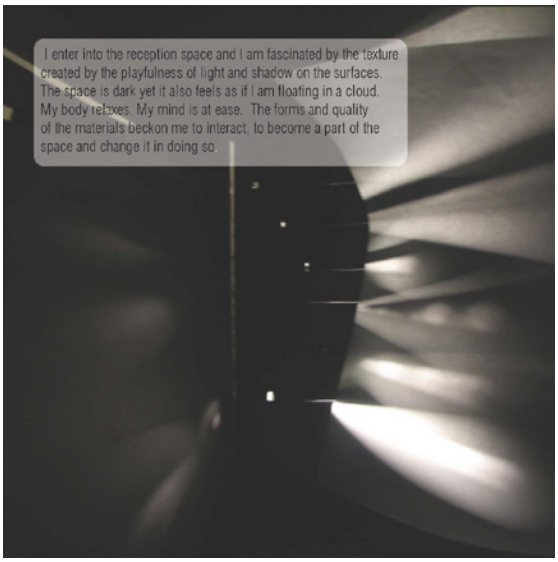

Figure 1: Sample Image/Text from student storyboard

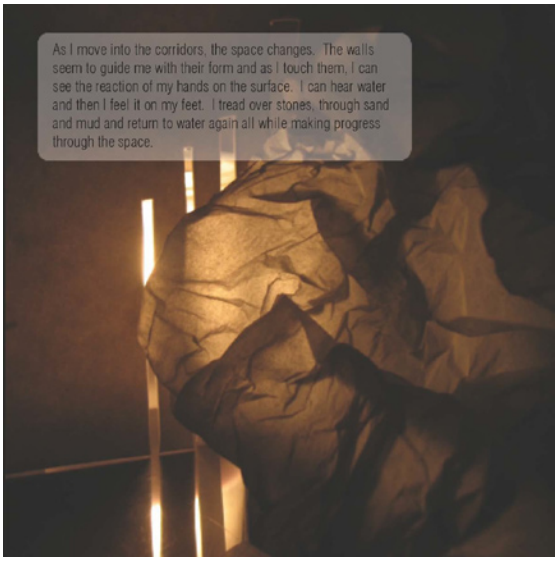

Figure 2: Sample Image/Text from student storyboard

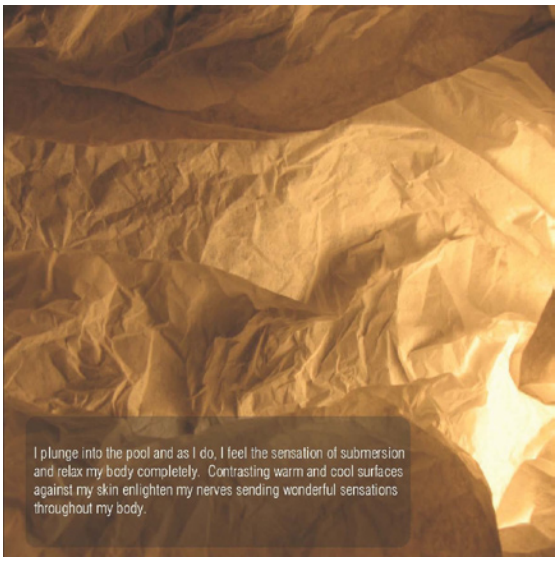

Figure 3: Sample Image/Text from student storyboard

Multifaceted Benefits of Studio Based Service Learning

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ABSTRACT

My intent in this presentation is to walk participants through a course which utilized a local non-profit organization as the client for a full term senior ID studio project. Our senior commercial (non-office) studio was partnered with a local inter-denominational church on the brink of beginning a building campaign but was without direction. It will be shown how the process not only benefited multiple entities, but also facilitated the meeting of course objectives in a richer and more significant way.

There can be many challenges to such a project type but early planning and an open dialog with the client group and students alleviated many issues. Some initial concerns included:

Aligning client needs and expectations with course competencies

Beliefs/preferences of students

Preliminary planning for instructor

Prior to student involvement, basic conceptual goals were discussed with the committee and a potential site was acquired to give students as practical an experience as possible. The committee was informed of the course competencies to be retained and the time commitments required of this partnership.

Students were given background information about the church and its founders, learned about the developer, and analyzed the master plan of the site. Students were given brief research and on-site observation homework assignments (re: liturgical design, multi-use facilities, etc.) and returned to class to pool their findings. Students and I discussed how designing this type of large scale, mutli-use facility and how the future pro-bono client interaction would benefit them as future designers. This allowed them to take more ownership of the project and set aside discomforts they may have had with the subject matter.

Students developed, as a group, their own programming list based on findings in their research and the preliminary conceptual ideas of the committee. They interviewed the committee and toured the proposed site with the developer. Students forecasted attainable sustainability goals, design appropriately and documented their solutions. Client contact continued throughout the semester through email correspondence, a midterm visit by the committee to our studio, and a final presentation to the committee and professional jurors. During winter break, student projects were put on display at the current facility for viewing by the congregation and community.

The benefits of this type of union extended farther than just to the students involved.

Students grew primarily from the client interaction and real world application and reacted positively to the overall experience. Course objectives were enriched through the inclusion of an authentic client, tangible project site, and ongoing communication opportunities.

The ***client/end user*** received free design ideas for a potential building campaign and assistance with developing the organization's facility goals.

For the ***instructor***, this endeavor served as an important addition to the teaching and service categories of academic advancement. Creative activity and scholarship opportunities were attained through professional

exposure and supplemental consultations.

Positive ***program*** exposure to community members was an advantage for the university while the ID ***profession*** benefited from exposing a local audience to the true responsibilities of professional designers.

NARRATIVE

THE PURPOSE

The intent in this presentation is to walk participants through a course which utilized a local non-profit organization as the client for a full term senior interior design studio project. It will be shown how the process not only benefited multiple entities, but also facilitated the meeting of course objectives in a richer and more significant way.

Many university faculty resist the incorporation of service learning into their courses. There can be many challenges to such a project type but early planning and an open dialog with the client group and students can alleviate many issues. Some typical faculty concerns include:

Aligning client needs and expectations with course competencies

Beliefs/preferences of students

Preliminary planning for instructor

The following course summary will address all of these concerns.

THE PROCESS

The senior commercial (non-office) studio at Winthrop was partnered with a local inter-denominational church that was on the brink of beginning a building campaign but was without direction or industry contacts. The church's services and activities took place at the local YMCA after hours (within a pedestrian oriented residential community) and the church maintained a small off-site office space. With few full time employees and a need for physical space outside the constraints of their space-sharing arrangement, the staff met with continual difficulties maintaining services for a growing congregation, 40% of whom are 18 and under.

Prior to student involvement, basic conceptual goals were discussed with the church committee. For "homework", the committee collected photos of spaces, colors, textures, etc. that they felt represented their collective vision. Available properties were researched through local brokers and information regarding a potential site was acquired in order to give students as practical an experience as possible. The property's developer provided

marketing and site analysis data that would be integral to the students' future work. Although time consuming, this investigation took place prior to the semester start and, for the instructor, led to multiple opportunities for networking, future consulting prospects, and a deeper understanding of the geographic area in question.

The committee was informed of the course competencies that would have to be retained and therefore, based on the course description, retail and food service components were a required inclusion to the design program. Although not in the original scope of the client's needs, the inclusion of these two components added space and conceptual opportunities which the clients could explore. Time commitments required of this partnership (for site visits, critiques, etc.) were also discussed.

Upon introducing students to the project type, students and instructor discussed how designing this type of large scale, multi-use facility and how the future pro-bono client interaction would benefit them and make them better developed designers. This allowed them to take more ownership of the project and set aside discomforts they may have had with the subject matter. Students were instructed to consider the contemporary personality and layered programming they would encounter and were encouraged to consider the project's similarities to other facility types. Those with religious backgrounds were encouraged to set aside their own preconceived space ideas while those with no background were encouraged to visit multiple denominational facilities and become familiar with spatial terminology specific to liturgical design. Instruction was given simultaneously so as not to draw attention to students' affiliations, or lack thereof.

Prior to the first meeting with the client, the class was given background information about the church and its founders, learned about the developer, and analyzed the master plan of the site to better understand the multiple layers of clientele and constraints involved. Students were given brief literature review and on-site observation homework assignments (re: liturgical design, multi-use facilities, urban planning, etc.) and subsequently returned to class to pool their findings.

Students developed, as a group, their own programming questionnaire based on findings in their research and the preliminary conceptual ideas of the committee. An extended class was held to allow students to interview the committee, acquire detailed programming information, visit the church offices and have a tour of the proposed site with the developer.

The project (based on curricular needs as well as client interest) took a decidedly "green" slant and students were required to forecast attainable sustainability goals, correlate those with LEED credits, design appropriately and then document and explain their solutions.

Throughout the semester, students received instruction on content integral to the primary objectives of the course. Students applied their knowledge of space planning, codes, mechanical systems, lighting and many other aspects to the design of the complex multi-functional facility. Additional direction was given on how a student's graphic and verbal presentations might differ based on audience makeup and size. Guest speakers and professional development opportunities were geared toward course competencies as well as project specific content (sanctuary design, acoustics).

Client contact continued throughout the semester through email correspondence, a midterm visit by the committee to our studio, and a final formal presentation to the committee and professional ID jurors. After each session, students reflected on their experiences serving the clients and their efforts producing the project. During winter break, student projects were put on display at the current facility for viewing by the congregation and community.

THE RESULTS

Overall, the experience was successful and produced extensive and inclusive portfolio pieces for many of the student participants. Projects were retained for future accreditation visits and recruitment purposes. Two of the ten students were offered jobs upon graduation from the firm which supplied our guest speakers and jurors.

Rather than hindering the content delivery, many course objectives were primarily satisfied or enriched through the inclusion of an authentic client, tangible project site, and ongoing communication opportunities. These objectives included:

Demonstrating programming skills, including problem identification, identification of client and user needs, information gathering research and analysis.

Demonstrating an understanding of theories of human behavior in interior environments including human factors and the relationship between human behavior and the built environment.

Demonstrating critical, analytical, strategic, and creative thinking as well as the ability to think visually and volumetrically.

Demonstrating professional discipline and active listening skills.

Expressing ideas clearly in oral presentations and critiques, communicating visually …. as well as communicating clearly in written specifications, schedules, project programs, and concept statements.

The benefits of this type of union extended farther than just to the students involved.

Students grew primarily from the client interaction and real world application and, though stressful, reacted positively to the overall experience.

The ***client and end user*** received free design ideas for a potential building campaign and assistance with developing the organization's facility goals.

For the ***instructor***, this endeavor served as an important addition to the teaching and service categories of academic advancement. Creative activity and scholarship opportunities were attained through professional exposure and supplemental consultations.

Positive ***program*** exposure to community members was an advantage for the university and department while the understanding of the ID ***profession*** benefited from exposing a local audience to the true responsibilities of professional designers.

Handouts available for digital distribution (email request to belkj@winthrop.edu)

Syllabus, Course Timeline and Lesson Plan
Student Project Requirements
Student Programming Questionnaire for Client

REFERENCE LIST (APA STYLE)

Barduson, S. (2004). Designing for the emerging church. *Church Executive Magazine, digital edition, 12*. Retrieved July 21, 2006, from *http://www.churchexecutive.com/2004/12/Designing_for_the_emerging_church.asp*

Barron, G. (2003). Trend toward mall-like churches to continue. *Church Executive Magazine, digital edition, 12*. Retrieved July 21, 2006, from http://www.churchexecutive.com/2003/12/Trend_toward_mall-like_churches_to_continue.asp

Jackson, J. (2006). In-house innovators can take a church beyond business as usual. Church Executive Magazine, digital edition, 2. Retrieved July 21, 2006, from http://www.churchexecutive.com/2006/02/In-house_innovators_can_take_a_church_beyond_business_as_usual.asp

Martof, M. (2005). Congregational Identities and Their Influence on Architecture and Facilities. *Worship Facilities Magazine, digital edition, 1*. Retrieved July 21, 2006, from http://www.worshipfacilities.com/article/1238.html

Padgett, C. B. (2006). The Word On Seeker Design. *Worship Facilities Magazine, digital edition, 8*. Retrieved July 21, 2006, from http://www.worshipfacilities.com/article/14011.html

Payne, C. A. & Bennett, E. B. (1999). Service-Learning and Changes in Involvement Preferences among Undergraduates. *NASPA Journal, vol 37* (n1), p337-48.

Roberts, N. (2004). *Building Type Basics for Places of Worship (Building Type Basics)*. Hoboken, New Jersey: John Wiley & Sons, Inc.

Sanoff, H. (2000). *Community participation methods in design and planning.* New York, NY: John Wiley & Sons, Inc.

Spuler, D. (2005). **In** going green is good design and good citizenship. *Church Executive Magazine, digital edition, 10*. Retrieved July 21, 2006, from *http://www.churchexecutive.com/2005/10/Going_green_is_good_design_and_good_citizenship.asp0*

Figure 1: Current state of client's services

Figure 2: Example of "vision" photos collected by committee members

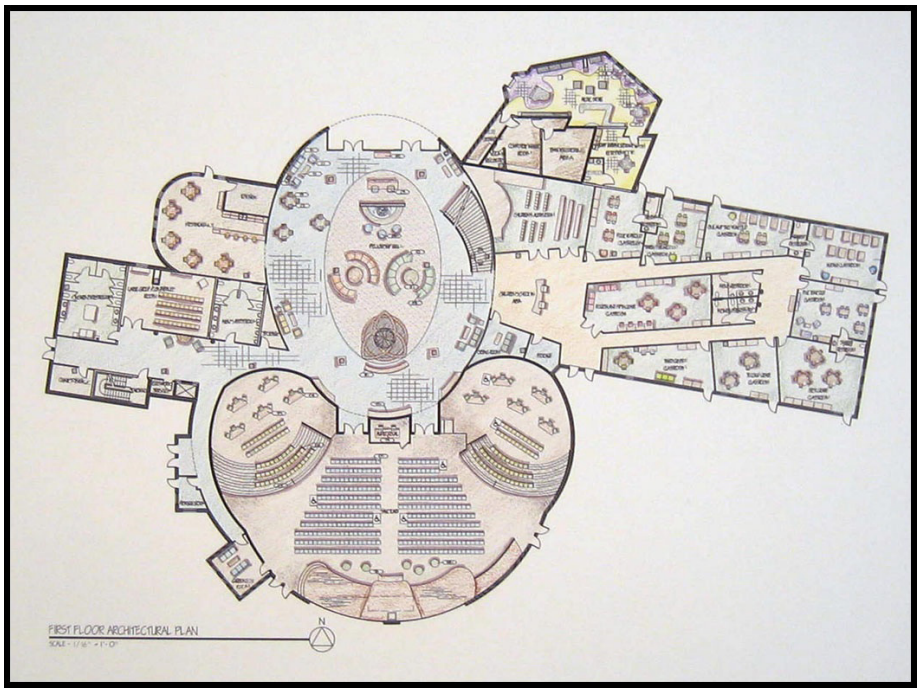


Figure 3: Presentation and documentation materials from a completed student project; Photos provided by Ashley W. Hall, CDT, LEED AP

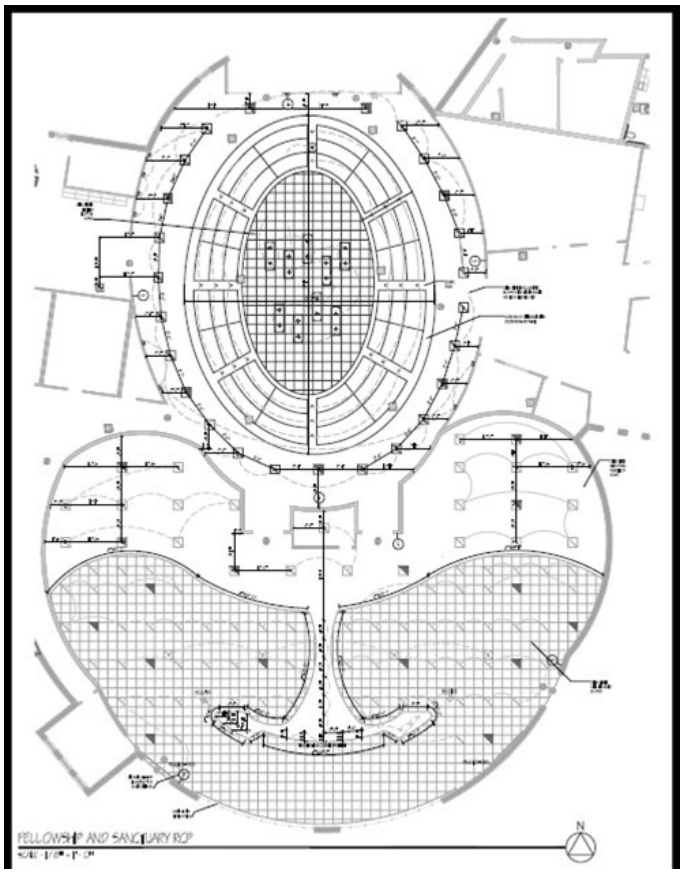


Figure 4: Presentation and documentation materials from a completed student project; Photos provided by Ashley W. Hall, CDT, LEED AP

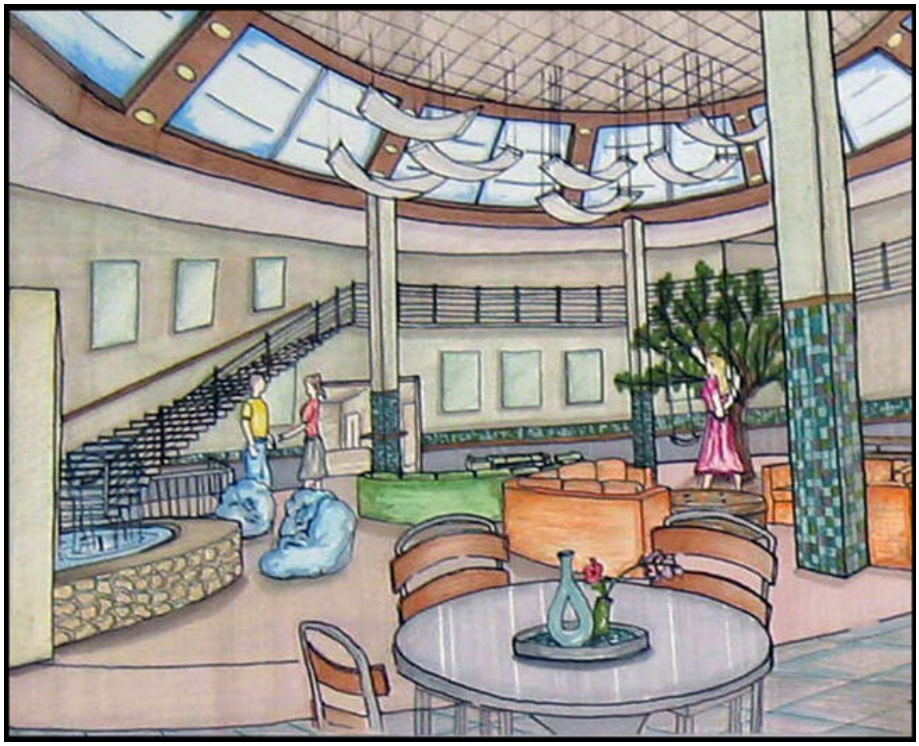


Figure 5: Presentation and documentation materials from a completed student project; Photos provided by Ashley W. Hall, CDT, LEED AP

Patterns in Context: Home Design and Sense of Place Cultivating Critical Thinking Skills in the Residential Studio

ADAIR BOWEN / STAN LOVE
Baylor University

ABSTRACT

Students have been inundated with quick and easy fixes for the designing of residential environments via media saturation. False perceptions of time constraints, cost factors, and quality as related to good design theory are prevalent. As design educators, we are charged with the dissemination of a body of knowledge based on sound research that fosters critical thinking skills and guides application. Regardless of shape, form, or type, residential environments are a basic need of all humankind and must be understood and conceptualized in relation to emotional connection and experience of place (Kopec, 2006). This understanding contributes to the *'essence'* of home; what our senses tell us about the environments we live in (Jacobson, Silverstein, and Winslow, 2002).

PURPOSE
Students enter the residential studio with a basic foundation in space planning, technical skills, aesthetics, and environmental applications for such environments. However, an understanding of home design specific to a client's needs, culture, and lifestyle involves intensive research, detailed programming, and knowledge of place and meaning which is often under addressed.

This presentation exemplifies a teaching methodology that helps students critically process the complexity of designing for residential clients. This method involves the in-depth study, observation, and application of the ten essential patterns of enduring home designs as established in Jacobson, Silverstein, and Winslow's book, *Patterns of Home,* and the impact these patterns have on residential design solutions.

METHODOLOGY
Prior to the residential studio, students are given a required reading list (Appendix A).

While the focus of class exercises is related to the understanding and application of information gleaned from *Patterns of Home*, supplemental readings offer further insight. The exercises are completed in the first two weeks of the semester, allowing for application throughout all residential studio projects.

The process begins with discussion of the readings and a PowerPoint presentation further examining the patterns and theoretical underpinnings of concept of home, place identity, and place attachment, as referenced in Cooper-Marcus (1997) and Kopec (2006). Exercises based on patterns of enduring home design follow: (Appendix B)

Exercise One: Create a Visual Narrative of Each Pattern

Exercise Two: Sketch and Analyze Personal Living Environment for Patterns

Exercise Three: Analyze Floor Plans for Existing Patterns (Appendix C)

Exercise Four: Field Experiences to Local Residences: Analyze, Create Visual Written Narrative (Appendix C)

IMPORTANCE OF TOPIC
Understanding of the ten essential patterns within the context of home design offer students a better understanding of their responsibilities as designers to the residential client. The learning experiences help dispel myths portrayed by the media, cultivate critical thinking skills related to human behavior and the design of home environments, hone programming and research skills,

and create a greater understanding of home design that is lasting, speaks to purpose (i.e. safety, comfort, regionalism, sustainability) and sense of place (place identity and place attachment).

RESULTS

Incorporating the study of patterns into the residential studio increased a greater understanding of what good home design encompasses. The exercises enhanced knowledge of residential environments beyond the basics and allowed for a higher level of critical thinking and application of design theory. Students continue to successfully apply these concepts in all residential studio projects.

NARRATIVE

CONTEXT

Students have been inundated with quick and easy fixes for the designing of residential environments via media saturation. False perceptions of time constraints, cost factors, and quality as related to good design theory are prevalent. Today, the language tied to home design is frequently related to real estate (i.e. resale, curb appeal, staging, etc.) rather than how one experiences the space (Jacobson, Silverstein, and Winslow, 2002). As design educators, we are charged with the dissemination of a body of knowledge based on sound research that fosters critical thinking skills and guides application. Regardless of shape, form, or type, residential environments are a basic need of all humankind and must be understood and conceptualized in relation to emotional connection and experience of place (Kopec, 2006). This understanding contributes to the *'essence'* of home; what our senses intuitively tell us about the environments we live in. While difficult to describe, Jacobson, Silverstein, and Winslow's *Patterns of Home: The Ten Essentials of Enduring Home Design* clearly illustrates this *'essence'* through a group of design concepts called patterns (ideas about how something is done) that focus on the experience of being in a home (Jacobson et al., 2002).

PURPOSE OF TEACHING METHODOLOGY

Students enter the residential studio with a basic foundation in space planning, technical skills, aesthetics, and environmental applications for such environments. However, an understanding of design theory related to home design specific to a client's needs, culture, lifestyle, identity, and attachment involves intensive research, detailed programming, and knowledge of place and meaning which is often under addressed in the classroom.

This teaching methodology helps students critically process the complexity of designing for residential clients. This method involves an in-depth study, observation, and application, through both written and visual communication skills, of the ten essential patterns of enduring home designs as established in Jacobson, Silverstein, and Winslow's book, *Patterns of Home,* and the impact these patterns have on residential design solutions.

The Council for Interior Design Accreditation (2009) standards associated with *global context for design, hu-*

man behavior, and communication (Standards 2, 3, and 6 respectively) require students and programs to demonstrate an understanding through knowledge and application. This methodology represents compliance with these standards.

METHODOLOGY

Prior to the residential studio (generally the summer before the fall semester residential studio), students are given a required reading list (Appendix A). While the focus of the class exercises is related to the understanding and application of information gleaned from *Patterns of Home*, supplemental readings offer further insight. The theoretical perspectives alluded to in Sarah Susanka's writings/illustrations closely parallel and often interface with those of Jacobson, Silverstein, and Winslow. Christopher Alexander's classic, *A Pattern Language*, from which the ten enduring patterns of home were extracted, offers awareness of other patterns applicable to the design of the home. The work of Cooper-Marcus, *House as a Mirror of Self*, addresses how individuals conceptualize the home environment from a psychological perspective and well-being.

The process begins with discussion of the readings and a PowerPoint presentation further examining the patterns and theoretical underpinnings of concept of home, place identity, and place attachment, as referenced in Cooper-Marcus and Kopec. Cooper-Marcus (1997) and Kopec (2006) both agree that one's psychological perception of one's dwelling place is altered by culture, traditions, and personality. Kopec (2006) goes on to define *place identity* as the incorporation of a place into a larger concept of identity or sense of self and *place attachment* as a person's bond with the social and physical environments of place; creating a profound personal connection to a site. This bond or sense of connection to a physical environment and the level of comfort or feeling of safety associated with it, for some, tends to translate into a sense of belonging—'sense of place' (Kopec, 2006). A common thread across all ten patterns is that strong sense of connection in creating 'sense of place.' The connection may be reflected in various forms such as connection to site, comfort, security/safety, nature, privacy, orientation, or culture as experienced in the built environment of the home.

The following exercises involving the patterns of enduring home design are completed by the students in the first two weeks of classes, allowing for application in all residential studio projects. Class exercises are found in Appendix B and examples of student work are exemplified in Appendix C.

Exercise One: Create a Visual Narrative of Each Pattern

Students use free-hand sketching skills to illustrate the concept behind each of the ten patterns. (*Inhabiting the Site* □ *Creating Rooms Inside and Out* □ *Sheltering Roof* □ *Capturing Light* □ *Parts in Proportion* □ *Flow Through Rooms* □ *Private Edges, Common Core* □ *Refuse and Outlook* □ *Places In Between* □ *Composing with Materials*)

Exercise Two: Sketch and Analyze Personal Living Environment for Patterns

Students sketch a drawing of a personal living environment and reflect on their personal '*sense of place*'—using both visual and written communication skills.

Exercise Three: Analyze Floor Plans for Existing Patterns

Students are given three floor plans with short design scenarios taken from magazines. They then analyze the floor plan noting patterns. Based on the simple scenario, they identify the three patterns that they feel best speak to the layout of the space.

Exercise Four: Field Experiences to Local Residences: Analyze, Create Visual Written Narrative

Students visit three residences in the local area chosen by the professor. These carefully selected residences are associated with and exhibit strong "patterns" considered by professional designers in the creative design process that can be recognized and captured by students in a short period of time. This experience is limited to approximately 30 to 45 minutes per residence. They interview the homeowner, discuss the design process, and then quickly illustrate, using free-hand sketching skills, the patterns that are evident in each environment. They present their findings in a creative visual and written format.

IMPORTANCE OF TOPIC

Understanding of the ten essential patterns within the context of home design offers students a better understanding of their responsibilities as designers to the residential client. These learning experiences help to dispel myths portrayed by the media, cultivate critical thinking skills related to human behavior and the design of home environments, hone programming and research skills, and create a greater understanding of home design that is lasting, speaks to purpose (i.e. safety, comfort, regionalism, sustainability) and sense of place (place identity and place attachment).

RESULTS

Incorporating the study of patterns into the residential studio increases a greater understanding of what good home design encompasses. Students discover their own 'sense of place' and, in turn, are able to recognize and respond to clients needs. The exercises enhance knowledge of residential environments beyond the basics and allowed for a higher level of critical thinking and application of design theory. Students continue to successfully apply these concepts in all residential studio projects.

REFERENCES

(APA MANUAL OF STYLE)

Copper-Marcus, C. (1997). *House as a mirror of self: Exploring the deeper meaning of home.* Berkeley, CA: Conari Press.

Council for Interior Design Accreditation (CIDA). (2009). *Professional standards.* Retrieved June 25, 2009, from http://www.accredit-id.org/June%20 2008%Standards_changes09.pdf

Jacobson, M., Silverstein, M., & Winslow, B. (2002). *Patterns of home: The ten essentials of enduring design.* Newton, CT: Taunton Press.

Kopec, D. (2006). *Environmental psychology for design.* New York: Fairchild, Inc.

APPENDIX A

ID Studio I: Residential Design
Required Reading List
Fall 2009

Patterns of Home*: *Ten Essentials of Enduring Design
Authors: Max Jacobson, Murray Silverstein, & Barbara Winslow (2002)

Not So Big Solutions for Your Home
Author: Sarah Susanka (2002)

Inside the Not So Big House
(2004)

Home by Design
(2005)

Highly Recommended

House as a Mirror of Self
Author: Clare Cooper-Marcus (1997)
Chapter 2—referenced in lecture

Environmental Psychology for Design
Author: Dak Kopec (2006)
Chapters 4 & 7—referenced in lecture

A Pattern Language (A Classic)
Authors: Christopher Alexander, Murray Silverstein, & Sarah Ishikawa with Max Jacobson, Ingrid Fiksdahl-King, and Shlomo Angel (1977)

Not So Big House Collection
Author: Sarah Susanka

Home: A History of an Idea
Author: Witold Rybczynski (1986)

APPENDIX B

Exercises in Patterns of Home Understanding Context and Application

Learning Objective(s):

- To cultivate critical thinking skills related to the design of residential environments. (CIDA, 2009, 2)
- To increase visual communication skills through free-hand sketching. (CIDA, 2009, 6b)
- To develop an understanding of design theory related to concept of home, place identity, and place attachment. (CIDA, 2009, 3a, 3b)

Materials Required: Clean Sketch Book 8 ½ X11, pen, pencil, colored markers

Exercise One:
Create a Visual Narrative of Each of the Ten Patterns of Enduring Design
Process:
Using your sketch book, identify each pattern and visually communicate your understanding of the pattern, using sketching as a design tool.

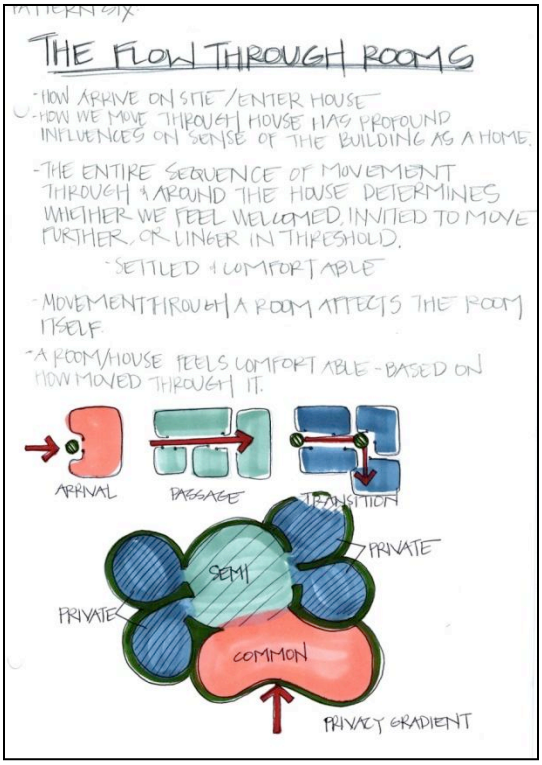
Exercise Two:
Sketch and Analyze Personal Living Environment for Evidence of Patterns Note the Three Most Significant Patterns Related to Concept of Home, Place Identity, and Place Attachment
Process:
Using your sketch book and sketching as a design tool, create a simple drawing of your home. Note windows, doorways, entrances, exterior extensions, etc. Identify the patterns of enduring design—your context. Reflect on your sense of place. You may use your present, past, or special home environment that speaks to you.

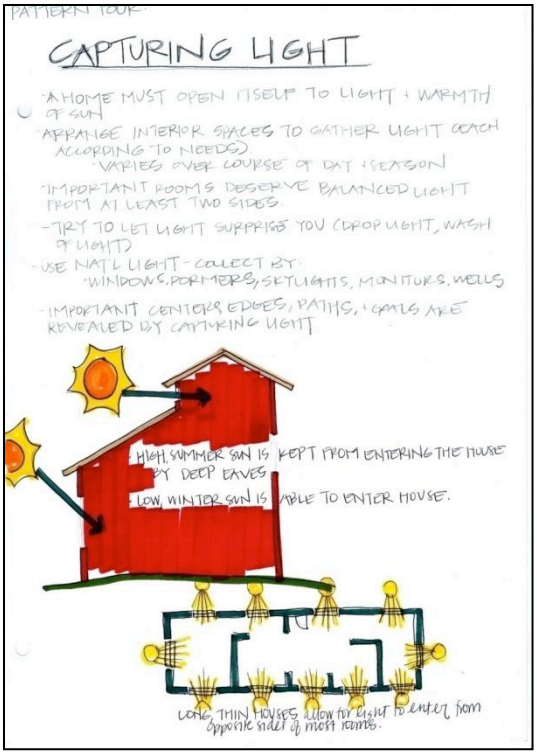
Exercise Three:
Analyze Two to Three Site Descriptions and Floor Plans for Existing Patterns
Process:
Site descriptions and floor plans will be provided in class.

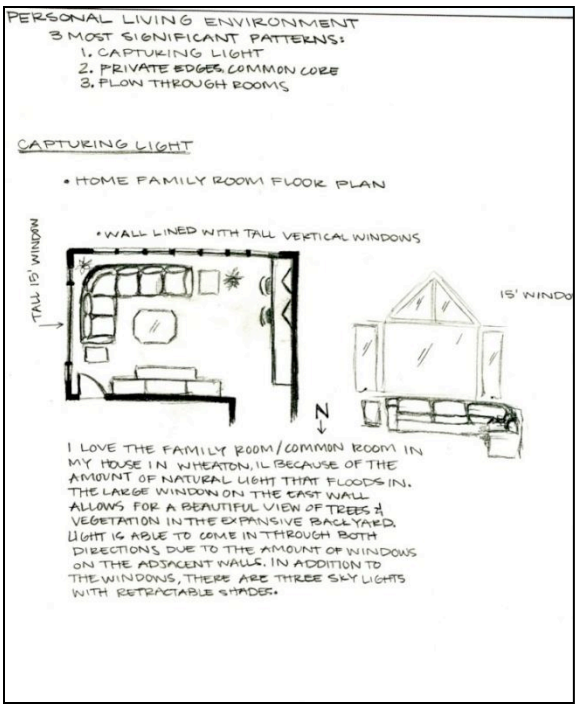
Exercise Four:
Field Experience to Local Residences: Analyze, Create Visual and Written Narrative of Existing Patterns
Process: Class field experience to three local residences. In sketch book, sketch, make notes, interview homeowner, discusses design process, etc. Present your findings in a creative visual and written format.

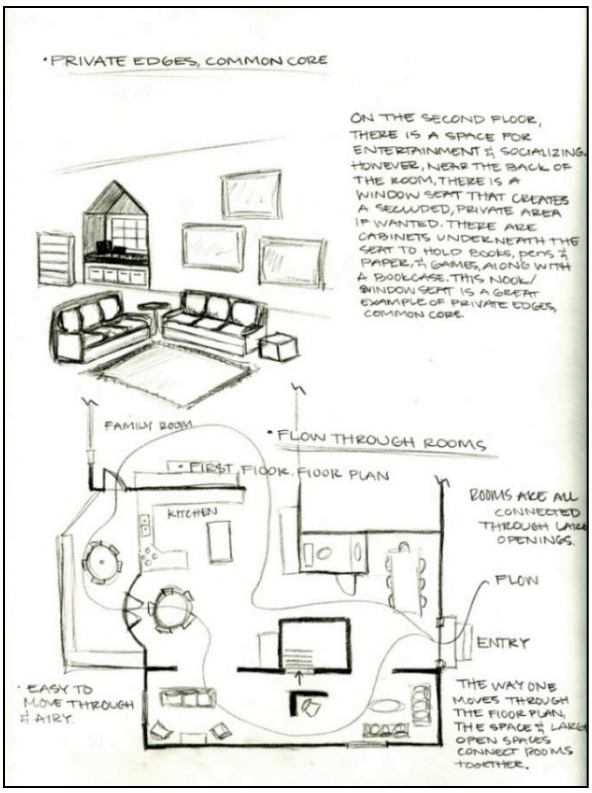
APPENDIX C

Patterns in Context—Samples of Student Work

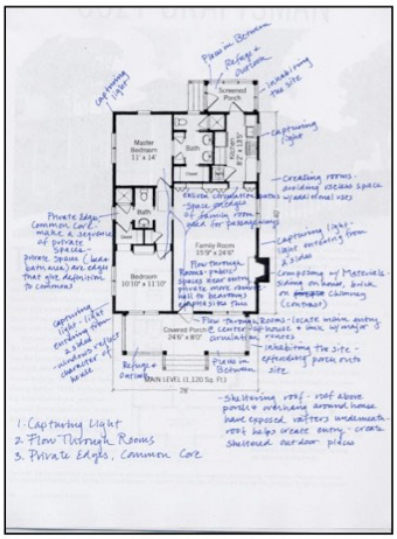


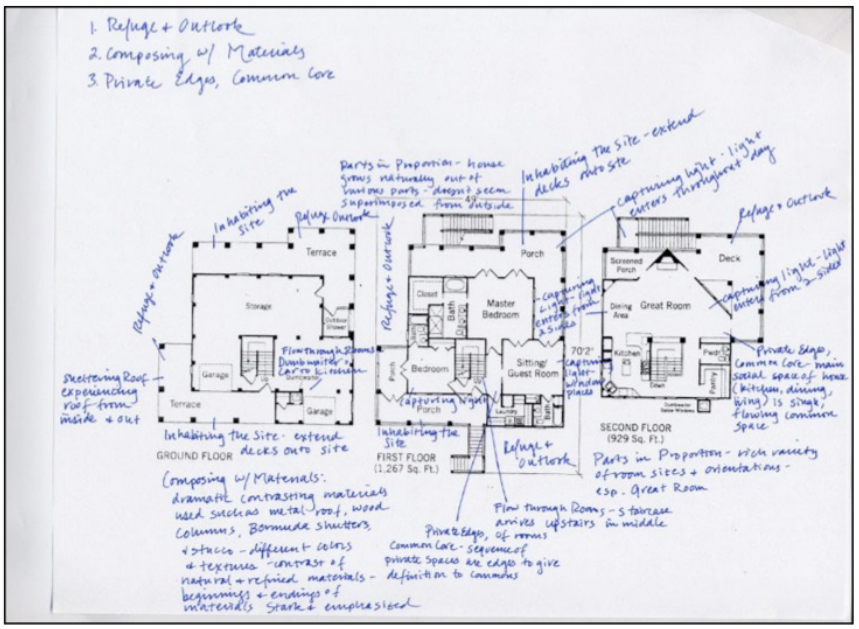




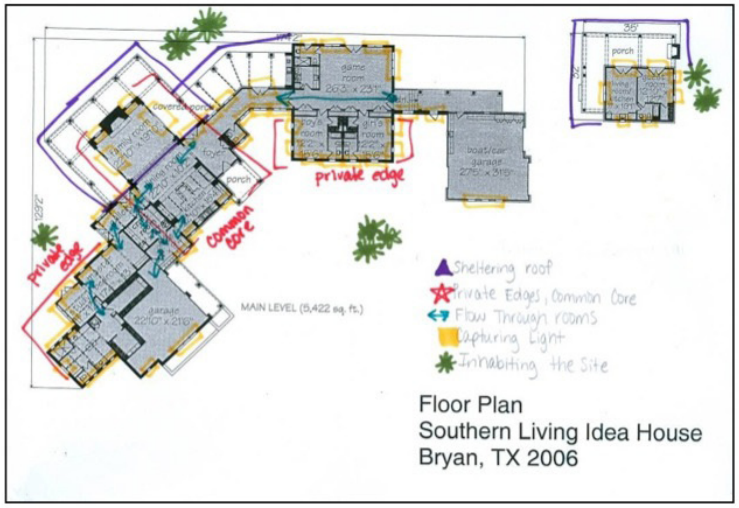


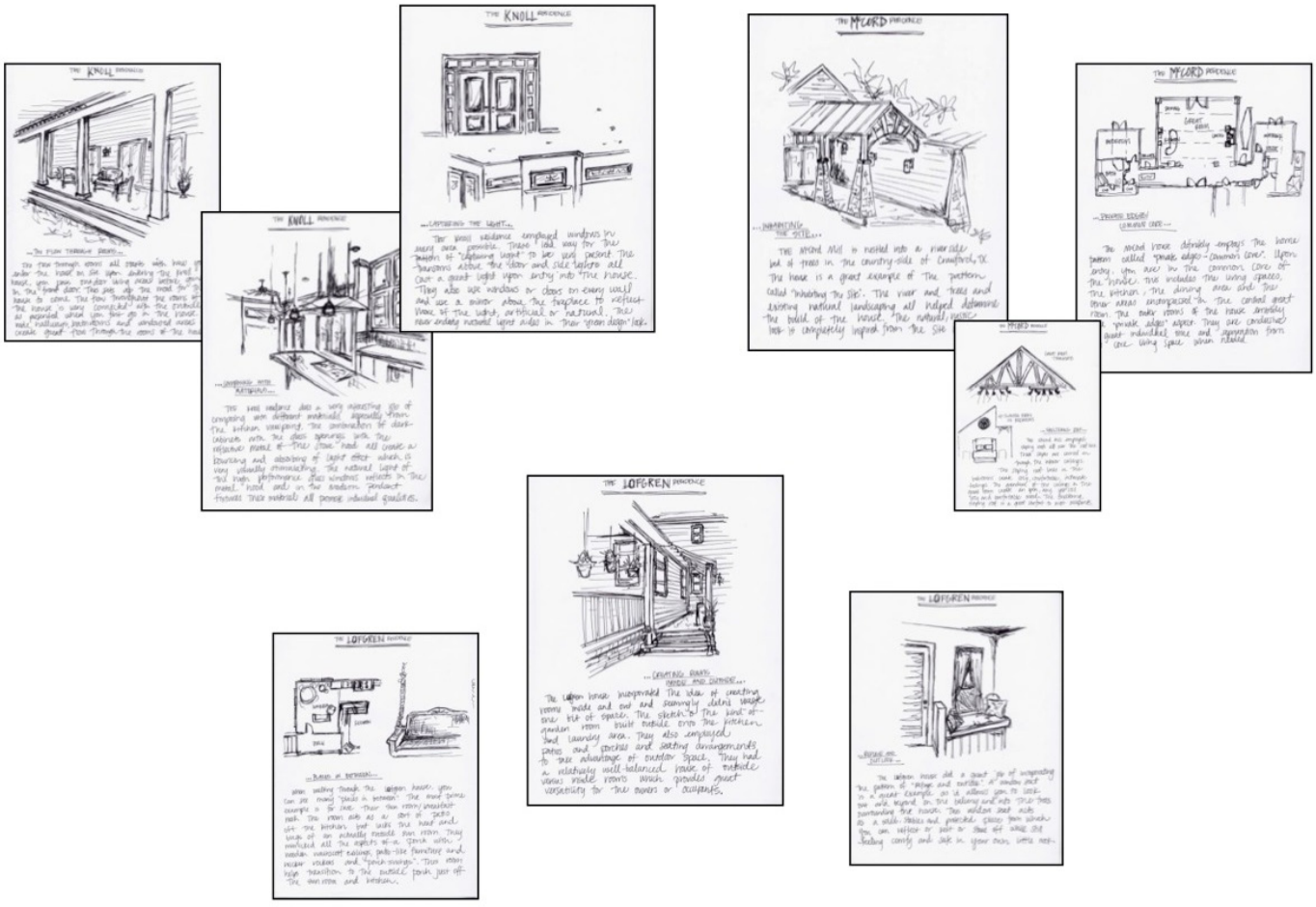
COZY CRAFTSMAN


1. Capturing Light
2. Flow Through Rooms
3. Private Edges, Common Core


1. Refuge + Outlook
2. Composing w/ Materials
3. Private Edges, Common Core
GROUND FLOOR
FIRST FLOOR (1,267 Sq. Ft.)
SECOND FLOOR (929 Sq. Ft.)

MARINER'S WATCH


private edge
common core
MAIN LEVEL (5,422 sq. ft.)
Sheltering roof
Private Edges, Common Core
Flow Through rooms
Capturing Light
Inhabiting the Site
Floor Plan
Southern Living Idea House
Bryan, TX 2006

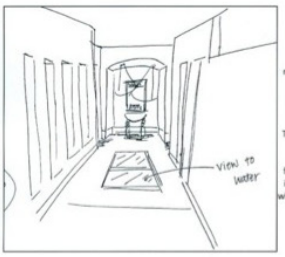


The McCord Mill:

The McCord Mill is definitely a home that has fully embraced modern technology. This home is in a forest area that is off of a riverbed; however, the residents have not overlooked modern conveniences and clever design in this remote location.

Sheltering Roof:
The wide exposed beams, gentle sloping roof, and sturdy archway all are contributing factors to the sheltering roof design in this home. The entry is the primary example of this pattern, but the rest of the home exhibits this as well. Throughout the home, one is reminded of the roof through the shape of the ceiling and exposed beams. The fluctuating ceiling heights also add to the emphasis of the rooms whose ceilings have been taken all the way to the roof level.

Composing with Materials:
From the columns composed with hand shaped stones flanking the entry to the exposed wood beams and supports to the placement of windows, this home has used materials to add up to a complete whole. All of the materials work together harmoniously in such a way that it does not take away from the surrounding nature but also does not stick out in an unpleasing way.



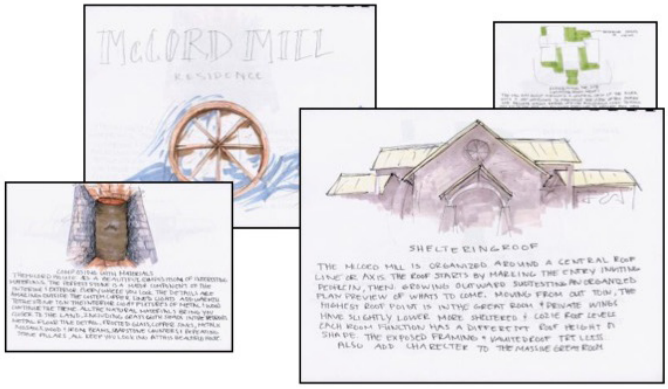
Parts in Proportion:
This hallway has a lowered roof level that emphasizes that is a pass through area. The main rooms off of this space have much higher ceilings to emphasize importance.

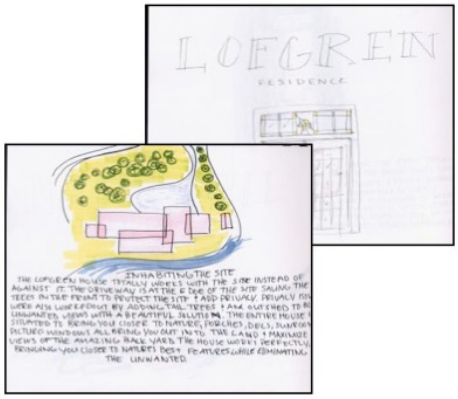
Capturing Light:
This room is flanked with windows so as not to become dark and dreary. The small window on the floor pulls in small amount of light in a completely unexpected place, while providing an interesting view.

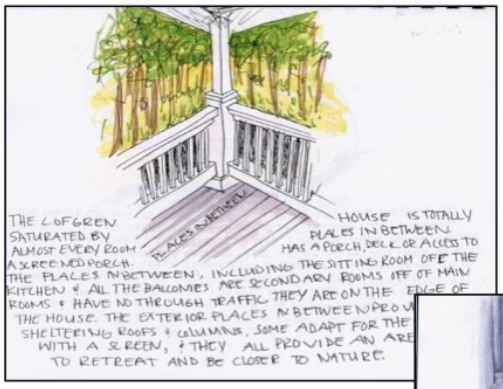
Composing with Materials:
The small window near the ceiling is an example of using the materials you have to add to the design theme and concept. The home has a mill in it as a design feature, and this window subtly references its shape while adding a functioning window.

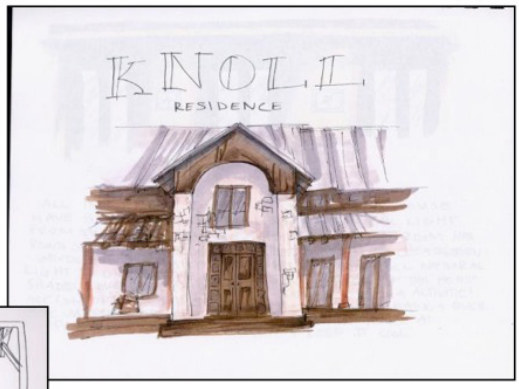
Capturing Light:
The long row of windows and the small window above each all pull in a lot of light and open up the view. They provide more light than a bedroom traditionally receives, which makes this room enjoyable at many times of the day.

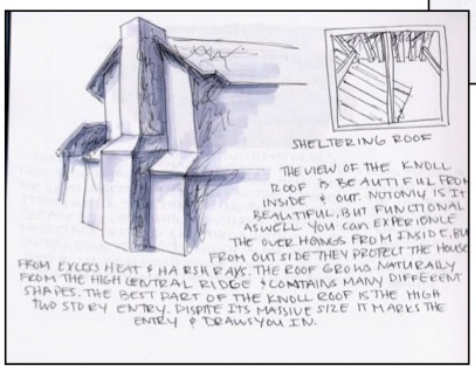
HOME
PATTERNS

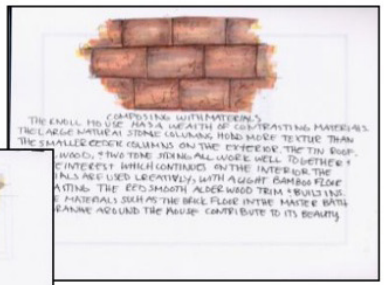

McLORD MILL
RESIDENCE
SHELTERING ROOF
THE McLORD MILL IS ORGANIZED AROUND A CENTRAL ROOF
LINE OR AXIS. THE ROOF STARTS BY MARKING THE ENTRY INVITING
PERHAPS, THEN GROWING OUTWARD SUGGESTING AN ORGANIZED
PLAN PREVIEW OF WHAT'S TO COME. MOVING FROM OUT TOWN, THE
HIGHEST ROOF POINT IS IN THE GREAT ROOM & PRIVATE WINGS
HAVE SLIGHTLY LOWER MORE SHELTERED & COZIE ROOF LEVELS
EACH ROOM FUNCTION HAS A DIFFERENT ROOF HEIGHT &
SHAPE. THE EXPOSED FRAMING & VAULTED ROOF TEE LEES
ALSO ADD CHARACTER TO THE MASSIVE GREEN ROOM

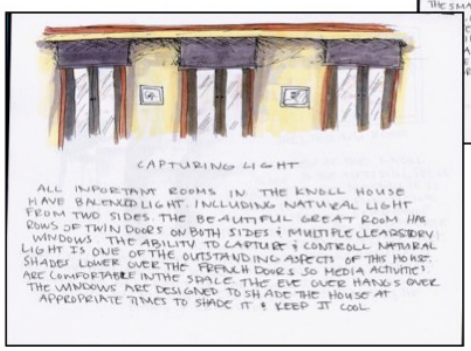

LOFGREN
RESIDENCE
INHABITING THE SITE


THE LOFGREN HOUSE IS TOTALLY SATURATED BY
ALMOST EVERY ROOM HAS A PORCH, DECK OR ACCESS TO
A SCREENED PORCH.
PLACES IN BETWEEN
PLACES IN BETWEEN, INCLUDING THE SITTING ROOM OFF THE
KITCHEN & ALL THE BALCONIES ARE SECONDARY ROOMS OFF OF MAIN
ROOMS & HAVE NO THROUGH TRAFFIC. THEY ARE ON THE EDGE OF
THE HOUSE. THE EXTERIOR PLACES IN BETWEEN PROV
SHELTERING ROOFS & COLUMNS, SOME ADAPT FOR THE
WITH A SCREEN, & THEY ALL PROVIDE AN ARE
TO RETREAT AND BE CLOSER TO NATURE.


KNOLL
RESIDENCE


SHELTERING ROOF
THE VIEW OF THE KNOLL
ROOF IS BEAUTIFUL FROM
INSIDE & OUT. NOTONLY IS IT
BEAUTIFUL, BUT FUNCTIONAL
AS WELL. YOU CAN EXPERIONCE
THE OVERHANGS FROM INSIDE, BU
FROM OUTSIDE THEY PROTECT THE HOUS
FROM EXCESS HEAT & HARSH RAYS. THE ROOF GROWS NATURALLY
FROM THE HIGH CENTRAL RIDGE & CONTAINS MANY DIFFERENT
SHAPES. THE BEST PART OF THE KNOLL ROOF IS THE HIGH
TWO STORY ENTRY. DISPITE ITS MASSIVE SIZE IT MARKS THE
ENTRY & DRAWS YOU IN.


COMPOSING WITH MATERIALS
THE KNOLL HOUSE HAS A WEALTH OF CONTRASTING MATERIALS
THE LARGE NATURAL STONE COLUMNS AND THE EXTERIOR TIE TIN ROOF.
WOOD, & TWO TONE STUCCO ALL WORK WELL TOGETHER &
INTEREST WHICH CONTINUES ON THE INTERIOR THE
ALS ARE USED CREATIVELY, WITH A LIGHT BAMBOO FLOOR
ATING. THE RED SMOOTH ALDER WOOD TRIM & BUILT INS.
MATERIALS SUCH AS THE BRICK FLOOR IN THE MASTER BATH
RAME AROUND THE HOUSE CONTRIBUTE TO ITS BEAUTY.


CAPTURING LIGHT
ALL IMPORTANT ROOMS IN THE KNOLL HOUSE
HAVE BALANCED LIGHT, INCLUDING NATURAL LIGHT
FROM TWO SIDES. THE BEAUTIFUL GREAT ROOM HAS
ROWS OF TWIN DOORS ON BOTH SIDES & MULTIPLE CLERESTORY
WINDOWS. THE ABILITY TO CAPTURE & CONTROL NATURAL
LIGHT IS ONE OF THE OUTSTANDING ASPECTS OF THIS HOME.
SHADES LOWER OVER THE FRENCH DOORS SO MEDIA ACTIVITIES
ARE COMFORTABLE IN THE SPACE. THE EVE OVER HANGS OVER
THE WINDOWS ARE DESIGNED TO SHADE THE HOUSE AT
APPROPRIATE TIMES TO SHADE IT & KEEP IT COOL.

Entry Student Personal Discovery of the Impact of Culture and Technology

JANIS BRICKEY
Middle Tennessee State University

ABSTRACT

Within the entry level studio at controlled admissions program, individual student and cohort development are addressed through a series of projects. The Influence of Culture and Technology on Design: Your Story project provides eager students with a beginning board experience and an investigation of the impact of culture and technology on their personal lives, family heritage, and design. Students examine cultural and visual literacy, expand their knowledge of symbolism, synthesize information about culture and technology into precise statements, explore methods to change scale, and practice presentation skills (Ankerson & Pable, 2008).

The millennial cohort is the largest and it is significantly more diverse than previous generations (Howe & Strauss, 2000). One of the recommendations for teaching the millennial is to encourage accountability and expand their abilities to self-reflect (Wilson, 2004). The process of verifying information with family members illustrates the importance of listening and research skills used in design. The project provides an opportunity for formal and informal graphic and oral culture that is important to millennial learners (Coomes, 2004).

Students select either the first letter or either their first or last name to use as a graphic representation of themselves culturally and technically. They research four fonts each to represent culture and technology. The small fonts fit within a 2 ½" x 2 ½" framework. One of the fonts is selected to enlarge to 5" x 5" and embellish with graphics to further illustrate the student's heritage. Students are instructed to use the left portion of a 15" x 20" board for culture and the right side for technology. The middle section of the board includes four 2" x 2" images to further illustrate the influence of culture and technology (two images each) on the student and their families. Each image includes a short statement to explain the significance.

Instructions are given on appropriate media, adhesives, illustration techniques, and presentation techniques and expectations. By using a topic that students are excited to present, the first formal presentation critique is less intimidating. Information shared during the oral presentations and the display of the boards fosters understanding and acceptance within the class and with the others in the program.

The project has been used for three years. Each cohort has expressed how the culture project helped them to get to know their family history and their studio peers. The process opens a new line of communication for students with their elders especially their grandparents. Research on the millennial generation suggests that these relationships are very important for both groups (Coomes & Bard, 2004). Finally, the students begin to realize the importance of research in design. Each semester there will be some students who state that they always assumed a particular cultural heritage but further investigation and interviews corrected it. In summary, The Influence of Culture and Technology on Design: Your Story project provides students and faculty with many opportunities to explore and celebrate how one is influenced by culture and technology.

NARRATIVE

The foundation studio in prepares students for future program learning and the field. However, the initial projects can be intimidating and students may lack the resources to begin to conduct research and build confidence. The Influence of Culture and Technology on Design: Your Story project introduces students to basic skills and provides the students in the beginning design studio sequence an opportunity to research family origins, the impact of technology on their families, learn about themselves and their peers, and develop an appreciation for past, present, and future diversity in the greater design field.

PROJECT GOALS

The primary goal of the Culture and Technology: Your Story project is to help students develop a sense of their perspective in the world of design and prepare them for the remainder of their design education. The students learn about their program level peers, explore how culture and technology has affected them, develop communication skills, start design research, and study font graphic representation. The opportunity to apply research in the design process is a critical step in the development of evidence based design philosophy.

The interior design program at Middle Tennessee State University has an admissions process and the first foundation studio series is an important period when students forge friendships for three years and explore how their talents, skills, and capabilities align with the program expectations. One of the project goals is to build group cohesiveness with students from increasingly diverse backgrounds. It has been noted that when senior classes are composed of groups of students who took the foundation courses at different times that there is more counter productive competition. It was observed that the bonding of the first studio experiences supported unique friendships and support systems that remained intact as the classes merged together in the junior year. Since the admissions program eliminated different program entry times but could encourage smaller competitive group development, it was devised that components of the studio should include opportunities to learn about each unique member and encourage a more global perspective characteristic of the millennial demographic group (Howe & Strauss, 2000). This is especially important since the program attracts a number of nontraditional students of different generations with some college or prior degrees. The goal is to build knowledge and celebrate the cohort diversity.

The interface of design as a process with culture and technology is one of the first topics. Students are introduced to the concept that innovation is a result of the design process in operation. Websites such as The Museum of Modern Art's section on design and technology: *Design and the Elastic Mind (MOMA)* and publications such as *Metropolis* are used as discussion topics to expose students to the impact of design problem identification, problem solving, use of technology, and culture.

The third goal is communication. Since most of the students are of the millennial generation, they are very comfortable with using technology but few understand the impact of technology on design. Several researchers suggest that the millennial cohort members are similar in their philosophies to the Silent Generation or the Depression Cohort (Lancaster & Stillman, 2002). There is a need for these students to connect with their personal histories and self reflection (Wilson, 2004). A key feature is that students contact elders in their families to research their family origins and the impact of technology on their family units. One may assume that this oral history is shared. It has been observed that students have an idea of their family history that is often incomplete or inaccurate (Coomes & Bard, 2004). Since many families deliver the information informally, it may be that the differences in the communication styles of the different generations affect the delivery and understanding.

Students are required to present their projects to their classmates. The professor provides oral feedback and includes positive and negative comments and summarizes suggestions for future presentations. During this first design presentation before peers, the method to acknowledge appropriate work and presentation skills is critical for future development. Projects receiving the top grades are displayed in the interior design student lobby. Upper division classmates and faculty view the boards and learn about the new group. Throughout the remainder of the semester, student demographic information is repeated as appropriate in the context of the foundation studio and concurrent studios.

PROJECT OVERVIEW:

The project is introduced with personal stories about

the professor's heritage and the importance of different forms of technology in her culture. Culture is defined as heritage but flexibility is allowed with adoptions or other issues. Students are cautioned to use discretion and discuss issues with the professor as appropriate. For instance, the Succession Period is introduced as the professor's favorite and books and graphics are used to illustrate the visual interpretation of the period. Students are encouraged to use various sources to research their cultural heritage visually and in written format.

Technology is defined broadly as changes in technology such as transportation, manufacturing process, and any work related change. Students cannot use the cell phone or computer unless their family has a direct connection to one. For instance, students have moved to the area with their father's work for Dell Computers and this is allowed as an illustration on how technology has changed their families. Other students represent how their families immigrated to the area or how their families have used farm technology to change food production. In the recent class, a number of students had family members connected to the garment industry and sewing.

The concepts behind alphabets, graphic representation, and embellishment are introduced. The students concurrently learn architectural block lettering in another studio. Students are encouraged to test different fonts using computer programs and the internet. Additional reading topics include graphic design, marketing imagery, and books on graphic representation.

Board layout is introduced and strict format guidelines are presented. All graphic work has to be done by hand or traced from computer generated scripts. Students research and select four (each) font typefaces to represent culture and technology based upon their research. Each font is reproduced by hand within a 2 ½" square. One technology font and one cultural font are scaled using a grid system to 5" square. From research and graphic exploration, students design a graphic image to represent their technology and culture. See Figures 1, 2, and 3.

Each year, increasing numbers of students state that the family research, the board project, and the opportunity to learn about themselves and their classmates are great experiences. Several students reported that the project was initially intimidating but the topic helped them adjust to the "scary nature of the design program" and overcome the "fear" of the first board. Another outcome is that the students learn about the diverse backgrounds of their cohort and how their classmates view themselves. For instance, information about prior degrees, family businesses, connections to historical facts and figures, and the diversity of the impact of "technology" on families and cultures are all shared. Students develop and nurture a new appreciation for each other and many friendships emerge from the project and shared experiences.

Figure 1: Student Project One

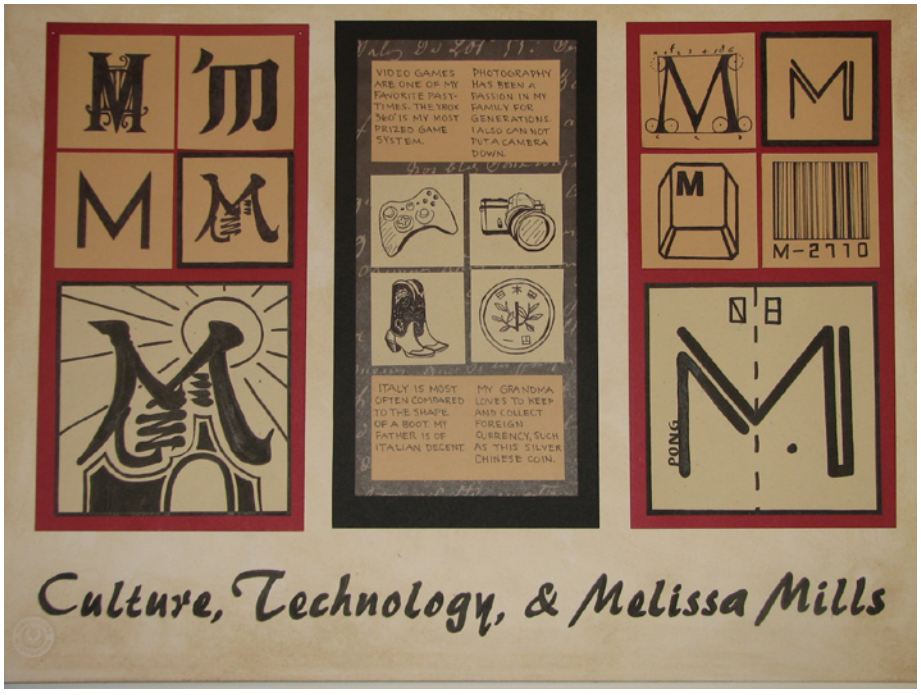


Figure 2: Student Project Two

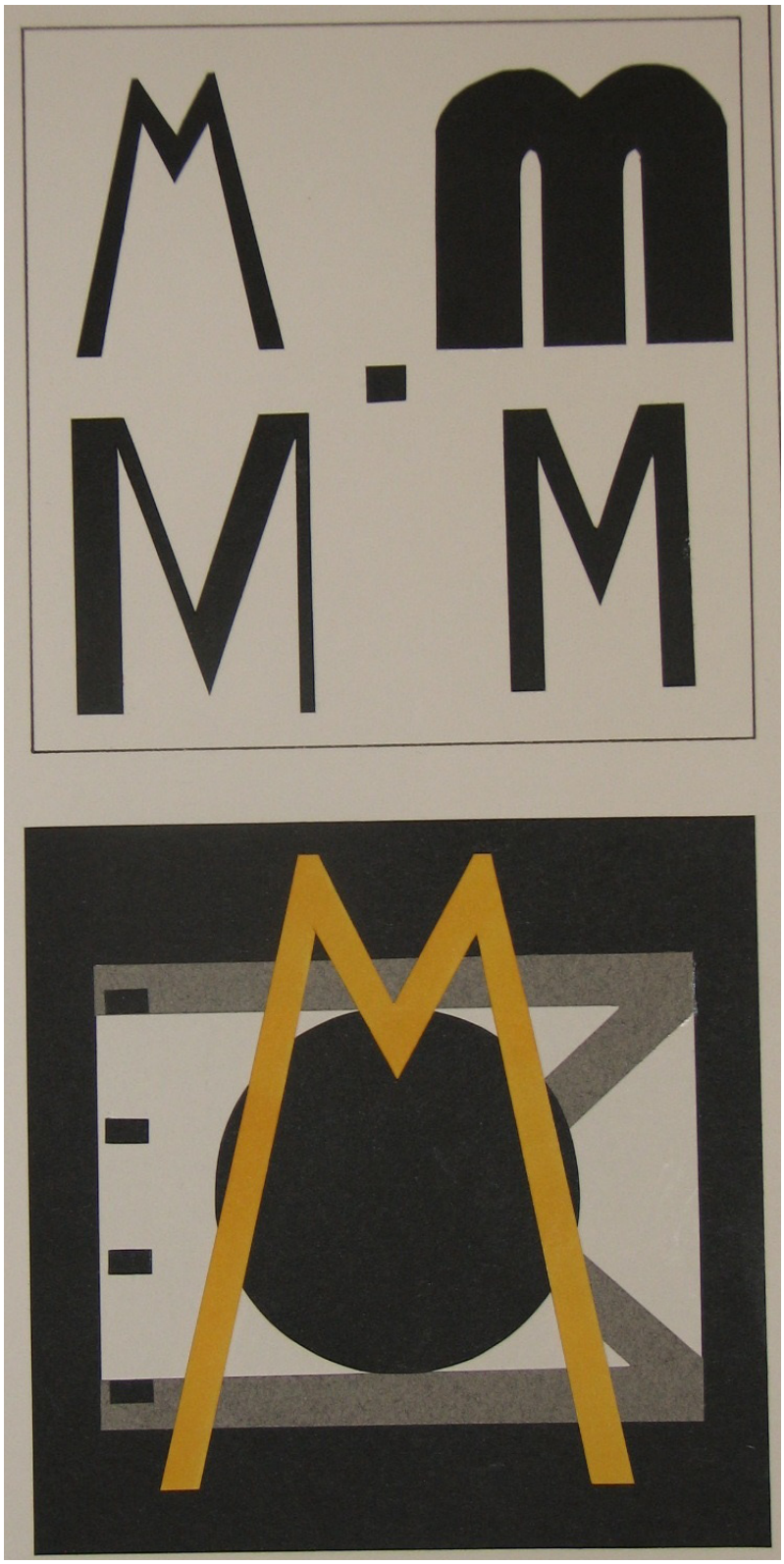


Figure 3: Illustration of Small and Large Cultural Fonts

REFERENCES (APA)

Ankerson, K. S., & Pable, J. (2008). *Interior design: Practical strategies for teaching and learning*. New York: Fairchild Publications, Inc.

Coomes, M. D. (2004). Understanding the historical and cultural influences that shape generations. *New Directions for Student Services, 106*(Summer), 17-31.

Coomes, M. D., & Bard, R. D. (2004). A generational approach to understanding students. *New Directions for Student Services, 106*(Summer), 5-16.

Howe, N., & Strauss, W. (2000). *Millennials rising: The next great generation*. New York: Vintage Books.

Lancaster, L. C., & Stillman, D. (2002). *When Generations Collide: Who they are. Why they clash. How to solve the generational puzzle at work.* New York: Harper Collins Publishers.

MOMA. Design and the Elastic Mind. from http://www.moma.org/interactives/exhibitions/2008/elasticmind/

Wilson, M. E. (2004). Teaching, learning, and millennial students. *New Directions for Student Services, 106*(Summer), 59-71.

Reality Studio: Design Lessons from Angela Adams

DARRIN BROOKS, MFA / SUSIE TIBBITTS, MS / JOSLYN OLSEN, BS
Utah State University

ABSTRACT

OBJECTIVE

Having students interact with professionals in the studio has long been the precedent in interior design education and is also a CIDA standard (http://www.accreditid. org/profstandards.php). The objective of this pedagogical experiment was to bring a well-known designer into the studio on a major project and have students experience how the designer approaches the design process. This teaching forum describes how bringing a designer into the studio with an actual project enhances the educational experience.

METHOD

Students were presented with a design project and informed that they would be doing a project with Angela Adams, who would spend one day on campus to give each student feedback. The project was integrated into two design studios, Residential Studio and Architectural Detailing Studio with twenty-three students. The studios were taught by two different professors, who coordinated their efforts with Adams and collaborated to identify the objective of the project and deliverables. The professors wanted students to focus on concept development throughout the project.

Students were told that the project would be broken into sections that would be unveiled one at a time. This prevented students from skipping the concept development phase and jumping to finished solutions. The first assignment was to gather fifty pictures into a binder that represented the beauty of the Utah. The next assignment included designing eight patterns inspired by the beauty of the Utah. The patterns were to be printed in color on 13.5" x 4.5" pieces of paper. The following day, students were given the assignment to wrap eight empty soup cans with the patterns that would be used to create displays for Adam's visit. These cans were collected and installed by the professors as a large collage in the departments' display cases to generate interest in the project.

Only then was the remainder of the project revealed. Each student would design three high-end rooms—a living room, a dining room and a kitchen—for clients who own a vacation home in the Utah. Each room had to celebrate the beauty of the **state** by incorporating the eight patterns designed previously. In addition, the students were to design custom furniture pieces with that idea in mind. This concept was a play on William Morris' mantra that you should only have things in your house that you consider beautiful (Waggoner, 2004). Students were given floor plans and elevations of the space. The professors provided feedback and critiques regularly. A dress rehearsal and critique prepared students the week prior to Adams' visit. The finished projects were then presented to Adams, who offered her insights with constructive comments. A large public address concluded the event.

IMPORTANCE OF TOPIC

This project allowed students not only to experience designing their own prototypes and interiors, but also to have invaluable interaction with a successful professional. Students expressed that this project pushed them to work harder because it was less about working for a grade or pleasing a professor and more about real-world design. Opportunities to share successes and lessons learned help in generating other good teaching opportunities.

NARRATIVE

This teaching forum will discuss how course work in Residential Studio and Design Detailing Studio were combined to give twenty students an opportunity to work with a highly successful design professional, approaching the process from this designer's perspective. Interior Design studios provide students an opportunity to learn and solve creative problems without known results (Ankerson, Pable 142).

Each year, three design leaders are invited to our campus not only to educate, elevate, and inspire, but also to interact with students in a studio setting. With each specialist, a student project is created to allow students to do work that will be critiqued by that high-profile designer, architect or artist in a studio setting. This time, Angela Adams was contacted because of her ability to graphically abstract natural elements into a variety of patterns and designs. Adams is a well-known designer for a variety of manufactures such as Shaw Carpet, Architex Fabrics, MDC Wallcoverings and Ann Sacks Tile. Adams has established herself as a leader in the design community. Interactions with real-world designers add increased learning experiences for students. They generally exercise a greater level of commitment when allowed to interact with a well-known figure in the field. Some educators go so far as to suggest that real projects be brought to the classroom by the visiting expert (Rowland, Lesseur Parra, Basset).

Due to the high-profile status of many of our visiting designers and architects, including Adams, involvement is limited. The faculty must facilitate each project under the direction of the designer. Therefore, it is important to establish a project that will strengthen student skills. The expert will then evaluate the projects on campus. The ability to work with a high-profile designer for a short period of time can be as beneficial as working with a lower-profile artist throughout the entire process.

A primary objective of this experience was to rethink the design sequence of how a student solves a project. The faculty wanted to modify standard approaches in an attempt to control learning outcomes. Often students begin to solve the problem before examining what the project is about. As creators of studio projects, we work hard to give our students the necessary information to begin making informed decisions. That information also allows a student to form design concepts and develop design outcomes. In our experience, with this type of project information, students take their own paths, which unfortunately can lead to underdeveloped designs and solutions. Students consequently become frustrated and don't allow the process to help them develop their beginning concepts. Some take poor concepts and run with them, resulting in designs with little direction and substance. Others don't know where to begin because they become overwhelmed with the complexity of the project. So we asked ourselves, is there a better way to deliver project information? Reality often does not allow designers to have all of the design parameters at once. Is there a way to force students through a project without compromising their ability to be open-minded in their design approach?

To avoid students skipping critical steps in the design process, we determined that unveiling the project slowly, one step at a time might help students design more effectively. The students had less information and smaller specific assignments to allow the design process to occur more naturally. Outcomes from previous designer visits were analyzed and led to a new approach. Kilmer and Kilmer suggest that many studies have been conducted on design methodologies. The results of these studies propose that alternative methods for problem solving help designers understand their own design processes. Eileen Jones from Perkins + Will noted, "It's how you approach your process and solution that makes all the difference" (qtd. in Portillo, Dohr). Therefore, improving the design process ultimately results in better designs (Kilmer and Kilmer 154). We began by setting up ground rules: Each assignment would focus on accomplishing a larger yet unknown final result.

Faculty consulted with Adams, who determined that students should be inspired by their environment on a project for clients who would be buying an upscale condominium in Salt Lake City, Utah, as a second home. They were to incorporate custom patterns and furniture into each room. Initially, this information was not given to the students.

The project aligned with Adams design philosophy which is explained in the following statement made in 2005, "There is a unifying language in my designs, they transcend through mood, season, and time. These designs are based on life, it's simple forms and expres-

sive nature and coloring. The beauty of the design lies in its pure simplicity, a classicism that will transcend and remain relevant for years" (qtd. in Sungur). It was important for students to understand and embrace her design philosophy as she would be the one reviewing their work.

Students were informed that Angela Adams would be visiting campus to oversee a studio project entitled "Inspired by the Beauty of Utah." The first assignment was to obtain between 50 and 100 images that visually celebrated Utah. With this visual reference, the students were to create eight patterns that celebrated Utah. At that point, students became impatient and wanted all the answers. Without those answers, two things happened: Some students were puzzled to the point of design-paralysis, fearing they would have to redo all their work or; others were freed from rules, regulations, and pretenses, able to design very raw and genuine work. Many students wanted to know the specifics so they could manipulate the final outcome. However, we told them the details would come in due time. After a critique with the faculty, students revised their work and submitted the patterns. Next they were told to place their finalized patterns on six oversized soup cans. This too baffled the students. We told the students they would used to create displays to announce the exhibit. Faculty collected cans and created four display windows. Students were not involved in the creation of the windows allowing them to focus on their project. The windows located in the department served to inform the public regarding the upcoming designer visit and created a positive energy for students for the upcoming event.

Once this step was completed, we began to reveal the parameters of the project one room at a time. As two professors were working with the students in different studios, they had to be in agreement in their discussions with the students and provide them with consistent information so as not to jeopardize the experiment or further frustrate the students.

The final step in this experiment was to design and decorate three rooms. Students began with a high-end living room that was to be inspired by Utah in some way. They were to incorporate one of their custom patterns into the living room design. The kitchen was to be designed second, using two more custom patterns. Last came the dining room, where two patterns and one custom piece of furniture were required. The project concluded with a formal PowerPoint presentation and mounted design boards, critiqued by Angela Adams. A large public address followed. While the public was entering the large auditorium, student work was displayed on the large screen.

Another innovative aspect of the visit by Adams was the creation of a small show where manufacturers who hold design licenses with Adams brought samples of her work to be viewed by the public. Not only could one hear Adams speak, but one could also view some of her actual work. Students were impressed at their own abilities. Viewing Adams' work contributed to the realization that they too could create designs that could be marketed. This experience would not have been as effective if the students had seen the product display from various manufacturers before starting the project. Only after they had gone through each of the steps could they fully appreciate the entire design process.

We learned that by controlling the requirements for each design step of the project, the student created more informed and more substantial projects. Students became more knowledgeable and could verbally describe the project in detail since the ideas they created were woven through every phase of the project. The students easily articulated the meaning behind their designs. Adams was impressed with their articulate presentations and the depths of their projects, including the research that went into every detail. We felt this approach through informed experience gave students a better foundation for design. This project allowed students to not only experience designing their own prototypes and interiors, but also provided them with invaluable interaction with a successful professional.

REFERENCES

Ankerson, Katherine S., Pable Jill, *Interior Design: Practical Strategies for Teaching and Learning*, Fairchild:New York, 2008.

"CIDA Standards" CIDA website, http://www.accredit-id.org/profstandards.php.

Kilmer, Rosemary and W. Otie, *Designing Interiors*, Thompson Wadsworth: Toronto, 1992.

Portillo, Margaret, Dohr, Joy H. "Creativity and Narrative" in Eva Maddox Associates Design Beyond Space, *Journal of Interior Design*, 26.2 (2000) 41-57.

Rowland, Gordon, Parra, Mariolga Lesseur, and Basset, Kanchan. "Education Instructional Designers: Different Methods for Different Outcomes". *Instructional Design Fundamentals: A Reconsideration*, Educational Technology Publications, Inc: New Jersey,1995.

Sungur, Elif. "Ann Sacks and Angela Adams", *Dexigner*, Aug. 18, 2005. http://www.dexigner.com/design_news/2560.html (accessed Jan. 19, 2010).

Waggoner, Diane. The Beauty of Life: William Morris & The Art of Design. Thames & Hudson: London, 2004.

Appendix A:

Biography of Angela Adams

Angela Adams grew up on an island twelve miles off the coast of Maine. This upbringing helped to shape her unique perspective on design which is known for its sense of timelessness, simplicity and balance. Her company produces a wide array of home products and fashion accessories. In addition to her well known hand-tufted wool area rugs, she has recently completed a new collection of contract carpeting as well as a line of sustainable fabrics and wallcoverings introducing her language to a broader audience. In designing for a modern life, whether fashion or interiors, Angela combines rich colors, organic geometrics and a signature style which has established her as an international leader in contemporary design. Angela continues to combine quality and integrity as she broadens her collection to create an optimistic, design-inspired lifestyle. Angela Adams partnerships include: *Shaw Contract Group*, *Architex*, *Ann Sacks* and *MDC Wallcovering.*

Appendix B: Handout

Angela Adams

Visiting Designer Project

SCHEDULE & PROJECT OUTLINE

Board Size 18 x 24
Board Template w: Title block Due February 4th for approval

Patterns: 1 Board
Rooms: Minimum 6 boards, remember to include floor plan

Living Room: Custom Cabinetry, Use of Custom pattern
Perspective
4 Elevations
Due: Monday, February 2nd at 1:30 p.m.
Kitchen: Custom Cabinetry, Use 2 Custom Fabrics
Perspective
Elevations
Due Thursday, February 12th at 5:00 p.m.
Dining Room: Custom Rug, Custom Piece of Furniture, Custom Fabric
Perspective
Elevations
Due by Wednesday, February 18th 8:30 a.m.

Dress Rehearsal February 18th 8:30-12:00
PowerPoint's Due February 19th 3:30 p.m.

Presentations to Angela Adams Monday February 23rd 8:30-1:30, 9th Floor Business Building, Go to 8th Floor and take stairs up. Professional Dress, No Jeans.

****Please make necessary arrangements to clear your schedule Monday, February 23rd. Attendance is mandatory. Excused letters will be distributed shortly.

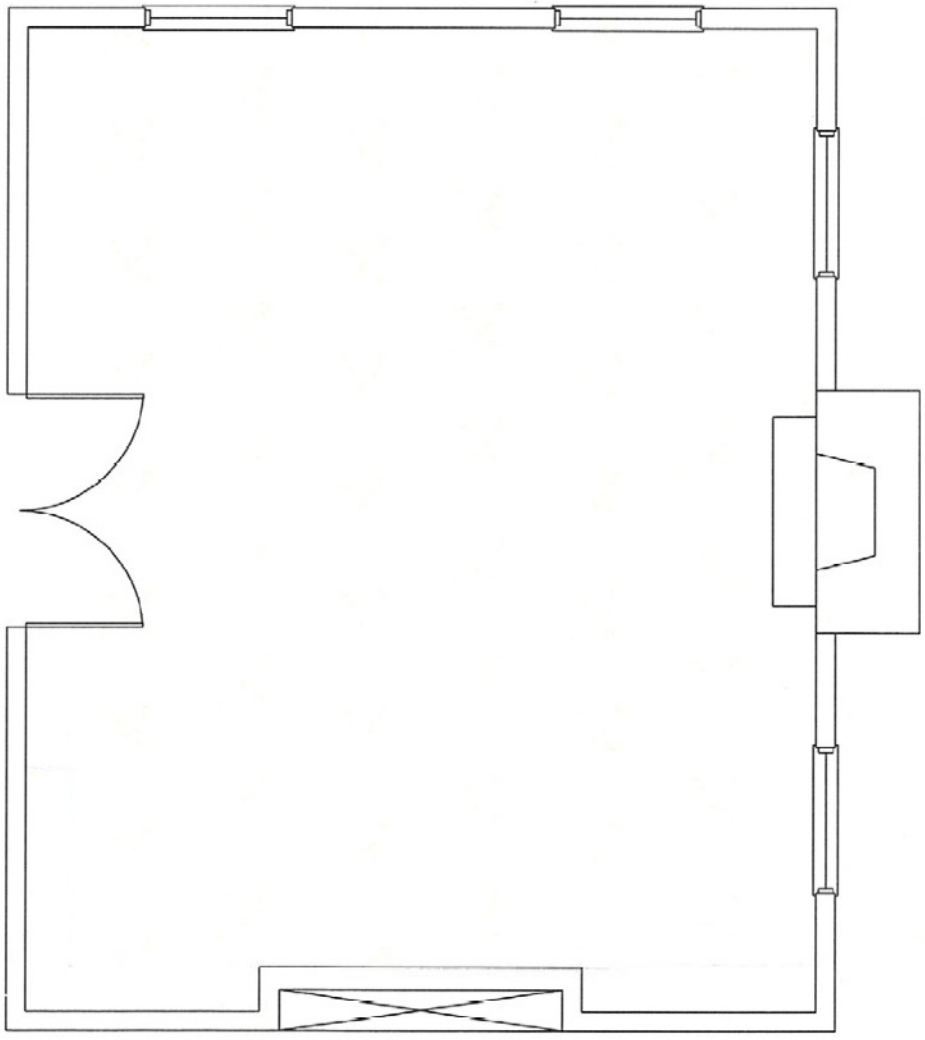
Appendix C: Handout

Client Profile

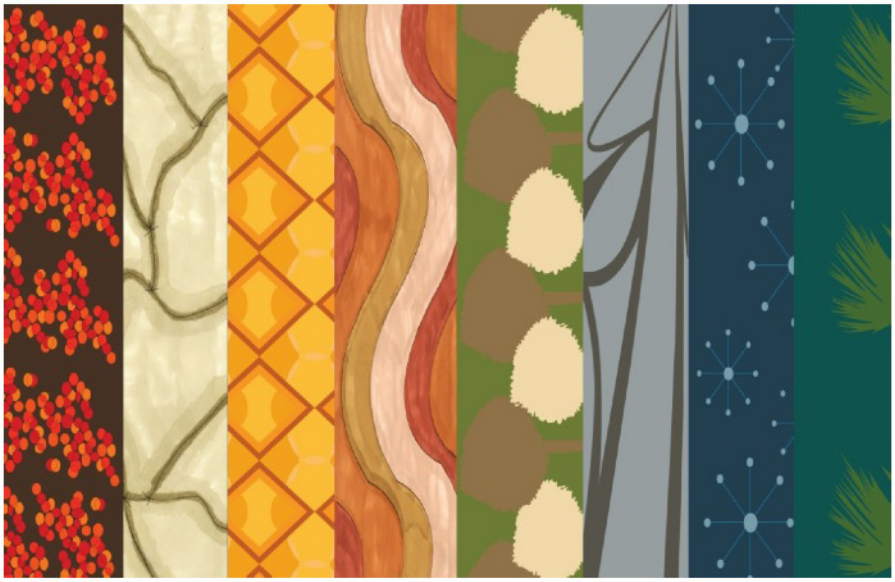
You will be designing several spaces for a young, hip couple who are building a vacation home in Salt Lake City with views of the mountains. They like a modern style that reflects the beauty of

The couple desires a living room wich can comfortably entertain their friends and family. They have been collecting books for the last ten years and would like to showcase the collectin in the room. Since the home is new construction, the couple would like help selecting finish work, i.e. moldings, interior doors, hardware.

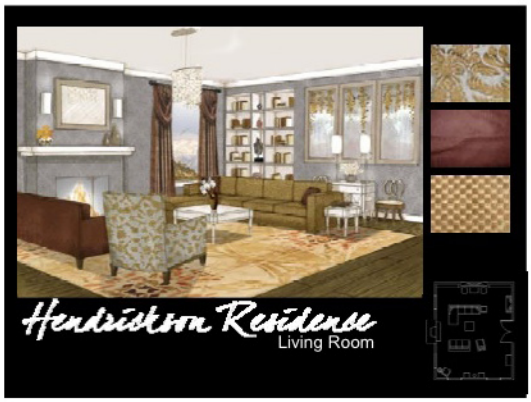
3 You need to being researching moldings, doors, and hardware (add to you binder) and think about how you are going to space plan the room.

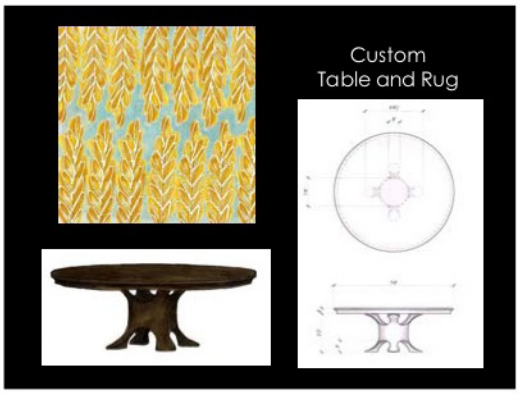


Appendix D: Patterns and display cases showing cans with patterns.



Appendix E: Various Student Projects





A Critical Assessment of the Need For Manual Drafting Skills for Interior Design Students

DAVID A. BROTHERS
New Jersey Institute of Technology

ABSTRACT

Current standards and performance criteria for the accreditation of interior design programs by CIDA rightfully emphasize the knowledge, skills, and judgment considered necessary for designers of the built environment. Unlike the previous FIDER 2002 *Professional Standards*, there is no mandate requiring students to show evidence of hand drafting and hand lettering abilities. In light of the accrediting body's acknowledgement of how profoundly digital technologies have transformed the profession it is curious why most schools have yet to acknowledge how peripherally relevant manual or 'hand' drafting has become in both academic and professional settings.

This paper is written as a proposition that questions the need for maintaining the teaching of manual drafting skills in the curriculum of interior design programs. Despite the adoption of computer-aided design (CAD) programs and other related digital drawing and modeling technologies by nearly all accredited schools, there remains a persistent tradition of introducing students to the conventions of two-dimensional technical representation through the use of hand drafting. The requirement for students to demonstrate a facility with traditional media and tools *in the service of drafting* when those specific skills are rarely employed in modern practices burdens institutions with courses and class work that could be better spent exposing them to digital media skills that are more relevant for their academic and professional training.

While technical drawing is unquestionably necessary for students to learn as the basis for graphic communication among designers, engineers, and related design professionals, it is argued that hand drafting is no longer the only, or even the best, method of acquiring the skills to understand the conventions of orthographic projection, paraline drawing and perspective rendering. Even with years of practice, it is quixotic to believe that hand drafting can come close to achieving the levels of precision, accuracy, information capture, and parametric modeling that are currently available with CAD and BIM programs. Though many programs organize instruction in the basics of manual drafting, today's beginning student grasps only the most rudimentary of skills and, soon enough, whatever craft he or she may have acquired is quickly abandoned in the effort to learn a computer-aided drafting program.

By contrast, hand drawing (i.e., sketching) is an unaided craft that relies on the judgment, dexterity and skill of the student to convey multiple meanings and interpretations. It is argued in this paper that exercises meant to develop the ability for students to freehand a plan, section, and elevation that is proportionally accurate is a more important drawing skill for ideation, site analysis and diagramming than any training spent on the art and techniques of manual drafting.

Admittedly, the fact that NCIDQ continues to require certification candidates to hand draft the practicum section of the exam is a persuasive argument for maintaining a modicum of training for students so that they are responsibly prepared to advance in the profession. It is, nonetheless, the goal of this paper to present a nuanced evaluation of the specific qualities of drafting skills that will most benefit interior design students.

NARRATIVE

PREMISE

This paper is written as a proposition that questions the need for maintaining the practice of teaching manual drafting skills in the curriculum of interior design programs. Despite the adoption of computer-aided design (CAD) programs and other related digital drawing and modeling technologies by nearly all accredited schools, there remains a persistent tradition of introducing students to the conventions of two-dimensional technical representation through the use of hand drafting. The requirement for students to demonstrate a facility with traditional media and tools *in the service of drafting* when those specific skills are rarely employed in modern practices burdens institutions with courses and class work that could be better spent exposing them to digital media skills that are more relevant and useful for their academic and professional training. While technical drawing is unquestionably necessary for students to learn as the basis for graphic communication among designers, engineers, and related design professionals, it is argued that hand drafting is no longer the only, or even the best, method of acquiring the skills to understand the conventions of orthographic projection, paraline drawing and perspective rendering.

CONTEXT

Typically, drafting skills and concepts are introduced in a variety of ways within the curriculum and most often within the first year of an interior design student's education. Dedicated technical drawing classes, foundation level drawing courses that also teach freehand drawing, and first-year studios are some of the class types that require students to purchase the familiar implements of hand drafting; parallel rules, triangles, lead holders, and such. The introduction of information technologies is often delayed in these beginning stages or it is limited to digital graphic tools (e.g., Photoshop, Illustrator, etc.) with the exclusion of CAD work. The assumption is that students are ill-prepared to grasp the complexity of computer drafting programs until they have been exposed to orthographic projection in its most rudimentary of forms; simple line work manually rendered with pencil or pen.

There are two forms of knowledge being conveyed through this process: one is the concept of how to create a relational, projective, and geometrical technique for depicting a three-dimensional artifact or space. We can rightfully claim that the ability to understand these abstract representations exists independently of the particular medium with which they have been rendered. Just as map reading is a conceptual depiction of relational space, we can just as easily 'read' a plan that is drawn in pencil, plotted digitally in pen, or projected as light from within screen. (Laseau, 1989)

The second is the aptitude necessary to execute the drawing by hand with as high a degree of accuracy and precision as possible. Its criteria for excellence are primarily physical, not intellectual. Since the professional value of the drafted design has always depended upon the degree to which it communicates clear and accurate information, it stands to reason that quality draftsmanship is equated with machine-like rigor and standardization. This is not to suggest that the carefully constructed drafted plan does not have an inherent opportunity for creative representation but, rather, its educational value lies primarily in its connection to the means of production in the professional realm. The interpretive qualities that educators might value through the artistic and creative uses of the medium are discouraged in practice where ambiguous information results in costly mistakes. (Goldman and Zarzycki, 2009)

In Individual mastery of hand drafting requires years of studied practice and esoteric knowledge (witness the considerable physical acumen required to make a single pencil stroke: proper utensil grip and angle; even, continuous arm motion; consistent rotation of lead; pull, not push stroke; slight pressure increase at beginning and end of line, etc.). Herein, lies the specific disconnect between the kinds of hand drawings we ask students to execute at the beginning of their academic careers and what is expected of them when they graduate.

Before the advent of computers in design schools, students would have entered the working world with years of concentrated study at their drafting boards. The confidence they would develop in their maturing design skills would be reinforced by the mastery experienced on the drafting board. This synthesis of pedagogy and practice is now fractured. Though many programs organize instruction in the basics of manual drafting, today's beginning student grasps only the most rudimentary of skills and, soon enough, whatever craft he or she may have

acquired is quickly scuttled by the pressure to learn a computer-aided drafting program. Drawing utensils are abandoned as soon as students are introduced to the leverage that digital modeling provides. Even with years of practice, it is quixotic to believe that hand drafting can come close to achieving the levels of precision, accuracy, information capture, and parametric modeling that are currently available with CAD and BIM programs. It becomes implicitly, if not explicitly, assumed that academic and professional success is most readily achieved when digital media is the primary means of design communication.

None of this might matter if indeed it were true that hand drafting was simply a direct analog to computer-aided drafting. Then, the opportunity cost of spending the time to train students in an anachronistic medium would be offset by the expedient translation of these skills in the digital realm. Unfortunately, this correspondence is a chimera, as students quickly grasp the fact that there is a qualitative change in *method* as well as medium when moving from one to the other. (McCullough, 1996)

Just as word processing is more than automated typing, line processing in a CAD program like *AutoCAD* is much more than automated drafting. The software introduces vector based calculations for what were traditionally graphical constructions delineated by means of instruments like 'T'-squares and triangles. Successful proficiency requires working in an organically different way. For example, there is no need to develop a drawing line by line. It is more expedient to identify patterns and classifications so that the intelligence in its use is the recognition that one object might be an instance or transformation of another – an awareness that is, arguably, a more complex form of knowledge. (McCullough, 1996)

IMPLICATION

The methods by which construction drawings are generated are inherently changing. It is, of course, no less important that students understand the conventions of orthographic projection, however, the means by which they achieve this is fungible.

Following a successful pilot program in 2004, it has been standard practice at New Jersey Institute of Technology to eliminate the traditional parallel rule and immediately introduce entering architecture students to electronic design tools. Employing a variety of digital applications, students are required to present their designs with constructed, printed, and projected media concurrently with extensive freehand sketches and drawings. Furthermore, in reverse procedure, students begin with three-dimensional modeling before generating abstract two-dimensional representations. (Computer Technology, 2005)

If we allow that there is a fundamental similarity between early architecture education and interior design, this is encouraging evidence of a successful strategy for integrating digital media as early in the educational process as possible with no discernible erosion of knowledge or skill for graduating students.

With regard to acceptable drawing and drafting skills that have been adopted by the CIDA 2009 *Professional Standards* are the Student Learning Expectations for Standard 6. Communication: "(s)tudents *apply* a variety of communication techniques and technologies appropriate to a range of purposes and audiences." It explains furthermore that, "(s)tudents are *able* to: use sketches as a design and communication tool", and "produce competent presentation drawings across a range of appropriate media". (CIDA, 2009)

Compare this to the previous FIDER 2002 *Professional Standards* that mandated, "(s)tudent work MUST demonstrate competence in drafting and lettering, both manual and computer-aided techniques" (FIDER, 1999). What has changed is the tacit acknowledgment by the accrediting body of how profoundly digital technologies have transformed the profession and rendered manual drafting a peripherally relevant skill in both professional and academic settings; enough, in fact, to no longer demand it as a necessary skill for the basic education of an interior design student. While it remains true that manual drafting is welcomed as a legitimate category within the variety of "appropriate media" that students must demonstrate, the truth is that the specific skills related to this output requires a considerable investment of time and effort to both produce and master. It is more likely that educators will introduce students earlier to the increasing array of digital tools they will be expected to know.

The above arguments are decidedly not a call to abandon hand drawing all together. Indeed, there is a critical

distinction to be made between drawings constructed with guides and mechanisms that help guarantee the success of line work versus the judgment, dexterity, and skill demonstrated by the unaided hand at work on a sketch. Using David Pye's criteria for distinguishing various forms of workmanship, one might characterize the latter type of drawing as a craft that embodies 'risk' while the former strives for 'certainty' (Pye, 1968). As educators, we would do well to continue encouraging students to master freehand drawing and accept that digital drawing and modeling is a much more versatile tool than traditional means at expanding the role of what it means to draw technically.

REFERENCE LIST (APA)

Campus Technology. (2005, August 1). *Innovators 2005: New Jersey Institute of Technology*. Retrieved from http://www.campus-technology.com/

Council for Interior Design Accreditation (CIDA). *Professional Standards, 2009.*

Foundation for Interior Design Education (FIDER), *Professional Standards, 2002*.

Fraser, Iain & Henmi, Rod (1994). *Envisioning Architecture: An Analysis of Drawing*. New York, NY: Van Nostrand Reinhold.

Goldman, Glenn (1997). *Architectural Graphics: Traditional and Digital Communication*. Upper Saddle River, N.J.: Prentice Hall.

Goldman, Glenn & Zarzycki, Andrzej. (2009, August). *Digital Media in Architecture and Interior Design – Curriculum Framework*. Version 0.1.

Laseau, Paul. (1989). *Graphic Thinking for Architects and Designers*. London: Van Nostrand Reinhold International Co., Ltd., 2nd Ed.

McCullough, Malcolm (1996). *Abstracting Craft: The Practiced Digital Hand*. Cambridge, MA: The MIT Press.

Pye, David (1968). *The Nature and Art of Workmanship*. Bethel, CT: Cambrium Press.

Sennett, Richard (2008). *The Craftsman*. New Haven, CT.: Yale University Press.

Treib, Marc, Ed. (2008). *Drawing/Thinking: Confronting an Electronic Age*. New York, NY.: Taylor & Francis.

The StrengthsQuest™ Program Application in Interior Design Education Preparing for the Profession: The Internship Seminar

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ABSTRACT

The StrengthsQuest™ Program is the result of the passion and commitment of Don Clifton and Chip Anderson, in cooperation with the Gallup Organization, to bring strengths "revolution" to higher education. StrengthsQuest ™(SQ) has a theoretical basis linked to a positive psychology perspective, and is supported by strong educational practices (Braskamp, 2006), and based on six principles of human nature and behavior (Anderson, 2004). The focus of the SQ program is to help the student identify their five major themes (strengths). These strengths, coupled with skills and knowledge, have the potential to foster achievement and success (Schreiner, 2006). Once discovered, the student then can develop and apply these strengths in academics, careers, relationship, leadership, and other areas of personal and professional development.

RATIONALE FOR APPLICATION IN INTERIOR DESIGN EDUCATION

In our institution, students are introduced to the program their freshman year in line with the university's mission. To help students prepare for internships, develop strong written and oral skills related to career building, and to increase 'sense of self' as they pursue careers, we feel that application of this program had potential to strengthen educational practices in design studios.

PURPOSE

This presentation is to share the process and experience of using the StrengthsQuest™ program in the internship seminar. The program allows for the integration of a multi-disciplinary approach to career building as supported in Professional Standards 5, 6, and 7, set forth by the Council for Interior Design Accreditation (CIDA, 2009).

PROCESS

Strengths Discovery

Students identify their five major strengths prior to first class meeting.

SQ program university coaches present program to students, supplying them with a brief description of the 34 major themes and engaging students in discussion and role playing activities to facilitate understanding and benefits (Gallup, 2006).

Strengths Development

Students analyze their strengths in preparation for the development of their resume and letters of application, the interviewing process, and portfolio development. As supported by Mitton (2008), this task is necessary to reflect and illustrate who you are.

Students take part in peer reviews of the above documents, identifying and validating peer strengths.

Oral communication skills are enhanced through interview role playing.

Students work with a faculty mentor to develop these career-based communication tools and skills.

Strengths Application

Students apply strengths in the refinement of a professional resume, letters of application, and through the actual interviewing process for an internship.

Evidence of strengths application is seen in their completed portfolio. As noted in Bender (2008), in preparing

the design portfolio, the student should be involved in collection, selection, connection, and reflection based on strengths evident in design work.

SUMMARY

Involvement of the design students in this process is often an eye-opening experience that inspires and challenges their career building skills. It also strengthens relationships among peers and faculty. Developing a positive 'sense of self' through the discovery of personal strengths transfers into senior level studio classes, as evidenced in the design process and team collaboration. Using the SQ program in design education has strong potential from both personal and professional developmental perspectives; equipping students to become competent, confident, and competitive design professionals.

NARRATIVE

The StrengthsQuest™ Program is the result of the passion and commitment of Don Clifton and Chip Anderson, in cooperation with the Gallup Organization, to bring strengths "revolution" to higher education. StrengthsQuest™ (SQ) has a theoretical basis linked to a positive psychology perspective and is supported by strong educational practices (Braskamp, 2006), and based on Anderson's (2004) six principles of human nature and behavior:

All individuals have a group of God-given talents.

An individual's greatest talents hold the key to high achievement, success and progress at levels of personal excellence.

Becoming aware of one's talents builds confidence and provides a basis for achievement.

Learning how to develop and apply strengths will improve one's levels of achievement.

An individual's talents can be applied in many areas including relationships, learning, academics, leadership, service and careers.

As an individual develops and applies strengths, achievements will increase and one will experience greater and more frequent successes.

SQ is based on a concept of talents and strengths. A talent is a naturally occurring God given gift that exists within you. A strength is not naturally occurring within you, but is a talent that can be discovered and developed. All individuals possess the 34 strengths (Figure 1) in some order. The focus of the SQ program is to help the student identify their five major themes (strengths), reinforcing a positive psychology perspective. These strengths, coupled with skills and knowledge, have the potential to foster achievement and success (Schreiner, 2006). Once discovered, the student then can develop and apply these strengths in academics, careers, relationship, leadership, and other areas of personal and professional development.

RATIONALE FOR APPLICATION IN INTERIOR DESIGN EDUCATION

In our institution, students are introduced to the program their freshman year in line with the university's mission, to better understand their calling and vocation in life. By developing a better understanding of one's self, a person can better utilize their talents and strengths to the best of their ability. The StrenghtsQuest™ program helps students prepare for internships, develop strong written and oral skills related to career building, and increase a 'sense of self' as they pursue a career. We feel that application of this program has potential to strengthen educational practices in all design studios.

PURPOSE

This presentation is to share the process and experience of using the StrengthsQuest™ program in the internship seminar. The program allows for the integration of a multi-disciplinary approach to career building as supported in Professional Standards 5 *(collaboration)*, 6 *(communication)*, and 7 *(professionalism and business practice)*, set forth by the Council for Interior Design Accreditation (CIDA, 2009).

PROCESS

Strengths Discovery

Freshman year the Clifton StrengthFinder Assessment is administered during orientation.

Prior to spring of the junior year, students are requested to review their strengths in preparation for the Internship Seminar.

The first day of seminar course, Baylor Strengths Coaches supply the students with a brief description of the 34 major themes (strengths) and engage students in interactive dialogue in claiming and validating their strengths. These discussions and role playing activities facilitate understanding and benefits of the student strengths (Gallup, 2006).

Fellow students will often validate strengths that they see in someone, especially if they have been in a team situation with that student.

Strengths Development

Students analyze their strengths in preparation for the development of their resume and letters of application, the interviewing process, and portfolio development. As supported by Mitton (2008), this task is necessary to reflect and illustrate who you are.

Students take part in peer reviews of the above documents, identifying and validating peer strengths.

Each student is assigned a faculty mentor to assist in the development of the student's resume, cover letter/letter of application and portfolio – career-based communication tools and skills.

Students are encouraged to look at strengths and apply them to academics and career building.

Mock Interviews are conducted during class, which enhances oral communication skills.

The class discusses how the strengths are reflected in the interviewing process and how different situations might be handled better in an actual interview.

The Gallup Organization's Strenghtquest™ web site has a wealth of resources that students can access. One such tool is the Strength Discovery and Action Planning Guide which tailors an individual's top five strengths specifically to him/her. This tool offers insights and action plans for each strength.

Strengths Application

Students apply strengths in the refinement of a professional resume, cover letters/letters of application, and through the actual interviewing process for an internship. Strengths are noted in both written and verbal communication.

Evidence of strengths application is seen in their completed portfolio. As noted in Bender (2008), in preparing the design portfolio, the student should be involved in collection, selection, connection, and reflection based on strengths evident in design work.

Strong application of strengths is evident when applying for internships, i.e. the level of positivity in verbal communications or how they maximize their abilities by the professionalism and organization of resumes and portfolios. (Figure 2)

Application of strengths is further validated by internship supervisors in the written evaluation of the intern. (Figure 3)

SUMMARY

Involvement of the design students in this process is an eye-opening experience that inspires and challenges their career building skills. It also strengthens relationships among peers and faculty. Developing a positive 'sense of self' through the discovery of personal strengths transfers into senior level studio classes, as evidenced in the design process and team collaboration. Using the SQ program in design education has strong potential from both personal and professional developmental perspectives; equipping students to become competent, confident, and competitive design professionals.

REFERENCE LIST (APA)

Anderson, E. C. (2004). *StrengthsQuest: Curriculum outline and learning activities.* Princeton, NJ: Gallup Organization.

Bender, D. M. (2008). *Design portfolios*. New York: Fairchild, Inc.

Braskamp, L. (2006). *The StrengthsQuest™ guidebook*. Retrieved June 25, 2009, from https://www.strengthsquest.com/content/111337/StrengthsQuestGuidebook.aspx

Council for Interior Design Accreditation (CIDA). (2009). *Professional standards.* Retrieved June 25, 2009, from http://www.accredit-id.org/June%202008%Standards_changes09.pdf

Gallup Organization. (2006). *Educational resources:* Retrieved June 25, 2009, from https://www.strengthsquest.com/content/25195/Educator-Resources.aspx

Mitton, M. (2008). *Interior design visual presentation*. (3rd ed.). New Jersey: Wiley & Sons.

Schreiner, L. (2006). *Introducing the second edition of strengthsquest.* Retrieved June 25, 2009, from https://www.strengthquest.com/content/111397/StrengthsQuest-Second-Edition.aspx

REFERENCE CARD

StrengthsQuest™

WWW.STRENGTHSQUEST.COM

ACHIEVER	People especially talented in the Achiever theme have a great deal of stamina and work hard. They take great satisfaction from being busy and productive.
ACTIVATOR	People especially talented in the Activator theme can make things happen by turning thoughts into action. They are often impatient.
ADAPTABILITY	People especially talented in the Adaptability theme prefer to "go with the flow." They tend to be "now" people who take things as they come and discover the future one day at a time.
ANALYTICAL	People especially talented in the Analytical theme search for reasons and causes. They have the ability to think about all the factors that might affect a situation.
ARRANGER	People especially talented in the Arranger theme can organize, but they also have a flexibility that complements this ability. They like to figure out how all of the pieces and resources can be arranged for maximum productivity.
BELIEF	People especially talented in the Belief theme have certain core values that are unchanging. Out of these values emerges a defined purpose for their life.
COMMAND	People especially talented in the Command theme have presence. They can take control of a situation and make decisions.
COMMUNICATION	People especially talented in the Communication theme generally find it easy to put their thoughts into words. They are good conversationalists and presenters.
COMPETITION	People especially talented in the Competition theme measure their progress against the performance of others. They strive to win first place and revel in contests.
CONNECTEDNESS	People especially talented in the Connectedness theme have faith in the links between all things. They believe there are few coincidences and that almost every event has a reason.
CONSISTENCY	People especially talented in the Consistency theme are keenly aware of the need to treat people the same. They try to treat everyone in the world with consistency by setting up clear rules and adhering to them.
CONTEXT	People especially talented in the Context theme enjoy thinking about the past. They understand the present by researching its history.
DELIBERATIVE	People especially talented in the Deliberative theme are best described by the serious care they take in making decisions or choices. They anticipate the obstacles.
DEVELOPER	People especially talented in the Developer theme recognize and cultivate the potential in others. They spot the signs of each small improvement and derive satisfaction from these improvements.
DISCIPLINE	People especially talented in the Discipline theme enjoy routine and structure. Their world is best described by the order they create.
EMPATHY	People especially talented in the Empathy theme can sense the feelings of other people by imagining themselves in others' lives or others' situations.

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Figure 1: 34 Strengths

Figure 2: Interview Slide

Figure 3: Internship Application

[b]logging on : the opus project in a first-year design program

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ABSTRACT

By tapping into the accumulated reservoir of student's savvy skills with social networking, texting, and digital knowledge, teachers gain significant methods for reaching today's millenials (Howe & Strauss, 2000). As design faculty, we assert a greater importance in linking to digital interfaces because we recognize they help teach the lesson that design is everywhere – even on Facebook. In this constructed digital world, students increasingly blur lines between public and private in adding far-flung friends to demonstrate their prowess as social networkers (Junco & Mastrodicasa, 2007; Nielsen, 2009). Last year, we amalgamated an assignment to take advantage of the energy of blogs with first-year design students in our interior architecture program. By adapting the foremost feature of blogs – relationships – we endeavored to transform social networking for emerging designers.

In January 2008, we asked our students to embark on a new journey within their sketchbooks and online, creating both a physical and a virtual opus, or illustrated chronicle, to document the semester. Occupying the crossroads of the students' four required interior architecture classes (basic environmental design, design graphics, history + theory, and perception and communication), *the opus project* served as a place to record the nexus of experiences and linkages to be found as a first year student. Thus, this project existed as a fertile testing ground not only for students but also for professors. The prospect of such an endeavor involved re-thinking teaching methods and course projects to re-tool the first-year enterprise – and to do so to facilitate learning through immersion.

Through discourse analysis (Rose, 2007) of student surveys and blogs, in this paper we trace progress of weekly analytical work; sophistication in interweaving text and visuals; and changes in design vocabulary during the semester. We show how *the opus project* yielded a shift in teaching pedagogy for our first-year curriculum, embedding twenty-first century technology in our approach. Because the power of social networking truly represents at least one potential basis for broad-based learning, we assert that as teachers of design we must embrace the savvy command of technology by our students to enhance our teaching and their learning. In helping students see connections between studio and other courses, we enable them to understand that design does not operate in a vacuum, challenging them to become engaged citizens in a global – and increasingly digital – world.

NARRATIVE

WHAT IS AN OPUS?

a musical work, especially one of a numbered series by the same composer arranged to show the order in which they were written or cataloged

a creative piece of work in any field of the arts.

OPPORTUNITIES. PERSPECTIVES. UNCOVERINGS. STORIES.

Most often associated with music, we take opus to mean a window into a designer's world, large in scale and complex in inter-relationships. In seeing the landscape of our first-year design program as a collection of individual courses and not an opus of our own, we instituted a pledge among the faculty teaching the first year courses to work toward integration of course material across the curriculum. In January 2008, we asked our students to embark on a new journey within their sketchbooks and online, creating both a physical and a virtual opus, or illustrated chronicle, to document the semester. Occupying the crossroads of the students' four required interior architecture classes (basic environmental design, design graphics, history + theory, and perception and communication), *the opus project* served as a place to record the nexus of experiences and linkages to be found as a first year student.[1] Thus, this project existed as a fertile testing ground not only for students but also for professors. The prospect of such an endeavor involved re-thinking teaching methods and course projects to re-tool the first-year enterprise – and to do so to facilitate learning through immersion.

As faculty, we encouraged students to consider the opus as their personal memoir – something they could turn to in the future as a keepsake and reflection of their design beginnings, a sort of first masterwork. Within their physical opus (sketchbook), students recorded their world through writing, drawing, thinking and collage. Students also freely integrated notes from readings and class, process from studio projects, reflections on experiences, stories, thoughts and ideas. In the more structured digital version, constructed on students' individual blog.folios (discussed herein) students aimed at facilitating connections among classes. On a weekly basis students pulled information, distilled design work, scanned and manipulated images and posted them to their blog. In editing and framing their work, the young designers wrote about their own ideas in the context of the four courses and from their own life experiences, importantly suggesting design as a deeply embedded component of all human life. To facilitate these connections, faculty provided weekly prompts, requiring students to address key concepts and make explicit connections to their own work via words and images.

Upon completion of the project at semester's end, we distributed an evaluation to all students participants in the teaching, learning, and reporting experiment. Divided by majors and non-majors and assessed through a content analysis, we organized key findings as follows: the level of understanding in design that resulted from participation; the drawbacks of *the opus project* reporting and monitoring systems, the importance of both visuals + texts online; and lessons about the interplays between and among courses, one of the chief premises for developing the integrated curriculum. The subsequent section summarizes the outcomes from the surveys.

OUTCOMES. POINTS. UNDERSTANDINGS. STRATEGIES.

Generally interior architecture students suggested that *the opus project* provided significant opportunities to connect ideas, reflect on information they had not considered, think more in depth, expand vocabulary, and participate in more active, reflective learning. One even went so far to note that the opus "gave me something to look forward to each week." Her statement stands at odds with one-third who suggested that the opus represented "busy work", particularly at the end of the semester, when final project due dates loomed large. On this score, students reported heightened stress in having the responsibility to reflect and write each week, balanced with the view that structured contributions provided streamlined reporting for the multiplicity of courses. Some students admitted to manufacturing work or adapting existing work just to fill a place on the blog each week, complaining about some specific prompts and their inability to make connection with any material covered in any course. Majors disclosed that they felt more comfortable using visuals over text, but that they encountered difficulty with drawing assignments, scanning them, and including them on line, much preferring to rip photographic images directly from the web.

1 Non-majors enrolled in history + theory also participated in this experiment, reporting on their own studies in the context of the assignment.

Non-majors underscored the critical nature of the blog and its required unit summaries in their experience, relying on the format and the specific assignments to pull together various strands of thought about what they were studying in history + theory class and in their own major courses and general education core. They suggested that it took an inordinate amount of time and energy to pick up the tips and techniques of blogging itself, along with the deeper issues of having to learn vocabulary outside a disciplinary area in which they were accustomed to accomplishing their studies. Non-majors found visuals (in their instance, photographs) tremendously helpful in understanding design and reporting on it, with one student postulating "design is essentially visual, so images were just a way to make more connections."

All students reported challenges with the blog interface, mostly centering around the scanning and placement of images alongside text. Majors showed a greater rate of accepting the online blog as a deliverable for class (95%) than non-majors, who remained more neutral on the query. Students recorded a wide range of time invested each week dealing with the opus, ranging from two to five or more hours. There seemed to be no correlation between amount of time invested and satisfaction with the opus as an approach. All students had particularly challenging weeks with vocabulary words and prompts, noting both successes in hearing vocabulary and concepts by all faculty in all classes, yet sometimes detailing a force fit of words when necessary. They characterized a steadier application of words and concepts deeply related to all the classes at the opening of the semester, with a dwindling of energy by both students and faculty as the semester unfolded.

Students expressed concern about the need for more consistent feedback and one of the challenges we encountered as a faculty related to the very public nature of the blog-o-sphere, and the ability to temper comments appropriately for such an open forum. In reality, we felt challenged as three faculty teaching four classes with a half dozen teaching assistants to set aside ample time for cogent and thorough commentary. Moving beyond assessment, setting aside time simply to meet as a faculty and determine appropriate vocabulary in a specific week signified one particular concern of the pedagogy. A third challenge proved formidable in the blending of teaching styles and approaches among this large teaching team (faculty and assistants) and one participant voiced concern about tampering with the creative teaching process to allow a more free-wheeling approach.

In *the opus project*, we set out to have students and faculty to work ACROSS course content, weaving issues and materials into a more seamless experience.

Notwithstanding challenges and drawbacks, the benefits far exceeded our expectations in the final outcomes. Without question, students reported a greater understanding of key concepts, specific vocabulary, and the ability to report in a professional manner. From the faculty view, these issues can be observed in the blog itself, though the single greatest moment of the semester came at the time for the final examination for the history + theory course, an exercise centered around the precedent analysis of a particular building, but relying deeply on both the perception + communication course, as well as studio and the design graphics course. As conversations unfolded in a three-hour window in our main critique space, students proved their mettle in theorizing about design and in demonstrating their oral command of design vocabulary. Graphically, student work achieved a high level (even for non-majors) because of the investment of time and energy from both students and faculty who sensed that the project (which counted as a grade in three classes) represented an extra-ordinary opportunity to weave together multiple assignments and assessments. As a faculty, we concurred that the efforts of students rated at a much higher level from previous students and semesters where faculty taught classes largely in a vacuum.

We believe *the opus project* contributed significantly to the level of intellectual discourse and curiosity raised throughout the semester for all the courses, and as most concretely manifested in the final examination period for the history + theory course. By uniting the lessons of four seemingly disparate course goals under one rubric, the system provided the structure to deeply examine the breadth of design knowledge in a cohesive manner for both faculty and students, resulting in greater accountability, opportunities for cross-fertilization, and outward sharing in a public forum. Using the filter of an opus throughout the semester to generate lessons represented a critical circumstance for deep learning and a fundamental demonstration of design as a complex, layered,

and inter-related enterprise.

http://theopusonline.blogspot.com

REFERENCE LIST (APA)

Howe, Neil and Strauss, William (2000) *Millennials Rising: The Next Great Generation.* New York: Random House.

Junco, Reynol and Mastrodicasa, Jeanna M. (2007). *Connecting to the Net.Generation: What Higher Education Professionals Need to Know about Today's Students*. NASPA (Student Affairs Administrators in Higher Education).

The Nielsen Company (2009). "How Teens Use Media - A Nielsen report on the myths and realities of teen media trends"

Oravec, Jo Ann (2002). "Bookmarking the World: Weblog Applications in Education," *Journal of Adolescent and Adult Literacy*, 45(7), 2-7.

Rose, Gillian. *Visual Methodologies: An Introduction to the Interpretation of Visual Methods*. San Francisco: Sage Publications, 2007.

Scaffolds and Separations: Insights into the minds of developing interior design and architecture students

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ABSTRACT

PURPOSE

No two students are alike; in the context of higher education students vary on their motivation, attitudes about teaching and learning, and responses to the classroom environment. For the instructor, the challenge is to respond to the diverse needs of all students all the while advancing critical thinking and problem solving skills of the discipline. Both intellectual development (Perry, 1968) and learning style (Kolb, 1984) influence the way students approach their learning and their subject matter. Understanding these pedagogic frameworks have substantial implications for teaching design; yet, few empirical studies have been completed in interior design and its allied disciplines (Nussbaumer & Guerin, 2000). This purpose of this paper is to examine learner profiles of interior design and architectural students in three well recognized, accredited design programs.

THEORETICAL FRAMEWORK

The study is based on two theoretical models: Perry Scheme proposed by William Perry, and Experiential Learning Model developed by David Kolb. The Perry Scheme (1968) proposes a distinct evolution of thought development that occurs during the college years. Perry presents a developmental trajectory that illustrates how thinking progresses from black and white absolutes to a more contextual understanding of knowledge. The Experiential Learning Model presents learning as a cycle that begins with experience, continues with reflection and later leads to action (Kolb, 1984). Kolb believes each learner has a preferred learning style resulting from the way they process and acquire new information.

METHOD

The sample included 139 upper division interior design and architecture student participants from CIDA and NAAB accredited programs. Participants completed the Measure of Intellectual Development (MID) (Widick & Knefelkamp, 1974), the Measure of Designing (MOD) (Portillo, 1987), and the Learning Style Inventory (LSI) (Kolb, 1984). The study raised the following questions:

What positions of thought development and learning styles characterize interior design and architecture students?

What relationships exist, if any, between thought development and learning styles and class standing, major, gender and age?

FINDINGS

The findings reveal a clear progression of thought development leading to a more advanced understanding of knowledge over time across majors. This helps validate the Perry scheme including the developmental phases of dualism, multiplicity, and contextual relativism, in the fields of interior design and architecture. In addition, results on learning style revealed that design students overall could be classified as: tending to favor learning either by concrete experience and learning by doing (accommodators) or learning by concrete experience and engaging in active reflection (divergers). Specifically, the study found students at different developmental levels in both design disciplines with a significantly greater number of interior design students classified as accommodators and architecture students representing divergers. This finding, when coupled with developmental theory, supports and extends previous research which classified interior designers as divergers (Nussbaumer & Guerin, 2000) and architects as accommodators (Kolb, 1984). Both commonalities and differences will be highlighted between field of study, class standing,

and gender. Importantly, the quantitative findings of this paper will be further amplified with student reflections on their design process and examples of studio work.

CONCLUSION

When cognizant of differences in terms of student development and learning styles, educators can tailor student learning experiences to encourage the highest levels of critical thinking and creative problem-solving. Recommendations for effective studio teaching, particularly in terms of interdisciplinary design scenarios will conclude the presentation.

NARRATIVE

"I have learned that I am a very intuitive learner/designer. I work off my emotions and then act on them after I have analyzed them. The best teachers are the ones who not so much push you, but inspire you to do more. The best classroom atmosphere is laid back at all times with class discussions and activities. My role as a student is to learn and grow. .. and to help others around me which in turn helps myself." (Student excerpt from Measure of Designing protocol)

"I learn best by individual critiques with the professor, this way I don't have to worry about whether I am headed in the right direction. I rely on the professor to move me forward to the next steps. I prefer to work at home, since I really need it to be quiet to concentrate and design." (Student excerpt from Measure of Designing protocol)

PURPOSE

No two students are alike; in the context of higher education students vary on their motivation, attitudes about teaching and learning, and responses to the classroom environment. For the instructor, the challenge is to respond to the diverse needs of all students all the while advancing critical thinking and problem solving skills of the discipline. Both intellectual development (Perry, 1968) and learning style (Kolb, 1984) influence the way students approach their learning and their subject matter. Understanding these pedagogic frameworks have substantial implications for teaching design; yet, few empirical studies have been completed in interior design and its allied disciplines (Nussbaumer & Guerin, 2000). This purpose of this paper is to examine learner profiles of interior design and architectural students in three well recognized, accredited design programs.

THEORETICAL FRAMEWORK

The study is based on two theoretical models: the Perry Scheme proposed by William Perry, and the Experiential Learning Model developed by David Kolb. The Perry Scheme (1968) proposes a distinct evolution of thought development that occurs during the college years. Perry presents a developmental trajectory that illustrates how thinking progresses from black and white absolutes to a more contextual understanding of knowledge. In the first stage of the continuum, dualism, students see knowledge as absolute; with the professor as an authority figure that dispenses knowledge. In the next stage, multiplicity, the

view broadens where knowledge is viewed as uncertain and subject to interpretation. Within this stage, the student begins to question if the professor has all of the answers. In the stage of contextual relativism knowledge is seen as relative or contextually bound. They begin to shift responsibility for learning to themselves. Finally, in commitment in relativism students begin to establish their own personal view of the world where knowledge is constructed not given. In this stage thought development reflects ethical dimensions where students make choices and commitments.

The Experiential Learning Model presents learning as a four-stage cyclical process that begins with a concrete experience (CE), continues with reflection observation (RO) and abstract conceptualization (AC), and later leads to active experimentation (AE) (Kolb, 1984). Based on their life experience and innate characteristics and the way they process and acquire new information, individuals typically develop preferences towards one to two phases of the learning cycle. Therefore, learners can be classified into one of four learning styles: converger, diverger, assimilator, and accomodator. Convergers have AC and AE as principal learning abilities. People with this learning style are good at solving problems and making decisions, and typically prefer dealing with technical tasks. Divergers have CE and RO as dominant learning traits. These individuals view concrete situations from different points of view and favor generating ideas to taking action. AC and RO are the prevailing learning styles for assimilators. These persons understand a wide range of information and have the ability to organize it into a logical form. They prefer abstract ideas and concepts. Finally, accommodators have CE and AE as overriding learning concepts. These individuals learn best from hands on experiences and rely heavily on people for information.

To explore thought development and approaches to learning in interior design and architecture, the study poses the following questions.

What positions of thought development and learning styles characterize interior design and architecture students?

What relationships exist, if any, between thought development and learning styles and class standing, major, gender, and age?

REVIEW OF LITERATURE

To understand student development and learning style, researchers have applied the Perry Scheme and Experiential Learning Theory to a variety of professional fields including interior design and architecture. A study on developmental positions of thinking in beginning design students found a significant relationship between more advanced cognitive development and past creative experience (Portillo, 1987; Portillo & Dohr, 1989). Further, research by Carmel-Gilfilen and Portillo (2010) into the initial stages of thought development in interior design revealed a developmental progression in both global and design-specific thinking. The study uncovered relationships between levels of global and design-specific thinking and studio performance and class standing suggesting those with more advanced thinking generally have higher grades and greater educational experiences in interior design. However, results still illustrated that even advanced students still express disciplinary misconceptions and compartmentalize learning experiences

Previous research into learning styles of interior designers found that all learning styles were present with the majority classified as either accommodators (Lim, 1996; Nussbaumer, 1997) or divergers (Nussbaumer & Guerin, 2000). A suggestion as to why all learning styles were found is due to the multidisciplinary nature of the profession, “where visual, analytical, decision-making, management, and business skills are used” (Nussbaumer & Guerin, 2000, p. 12). This study also found a significant relationship between learning styles and visualization skills, with the converger and assimilators’ scoring the highest on visualization tests. Further, research into the learning styles of Chinese architectural students by Kvan and Yunyan (2004) found the majority of the participants were divergers. A statistically significant correlation was also found between learning styles and academic performance.

METHOD

Data for this study were gathered in the spring of 2008 on site at three universities in the Northeast and South central regions of the United States. The data was collected in 11 sessions in the respective interior design and architecture programs in a single untimed session lasting approximately 1.5 hours. The session was sequenced to assess global thinking, design-specific thinking, and learning style. The sample included 139 sopho-

more, junior, and senior interior design and architecture student participants from three design schools, with six interior design and architecture programs. Programs were selected the following criteria: recognized design programs as identified by Design Intelligence, accredited by either the Council for Interior Design Accreditation (CIDA) or the National Architectural Accreditation Board (NAAB), and had undergraduate programs in interior design and architecture with a core design curriculum. Participants included 101 females and 38 males with an age range of 19-39. There were 86 interior design and 54 architecture student participants.

Participants were administered three instruments for data collection, the Measure of Intellectual Development (MID) (Widick & Knefelkamp, 1974), Measure of Designing (MOD) (Portillo, 1987), and Kolb Learning Style Inventory Version 3.1 (LSI) (Kolb, 1984). The MID assesses a student's global epistemology based on the defined stages of the Perry scheme. The protocol contains one major essay stem that encourages the student to reflect on previous learning experiences including content subject matter, types of teachers, classroom atmosphere, role as a student and evaluation procedures. The MID protocols were scored by trained raters from the Center of Intellectual Development who achieved an acceptable level of inter-rater reliability.

While the MID measures global thought development, the MOD assesses design specific stages of thinking using the set positions of the Perry scheme. The MOD contains nine essay questions which prompt students to write about their college learning experiences in design. The questions are divided in three categories including: design process and assumptions, design production and project perception, and design evaluation. Using design specific developmental criteria, each protocol was evaluated first by category and then assigned an overall developmental position. MOD protocols were scored by two trained raters who achieved an acceptable level inter-rater reliability.

Finally, the LSI assesses learning style based on the Experiential Learning Theory. This protocol uses 12 open-ended questions each containing four alternative responses. Respondents must rank order the four sentence endings in a way that best describes their learning preference. The LSI is evaluated using a test key with calculations being plotted on a predetermined axis to establish the appropriate learning style.

FINDINGS

The findings reveal a clear progression of thought development leading to a more advanced understanding of knowledge over time across majors. This helps validate the Perry scheme including the developmental phases of dualism, multiplicity, and contextual relativism, in the fields of interior design and architecture. In addition, results on learning style revealed that design students overall could be classified as: tending to favor learning either by concrete experience and learning by doing (accommodators) or learning by concrete experience and engaging in active reflection (divergers). Specifically, the study found students at different developmental levels in both design disciplines with a significantly greater number of interior design students classified as accommodators and architecture students representing divergers. This finding, when coupled with developmental theory, supports and extends previous research which classified interior designers as divergers (Nussbaumer & Guerin, 2000) and architects as accommodators (Kolb, 1984). Early findings also recognized a relationship between global thought development and gender, with the mean for males slightly higher than the females. This substantiates research by Baxter-Magolda (1992) which uncovered differences in the reasoning approach of men and women. Commonalities and differences will be highlighted between field of study, class standing, and gender. Importantly, the quantitative findings of this paper will be further amplified with student reflections on their design process and examples of studio work.

CONCLUSION

The role of the educator in the classroom and his or her teaching approach can profoundly influence the learning experience (Nussbaumer, 2001). When cognizant of differences in terms of student development and learning styles, educators can tailor student learning experiences to encourage the highest levels of critical thinking and creative problem-solving. Recommendations for supporting student development in interior design will be posed as well as directions for future research. Recommendations for effective studio teaching, particularly in terms of interdisciplinary design scenarios will conclude the presentation.

REFERENCE LIST (APA)

Baxter-Magolda, M. B. (1992). *Knowing and reasoning in college: Gender related patterns in students' intellectual development.* San Francisco: Jossey-Bass.

Carmel-Gilfilen, C. & Portillo, M. (2010). Creating mature thinkers in interior design: Pathways of intellectual development. *Journal of Interior Design, 35* (3).

Felder R. M. & Brent, R. (2005). Understanding student differences. *Journal of Engineering Education, 94* (1), 57-72.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development.* New York: Prentice Hall.

Kolb, D. A. & Wolfe, D. (1981). Professional education and career development: A cross- sectional study of adaptive competencies in experiential learning. Final report NIE grant No. NIE-G-77-0053, ERIC no. ED 209 493 CE 030 519.

Kvan, T. & Yunyan, J. (2004). Students' learning styles and their correlation with performance in architectural design studio. *Design Studies, 26* (1), 19-34.

Lim, Y. (1996). The effectiveness of multimedia presentation tools in teaching perspective drawing for interior design students. *Dissertation Abstracts International, 57* (08A), 3466. (Doctoral Dissertation, University of Minnesota).

Nussbaumer, L. L. (1997). *The relationship of learning styles and problem solving ability among interior design students at South Dakota State University.* Unpublished manuscript, South Dakota Stat University at Brookings.

Nussbaumer, L. L. (2001). Theoretical framework for instruction that accommodates all learning styles. *Journal of Interior Design, 27* (2), 3-15.

Nussbaumer, L. L., & Guerin, D. (2000). The relationship between learning styles and visualization skills among interior design students. *Journal of Interior Design, 26* (1), 1-15.

Perry, W. G. (1968). *Forms of intellectual and ethical development in the college years: A scheme*. New York: Holt, Rinehart and Winston.

Portillo, M. B. (1987). A developmental approach to design: Thought structuring related to creative experience. *Unpublished Master's Thesis*, University of Wisconsin- Madison.

Portillo, M. B. & Dohr J. (1989). Design education: On the road towards thought development. *Design Studies, 10* (2), 97-100.

Widick C, C, & Knefelkamp L. L. (1974). *Measure of Intellectual Development*. New York: Center for Study of Intellectual Development.

Junior Certificate in Interior Design: Rationale, Development, Status

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ABSTRACT

PURPOSE
This presentation will discuss the development of an interior design examination and "junior certificate" for high school and entry-level community college students to assess student learning at the pre-professional level. Discussion will be solicited concerning the potential impact of this examination/certificate on the profession.

IMPORTANCE OF TOPIC
Teens learn about interior design from three primary sources: architecture (AIA Foundation programs), design reality shows (Waxman & Clemons, 2005), and Family and Consumer Science (FCS) courses at the secondary education level. None of these sources accurately portray the full scope of the interior design profession; particularly related to commercial design.

Economic demands have placed high school interior design courses at risk (McGinnis, 2009). New federal mandates (e.g. Perkins IV legislation) necessitate a national pre-professional assessment to receive future funding for interior design courses at the secondary and community college levels. In response, the American Association of Family & Consumer Sciences (AAFCS) created a national assessment for interior design. Upon successful completion of the exam, students may receive credit toward an associate or bachelor degree in interior design and/or earn a credential to enhance employment potential upon graduation. See Table 1.

PROCESS
Thirty states (See Figure 1) funded the development of the examination and a formal process was followed. 1) Partnerships with industry and education organizations (e.g. American Society of Interior Designers (ASID) and the Interior Design Educators Council (IDEC) were formed to ensure content accuracy. 2) A fifteen member board offered input from practice, employment paths (e.g. IKEA), and various education levels. 3) Categories of interior design content were identified and weighted. A seventy-question exam, based on Bloom's Taxonomy three cognitive levels, was created and a pilot study conducted to assess its validity. Psychometric data guided revisions. 4) A certificate name including, appropriate language for public understanding, was identified.

RELEVANCE TO INTERIOR DESIGN
Both the public and teens lack an accurate understanding of the qualifications needed to be an interior design professional. Evidence of this can be seen in legislative arenas and on college campuses. At the same time, a shortage of educators at higher education institutions exists (SIDE, 2009) with few teachers educated accurately on interior design at the secondary level.

There is concern that the junior certificate will "muddy the water" in defining the "path to professionalism." Could the term "certificate" lead to confusion if used both at the pre-professional and the professional level? Will there be more demand at the higher education level when educators are already stressed? How will this examination shape the future of interior design?

Educating the public is critical to their understanding of our profession. A needed channel of dissemination through AAFCS teachers now exists. These teachers are interested in receiving information from practice and education (Clemons, 2007) and eager to teach high school students about interior design. As an assessment tool, the AAFCS examination will shape teaching and learning at the secondary level. If properly developed and positioned, this examination/certificate could assist

in clarifying the channel to the interior design "professional;" a needed message inside and outside the profession.

NARRATIVE

INTRODUCTION

Teens learn about the career of interior design from three primary sources. The first is through national architecture programs delivered in elementary and secondary levels (K-12). Most recently, the American Institute of Architects (AIA) joined with the American Architectural Foundation (AAF) and Chicago Architectural Foundation (CAF) in the Architecture + Design Education Network (A + DEN) to offer architecture curriculum on a national level (AIA, 2010). The second way is through viewing design reality shows that have permeated households through HGTV (Waxman & Clemons, 2005). The third way is through Family and Consumer Science (FCS) courses taught at the high school level; sometimes as many as four at one high school (D. Griffin, personal communication, December 17, 2009). Unfortunately, none of these sources accurately portray the full scope of the interior design profession; particularly related to commercial design.

A recent briefing by the United States Department of Occupational Education (DOE) revealed a shift in education goals by our national administration: from No Child Left Behind to a system of helping all students graduate from high school college and career-ready (U.S. Department, 2010).Within the Career and Technical Education (CTE) area, where interior design resides in secondary education, this budget directs states to create programs of study that lead to industry-recognized credentials or associate/baccalaureate degrees.

The interior design profession has concentrated more on the "college to professional" career path and less on educating youth about interior design at the high school level. Therefore, an industry-recognized credential or assessment tool needed by high school programs has not been developed. Economic demands have placed existing high school interior design courses at risk (G. N. McGinnis, personal communication, March 19, 2009). Federal mandates (e.g. Perkins IV legislation) necessitate an industry-recognized credential to receive future funding for interior design courses at the secondary and community college levels. In response, the American Association of Family & Consumer Sciences (AAFCS) created the Pre-Professional Assessment and Certification (Pre-PAC) program, a national assessment and certification system for eleven high school programs; one of

which is interior design.

This presentation will discuss the development of an interior design examination and "junior certificate" for high school and entry-level community college students to assess student learning at the pre-professional level.

BACKGROUND

Research has indicated that a gap exists in the interior design education continuum from "kindergarten to career." In part, this may be due to a lack of knowledge of how and where to begin (Clemons, 2007) or a lack of resources to address this complex task on a national level.

What education children and youth have received about interior design has been inadequate and inaccurate. Recognition of this issue is not new to design educators. Since the early 90's, research has indicated that interior design has been inaccurately represented in the built environment continuum (Tew and Portillo, 1993). As early as 1992, Dohr discussed the need for interior designers to be involved in K-12. In 1998, Clemons proposed a comprehensive model for collaborative involvement of interior design professionals in the K-12 arena. More recently, Clemons (2007) reported research conducted with K-12 teachers and curriculum specialists on how and what is needed to assist teachers in the K-12 level. Yet, due to a lack of resources or cohesive plan, little has been done with this information and research.

Youth are not the only ones that lack an accurate understanding of the qualifications needed to be an interior design professional. Evidence of this can be seen in legislative arenas across the country and on college campuses as students participate in entry-level courses. Yet, the timing to address this issue from the design educators' point of view is poor. A shortage of interior design educators at higher education institutions exists (SIDE, 2009); therefore efforts and resources have been understandably prioritized toward attracting and educating design practitioners into the higher education arena rather than offering more accurate educational materials to high school students.

Despite the bad timing, both the American Society of Interior Designers (ASID) and the Interior Design Educators Council (IDEC) have K-12 initiatives identified on their national strategic plans (ASID, 2010; IDEC, 2010). In addition, as early as 2000, the International Interior Design Association (IIDA) Foundation funded research concerning the resources and interior design materials available in the K-12 arena (Clemons, 2001). The importance of educating youth about the career has reached national recognition both in education and in practice.

At the high school level, interior design resides in the "career and technical education" (CTE) division; an odd home as it is the only licensed career under the AAFCS rubric. Introductory courses are typically titled "housing and interiors" or "interior design" and use national standards developed by AAFCS to guide curriculum and lesson plan development (NASAFACS, 2010). These standards stress housing issues (e.g. public policy) and furnishings along with residential design; therefore commercial interiors are rarely mentioned. Typically, teachers have earned a master's degree in Family and Consumer Sciences (FCS) that requires a maximum of one to three classes in interior design (CSU, 2010). They are rarely specialists in interior design, nor do their responsibilities require it. Research indicates these teachers are eager for current and accurate information about the interior design career (Clemons, 2007).

PROCESS

Brief History

In response to the national need for an interior design assessment, AAFCS began the process in 2008 of developing an interior design examination and certificate for high school and community college (entry-level) students. See Table 1 for perceived benefits. Interior design is one of their eleven examinations under development. See Table 2.

In March 2009, the state of Georgia approached IDEC inquiring about the existence of a national assessment. Supportive of developing one, IDEC discovered that AAFCS was in the process of doing so and developed a partnership with ASID to offer expertise in shaping AAFCS's examination. In June 2009, an invitation was extended to all interior design related organizations inviting them to partner in this initiative.

<u>Steps Taken</u>

Thirty states (See Figure 1) partially funded the development of the examination and a formal process was followed. 1) As mentioned before, partnerships with industry and education organizations (e.g. American Society of Interior Designers (ASID) and the Interior Design Educators Council (IDEC) were formed to ensure content accuracy. 2) October 2009 a fifteen member Development Board was formed. They offered input from practice, potential employment paths (e.g. IKEA, NKBA), and secondary/post secondary education levels (community college and four-year institutions). 3) Categories of interior design content were identified and weighted by the Board. Six domain levels were identified that related to career paths, professional practice, design fundamentals, human factors, communication skills, and design application. Note: these domain categories were different than originally presented to the Board by AAFCS. 4) Between October 2009 and February 2010, a seventy-question exam, based on Bloom's Taxonomy three cognitive levels, was created with alternative questions identified for each category. Note: test banks provided from high school textbooks and other AAFCS sources relating to Housing and Interiors were insufficient. Many new questions were developed by interior design educators/practitioners and evaluated by exam experts. 5) February 2010 the certificate was named to assist the public in understanding the level of student "competencies." Note: this was a difficult phase of the process due to the profession's concern with the term "certificate" and "certification." 5) In March 2010, a pilot study was conducted to assess the exam's validity. Psychometric data guided revisions. Pilot testing provided psychometric data to establish test validity and reliability.

ASSESSMENT

The assessment will be delivered fall2010 using a computer-based format that provides a reporting mechanism for competency measurement and improvement/ accountability. Images, diagrams and text will be used to assess learning .Administered tests will be offered at proctored sites and will use a unique combination of 70, four-option multiple choice items randomly selected from the item bank (AAFCS PRE-PAC, 2010). The pass rate will be based on an identified cut-score with printable certificates valid for three years. Individual institutions will determine whether students can use examination scores to earn college credit.

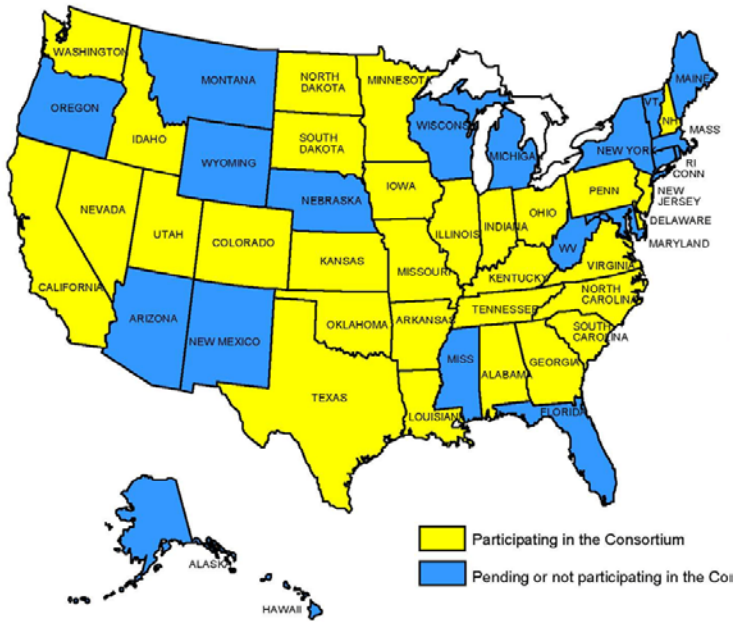
DISCUSSION + CONCLUSION

Concerns exist related to this examination/certificate. Some are individual: Will students leave high school with their certificate, set up business, and take future clients? Others are more global: Will this junior certificate "muddy the water" in defining the "path to professionalism?" Could the term "certificate" lead to public confusion if used both at the pre-professional and the professional level? How will this examination shape the future of interior design? Others relate to higher education: Will there be more demand at the freshmen level when educators are already stressed? How will we need to adjust our classes based on this national initiative?

Educating the public is critical to their understanding the profession. A channel of dissemination into high schools is now available. High school teachers are open to receiving accurate information from professionals (Clemons, 2007). As an assessment tool, the AAFCS examination will shape teaching and learning at the secondary level. If properly developed and positioned, this examination/certificate could assist in clarifying the channel to the interior design "professional;" a needed message inside and outside the profession.

Note: Partial funding in support of this initiative was granted by the IDEC Strategic Initiatives Grant and the ASID Foundation.

Figure 1. Consortium of states funding AAFCS examination/certificate.



Map developed by AAFCS, October 2009

Table 1. Perceived assessment tool benefits.

Benefits to high school students

- Career starter program for high school students
- Enhanced understanding of interior design profession
- Potential college credits earned during high school (articulation to colleges or post secondary partners)
- Certificate recognition of extra academic efforts

Benefits to high school programs

- Nationally recognized/endorsed certificate that indicates an assessment of learning; used to procure Federal funding related to career-building programs (e.g. Perkins grants); end of pathway assessment
- Teaching opportunity for high school teachers; encouragement for schools to keep interior design courses as part of their standard curriculum
- Support of state legislation (e.g. Georgia – bill in process states that students in Career Tech programs will leave with a national certificate confirming they have passed a national assessment from business/industry).
- Validation of programs are meeting business and industry needs as well as encouraging student success

Benefits to practitioners/educators

- Educates potential interior design educators, practitioners, and students
- Assists interior design high school student locate major before entering college
- Removes myths perpetuated through design reality shows

Table 2. List of pre-professional assessments/certificates under development by AAFCS.

Broad Field Family and Consumer Sciences	Food Science
Culinary Arts	Housing
Early Childhood Education	Interior Design
Education Careers	Nutrition
Family Services	Personal and Family Finance
Fashion, Textiles, and Apparel	

REFERENCES (APA)

American Association of Family and Consumer Science (AAFCS). (n.d.). Pre-Professional Assessment and Certification (Pre-PAC) Program. Retrieved http://www.aafcs.org/prepac/.

American Association of Family and Consumer Sciences (AAFCS) PRE-PAC. (n.d.). Retrieved from http://www.aafcs.org/prepac/assessment_development_characteristics.html.

American Institute of Architects (AIA). (n.d.). *The AIA Announces Partnership with American Architectural Foundation and Chicago Architecture Foundation to Advance K-12 Design Education.* Retrieved from http://www.aia.org/press/AIAS077074.

American Society of Interior Designers. (n.d.). *ASID Strategic Plan FY 2009-2011*. Retrieved on February 4, 2010 from http://www.asid.org/searchresults.htm?query=strategic%20plan.

Clemons, S. (2001). Interior design K-12 curriculum in the United States [Abstract]. *Proceedings of the International Interior Design Educators Council Annual Conference*, Chicago, IL, 20-22.

Clemons, S. (2007). Interior design in K-12 curricula: Asking the experts. *Journal of Interior Design*, *32*(3), 15-40.

Colorado State University (CSU). (n.d.). Family and Consumer Sciences homepage. Retrieved from http://www.fcs.cahs.colostate.edu/.

Dohr, J. (1992, October). Six predictions: The future of design education. *Interior Design*, *63*(14), 131.

IDEC Strategic Plan (n.d.). Retrieved from http://www.idec.org/documents/IDEC_Strategic_Chart_0209.pdf.

NASAFACS. (n.d.). *National standards for Family and Consumer Sciences.* Area of Study 11.0 Housing, interiors and furnishings. Retrieved] from http://www.doe.in.gov/octe/facs/sc_housingdesign.html.

Tew, S., & Portillo, M. (1993). Increasing interior design recognition: The potential of built environment education. *Proceeding of the Interior Design Educators Council Conference,* Coeur D'Alene, ID, 43.

Sustaining Interior Design Education Initiative (SIDE), (2009). Interior Design Educators Council. Retrieved from www.idec.org.

Waxman, L., & Clemons, S. (2005). Mixed messages: The impact of design-related television shows on student perceptions of the interior design profession [Abstract]. *Proceedings of the International Interior Design Educators Council Annual Conference*, Savannah, GA, 32-33.

U.S. Department of Education. (2010, February 1). *President's Education Budget Signals Bold Changes for ESEA.* Retrieved from http://www2.ed.gov/news/pressreleases/2010/02/02012010.html

Enabling Exploration: Educating Future Leaders in Extreme Design

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ABSTRACT

Progressive education is defined as, "an educational philosophy emphasizing democracy, student needs, practical activities, and school-community relationships" (Sadker 2006). During the late 19th century, progressive education developed as a reaction to traditional formal education. Emphasis was placed on independent thinking, which has translated today into innovation, creativity, and adaptable thinking. While progressive education is now formally established in our curricula, a century later we must look at the progression of the progressive and begin to establish a new emphasis on education with a future perspective. Typical educational settings are appropriate for providing basic theory and knowledge, but they often lack the challenges encountered by the student beyond the classroom walls, rendering some student learning obsolete beyond the educational setting. In-situ problem solving and multidisciplinary interactions provide students the ability to consider such challenges as living in the sea.

The extreme environments studio is an educational experience that has interior design students learning with faculty from medicine, geology, psychology, design, architecture, and with a SCUBA instructor from the National Association of Underwater Instructors [NAUI]. The experience enables students to consider future built environments through a global lens while anticipating the changing conditions of the natural environment.

SCUBA certification was integrated into the studio curriculum to establish empathy for supporting human habitation underwater. All students participated in the theory sessions of the SCUBA course and interested students participated in the practice sessions of the NAUI course on a voluntary basis. The studio was then charged to collaboratively design and fabricate a functional underwater shelter to provide breathing air and communication space for two individuals. This collective experience informed the projects that students went on to develop independently or in teams for the remainder of the term. The hands-on, underwater exercise along with the SCUBA theory delivered insight to issues to anticipate for designing complex underwater habitats for human researchers and explorers.

As humankind's aspirations for exploration increase so do the risks and strains on human support needs. Engineering has been the dominant discipline in designing for exploration and extreme environments in our lifetimes. Yet supporting and sustaining human explorers have been critical to exploring extreme environments—which is central to the efforts of interior design…extreme or otherwise, simply enhancing life. This case describes the value of bringing a human user focus to the complex matrix of criteria in designing for human habitation underwater. It presents a model for undergraduate learning that extends the capabilities of students beyond the assimilation of existing knowledge, enabling them to envision innovative, future solutions.

Aspirations for exploration are increasing as nations scan marine environments for new answers (research) and new resources (exploration and colonization). Simultaneously, individuals are seeking idealistic co-existence with natural orders in more intimate scales. Both heighten the opportunities for supportive design and increase the role of design education to accommodate the presence of humans in remote and extreme environments in their quest for knowledge and understanding of the yet-to-be-known.

NARRATIVE

Progressive education is defined as, "an educational philosophy emphasizing democracy, student needs, practical activities, and school-community relationships" (Sadker 2006). During the late 19th century, progressive education developed as a reaction to traditional formal education. Emphasis was placed on independent thinking, which has translated today into innovation, creativity, and adaptable thinking. While progressive education is now formally established in our curricula, a century later we must look at the progression of the progressive and begin to establish a new emphasis on education with a future perspective. Typical educational settings are appropriate for providing basic theory and knowledge, but they often lack the challenges encountered by the student beyond the classroom walls, rendering some student learning obsolete beyond the educational setting. In-situ problem solving and multidisciplinary interactions provide students the ability to consider such challenges as living in the sea.

As an educator**,** I am driven by the power of "*what if?"*—a power practically monopolized by the group we host in our lectures and studios. Questions, risks, hypotheses and change thrill this group. To fuel and direct their thrill is for me the greatest privilege of education—to synthesize expertise and knowledge with daring experimentation. (Figure 1)

> *"In the extreme environments studio, we must take the design process that we consider second nature and apply it to a situation that is completely new and…think about design in an abstract way that relies on information gathering, experimentation, and critical thinking…not assumptions.*
>
> *Without being able to rely on personal experience and expertise, the underwater activities that our class has conducted have been founded in the process of trial and error. We began the process on paper...As a team, we thought about potential scenarios and ways to avoid malfunctions. We knew that in theory, it would work, but that the real test would come when we actually built and assembled the piece underwater…On a larger scale, students in the future will be able take our experiences and findings and add to the ongoing process of…exploration…While I might not ever see the reality that might come from experiments of underwater [design] in my time, I am happy to be a part of the process." Chrystal Roggenkamp (Quoted from student's journal)*

The extreme environments studio is an educational experience at the University of Cincinnati that has interior design and architecture students learning with faculty from medicine, geology, psychology, design, architecture, and with a SCUBA (self contained underwater breathing apparatus) instructor from the National Association of Underwater Instructors [NAUI]. The experience enables students to consider future built environments through a global lens while anticipating the changing conditions of the natural environment. The effort is motivated by a mission to inspire greater respect for the planet and by an opportunity to enable exploration and science that will spurn broader understanding of our planet. The focus is less upon futurist design, such as that conjured by the Metabolists and Archigram, and more upon where things are and where they should be moving. The work is speculative not declarative. It is conceived from collective interests in human support, marine life, and environmental issues. (Figure 2)

> *In the first half of the twentieth century, the architectural avant-garde celebrated autonomy from nature, and architects devised utopian schemes for creating urban realms ex novo, with little consideration for their surroundings. More recently, however, the challenges of a threatened environment and rapidly expanding cities have fostered a revised understanding of landscape.*

Andres Lepik, Curator, and Margot Weller, Curatorial Assistant

MoMA: "In Situ: Architecture and Landscape". April 2009 – January 2010

In spite of the seemingly infinite expanse of its oceans, the world has come to experience the finite nature of them. It has emerged that there may be a critical threshold of human impact on the oceans that could trigger disastrous mechanisms. This, in turn underlines the dependence of the human race on clean water, the bounty of the seas and their fundamental role in supporting a life-sustaining climate. From equatorial waters and coral reefs to polar seas, water is an endangered global

resource and a climate determinant. Current data collection for climate change is predominately gathered in extreme environments. The conditions of these environments strain research efforts as outdated human support practices are employed in supporting advanced scientific discovery. The researchers' environmental exposure limits the amount and quality of data gathered.

The long-term goal of the studios is to advance research and education platforms through the development of human support systems that mediate adverse constraints of extreme environments, such as; atmospheric content and pressure, gravitational force, spatial constraints, and confined personal dynamics. We endeavor to lend the perspective of humanistic design in support of the physiological and psychological well being of researchers to supplement the accomplishments of engineering and science.

SCUBA certification was integrated into the studio curriculum to establish empathy for supporting human habitation underwater. All students participated in the theory sessions of the SCUBA course and interested students participated in the practice sessions of the NAUI course on a voluntary basis. The studio was then charged to collaboratively design and fabricate a functional underwater shelter to provide breathing air and communication space for two individuals. This collective experience informed the projects that students went on to develop independently or in teams for the remainder of the term. The hands-on, underwater exercise along with the SCUBA theory delivered insight to issues to anticipate for designing complex underwater habitats for human researchers and explorers. (Figures 3 and 4)

Engineering has been the dominant discipline in designing for exploration and extreme environments in our lifetimes. Yet supporting and sustaining human explorers have been critical to exploring extreme environments—which is central to the efforts of interior design…extreme or otherwise, simply enhancing life. This case describes the value of bringing a human user focus to the complex matrix of criteria in designing for human habitation underwater. It presents a model for undergraduate learning that extends the capabilities of students beyond the assimilation of existing knowledge, enabling them to envision innovative, future solutions.

> *"The next day in studio when Brian was talking about how pleased he was with the success it hit me how much we accomplished. I'm almost a certified scuba diver, we were given a task to make a breathing apparatus underwater (in 24 hours), and we succeeded…We've all done decent research on our own time to come up with very original ideas…I realized how much more knowledgeable we all are about extreme environments…Some of the interest in this studio has to do with the environmentally positive aspect we are incorporating, and I'm quite proud that we were able to put together an efficient 'DAAP-o-Sphere' that ran cleanly and smoothly without waste in materials or time."*
>
> Sarah Smith (Quoted from student's journal)

Aspirations for exploration are increasing as nations scan marine environments for new answers (research) and new resources (exploration and colonization). Simultaneously, individuals are seeking idealistic co-existence with natural orders in more intimate scales. Both heighten the opportunities for supportive design and increase the role of interior design education to accommodate the presence of humans in remote and extreme environments in their quest for knowledge and understanding of the yet-to-be-known.

The extreme environments studios have engaged students in educational opportunities in emerging specialties in the discipline. Students have delivered sophisticated outcomes that have garnered recognition nationally and internationally. The uniqueness of the studio course has been cited nationally and featured on Discovery Channel Canada's *Daily Planet*. The students presented their work at the 2008 University of Cincinnati Undergraduate Research Poster Session—a first for the university's interior design program. Synthesizing the studio with my research, three student collaborative teams have won national and international competitions to support human life in extreme environments. One interdisciplinary, undergraduate team won the prestigious, international Jacques Rougerie Award. A second, cross-disciplinarily team of graduate students, received notice that their proposal for a lunar health habitat submitted to NASA's "Life and Work on the Moon" competition will be on display in the Virginia Air & Space Center, the visitor center for NASA Langley Research Center. The third team earned a special commendation of merit from an international jury at the Cognizance 2009 conference

held at the Indian Institute of Technology for the team's concept for a prototype, low-impact Antarctic research station.

The work is inspired by the 19th century science fiction of Jules Verne, the upcoming 2012 World Expo in Yeosu, South Korea, "The Living Ocean and Coast", and the emerging 21st century architecture of Doha, Abu Dhabi, and Dubai. It is pressured by climatic shift and by the shift occurring in marine exploration, which stems from non-disruptive models of terrestrial exploration. Twenty-first century design has issued a non-disruptive mandate at every scale, from zoological to microbiologic observation. This mandate guides design for devices and enclaves to accommodate the presence of humans in their quest for knowledge and understanding of the yet-to-be-known. In this sense marine design is a close companion to space exploration, both in its challenges and frontiers. (Figure 5)

REFERENCE LIST (MLA)

Bruffee, Kenneth A. Collaborative Learning: Higher Education, Interdependence, and the Authority of Knowledge, 2nd edition. Baltimore, MD: Johns Hopkins University Press, 1999.

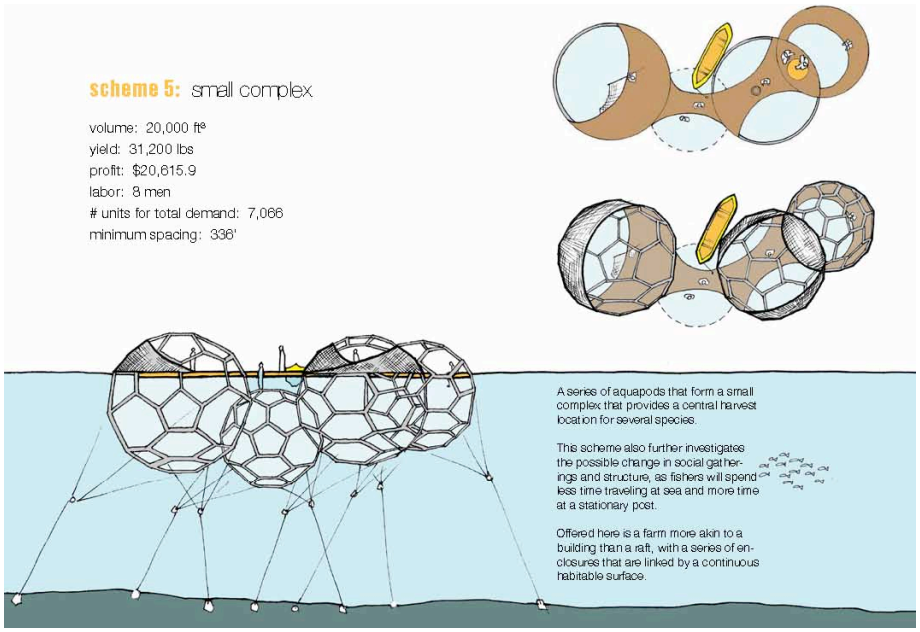
Laurel, Brenda. Design Research: Methods and Perspectives. Cambridge, MA: The MIT Press, 2003.

Miller, James W. and Koblick, Ian G. Living and Working in the Sea. Plymouth, VT: Five Corners Publications, Ltd., 1995.

Sadker, David M., Myra P. Sadker, and Karen R. Zittleman. Teachers, Schools and Society. Columbus, OH: McGraw-Hill, 2006.

Simpson, Douglass J., Michael J.B. Jackson, Judy C. Aycock. John Dewey and the Art of Teaching: Toward Reflective and Imaginative Practice. Thousand Oaks, CA: Sage Publications, 2005.

Figure 1: Implementing ideas collaboratively through hands-on experimentation.



Figures 2: Excerpt from an individual student project for sustainable aquaculture off the coast of Senegal.

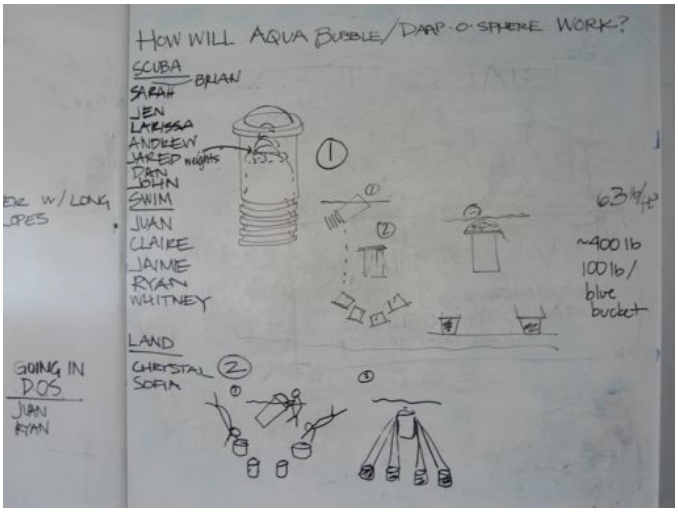


Figure 3 and 4: Conceiving the underwater shelter in studio and executing it at the pool.

Figure 5: Students executing third prototype after earning SCUBA certification.

Process + Strategy | The Future of Design Thinking and Hybrid Innovation

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ABSTRACT

Through creativity and innovation corporations are able to differentiate themselves within increasingly competitive markets. Designers continue to rely on creativity and innovation to differentiate themselves, but in a field where all rely on these methods, differentiation becomes increasingly challenging. As designers we compete on the basis that successful design is about better design. Those that have managed to position themselves favorably in the industry have found that better design develops from strategic design. Process based design thinking combined with a strategic business approach provides complimentary synergies pushing forward the current methodology of design thinking into the evolution of a hybridized design thinking.

Business today admires the design process yet design does not fully embrace business strategy. When we look to understand a great business leader, such as someone like Steve Jobs, we praise him for his success due to the emphasis he places on creativity and innovation. A designer such as Karim Rashid, has distinguished himself in his field due to his understanding of business strategy and alignment. This leads to the conclusion that successful business leaders are creative while successful designers are strategic.

It is this conclusion that has caused many of the most reputable business programs in this country and abroad to integrate the *design thinking* process into their curriculum, partnering this new methodology of creativity and innovation in problem solving with the traditional strategic and solution based approach, well established within the educational setting and industry. Business education is now surpassing the current discourse in design education when it comes to issues on integration and collaboration between the two fields. Evidence of business education's progressive view on *design thinking* can be found, for example, in Roger Martin's, the dean of the Rotman School of Management at the University of Toronto's, book *The Design of Business: Why Design Thinking is the Next Competitive Advantage.*

Within a design education context, rarely is this strategic approach taught or even emphasized, and the progressive nature of *design thinking* is failing short of its potential. Design education, as a simulated model of the professional design experience, must encourage the link between process and strategy in order to position its students as forerunners in the evolution of collaboration between design and industry. The future of design education, particularly within the design of environments, must encourage this synergy.

This paper challenges the current discourse by proposing that taking a process and strategic approach to design leads to a new methodology, providing for the future of *design thinking*. In our current economic climate, designers, primarily environmental designers, can struggle to remain relevant in cost conscious and limited budget restricted conditions. Students, graduating amidst a recession, we must look towards possible alternatives beyond the typical expected career paths. Students should position themselves to understand that *design thinking* when used in collaboration with analytical business strategy creates complimentary synergies for creativity and hybrid innovation.

NARRATIVE

INTRODUCTION / ISSUES AND OPPORTUNITIES

Within the past few decades, interest has heightened regarding well-designed spaces, promoting interior design to a forefront discipline for environmental creation. This has led to increasing numbers of interior design firms along with elevated enrollment in interior design and architecture schools. As a result of this, competition within the field has increased, broadening the pool of applicants searching for jobs upon graduation. In our current economic environment, designers, primarily environmental designers, can struggle to remain relevant in cost conscious and limited budget restricted conditions. As students, graduating amidst a recession, we must look towards possible alternatives beyond the typical expected career paths. Many view this as an unfortunate challenge. Taking a more positive outlook the current condition can be viewed as providing unprecedented opportunity to redefine the possibilities available through a design education. As designers we have shaped our environments, so how can we shape the future of our discipline today? This paper will reflect on the current role of interior design and architecture students, within the academic setting exploring the opportunities available to students beyond the typical expected outcomes, questioning how one can distinguish themselves within a progressively more competitive environment.

The impact of environmental design on business and the consumer industry has grown tremendously. Interior designers have played a critical role in the design of lifestyle. Through the creation of branded environments interior designers have solidified their role in the global market for consumer products. Branded environments have become an integral part of the marketing process and therefore have imbedded themselves into overall business strategy. With the acceptance of interior design as a critical component to business development one must question what our role is, as environmental designers, in *re-designing* today's approach to business.

DESIGN AND BUSINESS

As design students, we are exposed to and nurtured by an intuitive, process based approach to problem solving, which sets us apart from analytical business minded students. In a simplified statement, the design student approaches a problem based on a right-brain analysis while the business student from a left-brain approach. Pursuing masters degrees in both architecture and business, I have developed an understanding of the inconsistency between both thought methodologies.

What distinguishes design and business students is the way in which we interpret information. As a designer, problems are approached through an understanding of process rather than solution. (Figure 1) A design approach values the exploration of potential solutions as the importance within the process, developing multiple solutions that could be equally successful. The design process develops a method of value judgment for each problem yet at a certain point a decision must be made which often is based on intuition. A business approach is far more interested in the single best solution than in the process of exploring multiple solutions. (Figure 2) Often quantitative analysis is used to judge the merit of potential solutions. Evaluating many solutions very quickly, one is able to narrow down the scope of a project, while using analysis to project the potential success of the chosen solution, leaving less of the decisions to intuition. What is lacking in a design approach is the ability to analytically judge a solution prior to its implementation. This is provided in the business approach, yet what this approach lacks is the ability to substantially explore a multitude of options prior to making decisions. Herein lies the potential to hybridize both thought processes into a new approach. (Figure 3)

Roger Martin, the dean of the Rotman School of Management at the University of Toronto, has identified two schools of thought in regards to the business environment today, the *analytical* and the *intuitive*. The *analytical* he defines as reliant on quantitative information and logic, deriving conclusions based on a strategic approach and analysis of data. The *intuitive* approach is founded in creative instincts and gut feelings providing the framework for innovation.[1] In order to illustrate the two approaches, one can look at Toyota as the model of the *analytical* approach and Apple as the *intuitive* approach. Toyota with its systematically defined operations approach has limited the uncertainty within the daily processes, providing a repetitive and stable environment for continual business growth and development. Apple on the other hand, redefining itself with the intro-

1 Roger L. Martin, The Design of Business: Why Design Thinking is the Next Competitive Advantage. (Boston: Harvard Business Press, 2009), 5.

duction of the iPod, has shown how an approach based on intuition, creativity, and innovation, can be equality successful. Emphasizing a boom or bust approach to product development, Apple has demonstrated very fast growth, yet remains challenged like all *intuitive* based companies in maintaining this growth. Briefly summing up Martin's argument, he proposes that today neither approach to business development is sufficient and rather businesses must look towards the integration of both schools of thought into what he refers to as *design thinking*.[2] This *design thinking* is the future of business and it is this conclusion that provides new opportunity for the design student.

Tim Brown, principle of IDEO, also emphasizes the concept of design thinking yet approaches its implementation in a different way. He defines it as, "a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity.[3] Through this statement Brown is identifying the role of the design process within the business development strategy. The design process in this condition is required in order to develop and document an understanding of user needs in order to identify potential solutions. The strategic and analytical business approach can then take the potential solutions and filter them based on their feasibility and the overall alignment with the organizationís business strategy.

OPPORTUNITIES IN EDUCATION

The most reputable business programs, B-schools, around the country and abroad, have restructured their curriculum in order to imbed *design thinking* as a process based approach resulting in creativity and innovation in business strategy and educational methodology. Having begun to partner with their design programs, D-schools, these newly developed graduate programs, largely MBAs, are breaking down the barrier of a traditionalist education, finding ways to expose their students to new modes of thought through their introduction to *design thinking*.

Design education, having had a reputation for progressive curricular methodologies, is now lagging behind the previously traditionalist business schools. The emphasis on *design thinking* today has created opportunity for design programs to establish long-term collaborative environments between the two fields. It appears the business world has embraced the designer and gained an appreciation for the designer's thought process, yet the designer has not fully accepted the strategic business approach to problem solving and as a result design education is failing short of its potential. D-schools must begin to encourage the link between process and strategy, positioning their students as progressive thinkers in the emerging synergy between design and industry.

SYNTHESIS / HYBRID DESIGN THINKING

Business today admires the design process yet design does not embrace business strategy. When we look to understand a great business leader, such as someone like Steve Jobs, we praise him for his success due to the emphasis he places on creativity and innovation. His willingness and desire to take the risk and develop a product, such as the iPod, with no specific analytical or quantitative method for the assessment of its success, shows the emphasis he places on intuitive methods and his process based approach to business design. Similarly we can find example of designers who place emphasis on strategic business thinking, such as Karim Rashid, who has distinguished himself in his field due to his understanding of business strategy and alignment. As an industrial designer, Rashid has begun to distinguish himself with the creation of innovative interior environments, furthering the link between successful business and designed spaces. This leads to the conclusion that successful business leaders are creative and intuitive while successful designers are strategic and analytical.

The discipline of interior design is faced with the opportunity to embrace the current condition in which *design thinking* is becoming highly valued within the business setting. In order to further the success of collaboration between design and business, interior designers and interior design education, must equality embrace the realities and implication of business strategy and its integration with the design process. The future of design education, particularly within the design of environments, must encourage this synergy. Design thinking when used in collaboration with analytical business strategy provides for creativity and hybrid innovation.

2 Roger L. Martin, 6.

3 Tim Brown, "*Design Thinking,"* Harvard Business Review (June 2008).

Students currently pursuing a degree in environmental design are today provided with an opportunity to expand the perceived limits of their career possibilities. The economic climate has changed and has encouraged students to become flexible in both their future ambitions and the direction they pursue within their education. The opportunity to integrate *design thinking* with business strategy will allow current students to shape the future of both their careers and the limits in the scope of the discipline, giving them an edge within the competitive environment.

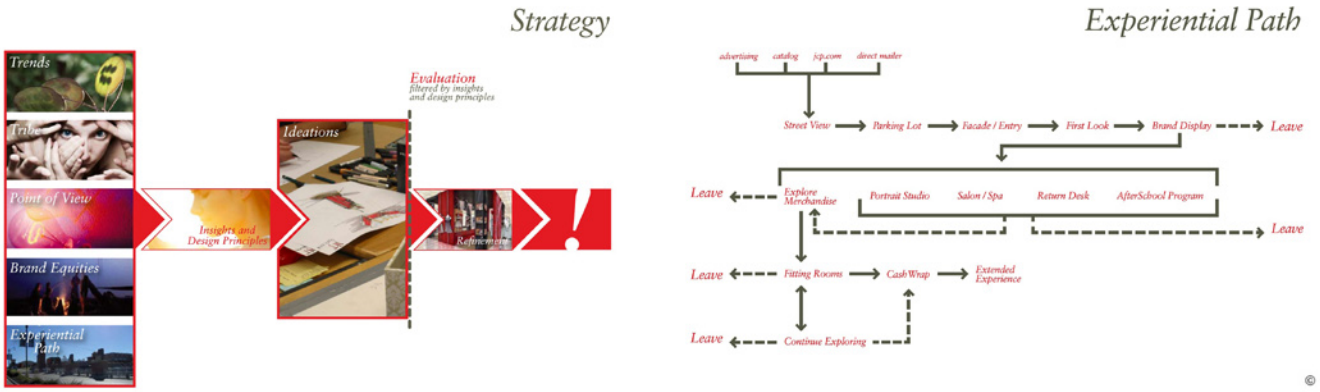

Figure 1: These diagrams, the outcome of a studio sponsored by a Fortune 500 company, illustrate the way in which design students interpret, organize, and present information.

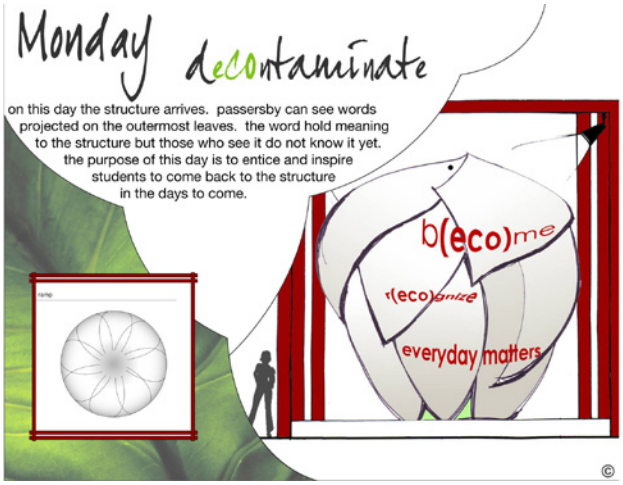

Figure 2: Providing two distinct outcomes for the same design challenge, the students of the sponsored studio illustrate how multiple solutions are successful through the implementation of design thinking and business strategy.

Figure 3: The students presented directly to executives of the Fortune 500 Company, leading to synergies for innovation between design thinking and business strategy.

REFERENCE LIST (CHICAGO)

Brown, Tim. 2009. *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation.* New York: Harper Business.

Brown, Tim. "*Design Thinking."* Harvard Business Review (June 2008).

Esslinger, Hartmut. 2009. *A Fine Line: How Design Strategies Are Shaping the Future of Business.* San Francisco: Jossey-Bass.

Martin, Roger L. 2009. *The Design of Business: Why Design Thinking is the Next Competitive Advantage*. Boston:Harvard Business Press.

Evidence-based Design: Conception and Application by Interior Design Students

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ABSTRACT

BACKGROUND

What is Evidence-based design? What is its purpose? Why is it an important component of interior design education? Evidence-based design (EBD) provides interior designers, architects, and their clients a way to make decisions through a process of gathering, evaluating and applying the best and most up-to-date evidence and research to affect the best medical outcomes for users (Iffrig, 2008). EBD uses current research, case studies and operational information to create guidelines for designing healthcare environments that foster healing, optimize quality performance and ensure safety. An evidence-based designer coupled with an informed client, makes design decisions based on the best information available from research, design project evaluations, and from information gathered from client operations (Hamilton, 2006). Properly designed health care environments have proven to reduce patient and staff stress, improve the quality of care and provide safe and effective delivery of health services (Ulrich, 1991).

Evidence-based design can mean different things to different people, so identifying its general parameters is important. The challenge is that EBD does not mean using a set formula approach to building design. Because every facility constructed requires a unique set of requirements and constraints, each must have a custom tailored approach (Kroll, 2005). The goal is for interior designers, architects and facility executives to intelligently adopt or adapt the research that has been conducted and apply it appropriately to the project on which they are working. By providing students with this applied knowledge, it introduces rigorous research into their problem solving process. which ensures these efforts result in great design that includes an efficient and quality work environment where healing and health are promoted. And as the quality of the design solution depends on the quality of research, the students' understanding of what and how to research topics relevant to a particular design project is vital. As potential designers, they will be able to offer informed design decisions to their clients, and it will enhance their contribution to the field. Evidence-based design provides clients tangible results, which are measureable and much more acceptable in the business world.

STUDENTS: COURSE REQUIREMENTS

Evidence-based design is an integral component of our upper division Interior Design studios. EBD skills are taught in a variety of ways, including awareness of the need for EBD, coupled with understanding the process through student-generated research and application. The Senior Thesis is a two-semester healthcare project, with the fall semester comprising the research and programming components, and the spring semester entailing the design development and specification phases. Students gain first-hand experience with evidence-based design by studying a variety of research methodology and data analysis through their required literature review. Their Senior Thesis project requirements entail conducting research through interviews and observational behavioral research at healthcare facilities to generate data to support evidence-based design decisions for their programming document.

NARRATIVE

What is Evidence-based design? What is its purpose? Why is it an important component of interior design education? Evidence-based design (EBD) provides interior designers, architects, and their clients a way to make decisions through a process of gathering, evaluating and applying the best and most up-to-date evidence and research to affect the best medical outcomes for users (Iffrig, 2008). An evidence-based designer coupled with an informed client, makes design decisions based on the best information available from research, design project evaluations, and from information gathered from client operations (Hamilton, 2005).

Evidence-Based Design (EBD) has its roots in healthcare design, as healthcare is characterized by the most complex and intimate service provided, with often painful, terrifying procedures that must be performed, with an unknown language by staff, and all this in a setting where life-and-death choices are constantly present. And the buildings are foreboding and the wayfinding daunting. With such a setting, designers have a responsibility to understand that effective building design can help reduce the stress experienced by patients, their families, and the staff caregivers serving them. Designers and healthcare stakeholders need to understand how design can help produce the desired healthcare outcomes and mitigate the undesirable, problematic results afflicting the industry, creating a *healing environment* versus a *sick* one. EBD provides another important intervention combined with a number of solutions to improve desired outcomes. EBD uses current research, case studies and operational information to create guidelines for designing healthcare environments that foster healing, optimize quality performance and ensure safety.

The desire to create healing environments can be traced back to the earliest use of medicine in Europe. The Ascelepieion hospital, built in ancient Epidaurus, Greece, in the sixth century BC, included patient rooms that faced eastward to promote healing, being the most revered healing center of the Classical world (Hamilton, 2008). While the design decision to orient patient rooms towards the sun was done intuitively, what basis are current healthcare facility design decisions being made?

Typically, most hospital design decisions have been generated more commonly from the design precedent and experience of the appointed architectural/interior design firm, experiences of the client, and new demands of technological changes – rather than solid research results (Hamilton, 2008). The pioneering study by Roger Ulrich (1984) initiated the change of this mode of thinking, with his study of the effects of hospital window views on recovery from abdominal cholecystectomy surgery. Ulrich's study focused on patients view to the outside versus viewing a brick wall, with findings that patients required less pain medication, experienced shorter stays and fewer negative evaluative comments in nurse's notes. This was the initiation a new wave of thinking about design of healthcare environments based on Evidence-Based Design. Over the last 20 years, as the healthcare industry has evolved, so has EBD, "evolving from other disciplines that have used an evidenced-based model to guide decisions and practices in their respective fields," (Stichler and Hamilton, 2008). According to Kirk Hamilton (2005), "the EBD process works especially well in the healthcare field, as it appeals to physicians, who practice based on medical evidence." EBD uses current research, case studies and operational information to create guidelines for designing healthcare environments that foster healing, optimize quality performance and ensure safety. Critical thinking is required to draw rational inferences about design information that seldom fits a unique situation precisely. Properly designed health care environments have proven to reduce patient and staff stress, improve the quality of care and provide safe and effective delivery of health services (Ulrich, 1991). Evidence-based design can mean different things to different people, so identifying its general parameters is important. The challenge is that EBD does not mean using a set formula approach to building design. Because every facility constructed requires a unique set of requirements and constraints, each must have a custom tailored approach (Kroll, 2005). The goal is for interior designers, architects and facility executives to intelligently adopt or adapt the research that has been conducted and apply it appropriately to the project on which they are working. By providing students with this applied knowledge, it introduces rigorous research into their problem solving process. which ensures these efforts result in great design that includes an efficient and quality work environment where healing and health are promoted. And as the quality of the design solution depends on the quality of research, the students' understanding of what and how to research topics relevant to a particular design project is vital. As

potential designers, they will be able to offer informed design decisions to their clients, and it will enhance their contribution to the field. Evidence-based design provides clients tangible results, which are measureable and much more acceptable in the business world, thus the *business case* can be made to convince the stakeholders of the validity of design recommendations. A recent Congressional briefing in Washington D.C. was held by ASID on the topic of evidenced-based design and its ability to improve quality care and to save money and resources. According to Michael Alin, Hon. FASID (2009), "…evidence has shown that good interior design in health care facilities has the power to help patients heal more quickly, reduce recovery times, prevent accidents and infections, provide support and comfort to families, and minimize the building's carbon footprint." Hospital systems throughout the country are building and renovating facilities that improve health, organizational, economic and sustainability goals through the use of evidenced-based practices. High-performance buildings address the human, environmental, economic and societal impact of the building, and interior designers play a large role in the process," says Michael Alin, Hon. FASID, executive director of ASID. "For example, evidence has shown that good interior design in health care facilities has the power to help patients heal more quickly, reduce recovery times, prevent accidents and infections, provide support and comfort to families, and minimize the building's carbon footprint."

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REFERENCES

(APA STYLE)

Kroll, K. (2005). Evidence Based Design in Healthcare Facilities. www.facilitiesnet.com/bom/article.asp?id=2425.

Hamilton, K. (2005). Four Levels of Evidence-Based Practice [Electronic Version]. *The AIA Journal of Architecture*. Retrieved 21/11/07 from http://www.aia.org/nwsltr_aiaj.cfm?pagename=aiaj_a_20041201_fourlevels.

Iffrig, A. (2008). Evidence Based Design in Architecture: Using Credible Research to Enhance Building Design. http://architecture.suite101.com/article.cfm/evidence_based_design_in_ architecture.

Hamilton, K.and Watkins, D. (2009). *Evidence-Based Design for Multiple Building Types.* John Wiley & Sons, New Jersey.

Ulrich, R. S. (1991). Effects of health facility interior design on wellness: Theory and recent scientific research. *Journal of Health Care Design*, 3: 97-109.

Utilizing Light as Material: A Case Study of an Interdisciplinary Student Collaboration Between Interior Design, Engineering and Art

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CRAIG WEDDERSPOON, M.F.A.
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ABSTRACT

PURPOSE

Effective teamwork among the many disciplines involved in design projects can be a challenge in the professional arena. It can be particularly difficult to provide students with a multi-disciplinary experience in which there is not only effective teamwork but a project which adds to their body of knowledge in a particular subject. We have become adept at providing teamwork experiences within the design studio using design students with the same level of experience, however, reaching across campus and involving students from other disciplines provides a unique challenge. This case study describes the framework and results of a team project between students within the disciplines of interior design, engineering, and art that used light as the connective design element.

FRAMEWORK

Given the difficulty of providing a singular course across different departments and colleges, the decision was made that this inaugural experience would be a joint project within the context of three existing courses. Three faculty members and courses were identified and, during the summer months, professors worked together to develop the project outline, sequence, and timing of events for the experience. Twenty-one interior design students (3 junior and 18 seniors) from one section of the Lighting for Interiors course, eighteen art students from three upper level sculpture courses and forty-five engineering students from the freshman introductory engineering course were combined into teams for a joint project. Three separate courses were conducted with the joint project shared by each course. Students were directed to investigate, explore, and develop design solutions for a variety of locations on campus using light as material or media.

RESULTS

Initial iterations of the project outline included a physical luminaire that the group would design and build and a design problem in which they would find and solve a poor lighting situation on campus. In the end, the project evolved into something entirely unexpected, a hybrid of the two ideas. Given that there is little precedent on our campus for this type of venture, collaboration among the faculty was critical. A joint eLearning site was established beyond the confines of the individual courses. All faculty presentations to the group were recorded using Tegrity and were uploaded to the eLearning site. In the event a student missed the group meeting they still had access to the information. The project outline, team roster and evaluation tools were included on the site. Student proposals were submitted to the site and accessible to each faculty member. Peer evaluation during different phases of the project was important in alerting faculty to problems or opportunities to facilitate the collaborative experience. Providing consistent, critical feedback to each team was something faculty struggled with throughout the process. This multi-departmental collaboration provides an example of an interdisciplinary approach to the teamwork experience within the context of the academic studio course. Project phase examples, technology utilized, successes, failures, and suggestions for future studios are presented.

NARRATIVE

INTRODUCTION / PURPOSE

Designers rarely work in isolation. The trend in the design profession over the last ten years has been toward multidisciplinary work. (Russ & Dickinson, 1999) Effective teamwork among the many disciplines involved in design projects can be a challenge in the professional arena. It can be particularly difficult to provide students with a multi-disciplinary experience in which there is not only effective teamwork but a project which adds to their body of knowledge in a particular subject. We have become adept at providing teamwork experiences within the design studio using design students with the same level of experience, but reaching across campus and involving students from other disciplines provides a unique challenge. This case study describes the framework and results of a team project between students within the disciplines of interior design, engineering, and art that used light as the connective design element.

LITERATURE REVIEW

"Collaboration is defined as a process by which disciplines work closely together." (Russ and Dickinson, 1999). Collaboration allows individuals from different backgrounds to generate unique solutions (Wagenknecht-Harte, 1989). "Dealing with people is the most important asset, and experience is the best way to enhance those skills." (Breton and Webb, 2002). "Experiential activities in the interior design studio are a primary way to prepare young designers for an effective transition to the workplace." An extensive body of literature exists which addresses teamwork, collaboration, and cooperative learning in education and professional practice. (Webb and Miller, 2006)

Students need to be exposed to other design professions prior to entering the field. Students who have an opportunity to work on collaborative projects will be more qualified as they enter the workforce. (Russ & Dickinson, 1999) Introducing students to collaborative projects forces them to interact with other design disciplines in order to complete a task, deal with communication problems, and learn how to optimize available talent (Bronzino et al, 1994). Collaboration increases design creativity, expedites the design process, generates greater amounts of work in a shorter period of time, and clarifies the task at hand (Denton, 1997; Ehrlenspeil et al, 1997; Walton, 1991).

There is great consensus on the value of collaborative experiences, the question is how do we achieve it within the academic setting?

THE PROCESS

In the spring of 2009, representatives from interior design, engineering and art met to discuss the possibility of a collaborative course.

In the initial meeting it was decided that providing a single course populated by students from the respective majors would be too difficult due to various institutional obstacles. The committee determined for this inaugural experience to utilize three existing courses and incorporate a team project into each course. The teams would be made up of one to two students from each discipline and they would work on the project outside of the normal class time for the majority of the semester.

Three courses and instructors were identified and, during the summer months of 2009, professors worked together to develop the project outline, sequence, and timing of events for the experience. Twenty-one interior design students (3 junior and 18 seniors) from one section of the Lighting for Interiors course, 18 art students from three upper level sculpture courses and 45 engineering students from the freshman introductory engineering course were combined into teams for a joint project.

Initial iterations of the project outline included 1) a physical luminaire that the group would design and build and 2) a design problem in which they would find and solve the worst lighting situation on campus. In the end, the project evolved into something entirely unexpected, a hybrid of the two ideas.

Given that there is little precedent on our campus for this type of venture, collaboration among the faculty was critical. Faculty first, had to specify a group meeting time and location. None of the three classes overlapped. It became necessary to add an evening meeting time in a space large enough to accommodate the entire group.

A joint eLearning site was established beyond the confines of the individual courses. All faculty presentations to the group were recorded using Tegrity and were uploaded to the eLearning site. In the event a student missed the group meeting they still had access to the information. The project outline, team roster and evalu-

ation tools were included on the site. Student proposals were submitted to the site and accessible to each faculty member.

The joint project was announced in each of the courses on the first day of class and the first group meeting took place within the week. The first task for each team was to walk around campus and find the worst lighting situation on campus (interior or exterior). The students then had to meet and agree on a single location, a potential solution and submit their initial proposal.

Faculty met for several hours to review the proposals and potential sites making note of any overlap in location. Out of 21 teams, only a few selected the same site. A couple of groups had to be either redirected or asked to choose another location and resubmit their proposal.

The students then met and refined their proposals, built models, and experimented to determine the appropriate lighting for each situation. Mid-semester the teams were convened to demonstrate their models and present a more extended proposal. Several students dropped their respective courses, while a couple of teams had substantial issues regarding teamwork. Faculty made the decision to move a few people to different teams and to reduce the number of teams from 21 to 18.

Originally faculty had hoped that each team would build and temporarily install their lighting solutions but the scope grew beyond the original expectations. It was decided that the students would refine their proposals and make a final design presentation utilizing Microsoft Powerpoint to faculty, department heads, deans and guests, including the head of UA facilities and the Landscape Architect.

Peer evaluation during different phases of the project was important in alerting faculty to problems or opportunities to facilitate the collaborative experience. Providing consistent, critical feedback to each team was something faculty struggled with throughout the process. With the exception of the group meetings during the first six weeks of the semester, faculty only saw the students in their individual courses and could only address an entire team via email.

SUMMARY

In the end, despite our lack of experience in directing this type of collaborative project as faculty and despite the hindrance of three separate classes, the students performed well. There was evidence of learning, not only about the subject matter of light, but in how to work together as a team.

Using a simple rubric to evaluate each team and individual performance, we were able to determine a final grade.

- 10% Original assignment – identifying a spot on campus which could be improved through lighting
- 20% Collaborative Aspect – how well did they participate and interact as a group
- 20% Deadlines – did the team meet the deadlines
- 50% Presentation – written initial proposal, concept model, final presentation

Faculty selected the top four teams based upon identification of a site, creativity of the solution and clarity of the presentation. The top two teams (12 students) have been invited to present at the Lightfair Conference in Las Vegas in May 2010. Students from all four teams will also take a field trip to the new Lighting Institute sponsored by DayBrite in Tuepelo, MS. in April of 2010.

Faculty also identified a number of ways to improve the experience for not only the students but the faculty who oversee the project.

- Despite the institutional obstacles, find a way to create a single course
- Populate the course with all freshmen or all upper classmen
- Take advantage of grant money available on campus and through IALD
- Incorporate team building exercises at the beginning of the project
- Utilize and encourage better use of technology

There is an increasing awareness of and need for effective collaborative efforts among varied disciplines

engaged in design. "Many examples may be found of teamwork and interdisciplinary work, some more or less effective in output and overall experience." (Ankerson & Bonner, 2009). Although students experienced a number of the common problems associated with team projects, they also seemed to recognize how valuable the experience was in preparing them for the real world.

The goal is not only to create the opportunities for students to experience the design process within collaborative, multi-disciplinary teams but to prepare students with a successful and rewarding experience. We need to teach them creative problem solving, space planning and AutoCAD but also how to be good leaders and good team members as well.

REFERENCES

Ankerson, Katherine S. & Borner, William (2009). "Effective Collaboration in Interdisciplinery Teams: Healthcare Design Studio as Vehicle." Proceedings of the Interior Design Educators' Council International Conference. St. Louis, MO., Mar. 25-28,

Breton, M. & Webb, J.D. (2002). "Teamwork: One firm's perspective." Proceedings of the Interior Design Educators' Council Southwest Regional Conference. Beaumont, TX., 24

Bronzino, J.D., Ahlgren, D.J., Chung, C., Mertens, J.D. & Palladir, J.L. (1994) "Design and Teamwork: A Must for Freshmen." IEEE Transactions on Education. 37(2), 184-188.

Denton, H.G. (1997). "Multidisciplinary team-based project work: Planning Factors." Design Studios. 18, 155-170.

Ehrlenspiel, K., Giapoulis, A. & Gunther, J. (1997). "Teamwork and Design Methodology: Observations About Teamwork in Design Education." Research in Engineering Design. 9, 61-69.

Russ, Randall & Dickinson, Joan. (1999)"Collaborative Design: Forming, Storming, and Norming." Journal of Interior Design. 25(2), 52-58.

Wagenknecht-Harte, K. (1989). Site + Sculpture: The Collaborative Design Process. New York: Van Nostrand Reinhold.

Walton, T. (1991, Spring). "The Hallmarks of Successful Design Teams." Design Management Journal. 2, 5-9.

Webb, Jennifer D. & Miller, Nancy G. (2006). "Some Preparation Required: The Journey to Successful Studio Collaboration." Journal of Interior Design. 31(2), 1-9.

Affording PREceptions as an Interior Design Methodology

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ABSTRACT

How do users of interior spaces know how to use them efficiently? What factors or experiences can be applied from past experiences to assist in such decision-making processes? More specifically, how do pedestrians seek their way through unfamiliar, complex environments? Are prior experiences influential determinants of success? This presentation would summarize key literature related to movement through unfamiliar spaces and introduce the idea of "environmental PREception," an important addition to the designer's understanding of spatial navigation.

Gibson offers one partial explanation as to how people cope with unfamiliar environments, in his frequently cited *Theory of Affordances* (Gibson, 1977). He describes "affordances" as clues in the environment that indicate possibilities for action. Although perceptual psychologists would debate the idea, Gibson maintains these clues are perceived in a direct, immediate way with no sensory processing. Gibson argues spatial behavior is influenced by interactions between two factors: physical components of a space and the people who use them. Environmental components may or may not provide "affordances" (accommodation or facilitation) of desired actions; and may or may not communicate the presence of these affordances (accommodations). Similarly, users have to seek specific affordances and interpret them. The affordances presented by a space have a impact on user conceptions of possible actions in that space. Norman (1999) cautions, "the most important design tool is that of coherence and understandability, which comes through an explicit, perceivable conceptual model. Affordances specify the range of possible activities, but affordances are of little use if they are not visible to the users. Hence, the art of the designer is to ensure that the desired, relevant actions are readily perceivable."

Highly visible, understandable affordances prepare users to deal with new environments. But, are there mechanisms to prepare users for complex experiences in advance? Expanding on Gibson's theory of affordances, Norman (1999) recommends that designers emphasize building features that will be logical and familiar to building users—what he calls "conventions." Norman does not dwell on how such generalizations are defined. However, beginning in the late 1960s, geographers have popularized the idea of environmental "schemata." These are summaries of complex spatial experiences, expressed in the form of a diagram, schematic, map or other semi-abstract graphic representations. (Lynch & Rivkin, 1959; Stea, 1970) As exemplified by the "mental mapping" work of Kaplan (1973), these visual summaries are used extensively to record what users remember after their experiences in complex spaces. Such graphic records have been largely overlooked as means of exploring what users expect to find in the complex spaces they encounter in the future.

The presentation begins with a review of Gibson's *Theory of Affordances* and contributions to the literature on schemata and mental mapping. This foundation introduces the idea of user PREceptions-- graphic summaries of expected perceptual experiences, prior to actual environmental exposure. The logic and value of such a methodology would be explained. Given the inherent stresses, complexity, potential unfamiliarity and other navigational challenges posed by airports, this setting would be discussed as a case study for application of this tool by interior designers.

NARRATIVE

REVIEW OF THE LITERATURE

Tolman (1948) introduced cognitive maps by comparing their relationship in rats and men. Characteristics of cognitive maps are based, from previous experiences and learning (Evans & Pezdek, 1980; Presson & Hazelrigg, 1984; Thorndyke & Hayes-Roth, 1982). Knowledge of spatial layout is acquired through observation of the environment or navigation (Presson & Hazelrigg, 1984).

Maps, among an assortment of methods, communicate information and skill, and introduce new audiences to consider and utilize the large-scale environment (Downs & Liben, 1993; Gauvain, 1993a, 1993b; Uttal, 1999). Maps play a role in cognitive map formation, which Downs and Stea define as "the representation of the geographical environment as it exists within a person's mind" (Downs & Stea, 1977). People think about their world through exposure to representations of their world, not only their direct physical experience (Liben, 1991; Liben & Downs, 1991).

Thorndyke and Hayes-Roth (1982) claim through direct experience of an environment one is able to produce a knowledge of the map which surveys the environmental experience.

Lynch (1960) theorized that individuals familiar with urban space concentrate on specific landmarks for navigation, not on paths. Appleyard (1970, 1976) continued Lynch's arguments through a comparison of maps drawn by individuals who lived in a city for less than a year; their maps were dominated by sequences of events and path usage. The maps of long-term residents emphasized boundaries and landmarks. Devlin (1976) additionally supports that newcomers focused on the same pathways six weeks after arriving to the new space, but showed an increase in landmark identification. Devlin indicates the initial paths, based upon initial structures, were elaborated on with continued setting experience.

OPPOSING THEORIES OF AFFORDANCES
GIBSON: AFFORDANCES

Gibson defines affordance as:

"A specific combination of the properties of its substance and its surfaces taken with reference to an animal […] what it offers animals, what it provides or furnishes, for good or ill" (Gibson, 1977, pg. 68). "Whether or not the affordance is perceived or attended to will change as the need of the observer changes but, being invariant, it is always there to be perceived" (Gibson, 1977, pg. 78). "The verb to afford is found in the dictionary, but the noun affordance is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment" (Gibson, 1986, pg. 127).

In The Ecological Approach to Visual Perception, Gibson addresses how animals perceive the environment: through the animal's perception of affordances. Gibson's Theory of Affordances is descriptive in nature: it describes how animals perceive their environment.

NORMAN: PERCEIVED AFFORDANCES

Donald Norman, took Gibson's Theory of Affordances and interpreted it in a prescriptive nature: Norman states there are guidelines as to what objects should and should not afford. In Norman's book, The Psychology of Everyday Things (Norman, 1988), Norman is concerned that everyday objects should be designed, rather than focus on mandatory, specific, and descriptive nature. The development of his methodology culminates in two design-for-x methodologies (design-for-usability and design-for-error); however, Norman stops short of stating that the incorporation of affordances is fundamental to design.

Norman defines an affordance as both actual and perceived properties; when combined, an affordance emerges as a relationship that holds the object and the individual that is acting on the object (Norman, 1999). This view is in conflict with Gibson's idea of an affordance:

"…those fundamental properties that determine just how the thing could possibly be used. […] Affordances provide strong clues to the operations of things. Plates are for pushing. Knobs are for turning. Slots are for inserting things into. Balls are for throwing and bouncing. When affordances are taken advantage of, the user knows what to do just by looking: no picture, label, or instruction is required" (Norman, 1988, pg. 9).

DIFFERENCES BETWEEN GIBSON AND NORMAN

"The notion of affordance and the insights it provides originated with J. J. Gibson, a psychologist interested

in how people see the world. I believe that affordances result from the mental interpretations of things […] My view is somewhat in conflict with the views of many Gibsonian psychologists…" (Norman, 1988, pg. 219).

Norman's Affordances, are prescriptive in nature. Characteristically:

Perceived properties may or may not exist

Properties of affordances include suggestions or clues

Dependent of actor's culture, experience or knowledge

Can make an action easy or difficult

Gibson's Affordances are descriptive in nature. Characteristically:

Possibilities in the environment in relation to the action of an actor

Independent of the actor's culture, experience, knowledge or perception level

Affordance either exists or does not exist

IMAGE SCHEMATA

Image schemata, developed by Johnson (Johnson, 1987), proposed a recurring pattern grounded in people's experience; it assists them to structure space and know what to do with the experience. Raubal, Egenhofer, Pfoser, and Tryfona (Raubal, Egenhofer, Pfoser, & Tryfona, 1997) applied image schemata into the category cognitive models of space; built upon people's experiences for a particular environment. Further literature shows numerous cognitive categorizations of space (Freundschuh & Engenhofer, 1997). Six kinds of spaces are identified by Couclelis and Gale (Couclelis & Gale, 1986): pure Euclidean, physical, sensorimotor, perceptual, cognitive, and symbolic space. A disparity exists between perceptual space (objects apprehended through the senses at one place and time) and cognitive space (sensory images of objects linked to elements of cognition, such as belief systems). Resolving these differences becomes a semantic issue; both conceptual spaces have a connection.

PRECEPTIONS

Environmental PREception is based upon a projected mental map of a specific environmental space. It utilizes schemata based upon projected mental maps and previous, although not always similar, user experiences. The foundation of PREceptions asks the subjects fundamental questions such as: "What should you expect to be in the space?," "What will be in the space?," and "What could potentially be in the space?"

The purpose is to examine the correlations between prior travel experience and amount of recall of travel experiences. Given the inherent stresses, complexity, potential unfamiliarity and navigational challenges posed by airports, this particular environmental setting provides the opportunities for designers to observe, identify, and resolve the existing design issues of a environment in which a specific order of tasks are required to be completed before initiating the next task.

RESEARCH QUESTIONS FOR THIS STUDY

How do airport users innately understand how to maneuver and circulate through an unknown space? What factors or experiences can airport users apply from past experiences to assist in decision making? How are these individual tasks developed into schemata which will be used in the future to make similar decisions between spatial and environmental cognition? (Kaplan, 1973).

CONCEPTUAL FRAMEWORK

This study addressed the relationship between affordances of the built environment and the linkages of the PREception cognitive maps drawn from one's anticipation and actions through an airport.

The airport environment provides a foundation of ordered events through which one has to progress; although wayfinding and circulation through an airport is identifiable, opportunities exist to get off course (Edwards, 2005). Raubal et al. (1997, pg. 86) described the airport as "a special case of moving though a building. […] Making wayfinding easier for passengers at an airport requires to design airport space in such a way that it facilitates people's structuring processes of tasks."

SUBJECTS

One interior design program in a large Midwestern university was the focus of this study. The subjects, and were preparing to embark on an international field study.

The participants had a variety of travel experiences, ranging from none to traveling internationally multiple times a year. The demographic age fell within a range of three years. Subjects were identical academic levels within the same academic program. The gender of the subjects, as naturally occurred among volunteers, was identical.

RESEARCH VARIABLES

In this particular study, the following variables were considered in the analysis and computation of information:

Amount of travel experience

Age of the subject

Home airport (self-identified)

Whether they have flown by themselves or in groups

Whether they have flown internationally or domestically

MATERIALS AND PROCEDURES

The procedures for this study included the collection of two surveys and three mental maps (expectations or recollections of environmental experiences) drawn by the participants. The first survey was conducted two weeks prior to the international field study to collect anticipated expectations of their journey through the airport. At this time, participants were asked to draw a map of their journey through the airport. Two weeks later, after completing the journey through the airport, participants were asked to draw a second map of their route through the airport, annotating any spatial experiences they encountered. The second survey was conducted two weeks after the completion of their journey, reflecting upon recalled experiences and noting if pre-trip expectations were fulfilled. A post-trip mental map was also drawn upon the completion of their journey. The final map was used to compare the expectations and experiences of the participants' journey through the airport.

LIMITATIONS

All subjects were the same gender; within a close age range; in the same academic program. International travel, for this case, was within North America.

EDUCATIONAL IMPLICATIONS

This study shows how designers (especially designers-as-subjects) have the opportunity to afford the environmental properties and protocol of spaces. Hopefully, this experience utilizing designers-as-subjects can recognize the importance of the concept of affordances to designers, as well as utilize a theory of Affordances, from Gibson or Norman.

FUTURE RESEARCH

Possibilities for future research include: the development of a cross-section of sampling from other design disciplines; exploration of additional POSTceptive maps (beyond two weeks); comparison of maps from airports of different sizes; comparison of maps from cities with multiple airports; and comparison of domestic to international flights from the same airport.

REFERENCE LIST (APA)

Appleyard, D. (1970). Styles and methods of structuring a city. *Environment and Behavior, 2*(1), 100-116.

Appleyard, D. (1976). *Planning a pluralistic city*. Cambridge, MA: MIT Press.

Couclelis, H., & Gale, N. (1986). Space and spaces. *Geografiske Annaler, 68B*, 1-12.

Devlin, A. S. (1976). The small town cognitve map: adjusting to a new environment. In G. T. Moore & R. G. Golledge (Eds.), *Environemental Knowing*. Stroudsburg, PA: Dowden, Hutchinson & Ross.

Downs, R. M., & Liben, L. S. (1993). Mediating the environment: communicating, appropriating, and developing graphic representations of place. In R. H. Wozniak & K. Fischer (Eds.), *Development in context: Acting and thinking in specific environments* (pp. 151-181). Hillsdale, NJ: Lawrence Erlbaum Associates.

Downs, R. M., & Stea, D. (1977). *Maps in minds : reflections on cognitive mapping*. New York: Harper & Row.

Edwards, B. (2005). *The Modern Airport Terminal: New approaches to airport architecture* (2nd ed.). London: Spon Press.

Evans, G. W., & Pezdek, K. (1980). Cognitive mapping: Knowledge of real-world distance and location information. *Journal of Experimental Psychology: Human Learning and Memory, 6*, 13-24.

Freundschuh, S., & Engenhofer, M. (1997). *Human conceptions of spaces: implications for geographic information systems*: National Center for Geographic Information and Analysis.

Gauvain, M. (1993a). Spatial thinking and its development in sociocultural context. In R. Vasta (Ed.), *Annals of child development* (Vol. 9, pp. 67-102). London: Jessica Kingsley Publishers.

Gauvain, M. (1993b). The development of spatial thinking in everyday activity. *Developmental Review, 13*, 92-121.

Gibson, J. J. (1977). The theory of affordances. In R. E. Shaw & J. Bransford (Eds.), *Perceiving, acting, and knowing* (pp. 67-82). Hillsdale, NJ: Lawrence Erlbaum Associates.

Gibson, J. J. (1986). The Theory of affordances. In J. J. Gibson (Ed.), *The ecological approach to visual perception* (pp. 127-143). New York: Psychology Press.

Johnson, M. (1987). *The body in the mind: the bodily basis of meaning*. Chicago: University of Chicago Press.

Kaplan, S. (1973). Cognitive maps in perception and thought. In R. M. Downs & D. Stea (Eds.), *Image & environment: Cognitive mapping and spatial behavior* (pp. 63-86). Chicago: Aldine.

Liben, L. S. (1991). Environmental cognition thorugh direct and representational experiences: a life-span perspective. In T. Garling & G. W. Evans (Eds.), *Evironment, cognition, and action* (pp. 245-276). New York: Oxford University Press.

Liben, L. S., & Downs, R. M. (1991). The role of graphic representation in understanding the world. In R. M. Downs, L. S. Liben & D. S. Palermo (Eds.), *Visions of aesthetics, the environment, and development: The legacy of Joachim Wohwill* (pp. 139-180). Hillsdale, NJ: Lawrence Erlbaum Associates.

Lynch, K. (1960). *The image of the city*. Cambridge [Mass.]: Technology Press.

Lynch, K., & Rivkin, M. (1959). A walk around the block. In H. M. Proshansky, W. H. Ittelson & L. G. Rivlin (Eds.), *Environmental psychology: Man and his physical setting* (pp. 631-643). New York: Holt, Rinehart and Winston.

Norman, D. A. (1988). *The design of everyday things*. New York: Basic Books.

Norman, D. A. (1999). Affordance, conventions, and design. *Interactions, 6*(3), 38-42.

Presson, C. C., & Hazelrigg, M. D. (1984). Building spatial representations through primary and secondary learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 10*, 716-722.

Raubal, M., Egenhofer, M. J., Pfoser, D., & Tryfona, N. (1997). Structuring space with image schemata: Wayfinding in airports as a case study. *Conference On Spatial Information Theory '97, 1329*, 85-102.

Stea, D. (1970). Space, territory and human movements. In H. M. Proshansky, W. H. Ittelson & L. G. Rivlin (Eds.), *Environmental psychology: Man and his physical settings* (pp. 37-42). New York: Holt, Reinhard, and Winston.

Thorndyke, P. W., & Hayes-Roth, B. (1982). Differences in spatial knowledge acquired from maps and navigation. *Cognitive Psychology, 14*(4), 560-589.

Tolman, E. C. (1948). Cognitive maps in rats and men. *Psychological Review, 55*, 189-208.

Uttal, D. H. (1999). Seeing the big picture: map use and the developement of spatial cognition. *Developmental Science, 3*, 247-286.

Voices: Documenting Multiple User Group Interpretations

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ABSTRACT

End users of spaces vary in many ways, including but not limited to age, gender, culture, education, race, physical and mental ability, and socio-economic status. The result is that the same built environment can simultaneously have multiple meanings to a range of people and can impact each of them differently. Often, the voices of certain user groups speak more loudly, but this does not diminish the importance of those who are silent or may speak more softly.

Through this undergraduate interior design course, "Designing for Human Behavior", students gained an understanding and awareness of human factors and how to apply theories of human behavior. In order to provide students with an opportunity to first-hand explore the complex relationship between humans and the built environment, students developed short documentaries that culminated in a film series titled "Voices". This dynamic approach helped students understand complicated settings with diverse human dimensions and multiple points of view. The qualitative exercise exposed students to a new form of dialogue that combines moving image with interpersonal and oral communication. It became a learning tool for the development of observation, interviewing, and critical listening skills; all of which are essential to professional success in the field of interior design.

In pairs, students collaborated to select a topic with the intention of documenting multiple user group interpretations of a single space, with the option to lend a voice to a minority or unspoken point of view. To accomplish this, students developed a character matrix and began weaving character threads to diagrammatically understand the relationships and importance of certain factors and where more diversity may be necessary. Literary sources and research studies provided them with the background knowledge, prevalent issues, and current trends. They were asked to create a graphic storyline as an organizational tool to evolve the sequence of scenes; and finally, written interview questions provided a framework for documenting the points of view they set out to capture. Hardware was comprised of small handheld digital cameras and laptops, and the software used was iMovie.

Outcomes demonstrated the students' success in using the multi-media format to accomplish two objectives: firstly, to document varied interpretations of multiple user groups in the built environment, and secondly, to synthesize their comprehension of the foundations of environmental psychology within a real world setting. The breadth and depth of topics for the student documentary explorations ranged from the democracy of co-op living environments, the gentrification of a low-income neighborhood, the spontaneous sense of community in tailgating, to the emotional attachment to spaces formerly occupied by loved ones who have passed. Through the final viewing of the "Voices" series, the class as a whole gained a greater understanding of social and cultural norms and how they varied from their own. The students' investigations built a greater awareness of a variety of human factors and how these may impact user needs and perceptions in everyday places and situations.

NARRATIVE

INTRODUCTION

"Designing for Human Behavior" is a core curriculum course with the main objective of instilling interior design students with an understanding and awareness of human factors and how to apply theories of human behavior. The course is structured with an introduction to the foundations of environmental psychology, followed by a weekly focus on various market sectors involving discussions, case studies, and expert speakers.

Like in many courses, students were asked to synthesize a barrage of new information, so this semester project provided them with an opportunity to first-hand explore the complex relationship between humans and the built environment. Over the course of nine weeks, students developed 10-15 minute documentaries that culminated in a film series titled "Voices". This dynamic approach helped students understand complicated settings with diverse human dimensions and multiple points of view. The qualitative exercise exposed students to a new form of dialogue that combines moving image with interpersonal and oral communication. It became a learning tool for the development of observation, interviewing, and critical listening skills; all of which are essential to professional success in the field of interior design.

GETTING STARTED

End users of spaces vary in many ways, including but not limited to age, gender, culture, education, race, physical and mental ability, and socio-economic status. The result is that the same built environment can simultaneously have multiple meanings to a range of people and can impact each of them differently. Often, the voices of certain user groups speak more loudly, but this does not diminish the importance of those who are silent or may speak more softly. In pairs, students collaborated to select a topic with the intention of documenting multiple user group interpretations of a single space, with the option to lend a voice to a minority or unspoken point of view.

Students were encouraged to build upon topics and types of spaces explored in class, which posed some difficulty on when to issue the semester project. Because it is time-intensive, it should be issued early in the course but ideally after the fundamentals are covered. Consideration could also be given to providing students with a list of approved topics from which to select. When left to their own devices though, students inevitably propose challenging subjects and often ones that are interesting or personal to them. This meant that many students had an emotional connection to their subjects, positively influencing the process. Although the selection of an interior space was stressed, a number of students explored much broader, even urban settings. This became a learning point for students to understand that the principles of human interaction are applicable to any scale or setting, demonstrating an even greater relevance to the exercise. Students' written proposals described their topic, the voices they intended to capture, their audience and tone, as well as references.

DEVELOPING A CHARACTER MATRIX

Students were asked to represent a full range of voices in contrast to one another, or to bring a minority voice to the forefront. To accomplish this, they developed a character matrix and began weaving character threads to diagrammatically understand the relationships and importance of certain factors and where more diversity may be necessary (Figure 1). The matrix required all characters featured in the documentary to be described in terms of life cycle, gender, race/ethnicity, physical and mental ability, level of education, culture, socio-economic status, or other categories deemed appropriate by the students. These diagrams were revisited throughout the making of the documentary. At first, the characters were defined but not yet identified; however, students used the matrix as they progressed as a guide to ensure they represented the desired range of individuals. There was an understanding though that all categories may not be relevant to each documentary and that diversity may be defined differently for each project.

RESEARCHING SOURCES

In the selection and development of topics, students conducted literature reviews to determine what information existed that may inform their process. Literary sources and research studies provided them with the background knowledge, prevalent issues, and current trends necessary to evolve and bring credibility to their approach. Undergraduates struggled most at this phase, not fully understanding the need and purpose of a working bibliography. Once students were introduced to resources such as the web-based InformeDesign database, created by University of Minnesota and initially sponsored by ASID, they became more comfortable but

relied heavily on online resources. Future courses will participate in a library tutorial and a greater portion of the course will be dedicated to understanding research, as well as its importance and application.

ILLUSTRATING THE STORYLINE

After presenting their topics, character matrix, and source findings, students created a graphic storyline as an organizational tool to assemble the sequence of scenes (Figures 2-3). Using words and images, students illustrated the progression of events, interviews, and other film segments they planned to use to convey their plot. This step proved extremely helpful to design students who are traditionally accustomed to working with visual content but may not have worked with video in the past. It was also beneficial to the instructor to ensure students were setting up a framework to capture their topics in a logical manner. Some restructuring was required as students progressed into the filming phase, but the storyline served as their roadmap. This step also offered students the chance to develop a graphic style that reflected their documentary's tone that was later translated into title, credits, and transitions.

LEARNING TO INTERVIEW

Students were asked to conduct one-on-one or group interviews to gather information in order to test theories developed based on the course content. A questionnaire for each interview was prepared using guidelines set out in the course textbook, *Place Advantage*. In future courses, *Research-Inspired Design: A Step-by-Step Guide for Interior Designers*, which has a chapter dedicated to interviews, will be used as a supplemental text. Interviewers utilized open and close-ended questions aimed at end users, varying in formality and structure; and client, expert, and professional interviews were incorporated whenever possible. In advance, students were asked to consider who would conduct the interview, where it would take place, the phrasing and tone of questions, and even their appearance. Consent forms were also discussed and required from each interviewee. A guest speaker who regularly uses the documentary format explained how to ask probing questions and to use silence as a technique. In the future, a class period devoted to learning and practicing interviewing would also be beneficial to students to allow them the opportunity to become comfortable with the equipment and gain confidence in their new-found skills.

DEFINING THE LOGISTICS

Pocket-size Kodak Zi6 cameras were a low-cost investment at approximately $160 each, which meant several could be purchased to accommodate the 16 student class. One complaint was that this camera model does not accept an external microphone, which made filming more challenging in noisy areas, and tripods were also necessary. Overall though, the HD quality videos were appropriate for this purpose and the sound quality was acceptable. The point-and-shoot nature of the camera was simple and easy for the students to use, although the software was a point of tension for some. Several believed iMovie was over-simplified and did not let them perform complex editing techniques allowed by other programs such as Adobe Premier, while others were overwhelmed with even the entry level software. A tutorial was provided, but in retrospect it should have been offered later in the process allowing students to learn editing while using their own footage.

UNDERSTANDING THE OUTCOMES

This exercise proved challenging for some students with already heavy course loads, even though interim deadlines or milestones were imposed. Generally speaking, students who invested more energy into the early stages produced the most successful documentaries. Weaknesses of others could be traced back to gaps or underdeveloped areas already visible in early assignments. Although students received written comments from their instructor throughout, more in-class time could have been devoted to presentation of work in progress, providing more incentive, as well as discourse amongst their peers.

The final documentaries demonstrated the students' success in using the multi-media format to accomplish two objectives: firstly, to document varied interpretations of multiple user groups in the built environment, and secondly, to synthesize their comprehension of the foundations of environmental psychology within a real world setting. The breadth and depth of topics for the student documentary explorations ranged from the democracy of co-op living environments, the gentrification of a low-income neighborhood, the spontaneous sense of community in tailgating, to the emotional attachment to spaces formerly occupied by loved ones who have passed. Through the final viewing of the "Voices" series, the class as a whole gained a greater understanding of social and cultural norms and how they varied from their

own. The students' investigations built a greater awareness of a variety of human factors such as, but not limited to, human life cycles, gender, and ranges in physical ability and how these may impact user needs and perceptions in everyday places and situations.

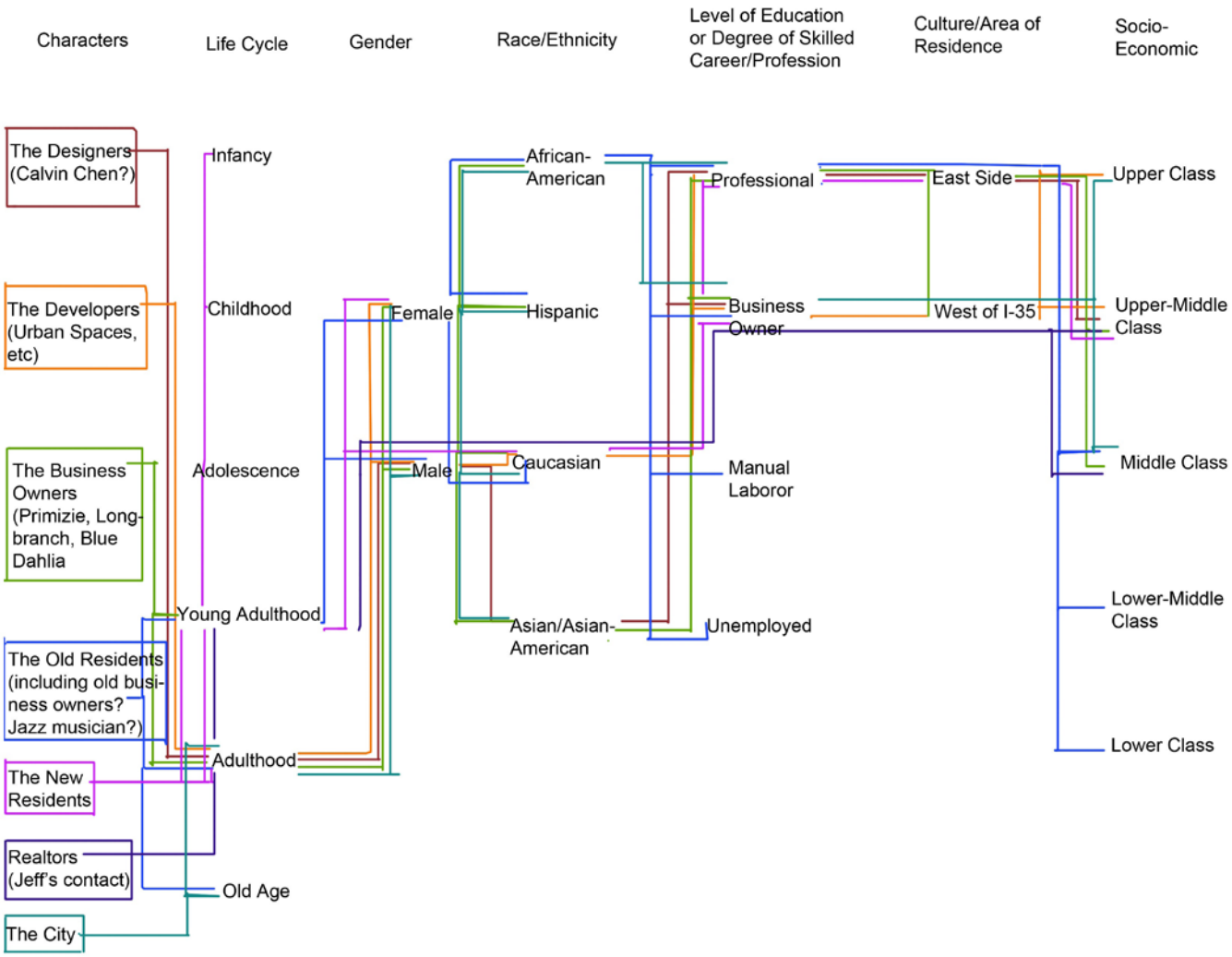

Figure 1: Character Matrix Student Example

Figure 2: Storyline Student Example

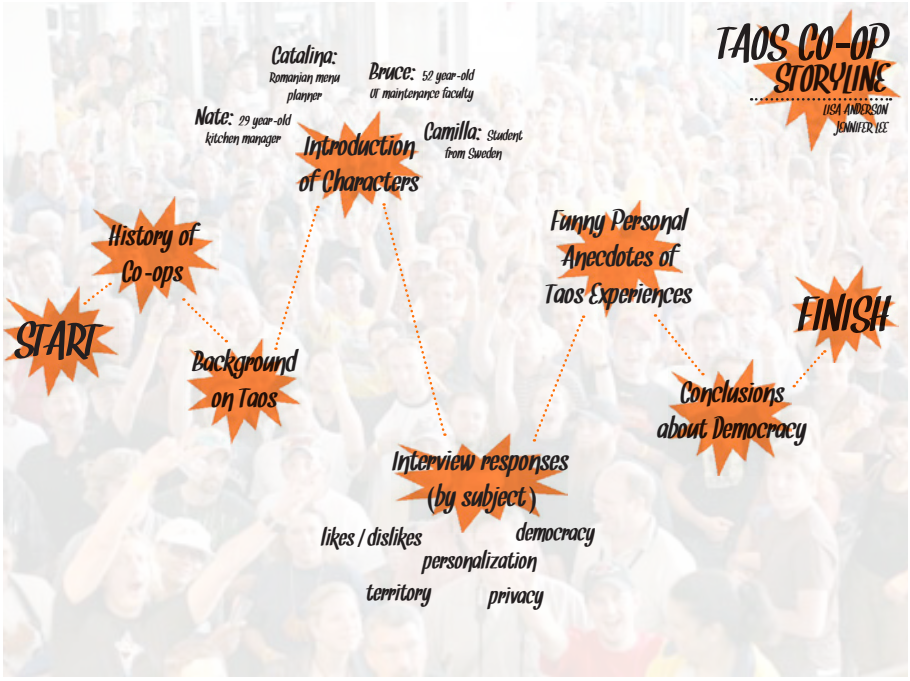

Figure 3: Storyline Student Example

REFERENCE LIST (MLA)

Aufderheide, Patricia. *Documentary Film: A Very Short Introduction*. New York, New York: Oxford University Press, 2007. Print.

Augustin, Sally. *Place Advantage: Applied Psychology for Interior Architecture*.Hoboken, New Jersey: John Wiley & Sons, Inc., 2009. Print.

InformeDesign. University of Minnesota and ASID, 2002. Web. 10 Oct. 2009

Plowman, Tim. "Ethnography and Critical Design Practice." *Design Research*. Ed. Brenda Laurel. Cambridge, Massachusetts: The MIT Press, 2003. 30-38. Print.

Robinson, Lily, and Alexandra Parman. *Research-Inspired Design: A Step-by-Step Guide for Interior Designers*. New York, New York: Fairchild Books, 2010. Print.

Developing interior design student studio projects through site assessment and analysis

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ABSTRACT

Interior designers work within a preexisting framework of site and building. The challenges of designing with, rather than imposing on, an existing structure are a central part of the design process. In studio classes, interior design students practice design techniques and create projects that respond to a site and its users' needs. Historic preservation projects can compound the challenges of working with an existing structure, since designers must also interpret the building through different time periods and spatial uses. The Council for Interior Design Accreditation's eighth standard requires that "[e] ntry-level interior designers apply knowledge of interiors, architecture, art, and the decorative arts within a historical and cultural context" (CIDA 2008, 16). Interior design programs typically teach design history through slide and lecture based courses (Beecher 1999; Beecher 1998). Prior studies have looked for methods to integrate design practices into history courses, but instructors are limited by the format and class time available (Beecher 1998). Interior design students address design problems and develop solutions in studio courses; therefore, if they "use historical precedent to inform design solutions" (CIDA 2008, 16), they will do so in project-based, studio classes. For a sophomore studio project set in a local historic downtown building, a multi-step inquiry and analysis sequence guided students through research and site analysis before they began designing a new use for the site. The format of this studio project is applicable to interior design projects involving an existing structure.

Students' engaged their historic downtown studio project by researching, assessing, analyzing, designing, and reflecting. Bloom's revised taxonomy (Anderson & Krathwohl, 2001) provided a framework to structure the project into seven objectives covering a range of learning and knowledge types. Teams of students began by researching and presenting on the history of the site, region, and historic preservation movement. Then, they explored the site by sketching and measuring for plans. The hands-on experience gained at the site was followed by individual analysis of existing spatial features. Students systematically analyzed each phase of the site: exterior site space, building envelope, and interior space. Using Ching's (2007) textbook, their analysis examined the role of materials, architectural and spatial features. Next, students determined which features were most significant. Their decisions informed their design solutions. After designing a new function for the site, students evaluated what they learned throughout the project. Student feedback was primarily positive, with most stating that analyzing the building lead to a significant alteration in their appreciation and understanding of the site. Most students felt they now appreciated the complexity of architectural space because of their analysis. Local designers provided feedback on student designs.

By analyzing a local site, researching its history, and articulating their decisions about the significance of the site's features before beginning their designs, students gained a clearer understanding and appreciation of the existing historic structure. Their informed understanding of this historic structure should help them assess and appreciate the significant elements of existing buildings. This should help them to work with existing sites, historic and contemporary.

NARRATIVE

In studio classes, interior design students learn to create relevant and innovative design solutions that respond to conditions at an existing site and meet end-users' needs. Interior design educators teach students to develop design solutions by guiding their individual learning processes. For a studio project set in a historic downtown building, students worked through a series of pre-design research and analysis exercises. With a foundation of pre-design analysis tools and guidelines to aid the development of their design solutions, students may be able to develop interior design solutions that relate to an existing structure, particularly a historic one. Historic buildings can be challenging for students and designers, because they need to integrate the historic building with its new function. The instructor, nine outside reviewers, and the nineteen participating students assessed students' design solutions.

This project tested a studio framework providing a structured method for educators to guide students through the pre-design research and analysis phases of a design project. The framework subdivides research, pre-design analysis, design, and post-design reflection into seven learning objective correlated with Bloom's revised taxonomy (Anderson & Krathwohl, 2001). Learning was a student-driven process guided by the requirements of each objective. Each learning objective drew on a different learning type and style, allowing students to experience a range of design learning methods.

Sophomore students in their first interior design studio individually developed designs for the Cranford building, part of the local downtown. The Cranford building is a large compartmentalized brick structure originally constructed in 1905 and partially occupied today. The exterior façade and some historic interior finishes are intact. Students worked only on the first floor of the middle unit, which does not connect to any other sections.

STUDIO OBJECTIVES

Students' studio projects were structured through seven learning objectives (see Figure 1) drawn from Bloom's revised taxonomy (Anderson & Krathwohl, 2001). Objectives 1, 2, 4, and 5 were designed to guide students' pre-design research and analysis, and improve students' awareness and sensitivity to the historic building. In Objectives 3 and 6, students worked with the historic building while gaining the discipline specific skills they need to acquire in their studio classes. In Objective 7, students reflected on their learning process and practiced their writing skills. Each objective and its evaluation method align with Bloom's revised taxonomy (Anderson & Krathwohl, 2001). The cognitive and knowledge processes dimensions of each objective, shown in Figure 1A, are referenced after each objective discussed below.

Objective 1 (Remembering- Factual): students described how the site fit into history. Pairs of students presented and gave out handouts on an aspect of life in 1905, when the Cranford building was built, or historic preservation history and issues. This objective was evaluated through quiz questions drawn from student handouts.

Objective 2 (Understanding-Conceptual): students constructed meaning from the site's architecture through sketches summarizing key features of the site. Each student chose ten building views or details to sketch. Students verbally explained why they choose particular views. This assignment was checked in-class.

Objective 3 (Applying- Procedural): Students measured and drafted an existing space. Groups of three to four students worked together to measure the Cranford building interior plan and elevation. Individually, each student drafted a floor plan and two interior elevations. Students were initially checked for completion and presented these drawings as part of their final presentations.

Objective 4 (Analyze-Conceptual): Students analyzed building components. Students analyzed the elements of the site by completing Figure 2 with notes, photographs, and sketches. Students created a building analysis notebook based on Figure 2. I assisted students in class as they worked in groups and with Ching's (2007) *Architecture: Form, space, and order* to individually complete a building analysis notebook. Students were checked for completion in class and turned in their notebooks for a grade at the end of the project.

Figure 2 is a cross between architectural and spatial elements and a sequential spatial arrangement highlighting how a building and site is experienced. As students moved through the three major types of space (exterior, shell, and interior), they can evaluate the site through architectural principles and concepts. When architectural elements and spaces cross, they form a table

for students to complete using their own photographs, sketches, and notes. By analyzing a site one system at a time and articulating how each feature works with each architectural element, students separated the building system into manageable parts and assessed how each one forms part of the site.

Similar defining features have previously been used in guidelines for historic districts, including the University of Florida, Hyde Park and Annapolis Historic District. These historic sites' guidelines use similar character defining features to highlight and explain the distinct elements that form the core of a historic site. The architectural elements are derived from several sources: Ching's (2007) textbook, the University of Florida's Dr. Jo Hasell's morphological analysis assignment, and Larry Doll's unpublished paper on building morphological analysis. Wilson (1996) found that architects use similar features to discuss and evaluate buildings; learning to use architectural evaluation methods is a critical outcome of design education.

Objective 5 (Evaluate- Conceptual): Students evaluated (made judgments about) the site's existing design. Students used their building analysis to develop a hierarchy of building elements. Their hierarchy gave them a simplified structure within which to begin placing their own design. By mimicking the building's type of emphasis in their new designs, students could maintain the site's hierarchy while creating room for their interventions. By evaluating the building, students could create their own designs while maintaining the site's original design emphasis. This objective was particularly challenging for students, who first struggled to evaluate the building and then imagine how a new design could be integrated with the existing design.

Objective 6 (Create-Procedural): Students created a design for their historic space. Students drafted and rendered a floor plan, two interior elevations, and an isometric plan for their project presentation boards. These drawings showed their new designs for the historic building. Students presented their projects to the class and submitted their project presentation boards for grading. Most students made major changes to the interior; however, their changes were additive, rather than destructive.

Objective 7 (Evaluate- Meta-Cognitive): Students examined their own learning. Students reflected on their own learning and opinions from the beginning to the completion of their studio project. They discussed differences and similarities between their initial views of the site, later evaluation, and why those views changed. Essays demonstrated students' understanding of the material and how they believed they incorporated their pre-design research and analysis into their final designs. Student essays enhanced my understanding of their learning process, bridging the gap between what students were able to show on the final presentation boards and what they had learned throughout the process and imagined for their designs.

Student essays covered a range of topics. There were no specific questions students had to answer. Each essay was unique and each student discussed what was most significant to them. Figure 3 summarizes the students' opinions, but with direct questioning, more students may have reported on each topic.

Student essays were one of the most positive outcomes of this project. Students used the architectural terms from their building analysis notebooks, Objective 4. Eleven out of nineteen students discussed how the history of the building was taken into consideration and influenced their designs. Most of the class initially expressed dislike of the 1905 Cranford building, and used descriptive negative analogies to describe the building's current condition, but by the end of the project, eleven students said they had changed their minds and now saw the building positively. Students enjoyed the design process, felt they had learned a great deal throughout the project and were pleased with their designs.

Completed student projects were evaluated by four faculty members, two from interior design and two from art history, and five local design and building professionals. Figure 4 summarizes the reviewer's questionnaire and shows the average score. Responses were primarily positive. Reviewers were pleased with students' project outcomes.

CONCLUSIONS

Throughout the studio project, my assessment of students' project outcomes has changed several times. Evaluator reviews and student essays concurred that the students' designs worked well with the historic building. Students' building analysis notebooks (Objective 4) show their understanding of the space, but that knowledge could have been more fully integrated into their final project designs. Future attempts to test and assess these site analysis methods will place more emphasis on how students can transfer their analysis knowledge into design decisions.

Students were excited to have a local, physical building and field trips to measure the interior. On-site conditions dampened their early enthusiasm, but as students' progressed through their designs, they began to visualize the Cranford Building's potential. I deliberately selected a building in need of renovation, giving students the opportunity to see a building fully rehabilitated, at least in their minds. The next time they encounter a historic building project, I hope that they will remember how their first impressions of the Cranford building improved during the design process.

REFERENCE LIST (APA)

Anderson, L. & Krathwohl, D. et al (eds). (2001) *Complete edition: A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of educational objectives.* New York: Longman.

Beecher, M. A. (1999). Alternative models of the past: History/theory/criticism courses. *Journal of Interior Design 25*(1), 37-44.

Beecher, M. A. (1998). Toward a critical approach to the history of interiors. *Journal of Interior Design 24*(2), 4-11.

Ching, F. (2007). *Architecture: Form, space, order.* Hoboken, New Jersey: Wiley.

Council for Interior Design Accreditation. (June 2008). *Council for interior design accreditation professional standards* (Effective July 1, 2009). Grand Rapids, MI: Author.

Wilson, M. (1996). The socialization of architectural preference. *Journal of Environmental Psychology 16*, 33-44.

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	1					
Conceptual Knowledge		2		4	5	
Procedural Knowledge			3			6
Meta-cognitive Knowledge					7	

Figure 1: Revised Bloom's Taxonomy Table showing numbered student learning objectives (Anderson & Krathwohl, 2001)

Architectural Elements	Spatial Sequence

	Site Space	Building Envelope	Interior Space
Elements: point, line, plane, volume, massing			
Form: shape, regular & irregular, transformation, surface, edges			
Form & Space: defining space, openings, light, view			
Organization: relations			
Circulation: entrance, movement, stairways			
Proportion: scale			
Principles: Axis, hierarchy, datum, rhythm			
Materials			

Figure 2: Building analysis table (Ching, 2007)

Student's self-reported views from their essay and presentation	19 possible
Initially liked having a project at the Cranford building	2
Initially liked the idea of a "real" project	6
Initially found the project building unpleasant or nasty	14
Liked the Cranford building by the end of the project	11
Used terms from Ching (2007) to discuss the project	10
Believed the Building Analysis notebook and sketching helped	7
Enjoyed the design process	9
Referenced the building's historic character when discussing their designs	11
Discussed a theme that guided their designs	10

Figure 3: Summary of student's expressed views

Evaluator's feedback	1-10 Scale
How well do you feel the student's interior designs respond to the existing building?	7.7
Do you see connections between the existing building and the students' designs?	6.7
How well do you feel the student's interior designs respond to the context of the site?	8
How appropriate do you feel students' interior designs are for the building?	7.5
How appropriate do you feel students' interior designs are for the downtown site?	8.4

Figure 4: Summary of evaluator's scores

Stimulating Learning and Engagement: The Relevance of Creativity to Interior Design History

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ABSTRACT

The teaching of history has held a central position in interior design education – as demonstrated by a Journal of Interior Design special issue (Jennings, 1998) and expectations outlined in the Council for Interior Design Accreditation (CIDA) standards. In parallel, creativity is inherent in a subject matter where novelty and imagination are used to grasp and explore the past as well as understand the unfamiliar (Jackson, 2005). Given the many facets of interior design history that can be unraveled (from chronologies to design characteristics and forces impacting interiors), the challenges to those teaching history are many. Questions abound: "What forms of teaching encourage/enable interior design history students to be creative?"; "How do you tackle the problem of creatively tying the past to the present?"; "How can history teaching spark excitement in today's youth and be relevant to current societal needs?" and "How do you assess and award students for being creative?" Two interior design educators will share techniques, assignments, and pedagogies that respond to the above questions and help set a trajectory for both creatively teaching interior design history and sparking students' creative potential.

FRAMEWORK

Creativity and originality are often not among the course objectives/outcomes one would typically associate with large enrollments classes that heavily rely on lectures and powerpoint presentations, such as interior design history classes. Drawing from over 20 years of combined experience in teaching history, the authors identified multiple ways by which creativity can be incorporated into the design history class. Examples range from study tools that appeal to technologically savvy students to a semester long project that challenges students to examine their role in the world and the difference they can make. In addition, the educators share: a) characteristics of effective history teaching; b) assignments that make history relevant to other interior design courses and the larger society; and c) assessment strategies that evaluate the outcomes of history lessons for the students and the overall program.

IMPORTANCE OF THE TOPIC

Interior design defines itself through its emphasis on health, safety, and well-being. When it comes to history courses however, faculty have little direction in how to entice students to translate the lessons learned from history to their own designs and lives, thereby increasing the relevance of history to interior design education. Using history as a medium for both generating and conveying creative ideas is a challenge when textbooks strive to cover historical precedents that range from ancient to modern and are not clearly tied to courses – such as studio and technology courses. The proposed teaching forum expands the pedagogical approaches to the problem of teaching history and stimulating creativity.

RELEVANCE TO INTERIOR DESIGN

Although a lot has changed since the role of history courses in supporting both the present and the future direction of the profession was first questioned (Jennings, 1998), much remains to be done. This sharing of ideas aims to continue earlier dialogues; revitalize energies devoted to re-thinking the role of history in interior design education; and foster collaborations among interested faculty.

NARRATIVE

PURPOSE

The teaching of history has held a central position in interior design education-as demonstrated by a Journal of Interior Design special issue (Jennings, 1998) and expectations outlined in the Council for Interior Design Accreditation (CIDA) standards. In parallel, creativity is inherent in a subject matter where novelty and imagination are used to grasp and explore the past as well as understand the unfamiliar (Jackson, 2005). Given the many facets of interior design history that can be unraveled (from chronologies to design characteristics and forces impacting interiors), the challenges to those teaching history are many. Questions abound: "What forms of teaching encourage/enable interior design history students to be creative?"; "How do you tackle the problem of creatively tying the past to the present?"; "How can history teaching spark excitement in today's youth and be relevant to current societal needs?" and "How do you assess and award students for being creative?" Two interior design educators from the Interior Design program of the University of Minnesota will share techniques, assignments, and pedagogies that respond to the above questions and help set a trajectory for both creatively teaching interior design history and sparking students' creative potential.

FRAMEWORK

"History is not what happened in the past, rather, it is the act of selecting, analyzing, and writing about the past. It is something that is done, that is constructed, rather than an insert body of data" (Davidson & Lytle, 1986, p.xix). It is this dynamic nature of history that makes it exciting for both teachers and students. Given that the material shared is not static or stagnant, but instead it is subject to interpretation and critical analysis (Flores, 2003), it can serve as the fertile ground on which creativity and originality can flourish.

Creativity and originality are often not among the course objectives/outcomes one would typically associate with large enrollment classes that heavily rely on lectures and powerpoint presentations, such as interior design history classes. Drawing from over 20 years of combined experience in teaching history, the authors identified multiple ways by which creativity can be incorporated into the design history class. Examples range from study tools that appeal to technologically savvy students to a semester long project that challenges students to examine their role in the world and the difference they can make. In the process, the authors relate: a) characteristics of effective history teaching; b) assignments that make history relevant to other interior design courses and the larger society; and c) assessment strategies that evaluate the outcomes of history lessons for the students and the overall program. Below are more detailed descriptions on three teaching techniques used.

EMBRACING TECHNOLOGY

The design history courses at the University of Minnesota are embracing technology by incorporating numerous computer games into their classrooms. The history faculty agree with research by Salan and Zimmerman (2004) stating that games are effective tools for learning because they offer students a hypothetical environment in which they can explore alternative decisions without the risk of failure . Thought and action are combined into purposeful behavior to accomplish a goal (Prensky, 2001). Faculty believe playing games teaches students how to strategize, to consider alternatives, and to think flexibly. Educational games are argued to enhance learning, engage learners, and provide learning methods that correspond with students' learning styles (Martinson, Zollinger & Gardner, 2009). Different games appeal to different people. This appeal may be based in content, activity, or personal affinity for game playing.

Interior design faculty member, Stephanie Zollinger, has developed numerous games such as flashcards, matching, and jeopardy (see Figure 1). The games are used to reinforce concepts that are covered in the textbook as well as in class lectures. Students are enjoying the games and are consistently asking for more. By playing online games, students claim that they understand the history material better and retain it longer. It also appears that the technology-enhanced learning environment has had a positive influence on student motivation, through factors such as novelty, curiosity, control, personal choice, and effort.

As in learning situation, students are usually more engaged when they face a challenge that they feel they can meet. Therefore, the games are developed to reflect course content and various skill sets. If the task is too hard, the students will give up easily, and if it is too easy, the student may become bored. Students also benefit from games that become progressively more complex

and difficult. Thus, an effective game like Jeopardy, allows students to begin at different levels of challenge and gradually take on more challenge.

Games can be a valuable part of an educational curriculum. As with all learning, students need guidance and opportunities to reflect on their work. Games need to be sufficiently challenging to engage students, and the level of challenge should be flexible, changing as students become more proficient. As students can attest, games are not just fun – they can be powerful learning tools!!!

SKETCHING

During lectures that draw from powerpoint presentations, students are expected to sketch the design examples shown. These sketches serve multiple purposes. First, they can be helpful when studying for tests. Second, they can serve as a reference book that students can use later in their careers. Third, sketches can sharpen students' critical engagement with the subject because of the fact that they need to reflect on which type of sketch to use to convey a particular idea, choosing from a diverse range of possibilities that includes a whole piece of furniture, building form, interior, elevation, etc.; details, such as legs, feet, seats, ornamentation style, etc; interior characteristics of buildings such as mouldings on openings, mantel pieces, stair designs, etc.; exterior characteristics of buildings, such as massing, elevations, window types, railings, landscape elements, etc; conceptual-type sketches that evoke the essence of a piece or the design ideas behind it; artists' rendition, such as paintings and decorative arts pieces; and other elements presented. Lastly, sketches as a means of note-taking allows assessment of a student's ability to grasp the concepts being taught and a student's comprehension of the design elements that make up the design shown (see Figure 2).

MAKING A DIFFERENCE

Creating responsible designs and fostering critical thinking are among both of the history classes objectives, particularly since concerns have been raised about the Eurocentric nature of interior design history and the use of conventional understandings of the notion of culture (Akkach, 2002; Hillenbrand, 2003). The design history courses at the University of Minnesota aim to engender an understanding of the artistic, historical, social, environmental, economic, political, cultural, religious, technological, and intellectual forces behind the design and manufacturing of furniture and interior design elements. With that understanding on hand, students are challenged to consider how their designs can creatively respond to current forces and social concerns. Through one assignment, students develop associations between the past and the present in order to plan for the future. Because of its design component, this pedagogical method ties studio teaching pedagogies to the teaching of history.

Interior design faculty member, Tasoulla Hadjiyanni, has students work in teams. In teams of four, students select a design problem to study across time and propose a design solution that responds to current societal needs – the design problem can be a building type; an interior space; a part of building, like a window; a piece of furniture; a wallpaper; a fabric; a lighting fixture, etc. and the historical periods must fall after 1750. Each team member studies one period, including the present (see Figure 3). As a semester-long project, it has two parts: a) a paper-like part that relates the research phase of the assignment and b) a design proposal part that includes key process drawings in the form of plans, elevations, sections, axonometrics, material selections, details and other forms of documentation that relate to the design proposal as well as rendered design development type drawings in enough detail to comprehend the design. In some cases, construction documents and models are also part of the final submission.

IMPORTANCE OF THE TOPIC

Interior design defines itself through its emphasis on health, safety, and well-being. When it comes to history courses however, faculty have little direction in how to entice students to translate the lessons learned from history to their own designs and lives, thereby increasing the relevance of history to interior design education. Using history as a medium for both generating and conveying creative ideas is a challenge when textbooks strive to cover historical precedents that range from ancient to modern and are not clearly tied to courses – such as studio and technology courses. The proposed teaching forum expands the pedagogical approaches to the problem of teaching history and stimulating creativity.

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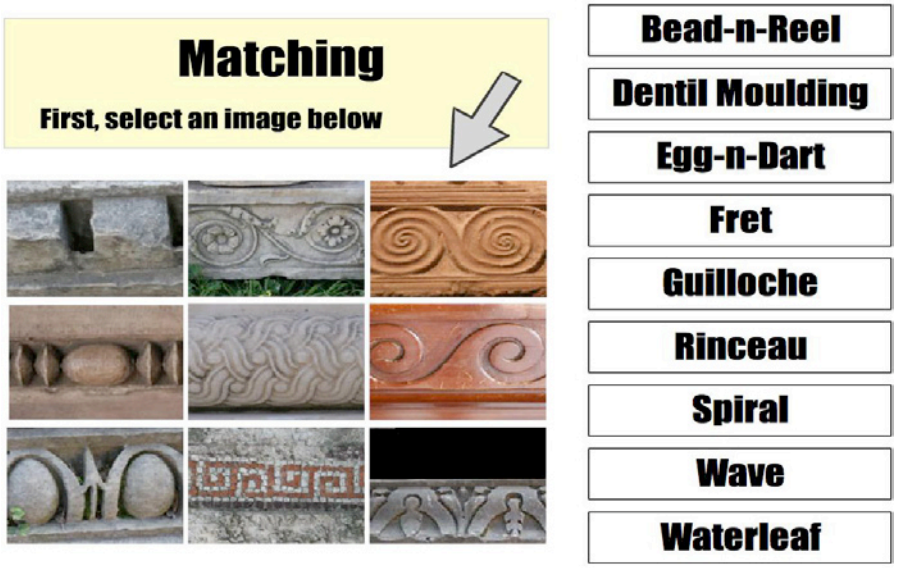

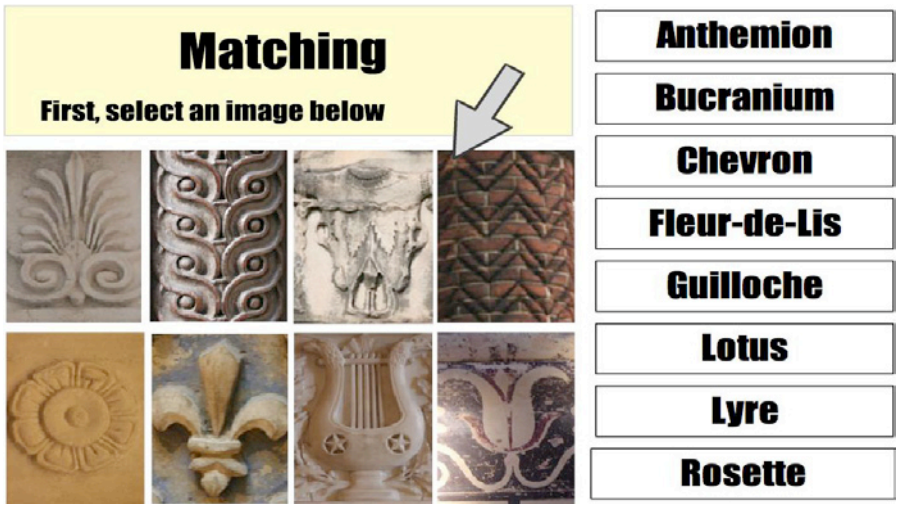

Figure 1: Matching Games

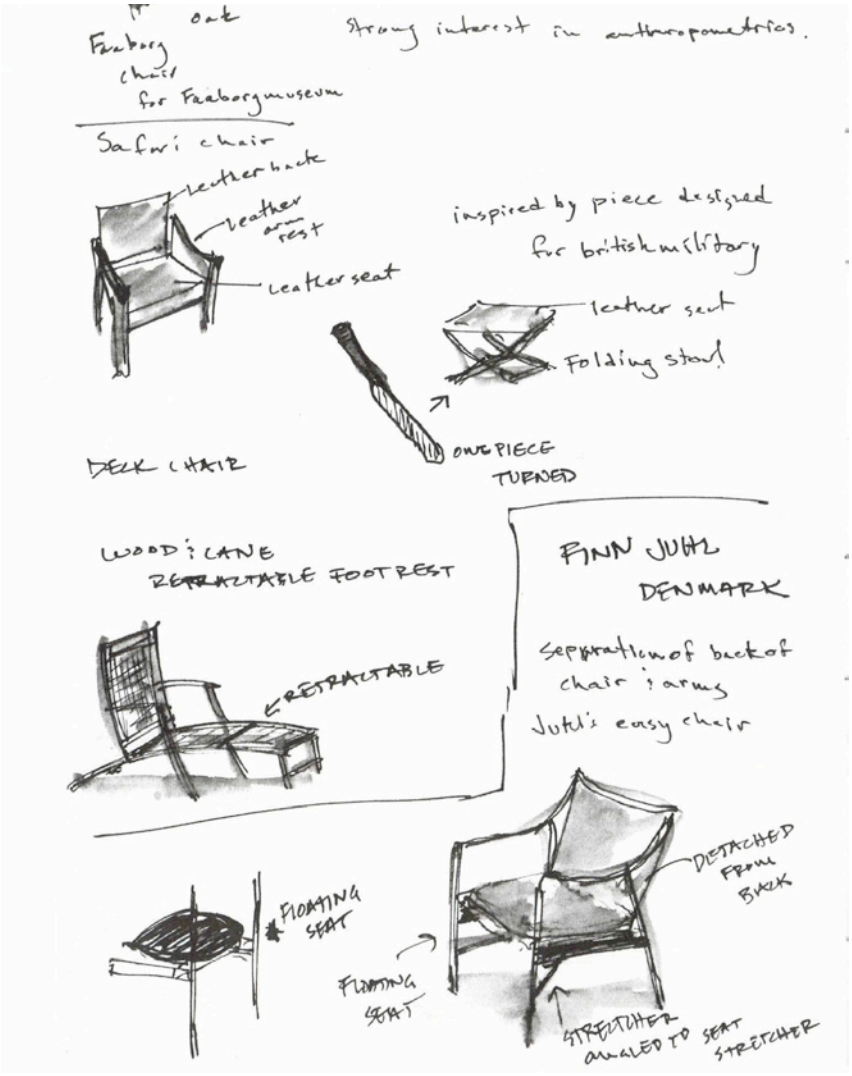

Figure 2: Sketching As A Creative Form of Engagement

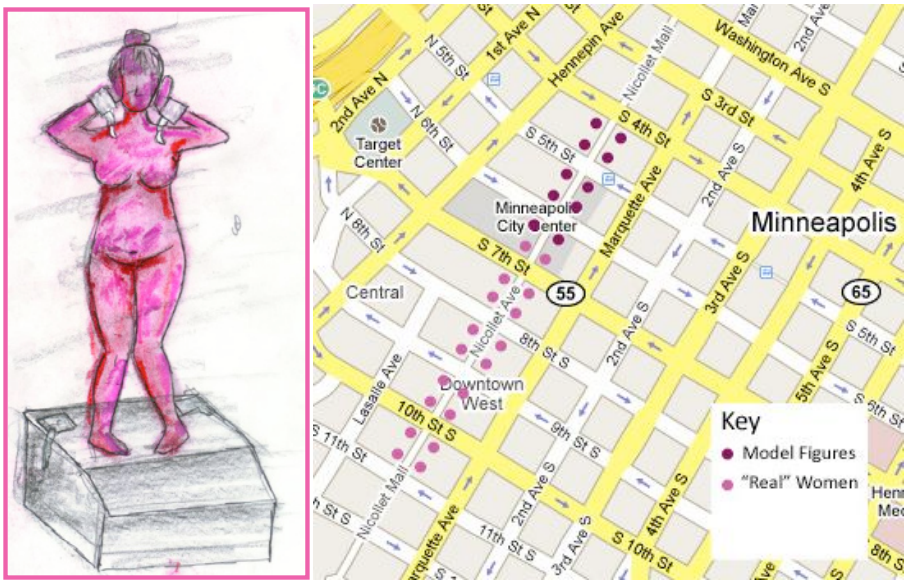

Figure 3: Images from the Semester-Long Project: SCREAM for Social Change.

REFERENCES (APA)

Akkach, S. (2002). Useful obsessions: Architecture as a cultural critique. In Ashraf M.

Salama, William O' Reilly, & Kaj Noschis (Eds). *Architectural education today- Cross-cultural perspectives.* Lausanne, Switzerland: Comportments, 31-41. Accessed November 13, 2009 from http://www.archnet.org/library/documents/one-document.jsp?document_id=8521

Davidson, J.W. & Lytle, M.H. (1986). *After the fact: The art of historical detection.* NY: Knopf.

Flores, C.A. H. (2003). "Will the real Borromini please stand up?" One method of introducing critical reading and analysis through a study of architectural history. *Journal of Architectural Education*, 56(3), 63-69.

Hillenbrand, R. (2003). Studying Islamic architecture: Challenges and perspectives. *Architectural History*, 46, 1-18.

Jackson, N. (2005). Creativity in history teaching and learning. *Subject Perspectives on Creativity in Higher Education.* Retrieved September 3, 2009 from http://www.heacademy.ac.uk/creativity.htm.

Jennings, J. (Guest Editor) (1998). *Journal of Interior Design Thematic Issue Object-Context-Design: The State of Interior Design History,* 24(2).

Martinson, B., Zollinger, S., & Gardner, C. (2009). The influence of learning styles on design students' academic progress. *Fate in Review: Foundations in Art, Theory and Education,* 30, 29-36.

Prensky, M. (2001). *Digital game-based learning.* New York: McGraw Hill.

Salen, K., & Zimmerman, E (2004). *Rules of play: Game design fundamentals.* Cambridge, MA: The MIT Press.

Practice Driven Teaching: A Collaborative Model for the Interior Design and Graphic Design Studio

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ABSTRACT

"Environmental Graphic Design involves communication, telling stories, defining a message, navigation, information, branding and identity." (Bedrossian 2008, 82)

INTRODUCTION

Environmental graphic design uses words, symbols, diagrams and images to communicate brand, deliver information, and to "enhance the aesthetic and psychological qualities of an environment." (Calori 2007, 9) Environmental graphics bridges interior design and graphic design, addressing translation of brand identity, conceptual and programmatic requirements, and materiality of solution. In an academic environment, it is often the case that the disciplines are distinct, each with curriculum and project work that separately conveys the theory and practice of the field. In practice, the separation is less distinct: designers employ the interior landscape and graphics to enhance the built environment, and amplify a client's visual message.

The purpose of this teaching paper is to explore the integration of interior and graphic design, and the role of collaboration between the two disciplines in the successful expression of design concept. Environmental graphics will serve as a model for a teaching methodology shared by professors in each field that encourages students to explore each other's disciplines to better understand design concept expression.

THE MODEL

The interior design and environmental graphics package for the Jesuit Conference, a corporate office space in downtown Washington, D.C. (16,000 square feet) provides the example of the industry overlap between disciplines (see appendix.) Two colleagues at [insert institution name] collaborated to build upon the brand identity that communicates the mission, vision and spirit of the Jesuit order. The environmental graphic design built on the existing interior design to fully realize the client's brand, mission and concept.

Using this practice-driven teaching model, students explore tools, lessons and methods of each discipline to enhance their conceptual development. Graphics students must consider issues of space, movement, proportion, behavioral mapping and environmental psychology in their projects. Interiors students must apply understanding of layout, composition, integration of type choice and imagery, and branding identity and development to maximize the effect of interior space in communicating a client's message. These key content knowledge areas bridge the disciplines, and foster more comprehensive design approaches in student work.

TEACHING METHODOLOGY

Two studio courses in Fall 2009 are used in this teaching model (GD361 and ID201.) Project assignments in each course explore the overlap between interior and graphic design, requiring students to broaden their approach to problem solving (see appendix) Content delivery in each course includes strategies related to environmental graphics programs that are demonstrated using the Jesuit project model. Deliverables in each require the consideration of both disciplines, and each faculty member will be involved with final critiques of the student projects. Project outcomes (see appendix for sample outcome, fall 2008) will be evaluated and demonstrated as a measure of success in the final presentation.

IMPORTANCE AND RELEVANCE TO INTERIOR DESIGN

This teaching study's examination of collaboration and content knowledge sharing between interior and graphic design illustrates a realistic, practice-driven approach to interior design pedagogy. Exposing design students to skills relevant to both industries will strengthen their understanding of the tools available for concept expression and design development.

NARRATIVE

INTRODUCTION

Environmental graphic design uses words, symbols, diagrams and images to communicate brand, deliver information, and to "enhance the aesthetic and psychological qualities of an environment." (Calori 2007, 9) Environmental graphics bridges interior design and graphic design, addressing brand identity, conceptual and programmatic requirements, and materiality of solution. In an academic environment, the disciplines are often distinct, each with curriculum and project work that separately conveys the theory and practice of the field. In practice, the separation is less distinct: designers employ the interior landscape and graphics to enhance the built environment, and amplify a client's visual message.

The purpose of this teaching paper is to explore the integration of interior and graphic design, and the common challenges and successes in student outcomes when design projects broaden student exposure to these two disciplines. Environmental graphics serves as the model for a teaching methodology shared by professors in each field that encourages students to explore each other's disciplines to better understand design concept expression.

THEORETICAL BACKGROUND

The collaborative nature of environmental graphic design is communicated to students in both disciplines through shared lectures that address theory, trends and practices. Through lectures, discussions, and sample projects, students are introduced to Wayne Hunt's theories, defining Signage and Wayfinding as orientation and navigation, Interpretation as storytelling, and Placemaking as image-making (Calori 2007, 4.) Issues of scale, hierarchy, context, brand, materials, and technological issues are also addressed.

Two recently completed projects by the professors illustrate the theories explored in the lectures: the Reston Center of Marymount University, (approx. 10,000 SF) is an exercise in Placemaking wherein a unique image, "A Point of Inspiration," was created to enhance learning and foster original and creative thoughts and action by using inspirational words and artwork. The Jesuit Conference, a 16,000 sf office interior employs Signage and Wayfinding of directory information throughout four

floors. The project also demonstrates Interpretation by incorporating past traditions, the spirit, mission, and vision of the Jesuit Order. (Appendix 1) Each project provides examples grounded in recent, professional practice to visually communicate design decisions regarding concept, program and materiality.

Students are also introduced to effective environmental graphics to create and support a unique site identity also known as a brand. “A brand is a person’s gut feeling about a product, service, or organization. It’s a gut feeling because we’re emotional, intuitive beings….” (Neumeier 2003, 2) Environmental graphics have a unique branding power by creating a pleasing venue that builds brand awareness, harmony, goodwill, and an integrated identity. “Branding fosters awareness, enthusiasm, loyalty, and participation.” (Gibson 2009, 68) The brand experience is the creation of a comprehensive program that focuses on how individuals experience the site and it defines the character of environment “… by finding order in chaos without destroying character. People always need to know how to reach a destination, where they are, what is happening there and how to exit.” (Gibson 2009, 13)

Finally, lectures address the creation of maps and symbols as critical tools for the well-being, safety, and pleasurable experience of the visitor. “Map design is an important subset of wayfinding …. Mapping remains at the forefront of the field today.” (Gibson 2009, 15-16). Communications is also enhanced by the use of symbols. “Symbol design is equally important … provides a shortcut way for large groups of people … to communicate.”

Based on faculty’s professional work, the two studio courses explore the overlap between interior and graphic design, requiring students to consider both disciplines in their approach to problem solving. Project outcomes (Appendix 3, 5) are evaluated as a measure of success and challenges.

STUDENT PROJECT OUTCOMES

The interior design studio involved in this exploration, ID 201, is an introductory studio for sophomore majors, focusing on human factors in design, design process and design theory. Students explored principles of environmental graphic design through a retail project, developing client and brand identity, and planning and schematic design solutions for a restaurant interior. Project objectives include the exploration of design concept through the elements and principles of design, promotion of visual thinking and image generation through the use of sketching, Google Sketchup and three-dimensional model building, and understanding the role of graphic design and visual communication in the expression of design concept. Deliverables include a final space plan, three-dimensional representation of the design, massing, environmental graphics of the space, and materiality of architecture and furnishings. (Appendix 2)

Student project outcomes demonstrated students exploring Placemaking and Interpretive theories most successfully by integrating brand identity through imagery. (Appendix 3) Students employed concept imagery as the primary visual communication tool, using the images to accomplish planning goals such as identifying key elements of the space for customer orientation, as well as more general Placemaking goals.

Students demonstrated successful integration of the visual imagery chosen and the color and materials palette used in the space. Imagery provided brand direction as well as design concept direction, and student work demonstrates a strong correlation between brand imagery, design concept and application of elements and principles such as color.

Student work also indicated challenges with the application of scale in integrating visual communication and environmental graphics into the interior design. Projects illustrate some consideration of the hierarchy of visual communication employed in a retail environment; design solutions demonstrate consideration of how the customer was anticipated to move through the space, and information that the customer might require to facilitate their experience of the space. Students failed to integrate scale and movement in signage, menu and type selection, choosing to focus on the broader goals of large-scale visual communication.

These student outcomes, representing challenges and successes related to scale, integration of color, understanding the hierarchy of space, and exploration of brand identity are mirrored by the results of the graphic design students.

The graphic design studio involved in this project, GD 404, is an upper level graphic design elective studio for

mostly senior majors. Objectives in this course are to increase interdisciplinary proficiency and understanding in a three-dimensional built environment; understand the role graphic design/visual communications plays in various disciplines; gain knowledge of manufacturing processes and materials; and, collaborate with professionals in industry, interdisciplinary faculty, and each other. The subject matter for the project was wayfinding, signage and graphics for a local zoo, requiring students to research, develop, and design environmental graphics for the site. Project requirements included a client interview, on-site mapping and the development of a signage/wayfinding program to make visitor's experience at the zoo a meaningful, informative, and secure experience. (Appendix 4)

Student Project outcomes were successful as students used the existing graphic brand identity and site limitations in new conceptual and creative ways — to establish a distinct image. Using Signage and Wayfinding theory, students integrated destination, information, and warning signs using the brand experience to help orient and navigate through the site. Student work demonstrated an understanding of how brand identity is applied to environmental design through various visual communication tools. (Appendix 5)

The successful use of mapping and symbol design exhibits the role graphic design plays in the interior design discipline. Using a site plan to identify signage placement, students began the project successfully visualizing the property in two dimensions. The illustrative map, symbols, and signs also support the brand identity by successfully demonstrating content hierarchy in the layouts through the use of color, grid structure, typography, texture, and materials.

Implementation of signage and the understanding of the three-dimensionality of the built environment was a challenge for graphic designers. In context, sign placement was awkward and sometimes perplexing. A better understanding of sign placement and its ability to direct traffic flow through a site will need to be addressed along with more exploration of in depth interdisciplinary proficiencies.

The understanding of scale and the treatment of the human figure in relationship to the signage and environment were challenging. Projects illustrate size issues where the site line and reading height is too low; therefore, hindering the visual flow and messaging. In the future, lectures will need to be developed to address scale requirements.

FUTURE GOALS

This teaching study's exploration of collaboration and content knowledge sharing between interior and graphic studios is a first step in the professors' inquiry of how content and theory delivered in each discipline can enhance students' understanding of concept exploration. Students struggle with integrating their design ideas in similar ways, as pointed out by the evaluation of student project outcomes. Understanding scale, color, hierarchy of design, and expression of brand identity and concept are shared challenges by students across both disciplines.

Possible changes to how this content is delivered and explored include greater collaboration between students of similar levels. Using the same project and a team approach to aid in student collaboration would allow shared learning across disciplines with issues that prove challenging. Lectures addressing scale, two- and three-dimensionality and hierarchy of space would build on theory already in place. Integration of code vocabulary and symbol standards would ground discussions in a practice methodology.

Practice driven teaching in the interior and graphic design studio can enhance student learning by exploring skills, theories and methodologies across both disciplines, and providing greater opportunities for integration.

Appendix 1

Model Teaching Project: Jesuit Conference

Appendix 2

Interior Design Project Outline

Fall '09

ID 201 INTERIOR DESIGN STUDIO II – FALL 2009

"Design is difficult because it must satisfy several criteria. These design (and evaluation) criteria constitute a hierarchy. First a space must be safe and healthy. A space must enable users to perform their functions. A design should not cause discomfort. Finally, a design should be aesthetically pleasing." Corwin Bennett, Spaces for People: Human Factors in Design

Project #4: You will be designing a small retail lunch counter. In this space, a corner ground floor retail space in a building in a historic downtown, you will be designing a food service environment that serves lunch (and possibly breakfast) to the community of residents and office workers in the area. Each student will develop a space plan solution, schematic design and environmental graphic design (EGD) package for their project.

Subject Matter: The project will require students to design a retail restaurant interior. Each student may choose what kind of food is being served, provided that it is a type of food that can be assembled with ease and without an active commercial kitchen (a deli, a coffee and pastry bar, a sushi counter, a soup and salad bar are some examples)

Program Requirements:
Counter/Prep Area: 400 SF
This area includes the service counter itself and any equipment or work space behind the counter. The space behind the counter should provide at least (3) work areas of 8-10 linear feet (LF) of counter space, so that a maximum of 6 staff people can work in the food assembly and preparation area. There must be 35-40 square feet (SF) of storage in a locked room for equipment, dry goods, and storage. In the counter area, there must be (1) order placement area (4-5 LF) and (1) order pickup area (4-5 LF)On the customer face of the counter and order area there should be racks that display small retail items.
Seating Area: 500 – 600 SF
The seating area should seat 12-15 people minimum, in your choice of table or lounge seating groupings. Seating should be arranged such that groups of varying number can sit comfortably, with the range of groups to seat 2 – 5 people.
Coolers and Drinks Area: 100 SF
There should be at least (3) drinks coolers for customer self-service in the retail area of the space. The coolers can be located in one group, or can be distributed throughout the space per your preference.
Line Queuing Areas: 100 SF
Each customer point of contact area (order placement and order pickup) should provide open floor space to allow 6-8 people to stand in line without impeding the circulation throughout the space.
Restroom: 50 SF
A single use unisex ADA compliant restroom must be provided in the space, to be accessible by both employees and customers. Dimensions of the room should be 8'-0" by 7'-0".

Project Requirements: For your final presentation, you are required to mount your drawings, materials and images on 15"x20" boards, with all developmental process drawings in a sealed envelope on the back of the board. Your board should indicate your name, the project name, and the date.
1. Completed space plan, neatly drawn, rooms labeled and square footages identified
2. Images from a Sketchup model that illustrate the space, basic massing and schematic intent
3. Interior elevations or perspectives, or a more detailed Sketchup model, that illustrate your interior and environmental graphic design intent for the counter area and the main public areas of the space.
4. Interior finishes for the main public areas of the space, including flooring, wall surface material, paint and upholstery
5. Images of furniture selected for the public areas of the space

Objectives:
1. Promote and strengthen visual thinking and image generation (sketching, model studies) as integral parts of the design process.
2. Develop schematic design skills using three-dimensional thinking
3. Integrate the study of human factors and proxemics into planning and design
4. Explore the application of design concepts through the elements and principles of design
5. Understand the role graphic design and visual communication plays in interior design

Due Dates:
October 21: Preliminary planning solution due (studio class)
November 2: Schematic design pin-up
November 9: Final Presentation

Appendix 3.1

Interior Design Student Outcome 1

Appendix 4

Graphic Design Project Outline

Fall '09 (and Fall '08)

Environmental Graphics

GD401 Graphic Design Studio II • Fall 09

Assignment: Throughout this semester, you will be participating in producing numerous visual communications projects for a specific site as a case study. Each student will design and develop Environmental Graphic Design (EGD), packaging, and tradeshow graphics for the site.

Subject matter: The project will require students to research, develop, and design environmental graphics, packaging and exhibit materials. You are required to participate in client/faculty critiques and lectures. Students will create EGD to make visitor's experience at site meaningful, informative, safe and secure, and re-enforce site brand.

Case Study: Reston Zoo
1228 Hunter Mill Rd
Vienna, VA 22182
(703) 757-6222
http://www.restonzoo.com
Contact: Kaci Rice

Requirements/specifications:
Develop and document design process of each part of this project in your Process Notebook.
Phase 1:

1. Visit three unique public spaces: record notations about their differing functions, activity level, emotional aspects, character/personality, physical flow, and signage. Document in Process notebook.
2. Research and develop questions for on-site visit.
   - Read *Signage and Wayfinding* textbook
3. Site visit: experience, collect data/samples; photograph, interview, etc.
4. Develop thumbnails, roughs and final comprehensives for EGD.

Deliverables:

- Formal design brief
- Portfolio quality, color comprehensives for EGD: wayfinding and signage for site. To include Informational Content, Graphics and Hardware selections. Quantity:TBD

Phase 2: Packaging Design - to come
Phase 3: Exhibit Design - to come

Objectives:
- Promote and strengthen visual thinking and image generation as integral parts of the design process.
- Explore new areas of design by independent research, developing questions to aid in visual solving problem.
- Develop interactive, conceptually driven visual communications.
- Increase interdisciplinary proficiency and understanding in an 3-D built environment.
- Understand the role graphic design/visual communications plays in various disciplines.
- Gain knowledge of manufacturing process and materials.
- Collaborate with professionals in industry, interdisciplinary faculty, and each other.

Due Dates:
September 8: assigned
September 17: research due
September 22: Site visit: Reston Zoo
Sept 25: list of Information Content System; class review
September 29: class critique - work to date
Oct. 2: Field trip: D&P:tbd
Oct 9: milestone critique: signage and wayfinding
Nov. 24: milestone critique
Dec 4: final presentation: EGD, packaging, tradeshow

Appendix 5.1

Graphic Design Student Outcome 1

REFERENCE LIST (CHICAGO)

Calori, Chis. *Signage and Wayfinding Design: A Complete Guide to Creating Environmental Graphic Design Systems*. New Jersey: John Wiley and Sons, Inc., 2007

Gibson, Chris. *The Wayfinding Handbook:Information Design for Public Places*. New York: Princeton Architectural Press, 2009

Neumeier, Mathew. *The Brand Gap: How to Bridge the Distance Between Business Strategy and Design*. Indiana: New Rider Publishing, 2003

An Interdisciplinary Model for Teaching Color

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ABSTRACT

This narrative covers an interdisciplinary undergraduate course, entitled *Living Color,* which teaches color in a unique way. The course was developed to fit the goals of the university's recently reformed undergraduate curriculum by allowing freshmen to have an academic experience at the beginning of their undergraduate career that exposes them to broad, complex subject matters before they are pigeon-holed into one or several specialized majors for the remaining of their academic career. It also attempts to humanize the learning experience by creating a small class atmosphere that contrasts greatly with the large impersonal courses which often characterize freshmen seminars at large universities.

The goal is to facilitate students to investigate and experience the role of color as a dynamic phenomenon permeating our daily lives. *Living Color* offers a pedagogical model that recognizes color as an important scientific, physiological, and cultural phenomenon by exploring works of several pioneering scholars that examine color as an interdisciplinary subject, including John Gage (1999), Kurt Nassau (1998), and Trevor Lamb and Janine Bourriau (1995). The course also includes guest speakers from a wide range of disciplines including physics, neurobiology, preservation, theatre, film, history, fine arts, branding, costume history, architecture, and interior design.

Living Color is organized into four units: "Colored Pigments and Art Making" (color in relation to the art-making process, emphasizing anthropology and the history of color use); "Color Coding" (color as a communication tool mapped through the lens of different disciplines); "Living Color and Light" (color and light in science, including in plants and animals, and the human visual system); and "Color in the Built Environment" (explores the impact of color and light in our interior environments). In keeping with another university goal to promote academic service learning, we incorporated a community service project, known as the Harvest Mandala Food Drive, wherein a huge color wheel resembling a circular drawing (called Mandala in Sanskrit, popularized by Carl Jung) was constructed from donated produce and canned food on the main lawn of campus (See Figure 1). At the end of the day, the Mandala was dismantled, weighed (1975 pounds), and donated to the local food bank.

Instead of teaching the color wheel in a conventional way, students in *Living Color* are exposed to a pedagogical model that highlights color's unique ability to provide visual pleasure, influence emotions, and transmit powerful non-verbal messages. By promoting color as an interdisciplinary study among the university's population, it is hoped that students will develop a more holistic understanding of color, inspiring further investigation into the nature of this uncanny yet ordinary phenomenon.

NARRATIVE

Living Color: Light, Science, Art, Architecture & Culture focuses on the RGBs of color in a unique way. The course was developed to fit the goals of the university's recently reformed undergraduate curriculum in two ways. First, it allows freshmen to have a shared academic experience at the beginning of their undergraduate career and exposes them to broad, complex subject matter across several disciplines before they are pigeon-holed into one or more specialized majors for the remainder of their academic career. Second, it attempts to humanize the learning experience by creating a small class atmosphere led by experienced professors in contrast to the large lecture courses that rely heavily on teaching assistants. For students who are undecided about their major, *Living Color* offers a unique way to explore new academic avenues.

The main purpose of *Living Color* is to facilitate students to investigate the role and place of color as a dynamic phenomenon permeating our daily lives. *Living Color* not only introduces students to color through art, science, culture, and architecture, it also helps students engage in the use of color through several hands-on projects. In addition, *Living Color* promotes an environment of inquiry, research, and collaboration.

In the course, the instructors emphasize students' development of creative and critical thinking skills about color. Students are taught how to recognize color as a partnership between the source of illumination, the surface properties of matter, perceptual organs of an individual, properties of color language, and the social color codes operating within a given culture. *Living Color* also familiarizes students with the basic terminologies that shape color language and offers a pedagogical model that recognizes color as an important scientific, physiological, and cultural phenomenon.

COLOR AS A MULTIDISCIPLINARY STUDY

Living Color teaches color as a powerful non-verbal language and addresses the multi-layered roles of color in order to better employ color as an effective communication tool. Its influence is expressed not only in nature, but through art, architecture, interior design, clothing, and functional objects. Insights into color's pivotal role within the built environment helps students gain an advantage when they enter the design profession, and other creative disciplines.

In Catching the Light: The Entwined History of Light and Mind (1993), Arthur Zajonc emphasizes the ways in which the interdisciplinary nature of light can equally apply to color. He suggests both light and color have ". . . innumerable artistic and religious associations of extraordinary beauty . . . [that can be] treated scientifically by physicists, symbolically by religious thinkers, and practically by artists and technicians . . . each [giving] voice to a part of our experience of light (color). When heard together, all speak of one thing whose nature and meaning has been the object of human attention and veneration of millennia" (p. 8).

The need to reposition color as an integrated phenomenon is supported by Michel Pastoureau's research. In Black, the History of a Color (2008), Pastoureau emphasizes that classifications such as the spectrum, chromatic circle, and the laws of perception "are not eternal truths but only stages in the fluid history of knowledge" (p. 15).

Because of the relatively new trend of color as an interdisciplinary study, an integrated framework for studying color through multiple fields has yet to be fully developed, despite inroads advanced by Johannes Itten, Wassily Kandinsky, Josef Albers, and other practitioners of the Bauhaus School. Therefore, instructors, Kwallek and Stovall, follow the footsteps of several pioneering scholars, including John Gage in his book Color and Meaning: Art, Science, and Symbolism (1999), Kurt Nassau in Color for Science, Art and Technology (1998), and Trevor Lamb and Janine Bourriau in Colour: Art & Science (1995). Different perspectives of color are explored, including color as a function of light, as an elemental driving force interwoven into our physiological and psychological responses, and as a critically influential player operating within our complex systems of communication.

A PEDAGOGICAL MODEL DESIGNED FOR DIVERSITY

The course was organized based on four units: The first unit "Colored Pigments and Art Making" focuses on color in relation to the art making process emphasizing the colored materials people of different cultures have long used to create visual expressions. Topics include the history of dyes and pigments, structuring a 'subtrac-

tive' color circle, analyzing art at our Blanton Museum, and color systems viewed through the lens of art history. The second unit "Color Coding" looks into color as a major communication tool, mapped through the lens of different disciplinary fields. The third unit "Living Color and Light" concentrates on color and light in theater and science, including the relation of light to plants and animals, and a tour of the human visual system. The Harvest Mandala Food Drive, a community oriented social service event, takes place during this unit. The final unit "Color in the Built Environment" explores color and light in our built environment, with an emphasis on ways that color can be used to help make a positive impact on the quality of life.

Although both instructors are capable of teaching diverse topics of color, they decided to take advantage of the wide range of expertise found throughout campus by inviting professors and experts of various fields to share their study on color. Guest speakers represented disciplines that included physics, neurobiology, historic preservation, theatre, film, art history, fine arts, color forecasting, communications and branding, costume history, architecture, and interior design.

LIVING COLOR AND THE HARVEST MANDALA FOOD DRIVE

"Color in Mandalas expresses your innermost thoughts, feelings, intuitions, even your physical sensations. Analyzing the meaning of colors in your Mandalas helps you understand the messages being sent by your unconscious" (Susanne Fincher, 1991).

Recognizing the importance of color in everyday life, the instructors lead the students to collaborate on a class project called, Harvest Mandala Food Drive, wherein a huge color wheel resembling a circular drawing in many cultures (called mandala in Sanskrit, popularized by Carl Jung, see Figure 1) is constructed from fresh produce and canned food on the main lawn of the campus (see Figure 2).

Living Color introduced students to different types of multi-media and challenged them to employ color as a communicative device designed to promote a community service initiative. This non-conventional pedagogical model attracted a diverse range of enrollees—students majoring in advertising, psychology, journalism, business, radio-film-television, special education, and public relations proved instrumental to the success of the project.

The students' creativity resulted in an interactive website (www.harvestmandala.org) which they broadcasted throughout the community and university campus using flyers (see Figure 3) and a Facebook group. Students were challenged to find innovative ways to incorporate the color wheel into the promotion of the event. They met this challenge by creating a unique logo (see Figure 4) that communicated the main theme of their Harvest Mandala Food Drive (see Figure 5).

The color study of the class evolved into a community event. A wide variety of student organizations, artists, musicians, dancers, balloonists, magicians, and henna hand painters participated in the multicultural celebration. The incorporation of Harvest Mandala seamlessly weaved community work into the curriculum, providing students real-world experiences that enhanced their academic learning while providing a tangible benefit for the community. The fresh produce was donated by a local market and the canned food was donated by students and faculty. At the end of the day, the Mandala was dismantled, boxed up, and donated to the local food bank.

IMPORTANCE AND FUTURE IMPLICATION OF THE LIVING COLOR MODEL

The Harvest Mandala is a less conventional, but more creative way of experiencing the many facets of color. The event was designed to celebrate unity through diversity and the natural bounty of the harvest season. Not only does the project allow students to understand how people in many cultures use color to express themselves, but it also brings the community together through a celebration of shared culture and food sustenance.

The uniqueness of the Harvest Mandala Food Drive has ensured a growing interest in color as a force for positive change, impacting events well beyond the class. A registered student group *Living Color* Student Organization was initiated by former *Living Color* students and its goal is to assist *Living Color* instructors to organize the Harvest Mandala project. In many ways, students continue to investigate color long after the semester as they enter a spectrum of fields from design, architecture, marketing and communications, theatre, education, and business.

The pedagogical model in *Living Color* highlights color's

unique ability to provide visual pleasure, influence emotions, and communicate powerful, non-verbal messages. By promoting color as an interdisciplinary study, it is hoped that students will develop a more holistic understanding of color across disciplines, inspiring future investigation into this uncanny yet ordinary phenomenon.

REFERENCES (APA)

Fincher, S. F. (1991). Creating mandalas: for insight, healing, and self-expression. Boston: Shambhala.

Gage, J. (1999). Color and meaning: art, science, and symbolism. Berkeley: University of California Press.

Lamb T., & Bourriau, J. (1995). Colour: art and science (Darwin College Lectures). New York: Cambridge University Press.

Nassau, K. (1998). Color for science, art and technology. New York: Elsevier Science.

Pastoureau, M. (2008). Black: the history of a color. Princeton, NJ: Princeton University Press.

Figure 1: Spiritual Mandala by Carl Jung

Figure 2: Living Color and the Harvest Mandala Food Drive

Figure 3: Flyer promoting Living Color and Harvest Mandala

Figure 4: Student created logo incorporating the color wheel

Figure 5: Can Mountain

A service-learning case study: Collaboration between students, faculty and small local retailers

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ABSTRACT

Academic service-learning is an educational experience for students to participate in an organized service activity addressing a community that involves specific learning activities to create curriculum specific learning outcomes (Bringle & Hatcher, 1995). The benefits of academic service-learning for students include practical and academic skills, professional skills, interpersonal skills, citizenship and personal responsibility (Eyler, Giles, Stenson, & Gray, 2001). The purpose of this paper is to develop a collaborative service-learning research project into a case study model. The research explores the impact of participation in a service-learning project with students taking a senior level studio in interior design.

The project design follows the Cone and Harris (1996) Service-Learning Model that emphasizes the individual, psychological and socio-cultural focus of service-learning and allows for the curriculum to remain at the forefront of the community activity. This service-learning project brings together multiple contingencies of students, faculty, community partners and the university. Furnishing and Interiors and Fashion Merchandising students from the same academic department will work together to provide small local retailers with research-based analyses regarding the retailers' consumers and the retail environment. While high-profits retailers hire professional experts to help increase revenue, most of their smaller counterparts cannot afford such services. Strengthening the competitiveness of local small retailers through professional relationships between university students, faculty experts and retailers is imperative, especially during the current domestic economic crisis. The aim of the project is to disseminate the practical implications of the latest theories of consumer behavior, visual merchandising and target market research (from fashion merchandising research), as well as space planning, sustainability and universal design/accessibility principles (from interior design research) to small retailers, who otherwise would have to commission these expensive services from professional consulting firms. Because the retailers will be actively involved in the development of the project, they will be able to tailor it to their needs.

Pre-post assessments of the students' participation are measured in three main dimensions of academic service-learning: (1) *civic responsibility*, (2) *personal and professional development*, and (3) *academic outcomes* (Vogelgesang & Astin, 2000). Mixed methods approach will be used for data collection and will include questionnaires, interviews, focus groups and reflective journaling.

This pilot project will identify ways to improve on student involvement benefits and will provide insights on how to maintain community partnership for future projects. The expectation is that this project will provide mutual and lasting benefits to members of the local business community and practical and problem-solving skills to students.

NARRATIVE

INTRODUCTION

The Athens Downtown Retail Study is a service-learning pilot project. Students from the Furnishing and Interiors (FI) program and Fashion Merchandising (FM) programs will work together in interdisciplinary groups to provide small, local, fashion retailers with research-based analyses regarding the retailers' consumers and the retail built environment. There were multiple objectives to achieve in this project aside from the primary focus of curriculum based learning objectives: (a) small local retailers could obtain free design and merchandising services, (b) students' interact with the community offering services that could possibly improve business during the current economic challenges, (c) students' gain professional development through client interactions, (d) interdisciplinary collaboration to offer the client an optimum outcome, and (e) the institution is interacting in the community (see Appendix A). By developing the project outcomes into a case study we will assess if service-learning is a teaching and learning paradigm beneficial for Interior Design curriculum.

THEORETICAL FRAMEWORK

Service-learning theory was used to develop and analyze the findings. Academic service-learning is defined as a course based, credit-bearing educational opportunity that: (a) students' participate in a service activity project that satisfies a community need, and (b) students' reflect on the service project to further understand the course content, develop professional commitment to their discipline, and develop an increased sense of civic responsibility and personal value (Bringle & Hatcher, 1995). The project design follows the Cone and Harris (1996) Service-Learning Model that emphasizes the individual, psychological and socio-cultural focus of service-learning and allows for the curriculum to remain at the forefront of the community activity. Pre and post assessments of the students' participation in this project are measured in three main dimensions of academic service-learning: (1) *civic responsibility*, (2) *personal and professional development*, and (3) *academic outcomes*.

METHOD

Student Participant Sample

The majority of the FM students are in their first two years of college taking an entry level Fashion Merchandising course titled the Fundamentals of Fashion Merchandising. There are 42 students enrolled in the FM course during Spring 2010 semester. The FI students are enrolled in a senior level Advanced Design Methods studio course. There are 20 students enrolled in the FI course during Spring 2010 semester.

Data Collection

The FM and FI student experience is being assessed before the project starts, during the project and at project completion. The open-ended pre-post questionnaires examine the students' *civic responsibility* with a specific focus on the students' commitment to interior design community service after graduation. The second service-learning measure is *personal and professional development* with a focus on (a) ability to work successfully with clients, (b) preparation to graduate and obtain employment in industry, (c) commitment to apply theories of sustainable and universal design, and (d) enhanced personal value. The third service-learning measure is *academic outcomes* with a focus on (a) project management, (b) satisfying client needs, (c) successful application of the design process, and (d) technical accuracy of working drawings (Vogelgesang & Astin, 2000).

RESULTS

The Athens Downtown Development Association provided contact information for the 53 clothing and accessories retail stores located in the historic downtown area. The 53 retailers were sent invitation letters to participate, and phone call and/or email follow-up to secure participation. There are nine downtown clothing and jewelry retail stores participating that include (a) three-stores focused on women's fashions, (b) three-stores focused on vintage men and women's fashions, (c) two-stores focused on jewelry and art, and (d) one-store focused on men's dress fashions. Each store has a group of six to eight students and the groups include two to three FI students and four to five FM students.

The following preliminary results from the pre-assessment questionnaires with the FI students explore the perceived benefits and disadvantages to project participation. Post-assessments will be completed by the students in March 2010.

Students' Perceived Benefits to Participating in the Project

The majority of FI students' perceived the primary benefits of the project as the experience of working with real clients in the community. The students had varied reasons for why they believed experience with real clients would be beneficial. Student #16 articulated that there is safety in working with a real client in a classroom environment, "I'm excited to get real-world experience and also be able to have guidance, assistance, and constructive criticism that I won't be able to get once I graduate." The students' perceived other benefits including:

Course credit, portfolio development, service to community and possible implementation [of design suggestions]. (Student # 4)

I will be able to network with business owners, be more comfortable working in a business partnership sharing equal responsibility for the project, and learn to manage others (FM students) effectively. (Student # 14)

Learn how to interact with clients, real life measuring experience, looks better to future employers, give me confidence after graduation, and learn what parts are most important and need to be completed first and with the most detail. (Student # 9)

Only two students expressed that the service learning component of *civic responsibility* is a benefit. Student # 19 stated, "We get to work one-on-one with the retailer. Also, the satisfaction of knowing that we are ultimately benefiting the community." When the project is completed it will be evaluated if the students' awareness for the *civic responsibility* component of the service-learning project increases.

Students' Perceived Disadvantages to Participating in the Project

The majority of the FI students' projected that the coordination of schedules with the FM group members could be problematic. In addition, the unknown of working on a non-simulated project had aspects categorized as possible project disadvantages. Student # 1 explained perceived disadvantages as, "…having to coordinate and rely on younger students and not knowing exactly what is going to happen with our clients." Student # 9 articulated the following concerns, "The disadvantages are the lack of scheduling freedom, [and] you have to base your work on the schedule of others. Also, the teacher has less control over the project." Although the perceived unpredictability of the project was considered a disadvantage by six of the twenty students, the same students simultaneously weighed the perceived learning benefits against the disadvantage of unpredictability. For example Student # 2 explained:

The main disadvantage is that the project is somewhat unpredictable. We don't know how responsive the store owners will be or how easy they are to work with. We will come across unexpected challenges, but this is part of the learning process.

Another perceived disadvantage with simultaneous advantages was articulated by Student # 20 as:

We are very much responsible for the way things go and have to be held accountable more. This is good though because this how it will be when we get a job. No one is going to baby us through projects. (Student # 20)

The students' perception that the project is not fully under the instructor's control and that unexpected challenges are expected to arise was accepted as "part of the learning process." Only one student of the twenty expressed the disadvantage that she "May not learn every tiny detail about the subject like taking tests would do" (Student # 11).

DISCUSSION

Prior to starting the project the students' perceive their *professional development* experiences as the most valuable aspect of the project. The *civic responsibility* component is not a perceived advantage or disadvantage of the project for the majority of the students. In order to identify the project as successful service-learning the post-assessments will need to indicate that the students gain *civic responsibility* awareness and/or commitment, and that *academic outcomes* are achieved.

The instructor and students are aware that each store project is unique and that the instructor has limited "control" over the project as compared to a full simulation project. To counteract the limited "control" over each store project the instructor uses two approaches to maintain close involvement in each group project: (1) adherence to the syllabus for crucial design process deadlines such as programming, concept development, design development and communication; and (2) weekly meetings

with each FI group during studio time. In addition, email, instant messaging and office hour contact occurs frequently to assist with each project outside of studio.

The instructor clearly defines key learning points that must be addressed throughout the project. As the students begin to experience the learning topic in the project the instructor identifies the lesson being learned and fosters discussion on the topic. The challenging aspect of maintaining focus on learning outcomes is not to become overwhelmed by identifying all the excellent learning opportunities that unexpectedly occur during this type of project. The project has many curriculum based learning outcomes outlined and this makes it crucial that the instructor remain focused on the identified key learning outcomes for the course and not to become sidetracked by the unexpected lessons learned. This approach assists with not overwhelming the students with too many diverse learning lessons and reinforces the key curriculum. Individual student experiences that become lessons learned may not be part of the curriculum focus but these valuable lessons are beneficial even though reflective exercises may not reinforce the learning outcome. Post-assessments and academic outcomes will be available in March 2010 and will be discussed at the paper presentation.

Appendix A

Studio Assignment Handout for the Athens Downtown Retail Study

Overall project objective. Furnishing and Interiors (FI) and Fashion Merchandising (FM) students will collaborate on this project to apply their knowledge of retailing, consumer behavior, space planning, and sustainable and universal design to analyze retail spaces. With faculty supervision students will conduct documentation, analysis and assessments of store design and in-store consumer behavior to provide store owners with practical suggestions that would increase their revenue as well as enhance consumer satisfaction.

About the collaboration between FI and FM students. The FI senior level students will serve as project managers responsible for the organization and supervision of their group. Each student group will consist of two to three FI seniors and four to five freshman level Fashion Merchandising students. The FI and FM group members must work together to complete their project. The following project timeline explains how FI and FM are dependent on each other to finish their part of the project in a timely fashion in order to successfully complete the project.

FI focused project objective. FI students will focus on honing skills in project management, programming, concept and design development and communication.

Final outcome/documents for FI. Final documents from FI will include, but not limited to, working drawings, a sustainability project manual, furnishings net budget for implementation of suggested design modifications, and communication documents.

Project Timeline

Dates	**Student Activity**	**Detailed Student Activity**
January 2010	Training & Meeting	FI & FM Student Training for Interviewing data collection. FI and FM Student Meeting 1 Agenda: • FI and FM group members prepare together for store interviews.
February 2010	Data Collection	FI and FM group interview the following to identify issues or concerns of the retail store including store owner(s), store manager(s), store employee(s)

REFERENCES (APA)

Bringle, R., & Hatcher, J. (1995). A service-learning curriculum for faculty. *Michigan Journal of Community Service Learning,* 2, 112-122.

Cone, D., & Harris, S. (1996). Service-learning practice: Developing a theoretical framework. *Michigan Journal of Community Service Learning,* 3, 31-43.

Eyler, J.S., Giles, D.E., Stenson, C.M., & Gray, C.J. (2001). *At a glance: What we know about the effects of service-learning on college students, faculty, institutions, and communities, 1993-2000.* Retrieved October 9, 2009, from http://www.compact.org/wp-content/uploads/resources/downloads/aag.pdf

Vogelgesang, L.J., & Astin, A. W. (2000). Comparing the effect of community service and service-learning. *Michigan Journal of Community Service Learning,* 7, 35-40.

Effect of Different Meadia on Student Learning in Interior Space Design

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ABSTRACT

PURPOSE

This study examines the effects of computer 3D modeling based design process and traditional manual design process on the interior space design in the studio environment. The research focuses on both the procedural development of space design and the final design result in design processes using different media. This study is intended to understand the student experience in the design process that is influenced by both digital and traditional media in the context of two concurrent courses of a traditional design studio and a computer-aided-design course that introduces the Google Sketchup as the 3D modeling tool.

CONTEXT

There are many studies trying to compare the effects of digital and traditional media on the design process. These studies tend to separate the two media of design and that is very different from the reality of today's design studios where the different media are mixed. Therefore, in recognizing the fact the different media are to be used in the design process of our studios, this study aims at revealing how the different media interact in the design process, instead of trying to judge which medium is better than the other. The majority of the comparative studies have been conducted primarily from technical perspectives. Specific *human* experiences in the context of a design studio have not been addressed adequately. This study looks into the dynamics of students' behaviors as designers with different abilities in design media application.

PROCESS

The participants of the study are sophomore students of the Interior Design Program. They work in both a design studios and a CAD course taught by different instructors, the authors. The CAD course teaches the students how to make 3D models with SkechUp and help the students to build 3D models of their studio project.

The instructors teach students making digital 3D models and manually made physical models at the beginning of their projects to allow them understand their designed space 3-dimensionally. In the process of learning, the students' works are observed and analyzed. Since both manual and digital techniques were used in the courses, a student's proficiency in both media was compared to see if there was any correlation. Questionnaires about their experience, comparisons, and suggestions of applying the media throughout the design process are also examined.

NARRATIVE

INTRODUCTION

This study examines the effects of different 3D modeling methods on the interior space design development process in a studio environment. The research focuses on both the procedural development of space design and the final design result in design processes using different media to understand the student experience in the design process that is influenced by both digital and traditional media in the context of two concurrent courses of a traditional design studio and a CAD course that introduces Google SketchUp as the 3D modeling tool.

Radical advocates of digital media believe that the digital media should replace traditional media, while some "pencil fundamentalists" argue that traditional media should remain essential in both design education and practice (Cuff 2001). Recently, more and more scholars studied the correlation between the proficiency of students in both media. The research shows that the artistic principles of the traditional media are equally important in digital media. Regarding the increasing demands of digital presentations in design procedure, scholars of interior design recently discussed the digital morphology and design process (Gibson 2007). Results indicated that first, digital creation was more linear than the traditional method; second, cyber-ideation had a positive impact on team dynamics; and third, automated output possessed greater surface delineation when compared with subjects' manual sketching.

However, the majority of the comparative studies have been conducted primarily from technical perspectives. Specific human experiences in the context of a design studio have not been addressed sufficiently and the proficiency of the students' media application has not been adequately examined. These experiences are informed by individual circumstances affecting students' preferences and choice of different techniques.

Taking this into account, it becomes crucial to examine the impact of students' individual experiences and abilities of applying different media in space design. Instead of trying to judge which medium is better, this study looks into the dynamics of students' behaviors as designers with different abilities in design media application. Meanwhile, it explores alternatives for using media on diverse circumstances of space design. Students were not required to use a specific technique to facilitate their designs. They were free to select either manual or digital method based on their personal experience and motivation. Their practices were observed and analyzed to tell what they were thinking and experiencing.

Many studies compare the effects of digital and traditional media in the design process. These studies tend to separate the two media of design and that is very different from the reality of today's design studios where different media are mixed. Therefore, in recognizing the fact that different media are used in our studios, this study aims to reveal how the different media interact in the design process.

PROCESS

The participants of the study were sophomore students of the Interior Design Program. They worked in both a traditional design studio and a CAD course taught by the authors. This is the first design project of the sophomore students, who had taken drafting and rendering studios in their freshmen year. The instructors teach students how to make both digital 3D models and manually made physical models at the beginning of their projects to allow them understand their designed space 3-dimensionally. The project requires students to design a space of 24'L x 12' W x 8' T to incorporate enveloped spaces, interlaced spaces, juxtaposed spaces, and translational space, based on students' individual commercial programs. The CAD course taught the students how to make 3D models with SkechUp and helped them to build digital 3D models of the space required in their studio project. The processes were observed and analyzed to find out what the students were thinking and experiencing.

Since both manual and digital techniques were used, a student's proficiency in both media was compared to see if there was any correlation. Beyond individual interviews, class group discussions and studio interviews were arranged several times during the design process and at the end of the semester. Questions were asked to obtain students' opinions about the approaches during the design process. At the end of the project, questionnaires about their experiences, comparisons of their work, and suggestions of applying the media throughout the design process were also examined.

RESULT

Students were motivated when they learned that they

were participating in the research, especially when they were encouraged to judge their favorite media for the design process. Their great creativity made the results very interesting and somewhat challenging to analyze. There are 24 students decided to participate in the research.

When asked if they used 3D digital modeling in their design process, 22 students answered yes; and two said no. The Table 1 shows the distribution of student usage of digital 3D modeling in their design process. The questionnaires show that two students only use SketchUp for final project presentations.

Table 2 shows the distribution of medium applications of using 3D modeling at the beginning and the end of the design. The effect of different meadia on student learning in Iinterior space design is more complicated. From our observation, students also employ free sketch and manual model during their study process. Some students mixed both manual and digital media together instead of using a single media, making the data richer but also more complex in terms of analysis. After the project was finished, students gave us a feedback regarding their choice of future approach of different media application. Table 3, 4, and 5 display the data.

There is another interesting phenomenon. From our observations, when students applied digital techniques in their designs, they used a bird's-eye-view instead of views at people's eye level. This causes some confusion in terms of estimating the height of elements and objects, such as interior walls, and furniture. In addition, a bird's-eye view, without showing the ceiling, limits students' creation of the entirety of a space. SketchUp software creates 3D modeling in the form of axonometric views that view the created 3D object from above, similar to a bird's-eye view. One principle of design is that one should avoid using a bird's-eye view at the beginning of a design. At the end of the project, we had a question asking if students found eye-level view created in 3D SketchUp models helpful in design developments. The positive answers are 23, 96% of the participants. This technique assists overcoming the lacking eye-level view in using physical models.

The authors found that students' final presentations were not presentations of a final design. They were the final output accumulated through the entire design process. Their 3D models were not only processed inside their computers, but also manipulated in their minds throughout the design process. These 3D SketchUp models became virtual models. The students talked about them, imagined them, and worked on them no matter how they visualized them. In addition to considering students' previous personal experience, communication among classmates and peer pressure were also factors that influenced media selection for design process. The Figure 1, 2, and 3 show students design process and presentation. The Figure 4 displays students' physical models.

From the interviews, and observations in the studio teaching process authors learned that specific human experiences in the context of a design studio should be considered when we teach. Meanwhile, the proficiency of the students' media application should be adequately examined. To most students, there were no big differences between traditional medium and digital medium as some scholars have argued. How much of each medium they applied in this process varied depending on their personal preference.

CONCLUSION

This study shows that quick digital 3D modeling helped the students understand size and height of spaces, the proportion and scale of material applications and especially ceiling design. With 3D modeling, students easily controlled complicated shapes, spaces, and components, such as stairs, open lobby spaces, curved walls and ceilings, and unique building spaces, etc. Students worked accurately on space and furniture planning.

From students' comments and tables, we can see that they preferred to have a quick digital 3D model in the beginning of a design. However during the design process, digital modeling was favored by certain students who have better digital modeling skills or who paid more attention to spatial relations. At the end of the design process, digital 3D modeling was again popular not only for the final presentation, but also for evaluation and refinement of spatial design.

To the question about the superiority of one medium over another, there is no simple answer. It all depends on the situation – both the type of the design problem and the students with various degree of proficiency in media application.

The most rewarding experience in this study was the reflection of student learning and the impact of these reflections on our teaching during the design process. The process was not only a learning process in space design for the students, but also a learning process of effective teaching for us. The observation and interviews in the studios provided considerable information to change my teaching to fit student needs.

TABLE 1. STUDENT EVALUATION OF 3D DIGITAL MODELING IN DESIGN PROCESS

Applied 3D Digital Modeling in the Design Process		
Very Helpful	Helpful	Not Used
18 (75%)	4 (16.7%)	2 (8.3%)

TABLE 2. STUDENTS' CHOICE OF MEDIA APPROACH AT BEGINNING OF DESIGN PROCESS

3D Digital Modeling	3D Manual Modeling	Freehand Sketch	Combine Different Media
13 (54%)	3 (12.5%)	6 (25%)	2 (8.5%)

TABLE 3. COMMENTS OF A MANUAL 3D MODEL HELP IN A DESIGN PROCESS

	Positive
1	it helped to convey my design idea better than Sketch Up
2	in schetuchup daring, I did not realize a big error until I saw it in the actual model
3	I built the manual model based on the digital one
4	you can see exactly what you want, how to best use the space and what the finished project looks like
5	it gives you a chance to pick it up with your hands and feel the design as you move from one area to another
6	light penetration on a model is very helpful
7	allows me to open my mind to other options
8	helped in measuring and figuring out dimensions, proportions
9	helped in getting ideas across for others to understand
10	good practice for future, clients can understand visual references and relate more to the hand on kind
11	improves craftsmanship
12	more natural and more familiar process to make a manual model instead of digital
13	ability to physically manipulating the elements without worrying about whether I had computer skills to do it
	Negative
1	the manual model not as helpful, used the digital model more in developing the design
2	the materials for a model don't always do a concept justice

TABLE 4. COMMENTS OF A DIGITAL 3D MODEL HELP IN A DESIGN PROCESS

	Positive
1	allows to change things in your project that might not have been seen without it
2	more efficient - was able to work on my laptop in a café
3	pushed my project, helped to train my eye
4	helped to visualize how a person would feel walking through the space
5	helped to develop my space better
6	helpful to move through a 3D generated space to witness the effectiveness of a design idea before committing to it on the floor plan
7	helpful because you get to plot out the space and size and you have a visual of what you have to work with
8	helped to physically see and understand the model
9	would like to do it as much as possible
10	better understanding of the scale of the project
11	easier to get ideas across
12	encourages creativity
13	faster and better outcome
14	allows to build, furnish and color in the model with a click of a button
15	digital model was a great reference while building an actual model - measurements
16	it is easier to build a manual model based on the digital one
17	more professional looking
	Negative
1	Limits creativity
2	the materials for a model don't always do a concept justice

TABLE 5. COMMENTS OF TWO MEDIA WORK TOGETHER IN THE DESIGN PROCESS

1	worked very well together, great to see both working together
2	good choice for a project
3	3D modeling will replace manual model building in my future projects
4	some hand-drawing and sketching is still helpful
5	it helped a lot working on the same project in two different ways because you could see different problems in different ways
6	the two played off each other, was able to fix things easier in 3D and then go into the manual model and incorporate the changes
7	more difficult to transform ideas into digital than the manual model - multiple curved elements

REFERENCE LIST (CHICAGO)

Bilda, Z. and Demirkan, H. 2003. An Insight on Designers' Sketching Activities in Traditional Versus Digital Media. *Design Studies* 24 (2003) 27-50.

Brandon, L. 2001. Effects of Hand-drawing and CAD Techniques on Design Development: A Comparison of Design Merit Ratings. *Journal of Interior Design,* 27(2): 26-34.

Cuff, D. 2001. Design Software's Effects on Design Thinking and Teaching. *Architectural Record,* 189(9): 200-206.

Edwards, Steven M. 2000-2001. The Technology Paradox: Efficiency Versus Creativity. *Creativity Research Journal*, Vol. 13, No. 2: 221-228.

Gibson, Kathleen. 2007. Automated Creativity: Digital Morphology and the Deign Process. *Journal of Interior Design*, Vol. 32, Number 3: 41-47.

Goel, V. 1995. *Sketches of Thought*. MIT Press, Cambridge, MA.

Hennessy, S. 1999. *The Potential for Collaborative Problem Solving in Design and Technology. International Journal of Technology and Design Education*, 9: 1-36.

Johnson, T. P. 2001. Digital Drawing: Illustrative drawing and rendering with Photoshop. *Landscape Architecture,* November: 44-48.

Laseau, P. 2000. *Architectural Representation Handbook. Traditional and digital techniques for graphic communication*. Mcgraw-Hill Companies, Inc.

Lu, J. 2005. "Bridge the Differences between the Digital and the Traditional Media." *Deliberate Design - A Deliberate Design - A Humane and Enlightened Course of Action*, IDEC, Savanna, GA: 76-77.

Levin, H. 2002. A Response to William Mitchell on "The Death of Drawing". *Leonardo*, 35(1): 118.

McCullough, M. 2004. *Digital Ground: Architecture, Pervasive Computing, and Environmental knowing.* MIT Press.

McLain-Kark, J. 2000. A Strategic Story of Using Computer Technology: The EPA Project by HOK. *Journal of Interior Design,* 26(2*)*: 25-40.

Meneely, J. 2007. Motive, Mind, and Media: Digital Sketching in the Creative Culture of Design. *Journal of Interior Design.* Vol. 32, Number 3: 69-90.

Reiss, G. N. 2001. Drawn to Perfection. *Preservation*, *53(1)*: 50-53.

Seelig, W. 2003. Digital Dialogues: Technology and the Hand. *Surface Design Journal.* 28(1): 6-11.

Steven, E. 2000-2001. The Technology Paradox: Efficiency Versus Creativity. *Creativity Research Journal.* Vol. 13, No. 2, 221-228.

Wagner, A. 2004. Photo Finish. *Blueprint,* February: 66-69.

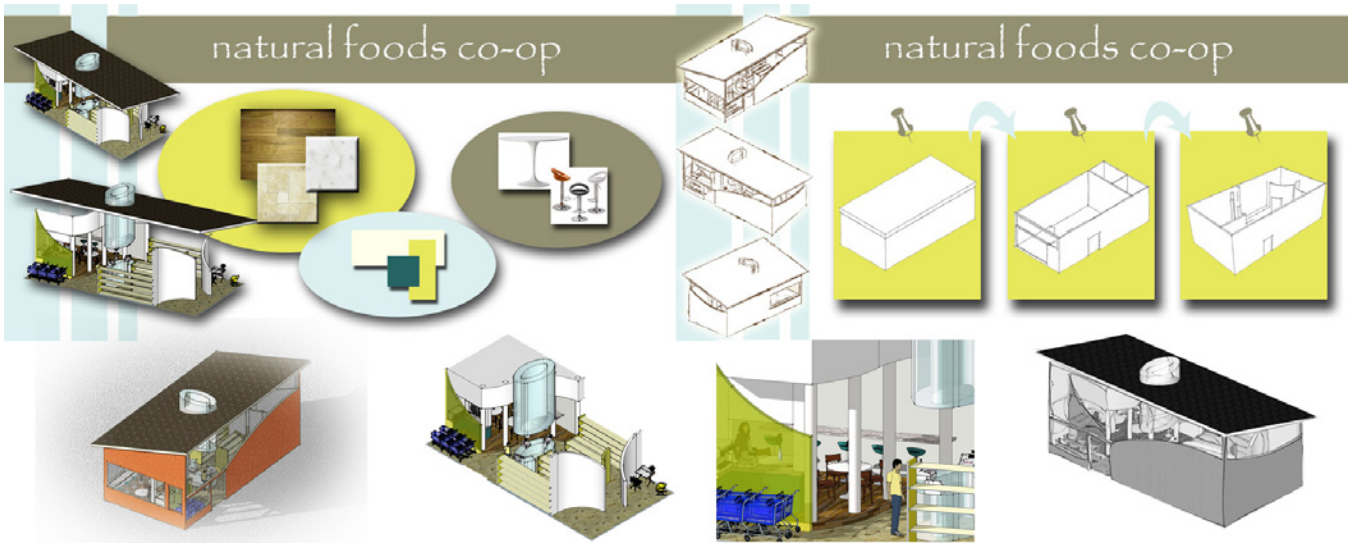
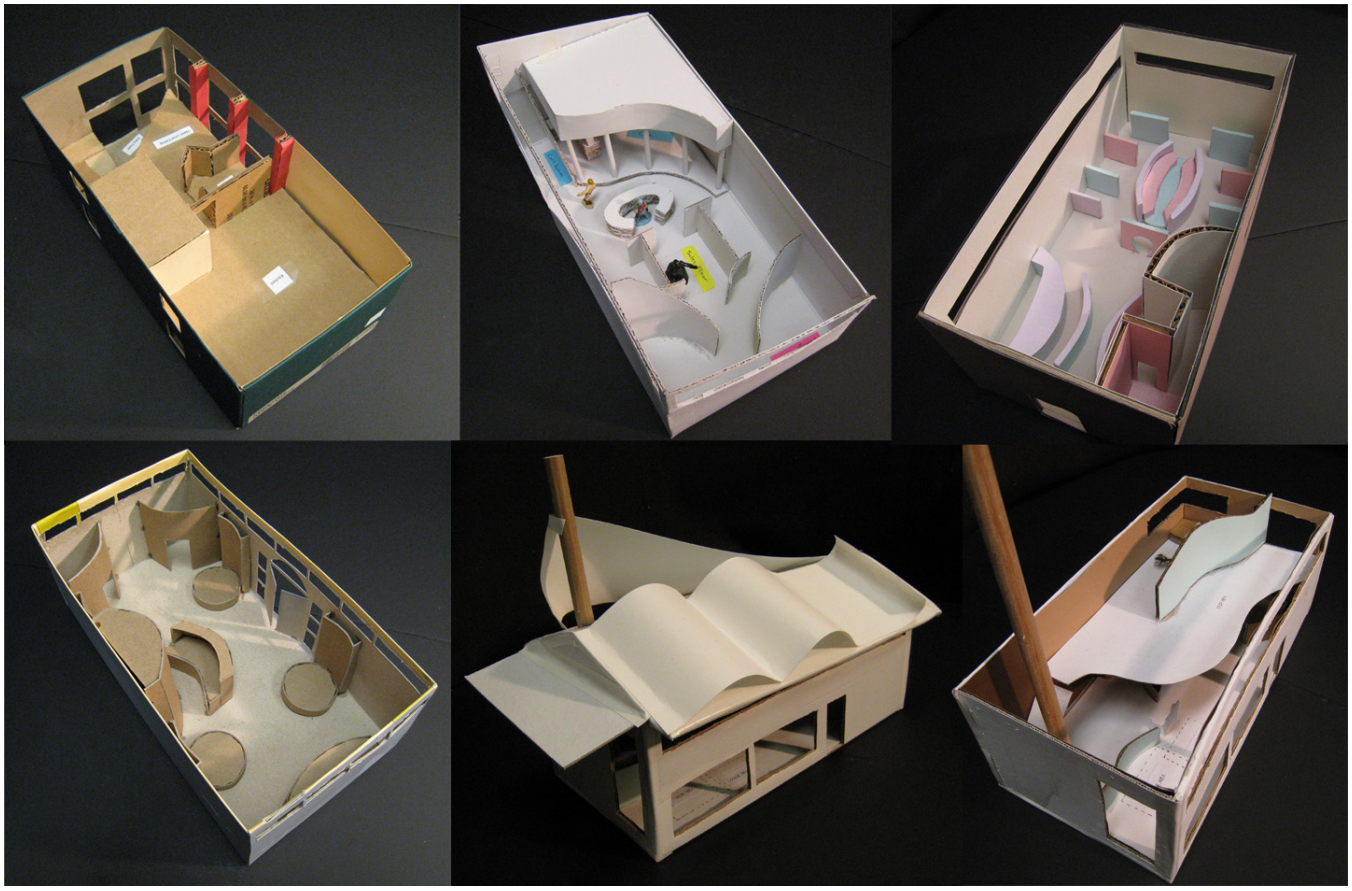


Figure 1: Digital presentation

Figure 2: Digital presentation

Figure 3: Digital presentation

Figure 4: Physical models



foundations : alternatives : reflections : explorations : abstractions constructing maps of meaning in design history

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ABSTRACT

This teaching forum follows the progress of design students as they construct "maps of meaning" in their design history course (Tuan, 1977). Borrowing on anthropological theory (Gray, 1958), suffusing analytical approaches to space (Unwin, 2003), and linking to the required student text for design studio (Rengel, 2007), the history course featured in this forum operates from the premise that we see design as a form of thinking and conversation where certain values and hopes about the world become materialized. During the forum, the instructor will demonstrate the impact of this pedagogical approach and the results of student endeavors therein, clearly significant to the study of design in social and historical context, a fundamental tenet of design education. This teaching forum allows the opportunity to review student views of various concepts and organizing principles for the course. Accordingly, the presenter utilizes student blogs to demonstrate "maps of meaning," reflecting on the successes and challenges of this approach to the teaching of history, and the opportunities that rise from a course that reaches across time as it stretches notions of disciplinarity and examines design across a sliding scale. With the history course viewed as a fundamental right of passage – a foundation experience for all designers – the import of a multi-faceted approach merits conversation among those at the forum.

NARRATIVE

On the first day of class in iar221 **[history + theory of design i]**, I bring along a map to visually unfold our design expedition in the first semester of a two-course history/theory sequence. An apt metaphor, this basic tool of geography resonates with students as they attempt to depict spatial phenomena and relationships on paper and explain them. Focused on both history (realized and tangible products of human intervention with nature) and theory (the ideas embedded within these products), iar221 involves a near-impossible task during the term: for students to pinpoint their own design world within a constellation of disciplines. As an interior architecture department, we move beyond the accepted notions of what interiors mean and think of closely related disciplines as allies in the quest for great design at multiple scales, much like the seminal movie, *Powers of 10* (Eames, 1977). This course, then, responds to that outward linking and inward contemplation as a sort of hybrid encounter with the "culture of building" (Davis, 1999) through architecture, interior architecture, interior design, decoration, decorative arts, environmental graphics, and industrial design – and the worlds of painting, sculpture, dance, music, theatre, philosophy, and more – thus the need for a map, and a darn good one.

In the first several weeks, I sketch out a map that includes the work of scholars, inside and outside design, to illuminate approaches to studying the built environment and the objects contained within. These include the concept of the built environment as a nautilus shell that we carry on our backs into the future (Roth, 2007); the triumvirate of all good building: commodity, firmness, and delight (Wotton, 1624); a material culture perspective, modified by a sub-culture lens (Prown, 1980; Prown, 1982; Hebdige, 1979); and the definition for our study

as “the holistic creation, arrangement, and completion of space for human use” (Kurtich + Eakin, 1993). As we launch into the foray of buildings, interiors, and objects of pre-history, I unveil the final theoretical approach, the design cycle, based upon anthropological theories in the study of creativity across time (Kroeber, 1944; Gray, 1958; Gray,1966).

As students scrutinize and discuss each theory, I remind them to think of visualizing that map to help guide them through the semester. Thus their “legend” – the key to their individual maps and the map of the class as a whole – rests in the course goals to:

see design as a form of thinking and conversation where certain values and hopes about the world become materialized;

interpret a framework for the study of design theory and history in global perspective;

explain interrelations of culture and design manifest in physical form;

identify key design characteristics and movements through time;

understand the recent built environment in relation to past buildings and designers;

form opinions about design history and theory in speech, writing, and drawing.

Two other important geographic concepts involved in map-making further illuminate: orientation and scale. In the case of the former, usually indicated by a north arrow, I see myself as the mental compass for the course, helping students back to true north as they work their way through the material and assignments. Of course, I do not accomplish this work on my own, having a number of additional direction-orienting devices in the room, both in person (undergraduate and graduate teaching assistants) and in texts (the authors of the assigned readings for the course). With our collective experience as a guide, I hope students find resonance with one or more of us to help them on their design journey. As to scale, the multi-disciplinary study of the building and decorative arts lends itself well to a ever expanding and decreasing series of contexts and relationships from one level to the next: material, artifact, collection, room, interior suite, building, block, neighborhood, community, region, nation, and world. In each case, students consider information from all scales to weigh the magnitude of the evidence in sketching out the panoramic story of design on their mental maps.

To provide further order, drawing from the design cycles theory, four chronological units frame the course: FOUNDATIONS, ALTERNATIVES, REFLECTIONS, and EXPLORATIONS. In FOUNDATIONS, the students explore humanity’s first efforts to shape their built environment, sifting through data from the Lascaux cave paintings through the development and eventual decline of the Roman Empire, tracing various modes of classical architecture as a way of shaping and decorating space. In the second unit, students investigate buildings and places of the Romanesque, Gothic, and Renaissance time periods, connecting these ALTERNATIVE views of design to those produced by the ancients. Students then confront the rise of interiors and the increasingly complex buildings of the seventeenth, eighteenth, and nineteenth centuries as REFLECTIONS, artifacts that link backward but speak of humanity’s hopes for the future. In the final unit of the course, students discover linkages as Modern designers grappled with deriving additional expressions for contemporary architecture and interiors, EXPLORATIONS anchored in and reacting to the sweep of history. To consider this wide range of ideas and evidentiary sources, the course engages material representations of design in four scales (OBJECT, SPACE, BUILDING, PLACE) across the globe (see **appendix a: 221 calendar**). Required unit summaries provide a convenient and methodical place and process for students to make connections and sum up, recounting the major buildings and objects, spaces and places of each unit, contextualizing them and linking them with course content, readings, and impacts on their own studio (and other course) work.

Because this foundation course offers the opportunity for general education credit as well as the promise of an embedded honors section of the course, linking to the university’s international honors program, in addition to regular assignments for the course, about a dozen students also take on the ABSTRACTIONS project. For this endeavor, I paired students and assigned them a concept to explore for each of the four course units: patina of place, silent buildings, fingerprints + footprints,

chiaroscuro, aqua vita, junctions, the dancing column, the theatre of everyday life, and frozen music. Paralleling their unit summaries, students applied a scale lens to this work (OBJECT, SPACE, BUILDING, PLACE), and an aspect lens as well, centering their analysis and reflection on NATURE, PEOPLE, MATERIAL, and SYMBOL. The result was a matrix (another map of sorts) upon which students hung their writing, sketching, and image collecting (see **appendix b: 221 abstractions**).

With varying degrees of success, but generally with an increase in comprehension of ideas across courses, with an ever-evolving command of design vocabulary, and with an inter-weaving of texts and visuals, students recorded their reactions to a series of weekly prompts on a blog. This digital space opened the possibility for students to construct "maps of meaning" within easy view and access of others. Thus, six dozen maps lay open for examination by the instructor, teaching assistants, faculty teaching other courses, and the students themselves – a sort of digital atlas of design history and theory. The student blogs demonstrated the promise of practiced and considered effort to explain difficult concepts in words and images weekly. Amalgamating through the entire semester, these blogs provided a ready source for students to scroll through, not only a study guide for the final examination, but a well-worn map to which students may return to add additional information and insight throughout their life by design.

Where the blogs represented the digital and semi-permanent legacy from the course – the true benefit of such an exercise revealed itself at the final examination period, where students tested their comprehension of design by undertaking and presenting a precedent analysis. To prepare for examination, students worked in their perception + communication course to prepare two 20x30" boards and a model, deliverables based on history/theory content. As their history/theory instructor, I visited the studio several times to review student concepts and to push and prod their investigations. Discrete deadlines throughout the semester helped students stay on track in selecting an object or a building, writing about it, refining ideas, and thinking of representational schemes that would support the concepts and ideas they hoped to explain about their selections. The blog provided a space for some of this process work, but the boards and models the students produced, perhaps because two classes "weighed in" on the assignment, outshone any previous graphic and history work by first year students in their second semester of the program. The maps of meaning first unfolded for the class on opening day of the semester provided structure for the final exercise, but by no means did the student projects observe the neatline (map boundary) prescribed at the onset of our time together. Instead the students reminded us that the mental maps we all construct individually speak to the inherent richness of the building and decorative arts and their inscription suggests that it takes detailed examination, painstaking representation, a large expenditure of energy, and a good sense of direction to make sense of a broad scale of design ideas in inter-related contexts, best understood from a multi-disciplinary approach.

T H E O R I E S

W	21 Jan	nautilus : shed | cathedral	
F	23	commodity : firmness : delight : cycles	Roth, 11-53
M	26	aedicule : the power of 3 : material culture	Roth, 55-117
W	28	circles + stones : humanity's first interiors	timeline DUE
F	30	more circles + stones : east meets west	Roth, 159-188

F O U N D A T I O N S

M	2 Feb	time : passage	Roth, 189-213
W	4	male : female	Blakemore, 1-25
F	6	real : ideal	Roth, 215-245
M	9	archetype : prototype : hybrid	Blakemore, 26-44
W	11	demos : empire	
F	13	the wu-wu + other interpretations	Roth, 247-273
M	16	architecture + civic life	Blakemore, 45-67
W	18	local : international	Roth, 275-300
F	20	structure + surface : east meets west	PA | justification DUE

A L T E R N A T I V E S

M	23	millenial observations	Roth, 301-351
W	25	reaching heavenward	Blakemore, 68-90
F	27	duomo : the cathedral at Florence	US | foundations DUE
M	2 Mar	venezia : city of floating stone	Roth, 353-395
W	4	villas in the veneto	Blakemore, 91-112
F	6	rinascimento : renaissance	Blakemore, 113-151
	9-13	SPRING BREAK : NO CLASS	
M	16	IARc ADVISING DAY : NO CLASS	Blakemore, 152-246
W	18	testing boundaries + breaking rules	Roth, 397-437
F	20	outside the box : a holistic view	PA | deliverables DUE

background

The study of the history and theory of design requires deep thought and articulate communication. To get better at explaining the import of design and architecture, one has to practice in writing and in drawing to speculate about big ideas that shape the built environment. Because many web-based resources do not move beyond a surface exploration of artifacts, spaces, buildings, and places, this ABSTRACTIONS project enables students to consider evidence at a variety of scales to further design discourse. In light of the course objective to "see design as a form of thinking and conversation where certain values and hopes about the world become materialized," together we will explore some deep-dwelling and far-reaching ideas about design throughout the semester.

opportunity

In addition to your entries for the opus project, you will undertake additional analytical practice centered on a phrase or concept to explore aspects of design and architecture at varying scales across time. A three-dimensional matrix provides structure for this experience, but the hope is that you will individually and collectively build from that matrix to a seamless investigation, uniting the written word with the visual image. For each unit in the class, address the SUBJECT at all four of the OBJECT scales, taking into account each ASPECT and the senses engaged in the process. Deliver a single salient image for each object scale with substantive writing about your assigned topic.

topics + assignments

patina of place : aiken + wilson

silent buildings : allen + waye

fingerprints + footprints : gustafson + sylvia

chiaroscuro : mickey + robert

aqua vitae : moon + ragan

junctions : ladd + shelton

the dancing column : jones

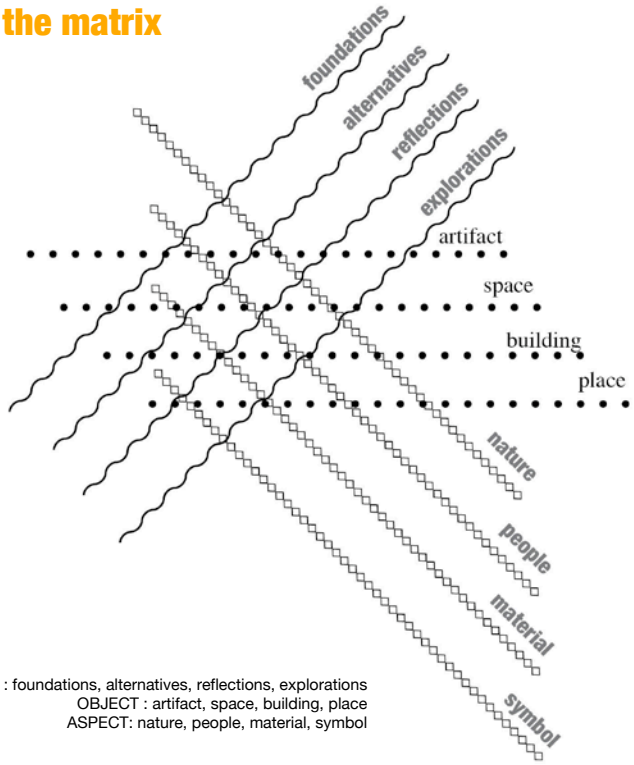
the theatre of everyday life : smith

frozen music : willis

the shifting image : rowland

lingua franca : rowland

the matrix



SUBJECT : foundations, alternatives, reflections, explorations
OBJECT : artifact, space, building, place
ASPECT: nature, people, material, symbol

due : along with unit summaries, but posted at designcosmology.blogspot.com

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REFERENCE LIST (APA)

Davis, Howard (1999). *The Culture of Building*. New York: Oxford University Press.

Eames, Charles and Ray (1977). *Powers of 10* movie.

Gray, Charles Edward (1958). "The Epicyclical Evolution of Graeco-Roman Civilization," *American Anthropologist* 60: 13-31

Gray, Charles Edward (1966). "A Measurement of Creativity in Western Civilization," *American Anthropologist* 68:6, 1384-1417.

Hebdige, Dick. *Subculture: The Meaning of Style*. New York: Methuen, 1979.

Kroeber, A.L. (1944). *Configurations of Culture Growth*. Berkeley: University of California Press.

Kurtich, John + Eakin, Garrett (1993). *Interior Architecture.* New York: Van Nostrand Reinhold.

Prown, Jules David. "Style as Evidence." *Winterthur Portfolio* 15.3 (1980): 197-210.

Prown, Jules David. "Mind in Matter: An Introduction to Material Culture Theory and Method." *Winterthur Portfolio* 17.1 (1982): 1-19.

Rengel, Roberto J. (2007). *Shaping Interior Space, Second Edition*. New York: Fairchild.

Roth, Leland. (1977). *Understanding Architecture: Its Elements, History and Meaning, Second Edition*. Cambridge: Westview, 2007.

Tuan, Yi-Fu (1977). *Space and Place: The Perspective of Experience*. St. Paul: North Central Publishing.

Unwin, Simon (2003*). Analysing Architecture, Second Edition*. London: Routledge.

Wotton, Henry (1624). *The Elements of Architecture*. Reprint 1903, London: Longmans, Green + Co.

Practitioners + Academics: A Team-Teaching Approach to Interior Design Studios

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ABSTRACT

PURPOSE AND LITERATURE REVIEW

In *Building Community: A New Future for Architecture Education and Practice* (1996, p. 107) Boyer and Mitgang state:

> *"The worlds of architecture practice and education depend on each other for their purpose and vitality. Both bear responsibility for preparing students for gainful employment and for continuing the lifelong professional education of architects. In the end, the academy and the profession also share an obligation to serve the needs of communities, the built environment, and society as a whole. It is inconceivable that these goals can ever be effectively realized in an atmosphere clouded by miscommunication, mistrust, or lack of respect."*

While this observation was made thirteen years ago about the relationship between architecture schools and the profession, one could argue that it is relevant for the interior design discipline today. This presentation shares the challenges, goals, and educational outcomes of two universitie's attempts to bridge the gap between academia and practice by engaging practitioners in the studio education process.

No literature published to date has addressed the issue of actively engaging practicing professionals in the day-to-day business of the interior design studio. However, a framework for the proposed teaching strategy can be drawn from the nursing profession, which regularly and effectively encourages practitioner-academic teaching teams. Specifically, the work of Murphy (2000) revealed a four-part framework for evaluating and nurturing the nurse practitioner-academic partnership objectives: liaison, teaching, clinical practice and research. Although not interior design specific, this framework translates to the practice of design and serves as the conceptual underpinning for the proposed presentation.

METHODOLOGY

The methodology for the proposed presentation is based on Grundy's (1982) Action Research Model, which is research designed by study participants with the goal of improving the quality of the participant's organization and performance. Accordingly, this presentation details the structure, educational goals, and outcomes of two interior design program's partnerships with practice in studio settings. Since 2003 six firms have volunteered to co-teach twelve studios. Methods for engaging practitioners varied from one school to another and reflect differences between the two universities (e.g. location (urban vs. rural), college (architecture vs. family & consumer sciences), and university classification (teaching vs. research)). The presentation will also share how this teaching methodology can be used to meet key CIDA accreditation requirements, allowing for more freedom and flexibility in other courses.

SUMMARY

The presentation showcases strategies for engaging practitioners in design studio education beyond their commonly assigned role of project critic. Based on the experiences of the faculty involved, this type of collaboration can be a win-win for all parties involved. According to Judy Pesek, Partner in Charge at Gensler (a participating firm), her staff members beg to volunteer because the experience of mentoring the students is exciting and brings fresh ideas into the office. In addition to energizing the practitioners, the collaborations have helped faculty keep abreast of changes in the industry. While the workload can be intense, student evaluations for the courses are consistently high and the quality of work produced is excellent.

NARRATIVE

INTRODUCTION AND PURPOSE

Boyer and Mitgang state:

> *"The worlds of architecture practice and education depend on each other for their purpose and vitality. Both bear responsibility for preparing students for gainful employment and for continuing the lifelong professional education of architects. In the end, the academy and the profession also share an obligation to serve the needs of communities, the built environment, and society as a whole. It is inconceivable that these goals can ever be effectively realized in an atmosphere clouded by miscommunication, mistrust, or lack of respect" (1996, p. 107).*

While this observation speaks to the discipline of architecture, it is equally relevant to interior design (ID). One strategy ID programs use to bridge this potential gap between academia and practice is to hire faculty with strong professional practice backgrounds. This paper presents an alternative method of engaging practitioners in the ID studio education process.

LITERATURE REVIEW AND FRAMEWORK

While there is considerable literature on role of practitioners in design critiques, limited literature has addressed the issue of actively engaging practicing professionals in the day-to-day studio process. However, one recent study (Ankerson & Borner, 2009) addresses this issue in an interdisciplinary design studio (architecture and ID students). In this studio, students worked in an off-campus setting on a healthcare project with weekly practitioner participation in the studio. Faculty noted that the studio was effective in terms of modeling collaborative behaviors, reinforcing evidence-based design methods and resulted in high quality student work.

Although the Ankerson & Borner (2009) study speaks to some of the merits of an academic-practitioner studio format, a formal framework for this model can be drawn from the field of nursing, which shares some key attributes with ID. Murphy commented on the disconnect between academia and clinical practice in the field of nursing stating, "it remains a fundamental issue of concern, that in a practice discipline, up to half the curriculum content may be delivered by those who have little or no contact with clinical practice" (2000, p. 705). A similar disconnect often exists between ID studio faculty and professional practice.

Researchers in nursing have proposed a variety of strategies for addressing this disconnect between academia and practice (Cahill, 1997; Kirk, Carlisle & Luker, 1996; Rolfe, 1996). The work of Murphy (2000) synthesizes these earlier proposals into a four-part framework for evaluating and nurturing the nurse practitioner-academic partnership focusing on the following objectives: liaison, teaching, clinical practice and research.

The role of liason references the need for faculty to serve as the link between the students and practitioners. This calls upon faculty members to mentor practitioners who may not possess inherent teaching skills and serving as the visible team leader and curriculum coordinator. In reference to the teaching component of the framework, Murphy (2000) challenges faculty to integrate theoretical components of the existing curriculum with current practice. The practice component of the framework refers to the ability of the faculty to maintain professional credibility with the students while updating their own knowledge base relevant to current trends and issues. Finally, the research objective of the framework acknowledges this inherent goal of academia and suggests a methodology for collecting, analyzing, and disseminating data relative to the partnership.

METHODOLOGY

Murphy's (2000) framework references a strategy for systematically collecting, analyzing and disseminating project results based on Grundy's (1982) Action Research Model methodology. As is often the case with action research, the collection and analysis of data requires a combination of quantitative and qualitative methods. The current presentation uses a combination of formal student evaluations and comments, CIDA standards, external awards and informal discussions with students and practitioners to evaluate project results.

The University of Texas at Austin (UT). UT is classified as a Carnegie "Doctoral/Research University-Extensive" institution and is located in Austin, Texas, the 4th-largest city in Texas (US Census, 2008). The ID program is housed in the School of Architecture and ID studios meet 15 hours per week. From 2002-2009, five design firms volunteered to team-teach thirteen design studios.

During the fall semesters 2002-2004, design firms team-taught senior level design studios with one faculty coordinator (see Table 1). Practitioners from the firms teamed with the professor and co-taught the studio two times per week. Assignments were based on actual projects the firms had completed. Students presented their work to clients and other firm members and toured the completed projects at the end of the semester. Structure and requirements of the studios varied slightly with the participating firms.

Based on feedback from students, colleagues, and practitioners it was determined that twice-a-week practitioner presence throughout the semester was too much. In subsequent years (2005-2009), practitioners met with students approximately seven to sixteen times throughout the semester (see Table 1). These meetings took the form of informal desk critiques, formal presentations, and teaching of specialized information. In 2005 the team-teaching model was expanded to a junior level studio. Most studios have been interdisciplinary and included ID, architecture, landscape architecture, and historic preservation students while also integrating experts in building codes and lighting design.

Texas State University-San Marcos (TSU). TSU is classified by Carnegie as a large "Master's College and University" institution and is located in San Marcos, Texas, which is the 59th largest city in Texas (US Census, 2008). The ID program is housed in the Family and Consumer Sciences Department and design studios meet 5½ hours per week. In the fall 2009, one faculty member implemented the practitioner-academic strategy in a junior level studio. The project was a 7,500 square foot commercial project done in short (six week) timeframe. The partnering practitioner met with students six times during the project duration, four times for desk critiques and twice for formal presentations.

RESULTS AND DISCUSSION

The team-taught ID studios at both universities enhanced the educational outcomes for students and resulted in mutually beneficial experiences for the faculty and professional practitioners involved in the process. The results are presented in relationship to the Murphy's (2000) framework for practitioner-academic partnerships.

Liason. Professors worked collaboratively with practitioners to define appropriate project type and scope to meet curriculum goals (refer to Table 1) and CIDA standards. Although the practitioners were given design authority equal to the faculty member in the classroom, the faculty members served as the first point of contact for students, practitioners, and other consultants relative to the project. Professors were responsible for all grading and nurtured practitioners in developing teaching skills.

Teaching. Projects from both programs seamlessly integrated theoretical components and academic research into the design process. For example, student discussions were regularly supplemented with scholarly articles relative to project type and students were required to complete independent research to enrich their understanding of the design problem. This balance or practice and theory-based input resulted in improved quality of student work. In the third year course at UT, instructor evaluation scores improved by an average of 22.5% and overall course evaluation scores improved by an average of 9.5%. Students consistently wrote positive statements about the course content and structure on course evaluations (refer to Table 2). Other practitioners have complimented the quality of work seen in student portfolios and noted the students improved verbal presentation skills. Both programs have had very positive CIDA accreditation reviews since the team-teaching strategy was implemented with CIDA site visitors noting the collaborative studio approach as a "program strength." The process also led to more creative solutions and a more rigorous studio climate. Since 2005, six students have used projects from the studios to win the prestigious $30,000 Donghia scholarship in addition to other scholarships.

Practice. The practitioner-academic strategy has ensured that projects are relevant and address contemporary issues and trends. Practitioners have repeatedly expressed their delight in volunteering to teach explaining that the enthusiasm and creativity of the students energizes the practitioners day-to-day work life. The connections between students and practitioners in the classroom have contributed to students securing internships/jobs with the participating firms. The model is also beneficial and refreshing for professors. By teaching side-by-side with practitioners, faculty members are exposed to the challenges and trends driving practitioners today and the collaboration with the practitioner seems to increase the faculty member's studio credibility among

the students.

Research. Professors have embraced feedback from students and practitioners and actively reflected on the successes and challenges of each studio in an effort to continually improve the academic-practitioner studio model. Hopefully, this presentation and future publications will increase interest in and awareness of this teaching model while providing some logistical guidance as well. The ultimate goal, of course, is strengthening the bond between academia and practice.

SUMMARY

The practitioner-academic studio model engages practitioners in design studio education beyond their commonly assigned role of project critic. Based on the experiences of the faculty involved, this type of collaboration can be a win-win for all parties involved. According to Judy Pesek, Partner in Charge at Gensler, her staff members beg to volunteer because the experience of mentoring the students is exciting and brings fresh ideas into the office. In addition to energizing the practitioners, the collaborations have helped faculty keep abreast of changes in the industry. While the workload can be intense, student evaluations for the courses are consistently high and the quality of work produced is excellent.

REFERENCES APA

Ankerson, K. & Borner, B. (2009, March). Effective collaboration in interdisciplinary teams: Healthcare design studio as vehicle. Proceedings from *Interior Design Educators Council 2009 Annual Conference*, St. Louis, MO. Retrieved from http://www.idec.org/events/annual.php.

Boyer, E. L, & Mitgang, L. D. (1996). *Building Communities: A New Future for Architecture Education and Practice. Princeton, New Jersey: The Carnegie Foundation for the Advancement of Teaching.*

Cahill, H. (1997). What should nurse teachers be doing? A preliminary study. Journal of Advanced Nursing, 26, 146-153.

Grundy, S. (1982). Three modes of action research. Curriculum Perspectives, 2, 23-34.

Kirk, S., Carlisle, C. & Luker, K. (1996). The changing academic role of the nurse teacher in the United Kingdom. Journal of Advanced Nursing, 24, 1054-1062.

Murphy, F. A. (2000). Collaborating with practitioners in teaching and research: a model for developing the role of the nurse lecturer in practice areas. Journal of Advanced Nursing, 31(3), 704-714.

Rolfe, G. (1996). Closing the Theory-Practice Gap. A New Paradigm for Nursing. Butterworth-Heinemann. Oxford.

US Census Bureau, Texas – Place, GCT-T1-R. Population Estimates, 2008. Retrieved online from http://factfinder.census.gov/servlet, 01/06/2010.

Table 2
Sample Student Comments from Team-Taught Studios

"It was extremely helpful to work with (design firm) they were an amazing resource. Thanks to (instructor) for setting that up for us."

"I think (the instructor) was a great studio studio professor and really tried to ensure we were learning about what was required for the course. Overall (the instructor was extremely helpful and seemed interested in our progress.

"I liked working with a firm . . . overall the project was great"

"(The instructor) is a great professor in trying to teach you how to be both practical and logical. This class was a great way for me to learn more about interior design."

"Great instructor! Very well organized – helped to pace course well. Guest critics and presentations were terrific."

"I learned more this semester than I thought possible."

"It was really great having a knowledgeable who I know genuinely cares about not only the work I produce, but also my future and well being. The fact that you took the time to bring in (the practitioner) really shows about how much you care about preparing us for the real world and made the last project a great experience."

"It is really helpful that you add the element of professionalism and interaction with real people in the field."

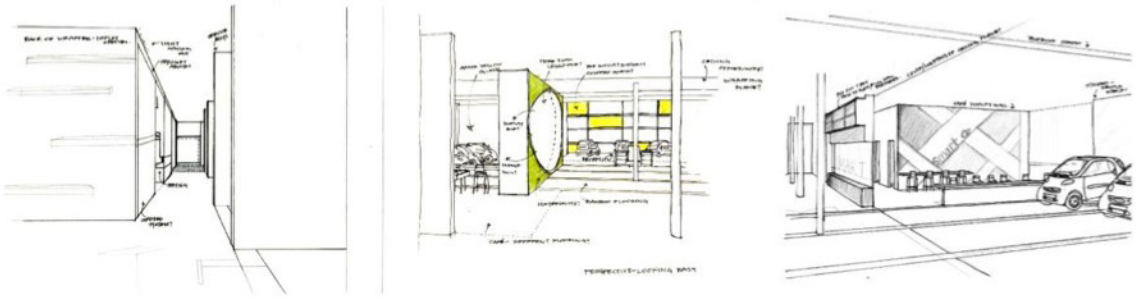
"Awesome projects! Thank you for the chance to work with "real" spaces and professionals. Amazing experience."

"A lot of good info. Very helpful working with professionals."

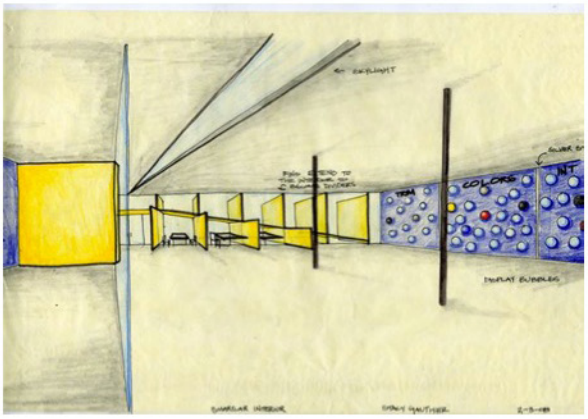
Appendix

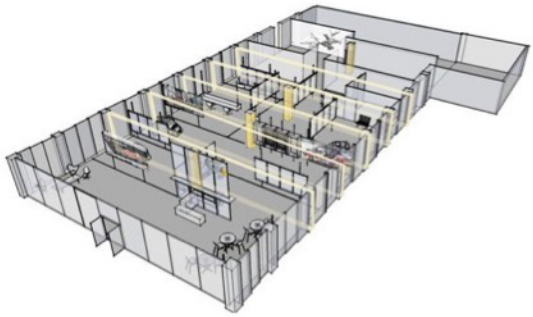
Note: The following images represent a small sampling of student work to be included in the presentation. Projects have included a boutique hotel, law firm, real estate firm, Dubai Atlantis hotel, golf club, spa/ballroom, corporate headquarters, alternative energy consortium, high-rise mixed use complexes, Smart Car dealership, and adaptive reuse of a shopping mall. Complete examples will include programming, feasibility studies, schematic design, design development, construction documents, budgeting, and specifications. Media include physical models, hand drawings, digital models, CAD, and digital fabrication.

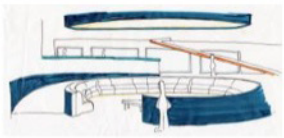
Smart Car - Schematic Design and Design Development (Spring 3rd Year - UT)

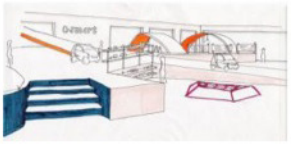


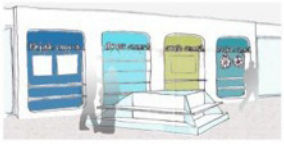
Smart Car – Schematic Design and Design Development (Spring 3rd Year - UT)

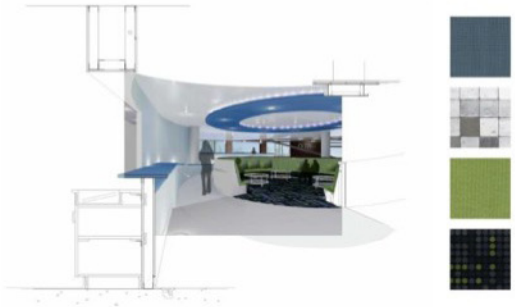




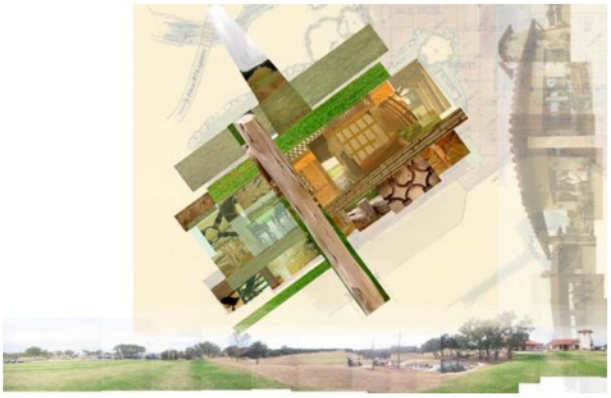


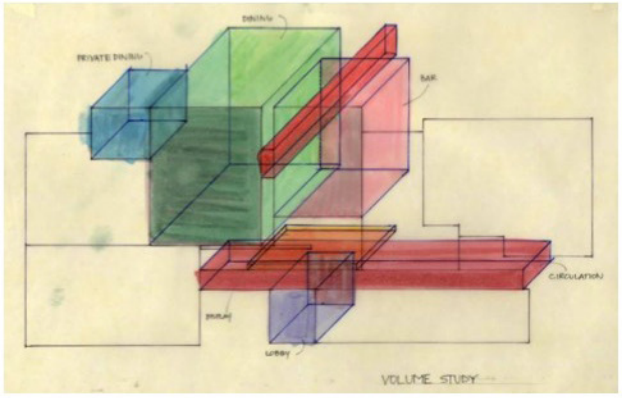




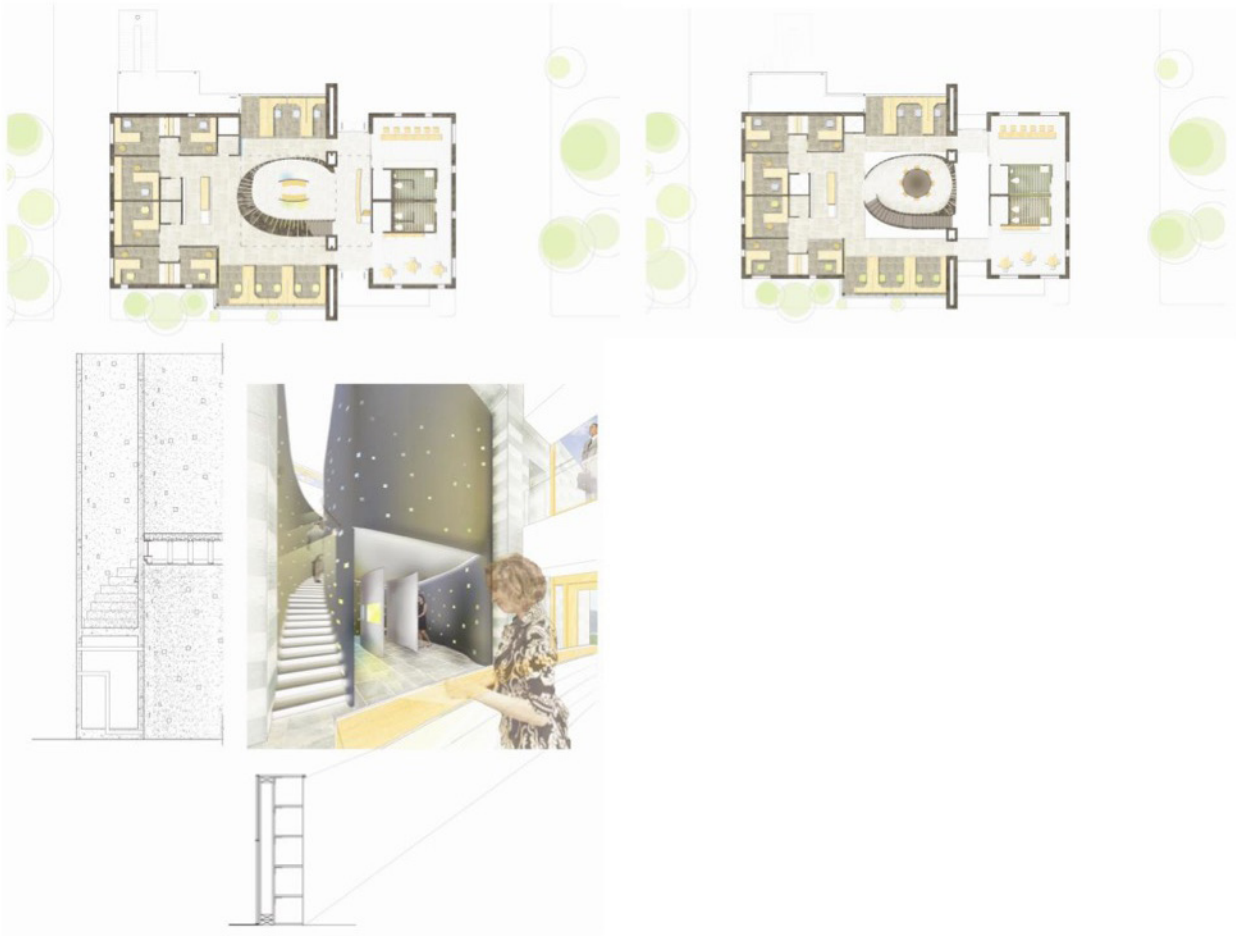


Golf Club - Schematic Sketches and Design Development (Spring 3rd Year - UT)



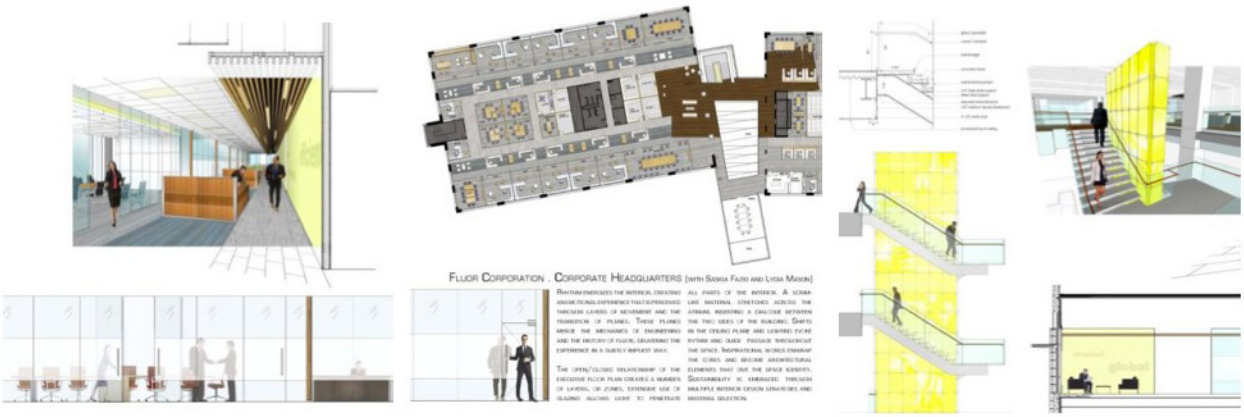


Alternative Energy Consortium - Design Development (Spring 3rd Year - UT)



Spa and Ballroom – Design Development (Spring 3rd Year - UT)

Fluor Corporate Headquarters – Design Development (Fall 4th Year -UT)



A Second Look at Second Life: Relevance for Interior Design Pedagogy

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East Carolina University

ABSTRACT

Although the literature reports the use of Second Life as a potential learning environment for interior design, the teaching strategies and approaches that have been used may not be ideal. (Clarke & Waxman, 2008; Olcayto, 2008). This paper takes a second look at Second Life applying an innovative use of the environment. In the fall of 2008, partnering with instructional technology support, a virtual environment was built in Second Life to accommodate student interactions, professional development, and peer evaluation. The following three semesters, the use of the environment evolved to broaden in scope. The Second Life learning environment for this fundamentals course now includes the integration of faculty and Advisory Board members and provides an opportunity for interactive, virtual reality-based evaluation and professional exchange and guidance. The virtual physical space initially consisted of an open gallery of extended height to allow for three levels of exhibit space in a 180° panorama. Course sections were designated using color-coded circular forms on the floor. An adjoining space served to illustrate the formative outcomes of student learning that mimic authentic professional marketing formats. Portfolios were housed on three open floor levels that were accessed by the avatars "flying up" to the multiple spaces. In addition, three-dimensional built environments allowed a virtual experience that tested design solutions for spatial relationships and pathways. The students moved through the built environments using their avatars, "A graphic identity you either select from a group of choices or create on your own to represent yourself to others." (PC Magazine, Inc, 2009). The space has evolved to make room for more course sections. The portfolio area was found to be redundant. It was converted to a library of past students' work that could be referenced by incoming students and external evaluators. The conversion allowed for additional built environments representing student design solutions. To prepare for external evaluations, training of interior design faculty and advisory board members was required. The training presented a unique occasion to conduct preliminary research in pedagogical innovation. Prior research explored the use of virtual worlds for learning art and design but did not incorporate external evaluation by industry leaders (Gaimster, 2008; McGill & Hobbs, 2008; Swinglehurst, Russell, & Greenhalgh; 2008). This study explored the perceived effectiveness of the use of virtual reality as a pedagogical tool for interior design and focused on exploring the potential for professional applications of virtual reality in the field of interior design. It was hypothesized that virtual reality would facilitate peer-to-peer and professional evaluation. A pre/post descriptive, exploratory methodology was used. An on-line survey was designed and delivered to faculty and board members prior to and after training. The training, held in a CAD lab following the annual meeting of the Board, was facilitated by technology support. The training lasted one and one-half hours and enhanced social learning engagement among the faculty and board members. Results of the pre and post survey will be presented.

NARRATIVE

INTRODUCTION

Although the literature reports the use of Second Life virtual reality as a potential learning environment for interior design, the teaching strategies and approaches that have been used may not be ideal. (Clarke & Waxman, 2008; Olcayto, 2008). This paper takes a second look at Second Life applying an innovative use of the environment. Further, it examines the perceived effectiveness and potential applications of Second Life virtual reality for interior design instruction as well as the potential for future professional applications.

EVOLUTION OF THE CURRICULAR DESIGN

In the fall of 2008, partnering with instructional technology support, a virtual environment was built in Second Life to accommodate student interactions, professional development, and peer evaluation for a fundamentals course. The following three semesters, the use of the environment evolved to broaden in scope. The Second Life learning environment now includes the integration of faculty and interior design advisory board members and provides an opportunity for interactive, virtual reality-based evaluation and professional exchange and guidance. The virtual physical space initially consisted of an open gallery of extended height to allow for three levels of exhibit space in an 180° panorama. Course sections were designated using color-coded circular forms on the floor. An adjoining space served to illustrate the formative outcomes of student learning that mimic authentic professional marketing formats. Portfolios were housed on three open floor levels that were accessed by the avatars "flying up" to the multiple spaces. In addition, three-dimensional built environments allowed a virtual experience that tested design solutions for spatial relationships and pathways. The students moved through the built environments using their avatars, "A graphic identity you either select from a group of choices or create on your own to represent yourself to others." (PC Magazine, Inc, 2009). The space has evolved to make room for more course sections. The portfolio area was found to be redundant. It was converted to a library similar to a permanent exhibit gallery of past students' work that could be referenced by incoming students and external evaluators. The conversion allowed for additional built environments representing student design solutions.

External Evaluation Integration Applied to a Research Methodology

To prepare for external evaluations, training of interior design faculty and advisory board members was required. The training presented a unique occasion to conduct preliminary research in pedagogical innovation. Prior research explored the use of virtual worlds for learning art and design but did not incorporate external evaluation by industry leaders (Gaimster, 2008; McGill & Hobbs, 2008; Swinglehurst, Russell, & Greenhalgh; 2008). This study explored the perceived effectiveness of the use of virtual reality as a pedagogical tool for interior design and focused on exploring the potential for professional applications of virtual reality in the field of interior design. It was hypothesized that virtual reality would facilitate peer-to-peer and professional evaluation. A pre/post descriptive, exploratory methodology was used. An on-line survey was designed and delivered to faculty and board members prior to and after training. The training, held in a CAD lab following the annual meeting of the Board, was facilitated by technology support. The training lasted one and one-half hours and enhanced social learning engagement among the faculty and board members.

PROFILES OF THE PARTICIPANTS

The pre-test collected demographic data and asked questions regarding participants' use of various technologies. Twenty-three individuals attended the training session. Sixteen of those in attendance completed the survey. Among those who completed the survey, there were five who were between the ages of twenty-five and thirty-five. There were two individuals between the ages of thirty-six and forty-five. There were five individuals between the ages of forty-six and fifty-five. The remaining four individuals were over the age of fifty-five. Sixty-eight and eight-tenths percent of the survey completers were female and 31.3% were male. Nine of the participants reported degrees in interior design, environmental design or architecture. Three participants reported degrees in related specialties. The remaining four individuals did not specify their concentration in their degree.

PARTICIPANTS' EXPERIENCE WITH TECHNOLOGY

When queried regarding their use of technology, it was noted that 93.8% used email while 75% used Facebook. The participants' company websites were employed by 37.5%. Thirty-one point three percent took advantage

of Instant Messenger and blogs were also utilized by 31.3%. Those individuals who reported using MySpace represented 25% whereas 12.5% had their own website and 12.5% used Skype for communication. None reported exploring Twitter.

PRE-TRAINING TECHNOLOGY SKILLS RANKING

Participants were asked to rank their technology skills prior to the training session as novice, intermediate, or expert. Once participants selected a skills category, they were then asked to further rank their skills within that category as high, moderate, or low. The results showed that 31.25% categorized their skill level as novice. Within the novice category, 40% rated their skills as low, 20% as moderate, and 40% as high. From the responses, it is apparent that some individuals placed themselves in multiple categories. Evidence of this is that 75% of the individuals also categorized themselves as intermediate. Of the twelve individuals responding in the immediate category, 75% ranked their skills as moderate with 25% ranking their skills as intermediate. In addition, 31.25% categorized themselves as experts. Of the five individuals responding with expert, 60% ranked themselves as high, 20% as moderate and 20% as low. A possible explanation for the multiple levels of ranking could be that individual respondents were taking into consideration their technological skills in various types of technology. This represents a limitation of the design of the study that would need addressing if replicated.

POST-TRAINING TECHNOLOGY SKILLS RANKING

Individuals were asked to rank their technology skills after the training: (1 to 3 where 1 is high and 3 is low) within the categories of Novice, Intermediate, or Expert. Nine individuals out of eleven completed this portion of the survey. Five individuals ranked their technology skills post-training as novice with 3 ranking them as high and 2 individual ranking their skills as moderate and low respectively. Three individuals ranked their skills as intermediate but at the moderate (2) or low (1) levels. Only one individual ranked their skills at an expert level.

INDICATORS OF EFFICACY FOR APPLICATIONS IN INTERIOR DESIGN

When asked to rate the training provided for Second Life for their own professional applications, 55.6% of the nine individuals responding noted that they could see the possible applications; while 44.4% indicated that the training was beneficial. The skills and knowledge of the group were self-assessed and 88.9% recognized potential applications of the Second Life environment as a venue for interior design. Respondents who specified they learned to create an alternate representative professional identity totaled 66.7%. In addition, the same percentage (66.7%) noted that they could apply expertise for critical review of student designs to generate feedback that elicits professional growth. A lesser amount (55.6%) identified that they could communicate in innovative ways with people in the industry and potential clients using Second Life. Respondents (33.3%) were least comfortable reporting that they could use intuitive coordination skills for staging professional interactions. One individual did comment that Second Life was a “great venue for involving jurors from afar”. There was unanimous agreement among respondents that the process the students are using in Second Life useful to the profession of interior design was potentially applicable to Interior Design. In fact, one respondent noted that “I think that it’s important for our students to have a familiarity with the virtual world - more and more will take place there in the future.”

CONCLUSIONS

The educational venue provided to the advisory board and faculty served to introduce them to the innovative technology that can be used as a teaching approach for interior design curricula. It provided them with the knowledge and skills needed to actively participate in reviewing the student learning outcomes in a virtual manner. Results of the survey indicated that although fewer respondents regarded virtual reality as a potentially useful venue for their own purposes, the large majority of the participants perceived virtual reality as a viable and relevant tool for applications in interior design.

The significance of virtual reality for global communication was also recognized. This application has been acknowledged as an asset for broader educational practices. “The popularity of such 3D virtual communities also lies in their ability to minimize geographic and time barriers. Users can visit virtual communities at any time, with any computer, and from any location.” (Li-Fen Lilly, 2008). “Virtual learning environments (VLEs) present us with unprecedented opportunities in bringing together students and educators from widely disparate geographical locations, as well as diverse cultures and backgrounds to participate in a learning experience.” (Aviter, 2008). The medium of 3-D virtual reality suits

the learning styles of the students of the new millennium. In the future, it is anticipated that virtual reality sites may even replace web pages as the requisite marketing instrument for interior designers as well as other professionals.

REFERENCE LIST (APA)

Ayiter, E. (2008). Integrative art education in a metaverse: ground<c>. *Technoetic Arts: A Journal of Speculative Research*, 6(1), 41-53. doi:10.1386/tear.6.1.41_1.

Berge, Z. (2008). Multi-Use Virtual Environments for Education and Training? A Critical Review of Second Life. *Educational Technology*, 48(3), 27-31. Retrieved from Education Research Complete database.

Clarke, Lindsay, and Waxman, Lisa. *Interior Design in Second Life: Collaborative Criticism of Virtual Environments.* Proceedings from the IDEC South Regional conference at Auburn University, Auburn, Alabama, 2008.

Gaimster,Julia. (2008) Reflections on Interactions in virtual worlds and their implication for learning art and design. *Art, Design & Communication in Higher Education* **6**, no. 3, 187-199.

Li-Fen Lilly, L. (2008). Art Café: A 3D Virtual Learning Environment for Art Education. *Art Education*, 61(6), 48-53. Retrieved from Education Research Complete database.

McGill, T.J. & Hobbs, V.J.(2008) How students and instructors using a virtual learning environment perceive the fit between technology and task. *Journal of Computer Assisted Learning* **24**, 191–202.

Olcayto, Rory. (2008) Second life. *Architects' Journal* **228**, n.19, 28-33, 35.

Sakatani, K. (2005). Harmony Quest: An Interdisciplinary Arts-Based Project Incorporating Virtual Reality. *Visual Arts Research*, 31(60), 53-62. Retrieved from Education Research Complete database.

Swinglehurst, D., Russell, J. & Greenhalgh, T. (2008) Peer observation of teaching in the online environment: an action research approach. *Journal of Computer Assisted Learning* **24**, 383–393.

PC Magazine, Inc. (2009). *PCMag.com*. Retrieved 2009, from PC Magazine Encyclopedia: http://www.pcmag.com/encyclopedia_term/0,2542,t=avatar&i=38293,00.asp

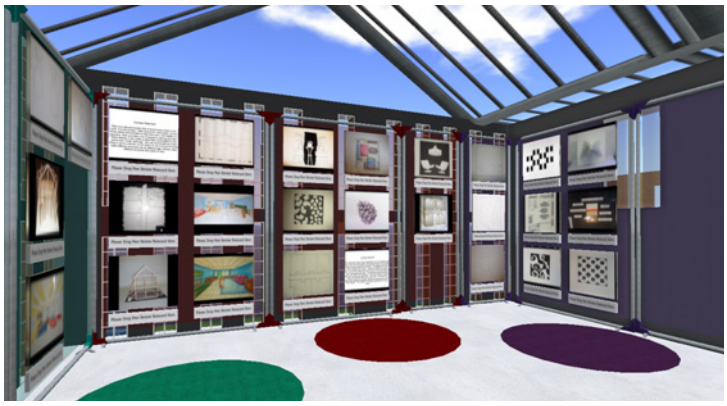

Figure 1: Color-coded gallery displays of student work.

Figure 2: Color-coded portfolio displays of student work divided by class sections.

Figure 3: Student design solution represented in 3-D virtual reality for a three-to four year-old pre-school classroom.

Figure 4: Review Notecard" drop box for student evaluations of displayed images is shown with an example of one of the peer evaluations posted for this particular basic 2-D design project.

INTERIOR DESIGN ADVISORY BOARD MEMBER

PRE-INSTRUCTION SURVEY

Second Life Training

(Please do not identify yourself on this survey form).

Background Information:

1. Age _____
2. Gender M F
3. What degree(s) do you hold? _____
4. I have used the following technology: (Check all that applies)
   - ___ My Space
   - ___ Email
   - ___ Facebook
   - ___ Instant messenger
   - ___ Twitter
   - ___ Blogs
   - ___ Own web site
   - ___ Company web site
   - ___ Skype (or equivalent)
   - ___ Other
5. Rank your technology skills: (1 to 3 where 1 is high and 3 is low)
   - ___ Novice
   - ___ Intermediate
   - ___ Expert

INTERIOR DESIGN ADVISORY BOARD MEMBER
POST-INSTRUCTION SURVEY

Second Life Training

(Please do not identify yourself on this survey form).

1. Rate your training in Second Life:
   - ___ Not beneficial to my role as an Interior Design Advisory Board member or educator.
   - ___ Beneficial
   - ___ Can see possible applications
   - ___ No opinion

2. I gained the following skills/understanding: (Check all that apply)
   - ___ Create an alternate representative professional identity.

Figure 5: Interior Design Advisory Board Member Pre-Instruction Survey

In Search of the Digital Muse: Divining the Role of` Digital Sketching in Interior Design Education

JASON MENEELY, M.S.
University of Florida

ABSTRACT

The computer has established a strong foothold for supporting design development and production processes; however, many designers question the computer's role to effectively support early ideational processes since the flow of thinking can be easily hindered by heavily structured and logarithmic software interfaces. "The discrepancy between the creative impulse and the input needed to activate digital commands often leaves the designer bound to a process that steers them away from design thinking" (Dorta, Pérez, & Lesage, 2008, p. 121).

Waging a debate between technology and tradition, the design literature is often polarized on the issue of digital ideation. For example, Lawson (2002) commented:

> *Increasingly we have students learning from scratch to design with CAD rather than manual drawing… Amongst those of us who examine such students, there is a growing feeling that a worrying trend is developing … I have examined design in half a dozen universities in three countries. In each case I found examples of students combining impressive and convincing computer presentations with poor design (p. 329).*

Others present a contrasting argument:

> *If the computer permits the experienced user to 'design anything' then perhaps the putative limitation of the computer is a condition generated by a certain pre-conception of the design process. That the device seems to challenge such a preconception suggests that it holds within its make-up the potential for discovery (Coyne, Park, & Wiszniewski, 2002, p. 271).*

Concerns on both sides of the issue have sparked numerous comparative studies examining the role of CAD and traditional drawing to support ideation (Bilda & Demirkan, 2003; Jonson, 2005; Senyapili & Yncy, 2006; Stones & Cassidy, 2007); however, the collective implications of such studies remain polarized.

Recent advances in digital pen tablet technology now permit designers to sketch directly on the surface of the computer screen with a level of sensitivity and expression akin to sketching on paper (see appendix figure 1). Blurring the boundaries between the computer and the tradition of freehand sketching, digital pen tablets have potential to soften the "CAD controversy" and become a compelling ideational medium.

This presentation chronicles one educator's quest to support student ideation on the computer through the meaningful application of digital sketching technology. In search of this digital muse, the author presents strategies, insights, and outcomes from three funded projects that infused digital sketching into interior design curricula. Theoretical underpinnings from Meneely and Danko's (2007) Motive, Mind, and Media framework will be presented to assess the integration of technology for each project:

PROJECT 1: EXPLORING THE POTENTIAL OF DIGITAL SKETCH TECHNOLOGY

The first project explored the potential of digital sketching to support student ideation (figure 1) and artistic expression (figure 4). Teaching modules were developed and student perceptions analyzed to identify the benefits and limitations of digital sketching media in design.

PROJECT 2: USING DIGITAL SKETCHING TO CRITIQUE STUDENT WORK

Design educators are increasingly asked to critique in-process digital work directly on the computer screen. Unfortunately, the computer screen is not an effective venue for conducting a design dialogue between faculty and student since it is difficult to incorporate freehand drawing as part of the onscreen conversation. This project developed a method for faculty to sketch directly on top of student on work in any software application (figures 2 & 3).

PROJECT 3: REMOTE COLLABORATION WITH DIGITAL SKETCHING

This project explores methods for employing digital sketching to support remote collaboration across the internet.

NARRATIVE

The computer has established a strong foothold for supporting design development and production processes; however, many designers question the computer's role to effectively support early ideational processes since the flow of thinking can be easily hindered by heavily structured and logarithmic software interfaces. "The discrepancy between the creative impulse and the input needed to activate digital commands often leaves the designer bound to a process that steers them away from design thinking" (Dorta et al., 2008, p. 121).

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PROJECT 1: EXPLORING THE POTENTIAL OF DIGITAL SKETCHING TECHNOLOGY

The first project explored the potential of digital sketching to support student ideation (figure 1) and artistic expression (figure 4). Teaching modules were developed and student perceptions analyzed to identify the benefits and limitations of digital sketching technology in design. Responses from 62 undergraduate students were content analyzed to assess perceived benefits and limitations.

Many students commented that digital sketching minimized barriers to thinking because it did not rely on prescriptive commands or tools, and that the paperless environment increased the flexibility of their ideation. Students also reported that the computer increased their ability to adapt and elaborate upon ideas, as one student responded, "Now you can sketch something and then alter it—copy, cut, paste, color, etc. —using the computer; instead of trying to redraw it. The work evolved more than when you draw something, think of a change and then get a new piece of paper and draw it over again." The students also noted some limitations of the technology. A few students felt that digital sketching was not as well suited for presentation work as it was for conceptual work and that the lack of portability was limiting. As one student noted, "One drawback is the fact that you are tied sitting next to a computer; wired. I envision when these tablets become more powerful and portable, it will allow for more spontaneous working –which I believe in very much (Meneely & Danko, 2007)."

PROJECT 2: USING DIGITAL SKETCHING TO CRITIQUE STUDENT WORK

Design educators are increasingly asked to critique in-process digital work directly on the computer screen. Unfortunately, the computer screen is not an effective venue for conducting a design dialogue between faculty and student since it is difficult to incorporate freehand drawing as part of the onscreen conversation. Although faculty can ask students to print out their work for review, it is often impractical to have an entire class print on a regular basis for daily desk critiques. In some cases students may be reluctant to repeatedly print out their work if their school charges printing fees. Consequently, even the most well intentioned faculty and students sometimes find themselves in a compromised position of pointing at a computer screen with no effective mechanism for leveraging drawing during the critique process.

The second project addressed this issue by developing a method for faculty to sketch directly on top of student on work in any software application (figures 2 & 3). Seven digital sketch tablets were integrated into junior and senior level studio courses to function as digital critique stations. A screen capturing system was utilized to capture still images of the student work for student/faculty critique. The integration of an overhead projector permitted onscreen critiques to extend to large groups and to facilitate classroom discussion.

PROJECT 3: REMOTE COLLABORATION WITH DIGITAL SKETCHING

The learning and development of design students is greatly enhanced when their studio projects are critiqued by practicing professionals. Unfortunately, the ability of faculty to repeatedly bring design professionals into the classroom is often limited by travel costs and busy practitioner schedules. While video conferencing may offer a tempting solution, the vast majority of conferencing systems make it difficult for a practitioner to engage the student work. Ideally, both student and practitioner should be able to sketch directly on top of the work being critiqued. Design is a visually and spatially oriented field where language and drawing go hand in hand; as Donald Schön (1983) noted, "drawing and talking are parallel ways of designing, and together make up the *language of designing*" (p. 80). What is needed is an interface that would permit both drawn and verbal forms of communication to occur across the internet in real time.

The third project explored methods for employing digital sketching to support remote collaboration across the internet. Since this project was in process at the time of this conference presentation, current progress, challenges, and insights are shared.

REFERENCE LIST

Bilda, Z., & Demirkan, H. (2003). An Insight on Designers' Sketching Activities in Traditional Versus Digital Media. *Design Studies, 24*(1), 27-50.

Coyne, R., Park, H., & Wiszniewski, D. (2002). Design devices: digital drawing and the pursuit of difference. *Design Studies, 23*(3), 263-286.

Dorta, T., Pérez, E., & Lesage, A. (2008). The ideation gap: hybrid tools, design flow and practice. *Design Studies, 29*(2), 121-141.

Jonson, B. (2005). Design ideation: the conceptual sketch in the digital age. *Design Studies, 26*(6), 613-624.

Lawson, B. (2002). CAD and creativity: Does the computer really help? *Leonardo, 35*(3), 327-331.

Meneely, J., & Danko, S. (2007). Motive, mind, and media: Digital sketching in the creative culture of design. *Journal of Interior Design, 32*(3), 69-90.

Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.

Senyapili, B., & Yncy, B. (2006). The Shifting Tides of Academe: Oscillation between Hand and Computer in Architectural Education. *International Journal of Technology and Design Education, 16*, 273-283.

Stones, C., & Cassidy, T. (2007). Comparing synthesis strategies of novice graphic designers using digital and traditional design tools. *Design Studies, 28*(1), 59-72.

Figure 1: Sketching ideas on a digital sketch tablet

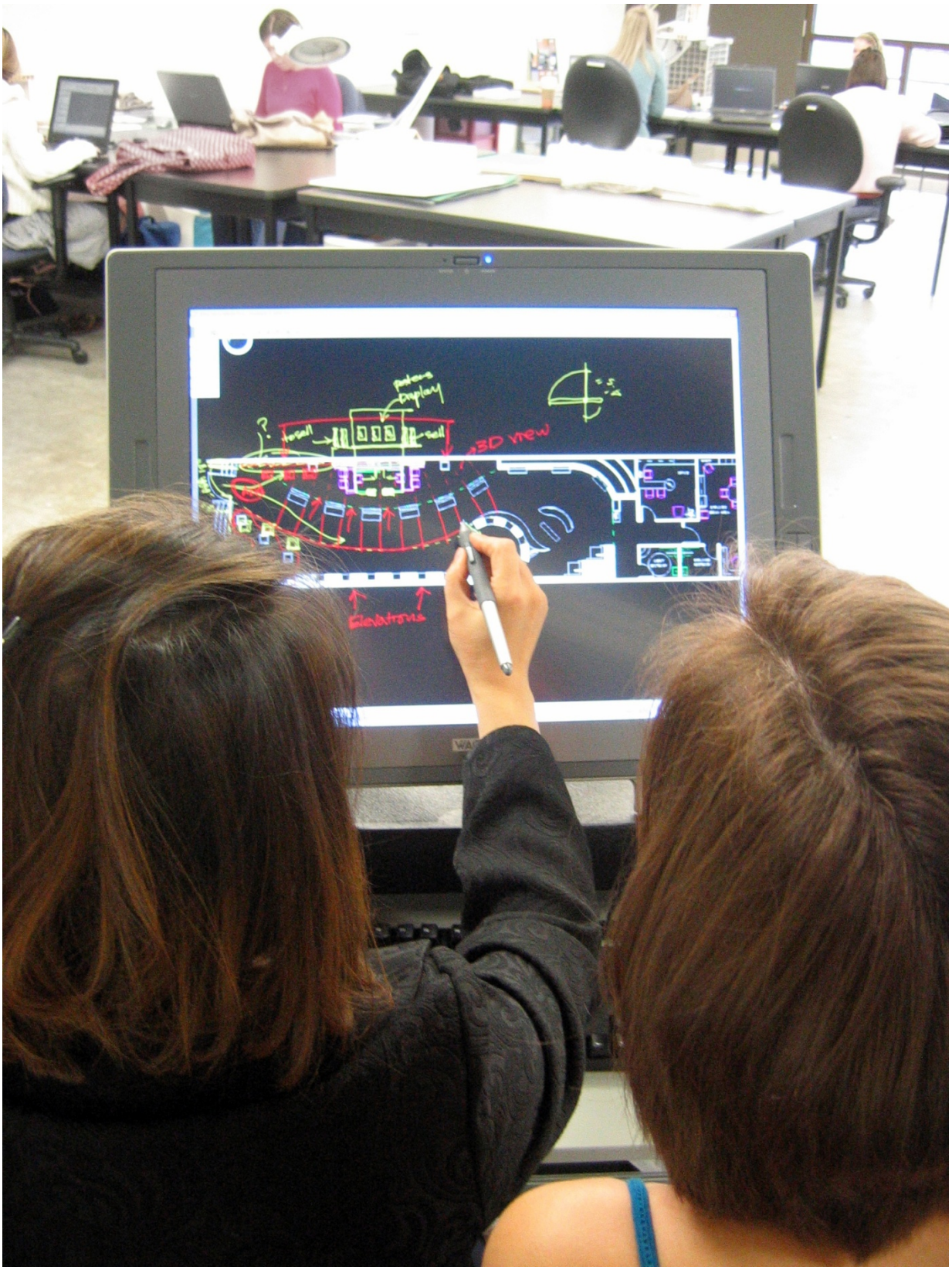


Figure 2: Onscreen critique of student work with digital sketching

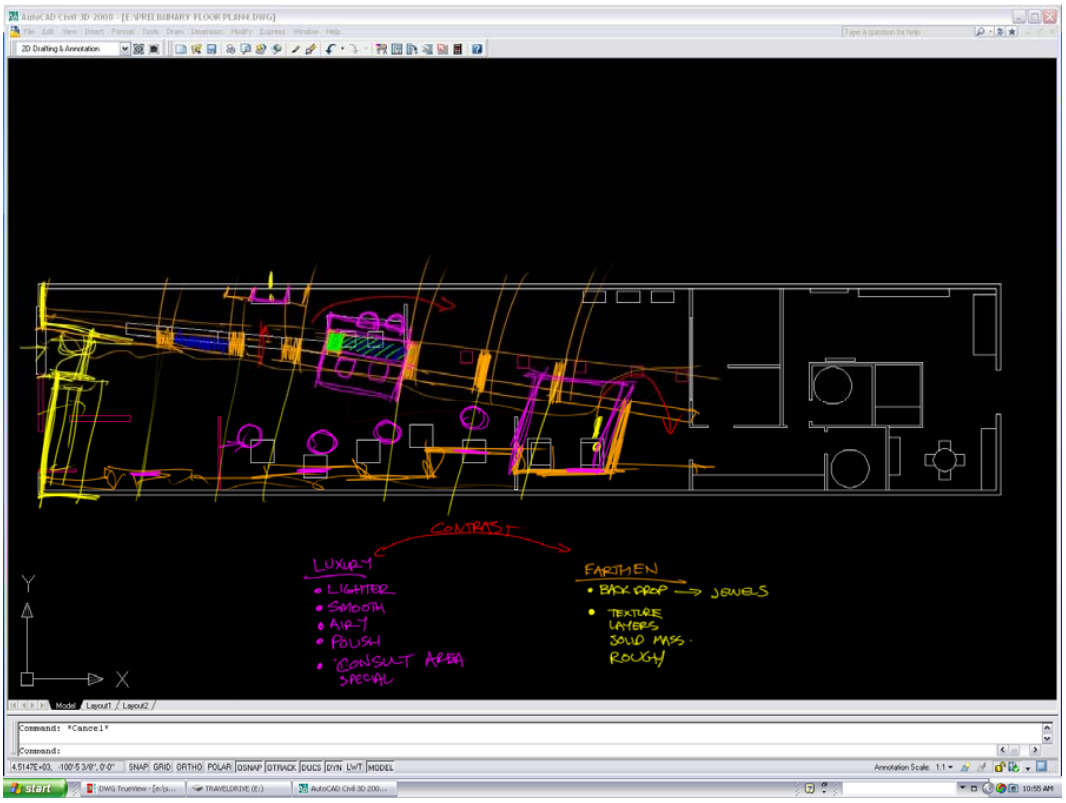


Figure 3: Onscreen critique of 3D student work.

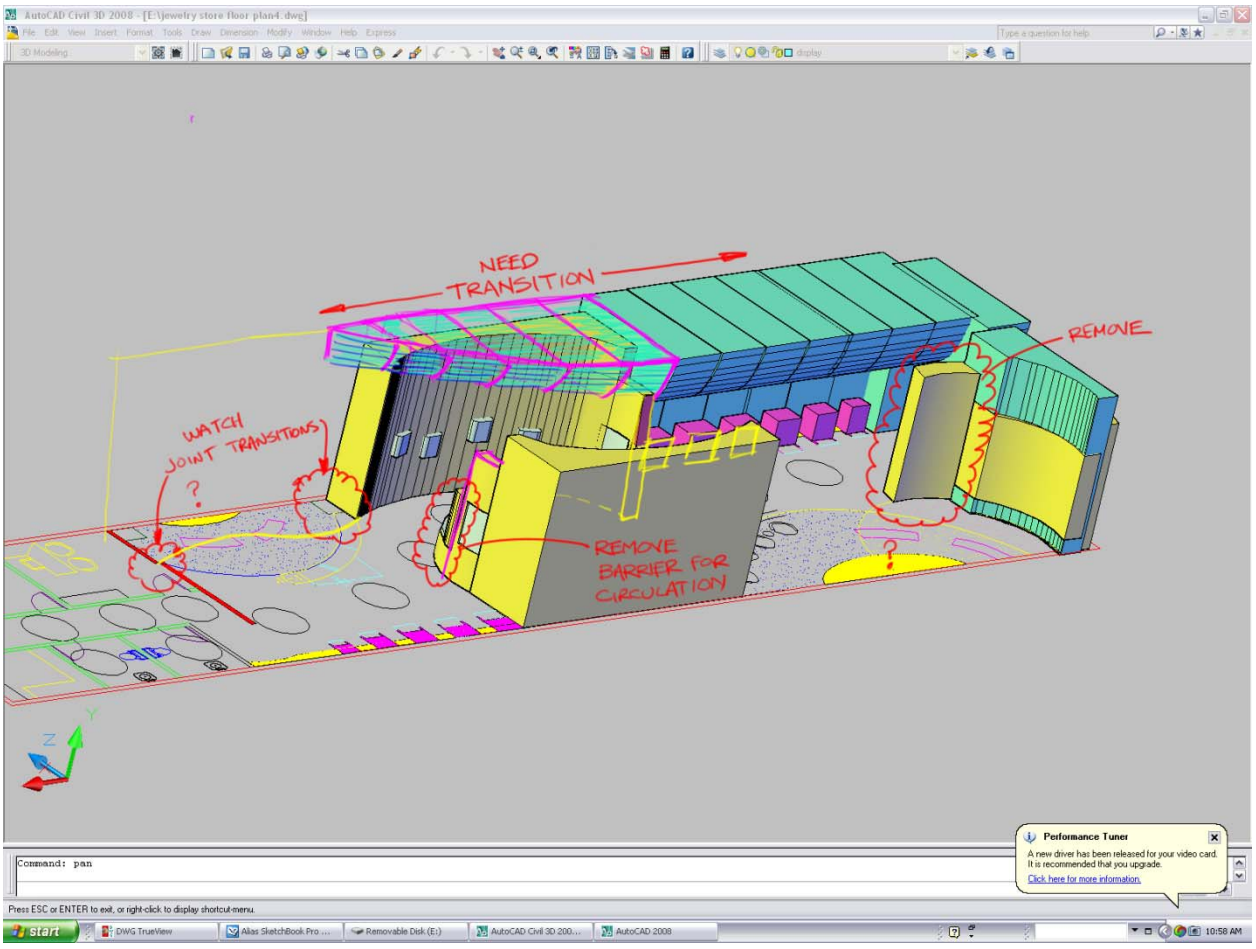
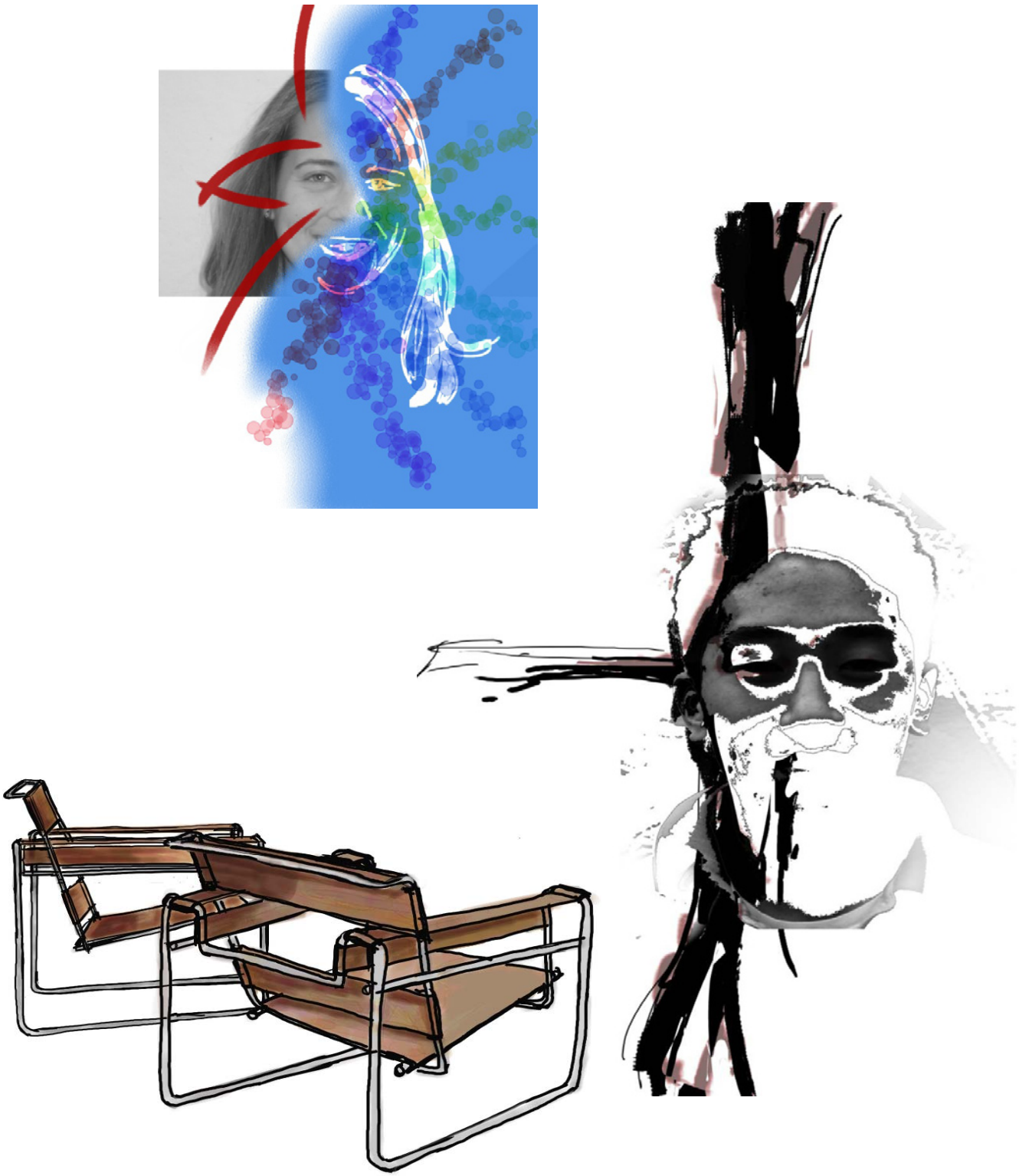


Figure 4: Exploring the expressive capacity of digital sketching



Blogging Through the Curriculum: A Tool for Assessment, Self Reflection and Writing Across the Curriculum

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University of Wisconsin-Stout

ABSTRACT

Based on research in writing across the curriculum, student self-reflection, active learning and assessment, we have instituted the use of student blogs in a range of interior design courses.

Techniques developed by Angelo and Cross (1993) known as classroom assessment techniques (CATs), which were intended to help faculty gauge and promote learning, have helped guide the creation of the blogs. As have related techniques developed by Luechauer and Shulman (1986) and Roberts (1995) involving "two-way fast feedback", which provides quick feedback between instructors and students.

Fink (2004) has identified feedback and assessment as important "decisions that need to be made", forming part of what he terms "Integrative Course Design". Fink identifies a triad of experiences that students require in order to have "powerful learning experiences". This triad is comprised of: 1) "good sources of information and ideas", 2) "some kind of doing…" and 3) "opportunities to engage in reflective dialog with themselves or with others".

Requiring students to generate blog entries incorporates ongoing writing experience as they move through the design program, thus reinforcing the notion of "writing across the curriculum", which has been identified as a successful teaching strategy by many including Zinsser (1988) and Fulwiler (1986) The nature of the blog form is one of *sharing* information and the fact that the writing is shared with and commented upon by peers can add to the level of engagement on the part of the writer (requiring that they up their game so to speak).

We have found that WordPress software has worked well in generating the blogs in that it nicely balances aesthetics, web standards, and usability –and is free. After providing clear directions as to the set up and use of WordPress, we present students with a series of questions to be answered or covered in each blog entry. Course content, reading assignments, lecture topics, and field trip experiences are some of the topics that are covered in the student blogs, with specific visual examples or illustrations requested for some topics.

The blogs are first required in the early design foundation courses such as Two-Dimensional Design, and are also required in courses as different as Construction Documentation and Senior Thesis Studio.

NARRATIVE

This narrative will serve to describe how our development of student blogs grew out of prior research by others in the areas of student assessment, writing across the curriculum, student self-reflection, and active learning.

In reviewing techniques developed by Angelo and Cross (1993) to use feedback from students to improve learning, specifically those known as classroom assessment techniques (CATs), which were intended to help faculty gauge and promote learning, we found reasons to ask for student feedback on a regular basis. Related techniques developed by Luechauer and Shulman (1986) and Roberts (1995) involving “two-way fast feedback”, which provides quick feedback between instructors and students moved us to consider ways to quickly access student feedback.

Fink (2004) has identified feedback and assessment as important “decisions that need to be made”, forming part of what he terms “Integrative Course Design”. Fink identifies a triad of experiences that students require in order to have “powerful learning experiences”. This triad is comprised of: 1) “good sources of information and ideas”, 2) “some kind of doing…” and 3) “opportunities to engage in reflective dialog with themselves or with others”. In addition, Fink also states “integration among these three forms of learning is important”. In developing the student blogs we seek to realize Fink’s goals of both engaging students in reflective dialog and integrating knowledge.

The use of blogs in a number of design courses can allow the course instructor to quickly assess whether content is becoming integrated into the student’s understanding of design and design related topics. Moving forward from the earlier research (described previously) in classroom assessment and into the realm of online communication has proven an efficient use of class time and can provide students more time (outside of class) for thought and reflection.

Requiring students to generate blog entries incorporates ongoing writing experience as they move through the design program, thus reinforcing the notion of “writing across the curriculum”, which has been identified as a successful teaching strategy by many including Zinsser, who has stated “writing is a form of thinking, whatever the subject” (1988).

In his chapter ìThe Argument for Writing Across the Curriculum,î Toby Fulwiler (1986) provides a rationale for the use of writing as a vehicle for thinking, learning and knowing in a variety of disciplines outside the English (or other language) curriculum. He maintains that writing is not just a way of communicating, but also a way of learning. For Fulwiler ìthe act of writing ... allows us to manipulate thought in unique ways because writing makes our thoughts visible and concrete and allows us to interact and modify themî. His use of words like ìmanipulateî and ìmodifyî and his idea that thoughts are made ìvisibleî and ìconcreteî suggest the possibility of a close relationship between writing and the process of design.

Fulwilerís views of writing as a vehicle for thinking engendered in us a desire to require more writing in our design courses. As did active learning theory described by Bransford et al. (2000), in which active learning is seen as dynamic process that is effective when students build new understandings while actively applying previously acquired knowledge. Bransford has also written, ìapplication of knowledge leads to understandingî.

In seeking out ways to keep our student writing across the curriculum, to be active learners and to initiate “writing to learn” we found the blog form to work well with the present student population. And, according to a recent Kaiser Family Foundation study (2010), 8-18 year-olds devote an average of 7 hours and 38 minutes to using entertainment media across a typical day (more than 53 hours a week), which is an indication that future students will continue want to use electronic media for such communication.

It is worth noting that the nature of the blog form is one of *sharing* information and the fact that the writing is shared with and commented upon by peers can add to the level of engagement on the part of the writer (requiring that they up their game so to speak). Using blogs as a form of student assessment, communication and as a writing tool has worked well to this point and we are considering requiring that student blogs are used throughout the student experience in our program, with required writing each semester.

We have found that WordPress software has worked well in generating the blogs in that it nicely balances aesthetics, web standards, and usability –and is free. After providing clear directions as to the set up and use of WordPress, we present students with a series of questions to be answered or covered in each blog entry . Course content, reading assignments, lecture topics, and field trip experiences are some of the topics that are covered in the student blogs, with specific visual examples or illustrations requested for some topics.

Figures 1 through 4 are examples of student blog entries. The actual questions and queries posed to students for incorporation into blogs will be shared at the presentation in Atlanta as will WordPress operating instructions.

REFERENCE LIST (APA STYLE)

Angelo, T., & Cross, K. (1993) *Classroom Assessment Techniques: A Handbook for College Teachers*. San Francisco: Josses-Bass.

Fink, L. D. (2004). Learning Portfolios: Powerful Tools for Enhancing Course Design. In J. Zubizarreta (Ed.), *The Learning Portfolio: Reflective Practice for Improving Student Learning* (pp.92-99). Bolton, MA: Anker Publishing.

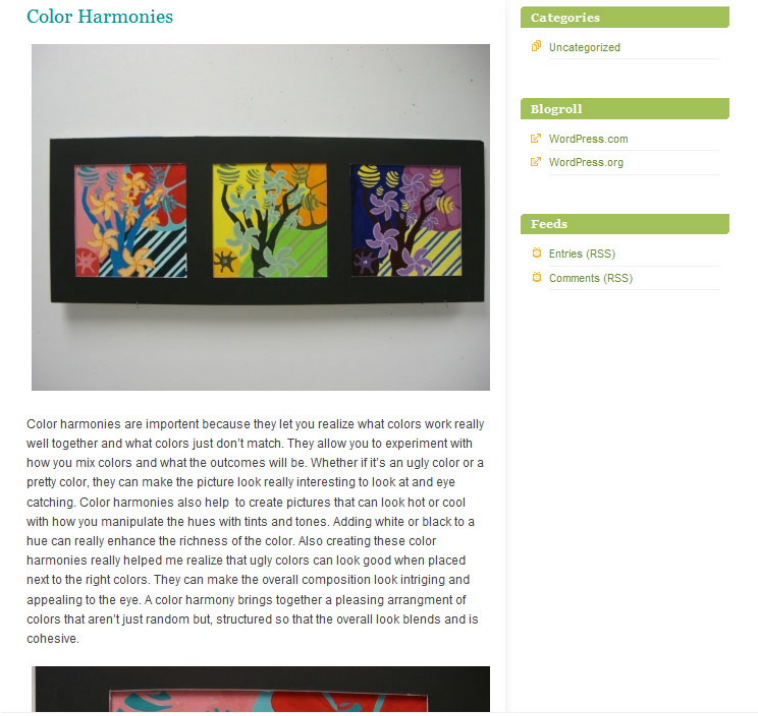
Fulwiler, Toby. (1986) The Argument for Writing Across the Curriculum. In A. Young and T. Fulwiler (Ed.), *Writing Across the Disciplines: Research into Practice.* (pp. 21-32). Upper Montclair, N.J: Boynton/Cook.

Kaiser Family Foundation. (2110). Generation M2: Media in the Lives of 8- to 18-Year-Olds. Menlo Park, CA: Author.

Luechauer, D.L., & Shulman, G.M. (1996). Fast Feedback Permits Students to Assess Faculty Performance. In T.W. Banta, J. P. Lund, K.E. Black, & F.W. Oblander (Eds.), *Assessment in Practice: Putting Principles to Work on College Campuses* (pp. 288-291). San Francisco: Jossey-Bass.

Roberts, H.V. (1995). Introduction. In H.V. Roberts (Ed.), *Academic Initiatives in Total Quality for Higher Education* (p. 1-16). Milwaukee, WI: ASQC Quality Press.

Zinsser, W. (1988). *Writing to Learn*. (pp.i). New York: Harper Collins



Color Harmonies

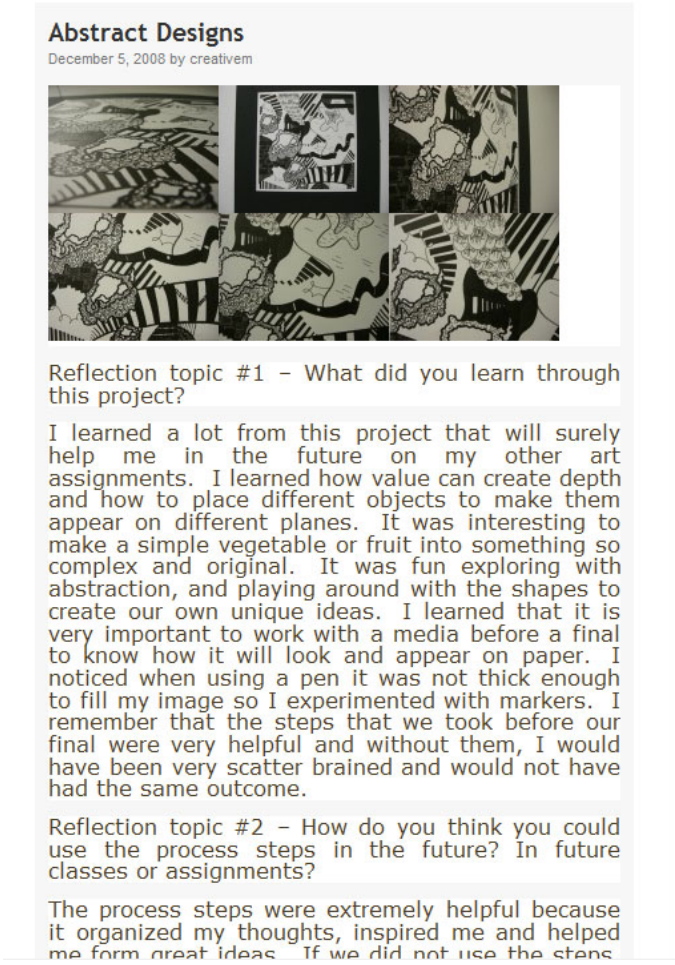
Color harmonies are importent because they let you realize what colors work really well together and what colors just don't match. They allow you to experiment with how you mix colors and what the outcomes will be. Whether if it's an ugly color or a pretty color, they can make the picture look really interesting to look at and eye catching. Color harmonies also help to create pictures that can look hot or cool with how you manipulate the hues with tints and tones. Adding white or black to a hue can really enhance the richness of the color. Also creating these color harmonies really helped me realize that ugly colors can look good when placed next to the right colors. They can make the overall composition look intriging and appealing to the eye. A color harmony brings together a pleasing arrangment of colors that aren't just random but, structured so that the overall look blends and is cohesive.

Categories
Uncategorized

Blogroll
WordPress.com
WordPress.org

Feeds
Entries (RSS)
Comments (RSS)

Figure 1: Foundation Level Blog Entry



Abstract Designs

December 5, 2008 by creativem

Reflection topic #1 – What did you learn through this project?

I learned a lot from this project that will surely help me in the future on my other art assignments. I learned how value can create depth and how to place different objects to make them appear on different planes. It was interesting to make a simple vegetable or fruit into something so complex and original. It was fun exploring with abstraction, and playing around with the shapes to create our own unique ideas. I learned that it is very important to work with a media before a final to know how it will look and appear on paper. I noticed when using a pen it was not thick enough to fill my image so I experimented with markers. I remember that the steps that we took before our final were very helpful and without them, I would have been very scatter brained and would not have had the same outcome.

Reflection topic #2 – How do you think you could use the process steps in the future? In future classes or assignments?

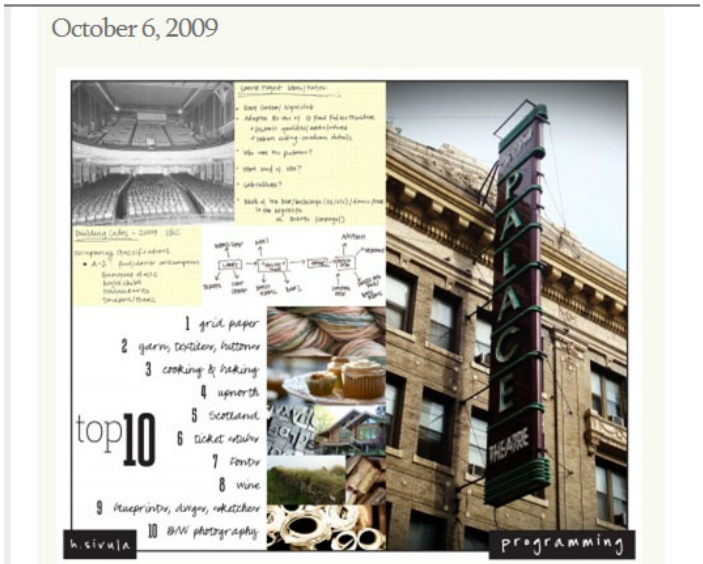
The process steps were extremely helpful because it organized my thoughts, inspired me and helped me form great ideas. If we did not use the steps

Figure 2: Foundation Level Blog Entry

I am designing a small airport terminal for my senior thesis project in the Interior Design program at the University of Wisconsin – Stout. In this section of my blog, I will explain the first stage of the design process, the programmatic phase, some important things I learned during this phase, why it is important, and my overall goals during this process. The programming phase is extremely important in the design process because it is the phase in which information and research data is gathered to understand the essential background information about the chosen interior being designed. During this phase, I looked up code information that is absolutely critical to designing a properly functioning space as well as other information regarding the framework of airport terminal design. This process is extremely valuable to every design because if it is skimped on and not thorough, the design will fail (if not in code requirements it will in usability, functionality, and efficiency.)

I explored numerous books from the library about airport design, planning, and management. These books helped me to understand the interworkings of airports, including required spaces in terminals and important adjacencies. The books helped me to understand space analysis requirements for the size of my airport as well as to grasp the idea of laying out a working floor plan by learning the important functions in terminals. I searched the web for articles, inspirational terminals and existing floor plans to help wrap my head around the important functions of terminal design. I found many floor plans that helped me to understand that two levels (baggage claim below and ticketing/security above) is the most economical way to design an airport because it best allows for expansion and flexibility in terminals. This was interesting to me because I thought that for small terminals one floor would be ideal, but because air travel is a constantly expanding industry, it is utterly essential that airports be designed with that in mind.

Figure 3: Senior Thesis Level Blog Entry



Senior Project Scope: An adaptive reuse of the historical Palace Theater in Saint Paul, Minnesota to be brought back to life as a event venue that can accommodate live music, dancing and space for private parties and events.

The programming process has been tedious yet extremely helpful to fully understand the scope of project and to wrap my brain around designing for an entirely new market. Since I am using an existing building, there have been many difficulties along the way already. With the theater currently not in use, it has taken a number of dead-end phone calls and phone-tag to track down the right people. I began researching the theater in August and it wasn't until the middle of September that I finally got in touch with the right people.

To my surprise there have been many attempts at renovating the theater, both as a historical restoration and as a new use. I was able to gain a lot of valuable information from the city of Saint Paul about its historical presence in the city and what they have done in the past to initiate changes for the theater. Once I was able to tour the theater, I became even more inspired and energized to move

Figure 4: Senior Thesis Level Blog Entry

The Instruction of Transformational Learning Pedagogy for Ethical Dilemmas in Interior Design

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ABSTRACT

While much of the learning adults do can be categorized as *adding to what we already know*, there exists the type of learning, transformational learning, that *changes what we know and how we know it*. Transformational learning (Mezirow, 1997) is the process of effecting change in a *frame of reference*. Frames of reference are the structures of assumptions through which we understand our experiences; we have a tendency to reject ideas that do not fit our preconceptions. When circumstances allow, transformative learners change their frame of reference to one that is more comprehensive, self-reflective, and integrative of experience.

The cognitive-rational approach to transformational learning, as advanced by Mezirow (as cited in Baumgartner, 2001) concentrates on the importance of rational thought and reflection in the transformative learning process. The process begins with a dilemma, such as a problem statement, which allows the student to see an inconsistency with their frame of reference and the problem which they are facing. Following is a process of critical reflection and reevaluation of the assumption the student made about their world, seen in Appendix I and II. This process can result in a perspective transformation or change in world view, leading to a more inclusive frame of reference.

There are topics in the discipline of interior design which would benefit from the process of transformational learning, such as sustainability in today's global community and business ethics. Rather than encouraging students to add to their body of knowledge of the topics (which they don't fully understand), educators must help learners become aware and critical of their own and others' frame of references, educators should lead students to questions their world views through critical reflection and consciousness-raising to allow the students to see the world and their place in it differently.

For transformational learning to occur, students must first be provided with a safe, open and trusting environment, where they feel comfortable to participate, explore, critically reflect and welcome feedback. Additionally, transformational learning involves feelings and thoughts of students and educators. "Fostering transformative learning in the classroom depends to a large extent on establishing meaningful, genuine relationships with students" (Cranton, 2006). Educators must learn to foster, allow and encourage these feelings and thoughts for the learning process to take place, as described by Taylor (2000). In other words, fostering transformational learning cannot occur unless educators are willing to "relinquish some of their authority or 'power position' in the classroom" and allow the students to lead themselves into the transforming realization (Baumgartner, 2001, p. 20).

This presentation will discuss the positive outcomes which can be achieved through the use of transformational learning in the areas of interior design business ethics and sustainable design. Ways to foster transformational learning in an interior design classroom will also be addressed in the presentation. Finally, an exploration of the ways that transformational learning aligns itself with andragogy and self-directed learning, which lead to the development to autonomous thinking, will conclude the presentation.

NARRATIVE

INTRODUCTION

Adults make their own interpretations of life, rather than act on the beliefs, conclusions, and feelings of others, as children do. To create appropriate interpretations, or frame of references, adults must be exposed to a coherent body of experiences, associations, concepts, values, and feelings. According to Mezirow (1997), transformational learning results in change to ones frame of reference. Facilitating exposure and discussion of such experiences within the classroom and curriculum is an important goal of adult education.

Although there are numerous topics within the discipline of interior design that could utilize the theory of transformational learning, two topics have the potential of benefiting the most, sustainability and business ethics in today's global interior design market. This presentation will evaluate the use transformational learning in the context of sustainable and business ethics and the alignment of such an education with andragogy and self-directed learning which results in autonomous thinking.

FRAME OF REFERENCE AND TRANSFORMATIONAL LEARNING THEORY

Transformational learning requires a method of instruction different from that normally associated with childhood education. Traditional pedagogical instruction deals primarily with the introduction of new information; however, new information is only one resource in the adult learning process (Mezirow, 1997). To become meaningful and beneficial for adults, learning requires that new information be incorporated by the learner into an already well-developed knowledge and frame of reference.

A frame of reference includes cognitive, conative, and emotional components. Frames of reference are assumptions and expectations that frame an individual's points of view and influence their thinking, beliefs, and actions. It is the revision of a frame of reference alongside reflection on experience that is addressed by the theory of transformational learning. We transform our frames of reference through critical reflection on the assumptions upon which our interpretations, beliefs, and actions are based.

FOSTERING TRANSFORMATION LEARNING IN THE INTERIOR DESIGN CLASSROOM

The transformational learning process begins with a dilemma, such as a problem statement, which allows the learner to see an inconsistency with their frame of reference and the problem which they are facing. Following is a process of critical reflection and reevaluation of the assumption the learner made about their decision. This process can result in a perspective transformation or change in world view, leading to a more inclusive frame of reference.

Educators must facilitate learners to become conscious and critical of their own presumptions and the presumptions of their peers for transformational learning to occur. Additionally, educators must become aware of the learners frame of reference, and be able to facilitate the learners in questioning their beliefs. For this to occur, educators must create an atmosphere within the classroom that makes the learners feel comfortable and knowledgeable enough to share their beliefs in class discussions. Successful dialogue depends on how well the educator can create a situation in which those participating have "full information; are free from coercion; have equal opportunity to assume the various roles of discourse (to advance beliefs, challenge, defend, explain, assess evidence, and judge arguments); become critically reflective of assumptions; are empathic and open to other perspectives; are willing to listen and to search for common ground or a synthesis of different points of view; and can make a tentative best judgment to guide action" (Mezirow, 1997). This type of a classroom will lead to an open discourse within the class, and enable learners not to make judgments of others, but instead to assess, critique, discuss and adjust (if necessary) their assumptions.

To ensure that learners feel knowledgeable enough to voice their opinions, it is essential that educators present multiple point of views and provide reading and other outside sources for research. In the case of sustainable ethics, it is important for learners to read material that is in support of sustainable design and development, but it is also important for students to know and understand the opposing point of view and be able to critique both. After information is presented and discussions are held within groups, students must be able to critically reflect on the subject and evaluate their frame of reference (see figure 1for an example of a reflective journal assignment).

Transformational learning is not about "brain-washing" learners, but rather about presenting multiple points of view and facilitating discussions and critical reflections which lead to an adjustment of the learners' frame of reference.

To make correct adjustments to their frame of reference, learners must practice in recognizing frames of reference and using their imaginations to redefine problems from a different perspective. When discussing interior design business ethics with a group of learners, the students are asked to first review general ethical dilemmas within small groups and report their responses of the situations to the rest of the class (see figure 2 for examples of discussion topics). Based on the reading that learners conducted prior to the discussion, learners can easily identify the ethical dilemma and suggest that they would not partake in such action. As the facilitator, educators must push the learners to expand their understanding of the situation, therefore students are asked to get back in their groups and reevaluate their responses to the previous scenarios while considering additional factors (see figure 3 for additional points of considerations). When presented with the scenarios of a failing business, sick family member, colleague support and assurance of anonymity, students start to reevaluate their responses and begin to consider unethical activity due to the factors presented. Finally, students are asked to critically reflect on the discussion in their private journal (see figure 4) and evaluate their personal ethical values. The result of this personal reflection is that learners understand the issues of ethical dilemma and understand why some professionals might be persuaded into unethical practice, however, each student identifies that they understand the necessity of ethical behavior, and learners start to understand their own personal limits.

As can be seen from the previous example, communication is necessary in the transformational learning process; learners must listen to other points of view. Educators must assume responsibility for establishing discussions that include autonomous thinking opportunities and foster critical reflectivity within discussions. As in the given example, instructional materials reflect the real-life experiences of the learners and are designed to foster participation in small-group discussion to assess reasons, examine evidence, and arrive at a reflective judgment. Learning takes place through discovery to solve and redefine problems. Learners are frequently challenged to identify and examine assumptions, including their own.

TRANSFORMATIONAL LEARNING AND ITS RELATIONSHIP TO ANDRAGOGY AND SELF-DIRECTED LEARNING

Transformational learning aligns itself with andragogy and self-directed learning, the first two theories of adult education, which identified adult learning as being unique and different from childhood education. Andragogy, first proposed by Malcolm Knowles in 1968, is based on five assumptions describing "the adult learner as someone who (1) has an independent self-concept and who can direct his or her own learning, (2) has accumulated a reservoir of life experiences that is a rich resource for learning, (3) has learning needs closely related to changing social roles, (4) is problem-centered and interested in immediate application of knowledge, and (5) is motivated to learn by internal rather than external factors" (Merriam, 2001).

The ideal conditions of discourse discussed as part of the transformational learning process are also considered ideal conditions for adult learning and education. The goal of both adult education and transitional learning is the learners' ability to achieve autonomous thinking. Autonomous thinking has been identified as one of the key skills necessary for the twenty-first century professional. "Economists recognize that resources should be directed toward creating a workforce that can adapt to changing conditions of employment, exercise critical judgment as it manages technology systems, and flexibly engage in more effective collaborative decision making." (Mezirow, 1997).

As within the transformational learning process, when fostering self-directed learning, the emphasis is on creating an environment in which learners learn from each other and help each other learn in problem-solving groups. The educator functions as a facilitator not just as an authority on subject matter. "The facilitator encourages learners to create norms that accept order, justice, and civility in the classroom and respect and responsibility for helping each other learn; to welcome diversity; to foster peer collaboration; and to provide equal opportunity for participation" (Mezirow, 1997). The facilitator must also be able to model the critically reflective role which is expected of the learners. Finally, the facilitator becomes a co-learner by gradually transferring her lead-

ership to the group as it becomes more self-directed.

CONCLUSION

Transformational learning is an effective tool for the instruction of business and environmental ethics in interior design, additionally; it is an instrument in the development of autonomous thinking adults. Transformation learning is also supportive of the two pillars of adult education, andragogy and self-directed learning. Transformational learning provides a method of teaching ethics within the interior design curriculum but the process teaches students to articulate and support their decisions, beliefs and actions, a necessary skill for interior designers.

REFERENCE LIST (APA)

Baumgartner, L. (2001). An Update on Transformational Learning. *New Directions for Adult & Continuing Education*, (89), 15.

Cranton, P. (2006). Fostering Authentic Relationships in the Transformative Classroom. *New Directions for Adult & Continuing Education*, (109), 5-13.

Merriam, S. (2001). Andragogy and Self-Directed Learning: Pillars of Adult Learning Theory. *New Directions for Adult & Continuing Education*, (89), 3.

Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult & Continuing Education*, (74), 5.

Taylor, E. (2008). Transformative learning theory. *New Directions for Adult & Continuing Education*, (119), 5-15.

Figure 1: Sustainable Ethics Reflective Journal Assignment Example

Reflective Journal Assignment: Transforming a student's frame of reference of sustainable principles and the student's impact on the world.

Reflective Journal Assignment

After watching the video *The Next Industrial Revolution: William McDonough, Micheal Braungart, and the Birth of the Sustainable Economy*, by Earthorne Production, during class today, please reflect on the following questions. Please answer the questions in full. Please come to class next week ready to discuss your reflections with the class.

1. Reflect on the idea of "growth" as defined by William McDonough. Do you believe that "growth" is necessary? Or do you think that "growth" must be stopped to achieve a fully sustainable economy?
2. Do you think a sustainable economy is possible? Why or why not? And, more importantly, do you think that a sustainable economy is necessary?
3. After viewing the videos, how do you honestly feel about your footprint? Are there things that you think you need to change? Are there things that you could change right away that will make a drastic difference in your personal footprint? List those things and how you could change them.

Figure 2: Example of Ethical In-class discussions

PowerPoint presentation shown during class session which addresses ethical business dilemmas through group discussions and includes an individual critical reflective exercise for students to reflect on their ethical values.

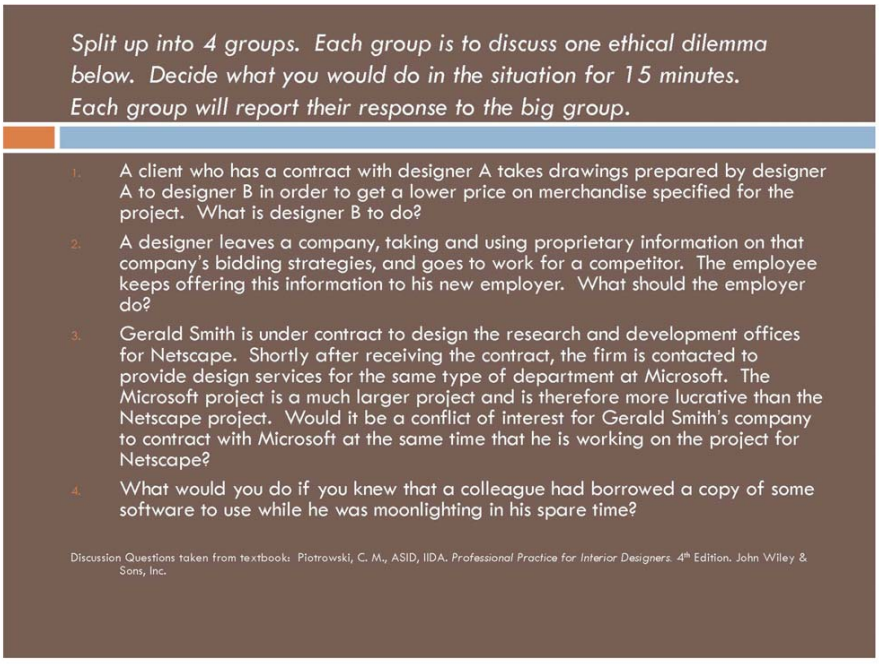


Figure 3: Additional Factors for Ethical Dilemmas

PowerPoint presentation shown during class session which addresses ethical business dilemmas through group discussions and includes an individual critical reflective exercise for students to reflect on their ethical values.

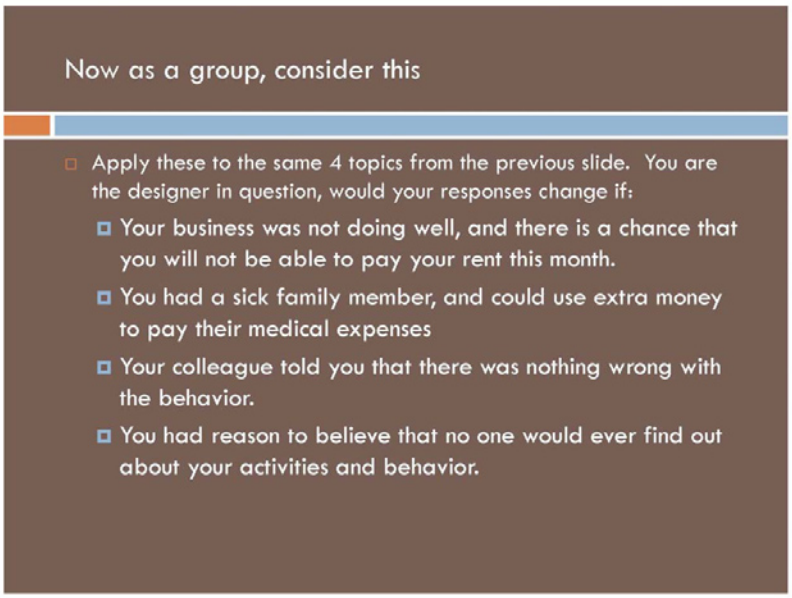
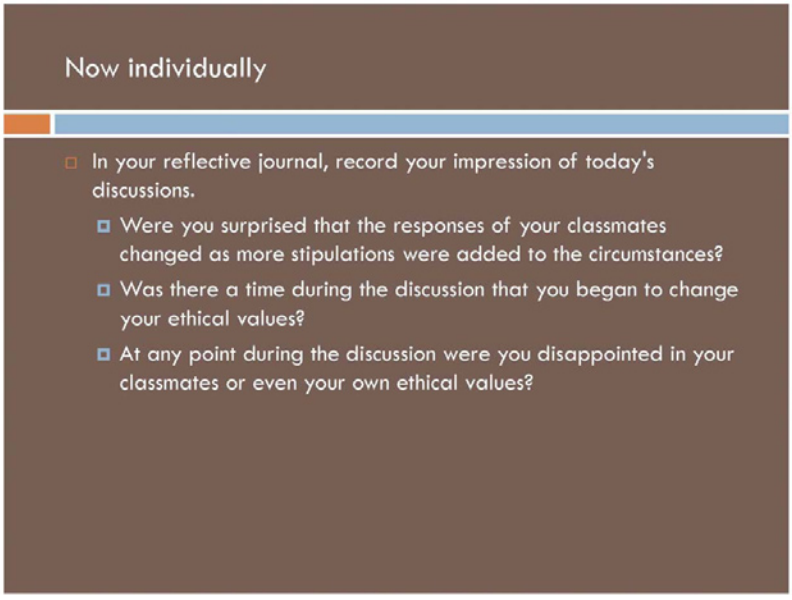


Figure 4: Business Ethics Reflective Journal Assignment Example

PowerPoint presentation shown during class session which addresses ethical business dilemmas through group discussions and includes an individual critical reflective exercise for students to reflect on their ethical values.



Student Assembly of a Personal Design Philosophy

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ABSTRACT

Designed to address current needs of interior design graduate education, this teaching method was developed to support discovery of the inner layers of a student's personal philosophy of designing inhabited spaces. Design philosophy acts as a guiding reference for design thinking (Nelson and Stolterman, 2003). Contrary to pedagogical approaches that introduce mainstream philosophical thought as a theoretical framework for students to reinterpret, this approach utilizes a "constructive" pedagogy following Ackermann's (1999) combination of constructivist theory (Piaget, 1999) with constructionist theory (Papert and Harel, 1991).

Graduate education in interior design requires that students develop a personal design philosophy to help them tailor their own learning and define their career path. Most interior design graduate programs accept students with interior design degrees and from other educational majors, various cultures, age groups, professional experiences, and cognitive levels. Frequently, these adult learners start the program without any design background and often with pre-conceived misrepresentations of the interior design profession. The development of a personal design philosophy helps level the field while providing students with a foundation to achieve greater self-awareness, capacity for analytical discussion, and skills for reflective as well as critical thinking. In order to meet these goals, a structured learning process was established and tested in both traditional classrooms and through online delivery with similar positive results. In both modalities, the course is taught in a seminar format for a maximum of fifteen students. Over a period of ten weeks, students are required to read articles, write responses, discuss various topics, and develop one quarter-long project. Throughout the quarter, they assemble fragmented intuitive preferences used as "learning mediators" for philosophical reflections (Papert and Harel, 1991).

A series of carefully chosen readings are assigned to both engage students in critical thinking and facilitate their interaction with peers. Written responses to the articles enable students to reflect on various design philosophies and to correlate readings with the knowledge gained through content topics presented by the instructor. Students establish a 'philosophical dialogue' with both the authors and their peers through class discussions. Students use design vocabulary to express ideas and formulate original thought. These weekly applications initiate the development of a philosophical base.

A quarter long project guides students through alternating moments of outward projection, connection, detachment, inward encapsulation, and reengagement (Ackermann, 1999). Weekly presentation of discoveries for peer critique and discussion, although difficult at first, becomes essential and leads to a successful outcome for all students. The different phases of the process follow a prescribed sequence and enable critical analysis at each stage of development. They also allow for meaningful evaluations, synthesis of ideas, and refinement of communication.

The final product is presented physically or digitally in book format to document the learning process and its final synthesis: the personal design philosophy statement. Examples of students' books illustrate the teaching method allowing for comparisons between outcomes of the two delivery formats.

NARRATIVE

INTRODUCTION

Contrary to pedagogical approaches that introduce mainstream philosophical thought as a theoretical framework for students to reinterpret, this teaching forum presents a "constructive" pedagogy crafted to support discovery of the inner layers of a designer's belief system.

Grounded by educational theories on adult learning, this 'constructive' teaching/learning method intends to fulfill specific needs of interior design graduate students. A collaborative self-discovery mediated by images and words enables students to gain individualized understanding of what inhabited spaces should be while formulating a personal design philosophy.

Different instructors have taught various groups of students in both traditional and virtual classrooms using this method. Student outcomes demonstrate increased reasoning ability and suggest that this process can support continuing cognitive development in knowledgeable and skilled adult learners. This learning experience has helped interior design graduate students to tailor their own learning, define their career paths, and gain self-confidence as interior design thinkers. Their philosophical statement, when used as a guide for further enlightenment and individual growth, can continue serving them later in professional practice.

The next few pages explain why and how integrated educational theories support our teaching/learning approach. We describe the method and strategies employed, illustrating them with examples of student outcomes. We also report consequent behavior of students who experienced this process.

THE NEEDS OF INTERIOR DESIGN GRADUATE STUDENTS

The political struggle for professionalization and accreditation has compelled undergraduate interior design education 'to impart given knowledge', conforming to normative professional standards for pre-established learning outcomes. Significantly impacting undergraduate programs, both positively and negatively, CIDA Accreditation Standards have strengthened the profession by leveling extreme disparities previously found in interior design education. Conversely, this standardized knowledge base tends to narrow the focus of undergraduate education on professional practice's competencies, reducing the opportunity for advancing independent thinking and collective construction of new knowledge.

Interior design graduate education, then, is the locus where refined research skills and advanced design thinking must be pursued. However, many interior design graduate programs accept students from various educational majors, cultures, age groups, professional experiences, cognitive levels, and locations who lack any design background. Often, these graduate students enter the program with pre-conceived misrepresentations of the interior design profession, requiring leveling courses to build up basic vocabulary, knowledge, and skills. At the same time, unlike undergraduate students, graduate students demand deeper content due to their more advanced cognitive development. Research shows that, in contrast to younger learners, adult learners require a sense of control over their own learning process (Mezirow, 1991) in order to reach transformational learning.

Each interior designer, knowingly or not, operates under a personal philosophy. Designers' philosophies are usually developed through reflection on practice (Shon, 1995) and not so much under a structured learning process. Undergraduate students' development of design values and beliefs usually happens in studio, where students "learn by doing" with the instructor fostering reflection. Graduate education, on the other hand, must add another dimension to learning, one that promotes deeper thinking processes and increased student independence. The fundamental purpose of adult education is the fulfillment of human potential for freedom through social means (Baptiste and Heaney, 1996). We argue that formulating a personal design philosophy can support differentiated cognitive development in interior design education.

The American Association of Adult Education promotes the notion that adults require specific conditions to learn. Interior design graduate students are adult learners, and predominantly "adult female learners" with demonstrated learning ability (four-year undergraduate degree) and work experience in a variety of fields, not necessarily design related. Educators must then acknowledge the richness of each and everyone's life experience to inform the process and also recognize that their interest in interior design connects them to us, professors, who

differ from them only slightly. Our role is to facilitate their access to the design process and the profession's body of knowledge.

A CONSTRUCTIVE PEDAGOGY: COLLABORATIVE SELF-DISCOVERY THROUGH IMAGES AND WORDS

Feminist scholars like Franck (1989) and Havenhand (2004), contend that many women prefer working with more personal, less-detached knowledge and do so very successfully. Papert and Turkle (1991) defend the idea of an "epistemological pluralism", suggesting that an adult student's identity should coalesce as he or she engages in a socially constructive learning process of "self-discovery".

Seymour Papert, a researcher of learning processes, worked under the assumption that knowledge is essentially grounded in contexts, even in adult experts. Questioning Piaget (1999), who considers abstract or scientific thinking the highest level of intellectual development, he showed that concrete thinkers can reach the same conclusions as abstract thinkers. Ackermann (1999), another researcher working under this "situated learning" theory, explains that Papert believed that "diving into situations rather than looking at them from a distance, becoming one with the phenomenon under study instead of disconnecting is a key to learning and puts empathy at the service of intelligence*"* (p.7). However, she suggests that "distancing oneself from a situation does not necessarily entail disengaging, but it may constitute a necessary step toward relating even more intimately and sensitively to people and things" (p.9).

Our teaching strategies, then, were crafted to alternate moments of intuitive expression, verbal rationalization, sharing experiences, individual reflection, abstract representation, collaborative analysis, and conceptual transference through continuous refinement of communication (graphic and verbal). This cyclical process has enabled students to discover essential values and beliefs that, synthesized in a coherent philosophical statement or in an overarching "personal design philosophy", should permeate design decision making. Like Papert and Harel (1991), we believe in the continuous development of the self, which implies that this "design philosophy" should be reexamined periodically. The strategies learned are appropriate for use at any point in one's adult life.

The course was initially taught in traditional seminar mode: a physical classroom, where ten students meet with their instructor for two and a half hours, twice a week during ten weeks. Readings and discussion supported a quarter-long collaborative project, which culminated on each student's developing a personal design philosophy. Later, an alternative online delivery mode was offered, requiring further structuring as ten separate consecutive units, each focused on a specific topic discussed in parallel to the project (Figure 1). A written response to weekly assigned readings (Figure 1) supports discussions while the project is executed. Online students alternate between two discussion forums: one thematic and one mediated by artifacts that change weekly.

Students initially select three images representing their individual preferences for twenty four given words (Figure 2). This task's discussion focuses on identifying differences and similarities within each set of images, and narrowing selections to one image per listed word. The next task is to associate three qualifying words to each image. The subsequent discussion requires careful observation of their peers' images and qualifiers, questioning for clarification of associations. After refining their combinations, students write a paragraph for each image incorporating the qualifying words to explain their choices. They then create a page for each initial word containing the image and justification paragraph. The following four weeks are dedicated to group critiques, each week focusing on six book pages. Students are discouraged from making value-judgments in their critiques and instructed to strive for clarity.

After four weeks of communication refinement, a 2 inch x 2 inch "abstract" diagram is added to each page. (Figure 3) This is a revealing moment for students, particularly for the ones unfamiliar with abstract representation. The 24 diagrams are also collectively composed on an additional page to facilitate identification of trends. (Figure 4) This week's discussion is guided towards identification of consistencies and design values, which requires abstract thinking not yet experienced by many.

The next task is to initiate synthesis by expressing their findings in the form of poetry. Students research cinquains (a five-line poem) and choose one of its various formats to convey their most significant design values. The poems are shared and comments focused, again, on clarity

of communication. The final task is to verbally express a meaningful personal design philosophy communicated in one page that includes images and text (Figure 5). All pages become a book that aesthetically conveys a personal design philosophy. Throughout this process, the role of the instructor is to raise awareness of design preferences, facilitate discussions, keep the group focused, and engage students in design discourse.

CONCLUSION

The beginning of a graduate education program is an appropriate time to experience this process. The uniqueness of each "personal design philosophy" book substantiates the method's effectiveness as much as noticeable changes in student's behavior. There is a gradual, visible gain in confidence. Formulated philosophies reappear later, in studios and lecture courses, as justifications for decision making and conceptualization. These designers seem more capable of design thinking in a world of accelerating change and intensifying danger, as described by Paul and Elder (2002).

With greater self-awareness, capacity for analytical discussion, and skills for reflective as well as critical thinking, these graduate students are being prompted to prepare themselves to become capable and well informed designers; designers able to shape design solutions responsive to intellectual, sensual and spiritual needs. They will be a part of refining the discipline and the practice of interior design.

REFERENCE LIST

Ackermann, E. (1999) Piaget's Constructivism, Papert's Constructionism: What is the Difference?. Retrieved July 18, 2009, from http://learning.media.mit.edu.

Baptiste, I. & Heaney, T. (1996) The Political Construction of Adult Education." Retrieved July 21, 2009, from http://www.nl.edu/academics/cas/ace/facultypapers/TomHeany_IanBaptiste_Construction.cfm.

Franck, K. A. (1989) A Feminine Approach to Architecture: Acknowledging Women's ways of Knowling. In E. Berkeley, Ed., *Architecture: Place for Women*. Washington, DC: Smithsonian Institution Press.

Havenhand, L. K. (2004) A View from the Margin: Interior Design. *Design Issues*, 20 (4), 32-42.

Mezirow, J. (1991) *Trasformative Dimensions of Adult Learners*. San Francisco, CA: Publisher name and contact information, as provided by the publisher; updated only if notified by the publisher.Jossey-Bass.

Nelson, H. G. & Stolterman, E. (2002) *The Design Way: Intentional Change in an Unpredictable World: Foundations and Fundamentals of Design Competence*. Englewood Cliffs, NJ : Educational Technology Publications.

Papert, S. & Harel, I. (1991) Situating Constructionism. In S. Papert & I. Harel. *Constructionism.* (pp. 309-330). New York, NY: Ablex Publishing Corporation.

Papert, S. & Turkle, S. (1991) Epistemological Pluralism and the Revaluation of the Concrete. In S. Papert & I. Harel. *Constructionism.* (pp. 161-191). New York, NY: Ablex Publishing Corporation

Paul, R. and Elder, L. (2002) *Critical Thinking: Tools for Taking Charge of your Professional and Personal Life*. Upper Saddle River, NJ: FT Press.

Piaget, J. (1999). *Psychology of Intelligence.* New York, NY: Rutledge Classics.

Shon, Donald. (1995) *The Reflective Practitioner: How Professionals Think in Action*. Farnham, United Kingdom: Ashgate Publishing.

Taylor, M. & Preston, J. (2006) *Intimus: Interior Design Theory Reader*. New York, NY: Wiley-Academy.

TOPICS FOR WEEKLY DISCUSSION AND ASSIGNED READINGS

Unit 1: Outside and Inside
Colley, A. C. (2006) Bodies and Mirrors. In M. Taylor & J. Preston (Eds.) *Intimus: Interior Design Theory Reader* (pp. 68-74). New York: John Wiley & Sons.

Unit 2: People and Space
Thoreau, H. D. (2006) Visitors. In M. Taylor & J. Preston (Eds.) *Intimus: Interior Design Theory Reader* (pp. 348-350), New York: John Wiley & Sons.

Unit 3: Spaces and Boundaries
Ardener, S. (2006) The Partition of Space. In M. Taylor & J. Preston (Eds.) *Intimus: Interior Design Theory Reader* (pp. 15-21). New York: John Wiley & Sons.

Unit 4: Space and Place
Rendell, J. (2006) The Clubs of St. James's: Places of Public Patriarchy. In M. Taylor & J. Preston (Eds.) *Intimus: Interior Design Theory Reader Intimus: Interior Design Theory Reader* (pp. 277-281). New York: John Wiley & Sons, 2006.

Unit 5: Ornament and Order
Soulillou, J. (2006) Ornament and Order. In M. Taylor & J. Preston (Eds.) *Intimus: Interior Design Theory Reader* (pp. 314-322). New York: John Wiley & Sons.

Unit 6: Beauty and Nature
Sparke, P. (2006) The Things Which Surround One In M. Taylor & J. Preston (Eds.) *Intimus: Interior Design Theory Reader* (pp. 323-327). New York: John Wiley & Sons.

Unit 7: Function and Meaning
Lawrence, R. J. (2006) Social, Spatial and Temporal Factors. In M. Taylor & J. Preston (Eds.) *Intimus: Interior Design Theory Reader* (pp. 184-185). New York: John Wiley & Sons, 2006.

Ching, F. (1998) Diagramming. In F. Ching, *Design Drawing* (pp. 289-300). New York: Van Nostrand Reinhold, 1998.

Unit 8: Energy and Light
Tanizaki, J. (2006) In Praise of Shadows. In M. Taylor & J. Preston (Eds.) *Intimus: Interior Design Theory Reader* (pp. 335-338). New York: John Wiley & Sons, 2006.

Unit 9: Materiality and Environment
Baudrillard, J. (2006) Structures of Atmosphere. In M. Taylor & J. Preston (Eds.). *Intimus: Interior Design Theory Reader* (pp. 37-42). New York: John Wiley & Sons,

Unit 10: Interior Design Philosophy: Yesterday, Today and Tomorrow
Taylor, M. (2006) Architecture and Interior: A Roam of One's Own. In M.Taylor & J. Preston (Eds.) *Intimus: Interior Design Theory Reader* (pp. 339-344). New York: John Wiley & Sons,

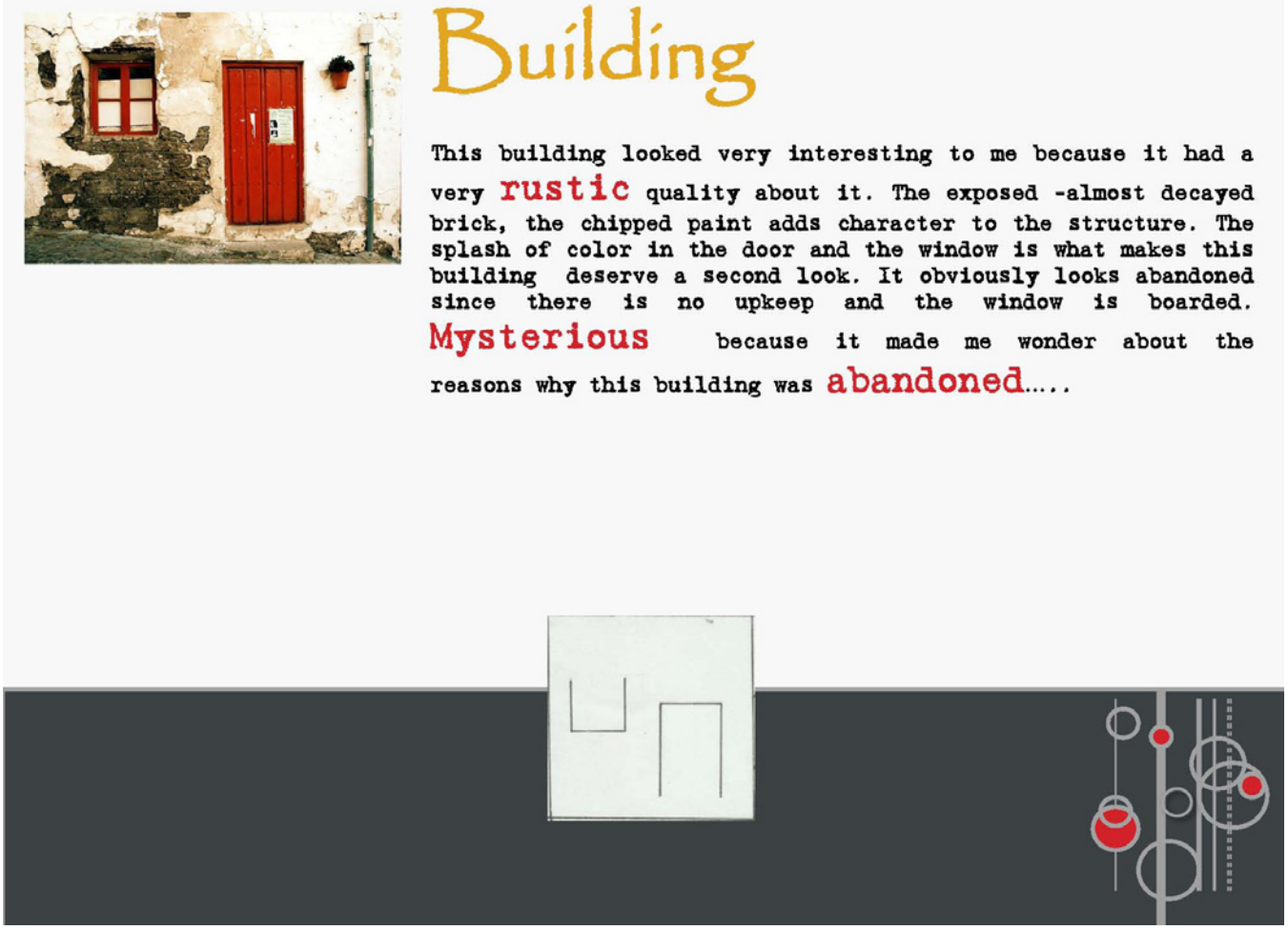
Figure 1: List of assigned readings per Content Unit

DESIGN PHILOSOPHY BOOK WORD LIST

Set 1	Set 2	Set 3	Set 4
LANDSCAPE	2-D ART	BOOK	ARTIST
BUILDING	SCULPTURE	FILM	DESIGNER
EXTERIOR	BEAUTIFUL FORM	PHOTOGRAPH	ARCHITECT
INTERIOR	MUSIC	ADVERTISEMENT	PERSONAL INTEREST
FURNITURE	POEM	CLOTHING	PROFESSIONAL: INTEREST
OBJECT	PASSION	CULTURE	ATTITUDE

Figure 2: Initial words list

Figure 3: Example of a student's book page



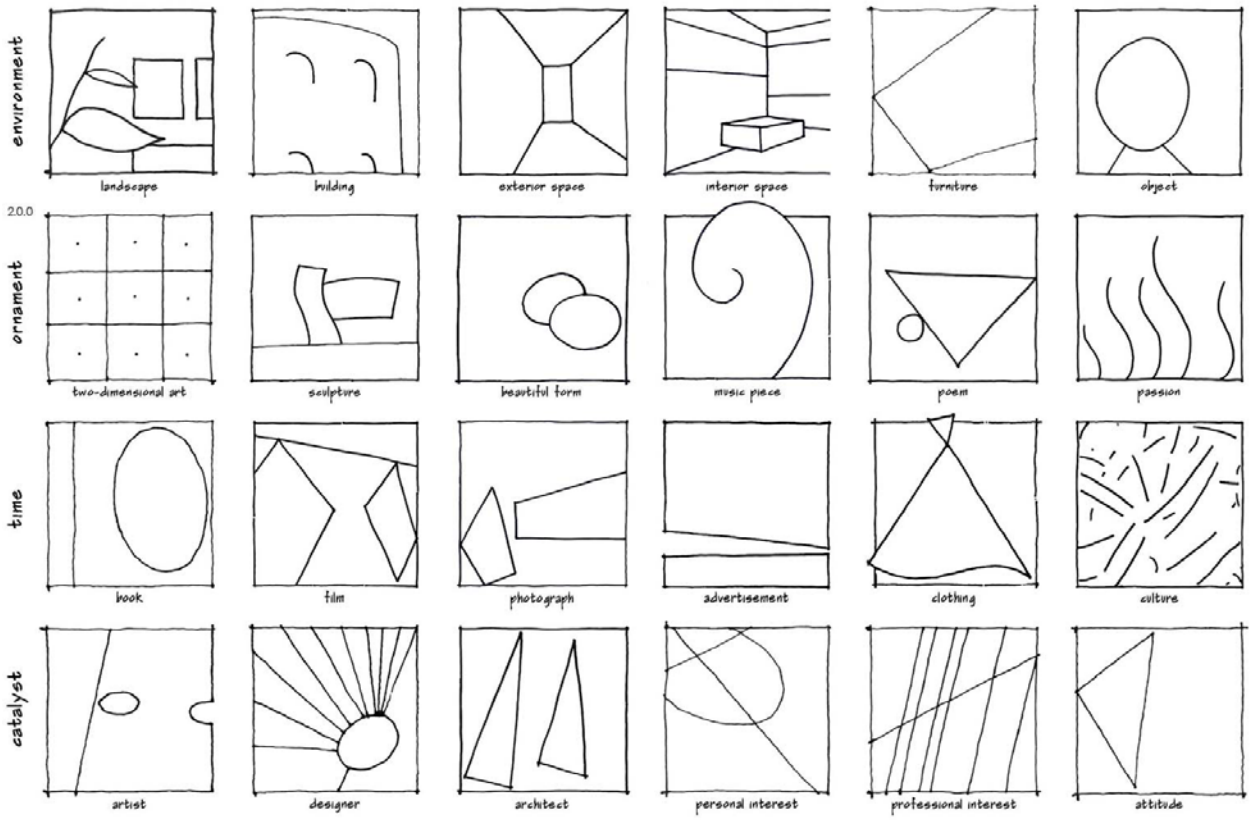
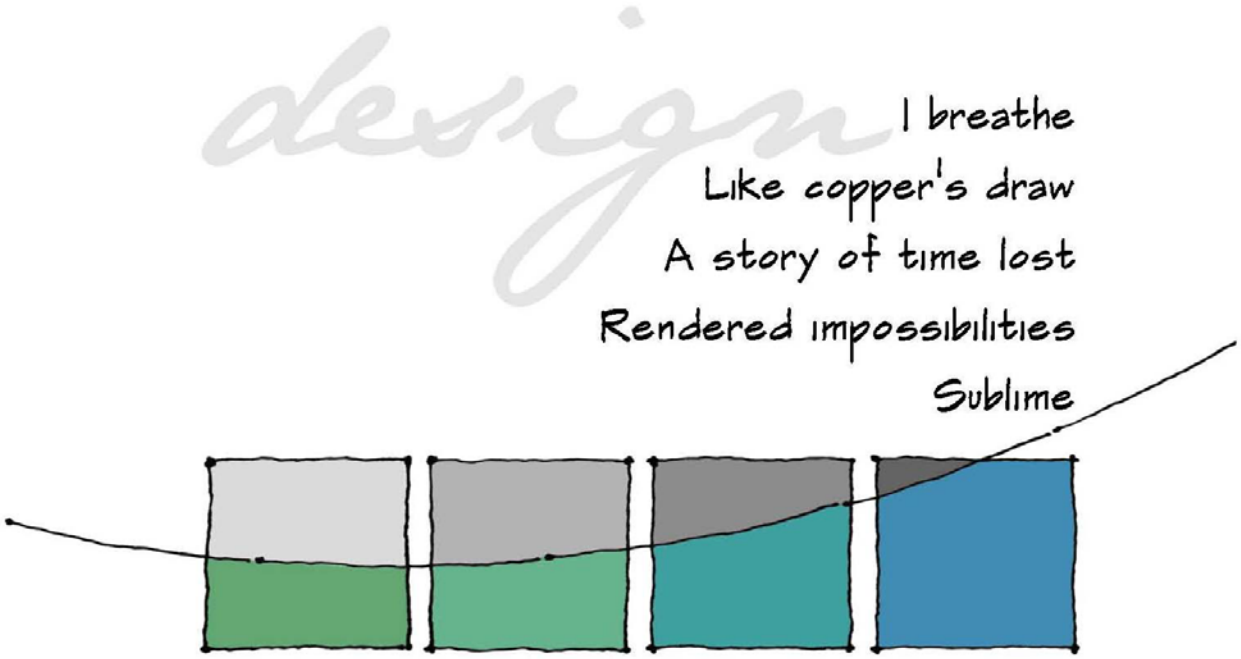


Figure 4: Example of a diagram composition page



I am an Interior Designer. I identify with that title and I embrace my responsibilities with great joy. I design because I love the process. The obstacles. The research. The solutions. It took years for me to realize that I am a servant in a service industry. People trust me with the spaces that define them and I am honored to share my love of the process.

Design is about the experience. Sensory. Emotional. Physical. I believe that it is my duty as a responsible designer to design for all people and to celebrate those who have left us, those that are around us and the children that will become us. I believe in designing for change by choosing materials that endure and improve with age.

Good design is quiet and often goes unnoticed. It is not about making a statement; it is about making a difference regardless of size or notoriety. My favorite projects are the ones riddled with obstacles. Small budget. Short timeline. Limited space. I leave those projects a better person and a better designer.

Figure 5: Example of a Personal Design Philosophy page

Image-Based Inquiry: Creative Survey Techniques for Eliminating Assumptions

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ABSTRACT

Assumptions are like springboards along the path of information-gathering, where the ultimate goal is to find the truth or the right solution. Once you make an assumption about a situation, all other conclusions are built upon that assumption. If the assumption is inaccurate or misguided, your subsequent conclusions will likely be wrong as well (Weisberg, 2006).

Assumptions arising out of personal value systems prevent us from seeking information or posing solutions that respond to value systems different from our own. This is especially apparent in the development of a questionnaire for use in an interview or survey, as our assumptions determine the questions we ask and the questions we don't ask (Cherry, 1999), or the things we notice and those we don't. The image-based inquiry minimizes reliance upon verbal language and explores imagery as a "universal language" communicating complex concepts between the interior designer and end user.

Does the interior designer always know best? In the program for a rehabilitation facility for combat veterans suffering from PTSD, one student challenged this and posed the question: "Can the combat veteran design a healing space?" A series of questions was given to veteran subjects about how they would respond emotionally to various scenarios. The veterans were asked to reply by selecting from a series of images the one that best illustrated their answer. This approach uncovered design concepts related to competition, control and companionship, eliminating assumed ideas of what a healing space for veterans *should be* and uncovering the potential for what this space *could be.*

In the programming phase for an inpatient drug treatment for non-violent drug offenders, another student found communication with her end users to be challenging and unproductive. Through research, the student found many of the end users considered themselves to be artists. The student presented a short list of questions to the end users, along with colored pens and blank paper. She asked that all survey responses be presented in the form of a drawing. Images that were returned to her unfolded into graphic and emotional stories that revealed the deep-seated wants and needs of an end user group that can have difficulty with trust, anger, abandonment and honest communication.

This paper also presents an in-class activity (developed by the authors) which allows students to recognize three points: 1) How underlying assumptions will influence the questions students ask, the images students select and the interpretation of results, 2) How images can be used in surveys to gather information involving emotional reactions and complex concepts and 3) How the clarity of a survey (in terms of goals and design) is directly related to its success. To maximize the potential solutions and outcomes from an image-based survey, students must acknowledge their own assumptions and value system, be open to the value systems of others, and be able to operate within a global context.

NARRATIVE

Assumptions are like springboards along the path of information-gathering, where the ultimate goal is to find the truth or the right solution. Once you make an assumption about a situation, all other conclusions are built upon that assumption. If the assumption is inaccurate or misguided, your subsequent conclusions will likely be wrong as well (Weisberg, 2006).

Assumptions arising out of personal value systems prevent us from seeking information or posing solutions that respond to value systems different from our own. This is especially apparent in the development of a questionnaire for use in an interview or survey, as our assumptions determine the questions we ask and the questions we don't ask (Cherry, 1999), or the things we notice and those we don't. The image-based inquiry minimizes reliance upon verbal language and explores imagery as a "universal language" communicating complex concepts between the interior designer and end user.

Image-Based Inquiry is an ethnographic tool using photo-elicitation, where images become the basis of dialogue between researcher and subject. Their meanings, rather than being assumed, are constructed in interviews, discussions, and reflections with the end user. Image Based Inquiry can incorporate not only photos, but drawings, collages and various cultural artifacts provided by the designer or the end user.

Image-Based Inquiry stimulates the interview process (Harper, 1994; Tucker and Dempsey, 1991) and explores participants' wants and needs for their spaces within the context of their values, beliefs, and attitudes. Exploring imagery during an interview with an end user offers a stimulating medium for discussion and provokes unpredictable questions, which often yield unpredictable answers. The imagery delves into the consciousness (and sub-consciousness, per studies done by Fathom in Pittsburg, PA) of the client and end user, and in an exploratory fashion can reveal significant metaphors and concepts triggered by the subject matter. (Taylor, 2002)

In addition, Collier and Collier (1986) found photographs to be an excellent medium to bridge the cultural differences between strangers, in today's global context, a common difference shared by a design researcher and the end user. In interviews, photographs and other imagery spontaneously invite and encourage open expression and rapport that a verbal interview alone could not as easily accomplish. In essence, the visual medium of an image offers a language that often can transcend cultural difference. (Taylor, 2002)

A famous example of the power of imagery in transcending cultural differences was the image at the conclusion of ''Glimpses of the U.S.A.'' (1959), by Charles and Ray Eames shown in the Soviet Union. '"In the 'U.S.A.' film, they did not know how to end it,'' their grandson said. ''Ray suggested an image of forget-me-nots, and they both knew it was right. And by one of those cosmic flukes, the flowers had the same name with the same meaning in Russian. At the end of the film, the seven images merged into one picture of a bouquet of forget-me-nots, and everyone in Moscow choked up.'" (Giovanni, 1999)

Most often photo-elicitation or photo-interviewing incorporate images taken by or provided by the researcher. However, using photographs taken by the researcher has significant limitations as the images often reflect the researcher's point of view, biases, and knowledge, or lack thereof. (Harper, 1998) We propose a technique where participants take their own photographs (auto-photography) or provide their own imagery, ensuring that each point of view is reflected in the images of the photographs, not simply the researcher's. (Taylor, 2002) This is especially effective in situations where the end user struggles to articulate their wants and needs, for example, due to age, language barriers or mental illness.

For example, one student interested in developing a thesis about nursing homes and assisted living facilities created "The Granny Cam". The student provided her 88 year old grandmother a disposable digital camera and asked her to take photographs of anything that reflected her daily life or was important to her. The resulting images provided an intimate look at the nursing home, as experienced by the end users, and uncovered thought provoking design problems related to personalization, social support and accessibility.

Various studies have posed the question, "Does the interior designer always know best?" In the program for a rehabilitation facility for combat veterans suffering from PTSD, one student challenged this and posed the question: "Can the combat veteran design a healing space?" A series of questions was given to veteran subjects about how they would respond emotionally to

various scenarios. The veterans were asked to reply by selecting from a series of images the one that best illustrated their answer. This approach uncovered design concepts related to competition, control and companionship, eliminating assumed ideas of what a healing space for veterans *should be* and uncovering the potential for what this space *could be.*

In the programming phase for an inpatient drug treatment for non-violent drug offenders, another student found communication with her end users to be challenging and unproductive. Through research and observation, the student found many of the end users considered themselves to be artists. The student presented a short list of questions to the end users, along with colored pens and blank paper. She asked that all survey responses be presented in the form of a drawing. Images that were returned to her unfolded into graphic and emotional stories that revealed the deep-seated wants and needs of an end user group that can have difficulty with trust, anger, abandonment and honest communication.

An innovative, research-based design company, *fathom*, asks the client to bring in stacks of images that evoke feelings, wants, and needs for the facility. The fathom interviewer asks the client-participant a series of questions to help the participant explain what the images represent to him or her. Through these probing questions, the interviewer helps the participant uncover deeper thoughts and feelings than if the interviewer had simply asked, “What does this image mean to you?”

A fathom graphic designer then manipulates and arranges the images into unique collages that reflect the client’s underlying desires. Researchers then study the images, along with the participant’s verbal explanation, to derive a metaphor. A metaphor is the expression of an understanding of one concept in terms of another concept, where there is some similarity or correlation between the two through the use of a poetic device—for example, “All the world’s a stage.” In this case, researchers seek to understand the wants and needs of the client on a deeper, subconscious level, and they strive to create a mutual understanding through a combination of symbolic words and images.

This presentation concludes with a simple image-based activity which allows participants to recognize three points: 1) How underlying assumptions will influence the questions they ask, the images they select and the interpretation of results, 2) How images can be used in surveys to gather information involving emotional reactions and complex concepts and 3) How the clarity of a survey (in terms of goals and design) is directly related to its success. Attendees will be asked to view several photographs of interior spaces: a reception desk, a waiting area and an office space and to list assumptions about the occupant of the space made by the viewer based on visual cues, artifacts, evidence of adaptation and traces of erosion or accretion. Participants are asked to examine their own point of view, value system and assumptions in an open discussion. A take-home activity the authors use in their textbook, *Research-Inspired Design*, will also be explored.

APPENDIX

(Parman_Granny_Cam.pdf)

(Parman_PTSD.pdf)

(Parman_image_inquiry.pdf)

(Parman_Walter_Reed.jpg)

(Parman_fathom.pdf)

"Granny Cam" | Research

Photos from a Resident

Figure 1: Granny Cam Photos

Figure 2: PTSD Image-Based Inquiry

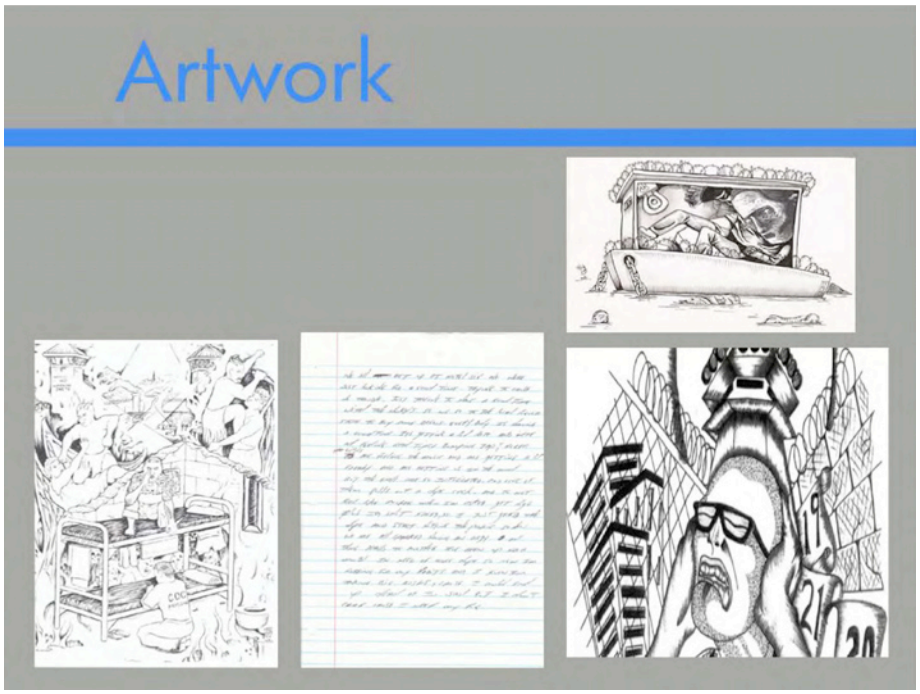

Figure 3: Non-Violent Drug Offender Image-Based Inquiry

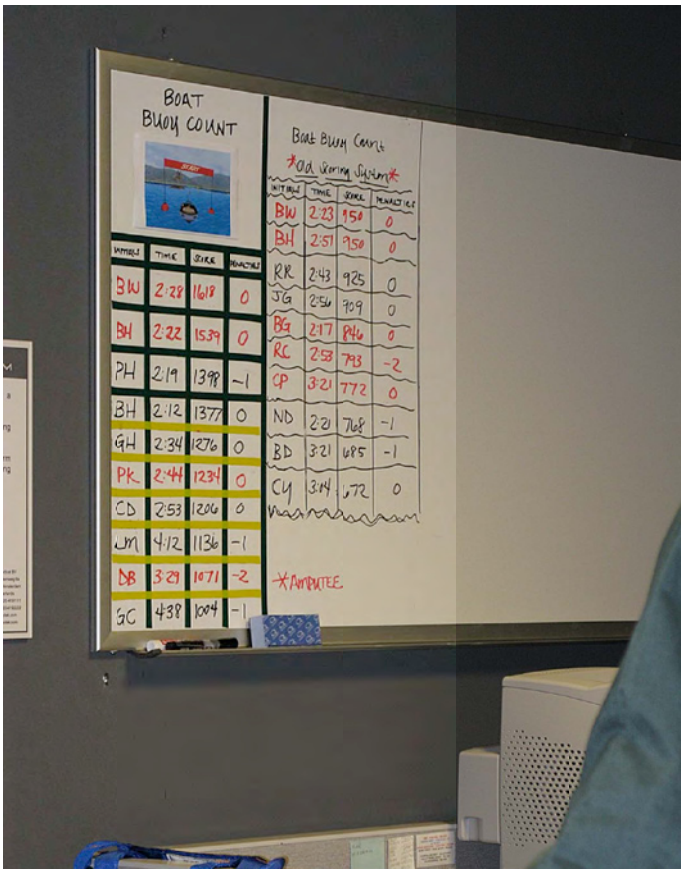

Figure 4: Walter Reed Medical Center

Figure 5: Fathom Children's Hospital

REFERENCE LIST (APA)

Cherry, E. (1999). *Programming for Design: From Theory to Practice*. New York: Wiley.

Collier, J Jr, and Collier, M (1986). *Visual Anthropology*. Albuquerque, NM: University of New Mexico Press.

Giovanni, J. (1999). Soul of the Eames Machine. *The New York Times (Online). Retrieved January, 27, 2010.*

Groat, L. & Wang, D. (2002). *Architectural Research Methods.* New York: Wiley.

Harper, D (1994). On the Authority of the Image, *Handbook of Qualitative Research*, p403-12. Thousand Oaks, CA: Sage.

Harper, D (l998). An argument for visual sociology, *Image-based Research*, p 24-41. London: Taylor and Francis.

Hershberger, R. G. (1999). *Values: A Theoretical Foundation for Architectural Programming.* Tempe: Arizona State University.

Laurel, B. (Ed.). (2003). *Design Research, Methods and Perspectives.* Massachusettes Institute of Technology.

Mayhew, M. (2004). Exploring the Essence of Spirituality: A Phenomenological Study of Eight Students with Eight Different Worldviews {computer file}. *NASPA Journal (Online)*, 41(4), p. 647-74. Retrieved January 25, 2010, from OmniFile Full Text Select database.

Patton, M. (1990). *Qualitative Evaluation and Research Methods*. Thousand Oaks, CA: Sage.

Sanoff, H. (1991). *Visual Research Methods in Design*. New York: John Wiley.

Taylor, E. (2002). Using still photography in making meaning of adult educators' teaching beliefs. *Studies in the Education of Adults*, 34(2), 123-39. Retrieved January 25, 2010, from OmniFile Full Text Select database.

Tucker, S.A. & Dempsey, J.V. (1991). Photo-interviewing, *Evaluation Review*, vol 15(5), p 630-53.

Weisberg, R. (2006). *Creativity: Understanding Innovation in Problem Solving, Science, Invention, and the Arts.* New York: Wiley.

Whitmore, H. (2001). Value that marketing cannot manufacture: cherished possessions as links to identity and wisdom. *Generations (San Francisco, Calif.),* 25(3), 57-63. Retrieved January 25, 2010, from OmniFile Full Text Select database.

Zeisel, J. (1984). *Inquiry by Design: Tools for Environment–Behavior Research*. Cambridge, England: Cambridge University Press.

Design Scholars: Using online communication to enhance creative thinking about design research.

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ABSTRACT

Careful study into interior design graduate curriculum has shown that "effective educational programs require the development of thoughtful and precise research and communication skills, including writing, critical reading, qualitative thinking, and process of analysis and synthesis" (Wolf, 1996, p. xi). These research and communication skills are essential to graduate students in interior design due to the interdisciplinary nature of this field of academic study. Using online discussions as a vehicle for communication about design research, students are able to socially construct knowledge and heighten their awareness of research topics and methodologies. By discussing current literature, students begin to create a necessary foundation to develop original and relevant research in the field. Prior exposure to design-based research may be limited for students due to many coming from other backgrounds than design, and because research has typically not been emphasized in undergraduate interior design programs. Communication and critical dialogue can help further student understanding about design research and how it is incorporated into successful design solutions.

The goal of this study was to examine an online learning community created for interior design master's students and the impact of online discussions on changes in their creative thinking about design research. It further considered potential changes in dimensions of creative thinking (fluency, flexibility, originality, and elaboration) to uncover where changes in creativity were taking place (Torrance, 1988).

Using a delivery method like asynchronous online discussions, students can interface with others engaged in a design research process regardless of geographic and time differences. Previous research in online discussions shows that cultivating online relationships, providing feedback, and reflecting on others' opinions can increase interactivity and scholarship among students resulting in a higher order of creative thought (Dutt-Doner & Powers, 2000). Online discussions afford students the opportunity to reflect upon and analyze their own opinions, increase their motivation in education, and share resources with other peers interested in similar topics (Chickering & Ehrmann, 1996). Further, studies show that the reflective writing activities that take place in online discussions groups enhance critical and creative thinking in students and have applications across disciplines (Cisero, 2006).

This study used 21 students from three interior design graduate programs across the United States. These students participated in online discussions for six-weeks during the fall of 2008. During this they completed pre and post tests to measure and compare creative thinking changes during the study.

Using qualitative and quantitative analysis, the interactions in the online discussions were shown to significantly impact creative thinking about understanding (p=.000) and defining a personal interest (p=.007) in interior design research. This supports the premise that knowledge is socially constructed and that discussions within a community can boost the knowledge of all involved. As technology continues to change and evolve, it is a tool that assists in connecting those of a specific community together. Ultimately, online approaches hold great potential for building and sustaining a creative, informed, and engaged community of learners in all disciplines.

NARRATIVE

Involving students in discussions about the significance of research and scholarship in interior design during graduate school is critically important. Not only can this heighten awareness and interest in research but it can also increase dialogue between future practitioners, educators, and/or researchers and therefore, increase the sense of community among those in the interior design field. Careful study into interior design graduate curriculum has shown that "effective educational programs require the development of thoughtful and precise research and communication skills, including writing, critical reading, qualitative thinking, and process of analysis and synthesis" (Wolf, 1996, p. xi). These research and communication skills are essential to graduate students in interior design due to the interdisciplinary nature of this field of academic study.

In addition to being interdisciplinary in nature, interior design is a constantly evolving academic discipline with a growing common body of knowledge (Carll White & Dickson, 1994; Dohr, 2007). Recipients of an interior design graduate degree are expected to build upon previous research and add to the knowledge base (Carll White & Dickson, 1994; Guerin & Thompson, 2004). Research, for the purposes of this study, is previous literature and documentation on the discovery, interpretation, and development of methods and systems for the advancement of interior design (Dickenson & Marsden, 2009). Research-based design solutions from previous research findings give future interior designers a way to base, defend, and rationalize the design decisions they make (Guerin & Thompson, 2004; Hasell & Scott, 1996). Incorporating research into design education is a way to advance the scholarly culture of interior design and bridge the practice and academic worlds (Dohr, 2007). Also, the ability to incorporate research-based design solutions into the practice of interior design has recently emerged as an important and necessary skill for interior design students. As a result, more and more educators are including this important tool in traditional studio education. This trend is reinforced by the recent change in standards for all accredited interior design programs set forth by the interior design accrediting body, the Council for Interior Design Accreditation (CIDA). The 2009 CIDA standards call for interior design students to evaluate, select, and apply information and research findings to design and for programs to expose students to design research and problem solving methods in undergraduate and graduate curriculum (Council for Interior Design Accreditation, 2009). Communication and critical dialogue can help further student understanding about design research and how it is incorporated into successful design solutions.

The goal of this study was to examine an online learning community created for interior design master's students and the impact of online discussions on changes in their creative thinking about design research. It further considered potential changes in dimensions of creative thinking (fluency, flexibility, originality, and elaboration) to uncover where changes in creativity were taking place (Torrance, 1988). By looking at specific dimensions of creativity, a better understanding of how creativity is influenced is formed.

Using online discussions as a vehicle for communication about design research, students are able to socially construct knowledge and heighten their awareness of research topics and methodologies. By discussing current literature, students begin to create a necessary foundation to develop original and relevant research in the field. Prior exposure to design-based research may be limited for students due to many coming from other backgrounds than design, and because research has typically not been emphasized in undergraduate interior design programs. Communication and critical dialogue can help further student understanding about design research and how it is incorporated into successful design processes and solutions.

Asynchronous online discussions allow students the opportunity to interface with others engaged in a design research process regardless of geographic and time differences. Research in online discussions shows that cultivating online relationships, providing feedback, and reflecting on others' opinions can increase interactivity and scholarship among students resulting in a higher order of creative thought (Dutt-Doner & Powers, 2000). Online discussions afford students the opportunity to reflect upon and analyze their own opinions, increase their motivation in education, and share resources with other peers interested in similar topics (Chickering & Ehrmann, 1996). Further, studies show that the reflective writing activities that take place in online discussions groups enhance critical and creative thinking in students and have applications across disciplines (Cisero, 2006).

This study used 21 students from three interior design graduate programs across the United States. These students participated in topical online discussions for six-weeks during the fall of 2008. To assess creative thinking about design research, students were asked to explain their knowledge about design research and to describe their personal interest in design research. These pre and post-test essays were the Research Knowledge Essay and the Research Interest Essay. These were coded and quantitatively analyzed to understand changes in creative thinking.

The interactions in the online discussions were shown to significantly impact creative thinking in the Research Knowledge Essay (p=.000). Further, three of the four dimensions of creative thinking were significantly changed; fluency (p=.001), flexibility (p=.000), and elaboration (p=.002), while originality showed no significant change. Creative thinking in the Research Interest Essay also showed a significant change (p=.007). Two of the four dimensions of creative thinking were significantly changed as well; originality (p=.001), and elaboration (p=.014). The remaining two dimensions of fluency and flexibility showed no significant change when discussing the participant's personal interest in design research.

These findings support the premise that knowledge is socially constructed and that discussions within a community can boost the knowledge of all involved. As technology continues to change and evolve, it is a tool that assists in connecting those of a specific community together. Ultimately, online approaches hold great potential for building and sustaining a creative, informed, and engaged community of learners in all disciplines.

REFERENCE LIST (APA)

Carll White, A., & Dickson, A. (1994). Practitioners' perceptions of interior design: Graduate education and implications for the future. *Journal of Interior Design,* 20(1), 27-35.

Chickering, A., & Ehrmann, S. (1996). Implementing the seven principles: Technology as a lever. *AAHE Bulletin*, October 3-6.

Cisero, C. (2006). Does reflective journal writing improve course performance? *College Teaching*, 54(2), 231-235.

Council for Interior Design Accreditation. (2009). 2009 Standards. Retrieved May 23, 2009, from http://www.cida.org

Dickenson, J. & Marsden, J. (2009). *Informing design*. New York: Fairchild Books.

Dohr, J. (2007). Continuing the dialogue: Interior design graduate education inquiry and scholarly cultures. *Journal of Interior Design*, 33(1), v-xvi.

Dutt-Doner, K., & Powers, S. (2000). The use of electronic communication to develop alternative avenues for classroom discussion. *Journal of Technology and Teacher Education*, 8(2), 153-172.

Guerin, D. & Thompson, J. (2004). Interior design education in the 21st century: An educational transformation. *Journal of Interior Design*, 30(1), 1-12.

Hasell, M., & Scott S. (1996). Interior design visionaries' explorations of emerging trends. *Journal of Interior Design*, 22(2), 1-14.

Torrance, E. P. (1988). The nature of creativity as manifest in its testing. In R.W. Sternberg (Ed.), *The nature of creativity* (pp. 43-75). New York: Cambridge Unviersity Press.

Wolf, R. (1996). Perspective: Service learning. *Journal of Interior Design*, 22(2), vii.

The Toy Design Project: An Innovative Research Application to Produce Creative and Effective Design Solutions for an Early Childhood Education Center

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ABSTRACT

For students to learn best they must be actively involved. (Bonwell and Eison 1991). Interior design students search beyond intuitional solutions, investing time and effort in information gathering, followed by research and application. The pre-design process includes reading, writing and participating in discussion groups, information sharing tools such as class wikis and group research presentations. Although these are effective active learning strategies, Interior Design students can go further to become actively engaged. The introduction of an interim assignment, such as a Toy Design Project, is a means of applying knowledge to a separate but related design problem, smaller in scale, but ultimately resulting in a better appreciation and understanding of the research that needs to drive the final design solutions.

As evidence of the benefit of an interim design project, I will present the work of Interior Design Studio Five, - a Junior level studio class designing an Early Childhood Education Center. Having the benefit of an Early Education program at our school we were able to engage in collaborative learning opportunities. Students quickly realized the extent of early education research and theories and developed a keen understanding of the nature, quality and requirements of the learning experience of children at various developmental stages. Well-designed teaching and learning environments support exploration, give young children a sense of control, and enable children to engage in focused, self-directed play, with play being the means by which learning is initiated. (Torelli and Durrett, 1999) As a preparation for the major design project and to engage in the application of gathered information the synthesis of knowledge was manifest in the design and fabrication of a proto-type educational and developmentally appropriate toy for a four-year old. It was observed that the toy designs emulated the properties required of the learning spaces themselves. Critics at the toy presentation included professionals in Early Education, Toy Research and Design, Interior Design and Architecture and a four-year old. Observations confirmed that the projects overwhelmingly demonstrated the breadth and depth of the Interior Design students' knowledge of the required subject matter. Consequently, the quality of the final projects, the actual school design, reflected a sensitivity and understanding that earned the students an invitation to display their projects at an Early Education Conference.

As students go through the significant thinking tasks of analysis, synthesis and evaluation their road to a final design solution can be clarified by engaging in activities that require knowledge applied to three dimensional fabrication. A design student's skills extend beyond thinking, writing and drawing and should include a physical creation that can be studied, explored and assessed, used not only as a teaching and learning tool but also as evidence of craftsmanship. By including additional means of research application the avenues for exploration are broadened and the door to creativity is widened. Additional design strategies and solutions present themselves and students have the ability to raise the quality of their projects to a higher, professional status, reflecting innovative solutions that stem from evidence, research and experience.

NARRATIVE

For students to learn best they must be actively involved. (Bonwell and Eison 1991). In many cases, discussion in class is one of the most common strategies to promote active learning, breaking off into small groups to ponder and reflect on an assigned topic. In order for Interior Design students to search beyond intuitional solutions, they must invest time and effort in information gathering and analysis, followed by research, synthesis and finally application. They must be able to consider data from multiple perspectives and various viewpoints, separating fact from fiction and assessing the credibility. (McGlynn, 2008) Finally they need to present their work professionally, justifying their design choices and demonstrating a keen knowledge of all pertinent aspects of their work.

The pre-design process often is initiated by the professor with traditional lectures followed by reading and writing on the part of the student, but the educational experience greatly benefits from participation in large and small discussion groups. During this critical phase students in my studio class engage in information sharing using tools such as class wikis and group research presentations. Required annotations are shared with classmates, discussion is encouraged and students rate annotations based on the perceived benefit to the project. In this manner the analysis of data begins. This application of peer review contributes to an overall improved quality of the shared information.

The nature of Interior Design education and the studio culture has always, naturally engaged the student with their work. Thus, the application of their research becomes an integral component of a studio project. This engagement will take many forms and can include model-building, group work, peer review etc. (Sickler & Pable, 2009) These are all considered effective, active learning strategies. Hands-on projects, by their very nature, become applications of the knowledge the student has gained. Inspiring students to improve their ability to apply their research in creative and innovate ways becomes the challenge for the instructor.

As educators we have become familiar with unique challenges in teaching the millennial student. One observation is the expectation of instant gratification (McGlynn, 2008). This need manifests itself in the expectation of professors' rapid grading of papers and instant responses to electronic communications, but this same expectation contributes to an inherent difficulty that students may encounter when engaging in a longer term project without interim progress reports and opportunities to feel success. The introduction of a secondary, constructed project or product design assignment such as the Toy Design Project not only assists the student to explore the application of acquired knowledge to a tangible object but also serves to satisfy the need for incremental feedback and positive reinforcement.

As evidence of the benefit of an interim design project, I will present the work of Interior Design Studio Five, - a Junior level studio class assigned to design an Early

Childhood Education Center. The client is Bethel Head Start, which is a school readiness program, started in 1966. Head Start is a federally-funded government program offering a comprehensive, community-based child development program for three to five year old children and their families. Primarily the recipients of this program and their services are low-income families. Our studio will focus on an existing facility in Buffalo, NY. and together with a representative from Bethel Head Start will establish the scope and details of the program. Students will be challenged to develop a comprehensive design solution addressing established early childhood learning models (Dickinson and Marsden, 2009) and incorporating state and federal guidelines, sustainability criteria and universal design principles.

Having the benefit of an Early Education program at Villa Maria College, students are able to engage in collaborative learning opportunities. These include guest lectures conducted by Education Program professors as well as Education faculty and student participation in studio and project critiques. Interior design students quickly realize the extent of early education research and theories and develop a keen understanding of the nature, quality and requirements of the learning experience of children at various developmental stages. Not only do they become versed in various education learning models but also acquire an appropriate vocabulary to engage in knowledgeable and informed discussions with education professionals. One lesson the students have learned is that well-designed teaching and learning environments that support exploration, give young children a sense of control, and enable children to engage in focused, self-directed play, with play being the means

by which learning is initiated. (Torelli and Durrett, 1999) Within this realization was the relevance of the Toy Design Project as a means to enhance the understanding of the pre-school education process and ultimately engage the design of a Bethel Head Start Early Childhood Education Center.

As preparation for the major design project and to engage in the application of gathered information the synthesis of knowledge was manifest in the design and fabrication of a proto-type educational and developmentally appropriate toy for a four-year old. The toy design was not only to respect and honor children but to address their abilities, sensibilities, dexterity, sense of humor and the joy of learning through play. Students were required to study various unique and specific needs in order to produce an effective design solution. Their research was to include but not be limited to anthropometrics, ergonomics, gross motor skills, cognitive development, general interests, learning abilities etc. of four year olds. In addition the students were required to address the particulars of a client identified as 'the poorest of the poor' and assess relevant design considerations.

In assessing the needs and abilities of their specific user group students addressed learning concepts such as literacy, numeracy, nutrition, exploration, discovery and anatomy as well as family and behavioral concerns including parental involvement and communication. The in depth interview with the Bethel Head Start representative provided students with insights to the challenges of the specific child- user group. Villa students once again were able to benefit from a guest lecture by a Fisher Price representative to assist in understanding the various categories and properties of toy design.

Quality craftsmanship was a requirement of the project. Students had a choice of construction methods; however they were provided the opportunity, if appropriate to their design, to craft their project in the wood-working shop with the assistance and supervision of the shop faculty and assistant. Preliminary designs were presented and critiqued. In accordance with CIDA standards construction and/or assembly drawings are an appropriate requirement for this project as well.

At this stage of the Design Process students are also exploring design concepts for their education center. It was observed that the toy designs emulated the properties required of the learning spaces themselves and in the most successful cases proved beneficial in concept development as well. Critics at the formal toy presentation include professionals in Early Childhood Education, Toy Research and Design from Fisher Price Toys Inc., Interior Design and Architecture professionals and a four-year old. Observations confirmed that the projects overwhelmingly demonstrated the breadth and depth of the Interior Design students' knowledge of the required subject matter. Critics agreed that the students articulated appropriate educational goals, designed developmentally appropriate toys, addressed critical concerns for Head Start programs and achieved quality craftsmanship in their final product.

Returning to the studio following the toy presentation the students were confident in their knowledge and prepared to engage in creative and innovative solutions to the programming requirements of the project. Consequently, the quality of the final projects, the actual school design, reflected a sensitivity and understanding that earned the students an invitation to display their projects at an Early Education Conference in Brooklyn, New York. As students go through the significant critical thinking tasks of analysis, synthesis and evaluation their road to a final design solution can be clarified by engaging in activities that require knowledge applied to a separate but related project. A design student's skills extend beyond thinking, writing and drawing and should include a physical creation that can be studied, explored and assessed, used not only as a teaching and learning tool but also as evidence of craftsmanship. By including additional means of research application the avenues for exploration are broadened and the door to creativity is widened. Additional design strategies and solutions present themselves and students have the ability to raise the quality of their projects to a higher, professional status, reflecting innovative solutions that stem from evidence, research and experience.

The introduction of an interim assignment, such as a Toy Design Project, is a means of applying knowledge to a separate but related design problem and product. It is smaller in scale, requires a demonstration of craftsmanship and creativity, but ultimately provides a means and method toward a better understanding and application of the research that is needed to drive an evidence-based design solution.

REFERENCES (MLA)

Abrams, Berenda W., and Nancy Allen Kauffman. *Toys for Early Childhood Development*, West Nyack, NY. Center for Applied Research in Education, 1990_____

Bonwell, C.C., and Eison, J.A., *Active Learning: Creating Excitement in the Classroom,*

1991. Washington, DC: The George Washington University, School Education and Human Development, 10 Oct. 2009 http://www.ntlf.com/html/lib/bib/91-9dig.htm.

Dickinson, Joan and Marsden, John P. *Informing Design,* Fairchild Books, New York,

2009

Gross Davis, Barbara, *Tools for Teaching,* San Francisco, CA, Jossey-Bass
Publishers, 1993

McGlynn, Angela Provitera, *Millennials in College: How Do We Motivate Them?,*

Education Digest: Essential Readings Condensed for Quick Review, v73 n6 Feb 2008

Miller, Karen. *Ages and Stages: Developmental Descriptions and Activities Birth*

Through Eight Years. Marshfield, MA: Telshare Publishing, 1985

Sickler, Stephanie, and Pable, Jill, *The Millennial Interior Design Learner: Implications for Classroom Teaching Strategies*, St. Louis, MO, IDEC National Conference Proceedings, 2009

Torelli, Louis, and Durrett, Charles, *Landscapes for Learning: Designing Group Care Environments for Infants, Toddlers and Two-Year-Olds*, 1999. Berkley, CA 13 Feb. 2009 <http://www.spacesforchildren.com/enhanc.html>

Center for Hope, Health and Healing: A Community Studio

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ABSTRACT

Based on the understanding that all people are entitled to a dignified environment, socioeconomic levels should not play a role in how a space is designed. However, many groups and communities continue to be marginalized, and therefore do not experience interior environments that serve even their most basic needs. Because Interior Design focuses on the design of places where we realize most of our daily activities, there is both great opportunity and need in this field for community impact through participatory design. This paper describes a participatory design process and details the approaches and outcomes of a Community Design Studio that facilitated the start of a transformation for a depressed urban community.

In the fall of 2008, Interior Design students at Drexel University embarked on a unique project that involved the re-design of an old printing factory, currently being used as a church, to a shared community and worship space where community groups could meet, learn and interact. The Church is located in a low socio-economic area where high unemployment, substandard housing, increasing crime rates, inadequate education and the routine apathy that comes with being economically disadvantaged have all contributed to the deterioration of this urban neighborhood.

The Pastor had a comprehensive vision for change in Carroll Park. He challenged students to work with church members and neighbors to design a center that would include spaces for social activities, life skills development, and worship. The community was involved in all parts of the process, including programming and design. Using the participation methods of Henry Sanoff (2000), and the article "Eleven Ways to Turn a Place Around" (Kent & Schwartz, 2001) students engaged with community members at five meetings to identify a vision, and develop a program and design schematic for the new center.

Students learned to manage the difficult time factors and evolving expectations that accompany working on a real project. Responding to community input gave them a sense of responsibility and commitment not experienced in other studios. The experience took the students out of the theoretical realm and instilled in them the power that design has to change lives (Oppenheimer Dean, 2002). The community was genuinely appreciative of the work accomplished collectively. The exercises raised awareness of problems the community face, but more importantly, it revealed the assets and potential they share, promoting a common ground from which to build.

Integrating participatory design into the Interior Design curriculum elevates the students' understanding of research, problem solving and design. Studies of such approaches in education have the potential to add to the Interior Design Body of Knowledge by expanding our field of engagement (Ga mez & Rogers, 2008). Participatory practices used in education promote communication skills, tolerance, diversity, and the value of service and team collaboration. The process and outcomes of this studio illustrate how guiding the design of the created space with the intent to nurture and sustain communities will help assure a project's success.

NARRATIVE

Participatory design engages practitioners and communities working together, to develop a vision, reach consensus and design spaces of value that contribute to a community's future well-being (Sanoff, 2000). This design approach benefits not only end users, but also design practitioners and students, as it helps them develop alternative approaches, envision different outcomes and supports experiential learning; giving students a practical application to what they learn in the classroom. The following project documents the process and outcomes of a Community Seminar taught in fall, 2008.

IDENTIFYING OBJECTIVES

As urban communities experience changing demographics and economic conditions, churches tend to stay loyal to their congregations, not necessarily to their neighborhoods. Although most churches attempt to provide local immediate relief and rehabilitation, they do not aspire to a broader improvement of the neighborhood social structure.

Sweet Union, a 5000 square foot printing factory is a relatively empty building during the week that becomes a vibrant spiritual space on Sundays. The pastor envisions the building as shared space between the community and the church, becoming an interactive and lively environment throughout the week. The goal to engage Drexel students, local churches and the Carroll Park community in a project would increase social capital, encourage healing and sustain future growth.

PREPARING FOR ENGAGEMENT

Students facilitated community meetings using the community visioning theories of Henry Sanoff (*Community Participation Methods in Design and Planning 2000)* as a guide. According to Sanoff (2000), engaging the community in the design process will lead to a better outcome: a stronger feeling of ownership for the newly designed space, and a design that serves the needs of the community.

Prior to five planned community meetings, students surveyed and documented the existing building and gathered demographic and historic data through research, storytelling and a walking tour led by the pastor (Figure 1). Ground rules were established as follows for each meeting: Clear goals and accomplishments will be identified; everyone will be allowed to express their ideas; the pastor and I will deal with any conflict resolution; meetings will be as short as possible; there will be celebration at intervals of large accomplishments; and the community will leave with something tangible.

Three objectives were identified that would take place over the ten week term: Developing a vision for the Carroll Park community, not just for the center; identifying tangible things that need to be accomplished in pursuit of the larger vision (i.e. street lighting, neighborhood watch, repaired sidewalks); and providing a schematic design and program for the center in order to pursue funding opportunities.

Students were also guided by the principles presented in the article "Eleven Ways to Turn a Place Around;" a pragmatic approach that reinforces the (essential) involvement of the community, the equalizing of participants, and an understanding that small steps need to be taken in order to accomplish big goals: turning substandard spaces into noteworthy places (Kent & Schwartz, 2001). The eleven principles provided guidance and structure for the project: an important resource for the students who felt at times that this project was an unattainable goal for the community. The eleven principles are referred to throughout the body of this paper.

"You can see a lot just by observing": Direct observation allows a firsthand understanding of how spaces are actually used without relying on intuition or opinion (Kent & Schwartz, 2001, p. 11). Students directly observed many obstacles in the existing building such as the narrow corridor that supports access to all of the spaces, but inhibits circulation and is constantly crowded. Direct observation or behavior setting analysis shows actual rather than imagined patterns of behavior, helps to determine requirements and generates a richer view of human behavior (Lang, 1987).

"The community is the expert": In many cases the community is never asked for their opinion (Kent & Schwartz, 2001, p. 10). Central to the theory of participatory design, drawing out common desires from the community is the first step in establishing a consensus. Students distributed a survey to determine the community's assets and liabilities. Data was collected regarding safety issues, access to local programs, and potential wants and needs (figure 2). Next, students facilitated commu-

nity members, in small groups, to develop a wish list for adults and youth on such topics as: recreation, social and economic/housing services and life skills education (figure 3). This list, combined with the survey, determined what activities were most important to the community.

"Develop a vision": As the vision should be defined by the stakeholders who use the space (Kent & Schwartz, 2001, p. 11), the community then came together to write and vote on their own vision which was presented to the students.

"You are creating a place not a design": Place making involves creating the intangible qualities of a place (Kent & Schwartz, 2001, p.11). The authors identify comfort, activities, accessibility and sociability as four key factors contributing to successful public space. Many of the vision session outcomes pertained to Carroll Park as a whole (not just the new center). These were dreams and desires that would not have been realized if the community was not included in the design process. It was determined that the center should be a place to experience flexibility and openness (comfort), attend fitness classes (activity), embrace all ages and cultures (accessibility) and share skills and talents with others (sociability). From these determinations students were able to develop concepts.

"Form supports function": "The most successful designs grow out of an understanding of how the community will use the space" (Kent & Schwartz, 2001, p. 12). Students presented bubble diagrams to illustrate the functions and relationships that would take place in the new center (figure 4). Evolving from the community's wish list, programs selected to become part of the building design included health and nutrition, life skills training, social services, and personal enrichment (i.e. cooking, sewing, dance). Using their talents, community members would lead many of the classes.

"Triangulate": (Kent & Schwartz, 2001, p. 12). Students focused on adjacencies in order to increase the potential for synergy. In the schematic design phase, students incorporated community ideas in zones, locating programming elements in proximity to others that would foster collaboration (figure 5). This included not only designing for program elements within the space, but also addressing street presence and connection to the outdoors. Based on feedback from the community, student groups presented three final design schematics to the community for its vote.

"They'll always say it can't be done": When an idea extends beyond the scope of an organization it is often times considered impossible (Kent & Schwartz, 2001, p.11). Opposition from different factions within Carroll Park itself, conflict with elected officials, inexperienced student facilitators and changing goals might have defeated the project. However, students came to understand that this was all part of working on a real project and confronted these obstacles as challenges.

"You can't do it alone": Expertise and resources gained through partnerships with outside organizations are essential to the development of a successful space (Kent & Schwartz, 2001, p.11). The concept for the center itself depended on the participation and support of surrounding churches, two local community organizations that began to take part in the shared goals of the community, support from a "city facing church" that supported the idea for community growth, and a consulting firm who provided structural advice and a full cost analysis.

"Money is not the issue" and "Start with the petunias": "When money is the issue, this is generally an indication that the wrong concept is at work" (Kent & Schwartz, 2001, p. 13).The students and Pastor realized that it was critical to acknowledge incremental accomplishments, however small, in order for the community to maintain faith in themselves and the project. The community focused solely on where funding for the building would come from until they grasped the concept of a long term goal. A suggestion that some classes be organized to begin immediately in the existing church building generated enthusiasm and an increased sense of reality towards the project.

"You are never finished": "No matter how good the design…it will never become a true place unless it is cared for and nurtured" (Kent & Schwartz, 2001, p. 13). The community feels ownership of this project. Many people who did not know each other at the outset now have a common goal and a positive feeling about their community's potential. The process raised awareness of problems they face, but also of assets and potential they share, demonstrating that participatory design is a "complex social process whereby change can take place" (Palleroni, 2007 p. 67). Although the building is a long

range goal, the community has mobilized to address issues in the surrounding area. They have initiated several programs at the existing site, and are working with the redevelopment authority in addressing abandoned buildings and lots in Carroll Park.

CONCLUSION

Applying Kent's participatory design theories for public spaces was successful because interior design is place making at its most fundamental level. The success of this project depended on students helping the community realize that its assets outweighed its liabilities, which could have seemed insurmountable. This interaction is not something that students experience in typical studio formats, where students are given fictitious programs, work more independently and are subject to their own pressures and ideals. The importance of the community studio is evident in the words of a student's evaluation: "Experiencing a real project with real clients was extremely valuable. I also loved learning how to work with an entire community and including them in the design process" (Student evaluation, F 08/09).

REFERENCES (APA)

Gamez, J. & Rogers, S. (2008). An architecture of change. In B. Bell (Ed.), *Expanding architecture: Design as activism* (pp. 19-25). New York, NY: Metropolis Books.

Kent, F. & Schwartz, A.G. (2001). Eleven ways to turn a place around. *Places*, 14(2), 9-13.

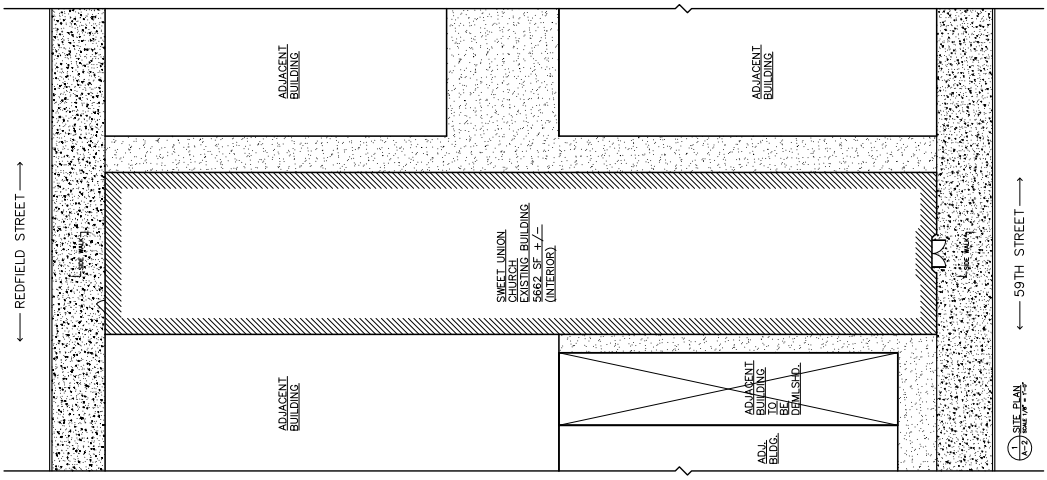
Lang, J. (1987). *Creating architectural theory: The role of the behavior sciences in environmental design.* New York, NY: Van Nostrand Reinhold.

Oppenheimer Dean, A. & Hursley, T. (2002). *Rural studio: Samuel Mockbee and an architecture of decency*. New York, NY: Princeton Architectural Press.

Palleroni, S. (2007). Katrina: Furniture project. In Smithsonian, *Design for the other 90%,* (pp. 66-69). New York, NY: Smithsonian Institution

Sanoff, H. (2000). *Community participation methods in design and planning*. New York, NY: John Wiley & Sons, Inc.

POSTCARDS FOR COMMUNITY



EXISTING PLAN

CHURCH BUILDING SITE

TOUR OF NEIGHBORHOOD

Figure 1

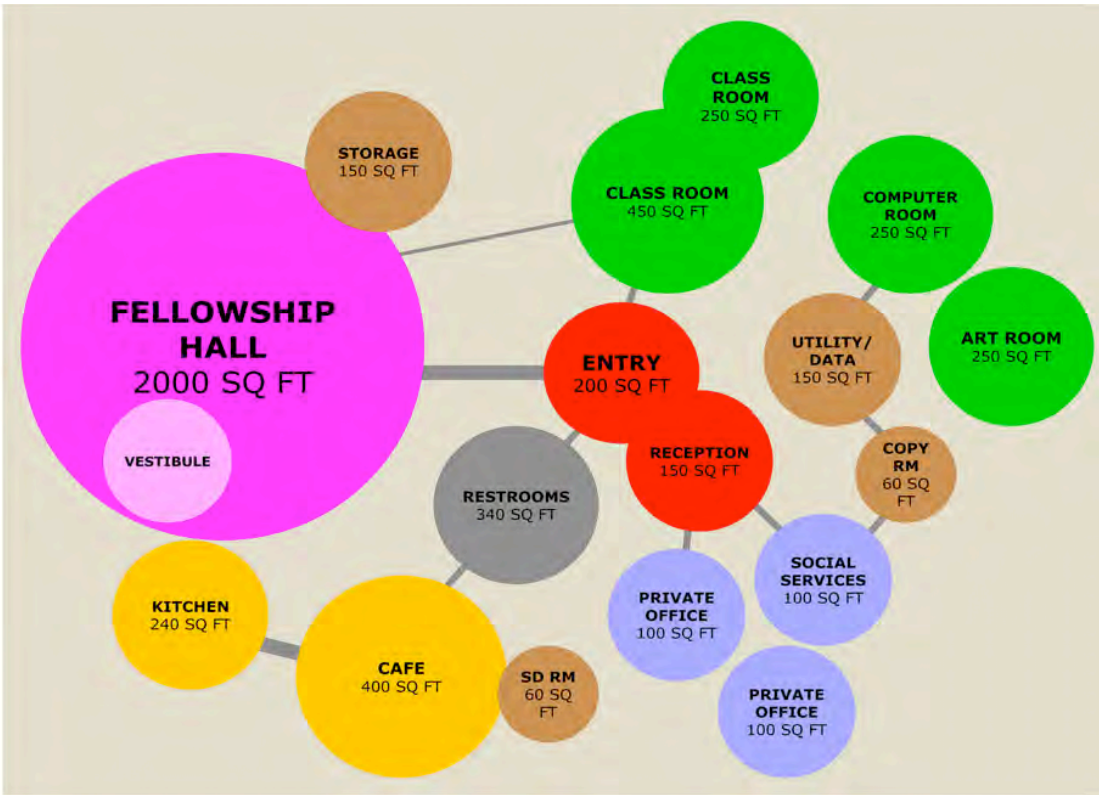
MEETING 1: VISION SESSION AND SURVEY

Carroll Park Community Survey
Partial Data Results 9.2008

		YES			NO			NOT SURE					
		50+	31–50	30 & under	50+	31–50	30 & under	50+	31–50	30 & under	TOTAL	TOTAL POSITIVE	% POSITIVE
1	Do you live in Carroll Park?	33	6	4	10	7	1	2	0	1	64	43	67.19%
2	Do you work in Carroll Park?	9	5	2	33	6	4	0	0	0	59	16	27.12%
3	Do you think your community is unified?	3	3	0	41	7	6	1	0	0	61	6	9.84%
4	Do you feel good about your community?	35	5	3	6	6	2	2	0	1	60	43	71.67%
5	Have you ever been a victim of a crime in Carroll Park?	6	1	0	37	9	6	0	0	0	59	7	11.86%
6	Do you know anyone who has been the victim of a crime in Carroll Park Community?	21	6	4	15	5	2	0	0	0	53	31	58.49%
7	Do you feel safe in your community during the day?	36	10	4	8	1	1	0	1	0	61	50	81.97%
8	Do you feel safe in your community at night?	21	6	4	18	4	2	4	3	0	62	31	50.00%
9	Would you be willing to take part in a neighborhood watch program?	26	13	2	15	0	2	1	0	1	60	41	68.33%
10	Do you feel connected to the people in your community?	34	8	5	8	3	1	2	0	0	61	47	77.05%
11	Do you have skills or interests that you would like to share with others in the community?	40	11	6	3	0	0	0	0	0	60	57	95.00%
12	If you are a senior, would you be interested in meeting with or learning from the youth in your community?	23	0	0	11	0	0	0	0	0	34	23	67.65%
13	If you are a youth, would you be interested in meeting with or learning from the seniors in your community?	0	0	4	0	0	1	0	0	0	5	4	80.00%
14	If you are a senior, do you participate in any of the PCA programs?	5	0	0	26	0	0	0	0	0	31	5	16.13%
15	Do you use public transportation?	31	5	6	13	6	0	2	0	0	63	42	66.67%
16	Do you own a business in Carroll Park?	2	2	0	39	11	6	0	0	0	60	4	6.67%
17	Would you be interested in a small business association?	25	8	6	18	3	0	0	0	0	60	39	65.00%
18	Do you spend time in the area eating, shopping etc?	32	10	6	11	1	0	0	0	0	60	48	80.00%
19	Are you a member of the Carroll Park Community Council?	17	0	1	23	11	5	10	0	0	67	18	
20	Are you a member of the Carroll Park Neighbors Association?	12	0	3	24	13	3	5	1	2	63	15	
21	Do you feel that you play a part in your community?	41	13	6	3	0	0	0	0	0	63	60	95.24%
22	Are you interested in the well being of your community?	44	13	5	0	0	0	0	0	0	62	62	100.00%

Figure 2

MEETING 3: FELLOWSHIP AND PUTTING SPACE TO PLACE



MEETING 3: BUBBLE DIAGRAMS

Figure 4

MEETING 2: ROUND TABLE TOPICS

1. Community Recreation

- Access to Library Resources and Programs such as Book Clubs
- Computer Classes
- Sewing Classes i.e. Crochet and Knitting*
- Arts and Crafts Classes with Exhibition Opportunities at the End
- Chess Club and Classes
- Outdoor Movie Nights in Carroll Park
- Photography
- Video-Making
- Cooking Classes*
- Dance Classes for all Ages i.e. Line Dancing
- Day-Time Classes for Elderly
- Drama and Music Classes

2. Youth Culture

- Safe Place to "Hang Out"
- Mentors
- Computer Labs and Video Games
- Open Mic Night i.e. Singing, Rapping, Spoken Word
- Café i.e. Place to Sit (with a Telephone Available)
- Movie Night
- Activities that Promote Participation from and Interaction with Different Generations
- Photography and Video-Making
- Summer Job Opportunities such as Landscaping
- Involvement within Community i.e. Helping the Elderly with Property Rehab*
- Gym and Fitness Center
- Cooking Classes*

3. Community Social Services

- Family Counseling
- Legal Services
- Conflict Resolution
- Tax and Credit Counseling
- Community Bulletin – Looking for Help/ to Help
- Community Website – Post Social Events, Keep Positive News Circulating
- More Police – and Security Guards at Recreational Centers to Stop the Violence
- Access to Health Services i.e. Senior Health, Dental and Eye Care

4. Economic/Housing Services

- Employment Listings and/or Career Link
- Entrepreneurship Classes
- Farmers Market
- Help Maintaining House, Property Rehab*
- Resources and Support that Promote Homeownership
- Friendlier Urban Setting i.e. Landscaping, Street Lights, Community Gardens
- Plan Projects to Fill-In Vacant Lots
- More Business Opportunities within the Carroll Park i.e. Bakery, Fish Market, Fabric Store, Boutiques

5. Community Education

- Life Skills i.e. Job Training, Resume and Interview Workshops
- Social Skills i.e. Etiquette, How to Dress
- Sex Education for youth
- GED Classes and tutoring
- Computer Classes

6. Community Culture

- African Culture
- African American History
- Events (Not Classes) that Bring Different Cultures Together

*Indicates skills that people would like to share with other members of the community.

Figure 3

MEETING 4: SCHEMATIC DESIGN AND REVIEW

MEETING 5: DESIGN PRESENTATION

Figure 5

The Design Charrette: A Bridge for Collaboration Between University and High-School Students

KATHLEEN RYAN / REBECCA BUNKER-HERMANCE

ABSTRACT

The design charrette is used to quickly generate design solutions while integrating numerous community-shared ideas. This rendition placed university students with rural community youth for a meaningful collaboration leading to the primary community goal of the design of a youth center. A fundamental aspect of this project was to provide one-on-one interaction between design students and a client group of youth organized through a poverty outreach program. This informal mentoring experience began with a preliminary charrette between design student teams, proceeded to the task of evaluating the proposed youth center structural shell, included design student and community youth collaboration in a community-based charrette, and concluded with the delivery of interior design solutions.

The development of a youth center is a main goal in the community's strategic poverty reduction plan to offer a healthy environment that supports the development of physical, social, and emotional abilities; and to create a place where youth can experience leadership, achievement, friendship, and recognition. (Aradiacono, Procentese, and Napoli, 2007) This service learning opportunity enabled university students to participate in a leadership capacity and assisted the community youth in visualizing a significant community goal. Interior design students utilized evidence-based design on youth centers, and included consideration of the therapeutic aspects and psychosocial value of space to develop an organizational and design strategy. To prepare for the collaborative experience with the community youth, the design students formed teams and participated in an pre-charrette workshop using the strategic plan developed by the community as the framework. This "practice-run" of the charrette demonstrated the fluid nature of the charrette for novice designers, and was a preview of how to work in a leadership capacity with the community youth. A pre-charrette workshop ensured that the charrette experience succeeded as an active and vocal method to develop a design solution. The community-based charrette experience also enabled the community youth and community members at large to become invested in the design solutions proposed. The design students developed the community-based charrette ideas into designs and spaceplans to create visual materials suitable for fund-raising by the community. The teamwork experience combines collaborative learning methods essential in professional practice (Brown, 2008) with experiential learning methods (Smith, Hedley, and Molloy, 2008; Kolb, Boyatzis, and Mainemelis, 2000) critical to the design studio experience. The charrette and teamwork experience enabled design students to advance their verbal and visual communication skills during interactions with community youth, and to further develop their collaboration skills with teammates.

For the community's youth, playing such an important role in the design process offered a sense of responsibility, commitment, and empowerment that was reinforced through the interaction with university interior design students. The effectiveness of the project was evaluated by assessment of the experiences of the interior design students and community youth through determining the extent of knowledge gained and strategies learned in the charrette and design process.

NARRATIVE

Visualizing the concept and program for a youth center, design students and community youth participated in leadership and interactive information gathering, through a problem-based service learning opportunity (Zollinger et al, 2009). The course learning objectives for this second-year studio course included: 1) gather information, analyze, set priorities, evaluate issues at a basic level; 2) generate creative solutions via a systematic and coordinated design process that integrates functional and aesthetic concerns; 3) justify and defend design solutions based on basic design theory and programmatic requirements. The youth center assignment offered the opportunity to expand the course goals to include objectives based on real-world experience; 1) develop team work skills and negotiation techniques; and 2) develop skills for working with clients and stakeholders on a design project. These objectives tie the project to the curriculum (Zollinger et al, 2009) and provide a comprehensive framework to structure the assignment to provide students with a deeper understanding and engagement in community service through "opportunities to share knowledge, skills, and resources for the benefit of student learning and the well-being of our communities" (Center for Civic Engagement, 2010).

To prepare for the collaborative experience with the community youth, the design students formed teams and participated in a pre-charrette workshop using the strategic plan developed by the community as the framework. The design students were introduced to the idea of a design charrette as a method to quickly generate design solutions that integrates numerous community-shared ideas. For the purposes of this assignment, the instructors deemed quick thinking, sketching, and decision-making as essential components of a charrette.

The design students were introduced to the charrette in conjunction with the ideas of cooperative teamwork and collaboration as critical to the success of idea development. As described to the students, collaboration is a team experience that requires cooperation and team problem solving. Collaboration and cooperation are aspects of the professional world and this "real-world" experience combined teamwork and clients in a supportive environment (Attle and Baker, 2007). The discussion of how to work effectively on a team was critical in order to direct the students in working on the design problem in a focused manner.

It was suggested that teams consider the following roles for their assignment, keeping in mind that these tasks all overlap, and in reality each team member will participate in each role, some to a greater extent than others: Designers - all team members participate in this role, as the design direction is clarified; Renderer - responsible for illustrating the design in a consistent and comprehensive way; Facilitator: responsible for organizing the team's work; Expert - collect necessary information to support design ideas; Graphics and digital tech - collect and transfer materials to final presentation; Recorder -responsible for visual and verbal recording (Musty and Schommer, 2001).

To begin the pre-charrette workshop the design students reviewed photos of the existing building, the background on the rural community, and discussed the fact that the building would also function as a horse barn during the county fair every summer. The students talked about service-learning, the idea of youth centers, and relayed their personal experiences with youth centers. Design students were placed on teams of 5-6, and began the pre-charrette workshop by engaging in a team driven discussion. A brief wishlist of program requirements developed by the community youth focused the discussion. This list provided an initial structure for the design students to respond to when participating in the pre-charrette workshop.

After discussion and consideration of the program list, the design students engaged in a team free write on the psychosocial aspects of space, in order to gain empathy for the idea of the youth center (Condon, 2007). Students developed words and statements that depicted the value of having a space for youth, a space that is not home or school. Following the team-generated word activity the students worked as a group to place the words into categories: Second home; Future; Upbeat; Relationships; Well-being; Role models; and Function (Figure 1).

In the next stage of the pre-charrette workshop, the teams developed program notes based on information provided from the community youth. Each team developed a list of questions (eg. general interests, what do you do in spare time now, what do you want this youth center to be, culture of the area, style of buildings, favorite buildings). This list of questions helped them later

in the community-based charrette to prompt the community youth in the freewrite stage, and built their confidence in that leadership role. Each team also determined goals to be accomplished for the charrette with community youth.

The third stage of this project included information gathering. On-site information consisted of an as-is measure and photo documentation of the proposed structure. Off-site information gathering consisted of the collection and review of case studies for similar projects, and development of a programming document.

The onsite charrette began with introductions and selection of teams consisting of two to three students, a combination of design students and community youth. The teams met in the horse barn to measure and photograph the space (Figure 2). This activity provided an opportunity for informal communication and a low stress method to meet each other and work together, and generated interpersonal empathy. "Only with empathy and respect in place can collective creativity be unleashed." (Condon, 2007, p. 20)

Following the on-site measure, students worked with the community youth in a design charrette. The design charrette consisted of several activities, including working together to answer programming related questions, and to develop the psychosocial ideas behind the youth center in order address the overall goals for the project. The entire group reviewed lists of questions and goals that each design team had created in the pre-charrette workshop. This also provided an opportunity to introduce design language terms to the community youth, including the definition of charrette, concept development, and parti as an idea to guide the design. An example of a possible driving concept behind this design was described as "What about the region is inspiring?"

In the fourth stage the design students and community youth met in small groups to sketch and write about the development of a design concept as inspired by aspects of the community, including their personal interests, activities they enjoyed inside and outside, and what they liked about the area (Figure 3). The pre-charrette workshop helped design students think about the type of information they needed from the youth and enabled them to direct the sketch and write, and elicit information. Each group met around a table and talked, sketched and wrote about their ideas for the youth center (Figure 4). To finalize this phase, the large group met together to view ideas from all the other groups, allowing time to add any 'missing' information and answer questions.

Design students unable to attend the meeting with the community youth were charged with gathering information about other youth centers and related program issues. They found guidelines, space-planning recommendations, images, etc. that helped them think about movement through space, color, programming, and atmosphere. They also gathered information about rooms created for social interaction, accessible design for public restrooms, community kitchens, and general public spaces, sustainable materiality, and the use of modular and movable pieces.

Upon completion of the on-site and off-site work the design students reconvened to the studio to work in teams to complete design work, and create visual and digital presentations. Because of the considerable distance between the community and the university, design students presented their ideas via video-conferencing to the community youth and leaders. The students presentations included discussion of the community and geography, and referenced conversations they had with community youth. The presentations also included descriptions of their concept development and design solutions.

The immediate responses from the community youth and leaders suggested that the students creation of a concept based on the community and geography made it all the more personal. It was apparent that the design students really listened to what the students had talked about and made the space meaningful for the youth. One community organizer said, "It really inspired us all to keep the momentum going." The conceptual design ideas are currently being used by the community group to raise money and interest in building the youth center (Figure 5). To finalize the assignment, the design students wrote reflections on their experiences working on the teams.

> *"… we learned how to work in a team setting with actual clients that we communicated with throughout the design phases. Our team work skills and negotiating techniques improved throughout the project as we gathered information, and produced*

creative solutions for the youth center design." design student reflection

For the design students and community youth, playing an essential role in the design process offered a sense of responsibility, commitment, and empowerment that further developed collaborative skills between these diverse groups. In reviewing this process the use of the design charrette was successful as an active and vocal method for developing a design solution through cooperation between design students and community youth.

REFERENCES (APA)

Arcidiacono, C., Protentese, F., and Di Napoli, I. (2007). Youth, Community

Belonging, Planning and Power. Journal of Community & Applied Social Psychology. 17: 280-295.

Brown, T. (2008). Design Thinking. Harvard Business Review.

Center for Civic Engagement, Washington State University. (2009). Retrieved October 11, 2009 from http://cce.wsu.edu/default.asp?PageID=3219

Condon, P. (2007). Design Charrettes for Sustainable Communities. Island Press.

Kolb, D., Boyatzis, R., Mainemelis, C. (2000). Experiential Learning Theory: Previous Research and New Directions. R. J. Sternberg and L. F. Zhang (Eds.), Perspectives on cognitive, learning, and thinking styles. NJ: Lawrence Erlbaum.

Musty, P. and Schommer, J. (2001). The Most Obvious part of a design charrette – the Design Team. retrieved October 10, 2009 from http://www.charrettecenter.net/charrettecenter.asp?a=spf&pfk=7&gk=258.

Smith, D., Hedley, P., and Molloy, M. (2008) Design learning: a reflective model,Design Studies, 30,13-37.

Zollinger, S., Guerin, D., Hadjiyanni, T., and Martin, C. (2009) Deconstructing Service-Learning: A Framework for Interior Design. Journal of Interior Design. 34(3): 31-45.

Figure 1: Design students engaged in pre-charrette workshop, brainstorming words related to the psychosocial aspects of space.

Figure 2: Design students and community youth measuring site.

Figure 3: Design students and community youth brainstorming sketches and words related to concept development for the youth center.

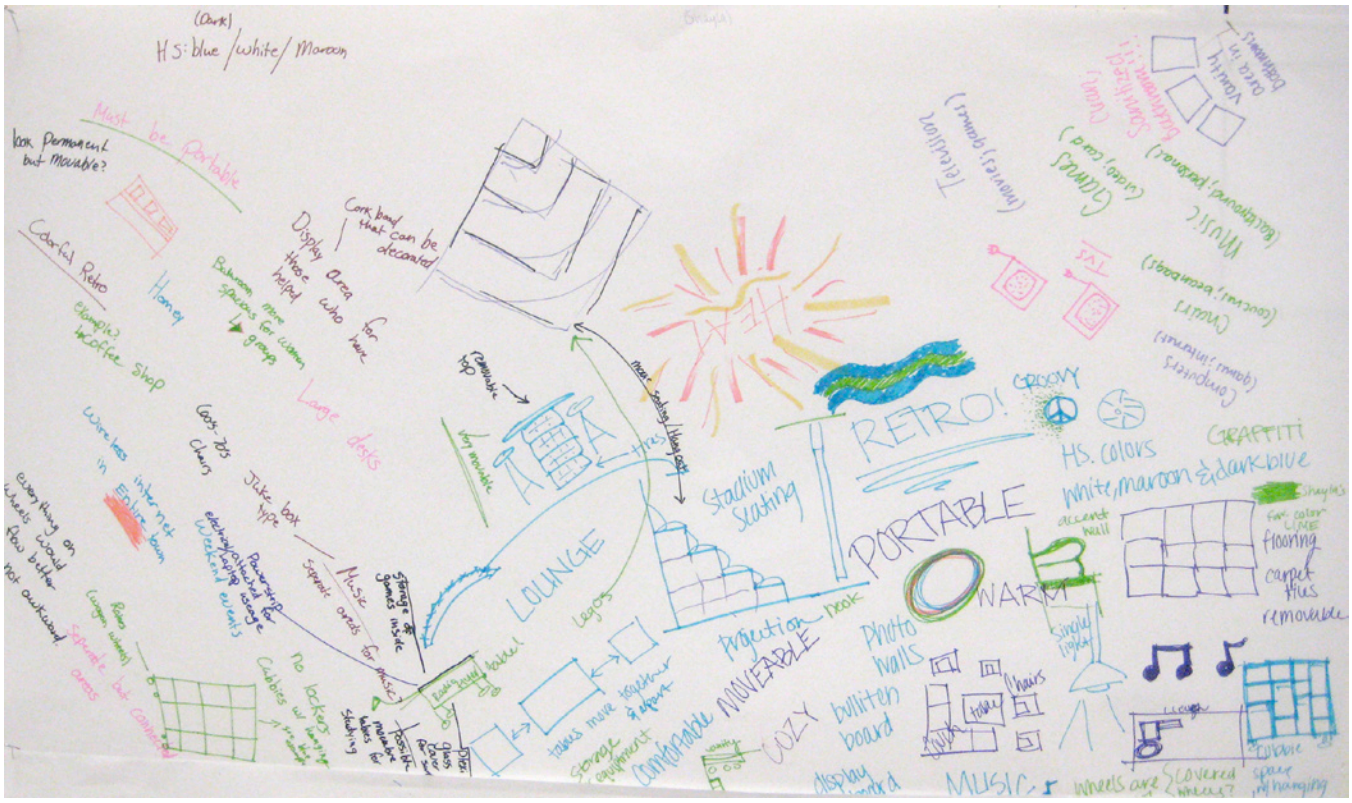


Figure 4: Sketches and words developed by group of design students and community youth.

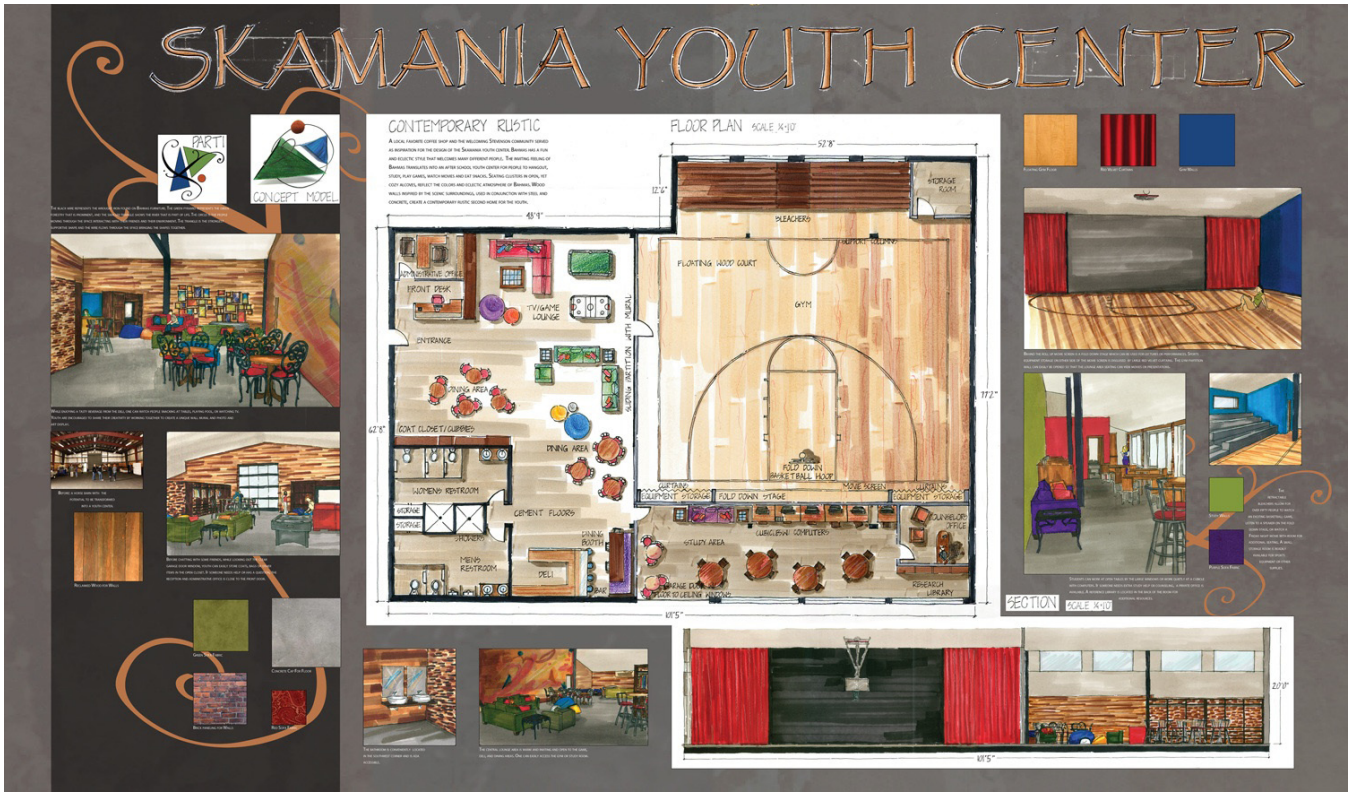


Figure 5: Example design student team concept for the youth center.

Assessing E-light : A Photometrically Accurate Lighting Design Learning Module in the Undergraduate Design Curriculum

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ABSTRACT

This paper discusses the assessment of *e-light*, an interactive multimedia interface, among third year students in an interior lighting design class. *E-light* was developed to introduce photometrically accurate lighting simulation methods in the lighting design process.

With the proliferation of computers in design schools there is no doubt that the students are becoming well-versed in digital visualization. Yet most do not understand the lighting performance of their designed spaces. Today, lighting design software tools have improved considerably in their accuracy and graphical user interface. They allow designers to iteratively explore different scenarios related to lighting, producing graphics and reports that help examine, compare and communicate them. The probability of the efficient use of electric light and daylight could be higher when lighting solutions are rigorously investigated through such tools in the design process. However, it is unfortunate to find that only 42.9% of interior design educators use lighting design software in their lighting design related courses (Sarawgi, 2006). *E-light* was designed to address this shortcoming.

E-light is built on the premise that all lighting design software programs are based on global illumination algorithms (Rea, 2000). If these software concepts were suitably linked to lighting design concepts, designers would feel less intimidated in using the programs and can include them in their design and analysis processes. *E-light* is thus divided into three main components with topics hyperlinked to one another: *lighting concepts* (fundamental knowledge on lighting), *software concepts* (related lighting design software concepts), and *lighting application* (application of knowledge from the other components for specific lighting tasks).

During *e-light*'s assessment, all the 42 students in the interior lighting design class worked on the same project: a shelter for teenage mothers. The class was divided into three groups: (a) group one received *e-light*, (b) group two received demonstration on software use, and (c) group three received both *e-light* and demonstration on software use. The students were also guided towards software user guides and tutorials, and the instructor spent an equal amount of time with each group in class. The students were expected to produce qualitative (renderings) and quantitative (illuminance calculations) lighting design solutions in a week.

The lighting design results show that group one students, who only received *e-light*, performed significantly better on the lighting task at hand compared to the other groups. The students in the two groups that received a demonstration by the instructor did not adequately refer to other resources that were provided to them. This could be attributed to the fact that the students using only *e-light* were actively engaged in seeking solutions to their problems rather than being passive consumers in a lecture classroom (Veronikas and Shaughnessy, 2004).

The results of this study highlight the importance of interactive digital pedagogical tools such as *e-light* in enhancing student learning. Similar interactive learning modules could be developed that link interior design concepts to software concepts in acoustics, energy analysis, etc. to enable students and professionals to make accurate design predictions.

NARRATIVE

BACKGROUND

This paper discusses the assessment of e-light, an interactive multimedia interface, among third year students in an interior lighting design class. E-light was developed to introduce photometrically accurate lighting simulation methods in the lighting design process.

With the proliferation of computers in design schools there is no doubt that the students are becoming well-versed in digital visualization. Yet most do not understand the lighting performance of their designed spaces. More often than not, lighting design is not integrated into the design process, but tagged in at the end of the project to generate attractive renderings.

Today, lighting design software tools have improved considerably in their accuracy and graphical user interface. They allow designers to iteratively explore different scenarios related to lighting, producing graphics and reports that help examine, compare and communicate them. The probability of the efficient use of electric light and daylight could be higher when lighting solutions are rigorously investigated through such tools in the design process. However, it is unfortunate to find that only 42.9% of interior design educators use lighting design software in their lighting design related courses (Sarawgi, 2006). *E-light* was designed to address this shortcoming. The purpose of *e-light* is three-fold: to demonstrate the capabilities of lighting design software, encourage interior designers to design using photometrically sound lighting software tools, and to integrate lighting in the overall design process. Figure 1 shows a screen capture of *e-light.*

Figure 1. The *e-light* multimedia interface.

E-light is built on the premise that all lighting design software programs are based on global illumination algorithms (Rea, 2000). If these software concepts were suitably linked to lighting design concepts, designers would feel less intimidated in using the programs and can include them in their design and analysis processes. *E-light* is thus divided into three main components with topics hyperlinked to one another: *lighting concepts*, *software concepts,* and *lighting application* as shown in Figure 2. The *lighting concepts* module provides fundamental knowledge on lighting to conduct lighting simulation. For example, lighting design guidelines, lighting metrics, different lighting distribution systems, etc. The *software concepts* module discusses the related computer model settings, and material assignment techniques, and luminaire selection and application to conduct lighting simulation with the current state of technology. The *lighting application* module demonstrates the application of knowledge from the previous two modules for specific lighting tasks.

Figure 2. The diagram shows the three principal components of the project.

ASSESSMENT

E-light was tested in Spring 2009 in an interior lighting design class at the University of North Carolina at Greensboro. During the assessment, all 42 students in the interior lighting design class worked on the same project: a shelter for teenage mothers. A basic 3D model of the project was provided to the students. Each student detailed the interiors, defining materials and adding furniture, fixture, and equipment in the space. The students were expected to produce qualitative (photo-realistic renderings) and quantitative (photometrically accurate illuminance calculations) lighting design solutions in a week. The class was divided into three groups: (a) group one received *e-light*, (b) group two received demonstration on software use by the instructor, and (c) group three received both *e-light* and demonstration on software use. The students were also guided towards software user guides and tutorials, and the instructor spent an equal amount of time with each group in class. The hypothesis put forward to test was that *e-light* would be useful as a supplementary tool to classroom discussions and demonstrations, thus extending student learning. The research questions framed were:

How effective is *e-light* in enhancing student's understanding of lighting design software to generate qualitative and quantitative lighting simulations. Is it effective as a supplementary tool of instruction?

What conditions may influence the effectiveness of *e-light*?

RESULTS AND OBSERVATION

The qualitative and quantitative lighting design simulations generated by the students at the end of the week were analyzed as the task-based learning outcomes of

the study. See Figures 3 and 4 for lighting simulations generated by the end of the week of testing. In addition, students completed a questionnaire to assess their perception of the helpfulness of *e-light* for the assignment.

Figure 3: Examples of photometrically accurate renderings of interior space of the shelter conducted during the week of testing (Students: Megan Weatherly, Caroline Vickery, Lynnet Sprague, Lauren Goodrum).

Figure 4. Illuminance calculations by a student in the group which received only *e-light* (Student: Megan McClune).

Overall, the lighting simulation results show that students in group one, who received only *e-light*, performed significantly better compared to the other two groups as illustrated in the graph in Figure 5.

Figure 5. E-light assessment results in the interior lighting design class.

About 50% of students from group one (group that received only *e-light*) were able to perform photometrically accurate lighting design calculations adequately as opposed to 35.7% of students from group two who only attended the demonstration by the instructor. It is also pertinent to note that the students from group one performed significantly better in generating photorealistic renderings compared to the other two groups. Performance of students who received both *e-light* and demonstration was the least satisfactory of all.

The questionnaire revealed that the students in the two groups that received demonstration by the instructor (groups two and three) did not adequately refer to other resources that were provided to them. This could be attributed to the fact that these students were passive consumers of information in a lecture room, who were not actively engage in seeking solutions to the given assignment (Veronikas and Shaughnessy, 2004). These students were satisfied with the classroom explanation; they did not take the initiative to explore other resources provided to them to perform lighting simulations.

A recent report by the US Department of Education supports this finding (US Department of Education, 2009). This report discusses results from a meta-analysis comparing online learning conditions with face-to-face instruction which revealed that learning outcomes for students who engaged in online learning exceeded those of students receiving face-to-face instruction, the results being statistically significant. Interactive tools like *e-light* can give learners control of their interactions with the media, allowing self-monitoring, and prompting learner reflection thus promoting student-centered learning. The author also found during the course of the testing and through the questionnaire that students using only *e-light* formed a community of learners, helping each other out.

DISCUSSION

E-light was intended as a supplementary tool to learn lighting design software. The study started with the hypothesis that the students who receive both *e-light* and demonstration would perform better than the other two groups. However, since group one performed significantly better than groups two and three, it could be concluded that *e-light* can be used as a standalone tool as an alternative tool to classroom demonstration and learning. However, the results of this study should be viewed in light of the following scope and limitations:

The results are based on a single testing and a small sample size. More testing of *e-light* needs to be done to determine if tools like *e-light* can improve student's comprehension of lighting simulation tools.

The study could have a potential bias due to the fact that the author served the roles of *e-light* author, instructor, and experimenter. *E-light* should be tested by other lighting design instructors.

Since the study was conducted only over a week, the students were able to use the software programs but not master it. The students got the opportunity to work for two more weeks following the study to refine their design solutions. See Figure 6.

Figure 6. A final photometrically accurate rendering of the interior space of the shelter for teenage mothers (Student: Ashley Andrews).

Some suggestions for *e-light* offered by the students in the questionnaire are as follows: "make the titles clearer so you can find info easily", "videos were very helpful for the specific areas that they showed", "*e-light* needs to be expanded but it is a highly effective source", etc. The

author is in the process of responding to these student comments in order to conduct the next round of testing of *e-light* in the interior lighting design class.

CONCLUSION

The results of this study highlight the importance of interactive digital pedagogical tools such as *e-light* in enhancing student learning. Similar interactive learning modules could be developed that link interior design concepts to software concepts in acoustics, energy analysis, etc. to enable students and professionals to make accurate design predictions.

REFERENCE LIST (APA)

Rea, M. S. (2000). *The IESNA Lighting Handbook: Reference and Application* (9th ed.). New York: Illuminating Engineering Society of North America.

Sarawgi, T. (2006). Survey on the Role of Lighting Design Software in Architecture and Interior Design Undergraduate Education. *International Journal of Architectural Computing*, 4(4), 91-108.

Veronikas, S. W. and Shaughnessey, M.F. (2004). Teaching and Learning in a Hybrid World. *EDUCAUSE Review,* July/ August.

U.S. Department of Education (2009). *Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies.* Office of Planning, Evaluation, and Policy Development, Washington, D.C.

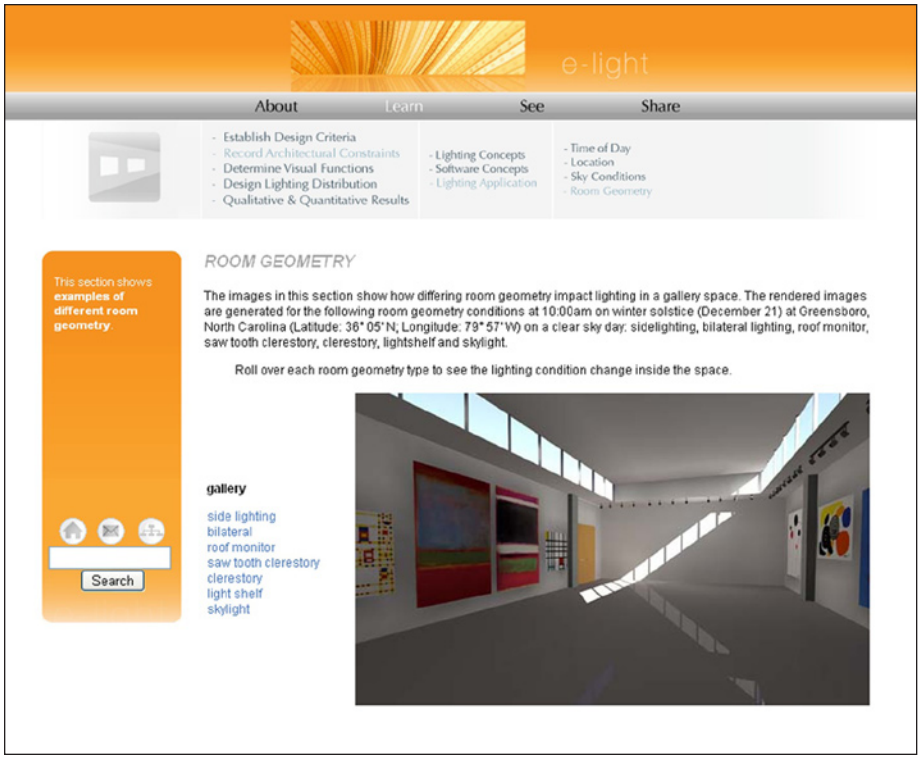

Figure 1: The e-light multimedia interface

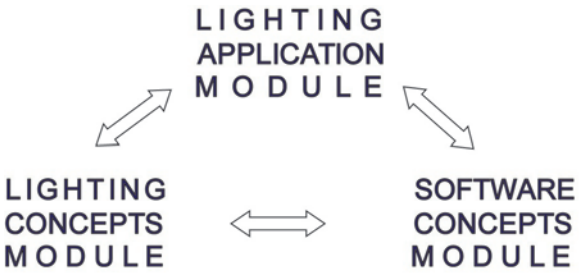

Figure 2: The diagram shows the three principal components of the project

Figure 3: Photometrically accurate renderings of interior space of the shelter (Students: Megan Weatherly, Caroline Vickery, Lynnet Sprague, Lauren Goodrum)

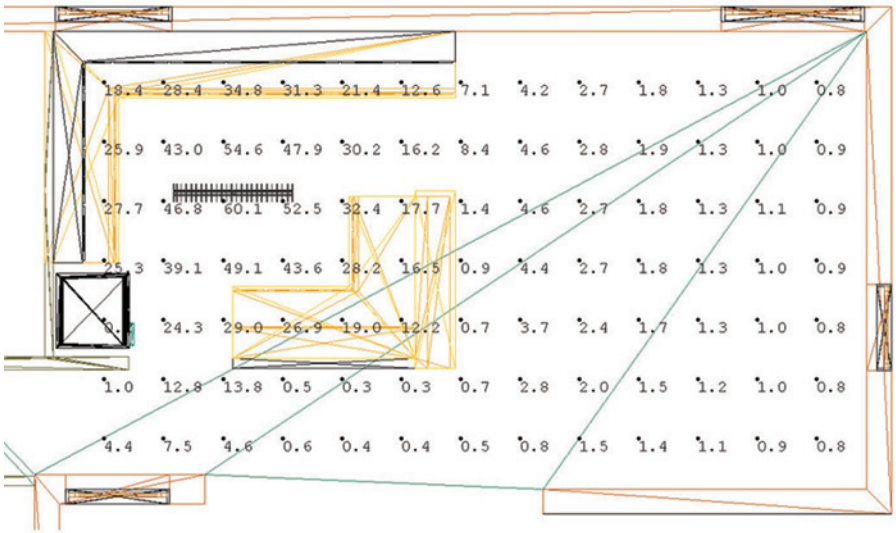

Figure 4: Illuminance calculations by a student in the group which received only e-light (Student: Megan McClune)

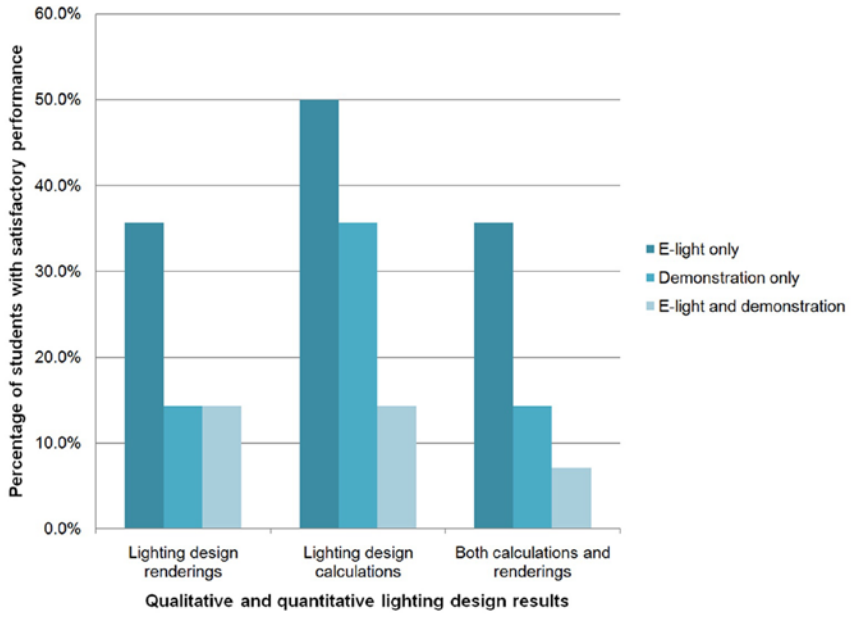

Figure 5: E-light assessment results in the interior lighting design class

Figure 6: A final photometrically accurate rendering of the interior space of the shelter for teenage mothers (Student: Ashley Andrews)

Adaptive Reuse, Sustainability and Experiential Learning in an Industry Sponsored Interior Design Studio

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ABSTRACT

PURPOSE

This paper addresses the integration of sustainable practice into the Interior Design studio through the investigation of a grant sponsored adaptive reuse project. The adaptive reuse of a building, a critical Interior Design practice, is essentially the recycling of a building through a process of renovation in which the purpose and program of the space is different from that which it was originally designed (Kessler, 2009). The practice of adaptive reuse is inherently sustainable as the embodied energy necessary in the design for reuse of a building is less than that of a new construction – and the life of the building is extended (Eisen-Brown, 2009). Experiential learning achieved through studio work with industry-sponsored projects provides Interior Design students the opportunity to design solutions that address the complexities of real world problems (Sterling, 2007). Research suggests that university-industry collaboration has a fertile future as a relationship in which Higher Education can, and should, play a critical role in terms of the creation of a sustainable future (Cerych & Frost-Smith, 1985).

METHOD

A fourth year commercial design studio project involved an exchange of conceptual ideas between the students and a sponsoring industry client. The project program provided students the opportunity to adapt and reuse an unremarkable former bank building and convert it into an innovative LEED Silver certification standard office space. Though Historic Preservation is the typical avenue for adaptive reuse, preserving the unremarkable building, and through reinterpretation once again making it useful and potentially remarkable, is a critical challenge for the Interior Designer. In this assignment the sustainable requirements far exceeded the inherent sustainability of adaptive reuse as the students were challenged to meet LEED Silver certification standards in their project designs.

The client team, headed by a LEED Accredited Professional, places particular importance on environmental sustainability and already maintains a LEED Existing Building. As participants in a sponsored project, the students were provided the opportunity to work with and be funded by the client. The professor and the client team agreed to dispense grant funding equally among the student teams in support of materials necessary to complete the project rather than receiving it as an award or scholarship. This decision enhanced the collaborative efforts of the students rather than instilling competition. Issues of sustainability are cross-disciplinary and multifaceted and necessitate collaboration and cooperation (Cortese, 2003).

Qualitative data was collected through observations at site visits and individual and juried critiques. Self-evaluations, peer evaluations and juror critique evaluations implemented purpose specific evaluation instruments with a consistent rating range.

RESULTS / RELEVANCE TO INTERIOR DESIGN

Currently, under a more segmented approach, the typical student does not yet appreciate the interconnectedness of sustainable issues. Students in this studio learned sustainable values and strategies, as represented by the evaluations and their completed projects, through this integrated studio approach. The real world project provided the students experiential knowledge in the implementation of sustainable design and enforced the significance of adaptive reuse as a sustainable practice as well as a critical Interior Design practice.

NARRATIVE

INTRODUCTION

Adaptive reuse is a viable trend of refurbishment for existing building sites, which are abandoned or have fallen into disrepair (Henehan et al, 2004). Key concepts of sustainability (such as lowering the material, transportation, energy consumption and pollution associated with new construction) are achieved through the avoidance of demolition and extending the useful life of the structure (Bullen, 2007). Adaptive reuse regenerates valuable community resources from deteriorating or unproductive properties, reduces land acquisition and sprawl, eliminates the environmental and economic cost of new construction, and revitalizes existing neighborhoods.

Unlike a building renovation or retrofit, adaptive reuse does not occur "within use", rather repurposing the core and shell of an infrastructure for another use altogether (Ellison et al, 2007).

REVIEW OF LITERATURE

Obsolescence

With an average life span of 30 years, it is inevitable that without above-average maintenance and management, buildings will fall into disrepair and begin losing value (Johnson, 1996). Shifting markets, business failure or tenant space overturn can mean that a building is no longer appropriate for its original purpose due to obsolescence. Though the building may remain structurally sound, components of the interior could reach a state of being that makes the services or practices obsolete. Reasons for this obsolescence could be physical, economic, functional, technological, social, or legal in origin (Langston et al, 2008). These factors, which cause a building to become obsolete, could individually or collaboratively necessitate demolition or gut renovation. Assuming that the initial strategic design of the structure considered the appropriate orientation, shape and window/wall ratio for the site and the structure remains sound and isn't deemed hazardous, then the sustainable prescription for an obsolete structure is adaptive reuse.

Sustainable Benefits

Recycling can happen on a wide range of scales, and the recycling of building structural and finishing components through an adaptive reuse process is one of the larger examples. A considerable amount of embodied energy is contained in the built environment, and the reuse of materials saves about 95 percent (Chau, 2003). By not replacing functional technology and efficient plumbing and HVAC, pressure is alleviated on the extraction, production and distribution of those new products. Potentially hazardous waste from these and other materials are also spared from being land filled after the demolition is complete.

Adaptive reuse is a process that changes a disused or ineffective item into one that can be used for a different purpose. Striving for improvement translates to improved sustainability of communities (Bullen, 2007). The intrinsic heritage values of an older building can oftentimes maintain the culture, status, image and character of the streetscape in neighborhoods (Langston, 2008). When buildings are abandoned or fall into disrepair, they begin to lower in property value as well as becoming more susceptible to vandalism and crime. Also, sustainable building practices often resonate to members of the community and occupants of the building making them more conscious of their own carbon footprint (Rees, 1999).

Experiential Learning and University Industry Collaboration

Experiential learning achieved through studio work with industry-sponsored projects provides Interior Design students the opportunity to design solutions that address the complexities of real world problems (Sterling, 2007). Research suggests that university-industry collaboration has a fertile future as a relationship in which Higher Education can, and should, play a critical role in terms of the creation of a sustainable future (Cerych & Frost-Smith, 1985).

METHOD

The studio, consisting of eleven seniors working in teams of two to three, programmatically addressed the workspace with a focus in adaptive reuse and environmental sustainability through and experiential leaning environment project. The design studio project provided real world experience by an exchange of conceptual ideas between the students and a sponsoring industry client. The project program provided students the opportunity to investigate the adaptive reuse of an unremark-

able building. Though Historic Preservation is the typical avenue for adaptive reuse, preserving the unremarkable building, and through reinterpretation once again making it useful and potentially remarkable, is a critical challenge for the Interior Designer. In this assignment the sustainable requirements far exceeded the inherent sustainability of adaptive reuse as the students were challenged to meet LEED Silver certification standards in their project designs.

The client team, headed by a LEED Accredited Professional, places particular importance on environmental sustainability and already maintains a LEED Existing Building. As participants in a sponsored project, the students were provided the experience and opportunity to work with and be funded by the client. Issues of sustainability are cross-disciplinary and multi-faceted and necessitate collaboration and cooperation (Cortese, 2003).

THE PROJECT

The key goal of this project was to conceive of design solutions for an adaptive reuse of an existing credit union building, into workspace for the industry sponsor. Key elements in the problem were to: design spaces and systems that are sustainable (meet LEED silver standards and criteria), flexible, allow for the circulation of light and air, provide availability to views and offer a level of customization and personalization by the user.

Five teams explored unique solutions to the design problem. Each team created a unique design. The industry sponsors provided programmatic requirements including occupancy and special requirements. The industry sponsors provided feedback and guidance to the student teams at several times through the semester and invited the students to their existing site for a lecture and presentation outlining their programmatic needs. Prior to the site meeting students were provided with as-built CAD drawings and photographs of the project site. Following the presentation students toured of the project site with the industry sponsors, students were able to identify additional areas to be photographed and take on-site measurements. The industry sponsors also attended mid-semester and final project reviews. Students were able to incorporate comments made by the client team and incorporate them into their final design solutions.

The Project Site

The former credit union building was constructed in the mid 1980's, a steel frame construction with a stucco exterior. The two story building is approximately 20,000 square feet. The building while in some disrepair had not been gutted and students were encouraged to consider the sustainable aspects of preserving interior partitions in their design process. The ground floor of the site housed typical bank features including vaults, a drive through window and teller counters, while the second floor was design was a more tradition office configuration. In addition to stairs and an elevator, a dumb waiter also connects the floors. Students were asked to consider reusing existing features in the design proposals. In their design solutions the teams were responsible for conceptual design, schematic design, design development, material and product selection and specification.

QUALITATIVE DATA COLLECTION

Qualitative data was collected through observations during studio meetings and discussions, and individual and juried critiques. The jury comprised of practicing interior designers, facilities managers and interior design educators. Juror critique evaluations implemented purpose specific evaluation instruments with a rating range from low to high. The instructor and each jury member completed an evaluation sheet for each student team. The criterion categories addressed the themes in this investigation including environmental sustainability. Jury members were invited to review the work at the completion of each of the three project phases. Jury evaluations formed a part of the final grade for the project assignment portion of course.

QUALITATIVE ASSESSMENT

At group critiques, all jurors assessed the student work for development of concept, design, presentation and sustainability. Including outside jurors in the critique and grading process permitted the students to have the real world experience of presenting to a group of professionals. Averaging the grades of the design faculty with the design professionals generated the final student grading assessment. The grades reported by the jury at both the mid-review and the final review demonstrated a definite appreciation of the student work in the strength of the grades given. At the time of the mid-review, average assessment scores ranged from 16.5 to 18.66 points out of 20. By the time of the final assessment, scores

increased to ranging between 17.35 and 19.1 points. The jurors sent a clear message in support of the efforts given to sustainability with the highest grade averages given to those factors. This grading allowed the students to know that they were being acknowledged for making sustainable choices. Additionally, students' regard for sustainability was evidenced as most team proposals exceeded LEED CI Silver standards.

CONCLUSION

Currently, under a more segmented approach, the typical student does not yet appreciate the interconnectedness of sustainable issues and significance of preserving the already built environment. Students in this studio learned sustainable values and strategies, as represented by the evaluations and their completed projects, through this integrated studio approach. The real world project provided the students experiential knowledge in the importance of preserving the existing building stock and in implementation of sustainable design strategies. The parameters of the studio enforced the significance of adaptive reuse as a sustainable practice as well as a critical Interior Design practice.

Image 1: Exterior view of Existing Building with Student Overlay Sketches

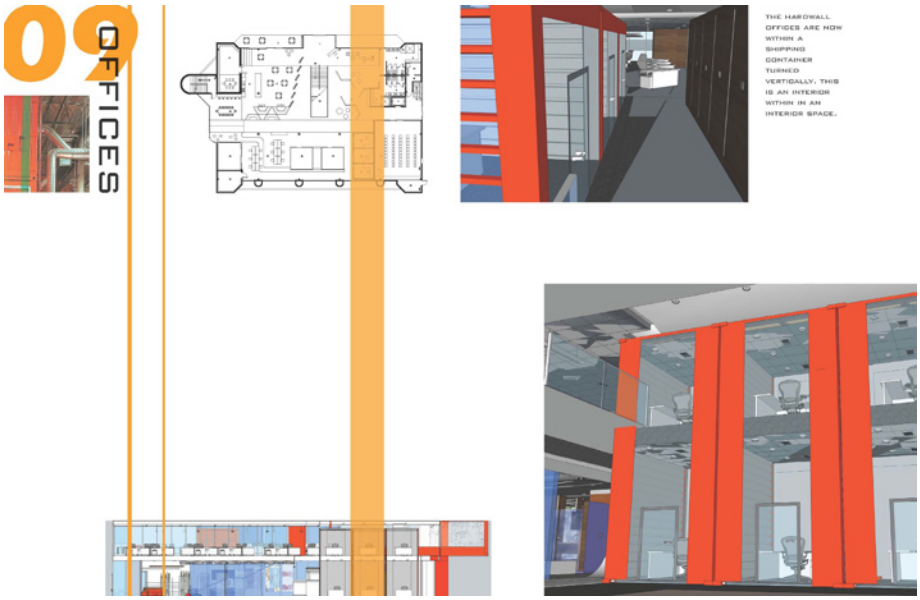

Image 2: Interior Project View with Shipping Containers Oriented Vertically, Repurposed as Private Offices

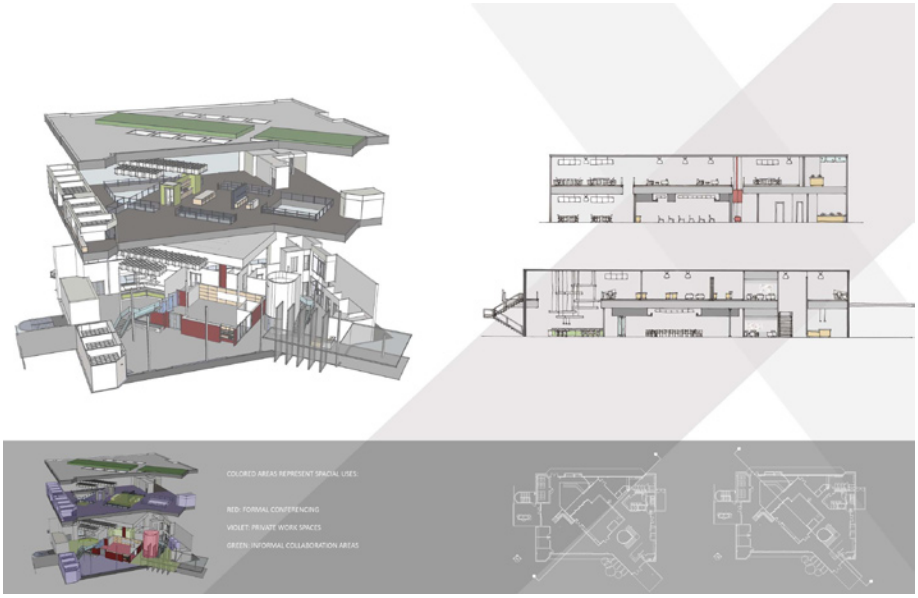

Image 3: Exploded Axonometric of Adapted Building with Relocated Shaded Entrance

Image 4: Adapted Building Design Recaptures Unusable Balconies as Interior Space

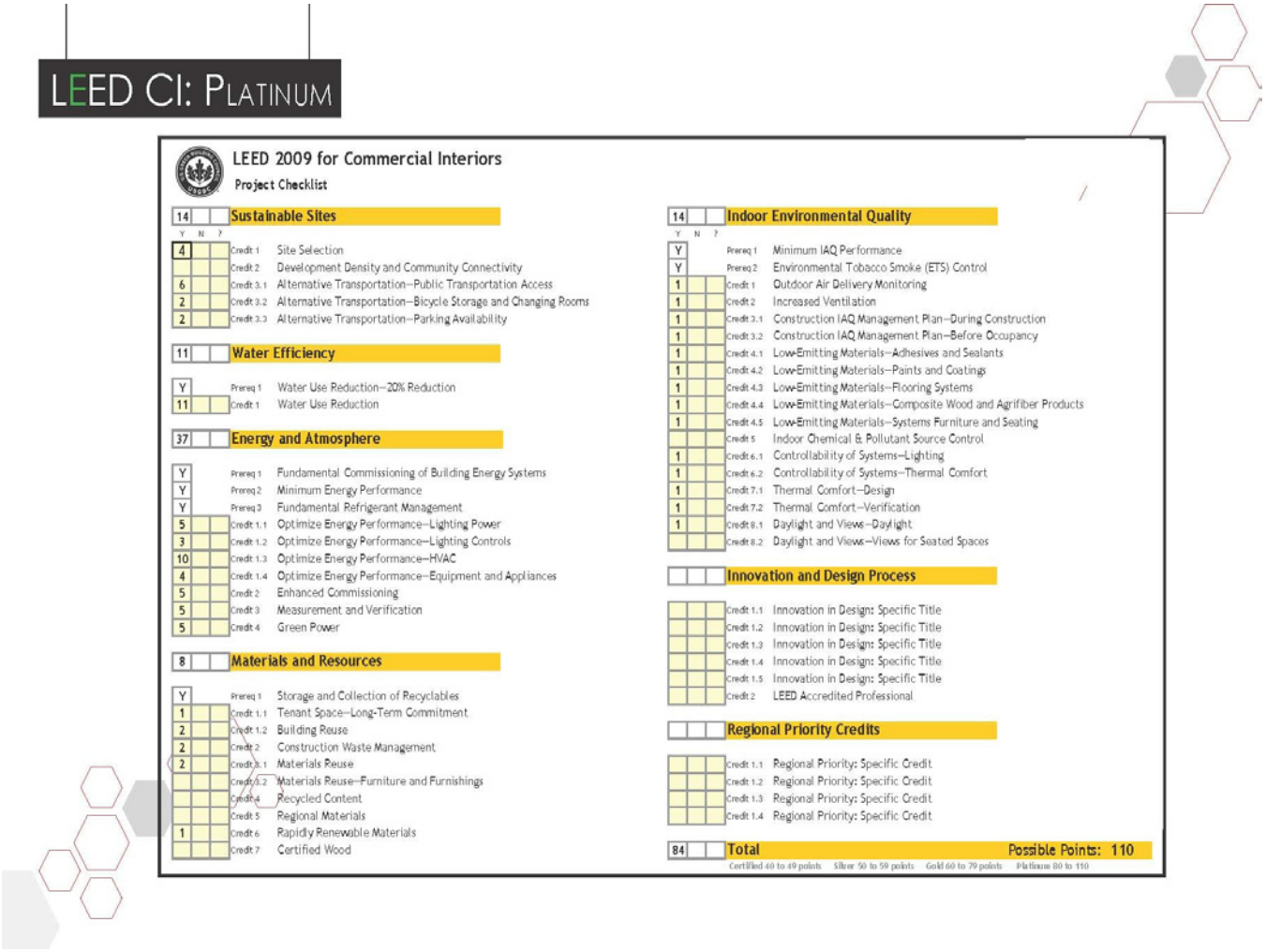

Image 5: Student Team Generated LEED Checklist Demonstrating Points Anticipated for LEED CI Platinum Certification

REFERENCE LIST (APA)

Arge, K. (2005). Adaptable office buildings: theory and practice, *Facilities, 23*(3), 119-127.

Ball, R.M. (1999). Developers, regeneration and sustainability issues in the reuse of vacant industrial buildings. *Building Research and Information*, 27(3):140–8.

Ball, R.M. (2002). Re-use potential and vacant industrial premises: revisiting the regeneration issue in Stoke on Trent. *Journal of Property Research, 19*, 93-110.

Bullen, P.A. (2007). Adaptive reuse and sustainability of commercial buildings*. Facilities,* 25(1/2): 20-31.

Cerych, L. & Frost-Smith, B. (1985). Collaboration between Higher Education and Industry: An Overview. *European Journal of Education,* 20(1), 7-18.

Chau, K.W., Leung, A.Y.T., Yin, C.Y. & Wong, S.K. (2003). Estimating the value enhancement effects of refurbishment. *Facilities, 21*(1), 13-19.

Cortese, A. D. (2003). The critical role of higher education in creating a sustainable future. *Planning for Higher Education, 31*(3), 15-22.

Eisen-Brown, S, L. (2009). Adaptive Reuse in Residential Studio: The 1st Step in Sustainability From Theory to Practice. *Proceedings of the Interior Design Educators Council*, 246 - 254

Ellison, L. & Sayce, S. (2007). Assessing sustainability in the existing commercial property stock. *Property Management, 25*(3), 287-304.

Fianchini, M. (2007). Fitness for purpose: A performance evaluation methodology for the management of university buildings, *Facilities, 25*(3/4), 137-146.

Henehan, D.A., Woodson, R.D., & Culbert, S. (2004). *Building Change-of-Use: Renovating, Adapting, and Altering Commercial, Institutional, and Industrial Properties.* New York, NY: McGraw-Hill.

Johnson, A. (1996). Rehabilitation and re-use of existing buildings. In Mills, E.D. (ed.). *Building maintenance and preservation: a guide to design and management*, *2nd ed*. 209-230, Oxford: Architectural Press.

Kessler, M. (2009). Sowing Seeds of Diversity: The Influence of Sustainability on Adaptive Reuse. *Proceedings of the Association of the Collegiate Schools of Architecture Conference*, 510-516.

Langston, C., Wong, F.K.W., Hui, E.C.M., Shen, L.Y. (2008). Strategic assessment of building adaptive reuse opportunities in Hong Kong. *Building and Environment,* 43: 1709–1718.

Latham, D. (2000). *Creative Re-Use of Buildings*. Shaftesbury: Donhead Publishing Ltd.

Mills, E.D. (1996). Building maintenance and preservation: a guide to design and management (2nd ed.). Oxford: Architectural Press.

Shipley, R., Utz, S., & Parsons, M. (2006). Does adaptive use pay? A study of the business of building renovation in Ontario Canada. *International Journal of Heritage Studies, 12*(6), 505-520.

Sterling, M. (2007). Service-Learning and Interior Design: A Case Study. *Journal of Experiential Education,* 29(3), 331-343.

Rees, W.E. (1999). The built environment and the ecosphere: a global perspective*. Building Research and Information,*27(4/5):206–20.

Reetz, N. (2006). A study in sustainable adaptive reuse. *Environmental Design + Construction, 9*(1), 18-20.

Wilkinson, S.J., James, K., Reed, R. (2009). Using building adaptation to deliver sustainability in Australia. *Structural Survey,* 27(1): 46-61.

The Prefabricated Interior Studio: History and Design

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ABSTRACT

PURPOSE

This paper examines the integration of prefabrication into an Interior Design senior studio. A review of the literature revealed that while there is a paucity of categorical research focused on this subject, there is however, an abundance of evidence regarding the prefabrication of the interior environment dating back thousands of years. The studio topic intends to introduce the specific topic 'Prefabricated Interior Design' to the Academy and to the Profession.

CONCEPT

Prefabrication refers to parts of the building, interior or exterior, with either a fully or partially prefabricated end result, assembled in a place other than the building site (typically a controlled factory environment). Ideally, assemblies are fabricated simultaneously (reducing total construction time and costs) in various locations and fully assembled into the whole at the building site.[1] An overarching result of the use of prefabricated elements is of particular interest in today's receptive climate toward sustainability and green design. Prefabrication of elements in a controlled environment limits waste in materials and inefficiencies in labor — while fabricating elements with the benefits of modularity or transportability allows for flexibility, increasing the useful life of all the elements.

There has been a long tradition involving the creation of prefabricated interior components including decorative elements, staircases, and mantles; even gypsum board is an interior element that is fabricated off-site and brought to the interior ready to install.[2] More importantly, though, prefabricated interior constructs have defined interior space and have informed the language of prefabricated Architecture.[3]

METHOD AND RESULTS

The course began with a research report, which uncovered a lack of specific topical historical evidence correlating prefabrication with Interior Design. Next, a series of lectures defined the topic 'Prefabricated Interior Design'. Finally, students were instructed to create and assemble three separate prefabricated design studies. A historical survey, a critical course element, was written and presented to establish and covey the previously undefined topic 'Prefabricated Interior Design'. For the design project, students worked in ascending order from micro to macro scale to design three-components including: a full-scale model of a screen prototype, a half-scale model of a wall prototype, and an interior design within a prefabricated building envelope. Throughout the process students were able to understand prefabrication's importance in the Interior Design community.

At the end of the instructional semester students were questioned about their education, attitudes, and professional objectives toward Prefabricated Interior Design. The survey uncovered that students feel Prefabricated Interior Design is 'unrepresented' in historical content and the professional practice. The survey also revealed that students' initial awareness of prefabrication in Inte-

1 Stephen Kieran and James Timberlake, *Refabricating Architecture: How Manufacturing Methodologies are Poised to Transform Building Construction* (New York; London: McGraw-Hill, 2004), 43.

2 Katherine H. Stevenson and H. Ward Jandl, *Houses by Mail: A Guide to Houses from Sears, Roebuck and Company* (Washington, D.C.: Preservation Press, 1986), 29-30.

3 Colin Davies, *The Prefabricated Home* (London, UK: Reaktion Books, 2005), 223.

rior Design is weak, however, with the implementation of the topic into a studio-based course their attitudes and perceptions toward prefabrication heightened.

IMPORTANCE/ RELEVANCE TO INTERIOR DESIGN

Interior Design organizations and programs need to endorse the idea of prefabrication as an element in Interior Design. Considering the benefits involved in prefabrication, the impact of such elements and strategies could influence the environment locally and globally.

NARRATIVE

INTRODUCTION

In the Fall of 2008, the question 'what is Prefabricated Interior Design' was posed to the senior Interior Design studio at Arizona State University. The response was a quiet room filled with blank faces. Therefore, the students were assigned a research project that investigates Prefabricated Interior Design. The papers nearly all recapitulated the history of prefabricated Architecture, as they did not find the topic of Prefabricated Interior Design explicitly addressed in their literature searches. In reality, while there is a paucity of topical research focused on this subject, there is, however an abundance of evidence regarding the prefabrication of the interior environment dating back thousands of years.

REVIEW OF LITERATURE: ASSEMBLAGE OF THE PREFAB INTERIOR TOPIC

What is Prefabricated Interior Design?

An overarching result of the use of prefabricated elements is of particular interest in today's receptive climate toward sustainability. Prefabrication or building off-site in a controlled environment limits waste in materials and inefficiencies in labor — while fabricating elements with the benefits of modularity or transportability allows for flexibility, which adds the benefit of increasing the useful life of all the elements.

The prefabricated interior is perhaps better described by the elements of the module, the screen, and the unit. The investigation into the prefabricated interior is particularly important in specific locations of the interior environment including the bathroom, the kitchen, and the office, but it also includes the composition of the module. In all cases, the elements that construct the prefabricated interior have not only been elements that in their placement and program have defined space, but ones that may be viewed as critical steps in the development of prefabricated construction techniques on a greater scale, ranging widely from the building to the city.

The Typologies of Prefabricated Interior Design

The earliest examples of prefabricated interior elements originated in Asia with two of the primary elements of the typology; the screen and the tatami mat (representative of the module). In the mid-twentieth century, the unit

came to market as a prefabricated element ready to be used whole.[1]

The Screen

The screen is the first prefabricated architectonic element. The first folding screen appeared in China as early as 300 or 400 BC,[2] far predating the first prefabricated houses that were shipped from England to Cape Ann in the early 1600s.[3] The relatively permanent screen from China evolved into the shoji, a system of flexible screens dating to as early as 200 BC in Japan.

The inclusion of the screen as an architectonic interior element in Western design is evidenced most notably in the work of the modern masters, particularly Frank Lloyd Wright, Walter Gropius, Gerrit Rietveld and Eileen Gray.

The Module

The Japanese building system kiwari jutsu dating to 1608 defines the modularization of space from the scale of the building to furniture and even includes the proportions of the shoji screen.[4] The proportion of the tatami, which actually predates kiwan jutsu to the 14th century, is a critical measure.[5] The tatami as a prefabricated interior element defines interior space and also is the basis for the proportion of the built environment.

The module also has a prominent place in Western design. The significance of the module is evident in Architecture through the most basic unit of the brick and also in Interior Design as system for fabricating any number of elements from furniture, to kitchens, or to office environments.

The Unit

As a primary defining element of Prefabricated Interior Design, the term unit is utilized to describe elements that are created in their entirety as a single all-inclusive piece. For example, the 'unit' kitchens of the 1950s were a single piece housing all elements necessary for the kitchen — including cabinetry and appliances.[6] Predating and informing the unit kitchens were the office secretaries of the late nineteenth century, furniture elements that in one piece fabricated an entire office environment for the individual user.[7]

The inclusiveness of the unit pushed the interior construction envelope in Joe Columbo's 'Living Machines' and culminated in the form of an entire 'house' with Joe Colombo's first 'Total Furniture Unit' investigation that housed everything necessary for the home in a single unit. [8]

THE SUSTAINABLE ENVELOPE: A PREFAB STUDIO PROJECT

This studio, programmatically addressed workspace design with a focus in prefabrication and environmental sustainability. The studio addressed the topic of Prefabricated Interior Design through lectures, discussions, and a research project. The studio also included a three-component approach to the design and discovery of prefabrication.

The three elements were investigated according to scale from micro to macro; student teams designed a prefabricated screen prototype, a prefabricated wall system prototype, and designed within and through a prefabricated structure as the project site. The three-component approach also engaged each team to explore a series of design problems including: client selection, programming, site selection, research on prefabrication and environmentally sustainable materials, and the creation of a comprehensive design.

The Project Screen

In addition to being a critical typology of Prefabricated Interior Design, the screen explores the notion of transition from one side to the other. In this initial construct, the student teams explored the notion of screen an element critical to the history of Prefabricated Interior Design and as a device of the human scale. The assigned screen was constructed of re-used recycled cardboard and was built at full scale. The application site for the screen, the student workstation, allowed the student teams the opportunity to interact with it at true scale.

The Prefabricated Interior Wall

The prefabricated interior wall is a critical challenge to Interior Design as it necessitates meeting existing conditions in multiple directions, width and height. In the solutions, the student teams were asked to consider the design of a system that was not site specific and could transcend commercial and residential application.

Teams utilized devices of not only the screen but also the module in their investigations. The student teams built their prefabricated wall prototypes at a one-half full-scale. Some successful solutions included screens that were fabricated as rigid overlapping elements while others were soft retractable systems.

The Prefabricated Site (Building)

Following the development of screen and prefabricated walls, student teams shifted to the scale of the building, a pre-engineered steel structure with much of its manufacturing process done off-site. The unarticulated shell necessitated that the teams design purposeful penetration to the structure in order to maximize the interconnectedness of the user to the building and to the environment.

THE SURVEY INSTRUMENT

At the end of the instructional semester students were given a questionnaire that evaluated their attitudes and perceptions towards Prefabricated Interior Design in their education and in the profession. The survey instrument is divided into three sections:

1. Prefabrication: Educational Approach and Awareness

2. Prefabrication in Interior Design Practice

3. Prefabrication and Sustainability.

Statistical Package for Social Sciences (SPSS) was used to analyze the data. The following results are analyzed and presented according to the three sections of the research instrument

For Section 1, Analysis indicates that students were not 'aware of the concept of prefabricated Interior Design' prior to the course. However, they 'believe that the meaning and history of prefabrication in Interior Design should be incorporated into Interior Design curricula'.

For section 2, all statements responses reflect a positive regard towards the topic. Students had mostly 'agreed' or were 'neutral' that they 'would like to pursue prefabrication in Interior Design in professional practice.' In addition, students share mixed attitudes if 'prefabricated elements in design is detrimental to the profession'.

For Section 3 analysis suggests that students feel 'that the incorporation of prefabricated interior elements and/or components into a project is a sustainable method of design.' and that students do 'believe that an understanding of the prefabrication interior elements or environments is critical in the practice of sustainable design'.

CONCLUSION

Although the literature has contained virtually no categorical discussion regarding the subject Prefabricated Interior Design, the prefabricated elements of interiority are well represented and have been fundamentally crucial in the development of prefabricated technologies. It is critical that this connection be formally drawn and the topic Prefabricated Interior Design clearly established. As indicated by the research papers and the survey instrument, the students were undereducated about the concept of prefabrication prior to the prefabrication studio. However, the incorporation of various teaching methods, including the historical survey, throughout the course has broadened students' awareness towards prefabrication in Interior Design as evidenced in the project evaluations by the jury and reflections of the students.

Realistically, prefabrication has several benefits such as: modularity, transportability, and versatility. Although challenging to incorporate another topic into the Interior Design curriculum, it could have direct impact and influence on students' attitudes towards prefabrication. The topic could be in integrated into several core courses throughout the Interior Design curricula such as: design history, materials, finishes, and furnishings or studio based courses. Prefabrication is a valuable and imperative design strategy that could opt for many unique and environmentally sustainable design opportunities in both new construction and adaptive reuse projects.

Image 1: Double Sliding Modular Prefabricated Interior Wall Proposal

Image 2: Biomimicry and the Burr, Prefabricated Interior Wall Proposal

Image 3: Retrofitted Prefabricated Steel Shell, Building Model

Image 4: Prefabricated Interior Project Poster – Burr

Image 5: Prefabricated Interior Project Poster – Stretch

REFERENCE LIST

(Chicago Manual of Style, *Documentary Note*)

[1] Helen McCollough, "The Kitchen of Tomorrow," *Journal of Home Economics* 37 (1945): 8-10.

[2] Van Der Reyden, 2.

[3] Allison Arieff and Bryan Burkhart, *Prefab* (Salt Lake City: Gibbs Smith, 2002), 11.

[4] Kiyoshi Seike, *The Art of Japanese Joinery* (New York: J. Weatherhill, 1977), 14.

[5] Azby Brown and Joseph Cali, *The Japanese Dream House* (New York: Kodansha International, 2001), 39.

[6] Mary Anne Beecher, "Packaged Kitchens: Understanding Prefabricated Manufactured Units as Mid-Century Interiors" (paper presented at the annual Interior Design Educator's Council, Montreal, Canada, March 5-8, 2008), 151-152.

[7] Janice Tolhurst Driesbach et. al., *Wooton Patent Desks: A Place for Everything and Everything in its Place* (Indianapolis: Indiana State Museum, 1983), 35-37.

[8] Ignazia Favata, *Joe Colombo and Italian Design of the Sixties: Commentary and Catalogue* [Joe Colombo and Italian design of the sixties.English], 1st MIT Press ed. (Cambridge, Mass.: MIT Press, 1988), 110-113.

Contextually Responsive Interiors: Journey Through Light and Space

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ABSTRACT

Students often struggle in developing cohesive design concepts with meaningful intention in the planning of interior environments. Studio instruction implementing Investigation of context is important to interior design education. Inquiry based learning using photography as a means to frame observations and articulate significant impressions in journal writing fosters creative interpretation of place and assessment of design elements. The potential of exploring ideas through narrative inquiry and using it as a tool for guiding decisions throughout various stages of the design process enhances multi-sensory conceptualization and visualization (Danko & Portillio, 2006). Dorothea Lange kept journals where she jotted the telling details she recorded in photographs (Lang & Newhall, 1967). Kevin Lynch defined place legibility as the ease with which people recognize the layout of a place. He identified distinct features to recognize in a place that gave spatial character. Journal assignments investigating landscape features provide opportunities for deepened awareness for the interplay of design elements. Developing narrative and visual essays enhances recognition of contextual design features that can influence interior environments. Integrating investigations of context in photographic assignments and journaling assists students in the interior design process. Students capture impressions of exterior environments scrutinized throughout the day and tell the story of the light, its intensity, clarity, color, and other observed qualities. Students discover the effects of light's presence in space and describe observations as precisely as possible when seeing how light reveals or conceals materials, defines surfaces, and illuminates forms. Journal entries include reflections of personal experiences in the activity of investigation. Close observation and intentional framing of photographs to capture expressive characteristics are later developed into sequenced visual frames to tell a story. Students choose what to frame, how, and what to place in sharpest focus in order to highlight any significant details and meanings that convey a sense of place and identity. Studying landscape improves understanding of important ideas in spatial design. The journal becomes a personal source of ideas and written material for a digital presentation and final essay.

This design method resulted in nurturing students' visualization capabilities and enhanced their discoveries of character and implicit expression of place. It offers significant relevance to improving studies of interior design by encouraging observations of details in landscape, writing, and storey telling about space. Journal writing and photography assignments integrated as narrative investigations provide transformative learning experiences characterized by constructivist learning. Journal reflections provide a dynamic means to explore material selections and creative design details. Students actively explore design elements and are able to translate characteristics into articulated details in schematic design proposals. Storyboard development and the sequencing of images and words into a digital essay improved students' understanding and communication skills. This multi-sensory studio approach to design instruction captures contextual experience and influences interior space planning. Future applications can require development of individual student web sites highlighting discoveries in studio skills and engagement.

NARRATIVE

INTRODUCTION

I became aware of interdisciplinary design inquiry processes in my postgraduate work in photojournalism and graduate education in architecture. Exploring photography as a disciplined way of seeing and expressing ideas is also the center of research and course work developed by Anne Winston Spirn, in landscape design courses taught at Massachusetts Institute of Technology. Spirn's work as a landscape architect focuses on city design, and urban nature. I discovered Spirn's research when seeking new ways to increase interior design majors' awareness for environmental factors to apply in studio. Interior design students have difficulty in recognizing contextual influences that can inform their design solutions. Studio discussions often touch on bringing the outside in but little time is allocated for concentrated study of the potential gain exterior environments offer for interior design. This lack of study negates possible implications for understanding the sophisticated interplay of design elements with the poetics of landscape. Typical interior design instruction incorporates problem solving using design briefs that address practical issues. Implementation of case study research buttresses understanding of how project types are designed and provide opportunity for analysis in precedent studies. Students often struggle in creating cohesive and unique design concepts with meaningful intention in the planning of interior environments. Spirn's research in site design and photographic inquiry (Spirn, 2007) explores urban landscape with digital communication and journal writing. Investigation into landscape details observed through the lens of a camera improved Spirn's students observational analysis of inherent aesthetic qualities of place and context. I adapted part of this research methodology for an advanced graduate interior design studio. Photographic assignments and journal writing were modified for interior design to improve observational analysis of context and better understanding for unique characteristics of site conditions. Incorporating design Investigation of contextually responsive interiors is important to interior design education. Becoming aware of contextual issues such as views, daylight, paths, and spatial qualities improves the quality of interior design (Rengel, 2003). Discovering photography as a means to frame observations and articulate significant impressions in writing fosters creative interpretation of place and assessment of design elements. The potential of exploring ideas through narrative inquiry and using it as a tool for guiding decisions throughout various stages of the design process enhances multi-sensory conceptualization and visualization (Danko & Portillio, 2006). Dorothea Lange kept journals where she jotted the telling details she recorded in photographs: "a country churchyard's acre, its bare soil swept with dogwood brooms" (Lang & Newhall, 1967*).* Kevin Lynch defined place legibility as the ease with which people recognize the layout of a place. He identified distinct features to recognize in a place that gave spatial character.

METHOD

Graduate interior design students were required to investigate their surroundings and landscape features by keeping a journal throughout the semester to gain impressions of design elements and design phenomena in environments. Investigations incorporated an interplay between observations, journal writing and photographing design elements and related issues. Weekly class discussions reviewed journal entries. Students recorded observations of place using journaling as a research tool and captured personal reflections on specific reading assignments, and site discoveries. Students use their journals as primary sources for both written and visual material to draw from for their digital essays of words and images.

The first few weeks of the semester, begin with personal intimate space observations of light as the major subject for the journal. Students record journal entries on light at least 6 times throughout the day, every day in a two-week period. They observe and describe light quality, and its changing behavior and engagement with their surroundings. Initially students were to observe the inherent characteristics of light as seen in specifics of intensity, clarity, color, and any other noticeable qualities. After the first week students begin describing how light interacts with, reveals, or conceals materials, surfaces, and forms. Qualitative statements of shadows are formed in their observations. Descriptive words are discussed in class and investigate and identify poetic verse that conveys more of what they see and expand their descriptive vocabulary.

Each studio participant independently chose a site for study. Photo essay assignments investigated inherent site features and afforded opportunity for close observation and deepened awareness for the interplay of natural

design elements. This observational analysis was a critical step for students to decipher the site's identity and its unique attributes, which became the focal point in their digital essays.

Beginning with site selection students explain site location, why it is interesting to them, and why they were drawn to it. Initial questions about definition of neighborhood and place are raised and specific aspects identified for further exploration in photography. Students scrutinize their specific sites throughout a twenty-four hour period to tell its story of light and other observed qualities. The objective is to discover the effects of light's presence in space; and working as photographers the students become close environmental observers. I believe its is here that the creative process begins as each student intentionally chose what to frame in their photographs, how, and what to place in sharpest focus in order to highlight important details. Students described their observations in words as precisely as possible and their personal experiences in the activity of investigation. A connection and understanding for design elements are discovered. Selected class readings from Kevin Lynch's Images of the City, provided examples for students to construct cognitive maps to augment their discussions of place.

The third and final photographic assignment, "poetics of space" asks students to reflect on their previous investigations of "light" and "significant detail" with perspective for the implied expressions of character in their selected site. This digital essay creates an expression of particular qualities and interpreted character. Close observation and intentional framing of photographs captures place characteristics that are later developed into sequenced storyboards narrating the identity of this place.

Studying the landscape improved student understanding of important ideas in spatial design and inherent material characteristics. Photography offered students a means for discovery of unique place characteristics and opportunity for interpretation through the framing of photographic views that in sequence tell larger stories. Photographic narratives offer potential for creative stories for other places.

Developing the narrative and visual essay enhanced student recognition of contextual design features. The digital essays articulated impressions and sensitivity for site character and identity. The study of landscape provided a means to decipher complex, layered, and seemingly ambiguous design features. Multiple meanings become a source for metaphor and introduce students to a correspondence, and investment of meaning in developing design concepts. Developing a narrative with selected attributes evident in photographs becomes an influential focus for detail that is later carried forward into schematic interior environments. Integrating investigation of context through photographic assignments and journaling assists students in individualizing their design process.

DISCUSSION

Photography and writing assignments enhanced creative development of design ideas and interior details directly linked with context. This studio instruction resulted in nurturing students' visualization capabilities and enhanced their discoveries of meaning and implicit expression of environmental design. The discovery experience increased student awareness for distinct design features and complex associations of details experienced with poetics of space. Students actively explored visual facts and were able to articulate expressive qualitative statements in their schematic designs. Storyboard development and the sequencing of photographic images and words into a visual essays improved students' understanding and communication skills. Digital essays were translated into supporting documentation for their interior design project presentations. Students independently engaged in discovery of meaningful concepts for interior design with associated details taken from earlier observational studies of landscape.

This teaching method captures a contextual component in space design. Students noted a positive response for the inquiry process in journal entries; and through multi-sensory activities improved their ability to develop design concepts. Assignments encouraged close first person observations of design and details in landscape, writing, and storey telling about space. Incorporating experiential expression with written inquiry enriches the learning experience for multiple type learners. Journal writing and photography assignments integrated as narrative investigations provide transformative learning experiences. Constructivist learning characterizes the design process; and photography assignments offer an opportunity for students to begin the design process from a personal point of view. Journal reflections provide

dynamic means to explore material selections and creative design details (Danko & Portillio, 2006). Assignments encouraging interpretation, integration, and analysis demonstrate higher cognitive abilities with creative and evaluative learning.

Study of landscape through photography and journal investigations provides an essential connection with interior space planning; and produces an expanded understanding for meaningful concepts with detailed visual imagery, and sensitivity to environmental design features. Future applications to further advance visual and written communication skills can encourage development of individual student web sites and blogs featuring writing as a form of inquiry and means of investigating design. Structured interplay between journal writing, digital photography, and related discoveries in studio work can be a tool to initiate students in creating electronic portfolios to advance their professional preparation and development.

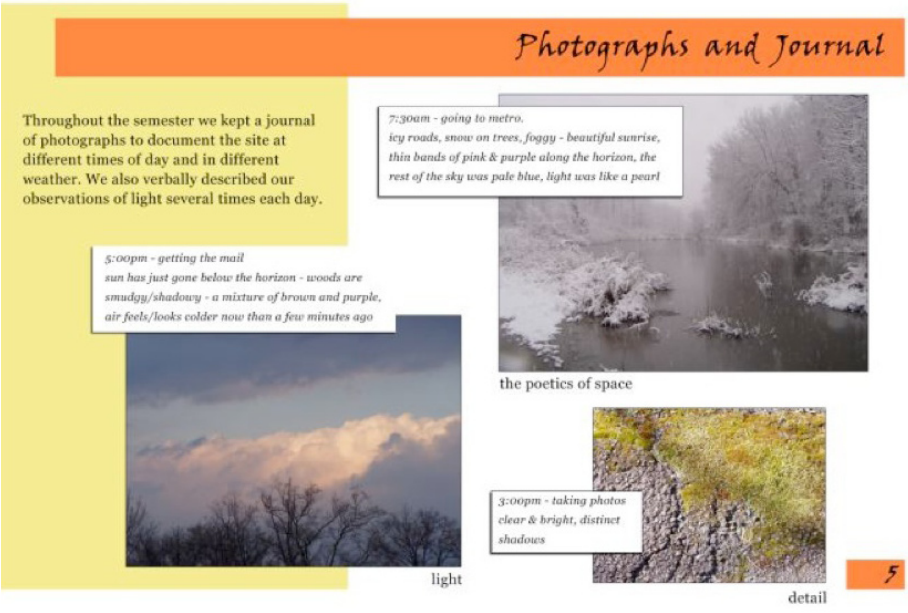

Figure 1: Example of Student Journal Reflections

Figure 2: Example from Student Digital Essay

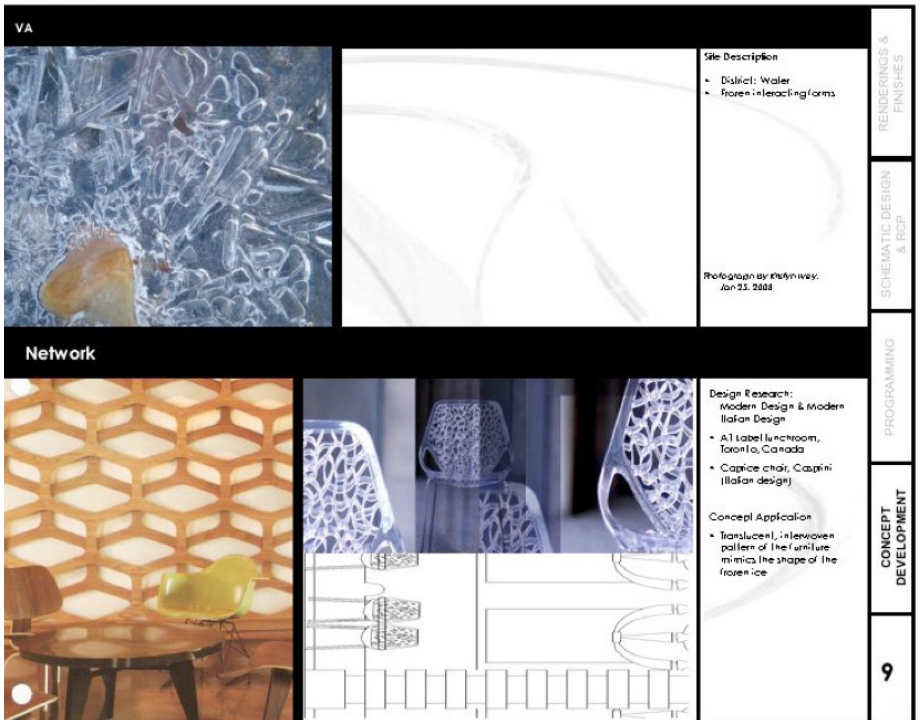

Figure 3: Example of Student Integration of journal and photographic assignments

REFERENCE LIST (APA)

Danko S. & Portillio M. (2006) Humanizing Design through Narrative Inquiry*. Journal of Interior Design, Vol. 31, Number 2*

Lang, D. & Newhall, B. (1967) *Dorothea Lange Looks At The American Country Woman*. Fort Worth Texas: Amon Carter Museum

Lynch, K. (1960) *The Image of the City*. Cambridge: MIT Press

Rengel, R.J. (2003) *Shaping Interior Space*. New York: Fairchild Publications, Inc.

Spirn, A. W. (2006) *Sensing Place: Photography as Inquiry*, Massachusetts Institute of Technology

The Material Project: A Call for Collaboration

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Marymount University

ABSTRACT

PURPOSES

The purposes of this teaching forum are 1) to introduce methods of creating a community knowledge base as a tool for learning, exploring, and collaborating in a single interior design course and 2) a call for collaboration with other educators to benefit from and contribute to a growing material research knowledge base.

In interior design education, material knowledge is traditionally transferred in one direction: from the source (instructor, expert, or textbook) to the student. This one-way conveyance of information does not provide opportunities for thorough investigation and in the case of textbooks, cannot adequately react to innovations in emerging materials.

Mendoza (2009) argues in The WikiID: An alternative approach to the body of knowledge, that wikis provide a framework for the collection, dissemination, and critique of any dynamic body of knowledge. Mendoza also argues that wikis offer unique opportunities to learn from individuals on the periphery of educational communities. The wiki framework was adopted for the MaterialWiki Project because it provides students an opportunity to build on existing research and collaborate with experts outside the classroom.

The call for collaboration is the second phase of this project. It is intended to formally expand contributions to the MaterialWiki Project allowing unique opportunities for collaboration across traditional university boundaries as students contribute to this dynamic body of knowledge.

METHOD

The MaterialWiki Project was started in the Fall 2005 semester as a printed research collaborative of graduate students studying Advanced Materials and Methods. A second cohort of students completed the same printed research project in the Spring 2007 semester. These projects allowed each group of students to document multiple materials for use throughout the semester. For each material in the project, students contribute written analysis including historic information, typical uses, and material properties. The goal is that the research help students identify: 1) the relationship between the properties of a material and the ways it can be used to create and shape interior space; 2) the similarities and differences between traditional and contemporary materials.

The Spring 2008 cohort migrated the printed documents to the MaterialWiki Project. In moving the research to a digital medium, students experienced the benefit of instant publishing which allowed the cohort to collaborate with each other and build on the research contributed by previous cohorts. Research continues informally on a 24/7 cycle and involves design students, professionals, and product vendors.

NARRATIVE

PURPOSES

The purposes of this teaching forum are 1) to introduce methods of creating a community knowledge base as a tool for learning, exploring, and collaborating in a single interior design course and 2) a call for collaboration with other educators to benefit from and contribute to a growing material research knowledge base.

In interior design education, knowledge is traditionally transferred in one direction: from the source (instructor, expert, or textbook) to the student. In the instance of traditional lectures, this one-way conveyance of information does not provide students adequate opportunities to investigate and explore higher orders of understanding such as evaluation and design. Textbooks also provide a one-way conveyance of knowledge and depending on the subject become obsolete in a few years. For example, an AutoCAD textbook is only successful if it is updated to match the current software release.

There are, however, good examples of bi-directional learning environments in interior design curricula. The design studio, for example, is successful pedagogically because it requires each student become an expert on a topic and use that expertise to create something new. One objective of this project was to transform a traditional lecture course to a bi-directional learning environment using a Wiki to collect and disseminate a malleable body of knowledge. Mendoza (2009) argues in The WikiID: An alternative approach to the body of knowledge, that wikis provide a framework for the collection, dissemination, and critique of any dynamic body of knowledge. Mendoza also argues that wikis offer unique opportunities to learn from individuals on the periphery of educational communities. The wiki framework was adopted for the MaterialProject.org because it provides students an opportunity to build on existing research and collaborate with experts outside the classroom.

The call for collaboration is the second phase of this project. It is intended to formally expand contributions to MaterialProject.org allowing unique opportunities for collaboration across traditional university boundaries as students contribute to this dynamic body of knowledge.

METHOD

The MaterialProject.org started in the Fall 2005 semester as a printed research collaborative of graduate students studying materials and methods of interior design detailing. A second cohort of students completed the same printed research project in the Spring 2007 semester. In each instance, students individually researched and documented three materials from a list of both traditional and emerging materials. For each material in the project, students contribute written analysis including historic information, typical material uses, and material properties. Research goals include helping students identify: 1) the relationship between the properties of a material and the ways it can be used to create and shape interior space; 2) the similarities and differences between traditional and contemporary materials. The individual material reports were collected and bound in a document that served as the course textbook for the semester. This body of knowledge informed material selection and use in the custom details designed by each student in the remaining portion of the semester.

The Spring 2008 cohort migrated the printed documents to MaterialProject.org. In moving the research to a digital medium, students experienced the benefit of instant publishing. This allows students to collaborate with each during the research and documentation phase. It also provides a unique opportunity for students to build on the research (existing body of knowledge) contributed by previous cohorts.

In the Spring 2009 and Spring 2010 semester, students selected and edited two materials from MaterialProject.org. Some edits were grammatical while others contributed information related to changes in product specification or additional research in categories like life safety and the environment. Each student is also required to contribute two new materials to MaterialProject.org. Research continues informally on a 24/7 cycle and involves design students, professionals, and product vendors.

MaterialProject.org is powered by MediaWiki software available for download at mediawiki.org. MediaWiki is free server-based software which is licensed under the GNU General Public License (GPL). Pages use the same wikitext format used at Wikipedia.org, allowing students to use existing editing knowledge at MaterialProject.org. For example, to create a hyperlink to the concrete article at MaterialProject.org, one has to add a bracket on either side of the work “concrete” (e.g. [concrete]). Just like Wikipedia, user submitted page edits are stored in a

database along with previous versions of the page. This allows easy reverts in case of vandalism, spamming, or inaccurate information. This also provides an historical context to this changing body of knowledge. In selecting MediaWiki as the software to run MaterialProject.org, the author chose a web system already understood by some students and a system that allows the use of a custom domain name (MaterialProject.org).

Templates created using the MediaWiki software provide students a starting point for their research and documentation. These templates pre-populate new material articles with the following sections: material analysis, material properties, environment and life safety, references, see also, and external links. The material analysis section is further subdivided into: traditional uses, emerging uses / trends, finish and aesthetic qualities, surface forms / shapes, cost analysis. The material properties section is further divided into: primary structural use, material performance, dimensional and opening restriction, acoustic property, manufacturing process and assembly. The environment and life safety section is divided into: environmental impact, flammability rating, coefficient of friction. Remaining sub-sections include: student contributions, similar materials, and leading manufacturers. In prescribing these categories, students are provided an initial framework for their research. Students then add or remove categories and sub-categories as appropriate for each material.

SIGNIFICANCE TO INTERIOR DESIGN EDUCATION

As we explore new methods of inquiry in interior design education, it is important to test projects outside the boundaries of individual classrooms and universities. Participation in this project will help interior design educators better understand distance collaboration and distance education. Finally, by collaborating across the boundaries of a traditional classroom, new learning opportunities may reveal themselves for both interior design students and educators.

REFERENCES (APA)

Chen, H. L., Cannon, D., Gabrio, J., Leifer, L., Toye, G. & Bailey, T. (2005). Using wikis and weblogs to support reflective learning in an introductory engineering design course. Proceedings of the 2005 American Society for Engineering Education Annual Conference & Exposition.

Fannin, V. & Clark, L. A. (2008). Design pedagogy and the tangible blog: Bringing cyberspace down to earth. Proceedings of the 2008 Interior Design Educators Council Annual Conference.

How does Mediawiki work?. (2009, October 10). Retrieved from http://www.mediawiki.org/wiki/How_does_MediaWiki_work%3F

Mendoza, H. R. (2008). The Wikibok: An Alternative Approach to the BoK. Proceedings of the 2008 Interior Design Educators Council Annual Conference.

Wallack, C. & Gentry, M. (2009). Wikis: Tractable Technology for the Design Curriculum. Proceedings of the 2008 Interior Design Educators Council Annual Conference.Appendix

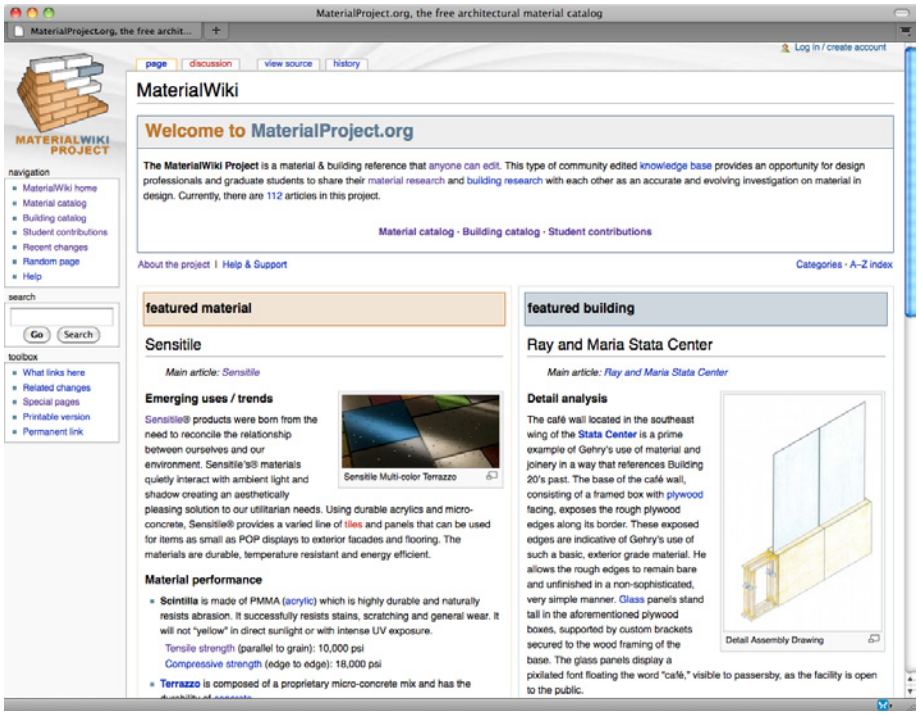

Figure 1: MaterialProject.org

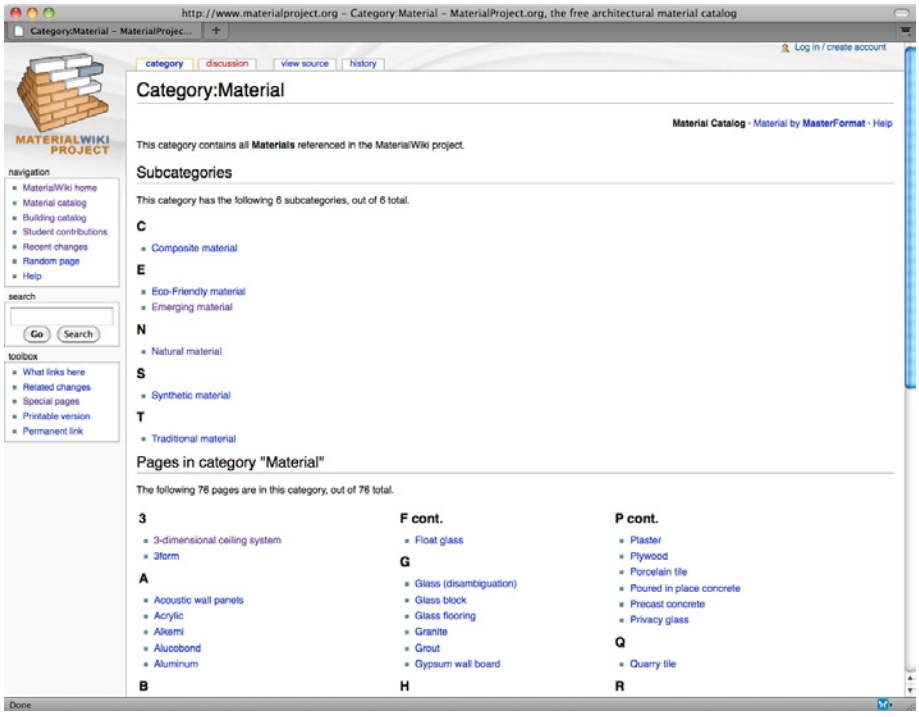

Figure 2: Material list page at MaterialProject.org

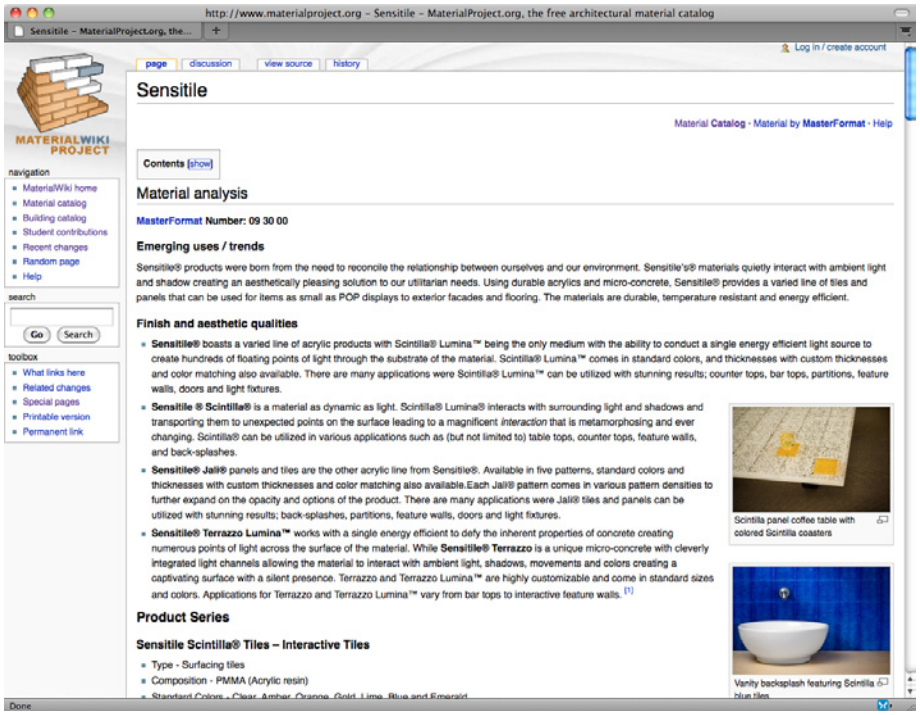

Figure 3: Sensitile article at MaterialProject.org

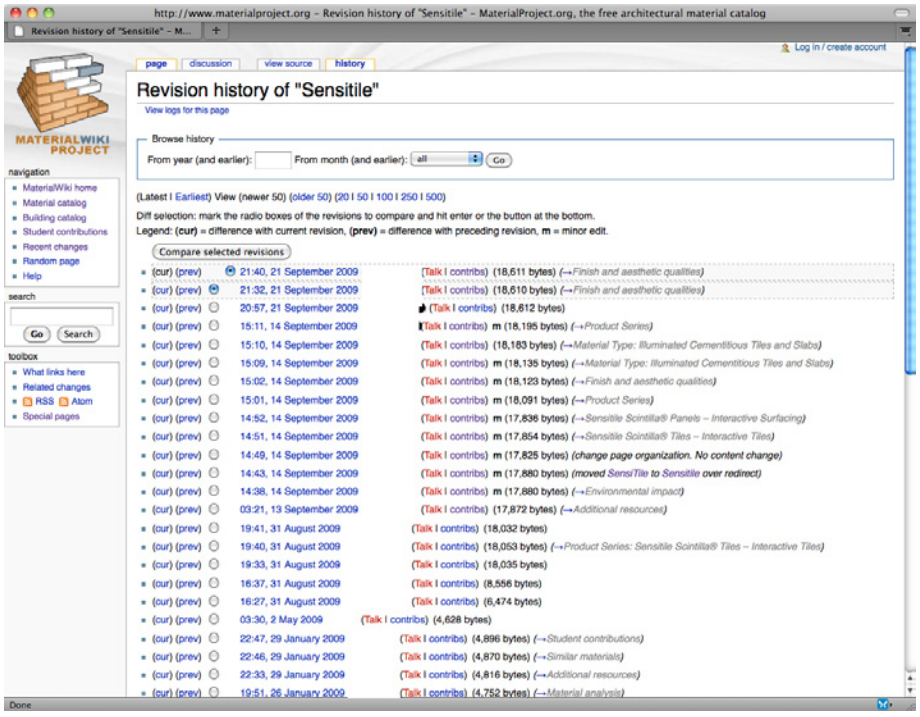

Figure 4: Sensitile article history at MaterialProject.org

research 1: **material wiki project**

Project Goals
This project will allow our class to collect and document multiple materials for use throughout the semester. Keep the following questions in mind as you work through this project:

- What is the relationship between the properties of a material and the ways it can be used to create and shape interior space?
- What are the similarities and differences between traditional and contemporary materials?
- How can explicit understanding of materials and their properties better prepare us when we design our own details?

Project Overview
Building on the 'knowledge base' of previous Materials & Methods studios, students will edit prior material research and contribute new material research to the MaterialWiki project.

www.MaterialProject.org

Students will select and *edit two (2) existing materials* from previous semesters the MaterialWiki project and *contribute three (3) new materials* to the project. For each material, students contribute written analysis for their materials including historic information, typical uses, and photographs when available. Students may also generate 2D and 3D diagrams/drawings of the material to illustrate its application in construction. The goal is that these drawings combined with the research will help students identify:

- **Material Analysis** - written analysis, technical data, material costs
- **Structural data** - material performance, dimensional restrictions, opening restrictions, assembly methods
- **Environmental impact** - embodied energy, geographic considerations
- **Life Safety** - flame spread, coefficient of friction
- **References** - research bibliography, manufacturer information, material use / building bibliography

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Figure 5: Sample assignment page 1

What's Due?

Wed January 14 Material Selection
By the beginning of class:
- select two existing materials to edit / maintain – primary research completed for one material;
- select three new materials to contribute

In Class:
- Students will copyedit one existing material on MaterialProject.org;
- Students will add one new materials on MaterialProject.org.

Wed January 21 Material Analysis
Edited material information contributed to **MaterialProject.org** before the start of class.

Wed January 28 Material Presentation
Two PowerPoint slides per material (e-mailed by 11:30 am)
Material information contributed to MaterialProject.org before the start of class.

Students will lead a discussion about their **contributed material** with the studio. Contribution should include:
- **Drawing Analysis** – 2D and 3D diagrams/drawings of the material to illustrate its application in construction.
- **Material Analysis** - written analysis, technical data, material costs
- **Structural data** - material performance, dimensional restrictions, opening restrictions, assembly methods
- **Environmental impact** - embodied energy, geographic considerations
- **Life Safety** - flame spread, coefficient of friction
- **References** - research bibliography, manufacturer information, material use / building bibliography

Mon February 2 Material Comparison
From our combined contribution to the MaterialProject.org, students are to select two materials that are most similar to the materials they researched (edited and contributed). Students will add *similar materials links* to their *edited* and *contributed* materials.

Figure 6: Sample assignment page 2

Teaching sustainability: A hybrid approach.

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University of Texas at San Antonio / Rees San Antonio

ABSTRACT

Interior design is one of the professions that carries responsibility of contributing efforts of sustainable development. It is now evident that development of sustainable strategies requires an integrated design process where all involved disciplines work together symbiotically towards shared goals. In response, interior design education needs to assimilate sustainable design issues into its curriculum in an integrated way. Though sustainability is becoming one of the essential components of many interior design curricula, this still typically happens in a piece-meal fashion. The same holds true with regard to collaboration with allied disciplines: while importance of collaboration at all levels of design process is widely recognized, little effort is made by interior design education to provide such collaborative opportunities. Another factor often ignored is the effect the space housing interior design programs has on student learning. Unfortunately many programs are located in spaces that exhibit the opposite of sustainable concepts and notions taught, which makes it difficult for students to accept and appreciate the advantages of sustainable design.

The 'hybrid' studio experiment described in the paper explored innovative tactics of integrating the concepts, principles, and methods of designing sustainably into the educational curricula in a holistic, integrated, and interdisciplinary manner. The task of redesigning the building housing architecture and interior design programs allowed students to take ownership, and to see how implementation of sustainable strategies can make a dramatic difference to their immediate environment. The paper describes and analyzes a 'hybrid' studio experiment, and links this one endeavor to the larger context of integrating sustainability considerations into the interior design curricula through a collaborative interdisciplinary and integrated learning experience.

NARRATIVE

There is doubt that the built environment greatly contributes to the efforts of sustainable development, and that interior designers, alongside with other design and construction professionals carry responsibility of developing strategies of making existing and new buildings more sustainable. It is also now evident that such strategies require integrated design process where all involved disciplines work together symbiotically towards shared goals. The integrated design approach incorporates all aspects of the project as primary parameters for design (Moe, 2008) without putting special emphasis on one specific factor. Keeler and Burke (2009) are convinced that to achieve more sustainable built environment an integrated design process is necessary, and the terms "green design" and "integrated design" should be thought of as equivalent. As designers comprehend the significance of impact early design decisions have on environmental performance of the building, such environmental performance criteria gains value. Interior design education needs to assimilate sustainable design issues to its curriculum in similar integrated way.

Sustainability is becoming one of the essential components of many interior design curricula. This trend is motivated by a combination of factors including professional demand, increased faculty awareness and student interest, accreditation requirements and influence of professional organizations (Posada, 2004). Wright (2003) identified three main approaches for integrating sustainability into design curricula: (1) implicit assimilation of sustainable issues throughout the curriculum, with no defined emphasis on "sustainable design"; (2) focused teaching of sustainability in existing environmental control systems (ECS) courses with the rest of the curriculum following traditional pattern; (3) explicit integration of sustainable design issues into all parts of the curriculum. While recognizing the advantages of the third approach, Wright observes that majority of design programs follow the second approach, despite increasing importance of sustainable design (Wright, 2003; Posada, 2004).

The same holds true with regard to collaboration with allied disciplines: while importance of collaboration at all levels of design process is widely recognized, little effort is made by interior design education to provide such collaborative opportunities. Russ and Dickinson (1999, p.52) acknowledge the lack of interdisciplinary collaboration is a problem encountered by many interior design programs in the nation, and this fact has been widely discussed in interior design educator's forums and publications.

Jackson (1999) believes that separation between disciplines, compartmentalization of faculty, and course content are responsible for this lack of interdisciplinary collaboration. The studio experiment described further in the paper attempted to overcome the above mentioned problems.

The 'hybrid' studio experiment built on Stieg's premise (2006, p. viii): "By nature and necessity, sustainable design is an interdisciplinary, holistic and highly integrative process". The described course responded to the fact that "Isolating interior design from architecture often creates a lack of integration between the interior and exterior space" (Russ and Dickinson, 1999, p. 52), and makes application of sustainable strategies piece-meal by integrating sustainable issues into the studio of two sections of interior design students, and two sections of architecture students collaborating on a semester long project. As in many other cases of interdisciplinary teamwork, 'hybrid' studio described in this paper had both advantages and disadvantages, lead to respect and comprehension of the complexities of different professions, and delivered higher quality projects than traditional studios.

Another factor addressed by the hybrid studio was raising awareness of interior design impact on environment by providing students with means of changing their immediate setting. Unfortunately many interior design programs are located in buildings that exemplify wastefulness, mindlessness, and disconnectedness (Orr, 2002) due to many factors. It is difficult for students to appreciate and accept notions taught in design courses when the setting of those courses exemplifies the opposite. The task of redesigning the building housing architecture and interior design programs allowed students to take ownership, and to see how implementation of sustainable strategies can make a dramatic difference to their immediate environment.

The aim of the hybrid studio was exploration of innovative tactics of integrating the concepts, principles, and methods of designing sustainably into the educational curricula in a holistic, integrated, and interdisciplinary manner. The design task given to interdisciplinary junior

teams of two interior design and two architecture students was development of sustainable solutions to improve the building housing both programs. Students began the project with analysis of aesthetic and functional characteristics of the building by surveying opinions of different user groups (students, faculty, administration, staff, etc). Based on the survey results and precedent analysis, each group of students proposed a program independent of constraints of the existing building. The next task was to fit the new program into the fabric of the building. Initial concepts of sustainability were introduced at this stage through requirements of retention of the existing building structure, maximizing use of daylight and natural ventilation, and prohibition of adding substantial amounts of conditioned space. Based on those additional requirements and space limitation, the program was prioritized and revised, leading to unique space plans for the building design by each team of students. From this point architecture students focused on re-designing the facade of the building based on 'high performance facade' concepts and creating new image for the building based on the relationship to the institution housed within. Interiors students focused on defining the character of the interior spaces, with an emphasis on a holistic view of the building and institution (Fig. 1), as well as sustainability issues such as indoor air quality, natural lighting and ventilation, and green materials and furnishings.

Energy performance simulation of the proposed designs using the performance simulation tool ECOTECT (Autodesk, 2009) was a large part of iterative process. ECOTECT is a building design and analysis tool that provides a range of simulation and analysis functions, and allowed students to evaluate the performance implications of their design decisions, thus resulting in a more informed decision making process. Final presentation included presentation program, space plan, interior layouts, graphic depictions of ECOTECT modeling, facade models and drawings, detailed interior and exterior elevation drawings, material board and perspective views of both interior and exterior spaces.

To summarize the experience, the hybrid studio was effective in raising students' understanding of the roles of each design profession, and the value of collaboration. The combined expertise of the four faculty involved offered students a range or knowledge not possible to provide by any individual instructor. Team work exposed students to the dynamics of integrated design teams from the development of shared goals to sharing different professional expertise, and required students to think both analytically and creatively, and develop their communication skills. The task of renovating the building the students spent their time allowed them to learn from the existing structure and to feel they are bringing a positive 'real' change. The use of simulation tools helped students to fully comprehend and appreciate the environmental implications of their design decisions and to use this information to inform their designs. In general, students' learning experiences were very effective and their final product impressive.

The success of one studio experiment described in this paper suggests great potential for effective integration of sustainability considerations into design curricula through much needed interdisciplinary, and integrated learning experiences. To become more effective, such changes will require a collaborative and interdisciplinary approach that includes architecture and interiors as well as other disciplines (e.g. engineering, planning, etc.), with unified goals and flexible curricula structure that can accommodate this change. Another change required is of the traditional studio format in which projects are evaluated either solely or primarily on the bases of their form/image to the format in which projects are evaluated comprehensively based on the criteria of environmental performance, and other design issues and objectives. It is very clear that no one experiment can affect assimilation of sustainable issues into the interior design curricula in an integrated and collaborative fashion. Administrative support and full curricula revisions are necessary at the level of multiple disciplines to promote collaboration and explicit incorporation of sustainability.

Figure 1: Interior elevations of the library and entrance lobby (Lisa Espinosa & Minerva Morales).

REFERENCES (APA)

Autodesk. (2009). *Autodesk Ecotect*. Retrieved from http://www.ecotect.com.

Jackson, B. (1999). Total studio: interdisciplinary collaborative design for engineering and architecture. *Proceedings of the 1999 ACSA Technology Conference*. Montreal: Canada.

Keeler, M. & Burke, B. (2009). *Fundamental of Integrated Design for Sustainable Building*. John Wiley and Sons.

Moe, K. (2008). *Integrated Design in Contemporary Architecture*. New York, NY: Princeton Architectural Press.

Orr, D. W. (2002). *The Nature of Design, Ecology, Culture, and Human Intention*. Oxford University Press.

Posada, D. (2004) Designing a way out of the box: Teaching sustainable design with technology. *Proceedings of the Solar Conference*. Portland, Oregon, 1203-1208.

Russ, R. R. &. Dickinson, J. (1999). Collaborative design: "Forming, storming, and norming." *Journal of Interior Design, 25(2), 52-58*.

Stieg, C. (2006). The sustainability gap. *Journal of Interior Design 32(1),.vii-xxi*.

Wright, J. (2003). Introducing sustainability into the architecture curriculum in the United States. *International Journal of Sustainability in Higher Education, 4(2),* 100-105.

Food for Design: Re-Conceptualizing the Grocery Store Cultivates Ecological Literacy (And Reaps Design Awards)

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ABSTRACT

This paper presents a capstone interior design studio in which ecological literacy is utilized as a pedagogical model in guiding students toward a broad vision of sustainable design. Renown ecologist David Orr (1992) submits that the "ecologically literate person has the knowledge necessary to comprehend interrelatedness, and an attitude of care or stewardship . . . ecological literacy further, implies a broad understanding of how people and societies relate to each other and to natural systems, and how they might do sustainably." (p. 92). The subject of design inquiry, a retail grocery store competition, was a natural vehicle for an ecological perspective. The students engaged systems theory, researching relationships and interactions within a diverse array of natural, commercial, and social systems. Most came to concur with Michael Pollan's (2009) view that restoring our food system requires "changes required at every link in the food chain: farm, marketplace, and culture". Not surprisingly, these links correspond with the well-accepted domains of sustainable design: ecology, economy, and equity.

As preparation for the studio, the students were directed to read Pollan's (2006) book, "Omnivore's Dilemma A Natural History of Four Meals", an exposé of biological, industrial, political, and cultural factors involved in food production. In addition, they were given readings in Barbara Kingsolver's "Animal, Vegetable, Miracle" and Paul Robert's "The End of Food". These readings provided rich fodder for discourse and self-reflection around the "ecology of agriculture" and the role of "human ecology". Outside experts in grocery retailing and branding, along with a field study of existing groceries, provided insight into business models and stimulated additional discussion around social issues related to the role of the grocery in communities. This extensive preparatory research took five weeks and culminated in a "pre-design proposal" in which the students committed to conceptual and aesthetic ideas. The second phase of the studio was more traditional, focused on developing the physical environment of the grocery and in preparing competition documentation.

The design solutions posit that the physical design of a grocery store can embody values that activate restoration of our current food systems. Three overlapping themes emerged:

Ecological model: on-site and local agriculture provides healthy food and sustainable ecosystems.

Business model: new paradigms for the grocery business include merging CoOp models with warehouse models, supporting decentralization of food supply, and introducing expanded program elements.

Experience model: provide social benefit by providing education and creating community at the grocery.

These transformative ideas, founded in multidisciplinary perspective, demonstrate the power of ecological literacy as pedagogy. The richness of the work is reinforced by juried review at the national level: students took the top three awards in the retail competition while another student placed second in a sustainable design competition.

NARRATIVE

PURPOSE

In the ongoing quest to envisage a meaningful sustainable design curriculum, there is a need for a pedagogical approach that that knits together a broad understanding of humans, society, and nature while cultivating agents of change. Renowned ecologist and educator David Orr (1992) promotes an ecological model, submitting the "ecologically literate person has the knowledge necessary to comprehend interrelatedness, and an attitude of care or stewardship" (p. 92). Systems theorist Fritjof Capra (2009) concurs, stating that "the survival of humanity will depend on eco-literacy, our ability to understand the basic principles of ecology and to live accordingly" (2009, Bioneers Radio). The ecological model is analogous with studio based design education: both study multi-variant problems by identifying connective patterns and potential. Integrative thinking is the substance of design studio, yet sustainable design paradigms can be elusive. The AIA COTE report, Ecological Literacy in Architecture Education (2006), found that sustainability was not well integrated across most curricula. Relevant courses tended to be concerned "with the techniques or mechanics of ecology, rather than the broader implications for culture and the study and practice of architecture" (p.44). Metropolis Magazine (2003) found similar anecdotal evidence in a report on sustainable design education, noting that teachers often found that "concepts like sustainability, systems thinking, and bio-inspiration were hard to grasp." With the intent of advancing pedagogy around sustainability, this paper presents a capstone interior design studio in which the problem, a design competition for a "Gourmet Grocery," is leveraged to cultivate ecological literacy. This complex problem, rooted in agriculture, is a natural vehicle for multidisciplinary systems thinking. Additionally, it manifests as a personal and cultural issue, rich in cues for students to reflect on their own lifestyles and values.

BACKGROUND AND METHOD

> *"Education is first and foremost a large conversation with technical aspects, not merely a technical subject." David Orr*

To better understand sustainability, it is informative to examine its semantic lineage. The word "sustain" is rooted in the Latin *sustinere,* meaning "to hold up". As a term, *sustainability* is used in many contexts but generally refers to protecting the environment while maintaining quality of human life. *Sustainable design* was defined by McClennon (2004) as "the philosophy of designing physical objects, the built environment and services to comply with the principles of economic, social, and ecological sustainability" (p. 4). However, he suggested that the term "ecological design" might better convey a meaningful philosophical direction (p.3). *Ecological design* was described by Orr (2002) as "a process that aims to increase local resilience by building connections between people, between people and the ecology of their places, and between people and their history" (p.180). Van der Ryn and Cowan (1996) took a slightly different approach, defining it as "design that minimizes environmentally destructive impacts by integrating itself with living processes" (p.18). *Ecology* crosses disciplines to study interactions between organisms and their environs, utilizing scientific method and systems theory. For their own purposes, the AIA COTE report defined *ecological literacy* as "interdisciplinary education centered on direct interaction with the environment in which it occurs," noting that it results in " better minds and better places" (p.1).

In reviewing these definitions, several themes emerge. The subject focus is on living organisms and their environments; human and natural systems are viewed as integrated rather than individual entities. There is recognition that sustainable design rests on pillars of ecology, economy, and social equity. Structurally, there is the understanding that fundamental interdependences exist between all phenomena. Therefore, the thinking is holistic, inclusive, non-linear, and multi-disciplinary. Philosophical underpinnings guide design. Finally, there is an ethical component, grounded in reverence for natural and human life and bearing the expectation of stewardship. These themes represent a significant departure from modern - industrial positions that tend toward an anthropocentric view in which nature is relegated to serve human needs. Yet it worth noting that a human-nature-systems paradigm is not new; in the early 20th century, trail-blazing educators Dewey and Montessori advocated for interdisciplinary, ecological approaches in education.

What we teach must be consistent with how we teach. The AIA COTE report noted that much of design education is still based on the "mentor model", characterized as the student being "filled up" with knowledge

from the professor (p.70). This observation is consonant with what educational theorist Paolo Freire (1970) disparaged as the "banking model," identified as typical in most schooling. He proposed a second model in which the student develops through the concept of "educe" or "drawing forth", a result of teacher-student dialogue, shared learning experiences, and critical thinking feedback loops. This resembles what the AIA COTE report describes as an "ecological model" of design: "multidisciplinary, participatory, iterative, designing for place, designing across time" (p. 76).

For the "Gourmet Grocery" design studio, there was no overt sustainability agenda. Rather, there was a deliberate intent to establish a learning environment that naturally cultivated an ecological approach to the design problem. The studio was guided by the philosophy that design is an opportunity to create mutually beneficial associations between the humans, society, and nature. This allowed the students to expand the boundaries of the problem, in scale and in discipline. The studio was structured around exposure to multi-disciplinary ideas, extensive collaborative discussion, and creative inquiry. Students were encouraged to draw from their personal knowledge - skill - experience repository and then were challenged to expand their frames of reference by probing the connective tissue between facts, theories, observations, experiences, and imagination. The problem was viewed as dynamic, interactive, and evolutionary; akin to an ecosystem.

PROCESS

"Eating is an agricultural act." Wendell Berry

The current popular dialogue around food created interest in the studio subject by suggesting the time is ripe for re-conceptualizing the standard suburban grocery store.

The pedagogical goals and activities align with the concept of an ecological approach to studio learning.

Comprehensive understanding of the scope of the problem. Research of the problem covered multiple bodies of knowledge including agriculture, nutrition, retail business practices, energy, consumer behavior, branding, grocery trends, food cultures and rituals. The students read **Omnivore's Dilemma** (Pollan, 2006) along with selections from **Animal, Vegetable, Miracle** (Kingsolver, 2007) and **The End of Food** (Roberts, 2008). Grocery and branding experts shared experiences and provided critique of student ideas. The students collaboratively built research files with relevant articles on a variety of topics. Field studies provided tangible observations, empirical evidence, and a variety of experiences.

Systems thinking. Pollan's book provided an incomparable view on the interrelatedness of agriculture and energy, the economy, transportation, eco-systems, nutrition, health, and culture. In developing solutions, students were directed to think holistically and to consider the concept of human ecology. Importantly, there was an emphasis on branding and its relationship to all links in the food chain, including the farm, the market, and the table.

Self-awareness with empathy for human-nature relationships. Again, Pollan's exposé became fodder for many discussions. Students shared personal experiences and cultural values with the impact of elevating self-awareness and ethical responsibility. Students also shared food and wine, in honor of nature's bounty and to "test drive" product ideas.

In terms of schedule, the studio invested as heavily in pre-design research and ideation as it did in schematic design work. Pre-design culminated in a finished booklet, a branded design proposal submitted as a first attempt at competition quality visual communication. These were juried as either "accepted, move to the next round" or sent "back to the drawing board." The schematic design phase of the project was more traditional, focusing on interiors strategies in support of the brand and design concept.

RESULTS

"Eventually, everything connects." Charles Eames

The design solutions posit that the branding and physical design of a grocery store can embody values and ideas that activate restoration of our current food systems. Despite the fact there was no explicit sustainability agenda, the students gravitated toward solutions that intersect and merge the three domains of sustainable design: ecology, economy, and equity.

Ecological model: on-site and local agriculture repair eco-systems, provide a better product, and reduce envi-

ronmental impacts.

Business model: new paradigms for the grocery business models with support for decentralization of food supply, and introduction of expanded program elements.

Experience model: provide social benefit by providing education and creating community at the grocery while valuing food culture and offering lifestyle solutions.

These transformative ideas, founded in multidisciplinary perspective, demonstrate the power of ecological literacy as a pedagogical approach. By inquiring deeply into the problem, students leveraged multidisciplinary knowledge and empathy to develop disciplinary responses that intentionally radiate impacts on multiple systems such as community, transportation, urban planning, health, economies, and agriculture. The process fostered intellectual, emotional, and creative understandings supporting the "drawing forth" of student consciousness and development of self-defined paradigms around sustainable / ecological design.

The value of the work was reinforced by juried review at the national level: students took the top three awards in the Retail Design Institute Student Competition while another student placed second in the IIDA Student Sustainable Design Competition.

REFERENCE LIST (APA)

Bioneers 2009 Radio Series. (2009, July 5). *Eco schools: educating for sustainable communities.* Podcast retrieved from http://www.bioneers.org/radio/2009-series/episode-3-eco-schools/?searchterm=eco%20schools

Freire, P. (2006). *Pedagogy of the oppressed: 30th Anniversary Edition.* New York, NY: Continuum. (original English translation published1970)

FORA.tv series. (2009, May 5)> *Michael Pollan: Deep Agriculture* [Video file]. Retrieved from http://fora.tv/2009/05/05/Michael_Pollan_Deep_Agriculture

Gould, K. and Hosey, L. (2006). *Ecology and design: Ecological literacy in architecture education*. American Institute of Architecture (AIA) Committee on the Environment (COTE) Report. Retrieved from http://www.aia.org/practicing/groups/kc/ AIAS074665

Kingsolver. B. (2007). *Animal, vegetable, miracle.* New York, NY: HarperCollins Publishers.

McClenon, J. (2004). *The philosophy of sustainable design.* Kansas City, MI: Ecotone Press.

Orr, D. (1992). *Ecological literacy: Education and the transition to a post-modern world.* Albany, NY: State University Press.

Orr, D. (2002). *The nature of design: Ecology, culture, and human intention.* New York, NY: Oxford University Press.

Pollan, M. (2006). *The Omnivore's Dilemma: A natural history of four meals.* New York, NY: The Penguin Press.

Roberts, P. (2008). *The end of food.* New York, NY: Houghton Mifflin Company.

Szenasy, S. ed. (2004, March 1). Sustainable design – 2003 school survey. *Metropolis Magazine.* retrieved from http://www.metropolismag.com/story/20040301/sustainable-design-2003-school-survey

Van der Ryn S and Cowan S. (1996) *Ecological Design*. Washington DC: Island Press, 1996.

Integrating Theory and Research into Third Year Studios

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ABSTRACT

As Interior Design faces serious questions about its future, and our struggle to secure a proper place among other academic disciplines continues, it is increasingly urgent that interior design educators prepare students early in their academic education to think beyond the practical to the theoretical. Yet, how do we go about providing undergraduate students with the necessary skills to "do" certain tasks, while at the same time develop their thinking to go beyond the pragmatic considerations of the design problem to explore its theoretical underpinnings? I submit that it is the studio environment that forms the backdrop for critical interior design discourse. This being the case, it is then the responsibility of studio instructors to engage the students in theoretical discussion and critique.

Taking this challenge to heart, several approaches were developed to integrate theory into a 3rd year studio environment. The studio was taught by a team of three instructors and split into sections of 13-15 students each. The instructors agreed on the projects that would be taught before the semester began as well as the appropriate theoretical orientations to integrate into the studio environment. Although each instructor was responsible for grading his/her own sections, one person was appointed as the lead on theory integration.

In this case study, the faculty agreed that Art Theory would be integrated into the first studio project and third place theory (Oldenburg, 1999) into the second (and primary) project of the semester. The first project, the design of an artist's retreat, was small in scale, required a shorter completion time, and placed emphasis on volumetric exploration, although pragmatic issues were still considerations. In contrast, the second project, the design of a food court, was much larger in scale, allowed for a longer time for completion, and placed emphasis on both pragmatic and theoretical considerations. (See project outlines, assignment sheets, and student outcomes in Appendix.)

Various techniques were used to raise the theoretical consciousness of the students and to help bring theory alive for them. The instructor in charge of theory for the studio prepared lectures to help orient students and research articles on art theories and third place theory (Oldenburg, 1999; Waxman, 2006) were assigned as readings with quizzes over the material. Research projects that included techniques such as participant and non-participant observation, interview, and semantic differentials were assigned in the programming and predesign phases of the project to increase and reinforce students' understanding of the importance of research in theory building and integration. Lastly, student teams prepared Power Point presentations of community settings they had observed and determined to be third places. Each team critically evaluated the setting they had chosen and presented their results to the entire class.

This case study provides several strategies for integrating theory into studio courses. There are, undoubtedly, other approaches and methodologies that would be equally useful and successful. Hopefully, this example will provide the opportunity for more dialogue on this important topic.

NARRATIVE

As Interior Design faces serious questions about its future, and our struggle to secure a proper place among other academic disciplines continues, it is increasingly urgent that interior design educators prepare students early in their academic education to think beyond the practical to the theoretical. With the current focus on evidence-based design (EBD) the need to prepare young designers with the tools to understand, critically review, and apply research and theory in their design solutions becomes increasingly important.

The origins of evidence-based design can be traced to the medical and healthcare professions with an emphasis on evidence-based medicine (EBM). Evidence-based medicine "requires the integration of the best research evidence with our clinical expertise and our patient's unique values and circumstances" (Straus, Richardson; Glasziou & Haynes, 2005). In design, this translates as "a process for the conscientious, explicit, and judicious use of current best evidence from research and practice in making critical decisions, together with an informed client, about the design of each individual and unique project" (Stichler & Hamilton, 2008).

The recent emergence of interior design firms with a focus on evidence-based design, along with the preponderance of discussions about design thinking and knowledge generation within the design disciplines, clearly reinforces the need for interior design educators to integrate theory and research into the learning environment. I submit that it is the studio environment that forms the backdrop for such critical interior design discourse. Yet, how do we go about providing undergraduate students with the necessary skills to "do" certain tasks, while at the same time develop their thinking to go beyond the pragmatic considerations of the design problem to explore the theoretical underpinnings? How do we engage the students in theoretical discussions and critique so that they see these as meaningful and applicable to design problem-solving?

With these concerns in mind, the interior design faculty at a public, land grant university agreed to integrate core theories into each studio experience. Once the appropriate theoretical context was determined for each level of studio, the challenge became implementation. This paper presents a case study of a third year studio where exploration of research and a grasp of the theoretical context of the project were essential components of the design process.

The studio was taught by a team of three instructors and split into sections of 13-15 students each. The faculty team met before the semester began and discussed the nature of the projects to be assigned and agreed upon the appropriate theoretical orientations for each project. Although each instructor was responsible for grading his/her own section, one person was appointed as the lead on theory integration. Several approaches were discussed as possible methods of integrating research and theory into the studio—with an emphasis on identifying ways that students would find valuable, rather than perceive as "busy-work".

In this case study, the program is taught on two campuses of the same University. The first and second years of the program are taught at the main University campus located in a rural setting. The third and fourth years of the program (plus the graduate program) are taught at the branch campus located in an urban setting. Students must physically move from one location to another when they begin their third year.

This being the situation, the faculty were sensitive to fact that the students were experiencing change and just getting settled into their new environment. As such, the faculty agreed that the first studio project should be less technical and focus on creativity and art theory. The project, *A Painterly Space—and Artist's Retreat,* was small in scale, required a short completion time, and placed emphasis on volumetric exploration, although pragmatic issues were still considered. Students were asked to create an inspirational space "that is a spatial and visual release from traditional housing and that celebrates light and view." A modern art painting (cubist, expressionist, constructionist, de stijl, or abstract) was designated as a point of departure for the design concept. (See Figures 1, 2, for examples of student projects.)

The second project, *A University Food Court,* was the primary vehicle used to integrate research and theory into the design process. In contrast to the first project the design of a food court, was much larger in scale, allowed for a longer time for completion, and placed emphasis on both pragmatic and theoretical considerations. The site for the food court was a portion of old

warehouse owned by the University and the project required an in-depth examination of the literature on place attachment, specifically as it related to third place environments. The students were told that the ultimate goal of the project was to create a third place environment—a place where "the regular, voluntary, informal, and happily anticipated gatherings of individuals beyond the realm of home and work" can occur (Oldenburg, 1999, p. 16). The challenge presented to the students was to create a space that both encouraged gathering behavior from students and other members of the community while also supporting an economically viable business.

(See project outlines and assignment sheets and student outcomes in Appendix.)

Various teaching approaches were employed in each project to help raise the theoretical consciousness of the students and to bring theory alive for them. The instructor in charge of theory for the studio prepared lectures to orient students and to introduce appropriate research articles. In the case of Project 1, the painterly space, lectures articulating the philosophies of various artists and art movements were provided. In addition, students were asked to select a particular artist and a painting as inspiration for their design. For Project 2, the food court, lectures on place attachment and third places were provided and, in the programming and pre-design phases of the project, students were given assignments that required them to identify and explore third places in the community. Various research techniques such as participant and non-participant observation, interview, and semantic differentials were discussed in studio and utilized in the students' explorations. The intent of these exercises was to increase and reinforce students' understanding of the importance of research and theory in design problem-solving, while at the same time increase their understanding of the difference between research techniques and simply gathering information. Short quizzes were given over the lectures and research reading assignments. The exercises culminated in the presentation of a PowerPoint lecture by each student team which critically evaluated the settings they had chosen to examine as third places. Each student team was expected to justify their choices through the literature on place theory.

How successful were the faculty in developing a studio culture that reinforces the importance of research and theory in the design process? Are the students more aware of evidence-based design and the difference between "gathering information" and the integration of research and theory into the design process? Did the focus on research and theory make a difference in their design-problem solving? Although these questions are difficult to answer, and the results are hard to measure because of their intangible nature; they are worthy of continued discussion among the faculty and design educators at large. I submit that positive results will become evident over time as these and other approaches for integrating theory into the design process permeate each studio, each semester, and each year of the program. The experiment continues…

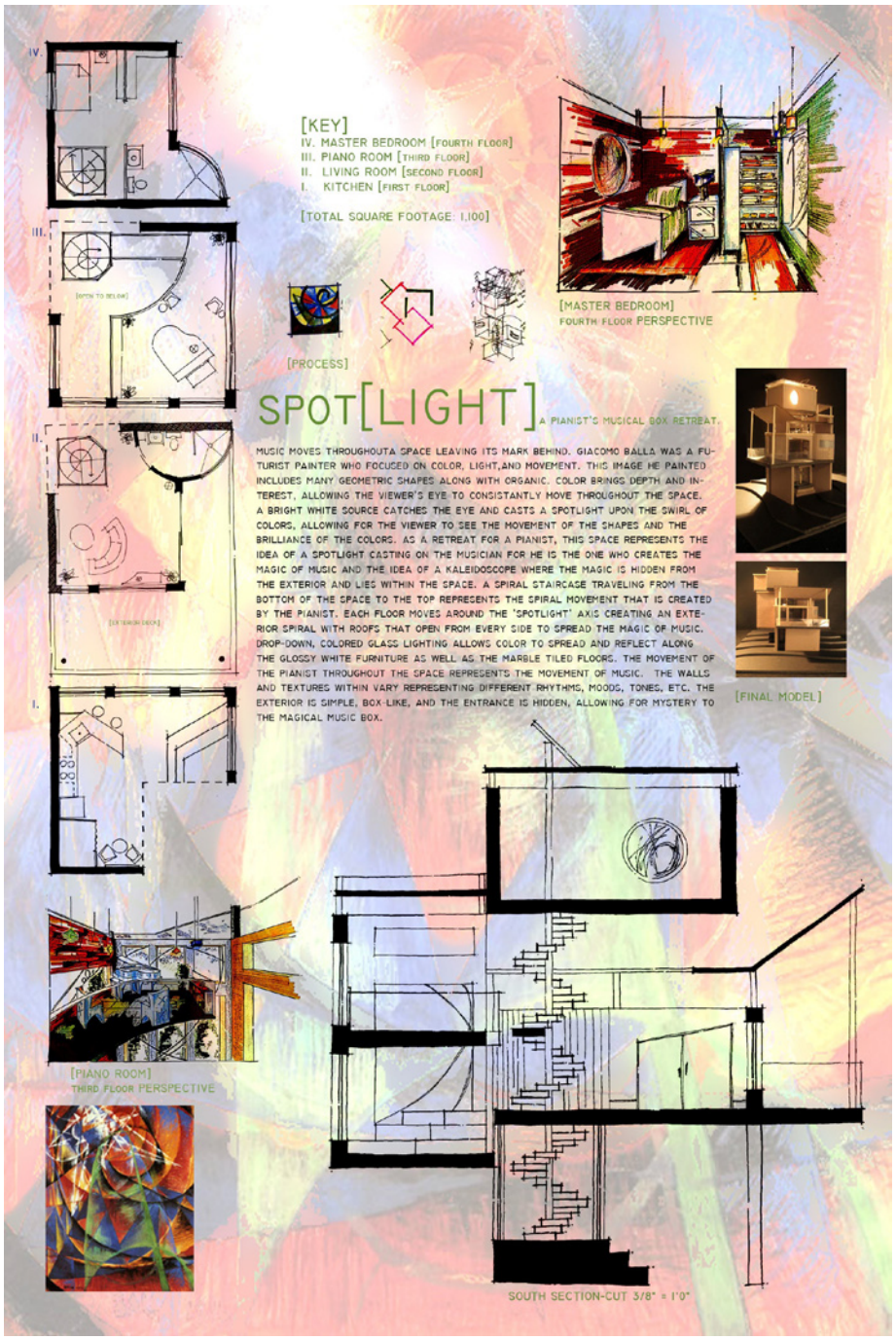

Figure 1:Example of Student Project: A Painterly Space

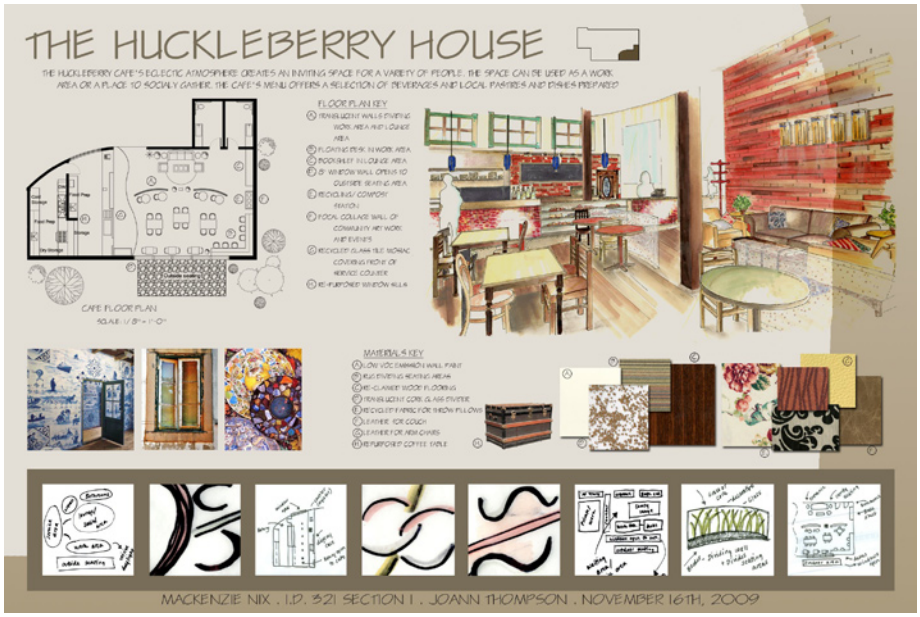

Figure 2: Example of Student Project: A Food Court

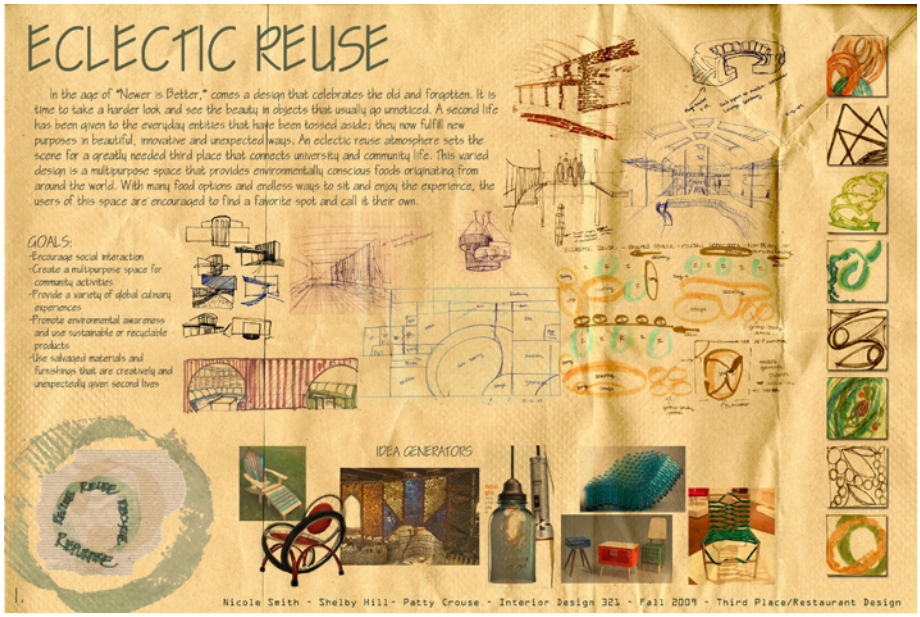

Figure 3: Example of Student Project: A Food Court

PROJECT 2
Course INTERIOR DESIGN 321
Title Fundamentals of Planning and Design I

Assignment **THIRD PLACE CASE STUDY**
Team: Semantic Differential & Individual Papers **DUE: Friday, October 2**
Team PowerPoint Presentations **DUE: Monday, October 5**

Required Readings **Note: There may be a QUIZ on the required readings**
Waxman, L. (2006). The coffee shop: Social and physical factors influencing place attachment. *Journal of Interior Design, 31(3),* 35-53.

You will be assigned to a group of three (3) people with whom you will work closely to identify, observe and analyze a place in the community that you think is an example of a *third place*. Your selection is not limited by the level of food and beverage services offered, e.g. coffee shop vs. full-service restaurant vs. café, etc., however, you must use information from the assigned readings as well as in-class discussion to defend your choice.

Your case study will be a 3-part research assignment including:

1. **Observation, Analysis and Documentation** – Each member of the group will be responsible for individually preparing a written analysis of observations specific to your selected case and must relate these observations back to the class readings and discussion. Be sure and include an analysis of the semantic differential results. *Your paper must be a minimum of 500 words, double-spaced, 12 point font.*
2. **Presentation** – Each group will prepare a 10-min. PowerPoint presentation for the class. At a minimum, your presentation should include:
   - Photographs of your selected place.
   - A parti diagram illustrating spatial organization.
   - A discussion of how your selected place qualifies as a *third place* based on information gathered from the readings.
   - A summary of your observations.

Figure 4: Project Outline and Assignment Sheet

REFERENCE LIST (APA)

Brown, B. B. & Perkins, D. (1992). Disruptions in place attachment. In I. Altman & S. Low (Eds.), *Place attachment.* New York: Plenum Press, 279-304.

Oldenburg, Ray (1999). *The great good place.* New York: Marlowe & Company.

Oldenburg, Ray. (2003). Third placers. In: Christenson, K, Levinson, D. (Eds.) *Encyclopedia of Community.* Thousand Oaks, CA: Sage, 1373-1376

Ryan, Robert L. (2005). Exploring the effects of environmental experience on attachment to urban natural areas. *Environment and Behavior, 37(1),* 3-42.

Straus, SE; Richardson, WS; Glaszio, P & Haynes, RB (2005). *Evidence-Based Medicine.* 3rd ed. Elsevier: Oxford.

Waxman, Lisa. (2006.) The coffee shop: Social and physical factors influencing place attachment. *Journal of Interior Design, 31(3),* 35-53.

Empowering Students: The Application of Experiential Learning Theory, Open Space Technology, and "Student Voice" to a Vertical, Multidisciplinary Charette

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Interdisciplinary Design Institute / Washington State University – Spokane

ABSTRACT

In 1999 Kevin Kelly, co-founder of *Wired* magazine, recognized that "in the emerging, networked world of information-based economies, learning is becoming more important than productivity in determining a person's … adaptation, survival, and growth" (Sternberg & Zhang, 2000, p. 244). This professional "flexibility" is a requirement for success in increasingly complex and service-oriented jobs. As educators, we are responsible for instilling a strong educational foundation that facilitates flexibility, as well as a sense of self-confidence and independence in our students.

Scholarship on teaching and learning has consistently championed Kolb's (1984) experiential learning theory as an effective tool to help produce the traits listed above (Sternberg & Zhang, 2000). Another method that encourages self-confidence and independence is that of Open Space Technology (Owen, 1997) that requires participants of an event to craft the event itself. Owen's core foundations are similar to those of student-centered learning and "student voice" that encourages student participation in the development of their educational experiences (Mitra, 2004).

This teaching forum discusses the successes and challenges of a team-oriented, vertical, multidisciplinary charette that embraced Kolb's experiential learning theory, Owen's Open Space Technology method, and the practice of student voice with the intent of challenging and empowering students' collaborative skills in a multidimensionally diverse team experience.

The overarching goal of the annual charette is to create a sense of community amongst the students (junior, seniors, masters, doctoral) and disciplines (industrial design, interior design, architecture, landscape architecture) at the Interdisciplinary Design Institute. The charette committee faced the challenge of creating an experience that did not privilege any one group by age, degree, or discipline. They also recognized the need to introduce the students to their new home, Spokane, as many undergraduates were moving here from around the state, and many graduate students were coming from other parts of the world. Consequently, the committee agreed upon four learning objectives: 1) introduce students to the city of Spokane, 2) foster creative and critical thinking, 3) understand and negotiate team dynamics, and 4) enhance communication skills.

Students were provided the following problem statement. "Using Kevin Lynch's vocabulary (path, edge, node, district, landmark) from The Image of the City each team will analyze and critique a self-defined human experience in a self-defined area of Spokane." For example, students could study wayfinding in a mall or community interaction in a neighborhood. Students were empowered to choose their own topic and area of study based on the team's interest with broad guidance from the problem statement. The outcomes were a poster demonstrating the team's planning and process, and a video to communicate their findings.

Student projects exceeded both faculty and student expectations, not only in the degree of critical thinking, but also in the delivery of the technology. Students had never been asked to produce videos and received no instruction. Many had to master the technology within the 42-hour time frame. A follow-up student survey revealed a high degree of satisfaction regarding the team's posters and videos, and the experience overall. The presentation discusses the challenges and successes of this charette, and offer suggestions and refinements to further support our outcome goals.

NARRATIVE

In 1999 Kevin Kelly, co-founder of *Wired* magazine, recognized that "in the emerging, networked world of information-based economies, learning is becoming more important than productivity in determining a person's … adaptation, survival, and growth" (Sternberg & Zhang, 2000, p. 244). This professional "flexibility" is a requirement for success in increasingly complex and service-oriented jobs. As educators, we are responsible for instilling a strong educational foundation that permits flexibility, as well as a sense of self-confidence and independence in our students. Our goal is to create life-long learners.

This teaching forum discusses the successes and challenges of a team-oriented, vertical, multidisciplinary charette that embraced Kolb's experiential learning theory (go out and do), Owen's Open Space Technology method (define your own experience), and the practice of student voice (freedom to speak and ability to hear) with the intent of challenging and empowering students' collaborative skills in a multi-dimensionally diverse team experience.

LITERATURE REVIEW

Scholarship on teaching and learning has consistently championed Kolb's (1984) experiential learning theory as an effective tool to help produce the traits listed above (Sternberg & Zhang, 2000). Another method that promotes self-confidence and independence is that of Open Space Technology (Owen, 1997), which requires participants of an event to craft the event itself. Owen's core foundations are similar to those of student-centered learning and "student voice" that encourages student participation in the development of their educational experiences (Mitra, 2004).

LEARNING OBJECTIVES

The overarching goal of the annual charette is to create a sense of community amongst the students (junior, seniors, masters, doctoral) and disciplines (industrial design, interior design, architecture, landscape architecture) at the Interdisciplinary Design Institute. The committee faced the challenge of creating an experience that did not privilege any one group by age, degree, or discipline. They also recognized the need to introduce the students to their new home, Spokane. Consequently, the committee agreed on four learning objectives: 1) introduce students to the city of Spokane, 2) foster creative and critical thinking, 3) understand and negotiate team dynamics, and 4) enhance communication skills.

PROJECT DESCRIPTION

Students were provided the following problem statement. "Using Kevin Lynch's vocabulary (path, edge, node, district, landmark) from The Image of the City each team will analyze and critique a self-defined human experience in a self-defined area of Spokane." For example, students could study wayfinding in a mall or community interaction in a neighborhood. Faculty intentionally empowered the students to choose their own topic and area of study based on the team's interest with broad guidance from the problem statement. Students produced a poster (see figure 1,2) demonstrating the team's planning and process, and a video (http://www.youtube.com/watch?v=AIsG21pyRVU) to communicate their findings. They had 42 hours from start to finish.

PROCESS

Other than the chapter on Lynch's (1969) The Image of the City, which students read prior to the informational meeting, the charette began Wednesday at 4pm and lasted until noon on Friday. Following the informational meeting, students went to the IDI gallery to find their teams posted. The committee structured the teams of four to include both undergraduate and graduate students and representatives from at least two disciplines from a pool of 10 doctoral students, 21 graduate architecture students, 22 graduate interior design students, 3 graduate landscape architecture students, and 85 undergraduate interior design students. The team's first assignment was a team building exercise, which required them to get to know each other and come to agreement as to how decisions were to be made. The process also required students to self-analyze their strengths and weaknesses as designers. Many teams divided the work based on a team member's self-identified skill set and knowledge creating a higher degree of comfort with the project and a sense of ownership, responsibility and accountability.

Each team was asked to discuss Lynch's terms (path, edge, node, district, landmark) as it relates to their individual discipline. The team had to agree upon a definition for each that the team used for the analysis phase of the project. The team's then chose both the area of Spokane and the human experience they wanted to

analyze. Faculty made available numerous resources to assist the students, including GIS maps of Spokane and various websites (see Appendix II). Each group had to come up with three scenarios (place and behavior), because the committee did not want multiple groups to study the same area. This enhanced the learning objectives because students had to become familiar with various parts of the city, not just a first choice. The following morning students lined up at 9:00 am to begin the selection process.

The faculty created a large map of Spokane using the institute's GIS lab. The map was posted on the wall. In the order in which they arrived, the team's presented their primary idea to one of the faculty. The team had to justify the relationship between the site and the behavior. If an area became saturated, then the faculty member asked the team to present their other options. In some cases, these were more creative and provocative. Students marked their site on the map with a team-designed logo and used a string to connect to a 4" x 6" detail map of the site and description of study. The selection process was complete within the hour and the students began their analysis as well as the production of the poster and video.

The purpose of the poster was to reveal the team's process that led to their final selection. The 2½- to 3-minute video took the form of an exposé or promotional piece for the city of Spokane. Students had to communicate clearly the impact of Lynch's terms on the selected human behavior. (See Appendix II for a full list of requirements.)

RESULTS

Student projects addressed issues of wayfinding in parks, malls and neighborhoods; community engagement in many of Spokane's neighborhoods; security and safety; walking pets; green living practices; and even the plight of the homeless who claim implied interiors created by an interstate overpass. Both faculty and students were impressed with the final outcomes. Posters and videos demonstrated the students' abilities to think critically and creatively, to navigate team dynamics to positive ends, to delegate work based on self-identified skill strengths, and to negotiate and value multi-disciplinary, vertical experiences.

REFLECTIONS

Upon reflection, the committee recognized that certain aspects worked very well. 1) Allowing students to choose their own location and human experience as the topic of their inquiry promoted a high level of interest and enthusiasm that helped them accomplish the first two learning objectives – introduce students to the city and foster creative and critical thinking. 2) Articulating parameters for the project was important. Faculty provided students with the general topic (select a location and a human behavior) and the means to organize the inquiry (Lynch as the theoretical framework). This was particularly important for such a short charette. 3) Finally, requiring the video as a final product revealed two things. First, a number of students were very familiar with this technology. Second, by working in groups, students learned a skill from their peers and the fear of video technology was greatly reduced, even for faculty members who do not have this expertise (such as the authors) and tend to avoid it.

Some particulars of the project can be improved upon. For example, the team-building exercise was not overseen by the faculty. We intentionally left them alone. Some teams embraced the exercise and others did not. It would be advantageous to direct this exercise to make sure all team members are being heard and to improve the effectiveness of the team experience. One possibility is to extend the "open space technology" concept to allow students to self-select teams, although this process may need to be structured in a way that insures team diversity. From a technical standpoint, we could have provided better video support by verifying which devices are available for recording, making suggestions for video formats the lab can handle, and ensuring all teams have a device that will work with the editing software. Finally, discussion did occur regarding the disparity of age and experience of the team members. In fact, it was the doctoral students who found it the most difficult to find their "place" in this project. Some voiced concerns about not being respected as a leader, others thought they should sit back and let the other students (undergraduate or masters) drive the project. Surveys indicated that their participation was valued, but the doctoral students have asked to take on a different role in the future.

CONCLUSION

Final projects exceeded both faculty and student expectations, not only in the degree of critical thinking, but also

in the delivery of the technology. A follow-up student survey revealed a high degree of satisfaction regarding the team's posters and videos, and the experience overall. We believe the effectiveness of the learning outcomes reflect the sense of empowerment the students experienced with this project by incorporating Kolb's experiential learning theory (go out and do), Owen's Open Space Technology method (define your own experience), and the practice of student voice (freedom to speak and ability to be heard).

REFERENCES (APA)

Kelly, Kevin. (1999). New rules for a new economy: 10 radical strategies for a connected world. New York: Viking Press.

Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. New Jersey: Prentice-Hall.

Lynch, K. (1960). The image of the city. Cambridge, MA: MIT Press.

Mitra, D. (2004). The significance of students: Can increasing 'student voice' in schools lead to gains in youth development? Teachers College Record, 106(4), 651-688.

Owen, Harrison. (1997). Open space technology: A user's guide. San Francisco: Berrett-Koehler Publishers.

Sternberg, R. J., & Zhang, L. F., eds. (2000). Perspectives on cognitive, learning, and thinking styles. New Jersey: Lawrence Erlbaum.

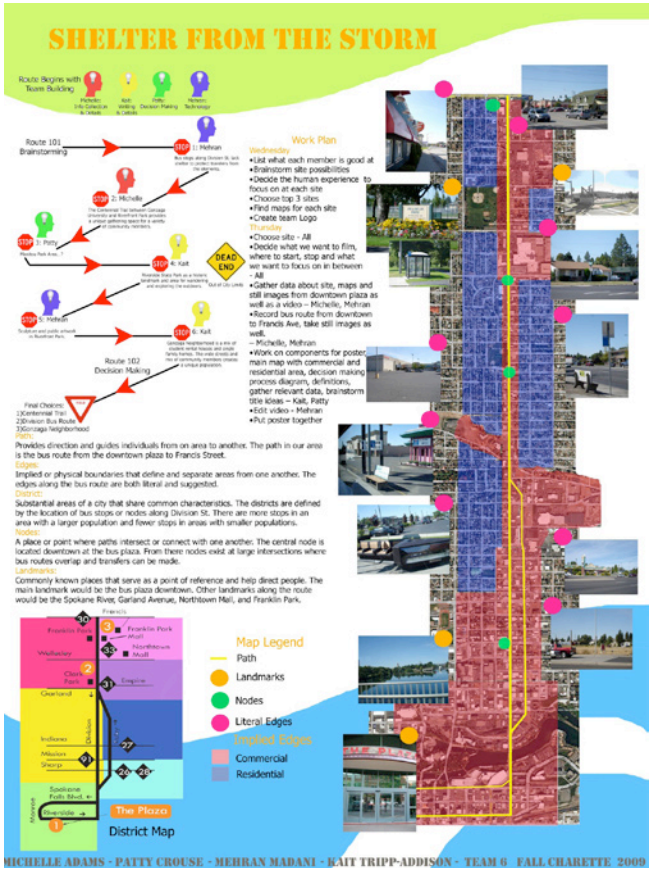

Figure 1: Sample poster from a team studying bus shelters along Division Street, the major north/south corridor of Spokane. Poster includes the following information: team definitions, diagrams of teaming and decision-making, work plan, site and human experience.

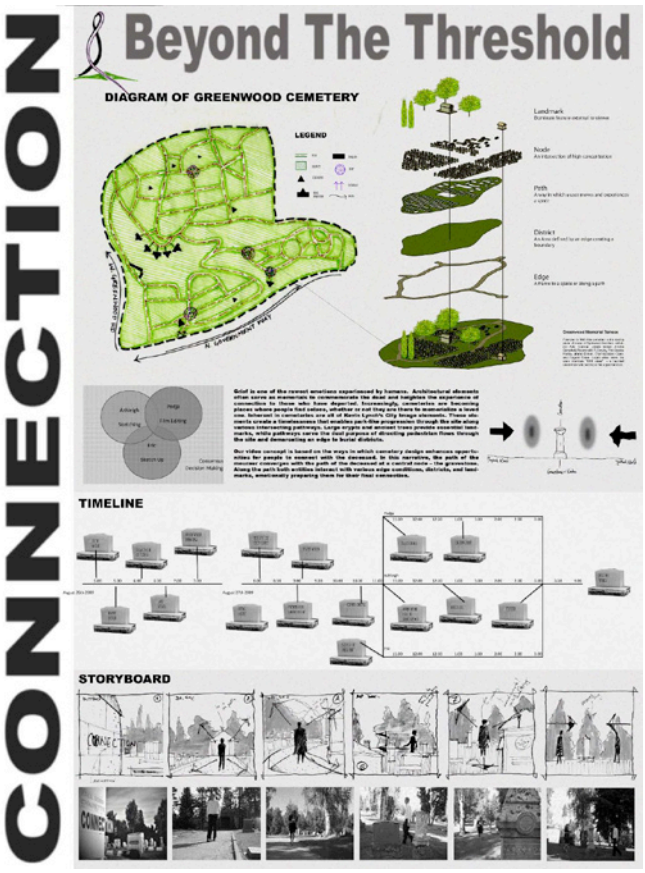

Figure 2: Sample poster from a team studying grief and mourning in a cemetery. Poster includes the following information: team definitions, diagrams of teaming and decision-making, work plan, video storyboard, site and human experience.

e.vocative [S]itations

2009 Interdisciplinary Design Institute Fall Charette

Learning Objectives
The intent of this charette is to 1) introduce students to the city of Spokane, 2) foster creative and critical thinking, 3) understand and negotiate team dynamics, and 4) enhance communication skills.

Project Description
As a student of design, you likely look at the built environment differently than most. Buildings are more than just structures; interiors are more than paint and furniture; landscapes are more than beds of flowers. There is meaning and intent in all aspects of our surroundings. You have developed this lens through your education and it is time to express this viewpoint to a larger audience.

Each team is going to produce a presentation that introduces the viewpoint of the designer to the community of Spokane. Using Kevin Lynch's vocabulary (path, edge, node, district, landmark) from The Image of the City each team will analyze and critique a self-defined area of Spokane. Your video could turn out to be a promotional piece for the city of Spokane OR an exposé on some of its problems. Your team's findings will determine this outcome.

Process

1. Prior to Wednesday: Read the chapter on Lynch's The Image of the City provided via email on Friday. It is also available on the network. Be sure to understand the *spirit* of Lynch's definition.

2. Wednesday Evening: There are three things that must be decided by the team. Do not assume that these need to be done in the following order. The team may be inspired and/or guided by their definitions, interest in a particular area of Spokane, or a specific human experience.
    - As a team, discuss the Lynch reading and then define what the terms "path", "edge", "node", "district" and "landmark" mean to your individual disciplines. Come to a consensus on the definitions that your team will use for the analysis phase of the project. Do not assume that you have to use Lynch's precise definitions. Consider keeping your definitions conceptual so that they are not too limiting.
    - Select three "areas" of Spokane that you wish to explore. You will only have to do one, but selection will be on a first come, first serve basis. The only restriction is that you be able to speak about path, edge, node, district, and landmark in the selected area. Note that it is just as informative to discuss instances where one or more of these does not exist.
    - The team also must consider what human experience they wish to explore. Do you want to look at issues of security, wayfinding, wandering, community engagement, play, work, or commuting? For example, if someone was new to the campus, what would be their experience (wayfinding or wandering) visiting the campus for the first time? How does the built environment pull or push them in certain directions? Where might they pause? Should they be pausing? Are the forces at play examples of paths, edges, nodes, districts or landmarks? Is the site legible? Can you navigate it easily?
    - Having made all of these decisions, the team needs to prepare a separate blow-up map of each area (must fit in a 4" x 6" area, but does not have to be rectangular). Visually

highlight your area and communicate through text, objects, drawings and/or images (2D and/or 3D) what you will be studying. Is it a casual walk through a neighborhood, wayfinding in the city, the experience of a commuter, the experience of a shopper? Next, quickly create a logo for your team. The logo needs to fit in a 1" x 1" space. Bring three of these on stick pins with you for the selection process on Thursday morning.

- Finally, create a work plan. Time is short and you must be efficient, yet effective over the next 42 hours.

3. Thursday morning: Selection of the team's site will begin at 8am in the Court at the SSCF. Arrive no later than 9am as the process will close at 9:30am. Be sure to bring all of your blow-up maps and three logos.

4. Thursday - Friday: The team must now visit and critically analyze the site based on the team's self-identified definitions and human experience. Remember to consider whether or not the path, edge, node, district and landmark support the intended experience or challenge it. Once you have completed the analysis, start thinking about how you will construct the video. You will have two deliverables: a poster and a video. The poster will communicate your team's process (see Deliverables for more detail). The video is the final expression of your study and findings. Use narrative, music, etc. to assist in the communication of your message. Remember that this is a video for the public, so be professional, be creative, and help educate the people about the integration of their daily lives and the built environment.

Tools

Each team will need at least one video recording device (phone, camera or video recorder). All students should have immediate access to their laptops.

Resources

Selected sections (chapters 1-3, Appendix C) of Lynch's *The Image of the City*

Maps of Spokane with designated neighborhoods and satellite imaging can be found on the network at \\keystone\Students\2009 Charette\Resources\SpokaneMaps.

Spokane Regional Site Selector: can assist you in locating businesses, bus routes, etc. http://selectspokane.com/ed.asp?bhcp=1

Lifeplan Improvement through Feasible Transportation Services: LIFTS uses an online mapping application to help you find the most direct route of travel to your daily destinations. It can locate housing, businesses, childcare, bus routes, and much more. http://lifts.wsu.edu/

MovieMaker has been installed on all lab computers in SCLS 150 and SSCF 216. You may also download MovieMaker (for XP or Vista) onto your laptop.

Audacity: a free, cross-platform sound editor (http://audacity.sourceforge.net/). This can be downloaded on your personal laptop.

Project Deliverables

Selection of Site

On Thursday morning you will have the opportunity to identify your site. You must bring three of your 1" x 1" logos, and your three detailed maps (no bigger than 4" x 6").

Process Poster

The poster should include the following information:

- Provocative title for the project (will be the same for your video presentation)
- The team's definitions of path, edge, node, district, and landmark
- Diagram of the team's decision making process and team structure
- Diagram of the site indicating paths, edges, nodes, districts, and landmarks
- Relevant data: sketches and photographs of the area
- Work Plan

The poster (18" x 24" vertical or horizontal) must be hung in the Phase I gallery and a digital copy uploaded to the network by 9am on Friday, August 28. Title the file by using your team number, for example, Team12_Poster.pdf.

Video Presentation
Each team will produce a 2.5 – 3 minute video/powerpoint presentation. Using video, images (e.g., photographs, sketches) and narrative (perhaps music?), communicate your findings. Lead the viewer through the experience; provide a narrative to communicate the critique. Is something (path, edge, node, district, and landmark) working well or not? Is there a missed opportunity? Remember that the video can be viewed as a promotional piece or an exposé. Have fun and be creative!

Public Dissemination
Our ultimate goal is to make all of these available to the public, perhaps through some mechanism like youtube. So, please make sure that your final product is professional.

Evaluation
Jurors will review posters and videos for content, craft, and communication. Prizes will be awarded to the top submissions; however, *entries that do not include the minimum requirements listed under Deliverables will be disqualified from judging*.

Team Building Assignment: Wednesday, 5:15 when the teams are formed
Before you jump to working on the charette assignment, your team **must complete** the following assignments:

1. Get to know each other – each person takes 2 minutes to tell each other what you are really good at and how you can contribute to the team – what is your "super power?" (You can also mention what you're not so great at…)

2. Your first decision - decide how your team will make decisions:
    a. majority rule? (what if the vote is 2 to 2?)
    b. consensus? (keep talking until you all agree)
    c. delegate? (decisions divided up among team members)
    d. designate a leader? (decisions made by leader after consulting team)

   Your team may end up using more than one of these methods at different times during the charette, but become clear about your preference and stick to it as much as possible.

   Take as long on this as you need, but do it before you begin any other work

Teamwork Tips:

Have open and honest conversations – listen carefully to each other and speak up about what you are thinking; remember, listening is not waiting for your turn to talk; if someone is not saying anything, ask for a comment.

Explore impasses by identifying what is agreed to, and where there are disagreements.

Balance inquiry with advocacy – in other words, ask questions and try to understand someone else's point of view as much as you put forth your own point of view.

A team is only as strong as its weakest link – but the weak link is not the person with the least skill, it is the person who is least engaged. Notice when a team member is "checking –out" and find out why. You will need everyone on your team to be engaged in order to succeed in the Charette.

Addressing the Present While Including the Past: A Typological Approach to Interior Design History

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ABSTRACT

As interior designers, existing conditions or spaces within places are a given. The site, created by man comes preloaded with set ideas manifested in form. Our work is a response to those ideas. Critical to this dialogue is the ability to analyze and critique that which already exists in order to make informed design decisions. The interdisciplinary nature of this process may raise questions regarding definitions and parameters. However, it also provides the freedom to explore and practice differing approaches. While this cross curricular practice breeds innovation, the common modality for teaching design history, chronologically and stylistically, fails to connect theory with practice.

This common chronological approach presupposes that the teaching of the modern can only occur after a study of the ancient and classical. As a result delayed access to contemporary issues denies a vital connection between history and studio, theory and practice. The chronological leads to course inconsistencies. For example, the semester is begun with an architectural focus upon the study of buildings (due to limited availability in the number of intact interiors from earlier civilizations) and then shifts the focus to interiors midstream. In addition, this method fails to integrate various content areas including: buildings, interiors, furniture, textiles, and art.

A typological approach allows for the immediate study of a wide variety of solutions to similar design problems. Arranging content according to programmatic requirements could yield units of study centered on “living,” “working,” and “communing.” The removal of chronological constraints promotes collaboration and strengthens connections with studio as types or units of study flexibly ordered according to need. A system of typology provides the opportunity to develop a unique course of study through the organization of various cross-curricular subjects according to the particulars of interior design. The question then becomes what are the typologies of interior design? This paper will propose and explore various typologies based upon programmatic requirements, fundamental design issues, and universal ideas.

NARRATIVE

Distinct challenges inherent in teaching history of interior design have been acknowledged and discussed for many years. Despite fine arguments presented by scholars such as Mary Ann Beecher and Jan Jennings the approach to teaching history has changed very little. In a chronologically based paradigm, emphasis on architectural works in the first semester leads students to view interiors as a subset of architecture, with little connection to their own work. We need to distinguish interior design history's unique academic identity while recognizing its contextual relationship with art and architectural history. In addition to the challenge of an expansive curriculum, students often hold strong preconceptions regarding history. The learning of history is often associated with the dry task of memorizing dates, names, and images. As technology natives, milennials place little value on learning information which is perceived as available on the internet. "Y's are overwhelmed and stressed out. They are suffering from information overload, entertainment debt and social circles they can barely keep up with. As such they are looking for life editors to help them make their day easier" (Lavigne, unpublished presentation). Millennials bombarded since birth with data find it difficult to prioritize, organize, and process information.

Besides increasing knowledge of historic, modern and contemporary design, it is appropriate for history to tackle several important goals. First we must emphasize the connection between history and studio. All too often student work inadvertently references the historic without purposeful intent or becomes a pastiche inspired by poor time management. We must help students to identify their design values using history as a rich source of design solutions to universal problems. We must make transparent the relationship between form, function, context and meaning in these design solutions. These connections must be forged by addressing contemporary issues with which students can relate. Finally, we must replace the perception of history as a set of facts to be memorized with the notion of history as an active learning practice useful to the design process.

Existing paradigms offer varying benefits as well as harboring deficits which perpetuate current obstacles. Style, precedent studies, and morphology, common models of instruction offer unique insights. However, they do not provide a cohesive understanding of form, function, context and meaning; concepts which form the core of interior design history. In traditional instruction, the use of "styles" provides a common language of reference, and convenient formal groupings. While this model makes it simple to memorize similar formal characteristics it does little to explain meaning, function and context. This format also reinforces the heuristic or pattern seeking tendencies of the brain. Once groupings are committed to memory students perceive the learning task as completed. The danger in grouping works by style is that some works are reduced to fit into categories, while others are excluded entirely. "The result of this exclusion is an incomplete comprehension of historical periods, of the work of individual architects and even of selected buildings. This leads to a distorted viewpoint of the way ideas emerge and develop . . . [and] makes linear a process which is often distinctly non-linear" (Speck, 21). Morphology, on the other hand, the study of systems components, makes a direct comparison between function and form but does not address context or meaning. Precedent studies provide a model for studying individual works often through the use of diagramming. One such system developed by Clark and Pause in Precedents in Architecture utilizes standardized symbols to express characteristics (massing, geometry, circulation. . .) of the built environment. Unfortunately precedent models such as these are architecturally based "omit[ting] many of the characteristics important in designing space and interiors, such as furnishings, materials, qualities of natural light, and room concepts" (Jennings, 49). These models, especially the stylistic approach, may persist due to the formatting of textbooks. However, if history of interiors is to be meaningful to our students then we need to align teaching methods with desired learning outcomes making connections to the design process, addressing contemporary issues, assigning authentic learning tasks and including a process for making sense of the correlation between form, function and meaning.

One solution is a hybrid approach based upon programming, fundamental design issues, and interiors typologies. Looking to the practice of interior design, programming can be easily adapted as a framework for teaching history. Programming, often thought of as a product, is also a process which involves the gathering of all data necessary in order to create a design solution (Ballast, 33). In the Interior Design Reference Manual, Ballast describes programming as a five step progression of establishing goals, collecting facts, uncovering concepts,

determining needs and stating problems. Each of these categories is useful in guiding the formulation of questions while the overall format provides a structure for recording and analyzing data (Appendix 1). The completed process offers a means for evaluating student learning. For the purposes of teaching history, programming concerns must be far reaching in order to effectively cover core concepts. At VCU, Camden Whitehead has developed a schema identifying nine fundamental issues which are universally present in design problems (Appendix 2). This schema is implemented in studio as a means of pushing and driving design solutions. Therefore, embedding these issues within the program framework serves to strengthen the connection between history and studio.

The development of interior design typologies establishes an emphasis on interior spaces, creating a measure for comparing solutions to similar design problems. Programming types are often labeled with nouns: restaurant, office, retail. . . The use of verbs for naming interiors types highlights the active process of programming. Categories (Appendix 3) may include spaces for: living, working, healing, playing, inspiring. . . Within each type further refinement helps to clarify how interior spaces are used. For example what is the difference between living and dwelling? Eating and dining? Speaking and sharing? Words not only carry meanings they also structure thoughts. Because all design begins with thought, helping students to develop a rich vocabulary and make fine distinctions between types aids in moving work beyond the obvious.

Using a programming approach requires change to course structure. Progression from familiar programs such as “spaces for living” to more complex such as “spaces for healing” proceeds over the course of two semesters. Course work begins with an introduction to the programming process modeled by the instructor progressing to programming studies completed in groups and culminating in independent studies of individual interiors types.

Removal of chronological restrictions allows the course to begin with a contemporary study. The choice of a local site would permits students to experience the space rather than interpreting a 2d image. In addition, sketching, diagramming, and photographing the space further engages students with the subject lending interest to the process (guided by the programming framework) of researching and collecting data.

Upon completion of this evaluation, new case studies of similar program type could branch out horizontally to include contemporary comparisons between various cultures and regions. In studying the Interior typology of a “space for living”, consider the comparison between Richard Neutra’s Rice house located in Richmond, Virginia and Neutra’s Kauffman House located in Palm desert. Comparisons based on similar program type make apparent not only the similarities but also the differences between design solutions. In addition, studies can be made using the fundamental design issues (and if desired traced vertically through time). The design solution of the Rice house in its physical context along the James River may also be compared with the design solutions preserved in the James River Plantations. Similarly, the meaning behind Westover Plantation’s Palladian rhythm can be compared with Palladio’s originals. The possible combinations are diverse and variable creating dynamic yet flexible comparisons for units of study.

This model serves to strengthen the academic identity of history of interiors through a cohesive underlying structure based upon active learning, the interconnection of core concepts: form, function, meaning and context and addition of contemporary issues. The constructivist nature of the framework activates analogical thinking the “insightful transfer of whole patterns of knowledge from a familiar domain to one whose structure and character are less well defined, for the sake of making sense and thus creating new understanding” (Ogle, 3). Beginning history with the study of familiar interiors types activates prior knowledge making new information accessible, relatable and therefore intrinsically relevant. Using programming methods provides students with a way to approach information and a process to follow. Questions developed from and within the format become tools of embedded intelligence which can be used to solve problems (Ogle, 13).

Perhaps most useful, is an adaptable and inclusive format. Teaching history non-chronologically through programming type does not exclude the use of more traditional methods based upon styles, morphology or precedent. Newer paradigms such as Jan Jennings Interior Archetypes may also be incorporated as needed. Additionally, emphasis placed upon interiors types does

not prevent the introduction of architecturally derived theories. We can teach a curriculum specific to interiors while addressing architectural relationships of interior to exterior and building to site.

REFERENCE LIST (CHICAGO)

Abercrombie, Stanley. 1990. A Philosophy of Interior Design. New York: Harper and Row Publishers.

Ballast, David K. 2002. Chapter 4: Programming. In Interior Design Reference Manual: A Guide to the NCIDQ Exam. 33-45. Belmont: Professional Publications Inc.

Beecher, Mary Anne. 1999. Alternative Models of the Past: History/ Theory/ Criticism Courses. Journal of Interior Design 25(1): 37- 44.

Beecher, Mary Ann.1998.Toward a Critical Approach to the History of Interiors. Journal of Interior Design 24(2):4-11.

Botti-Salitsky, Rose Mary.2009. Chapter 3: Defining a Topic and Structuring Your Program Document, and Chapter 5: Historical, Observational, and Interactive Research. In Programming and Research: Skills and Techniques for Interior Designers.25-35, 51-74. New York: Fairchild Books.

Brandt, Beverly Kay.1998. A Thematic Approach to Teaching Design History in a Multicultural Setting. Journal of Interior Design 24(2): 17-24.

Ching, F.D.K. 1996. Architecture: Form, Space, and Order, 2nd Edition. New York: Van Nostrand Reinhold.

Clark, R.H. and Pause, M. 1996. Precedents in Architecture, 2nd Edition. New York: Van Nostrand Reinhold.

Dickinson, Joan, Ed., and Marsden, John P. Ed. 2009. Chapter 1: What Is Research and What Is Programming? Understanding the Difference. In Informing Design. 1-25. New York: Fairchild Books.

Gelernter, Mark. 1995. Sources of Architectural Form: A Critical History of Western Design Theory. Manchester: Manchester University Press.

Hertzberger, Herman. 1991. Lessons for Students in Architecture. Rotterdam: Uitgeverij 010 Publishers.

Hudnut, Joseph. 1957. On Teaching the History of Architecture. Journal of Architectural Education 12(2): 6-8.

Jennings, Jan. 2007. A Case for Typology of Design: The Interior Archetype Project. Journal of Interior Design 32(3): 48-68.

Lavigne, Melissa. 2009. Y Work. Power Point Presentation for Teknion by the Intelligence Group, Syracuse University, New York.

Morgenthaler, Hans. 1995. Chronology versus System: Unleashing the Creative Potential of Architectural History. Journal of Architectural Education 48(4): 218-226.

Morris, Ellen K. 1980. Teaching History Typologically. Journal of Architectural Education 34(1): 27-28.

Mortimer, Adler J. 2007. How to Think About the Great Ideas: From the Great Books of Western Civilization. Ed. Max Weismann. Chicago and La Salle: Open Court.

Ogle, Richard. 2007. Smart World: Breakthrough Creativity and the New Science of Ideas. Boston: Harvard Business School Press.

Poppeliers, John C. and Chambers, Allen S. Jr. 2003. What Style is It? A Guide to American Architecture. Hoboken, New Jersey: John Wiley and Sons.

Robinson Williams, Julia and Weeks, Stephen J. 1983. Programming as Design. Journal of Architectural Education 37(2): 5-11.

Speck, Lawrence W. 1980. Mainstream is Almost All Wrong. Journal of Architectural Education 34(1): 20-21.

Temple, Stephen. 1998. Using Fundamentals of Description: A Foundation for Historical Inquiry. Journal of Interior Design 24(2): 46-54.

Vickery, Robert L. Jr. 1983. Sharing Architecture. Charlottesville: University Press of Virginia.

Whitehead, Camden. “Art 151-152 Foundation Studio” (Computer printout of syllabus, Department of Interior Design, Virginia Commonwealth University, 2008).

Appendix 1: Programming Process Adapted for History

The Programming Process Adapted for History

Programming traditionally considers form, function, economy, and time specifically in terms of user requirements.

Establishing goals	What was trying to be achieved and by whom? Describe and represent the built environment using sketches, photographs and written explanation
Collecting facts: Form, function, economy and time	Exploration of Fundamental Design Issues through: research, site visits, diagramming . . .
Determining user needs	What were the needs of user, client, and designer?
Uncovering concept	What was the design solution? Analysis of design solution based upon collected information
Stating the problem	Solutions to design problems are evaluated: Was the design successful in terms of form, function, context and meaning? What was the environment designed to do? How is this revealed? How well does the solution solve the problem?

Appendix 2: Fundamental Design Issues

Fundamental Design Issues

Meaning

Intent

Idea: the larger intangible connecting the work beyond its immediate situation and manifestation.
Concept: the idea grounded by and applied to a set of circumstances
Realization: the physical embodiment of the intangible idea
Interpretation: meaning conveyed vs. meaning intended
Values
Personal values
Societal/cultural values
The relationship of the individual to the whole (one/many)

Context

History/ Precedents
Physical Context
Formal context
Material context

Particulars of an existing context
Pragmatic context
The set/s of similar problems
The set/s of similar working processes
The set/s of similar solutions
Cultural context
The role of the individual
Societal context
Internal: the impact of traditions and expectations
External: the conflicts and differences from one society to another

Parameters and Limits or Economy and Program
Identifying parameters
Intrinsic
External
Analyzing parameters
Restating parameters
Imposed parameters

Material
Inherent qualities
Physical characteristics
Visual characteristics
Compatibility with other materials
Chemical compatibility
Symbolic compatibility
Formal compatibility
Impact of materials on form
Manufactured form
Methods of manipulation

Means of Construction
Craft & tolerance
Production/reproduction
One, Few, Many
Joint conditions
Components
Standard
Custom
Economy/budget
Constraints
Opportunities
Structure
Physical structure
Statics/equilibrium
Stresses
Tension
Compression
Shear
Form
Formal vocabulary
Vocabulary of formal manipulation and transformation
Geometric
Additive/subtractive
Iconic/metaphorical

Vocabulary of description
Objective
Stylistic
Form/shape
The intangibility of form
The tangible shape
Size
Scale
Proportion
Hierarchy
Sources of form generation
Visual Structure
Visible
Less than obvious
Space/Time
Three dimensional space
The illusion of three-dimensional space
Time/duration (movement through space)
Moment
Narrative: sequence of moments
Multiple points of view (a set of narratives)
Light
Color
Light as source of illumination
Natural
Man-made
Light/shadow

Appendix 3: Interior Typologies

PRESENTATIONS:
SCHOLARSHIP

Toward Developing a Meta-View of Design Thinking

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ABSTRACT

Design thinking is a process employed by traditional design disciplines to creatively address design problems. Recently we have seen a surge in the use of the term "design thinking" in relation to a multitude of disciplines apart from those traditionally associated with the process such as business, organizational management, and service design (Brunner & Emery, 2006; Pink,2006).

Our research program is aimed at developing a metaview of design thinking across disciplines to foster collaboration, understanding, and greater integration of the process for a variety of disciplines. A metaview of design thinking would identify the overarching concepts and ideas shared by the disciplines engaging in the process and foster exploration of divergent and convergent ideas within different disciplines.

The first phases of this research program have been to conduct a literature review of relevant works related to design thinking, and to conduct focus groups to gather input from individuals involved in disciplines engaging in design thinking (e.g. interior design, instructional design, architecture, landscape architecture, etc.). Initial conclusions include:

1. An agreement that "design thinking" as a topic is extremely complex and difficult to grapple with;

2. The term is typically discussed in a discipline-specific manner. Getting above the disciplines is difficult, but provides an opportunity to bring people together and support collaboration;

3. The democratization of design increases the importance of this discussion, and;

4. There are important educational and professional implications for understanding and being able to explain design thinking in terms that are not discipline-specific.

As with much qualitative and design research, this process is iterative and new steps continually emerge out of each phase (Laurel, 2003). From the input of the initial literature review and focus group, specific disciplines incorporating and/or discussing design thinking were identified, and key concepts explored. As shared ideas evolved, key terms began to reveal themselves, and were cataloged for analysis. It is through these concepts and terms that commonalities, differences, and "what's missing" among the disciplines incorporating design thinking can be identified. The identification of a common view of design thinking also supports opportunities for successful interdisciplinary educational experiences.

This work is important since interior design often struggles to justify itself as a profession, and with perceptions regarding its responsibilities and value. Conversations are increasing around the importance of design in "making things better" (Cross, 2007), and it is critical that interior designers have a strong language with which to discuss the value they bring to improving humans' quality of life. As the public becomes increasingly aware of design thinking as a positive concept, interior designers have an opportunity to engage in that discussion and improve the public's perception of the importance of their professional role. Creativity, innovation, and problem-solving (often considered components of design thinking) are also being incorporated into the 21st Century K-12 Learning Initiatives, providing additional opportunities for interior design, and designers in general, to impact younger children's exposure to ways of thinking beyond the traditional linear methods addressed in schools today.

NARRATIVE

Design thinking is a process employed by traditional design disciplines to creatively address design problems. Design thinking as a skill is often passed along to students covertly through academic experiences and modeling. Some students and professionals see design thinking as synonymous with design process. However, as more attention is being given to design thinking, it is becoming recognized as a separate but symbiotic process to be studied. As such, it becomes more critical for design disciplines to operationalize and promote design thinking as a contemporary approach to addressing complex problems. Recently we have seen a surge in the use of the term "design thinking" in relation to a multitude of disciplines apart from those traditionally associated with the process such as business, organizational management, and service design (Brunner & Emery, 2006; Pink,2006). Given this attention and the growing importance of design thinking as a multi-disciplinary tool, it is important for the traditional design disciplines to fully understand the design thinking process and provide leadership in the use of these very familiar activities.

As designers in different disciplines, we recognize the importance of a common language to facilitate strong interdisciplinary collaboration. Our research program is aimed at developing a metaview of design thinking across disciplines to foster collaboration, understanding, and greater integration of the process for a wide variety of disciplines. A metaview of design thinking would identify the overarching concepts and ideas shared by the disciplines engaging in the process and foster exploration of divergent and convergent ideas within different disciplines. This ongoing research program includes several phases as discussed below.

The first phase of the research program has been to conduct a literature review of relevant works related to design thinking. Recently many new works have been released on the topic. Representative works discussed below include both classic writing on design thinking as well as more contemporary work recently released. Nigel Cross' articles from the 1980's and subsequent book on *Designerly Ways of Knowing* (2007) provide a foundation for exploring design in relation to other areas of study including science and the humanities. The information he presents positions design as a critical component of educational focus, and challenges designers to reconsider the vital nature of design thinking in our culture. Rowe, in his 1987 book titled *Design Thinking*, presents a collection of ideas, theories, and systems related to design thinking and problem-solving. Schön's *Educating the Reflective Practitioner* (1987) has become another classic and influential design practitioner book that is set in the architectural design studio. The author discusses the reflections of new designers on their activities, and how these reflections affect both their designs and their design thinking/process. Lawson (2005) discusses design thinking in relation to the more traditional design disciplines of interior design, architecture, and industrial product design in his book *How Designers Think: The Design Process Demystified*. Pink's(2006) popular book *A Whole New Mind* has introduced design and design thinking to an entirely new audience, and is a vital part of the new movement of democratization of design. Farson (2008) identifies design and design thinking as powerful tools that have the ability to facilitate new approaches to our current social and economic problems. He introduces the concept of metadesign in his book *The Power of Design*, and discusses the importance of taking a big-picture view of "the design of design". One final work that is representative of the use and discussion of design thinking in non-traditional disciplines is Tim Brown's *Change by Design* (2009). This book provides a clear discussion of the design thinking tools used by the highly acclaimed consulting and innovation firm IDEO. Our initial readings led to the conclusion that design thinking is rarely defined and that there is no common agreement on the meaning of the term. Traditional design disciplines often see design thinking situated within a specific design process, and find it difficult to discuss it without discipline-specific terminology. Newer design fields often use the term, but have not clearly operationalized it for consistency.

The second phase of the research program included conducting a preliminary focus group to obtain input from individuals involved in disciplines engaging in design thinking (e.g. interior design, instructional design, architecture, landscape architecture, etc.). The focus group addressed the participants' approaches to teaching design thinking as well as defining the term. For the purposes of this project, we focused on the discussion of the definition of design thinking. The group agreed quickly that design thinking was a challenging topic, and that it was typically approached as a discipline-specific activity. Products resulting from design thinking were

often used as a reference point in discussions of the design thinking process. Terminology was sometimes similar among the design disciplines, but had interpretations based on specific disciplines' expected outcomes. To create an approach that went beyond the disciplines, the group discussed the possibility of a metaview of design thinking that could cross all fields of design. The metaview could provide a better understanding of the similarities and differences in the process across fields, and identify commonalities upon which to build. Data collected from the focus group participants reinforces the conclusions reached from the initial readings. Discussion of design thinking is discipline-specific, and is typically related to the outcomes or products of the discipline. No common definition is available among design disciplines, or within the non-traditional disciplines currently using and writing about the process.

From the input of the initial focus groups and literature review, specific disciplines incorporating and/or discussing design thinking were identified, and key concepts explored. As shared ideas evolved, key terms began to reveal themselves, and were cataloged for analysis. It is through these concepts and terms that commonalities, differences, and "what's missing" among the disciplines incorporating design thinking can be identified. Some of the categories and terms suggested included roles of the design thinker, tools used by design thinkers, cultural issues and situations of design thinkers, phases or processes used, orientation, and focus of the design thinker. These initial categories are organized in Figure 1.

As with much qualitative and design research, the process used in the research project is iterative and new steps continually emerge out of each phase (Laurel, 2003). Additional work is needed to further this project and move toward a more inclusive view of design thinking. Next steps include but are not limited to:

Expanding research of readings to include more international and practitioner resources;

Studying design thinking courses offered in different academic settings and among different disciplines;

Developing a comprehensive bibliography and key design thinking terms;

Conducting analysis of terminology for commonalities, differences, and missing components; and

Determining interdisciplinary approaches for teaching and evaluating design thinking in educational settings.

Developing a metaview of design thinking is important to facilitate interdisciplinary collaboration in all areas of design. The outcomes of this project are specifically important to interior design since this discipline often struggles to justify itself as a profession, and with perceptions regarding its responsibilities and value. Conversations are increasing around the importance of design in "making things better" (Cross, 2007), and it is critical that interior designers have a strong language with which to discuss the value they bring to improving humans' quality of life. Creativity, innovation, and problem-solving (often considered components of design thinking) are also being incorporated into the 21st Century K-12 Learning Initiatives, providing additional opportunities for interior design, and designers in general, to impact younger children's exposure to ways of thinking beyond the traditional linear methods addressed in schools today. Beyond professional collaboration, the identification of a common view of design thinking also supports opportunities for successful interdisciplinary educational experiences. As the public becomes increasingly aware of design thinking as a positive concept, interior designers have an opportunity to engage in the discussion and improve the public's perception of the importance of their professional role.

Figure 1
Initial Design Thinking Metaview Categories

Roles	What do designers do?
Tools	What tools do they use and need to know?
Cultures	What are the historical and social features of societal and working units? Views toward clients?
Phases	What are the working processes used?
Orientation	Do designers work from known goals or emergent goals?
Process-Product	What is the principal focus of the designer?
Other?	

REFERENCES (APA)

Brunner, R., & Emery, S. (2006). *Do you matter? How great design will make people love your company*. Upper Saddle River, NJ: Pearson Education.

Cross, N. (2007). *Designerly ways of knowing*. Birkhäuser Basel Publishers.

Farson, R. (2008). *The power of design: A force for transforming everything*. Atlanta, GA: Greenway Communications.

Laurel, B. (Ed.). (2003). *Design research: Methods and perspectives*. Cambridge, MA: MIT Press.

Lawson, B. (2005). *How designers think: The design process demystified* (4th ed). Philadelphia, PA: Architectural Press.

Pink, D. (2006). *A whole new mind: why right-brainers will rule the future*. Riverhead Trade.

Rowe, P. G. (1987). *Design thinking*. Cambridge, MA: MIT Press.

Schön, D. A. (1987). *Educating the reflective practitioner*. San Francisco, CA: Jossey-Bass.

The Impact of Pattern Scale on Preschool Environment Play Behavior

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ABSTRACT

During early childhood, cognitive and social development is mediated by adult decisions regarding education and the environment. As television and computer usage has increased, reports of reduced attention span and ability to concentrate in traditional school settings have increased (Elias, 2005). Interdisciplinary research linked the design of the environment and increased higher level play during the 1990s

(DeLong et al., 1994). This study revisited research on children and pattern scale in the near environment and proposes a link between the mediation of the environment and critical cognitive development through play in preschool children.

Previously, research was conducted using spatial scale to positively impact the play behavior of children (DeLong et al., 1994) and performance of children with hyperactive attention deposit disorder during testing (Nelson, 1995). Nelson posed the concept that children naturally prefer environmental conditions relative to their scale and size. Strong-Wilson and Ellis found that contemporary children are more reliant on teacher or environmental interventions and changes to actively engage in important play scenarios (Strong-Wilson & Ellis, 2007). Scale interventions in children's environments could engage children independent of teacher mediated instruction and encourage independent thinking.

Pattern scale was studied extensively with adult populations(Rodemann, 1999).

Rodemann reported that younger people tended to prefer more geometric patterns and patterns with strong contrasts can negatively influence behavior and concentration in academic settings. Furthermore, studies were presented on preferences for pattern scale (repeat), contrast, and tonal values.

A university preschool using a play curriculum within a Reggio framework was used for a study with three and four year olds. An area of the classroom used by both age groups to play with two traditional toys (Fischer Price™ and felt board) was modified with a portable framework to introduce pattern scale. The framework was built as a small partition wall to withstand normal play in the area when observations were not recorded. A grid pattern composed of proportional squares was produced in large carpet samples in two scale sizes and secured to the wall surrounding the play area. During control conditions, a partition used typically in the classroom that could not be modified with pattern was used. Earth tone colors were used to blend with the existing wood paneling in the classroom for the pattern conditions.

Previous data analysis suggested that children played for longer periods of time with the less interesting, two-dimensional felt board toys in the small scale condition as compared with the larger pattern scale condition. Previously, the control conditions were not reported but more recent research may support the outcomes of the original analysis. Implications for learning environments will be presented and future research identified. Limitations of the study recommendations for future research using current technologies to integrate pattern interventions into environments will be discussed.

NARRATIVE

INTRODUCTION

In human development, the timeframe of preschool produces significant changes in the emotional, intellectual, and physical welfare of children. The importance of play in these changes has been explored and promoted as a critical tool in learning and development of attention span in young children (Golinkoff, Hirsh-Pasek, & Singer, 2006). Since the early learning processes and attention span developing activities of early childhood become the basis for later learning, free play and child initiated problem solving is critical. Contemporary children are more reliant on teacher or environmental interventions to actively engage in important play scenarios (Strong-Wilson & Ellis, 2007).

The surrounding environmental influences will affect attention span development in children. Studies on family television habits include watching and having the television on while other activities are happening such as play (Schimidt, Pempek, Kirkorian, Lund, & Anderson, 2008). Age appropriate content with educational content is less distracting than the typical network when young children are performing educational tasks (Geist & Gibson, 2000). Analysis of data from the National Longitudinal Study on Youth using data on young children and television viewing indicate a link between reduced attention span by the age of seven and early television viewing (Christakis, Zimmerman, DiGiuseppe, & McCarty, 2004).

The skills required for attention to tasks is under developed in young children but can be measured after 54 months (Akshoomoff, 2002). During the first years of life, the types of distractions can change and evolve with maturation. For children between the ages of 42- and 48-months, the results suggest that visual distractions are more significant but some children have the ability to filter out other distractions (Ruff & Capozzoli, 2003). Part of the issue could be the perceptions of the teacher, parents, and other adults about children's attention spans (Findley, 2005). Each child has different motivators but when the curriculum and environment does not provide ample opportunities to practice and master skills through play; the risk is that children will not develop appropriate skills for focus.

Interdisciplinary research manipulating scale environments around children were conducted at The University of Tennessee. The first study funded by ASID, measured the impact of length of time in play and level of play as observed while children played with play dough (DeLong et al., 1994). The findings supported the concept that children engaged more quickly in advanced play and stayed in play longer when the surrounding environment was reduced relative to their size. Another study investigated if reduced scale environments would improve the test scores of children with hyperactive attention deposit disorder (Nelson, 1995). Nelson suggested that children naturally prefer environments scaled to their proportion and size.

One of the environmental factors that alters our sense of scale and proportion is pattern. Rodemann's book on pattern scale is a standard in the interior design industry. She reported that younger people tend to prefer geometric patterns but patterns with strong contrasts can negatively affect behavior and concentration in educational settings (Rodemann, 1999).

During the 1990s, the data were collected to investigate if preschool children playing with two different toys under varying conditions including introduction of partition walls with a geometric pattern design in two scales would influence the length of time in play. More advanced analysis is now available and recent studies suggest that environmental prompts have changed young brain development (Elias, 2005). In this respect, it is appropriate to revisit how children respond to pattern in the near environment. The results could support the need for replication with a current preschool population.

METHOD

The preschool classroom includes play areas with toys, books, and learning activity centers. At this preschool, free play time was dedicated to the three year old group in the early morning, the four year old group in the late morning, and a mixed age group in the afternoon as children waited for parents. Adults varied their location and activities to support themes and offer interaction. The play area used (See Figure 1) was selected to accommodate video recording of play activities in the area from behind a one-way mirror in the observation booth. Student data collectors recorded the classroom conditions, the weather, and the length of time in play using a stop watch. After the observation sessions ended, the researcher reviewed the tapes and noted checked all of the data collected.

The play area was established over time using a control condition with an existing screen and room arrangement and the introduction of a partition to surround the children with pattern. The frame was constructed using plywood as a substrate that was finished to blend with the natural wood walls of the setting. Large carpet samples were designed and purchased from Durkan in two tones to blend with the wood surround. The scale relationship between the two designs is shown in Figure 2. Children would self select to play with the toy (either felt board play as shown in Figure 3 or Fischer Price™). The toys were rotated every two to three days to ensure play time with classroom activities.

ANALYSIS

Earlier statistical procedures were conducted as part of ongoing research on children's environments at The University of Tennessee and a thesis project. The emphasis of the research was on scale relationships and not all of the data were utilized. More recently, the data were analyzed using SPSS including all of the data collected (condition without pattern).

The independent variables were condition (no pattern, small pattern, and large pattern), toy (felt board play and Fischer Price™), and time of day (morning sessions or afternoon mixed group session). The dependent variable was the length of time in play. The total length of play for each subject was analyzed by condition, toy, and time of day. Future analysis is planned for gender, group (three year old or four year old), and age (in months).

RESULTS

At the time of this submission, the data analysis was incomplete. There was no three way interaction between condition, toy, and time ($F(2, 827) = 2.18$ and p-value = .113). Significance was found on the interactions between toy and time of day and condition and time of day. Unlike previous analysis, condition and toy were not significant ($F(2, 827) = 1.8$ and p-value = .166). For the interaction between toy and time of day, there is significant interaction ($F1, (827) = 16.72$ and p-value = .000. The interaction between condition and time of day is significant ($F(2, 827) = 3.24$ and p-value = .04). Preliminary analyses of the post hoc tests suggest that there are interactions for specific conditions and toy.

SUMMARY

The importance of play in the development of young children is significant. The impact of the environment can mediate the play and attention development during the preschool years. Results of further analysis of these data may support replication of the study with current young children in order to discern if their changing brain patterns can be enhanced with environmental interventions.

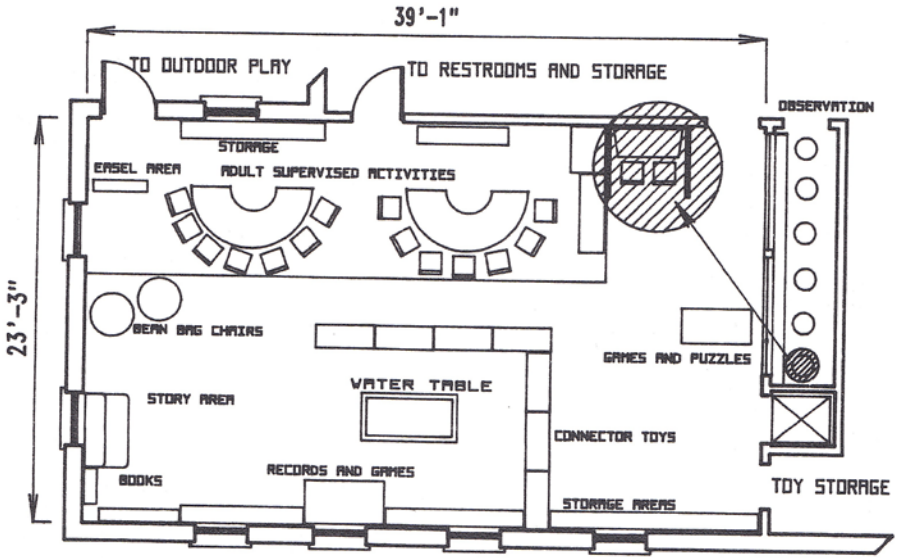

Figure 1. Layout of Preschool Classroom

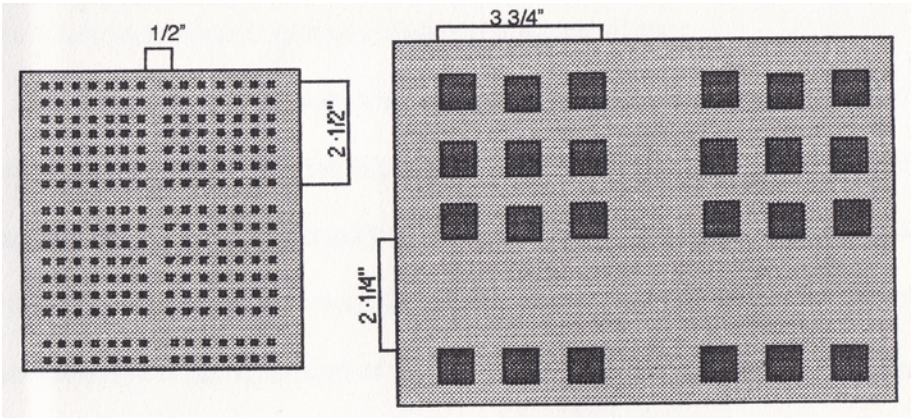

Figure 2. Small and Large Scale Patterns

Figure 3. Child Playing in Small Scale Pattern Space

REFERENCES (APA)

Akshoomoff, N. (2002). Selective attention and active engagement in young children. *developmental Neuropyschology, 22*(3), 625-642.

Christakis, D. A., Zimmerman, F. J., DiGiuseppe, D. L., & McCarty, C. A. (2004). Early television exposure and subsequent attentional problems in children. *Pediatrics, 113*(4), 708-713.

DeLong, A. J., Tegano, D. W., Moran, J. D. I., Brickey, J., Morrow, D., & Houser, T. L. (1994). Effects of spacial scale on cognitive play in preschool children. *Early Education and Development, 5*, 237-246.

Elias, M. (2005). So much media, so little attention span. *USA Today*. Retrieved Oct.11, 2009, from http://www.usatoday.com/news/education/2005-03-30-kids-attention_x.htm

Findley, N. (2005). What do we mean by 'limited attention span'. *Phi Delta Kappan*(May), 652-653.

Geist, E. A., & Gibson, M. (2000). The effect of network and public television programs on four and five year olds abiltiy to attend to educational tasks. *Journal of instructional Psychology, 27*(4), 250-261.

Golinkoff, R. M., Hirsh-Pasek, K., & Singer, D. G. (2006). Play = learning: How play motivates and enhances children's cognitive and social-emotional growth. In D. G. Singer, R. M. Golinkoff & K. Hirsh-Pasek (Eds.), *Play = learning: How play motivates and enhances children's cognitive and social-emotional growth* (pp. 3-12). New York: Oxford University Press, Inc.

Nelson, J. K. (1995). *The effect of spatial scale on the variables of attention of eight- to twelve-year old children with attention deficit-hyperactivity disorder.* The University of Tennessee, Knoxville, TN.

Rodemann, P. (1999). *Patterns in Interior Environments: Perception, Psychology, and Practice*. New York: John Wiley & Sons, Inc.

Ruff, H. A., & Capozzoli, M. c. (2003). Development of attention and distractibility in the first 4 years of life. *Developmental Psychology, 39*(5), 877-890.

Schimidt, M. E., Pempek, T. A., Kirkorian, H. L., Lund, A. F., & Anderson, D. R. (2008). The effects fo background television onthe toy play behavior of very young children. *Child Development, 79*(4), 1137-1151.

Strong-Wilson, T., & Ellis, J. (2007). Children and place: Reggio Emilia's environment as third teacher. *Theory into practice, 46*(1), 40-47.

Political Decorating: Leadership Styles from Presidents Franklin D. Roosevelt to Barack Obama Compared to their Oval Offices

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ABSTRACT

Much has been written about how personality types may be related to individuals' choices for furnishing and decorating their offices (Israel, 1998, 2004; Jarrett, 2006). While leadership styles of the US presidents (FDR–GW Bush) have been the subject of much scrutiny and speculation, and the choices of furnishing and decoration of the Oval Office have received a great deal of attention, little has been written about how the presidents' leadership styles might be reflected in those choices. And yet, such choices may be potentially instructive and insightful for understanding leadership styles and abilities, and perhaps potential. The purpose of this study is to compare and contrast modern presidents' furnishing and decoration of the Oval Office with their leadership styles in order to understand how those choices may reflect their strengths and weaknesses, thus their effectiveness as a leader. Greenstein (2004) categorizes the styles of modern presidential leaders in terms of public communication, organizational capacity, political skill, vision, cognitive style, and emotional intelligence (Tables 2 & 3). We employed his classifications to determine leadership style.

FRAMEWORK

"The Oval Office is the President's formal workspace, where he confers with heads of state, diplomats, his staff and other dignitaries: where he often addresses the American public and the world on television or radio: and where he deals with the issues of the day." (Oval Office n.d.) While the architectural features and wall color of the Oval Office remain consistent, the interior furnishings and draperies often change to reflect the personality and style of each president.

When President Clinton took office, decorator Kaki Hockersmith's stated mission was to help President-elect Clinton define his tone and personality and capture that in his Oval Office décor (Ovine, 2001). Many presidents have used interior design as a form of political branding. McGirt (2009) suggests that politics is about marketing—about projecting and selling an image, stroking aspirations, moving people to identify, evangelize, and in the end consume.

METHODS

Scrutiny of photographs and written documentation of the Oval Office décor during the terms of thirteen modern presidents were compared to their leadership styles as defined by Greenstein (2004). Analysis of physical qualities of the Oval Office included furniture style and arrangement, use of color, use and number of presidential emblems, as well as electronic and media resources (Table 1). It was also noted that some presidents made immediate and dramatic changes to their new office, while others delayed making changes; some made little or no change.

IMPORTANCE OF TOPIC

White House Historian William Seale observed that when one is in public office and you try to change your decor you're going to end up on the front page. Especially with presidential décor as the public eye is fixed on everything as president does (2006). Theodore C. Sorenson noted that presidential style affects presidential authority (1973). Decorating and leadership styles have close connections. This study enriches and expands the body of knowledge in an area that is an integral part in American history and the history of interior design.

NARRATIVE

The Oval Office is arguably the most famous designed interior in the world. It serves as the official office of the president of the United States, "where he confers with heads of state, diplomats, his staff and other dignitaries: where he often addresses the American public and the world on television or radio: and where he deals with the issues of the day" ("Oval Office" n.d.). Each president has an opportunity to personalize the space through décor. Colors, window treatments, furniture, rugs, and artwork ultimately come to reflect the image of the president. Thus, the Oval Office becomes a symbol of America and its leader, not only in the eyes of Americans, but to people all over the world.

The Oval Office visually communicates a brand. Theodore C. Sorenson noted that presidential style affects presidential authority (1973). Each president's design decisions are extremely significant because of the message they convey through meanings and symbolism found in subtle elements of the décor. These decorating decisions may also reflect strengths and weaknesses in leadership qualities. The current study compares the leadership qualities of the thirteen latest US presidents with the décor of their respective Oval Offices. If there is a relationship between the characteristics of a president's leadership style and the choices he makes in decorating the oval office, this knowledge may be useful for any new occupant of the office.

While the president makes the ultimate decision, the changes in décor are typically overseen by the First Lady with the assistance of a decorator or architect and the White House curator. Some elements of the Oval Office are consistent: the organization and layout have been static over time, with only minor changes in the placement of seating or other objects within the room (see Figure 1).

Figure 1. Oval Office Floor plan showing approximate placement of key furniture (nts).

The presidential desk faces the fireplace at one end of the room, and the large oval windows behind the desk provide a backdrop for the president while seated in the desk. This view of the desk provides the iconic view of the Oval Office. The plaster relief depicting the presidential emblem in the ceiling has remained constant from the room's inception. When changes in furniture or artwork are requested, more than 30,000 items from a large storehouse are at the disposal of each president to use in the private sections of the White House and in the official Oval Office (Kessler, 126).

The items and elements that are most commonly changed and define a president's image include the oval rug, the window treatments, the desk, upholstered seating, and the use of color. The presidential symbol, an American eagle holding arrows and olive branches in its talons, is often employed as a prominent feature in the decorative details in the room. Tables 1 and 2 summarize types of changes made to the Oval Office by each president.

While some research suggests that choices or preferences for office décor can be analyzed based on psychological qualities of individual occupants (Israel, 2003), we found no research directly relating leadership qualities and preferences or choices in an office. However, Greenstein (2004, 2009) suggests that modern US presidents can be ranked for effectiveness based on the qualities of their leadership style. Those qualities include public communication, organizational capacity, political skill, vision, cognitive style, and emotional intelligence. Each of these qualities have been shown to have an association for choices and preferences for office design (a good overview of these linkages can be found in Augustin, 2009).

METHODS OF INQUIRY

Seeking understanding of the potential relationship of a president's design decisions regarding the Oval Office and the characteristics of his leadership style, archival documents, popular media, and photographs, both formal and informal, were analyzed. Popular media included magazine and newspaper articles. Content analysis of official, formal photographs and informal photographs of the presidents interacting with staff and world leaders alike illustrated changes over time. From one president to the next we documented changes they made as well as changes made during a president's term in office.

Archival documents and the literature of popular media revealed how presidents made decisions about changes to the Oval Office. They also revealed how quickly or slowly (Table 2) each president thought it important to make those changes. For instance, Johnson wanted to

immediately remove Kennedy's brilliant red rug to avoid any association with the violence of Kennedy's death (Talbot, 2007). Ford wanted to "cleanse" the space following Nixon's resignation and the Watergate scandal. Reagan, on the other hand, was just not interested in the office décor, so Mrs. Reagan handled decorating changes by herself. Analyzing photographs illustrated distinctive differences and notable changes between presidents' decorating tastes. These differences can be seen in the choice and arrangement of furniture, use of color, use and number of presidential emblems and incorporation of electronics in the room.

ANALYSIS

Using Greenstein's (2004, 2009) evaluation and classification of the most recent thirteen presidents' characteristics of leadership styles (Tables 3 and 4), we scrutinized the photographs and narrative documents for patterns and trends of design decisions that might relate to leadership. Specifically, we compare those presidents most distinctively rated "very high" in leadership qualities per Greenstein's evaluation and those rated "low" or "very low" in relevant categories.

FINDINGS

Analyzing certain activities that are integral to leadership positions, we found some consistencies between the characteristics of a president's leadership style and the design decisions made for his Oval Office.

(1) Public Communication: A president's strong ability to project leadership through public communication was consistent with the choice of bold, strong colors, making a strong design statement (see FDR, Reagan, and Clinton photographs). The use of pale colors was consistent with a very low rating for public communication (see Truman photographs).

(2) Organizational Capacity: A president's strength to rally his colleagues and structure his activities was consistent with the level of change in the office. High organizational capacity of Eisenhower was consistent with less change; low organizational capacity of FDR and Clinton was consistent with high amount of change. Since Eisenhower did not have the disruption of change in décor, he could appear focused on other issues.

(3) Political skill: The extent to which a president successfully articulated his vision was consistent with the degree to which he made the Oval Office his own. Three of the four showing very high in political skill also had a bolder design statement (see Roosevelt, Reagan, Clinton photographs). Little change from a predecessor and a passive color scheme was consistent with low political skill (see Truman, Carter, GHW Bush photographs).

(4) Vision: Clarity and articulation of focus were consistent with strong colors (see Clinton and Nixon photographs) and willingness to make dramatic change; conversely, a lack of vision was consistent with passive colors (see Eisenhower, Johnson, GHW Bush photographs) and preference for the office of his predecessor.

(5) Cognitive style: Very high marks for the extent to which a president can process the advice and information given him and sensitivity to emerging issues are consistent with the use of and the number of presidential symbols and emblems (see Johnson, Clinton, Nixon photographs). Low rating for cognitive style is consistent with those who refused the use of such symbols (see Truman, Reagan, GW Bush photographs).

(6) Emotional intelligence: A high ranking for presidents with the ability to manage their emotions and turn them to constructive purposes rather than be dominated by them was given to those who made wide-sweeping, or "cleaning," design decisions, changing their predecessor's office significantly and acknowledging the use of symbols and emblems (see Roosevelt, Ford, and Reagan photographs). The focus in these cases lies on the presidency rather than the man. In contrast, those receiving lowest rankings of emotional intelligence made very bold statements in décor. They were perceived to focus on themselves rather than on the presidency.

From these findings several inferences can be made. First, the statement of change itself is important. Making noticeable and immediate changes in the Oval Office in order to distinguish himself from the previous administration may strengthen a new president's image. Second, the symbolic nature of the Oval Office as a place of power suggest displays of emblems may reinforce the powerful brand of the presidency, those who chose no such displays also had reputations for ineffectiveness. Third, the role of the First Lady should not be underestimated. When the president is not particularly interested in making decisions on décor, the examples of Mrs. Ken-

nedy and Mrs. Reagan suggest that the change is the requirement, not the president's action in the change.

This research may offer potent advice to President Obama who has yet to make any significant changes to the office concerned that such a move could strike a sour note with the public in the midst of a recession (Benac, 2010). Consequently, Obama's personal style is notably missing in the Oval Office décor.

REFERENCES (APA)

Augustin, S. (2009). Place Advantage: Applied Psychology for Interior Architecture. Wiley & Son, Hoboken, NJ.

Hales, L. (2006, November, 13). For This Old House and Senate, It's Makeover Time. *The Washington Post*. P. C-1.

Jarrett, C. (2006). Is there a psychologist in the building? *The Psychologist*, 19:10, 592-594.

Kessler, Ronald (2006) Laura Bush- A Portrait of the First Lady, Doubleday: New York.

Iovine, J. V. (2001, January 28). Oval Office: Room With a Hue. *The New York Time*s. p. 4-16.

Israel, T. (2003). Place Like Home: Using Design Psychology to Create the Ideal Places. Academy Editions Ltd. London.

McGirt, E. (2009).The Brand Called Obama. Retrieved October 1, 2009. from Fast Company.com website: http://www.fastcompany.com/magazine/124/the-brandcalled-obama.html

——— (1998). Space: People and Places. Trafalgar Square Publishing. London.

Greenstein, F. I. (2004). The presidential difference: leadership style from FDR to

George W. Bush. Princeton University Press: Princeton, NJ.

Greenstein, F. I. (2009). The presidential difference: leadership style from FDR to

Barack Obama. Princeton University Press: Princeton, NJ.

Seale, William, (1992). The White House-The History of an Idea. White House Historical Association: Washington D.C.

Sorenson, T.C. (1973, September 17). Your Next President, *The New York Times.* p.33.

Talbot, David, (2007). Brothers: The hidden history of the Kennedy Years. Free Press: New York.

"Oval Office." White House. http://www.whitehouse.gov/president/oval-office.html

(accessed July 02, 2008).

Table1. Modern Presidents and their Oval Office Décor

Franklin D. Roosevelt
1934-1945

(Franklin D. Roosevelt Library)

Harry S. Truman
1945-1953

(Dwight D. Eisenhower Presidential Library)

Dwight D. Eisenhower
1953-1961

(Dwight D. Eisenhower Presidential Library)

John F. Kennedy
1961-1963

(Courtesy of John F. Kennedy Library)

Lyndon B. Johnson
1963-1969

(White House Historical Association)

Richard M. Nixon
1969-1974

(White House Historical Association)

Gerald R. Ford
1974-1977

(White House Historical Association)

Jimmy Carter
1977-1981

(White House Historical Association)

Ronald Reagan
1981-1989

(Ronald Reagan Presidential Library)

George H. W. Bush
1989-1993

(White House Historical Association)

William Clinton
1993-2001

(Courtesy of the Clinton Library)

George W. Bush
2001-2009

(Photo by Bruce White, copyright White House Historical Association)

Skins and Layers: Constructing Meaningful Concepts

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ABSTRACT

Diagramming the domain of interior design through the intersection of one artist's theory with two architects' theories (modified by one interior designer/educator) offers a model for constructing creative concepts and ultimately more meaningful project solutions. The intersection of five skins of Hundertwasser and ten layers from Duffy/Brand and the author is revealed in a series of diagrams. By identifying the range and types of considerations critical to interior, the composite diagram illustrates multiple points of entry for concept generation. The multi-layered, multi-dimensioned model that emerges from this study provides a framework for the initial creative generation of concepts that develop from identifying key elements, boundaries, intersections and overlaps that define the domain for interior design inquiry. The model is a color-coded mind map of sorts that engages the maker and invites participation from others (colleagues, clients). Users find the information and ideas revealed through constructing the map facilitates discovery of patterns and links among the elements. More advanced students will find links with design theories while novice designers can work with a focus designated by the studio professor (aesthetics, elements and principles, etc.). The studio professor augments and expands the students' range of inquiry through the use of readings, discussions and individual or group critiques. The process is innately collaborative and dependent upon dialogue: students with students or faculty with student(s). The graphic framework encourages design thinking as defined by Tim Brown in his recent book, *Change By Design*:

Design is not just about creating elegant objects or beautifying the world around us. The best designers match necessity to utility, constraint to possibility, and need to demand. These design thinkers rely on rigorous observations of how we use spaces and the objects and services that occupy them; they synthesize new ideas from seemingly disparate fragments; and they convert problems into opportunities. Design thinking is a method in which genius, in the end, is not required.

This paper offers a method and a model derived from disparate thinkers housed in varied disciplines – art, architecture, industrial design and others – as interpreted by an interior design educator. The diagrams and teaching strategies are illustrated and discussed. Focus is on the origination of the design concept from varied skins and layers and the refinement of the method through the intervention of the studio professor.

NARRATIVE

In 1997 I concluded an invited Perspective essay for the Journal of Interior Design with:

> *The poet/artist/child/adult being who chooses to be an interior designer sees, composes, and crafts envelopes for the imagination. Stripped of the extrinsic paraphernalia of the exotic, the esoteric, the fashionable, interior design is essentially a visual haiku marking the boundaries of the uncontainable.*

Thirteen years later I am still seeking a way to make ideation for designing interiors a more inclusive and reflective quest through disparate elements. Several factors emerge as defining aspects of the search. Time, eastern philosophies and communication formats, beauty, patterns, poetics culminating in an all inclusive sensation described in *The Elegance of the Hedgehog: "*Beauty is consonance is a sublime thought…". Muriel Barbery extends the thought with the "Way of Consonance, a sort of Way of the Samurai applied to the intuition of authentic forms. We all have a knowledge of harmony, anchored deep within." This awareness of harmony is universal but understanding of aesthetics allows us to recognize "the greatness of small things" and to "pursue them to the very heart of the inessential where, cloaked in everyday attire, this greatness will emerge from within a certain ordering of ordinary things and from the certainty that *all is as it should be,* the conviction that *it is fine this way."* (p.165).

Barbery's text prompted me to refocus on the old essay and to seek to document a way to prompt designers to generate deeply layered thinking resulting in a more satisfying design process as well as solutions for interiors which enrich the daily lives of those who inhabit them. Seemingly disjointed fragments emerge from both essay and the segment from *Hedgehog:* harmony, aesthetics, the heart of the inessential, everyday attire, ordering of ordinary things, consonance and an exotic term, *hsin.* My challenge became how to seek consonance, to make it more easily perceptible to others through the design of interiors. The next issue was what is the domain of interior design? Who are the designers who initiate inquiries into the intangible as well as the practical?

Enter another former exploration of the domain of interior design, the diagram inspired by the work of Frank Duffy and Stewart Brand published in *How Buildings Learn.* Time-linked layers are keys to understanding the life of buildings and Brand expanded Duffy's original four layers to six. Seeking to incorporate people into the mix, I added more layers in keeping with the original theme of words beginning with "s". The layers grew to nine with the addition of selves representing people and spirit for the all -encompassing gestalt of places interior and site specific. (Brand 12-13).

Serendipitously the counterpoint to the structure specific layers appeared when I discovered Pierre Restany's book, *Hundertwasser: The Painter with the Five Skins.* The self-named artist Hundertwasser identified five "skins" each person inhabits. These range from the most intimate and obvious, Epidermis through the most universal, Earth. Unlike Duffy, Brand and I, Hundertwasser did not limit himself to "e" words for all five skins. The others are Clothes, Houses and Identity. (Restany: title page). Taking the artist's cue to start with the person led me to contrast the people-centric skins with the structure-derived layers. Examining both skins and layers diagrams, I identified some of each which seem to be within the domain of the interior designer. Most recently, two other sources inspired additional arenas inside the epidermis for consideration.

Spike Bucklow's *The Alchemy of Paint: Art, Science and Secrets from the Middle Ages* contributes concordant elements and most importantly for this study, the "traditional view of man" as a composition of body, soul and spirit. The body and soul are unique to the individual but the spirit is universal. (p.38). Generously, Bucklow includes women as he expands the traditional point of view. Individuals are integral parts of the whole of creation and connected with all other parts of creation. "All the different parts of heaven and earth resonate with different parts of people." (p.39) Add to the mix of skins and layers the concept of body/soul/spirit. Tuck body and soul into the selves layer and spirit emanating from the individual links naturally with spirit of site/place.

Sim van der Ryn's Integral Epoch is the label for what the present could be. In each stage of the evolutionary path, ecos, technos, mythos, nature, design & technology and culture are viewed through eight lenses. The lenses are : cultural form, space and time, (design) morphology, (prototype) geometry, built form, design process ecological footprint and economics. I find it pleasing that van

der Ryn identifies the design processes in this Integral Epoch as:

> *Integral culture and integral design processes are closely linked. Living in an integral world of body/mind, nature, and built environment, we experience all of life as an interconnected, self-organizing, co-evolving whole. The shift from self to self-organizing webs serving a larger common good brings into being new cultural patterns reflected in all key institutional forms and process, including the built form at all scales. (Design for Life p.158)*

In the sense of expanded scales and integral epochs, I've returned to another quest that's permeated my professor days since 1975: What is interior design? The question has changed for me. What should interior design be? What do interior design students need to know to thrive in the 21st century?

Perhaps the viable path is to educate (not train) students to be design thinkers. Design in the global sense that permeates all the allied design disciplines. Interior designers are linked skins and layers at the core of inhabited space and in collaboration with those who inhabit places with satisfaction that exceeds that of mere shelter. This paper seeks to offer consideration of a means for evolving interior designers who think creatively, collaboratively, critically and copiously and communicate concisely yet poetically in words and images. Designers who deal with the ephemeral and intangible to facilitate the experiential have many opportunities for generating creative and meaningful design concepts and resulting solutions. By looking to the east as well as the west for theory and aesthetic ideals, looking back in time to ancient wisdom from many peoples and casting the search in a wide arc through the layers and skins to discover the universal, timeless, sensual, unique and specific inspirations, designers can discover a beauty beyond aesthetics derived from the design's elegant fit with function, economy and nature.

The late Charles Moore as much poet as architect describes such places in *Chambers for a Memory Palace:*

> *Memories lodge in places that are distinct. Axes, orchards, platforms, boundaries, openings, canopies, and markers, when interwoven with our movements through them and the light that plays across them, set out an intricate web of relationships that can ensnare moments from our lives and hold them in safekeeping. Place, humble or grand, that become palaces for memory meld these themes into compositions, with rooms and spaces completely ordered in patterns both familiar and mysterious, enlivened by ornament and association and intertwined with gardens, water and evocative imagery.*

The design of interiors offers opportunities for creativity and satisfaction for both the designer and the inhabitant alike. Interior designers access the intimate and the expansive as identified by the skins and layers diagrams. In particular, the tripartite human composition of body, soul and spirit and the integral relationship of all three with the universe opens amazing portals for the designer's mind, eye and hand to explore.

REFERENCES (APA)

Barbery, M. (2006). *The Elegance of the hedgehog.* New York, NY: Europa Editions.

Brand, S. (1994). *How Buildings learn.* New York, NY: Viking.

Brooks, D. (1997). Hsin in the circuit of eye and hand. *Journal of Interior Design*, 23(2),1.

Bucklow, Spike. (2009). *The Alchemy of paint.* London: Marion Boyars.

Moore, C. (1996). *Chambers for a Memory Palace.* Boston: MIT Press.

Restany, Pierre. (2003). *Hundertwasser: the painter-king with the five skins.* Cologne: Taschen, GmbH.

Van der Ryn, S. (2005). *Design for life.* Layton, Utah: Gibbs Smith Publisher

The role of personality traits and The Big Five in predicting future success of interior design students

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ABSTRACT

Determining a student's potential is a serious endeavor in higher education. In this high stakes decision-making, most programs utilize a combination of assessment measures to obtain a full picture of the candidate student. In programs where only a limited number of slots are available, this selection process becomes particularly important. This process is based on the underlying assumption that academic units want to select the students who will be the most "successful" or who will succeed, given their conceptions success. Historically, admissions criteria have encompassed a narrow definition and set of tools, even when program or department mission statements included a broad range of student learning goals (Camara, 2005).

In the past 20 years, there has been a large body of research that demonstrates the validity of personality measures in predicting job performance criteria (Judge, Higgins, Thorensen, & Barrick, 1999). Researchers have also shown that personality measures predict academic criteria such as GPA and absenteeism (Paunonen & Nicol, 2001). Empirical support has been shown for the Big Five model as a theoretical framework for the study of personality in different settings and populations (Costa & McCrae, 1994; Digman, 1997). The five personality factors are: 1) Neuroticism—level of stability versus instability, 2) Extraversion—tendency to be assertive, sociable, and energetic 3) Openness—disposition to be curious, open to new situations, and imaginative, 4) Agreeableness—disposition to be cooperative, and supportive, and 5) Conscientiousness—disposition toward purposeful, determined, and goal-directed behavior.

The focus of this study is to analyze a set of personality measures in predicting college success in an undergraduate interior design program at a large Midwestern university in the United States. The criterion measure used to define success in college is the student's cumulative grade point average. This study is important for several reasons. First, there is limited current research on admissions criteria assessment for interior design programs. Second, because of the nature of design and the design student, these programs must not fall back on criteria and research that is not domain specific and does not holistically look at the candidate student. Lastly, admissions decisions are high-stakes decisions that should have a transparent and rigorous process, where the admission criteria are consistent with the program's mission and vision. This is a responsibility to the students, their parents, and to society as a whole.

NARRATIVE

INTRODUCTION

Research suggests that the Big Five traits, collectively, outperformed academic motivation, IQ, high school GPA, SAT scores, and ability, to predict academic success (Conrad, 2006; Noftle & Robins, 2007; Duckworth & Seligman, 2005). Interestingly, admissions decisions are rarely based on personality trait scores. The predominant form of admissions criteria include initial GPA, standardized tests, and portfolio reviews in the case of interior design programs.

In a previous study, Brunner (2009) looked at what variables best predict future academic success. The criterion measure used was a performance assessment of a design project. Results of this study indicated that the portfolio, essay, and freshman GPA had no predictive power. High school GPA did predict academic success, and three of the ACT subscores showed a significant relationship to the criterion measure. Personality measures were not collected and analyzed in this study. These participants are currently seniors, and part of this paper analysis looks at the personality measures with the other predictor variables collected earlier.

The purpose of this paper is to investigate the Big Five personality traits in predicting academic success. The main research question of this study is how well do students' personality traits predict academic success, using final, cumulative GPA as the criterion measure. Other research questions compare the personality trait results to other predictor variables collected, such as high school GPA, ACT, portfolio, and essay scores.

LITERATURE REVIEW

Big Five Personality Traits / Big Five Inventory. Currently the most popular approach among psychologists for studying personality traits is the five-factor model or the Big Five dimensions of personality. These five factors were derived from factor analyses of a large number of self- and peer reports on personality-relevant adjectives and questionnaire items. The Big Five personality dimensions are: 1) Neuroticism—level of stability versus instability, 2) Extraversion—tendency to be assertive, sociable, and energetic 3) Openness—disposition to be curious, open to new situations, and imaginative, 4) Agreeableness—disposition to be cooperative, supportive, trusting and 5) Conscientiousness—disposition toward purposeful, determined, and goal-directed behavior. These factors are dimensions, not types, so people vary continuously on them with most people falling in between the extremes. The factors have been shown to be stable over a 45-year period beginning in young adulthood (Soldz & Vaillant, 1999), and they are heritable at least in part (Loehlin, McCrae, Costa, & John, 1998).

The Big Five and workplace and academic success. Industrial and organizational researchers, as well as psychology scholars have rediscovered the importance of personality traits, specifically the Big Five, to academic and work achievement. Persons scoring high in Openness have completed more years of academic training by middle adulthood (Goldberg, Sweeney, Merenda, & Hughes, 1998). Openness also predicts success in artistic jobs, while Conscientiousness predicts success in conventional jobs (Barrick, Mount, & Gupta, 2003; Larson, Rottinghaus, & Borgen, 2002). This is using Holland's RIASEC typology of vocations, which include six types—realistic, investigative, artistic, social, enterprising, and conventional (Holland, 1996).

In college, Conscientiousness also predicts higher academic grade-point averages GPAs in school (Komarraju, Karau, & Schmeck, 2009; Noftle & Robins, 2007; Paunonen, 2003). This personality trait has consistently positive association with GPA beyond that explained by SAT scores (Conard, 2006), high school GPA (Noftle & Robins, 2007), IQ (Duckworth & Seligman, 2005), or motivation (Komarraju, Karau, & Schmeck, 2009). Conscientiousness, beyond primary and secondary schooling, has emerged as a general predictor of job performance across a wide range of jobs (Barrick & Mount, 1991; Mount, Barrick, & Stewart, 1998).

METHODOLOGY

The participants in this study included 100 interior design undergraduates in a large Midwestern university, including 29 seniors, 31 juniors, and 40 sophomores. Personality trait information was collected using the Big Five Inventory (BFI). This instrument is a 44-item survey developed to represent the Big Five prototype definitions. The goal of this instrument was to create a brief inventory that would allow efficient and flexible assessment of the five dimensions when there is no need for more differentiated measurement of individual facets. The BFI items retain the advantages of adjectival items (brevity and simplicity) while avoiding some of their pit-

falls (ambiguous or multiple meanings and salient desirability (Goldberg & Kilkowski, 1985).

RESULTS

Linear regression models were run using the statistical software, SPSS. The dependent variable or criterion measure was the students' cumulative GPA (finalGPA). Data sets included information from students' high school and freshmen years. Five main analyses were run, which included: 1) The Big Five dimensions and finalGPA for all participants, 2) the Big Five dimensions and the students' high school data for all participants, 3) the Big Five dimensions and the students' freshmen or Core Program[1] data for all participants, 4) the Big Five dimensions, and students' high school and freshmen data for all participants, and 5) the seniors cohort, using their previous criterion, which were scores from their performance assessment of a design project; this analysis also includes results using the finalGPA as the criterion measure.

The Big Five and final GPA. When all five dimensions were run in a regression analysis, the Conscientiousness dimension significantly predicted a student's finalGPA. Running each dimension separately as the independent variable, both Conscientiousness and Extroversion were significant predictors of finalGPA. This is consistent with previous academic success literature which found that the Conscientiousness dimension was a strong predictor in determining a student's final GPA. The significant Extroversion dimension has been found to predict workplace leadership in previous studies, but not necessarily academic success as measured by GPA.

The Big Five and high school data. The high school data for this analysis included the HS GPA, HS Rank, ACT subscores of Elementary Algebra (ACT_ALG), Geometry-Trigonometry (ACT_GEOM-TRIG), and ACT Math (ACT_MATH)[2]. Results showed that Conscientiousness and Agreeableness of the Big Five dimensions were significant predictors, along with HS GPA. The best regression model included Conscientiousness and HS GPA. The ACT subscores proved to not be significant predictors of success.

The Big Five and freshmen data. The freshmen data included the students' portfolio and essay scores, as well as their freshmen GPA. These are also the variables that are used in the current admissions process in the participants' interior design program. In this analysis, the freshmen GPA, and the Big Five dimension, Conscientiousness, were significant predictors. The Extroversion score was not significant, nor were the portfolio and essay scores. The interior design program admissions criteria include a student's freshmen GPA, portfolio, and essay scores.

The Big Five and both high school and freshmen data. When regression models were run using both high school and freshmen data, the best model consisted of the Big Five Conscientiousness score, freshmen GPA, and HS GPA. These results imply that a person's prior GPAs are the best predictor of future GPAs. This is also consistent with the literature that discusses a strong relationship between a person's Conscientiousness score and their GPA performance or academic performance.

Previous study with current seniors. In this analysis the first criterion measure used was the students' performance assessment score of a design project. Here, only the three ACT subscores were significant predictors. None of the Big Five dimensions, nor the HS GPA or freshmen GPA were significant. Interestingly, when the criterion measure was the students' final GPA, the Interior Design Rank[3] score was shown to be negatively significant.

DISCUSSION

The results of this study confirmed previous research describing a strong relationship between the Big Five dimension of Conscientiousness and a person's GPA. Intuitively this makes sense since Conscientiousness is described as a disposition toward purposeful, determined, and goal-oriented behavior. If one agrees with the definition of academic success as measured by GPA, then Conscientiousness would be a reasonable score to obtain from a prospective student. This Conscientiousness score may also be helpful in predicting those students who will do well in the workplace after

1 In the College of Design of this university, all freshmen design majors enroll in the college's Core Program. This consists of foundational courses, important to all design programs, which students begin in their sophomore year.

2 In a previous study, these variables were shown to be significant predictors (Brunner, 2009) of success.

3 The ID rank score consisted of a student's rank based on their portfolio, essay, and freshmen GPA scores. A ranking of 1, indicated the top scoring student admitted into the interior design program.

graduation.

The results also indicated that the current admissions criteria variables, as a whole, are not good predictors of a student's future academic success. The Interior Design Rank score showed a significantly negative relationship to a person's final GPA.

CONCLUDING REMARKS

As design educators, the question remains: are we looking for students who have the potential to obtain high GPAs in college, have a high intelligence level, or show strong design ability? Certain personality measures seem to better predict GPA than standardized test scores, portfolio and essay scores. Results indicated that GPA and performance assessments uncover different predictor variables, adding to the complexity of predicting design student success.

REFERENCE LIST (APA)

Anderson, C., John, O.P., Keltner, D., & Kring, A. (2001). Who attains social status? Effects of personality and physical attractiveness in social groups. *Journal of Personality and Social Psychology*, 81,116-132.

Barrick, M.R., & Mount, M.K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, 44, 1-26.

Barrick, M.R., & Mount, M.K., & Gupta, R. (2003). Meta-analysis of the relationship between the five factor model of personality and Holland's occupational types. *Personnel Psychology*, 56, 45-74.

Brunner, L.A., (2009). *Undergraduate interior design program admissions: What is the best predictor of future "success?"* International Conference of the Interior Design Educator's Council (IDEC), March 25-28, 2009. St. Louis, MO.

Camara, W.J. (2005). Broadening predictors of college success. In W.J. Camara, E.W. Kimmel (Eds.), *Choosing students: Higher education admission tools for the 21st century* (pp. 81-105). Mahway, NJ: Lawrence Erlbaum Associates, Publishers.

Conard, M.A. (2006). Aptitude is not enough: How personality and behavior predict academic performance. *Journal of Research in Personality*, 40, 339-346.

Costa, P.T., & McCrae, R.R. (1994). Stability and change in personality from adolescence through adulthood. In C.F. Halverson, Jr., G.A. Kohnmstamm, & R.P. Martin (Eds.), *The developing structure of temperament and personality from infancy to adulthood* (pp. 139-155). Hillsdale, NJ: Lawrence Erlbaum Associates.

Digman, J. (1997). Higher order factors of the Big Five. *Journal of Personality and Social Psychology*, 73, 1246-1256.

Duckworth, A.L., & Seligman, M.E.P. (2005). Self-discipline outdoes IQ in predicting academic performance in adolescents. *Psychological Science*, 16, 939-944.

Fairchild, A.J., Horst, S.J., Finney, S.J., & Barron, K.E. (2005). Evaluating the existing and new evidence for the Academic Motivation Scale. *Contemporary Educational Psychology*, 30, 331-358.

Goldberg, L.R., & Kilkowski, J.M. (1985). The prediction of semantic consistency in self-descriptions: Characteristics of persons and of terms that affect the consistency of responses to synonym and antonym pairs. *Journal of Personality and Social Psychology*, 48, 82-98.

Holland, J.L. (1996). Exploring careers with a typology:

What we have learned and some new directions. *American Psychologist*, 51, 397-406.

John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm Shift to the Integrative Big-Five Trait Taxonomy: History, Measurement, and Conceptual Issues. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (pp. 114-158). New York, NY: Guilford Press.

Judge, T.A., Higgins, C.A., Thorensen, C.J., & Barrick, M.R. (1999). The Big Five personality traits, general mental ability and career success across the life span. *Personnel Psychology*, 52, 621-652.

Komarraju, M., Karau, S.J., & Schmeck, R.R. (2009). Role of the Big Five personality traits in predicting college students' academic motivation and achievement. *Learning and Individual Differences*, 19, 47-52.

Larson, L.M., Rottinghaus, P.J., & Borgen, F.H. (2002). Meta-analyses of Big Six interests and Big Five personality factors. *Journal of Vocational Behavior*, 61, 217-239.

Loehlin, J. C., McCrae, R. R., Costa, P. T., Jr., & John, O. P. (1998). Heritabilities of common and measure-specific components of the Big Five personality factors. *Journal of Research in Personality, 32,* 431-453.

McCrae, R.R., & Costa, P.T. Jr. (1985). Updating Norman's "adequacy taxonomy": Intelligence and personality dimensions in nature language and in questionnaires. *Journal of Personality and Social Psychology*, 49, 710-721.

Mehl, M.R., Gosling, S.D. & Pennebaker, J.W. (2006). Personality in its natural habitat: Manifestations and implicit folk theories of personality in daily life. *Journal of Personality and Social Psychology*, 90,862-877.

Mount, M.K., Barrick, M.R., & Stewart, G.L. (1998). Five-factor model of personality and performance in jobs involving interpersonal interactions. *Human Performance*, 11, 145-165.

Noftle, E.E., & Robins, R.W. (2007). Personality predictors of Academic Outcomes: Big Five correlates of GPA and SAT scores. *Journal of Personality and Social Psychology*, 93, 116-130.

Paunonen, S.V., & Nicol, A.M. (2001). The personality hierarchy and the prediction of work behaviors. In B.W. Roberts & R. Hogan (Eds.), *Personality psychology in the workplace* (pp. 161-191). Washington, DC: American Psychology Association.

Paunonen, S.V. (2003). Big Five factors of personality and replicated prediction of behavior. *Journal of Personality and Social Psychology*, 84, 411-424.

Robins, R.W., Caspi, A., & Moffitt, T.E. (2002). It's not who you're with, it's who you are: Personality and relationship experiences across multiple relationships. *Journal of Personality*, 70, 925-964.

Soldz, S., & Vaillant, G. E. (1999). The Big Five personality traits and the life course: A 45-year longitudinal study. *Journal of Research in Personality, 33,* 208-232.

Thoresen, C.J., Kaplan, S.A., Barsky, A.P., Warren, C.R., & de Chermont, K. (2003). The affective underpinnings of job perceptions and attitudes: A meta-analytic review and integration. *Psychological Bulletin*, 129, 914-945.

Watson, D., Hubbard, B., & Wiese, D. (2000). General traits of personality and affectivity as predictors of satisfaction in intimate relationships: Evidence from self- and partner-ratings. *Journal of Personality*, 68,413-449.

Intertwined: Corsets, Divans and Promiscuity

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ABSTRACT

In the second half of the 19th century in the United States the concepts of bodily comfort, furniture, and costume became the focal points of an intense discourse. These issues became more intertwined with the introduction of foreign furniture pieces such as the Turkish divan. K. C. Grier noted that in the 1880s and 1890s, "new fashions for 'Turkish' furniture, particularly low couches, apparently presented parlor people with unanticipated deportment difficulties that some periodicals tried to assuage with advice such as 'How to Sit on a Divan (Grier, 126).'" Perhaps partially due to their connection to the infamous Harem, divans and other similar furnishings were associated with frivolous and slightly dissipated behavior, as though comfort induced promiscuity (de Dampierre, 173-174). There was also a contrast often explicitly drawn between Western formality and "oriental" more specifically Ottoman informality.

While Victorian ladies were making an effort to appropriate their corseted bodies to these new pieces of furniture, discussions of clothing as it relates to health, physical fitness and equality for women became common. Avant-garde groups, like the Aesthetic Dress Movement and The Rational Dress Society, were founded to encourage dress reform among men and women. The latter pledged to promote clothing, which was "perfect in healthiness, comfort, and beauty." In their own words, The Society protested "against the introduction of any fashion in dress that either deforms the figure, impedes the movements of the body, or in any way tends to injure the health."[1] In their gazette they advocated free waists and divided skirts for ladies, which would allow them to function like men. Amelia Bloomer famously protested the idealization and disfiguration of the female body through fashion and dress. When she promoted the Turkish pantaloon as an alternative to Victorian-style dresses, the liberation of female bodies from the restriction of corsets became a metaphor for the social freedom of women.[2] Although the "Bloomer" fashion was rejected and even ridiculed by many, it paved the way for future discussions of women's clothing and the issue of equality.[3] This idea of "liberating" women in the west by recourse to fashions in the east is a striking illustration of the unpredictabilities of intercultural relations.

This article will examine the evolution of women's costume as it relates to furniture design and bodily comfort in the second half of the nineteenth century, highlighting the way that foreign fashions and furniture design crystallized issues of comfort, gender and style.

NARRATIVE

The idea that chairs and furniture should be comfortable is second nature to us in the present day, but it was not always so. In fact, bodily comfort as an ideal for furniture becomes prominent in France during the reign of Louis XV (1715-1774), and can be linked to a more general interest in *turquerie*. Madeleine Dobie notes the appearance, beginning in the mid-seventeenth century, of a series of chairs that "responded to the new emphasis on comfort and sociability." And she continues: "The oriental, feminine names commonly conferred on them –*sofas*, *ottomanes*, *paphoses*, *turquoises*– evoked a distant impression of the Turkish divan, the row of cushions arranged against a wall that European travelers encountered in Constantinople (Dobie, 14-16)." An important ideal of this period was the pursuit of sensual gratification; furniture design followed the same path by searching for *convenance,* as the French called it. After the rigid and highly formal interiors and furniture of the Louis XIV period, with their perpendicular and solid lines, the new French furniture deployed floating and embracing curves, and plush softness. According to Sylvie Chadenet in the Louis XV period "everything conspired to create an atmosphere of exceptional elegance and refined comfort (Chadenet,48)." Madame de Pompadour, one of the favorites of Louis XV, played a significant role in the popularization of the *turquerie* fashion in eighteenth century France. She had her designers build a *chambre à la turque* in Chateau de Bellevue in 1752. In addition to a *lit à la turque,*[4] on the wall was a portrait of her painted by Carl Van Loo depicting her as a sultana in Turkish costume. In the eighteenth century the "craze for things Turkish (*turqueries*), was matched by a vogue for things Chinese, the two unrelated styles developing side by side. "the Both became aspects of Rococo…, an elegant, playful, and decorative style (Lemaire, 48)" that swept France, the rest of Europe and later North America.

While these changes were occurring in France, Turkish fashion also made its way to England. Thomas Hope traveled in Turkey as part of his Grand Tour, which lasted from 1787 to 1789. He studied architecture and costume while traveling and published *Household Furniture and Interior Decoration* in 1807. Hope named his low upholstered seat design as "ottoman," paying tribute to its origins. In his book he explained the origin of his inspiration for a drawing room: "a low sofa, after eastern fashion, fills the corners of this room. Its ceiling, imitated from those prevailing in Turkish palaces (Hope, 30)." The interest for things Turkish in America can be seen in American artist John Singleton Copley's portrait of Margaret Kemble Gage dressed up in Turkish style in 1771. Like her counterparts in England and France, Mrs. Gage's desire to be portrayed in Turkish costume without the restriction of her corset inaugurated the *turquerie* fashion in eighteenth century America (Barratt, 25). Copley painted more than a dozen other women in *turquerie* (Roark, 163).

Artistic representations of oriental women inspired by accounts of male travelers provide parallels for these associations.[5] In many of these paintings the Eastern women were gently placed on plush divans. The softness of the relaxed bodies and the clothes which loosely wrapped their bodies were based on orientalist assumptions about harem women. Whether they were realistic or not the travel accounts accompanied by images of women reclining seductively on soft divans in orientalist paintings created an association between the idea of bodily comfort and the East. Muslim women, of course, did wear flowing costumes, but as an expression of modesty. Ironically this social custom aimed at covering the form of the body was interpreted as just the opposite in representations by Westerners. In their paintings, the robes that were clinging or diaphanous revealed salaciously the female form beneath them and contributed to their construction as sexual objects. Intentionally or not, the artists of orientalist paintings often created a correlation of the freedom of bodily posture and the relaxation of sexual taboos. Another manifestation of the association of comfort and the orient is the emergence of women fashions that took their inspiration from the orient. Amelia Bloomer's *The Lily* is considered one of the first feminist journals in the United States. Bloomer gave detailed information on how women's clothing was influencing her physical and social life; and she protested the idealization and disfiguration of the female body through fashion and dress. She disapproved of tightlacing and dresses with big skirts and suggested the use of the Turkish pantaloon instead. After all, in its native land this oriental costume did offer postural freedom and comfort to its users, especially when sitting on a divan.

In Victorian American, "oriental" fashions and designs were at the heart of a design revolution at many levels. The parlor, for example, was criticized for being an

overformal, showy, and ineffective space. Some of the earliest complaints were about stiff furniture and how the room's formal organization of furniture, reflecting the rules of etiquette, prevented occupants from relaxing and interacting easily. Edith Wharton collaborated with architect Ogden Codman Jr. on *The Decoration of Houses* (1897), a book that became a milestone in the field of American interior design. They disapproved of the American parlor as a whole, which too often failed "to fulfill its purpose as a family apartment." When advising people to decorate, they emphasized that "the *comfort* of… [a room's] occupants depends more on the nature of the furniture than on the wall decorations or carpet." They continued to advise to keep "as much money as possible for the purchase of comfortable chairs and sofas and substantial tables (Wharton & Codman, 26).

Their emphasis on the importance of furniture came when Americans spent more money on fabric than anything else in their parlors. A similar predilection for comfort is expressed by Lillie Hamilton French in her book *Homes and Their Decoration* (1903), where she stated, "chairs should be placed where they provide the most comfort." She continued: "Suppose that your whole idea was to have a hospitable home.... Could you, if this were so, imagine your keeping in your parlor an uncomfortable chair…. Were you sincere in your claim to the hospitable spirit, could you rest content until you had substituted another chair for that one entailing such universal discomfort? (French, 14)"

The excessively formal parlor is here linked to a lack of hospitality. Hospitality, of course, is a legendary aspect of "oriental manners," a regular topic of travelers and western commentators. This idea must be added to flowing comfortable clothing and plush comfortable furniture as part of the web of associations that evokes the oriental world as an alternative to staid Victorian formality. In time Americans adopted bodily comfort as a distinctive ideal, an ideal that correlated well with their self image of practicality and simple virtue. Neither a promiscuous sensuousness, nor an excessive emphasis on style, the American ideal emphasized furniture function for mediating social relationships of a different kind, even while taking inspiration from the elements and traditions of Europe and Turkey.

REFERENCE LIST

Barratt, C. R. (1998) *John Singleton Copley and Margaret Kemble Gage, Turkish Fashion in 18th Century America.* New York: Putnam Foundation & Metropolitan Museum of Art.

Chadenet, S., ed. (2001) *French Furniture: From Louis XIII to Art Deco*. Boston: Little, Brown and Co.

Craig, H. T. (1973) *Clothing: A Comprehensive Study.* Philadelphia: Lippincott.

De Dampierre, F. (2006) *Chairs: A History*. New York: Abrams.

Dobie, M. (2007) "Orientalism, Colonialism, and Furniture in Eighteenth-Century France" in *Furnishing the Eighteenth Century*, Dena Goodman and Kathryn Norberg, ed. New York, London: Routledge.

French, L. H. (1903) *Homes and Their Decoration*. New York: Dodd, Mead and Company.

Grier, K. C. (1997) *Culture and Comfort: Parlor Making and Middle-Class Identity, 1850-1930.* Washington & London: Smithsonian Institution Press.

Hope, T. (1807) *Household Furniture and Interior Decoration: Executed from Designs by Thomas Hope.* London: Longman, Hurst, Rees & Orme, Paternoster Row.

Lemaire, G. (2005) *The Orient in Western Art*. Cologne: Konemann.

Wharton, E. and Ogden Codman Jr. (1897) *The Decoration of Houses*. New York: Charles Scribner's Sons.

(ENDNOTES)

1 *The Rational Dress Society's Gazette* 1888 No. 1 (April), 1.

2 On Aesthetic Dress Movement see Patricia A. Cunningham, P. A. *Reforming Women's Fashion, 1850-1920: Politics, Health, and Art* (Kent : Kent State University Press, 2003); Valerie Steele, *The Corset: A Cultural History* (New Haven: Yale University Press, 2003); Mary Warner Blanchard, *Oscar Wilde's America: Counterculture in the Gilded Age* (New Haven: Yale University Press, 1998); Lionel Lambourne, *The Aesthetic Movement* (London: Phaidon, 1996).

3 See Daniel Leonard Purdy, *The Rise of Fashion: A Reader* (Minneapolis : University of Minnesota Press, 2004) 109; Kim K. P. Johnson, Susan J. Torntore, Joanne Bubolz Eicher, *Fashion Foundations: Early Writings on Fashion and Dress* (Oxford ; New York: Berg Publishers, 2003), 59-63; Gayle V. Vischer, *Pantaloons and Power: A Nineteenth-century Dress Reform in the United States* (Kent, Ohio : Kent State University Press, 2001); Margaret Mary Finnegan, *Selling Suffrage: Consumer Culture and Votes for Women* (New York : Columbia University Press, 1999), 21. For parallel developments on the continent see Valerie Steele, *Paris Fashion: A Cultural History* (New York: Oxford University Press, 1988), especially 162-167; Valerie Steele, *Fashion and Eroticism: Ideals of Feminine Beauty from the Victorian Era to the Jazz Age* (New York: Oxford University Press, 1985).

4 Lits *à la turque* (Turkish beds) have a "back" (set against the wall) as well as a head- and footboards. The edges of the latter trace an S-curve and terminate in an overhanging scroll. From the baldaquin, fixed to the wall, hang curtains that are draped over the rear of the board (Chadenet, 53).

5 Mary Roberts, *Intimate Outsiders: The Harem in Ottoman and Orientalist Art and Travel Literature* (Durham: Duke University Press, 2007); Jill Beaulieu and Mary Roberts, *Orientalism's Interlocutors: Painting, Architecture, Photography* (Durham: Duke University Press, 2002); Lynne Thornton, *Women as Portrayed in Orientalist Painting* (Coubevoie: ACR Edition, 1994); Lynne Thornton, *Eastern Encounters: Orientalist Painters of the Nineteenth Century* (London: Fine Arts Society, 1978); Marianne Roland Michel, "Exoticism and Genre Painting in Eighteenth-Century France" in Colin B. Bailey, Philip Conisbee, Thomas W. Gaehtgens (eds.) *The Age of Watteau, Chardin, and Fragonard* (New Haven: Yale University Press, 2003), 106-119.

An Analysis on Topics of Sustainability during the Past Three Years: Reviewing Trends from Recent Conference Proceedings

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ABSTRACT

The decade following the inception of U.S. Green Building Council (USGBC)'s the Leadership in Energy and Environmental Design (LEED) Green Building Certification System saw a substantial increase in interest in sustainable design among design practitioners, educators, and researchers. With this growing attention, we believe that it is time to review the past years' research topics in sustainable design in order to know the current status and the seminal issues of sustainability research. Reporting on what is actually being done will speak to the main interests and focus for researchers.

Thus, the three primary purposes of this study are: (a) to review the trends of the past three years of research focusing on sustainability issues; (b) to map out the specific research areas under sustainability; and (c) to understand the background of the research trends that possibly inform us about the future direction of sustainability research.

A total 117 papers and posters, presented in Interior Design Educators Council (IDEC) annual conferences as well as Environmental Design Research Association (EDRA) annual conferences between 2007 and 2009, were assessed critically with the two perspectives- (a) the topic of the study and (b) the discipline of the study. The assessment resulted in a tabulation of all the papers and posters into total 20 topic categories, such as History, Housing, Workplace, Teaching/curriculum, etc, and four fields of study, ranging from interior design to urban development.

As a result, we found that among the 20 categories, six areas prominent in the number of presentations. The six areas are: (a) Housing, (b) Public awareness, (c) Theory, (d) Teaching/curriculum, (e) Practice, and (f) Youth education. Among the six areas, three are strongly related to education of sustainability issues- Public awareness (education of sustainability to public), Teaching/curriculum (education of sustainability for interior design or architecture major students), and Youth education (education of sustainability for youth groups).

Thus, this paper concludes that 'Education' and 'Housing' have been two seminal areas of study for the past three years in the field of interior design. One unique tendency found in this study is the lack of Public awareness and Youth education related to research in the interior design field, compared to architecture and landscape architecture. Findings and implications will result in a better understanding of the seminal issues of sustainability in the field of environmental design, and will help clarify the sustainability research realm.

NARRATIVE

INTRODUCTION

This study is an overview of a larger quest investigating the recent trends and tendencies in sustainability research. Since the inception of the U.S. Green Building Council (USGBC)'s Leadership in Energy and Environmental Design (LEED) Green Building Certification System in 1993, interest in sustainability development among design practitioners, educators, and researchers has increased. According to UN Brundtland Report, sustainable development is defined as the capacity to meet "the needs of the present without compromising the ability of future generations to meet their own needs".

In recent years, sustainability has become a frequently discussed term in the environmental design related fields, such as interior design, architecture, landscape architecture, and urban development. We believe that it is time to examine where we stand in terms of our efforts toward sustainable design. With this study, we reviewed past studies on sustainable design in order to address the research trends in sustainability and to better understand where the research is headed.

PURPOSE

Thus, the three primary purposes of this study are: (a) to review the trends of the past three years of research focusing on sustainability issues; (b) to map out the specific research areas under sustainability ; and (c) to understand the background of the trends that could possibly inform us about the future direction of sustainability research.

The findings of this study will provide a better understanding of the potentials and contributions of researchers interested in sustainable design.

METHOD

A total 1210 papers and posters were presented at the Interior Design Educators Council's (IDEC) annual conferences as well as Environmental Design Research Association's (EDRA) annual conferences between 2007 and 2009. Among them, 117 paper/poster presentations were related to sustainability. They were critically assessed from two perspectives – (a) the topic of the study, and (b) discipline area of the study (i.e., interior design, architecture, etc).

Table 1 shows the distribution of sustainability studies from each discipline area. The relevance of the research on sustainability was determined based upon the following three sources: (1) title of the study; (2) key words provided by the authors; and (3) the usage of such words as "sustainable, sustainability, green, energy efficiency, recycle" in the study. However, although a certain study contains "sustainability" in its key words or title, if the content does not actually deal with the sustainability issue, the study was excluded from our analysis. In addition, invited lectures and pre-conference workshops hosted by the organizations were not included in our study because such efforts were not considered voluntary. From the IDEC proceedings, paper narratives and posters were considered for analysis; from the EDRA proceedings, full papers and abstracts were considered.

In the first phase, a proportion of all the sustainability studies were examined. In the second phase, using only the sustainability studies, four distinct discipline areas and 20 categories of study topics were identified.

The four discipline areas were interior design; architecture, landscape architecture, and urban development, The 20 topic categories include History, Housing, Workplace, Teaching/curriculum, etc. Each study was categorized after carefully reviewing its abstract, purpose, and methods section. In the last phase, the unique tendency between interior design and other disciplines was examined. Table 1 demonstrates the distribution of the studies within each category.

FINDINGS AND IMPLICATIONS

Sustainability Research Proportion Out of the Entire Proceedings

The first finding recorded the percent of sustainability studies among all the presentations. During the six conferences, the overall percentage was between 4.5-13.5%, and the average was 9.7%. EDRA 2007 had the highest percentage (13.5%), which may be because the theme of the conference was "building sustainable community". In contrast, IDEC 2008 showed the lowest percentage (4.5%).

Using the reviews of sustainability studies, we identified research themes in the following 20 categories- Teaching/curriculum, Youth education, Public awareness, Policy, Assessment, Air quality, Ethics, History, Housing,

Workplace, Corporate, Commercial, Healthcare, Lab/ education facility, Method, Practice, Theory, Cost, Community, and Food.

Occurrences of 20 Categories of Research Topics

The analysis shows that there has been a broad range of sustainability research; and at the same time, it shows an inclination to certain research topics.

As seen in the table 2, among the 20 categories ranging all four disciplines, we found that six areas were prominent in the number of presentations. The six areas are: (a) Housing, (b) Public awareness, (c) Theory, (d) Teaching/curriculum, (e) Practice, and (f) Youth education. Housing, which accounts for 17.1 percent, was found to be the most frequently studied topic area. Public awareness (10.3%) and Theory (10.3%) were next, followed by Teaching/curriculum education (9.4%), Practice (8.5%), and Youth education (8.1%).

Interestingly, among the six areas, three are strongly related to education of sustainability issues. They are Public awareness (education of sustainability to public); Teaching/curriculum (education of sustainability for interior design or architecture major students); and Youth education (education of sustainability for youth groups). This education related topics occupy over 27.3% of all sustainability studies. Thus, based on this analysis, we can suggest that 'Education (27.3%)' and 'Housing (17.1%)' are currently the seminal areas of research regarding sustainability.

To illustrate, studies under the 'Housing' category are such as the perception and the behavior of home residents toward recycling, residents' value to a home's sustainability, the sustainable housing pattern, etc. 'Public awareness' contains research aimed at enhancing the public's understanding of sustainability (adult level). The research includes classroom assignments covering public awareness, the use of buildings or interiors as means of developing sustainability education, and students' intervention for sustainable behavior at the university level. 'Youth education' is another level of public awareness that was intended for children groups in elementary schools. A good deal of research in Youth education encouraged the awareness of sustainability through school or school grounds design. Research under 'Teaching/curriculum' category includes sustainability related courses and curriculum suggestions for majoring interior or architecture major students. Research under 'Practice' category includes research such as the case studies of sustainability applied design, usually presented by a group of practitioners and educators.

Topics in Interior Design and Public Awareness

As seen in table 2, in the field of interior design, the primary sustainability topics were Housing (27.8%) and Teaching/curriculum (27.8%). The rest of topics were very rare. Especially regarding Youth education, no studies exist and in terms of Public awareness, only two studies were found. In contrast in architecture, Youth education (11.6%) and Public awareness (11.6%) were frequently found following Housing (16.3%). The area of landscape architecture was not dominant, but within the small number of studies, Public awareness (33.3%) was prominent. In the urban development, Practice (23.1%) was dominant.

Environmentalist David Orr (1994) pointed out that current education is too focused on competitiveness for a global economy. He argues that our education system needs to include environmental education so students become more concerned about and make better efforts in developing a habitable society through responsible citizenship. When we credit Orr's arguments, the efforts done for youth and public education carried in architecture and landscape architecture are significant, indicating that interior design researchers may need to consider them.

DISCUSSION AND CONCLUSION

This study identified that when it comes to sustainable issues, 'Education' and 'Housing' have been two seminal areas of study for the past three years in the field of interior design. Among many studies that addressed sustainability education, the target audience has been limited to college level interior design students.

The importance of sustainability is addressed in guidelines of the Council for Interior Design Accreditation (CIDA) and the National Council for Interior Design Qualification (NCIDQ) (http://www.accredit-id.org/Prof_Standards2009.pdf, p. II-12). As an effort to comply with what appeared to be a more specifically emphasized topic area in interior design, researchers and educators have been focusing on incorporating sustainability into

the curriculum.

However, compared to other related disciplines, interior design tends to focus only on interior design curriculum without reaching out to education for the community or children. Since interiors are the closest environments to people and more people can immediately relate to sustainable issues concerning interiors compared to architectural or urban settings, interior design educators and researchers may hold a unique position to effectively communicate with public when disseminating their knowledge and findings for public awareness. Our analysis also demonstrated that target environments for research have been mainly within housing. No study on health care, commercial, or corporate environments has been reported. More practitioners now have experience in various types of LEED certified interior projects. Case studies on green interior design from both designers' and clients' perspectives can certainly contribute to broadening knowledge on sustainability applicable to the field.

Further analysis on the research approach, findings, and recommendations of previous studies over a longer period of time should provide more information useful for researchers interested in sustainable design.

APPENDIX

Table 1: Percentage distribution of 117 papers/posters according to year of conference

Conference title	Theme	Total No. of papers/posters	No. of paper/ posters regarding sustainability	Percentage out of total papers/posters
IDEC 2009	The spirit of exploration: the gateway to new frontiers	84	10	11.9%
IDEC 2008	Reason for being	111	5	4.5%
IDEC 2007	Design and social justice	54	6	11.1%
		249	21	Average 9.2%
EDRA 2009	Re: The Ethical Design of Places	357	22	6.2%
EDRA 2008	Linking differences/ defining actions	330	37	11.2%
EDRA 2007	Building sustainable community	274	37	13.5%
		961	96	Average 10.3%
	Total	1210	117	9.7%

Table 2: Percentage distribution of 117 papers/posters according to topics and discipline area of study

	Discipline area of the study				
Topics	**Interior design**	**Architecture**	**Landscape architecture**	**Urban studies development**	**TOTAL**
Teaching/curriculum	10	1			11
Youth education		5	3	1	9
Public awareness	2	5	4	1	12
Policy	1	3		3	7
Assessment	2	2		1	5
Air quality	1	2		2	5
Ethics	1			1	2
History	1	1			2
Housing	10	7	1	2	20
Workplace	2	1			3
Corporate				2	2
Commercial		3		1	4
Healthcare		1			1
Lab/education facility		2			2
Method		1	2		3
Practice	2	2		6	10
Theory	2	5	1	4	12
Cost	2				2
Community			1	2	3
Food		2			2
TOTAL	36	43	12	26	117

REFERENCE LIST (APA)

Corporate Author Environmental Design Research Association. (2009). *Proceedings of the 40th annual conference of Environmental Design Research Association*. Edmond, OK.: EDRA.

Corporate Author Environmental Design Research Association. (2008). *Proceedings of the 39th annual conference of Environmental Design Research Association*. Edmond, OK.: EDRA.

Corporate Author Environmental Design Research Association. (2007). *Proceedings of the 38th annual conference of Environmental Design Research Association*. Edmond, OK.: EDRA.

Council for Interior Design Accreditation (CIDA). (2009). *Professional standards 2009.* Retrieved February 2, 2010, from http://www.accredit-id.org/Prof_Standards2009.pdf

Guy, S., & Moore, S. (Eds.). (2005). *Sustainable architectures: Cultures and natures in Europe and North America.* New York: Spon Press

Interior Design Educators Council (IDEC). (2009). *Proceedings of the Interior Design Educators Council 46th Annual International Conference.*

Interior Design Educators Council (IDEC). (2008). *Proceedings of the Interior Design Educators Council 45th Annual International Conference.*

Interior Design Educators Council (IDEC). (2007). *Proceedings of the Interior Design Educators Council 44th Annual International Conference.*

National Council for Interior Design Qualification (NCIDQ). *Definition of interior design.* Retrieved February 2, 2010, from http://www.ncidq.org/AboutUs/AboutInteriorDesign/DefinitionofInteriorDesign.aspx

Orr, D. (1994). *Earth in mind: on education, environment and the human prospect*. Washington D.C.: Island press.

Stegall, N. (2006).Designing for sustainability: A philosophy for ecologically intentional design. *Design Issues*, *22(2)*, 56-63.

United Nations. 1987. *Report of the world commission on environment and development*

Wang, D. (2003). Categories of ACSA conference papers: A critical evaluation of architectural research in light of social science methodological frameworks. *Journal of Architectural Education*, *56(4)*, 50-56.

Our symbols, our space: A content analysis of symbolic motifs in the built environment

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ABSTRACT

Symbology is the study of symbols and symbolic meaning; environmental symbology is the study of symbols and symbolic meaning in the built and natural environment. The term "symbol" has several definitions across the spectrum of research. In psychology, Carl Jung defines a symbol as an image or word that has personal significance beyond its common meaning (Jung *et al*, 1964) while Erich From would distinguish between what he terms *conventional* and *universal* symbols (1951). In anthropology, both Victor Turner (1967) and Edward Hall (1959; 1966) study environmental symbols as an unspoken, social language capable of communicating cultural values and behavioral norms. In architectural theory, Clare Cooper Marcus (1974; 1995) and Christopher Day (1990; 2002) address the symbolic meaning of space in the context of personal interrelationships with the environment.

The subject matter of symbology is often interrelated with those of phenomenology, symbolic anthropology, rhetoric, communication, and psychology. Conversely, studies in these areas inform the body of knowledge for symbologists. This author's work is partly dedicated to classifying relevant theories into a useful typology. As such the author has identified three symbolic motifs in existing theory texts: threshold, edge, and mystery.

The aim of this study is to inform and assist interior design practitioners. It is this author's hope that insight into the symbolic meaning of the built environment will aid in designing spaces that nurture human psychological and emotional wellness. The method employs content analysis to develop a typology for the classification of theories. It then deconstructs and interprets the results using the elements and principles of design. As a result, the study generates a series of conceptual design sketches accompanied by descriptive narratives.

This author's exploration of three dominant symbolic motifs yields new resources for practitioners and educators. A framework of understanding is developed through the creation of a typology with keyword guide for relevant authors. A summary tool used in the methodology is developed into a typology worksheet for use in interior design teaching and practice. Most significantly this study takes a preliminary step toward the informed implementation of these theories in design practice.

NARRATIVE

Symbology is the study of symbols and symbolic meaning; environmental symbology is the study of symbols and symbolic meaning in the built and natural environment. The term "symbol" has several definitions across the spectrum of research. In psychology, Carl Jung defines a symbol as an image or word that has personal significance beyond its common meaning (Jung *et al*, 1964) while Erich From distinguishes between *conventional* and *universal* symbols (1951). In anthropology, Victor Turner (1967) and Edward Hall (1959; 1966) study symbolic acts as an unspoken, social language. In architectural theory, Clare Cooper Marcus (1974; 1995) and Christopher Day (1990; 2002) address the symbolic meaning of space.

There is symbolic meaning behind many aspects of human life, from our dreams (Jung *et al*, 1964; Jung, 1989) to our social behavior and cultural habits (McLaren, 1985; Ortner, 1984; Turner, 1967). The symbols of day-to-day human life are a language of their own (Fromm, 1951; Hall, 1959) and that symbolic language embeds itself in every artifact of culture, including the built environment. Well-designed space is therefore more than simply *how it is built*; it is also *what it means* to those who inhabit it (Cooper, 1974; Cooper Marcus, 1995; Day, 1990; Day, 2002).

To preclude some of the confusion created by inconsistent use of the term "symbol" across disciplines, the author has adopted the term "artifact" to describe a symbolically significant object, environmental feature, or applied decoration (patterns or designs) within the human environment. By this definition, a beloved family heirloom with special symbolic significance would be an *artifact*.

The subject matter of symbology is often interrelated with those of phenomenology, symbolic anthropology, rhetoric, communication, and psychology. Conversely, studies in these areas inform the body of knowledge for symbologists. From 2006 to 2008 the author gathered existing theories from the above, and related, disciplines (Clark, 2008a). The method of organizing the collected information made use of Jung's model, in which there are infinite symbols, each symbol with many possible meanings. In content analysis, the author noted many individual references to symbolism or symbolic meaning. These seemingly infinite references had many possible interpretations. Just as Jung noted that symbolic meaning seems to follow certain patterns (Jung *et al*, 1964), so the author observed certain prominently recurring symbolic themes in the built environment. Together these individual observations connect to form a web of understanding about the symbolic significance of the human environment.

Jung called his patterns *archetypes,* conceptual forms so expansive and abstract that the mind can only represent them *symbolically* (Jung *et al*, 1964). While Jung's theory of archetypes is not universally supported, it offers a helpful tool in environmental symbology because archetypes are not truly *ideas* unto themselves, but *categories* of ideas (Young-Eisendrath & Dawson, 1997). This organizing model is well-suited to the exploration of the built environment as artifacts manifest in myriad ways and vary greatly based on the socio-cultural context of their existence. This allows for the researcher to loosely group seemingly similar findings and then to assess whether there is truly a prominently recurring theme of symbolic meaning. The author refers to these themes as *symbolic motifs*. The symbolic motifs first identified in the author's research were described as (Clark, 2008a):

- Threshold: A sense of entry (Clark, 2008b)
- Territory and boundaries
- Mystery and the journey of discovery

Entry, as a physical and psychological nexus, shapes and controls the experience of a space by defining the nature of its interior. The threshold is a point of passage between two territories, setting the terms and conditions of transition from one territory – or social identity - to the next. The threshold is the point of transition, the gateway. Mystery is the impetus to begin the journey of discovery. It is also interesting to note how these three classes interrelate and support one another: it is the sense of mystery toward what lies behind a boundary that entices the imagination to cross the threshold.

The motifs, their value and import to the study of human space, are supported by interdisciplinary theory and research. As the typology has evolved, so have its classes. This author has thus far identified fifteen potential

classes in which symbolic meaning may reside. Each class consists of individual, observable phenomena that, together, present evidence of a dominant symbolic motif. The three classes listed above have now evolved into separate and distinct themes.

· Threshold, as the defined transition point at the edge of one or more places.

· Edge (boundary) as the physical or perceived division between places.

· Mystery, as the unknown beyond, sometimes associated with fear or trial.

These motifs represent synthesis of content from multiple fields, including environment psychology, symbolic anthropology, and cultural studies and thus expands the interior design body of knowledge. The results of this study yield new resources for practitioners and educators. For example, the author will provide a free, online *symbolic typology* that includes descriptions, keyword guides, and full reference information for relevant works. The first phase of this study analyzed content from a variety of authors to identify and categorize theories related to the psychological significance of specific design features. The symbolic typology briefly illustrates some of the words common to multiple authors in each class of the typology.

For example, when discussing a literal or figurative threshold, Abercrombie (1990) uses words like crossroads, door, changing, experience, path, and outward. Campbell (1988) writes about adventure, becoming, epiphany, experience, transcendent, initiation, and journey while Day (1990) uses words such as adventure, door, experience, threshold, reincarnation, and evolution. Although many of these terms differ from source to source, the underlying meaning remains the same. The symbolic typology shows the keywords and concepts associated with each author in a way that clearly connects related ideas.

The author will also provide access to typology worksheets, developed from the analysis and synthesis processes in the study method. These worksheets are intended as a tool for replicating the full method of this study, from content analysis through interpretation and illustration. As such, the worksheets could be used as a teaching tool in studio or theory courses that require students to follow a similar process of thinking.

The further aim of this line of inquiry is to create a symbolic typology and method that will be of use to all environment and behavior researchers. This will also serve to inform and assist interior design practitioners who utilize behavioral research in making evidence-based design decisions. It is this author's hope that insight into the symbolic meaning of the built environment will aid in designing spaces that nurture human psychological and emotional wellness.

APPENDIX

The symbolic typology, and the resources described in this narrative, is available online, free for use under the terms of its Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License: **http://www.lindsaytan.com**

REFERENCE LIST

Abercrombie, S. (1990). *A philosophy of interior design*. New York: Harper & Row, Publishers, Inc.

Alexander, C., Ishikawa, S., & Silverstein, M. (1977). *A pattern language.* New York: Oxford University Press.

Campbell, J. (1988). *The power of myth* (B.S. Flowers, Ed.). New York: Doubleday.

Clark, L. (2008a). *Symbology of interior design: A preliminary typological study of the theories of Christopher Day.* (Master's thesis, Florida State University, 2008). Retrieved July 23, 2009 from http://etd.lib.fsu.edu/ETD-db/ETD-search/search

Clark, L. (2008b). *The meaning of threshold: A preliminary typological study of the symbolism of entry.* Presented at the Interior Design Educators Council Midwest Regional Conference, Lincoln, Nebraska.

Cooper, C. (1974). The house as symbol of the self. In (Lang, J., Burnette, C., Moleski, W., and Vachon, D. Eds.), *Designing for human behaviour: Architecture and the behavioural sciences.* pp. 130-146. Stroudsburg, PA: Dowden, Hutchinson, & Ross.

Cooper Marcus, C. (1995). *House as a mirror of self: Exploring the deeper meaning of home.* Berkeley, CA: Conari Press.

Day, C. (1990). *Places of the soul: Architecture and environmental design as a healing art*. San Francisco, CA: Thorsons.

Day, C. (2002). *Spirit & place.* Oxford: Architectural Press.

Fromm, E. (1951). *The forgotten language: An introduction to the understanding of dreams, fairy tales and myths.* New York: Rinehart & Co. Inc.

Hall, E. (1959). *The silent language.* New York: Doubleday.

Hall, E. (1966). *The hidden dimension*. New York: Doubleday.

Israel, T. (2003). *Some place like home: Using design psychology to create ideal places.* West Sussex, England: Wiley-Academy.

Jung, C., von Franz, M.-L., Henderson, J. L., Jacobi, J., & Jaffé, A. (1964). *Man and his symbols*. New York: Dell Publishing.

Jung, C. (1989). *Memories, dreams, reflections* (A. Jaffé, Ed.) (R. Winston & C. Winston, Trans.). New York: Random House, Inc. (Original work published 1963).

Turner, V. (1967). *The forest of symbols: Aspects of Ndembu ritual.* Ithaca: Cornell University Press.

Young-Eisendrath, P. & Dawson, T. (1997). *The Cambridge companion to Jung*. Ithaca: Cambridge University Press.

Environmental design and emerging technologies: Today and the near future

LINDSAY CLARK / JOSEPH CLARK

ABSTRACT

Technological advances over the past 10 years have caused some significant changes to the design of the built environment. These developments, and others like them, promise to change more than just *how* we design; they will very likely change *what* we design as well. The authors will present the connection between these developments in a way that projects, realistically, how technology will affect, and are employed by, the design professions in the next five to ten years. Further, the authors will address the promises and pitfalls of embracing virtual environments as the domain of environmental design.

In 2007, Blaise Aguera y Arcas demoed Photosynth (1, see appendix), a software capable of compositing publicly available online photos, like those on Flickr (2), into a navigable, three-dimensional construct while Cisco and Musion systems teamed up to showcase the first real time holographic presentation on stage (3). Online, Jon Brouchoud opened an exhibit of "Reflexive Architecture" (4) in a three-dimensional virtual environment called Second Life (5). Brouchoud's virtual exhibit included walls that moved in response to an avatar's presence, and color-changing floors that followed visitors' movements.

The next year, the National Science Foundation awarded a grant of $920,000 to the KeckCAVES group in support of their work developing technology capable of changing four blank, white walls into an immersive virtual environment, completely customizable to the user (6). With this valuable advancement, virtual developments like Brouchoud's came one step closer to the real.

In 2009, the Augmented Reality Team demoed a sample of how their augmented reality projections could be coupled with existing, accessible technology (here, Second Life) to enhance distance collaborations (7). This project, similar to KeckCAVES' work, only requires special eyewear to see virtual, three-dimensional objects projected into real space (8).

In the same year, two important projects were announced. SixthSense (9) and Project Natal (10) offer digital interfaces that react with real world people and objects to further blur the line between real and virtual. SixthSense, at the time of its debut, required only color-coding to recognize human gestures; Project Natal recognizes body movement, natural gestures, and facial expressions without any assistive devices.

The relationship between the built environment and the virtual environment is changing. What new advancements will we see in the next few years? In a world of rapidly-developing technologies, environmental designers will play a crucial role in determining when and how to merge virtuality with reality. Increased availability and accessibility of immersive technologies will force design professionals to broaden our thinking of the natural and built environments as the "physical world"; perhaps our realm of practice will soon include virtual environments as well.

The authors will briefly present a chronology of recent and upcoming developments in the virtuality-to-reality bridge and will address how design professions will affect and be effected by this *brave new world*.

NARRATIVE

INTRODUCTION

While the technological affordances of computer-aided design have long been a part of the Interior Design curriculum, the past ten years have brought many advances to three-dimensional modeling and visualization, creating new challenges and opportunities for educators. Virtual worlds, augmented reality, and related developments not only afford new ways of visualizing designs, but may offer new *places* to be designed themselves. The pace of technological change requires educators to stay abreast of these developments in order to best prepare students for professional employment in an environment that is sometimes difficult to even envision.

The authors will introduce recent technological developments and will present the connection between these developments in a way that projects, realistically, how technology will affect and be employed by the design professions in the next five to ten years. Further, the authors will address the promises and pitfalls of embracing virtual environments as a domain of environmental design. Specifically, this includes emerging virtual worlds as design and visualization tools, virtual worlds as sites for design work, and the mixing of virtual and real elements in real-world spaces (often referred to as mixed reality or augmented reality—two closely related but distinct concepts).

TIMELINE OF EMERGING TECHNOLOGY

In 2007, Blaise Aguera y Arcas demonstrated Photosynth (1, see appendix), a software application capable of compositing publicly available online photos, like those on Flickr (2), into a navigable, three-dimensional construct, thus bypassing the need to manually construct three-dimensional models of real spaces. In other words, given the availability of enough two-dimensional photographs—no matter who took them—Photosynth can stitch together a three-dimensional model of the space.

That same year, Cisco and Musion systems collaborated to create and showcase the first real-time holographic presentation on stage (3). Whereas conventional "virtual meeting" tools simply display offsite participants on life-size monitors, the holographic system projects an apparent three-dimensional body into space.

Online, Jon Brouchoud opened an exhibit of "Reflexive Architecture" (4) in the multiuser, three-dimensional virtual environment of Second Life (5). Second Life allows its users to create realistic computer-generated buildings and other spaces, which they can then "inhabit" through puppetlike avatars that inhabit the space and provide a means for interacting with others. In Brouchoud's virtual exhibit, walls moved in response to an avatar's presence, and color-changing floors followed visitors' movements. In short, the virtual environment became directly responsive to the behavior of its inhabitants.

The next year, the National Science Foundation awarded a grant of $920,000 to the KeckCAVES group in support of their work developing technology capable of changing four blank, white walls into an immersive virtual environment, completely customizable to the user (6). Such an environment is far more immersive than a single computer screen because the user is literally inside it. With this advance, interactive projects like Brouchoud's came one step closer to the real.

In 2009, the Augmented Reality Team at Georgia Tech demonstrated an example of showing how their augmented reality projections could be coupled with existing, accessible technology (here, Second Life) to enhance distance collaborations (7). This project is similar to KeckCAVES' work but requires special eyewear to see virtual, three-dimensional objects projected into real space (8).

In the same year, two important projects were announced. SixthSense (9) and Project Natal (10) offer digital interfaces that react with real world people and objects to further blur the line between real and virtual. SixthSense, at the time of its debut, required only color-coding to recognize human gestures; Project Natal recognizes body movement, natural gestures, and facial expressions without any assistive devices.

These developments could each be seen as separate projects, but they are also interrelated contributions to what has been described above as mixed reality or augmented reality. As such, they are individual steps along the same real/virtual continuum. The possibilities afforded by a convergence of two or more of these developments are worth exploring further in the context of an open forum, which is planned for the second half of the conference presentation.

Problematizing The Real and The Gaze

These developments also challenge our conceptions of The Real. Augmented and mixed reality constructions are not "really there," it might be argued, but how much of a "real" interior is already virtual? Paintings and photographs on the walls are one example of virtual reality already existing in the home. Ink collects in zones of tonal value to create two-dimensional representations of people and places. Scented, plug-in air diffusers mechanically superimpose their representations of "sea breeze" over the natural smells of the home. Electronic signals—which we label as music or talk radio—pass through speakers and are translated into audible waves. Microfiber fabric covers sofas, forced air ventilation provides the sensation of stable temperature, and "real feel" silk plants simulate the look and feel of real vegetation. The average human being spends 90% of his life (Day, 2002) inside what could arguably be called a *virtual* environment.

If one can understand the built environment to be - to some extent - virtual, then it is possible to envision a near future in which virtuality is harnessed to improve the built environment. Despite all the the advances described above virtual environments are still largely *visual* environments. (Humans rely most heavily on vision, of all the available senses.) The technology behind the work of KeckCAVES, Georgia Tech, and Cisco and Musion (described above) is the same type of technology that could adapt easily to the practice of interior design. Consider the fact that crown moulding, wall covering, and framed art are three aspects of a design that are generally meant be *seen* rather than touched. And imagine using projection technologies to design a space in which these three aspects could be changed at the flip of a switch. The repainting of a room would no longer be subject to the restrictions of time, cost, environmental impact, or indoor air quality. Wall finishes could be selected once, based on their practical properties, and their appearance re-imaged as often as needed. Possibilities such as these are further explored in the conference presentation.

Yet a human needs more than a projected image of egg and dart moulding to thrive. When we embrace the promises of technology too eagerly we forget that it is but a means an end. Social and technological change has always raised philosophical dilemmas; this threshold to a *brave new world* is no different. One critique of many virtual environments in existence today is their reliance on the visual medium, which reinforces what Martin Jay and others have referred to as a modern hegemony of vision. This "Cartesian perspectivalism" valorizes rationalism and geometric relations as underlying "truth" and can be seen in the familiar perspective lines in a drawing and the wireframe substructure of a computer-generated object. This further reinforces colonialist and gendered notions of the "gaze" (Urry, 1990) that place the observer outside of and unaffected by the observed. Both notions become problematic when we consider the very pragmatic implications of real bodies in real spaces.

THE REALITY OF ENVIRONMENTAL DESIGN

The relationship between the built environment and the virtual environment is changing. What new advancements will we see in the next few years? We foresee three important trends:

- Greater public participation in visioning processes and more reliance on virtual constructions as part of the design process.

- Increased need for environmental and interior designers within virtual worlds like Second Life, which replicates the spaces of the real world but offers unique challenges and opportunities because of differences in physics, point of view, and embodiment.

- More mixed-reality spaces that contain "unreal" components that are nevertheless pragmatically embedded in our experience of those spaces.

- Shift from training students to use "the one best program" in depth, to teaching them generalized knowledge and skills that will allow them to adapt to rapidly changing technologies.

Increased availability and accessibility of immersive technologies will force design professionals to broaden our thinking of the natural and built environments as the "physical world"; perhaps our realm of practice will soon include virtual environments as well. As educators, we can and must prepare our students in established traditions as well as give them the ability to embrace change and extend their horizons. By attending to and incorporating these new technological developments into de-

sign curricula, educators can help students foresee new possibilities as well as potentially avoid new pitfalls.

APPENDIX

A short introduction to referenced technologies.

(1) Photosynth
http://www.ted.com/index.php/talks/blaise_aguera_y_arcas_demos_photosynth.html

(2) Flickr
http://www.flickr.com

(3) Cisco Telepresence Magic
http://www.youtube.com/watch?v=rcfNC_x0VvE&feature=channel_page

(4) Reflexive Architecture
http://www.youtube.com/watch?v=XBtma6YXAis&feature=PlayList&p=1AF4E617D2978B95

(5) Second Life
http://secondlife.com/

(6) KeckCaves
http://keckcaves.ucdavis.edu/

(7) Augmented Reality Team
http://virtual.vtt.fi/virtual/proj2/multimedia/

(8) Augmented Environment Laboratory
http://www.cc.gatech.edu/ael/

(9) SixthSense
http://www.ted.com/talks/pattie_maes_demos_the_sixth_sense.html

(10) Project Natal
http://www.youtube.com/xboxprojectnatal

REFERENCE LIST (MLA)

Day, Christopher *Spirit & place.* Oxford: Architectural Press, 2002. Print.

Heim, Michael. *The Metaphysics of Virtual Reality.* New York: Oxford University Press, 1993. Print.

Heim, Michael. *Virtual Realism*. New York: Oxford University Press, 1998. Print.

Jay, Martin. “Scopic Regimes of Modernity.” *Vision and Visuality.* Ed. Hal Foster. New York: New Press, 1999. Print.

Krug, Christian. Virtual tourism: The consumption of natural and digital environments. *Interactivity of Digital Texts.* Eds. Frenk, J. & Krug, C., 1964. Retrieved 4/5/07 from http://www.uni-muenster.de/interact/publications/digital/ environments.html

McLuhan, Marshall. *Understanding Media: The Extensions of Man.* New York: McGraw-Hill, 1964. Print.

Urry, John. *The Tourist Gaze: Leisure Travel in Contemporary Societies.* SAGE, 1990. Print.

Interior Design Practitioner Attitudes toward Research and Graduate Education

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ABSTRACT

In the last year, a critical issue to emerge in the academy has been the Master's of Interior Design (MID). Many interior design educators have argued that in order for undergraduate students to have research experiences, they need a 5-year first professional degree that would culminate in the MID (Guerin, 2007; Kroelinger, 2007; Weigand & Harwood, 2007). While these opinion pieces are important to the profession and critical to the advancement of graduate education, whether the field of interior design would value this advanced degree has yet to be determined. As noted by a number of architects, designers have "largely ignored" empirical research, and the design studio remains "embedded in the nineteenth-century" that relies very little on research skills (Kieran, 2007, p. 27). Is a disconnect occurring between the academy and interior design practice? The purpose of this study was to survey interior design practitioners to determine their: (a) definitions of research, (b) perceived attitudes and need for research in interior design practice, (c) attitudes toward research in interior design education, and (d) attitudes toward graduate education and the MID as the first professional degree. For this investigation, interior design practitioners who are members of the American Society of Interior Designers (ASID) were surveyed. The questionnaire was distributed online through a primary contact with ASID. This individual sent the link to the electronic questionnaire with our cover letter and contact information as an email blast to all members within the organization (N = 13,000; n = 319 response rate). The questionnaire, developed by the principal investigators, was based on several existing scales and consisted of four sections. In section one, subjects were asked to define research, programming, and evidence-based design using 4 open-ended questions. In section two, subjects were asked 18 questions that examined their attitudes toward research in design practice and undergraduate education using a Likert scale where 1 equaled strongly agree and 5 equaled strongly disagree. In section three, 3 open-ended questions and 10 close-ended questions were used to determine subject's attitudes toward graduate education. And in the last part of the questionnaire, subjects were asked demographic questions related to programming and research practices along with their professional experience. The questionnaire was pilot tested on three interior design professionals to ensure that the online format was correct and to measure content validity. The investigators are in the process of analyzing the data. In a previous, similar study conducted with interior design faculty, the investigators found that while 80% of faculty believed that research findings can provide useful information to practitioners, a number of subjects expressed doubt as to whether research was used in professional practice (40%) or whether research experience was helpful in gaining employment (51%). And, a number of subjects felt that the research findings in the *Journal of Interior Design* were irrelevant (21%). Whether these same attitudes are prevalent among practicing interior designers will be discussed, and whether the skepticism found among interior design faculty regarding research use by practitioners is warranted.

NARRATIVE

In 1993, Dickson and White surveyed 96 interior design practitioners in the field to determine their attitudes toward research. They found that practitioners primarily used soft sources (e.g., 82% used product catalogs, 71% used trade magazines, and 57% used books in the firm's individual library) rather than hard sources (e.g., scholarly journals) in their investigation of design problems. Since then, research and evidence-based design have emerged as important topics in the interior design profession. There is even an accreditation and certification process that allows designers to become "EDAC" (Evidence-based Design Accreditation and Certification) certified.

Yet, there is little agreement on how evidence-based design and research are defined.

Hamilton (2004) defines evidence-based design as design solutions informed by a variety of sources, while The Center for Health Design defines evidence-based design as the process of basing decisions about the built environment on credible research to achieve the best possible outcomes. In a study with undergraduate interior design students at three different universities, Dickinson, Marsden, and Read (2007) found that research is typically described by students as a search on the Internet or as any activity that involves information gathering. A second study of interior design faculty revealed confusion over what constitutes research (Dickinson, Anthony, & Marsden, 2009). If evidence-based design implies justifying design solutions based on research and if both interior design undergraduate students and faculty are having difficulties defining the term research, we have to wonder how much evidence-based design is really happening and whether practitioners in the field are utilizing research-based findings. The purpose of this investigation was to survey interior design practitioners who are members of ASID to determine their attitudes toward research.

RESULTS

The majority of our sample was female (86%) and between the ages of 50 to 59 years old (31%). Many of the individuals who responded to the survey had over 20 years of professional practice experience (44%). Because of this extensive experience, a number of participants were either principals in their firm (29%) or sole proprietor's (29%). On average, our sample worked in smaller firms with 1 to 10 employees (69%) that conducted residential (60%), kitchen and bath (35%), and/or office (46%) design.

DEFINITIONS OF RESEARCH

We asked participants to define the term research and evidence-based design in an open-ended format. Practitioner definitions were quite varied. To illustrate, when defining research some practitioners mentioned the term "systematic" (n = 13), while others used terms such as "discovery", "expands knowledge" or "advances profession or field" (n = 15). Yet, most likened research to information gathering (n = 38 who used the exact term "information gathering" in their definition). Examples of definitions included: "Gathering information about precedents", "Gathering information to get to a conclusion", and "Research related to interior design practice is information gathering". There were numerous definitions that implied information gathering such as, "The act of studying documented material on a subject to gain a better understanding of it. In the Interior Design field, this could include publications on codes and regulations, case studies, examples of similar works, magazine articles or websites." The definitions of evidence-based design were also varied and some practitioners were not familiar with this term (n = 29).

ATTITUDES TOWARD RESEARCH IN INTERIOR DESIGN PRACTICE

As a whole, interior design practitioners found research, as they defined the term, beneficial to the profession. When subjects were asked, "I believe that research findings can provide useful information to Interior Design Practitioners", 44% (n = 108) strongly agreed and 50% (n = 124) agreed. We also asked participants if the information they found in research journals is easy to understand, and the majority of our sample agreed with this statement (46%; n = 115). We found that the majority of our sample believed that the information found in research journals influenced their design decisions (59%; n = 145). Yet, when practitioners were asked if they read the *Journal of Interior Design* (JID), 153 said no, 28 said yes, and 28 read it sometimes. Of those who responded, 73 subjects did not know that JID existed.

WHO SHOULD BE CONDUCTING INTERIOR DESIGN RESEARCH?

When participants were asked, "Research related to In-

terior Design should be conducted primarily by Interior Design practitioners, the responses were mixed. The majority disagreed (34%; n = 84), while 30% (n = 75) were unsure, and 25% (n = 61) agreed. When subjects were asked, "Research related to Interior Design should be conducted by Interior Design educators, the majority disagreed (48%; n = 117) with this statement, while 22% (n = 55) were unsure and 18% (n = 44) agreed. When the participants were asked if they conducted research, the majority responded yes (51%; n = 120), 32% responded with no (n = 75), while 17% were unsure (n = 39).

In terms of the employment picture, the majority of participants in this sample felt that an interior designer's ability to understand research was a big help in gaining employment (42% agreed (n = 103) and 13% strongly agreed (n = 33)). Yet, the responses for an interior designer's ability to conduct research as being helpful in gaining employment were mixed (12% strongly agreed (n = 30); 31% agreed (n = 78); 27% were unsure (n = 66); 25% disagreed (n = 62); and 5% strongly disagreed (n = 12)).

UNDERGRADUATE AND GRADUATE EDUCATION AND RESEARCH

As a whole, the participants in this investigation believed that undergraduate students should have an understanding of research. For example when asked, "I think a course should be taught to undergraduate interior design students on how to evaluate the research findings of others, 80% of our sample agreed (n = 119) or strongly agreed (n = 79) with this statement. When subjects were asked if undergraduate students should know how to conduct research, again the results were positive with 75% of the subjects agreeing (n = 109) or strongly agreeing (n = 76). We also asked a number of questions related to degree type and readiness for professional practice or university teaching. "Interior designers should have a minimum of a bachelor's degree to practice" received strong agreement (47%; n = 117 strongly agreed and 24%; n = 60 agreed). "A minimum of a bachelor's degree in interior design is necessary for university teaching" also received strong agreement (45%; n = 112 strongly agreed and 26%; n = 63 agreed).

Practitioners also believed that graduate education should prepare students to understand and conduct research. But the findings on degree type and readiness for professional practice were not as positive. "The Master's of Interior Design should be the first professional degree in order to practice as an interior designer" received strong disagreement: 42% disagreed (n = 102) and 45% strongly disagreed (n = 109). "A minimum of a master's degree in interior design is necessary for university teaching" received mixed responses: 20% strongly agreed (n = 48); 25% agreed (n = 59); 17% were unsure (n = 40); 29% disagreed (n = 69); and 9% strongly disagreed (n = 22).

Participants were asked if a graduate degree in Interior Design was considered valuable to their firm and 129 responded no, while 62 subjects responded with a yes. As a whole, most firms did not compensate for employees to pursue graduate degrees (n =119).

DISCUSSION

As expected, most practitioners likened research and evidence-based design to information gathering, and thus overwhelmingly responded that they conduct research and engage in evidence-based design. To the practitioner, research truly involves gathering the relevant information for the project at hand. This study, as well as two others previously conducted, reveals that practitioners, faculty, and students do not have a clear understanding on who should be conducting interior design research. Some who have reviewed the *Journal of Interior Design* express negative reviews. As suggested by one subject, "Boring, boring, boring….I was extremely disappointed to find that due to research methods and documentation, every single exciting and interesting bit of information was only available after sifting your way through boring, boring, boring rationales…" Practitioners also did not respond positively to the MID as the first professional degree and unfortunately, most firms still do not value graduate education. These results suggest that a disconnect may in fact be occurring between practitioners and educators.

REFERENCE LIST (APA)

Dickinson, J. I., Anthony, L. A., & Marsden, J. P. (2009). Faculty perceptions regarding research: Are we on the right track? *Journal of Interior Design, 35*(1), 1-14. Dickinson, J. I., Marsden, J. P., & Read, M. A. (2007). Empirical design research: Student definitions, perceptions, and values. *Journal of Interior Design, 32*(2), 1-12.

Dickson, A. W., & White, A. C. (1993). Are we speaking the same language? Practitioners' perceptions of research and the state of the profession. *Journal of Interior Design, 19*(1), 3-10.

Guerin, D. A. (2007). Defining graduate education in interior design. *Journal of Interior Design, 33*(2), 11-14.

Hamilton, D. K. (2004). Four levels of evidence-based practice. *The American Institute of Architects* [Online]. Available: www.aia.org

Kieran, S. (2007). Research in design: Planning doing monitoring learning. *Journal of Architectural Education,* 6(1), 27-31.

Kroelinger, M. D. (2007). Defining graduate education in interior design. *Journal of Interior Design, 33*(2), 15-17.

Weigand, J., & Harwood, B. (2007). Defining graduate education in interior design. *Journal of Interior Design, 33*(2), 3-9.

Accessory Apartments in the Existing Urban Home: Utilizing Co-residency to address Social, Economic and Environmental issues.

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ABSTRACT

Society has changed radically since the construction of many of the homes within our communities. This has resulted in existing homes being incapable to adequately meet the demands created by contemporary society. Through a study of the bungalow and ranch homes within Sacramento, California, this research addresses the specific social, economic and environmental changes that have occurred since the homes construction and the resulting unmet needs of the homeowners. From this information co-residential living, utilizing accessory apartments, is explored to address those needs .

Accessory apartments are defined as: an independent living unit with separate cooking, eating, sanitation and sleeping facilities that is either in or added to an existing single-family dwelling or in a separate accessory structure on the same lot (Montgomery County Maryland, 2005). They are banned in many cities, primarily based on the fears of existing residents that they could lower housing values. However thoughtfully designed accessory apartments can preserve a neighborhoods aesthetic while addressing the demands of contemporary society. Therefore, design professionals can utilize this opportunity to expand their client base to typically underrepresented homeowners who wish or need to utilize co-residency. Examples of this process is shown for the bungalow and ranch typologies common within Sacramento utilizing statistical information to create a client profile.

This research is relevant because previous research has addressed individual aspects of this topic but did not look at these issues holistically or through the lens of the resulting demands on housing. The existing research includes changes in the demographics of homeowners: the clearly documented evolution of the ethnicity of homeowners (Haan, 2007), the aging population and the home modification required to support independent living (Bakker, 1997), and the changes in family size and composition (Hayden, 2002). There are also large data sources, such as the US Census Bureau and the Department of Labor, that inform on the current financial status of homeowners, foreclosure rates, and other economic trends. Finally, the environment and the environmental impacts of housing have been the focus of many recent articles (Parris, 2007; Schmidt, 2008). However, these studies do not address the issues concurrently or study the possibility of utilizing co-residency or existing homes in the solution.

NARRATIVE

Sacramento, like many American cities, has a large infrastructure of bungalow and ranch homes. However, this existing housing stock is unable to meet many of the demands of Sacramento's contemporary residents. By comparing the lifestyle of the original homeowners, for whom the homes were built, to that of the current residents it is clear why there is a disconnect. This study seeks to clarify how the creation of accessory apartments can make these homes relevant to society again.

BUNGALOW AND RANCH TYPOLOGIES

California bungalows are small, informal, one story homes that were built between 1880 and 1930. They were generally made of indigenous materials and are between 1000-1200 square feet. Typical characteristics include wide, projecting roofs and large porches (Lancaster, 1958). **Figure 1.** Accessory apartments are completely separate living units created within homes or on existing lots. Characteristics of bungalow homes that would easily accommodate modifications needed to create an accessory apartment include large dining rooms that are rarely used by contemporary homeowners, and large kitchens that could be reconfigured to be reduced in size while accommodating modern appliances. Furthermore, many traditional bungalow homes in Sacramento have a small outbuilding, such as a garage, that also could be adapted for use as an apartment.

Ranch homes were the ubiquitous low-cost dwelling of the postwar era, designed to emphasize the car culture that had evolved by the pinnacle of their popularity, 1945 to 1965. They did this by replacing the large entry porch of the bungalow with a prominent garage and an innocuous entryway. Other defining characteristics include an elongated structure and the utilization of large panes of glass in the form of picture windows or sliding glass doors. (Faragher, 2001). **Figure 2.** When many ranch homes were built in Sacramento lot sizes had increased from the bungalow era, so a typical ranch's lot is large enough to allow a secondary structure to be built behind the original home for an accessory apartment. However the size and the plan configuration of ranches, typically an "L" or an "H", allows the low-cost possibility of accommodating both the primary and secondary living units within the existing boundaries of the home.

REDUCED RESOURCES AND ENVIRONMENTAL CHANGES

Since these homes were constructed there has been significant changes in society and housing. The consumption and availability of resources is a crucial component in the study of contemporary housing. American homes and settlement patterns account for one-third of worlds consumption of natural resources (Hayden, 2002). And despite a reduction in family and household size, homes have grown exponentially.

Furthering the demand on resources is population growth. In 1946, the year many ranch homes were constructed, there were 141 million people living in the United States, by 2006 the population more than doubled to 298 million. This has resulted in an extraordinary demand for new housing, which has fueled suburban sprawl. From 1990 to 2004 urban land in Sacramento metropolitan region increased 35% resulting in a loss of 234,395 previously open acres. In addition, the pollution from the travel requirements associated with sprawl has created a dangerous environment. A study by the National Environmental Trust found children in the Sacramento Valley will be exposed to the EPA's lifetime acceptable exposure level for cancer causing toxic air contaminants by the time they are 23 days old (National Environmental Trust, 2002).

HOMEOWNER DEMOGRAPHICS CHANGES

By the year 2020 the number of people in California age 65 years old and older will nearly double from the 2007 population (US Census Bureau, 2007). And as the population ages, many older people find themselves living in their family homes alone. This results in a large percentage of their homes being unused, and a large percentage of the housing stock within the country being underutilized. In addition if the elderly homeowner develops a significant disability or a serious health problem, it is imperative that a care-taker is nearby if they wish to remain in their home. Though frequently as people age they do not have the additional income needed to pay for this or many other health care services. (O'Leary, 2000).

However, the need for additional income has become common in many households, not just of the elderly. This is especially true in the Sacramento region which consistently has an unemployment rate higher than the state or national averages. Compounding the problem is the fact that homeowners who bought their homes before recent falling prices face unusually high mortgage

costs, thus explaining the large number of foreclosures within the city. This section of the community needs alternate methods for generating income to allow them to keep their homes.

Beyond economics, another important changes to homeowner demographics has been a significant rise in the number of single homeowners. Currently in Sacramento 27% of households are 1-person, up from a national average of only 10% in 1950 when many ranch homes were being built (Hayden, 2002). Furthermore, although "family households" still account for 69.5% of all households in the United States, the average family size now includes only 2.1 children compared with the 4 children that was average at the turn of the century when many families were constructing and living in bungalow homes (US Census Bureau, 2007) .

Finally, in Sacramento, once touted as one of America's most diverse cities (Bower, 2002), it is imperative that housing be able to accommodate multigenerational living arrangements. Because "racial and ethnic minorities in the United States are more likely to reside with extended family than are non-Hispanic whites, even after demographic and socioeconomic differences are taken into account" (Van Hook, 2007).

ACCESSORY APARTMENT POSSIBILITIES

Accessory apartments could resolve many of these issues. Utilizing accessory dwelling units within existing housing could accommodate population growth and increase density within the city. This would allow Sacramento to "maintain the existing public infrastructure, … encourage public transit service and reduce urban sprawl" (O'Leary, 2000).

In addition, accessory apartments housing a relative or a paid care-giver could allow the elderly to remain in their home and fully utilize the structure once again. It also clearly supports multigenerational living

The creation of accessory apartments within homes could also provide struggling families with additional income while utilizing unneeded space. Furthermore, these modifications "could provide millions of families with moderately priced rental housing and ease the affordability crisis at virtually no cost to the taxpayer" (Maass, 1996).

Finally, the trends towards single home owners and smaller families result in a need for smaller homes that are not readily available in most communities, including Sacramento (Sigle-Rushton, 2002). Once again this could be remedied with the creation of 2 or more smaller living units with the existing single family homes.

UNDERREPRESENTED HOMEOWNERS/CLIENTS

Despite this potential demand, homeowners wishing to create accessory apartments are not typical clients of the current Interior Design industry. Typically, especially when finance is a motivator for the change, clients are looking for low cost renovations and feel that they cannot afford to hire a design professional. However, it is these renovations that lead to the public's misconception and disfavor of co-residential housing. There is a common fear that it will bring down neighborhood property values and increase crowding and congestion (Hayden, 2002). These fears have lead many municipalities to ban accessory apartments. However, Santa Cruz has created a solution to these issues by hiring a professional designer, to create standardized plans for accessory apartments within the city. These designs are available at no cost to homeowners. And utilizing these designs guaranteed building permit approval. In this way the city has created high quality, low cost designs for its residents who wish to utilize co-residential housing.

Interior designers throughout the country could work with their city governments to create similar design prototypes for various neighborhoods, client types and housing typologies. Furthermore, they could align with banks, mortgage owners, or residential developers to create prototypes for unsold or foreclosed homes that would allow a new population to purchase homes. This could also result in a new client base for designers, accessibility of high quality design at low cost to homeowners, and a higher density within our communities.

Attached are prototype examples created for client profiles based on the statistical average populations within the region. These designs once again utilize traditional bungalow and ranch plans found within Sacramento. **Figure 3 & 4.**

CONCLUSION

It is clear that as a result of changes in social, economic and environmental factors many ranch and bungalow homes within Sacramento, California are unable to ade-

quately support the demands of contemporary lifestyles and of the changing population within the city. Accessory apartments have the ability to address the demands of the aging, the various ethnicities within the city, smaller families and single homeowners. In addition, coresidency housing patterns can address environmental concerns, resource depletion, and economic challenges. All of these situations provide Interior Designers with opportunities to expand their client base to support the modification of existing homes to include accessory apartments.

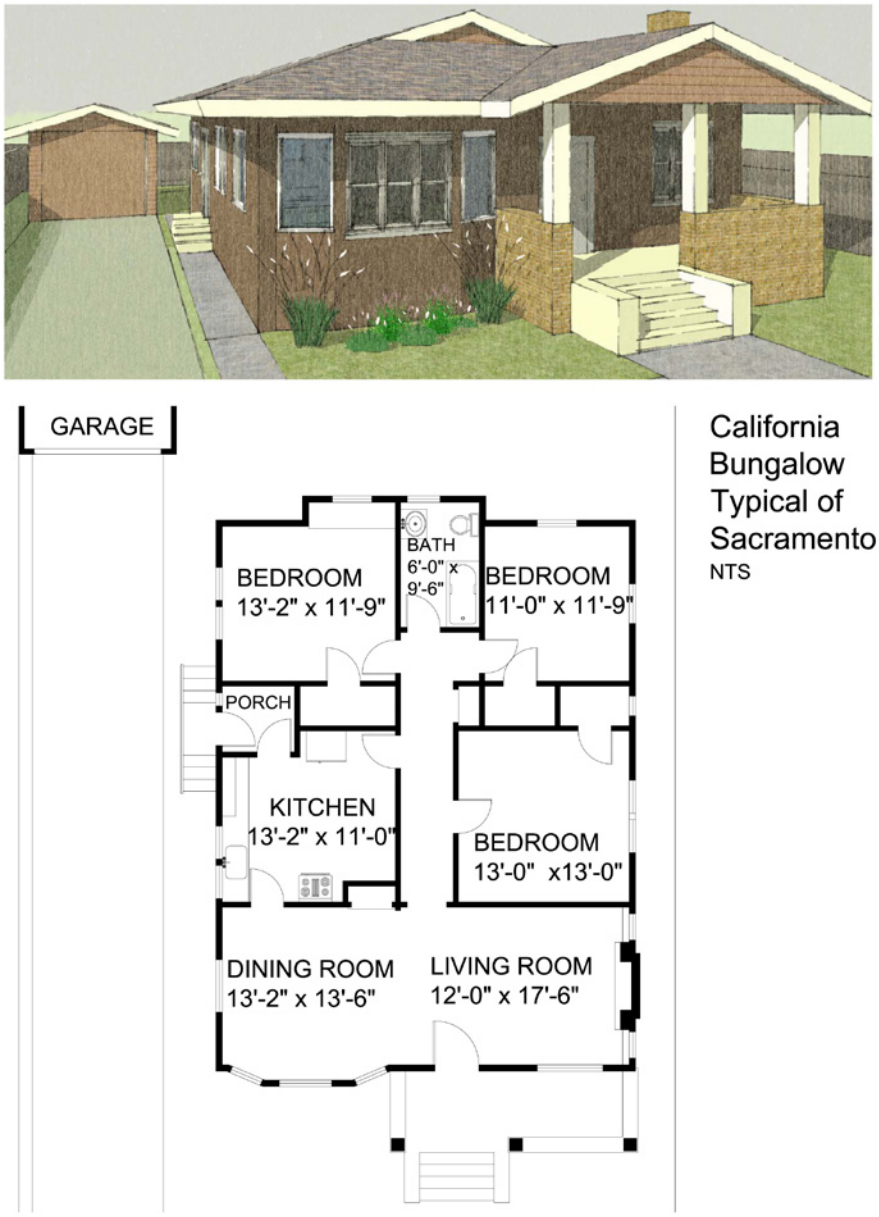


Figure 1: California Bungalow

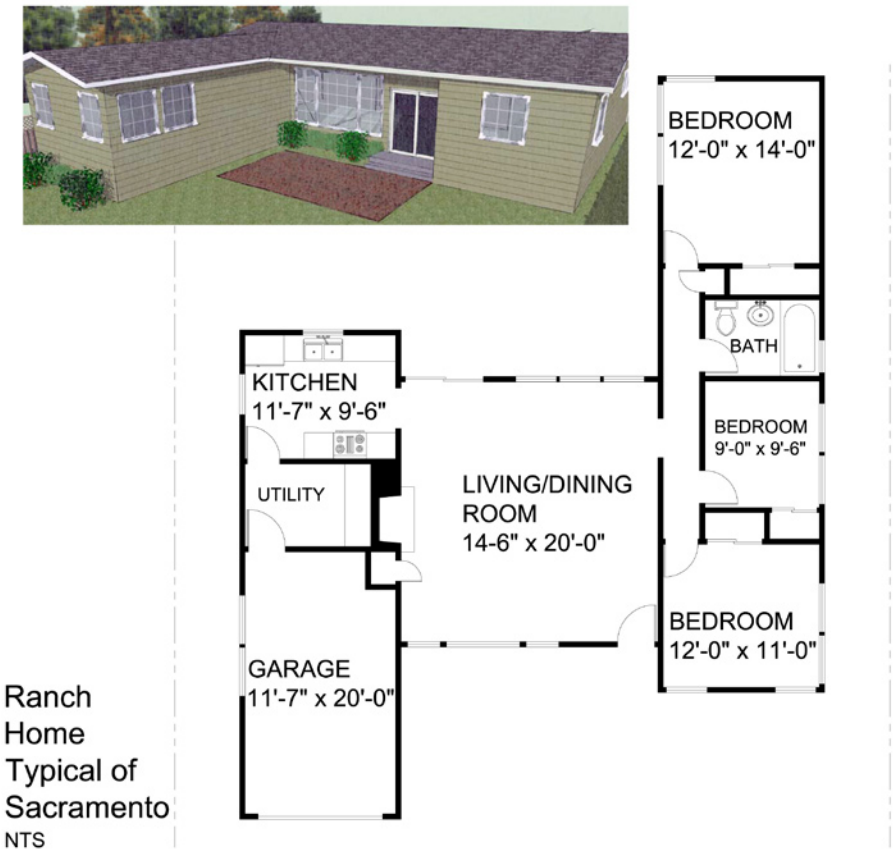
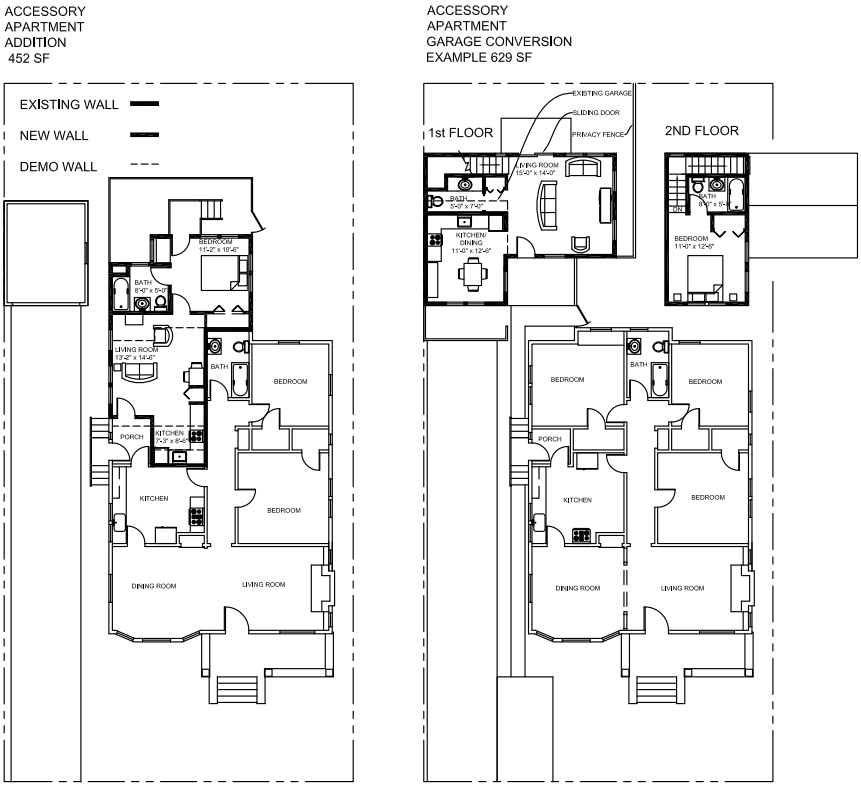


Figure 2: Ranch Home

GARAGE CONVERSION EXAMPLE

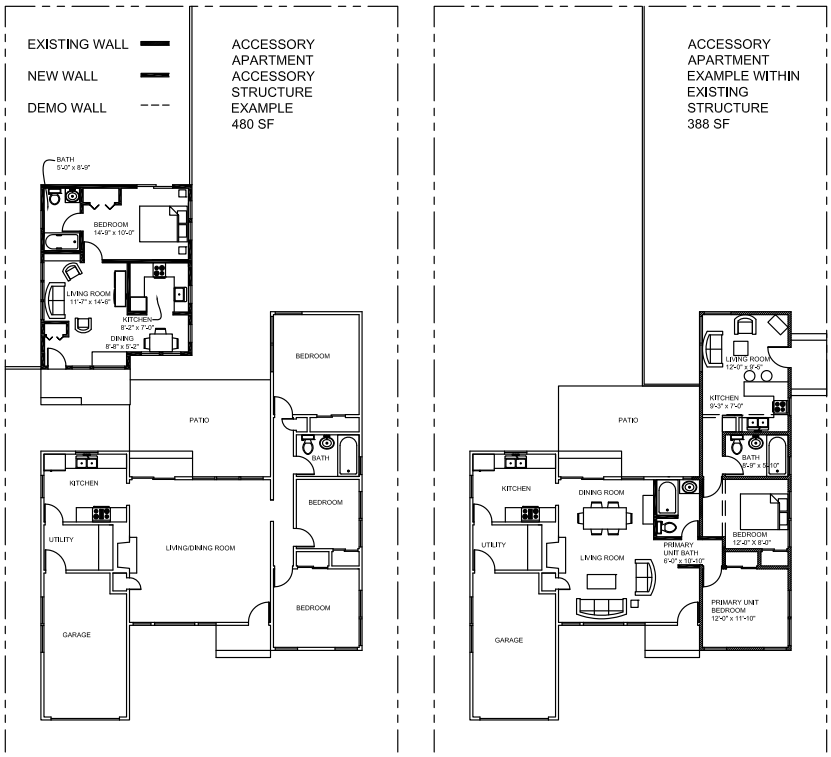


California Bungalow Accessory Apartment Examples

NTS

Figure 3: Bungalow Accessory Apartment Options

ACCESSORY STRUCTURE EXAMPLE



Ranch Home Accessory Apartment Examples
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Figure 4: Ranch Accessory Apartment Options

REFERENCE LIST (APA)

Antonucci, T., & Jackson, J. S. (2007). Intergenerational Relations: Theory, Research, and Policy. Journal of Social Issues , 63 (4), 679-693.

Bakker, R. (1997). Elder Design - Designing and Furnishing Your Home For Your Later Years. New York: Penguin Books.

Campoy, A. (2008, July 7). With Gas over $4, Cities Explore whether it's Smart to be Dense. The Wall Street Journal , p. A1.

Chapman, N., & Howe, D. (2001). Accessory Apartments: Are They a Realistic Alternative. Housing Studies , 16 (5), 637–650.

Chiara, J., Panero, J., & Zelnik, M. (2001). Time-Saver Standards for Interior Design and Space Planning. New York: McGraw-Hill.

County of Sacramento. (n.d.). Accessory Parcel Viewer. Retrieved June 2009, from http://assessorparcelviewer.saccounty.net/GISViewer/Default.aspx

DeLiere, T. a. (2001). Good things come in 3's: Single parent multigenerational family structure and adolescent adjustment. Working Papers 0106.

Drew, R. B. (2006). Buying For Themselves: An Analysis of Unmarried Female Home Buyers. Joint Center for Housing Studies, Harvard University.

Duchscherer, P. (1995). The Bungalow: America's Arts and Crafts Home. New York: Penguin Studio.

Employee Development Department. (2009). Report 400 M, Monthly Labor Force Data. State of California.

Faragher, J. (2001). Bungalow and Ranch House: The Architectural Backwash of California. Western Historical Quarterly, , 32, 149-73.

Giovannini, J. (1986, July 3). The Man Behind the Ranch. The New York Times , pp. Section C; Page 1, Column 4; Home Desk.

Haan, M. (2007). The Homeownership Hierarchies of Canada and the United States: The Housing Patterns of White and Non-White Immigrants of the Past Thirty Years. International Migration Review , 41 (2), 433– 465.

Hayden, D. (2002). Redesigning the American Dream; The Future of Housing, Work, and Family Life. New York: W.W. Norton & Company.

King, A. D. (1984). The Bungalow. London: Routledge & Kegan Paul plc.

Lancaster, C. (1958). The American Bungalow. The Art Bulletin , 40(3), 239-253.

Loftus, M. (2000, June 5). Rescuing the Relics of Modern Times. U.S. News and World Report , pp. 56-57.

Maass, P. (1996). How to Make Housing Affordable: Let People Subdivide their Homes. U.S. News & World Report , 121 (26), p. 51-5.

Montgomery County Maryland. (2005, May 13). Department of Housing and Community Affairs. Retrieved April 2009, from Accessory Apartments: http://www.montgomerycountymd.gov/.../accessory_apt_fact_sheet.pdf

Mulder, K., Costanza, R., & Erickson, J. (2006). The contribution of built, human, social and natural capital to quality of life in intentional and unintentional communities. ECOLOGICAL ECONOMICS , 59, 13–23.

National Environmental Trust. (2002). Toxic Beginnings, Cancer Risk to Children from California's Air Pollution.

Nelson, A. C. (2006). Leadership in a New Era. Journal of the American Planning Association , 72 (4), 393-409.

O'Leary, S. (2000). Accessory Dwelling Units: Model State Act and Local Ordinance . Spectrum , 8-9 vol. 73 (3).

Pamuk, A. (2004). Geography of Immigrant Clusters in Global. International Journal of Urban and Regional Research , 28.2, 287-307.

Sabia, J. J. (2008). There's No Place Like Home - A Hazard Model Analysis of. Research on Aging , 30 (1), 3-35.

US Census Bureau. (2007). Households and Families, 2007 American Community Survey.

US Census. (2009). Housing Vacancies and Homeownership. Retrieved from Annual Statistics: 2008: http://www.census.gov/hhes/www/housing/hvs/annual08/ann08ind.html

US Department of Commerce, Bureau of Economic Analysis. (2008). Regional Economic Accounts. Retrieved from Average wage and salary disbursements: http://www.bea.gov/regional/

Van Hook, J., & Glick, J. (2007). Immigration and Living Arrangements: Moving Beyond Economic Need versus Acculturation. Demography , 44 (2), 225–249.

Waserman, J. (2009, August 4). Signs of the Times. Sacramento Bee , p. A11.

The Interior Design Studio Environment: Value vs. Reality

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ABSTRACT

Extensive research has been done in the fields of education and psychology, and some in the field of architecture regarding the correlation between classroom environment and learning. Research shows that the learning process is enhanced by natural elements (fresh air, sunlight, green spaces, and natural views), adequate personal space and minimal noise levels. Many universities are responding to the broad base of evidence that the physical classroom affects students, teachers and the learning process.

In the field of interior design, the classroom is a studio environment. The typical university classroom and the studio classroom differ in aspects of layout, equipment, and the amount of time a student is in the space. The studio has drafting tables for each student and the instructor provides more hands on teaching. Instruction may be given to the class as a group or in a one-on-one situation. Where the conventional student spends fifty minutes attending a lecture, the design student may be in the studio for several hours of time every day. Even though the classroom layout, equipment, and time spent in the space are different between the studio classroom and the conventional lecture hall, the evidence regarding the correlation between classroom environments and learning still applies.

The body of research related to the evaluation of educational buildings of design and architecture is limited, which is surprising due to the focus of these fields of study on providing environments that are functional, beautiful and enhance the user's life. In the field of interior design, CIDA the accrediting organization for universities offering interior design defines standards for the physical design studio classroom, which must be met and maintained to retain certification. Interior design educators would be more aware than most fields of study how important the physical environment is to the learning process.

The purpose of this study was to gather information from state funded interior design programs throughout the United States, in order to access the value given to the classroom studio environment by interior design program administrators. The interior design administrator's assumed value of quality design was ascertained by measuring the design satisfaction of their studio classroom. A crossectional research using a Likert scale survey was distributed to one representative from each university. These questions accessed the perceived value and satisfaction given to the studio classroom environment. The survey also examines the correlation between CIDA and non-CIDA accredited universities and the quality of their studio environments.

The results of this study reveal general dissatisfaction of the interior design classroom, as assessed by interior design program administrators. This overwhelming dissatisfaction was coupled with a lack of long term planning concerning the studio classroom environment. General findings of this dissatisfaction are reported and suggested studio benchmarks are listed.

NARRATIVE

Would the computer lab of the science and technology field have outdated computers or software? Would the school of nursing offer techniques and instruments that were used twenty-five years ago? The studio classroom is to the interior design student what the computer or software is to the technology student.

Extensive research has been done in the fields of education and psychology regarding the correlation between classroom environment and learning. Research shows that the learning process is enhanced by natural elements (fresh air, sunlight, green spaces, and natural views), adequate personal space, and minimal noise levels.

In the field of interior design, the classroom is a studio environment. The typical university classroom and the studio classroom differ in aspects of layout and equipment and class time duration. Even though the layout and setting are different than the conventional lecture hall, the evidence regarding the correlation between classroom environment and learning still applies. In fact given the core values of interior design profession, the studio classroom may impact design student learning more acutely than the conventional student.

The body of research related to the evaluation of educational buildings of design and architecture is small, which is surprising due to the focus of these fields of study on providing environments that are functional, beautiful and enhance the user's life. In the field of interior design CIDA, the accrediting organization for universities offering interior design, defines standards for the physical design studio classroom, which must be met and maintained to retain certification.

The purpose of this study is to gather information from interior design programs throughout the United States, in order to access the value given to the classroom studio environment by interior design program administrators. The investigation further explores resources and funding sources for maintaining and updating the design studio.

The theoretical framework for this study was Functionalism. Three key concepts of functionalism include: Utility, Purpose/Function and Fitness. All three concepts are integrated with the quality of Beauty. This Functionalism foundation is used for our analysis along with environmental concerns established by Hershberger (1999). According to Heuberger and Special's (1997) conceptual framework pertaining to interior design, the five categories deemed significant in design are: "(1) space planning; (2) design elements and principles; (3) finish materials, decorative elements, and detailing; (4) lighting; and (5) furniture." In this particular study, an analysis of these categories within the interior design studio classroom was correlated to level of satisfaction. Level of satisfaction indicated the actual value of quality design exhibited in the studio classroom.

Non-probability sampling methods were conducted using a purposeful sample. The population for this research was selected from universities in the United States that house an interior design program as represented in Interior Design Educator Council (IDEC).The study utilized a Likert scale survey based on research by Nasar, Preiser and Fisher in Designing for Designers: Lessons learned from schools of Architecture (2007). The final survey was an online questionnaire administered by Illinois State University Assessment Office's Select Survey tool. Additionally a statistician, with the Illinois State University Assessment Office, reviewed the survey instrument prior to data collection and consulted on statistical analysis. A pilot survey was administered to and reviewed by key leaders in the field of interior design education in order to increase reliability, accuracy and validity of the instrument. The survey questions fell under five categories with 6 to 11 questions in each category for a total of 29 Likert scale questions and 6 open ended exploratory questions which were designed to provide information regarding the original research questions, which were:

1. Do interior design administrators feel their interior environment impacts the learning processes in interior design studios?

2. Have institutions with interior design programs allocated financial resources in the past five to ten years to renovate existing interior design studios?

4. When financial resources have been allocated, have renovations included sustainable practices?

5. Does the value of quality design in the studio environment, given by interior design administrators, correlate

to funding of actual renovation?

HYPOTHESIS:

University level Interior design departments, in the United States, will address aesthetic, environmental, human, temporal and resource concerns in their studio classrooms. Their studio classrooms will model these core values to the interior design students as well as the university at large. CIDA accredited universities will pursue these more diligently than non-CIDA accredited universities.

A total of 39.9% completed the survey, providing a strong response rate. To address our hypothesis that university level interior design departments will address aesthetic, environmental, human and temporal concerns in their studio classrooms levels of satisfaction were established and results showed an overwhelming level of dissatisfaction in all five areas of concern. The results of this study provide valuable insight into the current status of the interior design studio classroom. There was not one area of concern where there was general satisfaction among these universities. Three out of the five areas were determined to be ranked as highly dissatisfied. The hypothesis was rejected.

The results of the study may add to the rather small amount of current literature written on the topic of higher education studio design and impact funding for future renovations. This in turn could affect the potential to market the interior design field to potential students and their parents.

REFERENCE LIST (APA)

Ankerson, P., & Pable, J. (2008). *Interior design practical strategies for teaching and learning.* New York: Fairchild Books, Inc.

Bartlett, P., & Chase, G. (2004). *Sustainability on campus: Stories and strategies for change.* (Cambridge: MIT Press), p.5.

Heuberger, B. F., & Special, K. W. (1997). A conceptual framework for critical review: The Aronoff Center for the Arts. *Journal of Interior Design*, 23(1), 11-26.

Hill, C. (2007). Climate in the interior design studio: Implications for design education. *Journal of Interior Design* 33(2), 37-52.

Hughes, J. (2002). Developing a classroom vision and implementing a plan. *NewDirections for Teaching and Learning*, 92, 63-72.

Nasar, J. L., Preiser, W.F.E. & Fisher, T. (2007). *Designing for designers: Lesson's learned from schools of architecture*. Fairchild Publications, Inc. New York.

The Maison de Verre: Modernism and the Parisian Urban Hôtel

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ABSTRACT

CONTEXT AND INTENT

The evolution of the *hôtel particulier* in Parisian urban architecture provides a context for analyzing the Maison de Verre, an early 20th century house designed by Pierre Chareau. Located in a historically upper-class residential neighborhood, the Maison de Verre in many ways represents an early Modern challenge to bourgeois housing conventions of 19th century Paris (Edwards, M. J. & Gjertson, W. G., 2008). It also reflects, however, the urban townhouse tradition as it evolved in Paris from the 16th century forward. This paper contends that the Maison de Verre shares particular features of the *hôtel particulier* type, and continues its tradition, albeit in 20th century guise.

METHODOLOGY

To examine the Maison de Verre within the typology of the *hôtel particulier*, this paper compares and contrasts the house with characteristic features of developing Parisian hôtels from the mid-17th to the early 18th century. The Hôtel Lambert, a townhouse built on the Ile St. Louis by the architect Louis Le Vau and still inhabited, provides an instructive example for the comparison. The paper explores similarities and differences between 17th and early 20th century housing conventions in Paris as reflected in site organization, interior spatial planning and circulation, and the decorative schemes, including the use and placement of furniture and furnishings.

REVIEW OF LITERATURE

Thornton (1993) discusses the evolution of the *hôtel particulier* in Paris, paying particular attention to the planning innovations during the latter part of the 17th century. Neuman (1980) describes the most salient features of the hôtel typology, placing them within the cultural context of early 18th century Paris. (It is noteworthy that the Maison de Verre replaced all but the top floor of an 18th century townhouse, and thus was designed within its fixed parameters and existing site orientation). Blakemore (1997), also discussing the typical Parisian townhouse, identifies the Hôtel Lambert as a 17th century example of an "early use of asymmetrical planning," citing Le Vau's interest "in the dramatic" and his exploitation of "light and dark contrasts" (p. 161). Further analysis will show that these characteristics have parallels with the Maison de Verre, noted for its theatricality and the quality of light within its interior (Edwards & Gjertson, 2008). Finally, n both the Maison de Verre and the Hôtel Lambert the use of art is integral to the interior program.

SUMMARY

The Parisian *hôtel particulier* emerged as a distinct type as early as the 16th century. Although "the term *hôtel* was originally restricted to houses of the nobility, while the word *maison* was applied to town mansions of the middle class, [this] distinction ... had broken down by the second half of the 17th century" (Neuman, p. 129). The Maison de Verre, a notable 20th century Parisian townhouse, can be seen in this context as an extension of the *hôtel particulier* tradition.

NARRATIVE

PURPOSE

This presentation examines the Maison de Verre within the typology of the *hôtel particulier*, comparing and contrasting the house with characteristic features of the typical Parisian hôtel. The purpose is to discover aspects of the house that bend that tradition to make it a Modern expression of the form. Among the issues the presentation will address are the location and site organization of the house, its interior plan and circulation, and the impact of the clients' social status and lifestyle on the design.

BACKGROUND

The 18th century witnessed the emergence of the interior as worthy of design consideration distinct from the architectural exterior. According to Molnar and Vodvarka "one of the most profound legacies of the eighteenth century... may be its sharp distinction between the practice of interior architecture and exterior architecture – even when the practitioner is the same person" (1992, p. 19). Coinciding with this increased interest in the interior was the rising importance of domestic architecture, particularly in Paris. Following the reign of Louis XIV the court left the formality and strict social protocol of Versailles and returned to Paris. According to Neuman "it was in this rapidly expanding city environment that the intensification of private patronage secured the triumph of the French urban dwelling in its most representative form – the *hôtel particulier"* (p. 128-29). While "the term *hôtel* was originally restricted to houses of the nobility, and the word *maison* applied to town mansions of the middle class, [this] distinction ... had broken down by the second half of the 17th century" (Neuman, p. 129).

As the merchant and professional classes expanded and marriage alliances swelled the ranks of the titled, the need for more residential construction in the crowded city led to an expansion of the boundaries of fashionable neighborhoods. The hôtel became the site of advances in space planning and of technological innovations aimed at increasing the comfort and convenience of the interior in relation to its inhabitants.

> *The springs from which the mainstream of European interior decoration flowed, were ... to be found in France and it was widely recognized ... that the French were extremely skillful ... in the devising of ornaments and creating settings for an extremely pleasant way of life where convenience was regarded no less highly than decoration (Thornton, 1993, p. 89).*

Much of the work that architects were called upon to do, therefore, was the retrofit of older structures in order to provide a greater variety of smaller, more intimate spaces to accommodate an increasingly informal society, and to provide the technological advances in plumbing and heating that were adding to the comfort and convenience of interiors. These changes necessitated alterations of the plan and the strict *enfilade* circulation that had characterized the 17th century domestic interior. What emerged were modern notions of domestic comfort that we could recognize today (DeJean, 2009).

THE MAISON DE VERRE AND THE *HÔTEL PARTICULIER*

Dr. and Mme. Dalsace, an urban couple with political and cultural ties to the early 20th century Parisian avant-garde, chose to locate their home, the Maison de Verre, in the Faubourg St. Germain, a historically upper-class bourgeois residential neighborhood at the center of Parisian intellectual and cultural life. Because the site included an 18th century townhouse with a top floor that could not be demolished, the Maison de Verre resulted from the insertion of a new interior into the space of an existing structure. It was necessary for the designer, Pierre Chareau, to restructure this Modern house within the fixed parameters of the existing site. Chareau's structural and material innovations (the use of subway construction technology; his employment of structural steel left unconcealed on the interior and his use of glass block on the exterior facades) marked the house as Modern. However, he placed these Modernist devices and "...the technological advances within the house... at the service of the lives ... to be lived there" (Edwards & Gjertson, 2008, p. 22), a motive consistent with the spirit of architectural innovation evident in the 18th century. Chareau's emphasis on the interiority of the house and its design for comfort and convenience place it firmly in the tradition of the Parisian townhouse.

The traditional *hôtel-entre-cour-et-jardin* layout of the *hôtel particulier* consisted of a primary house block (the *corps-de-logis*) placed halfway down the site away from the street from which narrow wings extended to the street thus framing the entry courtyard. The court

was closed at the street by a service wing with a central classical portico. The primary house block separated the court and the garden at the back of the site. "The appeal of so simple a formula lay in its flexibility: by the judicious placement of the parts, a building erected on an irregular site could be designed to be ordered and symmetrical (Neuman, 1980, p. 130). The Maison de Verre maintains this pattern: the house itself is not on the street, but is located beyond a courtyard that is surrounded by existing buildings and a street façade that hides the Modern glass block front of the house core. (Fig. 1)

The technology to create large panes of glass was invented in France in the late 17th century resulting in increasing use of large areas of glass to open up the interior to natural light. The use of larger glass panes and mirrors enhanced the light within 18th century domestic interiors and marked them as "modern." "Good lighting soon came to be seen as an essential component of the comfortable life" (DeJean, p. 156). Once in the courtyard of the Maison de Verre, the glass block façade of the house, both declares its" newness" and maintains the privacy of the residence through its translucence. Chareau eschews the transparent glass of other Modernist facades in favor of a material that provides interior light without opening the interior to the eyes of visitors.

The 18th century *hôtel particulier* modified the *enfilade* interior circulation, gradually relaxing its strict arrangement of aligned spaces and providing circulation alternatives to the sequential movement through a prescribed series of rooms. The growing importance of familial privacy and desire for spaces of greater informality encouraged this development. By the early 20th century the bourgeois residence was essentially a private refuge separate from the public realm. The program for Chareau's Maison de Verre, however, required the re-introduction of public space into the private residence.

Dr. Dalsace's gynecological practice as well as his and his wife's cultural and political interests required the provision of public spaces that could accommodate society outside the immediate family. Chareau was able to carefully orchestrate the elements within the house to allow for public and private spaces that could expand and contract in a dynamic dance of movable parts: translucent screens, sliding panels, open and closed stairs, and a combination of direct and indirect circulation paths that both opened and shielded views throughout the house.

The inherent asymmetry of the Maison de Verre's spatial organization, however, is not without precedent in the early development of the *hôtel particulier.* Blakemore (1997, p. 161) identifies the Hôtel Lambert as a 17th century example of asymmetrical planning in order to address its irregular site at the tip of the Ile St. Louis. Two vestibules are located on either side of a main central stair that rises at the rear of the court; the vestibule to the right leads to the *corps-de-logis*, located in the right wing between the court and the garden. (Figs. 2 and 3) A library occupies the main floor of a wing that stretches perpendicularly to the right beyond the *corps-de-logis* at the back of the garden. The Hercules Gallery (Fig. 4), located on the floor above the library, provides both a view to the garden and a view to the Seine. In contrast, the Maison de Verre's bedroom corridor "gallery" (Fig. 5) allows views into the double height Grand Salon and library wall on one side and the closed closet fronts of the bedrooms on the other.

As a public space the Grand Salon of the Maison de Verre provides both architectural and social drama; the main stair from the ground floor ascends parallel to it and delivers the visitor into this space that:

> *... performed as a living center for the Parisian intellectual elite, which included the most avant-garde artists and thinkers of the day, and ... display[ed] the collective passions of the Dalsaces: Annie Dalsace's modern art and the couple's vast collection of books (Edwards & Gjertson, 2008, p, 31).*

The Grand Salon recalls the emphasis on display that was the original function of the enfilade sequence of rooms in the *hôtel particulier*. However, in the Maison de Verre the organization is no longer sequential; the circuitousness of the path is more simultaneous and individuated reflecting a 20th century Modernism.

CONCLUSION

Nicolai Ouroussoff states that the Maison de Verre "challenges our assumptions about the nature of Modernism" (2007, p. AR 1). For Ouroussoff the house reflects both "the magical promise of 20th century architecture" and "the road not taken" by Modernist architects (p. AR 1). The technological innovations of the Maison de Verre are perfectly in keeping with the tradition of this evolving urban house form. The innovative nature of the Maison

de Verre rests on its poetical reinterpretation of the historical *hôtel particulier*.

REFERENCE LIST (APA)

Blakemore, R. G. (1997). *History of interior design and furniture: From ancient Egypt to nineteenth century Europe*. New York: Van Nostrand Reinhold.

DeJean, Joan. (2009). *The age of comfort*. New York: Bloomsbury.

Edwards, M. J. & Gjertson, W. G. (2008). La Maison de Verre: Negotiating a Modern Domesticity. *Journal of Interior Design,* 34(1), pp. 15-37.

Molnar, J. & Vodvarka, F. (1992). *The interior dimension.* New York: Van Nostrand Reinhold.

Neuman, R. (1980). French domestic architecture in the early 18th century: The town houses of Robert de Cotte, *The Journal of the Society of Architectural Historians*, 39(2), pp. 128-144. Retrieved Sep. 24, 2009 from JSTOR, Stable URL: http://www.jstor.org/stable/989581

Ouroussoff, N. (2007, August 26). The best house in Paris, *The New York Times,* AR1, AR22-23.

Thornton, P. (2000). *Authentic décor: The domestic interior 1620-1920.* London: Seven Dials, Cassell & Co.

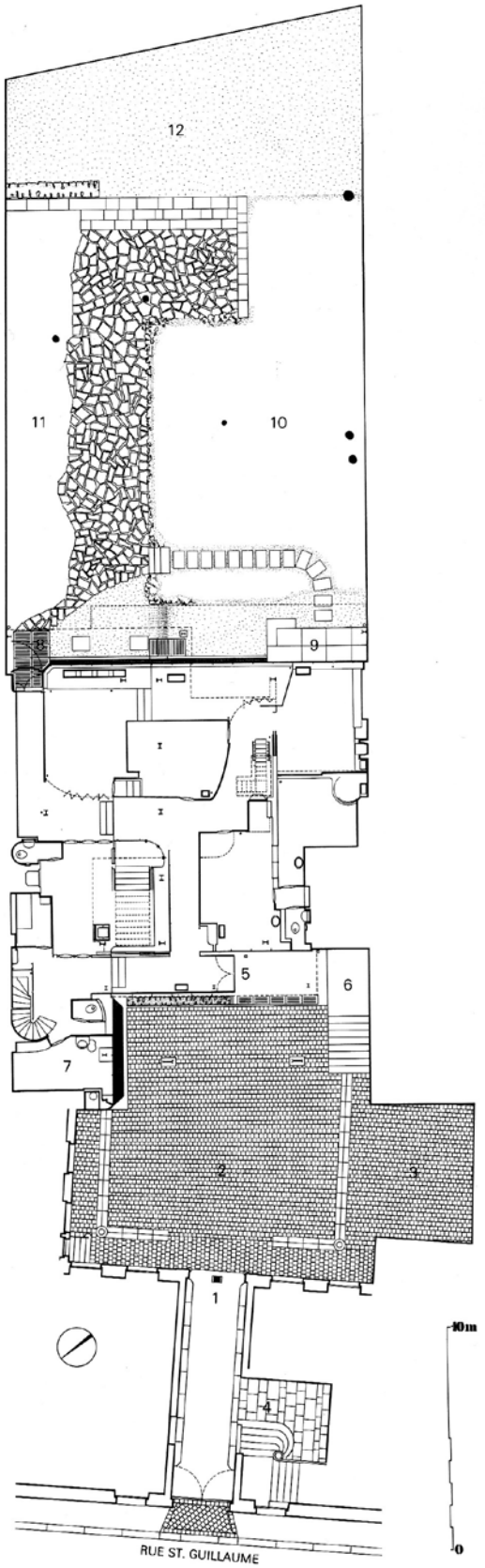

Figure 1: Site plan of the Maison de Verre

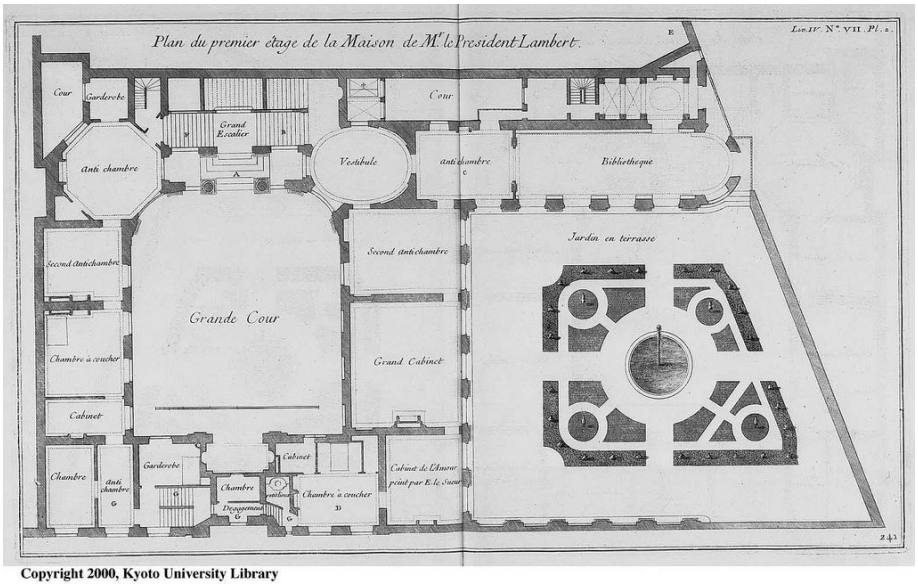

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Figure 2: First floor plan of the Hôtel Lambert

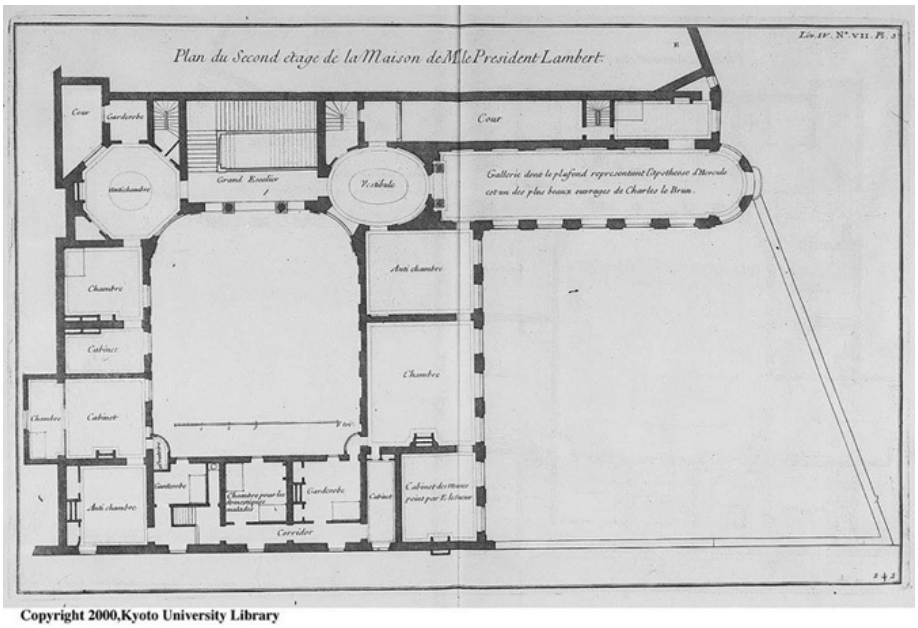

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Figure 3: Second floor plan of the Hôtel Lambert

Figure 4: The Hercules Gallery in the Hôtel Lambert

Figure 5: Bedroom Corridor "Gallery" in the Maison de Verre

Neo-vernacular Architecture – a Case Study in Yunnan Province of China

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ABSTRACT

In recent years of rapid economic development, Neo-vernacular architectural style becomes more and more popular in China among architects and interior designers who practice in regions with strong ethnic and vernacular architectural traditions. This study examines design projects in the last decade in Yunnan Province of southwest China where a majority of the ethnic groups in China reside. This study focuses on the designs related to the Dai ethnic architectural style in the southern part of the province.

The Neo-vernacular architectural style in the area populated with the Dai people, deeply rooted in its local social and environmental context, differs from the revival of Classical architecture during the 18th and early 19th centuries in Europe and America whose concerns were limited to the reuse of ancient architectural forms. The movement of Neo-vernacular architecture concerns itself with local ethnic culture, local materials, and traditional building technology. This is unlike the Chinese revivalism in the 20th century which focused on the reuse of classical forms of traditional Chinese architecture.

The Neo-vernacular architectural style combines modern architectural design with the local architectural tradition featuring renewable building materials, natural ventilation, and unique architectural forms refined in a long history of cultural evolution. The Neo-vernacular architecture style can be seen as a continuity of the architectural tradition. This new style must adapt to the local people's modernized life style in terms of practical functions and new cultural development. At the same time, it must bring together the unique local culture and new building materials in order to achieve a new unification of form and function.

In the examination of Neo-vernacular designs being studied, the authors found that this movement has great potentials in re-inventing the vernacular architectural tradition of the Dai people. The designers actually have learned a great deal from the vernacular tradition in their exploration of a new local architecture that is sustainable, culturally authentic, and aesthetically pleasing. The experience of initiating this Dai style Neo-vernacular architecture can be inspirational to designers of other areas of different vernacular traditions, and eventually make significant contribution to the cultural conservation of areas of other ethnic cultures where indigenous architecture has been threatened by rapid spread of an international style architecture under the name of modernization. The new buildings in the Neo-vernacular architectural style helped to create a renewed local cultural identity and to promote the value of vernacular architecture. The active creation of a new local culture perhaps is the best way of cultural conservation.

NARRATIVE

In recent years of rapid economic development, China has experienced drastic changes in architectural styles throughout the country. When Modernist buildings appear everywhere, the Neo-vernacular architectural style becomes more and more popular in China among architects and interior designers who practice in regions with strong ethnic and vernacular architectural traditions. This movement is a complicated phenomenon resulted from many different factors. A major factor promoting the preservation of the vernacular architectural tradition is the significance of tourism in the local economy. The rich ethnic cultures, the unique natural landscape and climatic conditions prescribe the strategic priority of the development of tourism in the areas. The critical role of ethnic cultures in tourism requires that the vernacular architectural styles are preserved in the historical buildings and applied in new constructions. This study examines design projects in the last decade in Yunnan Province of southwest China where a majority of the ethnic groups in China reside. This study focuses on the designs related to the Dai ethnic architectural style in the southern part of the province.

Yunnan province has twenty-five minority ethnic groups with population more than five thousand. The majority of the Dai population resides in the southern part of the province. The traditional Dai villages are composed of the multi-level houses made of bamboo and wood, Buddhist temple, and other public buildings such as the well and its associated shrine. (Figure 1) The most well-known vernacular architecture of the Dai peoples is the house that is often call bamboo house by the outsiders. In fact, most of the existing traditional Dai houses have wooden structure, and the bamboo structure of the old days had been replaced in the twentieth century. However, bamboo is still used as construction components. The ground level of the houses is open without vertical enclosure. The space with constant through ventilation provided shaded cool areas for house work as well as farm animals. The second level has the living and sleeping spaces. The high partially gabled pitch roof (Dutch gable) forms the most representative formal feature of the Di houses.

In the past two decades, the economic development provided the local people with imported housing models and new construction technology. The imported housing models are in a generic contemporary style that can be found in cities and suburbs all over the country. The most common features include flat roof of concrete slabs, masonry walls clad with ceramic tiles, and some simplified western classic architectural motifs. These new houses clash harshly with the traditional vernacular architecture in villages. (Figure 2) Since the new models symbolize fortune and success, they became popular quickly and formed great threat to the picturesque landscape of the traditional Di villages and towns that are the major tourist attractions. In such a situation, the conservationists reacted with studies of the vernacular architectural traditions and designs of modernized housing models with traditional style – the neo-vernacular style. (Figure 3) Since the environmental conservation of the local ecological system has been see as equally important, the use of local timber has been discouraged and new sustainable technologies have been introduced. For instance, a reusable pre-tensioned concrete modular system has been successfully used.

The Neo-vernacular architectural style in the area populated with the Dai people is deeply rooted in the local social and environmental context, and therefore differs from the revival of Classical architecture during the 18th and early 19th centuries in Europe and America whose concerns were limited to the reuse of ancient architectural forms. The movement of Neo-vernacular architecture concerns itself with local ethnic culture, local materials, and traditional building technology. This is also unlike the Chinese revivalism in the 20th century which focused on the reuse of classical forms of traditional Chinese architecture to symbolize the revival of the Chinese culture in the most general sense. A major difference is in the fact that the Neo-vernacular architectural style emphasizes the local cultural and environmental contexts. It combines modern architectural design with the local architectural tradition featuring renewable building materials, natural ventilation, and special spatial configurations reflecting particular life styles of the local population. The use of the unique traditional architectural forms, in comparison, is secondary. The more essential aspects of the Di house, such as the natural ventilation, are reinforced in the new houses.

The Neo-vernacular architecture style can be seen as a continuity of the architectural tradition. Although the houses are no longer built entirely by the local villagers, this new style adapts to the local people's modernized

life style in terms of practical functions and new cultural development. At the same time, it brings together the unique local culture and new building materials in order to achieve a new unification of form and function. The involvement of professional architects and construction companies in the construction of the houses in villages has been integrated into the life of the Di people. The professionals and academians learn sustainable applications from the folk architecture tradition, and reinforced them in the new housing models in the neo-vernacular style. It is in this interaction between the professionals and the local folk architectural tradition, are the elements of sustainable design brought to a new level of consciousness.

When the neo-vernacular style is applied in commercial and public buildings, it creates a unique sense of place often found in the architectural discourse as "local characteristics." This sense of place is highly symbolic and has certain arbitrariness because some formal aspects of the neo-vernacular style buildings do not intrinsically relate to the pragmatic functions of the buildings. However, the re-created local characteristics serve the function of providing people, including tourists, a connection to the local culture and placing them in an immersive local environment. In the design of hotels and tourist resorts, the architectural motifs of the Di religious architecture are used, in addition to those of the Di houses. (Figure 4) The curved roof and delicate architectural ornaments are inspired by temples and palaces. In the interior, bamboo is extensively used as a symbol of local cultures as well as a sustainable material. When the ideas and themes of the vernacular architectural tradition are used in the new structures for tourism, the created environment may be seen as a projection from the authentic environment, and therefore, the new building is connected with the spirit of the villages. At a larger scale, the entire layout of a resort can be designed in the form of a village to connect the experiences of the tourists to the life in the Di villages with the same kind of harmonious relationship to the natural landscape. (Figure 5) In a certain sense, the spirit of a place, or the so-called "genius loci," is embodied in architectural forms. Even when the form is separated from the original context, the sprit is still alive and capable of taking over the place.

In the examination of Neo-vernacular designs, the authors found that this movement has great potentials in re-inventing the vernacular architectural tradition of the Dai people. The designers actually have learned a great deal from the vernacular tradition in their exploration of a new local architecture that is sustainable, culturally authentic, and aesthetically pleasing. The experience of initiating this Dai style Neo-vernacular architecture can be inspirational to designers of other areas of different vernacular traditions, and eventually make significant contribution to the cultural conservation of areas of other ethnic cultures where indigenous architecture has been threatened by rapid spread of an international style architecture under the name of modernization. The new buildings in the Neo-vernacular architectural style helped to create a renewed local cultural identity and to promote the value of vernacular architecture. The active creation of a new local culture perhaps is the best way of cultural conservation.

Figure 1: Traditional Dai village in Yunnan Province

Figure 2: The new house of contemporary style clashes with traditional houses.

Figure 3: Houses built in the neo-vernacular style.

Figure 4: Newly built and designed Dai Style buildings in Yunnan Province.

Figure 5: A tourist resort planned in the form of a Di village

REFERENCE LIST (CHICAGO)

Irwin, David. 1997. *Neoclassicism.* London: Phaidon Press.

Luo, Xiaowei, ed. 2009. *New Chinese Architecture.* London: Laurence King Publishing.

Xing Ruan. 2006. *New China Architecture.* Tokyo: Tuttle Publishing.

Si, Xinzhi. 1992. *Southwest China Study Series.* Yunnan: Yunnan Educational Publishing House.

Zhang, Baohua. 2005. *Yunnan – Min Zu Wen Hua Gai Lun.* [Introduction of Ethnic Culture in Yunnan]. Beijing: Chinese Social Science Press.

Interior Design of the K-5 Classroom Environment for Literacy

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ABSTRACT

Literacy has been identified as the most emphasized goal of K-12 education in the United States today, for its value to individuals and to the larger society. The national Assessment of Educational Progress (NAEP) states, “As the key that allows access to many forms of knowledge and information, reading literacy is a skill critical to learning” (J. Lee, W. Grigg, and P. Donahue, 2007). While there are many approaches to the teaching of literacy, the method known as “balanced literacy”, developed by educators Fountas and Pinnell (1996) has been widely implemented since its origination in the 1980’s. Balanced literacy as a teaching method gives specific guidance to teachers on how to use the physical classroom to support the method of teaching and learning literacy (Fountas and Pinnell, 1996).

While there has been a great deal of research into how children create knowledge and become literate, as well as a great deal of research into purposeful environments for children, it is significant that there has been little research that directly explores the relationship between literacy outcomes and the physical setting. Research studies over the past thirty years have provided convincing evidence that students learn better when they perceive the environment more positively (Fraser 1994, 1986). Still, almost no environment and behavior research has directly addressed literacy and the physical learning environment.

This presentation will describe a study conducted in the spring 2009 which researched the ways in which K-5 teachers use the physical classroom environment to improve their students’ literacy outcomes, as well as investigating students’ own understanding of how the classroom is involved in their literacy activities. The goal of the study was to better understand the human and environmental interaction within the classroom setting as balanced literacy is practiced.

To examine the relationship between the teaching and learning of literacy and the physical environment, a case study of classrooms in one public K-5 elementary school in a suburban district, in which balanced literacy is implemented at every grade level, was conducted. The researcher, a former Montessori educator, is now a professional interior designer, design educator, and environment-behavior researcher. A variety of qualitative research techniques, including semi-structured interviews, photographic analysis, and observation, were used to facilitate data collection from both adults and children in classroom environments where balanced literacy is practiced. One of the unique attributes of this study was the use of children’s drawings as a platform for obtaining their observations and commentary on their classroom and literacy activities, which was captured on tape.

This study highlighted the lack of research into the interior design of classrooms of elementary-level school environments. In contrast to architectural research into school design, which has often focused on issues of adjacency of major spaces, security, and sustainability, the application of environment and behavior research to interior spaces within the greater school campus has been largely ignored.

NARRATIVE

The purpose of this study was to identify the ways in which elementary-level teachers in a typical American suburban school district use and transact with the physical classroom environment as they implemented balanced literacy methods to teach reading, writing, and oral expression; and to learn how this transaction is materialized in typical elementary classroom environments.

Diverse disciplines, including education, geography, design, biology, developmental psychology, and cognitive psychology, are concerned with how human beings interact with, are affected by, and how they themselves affect the physical environments that they inhabit, use, and pass through. Recently, the U. S. Department of Education, in order to enforce the intent of the No Child Left Behind Act (2001), began to require school districts to use "evidence-based" educational approaches as they implement educational initiatives. The same requirement is applied to school construction, wherein "evidence-based design" is the criterion for receiving federal funds (Whitehurst, 2004). As noted by Mark Schneider of the National Clearinghouse for Education, one problem has been that while existing studies on school building quality point to improved student behavior and better teaching in higher-quality facilities, firmer policy advice about the types of capital investments that would be most conducive to learning and to good teaching is still needed (2002). Restated, a valid connection between literacy and the physical setting, based on rigorous research, would be able to inform policy advice regarding federally-funded school construction.

Balanced literacy is a method of teaching reading and writing developed by educators Irene Fountas and Gay Su Pinnell (1996), based on previous teaching approaches such as the open classroom and "whole-language" methods. Balanced literacy has been adopted across the United States by many school districts and major school systems, including that of New York City (NYC Dept of Education, 2007). According to Fountas and Pinnell, the purpose of balanced literacy is to enable children to become independent readers, while participating in socially supported activity (1996).

In this study, the operational definition of "classroom environment" is, the physical classroom setting and its physical components. The goal of this study was to learn how teachers and students use their physical classroom environment for teaching and learning balanced literacy; and, how this activity is materialized in typical elementary classroom environments.

CONCEPTUAL FRAMEWORK

There has been substantial research conducted specifically on purposeful environments for children and the effect of the environment on their scholastic achievement. However, there is a significant gap in research concerning the relationship between physical environment and literacy outcomes. The National Assessment of Educational Progress (NAEP) states, "As the key that allows access to many forms of knowledge and information, reading literacy is a skill critical to learning." (J. Lee, W. Grigg, and P. Donahue, 2007). Given that literacy is seen today as central to education and preparation for work, this knowledge gap creates an opportunity for meaningful environment-behavior research.

As defined by the Workforce Investment Act of 1998 and the National Literacy Act of 1991, literacy is "an individual's ability to read, write, speak in English, compute and solve problems at levels of proficiency necessary to function on the job, in the family of the individual and in society" (Donahue, Finnegan, Luftus, 2001). This is the operational definition of literacy used in this study.

Researchers have investigated whether the physical environment has an effect on personality. As summarized by Heft and Wohlwill, there are three major areas of impact of the physical environment on personality. One area is *meaning,* or the idea that the physical milieu can contribute to a sense of coherence or alienation in individuals through place identity; second, referred to as *structure*, or the extent that environments restrict, shape, and give structure to everyday activities; and third, the sense of *community* and the impact on health and well-being.

In terms of *meaning*, most relevant to both teachers and children are the findings of Csikszentmihalyi and Rochberg-Halton's (1981) and their study of the symbolic importance of domestic objects and symbols in self-definition, although variations exist across age and socio-economic groups. The study of personalization of children's environments to create identity has been to date explored very little. Place identity may play a dis-

tinct role in the way that adults and children self-identify as teachers or students, situated in a place identifiable as a "school" or "classroom."

The concept of *structure* relates to the amount of control that an individual exerts over environmental factors, such as noise, crowding, and stress, and includes the ability to retreat from them. Kaplan suggests that a realistic and desirable goal for environmental designers is to design supportive environments that are high in legibility, information availability, and which foster a sense of participation (1983).

The concept of "community" is much-researched in education theory. Building a "community of learners," or simply, creating a sense of community within the classroom in order to foster an atmosphere conducive to learning, both individually and collaboratively, is a fundamental goal of the balanced literacy approach. In comparison, environment and behavior research (EBR) is inconclusive on the effects of *community*, although Little states that "personality factors will likely serve as key moderators of the effects of environment on human well-being, and this might mitigate whatever ameliorative effects innovative environmental design might have" (1991).

EXISTING LITERATURE ON LITERACY AND THE PHYSICAL SETTING

Contemporary literacy research is concerned with topics such as defining literacy; understanding the mechanisms of teaching literacy; the ways in which individuals become literate, such as through comprehension and self-expression; how particular social groups, such as adolescents, identify themselves and communicate; and the historical, cultural, and social theories concerning the acquisition of literacy (Robinson, McKenna, Wedman, 2004). The research points to a relationship between literacy and the physical setting (Pressley, 2004).

Social constructivism is epistemologically fundamental to the balanced literacy approach. The child, through increasingly-challenging literacy activities, constructs meaning and builds both an expanded view of the world, as well as constructing a view of the self as a capable, self-directed, and independent reader and writer; in other words, as a literate person. Particularly relevant to this proposed study, balanced literacy requires teachers to create visually and physically discrete areas within their classrooms to support specific guided literacy activities (Fountas and Pinnell, 1996).

EXISTING ENVIRONMENT-BEHAVIOR LITERATURE RELATED TO CHILDREN'S SPACES

Heft and Wohlwill found that a sense of pleasantness occurs at intermediate degrees of complexity, while unpleasantness occurs at the extreme highs or lows, and holds true for man-made environments (1991). Sensory experiences, in particular temperature and light, may affect mood, according to Russell and Snodgrass (1991). Recently, the Heshong Mahone Group, in their report for the California Energy Commission found that daylighting in classrooms had a significant effect on test scores, raising them over the course of a school year from between 7% and 26% (1999).

Arousal and aesthetics, with special relevance to children, has been found to be positively related to psychological development in a number of investigations, including Wachs, Uzgiris & Hunt (1971). It was found that the presence of room decorations, literature, and small manipulable objects was significant for a few aspects of development. Presence of decorations was positively correlated to intelligence, and the research suggested that the effects were not transitory. A positive relationship was found between novelty preference and persistence in toy play and competence mastery (Yarrow et al, 1979).

Current theoretical approaches see the environment as a source of stimulation, both imperceptible and perceptible. The environment is also a source of feedback to the child's behavior, and it has been posited that the effects of sensory experience are mediated through the actions of the individual. The research findings suggest that it is possible to think of the idea of stimulation as passive and ambient, with feedback generated as the child is in active interaction with the environment, complementary to stimulation.

In summary, environment and behavior research into children's environments has been grounded in developmental and cognitive psychology, and across a broad range of disciplines. There are substantial findings in the multidisciplinary literature regarding student affect and perceptions, and student achievement. General student outcomes have been investigated with regard to the effect of the physical environment, but the literature search identified a significant gap in both environment-behavior

science and education research specifically regarding the effect of the physical classroom environment on literacy outcomes. Architecture has responded to the need for school buildings which support new learning theories through the redesign of the school building as building type. However, within the larger building, the design of the physical classroom has remained an empty box, ready for adaptation by the individual teacher.

Although physical settings such as healthcare and corporate workplaces have been studied by environment-behavior researchers, in order to understand the relationship of the physical setting to occupants' motivation, health, productivity, and satisfaction, settings for literacy activities and education have been somewhat neglected.

REFERENCE LIST (APA)

Csikszentmihalyi, M. and Rochberg-Halton, E. (1981). The Meaning of Things. London: Cambridge University Press.

Donahue, P. L., Finnegan, A. D., and Lutkus, N. L. (2001). *The nation's report card: fourth-grade reading score. 2001.* Washington, D.C.: U.S. Department of Education, NCES.

English Language Arts. (2007). NYC Department of Education. Retrieved November 27, 2008 from http://schools.nyc.gov/Academics/EnglishLanguageArts/default.htm

Fountas, I. and Pinnell, G.S. (1996). *Guided reading: good first teaching for all children.* Portsmouth: Heinemann.

Fraser, **BJ** 1991, Two decades of classroom environment research. **In** B.J. Fraser & H.J. Walberg (Eds), *Educational environments: Evaluation, antecedents and consequences. 3*27.Pergamon, London.

Fraser, B.J. (1986). *Classroom environment.* London: Croom Helm.

Heft, H. & Wohlwill, J. (1991). Environmental cognition in children. In In D. Stokols & I. Altman (Eds.).*Handbook of environmental psychology, Vol. 1*. New York: Kreiger.

Kaplan, S. (1983). A model of person-environment compatibility. *Environment and Behavior, 15.*(3), 311-332.

Lee, J., Grigg, W., and Donahue, P. (2007). *The nation's report card: 2007.* Washington, D.C.: U.S. Department of Education. National Center for Educational Statistics. National Assessment of Educational Progress. *Retrieved December* 27, *2008 from* http://nces.ed.gov

No Child Left Behind Act (2001). U. S. Department of Education. *Retrieved on January 4, 2009 from http://www.ed.gov/policy/elsec/leg/esea02/index.html .*

Pressley, M. (2004). What I have learned up until now about research methods in reading education. In R. Robinson, McKenna, M. and Wedman, J. (Ed.), *Issues and trends in literacy education, 4th Edition* (pp. 283-298). Boston: Pearson.

Robinson, R., McKenna, M., Wedman, J. (2004). *Issues and trends in literacy education.* Boston: Pearson.

Russell, J.A., and Snodgrass, J. (1991) Emotion and the environment. In D. Stokols & I. Altman (Eds.).*Handbook of environmental psychology, Vol. 2.* 245-280. New York: Kreiger.

Schneider, M. (2002). Do school facilities affect academic outcomes? *National Clearinghouse for Educational Facilities.* Retrieved from http://www.edfacilities.org/pubs/outcomes.pdf

Wachs, T.D., Uzgiris, I.C., & Hunt, J. McV. (1971). Cognitive development in infants of different age levels and from different environmental backgrounds: An exploratory investigation. *Merrill-Palmer Quarterly, 17,* 283-317.

Yarrow, I,. Morgan, G., Jennings, K., Harmon, R., Gaiter, J. 1982. Infants' persistence at tasks: relationships to cognitive functioning in early experience. *Infant Behavior and Development* **5**: 131–141.

The Role of Building Information Modeling (BIM) In Education and Practice

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ABSTRACT

PURPOSE
The purpose of this paper is to present the findings of a graduate thesis study on the Role of Building Information Modeling (BIM) in Interior Design education and the professional design industry. The research model was developed in the Spring 2009 semester and implemented in the Fall 2009 semester.

LITERATURE REVIEW
The National Building Information Model Standard Project Committee (part of the National Institute of Building Sciences) defines BIM as:

> *… a digital representation of physical and functional characteristics of a facility. A BIM is a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life-cycle; defined as existing from earliest conception to demolition. (www.buildingsmartalliance.org/index.php/nbims/about)*

While an overwhelming body of literature on BIM technology exists in the architecture, engineering, and computer fields, very few papers have explored BIM in Interior Design. This study was modeled after the exploratory research done by Professors Julie Temple and Holly Cline, Radford University, entitled, *Integrating Building Information Modeling (BIM) Technology into Interior Design Curriculum: The Reality of Technology*. Results and findings from *DesignIntelligence's 2008 and 2009 Technology Surveys* were also used in developing the research model.

METHODOLOGY AND FINDINGS
The authors explore BIM adoption in design firms and BIM integration in academic curricula to determine: 1) if a gap exists between formal BIM education in academia and the technology adoption in design firms and 2) the perception in each group of who is responsible to close any gaps. Through two online surveys, the authors explore the attitudes, use, and requirements of BIM in both design firms and academia.

The first portion of the research consisted of curricular analysis of 33 CIDA accredited Interior Design programs representing ten states, (from Florida to New York). This information, when combined with the initial results of a questionnaire distributed to full-time and part-time faculty at CIDA accredited schools shows that eight out of every ten schools researched don't offer any BIM instruction

Findings from questionnaires to academia, architects, and interior designers from the Washington DC metropolitan area show that:

> *70% of designers use BIM software on projects*
>
> *A gap exists between formal BIM education in academia and the technology adoption in design firms*
>
> *Over a third of programs anticipate adding BIM*
>
> *Practitioners are most likely to utilize BIM in the design development and construction documents phases of design*
>
> *Academia and practitioners believe they share the responsibility for teaching/training BIM.*

RELEVANCE TO INTERIOR DESIGN
This research is significant to design educators because it provides both current and future adoption trends in

CIDA programs. This information provides a baseline comparison for programs considering modifications to their design technology curricula. The research also explores how industry uses BIM, which is helpful in developing learning objectives for new and existing courses. Finally, the research is significant to interior design firms because it identifies the extent current and planned BIM adoption at CIDA programs in the regions surveyed.

NARRATIVE

PURPOSE

This research explored the adoption of Building Information Modeling (BIM) by design firms and the integration of BIM into academic curricula to determine the following: 1) if a gap existed between formal BIM education in academia and the technology adoption in design firms, and 2) the perception of each group of who was responsible to close any gaps.

This study is intended to serve as a tool for interior design educators to use in future modifications to Interior Design program courses and to inform design firms and other firms that utilize BIM technology in their design projects. It is significant to design educators because it provides both current and future adoption trends in interior design school programs. It is significant to interior design students because it highlights CIDA accredited programs that offer courses in BIM technology. The research also explored how industry uses BIM, which is helpful in developing learning objectives for new and existing courses. Finally, the research is significant to architecture and interior design firms because it identifies the extent of BIM adoption and planned adoption at school programs in the regions surveyed.

LITERATURE REVIEW

The topic of BIM has only recently been addressed by the Interior Design Educators Council (IDEC). A panel discussion on BIM was held at the 2008 Annual IDEC conference in Canada, (Crumpton & Miller), and in October an exploratory study on BIM (Temple & Cline) was presented at the South Regional IDEC Conference 2008 in Alabama.

In the fall of 2008, an internet search of “BIM” showed that the interior design profession is lagging behind the architecture profession regarding information and research on BIM usage. As of the spring of 2009, no thesis or dissertations were found in interior design regarding BIM technology. The following are findings from the online web search:

A general search on “BIM” using www.Google.com produced over 1,900,000 hits.

A website dedicated to standardizing BIM, (National BIM Standard, a buildingSMART Initiative). It was the third

item listed in a "Google" search of BIM.

American Institute of Architects (AIA)- 2,980 hits

American Society of Interior Designers (ASID)-1hit

International Interior Design Association (IIDA)-0 hits

The overwhelming body of literature on BIM technology was found in architecture and computer sources. The authors' study of BIM was modeled after the exploratory research done by Professors Julie Temple and Holly Cline, Radford University, entitled, *Integrating Building Information Modeling (BIM) Technology into Interior Design Curriculum: The Reality of Technology* as published in South Regional IDEC Conference Proceedings 2008. The purpose of their exploratory study was to assess design educators and practitioners' use of and attitudes towards BIM.

METHODOLOGY AND FINDINGS

The research design involved three methods: curricula analysis, email survey, and two online questionnaires.

The curricula analysis included an online website search of CIDA accredited interior design program websites. Curriculum and course schedules from a total of thirty-three (33) undergraduate programs were analyzed in the spring of 2009. Appendix A shows the thirty-three (33) CIDA approved schools that were analyzed. The email survey consisted of one question to follow-up on the curricula analysis. It was sent to the point of contact listed for each of the targeted 33 schools on CIDA's website.

CURRICULA ANALYSIS AND SURVEY RESULTS:

Refer to Appendix A for complete results of the online search and email survey by school.

79% don't offer any BIM instruction

21% offer BIM instruction

The two online questionnaires were created and posted on www.surveymonkey.com. The first questionnaire was to interior design professors, and the second one was to interior designers and architects. A personal email with the survey link was sent to 74 points of contact for schools along the east coast of the US as listed on CIDA's website. A message with the survey link was also placed on two list serves for IDEC's South and East Regions with memberships of 166 and 88 respectively.

Questionnaire results from interior design professors (n=55):

85% of respondents think there is a need to offer BIM software courses to interior design students

64% of respondents agreed with the statement, "It is academia's responsibility to prepare students to work with BIM software, while

70% agreed with the statement, "It is a design firm's responsibility to train employees to work with BIM software"

For respondents that currently offer a BIM course, over half combined BIM with an existing course, almost a third added BIM as a new course, and 17% replaced an existing course with BIM

The questionnaire to practitioners was distributed three ways:

A personal email was sent to 107 American Society of Interior Designers (ASID) professional members from the Washington Metro Chapter as listed in the membership director of the ASID website, http://www.asid.org/

Another personal email was sent to 33 International Interior Design Association (IIDA) members (who had not already received the ASID email and worked for commercial design firms) from the DC Metro Chapter as listed in the membership directory of the IIDA website, www.iida.org.

A third personal email was sent to six design/architecture firms in the Washington DC area that hold BIM licenses.

Questionnaire results from interior designers and architects (n=136):

Almost 70% of respondents (28% architects and 21% interior designers) are currently using BIM software on projects. Appendix B shows the breakdown of respondents.

A third of firms have almost half of their contracts with a BIM requirement

SUMMARY AND CONCLUSIONS

The study findings demonstrated a gap between what educators believe should be offered to students and what is currently taught in Interior Design programs. While 85% of educators believe that BIM software courses should be offered to students only 20% of the programs surveyed offer such a course. Additionally, 86% of architects and 47% of interior designers use some level of BIM software on their design projects.

The secondary assertion of this study reveals the perception of each group of who is responsible for teaching BIM software. Both groups agree that they share responsibility for BIM. Appendix E illustrates the results from both academia and practitioners.

82% of architects believe academia should prepare students to work with BIM software

80% of interior designers believe academia should prepare students to work with BIM software

64% of professors believe academia should prepare students to work with BIM software

84% of architects believe a design firm should prepare employees to work with BIM software

66% of interior designers believe academia should prepare employees to work with BIM software

70% of professors believe academia should prepare employees to work with BIM software

The top three reasons why academia hasn't offered BIM software courses are because 1) there isn't space in current curriculum, 2) trained professors aren't available, and 3) there are hardware and software issues. Appendix C shows the breakdown between respondents as to why academia is not including BIM in their curriculum.

The findings show that academia is lagging behind practitioners in teaching BIM. Almost 80% of practitioners received training paid for by their firm, while only 21% of schools offer any instruction on BIM software.

There were several similarities between academia and practitioners:

The software Revit and Vectorworks were the top two choices by students and practitioners for using BIM technology.

The top three uses of BIM are the same for academia and practitioners. Both groups use BIM for construction documents, design development and schematic design. Appendix D shows the breakdown between respondents.

Both academia and practitioners share responsibilities for BIM. Appendix E shows the breakdown between respondents.

FURTHER STUDY/NEXT STEPS

There are several areas that of this study that should be modified for additional research. First, the sample groups should be identified to avoid duplications or possible skews from one institution or firm. For example, additional demographic questions should be included to define respondents by professional organization, institution, firm/employer, and by type of work (residential, commercial). This will allow the responses to be sorted and control for the number of respondents from any one institution or firm.

Secondly, additional questions to determine "why academia hasn't implemented BIM" should be included, as this study did not address this. Finally, in order to make recommendations on closing the gap between what is taught by academia and what is required by practitioners, further study is necessary.

Appendix A

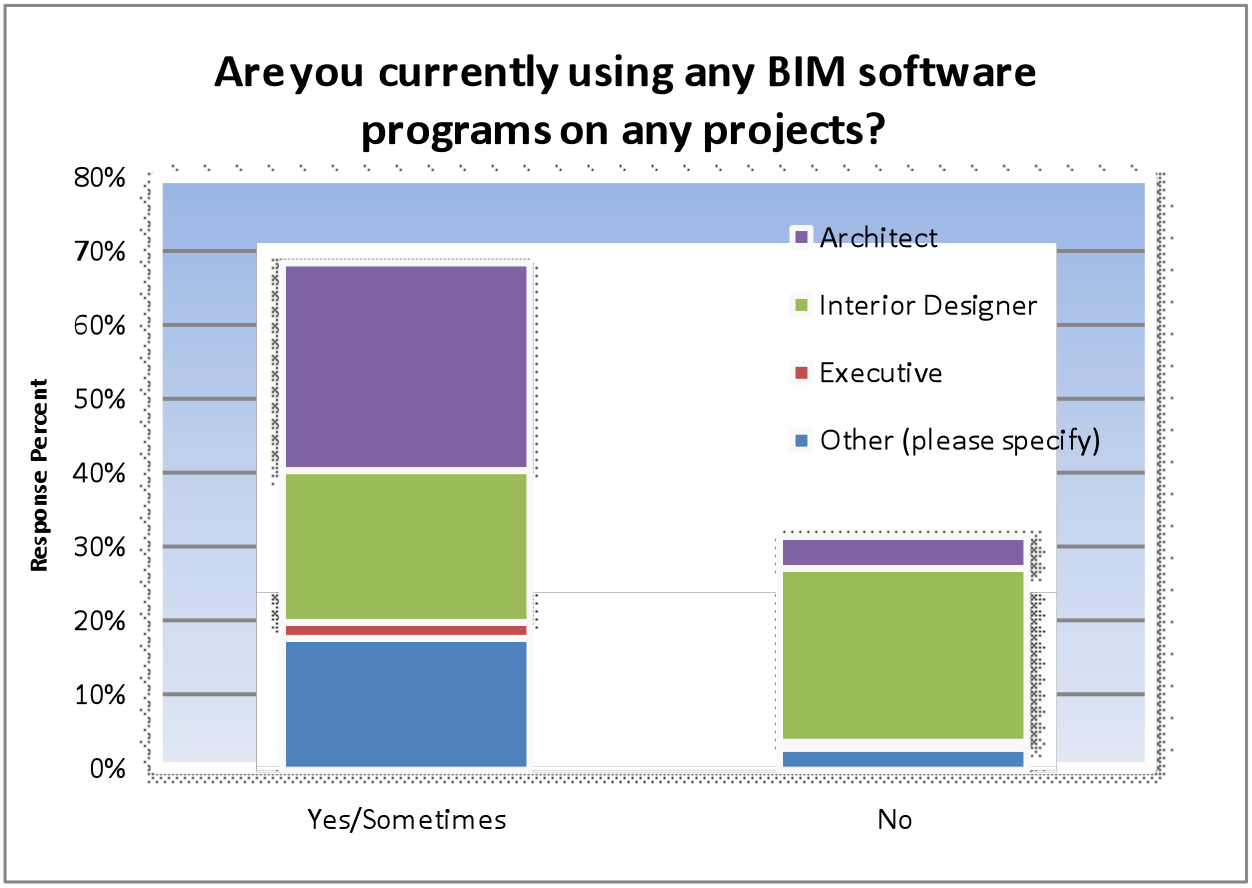
Curricula Analysis & Survey Results

State	School	Dedicated BIM Course	BIM part of another course	3D Modeling	AutoCAD or Computer Graphics	No BIM	Plans to add BIM	Email Resp.
DC	George Washington Uni.	0	1	0	2			
GA	Am. Intercontinental Uni.	0	0	1	2	X		
GA	Art Institute of Atlanta	0	0	0	1	X		
GA	Brenau Uni.	0	0	0	2	X		X
GA	Georgia Southern Uni.	0	1	0	2			X
GA	Uni. Of Georgia	0	0	0	1	X		X
NJ	Kean University	0	0	0	2	X		
NY	Buffalo State	0	0	0	2	X	X	X
NY	Cornell Uni.	0	0	0	3	X		X
NY	Fashion Inst. Of Tech. State University of NY	0	0	1	3	X		
NY	NY Inst. Of Tech.-Old Westbury	0	0	0	2	X		
NY	NY School of Interior Design	1	0	1	4			X
NY	Pratt Institute	0	0	1	3	X		
NY	Rochester Inst. Of Technology	0	0	0	1	X		
NY	School of Visual Arts	0	0	0	1	X		
NY	Syracuse Uni.	0	0	0	1	X		
NC	East Carolina Uni.	0	0	0	2	X		X
NC	High Point Uni.	0	1	0	2			X
NC	Meredith College	0	0	0	2	X		
NC	Uni. Of NC	0	1	0	1			X
NC	Western Carolina Uni.	0	0	1	1	X		
PA	Art Institute of Pittsburgh	0	0	1	3	X		
PA	Drexel Uni.	0	0	0	1	X		X
PA	LeRoche College	0	0	0	1	X		
PA	Moore College of Art and Design	1	0	1	3			X
PA	Philadelphia Uni.	0	0	1	2	X		X
SC	Winthrop Uni.	0	0	0	2	X		
VA	James Madison Uni.	0	0	1	2	X		
VA	Marymount Uni.	0	0	0	1	X	X	X
VA	Radford Uni.	0	0	0	2	X	X	X
VA	VA Commonwealth Uni.	1	0	0	2			X
VA	VA Polytechnic Inst. And State Uni.	0	0	0	1	X		X
WV	West VA Uni.	0	0	0	1	X	X	X
	Total	3	4	9	61	26	4	17
	Percentage	11%	12%	27%	N/A	79%	12%	52%

Appendix B
BIM Software Use and Need

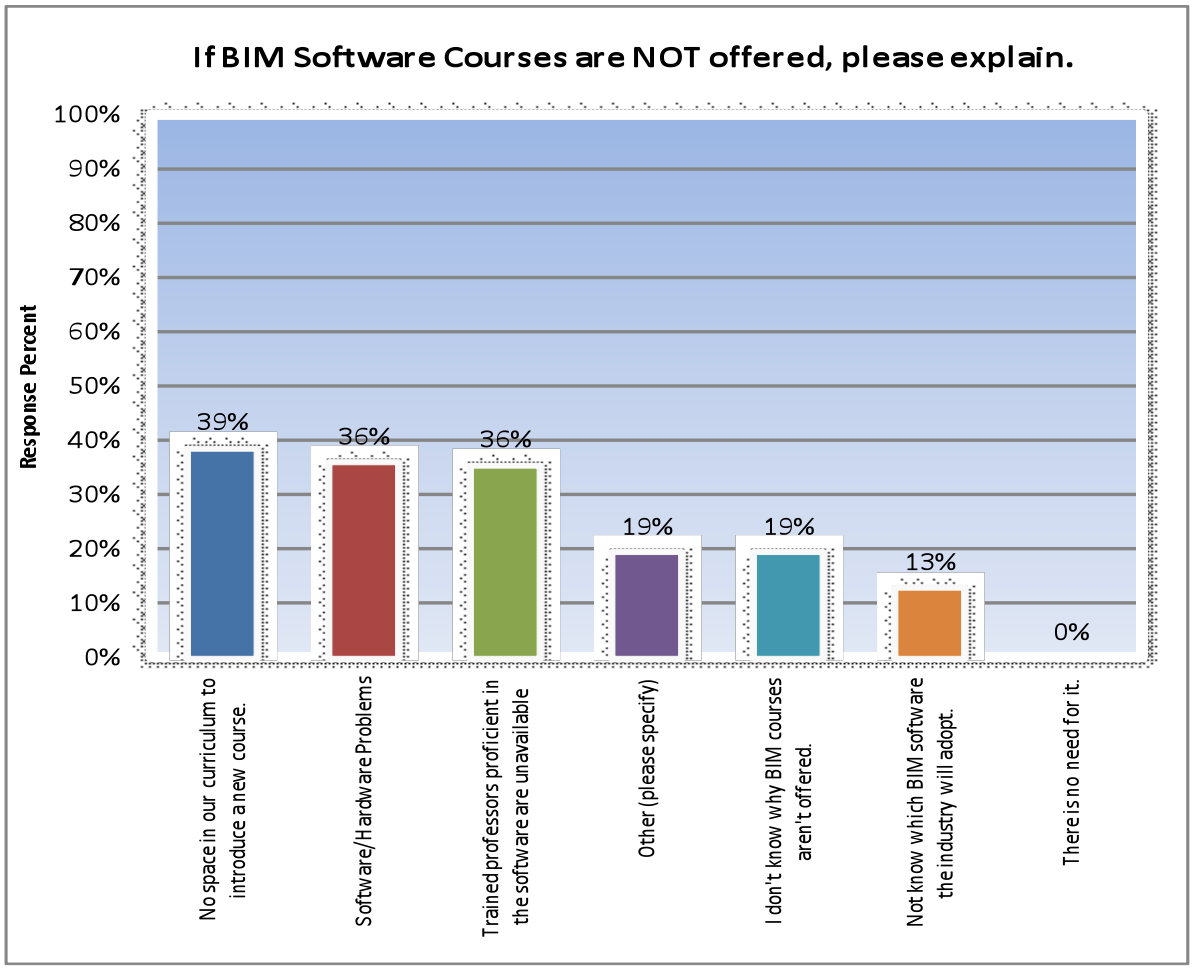
Table 1. Practitioners Use of BIM

Are you currently using any BIM software programs on any projects?	What is your primary role?					
Answer Options	**Architect**	**Interior Designer**	**Executive**	**Other (please specify)**	**Response Percent**	**Response Count**
Yes	35	23	1	22	59.6%	81
Sometimes	3	5	2	2	8.8%	12
No	6	32	1	4	31.6%	43
Answered Question						**136**



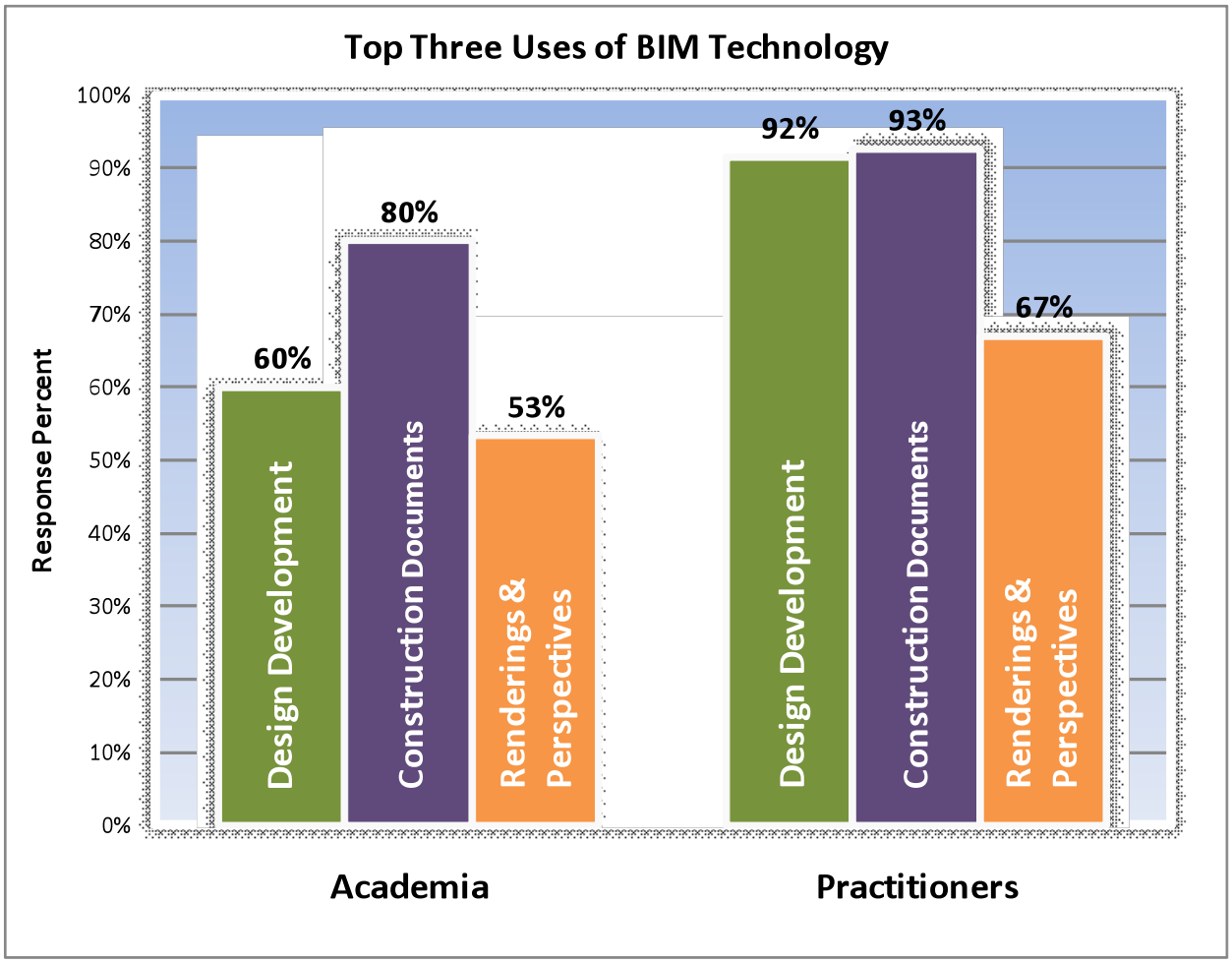
Appendix C
Why Software Courses are not Offered

If BIM software courses are NOT offered, please explain. (Check all that apply)			
Answer Options		**Response Percent**	**Response Count**
No space in our curriculum to introduce a new course.		39%	12
Software/Hardware Problems		36%	11
Software for classes are NOT available	10%	3	
Hardware for classes are NOT available	10%	3	
Software is too costly	16%	5	
Trained professors proficient in the software are unavailable		36%	11
Other (please specify)		19%	6
I don't know why BIM courses aren't offered.		19%	6
Not know which BIM software the industry will adopt.		13%	4
There is no need for it.		0%	0
Answered Question			**31**



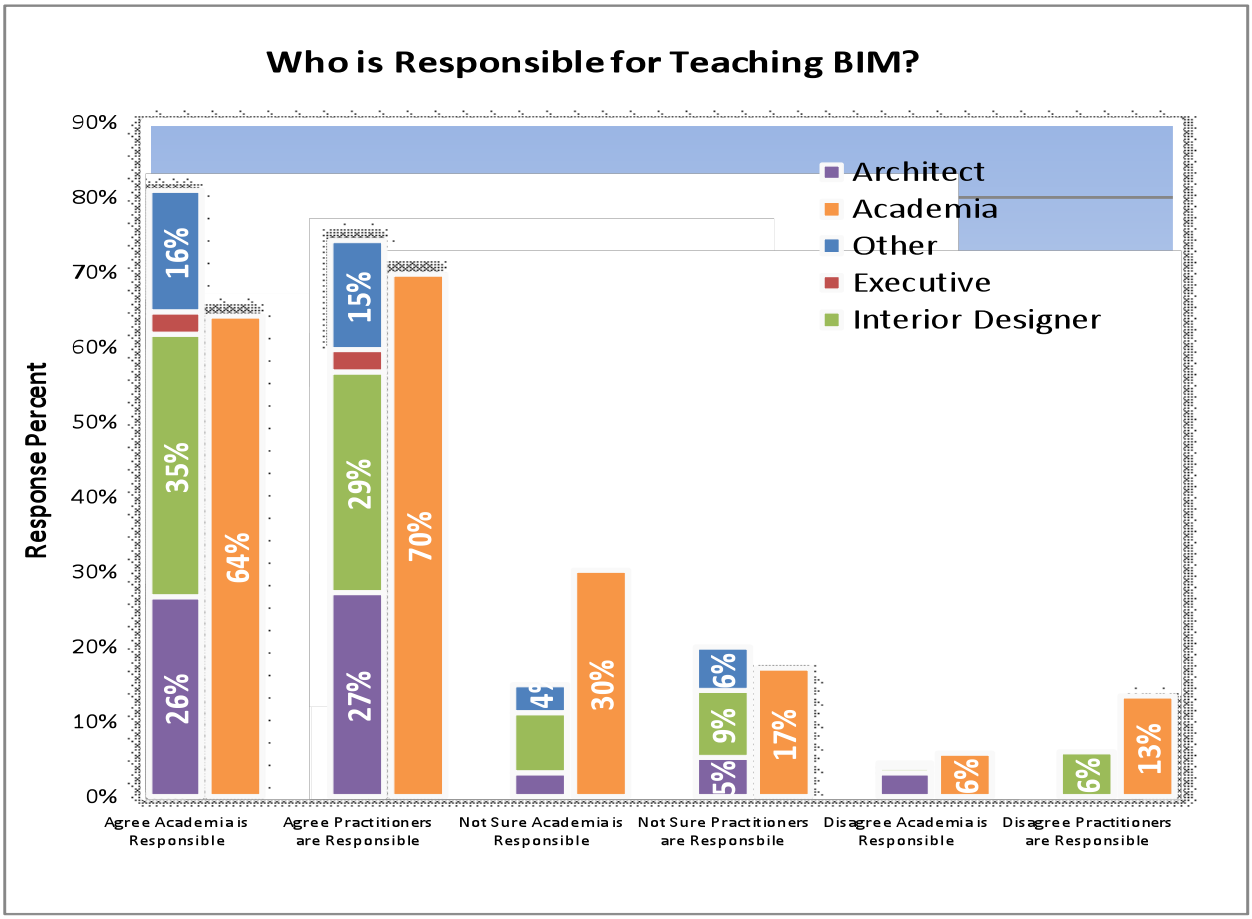
Appendix D
Top Three Uses of BIM Technology

Where do you use/teach BIM technology? (Check all that apply)				
Answer Options	**Practitioners Response Percent**	**Practitioners Response Count**	**Academia Response Percent**	**Academia Practitioners Response Count**
Programming & Concept Design	36.2%	34	13.8%	4
Schematic Design	64.9%	61	27.6%	8
Design Development	91.5%	86	58.6%	17
Construction Documents	92.6%	87	79.3%	23
Construction Administration	45.7%	43	13.8%	4
Renderings & Perspectives	67.0%	63	51.7%	15
3D Presentations	46.8%	44	34.5%	10
I'm not sure	0.0%	0	0.0%	0
Other (please specify)	0.0%	0	13.8%	4
Answered Question		**94**		**29**



Appendix E
Who is Responsible for Teaching BIM?

How much do you agree with the following statements:										
Answer Options	What is your primary role?								Practitioners Response Count	Academia
	Architect		Interior Designer		Executive		Other (please specify)			
It is academia's responsibility to prepare students to work with BIM software.	N	%	N	%	N	%	N	%		
Strongly Agree	15	11%	23	17%	3	2%	11	8%	52	14
Agree	21	15%	25	18%	1	1%	11	8%	58	20
Not Sure (neutral)	4	3%	11	8%	0	0%	5	4%	20	16
Disagree	3	2%	1	1%	0	0%	1	1%	5	3
Strongly Disagree	1	1%	0	0%	0	0%	0	0%	1	-
It is a design firm's responsibility to train employees to work with BIM software.	N	%	N	%	N	%	N	%		
Strongly Agree	10	7%	18	13%	1	1%	8	6%	37	13
Agree	27	20%	22	16%	3	2%	12	9%	64	24
Not Sure (neutral)	7	5%	12	9%	0	0%	8	6%	27	9
Disagree	0	0%	8	6%	0	0%	0	0%	8	6
Strongly Disagree	0	0%	0	0%	0	0%	0	0%	-	1
Answered Question										136



REFERENCES (MLA)

Barista, Dave. "BIM Adoption Rate Exceeds 80% Among Nation's Largest AEC Firms." *Building Design & Construction*. 28 July 2009. Web. 29 July 2009. http://www.bdcnetwork.com/article/CA6668193.html?q=top+170+bim+adopters.

Bender, PhD., Diane M. "Building Information Modeling in the Top 100 Architecture Firms." *Conference Proceedings*. 2009 Annual IDEC Conference, Maryville University, St. Louis, Missouri. Interior Design Educator's Council. Web. 23 Sept. 2009. http://www.idec.org/events/documents/2009ConferenceProceedingsFINAL.pdf.

Crumpton, Amy, and Beth Miller. "Building Information Modeling: State of the A&D Industry and BIM integration into design education." *Www.idec.org*. Proc. of Annual IDEC Conference, Interior Design Education Council, Canada, 5-8 Mar. 2008. Interior Design Education Council. Web. Oct. 2008. http://www.idec.org/pdf/idecProceedings.pdf.

DesignIntelligence 2009 Technology Survey. 3rd ed. Vol. 15. Norcross, Georgia: Greenway Communications, 2009. *Www.di.net*. Design Futures Council, 2009. Web.

DesignIntelligence, Technology Survey 2008. May/June 2008 ed. Vol. 14. Norcross: Greenway Communications LLC, 2008. Print.

Dye, Jennifer Anne, and Julie Kay Charlson, PhD. "3D Design Concept Comparison: Google SketchUP vs Autodesk Revit." *Conference Proceedings*. 2009 IDEC Annual Conference, Mayville University, St. Louis, Missouri. Interior Design Educator's Council. Web. 23 Sept. 2009.

http://www.idec.org/events/documents/2009ConferenceProceedingsFINAL.pdf.

"National BIM Standard." *Www.buildingsmartalliance.org*. National Institute of Building Sciences. Web. Nov. 2008. http://www.buildingsmartalliance.org/index.php/nbims/committee_members.php.

Temple, Julie A., and Holly L. Cline. "Integrating Building Information Modeling (BIM) Technology into Interior Design Curriculum: The Reality of Technology." *Conference Proceedings*. South Regional IDEC Conference, Interior Design Education Council, Auburn University, Auburn, Alabama. Interior Design Educator's Council. Web. Fall 2008. http://www.idec.org/regions/documents/SouthRegionConferenceProceedings2008.pdf.

Brain Compatible Learning Environments for Students with Autism Spectrum Disorders

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ABSTRACT

PURPOSE

The challenge of providing learner-centered environments is complicated by the increase in the prevalence of students with Autistic Spectrum Disorders (ASD). Federal law requires that students with ASD are to be educated in the general education classrooms to the fullest extent possible (U.S Department of Education). The majority of children with ASD have hypersensitivities with heightened senses (Shabha, 2006; Freed & Parsons, 1997; Grandin, 1995). Rapid shifting of attention between two stimuli is difficult, and abnormal sensory processing can cause individuals with autism to exhibit unusual behaviors. The purpose of this study was to explore the relationship between the design of the visual and acoustical learning environments on the behavior of students with ASD.

METHODOLOGY

A mixed method approach to inquiry using sequential procedures was utilized for this study. By collecting diverse types of data, research questions are better addressed. The review of literature revealed a lack of research concerning the effects of the sensory environment on individuals with ASD; therefore, a pilot study (focus group) was utilized for the first phase of this research project. The information gained was used to develop the survey instrument for phase two of the study. The questionnaire was administered electronically through SurveyMonkey. The target response group for phase two was certified special education teachers who have worked with a student with autism within the previous five years. A total of 608 individuals participated in the study. All of the participants were recruited by the special education director in their respective regions or districts, principals of their schools, or through university professors in special education programs.

FINDINGS/RELEVANCE TO INTERIOR DESIGN

Several sensory triggers were found to have a negative impact on the behavior of students with ASD. Aside from classrooms, large open spaces such as cafeterias, gyms, and outdoor play areas were selected most often as potential sensory problem areas. The main visual triggers were found to be visual changes and distraction, undefined space and source of light. Keeping the classroom tidy and orderly and reducing moving stimuli were found to reduce problems associated with visual triggers. The most commonly selected sound triggers included sudden unexpected sound and higher pitch sound. Music and nature sounds were found to reduce the impact of sound triggers within the classroom.

This study should increase understanding in the design of the built teaching environment and its impact on children's behavior. In turn, the findings may be used in developing guidelines for school design. Through well-informed design and management of built learning environments, undesirable sensory environmental responses may be reduced or eliminated. Little research exists concerning the relationship between the built environment and behavior for students with autism spectrum disorders. This study highlighted some of the issues and contributes to greater understanding of the impact of the built environment on students with ASD.

NARRATIVE

INTRODUCTION

Creating educational environments for all learners provides a series of complex challenges since each student has different ways of thinking and learning. Environmental psychologists and educational researchers recognize that the built environment has a profound effect on learning and behavior (Shabha, 2006; Lackney, 2003; Dunn, Griggs, Olson, Beasley, Gorman, 1995). Considerations for the design of educational environments must go beyond aesthetic value and provide for the needs of the students. The challenge of providing learner-centered environments is further complicated by the increase in the number of students with Autistic Spectrum Disorders (ASD). Federal law requires that students with all disabilities including ASD be educated in the general education classroom to the fullest extent possible (U.S. Department of Education).

Autism is a developmental disability that affects the normal functioning of the brain. Individuals with ASD are identified as having difficulty in social interactions, communication skills, and as having a limited range of interests (Scott, Clark, & Brady, 2000). Autism is a spectrum disorder. This means two students with the same diagnosis can vary greatly in capability and severity of deficits. Individuals at the high end of the spectrum, such as those with Asperger's syndrome, appear typical but have a variety of ASD related behaviors. Those at the low end of the spectrum, such as those with classic autism, may display severe deficits and extreme behaviors. Academic skills may be delayed or highly advanced (Scott et al., 2000). According to the Autism Society of America (2010) one percent of children ages 3-17 in the United States have autism. ASD is the fastest-growing developmental disability with an 1148% growth rate. Dramatically improved outcomes are associated with early intervention. In addition, the cost of lifelong care may also be reduced by 2/3 with diagnosis and intervention at a young age.

REVIEW OF LITERATURE

The majority of children with ASD have hypersensitivities with heightened senses (Freed & Parsons, 1997; Grandin, T.,1995; Hatch-Rasmussen, 1995). Rapid shifting of attention between two different stimuli is difficult and may cause abnormal sensory processing. This may result in the demonstration of unusual behaviors. The sensory systems of individuals with ASD may become overloaded since they have difficulty filtering stimuli from the environment causing them to "shut down" (Freed & Parsons, 1997; Grandin, T.,1995; Hatch-Rasmussen, 1995). Additionally, a dysfunction in these areas may result in distractibility, speech/language delays and academic under-achievement.

For this study, Sensory Integration Theory provided the framework. Abnormal sensory processing in any or all of the five senses of vision, hearing, touch, taste, and smell may lead to undesirable or stereotypic behavior. Common stereotypic behaviors displayed by individuals with visual hypersensitivity or hyposensitivity include staring at light, repetitive blinking, moving fingers in front of the eyes, and hand flapping. Unusual behaviors associated with sound include tapping ears, snapping fingers, and making vocal sounds (Shabha, 2006).

The acoustical aspects of a space are an important aspect of the learning environment. Students with ASD experience audio processing difficulties and sensory integrative dysfunction regarding hearing. Studies show that noise has an effect on learning for all students (Lercher, Evans, & Meis, 2003; Manlove et. al, 2001; Nober & Nober, 1975).

Physical structure and visual supports provide spatial organization for students and should be considered in any educational setting. For this population, the physical structure minimizes visual and auditory distractions (Mesibove & Howley, 2003).

Light is an important component in the design of interior spaces as it allows the various elements to be seen (Fielding, 2000; Lyons, 2003). Natural light relaxes students, permits better concentration, and reduces hyperactivity in children. (Dunn and Dunn, 1993; Beya, Dunn, & Greb, 2002). Daylighting has been shown to improve academic performance (Fielding, 2006). A detailed study on the relationship between lighting and performance involving thousands of students concluded that students in classrooms with more daylight progressed more quickly in math and reading than students in classrooms with less daylighting (Lyons, 2003).

Studies and literature in the area of color preferences for students with developmental disabilities are varied. Imhof (2004), Zentall (1989), and Kennedy (2005) con-

tend through their individual research that color stimulation in the learning environments improves attention and motor processes resulting in better academic performance. However, Clay (2004), Stokes (2003), and Myler, Fantacone, & Merritt. (2003) claim that a subdued color scheme in warm neutral colors is necessary to prevent overstimulation.

METHODOLOGY

The instrument used in this study was designed to identify sensory parameters in the learning environment that negatively affect the behavior of students with ASD. A mixed method approach to inquiry using sequential procedures was utilized for this study. The review of literature revealed a lack of research concerning the effects of the sensory environment on individuals with ASD; therefore, a pilot study (focus group) was utilized for the first phase of this research project. The information gained was used to develop the survey instrument for phase two of the study.

A focus group interview of eleven individuals with experience in working with children with ASD was conducted to facilitate in answering the research questions. Questions were asked to gather data about the schools, teaching settings, and behavioral reactions. Data analysis of this focus group followed the procedures outlined by a systematic analysis process.

Special education teachers who had worked with a student with autism within the previous five years were the target group for phase 2 of the study. SurveyMonkey was used to administer the survey. A total of 608 individuals responded to the study. Responses from participants without teaching certificates and those who had not worked with a child with autism in the past five years were eliminated from the study. A total of 546 participants remained. Simple statistical processes were used to analyze the data using descriptive statistics from the Statistical Package for the Social Sciences (SPSS) since the study was exploratory in nature

FINDINGS

The focus group participants unanimously agreed that the built environment has a profound effect on the behavior of students with ASD. Auditory triggers more often lead to stereotypic or self-stimulatory behavior in students with ASD. Focus group members were asked about the main visual triggers observed in the classroom causing sensory hypersensitivity and stereotypic behavior in children with ASD and aspects of the visual environment having a positive impact on behavior. Four main themes emerged: (1) classroom congestion, (2) space organization, (3) lighting, and (4) color.

The importance of visual and physical organization cannot be overemphasized when designing learning environments for students with ASD. According to the focus group, a thematic, visually rich environment is beneficial for students with ASD as long as it is organized. Based on the results from the focus and survey groups, a cluttered and a highly decorated classroom may lead to undesirable behavior.

According to the focus group and survey group, space should be well-defined. The focus group reported that an open concept space is difficult for students with ASD as they will desire to roam or run within the area. The survey group selected visual changes and distraction, undefined space, and source of light as the main visual triggers. The main auditory triggers selected by they survey group were found to be unexpected sound, higher pitched sound and background noise.

CONCLUSION

This study provides ground breaking information regarding the application of visual and auditory design elements in the learning environment for students with ASD as very few empirical studies have addressed the issue. The large sample of 608 provides a more accurate estimation of the optimal design features. The results of this study show that the design of the learning environment through space organization, lighting, color, and noise control has an effect on behavior of students with ASD. An appropriately designed built environment will help to reduce undesirable behavior which will contribute to learning.

The majority of the present literature concludes that visual and auditory stimuli results in undesirable or stereotypic behavior for students with ASD. This study contradicted this approach to classroom design and determined that in order to facilitate learning; balance is needed in the elements of design for classrooms. An under-stimulating use of sensory stimuli may be as detrimental as over-stimulating use of sensory stimuli. The environment should be visually rich in order to stimulate learning and improve behavior for students with ASD.

The proper application of design components, materials, and finishes in classrooms has become more important due to the move toward inclusion in the public schools of the United States. Every general education classroom is potentially inclusive. Furthermore, participants in this study stated that all students (not only students with ASD) benefit from the improvement in lighting, color, space organization, and noise control. Tables 1 and 2 outline design recommendations that help reduce stereotypic and self-stimulatory behavior as reported by the focus group and survey group in this study. As the special education and general education systems merge, the need to understand the effect of the sensory environment on the behavior of students with ASD applies to design professionals, administrators, and educators.

Table 1. Visual Design Recommendations for Students with ASD

Design Feature	Description/Recommendations
Lighting	Daylighting or full spectrum lighting is preferred
	Cover the bottom part of windows with an item such as a bulletin board to reduce distractions yet allow natural light
	Eliminate or reduce the number of fluorescent light sources
	Cover fluorescent lighting with blue lenses or paper
	Use incandescent table or floor lamps as primary or supplementary sources of light
	Avoid flashing lights
Color	Natural colors such as blue and green
	Discover the student's favorite color and use it in the environment and for instruction
	Use different colors of tape on the floor to identify different areas of the space
	Use color coding and visual cues
Space Organization	Boundary markers such as screens, tape, and furniture arrangement
	Break-out space or attached auxiliary space
	Reduce clutter
	Keep items hidden that are a source of distraction (e.g. toys)
	Study carrels
	Do not alter room set-up
Other considerations	Reduce visual changes and distractions
	Close classroom door during passing periods
	Avoid ceiling fans

Table 2. Auditory Design Recommendations for Students with ASD

Design Feature	Description/recommendations
Music	Soft music, classical, instrument, familiar music, computer music, music therapy, children's music, white noise
Nature sounds	Music or other sources with the sound of the ocean, rain, or birds
Water feature such as a fountain	
Spatial	Provide an attached quiet room or space
Reduce large open areas	
Technology	Headphones: Use with music or computer
Headphones: Use to block out sounds	
Video screens and equipment	
Reduce volume level on sound systems	
Building materials	Reduce hard surface finishes where possible
Use wall and ceiling insulating materials to keep background noise out of the classroom and keep interior noise within the classroom	

REFERENCES

Autism Society of America (2009). What causes autism? <online> Retrieved February 4, 2010. Availablehttp://www.autism-society.org/site/PageServer?pagename=about_whatis

Benya, J.R. (2001) *Lighting for schools*. Retrieved October 10,2003 from http://www.edfacilties.org.htm.

Clay, R.A. (2004) No more Mickey Mouse design: child's environments require unique considerations. *ASID ICON*, 43-47.

Dunn, R. & Dunn, K. (1993) *Teaching secondary students through their individual learning styles: Practical approaches for grades 7-12*. Boston: Allyn and Bacon.

Dunn, R., Griggs, S.A., Olson, J., Beasley, M., Gorman, B.S. (1995). A meta-analytic validation of the Dunn and Dunn model of learning-style preferences. *The Journal of Educational Research,* 88 (6), 353-362.

Engelbrecht, K. (2003) *The Impact of Color on Learning.* Perkins & Will. Chicago.

Fielding, R. (2006) *Lighting the learning environment* . Retrieved June 12, 2006, from http://www.designshare.com/Research/Lighting.htm.

Freed, J & Parsons, L. (1997). Right-Brained Children in a Left-Brained World. New York, New York: Fireside.

Grandin, T. (1995). *Thinking in Pictures and Other Reports from my Life with Autism.* New York: Doubleday.

Hatch-Rasmussen, C. (1995). *Sensory Integration.* Retrieved May 31,2003, from http://www.autism.org.si.htm

Imhof, M. (2004) Effects of color stimulation on handwriting performance of children with ADHD without and with additional learning disabilities. *European Child and Adolescent Psychiatry,* 13, 191-198.

Kennedy, M. (2005). *Classroom Colors.* American School & University. Retrieved July, 2005 from http://www.asumag.com.

Lackney, J.A. (2003, February) *33 Principles of Educational Design* Retrieved September 12, 2003 , from http://schoolstudio.engr.wisc.edu.html.

Lercher, P., Evans, G.W., Meis, M. (2003) Ambient noise and cognitive processes among primary school children. *Environment and Behavior*, 35, 725-735.

Lyons, J.B. (n.d.) *The learning environment: do school facilities really affect a child's education?* Retrieved September 12, 2003, from www.asbj.com/lbd2002/inprint/environment.html.

Manlove, E.E., Frank, T., Vernon-Feagans, L. (2001). Why should we care about noise in classrooms and child care settings? *Child &Youth Care Forum*, 30(1) 55-64.

Mesibove, G. & Howley, M. (2003). Accessing the Curriculum for Pupils with Autistic Spectrum Disorders. London: David Fulton Publishers Ltd.

Morton, J. (1998). Color Voodoo for the Office. Colorcom.com.

Myler, P.A., Fantacone, T.A., Merritt, E.T. (2003) Eliminating distractions: the educational needs of autistic children challenge ordinary approaches to school design. *American School & University.* November, 313-317.

Nober, L.W. & Nober, E.H. (1975). Auditory discrimination of learning disabled children in quiet and classroom noise. *Journal of Learning Disabilities*, 8(10) 57-60.

Scott, J., Clark, C., & Brady, M. (2000) Students with Autism. Canada: Thompson Wadsworth.

Shabha, G. (2006) An assessment of the impact of the sensory environment on individuals' behaviour in special needs schools. *Facilities*, 24, ½, 31-42.

Stokes, Susan (under contract with CESA 7 and funded by a discretionary grant from the Wisconsin Department of Public Instruction). (2003). *Structured Teaching: Strategies for supporting students with autism?* Retrieved June 25, 2003, from http://www.cesa7.k12.wi.us/sped/autism/structured/str10.htm.

U.S. Department of Education, Office of Special Education Programs (n.d.) Individuals with Disabilities Education Act (IDEA) Data. Retrieved March 21, 2008 from https://www.ideadata.org/index.html.

Zentall, S.S. & Dwyer, A.M. (1989). Color effects on the impulsivity and activity of hyperactive children. *Journal of School Psychology,* 27 (2), 165-17 http://encarta.msn.com/encyclopedia_761565821/Sense_Organs.html

Occupants' Satisfaction, Performance, and Sustainable Design Criteria

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ABSTRACT

This study investigated two issues: the relationship between occupants' workspace satisfaction and sustainable design criteria and the relationship between occupants' work performance and sustainable design criteria.

METHOD

A self-administered, Internet-based, post-occupancy evaluation (POE) instrument was first developed from sustainable design criteria in a set of established guidelines. Previous presentation reported on the development and validation process. Data have now been collected from the occupants in two office buildings that were newly designed and constructed according to specific sustainable guidelines.

The questionnaire used a 7-point Likert-type scale to measure satisfaction from very dissatisfied (1) to very satisfied (7). A 7-point semantic differential scale was used to measure if a respondent's work performance was hindered (1) or enhanced (7) by sustainable design criteria. Additionally, several scaled questions were asked about each sustainable design criteria to compare overall measures of satisfaction and performance.

The occupants were employees of two office buildings: 80 employees in the Building A and 106 employees in the Building B. The response rate was 48% (89/186), which is considered an above average response rate for on-line questionnaires.

FINDINGS

The sustainable design criteria measured included 1) thermal comfort; 2) indoor air quality of the building and individual workstations; 3) acoustics and vibrations; 4) lighting, daylighting, and views; 5) personal controls; 6) furnishings, ergonomics, finishes, privacy and recycling; and 7) circulation.

Preliminary findings indicate that employees were very satisfied with their work environment; consider that the work environment enhances their performance; and use some sustainable features that are designed to create a more functional interior environment.

They were satisfied with all sustainable criteria except thermal conditions and personal controls. Specifically, poor air quality and lack of personal control over daylighting and temperature reduced occupants' satisfaction and hindered their work performance. Additionally, respondents identified that building facilities and operations hindered overall work performance.

Occupants' satisfaction is highly and positively related to their perceived work performance in all criteria. This finding indicates the success of the sustainable design features in the interior environment for both sustainability and occupant satisfaction and performance.

Details of these results will be shown and discussed. Further, the validation process used for the questionnaire will be discussed.

CONCLUSIONS

The results of this study can be used to inform building owners/managers how to improve working conditions for its occupants; educate management, staff, occupants, and the general public about the benefits of sustainable design; and to highlight successes, lessons learned, and areas for improvement in the sustainable design of office buildings within the limitations of this study. More importantly, designers can use these results to support

the use of sustainable design criteria in their projects. Economic costs can be related to these results to assist with a client's return on investment.

NARRATIVE

The purpose of this study was to test a post-occupancy evaluation (POE) instrument developed to investigate the relationship between sustainable design criteria in commercial buildings and occupant satisfaction and performance.

IMPORTANCE

It is widely acknowledged that assessing human/social aspects of sustainable building performance is the least developed area of building performance evaluation. Preiser (2001), a leading POE researcher, suggests this is due to difficulties in quantitatively measuring the actual effects of buildings on human and social indicators and the lack of reliability of POE instruments. Additionally, reliable and valid POEs in sustainable buildings are limited. With the increase in sustainable building design, building and business owners are looking to architects and interior designers to provide evidence that their employees' performance, satisfaction, health, and well-being will be improved, or at least not hindered, by the implementation of sustainable design criteria, for which they may pay additional dollars.

We developed and piloted a POE instrument that allows architects, interior designers, and employers to assess the relationship of sustainable design criteria to occupant satisfaction and performance. The set of sustainable design guidelines we used were developed by the Center for Sustainable Building Research at the University of Minnesota; also known as the B3 guidelines (Buildings, Benchmarks, and Beyond). Sustainable buildings are designed to use fewer natural resources and improve the indoor environmental quality of its occupants, which, in turn affects their well being. Employees' needs are becoming an important focus of business owners as they try to increase their earnings by stabilizing and retaining the employee pool through improving their well-being, which is related to their satisfaction with their physical environment and their perception of their performance (Needy, Ries, Gokhan, Bilec, & Rettura, 2004). The findings from this pilot test are presented here.

METHOD

A self-administered, Internet-based, POE questionnaire was developed and pre-tested then piloted in the two Washington County, Minnesota service centers. The research question was, what is the relationship among

sustainable design criteria used in the B3 Guidelines and occupant satisfaction and performance? Specific relationships were explored and include the:

1. Relationship between design criteria and occupant satisfaction

2. Relationship between design criteria and occupants' perception of their performance

To measure occupants' satisfaction with the sustainable design criteria in their work environment, a Likert-type scale (1-7) was used where 1 was very dissatisfied and 7 was very satisfied. To measure the relationship between the occupants' perception of their work performance and if sustainable design criteria hindered or enhanced their work performance, a semantic differential was used where 1 was the environment hindered their work performance and 7 was the environment enhanced their work performance.

The instrument was pre-tested with local user groups and sustainable designers (none of whom were from the Washington County Service Centers) for clarity, language, accuracy, and bias. Revisions were made to the instrument to clarify some concepts, simplify the wording, and reduce the overall time spent by respondents when completing the questionnaire.

An email notice was sent to all employees that the questionnaire would be available to them, that they were allowed to complete the questionnaire on company time, and that they would receive a mug upon completion. Employees were given six working days to complete it. A consent statement was included; this process and the questionnaire had received an exemption from the University of Minnesota IRB.

SAMPLE DESCRIPTION

The occupants are employees of two Washington County Service Center (WCSC) buildings, which were newly designed and constructed and occupied in 2008. We had a 48% response rate (89/186). As shown in Table 1, respondents' ages ranged from 25 to 68 with 34.2% of the respondents between 41 and 50 years old. With respect to gender, 83.1% were female. Slightly more than half of the total respondents were part-time employees (52.3%). Only 11.6% had worked in their buildings for less than one year. The majority of these respondents (48.3%) worked at desks in an open office with no partitions; nearly three-quarters of them have desks/workstations near an exterior wall (73.3%) and proximity to a window (74.1%). About one-fifth (19.1%) had some participation in the design process. The respondent description is representative of the whole sample. (see Table 1)

LIMITATIONS

The generalizability of the findings is limited by the extent to which the respondents reflect the overall sample, i.e., all employees of the two WCSC. The questionnaire was lengthy, taking about 30 minutes for each respondent to complete it. This may cause some respondents to tire before completion, yet all statements were important to include in a pilot study.

FINDINGS AND DISCUSSION

Table 2 shows the respondents' overall satisfaction results. When using a 7-point scale that ranges from 1-7, mean responses above the middle are generally accepted as positive, therefore mean responses above 4.0 identify respondents as satisfied. The WCSC respondents are satisfied with all but two of their work environment aspects. The mean response for thermal conditions (3.79/7.0), which are defined as temperature, air velocity (drafts or stagnant air), and humidity, was below 4.0. The mean response for personal controls, defined as their ability to control the heating/cooling, lighting at their workstations, was also below 4.0 (2.78/7.0). These responses on overall conditions of satisfaction are helpful in identifying two areas for improvement. The mean responses for all other features were above 4.7 and most were above 5.02, indicating satisfaction with all other sustainable design criteria.

The mean response for occupants' overall satisfaction with their total work environment was 5.53/7.0, showing them to be highly satisfied with their physical work environment overall (see Table 3).

Table 4 shows the respondents' overall performance results, i.e., does their work environment hinder or enhance their work performance. In two areas, thermal comfort of the workstation and ability to adjust personal controls (lighting, heating, window shades) were perceived to hinder their work performance. With all other design criteria, occupants' perceptions were that they enhanced work performance. These results mirror the

satisfaction results; dissatisfaction was found with the same two design criteria.

SUMMARY AND CONCLUSIONS

Overall satisfaction of occupants with the site, building, and interior environment was 5.53/7.0, showing them to be highly satisfied with their physical work environment. A closer look shows they are satisfied with all specific work environment criteria except two, thermal conditions and personal controls.

Analysis of these data continues with efforts to investigate the relationship between satisfaction and performance. The instrument has been revised based on the findings of this study. POEs are now being conducted in two other buildings, with two more starting in Summer 2010. The plan is to develop a database of POE findings that can be studied in comprehensive ways.

This instrument and the database will be available to any interior designers, architects, facility managers or other interested parties for their own use in buildings they design. Knowing the relationship between specific sustainable design criteria and occupant satisfaction and performance will provide business owners with evidence that sustainable design can be profitable.

REFERENCES (APA)

Needy, K.L., Ries, R., Gokhan, N.M., Bilec, M., & Rettura, B. (2004). Creating a framework to examine benefits of green building construction. Paper presented at GreenBuild International Conference and Expo, Portland, OR.

Preiser, W. (2001). The evolution of post occupancy evaluation. In Federal Facilities Council (Ed), Learning from our buildings, Washington D. C: National Academy Press.

Table 1. Sample Description (N = 89)

Variable	Measure	Percentage
Gender	Male	12.4
	Female	83.1
	21-30	11.4
	31-40	24.1
	41-50	34.2
	51-60	25.3
	61 or older	5.1
Employment Duration (Q2)	Less than 1 year	11.6
	1-2 years	65.1
	More than 2 years	23.3
Workstation Type (Q7)	cubicles with high partitions (5+ feet high)	4.5
	cubicles with low partitions (less than 5 feet high)	9.0
	desk in open office with no partitions	48.3
	enclosed office, private	6.7
	enclosed office, shared with other people	14.6
	Other	1.1
Design Process Inputs (Q9)	Extensive participation	2.2
	Moderate participation	3.4
	None	71.9
	Some participation	19.1
Proximity to an Exterior Wall (Q13)	Yes	73.3
	No	26.7
Proximity to a Window (Q14)	Yes	74.1
	No	25.9

Table 2. Occupant Satisfaction with Sustainable Design Criteria (N=89)

Statement: Identify your level of overall satisfaction with the following where (1) is very dissatisfied and (7) is very satisfied.	**Mean (1-7)**	**Standard Deviation**
Feature		
…with commuting and transportation options	5.02	1.821
…with building facilities and operational procedures	5.43	1.311
…the thermal comfort in your workstation (temperature, air velocity, humidity)	**3.79**	**1.716**
…the overall indoor air quality of your building	5.45	1.348
…the overall indoor air quality of your workstation	5.43	1.297
…the overall acoustic and vibration quality in your workstation	4.71	1.600
…with lighting, daylighting, and views	5.06	1.745
…with personal controls	**2.52**	**2.027**
…with furnishings, ergonomics, finishes, privacy, and recycling	5.45	1.516
…with circulation (ability to get from one area of the office to another)	5.55	1.357

Table 3. Occupants' Overall Satisfaction with Work Environment (N=89)

Statement	**Mean** (1-7)	**Standard Deviation**
Overall Satisfaction with Work Environment	5.53	1.24

Table 4. Occupant Overall Performance as Influenced by Sustainable Design Criteria (N=89)

Statement: Identify the influence of each indicator on your work performance where (1) is hinders your work performance and (7) is enhances your work performance.	**Mean (1-7)**	**Std. Deviation**
Feature		
…with commuting and transportation options	5.32	1.34
…with building facilities and operational procedures	5.28	1.12
…the thermal comfort in your workstation (temperature, air velocity, humidity)	**3.86**	**.95**
…overall indoor air quality of your building	5.44	1.23
…the overall acoustic and vibration quality in your workstation	4.77	1.32
…with lighting, daylighting and views	5.38	1.45
…with personal controls	**4.31**	**1.10**
…with furnishings, ergonomics, finishes, privacy and recycling	5.29	1.28
…with circulation (ability to get from one area of the office to another)	5.30	1.53

Human Connection to Nature: An Exploration of Office Users' Perception of Nature Connectedness

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ABSTRACT

In order to create truly sustainable environments, some researchers suggest a holistic solution placing a premium on human experience must be used when constructing the built environment. Recently, sustainable design strategies such as increasing energy efficiency, reducing resource consumption, reusing and recycling products, utilizing nontoxic materials, creating high indoor air quality, and avoiding habitat and biodiversity loss have become a focus of the design and construction communities. While these strategies are crucial components of sustainable design and construction, their application alone fails to fully address the importance of creating a human connection to nature within the built environment.

The purpose of this presentation is to discuss a study that identifies elements of the built environment which facilitate human connections to nature. More specifically, this qualitative study analyzes the types of and frequencies of office users' connections to nature resulting from interactions with the built environment. The researcher discusses if these connections to nature exist, if office users are recognizing them, and how office users perceive the effects these connections have on their lives. For example, daily passage through a sunlit corridor may offer restorative experiences for an employee which bring delight and are believed to enhance the employee's productivity. Information on overarching themes in this study's data could be used to inform quantitative studies about human connection to nature within the built environment.

The overall under-representation of human connections to nature in the built environment is problematic because these connections are essential for healthy human development: nature facilitates development of intellectual capacity and immersion in nature satisfies a human desire for curiosity, discovery and imagination (Kellert, 1997). The importance of nature connections was articulated by sociobiologist Edward Wilson with his theory of biophilia which describes how humans have an innate tendency to focus on life and lifelike processes (1984). Steven Kellert applies the theory of biophilia to the built environment with a classification system that offers a potential protocol to assess how people directly, indirectly, or symbolically connect with nature in the built environment (2005). Kellert's classification system is timely because the sustainable design movement lacks a developed protocol for integrating human connections to nature into building assessment systems such as the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Rating System. This study is being conducted at the Interface Showroom and Offices in Atlanta, Georgia. The space is a 7,000 square foot LEED Commercial Interiors (CI) platinum-rated commercial office and showroom located in an urban setting.

The study employs a case study-scope ethnographic approach whereby office users take and annotate photographs of office experiences. This data is triangulated with questionnaires and interviews that clarify conclusions. Then, this data is classified according to Kellert's system of direct, indirect, and symbolic connections to nature. The frequency of and type of human connections to nature within the space is discussed as well as the perceived effects these connections have for office users. The importance of acknowledging these connections in green building assessment systems such as the LEED Rating System is also explored.

NARRATIVE

The interior design profession is standing on the brink of a paradigm shift. Over the last 100 years the philosophy for designing the built environment has resulted in various forms of environmental degradation such as depleted natural resources, polluted air and water, unprecedented amounts of waste, unhealthy indoor air quality, alienation of people from nature, and a sense of "placelessness" within the built environment (Kellert, Heerwagen & Mador, 2009). In the United States (US), sustainable, or low environmental impact design principles, have recently been employed within the design and construction communities as solutions to correct a trend of environmental degradation. For example, the US leader in setting the standard for low environmental impact design principles, the US Green Building Council (USGBC), was founded in 1993 and has grown to 131,724 Leadership in Energy and Environmental Design (LEED) professionals as of June 2009 (Beeke, 2007; USGBC, n.d.). However, some would suggest these prevailing low environmental impact design principles have lessened the negative impact on nature, but failed to foster a connection between people and nature (Mendler, Odell & Lazarus, 2006). Reconnecting humans and nature within the built environment is a complex challenge and opportunity which, in this author's opinion, must be an integral part of interior design's new paradigm shift.

PURPOSE

The purpose of this study is to describe the essence of human connections to nature within the built environment found within a case study. This purpose will be accomplished by identifying elements of the built environment which facilitate human connections to nature. Specifically, the research objective is to identify office users' pleasurable and/or nature-connected experiences. In doing so, the researcher will determine if these connections to nature exist, if office users are recognizing them, and how office users perceive the effects these connections have on their lives.

RELEVANT LITERATURE REVIEW

Humans have a need to experience connections to nature which are necessary for psychological well-being (Kellert & Wilson, 1993). Additionally, nature connections facilitate development of intellectual capacity; and immersion in nature satisfies human desire for curiosity, discovery and imagination (Kellert, 1997). The logic of this argument is thus: for more than 99 percent of human history people have lived in hunter-gatherer bands interacting intimately with the natural world (Kellert & Wilson, 1993). The brain, which shapes human behavior, evolved within the natural world; therefore, some writers believe human nature is adapted to these ancient environments even though the current environments in which humans live are separate from the natural world (Symons, 1992).

Humans have historically connected with nature while obtaining basic physical and emotional needs from the environment that were essential for survival and well-being. The desire to fulfill the same basic needs such as seeking protection from predators and inclement weather and seeking resources such as food, water, and shelter was present in humans living millions of years ago as well as in people living today (Orians & Heerwagen, 1992). These basic human needs have physical components (food, water, and shelter) and emotional components (comfort, safety, mystery, and beauty) and are expressed in evolved landscape preferences, such as the savannah hypothesis and prospect-refuge theory (Balling & Falk, 1982; Orians & Heerwagon, 1992).

The concept of a human connection to nature is related to the theory of biophilia which states humans have an innate tendency to focus on life and lifelike processes (Wilson, 1984). This theory states that humans have a need for nature beyond what nature provides them at a physical level, and encompasses the human craving for aesthetic, intellectual, cognitive, and even spiritual needs (Kellert & Wilson, 1993). Steven Kellert applied the theory of biophilia to the built environment, coining the term biophilic design. Biophilic design principles paired with low environmental impact design principles create a new design paradigm termed restorative environmental design which delivers holistic design solutions mutually benefiting people and nature and is illustrated in Figure 1. Furthermore, biophilic design is dually expressed: through organic design and vernacular design (Kellert, 2005). According to Kellert, biophilic design principles offer people nature-connection experiences within the built environment. Therefore, he proposes a classification system which defines human contact with nature as "…any form of direct, indirect, or symbolic expression of the nonhuman world that is integral to people's lives" (2005). Kellert uses this classification system to simplify

the multiple ways people experience nature.

In addition to theoretical support for a human need for nature, several empirical studies suggest connections with nature benefit people's physical and emotional needs, such as provide restorative experiences, expedite healing processes, and reduce sick building syndrome symptoms (Beauchemin & Hays, 1996; Fjeld, Veiersted, Sandvik & Levy, 1998; Hartig, Mang & Evans, 1991; Heerwagen & Orians, 1996; Heschong Mahone Group, 2003; Kaplan, 1993; Kaplan & Kaplan, 1989; Larsen, Adams, Dal, Kweon & Tyler, 1998; Ulrich, 1984). Furthermore, another empirical study found a person's connection to nature was positively associated with environmental concern and behavior, meaning that persons who feel a nature connection are more likely to nurture nature in their own actions (Dutcher, Finley, Luloff & Johnson, 2007).

JUSTIFICATION

Connecting people to nature within the built environment has been largely ignored in recent years. Little research has occurred on this topic, and there is a need to widen the breadth of knowledge about when, how and why people feel personal connections to nature (Kaplan, 1993). Since LEED-certified structures represent the leading standard for low environmental impact design strategies in the US, this study is an opportunity to discover if a high-achieving LEED facility is addressing the human connection to nature. This qualitative study's results could inform others of elements in the built environment which prompt a perception of nature connectedness. Finally, utilizing an existing classification system by Kellert to deconstruct nature connections provides a framework to study an ambiguous subject.

METHODOLOGY

This study takes place at Interface's Showroom and Retail Offices in Atlanta, Georgia which is a 7,000 square-foot LEED Commercial Interiors (CI) platinum-rated facility.

Study participants were selected via a purposive sample. Five out of the eight full-time employees at the Interface facility participated in the study.

RESEARCH QUESTIONS

The overall research question is 'How do either lack of connections to nature or connections to nature affect people in an office environment?' Specifically, there are seven research questions that address this overall research question:

1. Do office users' feel connected to nature at Interface's Atlanta Showroom? To what degree?

2. Which aspects of the building create pleasing and enjoyable experiences for office users', if any?

3. What is the classification and frequency of reported nature connections using Kellert's scheme of direct, indirect and symbolic connections to nature?

4. If connections to nature exist, what aspects of the building contribute to these experiences?

5. Which connections to nature are created by an aspect of the building which is the result of meeting a LEED-CI credit requirement?

6. What are office users' perceived effects of experiencing nature connections?

7. What are office users' perceived effects of not experiencing nature connections?

DATA COLLECTION METHODS

Data gathering occurred in January and February of 2010 and included three methods in order to triangulate findings: photoethnography whereby participants took and annotated photographs of office experiences, questionnaires, and follow-up interviews. Photoethnography was chosen as a key data collection method in order to more accurately understand exactly what office users experience on a daily basis.

Each office user carried a camera with him or her for a total of 40 hours spent in the office and took a photographs documenting a minimum of 10 experiences when an aspect of the building either created a pleasing or enjoyable moment for them, made them feel connected to nature, or made them feel removed from nature. The reason for providing participants the option of photographing an aspect of the built environment that created a pleasing/enjoyable moment is because pleasing moments may actually be indirect or symbolic connections to nature. Indirect and symbolic connections to nature are more subtle connections and often not recognized

as related to the natural world. Thus, participants are not overly directed in conducting their observations.

The researcher conducted follow-up interviews with each participant in person. Questions asked in the follow-up interviews provided detailed data to help the researcher analyze participants' experience or lack of experience with nature within the Interface Showroom first prompted by the photographs. The questions identified if the presence or lack of nature-connected experiences had a perceived effect on the office users' physical health, emotional state, job performance, or job satisfaction. The researcher also administered two questionnaires: a nature-affinity and biographical questionnaire in order to obtain more information about the office users' background and experience.

DATA ANALYSIS

At the time of this writing, the study is currently underway and analysis has not yet occurred. The researcher will conduct content analysis of resulting data from the participant interviews and questionnaires to identify if office users experience a connection to nature and how these connections or lack of connections affect them at work. Frequencies of responses will be recorded. It is expected that qualitative conclusions will emerge from themes in the data.

SUMMARY

It is hoped this study will create a more comprehensive understanding of a human connection to nature within the built environment. Results of this study could inform further quantitative studies about human connections to nature within the built environment which could add to the evidence-base for biophilic design. Ultimately, this greater knowledge could validate biophilic design as a crucial philosophy to embrace in conjunction with low environmental impact design principles in order to design and construct truly sustainable environments.

REFERENCE LIST (APA)

Balling and Falk. (1982). Development of visual preference for natural environments. *Environment and Behavior. 4(1),* 5-27.

Beauchemin, K.M. & P. Hays (1996). Sunny hospital rooms expedite recovery from severe and refractory depressions. *Journal of Affective Disorders. 40,* 49-51.

Beeke, B.C. (2007, May 10). *Founder of USGBC visits G.R.* Retrieved November 12, 2009 from http://www.usgbc.org/News/USGBCInTheNewsDetails.aspx?ID=3133

Dutcher, D.D., Finley, J.C., Luloff, A.E. & Johnson, J.B. (2007) Connectivity with nature as a measure of environmental values. *Environment and Behavior, 39(4),* 474-493.

Fjeld, T., B. Veiersted, L. Sandvik, G.Riise, and F. Levy. (1998) The effect of indoor foliage plants on health and discomfort symptoms among office workers. *Indoor & Built Environment. 7,* 204-209.Hartig, T., Mang, M. & Evans, G. (1991). Restorative effects of natural environment experiences. *Environment and Behavior, 23(1),* 3-26.

Heschong Mahone Group. (2003). Windows and offices: A study of office worker performance and the indoor environment. California Energy Commission Technical Report. Retrieved October 28, 2009 from http://www.h-m-.com/projects/daylighting/projects-PIER.htm.

Heerwagen., J.H., and G.H. Orians. (1986). Adaptations to windowlessness: A study of the use of visual décor in windowed and windowless offices. *Environment and Behavior*, *18,* 623-639.

Kaplan, R. & Kaplan, S. (1989). *The experience of nature: A psychological perspective.* Cambridge: Cambridge University Press, 1989.

Kaplan, Rachel. (1993). The role of nature in the context of the workplace. *Landscape and Urban Planning*, (26) 193-201.

Kellert, S.R. (1997). *Kinship to Mastery*. Washington D.C., Island Press.

Kellert, S.R. (2005) *Building for Life: Designing and Understanding the Human-Nature Connection*. Washington, D.C., Island Press.

Kellert, S.R., Heerwagen, J.H. & Mador, M.L. (Eds.). (2009). *Biophilic design: The theory, science, and practice of bringing building to life.* Hoboken: Wiley & Sons,Inc.

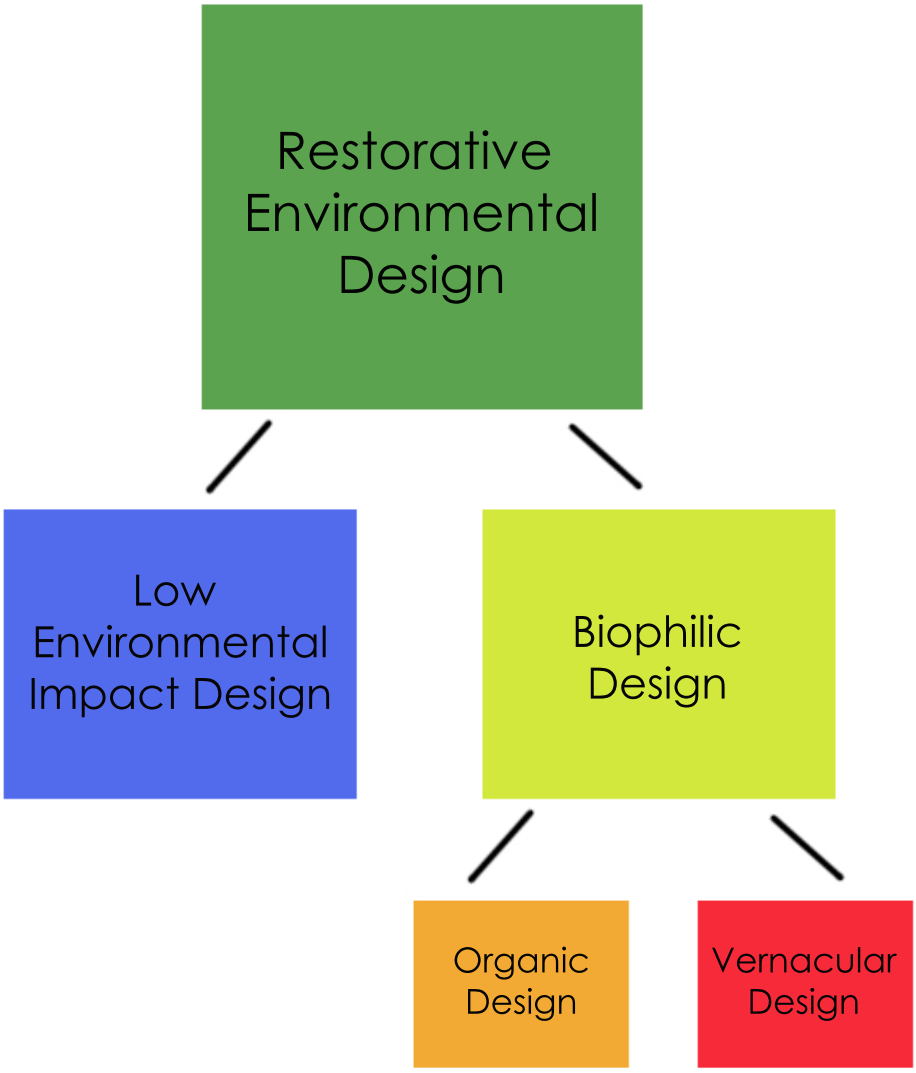

Figure 1: Restorative environmental design is a design paradigm introduced by Steven Kellert which employs biophilic design and low environmental impact design principles to create holistic design solutions mutually benefiting people and the environment (2005).

Kellert, S.R. & Wilson, E.O., (Eds.) (1993) *The Biophilia Hypothesis*. Washington D.C., Island Press.

Larsen, L., Adams, J., Deal, B., Keon, B. & Tyler, E. (1998). Plants in the workplace: The effect of plant density on productivity, attitudes, and perceptions. *Environment and Behavior*, 30(3), 261-281.

Mendler, S., Odell, W., & Lazarus, M. (2006) *The HOK Guidebook to Sustainable Design*. Hoboken, NJ: Wiley.

Orians, G.H., & Heerwagen. (1992). Evolved responses to landscapes. In Barkow, J.H., Cosmides, L, and Tooby, J., (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 555-579). New York: Oxford University Press, Inc.

Symons, D. (1992). On the use and misuse of Darwinism in the study of human behavior. In Barkow, J.H., Cosmides, L, and Tooby, J., (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 137-157). New York: Oxford University Press, Inc.

Ulrich, R. (1984). View through a window may influence recovery from surgery. *Science*. *224 (4647),* 420-421.

U.S. Green Building Council. LEED Professionals at a Glance. (n.d.) Retrieved November 12, 2009 from http://www.gbci.org/DisplayPage.aspx?CMSPageID=101

Wilson, E.O. (1984). *Biophilia*. London: Harvard University Press.

Dimensions of Creativity: How Do Practitioners Evaluate Entry-Level Interior Design Portfolios?

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ABSTRACT

In recent years, corporate, government, and educational leaders repeatedly point to the importance of creativity and innovation in global competition (Csikszentmihalyi, 2006). In interior design education and practice, there can be little doubt that creativity is highly valued and necessary for problem-solving (Council for Interior Design Accreditation, 2009). Nevertheless, creativity in interior design has not been fully examined in the context of education and practice.

One way to study creativity in the context of design is through the entry-level interior design portfolio (Levins, 2006). The design portfolio is a useful tool for assessing design creativity, ability, and skills. Furthermore, the evaluation of entry-level design portfolios plays an important role in the hiring process (Castiglione, 1996). Therefore, the present study aimed to address the following questions. (1) What criteria do design practitioners use when assessing portfolios? (2) What do design practitioners consider creative in portfolios? (3) Does perceived creativity impact hiring decisions?

To answer these questions, this study employed a systematic methodology and field research. The methodology for assessing entry-level design portfolios drew on Amabile's (1982) Consensual Assessment Technique (CAT) involving the agreement of expert judges, who represented senior level practitioners, in evaluating levels of creativity embodied by a portfolio. Moreover, semi-structured interviews with these judges contributed to the qualitative understanding of portfolio assessment and creativity in design.

A sample of twelve digital portfolios was collected from a well-established interior design program in Thailand. These portfolios were chosen in a pilot study from a total of 23 portfolios in a recent graduating class. To develop a portfolio sample, the authors and four designers who participated in the pilot study evaluated and sorted portfolios into groups exhibiting high (n = 4), medium (n = 4), and low creativity (n = 4). Assessing the randomized set of twelve portfolios and completing the interview took approximately one hour which was the average amount of time that practitioners could devote to the study. Each portfolio reviewed contained similar projects including a corporate and hospitality project, product design works, as well as an individualized thesis project.

In the data collection, sixteen senior level design practitioners, based in Atlanta, were asked to individually assess the sample of portfolios in their respective firms. Based on the literature, a locally developed assessment instrument assessed novelty, appropriateness, technical merit, aesthetic appeal, overall creativity, and hiring potential. After the portfolio assessment, designers were asked to elaborate on their own criteria used to assess design portfolios and creativity.

The interviews revealed that most practitioners considered creativity and technical skill as two primary criteria guiding portfolio assessment. Supporting the qualitative results, quantitative findings from the portfolio evaluation also showed a significant positive influence of perceived creativity on hiring potential ($r = .922$, $r^2 = .85$, $p < .01$). In other words, practitioners viewed creativity expressed in portfolios as a good predictor of employability. Additionally, results also indicated very high positive correlations among creativity, hiring potential, novelty, appropriateness, technical merit, and aesthetic appeal.

NARRATIVE

RESEARCH BACKGROUND

Creative designs, ideas, and processes increasingly attract global attention by organizations and governments that try hard to enhance the innovation and productivity of their services, businesses, and national economies (Baldoni, 2010; Oliver & Jung-a, 2010; United Nations, 2008). The U.K. has developed a strategy called "creative economy" to succeed in the global marketplace. Countries, such as the U.S., Australia, and Thailand, are explicitly developing initiatives to harness creativity to promote their economic standing (Development of Creative Economy in different countries, 2009).

Based on the globalization of creativity, there is the need for more information on creativeness in different fields and cultures. Creativity is a multi-faceted phenomenon revealed in products, processes, persons, and environments (Mayer, 1999; Mooney, 1963). Most recently, some researchers have focused their attention on creativity in design by studying the design process or design product (Casakin & Goldschmidt, 2000; Christiaans, 2002; Demirkan & Hasirci, 2009; Goldschmidt & Smolkov, 2006; Kokotovich & Purcell, 2000).

The present research examines creativity in portfolios, which represent a design product within the context of interior design. The design portfolio offers an excellent avenue not only to learn more about creativity in context but can be used to assess design creativity, ability, and skills (Castiglione, 1996). In many ways the portfolio also represents a passport enabling students who are graduating from interior design programs to cross from the educational to the professional world. There is no doubt that the evaluation of design portfolios plays an important role in the hiring process (Linton, 2008). Yet what do we know empirically about how designers evaluate portfolios and gauge their level of creativity?

LITERATURE REVIEW

A review of precedent reveals little research on the systematic study of portfolios or on creative works for that matter (Cho, 2007; Christiaans, 2002). A few existing studies on the evaluation of the portfolio or design product, however, are worth reviewing. Levins (2006) examined interior designers and architects' evaluations of entry-level interior design portfolios. Using Besemer and Treffinger's (1981) Creative Product Analysis Matrix (CPAM), she evaluated the creativity in terms of *novelty, resolution,* and *style*. Overall creativity appeared most related to novelty. Further, a high creative portfolio was shown to be a strong factor in determining whether or not job applicants would be hired.

Barnard (1992) also examined evaluated criteria relating to creativity. She adapted Amabile's (1983) rating criteria to assess *creativity*, *technical skills*, and *aesthetic aspects* of interior design projects. She recruited design educators and practitioners in the assessment process. Findings indicated that although the educators and practitioners gauged overall creativity similarly, they appeared to consider the creative dimensions differently. Design educator ratings distinguished creativity dimensions from technical aspects, while practitioner judge ratings seemed to view creativity independently from aesthetics.

In a related study on art and creativity, Niu and Sternberg (2001) recruited a sample of American and Chinese judges to assess artworks created by American and Chinese undergraduate students based on *creativity*, *likeability*, *appropriateness*, and *technical quality*. These four dimensions were strongly correlated to one another. Similarly, Chen, Kasof, Himsel, and colleagues (2002) asked American and Chinese judges to assess drawings created by American and Chinese college students on criteria of *creativity*, *uniqueness*, *technical quality*, and *liking*. The ratings of both judge groups were highly correlated on every criterion. Another cross-cultural study of creative products, Besemer and her colleagues (Besemer, 1998; Besemer & O'Quin, 1999) recruited Norwegian and American participants to assess creativity levels of three chair designs. The researchers also suggested that evaluation of products in non-Western cultures would be interesting and could provide a better understanding of the assessment criteria.

INTRODUCTION TO THE STUDY

In this global world, we are all interconnected through technology. Design products, including a portfolio, have gone digital to "promote [a designer's] personal and professional work globally" (Linton, 2008, p. 93). Since design works are universally passed and shared, it is essential to explore a common metric and potential cross-cultural difference in the assessment of design products. Therefore, digital design portfolios became the focus in this research.

The aim of this present study was to examine creativity dimensions in American practitioner evaluation of design portfolios produced by Thai interior design students. Three main questions were addressed. (1) What criteria do design practitioners use when assessing portfolios? (2) What do design practitioners consider creative in portfolios? (3) Does perceived creativity impact hiring decisions? Responses to the research questions were anticipated to expand the body of knowledge on the understanding of applied creativity in interior design. Moreover, the findings could provide a better understanding of creativity and its attributes in entry-level interior design portfolios and propose useful recommendations for design educators who are guiding students in developing their own portfolios.

METHODOLOGY

To answer the questions, this study employed a systematic methodology and field research. Survey and semi-structured interview methods were consolidated into a portfolio assessment procedure. The methodology for assessing entry-level design portfolios drew on Amabile's (1982, 1996) Consensual Assessment Technique (CAT) involving the agreement of sixteen expert judges who independently evaluated the sample of design portfolios. After the portfolio evaluation, an interview was conducted with each judge to gain the qualitative understanding of the evaluation process.

The sample of design portfolios consisted of twelve digital portfolios collected from Thammasat University in Bangkok, which has one of the most well-established interior design programs in Thailand. The first phase of the pilot study was conducted to develop the portfolio sample. Twelve portfolios were chosen from a total of 23 portfolios in the graduating class of 2009. The authors and four Thai designers evaluated and sorted portfolios into groups exhibiting high (n = 4), medium (n = 4), and low creativity (n = 4). The second phase of the pilot test was conducted to verify the range of creativity, research instruments, and procedures. Two interior design educators with practice experience from an accredited university in the southeast region of the U.S. participated in this phase of the pilot test.

Each of the selected portfolios contained similar projects including a corporate and hospitality project, a product design work, as well as an individualized thesis project. All twelve portfolios were formatted and timed as a Microsoft PowerPoint slide show. To eliminate factors related to the sequential order and potential viewing fatigue, three randomized sets of the slide show were developed.

Research participants consisted of sixteen senior-level design practitioners from eight firms located in Atlanta. The scope of services in these firms was similar and included corporate, generalist, hospitality, education, government, healthcare, lighting, retail, and special use specializations. Each firm had received national and/or international design awards. After scheduling a one-hour block with each practitioner, the data collection was taken place in a conference room at his or her firm.

The data collecting process involved three steps. First, the designer watched a four-minute slide show to get an overview of the portfolios. Second, the designer viewed the timed slide show and evaluated each portfolio using a locally developed assessment instrument assessing *novelty, appropriateness, technical merit, aesthetic appeal, overall creativity,* and *hiring potential*. Each dimension was measured by using a 7-point Likert-type scale. At the completion of the quantitative assessment, the designers were given the opportunity to elaborate on their process of reviewing portfolios.

FINDINGS

The quantitative and qualitative findings of the study reinforced each other and provided answers to the research questions. For the first question, most practitioners revealed in their interviews that creativity and technical skill were the primary criteria guiding their portfolio assessment and hiring decisions. Furthermore, they considered factors including uniqueness, aesthetic merit, compositional appeal, clarity of the presentation, as well as the candidate's personality characteristic and attitude.

When asked to describe creative design portfolios, designers mostly referenced originality, usefulness, attractiveness, and technical skills. Correlation analyses also showed that rated scores on overall creativity were highly associated with scores on novelty (r = .84), appropriateness (r = .80), aesthetic appeal (r = .70), and technical merit (r = .64). Finally, the interviews revealed that most practitioners considered creativity as one of the most important criteria used in hiring an entry-level designer. Correspondingly, results from the portfolio evaluation in-

dicated a strong relationship between perceived creativity and hiring potential ($r = .85$, $r^2 = .73$, $p < .01$). In other words, design practitioners viewed the level of creativity in portfolios as a good predictor of employability.

In addition, the assessed dimensions appeared similar to criteria that designers regularly consider in reviewing portfolios. Using international portfolios did not impede the American practitioner evaluation. Designers evaluated the portfolios based on quality of design works rather than cultural content. Only few remarks were made on differences of the Thai portfolios from U.S. portfolios. One judge mentioned that "I think the graphic composition, and this can be sort of cultural, was a little busy." Another judge stated that "Our design schools prepare our students very well. It's just graphically, we don't seem to be at the same level as the international."

PRESENTATION SESSION

The paper presentation will not be limited to empirical findings but also will share the portfolio assessment instrument and examples of high-, medium-, and low-creative portfolios as well as insights from the design practitioners who evaluated the portfolios. Also, the presentation will conclude with a short discussion of how design educators can optimize the portfolio development and presentation.

Figure 1: An Example of the Portfolio Sample

REFERENCE LIST (APA)

Amabile, T. (1982). Social psychology of creativity: A consensual assessment technique. *Journal of Personality & Social Psychology, 43*, 997-1013.

Amabile, T. (1983). *The social psychology of creativity*. New York: Springer-Verlag.

Amabile, T. (1996). *Creativity in context*. Boulder, CO: Westview.

Baldoni, J. (2010, January 29). *How to encourage small innovations*. Retrieved January 31, 2010, from Business Week Web site: http://www.businessweek.com/managing/content/jan2010/ca20100129_077398.htm

Barnard, S. S. (1992). *Interior design creativity: The development and testing of a methodology for the consensual agreement of projects*. Unpublished doctoral dissertation, Virginia Polytechnic Institute and State University, Virginia.

Besemer, S. (1998). Creative product analysis matrix: Testing the model structure and a comparison among products - three novel chairs. *Creativity Resaerch Journal, 11*(4), 333-346.

Besemer, S., & O'Quin, K. (1999). Confirming the three-factor creative product analysis matrix model in an American sample. *Creativity Reseach Journal, 12*(4), 287-296.

Besemer, S., & Treffinger, D. J. (1981). Analysis of creative products: Review and synthesis. *Journal of Creative Behavior, 15*, 158-178.

Casakin, H., & Goldschmidt, G. (2000). Reasoning by visual analogy in design problem-solving: The role of guidance. *Journal of Planning and Design: Environment & Planning, B27*, 105-119.

Castiglione, L. V. (1996). Portfolio assessment in art and education. *Arts Education Policy Review, 97*(4), 2-10.

Chen, C., Kasof, J., Himsel, A. J., Greenberger, E., Dong, Q., & Xue, G. (2002). Creativity in drawings of geometric shapes: A cross-cultural examination with the consensual assessment technique. *Journal of Cross-Cultural Psychology, 33*, 171-187.

Cho, M. (2007). Portfolio development in a secondary teaching credential art program. In T. Rayment (Ed.), *The problem of assessment in art & design* (pp. 69-75). Chicago: Intellect Books, University of Chicago Press.

Christiaans, H. (2002). Creativity as a design criterion. *Creativity Research Journal, 14*(1), 41-54.

Council for Interior Design Accreditation. (2009). *Council for Interior Design Accreditation Professional Standards*. Retrieved September 17, 2009, from http://www.accredit-id.org/profstandards.html

Csikszentmihalyi, M. (2006). Forward: Developing creativity. In N. Jackson, M. Oliver, M. Shaw, & J. Wisdom (Eds.), *Developing creativity in higher education: An imaginative curriculum* (pp. xviii-xx). New York: Routledge.

Demirkan, H., & Hasirci, D. (2009). Hidden dimensions of creativity elements in design process. *Creativity Research Journal, 21*(2-3), 294-301.

Development of creative economy in different countries (2009, January 31). Retrieved January 31, 2010, from Creative Thailand Web site: http://www.creativethailand.org/th/articles/article_detail.php?id=3

Goldschmidt, G., & Smolkov, M. (2006). Variances in the impact of visual stimuli on design problem solving performance. *Design Studies, 27*, 549-569.

Kokotovich, V., & Purcell, T. (2000). Mental synthesis and creativity in design: an experimental examination. *Design Studies, 21*, 437-449.

Levins, K. E. (2006). *The impact of creativity on the evaluation of entry-level interior design portfolios: Examining the relationships among creative novelty, resolution, and style*. Unpublished master's thesis, University of Florida, Gainesville, Florida.

Linton, H. (2008). An enviable design portfolio. *Design Intelligence, 14*(6), 92-96.

Mayer, R. E. (1999). Fifty years of creativity research. In R. J. Sternberg (Ed.), *Handbook of creativity* (pp. 449-460). Cambridge: Cambridge University Press.

Mooney, R. L. (1963). A conceptual model for integrating four approaches to the identification of creative talent. In C. W. Taylor & F. Barron (Eds.), *Scientific creativity: Its recognition and development* (pp. 331-339). New York: Wiley.

Niu, W., & Sternberg, R. J. (2001). Cultural influences on artistic creativity and its evaluation. *International journal of psychology, 36*(4), 225-241.

Oliver, C., & Jung-a, S. (2010, January 28). *Lack of innovation clouds Samsung's future*. Retrieved January 31, 2010, from Financial Times Web site: http://www.ft.com/cms/s/0/2988943c-0c31-11df-8b81-00144feabdc0.html

United Nations. (2008). *Creative economy report 2008: The challenge of assessing the creative economy: Towards informed policy-making*. Retrieved January 31, 2010, from http://www.unctad.org/en/docs/ditc20082cer_en.pdf

A House is Not Always a Home: Building a Home on the Hamilton Grange

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ABSTRACT

"I have formed a sweet project, of which I will make you my confident when I come to New York . . . but you will not be the less pleased when you come to understand and realize the scheme."[1] Alexander Hamilton, one of the founding fathers of the U.S. Constitution, wrote this passage in a letter to his wife about plans for his home the Hamilton Grange, built with the help of his architect, John McComb, Jr., in 1802 (Figure 1). Hamilton was born in the Caribbean and later moved to the United States as a young man, being 45-47 years old by the completion of his home. This paper will discuss how his architectural imprints[2] from the Caribbean affected Hamilton's concept of home and resulted in a syncretic floor plan with a form that incorporates both Caribbean and Federal architectural details.

A National Historic Landmark, the Hamilton Grange is the only existing domestic building completed by McComb, Jr., the architect of record for New York City Hall and the major source of the Federal details on the Hamilton Grange. As was common with builder-architects of the time, McComb, Jr. would have adapted a plan from a builder's handbook for Hamilton's residence. The historic structure report for the Hamilton Grange has suggested that the original first and second floor plans (Figures 2 and 3) had been adapted from the left-hand terminal pavilion of Kedleston Hall, shown in a builder's handbook by James Paine (Figure 4). However, research reported in this paper[3] builds the case that several plates by John Crunden bear striking similarities to the original Hamilton plan (Figure 5).

Adaptations made to Crunden's plan would have helped to bring the form and function of the original floor plan in line with Caribbean floor plans in the late eighteenth century. The original first floor plan fits the characteristics of typical floor plans in Hamilton's familiar Christiansted, St. Croix of a central salon that extends the entire length or width of the building. As in the Hamilton Grange, this central salon would be surrounded by secondary spaces. In addition, Hamilton and his family used both the interior and exterior spaces in the same way that these spaces would have been used in the Caribbean. The layout and use of these spaces serve as strong evidence that the Hamilton Grange represented Hamilton's Caribbean background.

Prior to this study, the Hamilton Grange was considered, by both official and popular sources, as a building with only Federal influences. Evaluating other cultural influences on this architecture has revealed not only the syncretic influences of this particular building, but also the importance of effectively handling the architectural imprints of the client, end user, and designer during the design process. According to Marcus[4], architectural imprints may be reflected in areas such as privacy, enclosure, view, form, materials, sounds, textures, etc. Designers should reflect on Hamilton's sweet project as an example of effectively using architectural imprints to assist a client in making a house a home.

1 Alexander Hamilton. *Alexander Hamilton: Writings*. Commemorative edition. (New York: The Library of America, 2001), 913-14.

2 Clare Cooper Marcus, *House as a Mirror of Self: Exploring the Deeper Meaning of Home* (Berwick, ME: Nicolas-Hays, 2006).

3 Tiffany Lang. "Caribbean Influences on the Hamilton Grange: Architectural Imprints on Alexander Hamilton Result in Syncretism" (Thesis (M. I. D.), University of Florida, 2008), 35-7.

4 Marcus, *House as a Mirror of Self: Exploring the Deeper Meaning of Home*, 41.

NARRATIVE

"I have formed a sweet project, of which I will make you my confident when I come to New York . . . but you will not be the less pleased when you come to understand and realize the scheme."[5] Alexander Hamilton, one of the founding fathers of the U.S. Constitution, wrote this passage in a letter to his wife about plans for his home the Hamilton Grange, built with the help of his architect, John McComb, Jr., in 1802 (Figure 1). Hamilton was born in the Caribbean and later moved to the United States as a young man, being 45-47 years old by the completion of his home. This paper will discuss how his architectural imprints[6] from the Caribbean affected Hamilton's concept of home and resulted in a syncretic floor plan with a form that incorporates both Caribbean and Federal architectural details.

A National Historic Landmark, the Hamilton Grange is the only existing domestic building completed by McComb, Jr., the architect of record for New York City Hall and the major source of the Federal details on the Hamilton Grange. As was common with builder-architects of the time, McComb, Jr. would have adapted a plan from a builder's handbook for Hamilton's residence. The main influences affecting McComb, Jr.'s work were his father, the builder's handbooks in his library, and contemporary architecture of the time.

The historic structure report for the Hamilton Grange has suggested that the original first and second floor plans (Figures 2 and 3) had been adapted from the left-hand terminal pavilion of Kedleston Hall shown in a builder's handbook by James Paine (Figure 4). As regards the second floor, both plans have a central hall extending from the front to the back of the entire area and two larger, more central areas surrounded by slightly smaller secondary spaces. However, the Kedleston Hall plan lacks a central octagonal space that would connect it to the first floor plan of the Hamilton Grange. In addition, the handbook by James Paine, *Plans, Sections, and Elevations of Noblemen and Gentlemen's Houses* may not have been part of McComb's library; although there is the possibility that McComb saw the Kedleston plan in Robert and James Adam's *The Works in Architecture.*[7]

Even if McComb did see the Kedleston plan, further research[8] builds the case that several plates by John Crunden bear striking similarities in appearance to the original Hamilton plan (Figure 5). McComb owned John Crunden's *Convenient and Ornamental Architecture* and had even used it in completing a design for Government House in 1789. McComb's adaption of plates 52-53 into the Government House plan not only is a demonstration of his modification of existing plans, but also establishes his familiarity with and application of the drawings within Crunden's publications.

Strong similarities exist between the original Hamilton Grange plan (Figures 2 and 3) and plate 41, plate 49 (Figure 5), and plates 50-51 of Crunden's handbook. All of these plates feature an octagonal space that becomes the dominant shape within the plan. Because of this dominance, the other areas are secondary spaces. Each octagonal space is equally divided in half in some way. The octagonal spaces in plate 49 and plates 50-51 hold a central location in the plan, with direct paths leading from the front door to the back entrance. In addition, plate 49 even has an option for a second floor that excludes the octagonal space. Adjusting any of the plans that were not symmetrical would have allowed them to reflect the symmetrical layouts of other buildings of the Federal period.

Adaptations made to Crunden's plan would also have helped to bring the form and function of the original floor plans in line with Caribbean floor plans in the late eighteenth century. This was part of the syncretic process that combined Federal and Caribbean architectural details to form the Hamilton Grange. The architectural imprints of Alexander Hamilton would have facilitated this process. As illustrated in the beginning quote, Hamilton had an intense interest in and substantial input into the building of his home. Although Hamilton was not an architect, his grandson wrote years later that "it is probable that Hamilton himself worked on the plans. . ."[9]

5 Alexander Hamilton. *Alexander Hamilton: Writings*. Commemorative edition. (New York: The Library of America, 2001), 913-14.

6 Clare Cooper Marcus, *House as a Mirror of Self: Exploring the Deeper Meaning of Home* (Berwick, ME: Nicolas-Hays, 2006).

7 Mongin and Whidden. "Historic Structure Report : Hamilton Grange National Memorial, Manhattan Sites, New York City." 23, 26 note no. 46.

8 Tiffany Lang. "Caribbean Influences on the Hamilton Grange: Architectural Imprints on Alexander Hamilton Result in Syncretism" (Thesis (M. I. D.), University of Florida, 2008), 35-7.

9 Allan McLane Hamilton, *The Intimate Life of Alexander Hamilton,*

He, therefore, would have been a major influence on the development of the final floor plans.

The floor plans are influenced by Federal architecture, but the existence of full-length piazzas on the two sides makes the layout analogous to Federal architecture in other regions with known Caribbean influence. In Charleston, North Carolina, "this is the so-called 'single house,' a house one room in depth, oriented with its short end toward the street and with a piazza along the entire long side. These features seem to have been imported from the West Indies and were intended to afford space for outdoor living and to protect the house from the sun. The type is thus distinctly regional."[10]

In the interior, the original first floor plan fits the characteristics of typical floor plans in Hamilton's familiar Christiansted, St. Croix of a central salon that extends the entire length or width of the building. As in the Hamilton Grange, this central salon would be surrounded by secondary spaces. Some Christiansted buildings also had arcades. Other buildings had a full-length gallery on wooden posts or a gallery indented in the façade and tended to have wooden louvers.[11] The central octagonal space in the Hamilton Grange was separated into two spaces with the parlor on the left and the dining room on the right. However, these spaces had doors that could be opened to form one large space. The original second floor plan combined the current four north rooms into one large space. This conforms to the full-length or width central salon layout. Any other rooms would be considered secondary spaces.

These floor plans in Christiansted are representative of a type of floor plan found in the Caribbean. It is derived from a proto-Creole building called Casa del Almirante or El Palacio that was constructed in Santo Domingo in 1510. Casa del Almirante had a tripartite plan with a central sala and secondary spaces. Variations on this pattern of a front loggia, corner gabinete spread throughout the Caribbean.

One variation was the addition of a full-length gallery. Galleries in the Caribbean were attributed to the Africans in these areas. There are two reasons for this conclusion. First, galleries appeared early and simultaneously in Portuguese Pernambuco, Brazil and the Spanish Antilles. These galleries were considered non-European and both colonies had the greatest number of Africans in the sixteenth and seventeenth centuries. Secondly, the cultural use of the gallery was the same in both places. "In Spain and other European countries, however, the elevated open front gallery functioned principally as storage, decoration, and occasional socialization space. Only in Africa and later in the Caribbean was the open front gallery employed as a full-time everyday living space."[12]

Hamilton and his family used both the interior and exterior spaces in the same way that these spaces would have been used in the Caribbean. Along with the central salon, he had floor-length windows that allowed his family to access the piazza. Flush board siding on the piazzas, instead of the clapboard siding seen on other exterior surfaces, indicates that these piazzas were considered extensions of the main living areas.

The layout and use of the interior and exterior spaces by Hamilton serve as strong evidence that the Hamilton Grange represented his Caribbean background. Prior to this study, the Hamilton Grange was considered, by both official and popular sources, as a building with only Federal influences.[13] Besides the floor plan; the materials and neoclassical details on the exterior, the shutters, the floor-length windows, and Hamilton's background all relate to both Federal and Caribbean architecture. This connection between the two types of architecture allowed syncretism to occur. However, the porticos, interior folding shutters, and McComb's background strongly reflect Federal influences. On the other hand, the raised first floor under the porch, the full-length porches, and the shutter-porch combination strongly reference the Caribbean.

Evaluating other cultural influences on the Hamilton Grange has revealed not only the syncretic influences

Based Chiefly Upon Original Family Letters and Other Documents, Many of Which Have Never Been Published (New York: C. Scribner's sons, 1911), 339.

10 William Harvey Pierson, *American Buildings and Their Architects : The Colonial and Neoclassical Styles*, vol. 1 (Garden City, N.Y.: Doubleday, 1970), 232.

11 Pamela W. Gosner, *Plantation and Town, Historic Architecture of the United States Virgin Islands, a Guide*, 61.

12 Jay D. Edwards, "The Origins of Creole Architecture," *Winterthur Portfolio* 29, no. 2/3 (1994): 176.

13 This paper is based on more detailed research. See Lang, "Caribbean Influences on the Hamilton Grange", 2008.

of this particular building, but also the importance of effectively handling the architectural imprints of the client, end user, and designer during the design process. Hamilton was able to construct his idea of home because he had an architect familiar with the syncretic process who considered his requirements as a client, even if McComb did not realize that these requirements reflected imprints from Hamilton's cultural background. According to Marcus[14], architectural imprints may be reflected in areas such as privacy, enclosure, view, form, materials, sounds, textures, etc. A building, including the floor plan, will include any number of these elements. Designers should reflect on Hamilton's sweet project, the Hamilton Grange, as a reminder of the impact of architectural imprints and an example of a designer effectively using these imprints to assist a client in making a house into a home.

REFERENCE LIST (CHICAGO)

Crunden, John. *Convenient and ornamental architecture, consisting of original designs, for plans, elevations, and sections: beginning with the farm house, ... Engraved on seventy copper plates. With reference and explanation in letter press, ...* A New Edition. London: printed for I. and J. Taylor, 1791.

Edwards, Jay D. "The Origins of Creole Architecture." *Winterthur Portfolio* 29, no. 2/3 (1994): 155-189.

Gosner, Pamela W. *Plantation and Town, Historic Architecture of the United States Virgin Islands, a Guide*. Durham: N.C., Moore Pub. Co., 1971.

Hamilton, Alexander. *Alexander Hamilton: Writings*. Commemorative edition. New York: The Library of America, 2001.

Hamilton, Allan McLane. *The Intimate Life of Alexander Hamilton, Based Chiefly Upon Original Family Letters and Other Documents, Many of Which Have Never Been Published*. New York: C. Scribner's sons, 1911.

Lang, Tiffany. "Caribbean Influences on the Hamilton Grange: Architectural Imprints on Alexander Hamilton Result in Syncretism" Thesis (M. I. D.), University of Florida, 2008.

Marcus, Clare Cooper. *House as a Mirror of Self: Exploring the Deeper Meaning of Home*. Berwick, ME: Nicolas-Hays, 2006.

Mongin, Alfred, and Anne D. Whidden. "Historic Structure Report: Hamilton Grange

National Memorial, Manhattan Sites, New York City." Boston: North Atlantic Historic Preservation Center, North Atlantic Region, National Park Service, U.S. Dept. of the Interior, 1980. http://www.cr.nps.gov/history/park_histories/index.htm (Retrieved January 15, 2007 from National Park Service, Technical Information Center).

Pierson, William Harvey. *American Buildings and Their Architects: The Colonial and Neoclassical Styles*. Vol. 1. Garden City, N.Y.: Doubleday, 1970.

Stillman, Samuel Damie. "Artistry and Skill in the Architecture of John Mccomb, Jr." Thesis (M. A.), University of Delaware, 1956.

14 Marcus, *House as a Mirror of Self: Exploring the Deeper Meaning of Home*, 41.

Figure 1: Hamilton Grange National Memorial. Photo taken by author in August 2006.

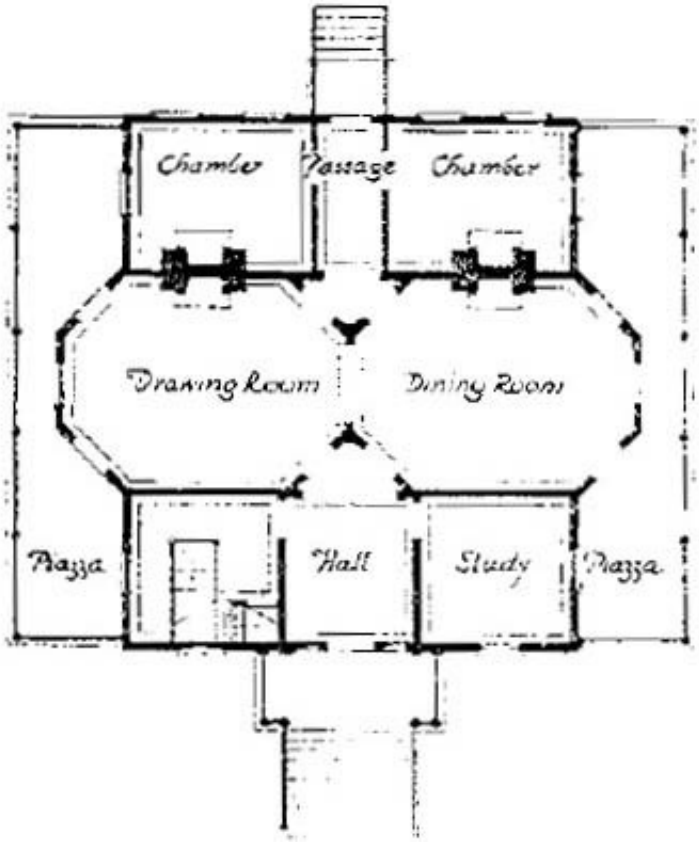

Figure 2: Hypothetical Original First Floor Plan. 1955 drawing by James G. VanDerpool in Mongin and Whidden, *Historic Structure Report: Hamilton Grange National Memorial, illustration 13*.

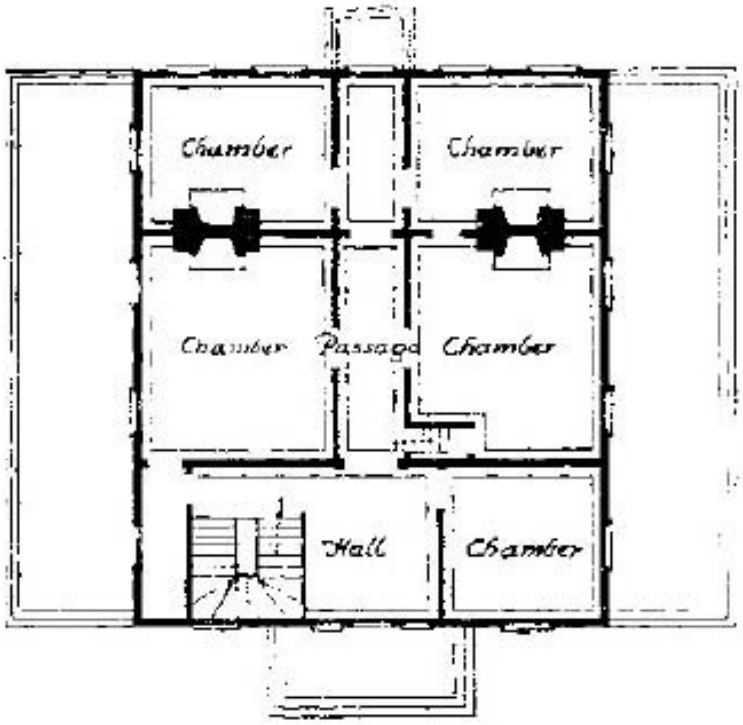

Figure 3: Hypothetical Original Second Floor Plan. 1955 drawing by James G. VanDerpool in Mongin and Whidden, *Historic Structure Report: Hamilton Grange National Memorial, illustration 12*.

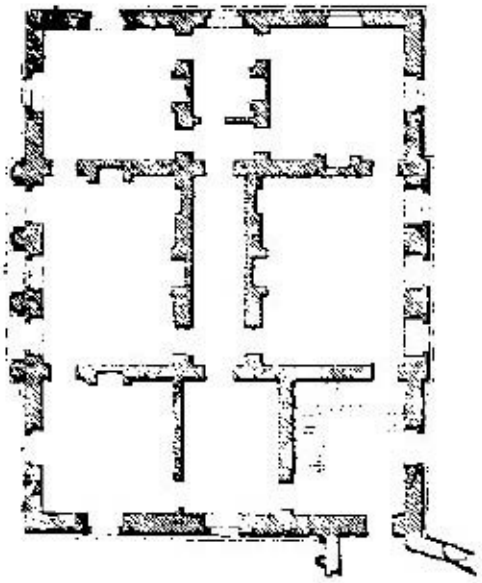

Figure 4: Left-Hand Terminal Pavilion of Kedleston Hall. Mongin and Whidden, *Historic Structure Report: Hamilton Grange National Memorial, illustration 11*.

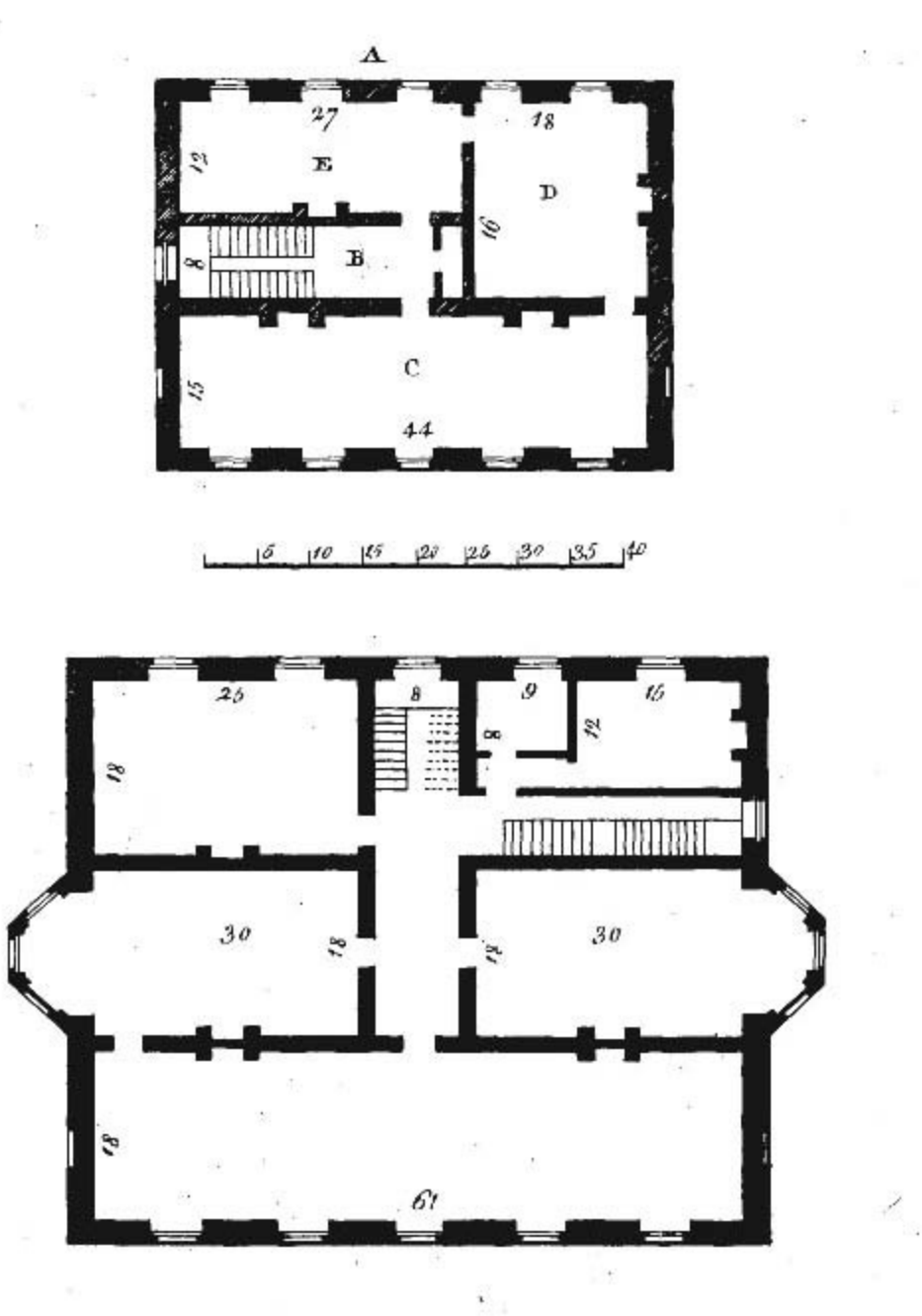

Figure 5: Plate 49. Crunden*, Convenient and Ornamental Architecture*.

Female Residents' Preferences for Interior Design Elements and Principles

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ABSTRACT

Older adults relocating to long-term care facilities typically select a residence that reflects personal preferences in the design of the facility, suggesting a sense of connection to the facility. Attachments to facilities may be formed from familiarity with interior design elements incorporated into their environment. According to M. Powell Lawton (1977), the environment plays a vital role in the adult aging process when the needs of the users of the space are in congruence with the demands of the environment. The resulting balance (positive fit) that occurs is directly related to the design of the facility (Bunker-Hellmich, n.d.). Furthermore, individuals will successfully adapt to constantly changing circumstances through enduring patterns of personal constructs based on prior experiences (Atchley, 1999). The purpose of this study was to describe the preferences of female residents in Continuing Care Retirement Communities (CCRCs) toward interior design elements and principles, and the role those elements and principles play in fostering attachments to the environment. Q methodology, based on a sorting technique, was used to explore the opinions of residents regarding their preferences of familiar interior design elements based on their previous and current residences. A concourse of all possible statements regarding preferences for design elements and principles was drawn from residents of three CCRCs in two metropolitan cities. Based on statements from the concourse, 36 photographs were selected for the Q-set. Participants, called the P-set in Q-methodology, sort the photographs according to their preferences. The P-set consisted of 18 residents living in or considering relocation to CCRCs in a major metropolitan city in the southwest. Two conditions of instruction resulted in 36 Q sorts. Three factors were identified using PQMethod 2.11 for analysis. Seventeen sorts were defined by Factor One, Traditional Symmetrical, nine were defined by Factor Two, Naturalistic Rhythm, and four were defined by Factor Three, Idiosyncratic Variety. Each of the factors clearly delineated a strong use of specific interior design elements and principles, indicating a preference for specific elements and principles in the participants' current residences. This preference has a direct relationship to the level of place attachment of the CCRC residents. Understanding the importance of CCRC residents' preferences for design elements and principles can lead to more informed decisions by stakeholders in designing continuing care retirement communities.

NARRATIVE

PURPOSE

According to the Administration on Aging, in 2006 approximately 12.4% of the population was 65 years or older. By the year 2030 this sector is expected to make up 20% of the total population of the United States (http://www.aoa.gov/prof/Statistics/ statistics.asp), the majority of which will be women (Older Americans, 2007: Key Indicators of Well-Being). For various reasons, women in this cohort may become unable to successfully age in place and therefore may make a decision to move to a community living facility, such as a Continuing Care Retirement Community (CCRC). Continuing Care Retirement Communities consist of varying levels of living options that include independent living, assisted living, and nursing and/or memory care facilities all located on the same campus (http://www.aarp.org/families/housing_choices/ other_options/a2004-02-26-retirement-community.html).

Older women relocating to long-term care facilities may select a residence that reflects personal preferences in the design of the facility, suggesting a sense of connection to the facility. The purpose of this study was to determine the preferences of female residents in Continuing Care Retirement Communities (CCRCs) toward interior design elements and principles, and the role those elements and principles play in fostering attachments to the environment.

REVIEW OF LITERATURE

Nielson's and Taylor's (2007) description of design elements and principles consist of color, light, line, mass, form, texture, pattern, shape, space, scale, proportion, balance, rhythm, emphasis, and harmony. Aranyi and Goldman (1980) consider these elements and principles as tools, which when used in varying combinations, generate solutions to design problems, enhance and distinguish the overall characteristics of a built environment, as well as aid in the evaluation of the outcome of designs. Marsden's (2005) study of Assisted Living Facilities identified design elements and principles as important characteristics contributing to the successful design of facilities for older adults.

Interior design elements and principles and their role in defining a built environment may influence an individual's overall attitude toward a particular space. As M. Powell Lawton (1977) notes, the environment plays a vital role in the adult aging process when the needs of the users of the space are in congruence with the demands of the environment. The resulting balance (positive fit) that occurs is directly related to the design of the facility (Bunker-Hellmich, n.d.). Furthermore, individuals will successfully adapt to constantly changing circumstances through enduring patterns of personal constructs based on prior experiences (Atchley, 1999).

Krout, Moen, Holmes, Oggins, & Bowen (2002) assert that an aging population, housing preferences other than nursing homes, a desire to live independently, and public policy regarding nursing homes, have contributed to the increased interest in CCRCs (Krout, et al, 2002) and were used as a reference in identifying the population of this study. For the purpose of this study, only independent living facilities (ILF) and assisted living facilities (ALFs) were included.

Because of the strong ties this cohort of women has to their homes and possessions (Shenk, Kuwahara, & Zablotsky, 2004) these women tend to identify themselves closely with their home environment incorporating a unique meaning of home through their past and current living environments (Leith, 2006). Older women can identify with a new living environment through experiencing a sense of familiarity with design elements and principles of that new environment. According to Marsden (1997), "familiarity results when characteristics of an environment have been frequently encountered before and there is a fit between current stimulation and an existing internal representation" (p. 29). Familiarity, therefore, may contribute to successful adaptation to a new environment through a continued use of familiar cues.

Place attachment is defined as "a set of feelings about a geographic location that emotionally binds a person to that place as a function of its role as a setting for experience" (Rubenstein & Parmelee, 1992, p. 139), and is fostered in part through congruence of familiar cues of an environment. Place attachment to a new surrounding occurs when the purpose and visual stimuli are similar to a resident's previous home (Zavotka & Teaford, 1997). Other indicators, specifically familiar objects and physical features, can act as a catalyst in establishing a connection to a place in a relatively shorter amount of time. According to Low and Altmann (1992), a stronger level

of place attachment has been linked to greater residential satisfaction and adjustment among older individuals after relocation.

METHODS

Data were gathered using Q-methodology and a place attachment questionnaire. Q-methodology, introduced by William Stephenson in 1953, allows for systematically quantifying subjectivity by correlating people rather than items (Brown, 1993). Q-methodology was selected for this study due to the nature of the operant subjectivity that allows for exploring the subjectivity, particularly in this study of preferences of familiar design elements and principles of women living in CCRCs.

Participants for this study included 18 females ages 65 to 91 who were residents of CCRCs in a metropolitan area in the Central Plains of the United Stated. Data for the Q-sorts were analyzed using PQMethod software (www.qmethod.org), which utilizes a three-step procedure: 1) the correlation of the Q-sorts 2) analysis of the correlation matrix using factor analysis to distinguish groupings of participants' viewpoints 3) principle components analysis, followed by a varimax rotation, to identify factor groupings of participants.The Q-method included a Q-sort consisting of 36 photographs that were sorted, using a form board, to determine female residents' familiarity with and preferences for interior design elements and principles in CCRCs.

Questions regarding demographics were included at the conclusion of the Q-sort. A follow-up questionnaire was administered to determine the level of place attachment of the participants with their current residences.

RESULTS

The three distinct factors were identified in this study as: Factor One, *Symmetrical Traditional*; Factor Two, *Naturalistic Rhythm*; and Factor Three, *Individualistic Variety*. Study participants sorted photographs of interior space and furnishings. Each factor as identified through factor analysis had distinguishing features. The first factor, *Symmetrical Tradition*, represented a traditional style that showed a more formal and symmetrical preference of design elements and principles. In Symmetrical Traditional, the elements of symmetry, natural light, and line were identified as distinguishing elements and principles. The second factor, *Naturalistic Rhythm*, represented a more relaxed transitional style preference using natural light and natural materials. Rhythm through repetition was the most distinguishing design principle in Factor Two. The third factor, *Individualistic Variety*, represented the uniqueness of each of these sorts in which the lack of any particular style expressed the individualism of the participants through a personal preference for color, line, and pattern in varying ways.

The analysis of the place attachment questionnaire used for this study showed that all participants had a positive level of place attachment to their current home. Two-thirds of the participants clearly indicated their preferences for design elements and principles were similar in both their former and current homes.

CONCLUSION

This was an exploratory study using Q-methodology and a place attachment questionnaire. No previous research could be found using these techniques as related to interior design elements and principles and place attachment. However, the findings from relevant literature indicate that persons with a preference for the design of a facility are more apt to feel connected to that facility. Place attachment can be instrumental in an individual's attachment to an environment (Inalhan & Finch, 2004). The lack of seminal work indicates a need for further research regarding preference, design elements and principles and place attachment. Design educators and researchers could apply the Q-methodology process to study preferences of design consumers beyond the scope of the current study.

These findings raise interesting questions for future study. For example, "Did these residents choose their current CCRC based partially on their familiarity with and preference for design elements and principles exemplified in the design of their current CCRC?" "Would a larger population of aging adults living in CCRCs in varying geographical locations generate similar findings?" "Do consumers of CCRCs consciously or subconsciously choose residences that 'feel familiar' to them?" "Might marketers of CCRCs use the constructs of familiarity and place attachment as tools to better communicate about the interior environment as they market their products?" These and other questions offer examples of possibilities for future research in order to result in greater understanding of how older consumer choose and relate to the interior environments.

This exploratory study provides findings which suggest the importance of design elements and principles to aging women who reside in CCRC facilities. In addition to design-related findings, the research method employed in the study, Q-methodology, was found to offer the opportunity for design researchers to measure the subjective preferences of consumers of design. This unique opportunity alone warrants further exploratory work within the interior design field as well as within other design disciplines. The diverse nature of the three factors that emerged from this research reflect the importance of design elements and principles and the role they play in contributing to place attachment. Given the positive levels of place attachment among all participants, the indication is that design elements and principles do contribute to place attachment.

REFERENCES (APA)

Aranyi, L. & Goldman, L. L. (1980). *Design of long-term care facilities*. New York: Van Nostrand Reinhold.

Atchley, R. C. (1989). A continuity theory of normal aging. *The Gerontologist, 29*(2), 183-190.

Brown, S. R. (1996). Q-methodology and qualitative research. *Qualitative Health Research, 6*(4), 561-567.

Bunker-Hellmich, L. (n.d.). Aging and the Designed Environment. *Implications 01*(01). Retrieved from www.informedesign.umn.edu

Continuing Care Retirement Communities (CCRC). *AARP.org.* Retrieved from: http://www.aarp.org/families/housing_choices/other_options/a2004-02-26-retirementcommunity.html

Inalhan, G. & Finch, E. (2004). Place attachment and sense of belonging. *Facilities, 22*(5/6), 120-128.

Krout, J. A., Moen, P., Holmes, H. H., Oggins, J., & Bowen, N. (2002). Reasons for relocation to a continuing care retirement community. *Journal of Applied Gerontology 21*(2), 236-256.

Lawton, M. P. (1977). An ecological theory of aging applied to elderly housing. *Journal of Architectural Education, 31*(1), p. 8-10.

Leith, K. H. (2006). Home is where the heart is…or is it? *Journal of Aging Studies, 20*(4), p. 317-333.

Low, S. M., Altman, I. (1992), Place attachment: a conceptual inquiry. In I Altman, and S. M. Low, (Eds.). *Place Attachment: Human Behavior and Environment* (pp.1-12). New York: Plenum

Marsden, J.P. (2005). *Humanistic design of assisted living.* Baltimore: Johns Hopkins University.

Nielson, K. J. & Taylor, D. A. (2007). *Interiors: An introduction* (4th ed.). New York: McGraw-Hill.

Older Americans 2007: Key indicators of well-being. *Agingstats.gov.* Retrieved on from http://www.agingstats.gov/agingstatsdotnet/main_site/default.aspx

QMethod Page. (n.d.). *PQMethod Software*. Retrieved from http://www.lrz-muenchen.de/~schmolck/qmethod/index.htm

Rubinstein, L & Parmelee, P.A. (1992). Attachment to place and the representation of the life course by the elderly. In I. Altman & S. M. Low (Eds), *Place Attachment* (pp.139-163). New York: Plenum.

Statistics on Aging. (2006). *Administration on Aging*. Retrieved from http://www.aoa.gov/prof/Statistics/statistics.asp

Shenk, D., Kuwahara, K., & Zablotsky, D. (2004). Older women's attachment to their home and possessions. *Journal of Ageing Studies, 18*(2), 157-169.

Zavotka, S. L., & Teaford, M. H. (1997). The design of shared social spaces in assisted living residences for older adults. *Journal of Interior Design, 23*(2), 2-16.

Millennial Learning Styles and the Design Studio Model

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ABSTRACT

Research on Millennial learners in post secondary education suggests that sound pedagogy developed for this group must address their unique learning styles, which are impacted by attention span and technology use. Texting, twittering, online or on a cell phone, the current crop of students show an inability to utilize traditional models of learning. This study asserts that the structure of the design studio learning model complements the learning styles of the Millennials by providing a format in which they construct their learning through the design process as they progress through the curriculum of an interior design program. The design studio model guides the Millennial student beyond simple acquisition of information to higher levels of learning.

NARRATIVE

LEARNING PROCESS/CONSTRUCTIVIST THEORY

Learning can be defined as an internal process that is different for individuals and is determined to be the act, process, or experience of gaining knowledge or skill (de Haan & de Ridder, 2006). Constructivist learning theory describes how learning happens based on the idea that learning and knowledge come from experience. The experience is internalized and creates a framework of understanding. As a result, students inherently develop a sense of identity based on what and how they have learned. The background and culture of the learner help to shape the knowledge and truth the learner creates, discovers, and attains throughout the learning process (Wertsch 1997). Student input directly affects the student outcome; how the student learns is just as important as the environment in which the student learns. Learning follows an active process where learners discover principles, concepts, and facts for themselves, hence the importance of encouraging trial and error as well as intuitive thinking in learners (Ackerman, 1996). For learners the reality of knowledge is discovered through the social invention of learning. Kukla (2000) argues that reality is constructed by our own activities and that people, together as members of a society, invent the properties of the world.

DESIGN STUDIO MODEL

Does the design studio model affect the cognitive development of Millennial students by utilizing their unique learning styles? The K-12 experience of the Millennials has prepared them to acquire knowledge through task completion and testing. The design studio model is focused on learning as active participation in the creation of knowledge. Millennials prefer interactive learning as evidenced by their devotion to the technology in their

lives. The design studio model promotes an environment that allows for a dialogue between instructor and student. Learning takes place between the two entities as a back and forth process of information exchange through critique. Holt and Willard-Holt (2000) developed the concept of dynamic assessment, which is a way of assessing the true potential of learners that differs significantly from conventional tests. Here the essentially interactive nature of learning is extended to the process of assessment. Instead of viewing assessment as a process carried out by one person, such as an instructor, it is seen as a two-way process involving interaction between both instructor and learner. This interaction works well with Millennial learners as they have the expectation that the design studio is student focused, rather than teacher focused (Okagaki, Lynn, Helling, M.K. & Bingham, G.E., 2009). The role of the assessor becomes one of entering into a dialogue with the students being assessed to find out the current level of performance on a task and sharing with them possible ways in which that performance might be subsequently improved. Again, Millennials expect and find this individualized approach in the design studio (McGlynn, 2005). Assessment and learning are seen as inextricably linked and not separate processes (Holt & Willard-Holt, 2000). Design studio instructors use this dynamic assessment as a continuous and interactive process that measures the achievement of the learner, the quality of the learning experience, and the courseware design. The feedback created by the assessment process serves as a direct foundation for further development. The design studio allows for a more learning centered environment for students. In Millennial learning styles, "active engagement promotes a deeper level of processing and learning because it creates stronger connections" (McGlynn, 2005). Does the design studio model and its constructivist environment complement or detract from the learning styles of the Millennials?

EMPIRICAL RESEARCH: METHODOLOGY

First year design students were tested to identify their type of learning style using an index of learning style questionnaire. This questionnaire was created for first year college students at the University of North Carolina by Barbara Soloman and Richard Felder (http://www.engr.ncsu.edu/learningstyles/ilsweb.html). The questionnaire is based on four pairs of learning styles that define the learning type of the student. The four pairs are; active/reflective learners, sensing/intuitive learners, visual/verbal learners and sequential/global learners. A second survey given to the students was a revised version of the 2009 Freshman Survey developed by the Cooperative Institutional Research Program at the Higher Education Research Institute. The survey was used to compare student characteristics with those of the original Millennial study: *Millennial's Rising* (Howe & Strauss, 2000). Modification of the questionnaire provided additional data about the students' level of cognitive development. This study utilizes the levels of learning in the cognitive domain of Bloom's Revised Taxonomy of Learning to demonstrate that learning does take place in the design studio (Anderson, L.W. & Krathwohl, D.R., 2001). As students move into the second year of design studio, they take with them the *knowledge* they have gained in their first studio. In terms of the Taxonomy, they have learned common terms, methods, procedures, and basic concepts. The second tier of the Taxonomy focuses on *comprehension* or understanding facts and principles, interpreting directions, and articulating solutions as well as being able to explain why things were done a certain way. Successful student achievement of this second group of objectives provides evidence of the progression of learning that the Taxonomy postulates. Second year design students in the study were asked to create a product design. The students were asked to use a rubric to create quick process schematics for a cell phone design and make a five minute presentation of their work. Class discussion and peer review then prompted a redesign phase. The same assessment with a different product will be conducted at the end of the semester to use as a measure of progress in comprehension. Analysis of variance (ANOVA) tests will also be conducted in order to determine if students' learning is affected by the design studio model as they progress through the interior design program. The initial sample is comprised of 2009-2010 academic year students enrolled in the Department of Clothing, Textiles, and Interior Design at the University of Alabama. The students that participated will be followed through each year of the program in a studio course. This research will provide the basis for an exploration of the relationship between the experiential learning model that is practiced in the design studio model and the cognitive development of Millennial students.

REFERENCES (APA)

Ackerman, P. L. (1996). A theory of adult intellectual development: Process, personality, interests, and knowledge. *Intelligence, 22*(2).

Anderson, L.W. & Krathwohl, D.R. (2001). A taxonomy for learning, teaching and assessing: A revision of bloom's taxonomy of educational objectives. New York: Longman.

Argyris C. & Schon D. (1978). In Addison-Wesley (Ed.), Organizational learning: A *theory in action perspective*. New York: Addison-Wesley.

Biggs J. (1993). What do inventories of student's learning process really measure? A theoretical review and clarification. *British Journal of Educational Psychology, 63*, 3-19.

Biggs, J. (1987). *Student approaches to learning and studying*. Hawthorn: Australian Council for Educational Research.

Biggs, J., & Collis, K. (1982). *Evaluating the quality of learning: The SOLO taxonomy*. New York: Academic Press.

Bloom, B. S., Hastings, J. T., & Maduas, G. F. (1956). *Taxonomy of educational* York: objectives: The classification of educational goals, handbook 1, cognitive *domain.* New McCay.

de Haan, E., & de Ridder, I. (2006). Action learning in practice: How do participants learn? *Consulting Psychology Journal: Practice and Research, 58*(4), 216-231. doi:DOI: 10.1037/1065-9293.58.4.216

Holt, D. G., & Willard-Holt, C. (2000). Let's get real: Students solving authentic corporate problems. *Phi Delta Kappan, 82*(3), 243. Retrieved from http://libdata.lib.ua.edu:2048/login?url=http://proquest.umi.com/pqdlink?did=63394513&Fmt=7&clientId=31537&RQT=309&VName=PQD

Howe, N. & Strauss,W. (2000). *Millennials Rising.* Vintage

McGlynn, A. P. (2005). Teaching millennials, our newest cultural cohort. *Education Digest, 71*(4), 5.

Okagaki, Lynn, Helling, M.K. & Bingham, G.E. (2009). American Indian college students' ethnic identity and beliefs about education. *Journal of College Student Development, 50*(2), 157.

Piaget, J. (1950). *The psychology of intelligence*. New York: Routledge.

Soloman, B.. (n.d.). Learning Styles Inventory. In North Carolina State University. Retrieved July, 2009, from http://www.engr.ncsu.edu/learningstyles/ilsweb.html.

Synder, B. R. (1971). *The hidden curriculum*. New York: Knopf.

Interior Decoration and Architecture in the United States: Selected Parallels, Oppositions, and Collaborations

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ABSTRACT

This presentation explores the relationship between interior decoration (pre-cursor to interior design) and architecture from the early 19th to the mid-20th centuries in the United States. It highlights parallels and shared concepts; oppositions and arguments; and calls for collaborations and understanding. Using quotes and imaginary conversations from primary sources, information will be presented through a series of dialogs and debates between two presenters who assume various roles, such as architect and/or decorator. The presentation frames the development of each profession and their relationship with each other as it identifies, compares, and contrasts selected areas of importance such as education, gender roles, and design work focus. While method of presentation may be unusual, it develops from a scholarly examination of the two fields and gives an overview of their early relationship, which has had little exploration. Besides identifying similarities and differences, it adds context and insight to today's relationship between the two professions, which continue to parallel, oppose, and collaborate with each other in many of the same areas as a century ago.

Parallels. One of the strongest parallels between interior decoration and architecture was early education. Both followed similar paths of first adopting informal and traditional means of professional preparation, such as self-study and apprenticeships, followed by academic training. As the professions grew, formal academic instruction became more important and readily available. Architecture initiated degree programs in late1860s, while interior-decorating programs began in the last decades of the nineteenth century. Both the American Institute of Architects (AIA; founded in1857) and the American Institute of Decorators (AID; founded in 1931) held discussions about education and proposed curricula and accreditation. Both issued official definitions of their respective professions.

Oppositions. Architecture was a male profession from its inception until well into the 20th century. Women found it difficult, if not impossible, to enter the field. In contrast, women helped define the decorating profession. From the 1880s onwards, writers insisted that interior decoration was a woman's vocation because of her inherent decorating abilities, which she demonstrated in her role as homemaker. Women could more easily enter the field, where they participated in decoration's professional development as lecturers, writers, practitioners, and members of professional organizations.

Friction with architects arose almost as soon as decorating separated itself from wallpaper hangers, furniture salesmen, and upholsterers. Disagreements included work boundaries, professional credentials, length of the profession's existence, and misunderstanding of design intentions. Architects thought that decorators, as the newer profession, did not understand or care about their design aims. They believed that decorators only wanted to carry out their own personal ideas without considering the architecture and many of them were uneducated and unprepared to perform required tasks. Most decorators disagreed.

Collaboration. Period literature often discussed the relationship between architecture and interior decoration. Writers and practitioners insisted that decorators should consider, if not collaborate with, architects to create the best designs for their clients and help eliminate strife. Some even called interior decoration superficial when it ignored architecture, and, therefore, was not good design. A few architects agreed.

NARRATIVE

This narrative discusses the selected areas in the relationship between interior decoration and architecture from the early 19th to the mid-20th centuries in the United States that will be presented in dialogs and debates in the presentation. Narrative and presentation will frame the development of each profession and their relationship with one another in such areas as origins, early education, and design work focus. Scholarly examination of the two fields will help provide an overview of their early relationship, which has had little exploration.

Parallels. Architecture and interior decoration in the United States have similar origins and paths to professionalism. Both come out of craft traditions. During the mid-19th century, architecture separated from the building trades, which included carpenters, master craftsmen and gentlemen responsible for building in America. Anyone could call himself architect. After immigrant architects introduced concepts of professionalism, various groups, who identified themselves as professionals, acted on these ideas by forming organizations and creating standards of practice. Most were trained in the building trades.[1]

During the last quarter of the 19th century, the Interior decorator emerged from among artists, upholsterers, cabinetmakers, wallpaper hangers, salespeople, and others. The Aesthetic and Arts and Crafts Movements with their emphasis upon design reform encouraged this separation and created a market for the decorator who provided art, good taste, and beauty along with furnishings. The decorator's particular expertise for interiors correlated with period emphasis upon specialization and experts.[2]

Early training in the United States for both architects and decorators was informal, consisting of self-study and apprenticeships. In the early 19th century, a few practitioners offered instruction in drawing, perspective, and the orders for would-be American architects. They also could learn from builders' guides and architectural pattern books. Crafts apprenticeships were common in early America but industrialization eliminated the practice because young men preferred to enter factories for paid work. Architectural offices offered jobs and training to young men in the traditional manner of law or medicine. It was a means for many, including women, to enter practice well into the 20th century. Because office training often lacked comprehensiveness, the "first systematic courses in architecture study at American universities" opened at MIT (1868) and Cornell (1871).[3]

Like architecture, early training for decorators consisted of self-study and apprenticeships. Literature encouraged would-be practitioners to read decorating advice books; study the best examples of furnishing and decorative arts in museums, galleries, and homes here and abroad; and/or work with an established decorator or firm. When possible, one could attend art or design school to learn principles applicable to interior decorating. Women were particularly urged to take advantage of their perceived innate good taste and ability for decorating, which was thought to make them better decorators than men were. During the last decade of the 19th and first decade of 20th centuries, some universities and art and design schools began offering courses and degrees in decorating.[4]

By the mid nineteenth century, the growing number of architects in the United States made professionalization desirable and possible. Various professional groups organized. In 1857, twelve architects in New York City formed the American Institute of Architects. Membership and educational standards were minimal, so the AIA functioned more like a gentleman's club with little influence. But the group did attempt to create standards for education and practice. After merging with the Western Association of Architects in 1889, the AIA became a stronger advocate for the profession, pursing licensing and creating a code of ethics. AIA's first definition described the architect as "a designer and supervisor standing between the clients who commissioned the work and artisans who constructed it.[5]

Similarly, as numbers increased, interior decorators formed professional groups. The American Institute of Interior Decorators (AIID; after 1936 the American Institute of Decorators, AID) founded in 1931 in Grand Rapids, Michigan, was the first national organization. Membership requirements were flexible, so it, like the early AIA, was more of a social club. Nevertheless, the group wrote a definition for interior decorator and made strides in identifying educational requirements but paid little attention to licensing. AIID's definition resembled the AIA's in that the decorator "planned, designed, and executed" the interiors and supervised their completion. It also de-

scribed the decorator as "qualified by training and experience" to perform these tasks. But, the term decorator remained fluid well into the 20th century.[6]

Oppositions. Gender was a major area of difference between the two professions. Males dominated architecture and the building fields. Women could not become architects until 1876 when the AIA sanctioned entering practice through a university degree or apprenticeship. Although this allowed women to enter the field, it remained easier for a woman to become an interior decorator than an architect until after the mid 20th century. Similarly, upholsterers and other decorator precursors were predominately male until the last quarter of the 19th century. Only a few women were house decorators earlier, but the number increased rapidly from the 1880s onwards as newspapers, magazines, and vocational guides touted decoration as a woman's profession and stressed her natural abilities for it. Home decoration was a woman's role, so it was a natural transition into the workplace. Unlike architecture, female decorators contributed to the professionalization of decoration in various ways.[7]

The largest area of opposition was professional friction over training, areas of work, and most important, misunderstanding of design intentions. Architects often regarded decorators as untrained, unartistic, and mere merchants or purveyors of goods whose only interest was in sales. Decorators, they believed, were more interested in displaying the latest period styles, which they usually chose arbitrarily with little regard for the design scheme the architect had created. Hence, to architects decorators were "interlopers" especially because most architects regarded themselves "as good an authority as anyone on the treatment of interiors in a house which [they had] designed." Architects also argued that they had years of technical and artistic training and experience, which eminently qualified them in their work. Decorators commonly lacked similar or any training they pointed out, so should they be "subservient to the architect." On the other hand, decorators claimed they were the authorities on interiors because of their training and experience. And they believed they understood the client better than the architect did, especially when both were women.[8]

Design intentions were particularly contentious. Architects thought that when decorators were "turned loose in a house," they made changes to interiors for which there was "absolutely no excuse" and that were "hurtful to a thoroughly artistic conception." Decorators argued that architects lacked training in interior decoration and thought about interiors last in their planning. This made these changes necessary so that decorators could do their jobs of expressing the clients' taste and personality. Thus, the architect and decorator often freely criticized "each other with more vehemence than propriety."[9] Many of their criticisms of one another were justified.

Collaborations. Despite these criticisms, some positive ideas and solutions surfaced. Some within each profession recognized that the two shared an innate, longstanding relationship and similar goals of doing the best for their clients. They saw each practitioner as a specialist in his or her own right and insisted it was critically important for each to understand and respect one another's areas of work. Training was a frequently offered solution. Decorators often were told to acquire some architectural education. Not only could they work better with the architect, but they also would practice "real decorating" that depended more on the architecture and less on furnishings and ornament. Fewer advocated some interior education for architects. And some decorators realized that their profession lacked the "dignity and authority" of architecture, so they advocated that the field model architecture's standardized knowledge, training, and experience. Among the more most obvious and frequently offered solutions was collaboration between architect and decorator. Not only would this help ease the tensions between the two professions, but it also would give the client the best possible design solution.[10]

Parallels, oppositions, and collaborations between architecture and interior decoration have existed from their beginnings and throughout their subsequent professional paths. Most people are more aware of the oppositions than the parallels or, even, collaborations. They know about the disdain, often rightly held, between the two. But, they rarely recognize that the professions shared more similarities than differences in their respective histories. These include their origins in and separation from craft traditions; early education and training methods; development of professional organizations; and goals of helping clients. However, more often in its history, Interior decoration recognized its relationship to and with architecture and called for mutual respect, recognition of separate and different areas of work, and collaboration

with architects. Fewer architects did the same.

By identifying similarities along with differences, the presentation intends to give broader context and deeper of understanding to the origins and development of architecture and interior decoration. It offers potential to increase understanding of and acceptance between and identifies some solutions from history for the two professions, which today continue to parallel, oppose, and collaborate with each other in many of the same areas as a century ago.

REFERENCES (CHICAGO)

(ENDNOTES)

1 Architecture began to become an identifiable profession as early as the Renaissance in Europe although the artisan remained. In contrast, the upholsterer who functioned as a decorator emerges during the 16th century. Later architects, such as Robert Adam, or artists, Charles LeBrun or William Kent, served in the capacity of interior decorators. Mary N. Woods, *From Craft to Profession: The Practice of Architecture in Nineteenth-Century America*. (Berkeley, CA: University of California Press), 6-15; and Cecil D. Elliott, *The American Architect from the Colonial Era to the Present*, Jefferson, NC: McFarland & Company, Inc. Publishers, 2003.

2 See, for example, "The Woman's Hour: House Decorating as a Profession," *The Boston Daily Globe*, July 5, 1885, 13; Catherine W. Zipf, *Professional Pursuits: Women and the American Arts and Crafts Movement*. (Knoxville: University of Tennessee Press, 2007), 9; Peter McNeil, 'Designing Women: Gender, Sexuality, and the Interior Decorator, c. 1890-1940,' *Art History*, vol. 17, December 1994, pp. 631-633; Cheryl Robertson, "From Cult to Profession: Domestic Women in Search of Equality," in *The Material Culture of Gender, The Gender of Material Culture*, ed. Katharine Martinez and Kenneth L. Ames (Winterthur, DE: Henry Francis du Pont Winterthur Museum, 1997), 89; Robert H. Wiebe, *The Search for Order 1877-1920* (New York: Hill and Wang, 1967), 174-175; and Dorothy Schneider and Carl J. Schneider, *American Women in the Progressive Era, 1900-1920* (New York: Facts on File, 1993), 13.

3 Wood, 53-67.

4 The first courses and degree programs in interior decoration have not yet been fully identified. Art and design schools existed in America from the early nineteenth century but few apparently taught interior decoration. The University of Pennsylvania proposed offering courses in interior decoration in189 as did the School of Applied Design for Women in 1893; "University of Pennsylvania," *The New York Times*, November 6, 1892, 11; and "Doing a Valuable Work: Plan and Scope of the School of Applied Design for Women," *The New York Times,* August 20, 1893, 16

5 Wood, 41-42 & 4.

6 American Society of Interior Designers, *The History of ASID: 30 Years of Advancing the Profession*, (Washington D.C.: ASID, 2005), 1 and McNeil, 35. Women were part of the founding group and held offices within AIID. Nancy V. McClelland was the first woman national president beginning in 1941.

7 Virginia Penny. *The Employments of Women: A Cyclopaedia of Woman's Work*, (Boston: Walker, Wise & Company, 1863), 486; Zipf, 9-12; McNeil 633; Robertson, and Bridget May, "Nancy Vincent McClelland (1877-1959): Professionalizing Interior Decoration in the Early 20th Century," *Journal of Design History*. Vol. 21, 2008.

8 C. Matlack Price, *The Practical Book of Architecture*, (Philadelphia: J. B. Lippincott Company, 1916), p 270.

9 "Doing a Mansion to Fit the Furniture," *The New York Times*, March 27, 1904, SM1 and C. Matlack Price, "Architect and Decorator: The Relations Between Two Specialized Professions," *Good Furniture*, June, 1915, 554; and Nancy McClelland, "Interior Decoration," in *An Outline of Careers for Women*, ed. Doris E. Flesichman, (New York: Doubleday, Doran and Company, 1929), 247 and 252.

10 Matlack, 1916, 244-245; Nancy McClelland, *The Practical Book of Decorative Wall Treatments*, Philadelphia: J.B. Lippincott Company, 1926, 23-24; and "Decorators Task Not Easy," *The Washington Post*, November 28, 1909, M9.

The Millenials: Assessing Suburban Housing Design and Development for a Unique Demographic

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ABSTRACT

PURPOSE

A new and diverse generation of individuals is beginning to overtake the residential marketplace in search of a new kind of life space. This group thinks, works, socializes and communicates in very different ways than past generations. The purpose of this project is to examine the requirements and desires of Generation Y with relation to suburban housing design in order to build more competently, avoid inefficiency, and suggest a long-term, sustainable model for living to the Midwest, residential real estate market.

METHODOLOGY

Ten students majoring in Interior Design, as part of their typical coursework for a junior level residential design studio course, worked in partnership with a credible local architect, as well as a top residential developer for the purpose of collaborating to study the generation of individuals born between the mid 1970's and mid 1990's. An effort was made to identify family values, personality, technology issues, as well as general lifestyle and social matters facing this demographic. In addition, a sample of Generation Y individuals was surveyed regarding their tastes and intentions with relation to future home purchase and style. This information was subsequently analyzed and used to create a housing design compatible with the study findings for a specific real estate development. The deliverable outcome includes floor plans and exterior elevations created by the students for a modern architectural structure based on the collected evidence.

SUMMARY

Many notable trends were discovered among Generation Y with relation to lifestyle and residential housing requirements. Of primary concern was the inclusion of flexibility in planning. The Millenials wish to personalize their spaces while maintaining the option of easy change. This indicates that rooms which could serve multiple purposes are highly valued. Also, most of the studied individuals are highly concerned with energy efficiency, and are willing to make interior trade-offs, such as a smaller kitchen, for the option of implementing some simple, sustainable features into the home. In addition, many in this generation are not financially capable of furnishing a home right away; therefore the provision of built-in features, such as a desk or bookshelf area for use in telecommuting, is greatly valued. Next, the Millenials plan to seek a home that is fun, funky, colorful and smart. The desire to entertain often is significant, yet the suburban development where the home resides should reflect urban characteristics, and offer plenty of local opportunities for socialization and amusement. Finally, Generation Y maintains an interest in redefining tradition. They maintain a strong sense of community and remain extremely family oriented, yet they are inspired by the meshing of historical styles with modern materials and methods.

Based on this information, several architectural models to support the above mentioned criteria have been developed. The students and project participants remain hopeful that these new models will remain reasonable and financially feasible to build, be widely accepted by this unique population of individuals, and that more long-term and sustainable housing developments such as this will be accepted and implemented throughout the Midwest.

NARRATIVE

INTRODUCTION

A new and diverse generation of individuals is beginning to overtake the residential marketplace in search of a new kind of life space. This group thinks, works, socializes and communicates in very different ways than past generations. Without a strong understanding of the needs of any unique population, change and improvement with relation to architectural structure and interior environment cannot occur. This is particularly true of our residential domiciles, where tract building in suburban America continues to remain and monotonous, and oblivious to the individual personalities and behaviors of changing households.

The prospect of improved building design and planning lies with the young innovators and designers of today. Who better to realize the needs of future generations than the youthful students who are currently undertaking studies in the profession of interior design? The purpose of this project is to use a select student population to examine the requirements and desires of Generation Y with relation to suburban housing design in order to build more competently, avoid inefficiency, and suggest a long-term, sustainable model for living to the Midwest, residential real estate market.

LITERATURE REVIEW

The review of literature with relation to this topic revealed that while substantial research has been completed with the intention of studying the familial structure and the psychological ties associated with “home” as well as the psychology of Generation Y, no studies have specifically focused on housing for this new generation of individuals in a suburban atmosphere.

METHODOLOGY

Prior to the start of the fall 2009 semester, the Indianapolis based residential builder and developer, Estridge Homes, was contacted to assess their interest in collaborating with Interior Design Technology students from Indiana University-Purdue University Indianapolis. Estridge was selected based on the professional qualities and strong community presence which they retain. The response was positive, the lead architect for the organization was assigned as the primary contact, and the logistics of the project were determined.

Ten students majoring in Interior Design, as part of their typical coursework for a junior level residential design studio course, would work in partnership with Estridge for the purpose of collaborating to study and create a new model of housing for the generation of individuals born between the mid 1970’s and mid 1990’s. The students would follow the design process to program, conceptualize and design a suburban home appropriate for Generation Y. A project team including architects, designers, estimators and marketing personnel from Estridge would meet with the students every 3 weeks for the duration of the semester to assess the progress of the project, as well as provide realistic feedback and critique to the students based on each individual’s expertise. The deliverable outcome would include floor plans, exterior elevations and related details created by the students for a modern architectural structure based on the collected evidence.

Upon commencement of the semester, students were each assigned a relative topic, and required to undertake extensive research in an effort to identify family values, personality traits, social issues, as well as general lifestyle and other matters facing this demographic. Findings were presented to the class in the form of power point presentations. In addition, a sample of 100 local Generation Y individuals was surveyed by the class regarding their tastes and intentions with relation to future home purchase and style in the Indianapolis area. This information as a whole was subsequently analyzed and used to create housing designs compatible with the study findings for a specific real estate development called Symphony, located in Westfield, IN. Westfield is located approximately 20 miles north of Indianapolis, and houses a population of approximately 24,000.

RESULTS AND DISCUSSION

Many notable trends were discovered among Generation Y with relation to lifestyle and residential housing requirements. Of primary concern was the inclusion of flexibility in planning. The Millenials wish to personalize their spaces while maintaining the option of easy change. This indicates that rooms which could serve multiple purposes are highly valued. In some instances, movable walls, lighting which could be interchanged based on mood, and impermanent technology components were proposed as a means of allowing any homeowner ease in change, and the ability to personalize each space to meet personal needs and desires.

Also, most of the studied individuals are highly concerned with energy efficiency, and are willing to make interior trade-offs, such as a smaller kitchen, for the option of implementing some simple, sustainable features into the home. Unlike Generation X and the baby boomers, Generation Y does not see the value in a state-of-the-art kitchen or an elaborate fireplace and hearth. They are highly educated in green design methods and practices, and desire recycling centers, tank less water heaters, grey water systems, rain barrels and natural building materials. They also demand that the construction process follow environmentally conscious procedures, with builders giving greater consideration to the orientation of the home on the property, conserving trees whenever possible, using renewable resources and recycling excess materials upon completion of construction.

In addition, many in this generation are not financially capable of furnishing a home right away; therefore the provision of simple, low maintenance built-in features, such as a desk for use in telecommuting, or the presence of a backyard fire pit is greatly valued. Furniture that is inexpensive to purchase and which can be self-assembled, such as that marketed by IKEA, was also identified as being desired. Most in this population were not overly concerned with furniture quality as they instead value ease in change and versatility.

Next, the Millenials plan to seek a home that is fun, funky, colorful and smart. The desire to entertain often is significant, yet the suburban development where the home resides should reflect urban characteristics, and offer plenty of local opportunities for socialization and amusement. Within the homes themselves, areas for recreation, such as swimming pools and a game or billiard room, and areas to be pampered, such as a spa-like bathroom with a whirlpool bathtub were identified as priority. Second floor balconies overlooking the neighborhood which simulate an urban environment were identified as ideal, and outdoor spaces such as patios which connect them with the community played a role in the orientation of the home on the lot. Saturated color schemes are not at all intimidating to this generation, and most desire a smart home with advanced technology. The inclusion of spaces for family gathering is not to be ignored as this is one of the most family oriented generations to date.

Finally, Generation Y maintains an interest in redefining tradition. They uphold a strong sense of community, and are inspired by the meshing of historical styles with modern materials and methods. Glass curtain walls interconnected with traditional brick exteriors to create and eclectic exterior, and second floor overlooks contribute to open communication among house occupants. Acoustics were not identified as a primary concern, but high visibility throughout the home contributes to the instant gratification attributes of this population.

CONCLUSIONS AND RECOMMENDATIONS

This research and analysis should serve as a wake-up call to the construction and real estate development industries. Generation Y, today's first-time homebuyers, are seeking something new and different in the way of design, materials and function, and this highly nurtured population won't settle until they get what they want. Builders must begin to offer sustainable or green building options, understand advanced technology needs, yet offer flexibility in planning like never before.

The students and project participants remain hopeful that these new models will remain reasonable and financially feasible to build, be widely accepted by the residential marketplace, and that more long-term and sustainable housing will be accepted and implemented throughout the Midwest, as well as nationally, based on these recommendations.

REFERENCE LIST (MLA)

Adams, John S. “The Meaning of Housing in America.” Annals of the Association of American Geographers 74.4 (2005): 515-526.

Adams, John S. “Residential Structure of Midwestern Cities.” Annals of the Association of American Geographers 60.1 (2005) : 37-62.

Al-Momani, Ayman H. “Structuring Information on Residential Building: A Model of Preference.” Engineering Construction and Architectural Management 7.2 (2000) 179-190.

Armour, Stephanie. “Real Estate Agents Court Gen Y.” USA Today 16 Jun. 2008.

Combs, E. Raedene, Gabb, Betsy S., Lodi, Kathleen, and Schriever, Lee. “Designing Housing for the Future: An Interdiscipliary Approach.” Journal of Interior Design 14.1 (1988): 21-28.

Cooke, Thomas J., Mulder, Clara H. “Family Ties and Residential Locations.” Population, Space and Place. 15.4 (2009): 299-304.

Duncan, F., and Kilty-Padgett R. “Innovative Approaches to Teaching Residential Design.” Journal of Interior Design 10.1 (1984): 17-25.

Mulder, Clara H. “The Family Context and Residential Choice: A Challenge for New Research.” Population, Space and Place 13.4 (2007): 265-278.

The Psychology of Space in a Culture of Fear: Unmasking Residential Interiors in Saõ Paulo, Brazil

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ABSTRACT

Enhancing security through the built environment has been a topic of interest for scholars during the last several decades. Exploration of the problematic nature of designed fortification has focused largely on the developments in urban planning and architecture (see: Caldeira, 2001; Ellin, 2001; Low, 2008) with little exploration regarding the institutionalization of these fears in interior spaces. Behind the gates and walls of fortified urban enclaves created for the elite are interiors that express dominant emotive institutions and operate to legitimate spatial practices of exclusion and discrimination.

A variety of methods were used to collect data in the field including, open-ended interviews, observation of participants in their homes, and photo-documentation. This study represents the preliminary phase of investigation of the relationships between insecurity and the interior environment.

Responses to insecurity in urban design have been classified into three typologies: retribalization, nostalgia, and escapism (Ellin, 2001). Retribalization is the desire to reassert cultural distinctions in response to homogenization in the globalized world. Vernacular design and the idiosyncracy of the local are embraced to connections and ownership to particular areas or groups. Nostalgic design focuses on creating connections across time through the idealization of the past and the insertion of self into the history of location. In escapism, rather than imagining cultural or temporal connections to place, design turns away from connecting and retreats. In the homes that served as the texts for analysis in this research, there was evidence of at least one response in every residence and sometimes of all three in combination.

The construction of walls, removal from public interactions, and institution of other security measures on the exterior of the home creates the need for an impression of freedom and openness on the interiors. Differentiation and exclusion are created not only through those external security measures but are embedded in the design language naturalized within the space as expressions of taste. The productions of these interiors are rituals engaged in to impose order, enact cultural myths, create personal and social identities, and legitimize socio-spatial injustice.

The interiors we examined in this study clearly demonstrated the response to feelings of grave insecurity in the urban environment through practices of nostalgia, retribalization, and escapism. The retreat and fortify reflex led to attempts to control encounters through the elimination contact with the unexpected. The aesthetics, spatial relationships, and security measures either responded to fear or were created to compensate for the disruptions to identity caused by those direct responses (see fig 4).

The negative impacts of this urban paranoia are felt not just by those who are excluded or diminished as outsiders, but also those who are trapped within this newly prisionized society. As ‘environment-making is an open-ended and speculative process for projecting possibilities of how we might live’ (Smith, 2005, p. 51) we argue that the approaches taken in the design of the interior environment problematize relations and spaces on the border between those who have and those who can’t.

NARRATIVE

As part of efforts to feel protected and secure, the societal elite in Saõ Paulo have created fortified residences increasingly disconnected from surrounding communities. The occupants rely upon mechanisms of exclusion created through hard architecture and threats of force to create safe zones for shelter from the discomforts of the unexpected. The built environment in Saõ Paulo increasingly "reflects deep social anxieties operating as systems of protection and social filtration which confer or deny access on the basis of ownership and affluence" (Atkinson & Blandy, 2007, p. 445).

There has been a sharp decrease in public confidence in the abilities of the nation-state to provide security and internal controls and consequently, an increase in subnational responses through the creation of exclusive and excluding environments acting to reinforce social inequity (Featherstone, 2008). As such "social trust and mutual identification have been slowly replaced by suspicion and resentment, animosity aimed especially at those social groups that are marginally integrated into political and economic life" (Barker, 2009, p. 23) producing national institutions that value private citizenship over collective good.

Social life is "fundamentally recursive" and as human beings create interaction patterns based on past patterns the entrenched structures of social discord become rigidly institutionalized (Giddens, 1993). The failure to engage in public spaces and unscripted interactions fuels the fear-fantasies of the elite leading to further withdrawal in a self-perpetuating cycle of increasing segregation and hostility.

PARANOID URBANISM

During the 1980's Brazil underwent an economic restructuring that increased fiscal distances between socio-economic classes while simultaneously narrowing spatial distances (Caldeira, 2001). The juxtaposition of poverty and opulence caused the wealthy to fear envy more intensely. To create a sense of security they isolated themselves from anything that reminded them of their own discomfort. The discourse of fear as part of the fabric of contemporary urban life exists even where statistics demonstrate marked decreases in crime. The everyday (re)expression of fear legitimizes avoidance of difference. Security concerns in residential interiors are intensified by the conceptualization of home as a place providing respite from the uncertainties of the public world (Spain, 1992).

These conceptual boundaries are realized in the physical forms of walls, security systems, gates, private police, and cameras designed to control the movements of outsiders (Domosh & Seager, 2001). Rather than relieving wealthy residents of their worries, these security devices instead serve as constant reminders. Residents of fortified enclaves feel sharp indignation at the injustice of their self-inflicted imprisonment while their withdrawal from public spaces simultaneously exacerbates the dangers outside. The relationships between those who belong inside and those who don't have become increasingly antagonistic as the humanizing encounters previously occurring in public spaces are avoided and the divide becomes institutionalized in physical impenetrability. There is some feeling that the measures taken decrease the risk of urban life, but 'such separatism also leads to more ignorance of others and less tolerance of difference. It feeds an 'us against them' mentality and a tendency to defend one's borders, family and self with gates as well as guns' (Ellin, 2001, p. 872).

RESEARCH DESIGN

A variety of methods were used to collect the ethnographic data in the field including, open-ended interviews, observation of participants in their homes, and photo-documentation. All of the interviewees were European Brazilians and the absence of minority participants is indicative of the racial and ethnic composition of the targeted social class. While the exact financial status of the participants is unknown, interviewees were business and creative executive and belonged to the wealthiest 5% of wage earners whose income accounts for 36.6% of national income (United Nations Development Programme, 2008).

The visual analysis of the spaces was performed using Rose's critical visual methodology, (Rose, 2007) in which the interiors were considered productions of visual culture. The interpretation of the meaning of the interiors required exploration of sites of production, existence (the interior itself), and audience. These were each approached through an examination of technological, compositional, and social modalities.

NOSTALGIA, RETRIBALIZATION, ESCAPE

Responses to insecurity in urban design can be classified into three typologies: retribalization, nostalgia, and escapism (Ellin, 2001). Retribalization is the desire to reassert cultural distinctions in response to increased global homogenization. Vernacular design and the idiosyncrasy of the local are valued as part of establishing the strength of connections and ownership to particular areas or groups. Nostalgia, rather than choosing connection to place as the locus of identity, creates connections across time to an idealized past. Ownership and belonging are established through production of a timeline that inserts self into the history of a location. Escapism is a more pronounced form of remaking current circumstances. Instead of cultural or temporal connections to place, escapism retreats from connections. In the homes that served as texts in this research, there was evidence of at least one response in each and sometimes all three in combination.

In Saõ Paulo, wealthy residents have created cultural myths in which to recast themselves as heroes in the struggle for the values of decency, culture, and citizenship. This sentimental recall leads to the adoption of neo-traditional tendencies in interior aesthetics to both emulate European counterparts and maintain the myth of cultured Brazil. Just as Brazilian democracy exists in political society but is not fully realized in civil society, the Brazilian Modernism adopted elevates the ideals of improved citizenship through Good Taste without the accompanying social messages.

In response to a city fragmented by walls and security, interiors are spacious and open (see figure 1). Open public spaces with free circulation patterns have historically been part of the interactive freedoms and democratic ideals of an open society as they allow for the possibility of inattention to or transgression of class. Closing these spaces and monitoring movement denies physical and social mobility, emphasizing differentiation, especially as it is tied to physical difference. Within the interiors of the homes of the elite, the open free-circulating spaces are recreated as a contrast to the fractured vista of the walled city and class can again be denied but only by those who have already been admitted (see fig. 2). Large, uninterrupted vistas to luxuriously landscaped and maintained private yards create the feeling of free interaction with the exterior environment. These exterior spaces however, are closely bound by walls, guards, and gates.

The elite in Brazil are overwhelmingly of European descent. The desire to ascribe to the white, European aesthetic canon is a reflection of a struggle to differentiate themselves via that connection from the darker skinned, immigrant *nordestinos*. Adherence to Modernism is an effort to create cultural identity and constitutes retribalization through shared norms and values. By virtue of its history, it also responds to a feeling of nostalgia by tying Brazilians to a period in their history before recent economic restructuring, government unrest, changes in immigration patterns, and the shift to a mixed urban structure.

Modernism in interior design is akin to abstraction in art; it is considered a reflection of high culture and taste. The ability to appreciate and afford the objects and finishes required for this aesthetic, serves to divide insider and outsider. These interiors set the stage for the performance of the cultural values of appreciation instead of use, minimalism instead of display, and patronage instead of ownership. They make transgression through difference a manner of social control over freedom of expression by outsiders (such as workmen or servants). The acceptance of these aesthetic norms as representative of good taste also restricts the activities that can appropriately occur and still be considered tasteful.

This dominant European aesthetic of order as beauty is disturbed when the vista includes favelas and active street life (see fig. 3). That contrast creates a feeling of tension for those viewing through the ideals of Modernism. Walls were built to shut out visual disarray and order and organization are re-established inside. This does not, however, translate into an aesthetic value for sameness. Pattern houses and homogeneity of design valued in suburban neighborhoods in the US, in Brazil are associated with inexpensive worker housing (Holston, 1991). Homeowners go to great lengths to personalize their houses and customization provides a primary method of expressing individuality. Ironically, just as in the favelas, doors, windows, wall coverings, and other elements of the interiors are site-specific and not mass-produced (see fig. 4).

The emphasis on cleanliness and order exists in stark contrast to the public spaces that have largely been abandoned by the wealthiest residents. Materials requir-

ing detailed daily maintenance such as glass, marble, and stainless steel, are heavily utilized and pristinely maintained. The maintenance demonstrates status through the possession of sufficient leisure time for necessary cleaning or the financial status to buy someone else's time (see fig. 5). During one interview a woman related a moment during a recently thrown dinner part when a guest, a prominent bank president, pointed out a smudge on his glass and suggested that she consider finding better help. The memory of this still mortified her and while at the time of the interview she had yet to replace the young woman responsible, the extra scrutiny under which the woman now worked was apparent.

CONCLUSIONS

Residents in exclusive housing in Saõ Paulo create psychological protection for themselves in their residential environments through nostalgia, retribalization, and/or escapism. The construction of walls, removal from public interactions, and institution of exterior security measures creates the need for freedom and openness on the inside. Differentiation and exclusion are embedded in the design language naturalized within the space as taste. The productions of these interiors are rituals engaged in to create a sense of order, enact cultural myths, create personal and social identities, and legitimize the existing socio-spatial injustices.

REFERENCE LIST (APA)

Atkinson, R., & Blandy, S. (2007). Panic Rooms: The Rise of Defensive Homeownership. *Housing Studies*, *22*(4), 443 - 458.

Barker, V. (2009). *The Politics of Imprisonment*. Oxford, UK: Oxford University Press.

Caldeira, T. P. (2001). *City of Walls: Crime, Segregation, and Citizenship in Sao Paulo*. Berkeley, CA: University of California Press.

Domosh, M., & Seager, J. (2001). *Putting Women in Place: Feminist Geographers Make Sense of the World*. New York, NY: The Guilford Press.

Ellin, N. (2001). Thresholds of Fear: Embracing the Urban Shadow. *Urban Studies*, *38*(5-6), 869 - 883.

Featherstone, M. (2008). The State of the Network: Radical Anxiety, Real Paranoia and Quantum Culture. *Journal for Cultural Research*, *12*(2), 181 - 203.

Giddens, A. (1993). Problems of Action and Structure. In P. Cassells (Ed.), *The Giddens Reader* (pp. 88 - 175). Standford, CA: Stanford University Press.

Holston, J. (1991). Autoconstruction in Working-Class Brazil. *Cultural Anthropology*, *6*(4), 447 - 465.

Rose, G. (2007). *Visual Methodologies: An Introduction to the Interpretation of Visual Materials* (Second.). Thousand Oaks, CA: Sage Publications.

Spain, D. (1992). *Gendered Spaces*. Chapel Hill, NC: The University of North Carolina Press.

United Nations Development Programme. (2008). Statistical update 2008/2009 - Country Fact Sheets - Brazil. *Human Development Reports*. Retrieved September 28, 2009, from http://hdrstats.undp.org/en/2008/countries/country_fact_sheets/cty_fs_BRA.html.

Figure 1: Entry Hall of prominent designer, Morumbi, Jardim Everest , Sao Paulo.

Figure 2: Second story patio of home under construction, Consolação , Sao Paulo

Figure 3: Autoconstructed housing in one of many favelas that exists in close proximity to the residences, businesses, and services for the wealthy.

Figure 4: Living Area of a business executive, Pinheiros, Sao Paulo.

Figure 5: Dressing Room of prominent designer, Morumbi, Jardim Everest , Sao Paulo.

Growing Home and Neomorphism: Creating living structures and a new design language

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ABSTRACT

Nature grows structures that evolve and maintain themselves while humans build structures to meet desired goals of a specific culture. Recently there have been projects and theoretical discussions on combining the human and natural ways of building.(Armstrong, 2008; Calts & Zurr, 2008; Cruz & Pike, Neoplasmatic Design, 2009; Gins & Arakawa, 2000; Steele, 2005; Watts & Affleck, 2008).

These ideas use the biological processes of natural elements, or growing elements, in a built human design scheme to further the design goals. Such a combination of nature and human building requires a new design vocabulary to describe the design project. This is a new design language I have termed Neomorphism.

These ideas use the biological processes of natural elements, or growing elements, in a built human design scheme to further the design goals. A growing element is a living organism incorporated into a design scheme, taking part by simply fulfilling its natural biological or ecological processes. Such a combination of nature and human building requires a new design vocabulary to describe these projects. I have proposed the term “Neomorphism”. While this master’s thesis only introduces this emerging design vocabulary, the body of the thesis presents a more complete project titled *Growing Home*.

Growing Home is a model for a residential structure constructed from living bamboo, designed for stateless persons and refugee populations. The experimental sample population in the thesis is the Bhutanese refugees, also known as Lhotsampas, who have been living in Nepal since the early 1990s. Nepal was chosen for the project context because it provides a specific natural, social, political, and cultural environment in the creation of a realistic design program. (Ranard, 2007)

The goal of this presentation is to introduce the emerging design vocabulary of Neomorphic Design and to analyze it in the context of the interior within the proposed project of this thesis, Growing Home.

NARRATIVE

PROJECT CONTEXT: REFUGEES

Seven million refugees currently in the world are living in refugee camps for 10 years or longer. The housing for these longer term or protracted camps is not significantly different from other refugee camps as the population uses United Nation High Commission for Refugees (UNHCR) tents created to house six individuals. Refugee camps of all types have been shown to be unhealthy according to UN reports because of close quarters and shared resources such as water and waste disposal sites. (Slaughter, 2009).

Host countries of refugee camps also complain of environmental degradation and natural resource depletion (Berry, 2008). Refugee housing structures in general can be sources of contention, as people already living in areas where a refugee camp is located may perceive the refugee settlement as an intrusion(Banki, 2004).

Other UNHCR reports discuss the fatigue of countries supplying relief as these protracted refugee camps require constant upkeep. A 2004 report states that, “40 percent of UNHCR’s budget is spent in care and maintenance of refugee camps rather than on solutions” and that these limited funds and waning commitment by donors lead to “stop gap solutions such as plastic sheets”, to replace work tent shelter materials (United Nations High Commission for Refugees, 2004). There are no regulations about how refugee housing is built or utilized. The UNHCR organizes and maintains refugee housing with the help of the refugees themselves, when possible.

PROJECT CONTEXT: REFUGEES IN NEPAL

Refugees in Nepal are of Bhutanese origin and are descendants from those who immigrated to southern Bhutan from Nepal in search of farmland, according to the United States Department of State Cultural Orientation Resource Center (COR). These immigrants were isolated from the rest of Bhutan, and a distinct Lhotsampa culture developed. In 1958, Lhotsampas were given Bhutanese citizenship and were permitted to work for the government. In the 1980s, the ruling majority of Bhutanese or Druk culture became concerned over the population shift that was occurring as the Lhotsampas began to gain a larger minority. The Druk Monarchy and government created a series of policies that imposed traditional Druk customs while banning Nepali and Lhotsampa customs (Didier, 2000).

After years of conflict, Lhotsampas began to organize and advocate for democracy and freedom resulting in large-scale violent protests in the early 1990s. In December of 1990, the government of Bhutan declared that any Lhotsampas who could not prove citizenship would be expelled from the country, and since 1990, Bhutan has not permitted a single refugee to reenter the country (Watch, 2003). Soon after refugee camps were created in Nepal to cope with the forced migration. It is estimated that 130,000 Lhotsampas still live in the refugee camps established over ten years ago in Nepal.

PROJECT CONTEXT: NEPAL

Nepal is a landlocked nation in Asia about the size of Arkansas. Tibet borders Nepal in the North and India borders Nepal to the East, West, and South. One third of the 26.9 million Nepalese lives below the poverty line according to the Nepal Living Standards Survey (Central Bureau of Statistics, Nepal, 2008).

The majority of the population is involved in small scale agricultural or subsistence farming. In fact, agriculture encompasses almost one third of the Gross Domestic Product of Nepal (Agency, 2009). Most members of the new ruling elite have descended from the old landed elite. Social stratification and cultural practices are maintained by the traditional extended family-based social system (Andrea Matles Savada, 1991).

PROJECT INTRODUCTION: GROWING HOME

Growing Home is a way to build that does not create total permanence but still offers functions found in permanent structures such as solid walls and built in cooking areas. If no longer needed the structure would revert to a grove of bamboo. The name of the project specifically includes the term *home* to reflect the psychological desires one has in a home as opposed to a house. A home, as defined by Anthony Giddens, is more than a physical place, but a “setting in which basic forms of social relations and institutions are both constituted and reproduced”. (Giddens, 1984). *Growing Home* is also a secure, more permanent home than currently used structures but without being a fully permanent space. Nepal is the context for this project because it provides a specific environment, social, political, and cultural context to create a realistic program.

PROJECT METHODOLOGY

The tradition and contemporary culture of the Lhotsampas refugee population was researched and a theoretical and realistic sample family was modeled to reflect the findings. Information pertaining to current housing and traditional housing for the sample refugee population was evaluated to determine the existing conditions and needs. Research was also conducted to examine how the housing traditions of the Lhotsampas compare to that of the refugee camps host country, Nepal. All of this research informed the design program for the interior of *Growing Home.* Materials that create the exterior were chosen based on research and communication with ABARI, A Bamboo and Adobe Research Institute located in Nepal.

GROWING HOME DESCRIPTION

Growing Home weaves living elements of bamboo together to create a building structure that becomes a home. As a result, this project is also a study of the subsequent interiors in these structures. This project will examine how such a design can fulfill the need for shelter, and renew the ability to continue the specific traditions of home unique to each displaced culture. This project simultaneously promotes the contemporary idea of designing spaces deeply connected with the earth. The estimated cost for required materials is dependent on the desired size of the structure, but all materials can be obtained on site.

The project *Growing Home* creates a living house of bamboo, grown together as it stands in the ground. The structural, living bamboo "studs" will be connected with a woven wall of smaller bamboo pieces. The interior finish applied to the woven bamboo layer will be an adobe cob mixture using the soil on site and plant refuse to help strengthen the cob. The intermediary layer of woven bamboo separates the structural bamboo studs from the adobe cob interior mixture so that the interior is able to function as needed and yet allows the exterior planted structure to continue to grow.

FINDINGS

Growing Home meets the needs of the sample family below and provides solutions for the major needs determined by the aforementioned research. This sample family was found to include one paternal grandmother, one paternal aunt, both maternal grandparents a mother and father, as well as one paternal grandmother, one paternal aunt, both maternal grandparents, and two children- one of each gender.

The resulting structure gives privacy for the married couples and the individual family unit as a whole, something that current housing does not provide. The space designed also establishes a gathering space on the exterior of the home for continued involvement within the larger refugee camp community. *Growing Home* also creates an indoor and outdoor cooking and food preparation space that situated to create cross ventilation and smoke removal to preserve indoor air quality, another major issue not addressed in current refugee housing. Spatial boundaries established in the design encourage separating the food preparation and waste disposal areas in an effort to combat the numerous problems present in existent refugee housing. Finally, Growing Home also uses the insulation properties of the interior adobe cob finish to address the need for warmer housing during colder temperatures.

NEOMORPHISM

In researching *Growing Home*, awareness of the vast history and current projects looking to include living materials became apparent. In conducting the *Growing Home* project research, it was determined that the combination of nature and human building has never been fully acknowledged, particularly in academic scholarship. Additionally, the increasing interest in combining nature and human building is a reflection of the goals held in the developed world's contemporary culture. I propose that these projects constitute a new design vocabulary, "Neomorphism" (the Latin root *neo* meaning new and *morphism* descending from *morph*, which means to change.) Literally, "New Growing" symbolizes the progressive nature of the projects without creating a definitive label that would constrict or limit the concept of what *Neomorphism* is or could become.

Neomorphic Design describes all projects with living materials, or growing elements, in the design. *Neomorphism* is an umbrella descriptor encompassing current aesthetics such as morphogenesis, bio-architecture, neoplasmatisim, and earth architecture, unifying them based on their shared use of growing elements. This design language is different textually as well because verbs connect to the elements and principles of design terms to describe the living component Neomorphic design is not just concerned with aesthetics and function

but also the incorporation of the earth that surrounds us, and seeks to reflect actions within the elements and principles of the Neomorphic design language and terminology. Neomorphic design is a proposed evolution in design that reflects the current hope of a new, harmonious relationship with the natural environment.

REFERENCE LIST (CHICAGO)

Adams, C. (2008). Bamboo Architecture and construction with Oscar Hidalgo. *Natural Building Colloquium Southwest.* Networks Productions.

Agency, C. I. (2009, Janurary 22). *United States Central Intelligence Agency.* Retrieved October 5, 2009, from CIA World Fact Book: https://www.cia.gov/library/publications/the-world-factbook/geos/np.html

Alter, L. (2008, June 3). *Bamboo Housed Stand up to Earthquakes.* Retrieved July 28, 2008, from Tree Hugger: www.treehugger.com

Andrea Matles Savada, e. (1991). *Nepal: A Country Study.* Washington: United States Library of Congress.

B and T World Seeds. (2009). *Photographs of Plants*. Retrieved 2009, from http://www.b-and-t-world-seeds.com/images/447590.jpg

Banki, S. (2004). *Refugee Integration in the Intermediate Term: A Study of Nepal, Pakistan, and Kenya.* Switzerland: UNHCR.

Berry, L. (2008). *The Impact of Environmental Degradation on Refugee Host Relations: A Case Study from Tanzania.* Switzerland: UNHCR.

Bhutan. (2008). *Bhutan Tourism*. Retrieved 2009, from Bhutan Culture: http://www.hiketohelprefugees.org/history.aspx

Blaha, M. (2009). *I love Cob*. Retrieved 2009, from What is Cob?: http://ilovecob.com/about

Central Bureau of Statistics, Nepal. (2008). *Nepal in Figures.* Kathmandu: Governmentof Nepal.

Didier, B. (2000). Displacement, Human Rights and Conflict Resolution: An International Conference on Forced Migration in the South Asia Region. *Journal of Refugee Studies* (pp. 223-226). Calcutta: Journal of Refugee Studies.

Giddens, A. (1984). *The Constitution of Society: Outline of the Theory of Structuration.* California: University of California Press.

Government of Bhutan. (2008). *Bhutan Celebration 2008*. Retrieved 2009, from http://www.bhutan2008.bt/ndlb/themes/centenary/images/dress.jpg

Hidalgo-Lopez, O. (2003). *Bamboo: The Gift of the Gods.* O. Hidalgo-Lopez.

Effects of Interior Spatial Features on Use and Perception of Space in Assisted Living Facilities

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ABSTRACT

The population in the United States is experiencing a dramatic increase in the number of older adults and this trend will continue with the aging of the baby boomer generation. Many of these older adults want to remain independent in the community. However, when physical or mental health needs make that impossible, purpose-built facilities provide alternative housing/residential care options. The most rapidly growing type of residential care for older adults in the United States is assisted living facilities. It is important that design practitioners and researchers understand whether current purpose-built housing for older adults, such as assisted living facilities, are addressing their shelter and healthcare needs.

The purpose of this study was to explore if specific interior spatial features (light, color, floor covering, and furniture) in the kitchens, dining rooms, and sitting areas of two assisted living facilities, designed with different goals, influenced space use and perception of space of the occupants. Based on Weisman, Chaudhury, and Moore's (2000) Environment and Aging Model, the study explored two specific research questions: 1) *Is there a difference in observed behavior of residents in the kitchen/dining/sitting areas of the two facilities?* and 2) *How do residents and staff perceive the interior spatial features in the kitchen/dining/sitting area of each of the two facilities?*

The methods used in this study were photographic analysis, behavioral observations, demographic surveys, and semi-structured participant interviews. Behavioral mapping was used for the observations in order to examine occupant use of the space. Participant interviews provided resident and staff impressions of space data. Information from both observations and interviews was used to create annotated floor plans indicating positively and negatively perceived interior spatial features.

Results indicate that there is a relationship between interior spatial features and how residents use the space. Layout, circulation, accessibility, and furniture type are aspects of the physical environment that affected space use. The study revealed that aspects of the social environment affecting space use included social interaction among residents and between residents and staff. Both residents and staff indicated that the dining areas were the social hub of the facilities. Autonomy and resident involvement were the most important aspects of the organizational environment that emerged in this study.

Results indicated both positively and negatively perceived environmental characteristics. Features perceived positively at both sites include the small scale of the buildings, the dining table arrangement, non-white walls, a connection to nature, social interaction in the space, and resident choice in level of involvement. Features perceived negatively at both sites were noise, carpet flooring in the kitchen work space, the sitting area upholstery, and the appearance of lighting fixtures.

Based on the findings from these observations and interviews, several practical implications for designers are proposed. More studies are needed in order to aide designers with the task of providing optimal living environments for older adults.

NARRATIVE

The population in the United States is experiencing a dramatic increase in the number of older adults and this trend will continue with the aging of the baby boomer generation. Many of these older adults want to remain independent in the community. However, when physical or mental health needs make that impossible, purpose-built facilities provide alternative housing/residential care options. The most rapidly growing type of residential care for older adults in the United States is assisted living facilities. It is important that design practitioners and researchers understand whether current purpose-built housing for older adults, such as assisted living facilities, are addressing their shelter and healthcare needs.

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Based on the findings from these observations and interviews, several practical implications for designers are proposed. These include finding ways to make smaller assisted living facilities affordable while remaining profitable, using an open or "family style" kitchen concept in assisted living facilities, as well as incorporating observation of and discussions with residents and staff at existing facilities during the process of designing/renovating facilities. More studies are needed in order to aide designers with the task of providing optimal living environments for older adults.

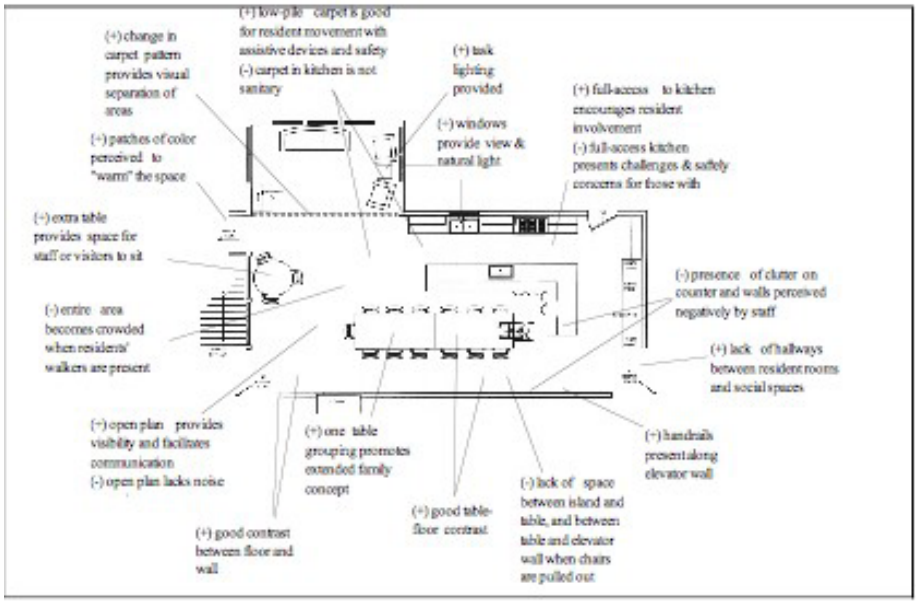

Figure 1: Annotated floor plan, Valley Run, House A

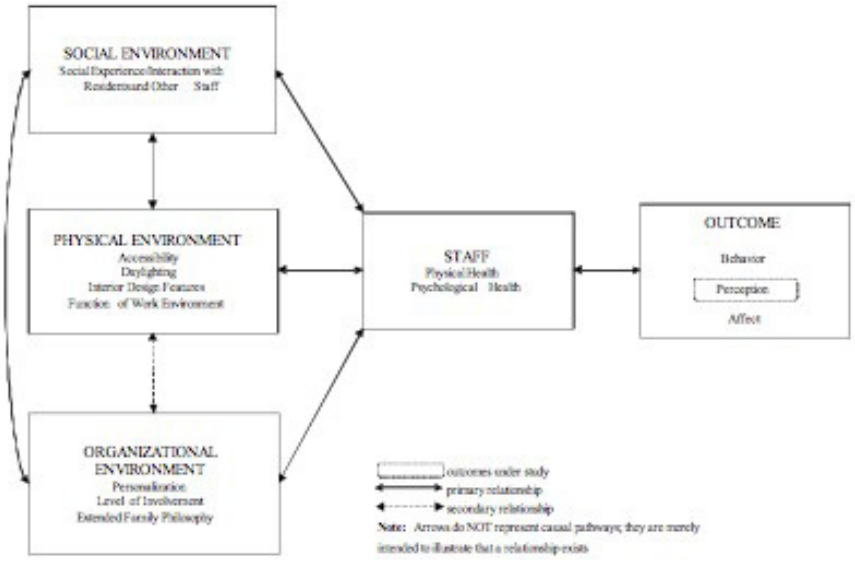

Figure 2: Diagrammatic Representation of Findings Related to Environmental Features Affecting Staff Perception of Space

REFERENCES (APA)

\Weisman, G.D., Chaudhury, H., & Moore, K.D. (2000). Theory and practice of place: Toward Integrative Model. In R. Rubinstein, M. Moss, & M. Kleban (Eds.), *The many dimensions of aging: Essays in honor of M. Powell Lawton* (p 14). New York: Springer Publishing Company.

Cultural Preferences in Hotel Guestroom Lighting Design

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ABSTRACT

One of the distinct features of our contemporary global society is the way in which business, cultural exchange, and overlapping economic and political spheres have shrunk the distances between nations. While globalization offers exciting opportunities it also creates unique cultural challenges since corporate standards and design solutions often cannot be universally applied to different cultural contexts (Holjevac, 2003). Many businesses and scholars have realized that culture is a prevailing determinate of consumer behavior (Ammi, 2007). In this context, identifying culturally related differences in occupants' environmental behaviors and preferences has become a critical concern for interior designers and their globally invested clients.

Many international hotel chains are challenged to maintain consistent standards of service and a uniform corporate identity across diverse cultural markets (Whitla, et al., 2007). A hotel's design plays an important role in customers' impression of hotels. Moreover, it is the most significant factor driving the hotel purchase decision and in creating value during a customer's stay (Dube & Renagham, 2000). According to McDonough et al. (2001) hotels are in the "business of memories"; therefore, hotel leadership and interior designers must work carefully to ensure a good and lasting memory for hotel guests. Successful global hotel chains have learned that it is necessary to understand the cultural nuances of different markets and to build some flexibility into their corporate standards to address variations in societal culture.

Although the benefits of well designed lighting are generally acknowledged for hotel interior environments, little to no empirical lighting studies have been conducted on effective guestroom lighting. Furthermore, no study focusing specifically on hotel guestroom lighting for customers from different cultures has been found. For these reasons, the current study was designed to understand the impact of different lighting conditions in a hotel guestroom on the preferences of Korean and North American customers.

A sample of 87 North Americans and 88 Koreans (*N*=175) rated their preference for different intensities and color temperatures of light within a digitally generated hotel guestroom design. Four lighting conditions were evaluated: warm/bright, cool/bright, warm/dim, and cool/dim. Chi-square analysis and a *mixed between-within* analysis of variance evaluated three dependent variables (preference, arousal, and pleasure) against three independent variables (2 culture groups x 2 light colors x 2 light intensities). Findings indicated that American subjects preferred the hotel guestroom with low intensity and warm color lighting the most while the Korean group preferred high intensity and warm color lighting the most. American participants also perceived dim lighting as more arousing than bright lighting while Korean participants perceived bright lighting as more arousing than dim lighting. Overall, the findings suggest that design criteria for hotel guestroom lighting should be revised to account for distinct cultural differences.

NARRATIVE

INTRODUCTION

One of the distinct features of our contemporary global society is the way in which business, cultural exchange, and overlapping economic and political spheres have shrunk the distances between nations. While globalization offers exciting opportunities it also creates unique cultural challenges since corporate standards and design solutions often cannot be universally applied to different cultural contexts (Holjevac, 2003). Many businesses and scholars have realized that culture is a prevailing determinate of consumer behavior (Ammi, 2007). In this context, identifying culturally related differences in occupants' environmental behaviors and preferences has become a critical concern for interior designers and their globally invested clients.

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Although the benefits of well designed lighting are generally acknowledged for hotel interior environments, little to no empirical lighting studies have been conducted on effective guestroom lighting. Furthermore, no study focusing specifically on hotel guestroom lighting for customers from different cultures has been found. For these reasons, the current study was designed to understand the impact of different lighting conditions in a hotel guestroom on the preferences of Korean and North American customers.

METHOD

Participants included 87 North Americans and 88 Koreans (N = 175) 19 to 35 years old. The 87 American subjects included 64 males (73.56%) and 23 females (26.44%). The 88 Korean subjects included 65 males (73.86%) and 23 females (26.14%). All subjects were screened for color vision deficiencies by self-reporting any visual impairments that could not be corrected by eyeglasses or contact lenses.

Participants were asked to rate their preference for different intensities and color temperatures of light within a digitally generated hotel guestroom design. Published lighting guidelines for hotel guestrooms (Karlen & Benya, 2004; Rea, 2000) were used to develop the lighting solution for the study. Color temperatures of light were tested between "warm" and "cool" sources. Preference for intensity was tested between "bright" and "dim" levels of illumination. Therefore, four lighting conditions were evaluated: warm/bright, cool/bright, warm/dim, and cool/dim. Chi-square analysis and a *mixed between-within* analysis of variance evaluated three dependent variables (preference, arousal, and pleasure) against three independent variables (2 culture groups x 2 light colors x 2 light intensities).

FINDINGS

The result of Pearson's Chi-square for lighting preference showed that there was a statistical significance between two cultural groups on their most preferred lighting condition: χ^2 (3, N = 175) = 121.4, $p < 0.000$. A greater proportion of American participants (62.10%) selected the warm/dim lighting as their most preferred condition compared to Korean participants (3.40%). A greater proportion of Korean participants (52.30%) selected the warm/bright lighting as their most preferred condition compared to American participants (4.60%). Participants were also asked to select their least preferred lighting condition. The results showed that there was a statistical significance between two cultural groups on their least preferred lighting condition: χ^2 (3, N = 175) = 79.96, $p < 0.000$. A greater proportion of American participants (54.00%) selected warm/bright lighting as their least preferred lighting compared to Korean participants (2.30%). Conversely, Korean participants selected the cool/dim lighting (43.20%) and the warm/dim lighting (40.90%) as their least preferred lighting condition.

In addition to selecting their most and least preferred lighting condition, participants were asked to evaluate their preference for each individual lighting condition on a 5-point Likert scale. A mixed between-within subjects analysis of variance showed a significant three-way in-

teraction, cultural group by light color by light intensity, $F(1,173) = 3.97$, $p < .05$. American participants preferred warm/dim lighting ($M = 4.01$) to warm/bright lighting ($M = 2.83$). In contrast, Korean subjects preferred cool/bright ($M = 3.76$) and warm/bright ($M = 3.67$) lighting to warm/dim ($M = 2.52$) and cool/dim ($M = 2.23$) lighting.

For arousal states, the results showed two significant two-way interactions, namely culture by intensity $F(1,173) = 27.30$, $p < 0.001$ and color by intensity $F(1,173) = 19.04$, $p < 0.001$. American participants perceived dim lighting ($M = 3.27$) as more arousing than bright lighting ($M = 3.01$), while Korean participants evaluated bright lighting ($M = 3.10$) as more arousing than dim lighting ($M = 2.70$). With regard to pleasure states, the results showed a significant three-way interaction, $F(1,173) = 8.31$, $p < .01$. American participants ranked warm/dim ($M = 4.15$) lighting as more pleasurable than warm/bright ($M = 2.82$) lighting, while Korean participants ranked warm/bright ($M = 3.56$) and cool/bright ($M = 3.51$) lighting as more pleasurable than warm/dim ($M = 2.68$) and cool/dim ($M = 2.45$) lighting.

DISCUSSION

The findings indicated that cultural background significantly influenced preference among different intensities and color temperatures of light. These findings confirm Belcher's (1985) hypothesis that cultural differences in illumination preference exist which may influence comfort, productivity, and feelings of well-being. The findings also indicated that a majority of North Americans prefer warm lighting conditions while Koreans display a more balanced preference between warm and cool lighting. This suggests that color temperature may not affect Korean guestroom lighting preference as strongly as the intensity of lighting. The findings also suggest that North American and Koreans guestroom lighting preferences may relate to the lighting conditions traditionally found in North American and Korean homes. Warm/dim light sources are traditionally found in North American homes (Flynn, 1977; Steffy, 2008) while cool/bright sources are traditionally found in Korean homes (Lee & Park, 2008).

The results for arousal indicated that North American participants perceived dim lighting as more arousing than bright lighting, while Korean participants evaluated bright lighting as more arousing than dim lighting; however, when interaction effects are evaluated cool/bright lighting was perceived as the most arousing condition for both cultural groups. This supports previous studies by Mehrabian (1976), Flynn (1977), Areni and Kim (1994), and Summer and Herbert (2001) indicating that arousal levels are influenced by cool color temperature with bright lighting.

Research applying the M-R framework has proved that pleasurable emotional experiences lead to increased "approach" behavior (Donovan & Rossiter, 1982; Hui & Bateson, 1991). Accordingly, the findings of this study suggested a positive relationship between pleasure and preference. The North American group felt the most pleasure in the guestroom with low intensity and warm color lighting while the Korean group felt the most pleasure with warm/bright lighting, followed closely by cool/bright lighting. This suggests that light intensity is a more critical component of pleasure than color temperature.

In sum, the current study confirms the assumption that there are cultural differences in how people perceive different lighting conditions. Overall, the findings suggest that design criteria for hotel guestroom lighting should be revised to account for distinct cultural differences. Knowledge generated by this study contributes to a better understanding of user preference which should enable interior lighting designers and international hotel developers to design more culturally sensitive lighting solutions.

REFERENCES (APA)

Ammi, C. (Ed.). (2007). Global Consumer Behavior. London; Newport Beach, Calif.: ISTE.

Areni, C. S. & Kim, D. (1994). The influence of in-store lighting on consumer's examination of merchandise in a wine store. *International Journal of Research in Marketing, 11*(2), 117-125.

Belcher, M. C. (1985). Cultural aspects of illuminance levels. *Lighting Design and Application*, *15*(2), 49-50.

Donovan, R. J. & Rossiter, J. R. (1982). Store atmosphere: An environmental psychology approach. *Journal of Retailing, 58*(1), 34-57.

Dube, L. & Renaghan, L. M. (2000). Creating visible customer value. Cornell Hotel and Restaurant Administration Quarterly, 41(1), 62-72.

Flynn, J. E. (1977). Procedures for investigating the effect of light on impressions. *Environment and Behavior, 9*(4), 491-510.

Holjevac, I. A. (2003). A vision of tourism and the hotel industry in the 21st century. Hospitality Management, 22, 129–134.

Hui, M. & Bateson, J. (1991). Perceived control and the effects of crowding and consumer choice on the service experience. *Journal of Consumer Research, 18*(2), 174–184.

Karlen, M. & Benya, J. (2004). *Lighting Design Basics.* New York: John Wiley & Sons.

Lee, E. & Park, N. (2008). Cross-cultural analysis of residential design and housing behaviors: The case of Koran households in the United States. *Proceedings of the Interior Design Educator's Council International Conference*, 681-690.

Mehrabian, A. (1976). *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments*. New York: Basic Books.

McDonough, B., Hill, J., Glazier, R., Lindsay, W.B. & Sykes, T. (2001). Building Type Basics for Hospitality Facilities. New York: John Wiley and Sons.

Rea, M. S. (Ed.). (2000). The IESNA Lighting Handbook: reference and application (9th ed.). New York; Illuminating Engineering Society of North America Publications Department.

Steffy, G. R. (2008). *Architectural Lighting Design* (3rd ed.). New York: John Wiley & Sons.

Summers, T. A., & Hebert, P. R. (2001). Shedding some light on store atmospherics: Influence of illumination on consumer behavior. *Journal of Business Research, 54*(2), 145-150.

Whitla, P., Walters, P. G. P., & Davies, H. (2007). Global strategies in the international hotel industry. Hospitality Management, 26, 777–792.

Aesthetic meaning-making as design thinking: Communicating within the design process

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ABSTRACT

This paper presents the idea of conversations as aesthetic meaning – making, how this is situated in the direct experiences of various stakeholders during the design process and how this occurs during the various phases of the interior design project. Interior designers increasingly need to use design processes to solve problems of a complex nature that necessarily deal with people in various contexts and in different and ever-changing situations. This paper proposes that the design process uses conversation as a particular type of '***aesthetic meaning-making',*** that this actively engages stakeholders and that this is a necessary and complex process often neglected when developing theory and research in interior design. Conversation as 'meaning making' is 'aesthetic' when the engagement between designers and participants within the design happens during the communication itself in the dialogue and visual exchanges that occur and when it is used to transform the design intent towards a project solution.

The design process is a foundational process that guides problem-solving in particular situations. For interior designers, the design process defines our very specificity (Weigand, 2006) and embraces complexity simultaneously with a multitude of contexts. A design process that embraces change and complexity (Nelson & Stolterman, 2003) deliberately engages stakeholders, users and clients, and during this engagement core values are defined through communication. Communication here refers to the ways that people engage in the design process directly with one another in real time experiences, using conversation and dialogue. This paper suggests that dialogue is the means of communication by which the emerging design becomes actualized through the 'working through' of different aspects of the concept. Design solutions happen as issues are developed and discussed in real time lived experiences, and this is phenomenological in the pragmatic sense of real lived experiences guiding design decision-making and aesthetic forms of expression that ultimately result in the design realization (Nelson & Stolterman, 2003, Vaikla-Poldma, 2003; Poldma, 2009).

The paper lays out a philosophical idea of what constitutes 'aesthetic meaning-making' and how communication between designers and stakeholders is fundamental to defining aesthetic meanings in the design. Theoretical concepts of values and aesthetic meaning are presented as these are manifested using both verbal and visual design languages. The discussion and conclusion propose ways to integrate these concepts into teaching using direct experience. Case study examples illustrate how meanings are developed in the process of conversation and how dialogue occurs in design practice through the example of commercial interior design projects.

NARRATIVE

INTRODUCTION

Communicating during the design process is a fundamental way of listening to the needs of the people who will be the recipients of the design, while accounting for the dynamic exchanges that occur by documenting the process as it unfolds. The real time experiences of dialogue that occur transform the design into the reality help the design to become actualized within the context for which it was conceived. When the dialogue occurs simultaneously with the design and is supported by visual language alongside conversation, this is a form of '***aesthetic meaning-making***' that is necessary to transform design ideas into realities. For the design to transform into reality, it is the experience of communication and working over visual ideas through conversation that the aesthetic meaning of the project or subject in its specific context becomes clearer, thus creating 'aesthetic meaning-making'. of development and each time with different stakeholders.

The paper lays out a philosophical idea of what constitutes the design process as a communicative tool known as 'aesthetic meaning-making' and how communication and meaning-making work together to define aesthetic meanings in designs with the intent of transforming them through stakeholder input into reality that is suitable and situated in context. This concept of 'aesthetic meaning-making' is described and two examples are presented. The discussion includes uncovering issues about how this tacit knowledge is captured, why this is important to understand and make explicit and how direct experiences that use conversation through dialogue and meaning-making as their root transform designs and make them work in the context for which they are intended.

THEORETICAL CONTEXT

To understand the idea of 'aesthetic meaning-making' a few concepts will be presented here as the foundational ideas for consideration. First, the design process is a foundational process, meaning that the process guides problem-solving in particular situations and for interior designers, defines our very specificity (Weigand, 2006). During the design process, interior designers solve problems using creative and functional tools to envision possible solutions to human-situated design problems within interior spaces. In this situation, the design process embraces concepts such as change, wherein the design solutions, when considered in context and with ethical notions of care and service to both clients and users (Nelson & Stolterman, 2003), deliberately engages various actors, including stakeholders and users alongside contractors, architects, and other specialists. During this engagement core values and needs are often defined through communication. By communication here we refer to the meaning-making that occurs when people actively engage in discussing design problems and issues, linking design systematically through the integration of functional issues with aesthetic concepts and making decisions that then are implemented. Whether verbal or visual languages are used, conversation and dialogue clarify meanings, identify contexts and reveal values important to diverse actors in the design process. Quite often words are accompanied by diagrams and sketches, as the communication of the idea is manifested through the dialogue that occurs in the designing. Drawings are used by designers to document what clients say, what stakeholders discuss and what situations call for, all to help resolve the problem and develop solutions.

Two ideas emerge here : The Design Process as an intentional act; and 2) the actual, real time experiences of dialoguing as a systematic means of making sense of design thinking processes between various stakeholders and actors.

THE DESIGN PROCESS AS AN INTENTIONAL ACT

The Design Process is a process that uses design thinking to move intention towards solution. We need design thinking infused with action to explore different ways of seeing potential futures and this using the concept of intention(Nelson & Stolterman, 2003). Nelson and Stolterman, in their seminal book, *The Design Way*, explore how intentional change is used by designers to put forward ideas for change. As they state:

> *Design processes use these types of thinking and '… In a design process, the designer has to make judgements and decisions about how to approach reality' (Nelson & Stolterman, 2003, p. 105).*

Whether this is through artistic intention (Hagberg, 1995) or through functional intent, design thinking and reasoning are combined with consultation with the various actors involved. Interior designers work using the engagement of various stakeholders in the reality of the design problem itself (Nelson & Stolterman, 2003; Pol-

dma, 2009).

UNDERSTANDING REAL, LIVED EXPERIENCES THROUGH DIALOGUE AND DESIGN THINKING

The construction of this reality, while tacit in nature, nevertheless has a systematic nature to it as well. People get together and dialogue occurs to move a design issue or situation from one state towards another using controlled and intentional actions of the part of the designer (Nelson & Stolterman, 2003) based on '…problem solving and pattern building' (Friedman, 1997, p. 23). This is usually done by phasing the work, in usual design phases such as information collection, preliminary design brief and program development, preliminary design ideas, design concept development and design implementation (Poldma, 1999; Vaikla-Poldma, 2003). When designers work together with clients and various stakeholders, they do so systematically, each time meeting to review the design project in different stages, and each time with different actors in the process.

Dialogue and conversation are used alongside drawings and sketches, models or images, to explicate what the designers' intent is, and move this towards what the stakeholder needs in the reality for which the design is intended. This type of dialogue creates 'Aesthetic meaning making', a process that integrates dialogue with various drawings and other visual images or concepts that emerge from the direct, lived experiences of 'doing' the design work together, as we see here in Figure 1.

Figure 1 – studio with students and professors in conversation over drawings and working through ideas together

Communicating and working over visual ideas through conversation that the aesthetic meaning of the project or subject in its specific context becomes clearer. Each time the designer moves from one phase of the design process to the next, visual tools may change but the verbal communication is a vital integrative component of meaning-making that occurs.

MAKING MEANING THROUGH DIALOGUE AND ARTISTIC INTENTION: EXAMPLES IN DESIGN

In this example, a retail store concept is developed through a series of concept drawings and meetings. Once the ideas are set down, the designer develops a concept and then works through the ideas directly with the client at every step of the way. The design happens through these conversations and resultant drawings that are created, first as a result of the communications between design and client and next the design and contractor with the client.

Figures 2 and 3. *Example of the client working with the designer over the drawings and project information and the end product*.

The example of the retail store is a relatively simple one. When large scale projects are done, the conversation and meaning-making becomes infinitely more complex. When multiple stakeholders, users and actors contribute to the problem solving the process becomes very complex, especially when large projects are at stake. For example, recently I was asked to participate in meetings where clients, project managers, engineers and architects were to move a design concept from the planning stage into the development and construction stage, and in concert with business and management decision-making about investment decisions to be made for a multi-million dollar commercial and hotel complex. Early designs had been conceived, budgets assessed and yet the design could not move forward. Despite two days of meetings, included conversation, drawings and presentations of visual ideas, and yet the client could not visualize that which the architects, designers, consultants and engineers were trying to propose. During the meetings, the designers and architects physically drew ideas as these were being discussed, and the drawings reflected the 'meaning making' that the dialogue created. Using Sketch-up and hand-drawn sketches simultaneously, the ideas were documented 'in situ' for further development once the meetings ended. The client knew immediately what ideas they liked, did not like, were feasible or possible, and decision-making happened on the spot. The meetings and decision-making happened through the medium of talk and sketch, model and dialogue, both happening simultaneously.

DISCUSSION

The two examples show how dialogue and communication are an integral means of transforming design ideas from vague conceptual ideas into tangible ones set within particular contexts Nelson and Stolterman (2003) suggest that dialogue is a form of communication essential to design transformation:

Communication modalities, such as formal dialogue or visual literacy, are essential to the process of making design images concrete realities. ….Design communication needs to convey comprehension, meaning and the promised value of *that-which-is-not-yet*. ….the design communication process unfolds through four iterative stages and one implementation stage. (pp. 174-175)

If we continue with the designer-client meetings as our example, drawings are used to convey what the dialogue cannot, as the designer interprets 'in situ' the meanings conveyed by the stakeholders and clients. Experiences, dialogue and aesthetic conversational meaning-making give life to the concept. Meaning is achieved through the conversation and direct visual contact with the ideas being generated, through whatever visual means are provided or available.

There has to be a certain 'honesty' in the exchanges that occur and for the design to take hold tangibly. Too often, group meetings consist of situations where the social norms and power relationships hinder open and constructive dialogue (Napier & Gershenfeld, 1992). In designer-stakeholder situations this needs to be clearly outlined before the dialogue occurs for the dialogue to be meaningful and productive. In the case of the retail store the conversation was crucial in the development not only of preliminary ideas but at all stages of the process, from client to contractor to various other consultants involved along the way.

CONCLUSION

It is in conversation and dialogue, that we make meaning about design. Whether it is chatting in a café drawing on a napkin, sitting shoulder to shoulder drawing, or discussing business decisions to be made, we create aesthetic meaning -making. The designers and architects in the meetings example discussed meet to discuss the aesthetic design and its properties and issues, understanding the power and social dynamics at play. Nel Noddings (2000), defines dialogue in this sense:

> *….Dialogue is open-ended; that is, in a genuine dialogue no one knows at the outset what the outcome or decision will be. … dialogue is a common search for understanding, for empathy or appreciation. It can be playful or serious, logical or imaginative, goal or process oriented, but it is always a genuine quest for something undetermined at the beginning.*
>
> *(Noddings in Reed & Johnson, 2000, p. 253-254).*

Dialogue can be honed as a skill as much as modelling or drawing. For example, design studio experiences can be devised that put students into situations where conversations are meaningful and are constructively directed towards problem-solving. Creating 'scenarios' where teachers act temporarily as 'clients' and students 'designers' is a useful tool – playacting and scenario making help to develop conversation skills alongside the studio environment. It is vital to engage students in the design studio in active conversation to mimic the ways that designers engage with clients in the real world. The experience of dialogue as aesthetic then becomes the medium of expression that uses visual tools, both virtual and real, to bring the design concept to life.

Figure 1. ***(not provided by author)***

Figure 2. Example of the client working with the designer over the drawings and project information and the end product.

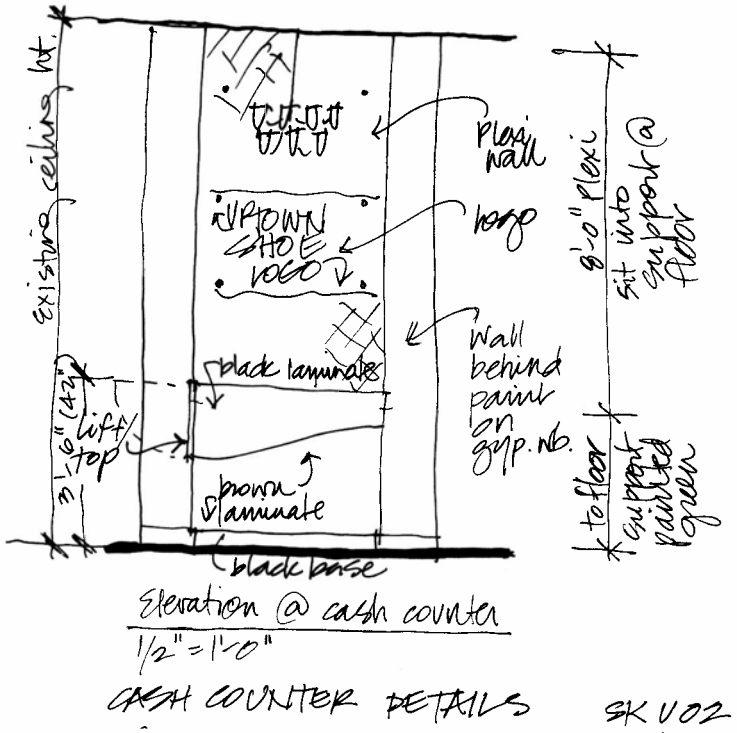

Figure 3. Example of the client working with the designer over the drawings and project information and the end product.

REFERENCES

Aspelund, K. (2010). *The Design Process. Second Edition*. New York: Fairchild Publications.

Dewey, J. (1934) Art as experience. In S.D. Ross (Ed.) *Art and Its Significance: An Anthology of Aesthetic Theory.* Third Edition (1992), pp. 204-221.

Friedman, K. (1997). Design Science and Design Education. In McGrory, P. (Ed.) *The Challenge of Complexity.* Helsinki: University of Art and Design UIAH, pp. 54-72.

Gorman, C.R. (2004) Why Designers Should Study Foreign Languages. *Design Issues* 20(1), pp. 40-47.

Krippendorff, K. (2006). *The semantic turn: A new foundation for design*. Boca Raton, FL.: CRC Press, Taylor & Francis.

Laczko, I., Hendricks, J., Hardenbrook, M., Robinson, J. (2002). Self-centred , Irreverent, Artsy-fartsy Inquiry: Girl Talk about Narrative Research. *Arts & Learning Research Journal,* 18(1), pp. 132-155.

Napier, R. W. & Gershenfeld, M.K. (1992). *Groups: Theory and Experience* (7th Ed.) New York: Houghton & Mifflin.

Nelson, H. & Stolterman, E. (2003). *The Design Way: intentional change in an unpredictable world.* Englewood Cliffs, NJ., Educational Technology Publications.

Nodding, N. (2000) in Reed, R.F" & Johnson, T.W. (2000). *Philosophical Documents in Education.* New York: Longman Publishing, Inc.

Poldma, T. (2009). Taking Up Space: Exploring the Design Process. New York: Fairchild Publications.

Shusterman, R. (1997). *Practicing Philosophy: Pragmatism and the Philosophical Life*. New York: Routledge.

Vaikla-Poldma (2003). *An Investigation of Learning and Teaching Processes in an Interior Design Class: An Interpretive and Contextual Inquiry*. Unpublished Doctoral Thesis. Montreal, McGill University: Author.

Weigand, J. (2006 winter). Defining Ourselves. *Perspective of the IIDA*.

The Residential Appropriation and Well-being of People with Trauma Due to Paralysis and Their Families: A Multi-Disciplinary Research Study

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ABSTRACT

This multi-disciplinary research study brings together researchers from diverse backgrounds to investigate how persons with disabilities and their families re-appropriate the home environment and its interior-exterior spaces after a major trauma. The focus of the study is on two groups of people: 1) persons who have trauma caused by paralysis of lower or all extremities due to spinal cord lesion caused by trauma or disease; and 2) members of their families. Their lived environment, the social and personal issues in adapting the home, and psychological, ergonomic, physical and social challenges and issues are examined using expertise-centred qualitative research methods. Facilitating this research are professionals from psychology, occupational therapy, social work and interior design who develop both qualitative and spatial characteristics to study the re-appropriation of home by 31 families.

The theoretical framework focuses on how both the family and person affected by the trauma deal with the physical and psychological challenges 're-appropriating' the home. The process of 're-appropriation' is understood as how living well and autonomously at home includes here integrating the physical and social challenges inherent in adapting the home to the trauma and its living circumstances. There are both psychological states of mind and physical states that are affected in both the individual and the family when these changes are implemented within the home environment (Putman et al, 2003), changes that affect well-being. Well-being here refers to the integral person-environment relationship as this relates to personal autonomy (Zeisel, 2006) and how the environment supports the persons affected by traumas affectively. This process of re-appropriation is studied in the context of the challenges and issues faced when adapting one's personal sense of home and living to the changes in relationship to the physical space, objects and the inherent challenges that occur. If the home environment is vital to the well-being of all people, for persons with disabilities the dwelling is crucial for their autonomy and participation in society. The home is ideally a place of intimacy, of refuge and of living well, in terms of the meanings of objects and things in the home and in terms of the level of personal and social comfort in the physical space itself (Csikszentmihalyi, M. & Rochberg-Halton, 1981; Poldma 2008). The interior design research team (Poldma, Lasalle, Tissaoui) studies the physical characteristics to understand how the residents and their families like (or dislike) their environment.

During the initial research protocol development, the entire research team develops a series of codes of qualitative, psychological and physical characteristics that are used to document and understand the re-appropriation of home. (Gosling et al, 2005). Each family is visited, interviewed and their choices of positive and negative physical attributes of the environments are recorded and analysed, using various qualitative research methods. This paper presents the research protocol, initial findings and the discussion includes emerging analysis themes. The study is significant as it uncovers multiple issues and perspectives that help to understand how well-being can be achieved in the home environment, and elevates understanding space-person relationships for persons with disabilities and their families and how the interior design researchers add value through both the affective and empirical dimensions that they bring to the study.

NARRATIVE

INTRODUCTION: BACKGROUND AND SIGNIFICANCE OF THE STUDY

This research study examines persons with disabilities (PD) and members of their families as they re-appropriate the home environment spaces after a major trauma. Psychologist Sylvie Jutras, the principal researcher, brought together specialists in social work (O.Sevigny), occupational therapy (D.Jutras) and interior environments and design (T.Poldma) to understand the issues of person and environment relationships from a multidisciplinary perspective. The team examines the persons living at home (PDs), their social network support and what they face when they return home after a period of intensive treatment and rehabilitation where they must reconstruct their relationship to the home, a place where they face several challenges. For those with disabilities, there are multiple challenges to living well and autonomously at home, whether it be in the intrusion of the social family, the psychological states of mind or the physical changes to both the person's own state or the home environment itself, challenges that include the changed relationship of the person with disability to both the home and their loved ones. This process of re-appropriation is studied in the context of the challenges and issues faced when adapting one's personal sense of home and living changes.

The research team develops both qualitative and spatial characteristics to study the re-appropriation of home by 31 families. The data collection includes interviews and photos that are analysed using the coded grids developed by the entire team. The design team then analyzes the data using descriptive and interpretive methods with visual content analysis, to uncover issues that emerge (Maykut & Morehouse, 1994; Miles & Huberman, 1994; Poldma et al, 2007; Rose, 2001). The design research team develops a 'contextualized' and a 'de-contextualized' analysis that combine the coded analysis with descriptive/interpretive narrative. (Ely et al, 1997; Rose, 2001).

The project has been ongoing since the fall of 2006, and the final analyses and results will be completed in the summer-fall of 2010.* This study is significant in that it brings together researchers from psychology, occupational therapy, social work and interior design, all interested in understanding the environment and the various factors that contribute to how space is appropriated.

THE THEORETICAL FRAMEWORK AND COMPONENTS OF THE STUDY

The theoretical framework for the study focuses on the process of re-appropriation of space by disabled persons and their family and the quality of life desired for an appropriate and well-managed space environment (Jutras, 2005, Gosling et al, 2005). When people have trauma due to illness or unforeseen circumstances and when this leads to paralysis, the living situation of both the person affected and the family and loved ones is changed significantly, as both must adapt to a new home situation in the physical, social and psychological sense. This re-appropriation occurs on several levels, as residents must adapt both physically and psychologically by learning how to 're-appropriate' the home under unfamiliar and often difficult circumstances.

There are multiple challenges for living well and autonomously at home for those with disabilities, whether it be in the intrusion of the social family, the psychological states of mind that accompany the changes brought by trauma or the real, physical changes to both the person's own state and the home environment itself (Putnam et al, 2003). Well-being is affected as these challenges change the relationship of the person with disability to both the home and loved ones. As Jutras et al (2009) state:

The relationship between people and their homes has considerable influence on their well-being (Evans et al, 2000; Sigmon et al, 2002)…the importance of adapting housing to facilitate activities of daily living and accessibility has been demonstrated (Fange & Iwarsson, 2005). However, very little is known about how disabled people perceive their home's overall contribution to their well-being.

The relationship of people and their homes is affected by several factors. First, both the individual affected by the trauma and the family members must adapt to a new home situation both physically and psychologically and 're-appropriate' the home. Second, these challenges include tacit issues that affect a person's well-being such as the changed relationship of the person with disability (PD) to both the home and their loved ones. Well-being here refers to the integral person-environment relationship as this relates to personal autonomy (Jutras, 2005;

Zeisel, 2006).

Third, there are challenges and issues faced when adapting one's personal sense of home and living to the changes in relationship to the physical space and objects themselves. The home is ideally a place of intimacy, of refuge and of living well both in terms of the meanings of objects and things in the home, to the level of personal and social comfort in the physical space itself (Csikszentmihalyi, M. & Rochberg-Halton, 1981; Poldma, 2008; Serfaty-Garzon, 2003).

Finally, the theoretical framework is based on particular psychological and interior design perspectives. First, the psychological perspective is one of psycho-environmental potential wherein six basic needs must be met for the home environment to be conducive to well-being (Jutras, 2002; Steele, 1973). Second, the interior design perspective looks at what physical characteristics have an impact on well-being and what salient aspects of re-appropriating objects and elements within the space affect positive and negative reactions of the persons using the space (Csikszentmihalyi & Rochberg-Halton, 1981; Poldma, 2008).

DATA COLLECTION METHODOLOGY AND PROCESS

The data collection combines mixed qualitative methods from psychology and design. The four researchers (Jutras, Poldma, Jutras, Sévigny) develop tools to document the various characteristics to be used to analyze the data collected. Prior to the data collection, the entire team develops the characteristics to be studied. Characteristics and attributes for the families are measured and the codes for the physical characteristics of the spaces are identified. Physical attributes are enumerated for all potential space characteristics. The grid and characteristics for the questionnaires were developed by the team lead researcher Jutras and completed by the various team members.

THE DATA COLLECTION PROCESS

The research study sample consists of 31 individuals with paraplegia or quadriplegia and 31 persons living with them. The data collection consists of on-site visits that include meeting and interviewing the residents and their families and documenting their choices of space attributes both inside and outside the home. Photos are taken of the positive and negative characteristics as identified by the participants.

THE DATA ANALYSIS BY THE DESIGN RESEARCH TEAM

Once the data had been collected, the overall project analysis proceeds with two major but integral streams: the contextual analysis by the entire team and the visual and interpretive analysis of the physical attributes of the interior (Creswell, 2006; Poldma et al, 2007; Rose, 2001) by the design research part of the team (Poldma, Lasalle, Tissaoui). For this analysis, the team documents their analysis using the Visual Analysis Grid (Poldma), a chart that is derived from the characteristics as outlined in the overall codes developed by the entire team and completed by the design research team. (Poldma and Wesolkowska, 2004: Poldma et al, 2007).

TWO LEVELS OF ANALYSIS – CONTEXTUALIZED AND DE-CONTEXTUALIZED

The team proceeds with two levels of analysis. First, a ***contextualized analysis*** is done informed by who selected the views and why. Second, a ***de-contextualized analysis*** is done, wherein the researcher studies the photographs taken per se, as they appear without further information (Analysis 1).

Once this first analysis is done, the researchers get together to compare findings and to interpret the analysis that each has done, and during this process themes and issues emerge (Analysis 2). Using a variation of visual content analysis and inductive category coding with descriptive analysis that elicits 'units of meaning' (Maykut & Morehouse, 1994; Miles & Huberman, 1994), the researchers uncover themes and issues that are salient in the data. The following section describes both Analysis methods in greater detail.

UNDERSTANDING THE DATA ANALYSIS

In Analysis 1, the researchers extract the physical characteristics from the overall data and codes and examine the photos using three processes:

1. Coding the positive and negative physical attributes of the space from two perspectives: the individual and the family member;

2. Visually analysing the photos in tandem with the interview and coding; and

3. Visually analysing the photos 'blind' – independent of interviews and coding.

First, the photos and interviews are analysed in terms of the physical attributes and to see how the residents and their families see their environment. For each participant (individual and family member), 5 positive and 5 negative photos are taken and the photos are sorted by participant type: the individual (PD) and the caregiver/family member who supports the PD. Once this preliminary coding has been done, the two layers of analysis are implemented. First, one researcher examines the photos and interviews in concert with the codes and interview notes and as the positive and negative attributes are selected by both PD and caregiver/family member. Another researcher studies the photos in a visual analysis independent of the interviews, in essence 'blind'.

ANALYSIS 2 – EMERGENT THEMES

In the second phase of the analysis, the researchers come together and analyse the photos, this time with the Analysis 1 attributes and codes that were documented alongside the photos. In this second content analysis, the comparison of the coded and descriptive data reveals insights into what aspects of re-appropriation are of priority (either positive or negative) and what objects within the home have particular meaning for the residents (PDs) and their families. While currently the study is in its analytic stage, some examples of the project will be shown in the presentation.

DISCUSSION AND CONCLUSION

The emergent analysis reveals insights into how physical characteristics impact on the well-being of the different users in different ways. People appropriate space with a myriad of elements and are concerned with both the physical and affective aspects of the environment that help them better adapt to their lived environment. Both the person with the disability (PD) and the caregiver/family members who share the lived environment grapple with the enormous physical, psychological and social challenges and express their issues through the elements within the spaces of the home and outside in the immediate surround.

The contextual and de-contextualized nature of the design team analysis of the physical characteristics reveals different ideas about what constitutes a positive or negative attribute. For example, the design researcher may consider certain elements as 'negative', such as poorly installed flooring or lack of security bars for bathroom safety, while by contrast, the family member or might consider the same attribute meaningful or vital to their well-being.

Finally, the study experience itself reveals some interesting insights for multi-disciplinary research teams. The inherent diversity of the team allows for two types of data and analysis to emerge. Bringing together researchers from such diverse backgrounds as

psychology, occupational therapy, social work and interior design allow for multiple perspectives on understanding the ways that the environment and persons with disabilities interact from the intimate social and psychological perspectives. Understanding the environment and what contributes to appropriating the space, in terms of both challenges and opportunities that the environment provides, helps to create understanding when considering both human affective needs and the design of these spaces for well-being.

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REFERENCES

Creswell, J. (2003). Research Design: *Qualitative, Quantitative and mixed method approaches.* Newbury Park, CA : Sage.Csikszentmihalyi, M. & Rochberg-Halton, E. (1981). *The Meaning of Things : Domestic Symbols and the Self.* Cambridge, UK : Cambridge University Press.

Canter, D.V. (1991). Understanding, assessing, and acting in places : Is an integrative Framework possible? In T. Gàrling and G. Evans (Eds.*) Environment, cognition and action : An integrated approach.* (pp. 191-209). London : Oxford University Press.

Ely, M., Viz, R., Downing, M., Anzul, M. (1997). *On writing qualitative research: living with words.* London : The Falmer Press.

Gosling, S.D., Crik, K.H., Martin, N.R., & Pryor, M.R. (2005). The personal living space cue inventory : An analysis and evaluation. *Environment and Behaviour*, 37(5). 683-705.

Jutras, S. (2002). L'influence des relations personne–environnement sur la santé. In G.-N. Fischer, (sous la direction de), *Traité de psychologie de la santé* (p. 491-511). Paris : Dunod.

Jutras, S. (2005). *Thésaurus du bien-être et de la bientraitance au sein de la famille.* Manuscrit inédit. Montréal : Département de psychologie, Université du Québec à Montréal.

Jutras, S., Labbé, V., Lafrance, V., Jutras, D., Sévigny, O. (2009). Priorités résidentielles en presence d'une incapacité motrice et bien-être des familles. Communication présentée au V^{e} Congrès de Psychologie de la santé de langue française, Rennes (France), juin 2009.

Kellett, P., Gilroy, R., & Jackson, S. (2005). Space, identity and choice : Exploring the housing arrangements of older people. In B. Martens & A.G. Keul (Eds.)*, Designing social innovation: Planning, building, evaluating*. Cambridge, MA. : Hogrefe & Huber Publishers.

Maykut, P. & Morehouse, (1994). *Beginning Qualitative Research: A Philosophical and Practical Guide.* London: The Falmer Press.

Miles, M.B., & Huberman, A.M. (1994). *Qualitative data analysis (2nd. Ed.)* Thousand Oaks, CA, Sage.

Poldma, T.(2008). Dwelling futures & lived experience: transforming interior space. *DesignPhilosophyPapers* http;//www.desphilosophy.com/dpp/dpp_journal/paper2/body.html; 8 pages. www.designphilosophy.com

Poldma, T. & Wesolkowska, M. (2004). *Preliminary Report of the Development of Lighting Products to Improve Well-being of an Ageing Populaiton and in Particular for People with Alheimer's Disease.* Montréal, QC.: IDM and the University of Montreal.

Poldma, T., Dastoor, D., & Brack, H. (2007). *Lighting Study at the Moe Levin Center of the Douglas Hospital. Analysis Report of Phase 1: Exploration Study of the Effects of Light on Behaviour and Well-being of People with Dementia in a Specialized Environment.* Montreal, QC: Douglas Hospital Moe Levin Centre and University of Montreal, 23 pages.

Putnam, M., Geenan, S., Powers, L., Saxton, M., Finney, S., & Dautel, P. (2003). Health and wellness : People with disabilities discuss barriers and facilitators to well-being. *Journal of Rehabilitation*, 69(1), 37-45.

Rose, G. (2001). *Visual methodologies*. London : Sage.

Serfaty-Garzon, P. (2003). L'appropriation (Appropriation). In Segaud, M., Brun, J., & Driant, J-C. (Eds.) *Dictionnaire critique de l'habitat et du logement*. (Dictionary of Housing and the Home, pp. 2-7). Paris: Armand – Colin.

Steele, F.I. (1973). *Physical settings and organizational development.* Reading, MA. : Addison-Wesley.

Stephenson, W. (1953). *The study of behaviour : Q-technique and its methodology.* Chicago, Il : University of Chicago Press.

Zeisel, J. (2006). *Inquiry by Design : Environment/behaviour/neuroscience in architecture, interiors, landscape and planning*. New York : W.W. Norton & Company.

Interior Design Identity: Professionalization, Professionalism and Profession

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ABSTRACT

The purpose of this study is to examine the concepts of professionalization, professionalism and profession as they relate to the discipline of Interior Design and its identity. Discourse around these concepts is present in the Interior Design literature and ranges from historical perspectives, definitions of the body of knowledge, education, and identity to those of licensing, regulation and professional association. Important overviews have been presented by individuals such as Birdsong and through dedicated journal volumes such as Volume 21 of the Journal of Design History.

Alongside this growing body of research relating to the professionalization of Interior Design there is ongoing debate relating to the currency and definition of these terms even in the archetypal professions of medicine and law and the so called 'high professions' of engineering and science. Evetts, a sociologist of professional groups, calls for a re-interpretation of these social constructs to reflect changes in cultural values and norms and to better reflect current concerns amongst professions and professionals in the new knowledge economy.

This involves confronting issues such as status, quality, moral probity, trust, discretion, knowledge, and paradoxically politics, power, gender, control and exclusion. These issues are central to the constructs of professionalization, professionalism and profession and in many ways perpetuate patriarchal models. Through a closer examination of the historical development and current debates relating to these social constructs a picture of their influence on the identity of interior design as a feminised profession is developed. This examination suggests ways in which these concepts may be re-interpreted to define a more useful, holistic and current framework for the profession of Interior Design, one that helps to define what it means to be an Interior Design professional.

NARRATIVE

INTRODUCTION

The concepts of professionalization, professionalism and profession are as strongly contested as the territorial social constructs they represent. There are no universal definitions of these concepts just as there are no universal definitions of the profession of interior design and its boundaries, with regional positions varying globally from expansive to restrictive paradigms (Cys, 2006).

As interior design is claiming professionalization (Lees-Maffei, 2008) there are those in sociology claiming that the professions are in decline (Burger, 1993, Krause, 1996, Laing, 2005) and that it is no longer important to draw hard definitional lines between professions and other occupations (Evetts, 2003). Through an examination of these concepts as patriarchal and gendered interior design's identity as feminized comes into focus.

HISTORICAL CONTEXT

The idealization of the professions as elitists groups began with the formation of the archetypal professions, clergy, medicine and law, in the period of the Reformation and the Renaissance (O'Day, 2000). As O'Day reveals, these professions did not embody the idealized contemporary concept of professions representing noble intentions, unity, elitism, power, control and respect. On the contrary, these professions were individuals using family connections and patronage to earn their place in a hierarchical society. Paradoxically this idealization of the professions has remained central to the appeal of professionalism and professionalization despite the differing focuses and employment conditions of occupational groups (Larson, 1979, Evetts, 2003).

The appeal of professionalism began during the Industrial Revolution when the expansion of trade and the mechanization of work were made possible. This period witnessed what Smith (1775) called, the division of labour, which essentially represented concepts of specialization and specialist giving rise to specialist education, regulation and limited inclusion (McDonald, 1975). In Anglo-American terms, professionalization became a means of creating social and business networks for middle class, white males, to maintain the 'gentlemanly' hierarchies characteristic of the archetypal professions and later, with the rise of capitalism, the ability to control and close markets (Abbott, 1988, Evetts, 2003, Beegan & Atkinson, 2008).

This occurred during a period when women 'belonged to their husbands' and were generally not allowed to work unless 'under the direction of their husbands or in the philanthropic sense amongst the upper class' (Attfield & Kirkham, 1989). As women began to enter the workforce the 'division of labour' came to represent the exclusion and or segregation of women from and within particular types of work and professions (McKeller & Sparke, 2004) reinforced through the gated professions and universities of the time (Beegan & Atkinson, 2008). As such the professions embodied the value system of patriarchy (Scott, 2000).

PROFESSION, PROFESSIONALIZATION AND PROFESSIONALISM

For the first half of the last century the predominant theory in the sociology of professions was functionalist theory aligning with modernism. To date functionalism has been the primary vehicle for interior design staking claim to its professional status through a 'trait based' system and concepts of the professional project, or professionalization (Larson, 1977, McDonald, 1995, Piotrowski, 2001, Birdsong, 2001, Whitney, 2009). This approach was highly criticized within sociology during the 1960's-1970's for it's narrowing and exclusionary affect leading to its general abandonment coinciding with the 'end of modernism' (McDonald, 1992). More current theories in sociology analyse the appeal of professionalism through the study of normative value systems and ideology systems (Evetts, 2003), systems that embody the values and ideologies of patriarchy.

The modern professions emerged out of this appeal contemporaneously with the modern capitalist industrial society, giving rise to the 'modern class system' (Macdonald, 1995). This system represents patriarchal capitalism, or the assertion that capitalism was built on patriarchy as mutually dependent or interrelated constructs (Witz, 1992, McDonald, 1995) and perpetuates the patriarchy of the professions (Scott, 2000). The class relations of capitalism and the gender relations of patriarchy relate to ideologies, material production and strategies that over time have worked to maintain the division of labour, both in the home and in the workplace (Witz, 1992). Patriarchal theory is therefore useful for examining and framing concepts of male dominance within the professions.

Patriarchy originally referred to the power of the father; power exerted over the wife/mother, the daughter and the son as subordinate to the father (Witz, 1992). In a broader definition, patriarchy can be viewed as male dominance over women, but also over other men in particular domains, at particular times in history. When considering patriarchal capitalism the domain of control is that of work and subsequently the professions. Patriarchal theory assumes the 'primacy' of 'gender systems' in all 'social organizations' creating an unchanging theme of a fixed gender inequality (Scott, 2000). In recognition of these relationships Davies (1996) suggests the abandonment of claims to professionalism and calls for recognition of the links between these claims and the construction of masculinity 'which fits uneasily with newer and more feminized professions' (Evetts, 2003) such as interior design.

INTERIOR DESIGN PROFESSION AND IDENTITY

Interior design as an occupation emerged following World War II out of a particular set of social and economic 'needs' and was professionalized by the mid to late 1970's (Piotrowski, 2001, Kilmer & Kilmer, 2000, Keane & Keane, 2002, Julier, 2000, Whitney, 2009). Despite the growth and contribution of interior design to the fields of design and the built environment, the profession is still perceived within discourse and professional paradigms that maintain a gendering of the profession as feminized and inferior. In order to understand this marginalization one needs to interrogate its history. Whilst there is much written about the periods leading up to the 1950's, when the profession was not yet marked out, there is little written about its emergence in the second half of the century in scholarly work.

At the turn of the century, legitimate scholars theorized that the new conditions of modernity indicated that society was devolving or degenerating. The reason for this degeneration was generally recognized as the "feminization" of culture. All indications of the feminine, therefore, were perceived as inferior. The perception that gay men are "feminized" men links them automatically with the same inferiority assigned to both women and decoration (Havenhand, 2004). It was this disparaging attitude toward both decoration and the feminine that fuelled the emergence of interior design as a practice separate to that of interior decoration and architecture (Tigerman, 2007).

It can be demonstrated through historical examples, and through the writing of history itself, that the interior and the profession of interior design are considered 'inferior', 'soft', 'feminine', and 'absent' in critical discourse surrounding the field, particularly in architectural discourse (Brod, 2000, McNeil, 2002, Turpin, 2007, McKeller, 2007,). A discourse that until recently has had a predominantly male voice and an inherent patriarchal bias or the voice of suffrage. In response there is now a rewriting of history to form a more complete and coherent historical record, that speaks of interiority and that includes significant female figures, from an historical record that has tended to ignore them (Turpin, 2007). Such rewriting begins to speak legitimately about difference and the cultural conditions out of which individuals and practices emerged: 'conditions that are the not-too-distant preconditions for the present professional status of women' (Ockman, 1992). Without a legitimate history interior designers, lack their own professional roots and models, and therefore have been limited to define the interior design profession's paradigm in relation to other professions, in particular to architecture (Ockman, 1992, Brown, 1999, Havenhand, 2004).

In Biglan's model of academic disciplines, professions associated with the built environment are typically classified as 'applied, hard and nonlife' including architecture and engineering, whereas design and business are classified as 'applied, soft and life' (Rice & Richlin, 1993). Once again, interior design is situated as 'other' within the built environment highlighting the dichotomy between Interior Design and its associated professions.

> *'The dichotomy of "hard" and "soft" is not unique to design, and there is a complex relationship between disciplinary cultures and gender' (Clegg & Mayfield, 1999). For the profession of Interior Design, this dichotomy has developed in an ongoing tension regarding its validity and subsequent subjugation of the profession. In this sense the terms 'hard' and 'soft' take on a particularly gendered voice and symbolism. This tension and subjugation arise as much out of concepts of separate spheres, domesticity and gendered roles, as they do out of contested territories (Avery, 2000).*

The identity of interior design is embedded within historically generated prejudices which have translated into a delineation between 'architecture', 'the masculine',

'hard' 'king' and 'interior design', 'the feminine', 'soft', 'hand-maiden'. (Brown, 1999, Clegg & Mayfield, 1999, Havenhand, 2004). This division, however, is not simply one of a professional divide, but rather, runs deeper, through the social construct of gender and the patriarchal construct of professions. The sexual division of labour and the social constructs of gender have remained, in the deepest cultural sense, rather unchanged (McKellar, 2007).

CONCLUSION AND DIRECTIONS

The constructs of professionalization, professionalism and profession are gendered and patriarchal and embody concepts of power and control. As a feminized profession, interior design should re-evaluate and take from these constructs what is important and appropriate to its identity.

A more useful framework for building the identity of interior design might include the following. A well defined paradigm that celebrates difference and articulates 'soft' and 'life' relationships and considers practice, research, education and knowledge as profession (Rice & Richlin, 1993, Klingenberg, 2006). A legitimate history of the profession that articulates claims of 'other' in the creation of interior places and represents the socio-cultural and socio-temporal perspectives and social actors involved. An identification in broad terms of shared values and aspirations that put social needs, such as trust, empathy and integrity before self needs. A continuing development of the body of knowledge including, propositional, personal, process and embedded knowledge (Eraut,1994). Specific methods for defining ways of thinking about problems within the paradigm and what is 'good' and 'right' (Dingwall & Lewis, 1983). Finally, an acceptance of shared territory rather than contested territory as a transdisciplinary profession in a globally networked economy.

REFERENCES (HARVARD UTS)

Abbott, A., 1988, *The System of Professions,* The University of Chicago Press, Chicago

Attfield, J., & Kirkham, P., (eds), 1989, *A view from the Interior: Feminism Women and Design,* The Women's Press Limited, London

Avery, T., 2008, *Acknowledging Regional Interior Design: Developing Design Practices for Australian Interiors (1880 – 1900),* Journal of Design History, Vol.21 No.1, pp. 41-58

Beegan, G. and Atkinson, P., 2008,'Professionalism, Amateurism and the Boundaries of Design', *Journal of Design History*, Vol. 21, No. 4, pp. 305-313

Birdsong, C., 2001, 'Perceptions of Professionalism: - Interior Design Practitioners

Working for the Top 100 Firms', *Journal of Interior Design,* Vol. 27, No. 1, pp. 20-34

Brod, H., 2000, "Excerpts from 'The Case for Men's Studies', *Gender space and architecture: an interdisciplinary introduction,* Ed.s Rendell, J., Penner, B., Borden, I., Routledge, Chp. 12, pp.88-95

Brown, D.S., 2000, 'Room at the top: Sexism and the Star System in Architecture', *Gender Space Architecture*: *an interdisciplinary introduction*, Ed.s Rendell, J., Penner, B., Borden, I., Routledge

Burger, W.E., 1993, 'The Decline of Professionalism', *Proceedings of the American Philosophical Society,* Vol. 137, No.4

Clegg, S., & Mayfield, W., 1999, 'Gendered by Design: How Women's Place in Design Is Still Defined by Gender', *Design Issues,* Vol. 15, No. 3., pp. 3-16

Cys, J., 2006, '[un]disciplined', *IDEA Journal, pp.14-25*

Eraut, M., 1994, *Developing Professional Knowledge and Competence*, The Falmer Press, London

Evetts, J., 2000, 'Analysing Change in Women's Careers: Culture, Structure and Action Dimensions', *Gender, Work & Organisation,* Vol. 7., No. 1, pp.57-67, Blackwell Publishers, Oxford, UK.

Evetts, J., 2003, 'The Sociological Analysis of Professionalism; Occupational Change in the Modern World*', International Sociology*, Vol. 18, No.2, pp.395-415, Sage, London

Havenhand, L.K., 2004, 'A View from the Margin: Interior Design', *Design Issues*, Vol. 20, No. 4 pp. 32-42

Julier, G., 2000, *The Culture of Design*, Sage Publications, London

Keane, L., & Keane, M., 2002, 'The Culture of Design Education', *Interior Design Handbook of Profession-*

al Practice, Coleman, C., (ed.), McGraw-Hill

Kilmer, R., & Kilmer, O., 1992, *Designing Interiors,* Harcourt Brace

Jovanovich College Publishers

Krause, E.A., 1996, *Death of the Guilds: Professions, states, and the advance of capitalism, 1930 to the present*, Yale University Press, New Haven, Conn.,

Laing, A. et al, 2005, 'Crisis of Confidence: Re-narrating the Consumer-Professional Discourse', *Advances in Consumer Research*, Volume 32, pp.524 - 541

Larson, M.S., 1977, *The Rise of Professionalism,* University of California Press, Berkeley

Lees-Maffei, G., 2008, ' Professionalization as a Focus in Interior Design History ',

Journal of Design History, vol. 21, no.1, pp. 1 – 18

MacDonald, K., 1995, *The Sociology of the Professions,* Sage Publications, London

McKeller, S., & Sparke, P., (eds.), 2004, *Interior Design and Identity,* Manchester University Press, UK

McKellar, E., 2007, *Representing the Georgian: Constructing Interiors in Early Twentieth-Century Publications, 1890 – 1930,* Journal of Design History, Vol.20, No.4, pp. 325-344, Oxford University Press, on behalf of The Design History Society, Oxford

McNeal, P., 2002, 'Rarely Looking In: The Writing of Australian Design History, 1900-1990', in *Designing Australia: Readings in the History of Design,* Ed. Bogle, M., Pluto Press, Annandale, Chp. 3 pp.14-23

Ockman, J., (ed.), 1993, *Architecture Culture 1943-1968*, Rizzoli, New York

O'Day, R., 2000, *The Professions in Early Modern England, 1450-1800: Servants of the Commonweal,* Harlow, England: Pearson Education

Piotrowski, C., 2002, *Professional Practice for Interior Designers,* J.Wiley, New York

Rice, R.E., & Richlin, L., 1993, 'Broadening the Concept of Scholarship in the Professions', *Educating Professionals: Responding to New Expectations for Competence and Accountability,* Curry, L. (ed.), Jossey-Bass, San Francisco, Chp.12. pp.279-315

Scott, J.W., 2000, 'Gender: A Useful Category of Historical Analysis', *Gender space architecture: an interdisciplinary introduction* Ed.s Rendell, J., Penner, B., Borden, I., Routledge, Chp.11, pp. 74-87

Tigerman, B., 2007, ' I Am Not a Decorator ': Florence Knoll, the Knoll Planning Unit and the Making of the Modern Office'*, Journal of Design History,* Vol. 20 No. 1, pp 61-74

Turpin, J., 2007, The History of Women in Interior Design: A Review of Literature, The Journal of Interior Design, Vol.33 No.1, pp.1-15

Walker, L., 1989, 'Women and Architecture' *A View from the Interior:*

Feminism Women and Design, Attfield & Kirkham, (eds) Chp 7, The Women's Press Limited

Whitney, M.C., 2009, *Interior Design: A Unique and Independent Profession*, IDEC Annual Conference, St Louis, Missouri

Witz, A., 1992, *Professions and Patriarchy,* Routledge, London

The Tessellated Interior: Continuous Surface and the Material Seam

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ABSTRACT

Tessellations are geometric patterns that organize surfaces into aggregate components without any gaps or overlaps. Commonly associated with tiling systems as well as ornamental mosaics, tessellated patterns may be efficiently repetitive or intricately differentiated. A tessellation allows smaller components to be multiplied and adjoined to other components based on their geometric compatibility, highlighting in this way edge-to-edge relationships that form seams. Most interior surfaces that are materially continuous, but composed of smaller parts, are essentially tessellations. Gypsum-board partitions, plank floors, acoustic ceilings, wood paneling, ceramic and stone assemblies, even tailored upholstery, are all surfaces whose overall coverage is determined by different types of tessellated patterns.

Material size is typically determined by the relationship between natural resources and industrial production. As such, materials are dimensionally standardized through manufacturing logistics, with standard sizes reflecting the efficiency of repetitive production, the limits of tooling and transportation processes, and the presupposed demand for uniformity as a measure of quality. Such industrial considerations have a direct impact on the aesthetics of use of those materials where, for example, the scale, proportion and shape of a tile determined by the workings of the factory, become the default measures within a designed space. While relating the reality of material production with its design application speaks to an understandable concern for economic efficiency as well as an ethos of truthful reciprocity between industry and design, it may also limit creative, aesthetic and functional potential of material assembly. Recently developed digital fabrication technologies open up the possibility of synthesizing manufacturing efficiency with a broader range of customized assembly strategies.

This paper analyzes three recently constructed interior installations by three different California designers that address such synthesis. *P_Wall* by Andrew Kudless is a 45 foot by 12 foot interior gallery wall commissioned by the San Francisco Museum of Art in 2009, through which the designer investigated the relationship between the material properties of cast plaster and the abstract tessellated geometries that organize its overall assembly. *Deform House* by Thom Faulders is a residential project completed in 2007, featuring an interior paneling system whose primary characteristic is the ornamental pattern that emerges from the tessellated assembly of its components. The overall geometric complexity of the seams is accomplished through digital means, while retaining material efficiency and minimizing waste. *In-Out Curtain*, produced by the design studio IwamotoScott as an experimental installation in 2005, is a prototype for an operable interior partition system. While the geometry of each component recalls the complexity of origami and digital forms, the efficiency of the tessellated pattern is demonstrated by the actual ease of fabrication as well as its flexibility for adjustment as per varying requirements for privacy, lighting, and air circulation.

Thorough analysis of these three projects from concept to installation demonstrates the creative and practical benefits of rethinking the geometries that organize the assemblies of interior surfaces– tessellations – through a thoughtful synthesis of material properties and digital fabrication techniques.

NARRATIVE

INTRODUCTION

Tessellations are geometric patterns that organize surfaces into aggregate components without any gaps or overlaps. Commonly associated with tiling systems as well as ornamental mosaics, tessellated patterns may be efficiently repetitive or intricately differentiated. Most interior surfaces that are materially continuous, but composed of smaller parts, are essentially tessellations. Gypsum-board partitions, plank floors, acoustic ceilings, wood paneling, ceramic and stone assemblies, even tailored upholstery, are all surfaces whose overall coverage is determined by different types of tessellated patterns.

Material size is typically determined by the relationship between natural resources and industrial production. As such, materials are dimensionally standardized through manufacturing logistics, with standard sizes reflecting the efficiency of repetitive production, the limits of tooling and transportation processes, and the presupposed demand for uniformity as a measure of quality. Such industrial considerations have a direct impact on the aesthetics of use of those materials where, for example, the scale, proportion and shape of a tile determined by the workings of the factory, become the default measures within a designed space. While relating the reality of material production with its design application speaks to an understandable concern for economic efficiency as well as an ethos of truthful reciprocity between industry and design, it may also limit creative, aesthetic and functional potential of material assembly. Recently developed digital fabrication technologies open up the possibility of synthesizing manufacturing efficiency with a broader range of customized assembly strategies.

THREE CASE STUDIES

This paper analyzes three recently constructed interior installations by three different California designers that address such synthesis. Each installation is viewed in relation to three interrelated issues: tessellated geometry, materiality, and digital techniques utilized in the design and fabrication process. Together, they provide a set of strategies for addressing the relationship between surface continuity on the one hand, and component-based assembly on the other.

DEFORM HOUSE

Deform House by architect Thom Faulders, a residence in San Francisco completed in 2007, features an interior paneling system primarily defined by its irregular tessellated pattern. The ceiling and an adjacent picture-window wall, the only available surfaces in a space otherwise dedicated to art display, were sheathed in the new paneling, allowing its ornamental pattern to spread continuously along the two planes.

The main characteristic of the paneling system is the aggregation of seams between otherwise flush panels. The seams form a non-standard, striated pattern, a series of lines whose overall paths are parallel to one another, but whose individual geometries are based on a specific range of curvatures, producing panels of varying profiles and dimensions. The interrelatedness of the curvilinear paths, the dimensional limitations of the panels and their profiles, as well as the principles that define the degrees of alignment and misalignment of the embedded geometries, all form a specific and legible vocabulary of the installation.

The paneling is constructed from medium-density fiberboard (MDF), an ordinary material that is typically available in four-foot by eight-foot sheets. The architect's design drawings reveal an explicit consideration for material efficiency, deploying tessellation as a strategy not just in the final assembly of the finished panels, but also as a principle of organization in their fabrication. Material cutting templates, designed in relation to the overall dimension of stock material, are in themselves patterns devoid of gaps or overlaps – and waste. The tessellated pattern is both organizational process and aesthetic product.

Embedded in the research and development of this installation is the deployment of digital techniques. The geometries of the seams, first produced as digital drawings, are constructed as splines – curvatures determined by control-points rather than radii – which allows for more complexity within the pattern while maintaining the clarity in the drawing process. Given that digital drawings utilized in the design process are directly applied to the digital fabrication methods – in this case a CNC (computer-numerical-controlled) router - the possibility for increased intricacy in the design while maintaining efficiency in the production becomes central to the project's motivation.

P_WALL

P_Wall by Andrew Kudless is a 20-foot by 12-foot interior paneling system commissioned by the San Francisco Museum of Art in 2009. Nearly 2 feet in thickness, the temporary installation occupied a full gallery wall, replacing the existing surface with a new tessellated cast-plaster skin.

An examination of the designer's drawings in relation to the installation itself provides helpful insight about the role of tessellated geometries in the organization of the paneling system. The primary tessellated pattern is hexagonal, dividing the overall wall surface into 150 tightly fitting panels. The pattern is modulated, so that the widths of the individual hexagons vary – a single parametric shift that incrementally changes the length of one set of parallel edges without disrupting the angle values of adjacent edges. The effect is that the pattern appears to expand and contract as it moves across the wall. The secondary tessellated pattern is a network of points interconnected through a web of triangulating lines. This pattern, most apparent in the drawings, is overlaid onto the primary pattern, constructing connections across panels otherwise separated by the hexagonal seams. The varying density of points within the pattern generates a tangible pattern, which, together with the hexagonal matrix underneath, reveals the logic of repetition within the overall system.

The interaction of the two tessellated patterns is translated into formwork into which liquid plaster is poured and formed into finished panels. Rigid hexagonal frames are constructed from wood, over which flexible Lycra fabric is stretched and constrained by a set of dowels underneath, distributed to reproduce the point-network described in the drawings. The repetition embedded within the overall system is deployed efficiently, allowing individual molds to produce multiple panels. Given the flexibility of the stretched fabric, its interaction with points of constraint, and the forces exerted by the liquid plaster in each pour, each final panel is a result of a material formation unique to the moment of execution. Form, materiality, and fabrication are thus interdependent.

Digital techniques in this project are primarily used in the design process. The hexagonal matrix is parametrically modulated to produce variation and rhythm. The point-network is a result of a digital script that converts a grayscale image into a point-cloud. The digital information sets up the rules of the process – from fabrication to assembly - but allows for the materiality of the system to produce variation within that process. In that sense, the digital techniques of design collaborate with the analog techniques of fabrication, creating an exchange between control and improvisation.

IN-OUT CURTAIN

In-Out Curtain is a prototype for an adjustable, component-based screen that can act as a window shade, interior partition or adjustable enclosure. Designed by the studio IwamotoScott, it explores the relationship between digitally fabricated small-scale components and their larger-scale aggregations.

The three-dimensional components are constructed from folded two-dimensional material. They aggregate side-by-side and edge-to-edge in a formation resembling a distorted grid. The tessellated pattern is a product of the individual geometries of the components and their overall compatibility with the neighboring units.

Given the experimental nature of the project, the material choices resemble model-making materials more so then they do those of full-scale construction. The designers did, however, take into account the specificity of the material, exploiting its ability to provide structural stiffness on the one hand, while having enough elasticity to be adjusted as needed on the other. In this way, the overall assembly is fixed in place, while the individual components can be pushed or pulled to open or close, depending on the desired affect.

The components are modeled digitally, generating multiple configurations based on set parameters. The three-dimensional models are then unfolded to produce two-dimensional templates for laser-cutting. The cut material is manually folded to produce the components, which are then fastened to one another to produce the overall installation. Like the other projects two projects, *In-Out Curtain* investigates the relationship between digital processes and material properties in order to retransform the performance and perception of common materials. The role of tessellation is here deployed primarily in the final stage of assembly, but one can imagine that, with further development, it could also become a more critical aspect in the management of the fabrication templates, negotiating the relationship between formal intricacy and

material efficiency.

CONCLUSION

The three projects, from concept to installation, demonstrate the creative and practical benefits, as well as the as-of-yet unrealized potential, of rethinking the tessellated geometries that organize the assemblies of interior surfaces. The tension between continuous materiality and the patterning of seams within that continuity provides opportunities for design innovation by directly engaging issues of one-to-one scale fabrication as fundamental to the design process. By considering the synthesis of geometry, materiality, and technique, the projects begin to map out a set of relationships between variation and efficiency. By taking into account repetition as a strategy for production, as well as customization as a condition of site-specificity, tessellations, as fundamentally organizational, may also be considered as a link between product design and architecture – the link always already provided by the practice of interior design.

REFERENCE LIST (CHICAGO)

http://www.faulders-studio.com/

http://www.iwamotoscott.com/

http://matsysdesign.com/

Iwamoto, Lisa. *Digital Fabrications: Architectural and Material Techniques.* New York: Princeton Architectural Press, 2009.

Kolarevic, Branko and Kevin Klinger. *Manufacturing Material Effects: Rethinking Design and Making in Architecture.* New York: Routledge, 2008.

Schafer Ashley, and Amanda Reeser Lawrence. *Praxis: Journal of Writing and Building, Issue 9: Expanding Suraface*. Boston: Praxis, Inc. 2007.

Adapting Atmosphere: Today's Small Synagogues

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ABSTRACT

Synagogues, large and small, continue to be built around the United States. Professional and academic curiosity has led me to ask why and how small long-established and younger congregations are building new "spaces" or substantially re-adapting existing ones. In this paper I expose a type and a scale of sacred building not usually seen in academic and interior design conversations.

This research focuses on understanding how regional and universal issues unite to making a synagogue. The synagogues I selected were completed in the last five years. Two are located in western states (Alaska and California) and two are located in the east (New York and Pennsylvania). Four different denominations were chosen: Reform, Orthodox, Reconstructionist, and Non-affiliated. All of the synagogues are found in small cities with some drawing members from surrounding locales. Memberships vary in size and are comprised of families and individuals.

The research is comparative in nature, looking at the particular religious interests and requirements each group desired along with the building processes used to construct the four congregations. The pertinent questions for investigating design process were: What were the means and processes that these groups took to achieve conceiving of and designing their new religious homes?; What were the driving design concepts and beliefs behind the interior designs?; What factors would have made for a different or more effective outcome? The pertinent questions for design assessment were: Did the process for design, and the design itself, achieve the goals of creating a public image that embodied membership interests?; Does an interior design aesthetic add to spiritual meaning and the collective aura, or is this "atmosphere" a consequence of other things?; and, Are the designs that resulted both regional and universal?

Interviews included speaking with rabbis, board presidents, contractors, designers, and building committee heads to assess the methods used for design and implementation. Through this varied user group I was able to assess the current spiritual and educational attitudes along with the programming. This allowed me to understand real spatial and emotional needs. The results were both varied and similar.

Unlike a church, a synagogue has very few liturgical requirements. Though size, denomination and geographical locale were different, I found for all that interior flexibility became key for functional and spatial allowance as well as social and financial reasons. From this research, I can reinforce the notion that interior design and aesthetic were more important to only some, as an underlying symbolic meaning can be generated in several ways. Small synagogues present a non-oppressive, personalized balance of reverence, and a place for assessing values and reaching for spiritual comfort.

NARRATIVE

Design calls for teasing out meaningful and detailed relationships surrounding the careful implementation and arrangement of functions, and the "urging of human interaction and impulse" to create appropriate atmospheres (Preston, 2008). Some defining of a synagogue is necessary to appreciate the various decisions made for the four synagogues featured here.

There is no architectural design or artistic style that is required for characterizing the exterior or interior of a synagogue. No shelter is specified and the liturgy is simple: to constitute a place for public Jewish prayer, a *minyan* of ten adults (exclusively men, in the Orthodox traditions) must gather with a torah. (Stolzman, 2006). In the last 200 years the synagogue has largely been defined by three main activities including a worship and sanctuary space, a place of learning (educational school space/s and library) and a place of assembly for various activities (celebratory/social and/or community-oriented) (Krinsky, 1985).

Through this study, I am purposely exposing a scale and method for looking at sacred buildings not usually seen in academic conversations. I am interested in revealing and depicting what is behind these meaningful, yet non-monumental structures. The intention is to give a brief comparative view of the building processes and how the regional and universal interests affect the outcomes. I illustrate the varied and similar conditions resulting from grass-roots efforts less associated with larger Jewish communities, though requirements for any synagogue are not necessarily different.

My interest in this subject stems from my earlier research on sacred space and associated lighting techniques as well as the affect of light levels. My interest in writing and teaching about mosques, synagogues and churches has extended to professional practice. I had the opportunity to plan, program and design a synagogue for a small congregation in Juneau, Alaska. The building they selected to use was as challenging as the search for the right design temperament. Designing a sacred space is similar to doing residential work—as the clients react personally and emotionally to almost every move—yet there are many more stake-holders.

The four small synagogues I selected for study were completed between 2004-2009. Their memberships vary from approximately 375 to 40 units including families or individuals. Sukkat Shalom in Juneau, Alaska (40+/-), Kenesset Israel in Sacramento, California (90+/-), Kehillat Lev Shalem in Woodstock (375+/-), New York and Congregation Beth El in Sunbury, Pennsylvania (75+/-) provide a small western and eastern cross-section of congregations. They were also chosen to represent four different denominations—Reform, Orthodox, Non-affiliated and Reconstructionist—to see if differences or similarities arose.

I devised questions to investigate how design process and programming could result in not only different designs but also possibly different understandings and "building" of atmosphere. Some involved new architecture while others were adaptive re-use projects, yet all focused on the use and provision of the interior spaces.

To collect and put forth an understanding of each of the congregation's decisions, I spoke with a selection of people associated with the projects in winter and spring of 2009. These included rabbis, board presidents, contractors, building committee heads and designers. With this information, I can assess the means and processes that these groups took to achieve the conception and then the resulting design of their new religious homes. I asked:

What were the driving design concepts and beliefs behind developing new architecture, the use of existing sites and in particular, the attention to interior planning and design?

What factors would have made for a different or more effective outcome?

Did the process for design, and the design itself achieve the goals of creating a public image that embodied membership interests?

Does an interior design aesthetic add to spiritual meaning and the collective aura, or is this "atmosphere" a consequence of other things?

Are the designs that resulted both regional and universal?

Goals for developing a new synagogue that express the

desires of its members were intertwined with the stories about where each of the of the four originally gathered before building new, re-constructing or re-adapting began. For example, Juneau's community originally met in member's houses, then followed by rented spaces from churches until they purchased an unusual long bridge-like structure for adaptive re-use in a residential location. Woodstock's Kehillat Lev Shalem originally rented a site and pitched tents on a rural site that housed a flea market and had their offices in a mobile trailer. Sunbury's Congregation Beth El owned a masonry church in town for many years and when it fell into disrepair they demolished it and started fresh. Sacramento's Kenesset Israel is perhaps the most shocking, as theirs was a story about rebuilding after their original synagogue was firebombed in 1999. For each of the four to achieve the desired site and building, most of the congregations took upwards of ten years for fundraising and committee development. And in this period architects, designers and contractors were hired and then let go, or projects were halted because the design did not meet the vision of the group or the price of construction was too high. In Juneau, most of the architect's work (the author) was done pro bono and the contractor cut his service costs; in Woodstock, the largest congregation and structure in the group studied, they eventually went with a design-build company; in Sacramento, after a second architect was retained, members of the community and the rabbi at the time contributed by actually managing construction, receiving many donated materials and building parts themselves, and in Sunbury, the small congregation was able to raise enough money to hire an architect that would ensure a level of quality while members aided the construction management team.

Constructing a synagogue depends on resilience and stamina. When speaking about function as compared to whether "architecture and design" actually matter, the answers were varied. In my own work and in the stories of others, the location of the sanctuary and the internal path used to arrive there, was most important. The sanctuary and its relationship or separation from other parts of the synagogue vary in each of the four. I also found that all four designs depended on some interior flexibility to allow for when worship or celebrations grow during some holidays, and for other educational or social interactions. The idea of flexible spaces may encourage adaptations for overlapping conditions and activities. In general, the small synagogues present a non-oppressive, personalized balance of reverence, and a place for assessing values and reaching for spiritual comfort.

The symbols often seen on exterior or interior walls at many synagogues are not required and may exist in many forms, sizes and materials. Board Presidents R. Carleton and N. Cohen of Woodstock and Juneau respectively, said congregants were concerned about exterior "presence and identity" yet were more focused on the functionality of the interior design. Both synagogue groups worked very hard to attain the needed spaces for worship, schooling and gathering which are achieved through different arrangements with the inclusion of some local detail and material choice. The group in Sacramento, as expressed by architecture committee member M. Rubin, and Sunbury's Rabbi N. Mandel explained how designs for existing and new sites involved internal spaces and forms that expressed the desire of the members and presented the force of the past while looking toward the future through the choice of masonry materials, craft and symbols.

From this research, I can reinforce the underlying symbolic meaning behind building a religious center. Architect-in-charge of the Sunbury synagogue, J. Kolker, emphasized how he was asked to develop the small design as though it embodied the same integrity as a large congregation. And a statement by building committee and construction team member, S. Haberfeld of Kenesset Israel made the team work and deep drive for their new spaces understandable on several levels, "the commitment is measured in the kind of sacrifice, an offering, you make to get something done…and now the physical place is much stronger."

All participants I spoke to or interacted with confirmed that the design process was very important and that external image must shelter while the inside spaces must allow for an atmosphere of spiritual focus. This might come from sharing community worship and events as well as taking advantage of the local context by peering outside towards nature in order to look deep within. The selection of a bridge or the use of courtyards serve as metaphors that bring the design concepts together.

The contemporary synagogue has transformed over time and continues to be re-invented. Small groups have a sense of a pioneering grass-roots spirit, and their necessity for permanence, owing to their past and pres-

ent experiences have brought about interesting alternatives to larger congregations. Their spirit is expressed in abstract designs and tangible space.

REFERENCES

Krinsky, Carolyn (1985) *Synagogues of Europe : Architecture, History*, Meaning, MIT Press, Cambridge.

Preston, Julieanna, ed. (2008) *Interior Atmospheres*, Architectural Design, Wiley, New York.

Stolzman, Henry (2006) *Synagogue Architecture in America*, Images Publishing, New York.

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Ron Carleton, Board President, for Kehillat Lev Shalem, Woodstock, NY. http://www.wjcshul.org/mc/page.do

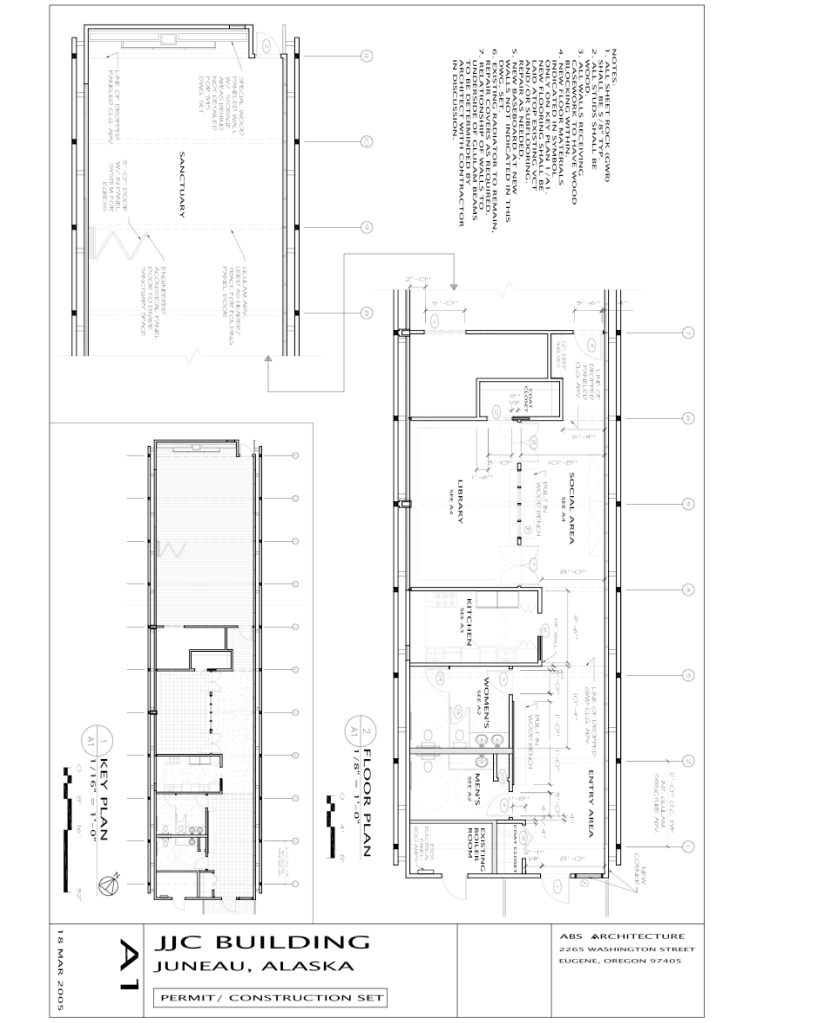

Figure 1: Succat Shalom, Juneau, AK, design by author

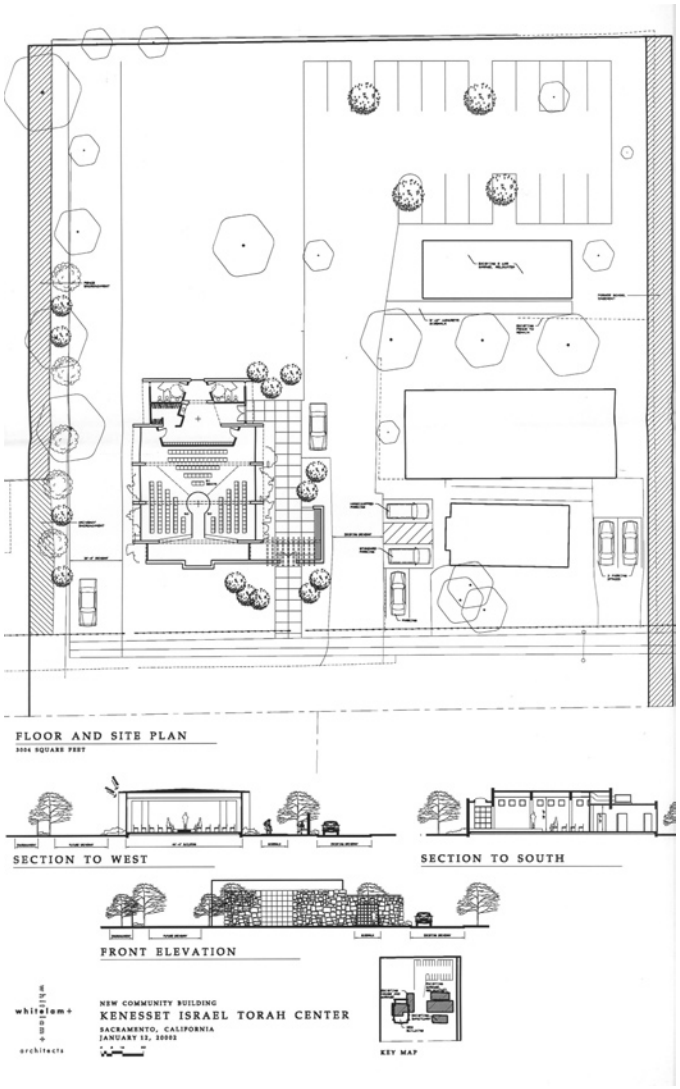

Figure 2: Kenesset Israel, Sacramento, CA

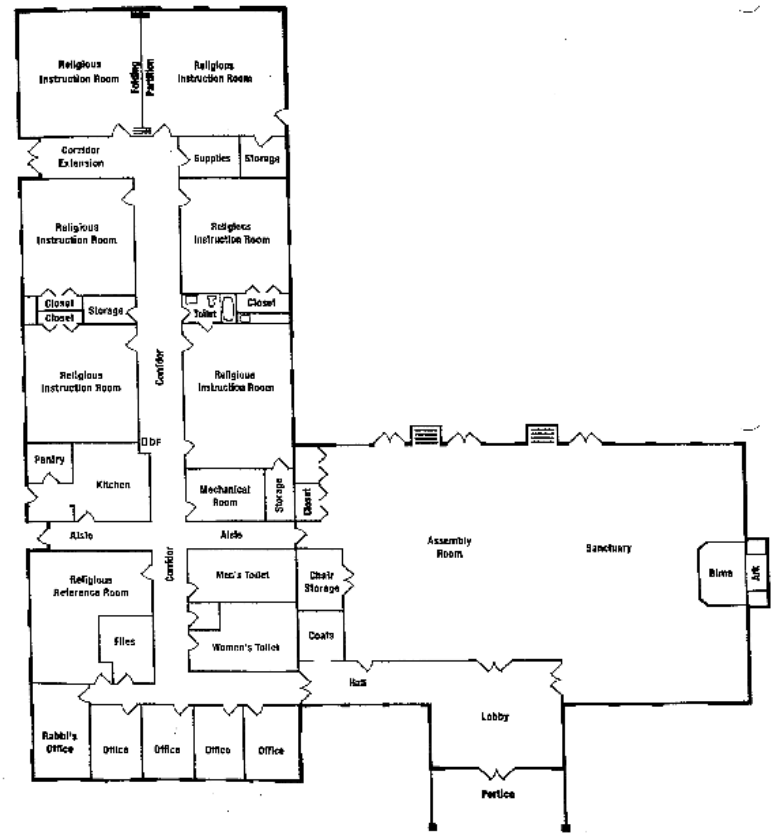

Figure 3: Kehillat Lev Shalem, Woodstock, NY

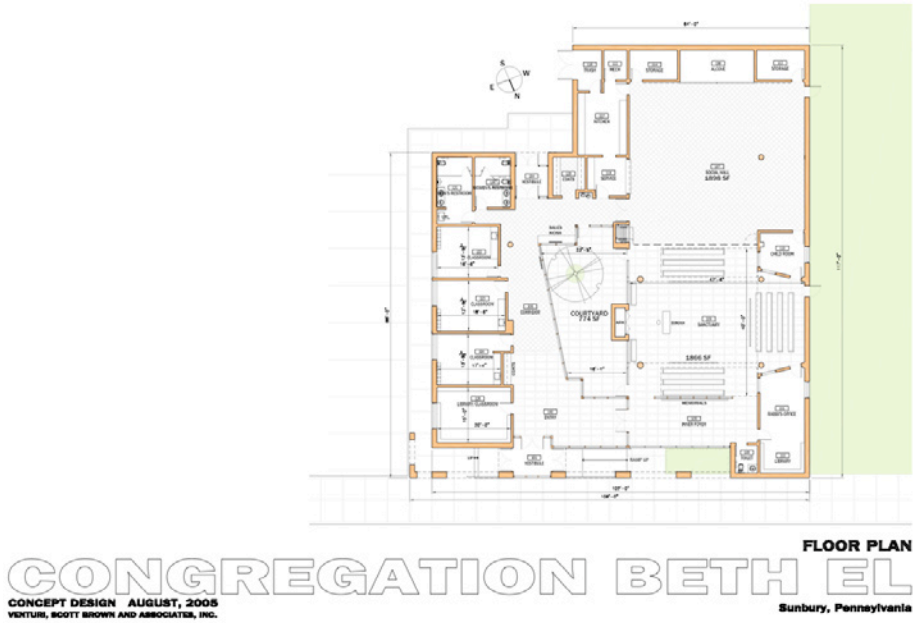

Figure 4: Congregation Beth El, Sunbury, PA

Occupant Perceptions of Daylit Classrooms: A Comparison of North and South Orientation

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ABSTRACT

PURPOSE

This research utilizes a semantic differential scale and a user satisfaction survey to explore perceptual dimensions of luminous environments in daylit elementary school classrooms. The object of the study is to determine whether subjective differences exist amongst occupants of north-facing and south-facing classrooms and if so, whether the differences are supported by observed and measured physical characteristics.

BACKGROUND

It is well known that daylight and views are highly desired attributes of interior environments. Sustainable school design guidelines encourage daylighting, recognizing potential benefits in human health and performance as well as energy efficiency. Best practices for daylighting schools recommend vertical apertures oriented to the North, employing diffuse skydome light, or to the South, employing controlled sunlight. As these sources vary considerably in quantity and quality, it is of interest and importance to examine the corresponding human response.

Successful luminous environments include both quantitative and qualitative aspects. Veitch and Newsham (1996) proposed a multidimensional construct whereby suitable luminous conditions for the worker should exist in six categories including mood state (happiness, alertness, satisfaction, preference) and aesthetic judgments (assessments of the appearance of the space or lighting). This model assigns significant value to the subjective human response including visual assessment and satisfaction.

The semantic differential, a well-known tool for attitude research, has been used in a number of studies to assess subjective impressions of luminous environments (Flynn, 1972; Veitch & Newsham 1996; Eissa & Mahdavi, 2001). The question is raised on whether the semantic differential can stand-alone or requires support of additional evidence (Tiller, 1990; Tiller & Rea 1992). It is suggested that subjective impressions linked to physical measures may provide a predictive model (Tiller, 1990).

METHOD

This analysis utilizes data collected from a field study of (14) north and (27) south facing classrooms in three new elementary school buildings, all designed to daylighting standards. The teachers were issued an anonymous survey with an 11-pair semantic differential scale relating to the luminous environment (six potency factors, three evaluative factors, two activity factors) and a Likert scale for satisfaction. Supportive data is provided by field observations of interior shade positions and field measurements which include illuminance and color temperature mapping.

DISCUSSION OF RESULTS

The semantic differential results indicate a pattern of more perceptual intensity in north classrooms than in south classrooms. In the evaluative factors, there was a clear pattern of more positive appraisal toward north classrooms; this is supported by a similar pattern in satisfaction ratings. In activity factors, there was no significant difference between north and south despite evidence of the south requiring more user involvement in light control. In potency factors, differences between north and south cannot be completely explained by physical evidence.

NARRATIVE

PURPOSE

The welcome resurgence of daylighting in architectural design presents opportunities to study, in-situ, aspects of daylight and occupancy. Daylight is well known as a highly desired spatial attribute, and a growing body of literature suggests positive links between daylit spaces and health, wellness, and productivity (Hechong Mahone Group,1999; Ulrich & Zimring, 2004; Boubekri, 2008). Given these favorable human impacts, it is of interest and importance to study occupant attitudes in order to better support preferences and behaviors in daylit interiors. The majority of research concerning psychological aspects of light is limited to electric lighting. Daylight's dynamic and variable nature creates conditions that are difficult to study experimentally as there are concerns over controls and replication (Boubekri, 2008. p.96). However, daylight's predictable orientation variance makes this aspect relatively easy to evaluate in the field, as it is common for daylit spaces to be designed with a unilateral orientation.

This comparative study utilizes a semantic differential scale and a user satisfaction survey to evaluate perceptions of the luminous environment in north-facing and south-facing daylit elementary classroom spaces. The object of the research is to determine whether or not the teachers perceive subjective differences between orientations, and if so, whether the differences are supported by observed and measured characteristics.

BACKGROUND

The luminous environment affects visual functions, psychological states, and health, yet lighting design often neglects human behavioral dimensions. In an attempt to define a quality lighting scheme for work environments, Veitch and Newsham (1996) proposed a multidimensional construct whereby suitable luminous conditions exist in six categories that range from visual requirements and psychosocial impacts. This behaviorally based model assigns significant value to subjective occupant response, including mood state (happiness, alertness, satisfaction, preference) and aesthetic judgments (assessments of the appearance of the space or lighting).

The semantic differential scale, a well-known tool for attitude research, has been used in a number of experimental studies to assess subjective impressions of lighting and aesthetics (Flynn, 1972; Veitch and Newsham,1996; Kirschbaum & Tonello, 1997; Eissa & Mahdavi, 2001). While the semantic differential tool provides insight on subjective perception, the question is raised on whether it can stand-alone or requires support from additional evidence (Tiller, 1990; Tiller & Rea 1992). It is suggested that subjective impressions linked to physical measures may provide a predictive model (Tiller, 1990). These studies provide a theoretical framework to build upon in evaluating the relationship of daylight and occupant perceptions.

Green school guidelines promote utilizing daylight as the primary source of ambient light for classrooms. Properly executed, daylighting has the potential to save electric lighting energy while creating a superior learning environment, supporting children's health (Kuller and Lindsten, 1992) and student academic performance (Heschong Mahone Group, 1999, 2001, 2003; Niklas and Bailey, 1996). Heschong Mahone (2003) determined that views from the classroom may be the most important predictor of performance. Views significantly impact occupant perceptions in two ways. First, windows provide a desired connection to the natural world; this need is supported by the biophilia thesis, which suggests that humans have an innate affiliation with living things (Kellert and Wilson, 1993). Second, environmental information and spectral variation stimulate neural and hormonal systems, impacting health and cognitive function.

The Collaborative for High Performance Schools Best Practices Manual provides general daylighting principles, recommending north-facing windows as the first choice in aperture orientation and south-facing as the second choice (2006, p. 215). These two orientations result in light sources that vary considerably in character. North apertures collect skydome light, a diffuse, relatively dim, and "bluish" light source. South apertures collect sunlight in addition to skydome light, creating dynamic, bright, and "white light" conditions and heat from thermal radiation. Proper design of the south aperture requires sun control to limit glare and excess heat, however, effectiveness is often less than ideal and requires user involvement.

METHOD

This analysis results from a post-occupancy pilot field study of three elementary schools in a single school dis-

trict, completed and occupied in 2006. The schools were designed under the Washington Sustainable Schools Protocol (2004), a guideline that required that 50% of the learning spaces be compliant with a Daylight Factor of 2%, a standard daylight metric (WSSP). Each school was designed by a different design firm, resulting in somewhat different architecture and interior strategies. However, all classrooms employed unilateral sidelighting to the north or south. Within each school, the classroom designs do not vary for orientation, with the exception of fixed shading on the south. The study included (14) north and (27) south facing classrooms.

The data consists of two sources: teacher surveys and field observations. The teacher surveys were designed to explore occupant perceptions, attitude, satisfaction, and behaviors relating to the luminous environment, daylight and views in particular. The survey utilized a five point Likert scale to assess satisfaction for the classroom, the natural light, and the view. The semantic differential tool requested that teachers answer the following: "The light in my classroom is best described as…." Eleven bipolar word pairs were randomly mixed to prevent positive or negative response sets. The return rate was 75%. Fieldwork was performed under mostly sunny, variable sky conditions seven months into occupation. Field measurement data consisted of illumination and color temperature mapping, luminance spot checks, high dynamic range photography, documentation of interior blind positions and spatial layouts.

ANALYSIS

Various descriptive statistics were gathered from the Likert and semantic differential including mean, mode, standard deviation and median values. Responses from the Likert scale, as they related to satisfaction, were assigned numerical values on a scale from one to five; one represented a more positive response, 'strongly agree', while five equated to a response of 'strongly disagree'.

Data collected from semantic differential scale responses were reorganized into the three different factor categories of evaluative, activity and power/potency factors. To more accurately analyze the semantic differential data, values from pairs that had previously been randomly switched, were then adjusted to reflect positive responses as one, and negative response as a five.

Correlation coefficient scores were calculated to measure the degree of correlational significance between satisfaction with classroom, satisfaction with daylight in the classroom, and satisfaction with view as compared to semantic differential scale responses for both north and south classrooms. A coefficient between (+.35 and -.35) indicated a weak relationship between variables. Values between (+.65 and -.35) and (-.65 and +.65) represented a moderate relationship, and coefficient values closest to (-1.00 and +1.00), between (+.65 and 1.00) and (-1.00 and -.65) indicate a strong relationship between two variables (Gay et al, 2009, p.198).

DISCUSSION OF RESULTS

The primary question of this study is whether or not occupants perceive perceptual differences between daylighting orientations and if so, are these differences supported by additional data? The semantic differential analysis (Figure 1) revealed strongly positive appraisal of potency factors in north-facing classrooms; the strongest impressions were 'friendly', 'healthy', 'pleasant' and 'desirable'. On the south, the pattern was similar but more neutral. In activity factors, north was seen as slightly more 'active' and 'dynamic' than south; an unexpected finding when considering qualities of the sources and reported behaviors around daylight controls. Likewise, in evaluative factors, there are differences that are counterintuitive. For example, north classrooms are perceived as "warmer" and "brighter" than south, yet color temperature and illuminance maps conflict with this finding.

Correlation coefficient scores closely aligned with results from the descriptive statistics (Figure 2). North was consistently associated with a 'healthy' impression of the space as it related to the three satisfaction variables. A correlation coefficient of (+.75), between satisfaction with light and the 'healthy/unhealthy' semantic differential pair, indicated a strong relationship between a 'healthy' impression and high level of daylight satisfaction in north classrooms. However, moderate and strong relationships also existed between 'pleasant' and each satisfaction condition, suggesting that the view had little or no association to the occupants' perception of a 'pleasant' space.

Limitations of the study include a small sample size, variable daylight conditions, and no control over when or where teachers took the survey. However, it was assumed that after seven months of daily occupation, the

teachers had formed impressions of the space as it varied throughout the year.

IMPLICATIONS FOR INTERIOR DESIGN

The findings of the study suggest that occupants have a more positive association with north orientations in daylit spaces. As we move toward buildings that increasingly rely on daylight as the primary light source, it is important for designers to consider the interaction of light qualities and human perception. Detailed analysis provides insight for the occupant perceptions of luminous environment issues resulting from the variability of daylight sources.

REFERENCE LIST (APA)

The Collaborative for High Performance Schools. (2006). *Best Practices Manual, Vol. 2.* Retrieved from http://www.chps.net

Boubekri, M. (2008) *Daylighting, architecture, and health: building design strategies.* Oxford: Elsevier.

Eissa, H. & Mahdavi, A. (2001). Subjective evaluation of architectural lighting via computationally rendered images. *Illuminating Engineering Society of North America 1996 Annual Conference: Proceedings.* IESNA: New York, NY

Flynn, J.E. (1972) The psychology of light. *Electrical Consultant* 88 (12-897).

Gay, Lorrie, Mills, Geoffrey, & Airasian, Peter. (2008). *Educational research: competencies for analysis and applications, 9th edition*. London: Prentice Hall.

Heschong Mahone Group. (1999). *Daylighting in Schools.* Pacific Gas and Electric Company on behalf of the California Board for Energy Efficiency Third Party Program.

Heschong Mahone Group. (2003). *Windows and classrooms: a study of student performance and the indoor environment*. For the California Energy Commission. retreived from http://www.h-m-g.com/Daylighting

Kellert, S. & Wilson, E.O. (1984). *The biophilia hypothesis.* Washington DC: Island Press.

Kirschbaum, C.F. and Tonello, G. (1997). Visual Appearance of Office Lighting. *Right Light 4, Vol. 1* (143-148).

Kuller, R. and Lindsten, C. (1992).Health and Behavior of Children in classrooms with and without windows. *Journal of Environmental Psychology, 12,* 305-17.

Tiller, D. (1990) Toward a deeper understanding of psychological aspects of lighting. *Journal of Illuminating Engineering Society*, *19 (2),* 155-160.

Tiller, D. & Rea, M. (1992). Semantic differential scaling: prospects in lighting research. *Lighting Research and Technology, 24 (1),* 43-51.

Ulrich, Roger and Zimring,C. (2004). *The role of the physical environment in the hospital of the 21st century: a once in a lifetime opportunity.* Center for Health Design.

Veitch, J. & Newsham, G.R. (1996). Experts' quantitative and qualitative assessment of lighting quality. *Illuminating Engineering Society of North America 1996 Annual Conference: Proceedings.* New York, NY: IESNA.

Veitch, J.A. (2001) Psychological processes influencing lighting quality. *Journal of the Illuminating Engineering Society, 30(1), 124-140.*

Washington Sustainable Schools Protocol for High Performance School Facilities (draft)

(2004) Retrieved January 15, 2008 from http://www.k12.wa.us/SchFacilities/pubdocs/.

FIGURE 1
SEMANTIC DIFFERENTIAL FINDINGS

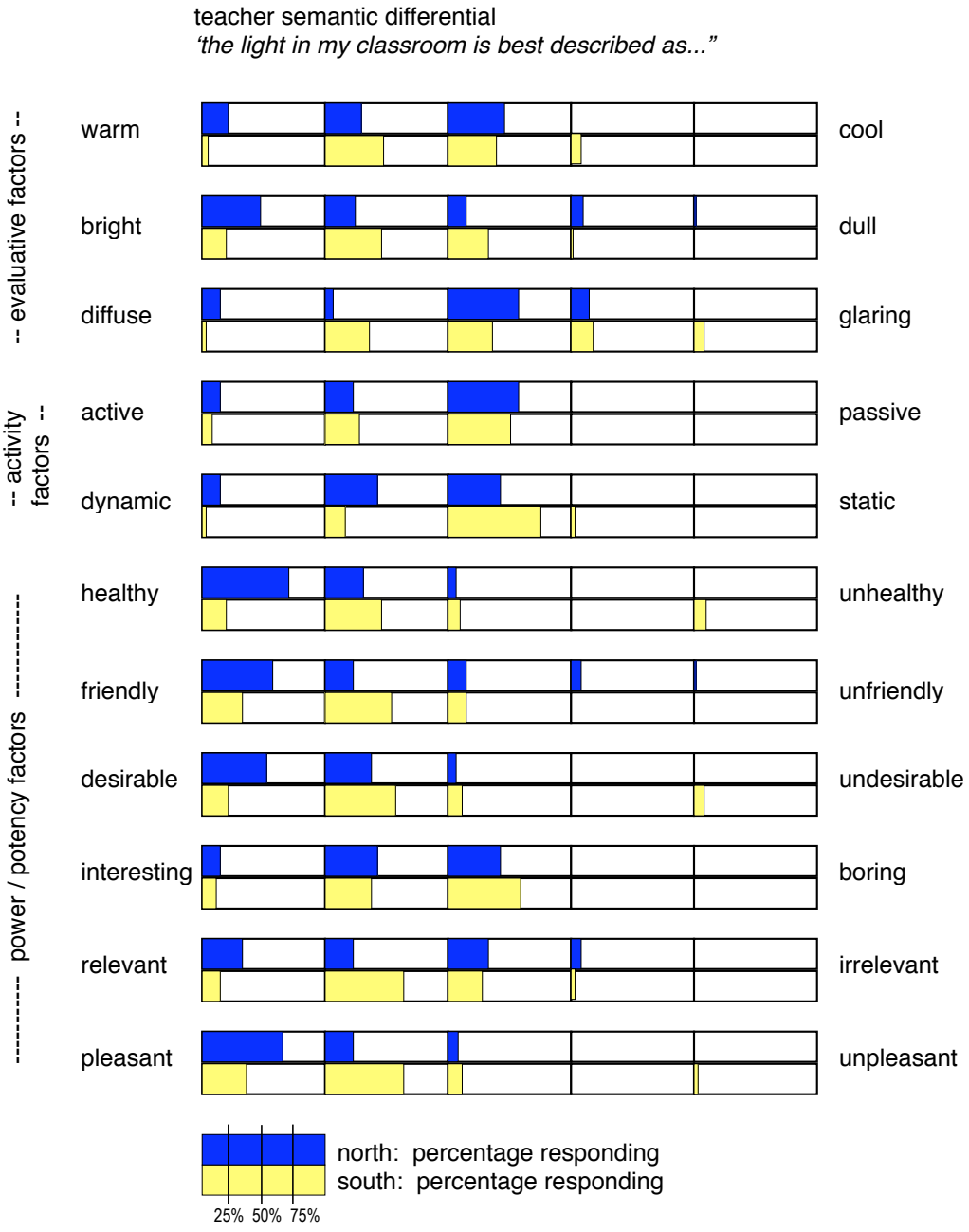

FIGURE 4
CORRELATIONS

CORRELATION COEFFICIENT NORTH

	OVERALL SATISFACTION	SATISFACTION WITH LIGHT	SATISFACTION WITH VIEW
WARM/COOL	*-0.33*	*-0.16*	*0.33*
BRIGHT/DULL	*0.00*	*-0.38*	*-0.40*
DIFFUSED/GLARING	*0.32*	*-0.16*	*-0.29*
DYNAMIC/STATIC	*-0.17*	*-0.32*	*-0.17*
ACTIVE/PASSIVE	*-0.32*	*-0.24*	*-0.28*
HEALTHY/UNHEALTHY	*0.46*	*0.75*	*0.63*
DESIRABLE/UNDESIRABLE	*0.05*	*0.40*	*-0.03*
FRIENDLY/UNFRIENDLY	*0.29*	*0.54*	*0.47*
INTERESTING/BORING	*-0.32*	*-0.60*	*-0.56*
RELEVANT/IRRELEVANT	*0.31*	*0.10*	*0.18*
PLEASANT/UNPLEASANT	*-0.42*	*-0.53*	*-0.70*

CORRELATION COEFFICIENT SOUTH

	OVERALL SATISFACTION	SATISFACTION WITH LIGHT	SATISFACTION WITH VIEW
WARM/COOL	*0.17*	*0.00*	*0.02*
BRIGHT/DULL	*-0.23*	*-0.20*	*-0.17*
DIFFUSED/GLARING	*-0.44*	*-0.18*	*-0.27*
DYNAMIC/STATIC	*-0.43*	*-0.18*	*-0.24*
ACTIVE/PASSIVE	*-0.40*	*-0.02*	*-0.24*
HEALTHY/UNHEALTHY	*0.11*	*0.37*	*0.02*
DESIRABLE/UNDESIRABLE	*0.06*	*0.29*	*-0.09*
FRIENDLY/UNFRIENDLY	*0.07*	*0.28*	*0.04*
INTERESTING/BORING	*-0.09*	*-0.04*	*-0.07*
RELEVANT/IRRELEVANT	*0.23*	*0.36*	*0.02*
PLEASANT/UNPLEASANT	*-0.07*	*-0.15*	*0.12*

KEY:

COEFFICIENT	RELATION BETWEEN VARIABLES
BETWEEN +.35 AND -35	**WEAK OR NONE**
BETWEEN +.35 AND +.65	**MODERATE**
BETWEEN -.35 AND -.65	**MODERATE**
BETWEEN +.65 AND +1.00	**STRONG**
BETWEEN -1.00 AND -.65	**STRONG**

Building Place Attachment in Assisted Living Facilities Through the Designed Environment

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ABSTRACT

As the number of adults in the United States over age 65 swells by 40% to 72 million in 2030 (Wan, Sengupta, Velkoff, Kimberly & DeBarros, 2005), many of these individuals will be faced with making decisions to change their living environments to support the aging process. The transition away from their home and community into a care facility can be a traumatic one and has been shown to upset their familiar routines and social structures. One option that is available to these individuals is an assisted living facility that provides the middle ground between independent living and a nursing home by adding the availability of nursing care or assistance when it is needed (Cutchin, Owen, & Chang, 2003). The design of these spaces should minimize the institutional feel of healthcare environments and maximize the feelings of hominess (Kopec, 2006), easing the transition.

Sociologists, anthropologists and geographers have analyzed the meaning of hominess and personal space in theories such as place attachment, which focuses on homes and sacred spaces, with an emphasis on the emotional experiences and bonds that people have with places. Research has been conducted by Dr. Graham D. Rowles at the University of Kentucky, into the aspect of a person's authentic response to a place resulting in the place attachment theory known as "insideness" (Rowles, 1984, 1993). Identified in his study are three constructs, 1) physical, 2) social, and 3) autobiographical, that when present provide an opportunity for place attachment to occur. By applying Rowles' insideness as the theoretical framework, this inquiry explores how the design of the built environment may support the development of place attachment in the residents of assisted living facilities. This research was conducted through triangulation as the following three methods of data collection were performed:

Observation, photography, and the taking of field notes was used to document the physical attributes of the assisted living facility.

Interviews were conducted with the residents to record their personal experiences.

Photography was used by the residents to identify the objects or places within the facility to further explore factors regarding place attachment.

The findings indicate that place attachment was achieved to the fullest when all three constructs of Rowles' insideness were experienced by the residents. The level to which residents interacted in their physical environment and the level to which a resident developed place attachment varied. All three constructs of insideness were not experienced by all participants to the same degree. Of particular interest was the realization that most residents indicated a strong preference for one over the other two constructs.

This study underscores the influence of the designed environment on the development of place attachment by the residents of assisted living facilities. As a result of this study, Guidelines for the Design of Spaces That Support the Development of Place Attachment in Assisted Living Facilities is offered to assist designers in creating effective environments that support the development of place attachment in residences for the aging population (Appendix 3).

NARRATIVE

In the race for headlines, the aging population often competes with global warming and the economy. The bottom line is the realization that the number of Americans who will reach 65 over the next two decades will increase by 40% (Wan, Sengupta, Velkoff, Kimberly & DeBarros, 2005). Included with the many national issues regarding this aging population segment is the realization that most individuals will require a modification or complete change in their living environment to support the aging process. In response to this need, there has been rapid growth in the construction of assisted living residences and an upsurge of research interest into the many facets of providing successful living environments for the aging population.

Assisted living facilities provide the middle ground between independent living and nursing homes by adding the availability of nursing care or assistance when needed (Cutchin, Owen, & Chang, 2003). Dr. Rosalie Kane and Dr. Lois Cutler, at the University of Minnesota, provide insight into the need for progress in both assisted living and nursing home facilities. The quality of life domains that measure the success of a facility, such as comfort, meaningful activity, privacy, and individuality are many times given credence only after health and safety outcomes are considered. (Cutler & Kane, 2004)

Research acknowledges the effect of the built environment on the behavior of the residents and supports the belief that the design of these spaces should minimize the institutional feel of healthcare environments and maximize the feeling of hominess (Kopec, 2006). Studies have also investigated the influence of the built environment on the residents' well being concluding that the development of place attachment seems particularly important for older individuals who have left behind their residences, in some cases after a lifetime of inhabitance (Sugihara & Evans, 2000). Findings indicate that elderly people who move to facilities and establish an attachment to their new environments can sustain their ability to function and increase self-esteem (Eshelman & Evans, 2002). Each of these research studies have produced significant evidence that supports the influence of the built environment on developing a sense of well being in the aging population.

The practice of applying research evidence to substantiate the design of interiors is referred to as evidence-based design (EBD). The purpose of EBD is to conduct or locate research, report the findings, and apply the findings to the design solution (Nussbaumer, 2009). This approach aspires to base design decisions on documented research together with an informed client, about each individual and unique project (Stichler & Hamilton, 2008). The goal of this project is to contribute to the body of research knowledge that will support the evidence based design of assisted living facilities resulting in the development of place attachment by the residents.

Dr. Graham D. Rowles, Director for the Graduate Center for Gerontology at the University of Kentucky and geographer, has researched the aspects of a person's authentic response to a place resulting in a concept known as "insideness" (Rowles, 1984, 1993). Identified are three constructs that when present provide an opportunity for place attachment to occur. The three constructs of insideness are: 1) physical, 2) social, and 3) autobiographical. Physical insideness refers to the familiarity from living in the same physical surroundings over a period of time. We become accustomed to the layout of our living room, or the path we take to walk the dog each morning that develops a repetitive routine. Social insideness refers to the sense of social familiarity that results from the relationships developed between people within a space. One's home may form a social identity and a place where certain rules of conduct and social norms apply such as the interaction that occurs between family members over the dinner table. The third component of insideness is "autobiographical" and is closely linked to personal history. As one grows older, the images of who we are become intertwined with past experiences at a specific location. These memory-making experiences may be of the park where their children once played baseball or the church where they were married. Attachment to personal mementos often become reminders of personal history.

Rowles' concept of insideness provides the theoretical framework for this research. This study proposes that when the three components of insideness are experienced by assisted living residents the emotional bond of place attachment may occur (Appendix 1). Therefore the research question to be answered becomes, "How does the design of the assisted living facility provide opportunities for the residents to experience the three

constructs of insideness resulting in place attachment?" Providing the answer to this question will assist designers in creating environments that will foster place attachment

The assisted living facility selected for this study was the Arbors at Ridges, located on the campus of the Fairview Ridges Hospital, in Burnsville, MN The Arbors is centrally located in a blended residential, retail and healthcare community. A diverse population lives at the Arbors that includes adults from the Twin Cities who have moved to this suburban location to be nearer to their adult children, those who have moved from other nearby communities or from out of state.

This triangulated research was conducted using three methods of data collection. Observation of the designed environment, interviews with the residents, and photography by the residents was used to provide an answer to the research question. A systematic method of evaluation of the Arbors at Ridges was conducted to document the physical attributes of the public and private areas including the foyer, sitting area, dining room, activity room, retail areas and individual apartments. In-depth, semi-structured interviews with the residents followed using an interview guide that encouraged the residents to share their experiences of living at the Arbors. The invitation to participate in the interviews produced a convenient sample group totaling seven residents. It was my observation that two of these were limited in physical mobility and all appeared in good mental health. The participants had lived at the Arbors for a period ranging from five months to four years. Their ages ranged from 67 to 91 with the median age being 79.5.years.

Participants were then provided with disposable cameras and instructed to take pictures of what made them feel homey or attached to the Arbors (Appendix 2). The images taken were used to reveal additional insight into the residents' level of place attachment and confirm themes identified during the analysis of the interview transcripts.

Rowles' concept of insideness provided the theoretical framework that answers the question, "How does the design of the assisted living facility provide opportunities for the residents to experience the three constructs of insideness resulting in place attachment?" The findings indicate that place attachment was achieved to the fullest when all three constructs of Rowles' insideness were experienced by the residents. The level to which residents interacted in their physical environment and the level to which a resident developed place attachment varied widely. All three constructs were not experienced by all participants to the same degree. Significant is the realization that many residents indicated a preference for one over the other two constructs. With respect to the first construct of physical insideness, residents who freely accessed the physical spaces including both their own apartment and the facility showed evidence of a higher level of place attachment. The second construct of social insideness was experienced by the residents as many revealed experiencing high levels of enjoyment within the spaces designed for socialization. They expressed satisfaction in the conversations held over meals and special events planned in the Dining Room and playing cards in the Activity Room. The Coffee Shop and Gift Store were also identified as special places to socialize with friends, family, and staff. The interview transcripts and the residents' photography of these spaced provided a significant link between having places to engage in social interaction and the development of place attachment at the Arbors. Autobiographical insideness was evident during the interviews as residents shared personal mementos and provided rich descriptions as to their meaning. Photographs of these objects that included a carefully folded American flag and a childhood Christmas stocking confirmed the attachment to objects of personal history. All three constructs of insideness provided opportunities for the residents to development place attachment.

In an effort to improve the quality of life for the residents of assisted living facilities, Recommendations for Designing Spaces That Support the Development of Place Attachment is offered as an outcome of this research (Appendix 3). Whether incorporated into the design of a new facility or into the remodeling of an existing facility these recommendations may be used by architects, interior designers and owners to increase the opportunities for residents to develop place attachment.

Research will continue to be a complex process requiring a multi-layered investigation of how the built environment can support the needs of aging adults Although few in number, the voices of the participants in this study, continued the dialogue centered on the design of successful assisted living facilities and underscores influence of the built environment on the development of place attachment.

REFERENCE (APA)

Altman, I., & Low, S. (1992). Place attachment. New York: Plenum Press.

Boschetti, M. (1990). Reflections on home: Implications for housing design for elderly persons, Housing and Society, 17(3). 57-65.

Bromley, D.B. (1986). The case study method in psychology and related disciplines. Chichester, Great Britain: Wiley.

Brown, B., & Perkins, D. (1992). Disruptions in place attachment. In S. Low & I. Altman (Eds.). Place Attachment. New York: Plenum. 279-304.

Cutchin, M., Owen, S., & Chang, P. (2003). Becoming "at home" in assisted living residences: Exploring place integration process. Journal of Gerontology: Social Science. 58b (2), S234-S243.

Cutler, L., (2007). Physical environments of assisted living: Research needs and *challenges. The Gerontologist, (47), 68-82.*

Cutler, L., & Kane, R. (2004). Practical strategies to transform nursing home environments: Towards better quality of life workbook. The Retirement Research Foundation, University of Minnesota.

Creswell, J.W. (2003). Research design: Qualitative, quantitative and mixed methods approaches. Thousand Oaks, CA: Sage.

Eshelmand, P., & Evans, G. (2002). Home again: Environmental predictors of place attachment and self esteem in new retirement community residents. Journal of Interior Design. 28 (1),1-9.

Harper, D. (1994). On the authority of the image. Visual methods at the crossroads. In N. Denzin, & Y. Lincoln, (Eds). The Sage Handbook of Qualitative Research.First Edition. London, Sage, 408-417.

Harris, P., Brown, B. B. & Werner, C. (1996). Privacy regulation and place attachment. Journal Environmental Psychology. 16, 287-300.

Kane, R. (2001). Long-term care and a good quality of life: Bringing them closer together. The Gerontologist. 41:293-304.

Kopec, D. (2006). Environmental psychology for design. New York: Fairchild Publications, Inc.

Nussbaumer, L. L., (2009). Evidence-based design for interior designers, New York: Fairchild Books.

Rowles, G. (1984). Aging in rural environments. In I. Altman, M. P. Lawton. & J. F. Wholwill (Eds.) Elderly People and the Environment. New York: Plenum.

*Rowles, G. (1993). Evolving images of place in aging and aging in place. Generations,*17 (2), 65.

Shavelson, R. J., & Towne, L. (Eds.). (2002). Scientific research in education. Washington, DC: National Research Council, National Academy Press.

Stichler, J., & Hamilton, D. (2008), Evidence based design, What is it? Health Environments Research and Design. 1 (2), 3-4.

Sugihara, S., Evans, G. (2000). Place attachment and social support at continuing care retirement communities. Environment and Behavior, 28 (1), 401.

Wan, H., Sengupta, M., Velkoff, V., Kimberly, A., & DeBarros, K.(2005). 65+ in the United States: 2005. U.S. Census Bureau, Current Population Reports, 23-209. Washington, DC: U.S. Government Printing Office.

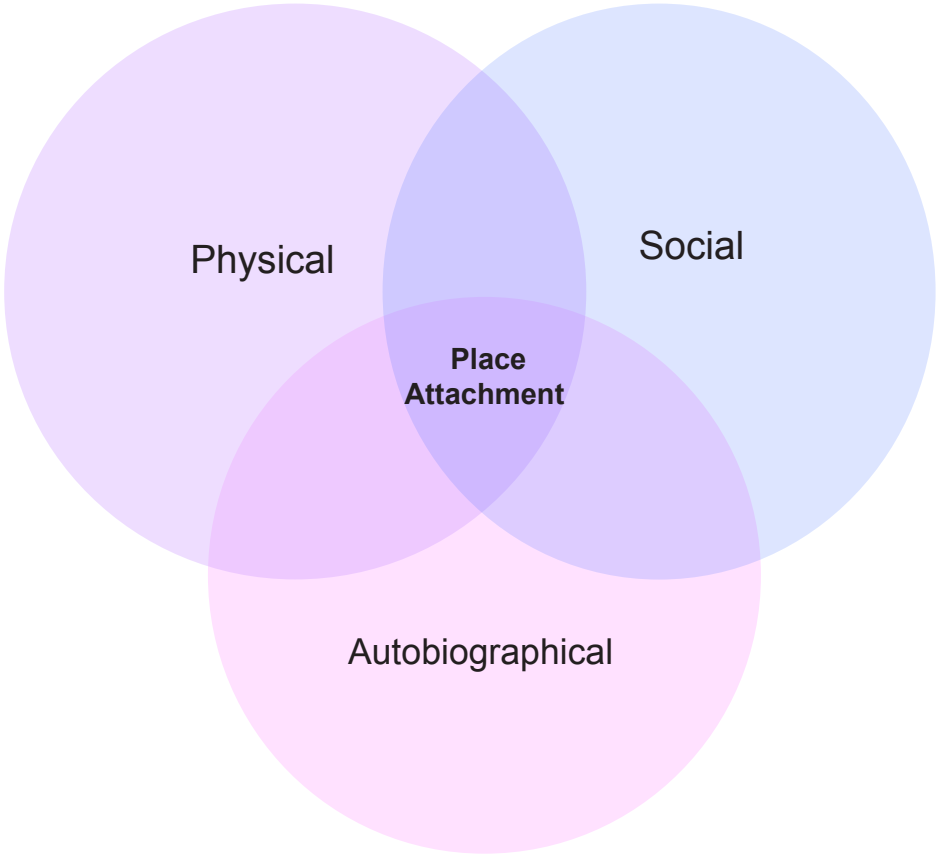
Yin, R. (2006). Case study methods. In Green, Camilli & Elmore (Eds), Handbook of complementary methods in education research. Washington, D.C.: American Educational Research Association.

Young, H. (1998). Moving to congregate housing: **The last chosen home**. Journal of Aging Studies, (2), 149.

Zimmerman, S., Mitchell, C., Chen, C., Morgan, L., Gruber- Baldini, A., Sloane, P., Eckert, J. ,& Munn, J., (2007). An observation of assisted living environments: Space use and behavior. Journal of Gerontological Social Work, 49(3), 185-203.

APPENDIX 1

Constructs of Insideness Leading to Place Attachment



Appendix 2

Let's Take Some Pictures!

I am asking you to please help me with this last exercise in my study by taking photographs what helps you feel "homey or attached" to the Arbors.

1. **Please start by taking a few minutes in a quiet place to think about what makes you feel homey and attached to the Arbors.**
2. **Then take a picture of it.**
3. **Write down why you took this picture.**
4. **The pictures can be taken inside and outside of your apartment.**
5. **I have provided a disposable camera with your name on it.**
6. **Please return the camera to Marge B in Apt. 201 by Saturday noon.**

I hope you will have fun with this!

Thank you again,

Julie Torelli

Appendix 3

Recommendations for Designing Spaces That Support the Development of Place Attachment in Assisted Living Facilities
Supportive of Physical Insideness
1. Provide adequate clearances in all areas to accommodate all accessibility needs and provide a clear means of egress in case of an emergency. 2. Locate accessible kitchen storage within easy reach to ease kitchen use. 3. Install microwaves at an accessible height for safe use. 4. Incorporate washers and dryers within each apartment to ease use.
Supportive of Social Insideness
5. Arrange apartments in clusters with close proximity to social areas of the facility, avoiding long, double loaded corridors. 6. Locate multiple areas of well lighted, informal, seating to encourage unscheduled activities and increase socialization. 7. Incorporate a variety of retail destinations within the facility to support socializing with other residents, family and staff.
Supportive of Autobiographical Insideness
8. Plan adequate storage areas within the apartments to encourage residents to keep meaningful personal belongings. 9. Provide adequate, clear wall and floor space within the apartments for the placement of a cabinet or bookcase to display personal memorabilia. 10. Provide secured, public, display cases for the sharing of the residents' autobiographical artifacts.

LEEDing Behavior: Sustainable Lifestyle Practices in Green Student Housing

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ABSTRACT

Recent studies point to a growing trend to build green student housing on US college and university campuses. Interest in such green residences responds to voluntary institutional commitments to promote sustainability through education, research, operations, and outreach (c.f. the 1990 Talloires Declaration), and to achieve carbon neutrality (c.f. the 2006 American College & University Presidents Climate Commitment). This interest is further supported by governmental incentives to promote sustainability in higher education (c.f. the 2008 Higher Education Opportunity Act) with LEED certification as the standard measure of compliance with environmentally sensitive facilities management. Because it is generally thought that green buildings are a main force for fostering environmentally responsible behavior (Sassi, 2006), the purpose of this study is to explore the impact the green features of LEED-certified student housing has on the sustainable lifestyle practices of its residents.

The study was set up as a comparative multiple-case study of three LEED-certified campus residences. Case study communities were selected from a short list of student housing benchmarked in previous studies as sustainability "hubs" combining green residence and education components. Data for each case study were collected over a period of six months using mixed methods centered on four categories of environmentally significant behaviors framed by McKenzie-Mohr and Smith (1999)—waste reduction, energy conservation, water conservation, and alternative transportation. Methods included documentation gathering; in-site observations; interviews with residence administrators and students; and online resident survey. Data collected by these various methods were analyzed to establish potential correlations between green building features and ensuing resident behaviors. Results from each case study were compared and summarized to identify similar and contrasting impacts of the green features of LEED-certified student housing on their residents' environmentally significant behaviors.

Findings from this study in all three cases show some relationship between the green features of a LEED-certified residence and the sustainable lifestyle practices of its residents. An apparent correspondence was detected between the different LEED-certification levels of the three case residences and the respective degrees of resident engagement in sustainable practices, with the most environmentally motivated students housed in the most sustainable residence. Waste reduction was most significantly supported through availability and convenience of recycling and composting stations. Participants evidenced increased awareness to energy and water conservation in connection to green building features; whereas use of alternative transportation seemed to be less directly associated to them. Additionally, they were challenged to replicate environmentally significant behaviors encouraged by their green residences outside of these supportive buildings. Contrasting impacts were illustrated by the inverse correspondence between environmentally significant behaviors detected in residents and the clarity with which the green features of LEED-certified residences are showcased. In considering these similar and contrasting impacts, this study suggests the importance of the green buildings in fostering environmentally responsible behaviors.

NARRATIVE

Recent studies point to a growing trend to build green student housing on US college and university campuses. Out of 87 self-reported initiatives to create sustainable student housing over the last ten years, 68% entailed the construction of green residence buildings, defined as "student residences purposefully designed and operated to meet, as well as model, optimal energy efficiency and overall environmental performance" (Torres-Antonini & Dunkel, 2009, p. 14). An additional 13% of institutions reporting data also built green residences as a backdrop for residence-based living-learning communities with an environmental emphasis.

Interest in such green residences seems to respond to governmental incentives to promote sustainability in higher education, such as the 2008 Higher Education Opportunity Act and its affiliated University Sustainability Grants Program (US Department of Education, 2008) as well as to voluntary institutional commitments to promote sustainability across the board. For instance, the 2007 American College & University Presidents Climate Commitment commits its over 600 signatories to taking immediate and long-term measures to achieve carbon neutrality, such as the adoption of campus-wide green building policy for new constructions and major renovations.

The increasing prevalence of LEED certification as the standard measure of green design, construction and operations has led to its use as the yardstick for compliance with environmentally sensitive campus facilities management. Conformity with the Leadership in Energy and Environmental Design (LEED) standards promoted through the US Green Building Council verifies that buildings are designed and built to foster energy and resource savings, reduce green house gas emissions, and ensure human health and environmental stewardship (USGBC, n/d). Thus, one possible measure for satisfying the American College & University Presidents Climate Commitment entails adopting a campus green building policy with LEED certification for new construction and major renovations. The Association for the Advancement of Sustainability in Higher Education (AASHE)'s Sustainability Tracking Assessment & Rating System (STARS), which gauges progress toward environmentally sensitive practices in American colleges and universities, similarly references LEED as its standard.

Construction of green residences, in particular if associated to environmentally-themed educational programming, seems to be seen as an opportunity to green campus operations while at the same time educating for sustainability. The idea follows from the generally accepted thought that green buildings are a main force, or at least hold strong potential, for fostering environmentally responsible behavior (Orr, 2004; Sassi, 2006). However, as opposed to the impact of living-learning communities on student achievement and socialization, which has been amply researched (Inkelas, Szelenyi, Soldner, & Brower, 2007), little has been written about the specific connections between the affordances offered by the building and the resulting behavioral changes of its occupants. This gap in the literature is particularly evident concerning LEED-certified buildings, particularly green campus residences, and their effect on their users' environmentally significant behaviors. The purpose of this study is, therefore, to explore the impact the green features of LEED-certified student housing may have on the sustainable lifestyle practices of its residents.

METHOD

The study was set up as a comparative multiple-case study of three LEED-certified campus residences. Case study communities were selected from a short list of student housing benchmarked in previous studies as sustainability "hubs"—settings combining green residence and education components and providing "a comprehensive student experience where the sustainability principles and pro-environmental lifestyle encouraged in the community are both illustrated and supported by a green living environment" (Torres-Antonini & Dunkel, 2009, p. 15).

Cases were selected from this pool based on their equivalent standing in relation to green construction. Residence 1, an "eco-residence" set in a 800-bed LEED-Gold student housing complex, includes a green roof, 100 percent fresh air distribution in every room, energy-efficient heating and ventilating systems, an insulated building envelope, cork flooring, and regionally produced furniture. Residence 2, a 36-bed residence hall with LEED-Platinum certification, boasts photovoltaic panels, radiant heat preheated in a solar collector, natural ventilation systems, and composting toilets. Materials used in construction emphasize reused and recycled content; runoff from the building's roof is stored in a converted 10,000 gallon railroad tank and later used for irrigation.

Residence 3, a LEED-Silver, 500-bed student residence hall, was the largest sustainable university residence facility in the U.S. at the time of its construction, and the first LEED-certified building on its campus. It features a storm water management system, a solar collection system, hydrogen fuel cell generators, carbon dioxide monitoring systems, a turf roof, façade light shelves, low-flow plumbing, and regionally sourced materials.

Data for each case study were collected over a period of six months using mixed methods centered on four categories of environmentally significant behaviors contained in the LEED system—waste reduction, energy conservation, water conservation, and alternative transportation—and framed by McKenzie-Mohr and Smith (1999) as lifestyle practice areas susceptible to positive behavioral change toward sustainability. Methods included documentation gathering; in-site observations; interviews with residence administrators and students; and an online resident survey. Data collection instruments and interview questions were adapted from Kaiser (1998); McKenzie-Mohr and Smith (1999); and Stern (2000). The guided interview questions were semi-structured to invite an open response. I

Data collected by these various methods were analyzed to establish potential correlations between green building features and ensuing resident behaviors. Constant comparative analysis, generative coding, and memoing were employed in the iterative process of analyzing the qualitative data. Chi-square analysis was performed for the categorical variables and analysis of variance was employed to assess the numerical variables from the online survey. Results from each case study were compared and summarized to identify similar and contrasting impacts of the green features of LEED-certified student housing on their residents' environmentally significant behaviors.

FINDINGS & DISCUSSION

Findings from this study in all three cases show some relationship between the green features of a LEED-certified residence and the sustainable lifestyle practices of its residents. An apparent correspondence was detected between the different LEED-certification levels of the three case residences and the respective degrees of resident engagement in sustainable practices, with the most environmentally motivated students housed in the most sustainable residence. Waste reduction was most significantly supported through availability and convenience of recycling and composting stations. Participants evidenced increased awareness to energy and water conservation in connection to green building features; whereas use of alternative transportation seemed to be less directly associated to them. Additionally, they were challenged to replicate environmentally significant behaviors encouraged by their green residences outside of these supportive buildings. Contrasting impacts were illustrated by the inverse correspondence between environmentally significant behaviors detected in residents and the clarity with which the green features of LEED-certified residences are showcased.

In considering these similar and contrasting impacts, this study suggests the importance of the green buildings in fostering environmentally responsible behaviors. It shows that awareness to sustainability and the behaviors needed to support it are high among residents of LEED-certified student housing. However, the study also shows that this level of awareness is still unmatched by the actual degree of engagement in environmentally significant practices. McKenzie-Mohr and Smith (1999, p. 116), citing Harriet Beecher Stowe, claim that "as a general rule nobody does much more than circumstances drive them to do." They propose that fostering sustainable behaviors entail as a precondition the elimination of barriers to engaging in these practices. The ease and convenience of recycling, saving water and electricity, and using alternative transportation that are embedded in LEED-sanctioned design strategies is a necessary first step in that direction.

REFERENCES (APA)

ACUPCC. (2006). American College & University Presidents Climate Commitment. Retrieved January 2009, from http://www.presidentsclimatecommitment.org/html/commitment.pdf

AULSF. (1990). The Talloires Declaration. Retrieved 09/30/2009, from http://www.ulsf.org/programs_talloires_td.html

Higher Education Opportunity Act (2008) Retrieved 10/1/2009 from http://www.ed.gov/policy/highered/leg/hea08/index.html

Inkelas, K. K., Szelenyi, K., Soldner, M., & Brower, A. M. (2007). National Study of

Living-Learning Programs. 2007 Report of Findings (study report). Ann Arbor, MI: University of Maryland/ Center for Student Studies.

Kaiser, F. G. (1998). A General Measure of Ecological Behavior. Journal of Applied Social Psychology, 28(5), 395-422.

McKenzie-Mohr, D., & Smith, W. (1999). Fostering Sustainable Behavior: an introduction to community-based social marketing. Gabriola Island, BC: New Society Publishers

Orr, D. (2004). Earth in Mind. On Education, Environment, and the Human Prospect. Washington, DC: Island Press.

Sassi, P. (2006). Strategies for Sustainable Architecture. London: Taylor and Francis.

Stern, P. C. (2000). Toward a coherent theory of environmentally significant behavior. Journal of Social Issues, 56, 407-424.

Torres-Antonini, M., & Dunkel, N. W. (2009). Green Residence Halls Are Here: Current Trends in Sustainable Campus Housing. The Journal of College and University Student Housing, 36(1), 10-23.

US Department of Education. (2008). *Higher Education Opportunity Act*. Retrieved. from http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_public_laws&docid=f:publ315.110.pdf.

USGBC. (n/d). An Introduction to LEED. Retrieved January 18, 2010, from http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1988

Four Approaches to the Cradle-to-Cradle House Design Competition

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ABSTRACT

OVERVIEW AND BACKGROUND

This paper explores sustainable design solutions provided by the Cradle-to-Cradle House Design competition conducted in 2005. Over 625 entries from forty one countries around the world were submitted to this international house design competition sponsored by SmithLewis architects and the City of Roanoke. The goal of the competition was to design a house to be built in Roanoke, VA that complied with the principles outlined in Cradle to Cradle by McDonough and Braungart (2002). This work examines these competition entries and proposes four different ways in which the majority and entrants approached the design problem. Within each of these four frameworks--integrated whole, wall section or sectional approach, individual systems approach and projects that either included little or no information related to sustainable design and construction--six sustainable design logics (as proposed by Guy and Farmer, 2001) were examined. Using this combination metric, a series of solutions to sustainable house design are presented based on the types of solutions created by firms and designers from around the world. Several case studies—including the competition winners—will be used to demonstrate various approaches to sustainability in general and cradle to cradle specifically. Particular emphasis will be given to the design development part of the design process in this presentation. The research presented here focuses on integrated building systems and approaches rather than simple material choices.

METHODS

A systematic document review of competition entries was performed to identify prevailing themes within the documents. Following the initial review projects were divided into the various phases of design: concept development, schematic design, and design development. Construction documents and administration were not included since the competition entries were conceptual projects in virtually all cases. A second document review was completed of the design development category selections. This review revealed four distinct types of competition approaches: integrated whole, wall section or sectional approach, individual systems approach and projects that either included little or no information related to sustainable design and construction. Each of these four subcategories were then examined and coded for specific sustainable design and cradle-to-cradle content. In many cases the projects reflected green technologies that did not meet cradle-to-cradle protocols. The winning projects were then examined using the four approaches and the six sustainable design logics proposed by Guy and Farmer.

FINDINGS

Projects which employed an integrated holistic approach and several of the Guy and Farmer sustainable design logics tended to be more cradle to cradle compliant than those which approached the project from either a systems or materials approach. Projects that used multiple (three to four) of the six sustainable design logics were also more effective than those that followed a single logic approach. The implications of this review of design development approaches to the c2c home competition imply that the most effective approach to producing a cradle to cradle design solution must include a multivariable point of view which is also contained within a single integrated conceptual approach.

NARRATIVE

OVERVIEW AND BACKGROUND

Over 625 entries from forty-one countries around the world were submitted to this international house design competition sponsored by SmithLewis architects and the City of Roanoke. The goal of the competition was to design a house to be built in Roanoke, VA that complied with the principles outlined in Cradle to Cradle by McDonough and Braungart (2002). From these 625+ entries, 200 were selected as finalists and were displayed at the Art Museum of Western Virginia for final judging. This chapter examines the competition winning entries and proposes four different ways in which the majority and entrants approached the design problem. Within each of these four frameworks six sustainable design logics (as proposed by Guy and Farmer, 2001) were examined. Using this combination metric, a series of solutions to sustainable house design are presented based on the types of solutions created by firms and designers from around the world.

THE SIX LOGICS

In their article "Reinterpreting Sustainable Architecture: The Place of Technology" Guy and Farmer propose six theoretical frameworks into which most approaches to sustainable design can be categorized. The six typologies are as follows: eco-technic, eco-centric, eco-aesthetic, eco-cultural, eco-medical and eco-social. Each type considers one area of emphasis to be of predominant concern.

Integrated technology and a scientific approach to design and building characterize the Eco-technic approach to sustainable architecture. Just as technology has created many of today's environmental woes, it can be used to solve current problems as well. An Eco-centric approach emphasizes harmony with nature and its systems. The Eco-aesthetic paradigm calls for a new understanding of ecological knowledge and an expanded consciousness about nature, resulting forms are organic and new. Vernacular local traditions highlight the Eco-cultural method of architecture. Eco-medical stresses a nontoxic emphasis focused on health and well-being while Eco-social involves community participation to achieve an organic, decentralized and democratic architecture.

FOUR APPROACHES OF C2C ENTRIES

A document review of the Cradle to cradle competition entries revealed four distinct types of competition entries: integrated whole, wall section or sectional approach, individual systems approach and projects which either included little or no information related to sustainable design and construction. In the overall integrated approach, individual systems are difficult to separate from the overriding concept of the project as a whole. The section approach commonly used wall sections and/or building sections to reveal information about the sustainable methods and materials used in the design. A multiple systems approach highlighted multiple systems separately such as the water system, the waste system, the energy system and others. A few entries did not clearly identify any sustainable design or C2C features and were categorized as "other."

C2C COMPETITION ISSUES

Four primary issues were identified in the C2C competition brief: creating a new "machine," using resources effectively, celebrating context and engaging industry. Creating a new machine challenged entrants to design a C2C home adapted modern lifestyles to natural systems. Using resources effectively required entries to eliminate the concept of waste. Projects that engaged residents and neighbors with the C2C home celebrated their context. Finally, specifications requiring new materials to achieve a C2C home were to be used to engage industry.

THE WINNERS

Professional Category

First place professional: Photo-Stack House

by Matthew Coates and Tim Meldrum (P-394; PS-252)

A team of architects designed the first place project in the professional category. It uses a multiple system approach and combines elements of three of the Guy and Farmer approaches to sustainable design: Eco-technic (photosynthetic plasma cell skin); Eco-aesthetic (sensual post modern scientific aesthetic with nonlinear organic forms); and Eco-social (community gardens). The Photo-stack house met three of the four C2C challenges: celebrating context (community gardens), using resources effectively and providing a new machine for living (central chimney core used to consolidate sun,

wind and water).

Second place professional: the c2c home

by Patrick Freet (P-151)

The second place entry illustrates an overall integrated approach that relies on a reusable component system. Like the first place entry, the second place winner also implements three of the Guy and Farmer logics: Eco-technic (the components themselves and the manner of assembly); Eco-social (components reuse through garage sales and donations to charity); and Eco-centric (systemic ecology, water use, autonomous). The C2C home used resources effectively (modular components) and celebrated ins context (donations, charities, garage sales) in accordance with the C2C design assignment.

Third place professional: (P-231; P-234)

By Russell Ashdown

A wall section approach characterized this winning entry. A new machine for living based on cradle to cradle was placed in opposition to the cradle to grave method of building paired with the traditional machine for living. The new "machine" design outlined the regeneration of forest land on the site, flexibility of use (from store to apartment to single-family house), and solar power. The entry included several process sketches outlining specific sustainable features such as water collection, food grown on the roof, and building components. One feature that set this entry apart from the other winning entries was that is featured interior views of the proposed living spaces. The design solution combined eco-technic concerns with eco-social ones. The adaptability of this solution to multiple uses was an efficient use of resources as described by the C2C assignment.

Fourth place professional: C2C House (P-450)

Douglas Oliver and Vincent Snyder

The main design element of this C2C House design included an internal court. The project outlines several sustainable building design techniques such as the use of fly ash concrete, composting, gray water filtration, solar energy, thermal mass, and rainwater catchment. The approach was predominantly eco-technic. This multiple system approach created a new machine for living and used resources effectively.

STUDENT CATEGORY

First place student: PMod (S-142)

Sean Wheeler

The pMod solution was based on a modular unit suitable to any of the four building sites proposed in the design brief. Constructed of either traditional wood construction of light gauge recycled steel these portable modular units could be made from billboards, train cars, tractor trailers, or old photovoltaic panels. This eco-cultural and eco-centric approach was modeled on the Apple Ipod whereby old parts could be traded up for new components. The pMod's integrated approach used resources effectively and eliminated waste through the reuse of multiple industrial bi-products.

Second place student: House as Porch (Linnen, no number)

By Damien Urain Linnen

The second place student try also uses an overall integrated approach wherein the house is approached as a porch. Only one Guy and Farmer approach is evidenced:

Eco-cultural (exploration of context and experience of porch--private, semi-private, public realms). The use of the porch as singular unifying element of the design also celebrated the Roanoke context in which the project was located.

Third place student: Paradigm Shift (S-122)

Jinyong Yum

The third place student project uses an overall integrated approach composed of modules and labeled as the "I-sharing" typology. Two Guy and Farmer approaches were included: Eco-social (flexible, adaptable; do it yourself assembly; communal dining and play areas); and Eco-cultural (vernacular). Communal dining areas and play areas as well as communal construction engaged local residents with the C2C house thus celebrating the local context.

Fourth place student: +A C2C Home (S-422)

Robert Gay

The main feature of +A C2C home was its adaptability. The design sought to celebrate its context invoking an eco-cultural approach. Integrated components included a roof garden with sedum, polycarbonate panels for roof areas and wedge vents, core walls composed of thermoplastics, SIPs panel walls and Rothstra panel floors and a sonotube foundation. The actual approach to construction of the house relied on an eco-technic methodology. The use of materials in this house might potentially push industrial engagement. A modular 4' x 8' panel systems provides for the effective use of resources in this overall multiple system design approach.

LESSONS LEARNED FROM THE WINNERS

Projects which employed an integrated holistic approach and multiple Guy and Farmer sustainable design logics tended to be more cradle to cradle compliant than those which approached the project from either a systems or materials approach. Projects that used multiple (three to four) of the six sustainable design logics were also more effective than those that followed a single logic approach. The implications based on these c2c home competition entries imply that the most effective approach to producing a cradle to cradle design solution must include a multi-variable point of view which is also contained within a single integrated conceptual approach.

The review of project entries reveals that the application of a complex approach to solving the Cradle-to-cradle design problem results in a far more compliant design solution that a single approach. The professional entries included a higher level of complexity than the student entries, but in all cases, the approach was multi-faceted.

SUMMARY

The ideals associated with the C2C Home Competition called forth a tremendous outpouring of design work from around the world. Ideas ranged from the very practical and mundane in some cases to thoroughly space-aged. In the final analysis, although no single project embodied a complete C2C house, many strides forward were made by a variety of individuals and teams. The winning entries show a representative range of solutions and how complex these could be.

SOURCES

Chittum, M. "1st C2C house nears construction," *Roanoke Times*, November 28, 2005, p. 1,2).

Cramer, J. "Building Green Trend could take root in Roanoke," *Roanoke Times*, September 28, 2006, p. 1, 5).

Guy, S. & Farmer, G.(2001) "Reinterpreting Sustainable Architecture: The Place of Technology," *Journal of Architectural Education* 54:3, 140-148.

Lewis, G. "C2C Home exhibition aspires to healthier living," *Roanoke Times*, January 13, 2005, p. 9).

McDonough, William and Braungart, Michael (2002) *Cradle to Cradle: Remaking the Way we Make Things*, New York: Northpoint Press.

Wardle, S. "C2C exhibit showcases futuristic homes," *Roanoke Times*, January 12, 2005, p. 1,3).

Wardle, S. "Tech student submits winning design," *Roanoke Times*, January 14, 2005, p. 1,3).

Guy and Farmer's Logic	Source of Environmental Knowledge	Technologies
Eco-technic	Technological and scientific	Integration of global concerns into conventional building strategies
Eco-centric	Systemic ecology Metaphysical holism	Autonomous Renewable Recycled Intermediate
Eco-aesthetic	Sensual postmodern Science	Pragmatic new Nonlinear organic
Eco-cultural	Phenomenology Cultural ecology	Local low-tech Commonplace Vernacular
Eco-medical	Medical Clinical Ecology	Passive non-toxic Natural tactile
Eco-social	Sociology and social ecology	Flexible Participatory Appropriate locally managed

Table 1: Summary Table of Guy and Farmer's Six Logics

Winning Entry Name #	Guy and Farmer's Logics	Four Approaches	C2C components
PhotoStack (P-394; P-252)	Eco-technic Eco-aesthetic Eco-social	Multiple system	New machine, using resources effectively; celebrating context
The C2C Home (P-151)	Eco-technic Eco-social Eco-centric	Overall integrated	using resources effectively; celebrating context
P-231; P-234)	Eco-technic Eco-social	Wall section	using resources effectively
C2C House (P-450)	Eco-technic	Multiple system	New machine, using resources effectively
pMod (S-142)	Eco-cultural Eco-centric	Overall integrated	using resources effectively
House as Porch (no number, Linnen)	Eco-cultural	Overall integrated	Celebrating context
Paradigm Shift (S-122)	Eco-social Eco-cultural	Overall integrated	Celebrating context
+A C2C House (S-422)	Eco-cultural Eco-technic	Multiple system	Engaging industry; using resources effectively

Table 2: Table showing winning entries, six logics, cradle-to-cradle compliance, and overall approach

Challenging the Meta-Narrative to Read Again the Mini-Narratives of the Field of Interior Design

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ABSTRACT

Through the course of the twentieth century, interior design has been shaped and reshaped by social, economic and political forces as well as interpreted and reinterpreted by scholars and laypersons. To many, outside this circle of interpreters, the notion of interior design remains vague. Part of the problem is a generation of interior designers in the 1970s who were educated under modernist pedagogies and sent to work specifically as "interior designers", not decorators. Emphases on space planning and the non-decorative aspects of interiors distinguished them from the "others." It is at this point, that the field of interior design abandoned its past, the decorators, in favor of professional advancement and legitimacy. However, that which we rejected is, in fact, crucial to our understanding of the profession today.

One way to understand this vagueness is to reflect more closely on the structure of the historic narrative of the field of interior design in America. This paper examines themes found in mid 20th century textile design as contributing forces in the shaping of interior design. The discussion reveals a series of critical themes: impact of world events on textiles, debate between historicism and modernism, role of women in the textile industry, significance of foreign designers, and finally, methods for improving textile sales. These themes are found in popular trade articles, personal narratives, and artifacts produced by selected key figures in the field.

It is the hypothesis of this paper that by turning our attention to the mini-narratives of the field of interior design in the twentieth century, an understanding emerges that suggests there is value in the heterogeneity embedded in its history. To discuss this more clearly, we establish the context of the mid-20th century in the field; we probe the five critical themes and conclude by examining mini-narratives of two key individuals: Dorothy Draper, designer of Schumacher's top-selling cabbage rose (1937), and Marion Dorn, known predominantly for her contribution to modern textiles and interiors (e.g., Claridges, the Orion, and the Queen Mary).

Draper is typically framed in the meta-narrative of the interior decorator that separates her as a contributor to the field of interior design, while Dorn is framed as a contributor to the design of textiles, a decorative art. A closer reading of Draper's personal narrative demonstrates a complex story of multiple contributions as demonstrated by her signature cabbage rose. A closer reading of Dorn's personal narrative demonstrates equal complexity. Comparing both reveals contradictions in background and education that nevertheless brought both women to successful careers that contribute to the contemporary understanding of professional women interior designers.

The value of the exploration of the mini-narrative is the ability to challenge the meta-narrative that currently defines interior design. As stated by Hilary Putnam (1992) "deconstruction without reconstruction is irresponsibility" (234). Reconstruction is the responsibility of the discipline, and at the heart of the issue is the chokehold of binary oppositions (historicism and modernism) on the 20th century.

NARRATIVE

INTRODUCTION

Through the course of the twentieth century, interior design has been shaped and reshaped by social, economic and political forces as well as interpreted and reinterpreted by scholars and laypersons. To many, outside this circle of interpreters, the notion of interior design remains vague. Part of the problem is a generation of interior designers in the 1970s who were educated under modernist pedagogies and sent to work specifically as "interior designers", not decorators. Emphases on space planning and minimalist aspects of interiors distinguished them from the "others." In a number of ways, this reflects the influence of modernism on the shaping of the history of the field of interior design.

CONTEXT

While progressive authors such as Catherine Beecher and Edith Wharton laid the groundwork for the notion of interior design as early as the late 1880s, the bulk of its development spans twentieth century modernism and post modernism. Modern and postmodern are complicated terms, representing multiple modes of understanding. For example, one understanding of modernism evolves from an aesthetic movement that strongly influenced all aspects of design, visual art, music, and literature, by rejecting the Victorian standards of how art should be made and consumed as well as what it should mean. Visually, modernism is easily recognized by a manifestation of simplicity in form that in many ways belies a more complex attitude. Modern can also be understood as a historical (social, political, economic) period or condition that is linked to the mid eighteenth century beginning of the European Enlightenment. Postmodern, as the language suggests, is simply understood as after modern, but simplicity again belies complexity, and current scholarship suggests that postmodernism defies a singular definition. Any attempt to understand the history of interior design is naturally challenged by the interpretation of these two periods, movements, or conditions that define it.

Postmodern theory constructs a specific image of modernism. The tendency to see things in seemingly obvious, binary, contrasting categories is usually associated with modernism. The tendency to dissolve binary categories and expose their arbitrary cultural co-dependency is associated with postmodernism. Lyotard (1984) argues that total order is maintained in modern societies through the means of "grand narratives" or "master narratives," which are stories a culture tells itself about its practices and beliefs. All aspects of modern societies, including science as the primary form of knowledge, depend on these grand narratives. Postmodernism, then, is the critique of grand narratives, the awareness that such narratives serve to mask the contradictions and instabilities that are inherent in any social organization or practice. Postmodernism rejects grand narratives in favor of "mini-narratives," stories that explain small practices, local events, rather than large-scale universal or global concepts. Postmodern "mini-narratives" are always situational, provisional, contingent, and temporary, making no claim to universality, truth, reason, or stability.

Jameson (1991) also posits that history is only truly accessible in narrative form. His view is that history can not be represented as "what really happened", but must be understood as a narrative of what happened, that is a mediated representation with the acknowledgement of cultural and or ideological interests. This position acknowledges the competing views of history and tradition and shifts away from universal histories to local explicitly contingent histories. Jameson argues against the "periodisation" of history in that it projects an idea of a historical period as largely homogeneous.

It is the hypothesis of this paper that by turning our attention to the mini-narratives of the field of interior design in the twentieth century, an understanding emerges that suggests there is value in the heterogeneity embedded in its history.

THEORETICAL FRAMEWORK

In order to provide a context for the discussion, the researchers mined the Art Index for articles published between 1930 and 1960 that specifically addressed the textile industry.[1] The articles yielded a list of nationally recognized designers, images of their textiles, and information on their design process. The review of literature uncovered five specific themes: impact of world events on textiles, debate between historicism and modernism, role of women in the textile industry, significance of foreign designers, and finally, methods for improv-

1 Some of the journals included: *Craft Horizons*, *Studio*, *American Fabrics*, *The Architectural Review*, *Design*, *House Beautiful*, *Magazine of Art*, *Arts and Architecture*, and *Architectural Record*.

ing textile sales. Some of the themes—in and of themselves—reflect the influence of the modern paradigm (and master narrative) and demonstrate the power of binary opposites as a means of framing discourse. We probe these five critical themes and conclude by examining mini-narratives of two key individuals who embody them: Dorothy Draper (1889-1969), designer of Schumacher's top-selling cabbage rose (1937), and Marion Dorn (1896-1964), known predominantly for her contribution to modern textiles and interiors (e.g., Claridges, the Orion, and the Queen Mary).

DISCUSSION

Draper is typically framed in the meta-narrative of the interior design profession as a decorator, which separates her as a contributor to the field of interior design. Historians view her as an "other." Her lack of training, social status, and romantic design philosophies (all embedded in her cabbage rose pattern) restrict her from being considered an interior designer as defined by many historians.[2] Within the context of the mid-twentieth century textile industry, Draper represents the untrained, female American decorator who reinterprets the past for mass consumption. She is the "dilletante." Ironically, this remains the dominant social perception.

Marion Dorn, on the other hand, is framed as a contributor to the design of textiles, a decorative art. Historians narrowly define her contributions because she worked in an industry sex-typed for women stretching back millennia. However, Dorn's identity is also defined by her education and design philosophy, both of which are decidedly modern and celebrated by the modernist philosophy. She embraced technology and looked toward the future. While Draper's popularity exceeded that of Dorn's, the modernist pedagogy penetrated the academy, and soon, virtually all designers (male or female, designer or architect) were educated as disciples of modernism.

Comparing the two mini-narratives reveals contradictions in background and education that nevertheless brought both women to successful careers that contribute to the contemporary understanding of professional women interior designers. However, both Draper and Dorn fall outside the prescribed criteria of the modernist meta-narrative, and thus are not seen as having impactful careers on the profession. Draper's lack of training and inclusion of historic references supersede her accomplishments as a businesswoman and designer who had her finger on the pulse of the American population. Dorn fits into the modern frame via her modernist education, philosophy, and aesthetic, but her product (textiles) lies on the other side of a binary scale that values architecture and technology, not fabric and weaving.

In reality, another meta-narrative aside from modernism does exist, and not surprisingly is its binary opposite in more ways than one. The American populace did not embrace modernism as history might imply; romanticism continued to dominate popular taste during the middle of the twentieth century. But, it was to some extent the manner in which they developed that had such an impact on history. Academics adopted modernism and began integrating it into the pedagogy of design schools across America. Romanticism—as a design philosophy and aesthetic—on the other hand, developed in shelter magazines, an artifact of popular culture and mass consumption. The context in which each developed defined unique trajectories that had a significant impact on the shaping of the field of interior design: the designer personified modernism, while the decorator personified romanticism. It is these two meta-narratives that interior design continues to hold in opposition, adding to the confusion of its identity.

CONCLUSION

Meta-narratives are inherently exclusionary. Defined by a set of criteria, the goal is not to include, but to categorize broadly. The development of interior design as a discipline, however, is not so black and white. Much is to be learned and celebrated in the gray areas, such as the rich diversity of our history. If the meta-narrative is not serving the discipline of interior design, then historians are challenged to re-consider their history—both in content and delivery—by breaking the barriers of the meta-narrative to explore and find value in the mini-narratives. We believe that by weaving the mini-narratives together, the history of the interior design profession brings clarity to the vague notion of interior design and strengthens the position of the profession.

The value of the exploration of the mini-narrative is

2 For an analysis of how women/decorators are represented in interior design textbooks, see John Turpin's "Omitted, Devalued, Ignored: Re-evaluating the Historical Interpretation of Women in the History of the Interior Design Profession," *Journal of Interior Design 27,* no.1 (2001): 1-11.

the ability to challenge the meta-narrative that currently defines interior design. As stated by Hilary Putnam (1992),

"Deconstruction without reconstruction is irresponsibility" (234). Reconstruction is the responsibility of the discipline, and at the heart of the issue is the chokehold of binary oppositions (historicism and modernism) on the 20th century.

REFERENCES (CHICAGO)

Appleby, Joyce, Lynn Hunt, and Margaret Jacob. *Telling the truth about history*. 1995. New York: W. W. Norton & Co.

Boydell, Christine. 1996. *The architect of floors: Modernism, art and Marion Dorn Designs*. London: Schoeser.

_____. 2001. The architect of floors: Modernism, art and Marion Dorn Designs. *Studies in the Decorative Arts* 8: 173-175.

Jameson, Frederic. 1991. *Postmodernism, or, the cultural logic of late capitalism*. Durham: Duke University Press.

Lyotard, Jean Francois. 1984. *The postmodern condition: A report on knowledge*. Minneapolis: University of Minnesota Press.

Norman, E. and P. H. Roberts, eds. 2001. *Design and technology educational research and development: the emerging international research agenda*. Loughborough: Loughborough University.

Putnam, Hilary. 1992. *Renewing philosophy.* Cambridge, MA: Harvard University Press.

Turpin, John. 2001. Omitted, devalued, ignored: Re-evaluating the historical interpretation of women in the history of the Interior Design profession. *Journal of Interior Design* 27*:* 1-11.

Varney, Carleton. 1988. *The Draper touch: The high style and high life of Dorothy Draper*. New York: Prenctice Hall.

Baba: Inside the Czechoslovakian Werkbund Housing Estate

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ABSTRACT

For a new generation of designers of the newly formed Czechoslovakian state, Baba, once a Celtic hill and pilgrim's path, prominently hailed its position above the city of Prague; thus its eminent form offered the perfect vantage point for an instructive building program for both its residents and the public below. Purchased by the Czechoslovakian Werkbund in 1932, the site was reconceived by architect Pavel Janak as thirty-three residential plots democratically arranged in a checkerboard pattern to provide each homeowner with a vista of the city and its illustrious Prague Castle below. Politically minded, both the homeowners and designers of the Baba housing project were members of the Czechslovakian Werkbund, practitioners of the New Architecture and Living movement and influenced by housing estates in neighboring countries; these qualifications made Prague's "academic" architects, mostly Social Democrats, hopeful that a solution to Prague's housing question would be provided. Twelve thousand people attended the opening, however, Baba's prominence was immediately shrouded by a damaging critical dismissal by members of the radical left.

Aesthetically, the white geometric forms and minimalist interiors denoted the constitutive features of modernity, but in its program it had neglected the goal of collectivity. The Baba estates had eventuated into individualized domestic spaces that did not adhere to the modernism's objectives of universal standardization and collective spaces. The spaces were not designed to be generic and adaptable interiors, but complicated the modernist narrative through the distinct design programs. In its individuality, the housing estate ostensibly neglected to function as a social experiment determined to structurally transform the public sphere, as architecture and design were expected to perform in a new nation-state. By altering these primary lessons, the once exemplary status of the prominent hillside was reconstituted as merely a bourgeoisie island adorned with stylistic platitudes. This early dismissal from the radical left altered Baba's history and suppressed subsequent research. The notion of a "bourgeoisie island" still reverberates through Prague today and only a diminutive number of publications exist; therefore, this paper aims to correct this unfair assessment by re-examining Baba and its relationship to Modernism's narrative through interior design.

The estates at Baba provide an opportunity to locate new strategies in which its designers dealt with the modern condition and reexamine the interior designer's relationship to Modernism. The Baba housing project was not dominated by the visual paradigms of architectural training, but led by three well-known interior designers, Ladislav Zak, Hana Kucerova-Zavesk, Antoin Heytheman, who were active practitioners in the field. Their projects confront modernist theories regarding time and space, mobility and flexibility through structural and interior attributes, such as furniture, that choreographed movement while thoughtfully reflecting the lifestyle and occupation of the homeowner. An analysis of the interior exhibits how the highly individualized, domestic interiors were constructed within the context of modernism, not against it. Rather than assume the designers debased the tenets of modernism to stylistic platitudes, Baba demonstrates the ways in which the concepts of individuality, domesticity and interior design can enter the modernist discourse.

NARRATIVE

In 1932 over twelve thousand visitors journeyed to a remote neighborhood on a high hill above the city of Prague in anticipation of finding a solution to the issues of housing that had plagued modern architects, but much to the dismay of the radical left, only thirty-three new residents were able to discover a place that they and future generations would call 'home.' Developed as single-family residences, the Baba housing estates were perceived by the avant-garde as too individualistic and the project was quickly dismissed with very few ever looking back. Ostensibly, the perceptual experiences imbued in an architectural space that produces the conceptions of 'home' did not have a place in the authoritative paradigms of the modern. The discussion of the modernist project was compressed by generalities that negotiated its ambitions at the macro-level: time replaced space, universality eliminated place and collectivity usurped individualism. It was not that issue of housing had been excluded from these debates; in fact, housing was at the forefront of the architect's mind but hyphenated by stringent rationalization and political ambitions. Developments in housing were committed to the structural transformation of the public sphere and evaluated accordingly. The quest for universality and collectivity circumscribed the interior spaces of domestic architecture as inhabitable containers – three-dimensional templates— in which mass populations could reside.

Thus when the plans for Baba manifested as merely thirty-three individual residences, many visitors left the hillside bitterly downtrodden that the sixth and final housing solution sponsored by the Werkbund program had failed to deliver on its promise. There was no place for 'home' within modernism. However, today, as discussions of locality and the vernacular enter a reevaluation of modernism, Baba's failure to perform as a transformative experiment for the public sector can be re-negotiated by its successful engagement with the issues of domesticity at the micro-level. The interior program provided plans for a perceptual experience that infused the space with meaning gathered through lived experiences associated 'dwelling' rather than inhabitation. [1] Baba was not a faceless and abstract version of modernism, but designed as a local sphere of experience that conjured place-based memories.[2] From this perspective, this paper will argue that the designers of the housing estate at Baba did not fail to understand the tenets of modernism, but rather grounded their practice in what is now understood in terms of 'dwelling' and new understandings of the vernacular.[3] Through an evaluation of the interior structures, Baba produced an embodied experience of space and place.

Purchased by the Czech Werkbund, Baba – once a Celtic hill and medieval pilgrim's path—prominently hailed its position above the city of Prague. For a new generation of designers of the newly formed Czechoslovakian state, the site's eminent form offered the perfect vantage point for an instructive building program for both its residents and the public below. Both the designers and future residents of the Baba housing project were ostensibly a politically minded group. As members of Czechslovakian Werkbund, practitioners of the New Architecture and Living movement and supporters of housing estates in neighboring countries, especially Mies van der Rohe's work at Stuttgart-Weissenhof in Germany, both parties augured the completion of an exemplary solution to the question of housing, and unfortunately a prediction that failed to happen. Baba's prominence was quickly shrouded by a damaging critical dismissal from its opponents on the radical left.

Where Baba failed to deliver was in the transformation of the public sector. Aesthetically, the white geometric forms of the exterior evoked the anonymity and timeless spirit of the modernity in the city, but its interior program evoked the anti-thesis of modernism: the individualism of the suburban ideal. Rather than generic and adaptable interiors, the Baba estates had eventuated into personalized, domestic spaces that did not adhere to the modernism's objectives of universal standardization, rationalization and social equality. The housing estate collapsed under the pressures placed on architecture and design in a new nation-state by neglecting its responsibility to perform as a social experiment that could structurally transform the public sphere. By altering these primary lessons, the once exemplary status of the eminent

1 In using this term, we refer to Heidegger's discussion of 'dwelling.'

2 Maiken Umbach and Bernd Huppauf, Vernacular Modernism: Heimat, Globalization, and the Built Environment: 4-13

3 Our use of the vernacular will be elaborated upon in the full presentation, but is derived from Maiken Umbach and Bernd Huppauf's new interpretation of the term as in Vernacular Modernism: Heimat, Globalization and the Built Environment.

hillside was reconstituted as merely a bourgeoisie island adorned with stylistic platitudes.[4]

It is important to understand the origin of Baba as it elucidates the rebuke of the project by the radical left. Baba manifested as the last of six housing projects designed by an international Werkbund agenda that had successfully articulated its optimistic visions of social equality in its first project, Stuttgart Weissenhof (1927). [5] Known for its experiments in standardization and new technologies, Stuttgart Weissenhof and the subsequent projects aimed to create prototypes for a new form of living. Throughout the 1920s and 1930s, housing estates were considered to be most effective vehicle for promulgating the virtues of modernism and providing a solution to the social housing crisis. As a critical arm to the Werkbund's organization, the architect members mounted a series of exhibitions that expounded on the tenets of the new architecture movement in an effort to reach hundreds of thousands of European citizens. From the onset of the Stuttgart-Weissenhof, their intentions were clearly stated in the organization's first policy statement:

The rationalization that has affected every area of our life has extended to the housing problem . . . For house building and for the economy itself, this entails the use of such materials and such technical installations as will reduce the cost of the building and administration of housing, simplify housekeeping, and improve living conditions. A systematic pursuit of these objectives signifies an improvement of conditions in large cities, and of the quality of life in general; it thus serves to strengthen our national economy.[6]

With the creation of the Czechoslovakian state in 1918, the aesthetic dimensions of the capital city, Prague, was the subject of much debate. In the 1920s, a polemic and politicized avant-garde emerged from the architecture schools in search of an appropriate modern language.[7] Influenced by their neighbors in Austria, Switzerland, Sweden and Italy and most significantly by the Deutscher Werkbund in Germany, the young Czechoslovakian architects adopted a language of Functionalism as they embarked on their own large-scale public housing projects. The need to educate the public on the lessons of modern housing resulted in a number of exhibitions that featured model settlements, including the 1928 exhibition in Brno. The Czech Werkbund conceived the Baba estates as a Czech example of the functional, healthy and reasonable housing projects that had been constructed in Vienna and Stuttgart, aimed to promote new architectural ideas in the field of housing and to provide viable examples that the public could follow.[8] In line with progressive architecture, the organizers of the Baba settlement made the claim that:

The settlement should be an example and aid for other similar action projects and it should be regarded as a collection of types, well thought-out and elaborated in its building program: ground-plan, from the point of construction; hygiene, with regards to interior furnishing; garden design; and also the entire plastic solution, which is evaluated according to particularly strict criteria.[9]

Advertising leaflets boasted that the houses were "designed to the last element of the roof and garden, simply and democratically, with regards to all developments which have emerged in housing design, especially abroad, and to which our public is also entitled."[10] But as history revealed itself, the public option never came to fruition thus gives the attack from the left some justification.

Today, however, the expansion of the discourse surrounding modernism and visual acuity gained from hindsight abates the initial, superficial assessment that reduced Baba to "stylistic platitudes." In fact, in light of new discourse, the utopian aspirations of the Stuttgart project seems ill-conceived with its unyielding belief that modern architecture with its pure white forms could erase all human folly and that the inherent flexibility of its floor plans could eradicate human frailty. With every wall planned and every door considered, Mies and his cohort did not carefully consider the most important aspect: the inhabitant. Baba, through the loss of public appeal,

4 Stephen Tempel, Baba: The Werkbund Housing Estate Prague. (Basel: Birkhauser, 1999): 11.

5 Jan Pavitt, The Buildings of Europe: Prague. (Manchester: Manchester University Press, 2000): 110.

6 Karin Kirsch, The Weissenhofsiedlung. (New York: Rizzoli, 1989): 17.

7 Pavitt, 23.

8 Jaroslav Andel, The New Vision for the New Architecture: Czechoslovakia, 1918-1938. (Zurich: Scalo Verlag, 2006): 188.

9 Ibid.

10 Ibid.

gained strength in its direct relationship to its occupant.

The interior designs of the Baba houses provide the occupants with the experience of dwelling by creating a space of embodiment for the inhabitant that is achieved through sensing place. In its full presentation, this paper reveals how this was staged through the interior design in an analysis of specific houses and examination of the close relationship between the designer and client. Critical to this discussion is the role of the designer at Baba as the projects were not dominated by the visual paradigms of architectural training, but led by three well-known interior designers, Ladislav Zak, Hana Kucerova-Zavesk, Antoin Heytheman. Their attunement to the interiors is reflected in dynamic spaces that are experienced at varying speeds depending on the flow of exterior pathways, entryways, hallways and living space. The result is an interior landscape that was not only inhabitable, but one which is embodied through a perceptual experience of space and a sense of place.

REFERENCE LIST (APA)

Andel, Jaroslav. (2006). The New Vision for the New Architecture: Czechoslovakia, 1918-1938. Zurich, Germany: Scalo Verlag.

Kirsch, Karin. (1989). The Weissenhofsiedlung. New York, NY: Rizzoli International Publication, Inc.

Pavitt, Jan. (2000). The Buildings of Europe: Prague. Manchester: Manchester University Press.

Umbach, M., & Huppauf, B. (2005) Vernacular Modernism: Heimat, Globization, and the Built Environment. Stanford, CA: Stanford University Press.

Unraveling A Master Weavers Process: Contributions From Jack Lenor Larsen

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ABSTRACT

Jack Lenor Larsen Inc. was founded in 1953 and quickly became one of the world's leading textile producers, specializing in high-end fabrics for use in the interior environment. In the course of almost 45 years, Jack Lenor Larsen, Inc. developed over 3000 fabrics that are now archived at the University of Minnesota. While the company's aesthetic has been a leader in style since its inception, what is often overlooked are the processes that stood behind him. How did the company work? How were the avant-garde fabrics created? What was the extent of Jack Lenor Larsen's input in the design of fabric? Why was this company so successful when so many creative businesses failed the test of time. The purpose of this presentation is to discuss the process by which Larsen designs were initiated, brought to production, and marketed.

METHOD

Oral history was used to explore and document the success of Jack Lenor Larsen Inc. In-depth interviews with 14 former Larsen designers , staff, collegues, and Jack Lenor Larsen, examined how the company worked and how the company succeeded. Interviews also enabled documentation of Larsen's design as a multi-faceted activity, encompassing not only the creative process, but also methods of production, marketing decisions and retail merchandising strategies. While design involves creativity, Jack Lenor Larsen, Inc. was successful as a business, requiring scrupulous surveillance of costs, maintenance of trusting relationships with manufacturers on several continents and persuasive publicity.

SUMMARY OF RESULTS

The name "Larsen" is synonymous with 20th century textiles. Ever since Jack Lenor Larsen, Inc. was established in 1952, the influence of this innovative, far-seeking founder has permeated the field of interior design. Larsen's design achievements include the first fabric for jet airliners, the first printed velvet upholstery fabrics, and the first stretch upholstery. Interviews reveal that Larsen was also an innovator in the development of fabrics that interact with light, creating new textile technologies for window treatments and other applications.

During the course of 45 years, Larsen expanded to complete the total interior package. In the early 1970s, Larsen Carpet and Leather was established. Fellow employees reveal that Larsen's revival of coir and sisal in America greatly contributed to the worldwide popularity of these fibers used in floorcovering in the early 1980s. The carpet division was also known for their custom designs involving jacquard-woven wiltons. Larsen Furniture was established in 1976. Top furniture designers, Ben Baldwin and Ernst Dettinger, teamed with Larsen to introduce new furniture collections.

Larsen's textiles have been recognized by numerous textile and design industry awards, and have been celebrated with major museum exhibitions from the Museum of Fine Arts in Boston to the Musée des Arts Décoratifs, Palais du Louvre in Paris.

In 1997, the Larsen Company merged with Cowtan and Tout, the American subsidiary of Colefax and Fowler Group of London.

REFERENCES

Feisst, B. (1984, August). Meeting Swiss carpet friends. *Interior/Textiles Swisses*, 47-49.

Larsen, J. (1998). *A Weaver's Memoir*. New York: Harry N. Abrams.

McDevitt, L. (1983, June). Contemporary designs from the established creator. *Designers West*, 224-226.

NARRATIVE

PURPOSE

Jack Lenor Larsen has been one of the most influential voices of this century in the textiles and interior design industries. According to textile folklore, it all began when Jack Larsen walked into Greenwich Village with a loom strapped to his back. Within the course of a few years his small weaving studio prospered, and when, a small group of investors decided to back his talent, Jack Lenor Larsen Inc, was born (K. Stack, personal communication, May 20, 2009)).

Founded in 1952, Jack Lenor Larsen Inc., quickly became one of the world's leading textile producers, specializing in fabrics for use in the interior environment. In the course of almost 45 years, Jack Lenor Larsen Inc. developed over 3000 fabrics that are now archived at the University of Minnesota. While the company's aesthetic has been a leader in style since its inception, what is often overlooked are the processes that stood behind him. How did the company work? How were the avant-garde fabrics created? What was the extent of Jack Lenor Larsen's input in the design of fabric? Why was this company so successful when so many creative businesses failed the test of time. The purpose of this presentation is to discuss the findings to many of these questions.

METHOD

Oral history was used to explore and document the success of Jack Lenor Larsen Inc. In-depth interviews with 14 former Larsen designers, staff, colleagues, and Jack Lenor Larsen, examined how the company worked and how the company succeeded. Interviews also enabled documentation of Larsen's design as a multi-faceted activity, encompassing not only the creative process, but also methods of production, marketing decisions and retail merchandising strategies. While design involves creativity, Jack Lenor Larsen Inc. was successful as a business, requiring scrupulous surveillance of costs, maintenance of trusting relationships with manufacturers on several continents and persuasive publicity.

FINDINGS

Based on numerous interviews, the single most important factor in the success of the company, Jack Lenor Larsen, Inc., is unquestionably the man, Jack Larsen. Many other people greatly contributed, but Larsen's vi-

sion and aesthetic, not to mention hard work, held the company together and led it forward. In-depth interviews have provided the following themes to the success of Jack Lenor Larsen Inc.:

PASSION FOR THE COMPANY

Somewhere between a democratic dictator and a deity, Larsen passionately ruled the company. He was involved in everything from enforcing the company policy on arranging flowers to hiring a president and designing the collections. More than simply reviewing end results, Larsen was involved in, or at least updated at, every step in the process and always had advice to offer (L. Stack, personal communication, November 17, 2009). Although his criticism was often harsh and his praise spare, there was a deep mutual respect between Larsen and his team. In many instances, it was his passion that kept the company going (K. Stack, personal communication, May 20, 2009).

WINNING TEAM –

In-depth interviews confirmed that Larsen was skillful in recruiting team-oriented employees. The sense of mission: to design, produce, and sell the most wonderful fabrics on the market (as all invariably believed), bound the employees into a tight family (B. Bloom, personal communication, October 2, 2009). Larsen fabrics may have been designed in high style and sold to high society, but Larsen employees were down to earth (K. Stack, personal communication, May 20, 2009).

Interviews suggest that Jack Lenor Larsen Inc. was a company that truly "whistled while it worked". Former staff members eagerly talked about the employee Christmas party and reminisced about staying late after work to party and to enjoy each other's company. Laughter, they say, was nearly always heard (S. Rothschild, personal communication, May 19, 2009).

EDUCATOR -

Larsen was a firm believer in educating not only his employees, but the design community at large. As new fabrics and carpets were added to the Larsen line, Larsen found it important to personally educate the sales staff on the fiber, weave structure, dye technique, etc. His presentations at Trunk Shows have been described as "mesmerizing", as Larsen was an "orator master" in keeping the audience focused, interested, and inspired (B. Bloom, personal communication, October 2, 2009).

Larsen also taught the local craftsmen. What the designer couldn't find, he taught. In his interview, Larsen described showing regional Siamese weavers how to switch from plain to twill weave, add polyester sewing thread, and making traditional ikat fabrics in bolts long and heavy enough to fulfill corporate commissions (J. Larsen, personal communication, May 21, 2009).

In trying to educate the design community, Larsen has ten books to his credit. He is the acknowledged expert on art fabrics and works where the line between the fine and decorating arts becomes the thinnest (E. Karanauskas, personal communication, May 21, 2009).

RELATIONSHIP WITH TRUSTED PROFESSIONALS

Although not a natural extrovert, Larsen strove to meet and know interesting, talented people (H. Hernmark, personal communication, April 20, 2009). As a result of his efforts he created and maintained trusting relationships with design professionals, vendors, and manufacturers. During the height of Larsen's career, he outsourced hand weaving to countries where weaving traditions were still alive, unique, and affordable labor available. He used producers around the world taking advantage of the newest technologies as well as the oldest traditions. At one time, Larsen had arrangements with mills in 31 countries. Many of his most outstanding textiles evolved out of these international collaborations (L. Stack, personal communication, November 17, 2009).

WILLING TO TAKE CALCULATED RISKS –

It has been said that doing things outside the box will help your business blossom. Jack Lenor Larsen did just that. Over the years, some of Larsen's most calculated risks involved theater curtains. Two of the most well-known are the Act Curtain for the Filene Center at Wolf Trap Farm, Vienna, Virginia, and the curtain for the Phoenix Opera House. These dazzlers were difficult to produce, and often were not commercially successful when produced for interior designer's lines, but their visual appeal firmly established Larsen's reputation. Magnum, Larsen's famous magenta machine-embroidered fabric backed with mylar was designed as a curtain for the Phoenix Opera House and became his signature fabric. Every designer in the country wanted a swatch of it in his/her studio, but little of it was ever sold. Many such unique fabrics remained in the line for twenty years and lost money, but established the Larsen reputation (E. Karanauskas, personal communication, May 21, 2009).

It is important to note that for all of the successes, there were also many design failures. The leading edge is also referred to as the bleeding edge, as innovation takes time to be understood and accepted. With the sales process as it was: showrooms to designers/architects to customers, a design often took as long as three years to reach its sales potential. Some fabrics never sold out of the initial stock. For the successes, the danger was knock-offs. An innovative design approach would be copied and simplified as its acceptance became widespread. Another company's cheaper production at greater volume would reap the larger financial benefits. This was a frequent story. However, it was this constant pushing for new solutions that kept the Larsen Design Studio at the forefront of design. Jack Lenor Laren was not scared to explore un-chartered territories, take risks and make difficult decisions (K. Stack, personal communication, May 20, 2009).

INNOVATION –

The success of Jack Lenor Larsen Inc. clearly rests on the innovation of its designs and the quality of the textiles it produced. A hands-on approach was used with the understanding that design was more than a pattern applied to a cloth. The two elements, cloth and pattern, had to be totally integrated to be a success. One of the things Larsen designers were noted for in the textile industry was their ability to push both historic and contemporary technology in new and unusual directions to achieve distinctive textile design innovations (L. Weitzner, personal communication, May 19, 2009).

Creativity is the ability to use your insights and come up with new solutions to old problems, get things done in a different way or find a totally different approach for conventional things to work together. Larsen was genius at this. Interviews confirmed that Larsen conceived what is believed to be the first diagonal stripe weave, the first printing in America on velvet, and the first stretch upholstery fabric. He also created a line of double cloths, which he refers to as "visual puns" since they can be used with either side as the face of the fabric, forming positive/negative images of the same pattern (P. Gedeohn, personal communication, May 22, 2009).

CORPORATE IDENTITY–

Creating and maintaining a corporate identify was a strength of Jack Larsen. He knew that first impressions do count! His name and plain weave logo appeared on everything- letterhead, envelopes, business cards, fabric labels, press releases, etc. Larsen knew that corporate identity and branding added a certain charm, appeal and allure. He also knew that corporate identity was the first thing the potential customers pay attention to. As a result, the Larsen name and logo is recognized around the world (B. Bloom, personal communication, October 2, 2009).

SUMMARY

Jack Lenor Larsen is one of the outstanding weavers and textile innovators of the twentieth century. It has been said that Jack Lenor Larsen could have been a painter, an architect, or poet, but he chose to be a weaver because, through textiles, he could be a painter, architect, and poet all at once. The Larsen name has become synonymous with exquisite woven fabrics, epitomizing the point at which modernism, handcraft, and technology interact (Constantine, 1981).

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REFERENCES (APA)

Constantine, M. (Ed). (1981). *Jack Lenor Larsen: Thirty years of creative textiles.* (Exhibition Catalog). Paris: Musée des Arts Décoratifs, Palais du Louvre.

PRESENTATIONS:
SERIVCE

Re-Design: Developing a Material Recovery Model for Campus Design Programs

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ABSTRACT

This paper outlines and evaluates a proposed recovery program for end-of-use materials resulting from campus design resource libraries. It is common for several materials libraries to exist on a university campus for the purpose of supporting curriculum needs. Particularly in interior design programs, these collections provide invaluable opportunities to increase student access to and knowledge of current materials and products. Featured prominently in design education and practice today is a growing concern and consideration for the environmental impacts of the building industry. In response to this, many materials collections have committed to increasing their offerings of sustainable material samples and product information. However, materials research and development is ever-changing as new products, certifications and environmental standards are identified each year. Limited display and storage space in many programs means that as product lines are discontinued, there are few established outlets for these samples. Whereas the input of sustainable materials for resource centers is ever-increasing, it seems that the identification of sustainable options for outmoded material and product samples has proven to be more of a challenge. A materials recovery program can assist in identifying new reuse strategies and potential markets for materials that might otherwise be sent to the landfill or to inefficient recycling practices, thereby promoting a Cradle to Cradle approach for material centers.

Additionally, this paper discusses a pedagogical approach recently used to address the development of this concept. Framing it as a project in a special topics course provided opportunity for students to participate in and guide the research, design and outcomes of program proposals firsthand. The development of a global perspective is of increasing importance in design education. Standard 2 of the Council of Interior Design Accreditation Professional Standards 2009 addresses “Global Context for Design”, stating that, “Entry-level interior designers have a global view and weigh design decisions within the parameters of ecological, socio-economic, and cultural contexts”. Learning expectations for this standard include an understanding of “the concepts, principles and theories of sustainability as they pertain to building methods, materials, systems and occupants” (CIDA 2008). This project asked students to propose a framework for a sustainable materials recovery model requiring them to more fully comprehend the complex ecological, socio-economic, and cultural impacts of their decisions as designers and consumers.

NARRATIVE

"The materials revolution will not arrive until society becomes much less consumptive – until consumers change their habits and until a new army of designers figures out how to do more with less" (Young: 10).

Many materials libraries exist on campuses across the nation for the purpose of supporting curriculum needs. Like the professional practice counterparts they are often modeled after, such collections strive to stay current with market factors including newly released, innovative, and sustainable product information and samples. One CIDA accredited interior design program has developed a Design Resource Center (DRC) that houses a material sample collection used by design students for on-site (short-term use) material research as well as off-site (long-term or permanent) use of materials for studio project finish sample boards. However, a constantly evolving building and finish material market necessitates frequent updates to lines as the availability and offerings change. As discontinued product lines are struck obsolete, there are few established outlets for these samples. It is common for some of the products and materials in the DRC to have been donated from design firms, showrooms or other sources. Design businesses no longer have a need for such duplicates or discontinued lines. So, when these items have surpassed their original purpose in design education programs, very few markets are interested in these materials.

A project recently developed for a special topics course provides an opportunity for students to participate in and guide the research, design and outcomes of a proposed Sustainable Material Recovery Model. The project encompassed three primary objectives:

Identify models of closing the loop on curriculum-based materials center waste streams as a step towards creating a sustainable materials economy at a university scale.

Allow students to use creative problem solving and entrepreneurial skills to design with less (or with more of what already exists) by proposing sustainable solutions for recycling and/or product design and marketing using repurposing materials.

Educate the campus and broader community on the role that materials play in sustainability efforts through an exhibit.

These objectives were accomplished in a phased approach to the project. For the initial phase, students worked in teams to research, analyze and provide the background and conceptual framework for a proposed material recovery model**.** This phase began with research and literature review including such books as Cradle to Cradle: Remaking the Way We Make Things, by W. McDonough and M. Braungart, Ecological Intelligence, by D. Goleman, Biomimicry: Innovation Inspired by Nature, by J. Benyus, and others that might inform the project. Later phases identified some of the existing material inputs and evaluated potential material outputs to consider in the material recovery model.

MATERIAL INPUTS

"Products lie at the nodes on the web of production, consumption and disposal. Products are like a messenger between production and consumption. They are the carriers of material's flow, energy usage, functional performance, and environmental impacts. Therefore, products provide the keys to unlocking one important vehicle for making progress in achieving sustainability" (Li: 705).

In order to appropriately develop a closed loop system for materials, it was first necessary for students to perform an initial materials flow analysis. Phase Two of the project asked students to look at the context of materials used on campus. This involved the research, identification and analysis of material inputs, on-campus uses, and currently established outputs for a certain material or material family. After selecting key materials or products of interest to focus on, students created a material log diagram to communicate the life cycle of the material as it relates to its travel to campus, uses while on campus, and, finally, its destination off-campus once no longer needed.

Through their research, students identified examples of materials used on campus and found that for many the complex industrial processes and technological advancements involved in creating final product compositions make for very limited recycling options. A majority of Design Resource Center product offerings, for example, are composite finish materials such as textiles, wallcoverings, carpeting, resilient and other flooring samples.

Limited recycling programs or alternate use markets are available for such products. Of those materials that can be recycled, such as carpeting, their unique material compositions often require specific and intensive processes that only a limited number of locations (usually carpet manufacturing facilities) can accommodate. The combination of limited recycling centers and the small scale of samples creates high environmental and economic costs due to transport that often outweigh the potential benefits of recycling.

Material Outputs

"We begin to make human systems and industries fitting when we recognize that all sustainability (just like politics) is local. We connect them to local material and energy flows, and to local customs, needs, and tastes, from the level of the molecule to the level of the region itself" (McDonough: 123).

The third phase of the project involves students indentifying and proposing new reuse strategies and potential markets for materials that otherwise might be sent to the landfill or to inefficient or remote recycling programs. In an effort to develop a sustainable material recovery model, proposals are encouraged to look at locally and/or regionally-based options.

Initial findings identified a variety in material inputs suggesting that rather than a single proposal, a variety of output options should be considered for implementation. Multiple strategies for achieving the project objectives were identified and organized within the following three primary output categories:

Output and Use Through Scholarly and Creative Activities

Output to Service / Humanitarian Efforts and Centers

Output Through Product Design and the Potential for Business Ventures

Scholarly and Creative Activities output potential included the use of material for class-level research and design projects such as in this current special topics course as well as other programs and classes on campus. Additionally, design competitions and shows/exhibits were noted as appropriate methods of effectively achieving the third project objective of educating audiences on materials sustainability. One example of a successful design competition at a local level that addresses creative solutions for repurposed materials is the University of Idaho College of Art & Architecture's Wearable Art Competition. This competition asks student teams to design and create a work of wearable art using recycled, repurposed and/or found materials. The final pieces are worn as part of a "trashy fashion show" at a local performing arts center where students had an opportunity to win cash prizes while raising community awareness of our consumptive materials economy (Fig. 1). At a regional level, the Interior Designers of Idaho sponsors the re:use Design Challenge, a competition that calls for miniature chair design submissions made from a material palette limited to a disposable coffee cup, lid, straw and stir stick. This competition and exhibit raises awareness to aspects of our disposable lifestyles while also resulting in creative and playful design solutions (Fig. 2). At an international level, such competitive design exhibits as the International Contemporary Furniture Fair (ICFF) have highlighted submissions that address and raise awareness of sustainable material use in product design. The University of Idaho College of Art & Architecture's Design Schools Exhibit at the ICFF in 2007, for example, communicated the importance of considering embodied energy when selecting finish materials (Fig. 3, Fig. 4).

Another potential outlet category for materials samples was recognized in Service / Humanitarian Efforts. For example, many programs collect unwanted upholstery and other textiles and use them to sew blankets or other household products for use by the homeless or others in need. Other not-for-profit organizations collect discarded material samples and make them available to the general community for arts and crafts or other uses, many focused on youth-based programs. These types of programs could be designated as potential local or regional material outlets or new ones could be implemented through a variety of community or educational venues or private ventures where they do not already exist.

Finally, opportunities for business ventures capitalizing on the repurposing potential of materials in product design were identified. Design exhibits such as the Haute Green in New York City in 2007 and, more recently, Ecotopia in Los Angeles in March 2010, have based

their call for submissions on innovative approaches to sustainable product design. Many of these design concepts have since been developed into marketable products. Michelle Branch's chandelier made from plastic soda pop bottles exhibited at Haute Green, for example, has since developed into a successful business product line.

CONCLUSIONS

The implementation of a material recovery program would be a method of identifying and communicating opportunities for sustainable material outputs and a step towards developing a college-level sustainable materials economy. Starting at a program and college level provides an initially smaller scale to work with while developing a framework for gathering inputs and identifying appropriate outputs. Opportunities for future expansion could address materials at a larger campus scale in cooperation with other programs on campus. Further expanded, regionally-based programs could provide an opportunity to include off-campus inputs such as professional design practices and showrooms as well as increasing community awareness of such programs.

REFERENCE LIST (APA)

Council for Interior Design Accreditation (CIDA). (2008, June). *Professional Standards 2009*. Retrieved June 20, 2009 from, www.accredit-id.org/June%20 2008%20Standards_changes09.pdf

Li, L., and Geiser, K. *Environmentally responsible public procurement (ERPP) and its implications for integrated product policy (IPP).* Journal of Cleaner Production, vol. 13 (2005) 705-715.

McDonough, W., and Braungart, M. (2002) *Cradle to Cradle: Remaking the Way We Make Things*. New York: North Point Press.

Young, J. E., and Sachs, A. (1994) *The Next Efficiency Revolution: Creating a Sustainable Materials Economy*. Worldwatch Paper 121. Washington, D.C.: Worldwatch Institute.

Figure 1: Highlights from The College of Art & Architecture's Wearable Art Competition

Figure 2: re:use Design Challenge cup designs, April 2009

Figure 3: The College of Art & Architecture's "Energy Materialized" winning Design Schools Exhibit team at the International Contemporary Furniture Fair (ICFF) in New York City, May 2007

Figure 4: The College of Art & Architecture's "Energy Materialized" Exhibit Poster

Service-Learning as Strategy in the Study of Aging and Environment: Developing Generations of Evidence-Based Interior Designers

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ABSTRACT

Interior designers are well suited as activists for change, undertaking the multitude of social issues plaguing our democratic society. On a daily basis designers are directly engaged with the world around them, inspiring dialogue in order to create the physical spaces and places where others live, work, and play. As our nation is facing obstacles and difficult issues pertaining to aging, the economy, and health care, designers can offer diversity and fulfill a multitude of responsibilities including as social scholars and educators. Inspiring and empowering the next generation of interior designers is a challenge educational institutions face. Therefore, the creation of responsible designers, who tackle difficult issues, will require educational institutions to actively participate in the social issues facing communities around the country, in particular the aging baby boomer.

Academic service-learning is a teaching strategy in which students are engaged in authentic activities, where course curriculum is applied to address the needs of communities in order to enrich the educational experience and encourage lifelong civic engagement (Furco, 2001; Howard, 1998). Service-learning has often been accepted as a teaching tool among educational institutions yet widely criticized as a research methodology (Bailis, 2001; Furco, 2001). Research is an integral part of all service-learning projects, including aging in community, since the solutions discovered for community problems should be derived from research (Enos and Troppe, 1996). Therefore, service-learning and research should be aligned to increase faculty and student use of evidence-based design decisions.

In 2006, Partners for Livable Communities found less than half, 46%, of American communities have begun planning to address the needs of the aging baby boomers. In response to this finding, this study will explore the implementation of a well defined service-learning philosophy to address the need for appropriate housing options within rural communities. This visual study will inspire leaders and members of the community into lasting partnerships with educational institutions, to address the evolving and challenging community social issues surrounding the aging baby boomer.

NARRATIVE

Designers are well suited as activists for change, undertaking the multitude of social issues plaguing our democratic society. On a daily basis interior designers are directly engaged with the world around them, inspiring dialogue in order to create the physical spaces and places where others live, work, and play. Inspiring and empowering the next generation of socially conscious designers is a challenge educational institutions face. Therefore, the creation of responsible interior designers, who tackle difficult issues, will require educational institutions to actively participate in the social issues facing communities around the country, in particular the issues surrounding the aging baby boomer.

Higher educational institutions are well-known to focus research toward innovation, to propel disciplines into the next era while preparing future professionals with the latest theories and practices. The design vocation has a responsibility to also focus on the future, to advance the field of study, and engage in researching the complicated social issues pertaining to the built environment. Ernest Boyer's article, "Creating the New American College", challenged higher educational institutions to educate students for a life as responsible citizens rather than educating students solely for a career (Bringle & Hatcher, 1996). Educational institutions have the ability to foster change in policies and practices by creating viable partnerships involving communities, professionals, and the institution. These strong partnerships will allow design to benefit a larger proportion of the population than currently across the country.

BACKGROUND

Designs top priority to the public is to their health, safety and welfare yet only between two and five percent of the built environment is directly affected by a designer (Bell and Wakeford, 2008). Many of the social issues plaguing our country are seen as unrelated to design work resulting in a limitation of what designers can and should do for the welfare and betterment of our communities. Instead design can play a positive role when designers are aware of their position in maintaining and shaping the connections between body and architecture both at the levels of emotional and physical involvement (Bevington, 1992). As interior design expands to improve the lives of all and not just a privileged few, designers will be able to play key roles in the shaping of our society and the improvement of the built environment for the masses. Of the many obstacles facing our nation, the aging of the baby boomer generation is one issue where interior designers can have a large impact. Designers are positioned to make substantial mark on the needs associated with aging and the home by understanding how people's needs change over a lifetime and be able to design environments which can help compensate expected declines with growing older (Bunker-Hellmich, 2002).

AGING BOOMER

America is confronted with the challenges and opportunities of an aging population as the baby boomer generation enters the next era of their lives. The U.S. Census Bureau found, in 2000, 1 in 8 Americans were age 65 years old and over but this number is estimated to increase to 1 in 5 by the year 2030. The lifestyle of the boomer generation and improvements in longevity are changing the way this generation lives into older life.

The baby boomer generation has continually shaped society as they have grown and entered into the different phases of their lives. Retirement will prove to be no different. As a generation of 80 million (Overly, 2007), they have the ability to exert great force over their lives and society as a whole. Many surveys and studies have been conducted to discover the desires for retirement the Boomer's possess. The majority of Baby Boomers, 77% to 89% (Maurer, 2001; Partners for Livable Communities, 2008), do not want to move south nor enter retirement facilities; they want to maintain their independence as long as possible. The AARP conducted a survey and also found a significant majority of the Boomer generation would prefer to age in place, to enable them to maintain their social connections and professional relationships within their familiar surroundings (Overly, 2007). Aging in place has been defined as the ability to live independently within one's own home, with emphasis on independence outside of a healthcare environment (National Aging in Place Council, 2009). The definition of aging in place, in this study, will expand to not only include aging within one home but rather the ability to age within a person's chosen community. This ability will allow the boomers to maintain those important connections they have fostered throughout their lives no matter if one chooses to change homes. This expansion of the definition of aging in place is due in part to the findings of older adults desire to live within the same

places they have always, both in the sense of community, neighborhood, as well as home (Scheidt & Windley, 1998) as well as the boomers avoidance of senior only communities and their willingness to explore housing options within their own communities (Rosenfeld & Chapman, 2008). Boomers will demand solutions to allow them to live independently within the communities they are invested.

A crucial aspect to remaining independent is to maintain the right fit between a person's abilities and the demands of the environment; too often an older adult must adapt their behavior to the environment rather than the environment changing to meet their needs (Pynoos, Nishita, & Perelma, 2003). The design of homes to adapt to the older individual rather than the individual adapting to the home is a realistic goal for the future of housing policy (Christenson, 1990). The optimum time to create accessible housing is at the time of new home construction but realistically the homes occupied today by older adults are in need of adaptations. Research has indicated older adults are unsure of home modifications needed, are not convinced the changes would make a difference, and they do not believe it will be difficult to stay within current home stock as they age; these findings all indicate there is a need to counsel and educate the boomer generation (Crews & Zavotka, 2006; Sherman & Combs, 1997; ASID, 2001). The National Association of Home Builders found much of the age remodeling occurs only after the homeowner has found difficulty navigating within their homes (Senior Journal, 2006). Modifications of older adults' homes should occur prior to any navigational issues, resulting in a residential environment which facilitates independent living and promotes overall health and welfare.

EDUCATIONAL INSTITUTIONS

There is now a demand for educational institutions to become more involved in the community. This is possibly in response to criticism of institutions and faculty lacking responsiveness to the larger public good (Kezar & Rhoads, 2001; Maas Weigert, 1998) when service is often included within the institution's mission statement but seldom evident in academic institution's work (Zollinger, Guerin, Hadjiyanni, & Martin, 2009). Boyer (1997) challenged educational institutions by stating:

"The academy must become a more vigorous partner in the search for answers to our most pressing social, civic, economic, and moral problems, and must reaffirm its historic commitment to what I call the scholarhsip of engagement."

This connection of scholarship and partnership contributed to the adoption of service-learning as a method of outreach and scholarship across the country. Interior design professional and research programs with service-learning experience are deemed more successful than their counterparts without service-learning (Wolf, 1996). Service-learning facilitates partnerships between educational institutions and communities but can also add collaboration with professionals to bridge the gap between education and practice. Interior design practitioners noted collaboration between practice, education, and research should be increased to inform one another and to further the field of interior design (Carll White & Dickson, 1994).

PURPOSE

Educational institutions with interior design programs are in need of a method to allow the development of socially responsible designers, engagement within community issues, and the ability to advance the field of design through research. Service-learning implemented into interior design education provides the structured method to fulfill the needs of communities, interior design students, and educational institutions by unifying research, teaching, and service.

In 2006, Partners for Livable Communities found less than half, 46%, of American communities have begun planning to address the needs of the aging baby boomers. An Elder-Friendly Community assessment conducted by Iowa State University, in 2008, also found Iowa small town communities are in need of improving housing options for the aging citizen. These research findings identify a need for interior design within communities to address the aging citizen and home environments. A service-learning model will be created for interior design programs by adapting prior researched service-learning models in order to create a viable service-learning model centered on the study of aging in community, the need for appropriate housing options.

REFERENCES (APA)

ASID. (2001). *Aging in Place: Aging and the Impact of Interior Design.* Washington, DC: American Society of Interior Designers.

Bailis, L.N. (2001). The national society for experiential education in service-learning. New Directions for Higher Education, 114, 61-65.

Bell, B., & Wakeford, K. (2008). *Expanding Architecture Design as Activism.* New York: Metropolis Books.

Bevington, C. B. (1992). One size doesn't fit all: a designer argues that universality may lead to homogeneity. *Interior Design* , 63(11), 80-86.

Boyer, E. (1997). The scholarship of engagement. *Journal of Public Service and Outreach* , 1(1), 11-20.

Bringle, R. G., & Hatcher, J. A. (1996). Implementing serivce learning in higher education. *Journal of Higher Education* , 67(2),221-239.

Bunker-Hellmich, L. (2002). Aging and the designed environment. *Implications* , 01(01) 1-2.

Carll White, A., & Dickson, A. W. (1994). Practitioners' Perceptions of Interior Design. *Journal of Interior Design* , 20(1), 27-35.

Christenson, M. A. (1990). *Aging and the Designed Environment.* Binghamton: The Haworth Press, Inc.

Crews, D. E., & Zavotka, S. (2006). Aging, Disability, and Frailty: Implications for Universal Design. *Journal of Physiological Anthropology* , 25(1), 113-118.

Enos, S.L., & Troppe, M. L. (1996). Service-learning in the curriculum. In B. Jacoby and Associates, *Service-Learning in Higher Education: Concepts and Practices*. San Francisco: Jossey-Bass.

Furco, A. (2001). Advancing service-learning at research universities. *New Directions for Higher Education*, 114, 67-78.

Howard, J.P.F. (1998). Academic service learning: a counternormative pedagogy. *New Directions for Teaching and Learning*, 73, 21-29.

Kezar, A., & Rhoads, R. A. (2001). The Dynamic Tensions of Service Learning in Higher Education. *The Journal of Higher Education* , 72(2), 148-171.

Maurer, T. L. (2001). Aging in Place: Aging and the Impact of Interior Design. *American Society of Interior Designers* .

National Aging in Place Council. (2009). *What is NAIPC?* Retrieved January 10, 2010, from Age in Place: http://www.ageinplace.org/about_us/what_is_naipc.aspx

Overly, N. (2007). *Baby Boomer Seeking a Different Retirement Lifestyle-At Home*. Retrieved August 28, 2007, from Senior Journal: www.seniorjournal.com/NEWS/Boomers/2007/7-03-08-BabyBoomersSeeking.html

Partners for Livable Communities. (2008). *Aging in place: making communities more livable for older adults*. Washington, D.C.

Pynoos, J., Nishita, C., & Perelma, L. (2003). Advancements in the Home Modification Field. *Journal of Housing For the Elderly* , 17(1&2), 105-116.

Rosenfeld, J. P., & Chapman, W. (2008). *Home Design in an Aging World.* New York: Fairchild Books, Inc.

Scheidt, R. J., & Windley, P. G. (1998). *Environment and Aging Theory a Focus on Housing.* Westport: Greenwood Press.

Senior Journal. (2006). *Aging in Place Specialists Offer Tips for Making Homes Age-Friendly*. Retrieved August 28, 2007, from Aging in Place: www.seniorjournal.com/NEWS/Housing/6-05-17-Aging-in-Place.html

Sherman, S. L., & Combs, E. R. (1997). Characteristics related to elderly persons' perceived difficulty of remaining in their current homes. *Family and Consumer Sciences Research Journal* , 26(1), 59-75.

Wolf, R. L. (1996). Service Learning. *Journal of Interior Design* , 22(2), iv.

Zollinger, S. W., Guerin, D. A., Hadjiyanni, T., & Martin, C. S. (2009). Deconstructing Service-Learning: A Framework for Interior Design. *Journal of Interior Design* , 34(3), 31-45.

The Endangered Historic Interior: Perspectives on Preserving these Unique Environments

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ABSTRACT

The purpose of this paper is to investigate why the preservation of historic interiors is important, to describe how they are endangered, to investigate attitudes about historic interiors, to discuss what level of protection currently exists for them, and to outline the basic process by which interior designers should preserve historic interiors in the rehabilitation process.

The approach includes an archival study and an original survey. The purpose is to research and present existing data regarding the definition, significance, threats to, and the appropriate treatment of historic interiors in America. In addition, the study will include an original survey of over one hundred practitioners within the field of historic preservation, such as historical architects and architectural reviewers at state historic preservation offices and city preservation offices, and members of architectural review boards, to document their attitudes and perspectives on what level of care and protection should be applied to historic interiors. The survey will query these professionals on issues including: a) what protections of historic interiors exist within their jurisdictions; b) how frequently are significant historic interiors in their area lost in rehabilitation or demolition; c) what protections they believe should be in place for interiors; d) what types of historic interiors and interior elements they believe should be protected, and; e) what recommendations they have for interior designers who work with historic interiors to properly treat and protect them.

The archival study reveals that while a number of major American cities, such as New York, Boston, and Chicago protect highly historic interiors within individually designated landmark buildings, interiors in the vast majority of historic buildings, those located within historic districts but not individually landmarked, receive no legal protection. In addition, the study shows that interiors are particularly vulnerable due to their critical role in the function of a building. Interiors are subject to more frequent and more destructive remodeling than exteriors, and since they are often not as visible as exteriors, destructive work can go unnoticed even if legal protections are in place. Historic interiors are also endangered by looting of architectural antiques and are more subject to law suits regarding property rights than exteriors. The survey sheds light on how the attitudes of preservation professionals about historic interiors compare and contrast with their viewpoints regarding the preservation of historic exteriors.

The implications of this research are that a) historic interiors are significant in embodying the style, history, and educational value of historic buildings; b) despite their significance, historic interiors are endangered; c) while some legal protections exist for a limited number of significant interiors, protection is not widespread; d) by using proper preservation methods, interior designers can achieve goals such as modern function and providing accessibility for the handicapped while still retaining important historic interior spaces and features. This paper will be valuable to interior designers who seek to preserve historic interiors.

NARRATIVE

This paper will examine the many ways that historic interiors contribute to the appreciation and understanding of historic architecture and describe the results of a survey of the attitudes of preservation professionals in regard to historic interiors. It will then discuss how historic interiors in the United States are threatened by demolition, insensitive alteration, and looting and outline specific reasons why they are threatened using illustrative examples. Then the paper will present a brief summary of the basic process that interior designers can use when identifying and preserving historic interiors, citing examples.

According to the national standards laid out by the National Park Service for historic resources in general, a historic interior can be defined as an interior space that is usually at least fifty years old that has historic significance due its role as the site of a historic event, because of its association with a significant individual or group, or due to its embodiment of a distinctive style of architecture or the work of a noteworthy designer or craftsperson. In addition, to be considered historic, an interior must retain many of the architectural and decorative features that it possessed when constructed, or that were present during the period of its association with a historic event or person.

The paper will report the results of a survey of practitioners within the field of historic preservation, such as preservation architects, architectural reviewers, and members of architectural review boards, to document their attitudes and perspectives on the relative importance of historic interiors, and the kinds and degrees of protection that are provided and that should be applied to historic interiors. Information gained in that survey will be employed to provide data to enhance the discussion of the issues outlined below.

The interiors of historic buildings are significant and distinctive elements of the built environment. The arrangement of spaces in a building's plan, patterns of circulation, the materials, finishes, and motifs used in its walls, floors, and ceilings, historic interior mechanical systems, decorative systems, and built-ins, all help define a historic building. People generally interact more intimately with interiors than with exteriors, and since most people spend the vast majority of their time indoors, they are bound to be especially impacted by the interiors of buildings where they visit, work, or live. Intact historic interiors can provide a unique experiential window into how people lived and worked in the past. Interiors that relate closely with a significant building's exterior architecture are particularly important.

Historic interiors are subject to a number significant threats. Interiors tend to be changed and updated more often than exteriors because they are more subject to wear and changes in function and technologies. This has caused many significant interiors to lose their historic integrity over time. Since interiors are used directly by their occupants, they are often subject to numerous upgrades in both function and style. Even interiors that require little change to function effectively can be subject to being looted for the valuable architectural salvage that they often contain. Sometimes valuable objects, such as chandeliers, are removed and sold. For example, in the 1980s, the Internal Revenue Service (IRS) took possession of a vacant mansion in New Orleans for unpaid taxes and removed a number of ornate chandeliers, which were worth in excess of $75,000 each. The IRS intended to sell them, however the bank, which had received the house in foreclosure, successfully sued to have the lamps returned (Avila 1997). Historic interiors are looted by vandals and antique dealers for salvage, and sometimes entire rooms are removed by property owners and sold to dealers or museums. Removing significant interior elements destroys the connection between a building's interior design and its exterior and reduces its overall integrity.

Despite their potential to inspire and educate the public, historic interiors receive little protection in most American jurisdictions. For example, in the French Quarter in New Orleans, one of the nation's most restrictive local historic districts, only areas of historic buildings that "come in contact with outside air" receive legal protection. This preserves porches and courtyards, but developers can treat interiors as they wish. One unfortunate consequence of this took place in the early 2000s when the distinctive and historic interior of a bar on Bourbon Street called the Old Absinthe House Bar, was gutted and its unique nineteenth-century interior replaced with a sterile twenty-first-century daiquiri shop. New Orleans is no exception. Although there are over 1,800 regulated historic districts in the United States (Silver 2004), in general, interior elements are rarely protected by his-

toric ordinances in the United States. A 2007 study revealed that although fourteen of twenty American cities studied had provisions protecting historic interiors, they overwhelmingly protected only interiors within individually landmarked buildings, which constitute a small fraction of the number of historic buildings within those cities that contribute to historic districts (Preservation Alliance 2007, 7). The following language, taken from the Commission on Chicago Landmarks is typical, "Landmark qualities are defined by the Commission as significant historical or architectural features. In the case of landmark districts, these features are confined to the exterior aspects of the property" (Commission on Chicago Landmarks 2006). In Chicago only individual buildings of exceptionally high historic value are "landmarked [sic] inside and out" (Commission on Chicago Landmarks 2006). For example, the lobby and the auditorium of the famous 1921 historic landmark, the Chicago Theater, are regulated. In addition, in almost all jurisdictions that offer legal designation of interiors, only interiors that are open to the public receive protection and in many cases, only those that are in public ownership are eligible.

Even where historic interiors have legal protection, preserving them can be particularly challenging. Although the practice of preserving historic exteriors has been well established in practice and in the law for many decades, preserving interiors is a relatively recent phenomenon. Some landowners who are willing to abide by laws protecting historic building exteriors view legal designation of interiors as an undue invasion of their property rights and have challenged such designation in court and sometimes won. For example, The Supreme Judicial Court of Massachusetts ruled in 1990 that Boston Landmark Commission's designation and legal protection of the interior of the Church of the Immaculate Conception violated the constitution of Massachusetts. The court stated that the regulation of the church's interior was inappropriate. The court stated: "The government intrusion here is substantially more invasive, reaching into the church's actual worship space" (Ross, 2005, 38).

How should interior designers and architects approach historic interiors? It is obvious that for historic buildings to remain functional and economically viable, alterations to their interiors must be made on a fairly regular basis, even if that means just updating services, such as HVAC, electrical wiring and plumbing. While altering historic interiors, is important to determine what spaces and aspects within the spaces should be protected and which can be altered or removed without having a significant deleterious effect on the historic integrity of the building. In general, the designer needs to identify interior elements that define the building's character. These defining elements are often distinctive and highly visible. Elements and spaces that help a visitor to understand the historic function and style of the building are particularly important. Examples include formal stair cases, lobbies, major hallways, formal dining rooms and ballrooms, ornate theater spaces, parlors, and auditoriums. Spaces and elements such as these define the character of a building and are significant factors in the building's architectural design. Generally, the most public spaces within buildings merit the highest degree of preservation. One notable exception would be a private space which has outstanding historical value, such as a study where a famous writer worked or where a treaty was signed. Treatments such as decorated ceilings, distinctive walls treatments, floor materials and decorative patterns, distinctive trim, crown molding, and base boards should also be retained wherever possible (Jandl 1988). If major alterations must be made to a historic interior, it is best to design them in a manner that the new changes are reversible.

When dealing with historic architecture, often designers find themselves at odds with preservationists. Designers often want to provide the best modern function and to express their and their clients' tastes. There is no problem with this so long as highly distinctive and significant historic fabric is not negatively impacted. In many rehabilitations, modern functions, including accessibility for the handicapped, can be accommodated in secondary spaces such as utility rooms and back areas of a building. The primary factor in successful historic design is maintaining sensitivity to the unique aesthetic and educational properties of a historic interior. If designers work closely with preservationists on the issues involved in protecting historic interiors, then these unique environments of the historic built environment will become regarded more highly and be better preserved.

REFERENCE LIST (CHICAGO)

1. Avila, Robert Xavier, “Preservation of Historic Interiors: Retaining Fixtures in Significant Buildings,” Master’s Thesis, University of Pennsylvania, 1997.

2. Commission on Chicago Landmarks, “The Commission on Chicago Landmarks designation process and criteria; how landmarking and its tax incentives could affect you, and the differences from National Registry,” 2006, http://www.hydepark.org/historicpres/landmarkscrit.htm (accessed July 21, 2009).

3. Jandl, Ward, “Rehabilitating Interiors in Historic Buildings,” Preservation Brief number 15, National Park Service, 1986.

4. Preservation Alliance for Greater Philadelphia, “Protecting Historic interiors: A Survey of Preservation Practices and their Implications for Philadelphia,” 2007, http//www.buildingconservation.com/articles/interior/interior.htm (accessed February 1, 2010).

5. Ross, Andie, “Historic Preservation: First Amendment Considerations,” Master’s Thesis, University of Pennsylvania, 2005.

6. Silver, Sass, “Not Brick by Brick: Development of Interior Landmark Designation Policies in Washington , D.C.,” Student Paper, Georgetown Law Center, 2004, http://scholarship.law.georgetown.edu/hpps papers/15 (accessed January 30, 2010).

"And the winner is…" The unfulfilled potential of interior design competitions

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ABSTRACT

THE CHALLENGE

A recent proposal that interior design competitions recognize projects "with proven results from their hypothesized outcomes" promotes the idea that the publication of award winning entries "will be more meaningful to new project teams and to the industry as a whole" (Cama, 2009). This modification is suggested to remedy the prevailing reality of many interior design awards programs as mere beauty contests, based more on photography than on recognizing the highest levels of design achievement as measurable enhancements to human needs. An earlier editorial decried the unprofessional language used in presentations at a major national competition, with the judges' citations using words like "sophisticated", "classic", and playful" (Szenasy, 2008) rather than identifying achievements in addressing issues like sustainability. Both authors suggest that design competitions should contribute to the ongoing development and dissemination of professional expertise as well as contribute to the education of the public about the goals and expertise of interior design professionals.

THE PROBLEM

Design competitions held in two consecutive years by a large regional chapter of a national organization were studied to gauge their effectiveness developing professional expertise and enhancing public perception of the profession. The criteria for the first of the two competitions had been used for a number of years, and could be described as vague, general, and hardly measurable. The written material accompanying the images submitted by competition entrants was similarly indefinite in stating the design problem and explaining the solution. No examples of "hypothesized outcome" or "proven results" were provided. Instead, the somewhat florid style of the decorating magazines prevailed, peppered with the kind of language that Szenasy (2008) called "mushy words" and Frascara (2007) termed "fuzzy words". In an effort to make the competition more relevant to both the design profession and the general public, the next year's competition was to be judged with far more specific criteria focused on the health, safety, and welfare of end users.

THE METHOD

Employing content analysis, copies of evaluation sheets completed by competition judges in each of the two years under review were studied. Words used by the judges, all of whom were fellows of the organization, were separated into grammatical categories and counted. Words used most frequently by judges corresponded to the "mushy" and "fuzzy" language used by contestants, and to vocabulary identified by Drab (2008) as common to magazine journalism and, consequently, interior design practitioners, negatively affecting public perception of the profession. The modification made to the competition criteria had little impact on the judges' comments, with only three comments addressing health, safety, and welfare issues. Further, judges' comments in both competitions were more descriptive than analytical. Rather than being meaningful or instructive relative to the evidence base or measurable outcomes of the designs, the comments focused on aesthetics ("simple", "nice", "beautiful","elegant"), on the use of materials, and on expressions of personal preference.

IMPLICATIONS

This paper will explore further modifications needed to enhance the effectiveness of design competitions, and will also suggest strategies to utilize similar modifications in the educational setting.

NARRATIVE

BACKGROUND

In explaining a shift in how professional interior design competitions should be judged, Cama (2009) observes that "award-winning attractiveness", previously evaluated mostly in photographs of completed projects, requires redefinition. She notes that judges are highly influenced by the quality of the photography, and elsewhere states that "a masterful photographer can win an award for you even if your design work isn't any good" (Robertson, 2010). In exchange for the "aesthetic qualities" that for too long dominated competition judging, "quantifiable evidence", "performance measures", and "application of knowledge based design" should become central to the evaluation of "outcome-driven solutions". Adopting academic language, Cama predicts that this more rigorous "peer review" will encourage design innovation and strengthen the case for the role that design plays in modern life. Design competitions have the potential to disseminate knowledge to practitioners and educate a wider audience about the value of good design.

Cama's prescription for change responds to Szenasy's (2008) observation that design awards programs rarely recognize important achievements in "sustainable and human centered design". Dismissing national competitions as "old fangled", "almost irrelevant" and "dangerous", she points out "the lack of real conversation about what makes these particular projects worthy of industry recognition". Criticism is focused on the language used to praise the winning entries at awards ceremonies. Terming them "mushy words", Szenasy suggests that a vocabulary dominated by descriptors like "sophisticated", "classic", and "playful" fails to communicate the value of professionally executed design, indicating a troubling lack of emphasis on "the great environmental debate of our time".

Addressing educators, Frascara (2007) asserts that "whether dealing with safety, nutrition, ecology, literacy, health, discrimination, unemployment, social justice, tolerance, administration, business, peace, training, education or whatever human need, design has a role to play". He suggests that these important design issues deserve to be pondered and discussed without using what he calls "fuzzy words", with "intuition" and "creativity" mentioned as specific examples. Just as Cama criticizes design competitions' dependence on photographs, Frascara observes that "the teaching of design often concentrates almost exclusively on the visual aspect of things… without its reformulation as propositional knowledge". While Szenasy sees as "dangerous" the competitions' emphasis on beauty contest winners, Frascara suggests an emphasis on "intuition" and "creativity" leads to "the promotion of the designer as an illuminated magician ".

Research at Oklahoma State University over the last decade targeted the language used in design periodicals, linking the vocabulary of interior design practitioners to that source. Just as the writers of magazine articles fail to use verbiage in the NCIDQ Definition of Interior Design (2004) to describe the activities of interior designers, practitioners fail to adopt words from the Definition, instead relying on a much less professional (and much less varied) lexicon. The use of "create" and its derivatives, described by Frascara as "fuzzy" , has been shown to be the single most used (or overused) word in periodicals and by practitioners (Drab, 2008), with expressions of preference ("love". "like") dominating the verbs used, and non-specific adjectives like "beautiful", "elegant" and "simple" relating closely to the descriptors that Szenasy criticized.

A PROPOSED REMEDY

Recognizing that the regional design competition it annually sponsored fit the "beauty contest" classification, failing to contribute to public recognition of the true value of interior design and consequent support for practice legislation, the board of directors of the largest chapter of the International Interior Design Association (IIDA) voted to recast the competition to focus on health, safety, and welfare issues. The call for entries and judging criteria were rewritten, requiring "achievement of excellence in one or more of the following health, safety, and welfare criteria", including innovations in energy, security, special needs, indoor air quality, increased productivity, and environmental impact. The new criteria were intended to motivate competing design firms to submit projects that would were more than just photogenic, installations that could demonstrate the capabilities of interior design professionals in meeting human needs and protecting the environment.

ASSESSING SUCCESS: THE METHOD

Since much of the impact of competitions, on both the design profession and the general public, is made by

exhibition and publication, this study targeted the comments of competition judges, reiterated at the awards ceremonies and published in the organization's magazine and website. Content analysis of each judge's comments on winning entries of the chapter's Design Excellence Awards for 2008, with the former aesthetically weighted criteria in place, were compared with judges' comments on winning entries for 2009, evaluated according to the new criteria emphasizing health, safety, and welfare issues. In both instances, the number of judges was the same, and all were IIDA fellows residing outside the geographical boundaries of the chapter. Content analysis focused on the adjectives, nouns, and verbs used by the judges. Would the adjectives used in the evaluation of the 2009 submissions reflect the new emphasis on health, safety, and welfare? Would the new criteria have an impact on the nouns used by judges? Would the verbs used by judges in the 2008 competition change the following year as a result of the wording of the new criteria? Would the judges' comments communicate to the design community and the general public the new direction that the IIDA Chapter had initiated, demonstrating interior design's value in protecting the health, safety, and welfare of citizens?

ASSESSING SUCCESS: THE RESULTS

Nouns, adjectives, and verbs used by the 2009 judges varied only slightly from those used the previous year. (see appendix one) Frequently used adjectives in both years included "beautiful", "nice", and "elegant", with "simple", an adjective viewed suspiciously by Frascara (2007), used both years. The least appropriate modifiers for a professional peer review appeared in the earlier year in the form of "cool as all get out" and "jazzy", yet many modifiers in 2009 are more expressive of the judge's enthusiasm than of professional analysis: "amazing", "cool", "incredible", "phenomenal", "remarkable", "wonderful". The word "sustainable" was used in 2008 yet not in 2009. The noun "materials" was used with similar frequency in both years, with the word "feeling" or "feel" (as in "the space has a welcoming feel(ing)") appeared only once in 2009. The term "environment" appeared in 2008, with "carbon footprint", "construction waste" and "sustainability" the only nouns used in 2009 directly relating to the new criteria. The verb "create", found by Drab (2008) to be most frequent in the interior design periodicals and in practitioners' vocabulary, was the most frequently used verb by 2008 judges, with verbs expressing personal preference ("love" and "like), also identified by Drab as highly frequent in journalist and practitioner use, the most used verbs by 2009 judges.

CONCLUSIONS AND IMPLICATIONS

The comments of the 2009 Design Excellence Awards judges failed to communicate the new direction that the IIDA Chapter board had intended. The awards presentation for the 2009 competition was practically identical to the 2008 event, punctuated with the same types of words Szenasy (2008) called "mushy" in her review of the 2007 Calibre Awards ceremony. She expressed concern that clients, looking for proof of interior design value, would not find this vocabulary convincing. It could be added that state legislators, debating the benefit to the public of passing title or practice acts, might be dissuaded from taking such strong action in light of such weak language. In her proposed shift to "peer review" of exemplary projects, Cama (2009) called for "quantifiable evidence" , "results of hypothesized design interventions", "application of knowledge based design", and "performance measures", all of which ideas were included in the 2009 competition's criteria. Rather than disqualifying submissions that failed to provide any of these, the judges selected some of them for awards, praising them in terms that Szenasy called "mushy" and Frascara called "fuzzy". Rather than serving as models of the "propositional knowledge" that is "socially relevant" proposed by Frascara (2007), the competition celebrated what he termed "the superficial aspects of design" resulting in "different 'looks', but in useless learning results". Robertson (2010) quotes two interior design professionals who have served as competition judges. "I believe in some competitions, the number of entries or the jury's lack of time and patience to dig into critical issues can affect the outcome". The idea of "peer review" is also called into question in the following judge's comments. "A lot of people just don't have time to sit and read through all the entries, so it becomes a visual thing and if you want to take the time to read about it, you have to make a major effort as a judge".

A "major effort" is obviously required to accomplish the IIDA chapter's goal in "raising the bar" for its annual Design Excellence Awards program. Educators, too, might consider how critiques in studio, responses during design presentations, and feedback to students relative to project submissions might contribute to either the problem or the solution highlighted in this report. Are we teaching our students the mushy and fuzzy words that

prevent them from recognizing or producing more effective interior design?

REFERENCES (APA)

Cama, R. (2009, September). A shift in peer review for design competitions. Healthcare Design Magazine, 10.

Drab, T. (2008). Defining interior design: Professional language vs professionals' language. IDEC 45th International Conference Proceedings, Montreal, 358-362.

Frascara, J. (2007). Hiding lack of knowledge: Bad words in design education. Design Issues, 23 (4), 62-68.

Robertson, S. (2010, Winter). More than meets the eye. Perspective, 20-26.

Szenasy, S. (2008, June). The green ghetto: Why are sustainable ideas rarely recognized by mainstream design award programs? Metropolis, 20.

2008 Judges' Adjectives			2009 Judges' Adjectives		
(9) **simple**	artistic	neutral	**(7) beautiful**	amazing	impressive
(6) nice	balance	new	**(6) nice**	attractive	incredible
(4) rich	bold	powerful	**(4) good**	best	organized
(4) elegant	comfortable	sensuous	**(3)excellent**	clear	phenomenal
(3) beautiful	cool as all	solid	**(3) great**	competent	pleasing
	get out	soothing	**(2) creative**	concise	powerful
(2) clean	cozy	sustainable	**(2)elegant**	controlled	simple
(2)effective	crisp	timeless	**(2)remarkable**	cool	smooth
(2) special	great	unifying		direct	spare
	jazzy	unique		durable	subtle
	luxury (clientele)	vibrant		elegant	unique
		warm		exciting	workable
				high style	wonderful
2008 Judges' Nouns			**2009 Judges' Nouns**		
(6) use	benefit	integration	**(6) materials**	budget	innovation
(5) materials	connection	intimacy	**(5) project**	carbon footprint	jewel
(4)feel (ing)	contrast	molding	**(2) execution**	carpeting	mix
(4) solution	daylight	palette	**(2) planning**	choices	mood
(3) elements	detail	pavilion	**(2) solution**	connection	mural
(2) area	display	proportion		design	place
(2) color	encounter	richness		detail	scheme
(2) experience	environment	sense		feeling	selection
(2) form	graphics	somberness		furnishings	space
(2) interiors	height	space		graphics	sustainability
				idea	use
				image	waste
2008 Judges' Verbs			**2009 Judges' Verbs**		
(4) create	assist	love	**(5) love**	diverted (const. waste)	
(2) use	detail	maximize	**(4) like**	reinvented	
	exude	weave	**(3) use**	restored	
	feel	works	**(2) want**	works	

Figure 1: Judges' Comments Summary

In Search of the 4th 'E': IDEC's Role in Fostering Professional Empowerment as a Strategic Response to the Anti-Regulation Effort

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ABSTRACT

"*Is professional power the special power of knowledge or merely the ordinary power of vested economic, political and bureaucratic interest? That is the critical question"*

Eliot Friedsen, 1986

The education, experience and examination tripartite, also known as the three 'E's, act as a foundation for the growth and advancement of the Interior Design (ID) profession (Martin & Guerin, 2006). However, what responsibility do we, as the first order gate keepers of the profession, have to influence the direction of the profession beyond the three 'E's? Given the current challenges facing the ID profession this paper proposes that it is time for the academy to consider the institution of a fourth 'E', professional *empowerment.*

Recently the Interior Design Protection Council (IDPC) and The Institute for Justice (IJ) have mounted an effective campaign to repeal existing ID legislation[1]. From the period 2006-2008, 71 efforts to enact either title or practice legislation were initiated yet only one was enacted[2] (Morrow, P. 2009b).

The Interior Design Educators Council (IDEC) has countered the anti-regulation effort (Martin, 2008) however the IJ's campaign to obfuscate and malign the profession of ID in the court of public opinion continues virtually unabated. Most recently the IJ has filed suit in Florida challenging that state's legislation (Institute for Justice, 2009, Locke v. Shore, 2009). This is a significant challenge to the regulation effort and, by default, the entire professional jurisdiction (Abbott, 1988).

The IJ's rhetoric denigrates the three E's model (Carpenter II & Ross, 2008) which is causing our students to question its validity. How we address this fallacy and frame our response is crucial. CIDA requires accredited programs to address the issue of ID regulation (Fig. 1). However, are we to assume from this standard that "legal recognition" is the only model for professional advancement, or *empowerment*?

Standard 7. Professionalism and Business Practice

Entry-level interior designers use ethical and accepted standards of practice, are committed to professional development and the industry, and understand the value of their contribution to the built environment.

Program Expectations

The interior design program provides exposure to the role and value of: g) legal recognition for the profession.

We must carefully assess the model of legally regulating our responsibility to protect health, safety and welfare as the sole means to validate our professional status (Anderson, Dudek & Honey, 2008). Currently the only reference to "health, safety and welfare" in the Council for Interior Design Accreditation (CIDA) professionalism standards occurs within the context of environmental systems (Fig. 2). Clearly if this is the premise by which we present our entire jurisdictional responsibility to society then we need to re-evaluate its value within the pedagogy of our professional standards.

Standard 12. Environmental Systems and Controls

Entry-level interior designers use the principles of lighting, acoustics, thermal comfort, and indoor air quality to enhance the ***health, safety, welfare,*** *and performance of building occupants.*

Can we expect legal protection based on this premise when it is a legal responsibility already claimed by architects? Not only is this redundant legislation it also poses an occupational conflict of interest with our closest allied profession.

Other jurisdictional issues that the academy must address include;

defining governments responsibility to "bring uniformity to the profession, define responsibility, and encourage excellence" (IIDA, 2001).

the consideration of multiple organizations and their role in representing the professional society (Kucko, Turpin & Pable, 2009).

the polarity and semantic confusion of interior architecture and residential decoration.

defending our right to practice vs. protecting the HS&W of the public.

The profession of ID is suffering an identity crisis that diminishes its ability to establish public understanding and respect for its skills and societal benefit. We must acknowledge that IDEC's responsibility for professional preparation does not end at the granting of diplomas. The bulk of our students professional careers depend on us empowering them with the proper knowledge and skills to make the right choices as they define and defend our professional jurisdiction.

NARRATIVE

INTRODUCTION

The Interior Design Protection Council (IDPC) and The Institute for Justice (IJ) have mounted an effective campaign to repeal existing, and obstruct pending, interior design legislation[1]. Given the complexity and the scope of governmental regulations it is easy to underestimate the actual success of the IJ's deregulation effort. From the period 2006-2008, 71 efforts to enact either title or practice legislation were initiated yet only one was enacted (Morrow, P. 2009a). In 2009 one state enacted a title act and at least five states suffered setbacks in their regulatory efforts.

The Interior Design Educators Council (IDEC) has proffered scholarly counters to the IDPC/IJ propaganda effort (Martin, 2008) however, IDEC has not formulated an official position nor have they developed an effective response protocol. Hence the anti-regulation effort to obfuscate and malign the profession of Interior Design in the court of public opinion continues unabated. Most recently the IJ has filed suit in Florida (Locke v. Shore, 2009) challenging that state's Interior Design (ID) legislation. Clearly this is a significant challenge to the regulation effort and, by default, the entire professional jurisdiction (Abbott, 1988).

CONTEXT

The effort to legally regulate interior design practice is a complex and constantly evolving process. Interior Design (ID) regulation itself can vary from the voluntary title regulation in California to the strictest form of practice legislation as enacted in Florida. In 1973 Puerto Rico became the first U.S State or Territory to legally recognize the practice of ID. Thirty seven years later, as of January 2, 2010 twenty states, Puerto Rico and the District of Columbia[2] have some form of interior design legislation. Specifically, and a point of distinction often confused or overlooked by many in the profession, seventeen of those legislative acts are simply "title" acts. To reiterate, after 36 years the ID profession can claim two states that have uncontested and fully enforceable practice acts[3]. In comparison the profession of architecture took 54 years to achieve full licensure in all fifty states (Martin, 2008).

The primary points of contention cited by the anti-regulation proponents are that ID regulation;

is anti-competitive.

is discriminatory.

requires unreasonable government regulations.

is based on a moot premise of need for governmental sanctions.

While some may see this as misguided self preservation by a few disenfranchised interior decorators and turf conscious architects the facts prove otherwise. For instance in October of 2007 the IJ, with substantial financial support of the National Kitchen and Bath Association (NKBA, 2008), was instrumental in striking down Alabama's ID practice act. In addition the IJ's efforts to derail ID regulation were recently successful in Connecticut and New Mexico and lawsuits are also pending in Oklahoma and Texas. Should the Florida Supreme Court rule in favor of the IJ lawsuit in that state, the case will set a precedent that could abolish all existing ID legislation and nullify future attempts to validate the profession via government regulation.

The progenitors of the ID profession were expeditious in establishing three components of basic professional status; a clear process of accredited *education*, supervised *experience* and confirmation of basic knowledge and skills via *examination* (Martin & Guerin, 2006). The education, experience and examination tripartite, also known as the three 'E's, acts as a foundation for the growth and advancement of the profession. Unfortunately the advancement of the profession beyond examination and continuing education has not received the same level of consideration or input by the academy. This paper proposes that it is time to consider the institution of a fourth 'E', professional *empowerment.*

DISCUSSION

A cursory overview of the anti-regulation proponent's platform might lead one to believe that the target of their effort is strictly ID regulation. Unfortunately theirs is an all out effort to *de-professionalize* the entire professional domain. The IJ's rhetoric includes the denunciation of the Council of Interior Design Accreditation (CIDA) and the National Council for Interior Design Qualification (NCIDQ) via their inclusion in the so called "Interior Design Cartel" (Carpenter II & Ross, 2008). This blatant denigration of the three E's model by the IDPC/IJ campaign is causing our students to question its validity. How we as instructors address this fallacy and frame our response is crucial and already subject to IDPC scrutiny (Morrow, 2009b). It is imperative that we present a uniform message to our constituents. Our message needs to provide future professionals with the appropriate knowledge to make informed decisions regarding the opportunities available to them to advance the societal status of their profession.

On the issue of governmental protection it should be noted that CIDA does require accredited programs to address the issue of ID regulation (Fig. 1).

STANDARD 7. PROFESSIONALISM AND BUSINESS PRACTICE

Entry-level interior designers use ethical and accepted standards of practice, are committed to professional development and the industry, and understand the value of their contribution to the built environment.

Program Expectations:

The interior design program provides exposure to the role and value of:

g) legal recognition for the profession.

However, are we to assume from this standard that "legal recognition" is the only model for professional advancement, or *empowerment*? Is that recognition actually practice regulation or merely title protection? While some may be satisfied with a clear and regulated claim to the title *Interior Design,* others within the profession are adamant that we acquire full practice licensure. Yet with any polarizing political issue there others who oppose government regulation of any sort. And of course there are many, possibly a majority, that have not taken a position on the issue. Unfortunately it is this lack of focus and collective concurrence on an intended outcome that makes us susceptible to those whose goal is to deprofessionalize our domain.

Moreover there are several overarching aspects of the regulation effort which must also be considered but exceed the scope of this paper. First it is incumbent on the academy to undertake a swift and thorough assessment of legally regulating our responsibility to protect *health,*

safety and welfare as the sole justification for our regulatory efforts. Currently the only direct reference to "health, safety and welfare" (HS&W) in the CIDA professionalism standards occurs within the context of environmental systems (Fig. 2). Clearly if this is the premise by which we present our entire legal responsibility to society then we need to re-evaluate its value within the pedagogy of our professional standards.

STANDARD 12. ENVIRONMENTAL SYSTEMS AND CONTROLS

Entry-level interior designers use the principles of lighting, acoustics,

thermal comfort, and indoor air quality to enhance the

health, safety, welfare, and performance of building occupants.

We must also consider if the protection of HS&W is truly our primary defining value to society (Anderson, Dudek & Honey, 2008). If it is then we need to provide incontrovertible evidence that demands the unquestioning respect of our policymakers and more importantly, the general public. Furthermore can we expect legal protection based on this premise when it is clearly a duplication of existing legal responsibility claimed by architects and engineers? Not only is this redundant legislation it also poses an occupational conflict of interest with the very allied professionals that we must collaborate with. To continue our effort for professional advancement with our allies in staunch opposition is simply self defeating.

While practice legislation poses many benefits for the collective profession there are many negatives which this author maintains have not been fully considered. For instance can we expect government regulation to "bring uniformity to the profession, define responsibility, and encourage excellence" as stated in an International Interior Design Association (IIDA) policy statement on licensure (IIDA, 2001)? Are we not obligated to maintain the admission requirements to, and the policing of, our own professional domain (Sullivan, 1998)? In fact Sullivan posits that professional societies that rely on the government to sort out their internal politics are a major source of "public disquiet about the professions". We must also consider the loss of financial and intellectual resources that our profession is investing, at an unknown rate of return, in various government bureaucracies to perform basic internal policing tasks that the collective professional domain is actually better suited to perform. Unfortunately because the profession is represented by two disparate organizations, ostensibly with the same mission and inherently limited influence, our ability to consider these important issues as a singular professional domain is hampered. A recent *Journal of Interior Design* article by IDEC leadership offered a cogent argument for unification of the American Society of Interior Designers (ASID) and IIDA (Kucko, Turpin & Pable, 2009) however unification, if it occurs, will take valuable time and resources.

SUMMARY

As the first order gatekeepers of the professional jurisdiction, it is incumbent on IDEC to thoughtfully, yet expeditiously, formulate a strategic response to this threat. If we conclude that the current model of professional empowerment via practice regulation is acceptable then we must do what we can to expedite the process and negate the opposition. If we admit that the current regulation model is flawed, or that it has in fact failed altogether, then we must lead the charge to institute a paradigmatic change.

It is clear to this author that the traditional scholarly debate on this topic, while essential, has been subsumed by the more accessible, but far less objective, on-line model of disseminating ad hominem opinions presented as fact. The anti-regulation effort is well funded (by design allies no less) and highly adept at obfuscating facts and disseminating broadly appealing misinformation regarding the ID regulation effort. Certainly there is the intellectual capacity, manpower and financial resources within the profession to mount a focused and strategic response.

Finally we must acknowledge that our responsibility for professional empowerment does not end at the granting of diplomas and that the bulk of our students professional careers depend on a strong and unified response to the anti-regulation effort. If we do not do it who will?

REFERENCES (APA)

Abbott, A. (1988). *The System of Professions: An Essay on the Division of Expert Labor.* Chicago, Illinois: The University of Chicago Press.

Anderson, B.G., Honey, P.L., & Dudek, M.T. (2007). "Interior design's social compact: Key to the quest for professional status". *Journal of Interior Design 33*(2) v-xiii.

Carpenter II, D.M., Ross, J.K. (Summer 2008). Designing Cartels through Censorship. Retrieved June 13, 2009 from http://cato.org/pubs/regulation/regu31n2/v31n2-3.pdf.

IIDA- Position Statement on Licensing/ Registration/ Certification. Retrieved Sept. 12, 2009 from http://www.iida.org/resources/content/1/0/1/documents/IIDAPolicy_Licensure.pdf

Kucko, J., Turpin, J.C., and Pable, J. (2009). A Single Interior Design Professional Association: The Time is Now. *Journal of Interior Design*. 34(3)1-14

Locke v. Shore, No. 09-CV-00193 (N.D. Fla., filed May 26, 2009) Retrieved June 10, 2009 from http://www.ij.org/images/pdf_folder/economic_liberty/complaint-fldesign.pdf.

Martin, C.S. (2008) Rebuttal of the Report by the Institute for Justice Entitled **Designing Cartels: How Industry Insiders Cut Out Competition.** *Journal of Interior Design.* 33(3)1-49.

Martin, C. & Guerin, D. (2006) The interior design profession's body of knowledge, 2005 edition. University of Minnesota:CIDA, ASID, IDC, IIDA and NCIDQ. Retrieved August 28, 2009 from http://www.careersininteriordesign.com/idbok.pdf

Morrow, P. (2009a). Interior Design Protection Council Legislation Summaries. Retrieved June 22, 2009 from http://idpcinfo.org/legislation.html.

Morrow, P. (2009b). Coercion at a CIDA College. Retrieved June 12, 2009 from http://idpcinfo.wordpress.com/2009/06/11/patti-morrow-students-should-not-be-forced-to -support-licensing/.

NKBA-The NKBA Funds Opposition to Title and Practice Acts. Retrieved July 23, 2009 from http://www.nkba.org/press_releases_20080313.aspx

Sullivan, W. M. (2005). *Work and integrity: The crisis and promise of professionalism in America (2nd ed.).* San Francisco, CA: Jossey-Bass.

NOTES

Lacking a single neutral source for current and historical data of interior design legislative activities it is difficult to provide a reliable and objective assessment of the influence of the anti-regulation effort on ID legislation. However, in assessing recent legislative activity (2006-2008) and observing patterns of activity and organizational effort on both sides of the issue it is the author's opinion that the anti-regulation effort has had a major influence on the previous success of the ID regulation effort.

The anti-regulation effort is focused on domestic U.S. Interior Design regulation at this time. Hence, this paper assumes a domestic U.S. point of view. The author acknowledges that this is in fact an issue that affects the entire professional jurisdiction of Interior Design but is beyond the scope of this paper and presentation thereof. It should be noted that seven Canadian Provinces have enacted ID regulation similar to domestic U.S. efforts.

Nevada and Louisiana are the only two states in which the IJ/IDPC have not initiated legal action resulting in Circuit or State Supreme Court level rulings against their practice/license legislation.

Interior Design and Interior Architecture: Why Not?

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ABSTRACT

Recently, many design educators, practitioners, and leaders of professional organizations have expressed concern about use of the term "interior architecture." For example, in a letter to department chairs the President of ASID writes in 2007:

> *We at ASID have watched with growing concern the use of the term "interior architecture" to describe interior design education programs and practice…. ASID encourages the appropriate leaders of interior design educational programs currently identified as interior architecture to change their programs' names to interior design to correctly reflect the education their students are receiving….(Guest, personal communication, 2007).*

That a professional organization would suggest such a change indicates that interior architecture, particularly in academia, is not understood well. This misunderstanding exists among practitioners and educators as well. During the Fellows Forum at the annual meeting of IDEC in 2009, e.g., conference attendees participated in an exercise imagining various futures of interior design and interior architecture. Yet no clear explanation of interior architecture was presented, enabling many to respond to the exercise from uninformed or ill-formed positions. The purpose of this presentation is twofold, to offer an explanation for interior architecture in higher education and to propose a complementary co-existence of interior design and interior architecture.

Definitions and, thus, distinctions between fields such as architecture, interior architecture, and interior design have been developed by various organizations and public institutions. The taxonomy of programs developed by the Department of Education, e.g., can be used to support and guide the educational goals of academic units ("Classification of instructional programs," 2009). State law, boards of regents and governors, and various other levels of review such as curriculum committees, deans, and provosts assure that proposed academic programs meet sufficiently the academic goals of the institution. Because third party professional organizations are not empowered by state law to intervene in this process or the resulting decisions, academic institutions develop curriculum, pedagogical approaches, and identities that manifest their educational goals. "Interior architecture," then, may reflect better the intention of one program while "interior design" is more appropriate for another. To attempt to sever these programs which share the same interest and rigor in the design of interior space not only narrows the academic breadth of a field that is inherently broad and interdisciplinary, but also divides a design community already facing numerous, serious challenges to its existence from external forces.

Rather than divide the community of designers of interior space, embracing "interior architecture" positions the field of interior design to: partner with designers providing interior architecture services in domestic and international design firms and with educators in academic institutions;

- *determine the relationship between interior design and interior architecture without abdicating that opportunity to architecture;*
- *support a single, primary accrediting body of interiors programs (CIDA) around the globe;*
- *develop an international organization of educators involved in the design of interior space*

(IDEC) whether architects, interior designers, or interior architects; and

- *be proactive rather than reactive.*

NARRATIVE

Recent attention to the term "interior architecture" reveals a misunderstanding and perhaps a perceived threat to interior design education and practice. In the winter of 2007, the president of ASID sent department chairs in interior architecture a letter:

> *Dear Interior Design Educator:*
>
> *We at ASID have watched with growing concern the use of the term "interior architecture" to describe interior design education programs and practice… ASID encourages the appropriate leaders of interior design educational programs currently identified as interior architecture to change their programs' names to interior design to correctly reflect the education their students are receiving… (Guest, personal communication, 2007).*

This was followed in April of 2008 with a statement by the leadership of IDEC:

> *It is the position of the Interior Design Educators Council that interior design is a distinctive profession grounded in education, research, accreditation and licensure.…IDEC supports the use of the international term interior design, as opposed to interior architecture, as the primary title of programs that educate students to practice interior design ("04/21/2008: Proposed resolution," 2008).*

In June of 2008, when a group convened to discuss the relationship of interior design, architecture, and interior architecture, participants described conversations among some members of AIA, ACSA, and NAAB regarding interior architecture and its place, perhaps, in architecture. Then in March 2009, the Fellows of IDEC coordinated a visioning session among attendees at the annual conference regarding the future relationship of interior design and interior architecture. Yet none of this correspondence or conversation ever presented an explanation of interior architecture, enabling often uninformed, ill-informed, or purely emotional exchanges. The purpose of this presentation is to offer an explanation of interior architecture in higher education and to propose a complementary co-existence of interior design and interior architecture.

INTERIOR ARCHITECTURE

The Classification of Instructional Programs (CIPs) developed by the U.S. Department of Education National Center for Education Statistics includes definitions of interior architecture and interior design ("Classification of instructional programs," 2009; see Appendix A). Generally, the definition of interior architecture describes a field related to architectural principles, structure, safety, and professional responsibility while interior design is a program in the visual arts that applies artistic principles using color, textiles, finishes, furniture and furnishings, while instructing individuals in lighting, acoustics, and systems, history and period styles, building codes, and computer programs. Though perhaps unintentional, the taxonomy of programs classified in CIPs establishes a hierarchy of importance or value to the public, which in turn affects funding of academic programs. "Interior architecture," e.g., is in "Architecture and Related Services," a category that "…[prepares] individuals for professional practice…" and includes architectural engineering, construction engineering, architecture, and landscape architecture. "Visual and Performing Arts" is a category of programs that "…focus on the creation and interpretation of works [that]…express ideas and emotions," and includes interior design, crafts and folk art, fine art, dance, drama, music, fashion and apparel design, and industrial design. These distinctions, generally, describe interior architecture as a profession and interior design as aesthetics.

CIPs is not the only site providing information about interior design and interior architecture. The CollegeBoard site which serves as a primary source for high school students seeking academic and career information, also makes distinctions between interior design, interior architecture, and architecture ("Majors and career central," 2008; see Appendix B). This site poses hypothetical questions that reveal qualities of the profession that future designers should be prepared to do. For example, questions regarding interior design indicate that students will research styles and materials, choose fabrics, floor and wall coverings, paint colors, furniture, and window treatments. Architecture students, however, will build models, research, and study physics and calculus. In interior architecture, students will study architecture and design history, build physical and virtual models, and learn building codes.

Distinctions such as these guide decisions made by faculty as they determine the content, curriculum, pedagogy, and even the name of their programs and departments. That process involves agreement among the faculty, approval from department chairs and curriculum committees, support from alumni, the dean and other administrators, school, college or university curriculum committees, provosts, vice-presidents or vice-chancellors, and ultimately presidents, chancellors, and boards of visitors, regents, trustees, or governors. State laws empower colleges and universities to make decisions regarding academia – just as state law empowers licensing boards to regulate professional practice. But professional organizations, whether AIA or ASID, are not empowered to affect names that academic institutions may choose.

WHY CHOOSE "INTERIOR ARCHITECTURE"?

Faculty in many programs that focus on the design of interior space have discussed whether to use "interior design" or "interior architecture." Programs using either name may appear similar. But the reasons to choose "interior design" or "interior architecture" are likely to be unique to the institution. At UNCG, "interior architecture" was chosen when the former name, "Housing and Interior Design," was no longer accurate;

after a restructuring process informed by design educators (architects) from the College of Design at North Carolina State University resulted in a program with a 5 year, studio-based curriculum, "cold desk" studio environment, 5th year design thesis, and fabrication shop;

to distinguish the program at UNCG from other FIDER/CIDA accredited programs in North Carolina;

to attract international students familiar with "interior architecture";

to attract graduate students from architecture;

to join the other 4 departments in the School of Human Environmental Sciences that all changed their names from those used in the former school of Home Economics;

to align with the desires of alumni; and

to increase at least gender diversity in a program (and profession) dominated by women, situated in a former

school of home economics at a university that was the former women's college in the UNC system (see Figure 1).

None of these alone is a reason to change the department name to "interior architecture," and, again, other programs of interior design may look very similar to this program of interior architecture at UNCG. But collectively, the faculty at UNCG felt these reasons converged not only to make "interior architecture" the appropriate name for the department, but also to "… correctly reflect the education [our] students are receiving" (see Guest, personal communication, 2007).

CONCLUSION

Interior architecture is a term, a field of study, that exists in academia and has done so since the 1920s. Interior architecture also is a profession internationally, and a number of design firms in this country offer interior architecture services. Even if academic programs agreed not to use the term, design firms would be unlikely to follow suit. In contrast, interior design education and interior design practice which have made significant strides toward licensing are poised to embrace rather than debase those associated with "interior architecture." Significant considerations regarding a convergence of "interior design" and "interior architecture" include:

recognition that "interior design" or "interior architecture" both are involved in the design of interior space;

further dividing a design community that faces challenges from others such as architects, kitchen and bath designers, libertarians, and home furnishings groups is ill advised;

excluding those involved in "interior architecture" will encourage their allegiance with another group (likely to be architecture);

determining the relationship between interior design and interior architecture

without abdicating that opportunity to architecture;

enabling a second licensed profession or accreditation process regarding the design of interior space which is not in the best interest of either interior design practice or education;

partnering with interior architecture globally increases the numbers and presence of those involved in the design of interior space;

supporting a single, primary accrediting body of interiors programs (CIDA) around the globe;

developing an international organization of educators involved in the design of

interior space (IDCE) whether architects, interior designers, or interior architects; and

becoming proactive rather than reactive.

Though distasteful it may be to some, it is in the best interest of interior design education and practice to embrace interior architecture.

REFERENCE LIST (APA)

CollegeBoard (2008). *Majors & career central*. Retrieved 30 April 2008, from the CollegeBoard web site: http://www.collegeboard.com/csearch/majors_careers/

Department of Education, Institute of Educational Services. (2009). *Classification of instructional programs.* Retrieved 05 October 2009, from ies National Center for Education Statistics web site: http://nces.ed.gov/pubs2002/cip2000/

Interior Design Educators Council (2008). *04/21/2008: Proposed resolution.* From the Interior Design Educators Council web site: http://idec.org/blog/index.php?itemid+29&catid=1

	First Year Students	Men in First Year	Percentage Men/Students
F 2000	45	3	7%
F 2001*	64	9	14%
F 2002	62	5	8%
F 2003	61	9	15%
F 2004	65	6	9%
F 2005	62	10	16%
F 2006	55	8	15%
F 2007	63	10	16%
F 2008**	57	10	18%
F 2009	48	6	13%

*Name change (to Dept of Interior Architecture) effective Fall 2001

**2008 Class in their 2nd year (with transfers) during Fall 2009

	46	12	26%

Figure 1: Men in Interior Architecture at UNCG Changes in the number of men enrolled in the Department of Interior Architecture at UNCG since the name change became effective in 2001

Appendix A: CIPs Definitions

Interior Architecture
A program that prepares individuals to apply architectural principles in the design of structural interiors for living, recreational, and business purposes and to function as professional interior architects. Includes instruction in architecture, structural systems design, heating and cooling systems, occupational and safety standards, interior design, specific end-use applications, and professional responsibilities and standards.

Interior Design
A program in the applied visual arts that prepares individuals to apply artistic principles and techniques to the professional planning, designing, equipping, and furnishing residential and commercial interior spaces. Includes instruction in computer applications drafting and graphic techniques; principles of interior lighting, acoustics, systems integration, and color coordination; furniture and furnishings; textiles and their finishing; the history of interior design and period styles; basic structural design; building codes and inspection regulations; and applications to office, hotel, factory, restaurant and housing design.

…continued at http://nces.ed.gov/pubs2002/cip2000

APPENDIX B: Distinctions from the CollegeBoard

Career: Interior Designers
Good interior designers are able to create indoor spaces that not only look good but also work well. That is, their designs suit the intended purpose of the room -- whether it's an office, a reception area, a child's playroom, or a beauty salon. Each of these spaces has its own purpose, from raising workers' productivity to providing a safe place for children to play, and therefore, its own design requirements.

Interior designers design and furnish interiors of residential, commercial, or industrial buildings.

Did You Know?
Some interior designers specialize in a particular field (such as designing restaurants), a style, or a phase of interior design.

Are You Ready To...?
- Research design styles and materials
- Collect fabric swatches and samples of other materials
- Estimate costs
- Satisfy each client's sense of style and taste
- Use computers to create floor plans and perspective drawings
- Choose paint colors
- Select lighting fixtures
- Choose floor and wall coverings
- Design window treatments
- Choose and design furnishings and upholstery

It Helps to Be...
Artistic, creative, and good with all kinds of people, including clients, contractors, electricians, and carpenters.

….continued at http://www.collegeboard.com

Major: Architecture
While architecture is grounded in science, its heart is in the arts. Well-designed buildings not only serve the people who use them. They are also works of art that help define the town or city in which they stand.

As an architecture major, you'll learn how to work with others to imagine buildings, from straw-bale houses to the tallest skyscrapers. And with the technical know-how you pick up in such classes as architectural engineering and construction materials, you'll know just what needs to be done to bring them to life.

Students of architecture prepare to become professional architects. Classes cover such topics as architectural theory, design, and history; drafting; and project and site planning.

“I see architecture as a study and a profession that brings all the rest of them together: art, science, philosophy, music, psychology, [and] literature.”
Dana, freshman, architecture, University of Virginia

Are You Ready To...?
- Build models
- Draw plans of your own building ideas
- Research and write papers
- Take physics and calculus courses
- Learn about preserving and restoring old buildings
- Study architectural styles and history
- Think about how buildings affect individuals and society

It Helps to Be...
A creative problem solver. Because architects never work alone, it also helps to be good at working with other people -- so start building teamwork skills now.

….continued at http://www.collegeboard.com

Major: **Interior Architecture**
The field of interior architecture shares a lot with interior design and decorating. Students of both fields learn to design comfortable, safe, and useful indoor spaces, from downtown penthouses to high school classrooms.

But the interior architecture major typically focuses on architecture and construction. You'll learn about much more than artistic concerns, such as choosing which style of furnishings works well in an open, loftlike apartment. You'll also learn about technical issues, such as seismic retrofitting (making old buildings safe from earthquakes).

Students of interior architecture learn how to design attractive and functional indoor spaces. Classes cover such topics as architecture and interior design, heating and cooling systems, and safety standards.

Are You Ready To...?

- Study architectural and design styles and history
- Draw plans of your own designs
- Build physical and virtual (computer-based) models
- Learn about building code and safety
- Learn about preserving and restoring old buildings

It Helps to Be...
A good problem solver who is able to communicate well and work with all types of people, from other architects to clients.

….continued at http://www.collegeboard.com

Hard Times: Using Education to Sustain Practitioners in a Fractious Economy

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ABSTRACT

PURPOSE

The financial prudence of consumers and lack of confidence in the economy has slowed a good deal of interior design activity, and placed countless design professionals out of work in recent times. While most companies are tightening their belts and seeking alternative methods of business delivery and commerce in order to survive, interior design academia moves forward. The purpose of this study is to determine what, if anything, our educational institutions can do from our academic locality to progress the practicing profession during tough economic times, as well as analyze what greater benefit we might obtain from individuals and organizations experiencing this phenomenon.

METHODOLOGY

A well-established advisory board of 18 interior design and architectural practitioners, both employed and unemployed, was gathered for a half-day retreat. Participants were selected from various fields of residential, commercial and graphics disciplines. Current curriculum materials and existing marketing resources were provided prior to the meeting for individual review and consideration. Primary topics including curriculum, internships/careers, financial support, and community and University initiatives were identified by faculty as key investigative areas for study, which led to the development of a dashboard grid for use in the compilation of feedback, and prioritization of responses.

SUMMARY

The use of this focus group proved extremely useful in identifying areas of underdevelopment with relation to the collaboration of academia and the practicing profession in our demographic area during slow economic times. First, the prospect of using these times to provide advanced training to practitioners in various computer applications was highly desired. The creation of a special certificate program or workshop series was requested as a means of not only contributing to the advancement of local business capabilities, but also generating income and networking connections for the school. Being able to piggyback such seminars with highly coveted CEU credits was of primary interest. Also related, the idea of providing University or faculty sponsored examination preparation for such certifications as the NCIDQ, LEED and CKD exams was highly recommended. Next, the ability of interior design or architecture programs to provide inexpensive access to laboratories or equipment was identified. For example, practitioners expressed a greater willingness to pay for the use of modeling machinery or equipment at a rate slightly less or equal to traditional retail sources when experiential student learning can take place as a result, thus benefiting all involved. Finally, it became apparent that professionals out of work are overly willing to serve as adjunct faculty, guest speakers, jury participants, or in a variety of other capacities to support the day to day and long term ambitions of the design programs. Practitioners remain openly aware of the benefits these services will offer them in their continuing careers.

In the end, there is not a better time for industry and academia to collaborate than in times of economic strife. Ultimately, a robust balance is apparent, which will not only prepare the profession for approaching economic resumption, but also provides unmatched resources, support and energy to the programs themselves.

NARRATIVE

INTRODUCTION

The financial prudence of consumers and lack of confidence in the economy has slowed a good deal of interior design activity, and placed countless design professionals out of work in recent times. While most companies are tightening their belts and seeking alternative methods of business delivery and commerce in order to survive, interior design academia moves forward. The relationship between these industries must be closely analyzed if there is to be accurate collaboration, progression or understanding in order to support each other and protect the integrity and future of the interior design profession, particularly during harsh economic times.

Educators play a significant role in the preparation of interior design students for professional practice. This unremitting responsibility is impossible to achieve without consistent awareness and attention to the trends and activities with relation to the job market. Many determinations must be made in order to understand how the academic world and the practicing profession have been affected by the recession and a dire economy, such as that which we have experienced over recent years. The purpose of this study is to determine what, if anything, our educational institutions can do from our academic locality to progress the practicing profession during tough economic times, as well as analyze what greater benefit we might obtain from individuals and organizations experiencing this phenomenon.

REVIEW OF LITERATURE

The literature review revealed that while many studies have focused upon the manner in which practitioners learn and remain current with relation to interior design topics, products and methods, very little investigation has been undertaken to explore how these processes are affected by recession or pitiable economic times. In addition, very little comparison has been completed in an effort to understand how academia and interior design professional practice can support one another, particularly when one is seemingly flourishing and the other is outwardly diminishing.

METHODOLOGY

A well-established advisory board of 18 interior design and architectural practitioners who were both employed and unemployed, from the central Indiana locale were gathered for a half-day retreat. Participants were selected from various fields of residential, commercial and graphics disciplines. Current curriculum materials for the Interior Design Technology program at Indiana University-Purdue University in Indianapolis, Indiana were provided to each individual prior to the meeting for individual review and consideration, as were existing marketing resources. Primary topics for discussion were identified by faculty in an effort to provide some focus for the discussion. These topics included curriculum, internships/careers, financial support, and community and University initiatives. These topics were identified by faculty as key investigative areas, which led to the development of a specialized dashboard grid for use in the compilation of feedback, and prioritization of responses. In addition, the grid was designed to cross reference key issues including educator visions and goals, practitioner visions and goals, barriers to realization of visions and goals, solutions to overcoming these barriers, priorities for educators, and priorities for practitioners (See figure 1). Open ended discussion was the primary method used to collect information, and responses were recorded in meeting minutes, as well as documented on a large wall chart as previously mentioned.

RESULTS AND DISCUSSION

The use of this focus group proved extremely useful in identifying areas of underdevelopment with relation to the collaboration of academia and the practicing profession in our demographic area during slow economic times. First, the prospect of using these times to provide advanced training to practitioners in various computer applications was highly desired. Taking advantage of this interlude to bring employees up to speed with relation to modern versions of software, as well as current design technologies and methods would increase overall speed, accuracy and aptitude when workload does accelerate, and was vastly desired by professional interior designers. In addition, the creation of a special certificate program or workshop series on topics such as sustainability or project management were discussed as a means of not only contributing to the advancement of local business capabilities, but also generating income and networking connections for the University. Being able to piggyback such seminars with highly coveted CEU credits was of primary interest, particularly as Indiana is a State which recognizes interior designers through registration and requires continuing education in order to maintain this status.

Also related, the idea of providing University or faculty sponsored examination preparation for such certifications as the NCIDQ, LEED and CKD exams was highly recommended. While various professional organizations do arrange “study groups” for such exams locally, there were very few formal review sessions taught by qualified professionals or faculty within a reasonable geographic area. Who better to educate junior designers on modern topics and industry regulations than academics who hold these designations? Once again, this activity supplements not only the credentials of the profession, but could also generate income and encourage ongoing relationships with the University.

Next, the ability of interior design or architecture programs to provide inexpensive access to laboratories or equipment was identified. For example, practitioners expressed a greater willingness to pay for the use of modeling machinery, lighting and heating analytics, or equipment such as plotters or prototyping technology, at a rate slightly less or equal to traditional retail sources when experiential student learning can take place as a result, thus benefiting all involved. Encouraging this interaction between students and the profession once again fosters the development of relationships and networking opportunities, gives the student the ability to produce and test new and complex geometries, furniture, design and construction techniques while maintaining a strong idea of how professional practice works, and again allows the opportunity for the generation of income or financial support for the University.

Subsequently, suggestions and ideas which promote the sharing of research and publications between industry and academia were discussed. Many academics are earnestly seeking opportunities which would create partnerships, service-learning opportunities or research collaborations with industry. Not only do these kinds of alliance create opportunities for the study and advancement of the a tenure-track academic through papers, presentations and publications, but they also allow practicing designers to gain valuable evidence-based insight through their designs, and provide a valid marketing tool with which to promote their organization.

Finally, it became apparent that professionals out of work are overly willing to serve as adjunct faculty, guest speakers, jury participants, or in a variety of other capacities to support the day to day and long term ambitions of the design programs. Practitioners remain openly aware of the benefits these services will offer them in their continuing careers. The exposure of students to the realities of the practicing profession, and the inclusion of practitioners into the classroom setting fosters a win, win situation.

CONCLUSIONS AND RECOMMENDATIONS

In the end, there is not a better time for industry and academia to collaborate than in times of economic strife. Ultimately, a robust balance is apparent, which will not only prepare the profession for approaching economic resumption, but also provides unmatched resources, support and energy to the programs themselves. While these revelations do not come without challenges and barriers, they open a dialog that support some directions for the immediate present, as well as the future.

Every interior design program should remain aware of the ways in which these methods can enhance and support the program and faculties while equally supporting future employers for upcoming students and the profession as a whole.

REFERENCE LIST (MLA)

Fowles, Dorothy L. “Interior Design Education in the Year 2000: A Challenge to Change.” Journal of Interior Design 17.2 (1991): 17-24.

Peterson, Julie E., and Zollinger, Stephanie. “Interior Design Practitioners: How Do They Learn?” Proceedings of the 2008 IDEC International Conference. 5-8 Mar 2008. Montreal, Quebec, Canada. 1152-1165.

Stevens, Kimberley. “Renovating an Industry.” New York Times 19 Aug 2009: D1.

Waite, Richard. “Number of Shelved Projects Drops as Confidence Rises.” Architects’ Journal 230:1 (2009): 5.

Watson, Stephanie A., Guerin, Denise A., Ginthner, Delores A. “Educators and Practice: How to Stay Current.” Journal of Interior Design 29.1 (2003): 97-103.

Waxman, Lisa K., Zhang, Hong. “Computer Aided Design Training Methods in Interior Design Professional Practice.” Journal of Interior Design 21.1 (1995): 21-29.

Figure 1: Dashboard Grid

	CURRICULUM	INTERNSHIPS/ CAREERS	FINANCIAL SUPPORT	COMMUNITY	UNIVERSITY INITIATIVES
Educator Visions & Goals	Development of certificate programs & workshops; Sustainabilty, Industrial Design, Project Management	Required internships must be flexible and consider current economic shortages; Program must accentuate alternative career paths for students.	Would like to see a continuation of scholarship & resource support; Can we develop innovative new support ideas?	Faculty are interested in more collaborative community projects involving students and industry; In need of a strong branding image	Required to offer students opportunities in research, international travel, service learning and experiential learning (RISE)
Practitioner Visions & Goals	Advanced training on modern methods and current software; Exam study sessions; CEU's; Willing to assist with course instruction/ jury	Unable to support paid experiences under current conditions; Willing to offer shadowing opportunities	Unable to contribute monetarily, but willing to contribute to grant writing or donations of goods and services (ie: materials for library, etc.)	Practitioners interested in collaborations; Willing to support students through shared use of laboratories or equipment	Supportive of RISE; Willing to partner on research and service-learning; Evidenced based design - post occupancy evaluations
Barriers to Realize Visions & Goals	Lengthy approval process for curriculum additions; Limited faculty numbers; Advance degree requirements to teach	Students unable to work for free; Limited availability	Management of goods and services donated by practitioners; Time and space restraints	Difficult to identify collaborative opportunities due to time constraints; Political policies regarding use of labs & equipment	Difficult to identify collaborative opportunities; Some procedural bottlenecks
Solution to Overcomig Barriers	Use existing curriculum to support new certificate endeavors; Push for additional faculty and resources at the School level	Examine course schedules to make shadowing opportunities more convenient for students; Accentuate non-traditional career paths	Accept goods and services; Partner with industry on grants; Develop new ideas for support	Pursue the hiring of an industry liason for the program; Obtain special approvals for the use of labs and equipment by industry	Pursue the hiring of an industry liason for the program who identifies and organizes RISE initiatives; Obtain special approvals as needed
Priorities for Educators	Seek additional support and resources from the School to develop programs and workshops for industry	Continue to locate valid internship opportunities for students; Examine curriculum and schedules for areas of improvement	Develop new ways of financial support; Seek grants in conjunction with industry; Manage donations as best we can	Seek collaborative opportunities in industry; Develop labs and equipment for the purpose of generating income (if possible)	Remain mindful of University initiatives at all times, and connect students with desired activities
Priorities for Practitioners	Complete CEU's and workshops to advance personal knowledge and growth	Support students through jobs and hiring whenever possible; Take in academics for field trips or shadowing whenever possible	Support through means other than monetary donations; Continue to give time and expertise as needed	Work with faculty to identify areas where assistance is needed; Support academia through use of equip. where possible	Offer students supplemental opportunities when possible to augment educational goals

PANELS:
TEACHING

Reach Out – Pull In: The Pros and Cons of Teaching Interior Design Online

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ABSTRACT

The number of online courses and complete degree programs offered in part or whole through online delivery has grown. In the Education Resources Information Center (ERIC) database, there are 595,260 articles listed under the keywords “online education.” Writing in the Chronicle of Higher Education, Carey (2009) predicts that universities must change and accommodate reality and use online delivery of course content, or go the way of the dodo, or more to the point, the way of the newspaper. Garrison and Anderson (2003) contend that the educational community has barely begun to appreciate the collaborative capabilities of e-learning and, as a result, these capabilities are greatly under-utilized (Garrison and Anderson 2003, p.21.) However, others argue that the university experience is more than the transmission of content, but is the setting in which higher levels of thinking *about the content* may occur.

The virtue of a virtual learning environment is the flexibility of access, both in terms of location and schedule. For schools and departments, online delivery permits outreach to a greater pool of prospective students, not limited by physical proximity. As the profession of interior design education reaches out to active interior design practitioners in order to increase the ranks of qualified instructors, online education may enable active practitioners to obtain graduate degrees while working, and will aid in accomplishing this goal. However, while it is apparent that online education has taken hold in the U.S. and globally, and is now used by many universities and college programs across an array of disciplines, interior design education has been slow to adopt or adapt online education to traditional content and formats. As Bender (2005) writes, design educators do not recognize the advantages of online education.

This panel consists of interior design educators, representing a range of expertise within design education, from history, to technical drawing, to design studio, who have either taught in an online environment, or have created degree programs intended from inception to be delivered in a distance learning format. The purpose of the panel is to openly discuss how these educators assess the quality of the teaching experience, the quality of the educational experience, and how these experiences compare to traditional on-site education. The panelists will discuss the hurdles they faced in creating the courses and adapting traditional content to a new method of delivering the knowledge, the creation of a virtual classroom environment, and assess their experiences.

Design education has closely followed the traditional model of studio and lecture. This panel will address the question, can the dynamic interaction and depth of learning that are its hallmark be generated and recreated in the virtual classroom, and how that may be achieved.

NARRATIVE

The number of online courses and complete degree programs offered in part or whole through online delivery has grown. In the Education Resources Information Center (ERIC) database, there are 595,260 articles listed under the keywords "online education." Writing in the Chronicle of Higher Education, Carey (2009) predicts that universities must change and accommodate reality and use online delivery of course content, or go the way of the dodo, or more to the point, the way of the newspaper. Garrison and Anderson (2003) contend that the educational community has barely begun to appreciate the collaborative capabilities of e-learning and, as a result, these capabilities are greatly under-utilized (Garrison and Anderson 2003, p.21.) However, others argue that the university experience is more than the transmission of content, but is the setting in which higher levels of thinking *about the content* may occur.

The virtue of a virtual learning environment is the flexibility of access, both in terms of location and schedule. For schools and departments, online delivery permits outreach to a greater pool of prospective students, not limited by physical proximity. In fact, outreach may actually be the mission of certain land-grant institutions. As the profession of interior design education reaches out to active interior design practitioners in order to increase the ranks of qualified instructors, online education may enable active practitioners to obtain graduate degrees while working, and will aid in accomplishing this goal. However, while it is apparent that online education has taken hold in the U.S. and globally, and is now used by many universities and college programs across an array of disciplines, interior design education has been slow to adopt or adapt online education to traditional content and formats. As Bender (2005) writes, design educators do not recognize the advantages of online education.

This panel consists of interior design educators, representing a range of expertise within design education, from history, to technical drawing, to design studio, who have either taught in an online environment, or have created degree programs intended from inception to be delivered in a distance learning format. The purpose of the panel is to openly discuss how these educators assess the quality of the teaching experience, the quality of the educational experience, and how these experiences compare to traditional on-site education. The panelists will discuss the hurdles they faced in creating the courses and adapting traditional content to a new method of delivering the knowledge, the creation of a virtual classroom environment, and assess their experiences.

Design education has closely followed the traditional model of studio and lecture. The expert educators on this panel will address the question, can the dynamic interaction and depth of learning that are its hallmark be generated and recreated in the virtual classroom, and how that may be achieved.

PANELISTS' STATEMENTS:

Sally Ann Swearingen, M.F.A., Interior Design Coordinator, Stephen F. Austin State University

Her Statement: *"Stephen F. Austin State University in Nacogdoches Texas has two different emphases. One track is a Master of Sciences with a Healthcare Emphasis and the other is Masters of Sciences with an Interior Design emphasis. The Specialized healthcare courses are aligned with the healthcare interior design body of knowledge as identified by the American Academy of Healthcare Interior Designers. The Masters of Sciences with an Interior Design emphasis focuses in two directions: One is a teaching emphasis and the second is a research emphasis.*

Diversity of student location, experience and educational background has been the most challenging and interesting on teaching on-line. Reaching out globally and nationally creates challenges on setting scheduled chats or lectures.

Before you begin developing an on-line course you must determine your format. Some classes are laid out as self-paced while others are planned with scheduled virtual class lectures and dialogue among the class. Content of the course and course objectives may dictate which one you go with. Once you determined your format experimenting with different devices that can add interest to your course can expand student's interest. Not all students succeed in an on-line environment because they do not have the patients to read through the materials that are traditionally used. Adding communication factors, videos, or scheduled speakers creates a more conducive learning environment for most."

Mark Hinchman, RA, PhD, Assoc. Prof. Interior Design, College of Architecture, University of Nebraska - Lincoln

His Statement: "Reading, Writing, and Graduate-level Distance Education in Interior Design

The number of graduate programs in interior design is growing prolifically while university administrations are increasingly interested in offering distance courses. Is the combination of graduate education and distance learning beneficial to the interior design profession? Initially skeptical, I am now an enthusiastic supporter of graduate classes offered distance. My focus is on issue-oriented or thematic offerings, similar to on-campus classes labeled seminars. The two courses I have offered are Material Culture, and African Architecture. While it is possible to offer studio-oriented classes, the experience I have to share concerns text-based subjects. In fact, what convinced me of the validity of distance education is the focus, by necessity, on reading and writing. So a new technology presents an opportunity to reinforce textual learning. Having taught these distance seminars for five years, I have developed a framework for organizing courses that is easy to use, flexible, and utilizes Blackboard's simpler tools."

Helena Moussatche, PhD, Professor, Department of Interior Design, Savannah College of Art and Design

Her Statement: *"At the Savannah College of Art and Design, we have a Master of Arts program focused on Interior Design literacy (non-professional program)that is offered completely online. I have participated in the program's development and I have designed its first course - Interior Design Seminar - which is a course where students develop their own design philosophy. I also teach the online courses on Emerging Materials for Interiors and Research Methods for interior Design. This coming quarter, for the first time, I will be teaching the same course (Research Methods) simultaneously online and on-ground, which will allow me to compare my teaching experience and the students' performance in these two modalities. I will discuss the way SCAD structures online courses and how the interior design department faculty has reached the decision of what program and courses should be offered online. I will then share my experience in teaching the course "Research Methods for Interior Design" both online and in a traditional seminar classroom, comparing both teaching advantages and challenges of each modality as well as student outcomes."*

Rosemary Botti-Salitsky, PhD, ASID.IDEC; Director Interior Design Graduate and Undergraduate programs -- Chamberlayne School of Design, Mount Ida College

Her Statement: *"Studio education is a complex learning environment. To visualize the transformation to an online platform of learning, it is important to analyze various instructional design models that could aid in the delivery of studio education. The theoretical basis for a Virtual Design Studio (VDS) needs to be explored and personalized, by the faculty teaching the studio. Unfortunately this is not always the case and faculty are given a "cookie cutter" instructional platform to work within and typically the tools are not conducive to facilitate a studio environment.*

That being said a VDS could become an enabler of one's own vision fostering a problem-solving environment utilizing metacognitive learning theories. In a traditional studio many of the interactions—and the general dynamics of the environment change as we interact in a virtual realm. Identities cannot be assumed. Think about the echo boomers and how they have transcended into higher education, their culture and expectations have impacted the classroom and alternative delivery techniques significantly. . Second Life, Facebook, Twitter, texting, Skype, Youtube, are all part of their vocabulary and tools of trade. When interacting in these virtual environments, a sense of community begins to develop. Fostering a community in a studio is very important but the goal is not to simulate a studio community but to redefine how a sense of community and interaction can occur in a VDS. The new VDS model integrates instructional design platforms with the multitude of technological tools that are at the fingertips of our learners to foster, F2F interactions, for critique, teaming and presentations."

SUMMARY

Online delivery of the varied formats in which interior

design education is taught and learned is the next challenge facing design educators. This panel has opened the discussion and without doubt, that discussion will – and should – continue and grow.

REFERENCE LIST (APA)

Bender, D. (2005). Developing a collaborative multidisciplinary online design course. *Journal of Educators Online, 2(2).* Retrieved online September 27, 2009 from http://itecideas.pbworks.com/f/bender-developing+a+coll+online+design+course.pdf

Carey, K. (2009, April). What Colleges Should Learn From Newspapers' Decline. Retrieved online 19 October 2009. http://chronicle.com/weekly/v55/i30/30a02101.htm. Section: Commentary *55(30)* pA21.

Garrison, D. & Anderson, T. (2003). *E-Learning in the 21st Century: A Framework for Research and Practice*. London: Routledge Falmer, Taylor & Francis Group.

Experiencing Both Sides of Education: Interior Design Educators as Online Graduate Students

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ABSTRACT

While online educational programs have become mainstream, online graduate programs in interior design are making slow progress. According to Bender & Good (2003), one reason for this slow start is that design educators do not initially see the advantages of online education and do not see its compatibility with their teaching style. These perceptions of teaching online might be able to be changed with more information about how this type of education impacts the online graduate student. There is a lot of research in other disciplines regarding the students' perspective of online learning (Getzlaf et al, 2009; Rovai & Barnum, 2003; Perry & Edwards, 2005), but there is a scarcity in peer-reviewed journals of the interior design students' perspective. Given the lack of information about this educational experience from the interior design graduate students' point of view, this panel is an attempt to put a face on the students who enroll in online graduate programs and to learn about these students' online educational experiences.

By exploring the experiences of interior design educators who have gone through online graduate programs we can uncover the successes and the perceived advantages and disadvantages of this type of education. The fit between the online programs and lives of the presenters and the expected/unexpected consequences and events experienced in and outside of an online classroom will be explored. The presenters are interior design educators teaching at different institutions across the United States. They are educated consumers of online education and, through their experience, can judge the quality, effectiveness, and appropriateness, including the missteps of online graduate education. With the limited number of online programs, it is important to bring the experiences of online students to a larger population who might consider developing or applying to an online graduate program. Program rigor, course content, and methods of content delivery as well as successful techniques and not so successful techniques of online learner engagement will be discussed.

NARRATIVE

While online educational programs have become mainstream, online graduate programs in interior design are making slow progress. According to Bender & Good (2003), one reason for this slow start is that design educators do not initially see the advantages of online education and do not see its compatibility with their teaching style. These perceptions of teaching online might be able to be changed with more information about how this type of education impacts the online graduate student. There is a lot of research in other disciplines regarding the students' perspective of online learning (Getzlaf et al, 2009; Rovai & Barnum, 2003; Perry & Edwards, 2005), but there is a scarcity in peer-reviewed journals of the interior design students' perspective. Given the lack of information about this educational experience from the interior design graduate students' point of view, this panel is an attempt to put a face on the students who enroll in online graduate programs and to learn about these students' online educational experiences.

In determining which interior design programs were fully online programs, the Interior Design Educators Council's (IDEC) table showing Interior Design and Related Graduate Programs (2004) was used, followed by a search of each listed institution's website to discover course offerings and format of these offerings. It was thought that most online interior design programs would be using the institution's online web-page to promote this type of course delivery. One concern is that this information is now six years old and does not reflect the current state of interior design graduate programs. Of the 86 graduate programs represented in this document (IDEC, 2004), only seven programs, including one Ph.D. program, are delivered in a fully online format. Educators in the seven programs can be considered pioneers in the delivery of online graduate programs related to the interior design field. They have had to learn new technology in the form of online delivery systems and computer software in order to bring the classroom content to an online audience (Bender & Good, 2003). These educators have had to look to faculty in other disciplines who have more experience with the online environment and explore how to translate the traditional design education into an online model. They have also had to experiment with different types of lessons and assignments to find a way to engage their online students in order to create meaningful interaction that helps in the construction of knowledge (Guri-Rosenblit, 2009; Perry, 2006; Rovai & Barnum, 2003).

The constructivist theory of learning places importance on active and interactive learning with the individual active in the construction of their knowledge (Guri-Rosenblit, 2009; Perry, 2006). While the online learning environment can be conducive to active learning, it is the efforts of the instructor to put mechanisms in place to support and encourage the interaction and active involvement of the students (Guri-Rosenblit, 2009; Perry, 2006). Instructor presence and timeliness of feedback in the online courses seem to enhance the online learning experience (Perry, 2006; Perry & Edwards, 2005).

A need for quality assurance in online courses was revealed by Rovai and Barnum's (2003) research. Their study provided evidence showing great variability in the perception of learning by graduate students between 19 different graduate online courses. Getzlat et al (2009) looked at the perception of online graduate students as to effective instructor feedback and found effective feedback from the instructors to the students in online courses has five distinct characteristics: "student involvement/individualization, gentle guidance, being positively constructive, timeliness and future orientation" (p. 8). It can be argued that these characteristics could apply to traditional courses as well; however in the online environment, where the presence of the instructor is not felt unless they are engaged in some manner with the student, these characteristics have added importance. Perry & Edwards (2005) found major themes for exemplary online instructors as challengers, affirmers, and influencers. Instructors (challengers) who have high standards for their students, instructors (affirmers) who encourage their students, and instructors (influencers) whose expertise and online presence impacted their students, positively affected their students' learning (Perry & Edwards, 2005). Are these same themes and characteristics found in the online graduate programs that the presenters have experienced?

Why do students opt to take courses or earn their graduate degree online? Guri-Rosenblit (2009) states "Trends of lifelong learning, changing professional careers during a lifetime, and the crucial need to update and upgrade professional education on an ongoing basis have changed drastically the composition of the student populations in both traditional campus-based universities and

distance education providers" (p. 112). It is common today for students to have families with children in school and established job positions. Increasingly these same students may also need to provide care or support for parents or grandparents. They may have the desire for more education but not always have the option of mobility to move where the college or university is located in order to attend classes. The advent of online graduate programs may be a pathway for those needing flexible schedules, for example, interior design practitioners able to obtain graduate degrees that can expand the potential pool of interior design educators. This could be the new face of interior design graduate education in this technological age, and feedback from the student's point of view may be valuable in persuading more educators to consider this type of education.

By exploring the experiences of interior design educators who have gone through online graduate programs we can uncover the successes and the perceived advantages and disadvantages of this type of education. The fit between the online programs and lives of the presenters and the expected/unexpected consequences and events experienced in and outside of an online classroom will be explored. The presenters are interior design educators teaching at different institutions across the United States. They are educated consumers of online education and, through their experience, can judge the quality, effectiveness, and appropriateness, including the missteps, of online graduate education. With the limited number of online programs, it is important to bring the experiences of online students to a larger population who might consider developing or applying to an online graduate program. Program rigor, course content, and methods of content delivery as well as successful techniques and not so successful techniques of online learner engagement will be discussed.

REFERENCE LIST (APA)

Bender, D. & Good, L. (2003). Interior Design Faculty Intentions to Adopt Distance Education*. Journal of Interior Design, 29(1/2),* pp. 66-81.

Getzlaf, B., Perry, B., Toffner, G., Lamarche, K., & Edwards, M. (2009). Effective Instructor Feedback: Perceptions of online graduate students. *The Journal of Educators Online, 6(2).*

Guri-Rosenblit, S. (2009). Distance Education in the Digital Age: Common misconceptions and challenging tasks. *Journal of Distance Education, 23(2),* pp. 105-122.

Interior Design Educators Council. (2004, August). *Interior design and related graduate programs.* Retrieved online September 27, 2009 from http://www.idec.org/pdf/ID_grad_prog.pdf.

Perry, B. (2006). Using Photographic Images as an Interactive Online Teaching Strategy. *The Internet and Higher Education, 9,* pp 229-240.

Perry, B. & Edwards, M. (2005). Exemplary Online Educators: Creating a community of inquiry. *Turkish Online Journal of Distance Education, 6(2),* pp. 46-54.

Rovai, A., & Barnum, K. (2003). On-Line Course Effectiveness: An analysis of student interactions and perceptions of learning. *Journal of Distance Education, 18(1),* pp.57-73.

Impact of the 2009 Accreditation Requirements: Comparison of CIDA and NAAB

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ABSTRACT

This study examined the accreditation requirements for interior design (CIDA) and architecture (NAAB) programs relative to the knowledge areas (KAs) attained via student learning outcomes. Using content analysis methodology, refined from experience gained from a 2008 pilot study (Martin & Kroelinger, 2009), the researchers determined the specialized, shared, and parallel but different knowledge areas contained within these current accreditation standards. The interior design and architecture respective bodies of knowledge (BOK) were found to be unique.

Formal education constitutes the foundation of a profession's BOK, which continues to evolve throughout the career cycle (Abbott, 1988; Boyer & Mitgang, 1996; Guerin & Martin, 2001). Further discussion is warranted on several levels: 1) does the BOK as informed through accredited education reflect the professions' future aims, 2) are the BOKs as expressed in the curriculum unique, and 3) are accreditation requirements steering the future of professional practice appropriately?

This diverse panel will review highlights of this accreditation requirements comparison in context with expectations of stakeholders in the academy and in practice settings where interior designers and architects participate in multidisciplinary teams. Also, considering accreditation requirements, the panel will also address how educators can prepare students to be confident of their specific KAs and learn to respect and embrace the knowledge of the "other."

METHOD

The CIDA 2009 *Professional Standards* (*Standards*; 2-14) and the NAAB 2009 *Conditions of Accreditation* (*Conditions*; Realms A, B, and C) were analyzed using manifest and latent content analysis of KAs contained in student performance criteria (SPC). Coding of data were performed following pre-determined "decision rules" (Sommer & Sommer, 2002). Five analysis categories (see Table 1) were determined in context with established CIDA and NAAB student achievement qualifiers.

IMPORTANCE OF THE TOPIC

Findings indicated that the respective BOKs were unique, with evidence of all five types of KAs (specifics to be discussed) and to a lesser degree was "unique" knowledge found within the SPC of either discipline's accreditation requirements. Significance of these findings ground the pedagogical discussion specific to the related design disciplines as well as the collaborative manner in which design professionals work, now and into the future. Educators are responsible for students' first exposure to their future professions' BOK; are we on the right track? What role does accreditation requirements language have in the development of curriculum and are the outcomes commiserate with that role? And finally, what does this comparison of KAs tell us about the distinction between the professions' BOKs?

RELEVANCE TO INTERIOR DESIGN

As interior design matures as a profession, acknowledging the role of accredited education on specialized KAs is important is pivotal. It contributes to interior design's professional stature, acknowledging the profession's responsibility to protect the public's health, safety, and welfare. The American Institute of Architects' (AIA) "Directory of Public Policies and Position Statements" state that only architects and engineers should be licensed and that only they protect the public (AIA, 2008). That AIA position statement is out for review and comment in 2009—perhaps this dialog can help influence its final form.

NARRATIVE

This study examined the accreditation requirements for interior design (CIDA) and architecture (NAAB) programs relative to the knowledge areas (KAs) attained via student learning outcomes. Using content analysis methodology, refined from experience gained from a 2008 pilot study (Martin & Kroelinger, 2009), the researchers determined the specialized, shared, and parallel but different knowledge areas contained within these current accreditation standards. The interior design and architecture respective bodies of knowledge (BOK) were found to be unique. The study that is the basis of this panel discussion (Martin & Kroelinger, 2010) has been published in the *Journal of Interior Design, 35*(2), ix-xxxii. Review of the study prior to attending this panel is recommended.

Formal education constitutes the foundation of a profession's BOK, which continues to evolve throughout the career cycle (Abbott, 1988; Boyer & Mitgang, 1996; Guerin & Martin, 2001). Interior design knowledge gained through education and practice and shared with allied professions, namely architecture, has created challenges. Right to practice issues and advocacy for regulation by the interior design profession have heightened efforts by the American Institute of Architects (AIA), the Institute for Justice, and others to claim that interior design does not possess specialized knowledge and is, therefore, not a unique profession (AIA, 2008; AIA, 2009; Carpenter, 2006).

Education is the initial step in the career cycle for interior designers taking them to entry-level professional practice (Guerin & Martin, 2001). Formal interior design academic programs are accredited by the Council for Interior Design Accreditation (CIDA, 2008; formerly the Foundation for Interior Design Education Research, FIDER). In the CIDA *Professional Standards 2009 (Standards)* "Preamble," the importance of interior design and the role accredited education plays is communicated (CIDA, 2008, p. 2).

Similarly, the Boyer and Mitgang (1996) report established a blueprint for architectural education, building on an earlier Boyer (1990) report regarding scholarship. Formal architecture education is accredited by the National Architectural Accrediting Board (NAAB, 2009). In the NAAB *2009 Conditions of Accreditation (Conditions)*, the critical influence of accredited education and the role of the architect is communicated within the "Response to the Five Perspectives" (NAAB, 2009, pp. 10-11).

CIDA is recognized in the United States and Canada and NAAB is recognized in the United States. The degree level of education on which accreditation is focused varies for interior design and architecture, though this analysis focuses on the "first-professional degree" by CIDA or a "professional degree" by NAAB; namely, the degree that is required to enter professional practice. First-professional interior design programs culminate in a bachelor's degree (CIDA, n.d.). Architecture programs culminate in either five-year undergraduate programs or "4+2," "3+," and less commonly, professional doctorates for architecture (NAAB, n.d.). As the study's purpose was to determine the knowledge areas required within the accredited program's curriculum for both interior design and architecture, the level of degree, per se, was not addressed.

The findings of the study require discussion by the academy and respective practices. Several paramount issues arise as consequences from an examination of the data: 1) does the BOK as informed through accredited education reflect the professions' future aims, 2) are the BOKs as expressed in the curriculum unique, 3) are accreditation requirements steering the future of professional practice appropriately, and 4) is practice outpacing curricular development and accreditation standards?

This diverse panel will review highlights of this accreditation requirements comparison in context with expectations of stakeholders in the academy and in practice settings where interior designers and architects participate in multidisciplinary teams. Also, considering accreditation requirements, they addressed how educators can prepare students to be confident of their specific KAs and learn to respect and embrace the knowledge of the "other" based in experience from context of their institutional settings.

METHOD

The CIDA 2009 *Professional Standards* (*Standards*; 2-14) and the NAAB 2009 *Conditions of Accreditation* (*Conditions*; Realms A, B, and C) were analyzed using manifest and latent content analysis of KAs contained in student performance criteria (SPC). Coding of data were performed following pre-determined "decision rules" (Sommer & Sommer, 2002). The KAs contained within

the SPC was the unit of analysis, and were coded by student achievement qualifier level: awareness (CIDA only); understand/understanding; and apply, ability, able. Five analysis categories were determined in context with established CIDA and NAAB student achievement qualifiers. They are identified in Table 1. Once the data were coded and findings were documented, the researchers considered the immediate and future implications of the findings relative to needs and concerns of students, educators, educational institutions, and the practices themselves. Dissemination for purposes of discussion was an important goal.

As a means to broaden discussion, a diverse panel will review highlights of the study's findings (Martin & Kroelinger, 2010) in context with expectations of stakeholders in the academy and in practice settings where interior designers and architects participate in multidisciplinary teams. Also, steps educators can take to prepare students to be confident of their specific KAs and learn to respect and embrace the knowledge of the "other" is also crucial to both practices, as well as the clients and society being served.

FINDINGS AND DISCUSSION

Due to the expanse of KAs represented across the accreditation requirements, an examination of the comparison demonstrated in Table 5 of the study (Martin & Kroelinger, 2010, p. xviii-xxv) is necessary. In that way, the extent of the specialized, shared, and parallel but different KAs can be considered via the analysis. Analyses of three KA comparisons are included in this narrative as illustrative of the findings.

The first two, illustrate "shared/common knowledge with unequal comprehension levels." Comparisons of CIDA's 12d to NAAB's B.8 and of CIDA's 13a to NAAB's B.9 (see Table 2) illustrate how frequently differing accreditation requirements occur in SPC that are shared/common knowledge with equal KA qualifier levels (awareness, understanding, ability), but unequal comprehension levels. CIDA's 12d requirement to "Understand appropriate strategies for acoustical control (e.g., material selection; white noise; space planning; floor, wall and ceiling systems)" is a more comprehensive requirement than NAAB's B.8 acoustical KA requirement, "Environmental Systems: Understanding the principles of environmental systems' design such as embodied energy, active and passive heating and cooling, indoor air quality, solar orientation, daylighting and artificial illumination, and acoustics; including the use of appropriate performance assessment tools." It is also important to note that the comparison of KAs within CIDA's 12d and NAAB's B.8 is illustrative of the sorting challenges presented by the nature of both agencies' SPC. B.8 is applicable to all SPCs of CIDA's Standard 12 (a through h).

The second example, illustrates "shared/common knowledge with unequal comprehension and unequal qualifier levels" (see Table 2). This set of KAs demonstrates shared/common knowledge with one accrediting agency expecting a more comprehensive SPC while the other agency required a KA at a higher qualifier level. CIDA's 14c, "Demonstrates understanding of laws, codes, standards, and guidelines that impact fire and life safety, including compartmentalization: fire separation and smoke containment," and NAAB's B.5, "Life Safety: Ability to apply the basic principles of life-safety systems with an emphasis on egress" both address life safety. CIDA requires a greater degree of comprehension but at the "understanding" qualifier level, whereas NAAB requires application ("ability" level) of life safety systems with emphasis on egress. However, CIDA's qualifier level language to describe this SPC (i.e., "demonstrates understanding") could perhaps be considered an "ability" qualifier level. This CIDA qualifier level language is an example of some of the difficulties encountered when coding the data (for both CIDA and NAAB). Perhaps it also presents a challenge for general comprehension and application of the accreditation requirements.

Categorization of these types of KAs illuminate to what degree and how these professions differ from an educational standpoint, the initial attainment of KAs that comprise the basis of the profession's BOK (Guerin & Martin, 2001). Further exploration and discussion of the findings could contribute to clarifying the delineation between interior design and architecture as unique, but related, professions.

Significance of these findings grounds the pedagogical discussion specific to these related design disciplines as well as the collaborative manner in which design professionals work, now and into the future. Educators are responsible for students' first exposure to their future professions' BOK; are we on the right track? What role does the language of accreditation requirements have in the development of curriculum and are the outcomes

commiserate with that role? And finally, what does this comparison of KAs tell us about the distinction between the professions' BOKs?

RELEVANCE TO INTERIOR DESIGN

As interior design matures as a profession, acknowledging the increasingly important role of accredited education to identify and deliver the BOK to future interior design practitioners is critical. Accredited education substantiates interior design's professional stature through learning and application of the specialized, shared, and parallel but different KAs necessary to protect the public's health, safety, and welfare. The American Institute of Architects' (AIA) "Directory of Public Policies and Position Statements" states that only architects and engineers should be licensed and that only they protect the public (AIA, 2008). That AIA position statement is out for review and comment—perhaps this dialog can help influence its final form.

Table 1. Knowledge Area (KA) Categories

- Shared/common knowledge area requirements
- Shared/common knowledge area but unequal qualifier level of requirements (CIDA or NAAB noted as “higher level,” “more comprehensive,” or both)
- Parallel (but different) knowledge area, equal qualifier level requirements
- Parallel (but different) knowledge area requirements, unequal qualifier levels (e.g., NAAB “ability,” CIDA “understanding”)
- Specialized knowledge area requirements (CIDA or NAAB)

Table 2: Comparison of CIDA and NAAB SPC KAs

Font Notes: Ability; *Understanding*; Awareness. (* = Interpretation)

CIDA 2009			**NAAB 2009**		
Student Performance Criteria (SPC)		No.	No.	**Student Performance Criteria (SPC)**	**Analysis Remarks**
12:Environmental Systems and Contols	*Understand appropriate strategies for acoustical control (e.g., material selection; white noise; space planning; floor, wall and ceiling systems).*	*12d*	*B.8*	*Environmental Systems (see CIDA 12a for complete text of NAAB B.8)*	Shared/common knowledge area but unequal level of requirements (CIDA more comprehensive).
13: Interior Construction and Building Systems	*Demonstrates understanding that design solutions affect and are impacted by structural systems and methods (e.g., wood-frame and steel-frame).*	*13a*	*B.9*	*Structural Systems: Understanding of the basic principles of structural behavior in withstanding gravity and lateral forces and the evolution, range, and appropriate application of contemporary structural systems.*	Shared/common knowledge area but unequal level of requirements (NAAB more comprehensive).
14: Regulations	*Demonstrates understanding of laws, codes, standards, and guidelines that impact fire and life safety, including compartmentalization: fire separation and smoke containment.*	*14c*	B.5	Life Safety: Ability to apply the basic principles of life-safety systems with an emphasis on egress.	Shared/common knowledge area but unequal level of requirements (CIDA more comprehensive, NAAB higher level).

REFERENCE LIST (APA)

Abbott, A. (1988). *The system of professions: An essay on the division of expert labor*. Chicago: University of Chicago Press.

American Institute of Architects. (2008, December). *Supporting position statements: 8. Architectural practice and title regulations.* Board of Directors: Directory of Public Policies and Position Statements Washington, DC: Author.

Boyer, E. (1990). *Scholarship reconsidered: Priorities of the professoriate*. Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching.

Boyer, E., & Mitgang, L. (1996). *Building community: A new future for architecture education and practice.* Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching.

Carpenter, D. (2006). *Designing cartels: How industry insiders cut out competition*. Retrieved October 21, 2006, from http://www.ij.org/pdf_folder/economic_liberty/Interior-Design-Study.pdf

Council for Interior Design Accreditation (CIDA). (2008). *Professional standards 2009.* Retrieved February 25, 2009, from http://www.accredit-id.org/June %20 2008%20Standards_changes09.pdf

Guerin, D., & Martin, C. (2001). *The interior design profession's body of knowledge: Its definition and documentation.* Toronto, Ontario, Canada: The Association of Registered Interior Designers of Ontario (ARIDO).

Martin, C. & Kroelinger, M. (2009). *Comparison of CIDA professional standards and NAAB conditions*. Proceedings of the Interior Design Educators Council Annual International Conference (pp. 538-548). St. Louis, MO.

National Architectural Accrediting Board. (2009). *2009 Conditions for accreditation*. Retrieved August 4, 2009, from http://www.naab.org/documents/home_origin.aspx?path=Public+Documents\Accreditation

Sommer, R., & Sommer, B. (2002).*A practical guide to behavior research: Tools and techniques.* (5th ed.). New York: Oxford University Press.

PANELS:
SCHOLARSHIP

Taste and the Modern Interior, a Seminar

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ABSTRACT

To study the development of the modern Interior, one must work towards a redefinition of taste and how it is constructed. Taste shifts in modernity from a static set of values reiterating socioeconomic strata, to a dynamic system of value relations between an artifact or space, representation and consumption. Taste is an excavation of the Interior as transmitted through media, the reciprocal effects on its inhabitants and its readers, on media and design itself.

Interior Design history recounts the numerous influences woven together to create modernism's hallmark spaces; their plurality examined from various vantage points describes much about the culture that produced them and the individuals who inhabit them. The physical space of the Interior often so clearly reflects modernity's identifiers- mass production of furniture, finishes and artifacts, the changes in role of women, the rise of the middle-class, many others. Yet the physical reality of these spaces have ever less impact on a collective consciousness; since the end of the 19th century the apprehension of Interior Design has been largely second-hand, through descriptions and photographs in books and mass-media. Perhaps design becomes modern in that second-hand apprehension, as the primacy of the image over the real. We visit spaces in print, not in person.

Each emerging form of mass communication (i.e. newspaper, magazine, radio, TV, film, internet) carries through a semantic privileging of content versus form, its own modality by which the value or meaning of the represented subject can be transmitted, edited, manipulated. Each specific instance (i.e. media outlet, magazine) has a point-of-view, usually acknowledging the values of its target audience.

Mass media begets a trade in images, this trade itself a measure of what we agree to value, albeit unconsciously: our habit of a distracted (eventually conspicuous) consumption gives the image ever more power to reinforce a status quo.

Taste, as an academic subject, allows the histories and theories of Interior Design to be examined within a pedagogical frame latent within the existing discourse.

Our graduate level seminar, run for the first time in the Summer of 2009, examined the relationship of taste and the modern Interior. Students built their own body of scholarship through a series of focused case study investigations of representations of influential modern domestic American Interiors. Case studies examined the canonical and the colloquial throughout the twentieth century. For example, Pierre Koenig's 1954 Stahl House and the interiors of the 1951 Levittown Houses represented the mid-century mark. Students investigated a single project in all forms of mass media over time, their analysis excavating embedded readings from within its representations.

Our presentation would present a larger context regarding the exploration of taste in the 19th – 20th century modern Interior: defining terms, discussing limits. We would expand upon the issues examined in lecture form (privacy and publicity, rise of the middle class, etc), the media studied and would present student discoveries in the formation of taste in the American domestic Interior.

NARRATIVE

Our class "Taste and the Modern Interior" is a graduate level course, run in a lecture and seminar format.

Taste, colloquially, is a predetermined set of preferences. In the design studio, students are taught to find their own voice through the solution of design problems. Anything like predetermination is suspect, bracketing the design process, and preferences must be defended as relevant beyond the designers own satisfaction. This class began as an attempt to address the term: taboo in the studio environment, yet appearing consistently in design journals, magazines, and manifestoes alike. We aimed to discover why and how it remains prevalent, and to recuperate the term academically.

Pierre Bourdieu, the French sociologist, declares that these preferences are learned, conditioned. Our research began as we discovered that the term 'taste' through upbringing and education, deeply and often unconsciously imbricated into our identities:

> *… "a system of acquired dispositions functioning on the practical level as categories of perception and assessment... as well as being the organizing principles of action[1]."*

These preferences are habits, or *habitus*: what we eat, wear, do. Consciously or unconsciously our choices describe social distinctions, traditionally a static set of values reiterating socioeconomic strata. The degree to which one had good taste is a measure of one's cultural competence, the degree to which one could deploy one's *habitus* to reinforce one's social position. The word "habit" provides insight into its mechanics: an acquired behavior pattern regularly followed until it has become almost involuntary or unconscious. With no critical faculties employed, we reiterate a status quo by rote.

Bourdieu's proposition is that taste is nothing other than difference, a relational property existing only in and through its relation with other properties. Any object in question is not necessarily better or worse or even more or less costly per se, the operative quality is that it is different; it serves to distinguish. Yet it remains that the degree to which any object is associated with a dominant group has direct upward influence on its symbolic value.

Two distinct systems of social hierarchies are operative in dominance, two ways that a group might garner influence specific to this symbolic system of identification.

The first is economic: those with more power as determined by money and property.

The second is cultural or symbolic. Intellectuals and designers are in the key role as specialists of cultural production and creators of symbolic power. We create the aesthetics and the ideas that reinforce distinctions between groups, whether or not this was our intent or we are conscious of this role.

The initial proposition of this seminar is that taste shifts in modernity from a static to a dynamic system of value relations through the emergence of modern media. Our students examine this phenomenon through a study of representations of influential modern domestic American Interiors, through a series of readings and their own focused scholarship. The projects studied range from the canonical to the vilified, unified in their profound influence on the American domestic sphere. The students sought to map shifts in value or message through the specifics of the projects' representations. Three topics organized the explorations.

MEDIA.

Since the end of the 19th century the apprehension of Interior Design has been largely second-hand, through descriptions and photographs in books and mass-media. Perhaps design *becomes* modern (as Beatriz Colomina suggests) in this second-hand apprehension, as the primacy of the image over the real. It's an idea so obvious as to be easily overlooked, or at least under-estimated, we most often visit spaces in print, not in person. The degree to which this influences us as both consumers and as producers requires examination.

To a large extent, the spaces we "know" exist as mass produced representations: through printed drawings, photographs, writings, films, or advertising. Each form of media has its own idiosyncrasies and own form of narrative devices, from advice books to glossy magazines to reality television, a different relationship between form and content. As forms of media proliferate and outlets

1

multiply, criteria for choices in the heterogeneity of the marketplace become more difficult. Furthermore, each instance evinces a point-of-view, somewhat related to their degree of disinterestedness, the degree to which they have a function beyond the mere mimesis of their subject or content. Advertising is an obvious example, yet we as consumer of media are so familiar with its tropes we may look past its embedded values, no matter if the mechanisms of the message are overt (text in an ad) or obvious (overt content within images) or subtler manipulations therein.

MODERN.

Proliferation of media is only one of the characteristics that predicate a reexamination of the term "taste". It is hard to overestimate the importance of the rise of the middle class and the fluidity of social position as reinforcing the importance of taste. These newly minted groups and members needed to evince membership construct a new identity for the individual and indeed the group itself; this is contemporary to the U.S.'s emerging desire for a clear and singular national (aesthetic) identity.

Authenticity is still sought in a world now overrun with mass-produced objects and images, perhaps evincing nostalgia for certainty in a world in flux. Alternative models for uniqueness or originality abound: authorship, signature, even ownership can confer value. Outside of empiric factors such as scarcity or costs inherent to production, value becomes a matter or persuasion.

RESIDENTIAL

"To live means to leave traces. In the interior these are emphasized. An abundance of covers, protectors, liners and cases is devised, on which the traces of the objects of everyday use are imprinted. The traces of the occupant also leave their impression on the interior.[2]"

Walter Benjamin's description of the Victorian interior describes an environment reflecting history and memory of its inhabitants, constructing boundary markers of the symbolic configuration known as home "…*as a refuge, a site for an idea of taste to construct one's identity to be displayed and produced[3]*", yet this site is constantly under construction, history and memory continually abridged and overwritten, influenced by the vicissitudes of mass produced consumable fashions.

The late nineteenth century's segregation of work and home placed an ever greater focus on the domestic environment as the seat of one's identity, a stage set where one might play out one's desired social role, framed by an atmosphere of one's choices.

STUDENT DISCOVERIES

Through excavating the constructs of taste in relation to mass media students began to discover the modes in which interior within the 20th century has been mediated, its effects and how it privileges types of packaging of narratives for consumption. Students focused on creating a comparative analysis that traces a single precedent (a model for taste from each decade) through various media platforms and were able to deconstruct the changing status and meaning of that interior.

For a single project, transparency (a residential glass box) is represented as honest extensive/ exhibitionist, integrated into its surrounding site through reflection, discrete from its site through reflection, paradoxically imprisoning (this is a recurring theme in popular film). Virtually every representation studied of prefabricated or manufactured housing was made reference to the ideology of the producer vs. the tactics of the consumer. It is typical in academic or trade publications to portray the spatial continuum of the villas of Modernism from the surrounding landscape into interior as life-affirming, healthy (or at least hygienic) for its inhabitants; when the same projects appear in films, their most typical role finds them as lairs for villains. Usually clever villains, but villains nonetheless[4].

FINDINGS

While existing definitions of taste lay the foundation for our students' examinations, their work and our continued research and discussions helped us open up the concept.

Beyond differences in socio-economic class, one might argue that this concept of taste as distinction is necessary to understand the aesthetic of the subculture (in many cases highly organized and publicized).

2

3

4 Projects studied included: Gamble House (1908), Sears Catalog Home (1910), Ennis-Brown House (1924), Levittown House (1945), Farnsworth House (1949), Case Study House #22 - Stahl House (1960), Seaside House (1979).

Pre-modern taste relies on conventional definitions of high or low culture, as reinforced by conventional criticism. An example: modern design of architecture / interiors as a high artistic practice, in opposition to mass culture, but even within the academy design rarely operates by strict academic or canonical rules.

The transmission of images is ever faster and more furious, yet it is no longer solely the provision of any dominant group (through economic or cultural capital) to disseminate them; (almost) instantaneous self-publishing mechanisms provide a powerful means to challenge to any top-down model of the determination of their content and distribution.

Patterns of consumption can influence the symbolic value of an object; these values are then absorbed back by its producers, influencing production itself.

Finally, it is critical as designers to be aware that we too are affected by these same forces. Bourdieu may concede us enormous power as arbiters of cultural capital, but that does not place us outside the mediating power of image, even as their authors.

Taste is an excavation of the Interior as transmitted through media, the reciprocal effects on its inhabitants and its readers, on media and design itself.

REFERENCE LIST (CHICAGO)

1 Pierre Bourdieu, *Distinction: A Social Critique of the Judgment of Taste,* (Harvard University Press, 1984)
2 Walter Benjamin, *Reflections,* (Harcourt Brace Jovanovich, 1978) 156.
3 Jean Baudrillard, *The System of Objects*, (Verso, 2005) 14.

Figure 1: Student: Thomas Stapleton Case Study: Farnsworth House, Mies Van der Rohe. Covers and Articles Analyzed + Textual Analysis

Figure 2: Student: Lauren Helman. Case Study: Lovell Health House, Richard Neutra. Textual Analysis

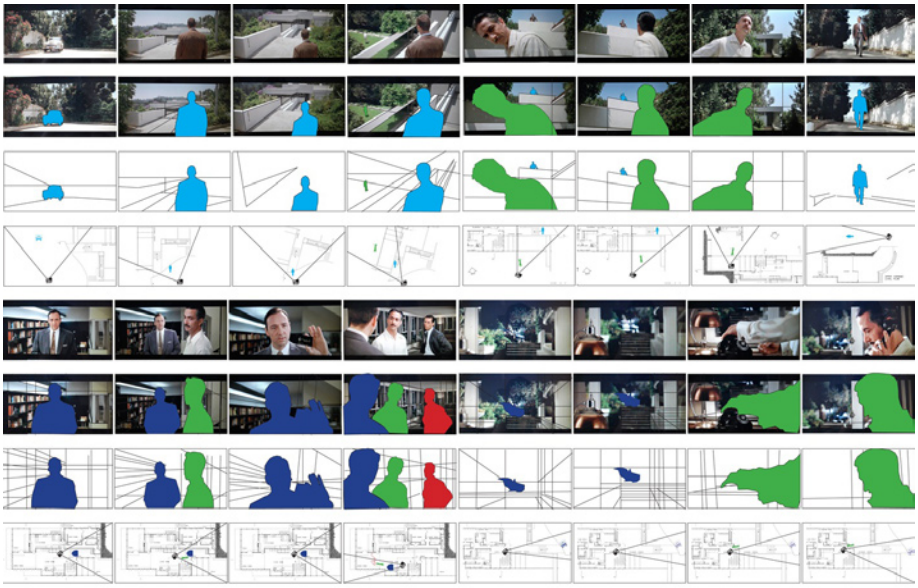

Figure 3: Student: Lauren Helman, Case Study: Lovell Health House, Richard Neutra, Film Analysis

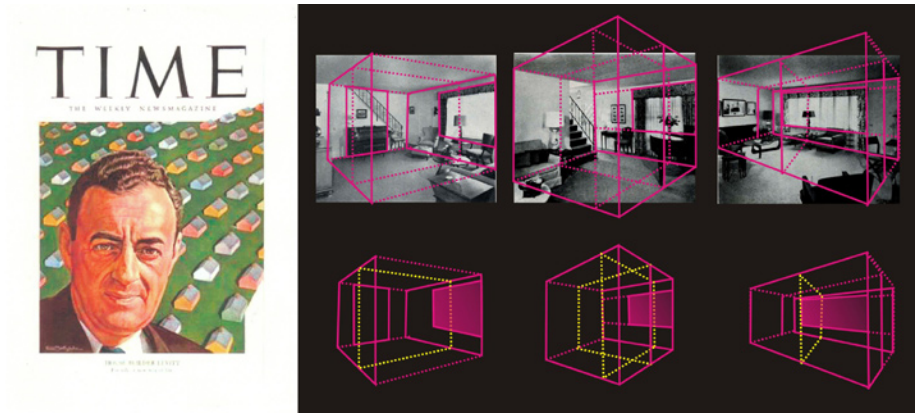

Figure 4: Student: Viviana Wang, Case Study: Levittown Houses. Magazine Cover + Image Analysis

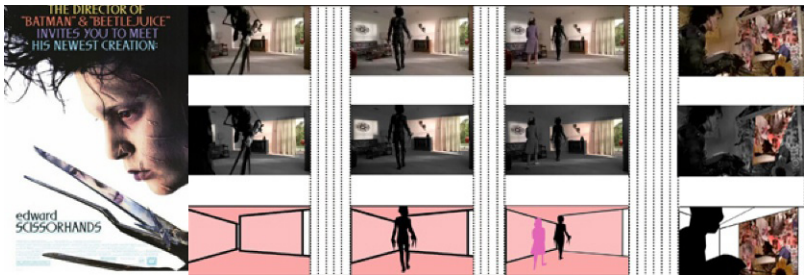

Figure 5: Student: Viviana Wang, Case Study: Levittown Houses, Above: Film Analysis

POSTERS:
TEACHING

Collaborative Learning Experiences: Pedagogical Models from Interior Design Senior Capstone Studio

ABIMBOLA O. ASOJO
University of Oklahoma

ABSTRACT

INTRODUCTION

Current trends in integrated project design and delivery methods demand the development of new competencies in interdisciplinary collaborations in design pedagogy. In order to expose Interior Design students to multiple view points, the 2009 Council for Interior Design Accreditation Standard 5 now requires "entry-level Interior Designers engage in multi-disciplinary collaborations and consensus building… Students have *awareness* of:

a) team work structures and dynamics.

b) the nature and value of integrated design practices" (p.14).

This presentation discusses pedagogical experiences from a collaborative capstone studio between final year Interior Design and Architecture students.

LITERATURE REVIEW

The AIA notes "new modes of project design and delivery have created an opportunity for professionals and educators alike to reassess the dynamics of practice and education…. This integrated approach, enabled by integrated design tools, is resulting in enhanced communication, more comprehensive and coordinated documents, and improved collaborative teams." This new delivery method benefits the owner and the environment. For example, the USGBC Colorado Chapter 2007 notes "effectively integrated design is the key to creating buildings that do a better job of serving their occupants, their owners, the community, and the environment. The design process is every bit as important as understanding the value, mechanisms, and opportunities of integrated design…Experts in the areas of energy efficiency, daylighting, materials, ecology, biology, urban planning and so forth can assist in developing integrated approaches that capture project-specific synergies. An important element of this process is creating, in the pre-design phase, a common understanding of goals and opportunities for cross-disciplinary design synergies. This provides a framework and impetus for communication among design professionals. It can also provide a useful starting point for exploring design concepts…"(p. 24-25). These trends imply that Interior Design programs must prepare students for future roles in integrated practices.

PROCESS

The following two case studies illustrate experiences from collaborative design studio between fourth year Interior Design, fifth year Architecture and graduate Architecture students. The author shares findings about pedagogy, outcomes, as well as, pros and cons of interdisciplinary collaboration to serve as a model for other Interior Design educators.

CASE STUDY 1: GLOBAL DESIGN VILLAGE IN NORMAN

In the Global Design Village, fourth year Interior Design and fifth year Architecture students collaborated on the design of a spa, virtual reality technology center, hotel, conference center, concert hall, and offices in an urban setting from the pre-design stages to design development. The overall concept was to tie the entire complex together through distinct design features (Figure 1, 2, 3, 4).

CASE STUDY 2: TULSA VISION PROJECT

In the Tulsa Vision project, an Interior Design student and a graduate Architecture student collaborated on creating community connections through the design of amenities within walking proximity of an urban setting to

attract people back to urban settings and reduce dependency on vehicular transportation (Figure 5,6,7).

CONCLUSION

Overall, both projects offered design students the opportunity to collaborate on regional projects and develop the synergies necessary for success in integrated project delivery. Through pedagogical examples such as these, educators can prepare Interior Design students for future roles in integrated practices which will benefit the owner, the community, and the environment.

NARRATIVE

INTRODUCTION

Current trends in integrated project design and delivery methods demand the development of new competencies in interdisciplinary collaborations in design pedagogy. In order to expose Interior Design students to multiple view points, the 2009 Council for Interior Design Accreditation Standard 5 now requires "entry-level Interior Designers engage in multi-disciplinary collaborations and consensus building… Students have *awareness* of:

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b) the nature and value of integrated design practices" (p.14).

This presentation discusses pedagogical experiences from a collaborative capstone studio between final year Interior Design and Architecture students. The author shares findings about pedagogy, outcomes, as well as, pros and cons of interdisciplinary collaboration to serve as a model for other Interior Design educators.

LITERATURE REVIEW

The AIA notes "new modes of project design and delivery have created an opportunity for professionals and educators alike to reassess the dynamics of practice and education…. This integrated approach, enabled by integrated design tools, is resulting in enhanced communication, more comprehensive and coordinated documents, and improved collaborative teams" (p. 1). This new delivery method benefits the owner and the environment. For example, the USGBC Colorado Chapter 2007 notes "effectively integrated design is the key to creating buildings that do a better job of serving their occupants, their owners, the community, and the environment. The design process is every bit as important as understanding the value, mechanisms, and opportunities of integrated design…Experts in the areas of energy efficiency, daylighting, materials, ecology, biology, urban planning and so forth can assist in developing integrated approaches that capture project-specific synergies. An important element of this process is creating, in the pre-design phase, a common understanding of goals and opportunities for cross-disciplinary design synergies. This provides a framework and impetus for communication among design professionals. It can also provide a useful starting point for exploring design concepts…"(p. 24-25). These

trends imply that Interior Design programs must prepare students for future roles in integrated practices.

The benefits of integrated project delivery methods in academia are profound. The most significant benefit is the opportunity for interdisciplinary study in the curriculum. The AIA notes other benefits such as "empowering each student's individual capacities and abilities, responding to students' different learning styles, engaging students in shared leadership opportunities and roles, providing opportunities for interdisciplinary study throughout the curriculum and across the campus, and encouraging cross-pollination with engineering, business and construction colleges/departments to demonstrate the value of integrated design and delivery processes" (p.1).

These benefits apply to Interior Design programs and integrated practices offer implications for Interior Design pedagogy. The implications are numerous for Interior Design programs. For example, how can Interior Design educators teach the tools that are necessary to prepare students to work in collaborative environments? Another question is how are traditional educational delivery methods compatible with these new methods? Another significant question is how will Council of Interior Design Accreditation (CIDA) standards adapt their standards to further encourage these new delivery methods? This paper takes a pragmatic approach and the author offers some practical examples in Interior Design academic settings. It is important for Interior Design programs to begin to engage in this discourse and this will contribute to the perception of the role of Interior Design in the built environment.

PROCESS

The following two case studies illustrate experiences from collaborative design studio between fourth year Interior Design, fifth year Architecture and graduate Architecture students in spring 2009. The spring 2009 Interior Design Capstone class had eighteen students. The author encouraged all students to participate in collaborative projects and thirteen students selected collaborative projects, while five worked on adaptive reuse projects. The author shares findings about pedagogy, technology, outcomes, as well as, pros and cons of interdisciplinary collaboration to serve as a model for other Interior Design educators.

PEDAGOGY

In the Capstone course, the final semester studio at the University of Oklahoma Interior Design program, students undertake a project of significant scale and complexity from pre-project planning stages to design development in the course of a semester. Each student is responsible for defining the scope of his or her project and each student is encouraged to select a project in a market sector of interest to them. The goal of the project is to demonstrate competency in Interior design and it assumes a significant presence in their portfolio illustrating their design abilities, technical skills, and presentation skills. Projects are required to be multilevel, a minimum of 30,000 square foot and must incorporate pre-project planning, programming, site analysis, space planning, schematic design, furniture and finish selection, three-dimensional exploration and modeling, detailing, design development, lighting design and culminate in a creative presentation. Project types may explore healthcare, hospitality, retail, mixed-use development, work environments, exhibition space, and approved competitions. Students are encouraged to collaborate with 5th year and graduate architecture students in their capstone. Considerations in project selection should include career plans, feasibility of project, and portfolio depth. The author provided ongoing critique and direction during studio periods.

CASE STUDY 1: GLOBAL DESIGN VILLAGE IN NORMAN

In spring 2009, fourth year Interior Design and fifth year Architecture students collaborated on the design of a complex called the Global Design Village in Norman. The overall concept was to tie the entire complex together through distinct design features. Interior Design seniors were responsible for Interior design of a spa, virtual reality technology center, hotel, conference center, concert hall, and offices in an urban setting from the predesign stages to design development.

A unique characteristic of this collaboration was that the fifth year architecture students began their preliminary design in the fall semester. Their capstone was a year long. They spent the fall semester doing their site analysis, urban studies and urban planning. The Interior Design capstone is a semester long studio, therefore the opportunity to integrate both groups came at the beginning of spring 2009. By the spring semester, the architecture students had developed their site plans

and building footprints but no space planning had been accomplished. When Interior Design students came onboard in spring 2009, their first task was to familiarize themselves with the site and historical issues. In collaboration with the fifth year architecture majors, they developed design issues and challenges, programmatic proposals, and conceptual ideas. Next, they developed their schematic designs which included space plans and three-dimensional design development and finally, they developed their final design drawings. The spa design (Figure 1,2) and the Virtual Reality and Technology Center (Figure 3,4) were two successful projects that came out of this collaboration.

CASE STUDY 2: TULSA VISION PROJECT

In the Tulsa Vision project, an Interior Design student and a graduate Architecture student collaborated on a project in Tulsa. The uniqueness of this project was the fact that the author was the committee chair for the graduate student's thesis proposal and the Interior Design student was one of the seniors enrolled in the author's Capstone studio. The author supervised the graduate student in fall 2008 and helped identify the opportunity to collaborate with an Interior Design student. However, unlike the above example the Interior Design student came onboard early and had initial discussions about their intention and scope of collaboration in the fall semester and had the opportunity to contribute to the preliminary design investigation and ideas.

The resulting project was the Tulsa Vision project and the goal was to design a complex which will create community connections through the design of amenities within walking proximity of an urban setting to attract people back to urban settings and reduce dependency on vehicular transportation. The design utilized new urbanism principles of finding amenities within ones walking distant, as well as, sustainable design principles. The first part of the spring semester was spent finalizing the programmatic proposals and conceptual ideas. Next, they developed their schematic designs and finally, they developed their final design drawings. Images from the Tulsa Vision project are illustrated in Figures 5, 6 and 7.

CONCLUSION

Both case studies reinforced the importance of interdisciplinary learning and collaboration. Both the Interior Design and Architecture students left with a better understanding of their roles in the design process. This was particularly beneficial as their last studio class before graduating and going to practice. In the Tulsa Vision project because collaboration started earlier in the fall semester in the preliminary design phase, the Interior Design and architecture student had ample time to collaborate on the entire project. The architecture student benefited from learning more about space planning and interior elements while the Interior Design student learned more about building structural and systems integration with interior elements. This team worked more as peers. In the Global Design Village, the Interior Design students had to take a lot of leadership role in getting decisions about the building envelope from the architecture majors. This was challenging, mainly because most of the architecture majors were idealistic about their design solutions as opposed to the pragmatic Interior Design students.

Overall, both projects offered design students the opportunity to collaborate on regional projects and develop the synergies necessary for success in integrated project delivery. Through pedagogical examples such as these, educators can prepare Interior Design students for future roles in integrated practices which will benefit the owner, the community, and the environment.

REFERENCES

American Institute of Architects (2007). Draft White Paper, Part II-Integrated Project Delivery Methods. Retrieved December 12, 2008 from http://blog.aia.org/whitepaper/2007/09/draft white paper for the naab 5.html

Council for Interior Design Accreditation (2009). Council for Interior Design Accreditation: Professional Standards. Grand Rapids, MI: Author.

Erdener, E. and Asojo, Abimbola O. (2009). Illuminating the Past, Present and Future: Architectural and Lighting Design in Historic Buildings – A Collaborative Learning Experience. Design Principles and Practices: An International Journal, 3 (2), 249-259.

Asojo, Abimbola O and Pober, Elizabeth (2009). Building Information Modeling (BIM) Strategies: Pedagogical Models for Interior Design. Design Principles and Practices: An International Journal, 3 (2),159-167.

USGBC Colorado Chapter (2007). *LEED Professional Accreditation Study Guide and Practice Exam.* Colorado: Author.

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Professor Lee Fithian and Professor Shawn Schaffer in their roles as graduate committee members in the Tulsa Vision project.

Figure 1: Spa Design

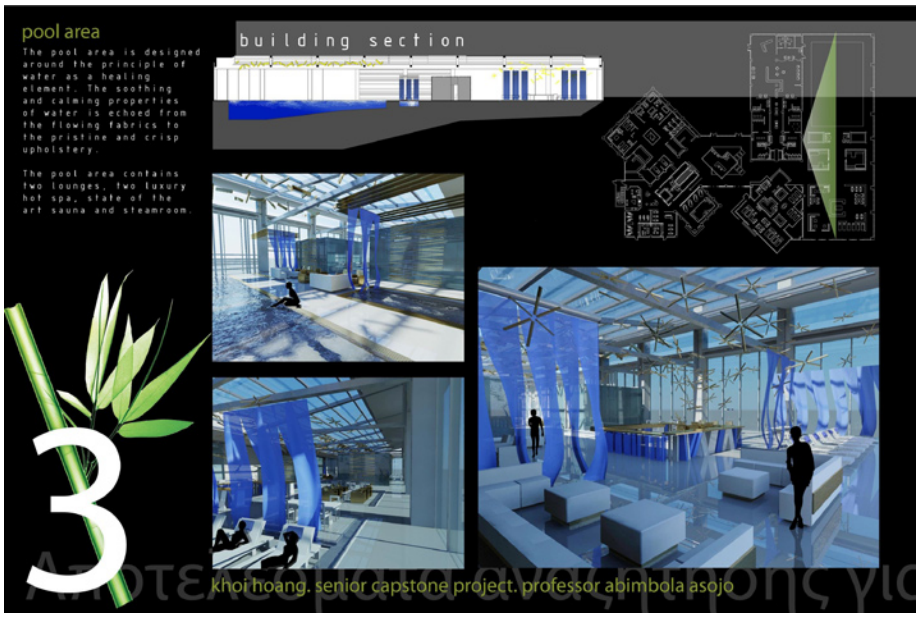

Figure 2: Spa Design

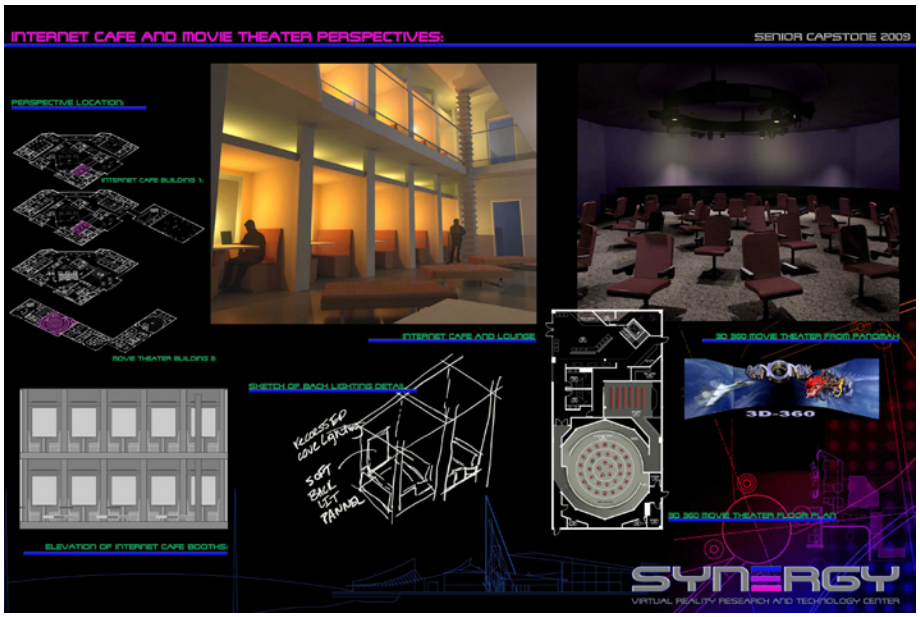

Figure 3: Virtual Reality and Technology Center

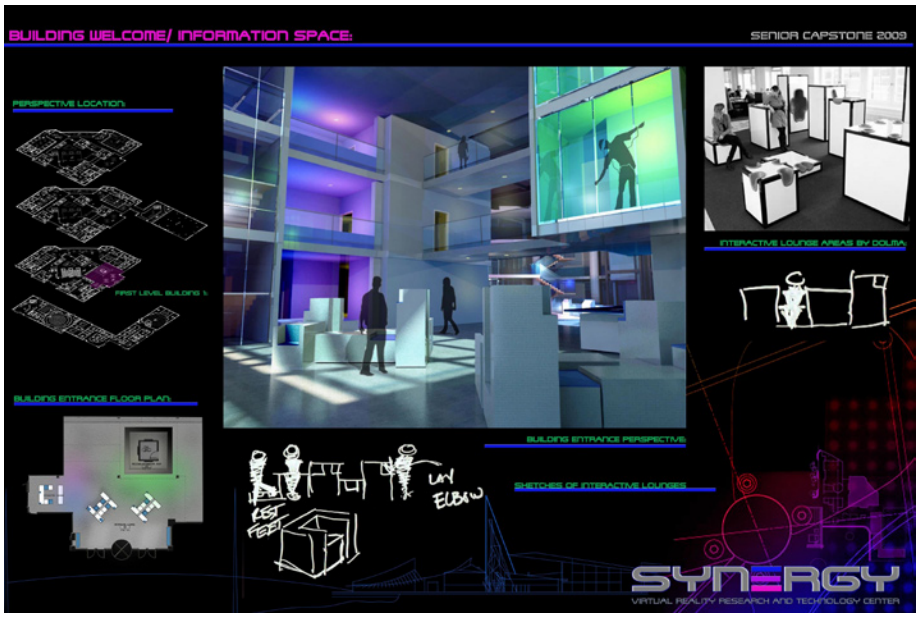

Figure 4: Virtual Reality and Technology Center

Figure 5: Tulsa Vision Project

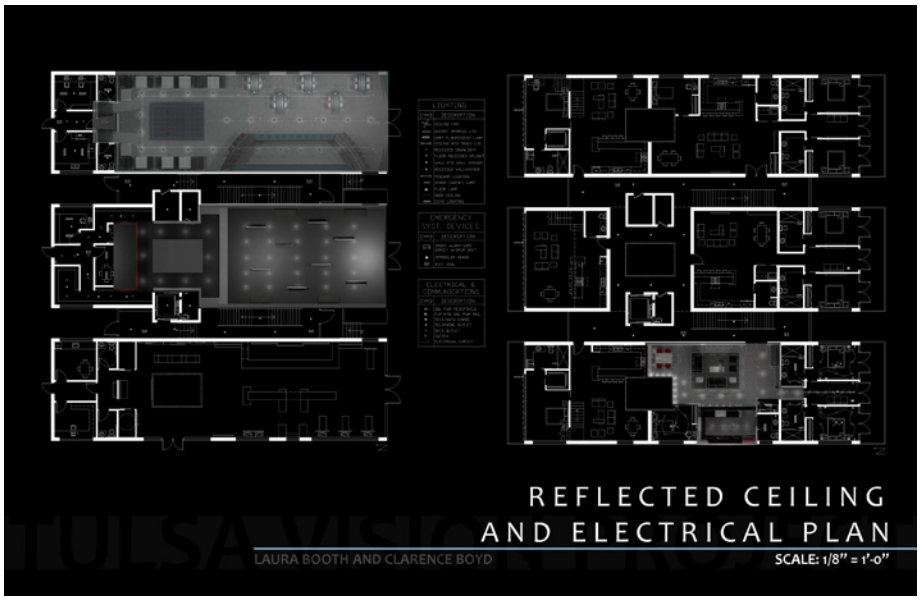

Figure 5: Tulsa Vision Project

Changing the Paradigm: Multidisciplinary Teaching in Design

HANS-PETER (HEPI) WACHTER / DAVE BOECK
University of Oklahoma

ABSTRACT

This poster illustrates an approach of a multi-disciplinary design studio setting and the learning experience of architecture and interior design students. Studio description and examples provide an insight of how multi-disciplinary teaching can be imbedded in design studios.

NARRATIVE

PURPOSE

Multi-disciplinary team structures for project development, both academically and professionally, are becoming the norm in meeting the federal government's requirements for building project development. Multi-disciplinary teams are not new to the academic area of teaching and are present in professional settings of design. Finding an effective pedagogy in a multi-disciplinary setting is challenging.

FRAMEWORK

The design studio was combined from a third year architecture studio with 26 students, a third year interior design studio with 9 students. Architecture and Interior Design students worked together exploring possibilities for a fire station and a public library (Figure 1; Figure 2). In addition to studio work, students met weekly in documented work sessions during the programming phase and at the end of the project to work on budget and life cycle cost of the projects (Figure 3).

Two professors, one from each discipline, worked together to develop the timing of events and projects in the design studio and lecture class and the sequence of lectures, presentation and project. The initial objective for the professors was to define typical expectations of each discipline. A series of discussions of the project objectives, expected outcomes, and schedules was necessary to develop the learning applications for the semester. Collaboration was challenging for the students and for the inter-disciplinary teaching team as well.

All project phases required student team work and a predefined deliverable which was presented verbally and visually to all other teams, professors, and invited fire-

men, librarians, design and construction management professionals. In multidisciplinary teams, members must not only understand the connections between separate disciplines, but also be able to visually communicate and recognize concepts and ideas. Graell-Colas. M, Gill C. (2009). Visual literacy in each discipline of the collaboration must be expected or addressed prior to any project assignment in a multi-disciplinary studio. The presentation included design proposals and construction budgets. Weekly critique sessions between professors and teams insured to guide the students in critical observations and feedback. Critique sessions included a Design Psychology exercise, focusing on the emotional and physiological responses to the built environment Figure 4). Invited guest speakers enriched the intended course concept of multi-disciplinary contributions to the process. There is evidence that these approaches promote student learning (Karsten, H.D., O.Connor, R.E. 2002).

RELEVANCE

Teaming skills are critical in the workplace of the build environment (Howes, 2000). The industry sees the importance of a multi-disciplinary team approach in developing successful projects. Multi-disciplinary design studio settings provide education to instill effective teaming skills and actively entrench collaborative techniques for problem solving and design solutions for students to succeed in their future careers.

REFERENCES (APA)

Howes, J. (2000). *Is working together working?* in Changing Architectural Education: Towards a new professionalism, Ed. By David Nicol and Simon Pitting, London: E& FN SPON 128-135

Horgen et al (1999) Excellence by Design: Transforming Workplace and Work Practice. London: Wiley

Graell-Colas. M, Gill C. (2008). *Visual Literacy Across Disciplines: Visualization Tools for Generating and Communicating Information in Multidisciplinary Teams*, Proceedings of the fifth International Conference of Learning, Chicago Illinois

Karsten, H.D., O.Connor, R.E. (2002*). Lessons Learned from Teaching an Interdisciplinary Undergraduate Course on Sustainable Agriculture Science and Policy,* Journal of Natural. Resource. Life Science. Education., Vol. 31, 2002, 111-116

Figure 1: Fires station presentation board

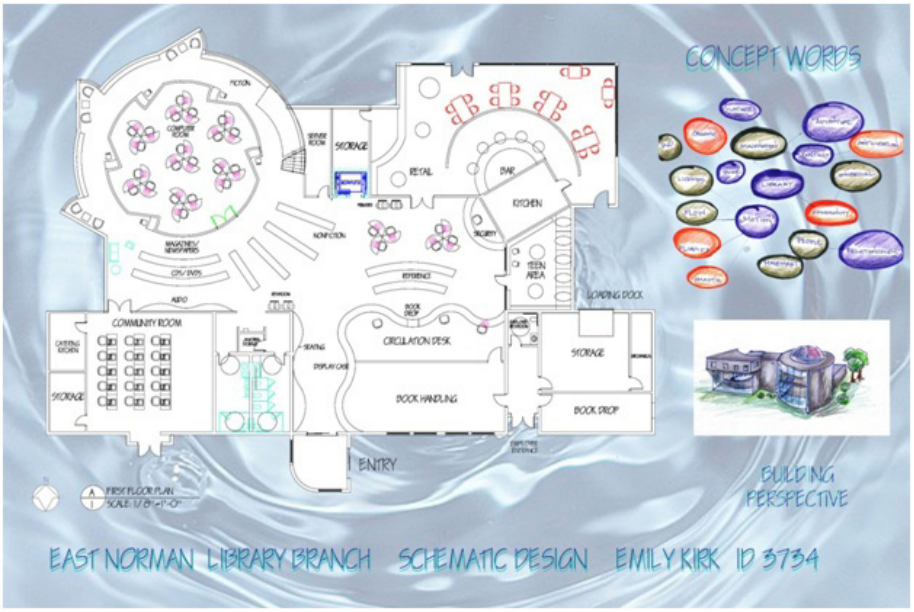

Figure 2: Library schematic review board

RSMeans QuickCost Estimator

Project Title:	Norman Public Library New Branch
Model:	Library
Construction:	Face Brick with Concrete Block Back-up / R/Conc. Frame
Location:	OKLAHOMA CITY, OK
Stories:	2
Story Height (l.f.):	14
Floor Area (s.f.):	18,060
Data Release:	Year 2009 Quarter 1
Wage Rate:	Union
Basement:	Not included

Costs are derived from a building model with basic components. Scope differences and market conditions can cause costs to vary significantly.

Cost Ranges	Low	Med	High
Total:	$1,430,100	$1,589,000	$1,986,250
Contractor's Overhead & Profit:	$357,750	$397,500	$496,875
Architectural Fees:	$143,100	$159,000	$198,750
Total Building Cost:	**$1,930,950**	**$2,145,500**	**$2,681,875**

Do You Need a More Comprehensive Estimate With Current Cost Data and Your Own Detailed Project Specifications?

Access the Custom Cost Estimator, a paid subscription service, to reference a comprehensive library of square foot models updated and localized for the United States to create a customized online estimate specific to your individual project! - **All from RSMeans, *The Industry Source!***

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Figure 3: Life Cycle Cost Exercise

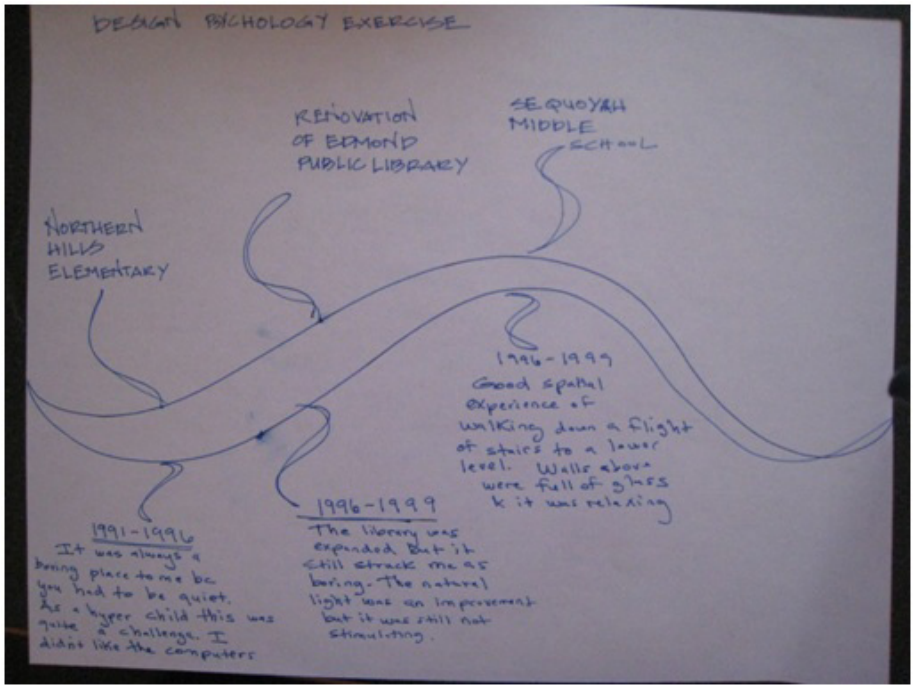

Figure 4: Design Psychology Exercise

POSTERS:
SCHOLARSHIP

Building a community in a cultural district as a medium for creating intimacy and social affiliation with interiors; case study of the Ames train depot as a community building

KYOUNGMEE BYUN / CIGDEM AKKURT
Iowa State University

ABSTRACT

This study addresses the potential value of an interdisciplinary dialogue between environmental psychology and interior design. It addresses the importance of creating intimacy and social affiliation within a building as part of the project revitalizing a cultural district.

Revitalization of cultural districts is profitable for society and also provides better public environments. It offers inherent opportunities for addressing matters of ecology and economy. However, the primary function of many downtown areas has shifted from exclusively economic purposes to a broader range of social- and community-related purposes (Brooks, 1995, 14-29). Therefore, Main Street programs which tend to emphasize superficial appearance may be falling short of potential success by undervaluing building interiors.

"Melody is like seeing someone for the first time, physical attraction; sex. But then, as you get to know the person, that's lyrics; their story; who they are underneath. It is the combination of two that makes it magic…" (Marc Lawrence, 2007, Music & Lyrics)

With this metaphor, good community spaces for people contain their story within them - intimacy and social affiliation. Also, it is widely accepted that interior design is one of the most personal and human-scale of the design disciplines, and community space is for interaction between people, making it fitting to study. As such, the interior is at the scale at which concern for quality of life and human interaction are most important; how the spatial arrangement of persons, as dictated by environment, affects affiliation is worthy of greater attention.

Through this study, the theoretical framework will be constructed based on literature review of environmental psychology about how to create a community space for interaction, intimacy and social affiliation with reference to Approach-Avoidance Behavior and Place attachment. Also linkage between environmental psychology and interior design in terms of creating community building for interaction, intimacy and social affiliation among the persons will be presented through the analysis of a case study, Ames train depot as a place of community in Iowa.

NARRATIVE

ISSUE

Revitalization of cultural districts, or downtown areas, is profitable for society and also provides better public environments. It offers inherent opportunities for addressing matters of ecology and economy. A study of downtown revitalization strategies shows that the use of historic preservation, enhancement of the visual qualities of Main Street, and business diversification have helped to stimulate the economies of downtowns of large cities. Despite the overwhelming literature on downtowns, however, research findings and derivative policies have been based primarily on the experience of large urban areas such as Seattle, Los Angeles, and New York City. Yet majority of the U.S. population lives in small urban areas (Michael, 2001). There have been numerous failed downtown areas that have followed revitalization strategies fitted to large urban areas. Therefore, small urban areas need revitalization strategies suited to small urban areas.

While downtown areas in large U.S. cities are growing, a significant number of downtown areas in small U.S. cities are declining. “The most often (73.3 percent) reported factor contributing to declines of small urban areas is “competition from neighboring large retail centers.” ” (Michael, 2001). Malls or shopping centers have been constructed according to many of the principles and formulas stated in the “Community Builders Handbook”, but they have failed to create a “community”. The mall may offer a pleasant diversion in the best sense that malls can, but it is not a community. As Oldenburg said, “Not just a shopping center where people come to buy one sheet, one shirt, or one shoe, but a place where lingering, staying ,dawdling, socializing are a way of life.” (Oldenburg, 1999). Thus the primary function of many downtown areas has shifted from exclusively economic purposes to a broader range of social- and community-related purposes (Brooks, 1995, 14-29).

Social reformers and planners all too usually disregard the importance of neutral ground and the kinds of relationships, interactions and activities to which it plays host (Oldenburg, 1999). However, it is a positive aspect of small town life that the third place, which is a term used in the concept of community building to refer to social surroundings separated from the two usual social environments of home and the workplace, fosters in the larger urban context. An interest in people and their infinite capacity to amuse and to be familiar with one another is nurtured where personalities are freed from purpose and allowed free play with one another. Downtowns are eager to revive their origins, yet, downtown areas are missing the most important feature – a true place of community. Therefore, Main Street programs that tend to emphasize superficial appearance may be falling short of potential success by undervaluing building interiors for community.

“Melody is like seeing someone for the first time, physical attractions; sex. But then, as you get to know the person, that’s lyrics; their story; who they are underneath. It is the combination of two that makes it magic…” (Marc Lawrene, 2007. Music $ Lyrics).

With this metaphor, good community spaces for people contain their story within them – intimacy and social affiliation. Also, it is widely accepted that interior design is one of the most personal and human-scale of the design disciplines, and community space is for interaction between people, making it fitting to study. As such, the interior is at the scale at which concern for quality of life and human interaction are most important; how the physical aspects of the environment affect liking among the persons within it and how the spatial arrangement of persons, as dictated by the environment, affects affiliation.

PURPOSE STATEMENT

The purpose of this study is to address the merits of creating a community space for people with the goal of promoting intimacy and social affiliation as the platform for the discussion of interdisciplinary approach between environmental psychology and interior design, and the potential of revitalization of downtown in small urban areas by building a community. This particular study will focus on constructing a theoretical framework, which is a design guideline; how to create community with interiors based on human emotions and behaviors towards physical settings, so that not only can designers and students efficiently create community buildings for people, but they can also suggest new insight in research fields to scholars in interior design research.

This study will apply the findings in community building design processes, and propose design solutions for creating community as a social gathering place through

analysis of an existing former railroad depot for a third place. The Main Street Station located in the downtown of Ames, Iowa will be used as the case study based on the proposed framework.

LITERATURE REVIEW

This study will address the basic human emotional dimensions such as pleasure, arousal and dominance with the Approach and Avoidance Theory.

However, due to the unavailability of literature on the social and psychological studies of place, and lack of literature on the design of social gathering places, the review of literature will focus primarily on studies of Place attachment, especially community attachment, to convey the importance of sense of belonging and sense of community.

APPROACH-AVOIDANCE THEORY:

Albert defined Approach-Avoidance theory is a behavioral outcome of emotions induced by environmental stimuli. The behavioral reactions of people to all environments fall into the two categories of Approach and Avoidance. The concept of Approach-Avoidance is defined in a broad sense to include physical movement toward, or away from, an environment or stimulus, displayed as the degree of attention, exploration, favorable attitudes such as verbally or nonverbally expressed preference or liking, approach to a task(the level of performance), and approach to another persons(affiliation) (Albert, 1974).

Affiliation, in particular, is an approach behavior and is effected by mutual exchanges of positive social cues. Since affiliative behavior is a main factor in social interactions, the most important effects of environments on social behavior may be considered in terms of how environments improve positive feelings and the communications of these feelings among the persons with them.

PLACE ATTACHMENT:

Altman stated “Place attachment is the symbolic relationship formed by people giving culturally shared emotional /affective meaning to a particular space or piece of land that provides the basis for the individual’s and group’s understanding of and relation to the environment.” Plate attachment refers to the idea that people develop special bonds with certain settings that hold deep meaning to the individual (Altman & Low, 1992).

Community is “a complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and on-going socialization processes.” Two types of community have been classified: community of interest, where members are connected through lifestyle and common interests, and community of place, where members are connected through geographical location. Communities of interest are not always place-bonding, for example, in the case of online, professional, or religious groups that are connected without a tangible place, and so this term is not fitting to Place attachment. Community of place describes the social tie rooted in places such as neighborhoods, coffee shops, or other spaces that support social interaction (Leila Scannell,Robert Gifford,2009)

Social gathering places that have the potential to enhance a community have been called third places, and these contribute to Place attachment with better understanding of person-environment relationship. (Lisa Waxman, 2006)

IMPLICATION

Through this study, linkage between environmental psychology and interior design in terms of creating community building for interaction, intimacy and social affiliation among the persons will be presented through the analysis of a case study: Ames train depot as the third place. Also, it will be beneficial to revitalize cultural districts with the shift from economic purposes to social- and community-related purposes. The study will discuss the outcomes from analysis, and pros and cons of it in design. The theoretical framework could be adapted to other settings in the design field by using its merits. Finally, the rationale of making a community area for human interaction is a significant aspect of design and the influences in interior space will be addressed.

REFERENCE LIST (APA)

Albert Mehrabian and James A. Russell. (1974). *An approach to environmental psychology.* Cambridge.M.I.T.Press.

Irwin Altman & Setha M.Low. (1992). *Place attachment.* New York:Plenum Press.

Leila Scannell,Robert Gifford. (2009). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology*. 1-10

Lisa Waxman.(2006). The coffee shop: Social and physical factors influencing Place Attachment. *Journal of Interior Design*. Vol31,No3,35-53

Liz Glotzer.Martin Shafer.(Producer),& Marc Lawrence(Director).(2007). Music and Lyrics[Warner Bros].United States.

Michael A.Burayidi.(2001*). Downtowns; revitalizing the centers of small urban communities.* New York:Routledge.

Ray Oldenburg. (1999). *The great good place: cafes, coffee shops, bookstores, bars, hair salons, and other hangouts at the heart of a community*. New York: Marlowe

Rusty Books and Cindy Searcy. (1995, November-December). Downtowns in Georgia: Where are we and what do we know?. *Small town* .26, 14-29.

The Effects of the Physical, Social, and Organizational Environments in Creating Homelike Characteristics for Assisted Living Facilities

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ABSTRACT

Home is not only a physical shelter, but also has psychological significance and social meaning. Home provides people who reside in it a sense of security, privacy, organization, comfort, and independence, and facilitates social interactions with family and friends while integrating memories, images, desires, and fears (Leith, 2006). Home is a major variable physically, socially, and psychologically in the lives of older people (Leith, 2006). As a result, 86% of older individuals want to age in place and remain independent. Unfortunately, many seniors will need to leave conventional housing and move to long-term care due to mental or physical health problems or the loss of family members. Most seniors who move to these facilities do not feel at home in their new living arrangements. In response to this need, assisted living facilities (ALFs) have dominated new construction for seniors due to their advertised residential appeal (Cutchin, Owen, & Chang, 2003). The major goal of assisted living is to create a supportive social setting that residents can call home. Although assisted living is the fastest growing long-term care alternative (Cutchin et al., 2003), Schwarz (1999) and Imamoglu (2007) suggest that residents may not feel at home in these facilities despite efforts to create a homelike ambience. Based on the previous work by Kim (2002), the purpose of this study was to examine the variables that make residents feel at home in two ALFs by investigating the physical, social, and organizational environments to determine whether homelike elements were applied across the three domains. Data collection consisted of interviews with administrators, observations and photo journaling, and document review. Each facility was designed to provide a single-family home imagery from the exterior (i.e., the physical environment), while the interior spaces embodied the ideas of: safety and security, autonomy and privacy, independence, comfort and warmth and personalization (see Figures 1 and 2). However, the older the structure, the fewer homelike features were provided. Most of the residents seem to have close relationships with the staff. The staff's attitude and behavior and availability of friends and family greatly influenced the residents' feeling of home, thus supporting the importance of the social environment in creating a residential space. Even though both facilities implemented supportive social environments, communal group living can be at odds with autonomy by creating undesirable social settings (e.g., no privacy when family visits, interacting with individuals you do not know, and feeling lonely). The administrators in both facilities tried to make the residents feel at home, yet the limitations in providing a true residential ambience included: resident diversity and the organizational environment. The rules and regulations that guide group living (e.g., standard meal times) are often at odds with creating control, independence, and autonomy which are closely associated with residential living. Moreover, resident perception of "home" can vary greatly as we all have different connotations of what a true home entails.

NARRATIVE

"It is often said that the value and meaning of a civilization can be determined from the record it leaves in the form of architecture and that the true measure of the compassion and civility of a society lies in how well it treats its frail older people" (Regnier, 2002, p.1).

The number of older people in the United States is growing. To illustrate, the oldest old (i.e., those individuals over the age of 85) represented 3.5 million Americans in 1994 or 1% of the U.S. population. By 2020, this group is estimated to reach 7 million and will double by 2040 as the baby boomers continue to age (U.S. Department of Commerce, 2002). These demographics present many challenges to interior designers who are faced with designing environments that will meet the needs of an aging population susceptible to both normal and pathological age-related changes. In response to these needs, the long-term care industry has grown tremendously, and estimates are that the number of elderly needing long-term care will double to 14 million over the next two decades (Cutchin, Chang, & Owen, 2005). For the past few years, assisted living facilities have dominated new construction of housing for seniors (Cutchin et al., 2005; Cutchin et al., 2003). Indeed, one-third of all facilities that call themselves "assisted living" have been in business for five or fewer years, and 60% have been in operation for ten or fewer years (Hawes, Rose, & Phillips, 1999).

Baby boomers are now seeking assisted living facilities not only for the available services, but also for the homelike ambience they claim to provide. "Homelike" can be defined as the attachment a person has to a place, which includes the interplay of emotions, beliefs, behaviors, and self esteem (Frank, 1999). The style of furniture, flooring, accessories, memorabilia, and color of the walls to reflect a homelike environment are very personal and defined individually. Thus, the relocation of an older individual during their final years to an assisted living facility is a challenge to interior designers because they must accommodate homelike features that appeal to the elderly population as a whole. Yet, older individuals who move into long-term care facilities do not feel at home in their new living arrangement. Frequently, the cause for this discomfort is the disconnect between the physical environment of the long-term care facility and the older adult's former home (Frank, 1999; Zavotka & Teaford, 1997). Home is a place where our identity continually evolves through connections with the past. The physical environment plays a very important role because it enables us to materialize our memory through association with places and events. Memories whether good or bad reflected in the home environment help to create our experiences of home, and those experiences in turn help to preserve, evoke, and even revise memory.

While creating a residential imagery is still a critical part of the long-term care environment, few studies have examined the complete picture of homelike. To illustrate, Zavotka and Teaford (1997) limited their study to furnishings (e.g., styles, colors, and accessories) used in shared spaces and found a mismatch between the ALFs notion of home (e.g., formal, hospitality in appearance) versus the older individuals idea of a home (e.g., informal, personalized, eclectic). Marsden and Kaplan (1999) studied the homelike attributes of exterior facades for ALFs, but did not examine how interior space influences homelike ambience. In both of these studies, only the physical environment was examined. The social and organizational environments were not considered. Imamoglu (2007) investigated how ALFs were represented in terms of their "visual and verbal attributes" in comparison to the residential home and nursing home (p. 246). Subjects were shown photos of exteriors and interiors of ALFs and nursing homes and asked to describe them in terms of their hominess. ALFs in this study fell between residential homes and nursing homes on the hominess scale. Again, this study focused on the physical environment and did not examine the organizational or social environments.

As noted by Cutchin et al. (2005), growth of assisted living facilities has exploded, but research on this housing type is still in its infancy. And as stated by Frank (1999), despite efforts to create increasingly residential architecture, many residents still do not call these facilities home. Thus, the purpose of this study was to examine the variables that make residents feel at home in assisted living facilities (ALFs). Two facilities were compared in relationship to their physical, social, and organizational environments. Due to the qualitative nature of this study, several forms of data collection were used. First, the administrator at each ALF was interviewed to gain a history along with background information concerning the facility (e.g., age of the facility, number of residents, philosophy, services provided, activity programs, mission statement, and operational issues). Next, observa-

tions were conducted in order to evaluate the physical and social environments. Photographs were taken of the exterior and interior of the buildings and a Home Evaluation Instrument (Pastalan et al., 1993) was used as a guide in order to measure homelike attributes for the physical environment. Observations of interaction patterns among residents and staff were also recorded. Last, a document review of both ALFs including their mission statements, brochures, and resident handbooks were evaluated to provide information regarding the organizational environment.

PHYSICAL ENVIRONMENT

Overall both sites presented homelike features, yet Facility A seemed more successful in conveying homelike attributes. For example, the interior environment throughout had more spatial variety, interest, and character. The resident rooms, hallways, and public spaces were designed using architectural features such as baseboards, crown molding, chair rails, wainscots, sky lights, fire places, and window mullions that are closely associated with the aspects of familiar, single-family home architecture. Facility B certainly attempted to provide a homelike setting, but the majority of their design features were decorative applications such as wallpaper borders, wreaths, and flowers rather then the permanent architectural interest found at Facility A.

Both facilities created the opportunity for personalization (see Figure 1). Residents were encouraged to bring items from home and displays of photographs, artwork, books, and other personal belongings were clearly seen in the resident rooms at both facilities. Yet, the public spaces did not seem to advocate this same degree of personalization (see Figure 2). Although the public spaces at Facility A created links to the familiar through homelike, architectural features, there was a formality associated with these spaces that may not be conducive to the home of the older individual (Zavotka & Teaford, 1997). As noted by Eshelman and Evans (2002), interior designers should view the challenge of designing to “support the expression of individual preferences” (p. 7), and the goal should be to create areas within spaces that will accommodate personal possessions.

SOCIAL ENVIRONMENT

In both facilities, interaction between residents, staff, and family members was highly encouraged. Nonetheless, a large part of what makes people comfortable in their environment is the people around them. In their own homes, individuals know their roles and can choose whom they live with. While it may seem that residents would be pleased to have companions of their own age, this is often not the case. In both Facility A and B, interaction among residents and the use of organized social activities was minimal. Residents were often seen watching television or sleeping. There did not seem to be much meaningful use of time, and most residents were likely to spend time in their private rooms or engaged in informal activities such as playing cards or reading.

ORGANIZATIONAL ENVIRONMENT

The enforcement of rules and regulations in order to ensure a smooth operation of the facility creates a tension for the residents between notions of home and institution. To illustrate, both of these facilities had meal times scheduled at certain times of the day. Thus, the freedom to eat when one desires to eat is lost in these facilities. The administrators often discussed the abundance of organized activities provided at the facility as a way to enhance independence and build self-esteem. However, it is important to consider age-appropriate activities that encourage a sense of community. Moreover, activities should be scheduled for enhanced resident flexibility.

While this qualitative case study yielded interesting results, the research was limited to two facilities. In the future, additional research should be conducted to include a larger variety of facilities. This investigation relied heavily on observation, photo journaling, and document review. As we continue to study homelike attributes, it will be vitally important to not only interview staff and administrators, but to also talk with the residents who live in these facilities. How do they define home? Do they believe the public spaces in their particular facility are homelike? Last, it might also be interesting to interview family members. Often, family is involved in the decision to place a loved one in a group-living arrangement. How this decision-making process is made needs to be better understood.

Figure 1.

- Resident's have personalized the walls of their rooms in both facilities.
- Lighting is scarce in this facility.
- The wall, ceiling, and floor plane are institutional. Use of white walls, white ceiling plane is more closely associated with a hospital environment.
- Although the room is personalized by the resident, without the personal items, the space does little to convey a sense of home.
- Illustrates the unique, personalization found in the resident room that enhances the hominess found in the physical environment.

Figure 2.

- The lighting is fluorescent and ceiling mounted which conveys a hospital appearance.
- Seating for 4 creates familiarity and is homelike.
- Wall sconces add residential appearance and create a sense of interest, variety, and stimulation.
- No eclectic or personalized items brought from home. This leads to a hospitality appearance. Space does not appear lived in.

REFERENCE LIST (APA)

Cutchin, M. P., Chang, P. J., & Owen, S. V. (2005). Expanding our understanding of the assisted living experience. *Journal of Housing for the Elderly, 19*(1), 5-22.

Cutchin, M. P., Owen, S. V., & Chang, P. J. (2003). Becoming "at home" in assisted

living residences: Exploring place integration processes. *Journal of Gerontology: Social Sciences, 58B*(4), S234-S243.

Eshelman, E. P., & Evans, W. G. (2002). Home again: Environmental predictors of place attachment and self-esteem for new retirement community residents. *Journal of Interior Design, 28*(1), 1-19.

Frank, J. (1999). I live here, but it's not my home: Residents' experiences in assisted living. In B. Schwarz & R. Brent (Eds.), *Aging, autonomy, and architecture:*

Advances in assisted living, 166-182. Baltimore, MD: The Johns Hopkins University Press.

Hawes, C., Rose, M., & Phillips, C. (1999). *A national study for assisted living for the*

frail elderly, executive summary: Results of a national survey of facilities.

Beachwood, OH: Myers Research Institute [Executive Summary and Full

Report].

Imamoglu, C. (2007). Assisted living as a new place schema: A comparison with homes and nursing homes. *Environment and Behavior, 39*(2), 246-268

Kim, Y. (2002). *Assisted living facility as a home: Cases in southwest Virginia, 64-09.* Dissertation, Virginia Tech: Blacksburg, VA.

Leith, K. H. (2006). "Home is where the heart is or is it?" A phenomenological exploration of the meaning of home for older women in congregate housing. *Journal of Aging Studies, 20,* 317-333

Marsden, J. P., & Kaplan, R. (1999). Communicating homeyness from the outside: Elderly people's perceptions of assisted living. In B. Schwarz & R. Brent (Eds.), *Aging, autonomy, and architecture: Advances in assisted living,* 207-228. Baltimore, MD: The Johns Hopkins University Press.

Pastalan, L., Jones, V., Schwarz, B., Sekulski, R., & Struble, L. M. (1993). *Homelike attributes of dementia special care units.* National Center for Housing and Living Arrangements for Older Americans. Ann Arbor, MI: University of Michigan College of Architecture and Urban Planning.

Regnier, R. (2002). *Design for assisted living: Guidelines for housing the physically and mentally frail.* NY: John Wiley & Sons.

Schwarz, B. (1999). Assisted living: An evolving place type. In B. Schwarz & R. Brent (Eds.), *Aging, autonomy, and architecture: Advances in assisted living*, 185-206. Baltimore, MD: The John Hopkins University Press.

U.S. Department of Commerce (2002, March). *An aging world 2001.* UN Department of Public Information, DP/2264.

Zavotka, L. S., & Teaford, H. M. (1997). The design of shared social spaces in assisted living residences for older adults. *Journal of Interior Design, 23*(2), 2-16.

The Symbolist Aesthetic: Exploring Charles Rennie Mackintosh's Creation of Spatial Narratives in the Modern Interior

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ABSTRACT

PURPOSE

This study explores the correlation between 19th century Symbolist literature and Charles Rennie Mackintosh's creation of spatial narratives through the use of forest imagery in the modern interior. The influence of Symbolist literature on art and design, particularly the Glasgow Movement, was a product of the widespread revolt against convention inspired by mid-nineteenth century writers and critics, such as Charles Baudelaire (Howarth, 1953). In what could be considered the preliminary manifesto for the Symbolist movement, "Correspondences," Charles Baudelaire (1963) initiates symbolic context for nature and the forest motif:

> *"Nature is a temple in which living pillars*
> *Sometimes emit confused words;*
> *Man crosses it through forests of symbols*
> *That observe him with familiar glances. (p. 26)"*

Although there is no evidence of the direct influence of Baudelaire's writings on Mackintosh's work, a word and image analysis of Mackintosh's visual imagery and Baudelaire's poetic works reveal the presence of Symbolist philosophy in Mackintosh's art and design.

FRAMEWORK

In this study, Mackintosh's two-dimensional work is explored as the foundation for Mackintosh's integration of Symbolist concepts into visual media. The development of the forest imagery into more spatial schemata and functional form are explored through the development of Mackintosh's artistic works as narratives with emphasis on the creative process. A semiotic analysis of Baudelaire's 1860 poem titled "Chacun a Chimere" exposes the use of forest imagery for its spiritual and mystical qualities, presence of Baudelaire's theory of double consciousness, and the referential structure that emphasizes the subjective act of narration, concepts visually illustrated in Mackintosh's 1895 watercolor "The Tree of Personal Effort, the Sun of Indifference."

Throughout Mackintosh's career the use of narrative imagery was utilized and developed from two-dimensional media into engaging spatial configurations that transcended conventional relationships of the occupant to the interior environment. In designs for the modern interior, Mackintosh incorporates a subjective narrative that engages the occupant to reference the designer's creation of the space. In this study, evidence of Mackintosh's spatial narratives and use of forest imagery are addressed in two interior environments; Hill House and the Glasgow School of Art Library.

SUMMARY

During his lifetime, Mackintosh was able to boldly incorporate the subjective content of his visual art into the form of architectural and interior designs in a way that furthers the discourse on the Symbolist aesthetic and its contribution to Modernism. In the poster presentation, examples of Mackintosh's work will be presented as photographic images, along with diagrammatic analyses to illustrate the presence of Symbolist semiotic functions within Mackintosh's visual media and spatial imagery. The purpose of the presentation is to engage participants in the discourse on narrative spatial imagery and the role of Symbolism in creating the modern interior.

NARRATIVE

PURPOSE

This study explores the correlation between 19th century Symbolist literature and Charles Rennie Mackintosh's creation of spatial narratives through the use of forest imagery in the modern interior. The influence of Symbolist literature on art and design, particularly during the Glasgow Movement, is a product of the widespread revolt against convention inspired by mid-nineteenth century writers and critics, such as Charles Baudelaire (Howarth, 1953). In what could be considered the preliminary manifesto for the Symbolist movement, "Correspondences," Charles Baudelaire (1857) initiates symbolic context for nature and the forest motif:

> *"Nature is a temple in which living pillars*
> *Sometimes emit confused words;*
> *Man crosses it through forests of symbols*
> *That observe him with familiar glances. (p. 26)"*

The symbolic context of the forest motif is further signified by the spiritual and mystical qualities of art in the writings of Symbolist playwright, Maurice Maeterlinck. Mackintosh, who was known to have admired Maeterlinck's work, emphasized the spiritual qualities of forest imagery in his visual and spatial media. During his affiliation with "The Spook School," Mackintosh's two dimensional works began to explore connections between nature and spiritualism in ways that transcended conventional aesthetics. Mackintosh's stylized depiction and treatment of natural forms communicated as much about Mackintosh himself, as it did about the images depicted. The narrative imagery provided clues to Mackintosh's own subjective interpretation to what Maeterlinck coined as the "mystical destiny" of the arts. In addition, Mackintosh's work demonstrated the strong connection between the artist and the art. In a criticism of theater, Maeterlinck addressed the significance of the artist's presence within the work by stating that the "… poem is an ensemble of words so extraordinary that the presence of the poet is forever chained to it…" (as cited in Dorra, 1996, p.146). It is the presence of the poet that is the content of the work, a distinction that further distances Mackintosh's work from conventional architectural models.

PROCESS

The symbolic context of forest imagery in both Symbolist literature and Mackintosh's visual media is explored through a comparison of semiotic functions of symbolist prose and Mackintosh's 1895 watercolor "The Tree of Personal Effort the Sun of Indifference." The painting is one of many artistic works completed by Mackintosh during this time period that used a tree as the dominant symbol. One remarkable characteristic about the painting is Mackintosh's visual balance of architectural structuralism and organic curvilinear line. The simultaneous representation of opposing meanings is a Symbolist concept spelled out in Baudelaire's theory of double consciousness, and a reoccurring theme of Mackintosh's work, particularly with regards to the juxtaposition of masculine and feminine qualities in applied design and interior space.

Parallels between Mackintosh's "Tree of Personal Effort the Sun of Indifference" and Charles Baudelaire's poem "Chacun a Chimere" emphasize the use of opposing meanings, as well as the use of narrative imagery in both text and visual media. In Baudelaire's poem, the narrator is a man of indifference, and the interaction between the narrator and the chimera carriers is driven by the opposition between the meaning of indifference and that of hope. Even the chimera carriers themselves embody the opposing images of resignation and hope: "… they walked with the resigned look of men condemned to hope forever" (as cited in Frey, 1996, p. 109).

The narrative format of the text also demonstrates a semiotic function visually illustrated in "The Tree of Personal Effort the Sun of Indifference." The tensions between opposing concepts is never reconciled in either work, leaving the meaning of the oppositions of indifference and hope, and personal effort and indifference, as questions for the reader and viewer. The lack of reconciliation suggests that the imagery exists outside its representation; it exists through the act of its representation (Frey, 1996). The narrative as presented in both Baudelaire's poem and Mackintosh's painting depicts the artists themselves as essential components of the imagery depicted. By including his own experience of creating the work, Mackintosh has broken bonds with products of imitation, which merely recreate presupposed ideas to engage in what Baudelaire defined as "acts of imagination." The self-referential structure of the painting leads anyone in search of its meaningful content to the act of its being created. The meaning is found in the image's signification.

The referential structure of Mackintosh's visual narratives and use of forest imagery are also present in Mackintosh's interior environments. Hill House, one of Mackintosh's most notorious residential designs, uses narrative imagery to engage the occupant in a mysterious transition space that references both the designer and the occupant. The intermediate space between exterior and interior in the Hill House foyer depicts connections between public and private space and masculine and feminine qualities as well. In opposition to the massive, masculine exterior, the interior of Hill House is dream-like, idealist, and characteristically feminine (McKean, 1996). The entrance to the foyer acts as a gate to a private inner world which is gradually revealed as the occupant enters the space. The passing of two portcullis-like barriers, a two foot threshold, and overall mood of the space may give occupants the sense that they are in a wooded forest about to enter upon a palely lit clearing. Through dark vertical slats of timber, the occupant may notice the hidden, shadowy seat under the upper stair from which his entrance may have been observed. Upon further entry, the occupant would likely notice the suspended tungsten lamps that glow through pink and white glass to cast peculiar orange and pink shadows onto the ceiling and walls, adding to the air of mystery. In the Hill House interior, Mackintosh engages the occupant to reference the imagery as created by Mackintosh in a way that differs from occupant's conventional relationships with space.

In Mackintosh's later works, increasing use of grid patterns and structural detail dominates his interior spatial designs, and minimize the presence of ornamental decoration and curvilinear line. S in Mackintosh's work, however, is the use of forest imagery and the presence of Baudelaire's theory of double consciousness. The Glasgow School of Art library is an example of Mackintosh's incorporation of forest motifs into functional elements. The wagon chamfered poles and vertical wooden beams for example, contribute to the overall forest imagery and evoke qualities of mystery, rhythm, and color that reference Mackintosh within the design. The thirteen pendant lamps create a pool of light which, in addition to the natural light entering form the long vertical windows, creates the effect of being in a forest clearing. The effects of Mackintosh's configuration of space and structural ornament are still expressive in that they are unique to Mackintosh's vision of architecture and fully embody the forest motif and the spiritual power of nature.

SUMMARY

Charles Rennie Mackintosh is one of the most intriguing figures in architectural history because his contributions to the Modern Movement are constantly being reconsidered (Wilhide, 1995). Since the time Mackintosh's work was reintroduced by historians in the mid 20th century, he has been categorized as the most important precursor to the Modern Movement for the purity, structural integrity, and practical functionalism of his interiors (Wilhide, 1995). Other classifications of Mackintosh's work have placed him within the context of the Arts and Crafts Movement, and more popularly, as a northern manifestation of Art Nouveau. The primary contribution of Mackintosh's work to Modernism, however, may not be in its form, but in the process Mackintosh used to interject dissatisfaction with conventional models through the use of narrative imagery. In designs for the Modern interior, Mackintosh has incorporated his own subjective narrative in a way that transcends conventional relationships between occupants and space and furthers the discourse on the Symbolist aesthetic and its contribution to Modernism.

REFERENCE LIST (APA)

Baudelaire, C. (1963). *Flowers of evil and other works*. (W. Fowlie, Trans.) New York: Dover. (Original work published 1857).

Dorra, H. (1994). *Symbolist art theories: A critical anthology*. Berkley: University of California Press, Ltd.

Frey, H. (1996). *Studies in poetic discourse*. Stanford: Stanford University Press.

Howarth, T. (1953). *Charles Rennie Mackintosh and the Modern Movement*. New York: Wittenborn Publications Inc.

McKean, J. (1996). "The Hill House" in *Charles Rennie Mackintosh*. New York: Glasgow Museums. (pp. 175-199).

Wilhide, E. (1995). *The Mackintosh style: Design and décor*. San Francisco: Chronicle Books.

Contemporary Relevance of Traditional Internal Courtyard in Urban Indian Housing

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ABSTRACT

Housing of any culture is an invaluable physical document and an instrument to interpret and understand people's cultural, historical and socio-economic values of any given context. Particularly, traditional Indian housing reflects social, religious and cultural believes rooted-in for generations. During last few decades, housing culture in India has been experiencing drastic changes in the contemporary society of globalization. Modernization and globalization have had both positive and negative impact on Indian housing design. Soaring land values resulted from lack of space in metropolitan cities has brought in new trends. Modern technological intervention and consumer driven marketing in Indian housing industry have provided utilization convenience in vast multi-family housing. However, it has also brought a tradition-modernity confusion making it difficult to indentify Indian housing within a 'cultural context'. Modern housing design is aiming at adapting to new ideas, new trends in lifestyle but functional efficiency and the cultural context of the design is often neglected which lead to the disappearance of cultural icons. This article focuses on the importance of 'context-sensitivity' in blending modern ideas and cultural relevance in housing design and how Architecture can still be a reflection of self and establish one's identity.

Architectural contexts in multi-family Indian housing in three different time periods - 1970, 1980 and 2000 focusing on the relevance of internal courtyard were analyzed to investigate how Courtyard did manifest itself as the ultimate cultural icon and how gradually it has lost its identity and why it is important to revive it in modern housing design. This case study illustrates the cultural values and symbolic images of cultural identity embedded in the traditional Indian Courtyard - which has emerged from the climatic, socio-cultural and habitual needs of the users. This poster also attempts to rediscover and to revive the one Cultural and Architectural 'icon' that distinguishes Indian housing from those of other cultures and that are applicable in the contemporary urban contexts. The presentation would be in two page graphic poster - 3'x4' format.

The study found that the characteristics of the Indian courtyard are associated with the socio-cultural practices of Indians (despite the technological intervention) from their social gatherings, religious rituals to day-to-day chores like cooking. It is observed that the socio-cultural and habitual needs and identities of Urban Indian context are not comprehensively addressed. The study of multi-family housing in the year 2000 reveals that modern housing design has not yet completely explored the possibility of reviving and incorporating the traditional internal courtyard in the modern urban context - to meet the challenge of maintaining architectural identity, which is being lost in the era of globalization. Very few unsuccessful attempts were made but there is ample possibility to incorporate the traditional internal courtyard which it is being neglected for reasons like space constraint which could have been solved efficiently. Identifying, accepting and addressing the social significance and functional relevance of cultural icons like internal courtyard in housing design is the need of the contemporary times.

NARRATIVE

MANIFESTATION OF COURTYARD IN INDIAN HOUSING:

In Vastu shastra (traditional Hindu system of design) courtyard is considered as 'Brahmasthala' - soul of the house. Apart from being the structural core, it is also truly the soul of the house. From simple daily chores to religious rituals and festivals, courtyard is used as the socio-cultural center. In this paper I intend to focus on the socio-cultural and habitual needs, as a response to which courtyard has manifested in Indian housing.

SOCIO-CULTURAL SCENARIOS:

PRIVATE 'OPEN SPACE' FOR FEMALES OF THE FAMILY:

From cultural stand point, providing privacy to the females of the family had been an important factor in designing a house. An outdoor space inside the house which provides enough privacy to the females of the family is a crucial factor in design. Courtyard emerged as the desired outdoor space inside the house. Females of the family sit in and around the courtyard and the arcades from morning to evening, doing the daily chores like cooking, washing, preparing, gossiping, knitting etc.

RELIGIOUS RITUALS AND FESTIVALS:

Performing religious rituals on special occasions like festivals with all the members of the family is a practice in India. Religious rituals usually take place with offerings to Fire God and also Sun, is considered as an important witness. To perform such rituals, a huge internal open space is required to be able to see the sun and also for the smoke to escape. Courtyard, located in the center of the house has been an ideal solution. The smoke and the hot air released are escaped by stack effect and while the ritual taking place, guests and other members of the family would witness the ritual, being on the periphery in the shaded corridor.

Extension to Kitchen: Traditionally courtyard acts as a spill-out area for kitchen. Courtyard is used to solarize spices, sometimes for cooking and on special occasions as dining area and the 'open' space helps the pungent smell to escape the house while cooking.

Children play area: Usually courtyards are planted with plants and trees which make it a nice shady, safe-playing area for children. Children play in courtyards under the supervision of elders.

From the said socio-cultural and habitual scenarios, emerged cultural icons in and around the Courtyard. Cultural icons are instrumental in interpreting and understanding a society's cultural, historical, socio-economic values. They provide 'Cultural Identity' to Architecture. Few such icons are the following:

Rangoli (Graffiti): Rangoli is a traditional art of decorating homes especially thresholds, courtyards & Prayer rooms. Traditional medium is rice floor and flowers are used on special occasions. Women folk of a family get together in the mornings to decorate thresholds and courtyards with elaborate designs of rangoli. On special occasions, women folk of entire neighborhood get together to decorate common courtyards and streets with rangoli. The colorful tradition of Rangoli acted as a chief link in bringing together women in a family/neighborhood for social gatherings, entertainment and ritual performances.

Tulsi (Indian Basil): Tulsi is an important icon in traditional Hindu homes. Tulsi plant is considered holy and is worshipped by Hindus. Tulsi plant is usually located in the centre of the courtyard.

Solarizing Spices: Spices are the important ingredients in Indian cooking. Traditionally, Courtyard is used to solarize spices. Colorful spices beautifully spread across the courtyard in summers are a visual feast.

DISAPPEARANCE OF COURTYARD IN INDIAN HOUSING:

Globalization and modernization has positive and negative impact on architecture especially on housing design. Globalization and space constraint in metropolitan cities has brought a new trend for high-rise structures. Soaring land values have forced people to go for compact building designs. To optimize the space, apartment housing concept has taken over independent housing. Modern housing design is aiming at adapting to new ideas, new trends in lifestyle but functional efficiency and the cultural context of the design is often neglected which lead to the disappearance of cultural icons that includes internal courtyard.

CASE STUDIES:

A detailed study of multi-family Indian housing with

courtyards in three different time periods - 1970, 1980 and 2000 focusing on the relevance of internal courtyard is done to understand how contemporary Architects tried to incorporate traditional courtyard in modern Indian housing.

FRENCH EMBASSY STAFF QUARTERS, NEW DELHI, INDIA

Building type: Three storied Apartment building

Year: 1967

Architect: Raj Rewal

This project is a housing facility for the service personnel of the French Embassy. An honest attempt was made to merge traditional elements into modern housing. The Courtyard was taken as the focal point in planning each unit, each of which was eventually provided with a private courtyard. Since it is apartment housing and the courtyard is meant to be a 'private space' for the users, the location of the courtyard is slightly shifted off the axis but the functions associated with it have remained the same. The desired relation of the Courtyard with the living and the bedroom is still maintained.

KANCHANJUNGA, MUMBAI, INDIA

Building type: Residential Apartment building

Year: 1970-1983

Architect: Charles Correa

The project is a very good example of an adaptation of modernism to a non-western culture. The objective seems to be exploring the possibility of providing a voice to a vernacular icon juxtaposing it with modern environment. The design of the building is modern, yet very much rooted in the culture of the location, where it is built. The concept of traditional Courtyard is adapted to the demands of modern urban housing, compromising with neither of the same. The location of the Courtyard is shifted from the centre to the boundary and the relationship of the living with the Courtyard and that of the Courtyard with the bedroom being still maintained. The Courtyard can still act as the traditional spill-out area for the living-room. And the most striking feature is the double height volume of the Courtyard's going with the 'outdoor room' concept of the traditional Courtyard.

SPACE STATION I, HYDERABAD

Building type: High rise residential gated community

Year: 2008

Developer: Aliens Developers Pvt. Ltd.

This project called Space Station I is one of the seminal high-rise structures in the city of Hyderabad designed by SMC Alsop for Aliens Developers Pvt. Ltd., is a very good example of the adaptation of the concept of Courtyards at a macro level. Instead of breaking units into different towers, all the units were spread in one S-shaped block. This shape also facilitated two bigger pockets of courtyards so that every unit has something of interest to view.

The designers were making a sincere attempt to incorporate the concept of Common Courtyard, but it could be achieved only at the macro level. The relationship between the exteriors and the interiors through courtyard could be achieved but the characteristic of the Courtyard that would address the privacy issue - courtyard as a private area for the residents, a private outdoor room with visual privacy - was missing.

REFLECTION:

The study found that the characteristics of the Indian courtyard are associated with the socio-cultural practices of Indians (despite the technological intervention) from their social gatherings, religious rituals to day-to-day chores like cooking. It is observed that the socio-cultural and habitual needs and identities of Urban Indian context are not comprehensively addressed.

Most Urban Indian dwellers today do feel the need for a small porch (semi-public space) at the entrance, particularly when an unexpected guest knocks the door. Traditionally, courtyard acted as an entrance porch. Inviting extended family and friends to homes on special occasions is still a part of Indian culture and with the disappearance of courtyard urban dwellers feel the lack of a semi-public space in the house. And, in a typical Indian context, food preparation is still considered a ritual and the Courtyard, where herbs and spices are planted, is more often than not is used as an extension to the kitchen, and the 'open' courtyard often would clear off the pungent smell, emanated, of spices, when cooking is in progress. Most of the urban Indians, today, feel the

need for a more private kitchen, when guests are entertained for the said reason. In modern urban neighborhoods, children find too little space to play and urban parents feel the need for a more open space within the house where children can play.

Modern housing design has not yet completely explored the possibility of reviving and incorporating the traditional internal courtyard in the modern urban context - to meet the challenge of maintaining architectural identity, which is being lost in the era of globalization. Few attempts are made but were not completely successful. I believe that there is an ample possibility of incorporating the traditional courtyard but it is being neglected for reasons like space constraint which could have been solved efficiently like the examples of housing design 20 years ago. There is a need for these socio-cultural issues to be embraced and solved by modern designers and courtyard could be an ideal solution.

REFERENCES (CHICAGO)

Derne, Steve. “The (limited) effect of cultural globalization in India: implications for cultural theory.” *Poetics* 33 (2005): 33–47.

Das, N. “Courtyards Houses of Kolkata: Bioclimatic, Typological and Socio-Cultural Study.” M.Arch. diss., Kansas State University, 2006.

Dhattiwala, Raheel. “Modern houses are courting courtyards.” *Times of India,* June 16, 2007, Cities section, Ahmadabad edition.

Gupta, Smita. “Vastu Shilpa Shastra: The Ancient Indian bio climatically responsive science of building.” Paper presented at Solar conference, 1999.

Low Energy Architecture Research Unit of the London Metropolitan University. “Cool built forms-The Design/Planning Dilemma of Courtyards”

Charles Correa Associates. http://www.charlescorrea.net/ (accessed May 15, 2009).

Raj Rewal Associates. http://www.rajrewal.in/projects/housing-french-emb.htm (accessed May 15, 2009

Aliens Group Pvt. Ltd. http://aliensgroup.in/html/ss1.html (accessed June 5, 2009)

The Articulation of Sustainability: A New Beauty?

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ABSTRACT

Beauty has been maligned as an empty concept despite the fact that philosophers, artists and critics have attempted definition for millennia. From the proportions of Pythagoras to the sublime of Kant and the irreverence of Hickey, seldom has a single concept served as a perpetually contentious and motivating idea. Beauty's attributes, whether sensorial, perceptual, emotional, or experiential, serve as a *zeitgeist* or the spirit of an age. Embedded in and defined by its culture, beauty is ever-changeable and ever-elusive.

With the popularization of sustainability, a new aesthetic – the aesthetic of the sustainable – and the articulation of a new value system must be defined. Critics, creators, and consumers must answer the following questions: What are the criteria for evaluation of beauty within this new system and what are the goals of the evaluation? What is the recognized image of the sustainable and how does that image relate to the ideology of the industries producing that image, the ideology of the critics of the image and the ideology of the public/users of the image?

Sustainability requires a shift in visualization of the beautiful not from the "high" to the "low", not from the decorative to practical, or from the representation of an object to the mechanics of representation but, alternately, from functional to systemic. The purpose of this poster is to summarize major theories of beauty before the 18th century (e.g., Plato, Aristotle, Kant) as well as those more contemporary (e.g., Definist, Nondefinist) and their transformation from objective to subjective pleasure and evaluation. Further, salient mechanisms for evaluation will be identified within each genre. From this analysis, criteria for evaluation will proposed and an operationalized construct of beauty embedded in today's sustainability context will be presented for debate.

NARRATIVE

In our contemporary culture, "sustainability" is a term that has moved into common usage even though a definition of the term has not yet been universally accepted. As methods of implementing sustainable practices or designing (and using) sustainable objects are refined, criteria for describing and evaluating these practices and objects must be articulated. These criteria are the foundation of an aesthetic of the sustainable and defining them requires relating existing descriptive and evaluative concepts to the ideas and situations of sustainable design. Beauty is a particularly appropriate medium for according to Monroe C. Beardsley, throughout its history beauty has always embodied both descriptive and appraisive elements: it has been used both to characterize works of art or nature and to judge them.[1]

For millennia, philosophers, artists, designers, and critics have attempted to define beauty: Pythagoras's proportions, Kant's sublime, Heidegger's unconcealment of Truth, Hickey's irreverence. Seldom has a concept central to the creation of, understanding of, and experiencing of music, art or designed objects, served as a perpetually contentious and yet motivating idea. Defined and/or used differently in different contexts, the idea of beauty seems ever-changeable, ever elusive, and yet ever of interest, in spite of the fact that many in the latter twentieth century rejected the idea all together. For a selection of theories we will identify the intellectual context within which they occurred, identify their major tenants and then propose mechanisms by which these tenants might be used as descriptive and evaluative tools in articulating the emerging aesthetic of the sustainable.

DEFINING SUSTAINABILITY

Before the influences that historical concepts of beauty have on the aesthetic of the sustainable can be interpreted, sustainability itself must first be described. "Meeting the needs of the present without compromising the ability of future generations to meet their own needs"[2] served as an initial definition, expanded as per McDonough and Braugnart to be less human-centric by changing 'future generations' to 'all parts of nature.'[3] In an effort to bring a wider audience to the table, the concept of the triple bottom line, people, planet, and profit, has been integrated into the discourse, thereby bringing not only the environmentalists to the table, but also business entities of all sizes.'[4]

THEORIES OF BEAUTY

Beardsley suggests that the history of beauty is best conceived not as the history of a single concept but as the history of a *term* designating a cluster of concepts.[5] He sorts the main works on beauty in the twentieth century into four categories: philosophical analysis, phenomenology, psychological responses and sociocultural context. The theories of beauty used here were chosen because they provide particular clarity or mark a shift in meaning.[6]

PHILOSOPHICAL ANALYSIS

The philosophical analysis of beauty is about the elucidation of the concept itself and is the foundation of our intellectual history. The juxtaposition of concept-object-experience(r) is created by the philosopher to reveal and argue for the tenants of the concept; to determine whether or not the concept is related to a specific object or is more universal and how and why it is or isn't; to determine whether the concept is inherent in an object or in external knowledge applied in an experience of the object; to determine the criteria for finding it or not finding it. Significant contributions include:

Plato: Beauty as harmony and proportion between the parts (derived from Pythagoras); Beauty as splendor.[7]

Plotinus: Hierarchy of beauty above the physical, culminating in the Forms themselves.

Kant: Beautiful vs. Sublime where the sublime is without boundaries.

Hume: The shift from objective to subjective where beauty exists merely in the mind.

PHENOMENOLOGY

The phenomenological interpretation of beauty is concerned with the specific characteristics of experience itself. Critical to this perspective is the premise that extraneous preconceptions or references must be excluded. Delineating the discrete differences within a range of experiences is a critical phenomenological question. Significant contributions include:

Heidegger: In works of art, truths are "unconcealed" and beauty is one of the ways that this unconcealment happens.

Hofstadter: Beauty is the central aesthetic phenomenon, the appearance of the truth of being.

PSYCHOLOGICAL RESPONSE

The scientific method has allowed the analysis of human response to specific principles and elements in visual, musical, and verbal works. This analysis has revealed which objects a particular category of people call beautiful and, more helpfully, this approach has facilitated an understanding of preference. Significant contributions include:

Empathy Theory: When the empathic response is highly unified and uninhibited, beauty is experienced.

C.W. Valentine: The appreciation of beauty is not the same as the enjoyment of pleasure.

SOCIOCULTURAL CONTEXT

Sociological and anthropological investigations reveal two principles with regard to beauty. First, there is a unique human experience that influences the perception of beauty. It is not a high style developed solely for the sake of beauty but is the "secular and ceremonial life" that serves as an opportunity to satisfy human desire for beauty. Second, that while the objects created to satisfy a desire for beauty can be unique within a cultural context, there is a broader, more universal understanding of beauty that is cross-cultural even though specific criteria might differ. Significant contributions include:

Adolf S. Tomars: The phenomena of art are those referred to in making the judgment "this is beautiful."

Melville J. Herskovits: Beauty as an abstraction is so deep in human experience that it is a cultural universal.

Firth, Chold, Soroto, etc.: A significant cross-cultural convergence in standards of beauty exist even if some standards are applied in one culture and not in another.

CONCLUSION

Design critic Alice Rawsthorne suggests that designers have been schooled in an object-referenced rather than systemic-referenced design process. [8] Therefore, the design community is challenged to develop an aesthetic that embodies the values of systemic thinking in object forms that reflect an interplay of creator, object, user of object and the intellect evaluating all of these. Defining sustainability suggests a shift that moves the basic intentions of design from object-making to system-making, from object-reference to system-reference. Sustainable design is, therefore, about designing an object that functions within a system, and the abstract, intangible relationships among system components and among systems of systems must first be articulated before that object is given form.

This shift towards systemic thinking requires the placement of value on invisible ideals first and then on tangible object forms, requiring the "location" of the object within a system of values before the object itself is conceived and its potential forms imagined, created, evaluated. One such value is beauty.

Christopher Hawthorne, architecture critic for the *Los Angeles Times*, recounts his interview with Bill Browning concerning green design. Browning, senior fellow at the Rocky Mountain Institute and a fellow of the American Institute of Architects, suggested that "green architects…. focus on a formal language that won't scare off corporate America."[9] This illustrates a formalist philosophical bias towards beauty, and while a formal aesthetic may or may not be desirable, Browning affirms the need to establish a place for beauty within the sustainable aesthetic.

REFERENCE LIST (CHICAGO)

1 Munroe C. Beardsley, “Theories of Beauty Since the Mid-Nineteenth Century.” *The Dictionary of the History of Ideas (2003),* http://etext.virginia.edu/cgi-local/DHI/dhiana.cgi?id=dv1-29 (accessed September 30, 2009).

2 World Commission on Environment and Development, “*Our Common Future*,” London: Oxford University Press, 1987.

3 William McDonough and Michael Braungart, *The Hannover Principles: Design for Sustainability* (William McDonough & Partners, Charlottesville, Virginia, 1992), 4. Available online: http://www.mcdonough.com/principles.pdf.

4 John Elkington, “Towards the sustainable corporation: Win-win-win business strategies for sustainable development.” *California Management Review* 36, no. 2 (1994): 90-100.

5 Beardsley, 234.

6 A succinct summary of theories of beauty along with specific examples has been provided in the following references. The examples used in this paper were derived from these sources unless otherwise noted. Munroe C. Beardsley, “Theories of Beauty Since the Mid-Nineteenth Century.” *The Dictionary of the History of Ideas (2003),* http://etext.virginia.edu/cgi-local/DHI/dhiana.cgi?id=dv1-29 (accessed September 30, 2009); and Dieckmann, H. “Theories of Beauty to the Mid-Nineteenth Century.” *The Dictionary of the History of Ideas*, *(2003),* http://etext.virginia.edu/cgi-local/DHI/dhiana.cgi?id=dv1-29 (accessed September 30, 2009).

7 Umberto Eco, editor, *History of Beauty*, translated by Alastair McEwen (New York: Rizzoli, 2004): 48-51.

8 *Objectified*, DVD, directed by Gary Hustwit (2009, Plexifilm). Interview with Alice Rawsthorne.

9 Christopher Hawthorne, “The Case for a Green Aesthetic,” *Metropolis Magazine* (Oct, 2001). Available at http://www.metropolismag.com/html/content_1001/grn/index.html.

Library Renovation: Designing to Accommodate Multiple Intelligences and Learning Styles

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ABSTRACT

The purpose of this research was to inform the design of a K-8th grade library design utilizing Gardner's theory of multiple intelligences and student learning styles as a basis for design decisions. Gardner identified seven intelligences: Interactive/Kinesthetic, Visual/Spatial, Verbal/Linguistic, Logical/Mathematical, Musical/Rhythmic, Intrapersonal, and Interpersonal. Individuals are likely to have varying strengths in these areas. Gardner (1999) stresses that possessing these various intelligences is not good or bad and that any intelligence can be put to constructive or destructive use. The challenge is how best to take advantage of "the uniqueness conferred on us as a species exhibiting several intelligences" (Gardner, 1999, p. 45).

An existing K-8th grade library in Key West Florida was chosen as the proposed site for the renovation. Multiple Intelligences (Gardner, 1993), brain-based learning (Akinsanmi; Dunn & Dunn, 1992)), current library design trends (Waxman, Clemons, Banning, McElfresh, 2007; Brown, 2002), and student scale (Brown, 2002) were factors that influenced design decisions. Decisions regarding space allocations, adjacencies, lighting, furniture, and finish materials were carefully considered based on the findings. The final design includes collaborative spaces, individual study areas, interactive areas, presentation areas, age-specific areas, meeting areas, and state-of-the-art technological equipment (See Figures 1-5). The open plan also allows librarians to change the layout as the needs of the users (and technology) change. The final design offers students the opportunity to independently, confidently, and comfortably use the proposed library space.

NARRATIVE

PURPOSE

The purpose of this research was to inform the renovation plan of a K-8th grade library design utilizing Gardner's theory of multiple intelligences and student learning styles as a basis for design decisions.

BACKGROUND

Howard Gardner theorized that it is the fusion of the multiple intelligences inherent in individuals that determines their success in problem solving (Gardner, 1993; 2006). In his description of multiple intelligences, Gardner identified seven intelligences: Interactive/Kinesthetic, Visual/Spatial, Verbal/Linguistic, Logical/Mathematical, Musical/Rhythmic, Intrapersonal, and Interpersonal. Individuals are likely to have varying strengths in these areas. Gardner (1999) stresses that possessing these various intelligences is not good or bad and that any intelligence can be put to constructive or destructive use. The challenge is how best to take advantage of "the uniqueness conferred on us as a species exhibiting several intelligences" (Gardner, 1999, p.45).

With the increased amount of information that can be accessed from the Internet, libraries have had to reinvent themselves to remain viable (Waxman, Clemons, Banning, & McElfresh, 2007). Libraries have moved from buildings that serve as a repository for books, to places where information can be accessed using a variety of methods. Research also revealed current trends in library design, which include the incorporation of technology, social areas, and cafés. Addressing these trends is important in meeting the needs of the millennial generation. Libraries are increasingly becoming gathering places for students and faculty resulting in changes in design. Lawsen (2004) stated, "They [libraries] each

welcome members of their particular communities regardless of age and economics status and provide them with access to information, services, and a responsive, usually safe environment" (p.126).

THE PROJECT

An existing K-8th grade library in Key West Florida was chosen as the proposed site for the renovation. Multiple Intelligences (Gardner, 1993), brain-based learning (Akinsanmi; Dunn & Dunn, 1992), current library design trends (Waxman, Clemons, Banning, McElfresh, 2007; Brown, 2002), and student scale (Brown, 2002) were factors that influenced design decisions. Decisions regarding space allocations, adjacencies, lighting, furniture, and finish materials were carefully considered based on the findings.

EXISTING SITE CONDITIONS

The existing library was located on the first floor of the main school building, and included 2,300 square feet. Adjacent rooms serve as the librarian's office, teachers' lounge, and storage space. The proposed design for the new library/media center provides more computer stations for students, as well as collaborative spaces for team projects, creative brainstorming, and interactive spaces to encourage independent learning.

PROPOSED LIBRARY SPATIAL NARRATIVE

The entry to the library begins in a breezeway directly accessible from the school's main entrance. The library can be entered through either of the two doors located on the east wall (See Figure 1-5). Both are immediately adjacent to the central circulation desk. Upon entry, views of the west wall include the central media area and a large expanse of jalousie windows. The light blue terrazzo flooring, which begins at the north entry door, will guide users to the middle school study and lounge areas, which are located near the northwest section of the library. Additionally, an immediate turn toward the north wall will provide access to tall wall-mounted book stacks and the collaborative/presentation spaces for middle school students. Glass marker boards, artwork, and a drop-down projection screen are also located on the east wall, and integrated into the collaborative/presentation space. This area could also be used by parents and faculty for meetings. Entry through the south door will also provide immediate views of the media center as well as the southwest section of the library, containing the elementary study area and librarian office.

Upon entering through the second main door of the library, a visitor will see the story area, theatrical play area, and interactive video room (See Figure 4). The dark navy blue carpeting defines the spaces that allow casual play and interaction between students. Carpeting for the story area begins at the south entry door and is continued into the librarian office located on the southwest corner of the library. This provides a visual guide from the south entry door to the librarian's office. The flooring in the library was applied strategically to provide appropriate, intuitive wayfinding throughout the space. Additionally, the flooring colors and materials help designate what activities take place in specific areas (e.g. terrazzo used in study areas, carpeting used in casual social areas).

The library collection can be found throughout the space on wall-mounted shelves and free-standing book stacks. High wall unit shelving was used in the middle school library collection area, while low-height wall shelving and low free-standing book stacks were used in all other areas of the library collection areas. The location and height of shelving and book stacks fulfills one of the library design goals, to make it a space that accommodates independent study and self-help. By combining reading and study areas with book stacks, the space appears more casual/comfortable and less academic. The book stacks also provide visual barriers and separation between areas such as middle school student areas and elementary school student areas. The furniture and fixture choices implemented in the library design allow clear sight lines throughout the space to enhance student safety. The central, focal points within the proposed library are the circulation desk and media center.

ACCOMMODATING MULTIPLE INTELLIGENCES AND LEARNING STYLES

A theory to action grid was created to delineate the design elements included in the proposed design and explain which intelligence it accommodates (See Table 1). Also, a table was created to highlight the specific design features recommended for each type of intelligence. This table also explains how the intelligence affects a students' learning and how the features will benefit the students. For example, students with a visual/spatial intelligence often create vivid, visual mental images and memories, and often think in terms of pictures. They benefit from maps, pictures, videos, movies, charts, graphs, puzzles, sketching, and painting. They also may

experience sensitivity to color, object scale, lighting, and spatial volume. In order to accommodate students with this intelligence, the scale of the space and ceiling height were designed to fit the needs of the young student users. The proposed open floor plan, window adjacencies, signage, wall art, and lighting were all incorporated into the proposed design to enhance the visual environment, aesthetics, and functionality of the library. Also the flooring material and color as well as the ceiling treatment were designed to create a clear division of spaces within the library (e.g. student study areas and casual areas).

Each space in the library is identified in a diagrammed floor plan through assigned colors isolating the location and title of each designates area. To explain the theory to action research, each diagram illustrates the type of intelligences that would benefit from various design features and explains how students would benefit. For example, the interactive video space provides an ideal environment for video projections (visual/spatial), encourages student interaction (interpersonal), can project games or mathematical puzzles (logical/mathematical), and can project music or supposed audio displays (musical/rhythmic). The intelligence most accommodated and exercised within this space in *interactive/kinesthetic.*

This space also allows students to interact with information via multi-media equipment, and therefore accommodates millennial students. The ability to project large images enables faculty to teach or give presentations in this room. This provides the opportunity to stimulate field trips, and may even allow teachers to present information not typically accessible to students. The space is called the “growing room” because it provides a state-of-the-art, hands-on experiential learning environment. This promotes knowledge growth and allows an emotional connection, increasing the chances of permanent learning and information retention (brain-based learning).

Additionally, this space was created to encourage students to freely and independently interact with their environment. The flooring in the video room is resilient, comfortable, durable, and easy to clean and has a good acoustic value, making it appropriate for young student users. The space was designed to be a safe, lockable room, separate from the main library area. It was a goal to provide a space where students have the opportunity to experience the unique “hands-on” interactions that occur during field trips that may not be possible because Key West is an isolated island and traveling is costly and timely.

Table 4.1. K-8 Library Design Features to Accommodate Multiple Intelligences.

Types of Intelligence	How They Learn	Key Words	Design Features of the Library
Visual/ Spatial	They create vivid, visual mental images and memories. They also think in terms of pictures.	Easily interpret images Visually anticipating outcomes Maps, pictures, videos, movies, charts and graphs Puzzles, sketching, and painting Visual metaphors and analogies Easily recall colors, scale, and forms of objects	Appropriate Scale and Ceiling Height. Window adjacencies, open space plan. Blue in study areas and red in active area. Signage, wall art, and captions. Presentation glass marker board, video room, and projector/screen. Clear division of space: flooring material, ceiling height, and lighting. Combined natural and artificial lighting. Space for studying, reading.
Auditory/ Linguistic	They think in words rather than images. Generally have highly developed auditory skills and speak elegantly. They possess sensitivity to words and the organization and order of them.	Easily interpret spoken information Language, writing, listening, and speaking, storytelling, explaining, teaching Easily understand syntax, words, analyze language usage Memorize places, dates, names, and trivia, verbatim	Appropriate ceiling height, 2"x2" tiles, and carpet for acoustic control. Story-telling area and theatrical play area. Installation of audio equipment. Separation for older students for noise control. Tables for reading, writing. Presentation areas for guest or student speakers. Computers for language programs.
Logical/ Mathematical	They think conceptually in logical and numerical patterns, making connections between pieces of information. These individuals ask a lot of questions and enjoy experiments.	Solve complex mathematical calculations Abstract concepts of data, logical progression, and classify/categorize information Problem solving, controlled experiments, geometric shapes, pattern puzzles Physical objects: counting, qualifying, and ordering	Repetition of patterns, numbered material, logical space planning. Storage for puzzles, games, trivia. Intuitive wayfinding. Flexible space plan

Interactive/ Kinesthetic	They express themselves through movement and have a good sense of balance and hand-eye coordination. They remember and process information through interaction.	Interactive experiments Physical coordination, athletic ability, body language acting, miming, and craft projects Hand gestures to express emotions	Interactive multi-media video room, collaboration, group spaces. Theatrical play, story-area, large tables for crafts, reading, writing. Resilient flooring: carpet and rubber. Storage for games, puzzles. Presentation area and equipment. Self-help library. Flexible space plan and furniture.
Musical/ Rhythmic	They think in sounds, rhythms, and patterns. They immediately respond to music, either appreciating or criticizing it. They are also extremely sensitive to environmental sounds.	Structure of music and rhythms Sing, whistle, musical instruments Recognize tonal patterns, compose music, rhythmic pitch Affected by auditory deficiencies	Touch-screen jukebox, space for music collection, equipment for MP3 plug-ins, music wall art, installation of audio equipment. Theatrical play area.
Interpersonal	They see things from another's point of view in order to understand how they think and feel. They sense feelings, intentions, and motivations. They are organizers and try to maintain and encourage cooperation. They use both verbal and non-verbal language to communicate with others.	Understand feelings, perspectives of others and point of view Empathy, understand people's moods and feelings, counseling, listening, cooperative relationships, "social butterflies", adapt to social situation, leaders.	Open space: group collaboration/interaction. Lounge for socialization, large tables for group activity, carpeted reading area for peer counseling or discussions. Square and round tables for group work, meetings, and presentations. Story area for group play. Space for group computer use. Flexible space plan for spur of the moment collaborative ideas.
Intrapersonal	They tend to understand their inner feelings, strengths, weaknesses, and dreams.	Understand inner feelings and emotions, personal strengths, weaknesses, inner reflection understanding their role in relationships, strong willed, prefer to work alone, independent, work best in self-paced instruction, individualized projects.	Individual seating: stools, chairs. Independent study areas, individual computer space, enhanced acoustics for private study. Areas that encourage safe paced instruction, internal reflection. Blue colors to promote overall tranquil atmosphere.

DESIGN IMPLICATIONS

The final design includes collaborative spaces, individual study areas, interactive areas, presentation areas, age-specific areas, meeting areas, and state-of-the-art technological equipment (See Figure 1-5). The open plan also allows librarians to change the layout as the needs of the users (and technology) change. The final design offers students the opportunity to independently, confidently, and comfortably use the proposed library space. The proposed library renovation has the potential to help guide future school designers in applying educational theory to facility design to best accommodate student users.

REFERENCE LIST (APA)

Akinsanmi, B. (n.d.). *The Optimal Learning Environment: Learning Theories.* Retrieved March 15, 2009, from http://www.designshare.com/index.php/articles/the-optimal-learning-environment-learning-theories/

Brown, C. (2002). *Interior Design for Libraries: Drawing of Functional Appeal.* Chicago: American Library Association.

Dunn, R. & Dunn, K. (1992). *Teaching Elementary Students through their Individual Learning Styles: Practical Approaches for Grades 3-6.* Boston: Allyn & Bacon.

Gardner, H. (1993). *Frames of Mind: The Theory of Multiple Intelligences.* New York: Basic Books.

Gardner, H. (1999). *Intelligence Reframed: Multiple Intelligences for the 21st Century.* New York: Basic Books.

Gardner, H. (2006). *Multiple Intelligences: New Horizons in Theory and Practice.* New York: Basic Books.

Lawsen, K. (2004). Libraries in the USA as Traditional and Virtual “Third Places”, *New Library World*, 105 (1198/1999), 125-30.

Waxman, L., Clemons, S., Banning, J., & McElfresh, D. (2007). The library as place: Providing students with opportunities for socialization, relaxation, and restoration. *New Library World*, 108 (9/10), 424-434.

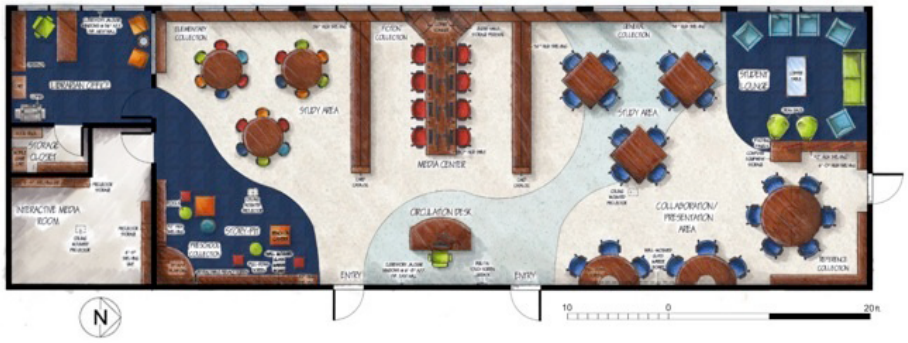

Figure 1: Library Floor Plan

Figure 2: View from Middle School Area to Front of Library

Figure 3: View of Middle School & Collaboration Area

Figure 4: View of Collaborative Area

Figure 5: View of Dramatic Play/Reading Area

The effects of music on creativity in the design process

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ABSTRACT

Designers in all disciplines live in a very visual world. Moreover, they live in a strong conceptual world, which is a precondition to any kind of development in the design process. From the perspective of cognitive psychology, the design process is driven by creative cognition. The organization of cognitive material is influenced by a number of environmental elements, including music. This study was set to examine the general hypothesis that music indirectly has an effect on creativity in the design process. The experiment was designed to examine possibilities in observing different levels of creativity in the final product. The study consisted of two phases. In both phases the participants were students of Interior Design, enrolled in the final year of their programs. The pilot experiment was carried out in the first phase for the purpose of examining theoretical assumptions and adequacy of the experiment's design. In addition, the pilot was essential for examining weaknesses and strengths of the main experiment's design and its procedures. The main experiment was conducted in the second phase. It was designed to have two sessions. In both sessions the participants were asked to solve a creative design task. In the first session, music stimuli were introduced to one half of the participants, while the other half was instructed not to listen to music. In the second session music stimuli were introduced to the other half, while the first half, this time, was instructed not to listen to music. Final design solutions from both sessions were then assessed using the Consensual Assessment Technique (CAT), a standard method for assessing creative products. The CAT was conducted in order to determine if there were differences in levels of creativity in the final design products. The intent of this study was to indicate a possible relationship between music listening during the design process and the design process itself, and to stimulate awareness for the role that creative cognition plays in the design process and how it reflects in the quality of the final design product.

NARRATIVE

INTRODUCTION: DESIGN PROCESS AND MUSIC

In the 1950s the design process was first designated as a cognitive process (Coley, Housman and Roy, 2007), it was not until three decades later that researchers realized the importance of this designation. Since then the number of studies on this issue has increased. Researchers wanted to understand designers' cognition processes. They were usually studying it in relation to creativity. For instance, recording and analyzing artifacts of cognitive processes (sketches and verbal protocols) helped researchers to determine whether traditional design media had advantages over digital. The researchers were also examining if the design process should be based on the development of a single solution or on a search for alternative solutions followed by selection. Researchers, examining designers' creativity, were consciously integrating psychological theories in their studies. Many design studies showed awareness for an approach to the study of creativity, called creative cognition (e.g., Heylighen, Deisz and Verstijnen, 2007).

The creative cognition approach, developed by Finke, Ward and Smith (1996), is widely accepted in the research community. The authors of creative cognition developed a model of "general theory of creativity" that relates cognitive processes and the resultant creative products. The model can provide an understanding of how creativity is expressed in a design. This model of creative cognition is called the Geneplore Model (Figure 1). According to the Geneplore Model there are two phases in the creative cognitive process: generative and exploratory. In the generative phase, based on mental images, a person constructs preinventive structures with its properties. The properties are then further examined in the exploratory phase where a person seeks to find meaningful ways for these properties. According to the authors of this model, the creative cognitive process starts when a cycling between the two phases begins, and it lasts until a person finds a satisfactory solution. Translating this knowledge to design context, designer's creative cognition starts with the cycling process. The outcome of the creative cognitive process is a creative product. In this study a creative product will be regarded as an artifact of the cognitive processes, thus it represents a central object for observation and examination.

Emotional states of being influence performance on cognitive tasks. Isen, Daubman and Nowicki (1987) examined the effects of positive mood on creative problem solving. The participants who were exposed to a few minutes of a comedy film showed improved performance, in contrast to those who were exposed to a depressing movie and failed to show improvements in creative performance. The authors concluded that state of being, in this case positive feelings, indeed had an effect on creative performance. This finding is supported with neuropsychological theory (Ashby, Isen and Turken, 1999) which suggests that many positive feelings are associated with increased brain dopamine levels. According to the authors, the theory assumes that creative problem solving is improved, in part, because increased dopamine releases in the anterior cingulate which improves cognitive flexibility and facilitates the selection of cognitive perspective.

Past studies suggest that music can produce different kinds of feelings for individuals who take part in music listening. The mood states following music listening are the results of an individual's unique past experiences. Essentially, state of being, influenced by music, is a result of individuals projecting their many past experiences of the tonal-rhythmic events presented in music. The state of being usually refers to a waking of emotions and relaxation. Stratton and Zalanowski (1984) reported a significant correlation between degree of relaxation and preference for music. Lesuik (2005) explored the influence of music on levels of creativity in performance. The author reported that the state anxiety level decreased when music was used prior to and throughout a creative task, and that state of being, positive feelings, and quality of work was lowest with no music.

Findings in the literature presented above leave room for speculation and development of a hypothesis that music can indirectly influence the design process. By influencing a designer's state of being, music causes emotional reactions or states of relaxation, which have effects on the way cognitive actions are organized and used. Since designers employ a number of cognitive actions in purpose of solving design problems, music indirectly influences "the way designers think" by improving creative problem solving and facilitating the selection of cognitive perspective. All this is expected to have an effect on the quality in the final design product (Figure 2). The final design product embodies qualitative dimensions that can be measured and demonstrated through different

levels of creativity.

METHOD: EXPERIMENT AND CREATIVITY ASSESSMENT

An experiment was designed for the purpose of examining the general hypothesis presented above. The goal was to learn whether it is possible to observe different levels of creativity in the final design product as a result of the music influence.

This study had two phases. In the first phase the pilot experiment was conducted (Figure 3). The pilot had two participants, interior design students, who worked on the task and produced the design products (Figure 4). One randomly selected participant was asked to listen to music, while the other one was asked not to. A panel of judges rated the design products. The pilot study was essential for the design of the main experiment, particularly in the area of participant selection, the design task, the creativity assessment and finally in overall experiment organization.

In the second phase, the main experiment was conducted within a classroom at the Interdisciplinary Design Institute, Washington State University. Participants were selected from the population of students from the Interior Design department. The experiment had two sessions. In the first session the participants worked for three hours solving the design task (Figure 5). Half of this group was asked to listen to music on their personal music players, while the other half was asked not to listen to music. The second session occurred after one week in which the participants worked for three hours on a slightly different design task. This time instruction for music listening was inverted.

Finke's (1995) creativity task was modified and adjusted to the current experiment. In the first session, a set of fifteen basic forms was given to the participants. The forms were divided into three groups, each consisting of five shapes. They were asked to select three shapes, one from each group. Afterwards, the participants were asked to create a piece of furniture by combining the selected forms. They had freedom in defining dimensions, proportions, duplication and in selecting materials. The selected forms were not allowed to be deformed in shape. In the second session, participants were asked to use the same shapes which they selected in the first phase. The design task was slightly changed - this time they were asked to design a different piece of furniture.

According to Purcell and Gero (1998) drawings are the visual display of the imagery. Drawings play a great role in the emergence of new ways of seeing the potential design. From a cognitive science perspective, Goel (1995) sees drawings as representations of the external symbol system. The author designates drawings as artifacts of the creative cognitive processes; in other words they are representations of a substantial shift from verbal to graphical information. Lawson (2004) as well thinks that drawings could be seen as a window into the designers' mind and their cognition system. This study will look more closely into the proposition drawings, the type designated by Lawson (2004). According to Lawson, the proposition drawings appear at the center of the design process. This is the point in the design process where a designer externalizes some features of the design situation in order to examine them in a more focused way. The proposition drawings encapsulate the idea. They can be useful for a designer in terms of conversation with the drawings as well as for proposing them in a more organized way to the other individuals interested in the design solution. In this study the proposition drawings, which emerged in the preliminary design phase, were regarded as a data source.

This study utilized The Consensual Assessment Technique (CAT) as a standard method for assessment of creative products. According to Amabile (1982), the CAT is grounded in a consensual definition of creativity, "A product or response is creative to the extent that appropriate observers independently agree it is creative. Appropriate observers are those familiar with the domain in which the product was created or the response articulated. Thus, creativity can be regarded as the quality of products or responses judged to be creative by appropriate observers, and it can also be regarded as the process by which something so judged is produced" (p.1001).

CONCLUSION

This text began by introducing the hypothesis that music has an effect on creativity in the design process. The hypothesis was examined by a complex set of actions through two phases. This study serves not simply to answer the hypothesis; it is there to stimulate interest for, and to contribute to, the knowledge about the structure of the creative mind and the environmental influences

on it; of which music is just one of them.

REFERENCE LIST (APA)

Amabile, T. M. (1982). Social psychology of creativity: a consensual assessment technique. *Journal of Personality and Social Psychology, 43(5), 997-1013.*

Ashby, F.G., Isen, A.M. & Turken, A. U. (1999). A neuropsychological theory of positive affect and its influence on cognition. *Psychological Review,* 106(3), 529-50.

Coley, F., Houseman, O., & Roy, R. (2007). An introduction to capturing and understanding the cognitive behavior of design engineers. *Journal of Engineering Design,* 18(4), 311-325.

Heylighen, A., Deisz, P., & Verstijnen, I.M. (2007). Less is more original? *Design Studies,* 28, 499-512.

Finke, R.A. (1990). *Creative imagery: Discoveries and Inventions in visualization.* New Jersey: Lawrence Erlbaum Associates.

Finke, R. A., Ward, T. B. & Smith, S. M. (1996). *Creative cognition: Theory, research, and application.* MIT Press, Cambridge: MA. Retrieved October 21, 2009, from NetLibrary database.

Goel, V. (1995). *Sketches of thought.* Cambridge, MA: The MIT Press.

Isen, A.M., Daubman, K.A., & Nowicki, G.P. (1987). Positive affect facilitates creative problem solving. *Journal of Personal and Social Psychology,* 52(6), 1122-1131.

Lawson, B. R. (2004). *What designers know.* London, Architectural Press.

Lesuik, T. (2005). The effects of music listening on work performance. *Psychology of Music,* 33(2), 173-191.

Purcell, A. T., & Gero, J. S. (1998). Drawings and the design process. *Design Studies,*19, 389-430.

Stratton, V.N., & Zalanowski, A.H. (1984). The relationship between music, degree of linking, and self-reported relaxation. *Journal of Music Therapy,* 21(4), 184-192.

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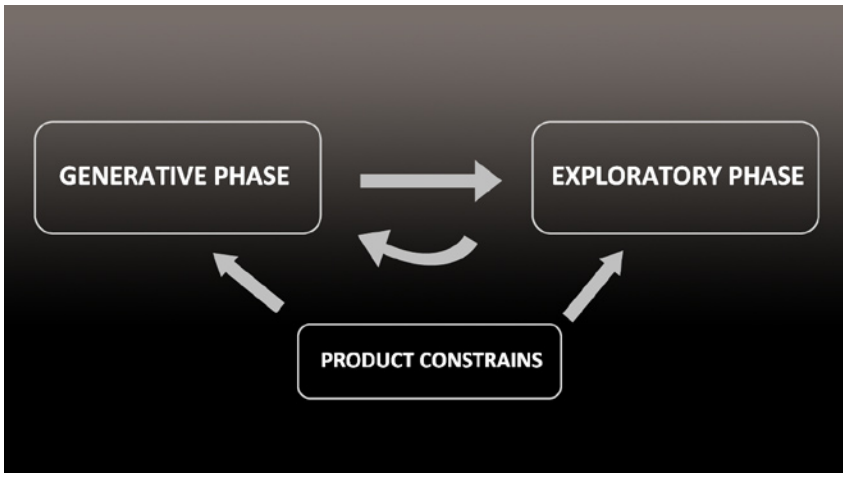


Figure 1: Geneplore Model

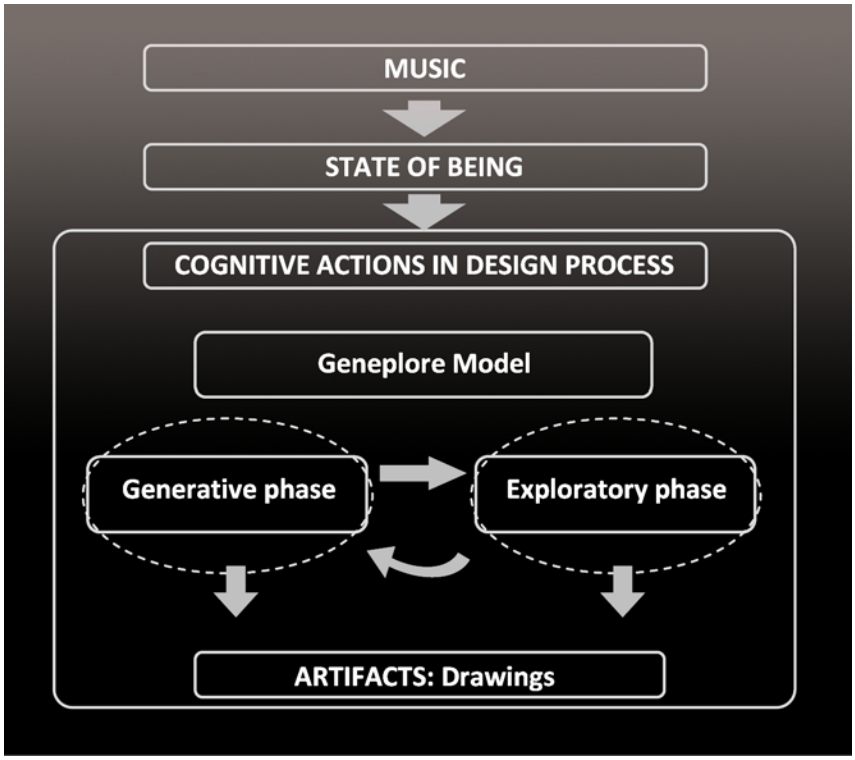


Figure 2: Structure of the study

Figure 3: Participants in the pilot study: Two interior design students

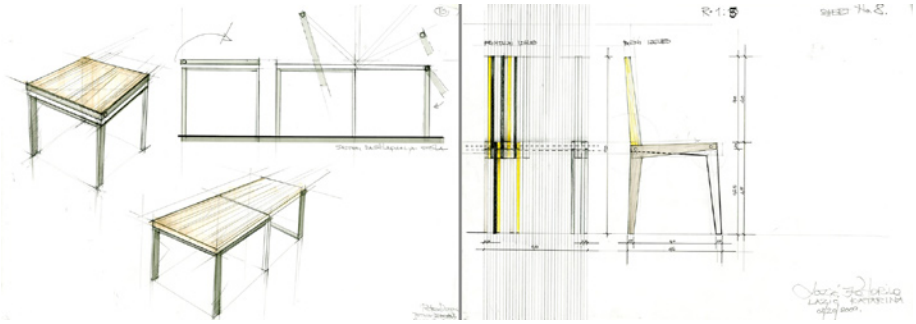


Figure 4: Pilot study: Final design solutions - left: music non-listener, right: music listener

WASHINGTON STATE UNIVERSITY

Interdisciplinary Design Institute

Spring 2010

Student name (printed): _____

YOU ARE KINDLY BEING ASKED *(NOT)* **TO LISTEN TO MUSIC DURING THE WHOLE SESSION**

DESIGN TASK:

Please select **three (3) forms** presented below by checking the boxes. Select one form from each group - **Group A, Group B, Group C**. Once your decision is made, you cannot change the selected forms.

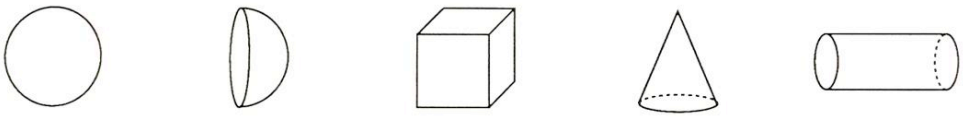
After the selection, use **all three forms** to design a **COFFEE TABLE** - a low table, usually placed in front of a sofa, for placing ashtrays, snack bowls, glasses etc. Your table should include space for storing magazines, etc. *[For 2nd session: a **BENCH** - a long seat for several persons, from two (2) or three (3) persons.]*

Dimensions of the coffee table should not exceed: **Length: 36" / Width: 36" / Height: 20".**

Finishing materials should be defined in the final design solution. Materials which you can assign are **wood, metal, glass, plastic** or **rubber**.

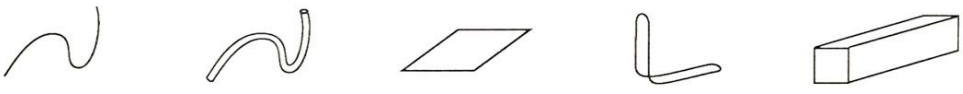
You can **change dimensions, proportions** or **repeat** your chosen forms. Any kind of **form deformation** is **not allowed** (except **wire** or **tube** in Group B).

GROUP A



SPHERE ☐ **HALF SPHERE** ☐ **CUBE** ☐ **CONE** ☐ **CYLINDER** ☐

GROUP B



WIRE ☐ **TUBE** ☐ **FLAT SQUARE** ☐ **BRACKET** ☐ **BLOCK** ☐

GROUP C

HOOK ☐ **WHEELS** ☐ **CROSS** ☐ **RING** ☐ **HANDLE** ☐

Figure 5: Design task

FORMAT: Your final design solution should be presented on **two 11x17 (13x19) format papers**. The papers should be positioned in **landscape, signed** and **dated**.

On the first paper (see Figure 1.) you should draw two to three orthographic views in **scale 1-1/2"=1'-0"; one (1) plan view** and **one** to **two (2) elevations** (depending on the design solution). Briefly describe your design solution on the bottom right corner of the paper (printed). On the second paper (see Figure 2), you should draw **one (1)** or **two (2) perspective views** (depending on the design solution) in two different positions. All drawings should be hand rendered.

UPON COMPLETION: Place your drawings (two 11x17 (13x19) format papers) and instruction sheet back in the envelope. The envelope should be submitted to the instructor.

DURATION: The duration of the session is **three (3) hours**. You are free to submit your completed work at anytime. After the submission, you are not allowed to return.

NOTE: During the session, you are not allowed to talk to other participants nor to the instructor regarding the design task or solution. Remember, this is a "design-on-your-own" assignment.

Figure1.

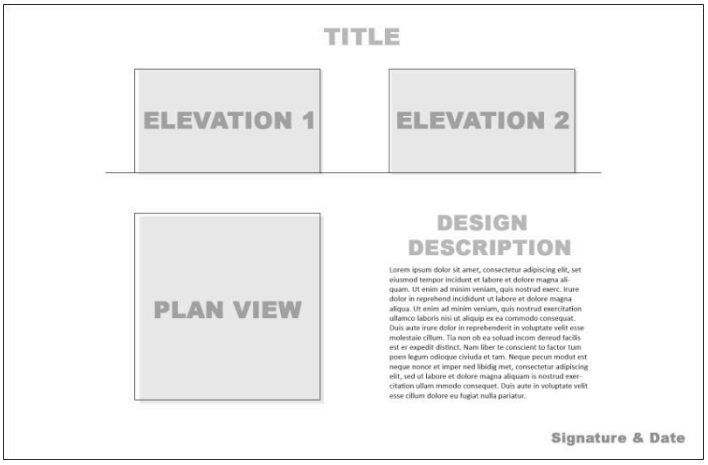
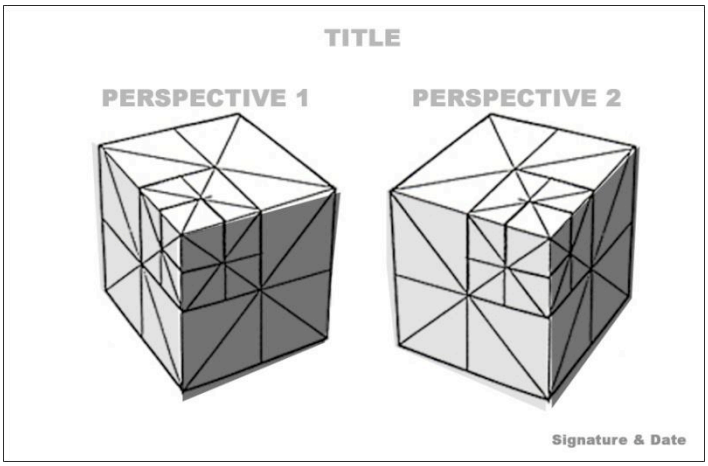


Figure 2.



YOUR PARTICIPATION IN THIS EXPERIMENT IS GREATLY APPRECIATED. THANK YOU.

Palestine revisited: An exploration of the cultural forces and identity that define the interior design of a Palestinian house.

MAY SAYRAFI / DR. JOHN TURPIN
Washington State University

ABSTRACT

There have been an increasing number of studies that focus on the cultural and social aspects that shape home environments and provide people with a meaningful place that communicates their identity. Many elements in the interior environment allow the occupants to construct bonds with their place of residence and to draw their identity from that place (Twigger-Ross & Uzzell, 1996; Fried, 2000). The purpose of this research is to establish design strategies for an interior of a contemporary Palestinian home that responds to the cultural and historical context of Palestine and reflects the identity of the occupants.

The Palestinian experience has been charged with a long and painful history of displacement due to the loss of the land and the home. Now, Palestinians live in a place that barely satisfies their basic needs of living. The home no longer speaks the silent language it once spoke in the past; it is an instant product rather than a process that reflects the values of the community and their dynamic identity. The lack of a clear identity in the architectural and design language has produced residential concrete blocks that force themselves on the ancient land (Bianca, 2000). The modern home in Palestine needs to acquire form and substance that will allow the occupants to claim this space as they struggle for statehood and a national identity.

This research responds to the current need in Palestine to design homes that support the identity and respond to the social needs of Palestinians. The method section of this study focuses on exploring the process of identity construction within the home environments by examining the cultural, social, historical, and political forces that shape the identity of the home (Rapoport, 2001).

The study took place in the city of Nablus in Palestine, and it included visiting and documenting twenty three homes in two different neighborhoods. The first neighborhood was in the old city of Nablus and it included historical residences from the Ottoman and Islamic periods. The second neighborhood was outside the old city and it included modern homes which were built during the British mandate and after the Israeli occupation.

The data was collected by conducting semi-structured interviews with the residents, photographing the interior elements of the home, and diagramming the spatial organization and circulation patterns of each house. The analysis of this information within the cultural and political context allows one to identify the core elements that define the culture and reinforces the identity of Palestinians. These elements can be used to bridge the principles of the traditional home with the current living patterns of the Palestinians. The appendix shows samples from the poster which demonstrates core elements from the historical and modern houses.

This study could lead to the development of a contemporary interior of the Palestinian house that reinterprets the past in a modern way, responds to the current needs of the community, and restores their identity. It also raises awareness regarding the historical interiors, and reveals how the historical interiors responded to social and functional needs in a more sensitive manner (Bianca, 2000; Ragette, 2003).

NARRATIVE

Home is no longer perceived as a static environment that only provides security and shelter to the occupants; there are other cultural and social forces which define the spatial and functional organizations of a home. In Palestine, the issue of the home became more significant as people started moving into modern residences that do not respond to their social and cultural needs. The Palestinian home needs to become a place that exceeds the physical boundary and becomes a sequence of experiences that define the identity and cultural patterns of the residents.

In order to reconnect people with their home and identity, it is important to explore the aspects that enhance the sense of belonging and allow people to express their identity in their home (Hidalgo & Hernandez, 2001). Understanding the process in which people construct relationships with their homes can help develop better homes that respond to the social, cultural, and historical context. The research question of this study is: What are the design elements and values that can create a meaningful home that supports the Palestinian identity and their current needs? The purpose of this study is to establish new design strategies for a contemporary interior of the Palestinian house that reinterprets the past in a modern way that responds to the current needs of the community and restores their identity and sense of place.

There are a number of significant studies that explore the home in the cultural and social context (Lawrence &Law, 1990; Rapoport 1969; Rapoport, 2001) .These studies indicate how the cultural practices, the social norms, and the historical meanings establish a sense of belonging to the home, and enable one to explore his/her identity in that place (Cuba & Hummon, 1993, Twigger-RossUzzell1996, Manzo, 2005, Hauge, & Kolstad, 2007). However, many of these studies focus on philosophical and phenomenological theories that support the cultural forces of the home. There remains a need for newer research regarding the cultural process itself and how it starts to formulate a clear identity for the occupants. More research is also needed to explore the non verbal communications present in the home environment, such as the symbolic expressions of the interior elements, and the range of experiences that could give meaning to the home. The range of experiences should include previous experiences in the place of residence, and also the negative and positive experiences in the home which contribute to the process of identity development.

The studies that focus on the Palestinian home reveal a clear gap between the traditional models of the Palestinian house and current residences (Bianca, 2000; Ragette, 2003). Many studies explore the changes of the traditional home and how the cultural, historical, and social forces gradually changed the character and identity of that home. There are only a few studies (Awad, 1999) that explore the architectural language and cultural expressions of the contemporary Palestinian house. Further research is needed in order to explore the current cultural values and practices, and find a way to bridge between the principles of the traditional home and the current living patterns of the Palestinians. The main focus of this research will be examining the different dimensions which shape the Palestinian culture and identity, and develop design strategies that respond to the cultural and social needs.

In order to determine the forces which shape the home environment, the method section of this research study explores the relationship between people and their place of residence on a physical, social, and cultural level. The methodology used for exploring these relationships included observing the physical and aesthetic characteristics of twenty three homes, and conducting semi-structured interviews with the residents of these homes.

The observation process (see Appendix A) included documenting the architectural and aesthetic aspects of the physical space. The documentation included sketches of floor plans, photographs of the interior elements, and a detailed description of the physical setting .The objective of the observation was to document the physical features that reveal information about the activity systems, the functional needs, and the life style of the occupants. The semi-structured interviews focus on various aspects that make the home meaningful and significant to its residents. The face-to-face interviews were held at the home of the participants .The purpose of these interviews was to gain a richer insight of the relationship that residents construct with their homes as a result of both positive and negative experiences in that place (Manzo, 2005).The interviews explored several themes, which include place attachment, residential satisfaction,

and identity and home (See Appendix A).

The study took place in the city of Nablus, in Palestine. The architecture of the city is an interesting mix of styles that reflected the different historical events and cultural values of the city. The sample was selected from two neighborhoods: the first neighborhood is located in the historic district of the old city and the second neighborhood is located in the outskirts of the city. The historic district is currently undergoing a great number of conservation projects that seek to restore the heritage of the city, and increase the number of residents in the old city. Hence, investigating people's attitudes and experiences towards their homes in that neighborhood provides a good insight regarding the identity of the place and the cultural values of the occupants. The second neighborhood, which is located at the outskirts of the city, consists of modern residences which have minimal historical and traditional references. The purpose of exploring this neighborhood is to understand how people feel about their current residences, and how modern physical settings can influence the values and behavioral patterns of the residents. The selected participants lived in homes that belonged to different historical periods. Eight homes were built during the Islamic or early Ottoman period (before 1841), three homes were built during the late Ottoman period (1841-1917), two homes were built during the British mandate (1920-1948), and ten homes were built after the Israeli occupation (1948-present).

After collecting the data from fieldwork observations and interviews, the analysis of the data was carried out in two phases. The initial classifications in the first phase examined the cultural, social, historical, and identity aspects in relation to the home environments (see Appendix B). However, these findings also revealed that the interior environments are also responding to changes in the political, economic, and ecological context. Paulsen (2004) indicates how each place has a specific context that is shaped by historical, geographical, political, economical, and cultural forces. The combination of these forces gives the place a distinct character, and defining the character of the built environment requires the study of all these forces. The second phase of the data analysis was a more detailed analysis of the findings that takes into accounts the ecological, political, and economical aspects. The new classification in the second phase includes these different forces, and the themes and findings were organized in response to these forces. The forces that relate to the culture, social, and identity aspects are referred to as intrinsic forces. The forces that relate to the political, historical, economic, and ecological aspects are referred to as extrinsic forces.

The findings from the interviews and the observations guided the development of the design goals and strategies that are essential to the design of a Palestinian home that responds to cultural, social, and identity aspects. The two phases of data analysis generated a list of significant design values that are shaped by the extrinsic and intrinsic forces (see Appendix C). The design values include the family, the social networks, privacy, daily life patterns, cultural symbols, and the land. These design values were developed into design goals and strategies (see appendix D) which can be implemented in the design of a Palestinian home that responds to the current modes of living and the shared values of the Palestinians.

The interior design of the Palestinian house needs to take into consideration the various contexts that shape the region, and the modern values which became a significant part of the Palestinian life patterns and activity systems. The findings of this study reveal the current social, cultural, and functional needs of the occupants, and can be used in the design of an interior of a home that supports the identity of the Palestinians.

In order to face modernity and make use of its convenience, we must first define the strong base that makes Palestine a community, city, and a country. When this identity becomes clear, the core elements that define the culture and reinforce the identity of Palestinians become clear as well. Technology and modern amenities are tools that can be used to satisfy the current needs, yet these tools should be informed by the socio-economic and cultural forces that define the Palestinian community.

REFERENCES (APA)

Awad, J. (1999). Contemporary architecture in Palestine: A critical view. In. W. O'Reilly (Ed.), *Architectural knowledge and cultural diversity* (pp 58-62). Lausanne: Comportements.

Bianca, S. (2000).Urban form in the Arab world: Past and present. United States: Thames and Hudson.

Cuba, L. & Hummon, D. (1993). Constructing a sense of home: Place affiliation and migration across the life cycle. *Sociological Forum*, 8, (4), pp.547-572.

Fried, M. (2000). Continuities and discontinuities of place. *Journal of Environmental Psychology*, 20, 193-205.

Hauge, S.L., & Kolstad, A. (2007). Dwelling as an Expression of Identity: A comparative study among residents in high-priced and low-priced neighborhoods in Norway. *Housing, Theory and Society*, 24(4), 272–292.

Hidalgo, M. & Hernandez, B. (2001).Place attachment: Conceptual and empirical questions. *Journal of Environmental Psychology* 21, 273-281

Lawrence, D. & Low, S.M. (1990).The Built Environment and Spatial Form Annual Review of Anthropology, 19, 453-505.

Manzo, L. (2003). For better or worse: Exploring multiple dimensions of place meaning.

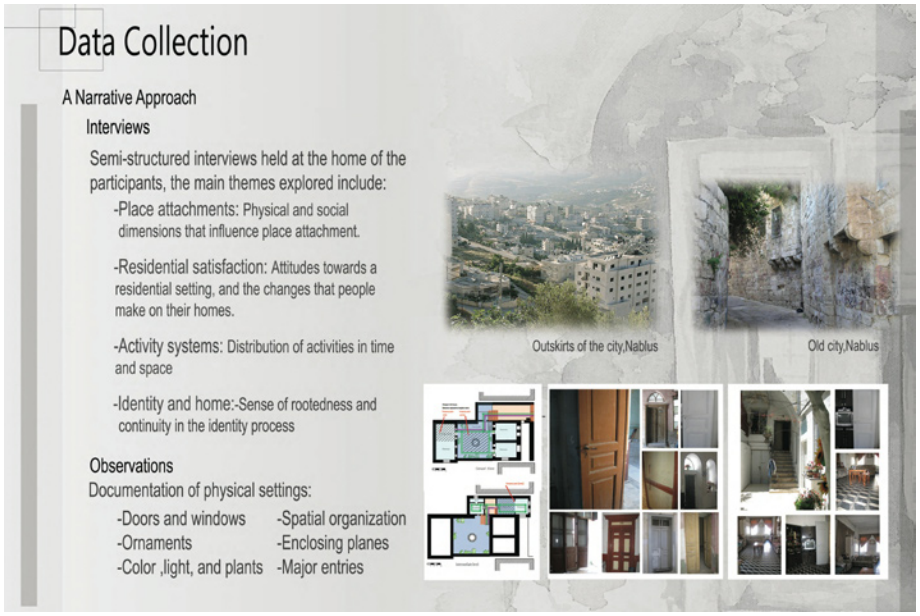
Paulsen, K. (2004). Making Character Concrete: Empirical Strategies for Studying Place Distinction. *City and Community,* 3(3), 243-262.

Ragette, F. (2003).*Traditional domestic architecture of the Arab region.* Sharjah: American University of Sharjah..

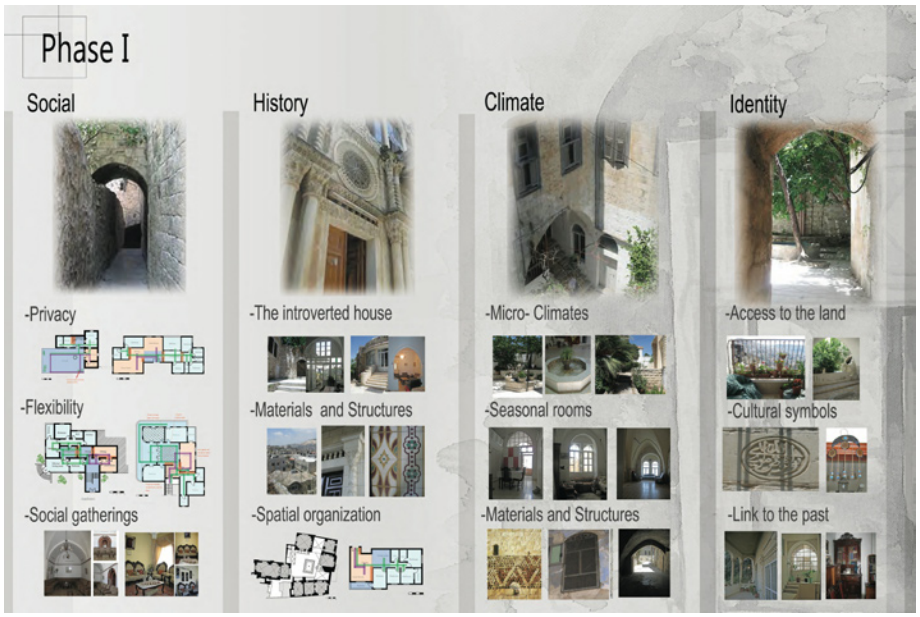
Rapoport, A. (1969). *House form and culture* .N.J: Prentice Hall.

Rapoport, A. (2001). Theory, culture and housing. *Housing, Theory and Society*, 17: 145–165.

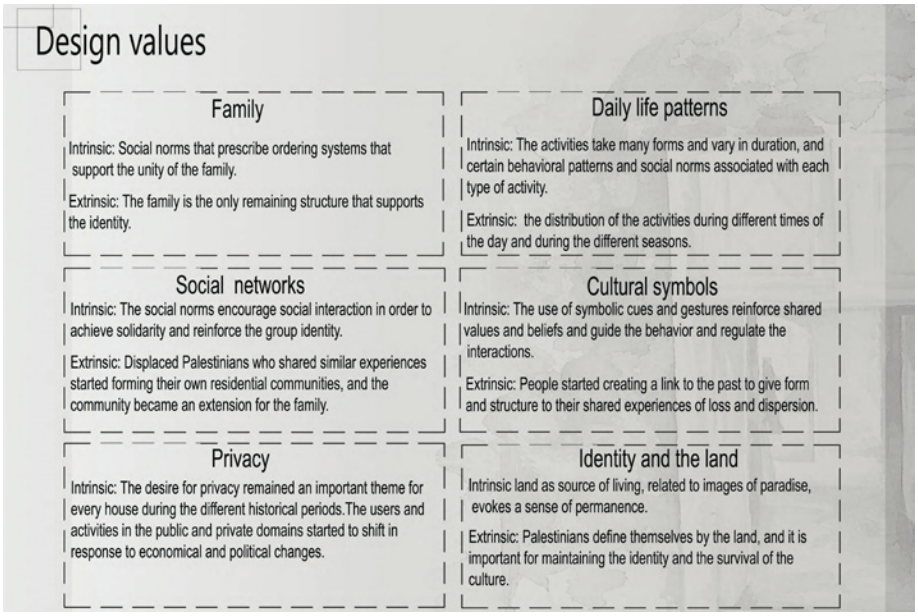
Twigger-Ross, C., & Uzzell, D. (1996). Place and Identity Processes. *Journal of Environmental Psychology, 16*, 205-220.



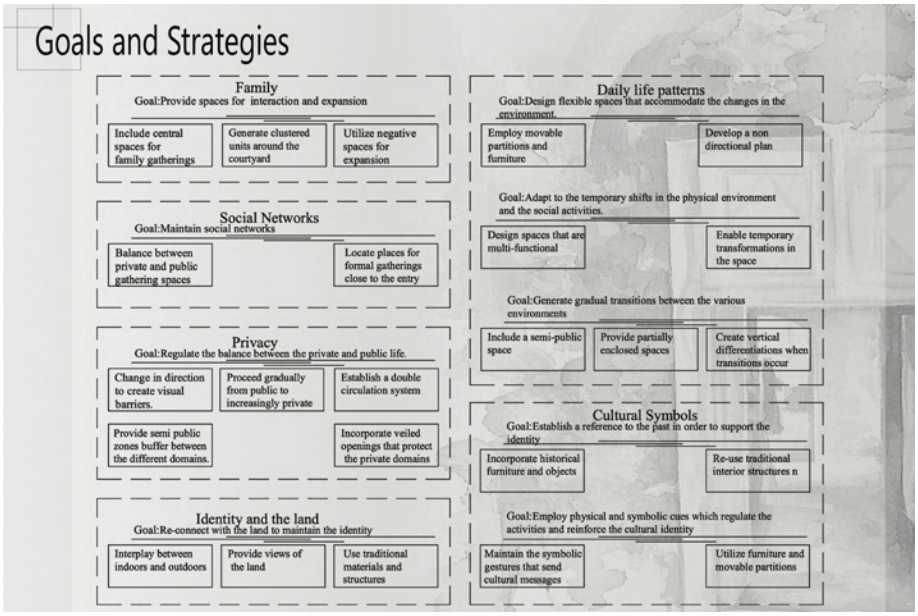
Appendix A: The method used for collecting the data



Appendix B: The first phase of the data analysis



Appendix C: The design values and the forces that shape them



Appendix D: Design goals and strategies

Investigating Interior Design Student Awareness of Sustainable Design: An Interdisciplinary Undergraduate Research Experience

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ABSTRACT

PURPOSE

This poster presentation communicates findings from *Growing Green: Interior Design Student Perceptions of Sustainability*, an ongoing research project conducted by the authors. The context is an interior design program housed in a department of design in a college of arts and design in a broad-based, public, research university. During the 2009 fall semester, the study was chosen as a recipient of an undergraduate research fellowship, an opportunity allowing a team of interior design, communication design, and fiber studio arts students to engage in faculty-directed research activities. Faculty and students in the three programs share an interest in sustainable design and the ethical implications for socially responsible practice in their respected fields. The fellowship supports the participation of interior design undergraduate students accompanied by a faculty researcher in a conference-venue poster session.

METHODOLOGY

The poster is a 24" x36" landscape orientation, Adobe InDesign file format, large scale, full color print. The content imparts analysis of data gathered during the 2009 spring semester, the first year of *Growing Green,* a four-year cohort-sequential study based on a questionnaire administered to freshmen in an introduction to interior design survey course and to seniors enrolled in an interior design professional practice seminar. In addition to demographics categories, the survey instrument includes quantitative format questions utilizing a Likert-type scale and an open comment section. Topics are framed by the Council for Interior Design Accreditation (CIDA) Professional Standards and include sustainable design awareness, the interior designer's responsibility for sustainable design, and integration of sustainable strategies in interior design processes. For the quantitative sections, an independent samples t-test was used to compare the mean scores of the freshman and senior groups. Qualitative analysis of the open comments combined scrutiny and processing techniques to identify themes (Ryan & Bernard, 2003).

In collaboration with the faculty researchers, undergraduate student activities include compiling bibliographic information, discussing data analysis and findings, and developing the poster through information design techniques. "Information design uses pictures, symbols, colors, and words to communicate ideas, illustrate information or express relationships visually" (Emerson, 2009, p. 4).

IMPORTANCE

Although much has been written about sustainable design program integration and curriculum development, fewer studies specifically address student attitudes (Ulasewicz & Vouchilas, 2008; Ruff & Olson, 2009). Ulasewicz and Vouchilas (2008) were interested in interior design and apparel design/merchandising students' understanding of sustainability and differences related to the two fields. Ruff and Olson (2009) surveyed freshman through senior level interior design students at a regional liberal arts university. The survey instrument included an ecology section based on a modified version of Dunlap's revised new Ecological Paradigm (NEP) scale (Dunlap et al, 2000). The student sample was treated as one group. The *Growing Green* study is unique because it focuses on interior design student attitudes, proceeds from interior design curriculum standards, and considers the maturation of students over the course of their college experience. The poster project offers opportunities for new ways to communicate evidence-based information.

RELEVANCE

The research study has the potential to contribute to the literature on sustainable design education, and in tandem with the poster presentation, will expose undergraduates to a variety of research methods and interdisciplinary experiences.

NARRATIVE

INTRODUCTION

The purpose of this poster session is defined by the intersection of sustainable design education, undergraduate research activities, and interdisciplinary collaboration

between faculty, students and design professionals. Of particular significance, the poster exercise focused on a study *about* undergraduates and analysis performed *by* undergraduates. The process occurred in the context of an undergraduate research fellowship awarded to the Department of Design in the University of North Texas (UNT) College of Visual Arts and Design (CVAD). A study comparing the perceptions of sustainable design by freshmen and seniors was in progress and served as a platform for discussion between eight undergraduate students and six faculty facilitators. The student researchers included four interior designers (two seniors and two juniors), two communication designers (one senior and one junior), and two juniors from the fiber arts program. The faculty members were three assistant professors from interior design (authors, Stark, Reed and Park), communication design associate professor, Keith Owens, fiber studio arts associate professor, Amie Adelman, and Cynthia Mohr, Chair, Department of Design. These individuals are involved in multidisciplinary activities on many levels. In addition to studying sustainable strategies, the interior design students have participated in events sponsored by the U.S. Green Building Council (USGBC), North Texas Chapter. In 2009, the two interior design seniors in the group passed the examination for LEED CI AP (Leadership in Energy and Environmental Design, Commercial Interiors, Accredited Professional). Communication design faculty and students are intensely engaged in program development for the Design Research Center located at the Universities Center Dallas and the application of information design to current market issues. In addition to collaboration with the UNT Office of Sustainability, fibers students and faculty are currently working with biology department researchers to explore the potential for a plant fiber to be used in the production of artwork and sustainable products. The IDEC poster session was designated as a research enrichment activity. One senior and one junior interior design student were selected to represent the group at the poster session presentation.

Students in the CVAD research group shared a familiar-

ity with project-focused processes such as information gathering and programming related to functional requirements. Studies have noted that undergraduate interior design students often equate research with "a search on the Internet or frankly any activity that involves information gathering" (Dickinson, 2009, p. 230). However, as design issues become more complex, an evidenced-based approach to problem solving is increasingly important. Linda Nussbaumer (2009) defines evidence-based design as "an informed approach to design where designers intentionally base their decisions on quantitative and qualitative research – two forms of systematic inquiry…" (p. 4). For Nussbaumer (2009), "Systematic inquiry not only creates knowledge but also solves design problems" (p. 4). Preparing for the poster presentation was an opportunity for the students to discern differences between programming and research tasks. They participated in systematic data analysis methodologies to discover new connections and to create new knowledge. Acquisition of the skills necessary for technical data analysis and multidisciplinary communication also supports sustainable design education directives outlined by IDEC (Tucker, 2006) and the Council for Interior Design Accreditation (CIDA, 2006).

DISCUSSION

The fellowship was offered by the university honors college as an initiative for undergraduate research. The project was a special opportunity to utilize a research model typical to science, mathematics and engineering to inform a design investigation. In crafting the fellowship proposal, the authors cited an ongoing project, a survey of interior design student perceptions of sustainable design, previously approved by the institutional review board and supported by pilot studies. To attract additional student and faculty partners, the authors solicited others in CVAD with interests in sustainable design and opportunities for interdisciplinary research collaboration. An hourly stipend for student participation was included in the fellowship and served as an added incentive.

To expose undergraduate students to research methods, the faculty facilitators proposed the following activities: 1) record and compile bibliographic information in APA format; 2) engage in discussion of data analysis and formulation of findings; 3) assist in coding open-ended comment section of questionnaire; 4) develop charts, graphs and other visual means for communicating findings; 5) prepare poster, presentation materials; and 6) participate in presentation venues targeting students, educators, administrators and design practitioners, including but not limited to, on-campus classes and departmental meetings, the UNT Office of Sustainability, USGBC Chapter student exhibits, University Scholars Day, and the IDEC Annual Conference poster session.

Goodwin, Holmes, and Hoagland (2008, p. 2, 3), writing for the Council on Undergraduate Research, consider original student contributions to knowledge as a main objective for higher education and describe the three levels of achievement required for this to occur: 1) learn the new language of research, 2) integrate ideas in the context of logical problem-solving skills, and ultimately 3) identify and test new avenues for inquiry. The authors targeted the following activities to support these project goals:

1. *Learn the new language of research*

a) Identify investigative questions

b) Document a literature search

c) Understand design research strategies

d) Understand design research instruments

In order for the group to have a meaningful discussion, everyone needed a baseline understanding of sustainable design in the context of an interior design program. A glossary of terms compiled from *Sustainable Commercial Interiors* (Bonda & Sosnowchik, 2007) and *Sustainable Design for Interior Environments* (Winchip, 2007) was distributed prior to the first meeting. *Cradle to Cradle: Remaking the Way We Make Things* (McDonough & Braungart, 2002) was recommended reading. During the first meeting, the authors presented an overview of the previous development of the *Growing Green* study including the evolution of sustainability in interior design curriculum and practice, and questionnaire formatting. Sustainable design principles were stressed including a holistic approach, life cycle thinking, building methods and materials strategies (beyond recycling), and social responsibility issues.

2. *Integrate ideas in the context of logical problem-solving skills*

a) Utilize quantitative data methodologies and analysis; SPSS (Statistical Package for the Social Sciences)

b) Utilize qualitative data methodologies and analysis; develop themes, code and tabulate open comments

c) Explore written and graphic information design methods for understanding and communicating findings

Based on primary interests, the students elected to form two groups for data analysis, a

quantitative and a qualitative team. The quantitative team was introduced to the SPSS software program and articulated significant findings. The qualitative team expanded the literature search and learned APA formatting for bibliographic entries. For data analysis, this group reviewed the open-ended comment questionnaire section, identified themes and used a cutting and sorting technique to present findings in terms of frequency of responses. With the communication design faculty and students taking the lead, both groups developed visual information techniques and collaborated on the poster design.

3. *Identify and test new avenues for inquiry*

a) Recommend revisions for existing questionnaire

b) Administer questionnaire to spring 2010 classes

In addition to the IDEC poster session, the students will present to on-campus design classes and administrators, and the local professional groups. The undergraduate researchers will also assist in administering the questionnaire to the spring semester sample groups.

CONCLUSION

Sustainability was a unifying concept. Interiors, communication design and the fiber arts share interests in the design process, material culture, the market economy, clients and consumers, and product design. The elimination of waste, resource conservation and management, life cycle analysis, social responsibility, and the role of the designer are central topics for the three areas.

In terms of research, the students related to the subject matter of documenting student perceptions of sustainable design. The team activities were an opportunity to learn more about the differences between project-oriented processes and research methods. Combining the systematic inquiry of quantitative and qualitative analysis with information design graphic techniques created a synergy unique to the CVAD context.

Through interdisciplinary collaboration, the exercise generated a cross-pollination of ideas and methods. Communication design students gained an understanding of sustainable design principles applicable to professional practice through their own personal philosophies and those of their clients. Fiber arts students expanded their awareness of how sustainable design concepts such as life cycle analysis can inform product prototype development. Interior design students learned about the application of Adobe InDesign software for image communication and portfolio development. For the faculty, the experience confirmed the value of other disciplines as sources for research and pedagogical models. Involvement in the program demonstrated that research activities need not be restricted to graduate students.

CONSIDERATIONS FOR FUTURE PROGRAMS

The interdisciplinary nature of the project presented opportunities and challenges. Scheduling meetings that all participants could attend was almost impossible given saturated degree programs and other commitments. Although the research experience was extremely valuable, this activity occurred parallel and in addition to required curriculum. Offering a non-graded opportunity and utilizing existing resources and equipment were additional benefits.

An ongoing project as the discussion platform added validity to the experience and allowed for a prompt start. Perhaps if there is continuity over time with the undergraduate initiative, students will be able to pose their own individual research questions. Anecdotally, students used methods from this program in their studio classes.

REFERENCES (APA)

Bonda, P., & Sosnowchik, K. (2007). *Sustainable commercial interiors*. Hoboken, New Jersey: John Wiley & Sons, Inc.

Council for Interior Design Accreditation Professional Standards 2006. Retrieved July 28, 2009 from http://www.cida.org

Dickinson, J. (2009). Evidenced-based design and empirical research for the undergraduate student. *Proceedings of the Interior Design Educators Council Annual Conference*, 230-236, St. Louis, MO.

Dunlap, R. E., Van Liere, K. D., Mertig, A. G., & Jones, R. E. (2000). Measuring endorsement of the New Ecological Paradigm: A revised NEP scale. *Journal of Social Issues, 56*(3), 425-442.

Emerson, J. (2008). *Visualizing information for advocacy – An introduction to information design*. Retrieved October 14, 2009, from http://www.tacticaltech.org/infodesign

Goodwin, T., Holmes, B., & Hoagland, K. E. (2008). *How to get started in research*. (2nd ed.) [Booklet]. Washington, DC: The Council on Undergraduate Research. Available from https://cur.org/publications/howtoseries.html#

McDonough, W., & Braungart, M. (2002). *Cradle to cradle: Remaking the way we make things*. New York: North Point Press.

Nussbaumer, L. L. (2009). *Evidenced-based design for interior designers*. New York: Fairchild Books.

Ruff, C. L., & Olson, M. A. (2009). The attitudes of interior design students towards sustainability. *International Journal of Technology and Design Education, 19*(1), 67-77.

Ryan, G. W., & Bernard, H. R. (2003). Techniques to identify themes. *Field Methods, 15*(1), 85-109.

Tucker, L. (2006). Tomorrow's educators and C2C. *Proceedings of the Interior Design Educators Council Annual Conference*, 7-9, Scottsdale, AZ.

Ulasewicz, C., & Vouchilas, G. (2008). Sustainable design practices and consumer behavior: FCS student perceptions. *Journal of Family and Consumer Sciences*, *100*(4), 17-20.

Winchip, S. (2007). *Sustainable design for interior environments*. New York: Fairchild Publications, Inc.

Emotional Responses to the Design of Conference Rooms Located in a LEED-Certified Building and a non-LEED-Certified Building

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ABSTRACT

The first Gold-level LEED-certified university building located on the campus of a land-grant institution was the inspiration for the design of this study. The setting provides an excellent opportunity for researchers to assess the perceptions of students as they experience the design of the interiors. The structure is a contemporary, 153,000 square-foot, 4-story structure that provides students, faculty and staff with conference rooms, classrooms, laboratories, offices, encircling a large central atrium. Researchers have found that the emotional responses of users in a space may give more information about that space (Damasio, 2000). If this is so, then what impact does a sustainable environment have on participants' understanding about that space? The research objective of the study was to determine whether participants' emotions were different in the sustainable setting as compared with a non-sustainable setting. The focus of this study was on the pleasure, arousal, and dominance emotions evoked when participants spent time in two different conference rooms. The research questions were: (1) Does an environmentally sustainable conference room evoke more pleasurable emotions than a non-sustainable conference room? (2) Does an environmentally sustainable conference room evoke more emotions of arousal than a non-sustainable conference room? (3) Does an environmentally sustainable conference room promote more dominant feelings toward the space as compared with a non-sustainable conference room? A mixed-methods approach was used to compare the emotional responses of participants to the interiors of one conference room located in the sustainable building with emotional responses reported from a conference room located in a non-sustainable building. 39 participants responded to a survey based on Mehrabian and Russell's (1974) "Semantic Differential Measures of Emotional State or Characteristic (Trait) Emotions" scale and the "Verbal Measures of Approach-Avoidance" scale. In addition, participants answered open-ended questions based on their reactions to the settings (Mossholder, et al., 1995). Results from this study showed that participants felt more excited and more aroused in the sustainable environment as compared with the non-sustainable environment. There was no significant difference between participants' scores on the dominance scale. Participants did not state clear preferences for either setting in their open-ended responses. They specifically described the impact that color and lighting in both environments had on their emotional responses to the conference rooms. Results from this study shed light on the importance of considering emotion when designing sustainable environments.

NARRATIVE

The number of sustainable structures designed and built across the United States has increased in recent years. Since sustainability has become a prevalent building approach and method, there have been systems generated to define what a sustainable space is and, therefore, what it is not. One such system that defines sustainable building is Leadership in Energy and Environmental Design (LEED) from the United States Green Building Council (USGBC). LEED gives designers and builders of spaces a point-based system to follow in order to create a sustainable environment. These achievable points in the LEED system are attributed to aspects of building including sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, and innovation in design (USGCB website, 2007). The first Gold-level LEED-certified university building located on the campus of a land-grant institution was the inspiration for the design of this study. The setting provides an excellent opportunity for researchers to assess the perceptions of students as they experience the design of the interiors. The structure is a contemporary, 153,000 square-foot, 4-story structure that provides students, faculty and staff with conference rooms, classrooms, laboratories, offices, encircling a large central atrium. Previous researchers have found that the emotional responses of users in a space may give more information about that space (Damasio, 2000). If this is so, then what impact does a sustainable environment have on participants' understanding about that space?

The research objective of the study was to determine whether participants' emotions were similar in the sustainable setting as compared with a non-sustainable setting. In order to test this objective two interior environments were used. One conference room from the Gold-level LEED-certified building was used in the study and the other conference room implemented in this research was from a building that was not created sustainably by a system such as LEED. The two conference rooms used in this study were similar aesthetically because both conference rooms embodied similar contemporary design styles. By using two spaces that were as similar as possible in all aspects besides sustainability emotional responses to the spaces could be more clearly understood.

The focus of this study was on the emotional responses of pleasure, arousal, and dominance evoked when participants spent time in two different conference rooms. The term "pleasure" refers to feelings of joy, happiness, satisfaction, and contentment, versus "unpleasant", which refers to feelings of melancholy, dissatisfaction, and unhappiness (Mehrabian, 1976). "Arousal" refers to activation, stimulation, excitement, and a level of frenzy versus its opposite "sleepiness" meaning inactive or under-stimulated (Mehrabian, 1976). Finally, "dominance refers to an individual's sense of control within a space (Mehrabian & Russell, 1974). The research questions were: (1) Does an environmentally sustainable conference room evoke more pleasurable emotions than a non-sustainable conference room? (2) Does an environmentally sustainable conference room evoke more emotions of arousal than a non-sustainable conference room? (3) Does an environmentally sustainable conference room promote more dominant feelings toward the space as compared with a non-sustainable conference room?

A mixed-methods approach was used to compare the emotional responses of participants to the interiors. 39 participants responded to a survey based on Mehrabian and Russell's (1974) "Semantic Differential Measures of Emotional State or Characteristic (Trait) Emotions" scale which included pleasure and arousal and the "Verbal Measures of Approach-Avoidance" scale which included dominance. It should be noted that the scales as developed by Mehrabian and Russell in 1974 were altered. The "Semantic Differential Measures of Emotional State or Characteristic (Trait) Emotions" scale originally included pleasure, arousal and dominance. In this case dominance was removed, due to previous research showing that dominance only accounts for a small portion of emotional response related to environments (Russell, 1980, Russell and Pratt, 1980). Although, in an effort to leave no stone unturned, dominance was included in this research by using the "Verbal Measures of Approach-Avoidance" scale which solely involves dominance. In addition, participants answered open-ended questions based on their responses to the settings (Mossholder, et al., 1995).

Results from the "Semantic Differential Measures of Emotional State or Characteristic (Trait) Emotions" scale were depicted visually with circumplexes. In this case, the circumplexes depict the results of the pleasure and arousal scores of each participant from each interior

environment. Additionally, the circumplexes show that more neutral pleasure and arousal scores place near the center of the axes whereas more intense emotional responses place farther out on the graph. Additionally, the pleasure and arousal results for the interiors were compared with the use of a two-sided paired t-test. These results showed that participants felt more excited and more aroused in the sustainable environment as compared with the non-sustainable environment. The dominance scores from the "Verbal Measures of Approach-Avoidance" scale were analyzed only with a two-sided paired t-test. There was no significant difference between participants' scores on the dominance scale. Lastly, participants did not state clear preferences for either setting in their open-ended responses. Although, they specifically described the impact that color and lighting in both environments had on their emotional responses to the conference rooms. For instance in the non-sustainable interior, a participant commented that "the walls are painting a pleasant color." In regard to the LEED-certified space a different subject stated "lighting provide a relaxing...environment for me." The color variation in the two interior environments was only in the fabric on the upholstered chairs. The LEED-certified space had red upholstery while the non-sustainable interior had light blue upholstery fabric. Previous research has shown that color greatly impacts perception of an interior environment. Hue choices have an impact on the emotional responses of users by calming, exciting, or annoying them depending on the color application (Demirbilek & Sener, 2003). Previous research has studied blue green office settings and red office settings in relation to levels of perceived job satisfaction (Kwallek, Soon, Woodson, & Alexander, 2005). This previous research found that perceived job satisfaction was higher in one color of interior compared to another. In this research the variance in color use in the two interiors did seem to have an impact on the participant's emotional responses. Additional previous research relates to the lighting comments collected from participants. Leather, Pyrgas, Beale and Lawrence (1998) discussed previous research, which found that the lighting of a space can impact user's responses. Leather et al. (2005) studied the relationship between sunlight, view and stress in the work environment. These previous findings could relate to the emotional differences found in the open ended responses of this research. Although the level of natural sunlight penetration is unknown for these two spaces, it could be that the amount of natural light that penetrated into the interiors of the conference rooms influenced the emotional responses reported by participants. In conclusion, results from this study shed light on the importance of considering emotion when designing sustainable environments.

Future research on this topic could go in multiple directions. A researcher could conduct a similar study to this one but use a different type of commercial interior, or a residential space. Another study could use two spaces that are both alike and non-sustainable. The researcher could include deceit into the method telling participants that one interior is sustainable and the other is not. Then information may be gathered on users associations to sustainable spaces that they "know" (believe) are environmentally friendly. Lastly a researcher could use just one non-sustainable interior and tell half the participants that it is sustainable, explaining what that means and then tell the other half that it is a non-sustainable interior. The study could then compare and contrast a participants "knowing" (believing) that an interior is sustainable versus when the participant does not have such knowledge on the setting.

Figure 1. LEED-certified conference room

Figure 2. Non-LEED-certified conference room

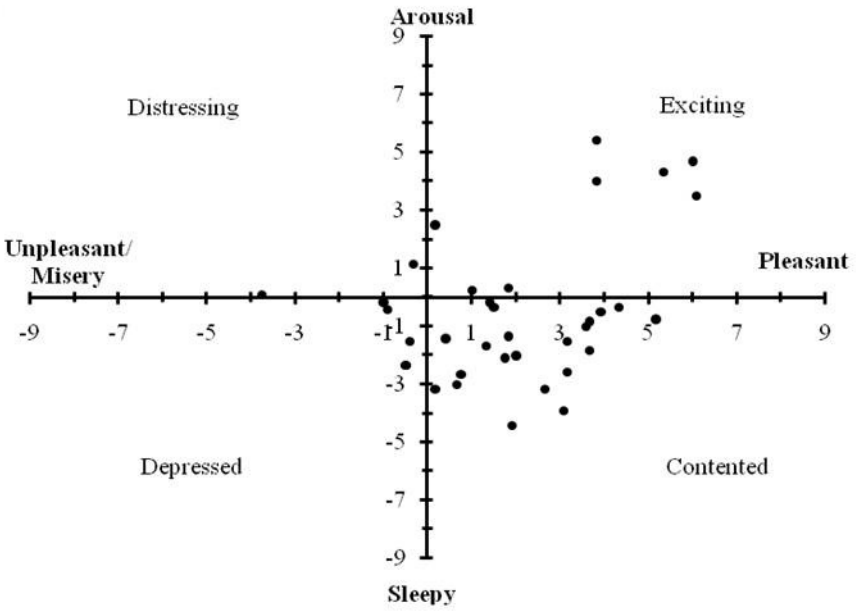


Figure 3. Circumplex for non-LEED-certified conference room

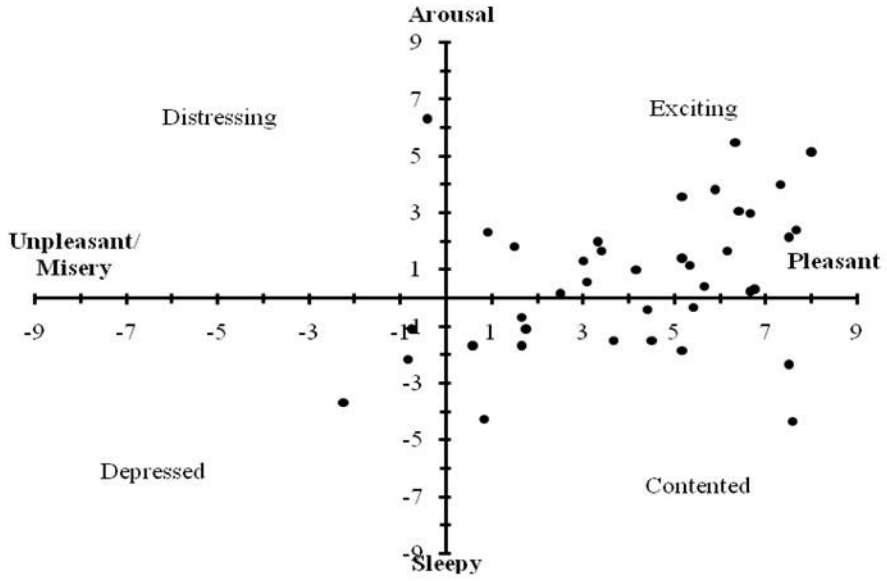


Figure 4. Circumplex for LEED-certified conference room

Two -Sided Paired t-test for Pleasure, Arousal and Dominance

	p value	*df*
Pleasure	0.0065**	35
Arousal	0.0238*	35
Dominance	0.1740	38

***p* –value <.01
**p*-value <.05

Figure 5. Two-sided paired t-test for Pleasure, Arousal, and Dominance

REFERENCE LIST (APA)

Damasio, A. (2000). A second chance for emotion, In Lane, R.D., & Nadel, L. (Eds.) *Cognitive Neuroscience of Emotion.* NY: Oxford University Press.

Demirbilek, O., & Sener, B. (2003). Product Design, Semantics and Emotional Response*. Ergonomics (46)* 13, 1346-1360.

Kwallek, N., Soon, K., Woodson, H., & Alexander, J.L. (2005). Effect of Color Schemes and Environmental Sensitivity on Job Satisfaction and Perceived Performance. *Perceptual and Motor Skills 101,* 473-486.

Mehrabian, A. (1976). *Public Places and Private Spaces the Psychology of Work, Play and Living Environments.* New York: Basic Books Inc., Publishers.

Mehrabian, A., & Russell, J. (1974). *An approach to environmental psychology.* USA: The Massachusetts Institute of Technology.

Mossholder, K., Settoon, R., Harris, S., & Armenakis, A. (1995). Measuring emotion in open-ended survey responses: An application of textual data analysis, *Journal of Management, 21*(2), 335-355.

Russell, J. (1980). A Circumplex Model of Affect, *Journal of Personality and Social Psychology, 36* (6), 1161-1178.

Russell, J., & Pratt, G. (1980). A Description of the Affective Quality Attributed to Environments, *Journal of Personality and Social Psychology 38* (2), 311-322.

USGBC. (2007). Retrieved March, 2007, from the United States Green Building Council Website, http://www.usgbc.org.

POSTERS:
SERIVCE

Service-Learning as Strategy in the Study of Aging and Environment: Developing Generations of Evidence-Based Interior Designers

LISA BATES / CIGDEM AKKURT
Iowa State University

ABSTRACT

Interior designers are well suited as activists for change, undertaking the multitude of social issues plaguing our democratic society. On a daily basis designers are directly engaged with the world around them, inspiring dialogue in order to create the physical spaces and places where others live, work, and play. As our nation is facing obstacles and difficult issues pertaining to aging, the economy, and health care, designers can offer diversity and fulfill a multitude of responsibilities including as social scholars and educators. Inspiring and empowering the next generation of interior designers is a challenge educational institutions face. Therefore, the creation of responsible designers, who tackle difficult issues, will require educational institutions to actively participate in the social issues facing communities around the country, in particular the aging baby boomer.

One method of engaging communities into partnerships with academic institutions is through the service-learning strategy. Academic service-learning is a teaching strategy in which students are engaged in authentic activities, where course curriculum is applied to address the needs of communities in order to enrich the educational experience and encourage lifelong civic engagement (Furco, 2001; Howard, 1998). Service-learning has been found to be valuable to communities in a variety of areas including: community development; bridging town gaps; and benefitting community partners (Cruz & Giles, 2000). The creation of reciprocal partnerships will be a key component in the success of interior design service-learning projects. The development of a service-learning model where educational institutions and communities form sustainable partnerships, transcending specific projects, will allow service-learning to achieve its full potential while addressing real community needs (Bailis, 2001). Therefore, a successful service-learning project must begin with the formation of strong partnerships between the community and the service-learning educational institution.

In 2006, Partners for Livable Communities found less than half, 46%, of American communities have begun planning to address the needs of the aging baby boomers. In response to this finding, this study will explore the development of visual media to encourage community members and leaders to address the needs of their current and future aging citizens. This visual study will inspire leaders and members of the community into lasting partnerships with educational institutions, to address the evolving and challenging community social issues surrounding the aging baby boomer.

NARRATIVE

Designers are well suited as activists for change, undertaking the multitude of social issues plaguing our democratic society. On a daily basis interior designers are directly engaged with the world around them, inspiring dialogue in order to create the physical spaces and places where others live, work, and play. Inspiring and empowering the next generation of socially conscious designers is a challenge educational institutions face. Therefore, the creation of responsible interior designers, who tackle difficult issues, will require educational institutions to actively participate in the social issues facing communities around the country, in particular the issues surrounding the aging baby boomer.

Higher educational institutions are well-known to focus research toward innovation, to propel disciplines into the next era while preparing future professionals with the latest theories and practices. The design vocation has a responsibility to also focus on the future, to advance the field of study, and engage in researching the complicated social issues pertaining to the built environment. Ernest Boyer's article, "Creating the New American College", challenged higher educational institutions to educate students for a life as responsible citizens rather than educating students solely for a career (Bringle & Hatcher, 1996). Educational institutions have the ability to foster change in policies and practices by creating viable partnerships involving communities, professionals, and the institution. These strong partnerships will allow design to benefit a larger proportion of the population than currently across the country.

BACKGROUND

Designs top priority to the public is to their health, safety and welfare yet only between two and five percent of the built environment is directly affected by a designer (Bell and Wakeford, 2008). Many of the social issues plaguing our country are seen as unrelated to design work resulting in a limitation of what designers can and should do for the welfare and betterment of our communities. Instead design can play a positive role when designers are aware of their position in maintaining and shaping the connections between body and architecture both at the levels of emotional and physical involvement (Bevington, 1992). As interior design expands to improve the lives of all and not just a privileged few, designers will be able to play key roles in the shaping of our society and the improvement of the built environment for the masses. Of the many obstacles facing our nation, the aging of the baby boomer generation is one issue where interior designers can have a large impact. Designers are positioned to make substantial mark on the needs associated with aging and the home by understanding how people's needs change over a lifetime and be able to design environments which can help compensate expected declines with growing older (Bunker-Hellmich, 2002).

AGING BOOMER

America is confronted with the challenges and opportunities of an aging population as the baby boomer generation enters the next era of their lives. The U.S. Census Bureau found, in 2000, 1 in 8 Americans were age 65 years old and over but this number is estimated to increase to 1 in 5 by the year 2030. The lifestyle of the boomer generation and improvements in longevity are changing the way this generation lives into older life.

The baby boomer generation has continually shaped society as they have grown and entered into the different phases of their lives. Retirement will prove to be no different. As a generation of 80 million (Overly, 2007), they have the ability to exert great force over their lives and society as a whole. Many surveys and studies have been conducted to discover the desires for retirement the Boomer's possess. The majority of Baby Boomers, 77% to 89% (Maurer, 2001; Partners for Livable Communities, 2008), do not want to move south nor enter retirement facilities; they want to maintain their independence as long as possible. The AARP conducted a survey and also found a significant majority of the Boomer generation would prefer to age in place, to enable them to maintain their social connections and professional relationships within their familiar surroundings (Overly, 2007). Aging in place has been defined as the ability to live independently within one's own home, with emphasis on independence outside of a healthcare environment (National Aging in Place Council, 2009). The definition of aging in place, in this study, will expand to not only include aging within one home but rather the ability to age within a person's chosen community. This ability will allow the boomers to maintain those important connections they have fostered throughout their lives no matter if one chooses to change homes. This expansion of the definition of aging in place is due in part to the findings of older adults desire to live within the same

places they have always, both in the sense of community, neighborhood, as well as home (Scheidt & Windley, 1998) as well as the boomers avoidance of senior only communities and their willingness to explore housing options within their own communities (Rosenfeld & Chapman, 2008). Boomers will demand solutions to allow them to live independently within the communities they are invested.

A crucial aspect to remaining independent is to maintain the right fit between a person's abilities and the demands of the environment; too often an older adult must adapt their behavior to the environment rather than the environment changing to meet their needs (Pynoos, Nishita, & Perelma, 2003). The design of homes to adapt to the older individual rather than the individual adapting to the home is a realistic goal for the future of housing policy (Christenson, 1990). The optimum time to create accessible housing is at the time of new home construction but realistically the homes occupied today by older adults are in need of adaptations. Research has indicated older adults are unsure of home modifications needed, are not convinced the changes would make a difference, and they do not believe it will be difficult to stay within current home stock as they age; these findings all indicate there is a need to counsel and educate the boomer generation (Crews & Zavotka, 2006; Sherman & Combs, 1997; ASID, 2001). The National Association of Home Builders found much of the age remodeling occurs only after the homeowner has found difficulty navigating within their homes (Senior Journal, 2006). Modifications of older adults' homes should occur prior to any navigational issues, resulting in a residential environment which facilitates independent living and promotes overall health and welfare.

EDUCATIONAL INSTITUTIONS

There is now a demand for educational institutions to become more involved in the community. This is possibly in response to criticism of institutions and faculty lacking responsiveness to the larger public good (Kezar & Rhoads, 2001; Maas Weigert, 1998) when service is often included within the institution's mission statement but seldom evident in academic institution's work (Zollinger, Guerin, Hadjiyanni, & Martin, 2009). Boyer (1997) challenged educational institutions by stating:

"The academy must become a more vigorous partner in the search for answers to our most pressing social, civic, economic, and moral problems, and must reaffirm its historic commitment to what I call the scholarhsip of engagement."

This connection of scholarship and partnership contributed to the adoption of service-learning as a method of outreach and scholarship across the country. Interior design professional and research programs with service-learning experience are deemed more successful than their counterparts without service-learning (Wolf, 1996). Service-learning facilitates partnerships between educational institutions and communities but can also add collaboration with professionals to bridge the gap between education and practice. Interior design practitioners noted collaboration between practice, education, and research should be increased to inform one another and to further the field of interior design (Carll White & Dickson, 1994).

PURPOSE

Educational institutions with interior design programs are in need of a method to allow the development of socially responsible designers, engagement within community issues, and the ability to advance the field of design through research. Service-learning implemented into interior design education provides the structured method to fulfill the needs of communities, interior design students, and educational institutions by unifying research, teaching, and service.

An Elder-Friendly Community assessment conducted by Iowa State University, in 2008, found Iowa small town communities are in need of improving housing options for the aging citizen. These research findings identify a need for interior design within communities to address the aging citizen and home environments. A service-learning model created for interior design programs to center on the study of aging in community, the need for appropriate housing options, is only as successful as the partnerships created.

This poster will examine the development of a video series created to foster partnerships between the baby boomers, the community, and the interior designer. This visual media series serves as inspiration for all partners to become actively involved within the social issues pertaining to the aging of Americans, particularly the issue of aging within one's community.

REFERENCES (APA)

ASID. (2001). *Aging in Place: Aging and the Impact of Interior Design.* Washington, DC: American Society of Interior Designers.

Bailis, L.N. (2001). The national society for experiential education in service-learning. New Directions for Higher Education, 114, 61-65.

Bell, B., & Wakeford, K. (2008). *Expanding Architecture Design as Activism.* New York: Metropolis Books.

Bevington, C. B. (1992). One size doesn't fit all: a designer argues that universality may lead to homogeneity. *Interior Design* , 63(11), 80-86.

Boyer, E. (1997). The scholarship of engagement. *Journal of Public Service and Outreach* , 1(1), 11-20.

Bringle, R. G., & Hatcher, J. A. (1996). Implementing serivce learning in higher education. *Journal of Higher Education* , 67(2),221-239.

Bunker-Hellmich, L. (2002). Aging and the designed environment. *Implications* , 01(01) 1-2.

Carll White, A., & Dickson, A. W. (1994). Practitioners' Perceptions of Interior Design. *Journal of Interior Design* , 20(1), 27-35.

Christenson, M. A. (1990). *Aging and the Designed Environment.* Binghamton: The Haworth Press, Inc.

Crews, D. E., & Zavotka, S. (2006). Aging, Disability, and Frailty: Implications for Universal Design. *Journal of Physiological Anthropology* , 25(1), 113-118.

Enos, S.L., & Troppe, M. L. (1996). Service-learning in the curriculum. In B. Jacoby and Associates, *Service-Learning in Higher Education: Concepts and Practices*. San Francisco: Jossey-Bass.

Furco, A. (2001). Advancing service-learning at research universities. *New Directions for Higher Education*, 114, 67-78.

Howard, J.P.F. (1998). Academic service learning: a counternormative pedagogy. *New Directions for Teaching and Learning*, 73, 21-29.

Kezar, A., & Rhoads, R. A. (2001). The Dynamic Tensions of Service Learning in Higher Education. *The Journal of Higher Education* , 72(2), 148-171.

Maurer, T. L. (2001). Aging in Place: Aging and the Impact of Interior Design. *American Society of Interior Designers* .

National Aging in Place Council. (2009). *What is NAIPC?* Retrieved January 10, 2010, from Age in Place: http://www.ageinplace.org/about_us/what_is_naipc.aspx

Overly, N. (2007). *Baby Boomer Seeking a Different Retirement Lifestyle-At Home*. Retrieved August 28, 2007, from Senior Journal: www.seniorjournal.com/NEWS/Boomers/2007/7-03-08-BabyBoomersSeeking.html

Partners for Livable Communities. (2008). *Aging in place: making communities more livable for older adults*. Washington, D.C.

Pynoos, J., Nishita, C., & Perelma, L. (2003). Advancements in the Home Modification Field. *Journal of Housing For the Elderly* , 17(1&2), 105-116.

Rosenfeld, J. P., & Chapman, W. (2008). *Home Design in an Aging World.* New York: Fairchild Books, Inc.

Scheidt, R. J., & Windley, P. G. (1998). *Environment and Aging Theory a Focus on Housing.* Westport: Greenwood Press.

Senior Journal. (2006). *Aging in Place Specialists Offer Tips for Making Homes Age-Friendly*. Retrieved August 28, 2007, from Aging in Place: www.seniorjournal.com/NEWS/Housing/6-05-17-Aging-in-Place.html

Sherman, S. L., & Combs, E. R. (1997). Characteristics related to elderly persons' perceived difficulty of remaining in their current homes. *Family and Consumer Sciences Research Journal* , 26(1), 59-75.

Wolf, R. L. (1996). Service Learning. *Journal of Interior Design* , 22(2), iv.

Zollinger, S. W., Guerin, D. A., Hadjiyanni, T., & Martin, C. S. (2009). Deconstructing Service-Learning: A Framework for Interior Design. *Journal of Interior Design* , 34(3), 31-45.

CREATIVE SCHOLARSHIP

Bianco Ristorante Italiano

TOM ALLISMA
University of Nebraska at Lincoln

DESIGNER STATEMENT

A few years back, two of the owners of this project (the executive chef and the general manager) along with the designer of this project, traveled to Italy for 10 days. They journeyed there to experience the Italian culture first hand. While there they traveled around substantially thru the northern region and ate, drank and explored the stress free life of the Italians. The team wanted to get inspired from the food, the people, and their lifestyle. To say the least the trip was extremely informative, not only from the culinary standpoint, but also the design aspect.

After returning back to the states this project was conceived. The owners have many other successful establishments around the Omaha area and they have found success in the fact that they have named all their establishments after names of colors (Blue Sushi and Roja Mexican Grill). For this restaurant, they wanted to stick with their proven formula and it was named “bianco” which translates to “white” in Italian. Along with the simple name, crisp clean lines and a splash of white and citrus was the main theme that was brought back from the travels. (see fig.1) Keeping it simple was what the Italians seemed to be the best at and that modern aspect was what the owners really wanted for their new eatery. The project is located within a west Omaha strip retail center and the space that it occupies is 3200 square feet. The center itself is somewhat non-descript and the owners really wanted to make a bold, yet simple impression on their clients inside and out.(see fig.2)

The project is simple in plan and consists of one large white and orange lantern centerpiece.(see fig.3) The lantern also acts as a divider between the lounge and restaurant and is also has a built in bench seat for the clientele on both the dining and lounge side.(see fig.4) Zebra wood, gerber daisies, framed photographs from the designers travels, an original 1966 Vespa along with old Italian movies projected on the dining room wall all add to the experience. (see fig.5) Taking the clientele out of Omaha through the food and atmosphere was one of the major goals for the owners and by bringing in materials and modern lines from the exploration to Italy is how it was accomplished.

Figure 1:
View of Lounge and Bar

Figure 2: Exterior View at Night

Figure 3: Center Piece – Illuminated Lantern

Figure 4: Reception Area and Lounge

Figure 5: View of Bar and Lounge

Parliament Pub

TOM ALLISMA
University of Nebraska at Lincoln

DESIGNER STATEMENT

Two business partners approached me about designing an English Pub concept for them on their first try out at the bar business. Located in the Midwest, the landscape is full of many bar and pub concepts that usually fall short of anything original or authentic. The partners had a few ideas on what they wanted, but they weren't sure on how to accomplish it and how to pull it off as something unique. The concept that I approached them with was a pub with a "rock and roll-punk" edge. After explaining my ideas with them, and pitching the idea of calling the establishment "Parliament Pub," they were instantly hooked. I ended up designing everything from the interior down to the logo and picking all the art work and accessories. It was a total design project from top to bottom and it was quite a rock and roll adventure in itself.

The site location was an empty bay within a newly constructed upscale strip retail center. The plan laid out into two major areas, the upfront bar and the backroom lounge. The upfront bar consists of rust stained colored concrete floors, wood paneled walls, a large metal and wood canopy over a large rectangular wood bar, (see fig.1) red accent lights and chandeliers, a classic 1954 Triumph motorcycle (see fig.2) and lots of gargoyles and English accessories helped to set the space off and give the edge that we were looking for. The backroom lounge is completely clad with brick and stone walls, wood flooring, copper inlay ceiling, rustic gas lamps, and a huge six foot wide red chandelier over the pool table. (see fig.3) The entire backroom space is set against a back wall that is painted red and has a grid of lion heads that is up-lit in fluorescent lights. (see fig.4)

The element that ties all the spaces together is 24 framed pieces of British punk and rock and roll art work. The art is all framed in ornate gold frames and the frames are found within all public spaces including the restrooms. (see fig.5) In a very short time the project has turned out to be a huge success for the business partners and I have completed the design of their second location which is currently under construction and slated to be open in April of 2010.

Figure 1: Rectangular Bar and English Accents

Figure 2: 1954 Triumph Motorcyle display

Figure 3: Pool Table in back lounge

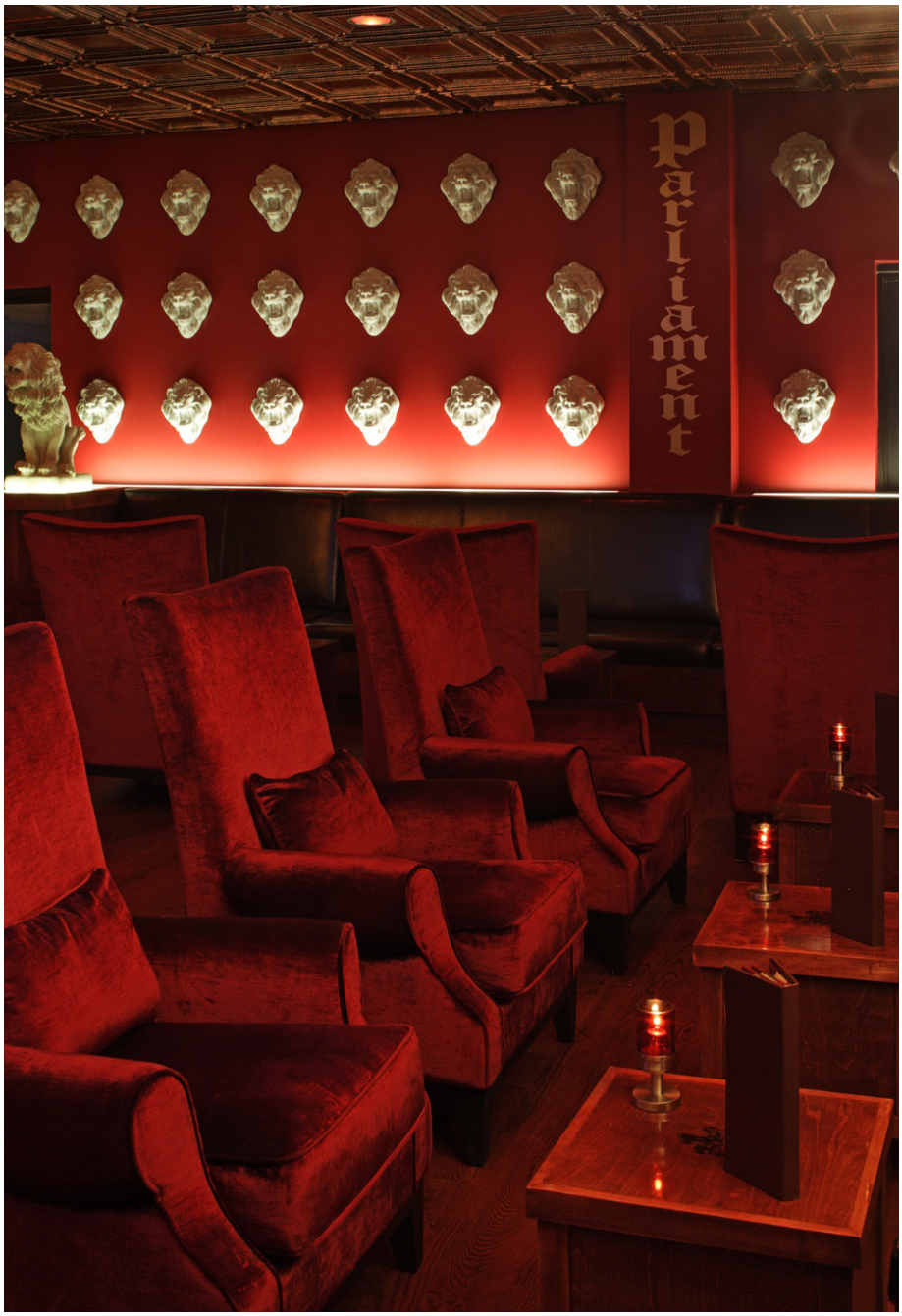


Figure 4: Lion Head wall display in back lounge

Figure 5: Rock and Roll artwork in upfront bar space

The Silk Road Series Pendants

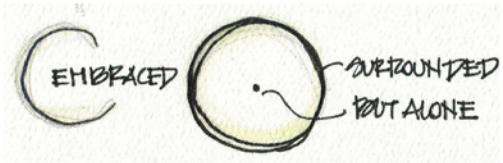
GÜLEN ÇEVIK
Miami University, Ohio

DESIGNER STATEMENT

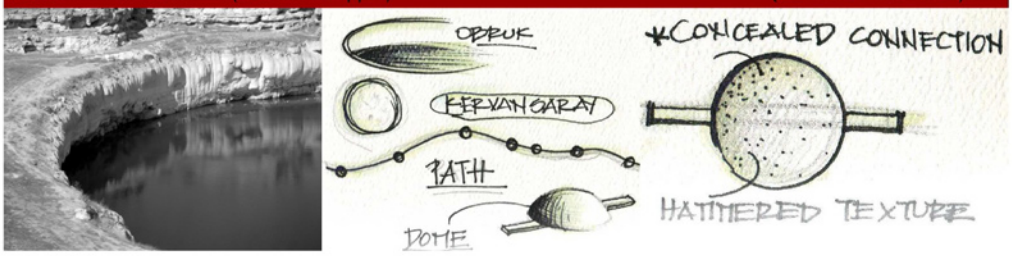
Imagine… Imagine traveling in search of the boundaries that separate one culture from another and one architecture from another. Will these boundaries coincide with political boundaries? Traveling on land from China to Turkey, you encounter some of the most interesting geographic, cultural and architectural traditions, transmitted and exchanged along the Silk Road, which connected 'East' and 'West." I traveled along the Silk Road starting in China and ending in Istanbul. Funded mainly by The Havighurst Center for Russian & Post-Soviet Studies at Miami University, this month-long trip left an ever-lasting impression on me as a human being and as a designer. From my hopeless trials of pronouncing Chinese words, to witnessing the creation of simple and sustainable yet beautiful architecture, to the generosity of random strangers, to observing the very young but tired hands which worked delicately on the silk loom, it was an unforgettable trip.

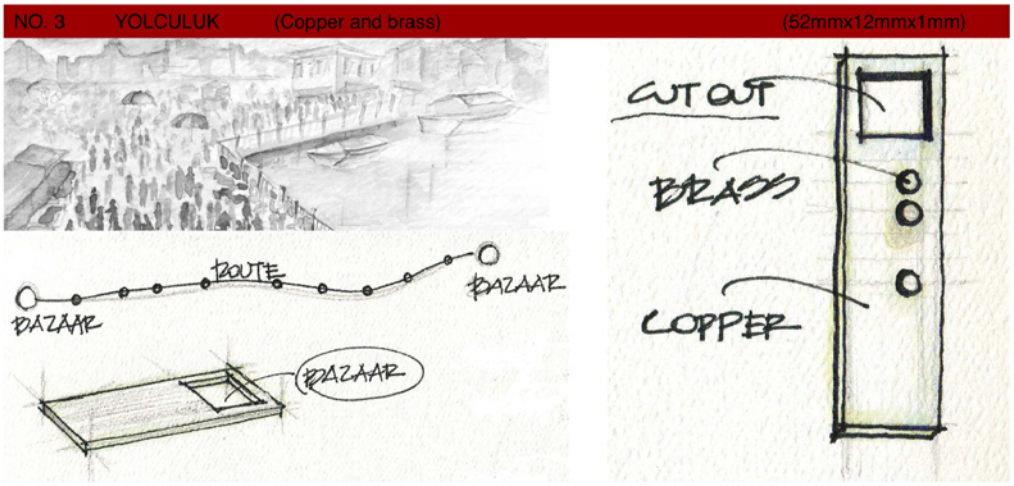
The Silk Road Series was inspired from my own experiences of travel as well as learning about early travelers. Each piece is unique, yet shares some properties with the ones that come before and follow. No. 1 is called *Kalabalıkta Yalnızlık* (The Solitude in Companionship). Travelers had to leave their loved ones behind and although they were fortunate to have the companionship of fellow travelers, they still lacked something else. No. 2 is called *Obruk*. Obruk Han was one of the caravanserais on the Silk Road, providing a much needed shelter for travelers. Located on the Anatolian plateau Obruk Han was founded next to a lake. Especially on a hot summer day you are reminded of the significance of water as you walk on dry earth and see the deep blue lake. The circle represents the lake whereas the continuous silver line represents the Silk Road. No. 3 is *Yolculuk*. The long rectangle suggests the linear quality of the travel path. The brass pieces symbolize stops along the way, whereas the square cut-out represents the bazaar where the goods will find their new owners. No. 4 is called *Toprak* which means "earth" in Turkish. The travelers on the Silk Road wore headpieces called *sarık*s which comprised of several yards of white fabric, usually silk wrapped onto their heads. The *Sarık* protected them from the heat and cold but also served as a wrapping material for the body in case they were not able to complete their journey. The dead body was first wrapped by the silk and then earth. This piece is an abstraction of the silk and the earth wrapping the dead. And finally No. 5 is called Istanbul. As a city that connects "East" and "West," it was fitting to design and construct a piece after this imperial city. The three major political and cultural entities which governed the city, The Roman, Byzantine, and Ottoman Empires, are represented with square cut-outs. The final square attached represents modern Turkey. The layering of culture and history is implied by the layered pieces which are topped with a green peridot, representing the green hills of the old city. Visual and physical balance is acquired by a careful designation of negative and positive components.

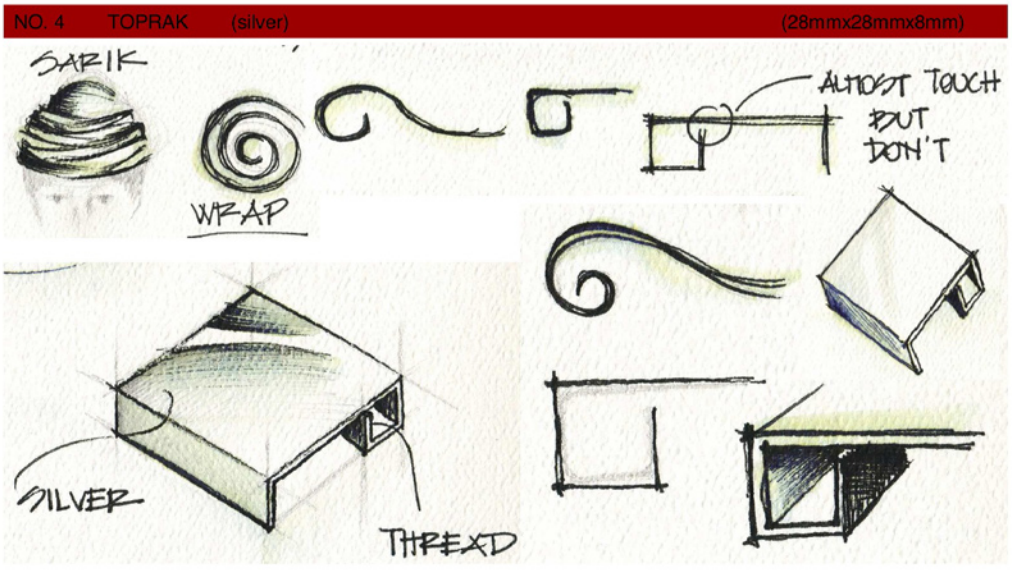
NO. 1 KALABALIKTA YALNIZLIK (silver) (20mmx20mmx3mm)

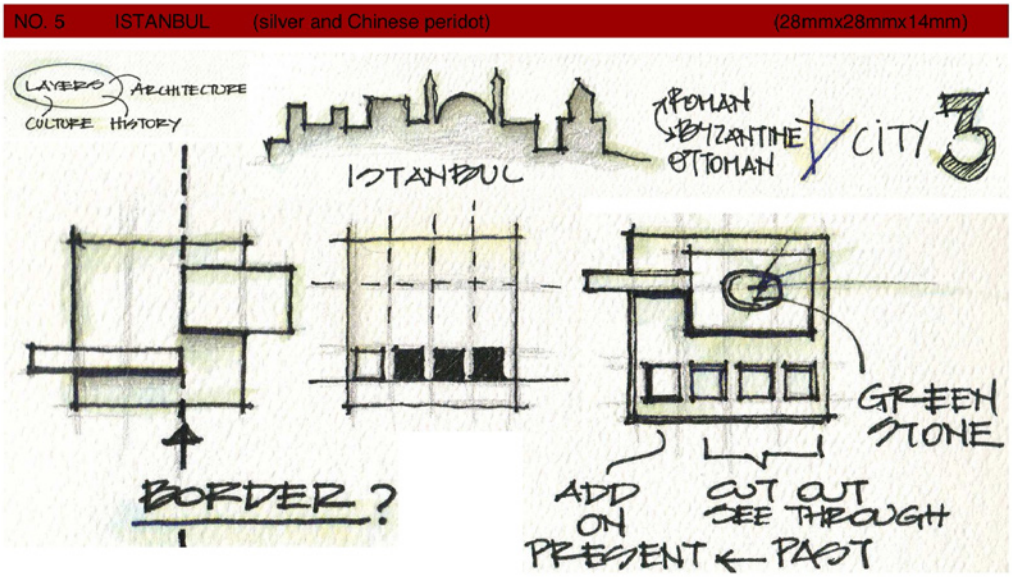


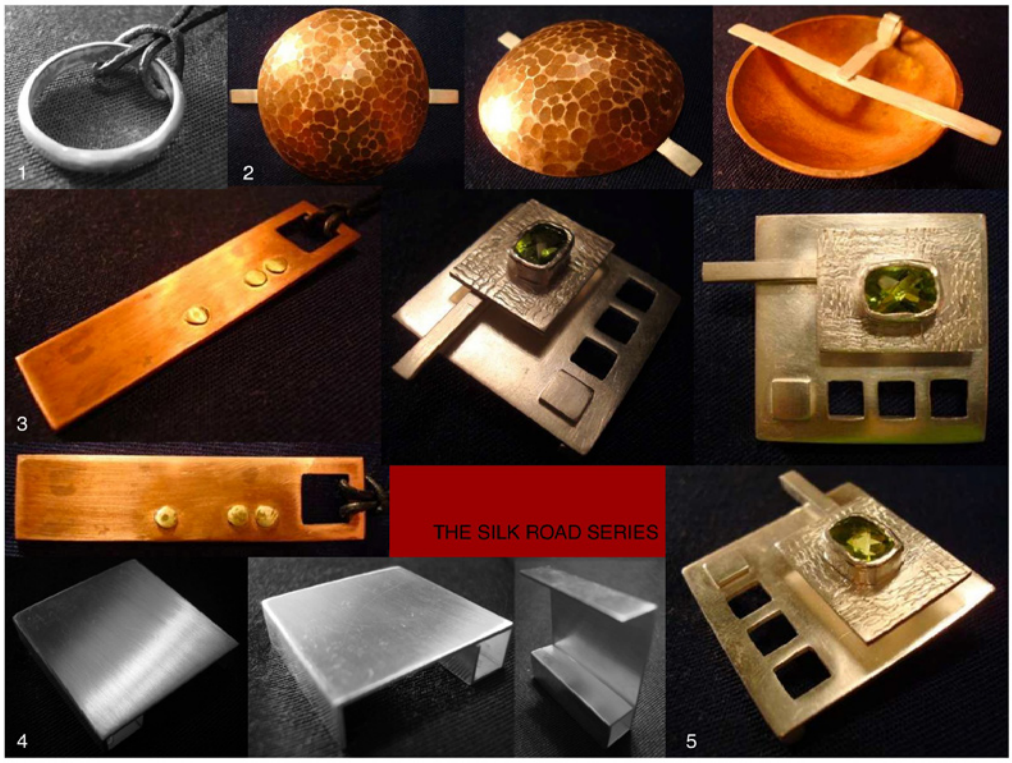
NO. 2 OBRUK (silver and copper) (56mmx42mmx12mm)




NO. 3 YOLCULUK (Copper and brass) (52mmx12mmx1mm)
ROUTE
BAZAAR
BAZAAR
BAZAAR
CUT OUT
BRASS
COPPER


NO. 4 TOPRAK (silver) (28mmx28mmx8mm)
SARIK
WRAP
ALMOST TOUCH
BUT
DON'T
SILVER
THREAD


NO. 5 ISTANBUL (silver and Chinese peridot) (28mmx28mmx14mm)
LAYERS
ARCHITECTURE
CULTURE
HISTORY
ISTANBUL
ROMAN
BYZANTINE
OTTOMAN
CITY
GREEN STONE
BORDER?
ADD ON
CUT OUT SEE THROUGH
PRESENT ← PAST


1
2
3
THE SILK ROAD SERIES
4
5

Little Building Cafe

ANNIE COGGAN-CRAWFORD
Mississippi State University

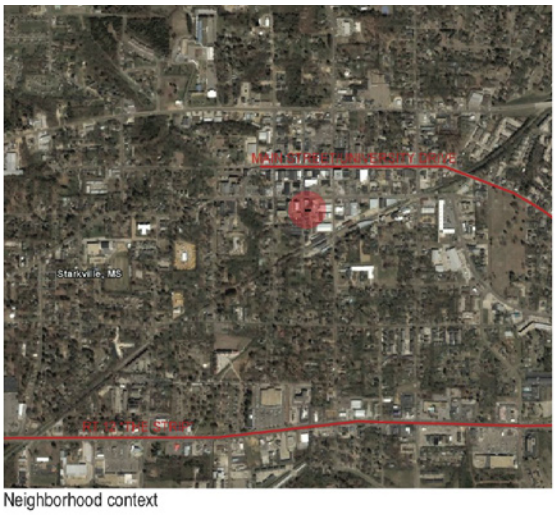
DESIGNER STATEMENT

This is not the first restaurant venture to aspire to a value system rather than just a business. But it is unique in that the design laid the ground work for a democratic enterprise and a far reaching design dialogue. Alice Waters, Judy Wicks and Frank Stitt are all restaurateurs involved in the farm to table movement (Waters having inventing the genre). This movement establishes a business venture as an activist mechanism. Michael Pollen and Barbara Kingsolver have written extensively about food and the food industry. The project seeks to examine the café as an example of entrepreneur as community activist that is potentially more successful than the role of the community designer.

The café is seated in the notion of the local, and operates with this concept at a number of scales. Food is sourced regionally with a 100 mile goal. The location is in the downtown district, avoiding the automobile-centric and ubiquitous strip. The architecture is framed by an existing mixed-use building (commercial and residential), which was completely renovated using sustainable design principles and local craftsmen. Fixed single-pane windows were replaced with operable double insulated low e windows. The ceiling is insulated to R-50. The roof has a venting skylight with solar hot water panels on the south side. Back-up hot water is via a natural gas tankless water heater. Heating and cooling is supplied by high efficiency heat pumps. Chairs were either found in local thrift shops for under 20 dollars or in the trash. Most had a weakness that needed to be reinforced before putting back into service engendering a southern vernacular meets Surrealist aesthetic. Tables were constructed on-site. Cups, plates, bowls, etc. are a mismatched collection from local thrift shops.

The goal of the café was not to design all the activity inside the four walls of the building but to extend the influence of the farm-to-table movement throughout the community. An unconventional space that is used is the Little Building Blog that, along with the sandwich board out front, serves as a town crier for the ever changing daily menu. The virtual space has lead to quite an intimate relationship with the customers: daily face book critiques of spring greens soup and chocolate chip muffins make the café feel very democratic. The space is used for public events. Partnering with the local artist,Äôs co-op has lead to a constant flow of artist and designer community events that promote the creative capital of Starkville.

This project examines how a building can be a critique of current urban development patterns and the entire US food industry, as well as form an anchor for the revitalization of a walkable downtown community.



Neighborhood context

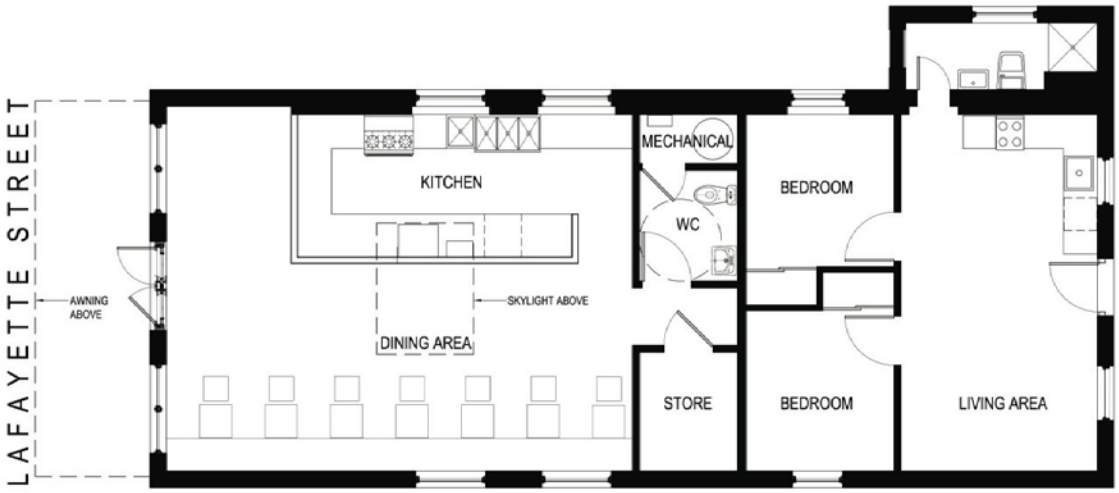
Site context

Project in context from the north west

Front facade

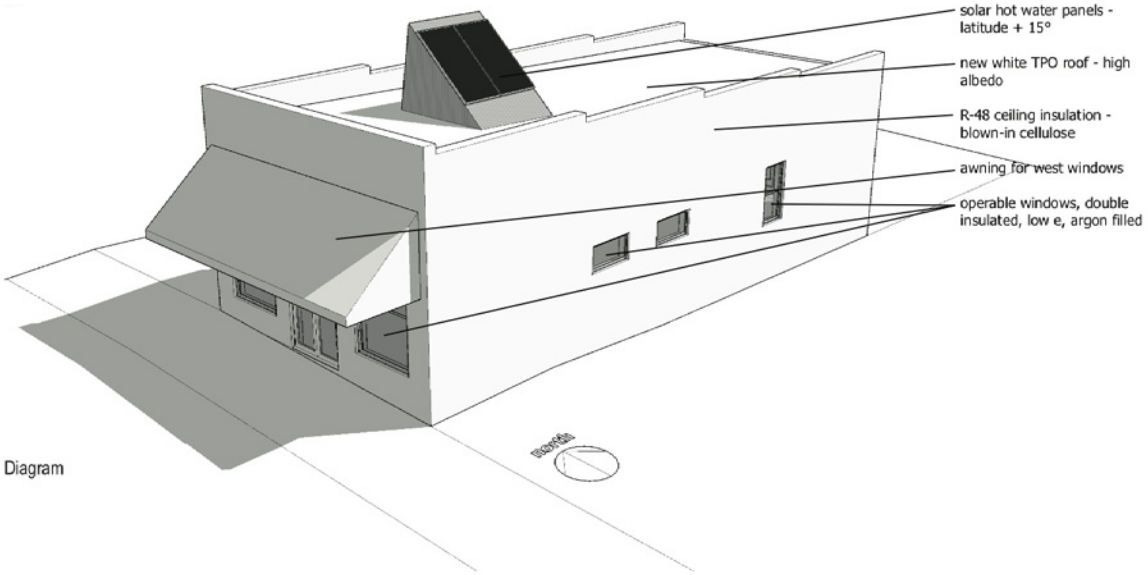
Original context before construction

Context across the street from the street facade

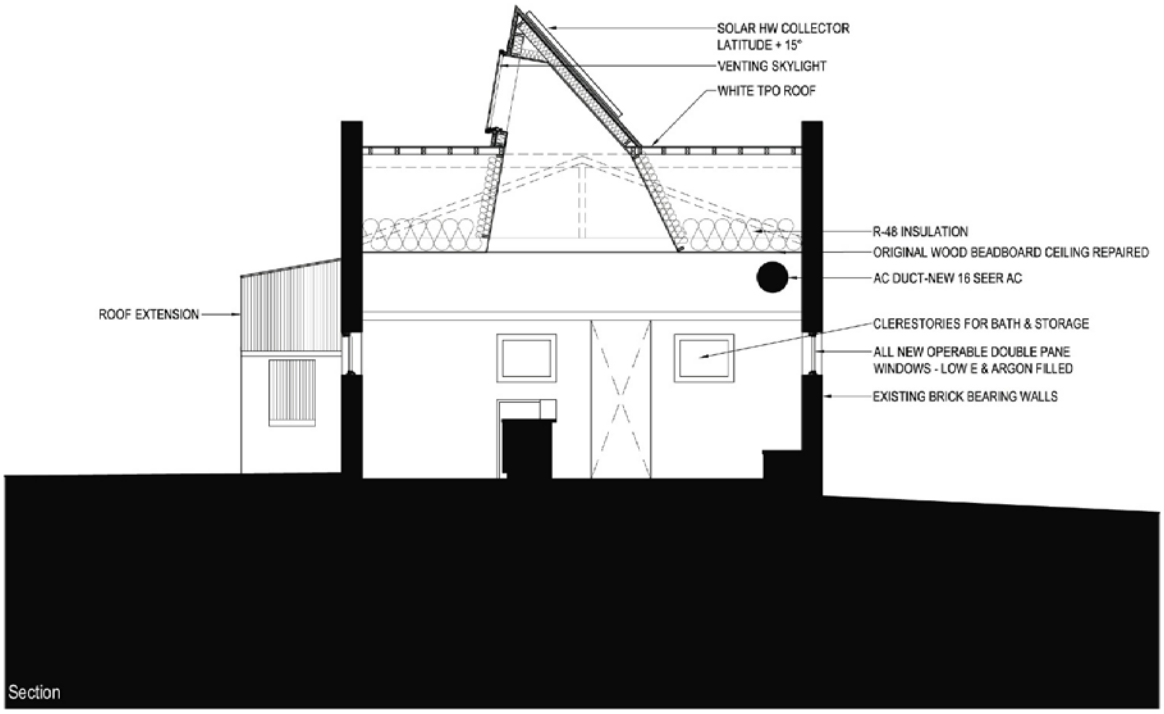


FLOOR PLAN

0 1 4 8 16 24



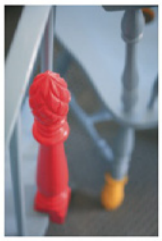
Diagram

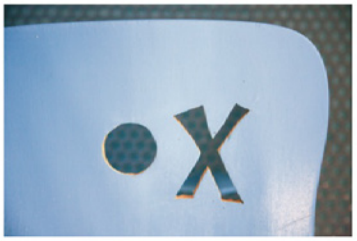

SOLAR HW COLLECTOR
LATITUDE + 15°
VENTING SKYLIGHT
WHITE TPO ROOF
R-48 INSULATION
ORIGINAL WOOD BEADBOARD CEILING REPAIRED
AC DUCT-NEW 16 SEER AC
ROOF EXTENSION
CLERESTORIES FOR BATH & STORAGE
ALL NEW OPERABLE DOUBLE PANE
WINDOWS - LOW E & ARGON FILLED
EXISTING BRICK BEARING WALLS
Section

The building is mixed use. There is a two bedroom apartment in the back. Floors are reclaimed wood. Cabinets were made on site by a local carpenter. Clerestories to the bedrooms are salvaged from the demolition. Appliances are Energy Star. Ceiling fans augment the AC system.

Furniture in the cafe was also made on-site by a local carpenter and incorporated salvaged furniture parts.

Chairs were either garbage or thrift shop finds, grafted together and repaired using other furniture finds. Paint was used to integrate with the space but also to highlight the history of the chair.





Record Values – Project Description and Identification Process

TAD GLOECKLER
University of Georgia

ARTIST STATEMENT

- extreme material worth -
↓
Record Values
↑
- identify desired principles -

CONTENT

Value, is a compelling word with multiple and potentially divergent meanings. “Monetary or material worth”, and “a principle or standard considered desirable” (The American Heritage Dictionary, 1982), are definitions directly associated with this project. Record Values, encourages a viewer to evaluate their principles or standards.

Urgency may also be an issue – design detailing suggests uncertain stability. Is the tower insidiously sinking into the base . . . and further challenged by a disintegrating floor assembly? Will material worth *(represented by 4-drawer cherry wood chest at tower peak)* implode on the work surface below? Is it a luxury to contemplate, evaluate, and document what a person truly values?

Record, the subordinate word in the project title, also has multiple meanings. “The best performance known”, and “to register or indicate in writing or other permanent form” (The American Heritage Dictionary, 1982), are different meanings that equally apply to this project.

CONTEXT

Record Values was designed and constructed in 2008, during a time when our economy was experiencing the greatest, loss of material worth, since the great depression.

WHAT IS THE VALUE OF THIS WORK?

The paragraph below elegantly communicates the value of creative exploration and art-making, and sets a standard I endeavor to achieve.

> *“But it’s lovely when you find someone at work who is doing exactly what they dreamed they should be doing, and whose work is an expression of their inner gift. And in witness to that gift, and in bringing it out, they actually provide an incredible service to us all. And I think that you see the gifts that are given to us as individuals, are not for us alone, and for our own self-improvement; but they are actually for the community and to be offered” (O’Donohue, 2009).*

REFERENCES (APA)

O’Donohue, J. (2009, September 17). Speaking of Faith. (K. Tippett, Interviewer)

The American Heritage Dictionary. (1982). Boston: Houghton Mifflin Company.

Folia

CHARLES F GUSTINA, MFA
East Carolina University

ARTIST STATEMENT

As interior designers we necessarily deal with the world of architecturally constructed space. Equally fascinating to me are the objects and spaces of the botanical environment, whether or not created through human intervention. This work explores our perceptions of and reactions to color light and depth within the botanical environment, and asks if a sense of place can be constructed out of fragmentary imagery.

Design is a response to a set of criteria, real or fictional. Design demands that my response fulfill requirements – firmness, commodity, delight. If I don't make someone happy, I'm not a designer for very long. Art is an individual's response to stimulus. I see/hear/feel something, and respond by creating an artwork. Art flings the door open: my response can mimic the stimulus or set it on its head or ask a question or go off on a tangent. As an artist I can make people hopping mad and still be considered artistic.

Visual art provides a testing ground for the ideas and themes that inform design work. The creation of an artwork draws forth subliminal personal meaning and goals, metaphor, and design elements. It is in the artistic process that one touches most directly sources of wonder and solutions to need. Here reside the tools to manipulate 2D images into plastic realities.

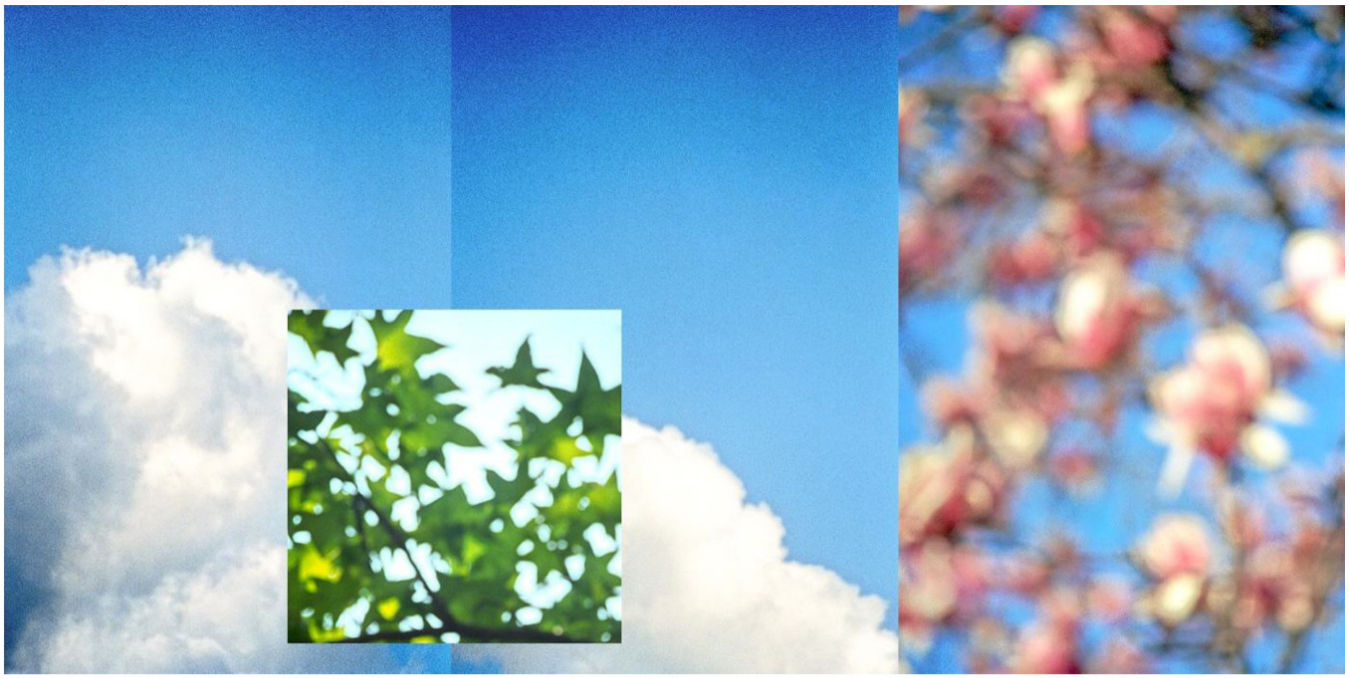
The work presented here illustrates the need to create Place. The use of natural cues, of rhythm and balance and color, pull these assemblages from abstraction back to a sense of place. The images employ design elements and representations of our physical world to invite the viewer in, to place the viewer in the context of the image. The scale of the work envelops and engages the viewer. Engagement completes the loop between artist, artwork, and viewer – the artist creates a space to share with you, expressing ideals of beauty, of order, of control. (Certainly design is the highest form of control.) Come enjoy the view.

Folia, an ongoing body of work, began as a photographic experiment. Soft-focus images of flowers and foliage are taken on film and edited digitally. Discrete images coalesce into gridded assemblages. Design asserts itself in the layout process. The orthogonal placement tames the exuberance of natural forms. The garden's civilizing influence is re-affirmed, even as the varied focal distances question our perception of surface and space.

Art provides another avenue to the creation of space, which is central to interior design. Art speaks directly to our needs, offering insight and direction towards nuanced evocative design solutions.

Folia 4-1 2009, Photo assemblage 96”w x 48”h

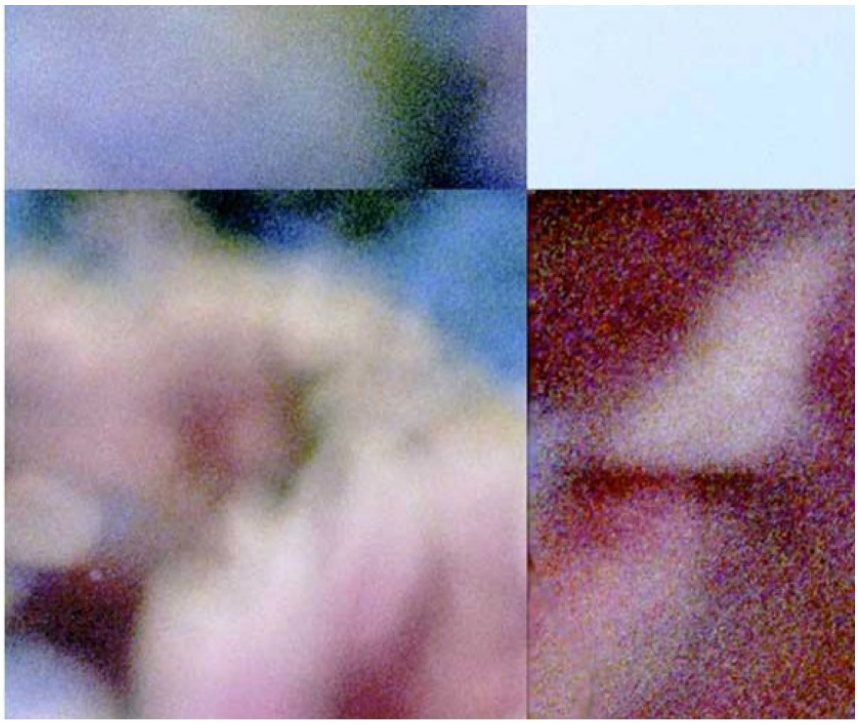
Folia 4-2 2009, Photo assemblage 54”w x 48”h



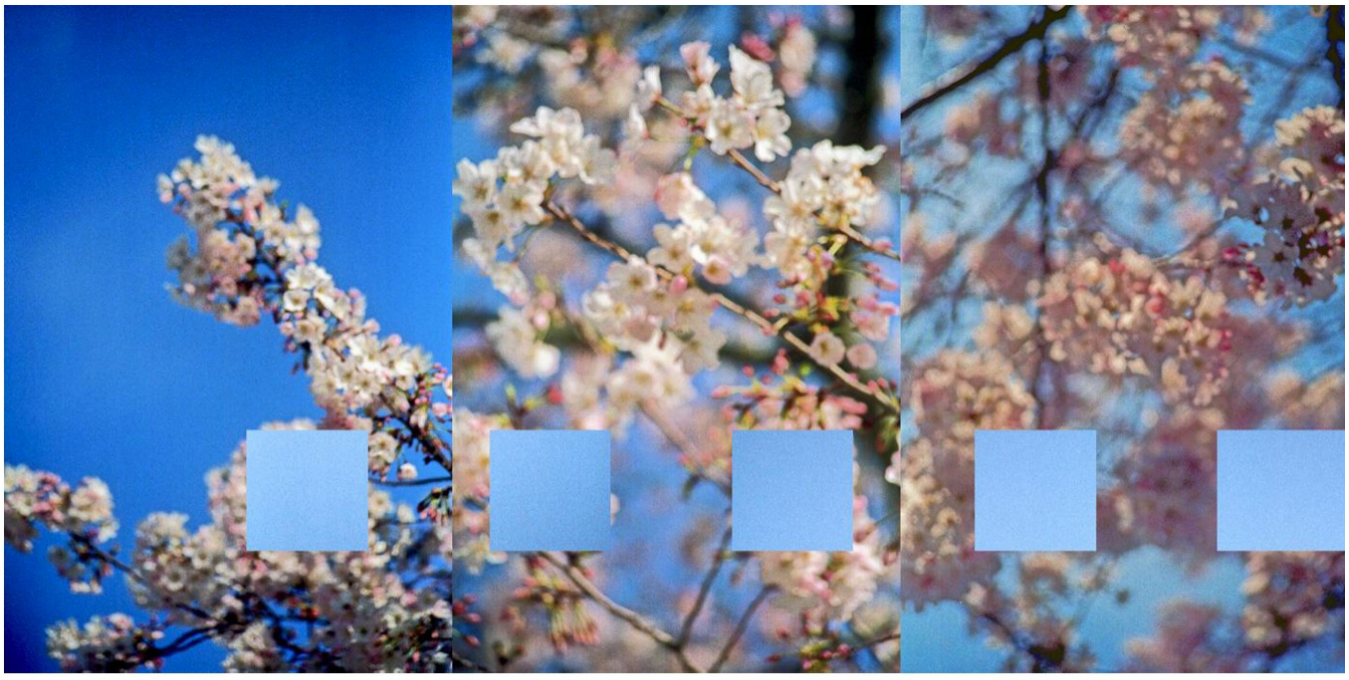
Folia 4-3 (Skyscape) 2008, Photo assemblage 96”w x 48”h

Folia 4-4 (Spring) 2008, Photo assemblage 54”w x 48”h

Folia 4-4 (Spring) 2008, Installation view



Folia 4-4 (Spring) 2008, Full-size detail



Folia 4-5 2009, Photo assemblage 96”w x 48”h

drawings of earth, mud, or nothing

JOHN HUMPHRIES
Miami University

ARTIST STATEMENT

The act of making a line is the act of assembling and crafting in space. Drawings for design are most readily thought of as a means of communication, a communicative device for what is proposed as a design solution. Conceptual drawings contain a broader potential. It is a mode that can consider intentions and attitudes, literal aspects and abstract thoughts, complexities and contradictions, fantasies and intricate relationships, along with fragmented notions. While the process of drawing can be both tangible and speculative, it is the speculative nature that can provide a significant contribution to the process of design. Without the firmness required of a building, one can investigate tectonic ideas of space, narrative, texture, order [and disorder], connection, human passage, and material.

This commissioned design project uses watercolour drawings to form a **spatial composition for use as the basis for a stage set**, a personal narrative coded within a classical myth. Original watercolour drawings reference the classical narrative of Pelops, son of Tantalus, a story of transformation, rebirth, deception, lust, and a haunted progeny. Pelops is a tragic figure linking the desires of Poseidon, the Peloponnesian wars, and the tragedies of Agamemnon, his descendant. In modern usage, Pelops is the root of something formed from the mud, or earth, or nothing.

The forms, surfaces, lines, and fragments begin to describe a series of spaces just shifting from the conceptual drawing into the first throws of three-dimensional space. These drawing illustrate a space as concrete as any space filtered through or considerate of the human experience.

Is a greater understanding of the client, the author's complex path, or even of the myth formed? Likely not. Can considering multiple spatial configurations simultaneously transform the pre-conceived notions surrounding the start of a new project? Likely yes

Transformational learning states that the primary manner in which one learns is through transforming one known or familiar concept to another--incrementally. By connecting small portions of one set of knowledge to another, insight can be gained in another set of knowledge. It proposes that ideas and notions and understandings are evolutionary and not instantaneous. Even the apparent instant connections and "ahha" moments or bolts out of the blue are the results of an active thought process that has been transforming many things until several connections are made. There is a critical moment where cascade events can happen--this is the result of not instantaneous revelation but one small thing transformed acting as a connection catalyst for several notions.

NARRATIVE

INTRODUCTION

This commissioned design project uses watercolour drawings to form a spatial composition for use as the basis for a stage set. Original watercolour drawings reference a classical narrative of Pelops, son of Tantalus, a story of transformation, rebirth, deception, lust, and a haunted progeny. Pelops is a tragic figure linking the desires of Poseidon, the Peloponnesian wars, and the tragedies of Agamemnon, his descendant. In modern usage, Pelops is the **root of something formed from the mud, or earth, or nothing**[1]**.**

The act of making a line is the act of assembling and crafting in space. Drawings for design are most readily thought of as a means of communication, a communicative device for what is proposed as a design solution. Conceptual drawings contain a broader potential. It is a mode, which can consider intentions and attitudes, literal aspects and abstract thoughts, complexities and contradictions, fantasies and intricate relationships, along with fragmented notions. While the process of drawing can be both tangible and speculative, it is the speculative nature that can provide a significant contribution to the process of design. Without the firmness required of a building, one can investigate tectonic ideas of space, narrative, texture, order (and disorder), connection, human passage, and material.

TRANSFORMATION

Transformational learning states that the primary manner in which one learns is through transforming one known or familiar concept to another--incrementally[2]. By connecting small portions of one set of knowledge to another, insight can be gained in another set of knowledge. It proposes that ideas and notions and understandings are evolutionary and not instantaneous. Even the apparent instant connections and “ah-ha” moments or bolts out of the blue are the results of an active thought process that has been transforming many things until several connections are made. There is a critical moment where cascade events can happen--this is the result of not instantaneous revelation but one small thing transformed acting as a connection catalyst for several notions.

TRANSFORMATION AND DRAWING HISTORY

Drawing as a means to discovery involves being prepared for the opportunity to make connections and other relationships. An investigative drawing pulls much from the beaux-arts tradition of representation the analytique. The juxtaposing of multiple type of media is not exclusive to this form of representation there have been many forms developed through the history of human communication from the linguistic cartoosh of ancient Egypt (a symbolic representation of glyph and image), the explicative and decorative borders and characters in illuminated manuscripts and psalters, the revolutionary and powerful early soviet posters and documents by artists such as El Lissitsky, the very space conscious concerns of newspaper pages, even the ever present pharmaceutical advertisements linking a pleasant and desirable quality of like with mountains of legal copy and a side effect list long enough to scare most viewers. The analytique, however constructed a drawing where the elements exist not only in juxtaposition but inter-relate, expand the narrative, and when best there is evidence of elements affecting each other. Often students new to the field of design are struck by the complexities of these drawings and comment on the genius it must have taken to fully plan the document. This is the response of an inquiring mind, which is focused on solving a specific equation instead of using representation as a means of exploration. One can hardly fault the new designer, we have to teach content as well as develop life long learners who can make their own discoveries.

TECHNICAL INTERCONNECTIONS

The key to a drawing able to shift between content and open the possibilities for an author to generate original content is the ability to find and make interconnections or to find the technical clues. This is parallel to the manner in which a novelist might work by linking characters and personality traits to a plot, story, or circumstance and likely some element of a human condition for the most enduring manuscripts. Being a constructed or made thing, linkages in a drawing are often mechanical. An orthographic projection of a project, being largely horizontal and parallel lines, can easily extend to become other orthographic drawings with variable scales or amounts of information. Orthographic representations can shift to paraline by way of the vertical mark. The diagonal shear of an axonometric can open the gate for perspectival planes to recede or expand from the page. Letterform is accessed through figural forms, vertical or horizontal marks, through the diagonal strokes of the characters, or bound within a frame.

Quickness[3] Early in a speculative project or design a nimble mind moves easily between conflicting sources.

Precision[4] Numerical measuring is not the goal of precision. Precision is meant to suggest the author is precise in the means and application of the media or technique used in the development of the project.

Revealing Related to quickness and precision, the designer or author must not be concerned with error. Those that do not kill the organism survive to influence future generations.

Multiplicity[5] Connections to other elements, concepts, or ideas need to occur in multiple layers. If the drawing lives in the realm of singularity this falls from the realm of speculation and becomes direct or pictorial representation.

MODES OF WORKING

Based upon research into the technicalities of shifting from one mode of expression to another in both digital and analogue media as a means to understand both learning and creativity:

image becomes text,
video is audio,
text becomes audio,
panorama shifts to automatic writing, then dialog
image leads to form,
form to narration,
deep rooted psychosis becomes opera.

Beginning with an initial shallow reading of a classical Greek myth the text of the narrative is read through the lens of a formal language of architecture, focusing on the geometric description of the character and events and the analogous descriptions of the characters interrelationship. For example the description of the primary character Pelops is translated into a series or set of similar object which when combined begin to describe the whole. His father chops the character up for so much human stew. The father is placed in a position to slice or separate the pieces into individual components. Connections between the objects and components allow for the continuity and individuality of the character. When the arm is re-formed the drawing becomes one of a series of planes, lines, and hues beginning to reassemble themselves. Within the frame of the drawing these relationships are questioned again as the lines, planes, and figures begin to leave the page. Expanding beyond the surface of the page reinforces two notions related to transformation. The first is a notion of straddling one form of representation and another which allows for a more fluid dialogue or inquiry of each; there is a possible simultaneous reading of a graphite line or a wooden line as being two dimensional or three dimensional. The other notion is one of questioning the media itself and denying the categorization of model or drawing, painting or sculpture.

A component or kernel of connection between media allows for the transformation of one mode of representation to another. When a two dimensional image is considered as a graph or plotting with the horizontal line representing time and the vertical component being pitch each image (whether individually extracted hues, a bridge, or of grandma) can generate a sound[6]. A further investigation into visual synthesizing can extract the redness or greenness relating to right or left audio channel, luminosity can be volume, and blur or transition between each pixel can be something sneakily similar to timbre. The individual hues once extracted and processed from each of the images can suggest tones or voices or instruments. Blues, Oranges, Reds, Greens, and Blacks become an acoustical representation of the image.

With an acoustical representation of the narrative generated, this multi-layered sound can be sent through speech recognition equipment and generate a sort of automatic poem. This new series of texts, one for each drawing, becomes a sort of text or dialogue or monologue two or three steps removed. Filtration by grammar and spell checking software there is, at first, a seeming sense to the texts.

Lastly the text, image, hue, and acoustical representations are used to generate a series of three dimensional forms; a surface for the execution of the operatic performance. These studies illustrate space as concrete as any space filtered through or considerate of the human experience.

Is a greater understanding of the client, the author's complex path, or even of the myth formed? Likely not. Can considering multiple spatial configurations simultaneously transform the pre-conceived notions surround-

ing the start of a new project? Likely yes.

Perhaps an equivalent analogy might be of industrial food production where nearly inedible industrial corn can be translated into ethanol, Xanthin gum, acoustical ceiling tiles, or chicken nuggets.

The nutritional value of the process is yet to be determined or evaluated by the FDA.

ENDNOTES

1 Summarized story of Pelops: Pelops' father was Tantalus (origin of the word tantalize). Wanting to make an offering to the Olympians of human flesh (which would debase them and dissolve their godliness and authority), Tantalus cut Pelops into pieces and made his flesh into a stew, then served it to the gods. Demeter, deep in grief after the abduction of her daughter Persephone by Hades, absentmindedly accepted the offering and ate the left shoulder. The other gods sensed the plot, however, and held off from eating of the boy's body. Pelops was ritually reassembled and brought back to life, his shoulder replaced with one of ivory made for him by Hephaestus. After Pelops' resurrection, Poseidon took him to Olympus, and made the youth his eromenos, teaching him also to drive the divine chariot. Later, Zeus threw Pelops out of Olympus, angry that his father, Tantalus, had stolen the food of the gods, given it to his subjects, and revealed the secrets of the gods.

Having grown to manhood, Pelops wanted to marry Hippodamia. King Oenomaus, her father, fearful of a prophecy that claimed his son-in-law would kill him, had killed thirteen suitors of Hippodamia after defeating them in a chariot race and affixed their heads to the wooden columns of his palace. Pelops came to ask for her hand and prepared to race Oenomaus. Worried about losing, Pelops went to the seaside and invoked Poseidon, his former lover. Reminding Poseidon of their love he asked Poseidon for help. Smiling, Poseidon caused a chariot drawn by winged horses to appear. Pelops, still unsure of himself, convinced Oenomaus' charioteer, Myrtilus, a son of Hermes, to help him win. Pelops convinced Myrtilus by promising him half of Oenomaus' kingdom and the first night in bed with Hippodamia. The night before the race, while Myrtilus was putting together Oenomaus' chariot, he replaced the bronze linchpins attaching the wheels to the chariot axle with fake ones made of beeswax. The race started, and went on for a long time. But just as Oenomaus was catching up to Pelops and readying to kill him, the wheels flew off and the chariot broke apart. Myrtilus survived, but Oenomaus was dragged to death by his horses. Pelops then killed Myrtilus after the attempted rape of Hippodamia.

As Myrtilus died, he cursed Pelops for his ultimate betrayal. This was one of the sources of the curse that destroyed his family (two of his sons, Atreus and Thyestes killed a third, Chrysippus, who was his favorite son and was meant to inherit the kingdom; Atreus and Thyestes were banished by him together with Hippodamia, their mother, who then hanged herself) and haunted Pelops' children, grandchildren, and great-grandchildren including Atreus, Thyestes, Agamemnon, Aegisthus, Menelaus and Orestes.

2 Mezerow, Jack. The transformative Dimensions of Adult Learning, 1991.

3 Wallick, Karl. "Design Research Through Generative Drawing". 25th National Conference on the Beginning Design Student. Louisiana State University. Baton Rouge, LA. 2009.

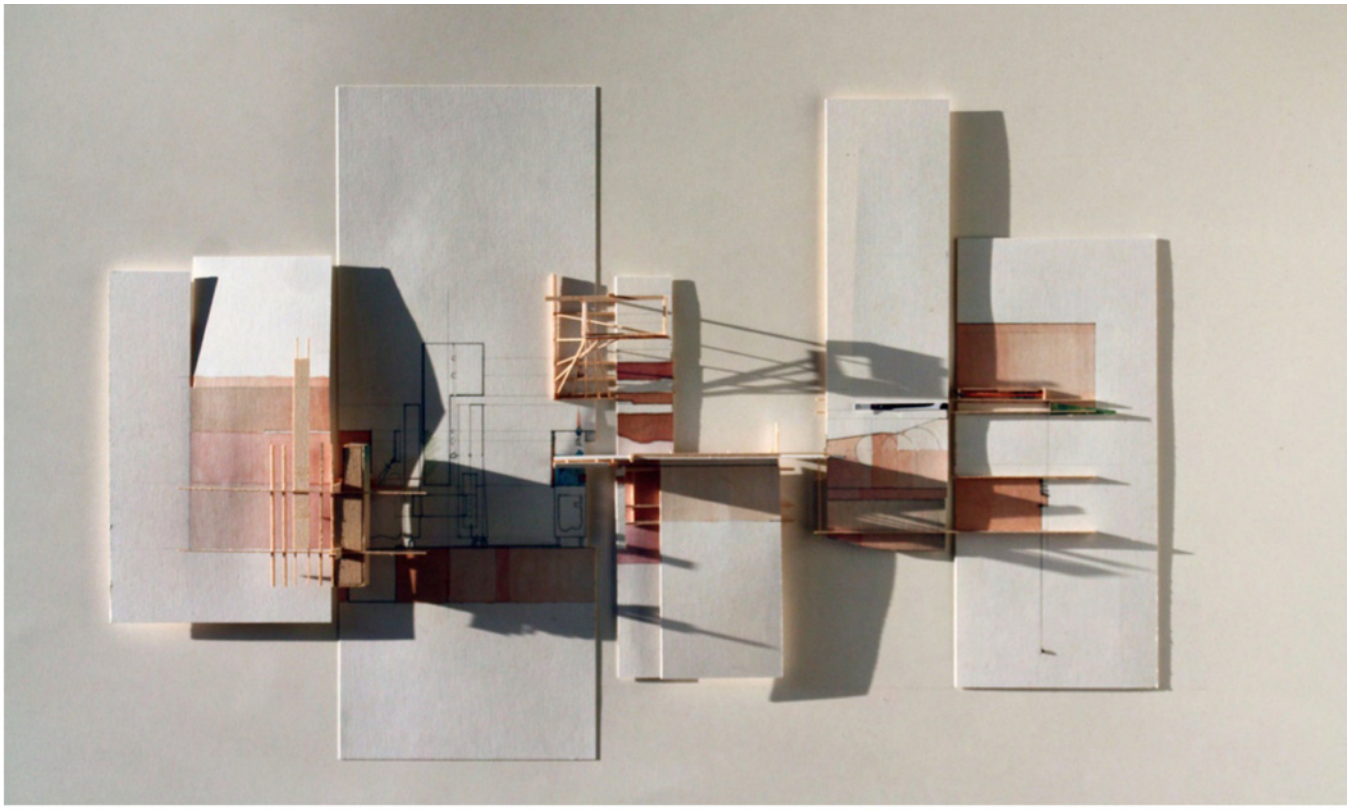
4 Gregotti, Vittorio. Inside Architecture. The MIT Press. Cambridge, MA. 1996.

5 Nicholson, Ben Collage Making, Appliance House, MIT press, 1990.

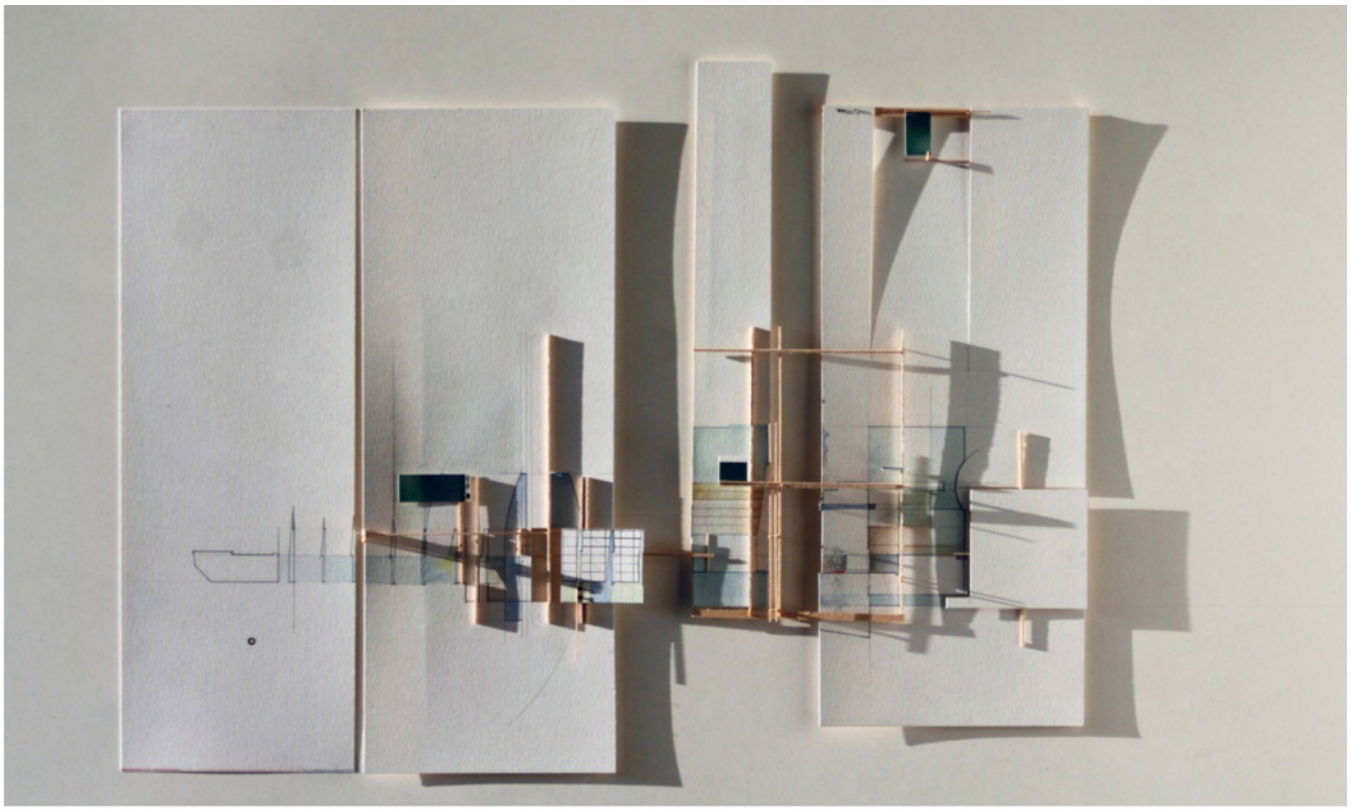
6 It must be noted that the term sound os used as the acoustical representation is farm from the complexities of music.

A project of transformation, conception, and speculation. A narrative or story just starting to move from prose to spatial construct. This is the digital equivalent of industrial food production where nearly inedible corn can be translated into ethanol, xanthan gum, acoustical ceiling tiles, or chicken nuggets.

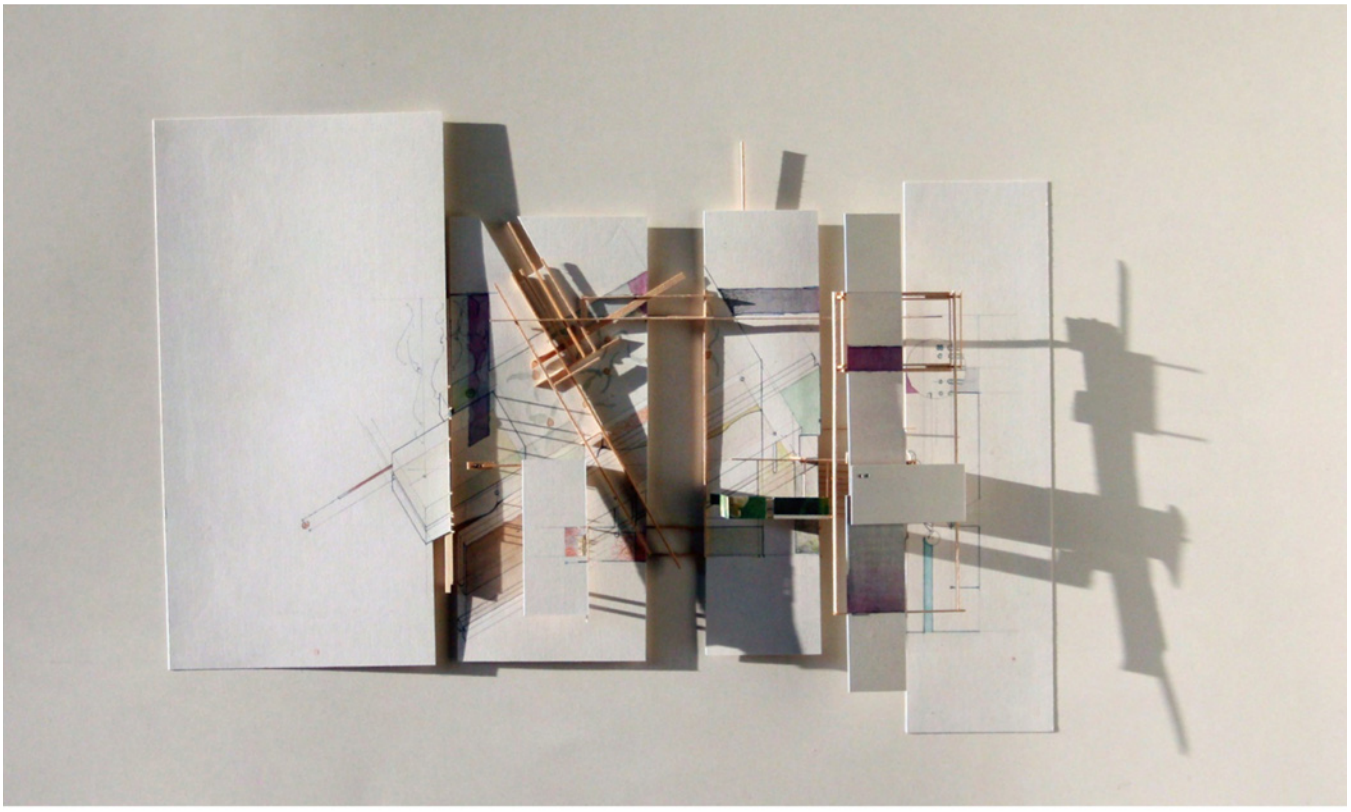
The nutritional value of the process is yet to be determined or evaluated by the USDA.



sketch for stage set design **media: watercolour drawing** **size: 20x30”**



sketch for stage set design media: watercolour drawing size: 20x30”



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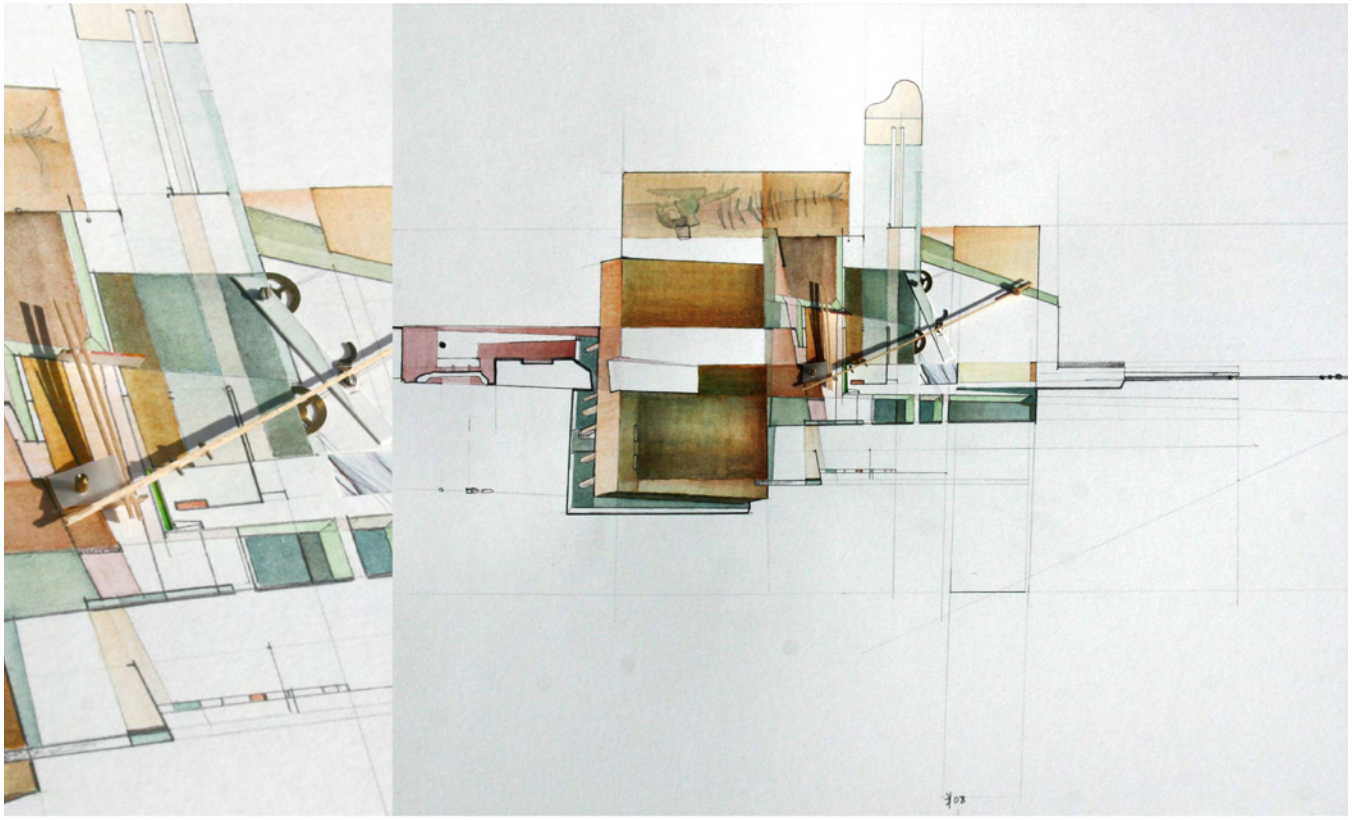
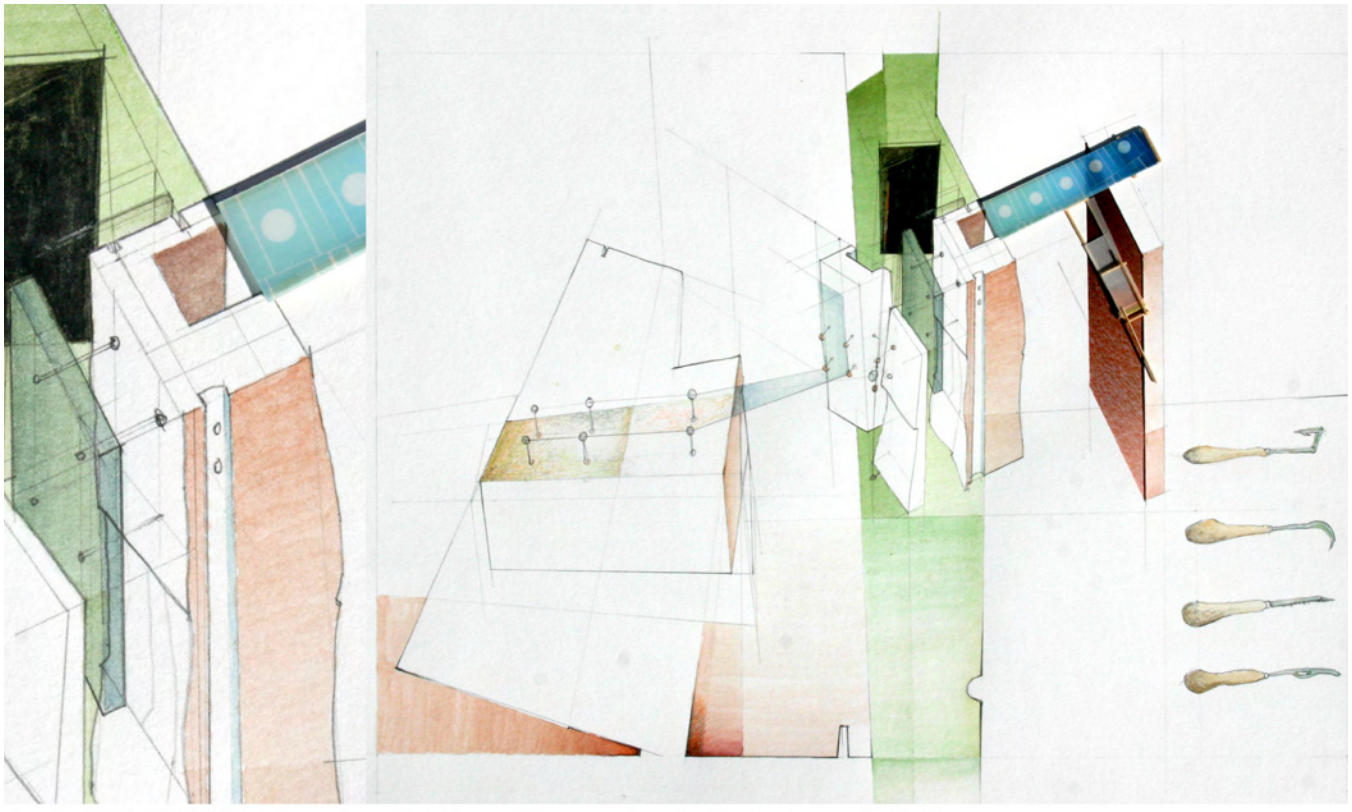


character sketch with detail illustrating analogous tectonic assemblies media: watercolour drawing size: 11x14”



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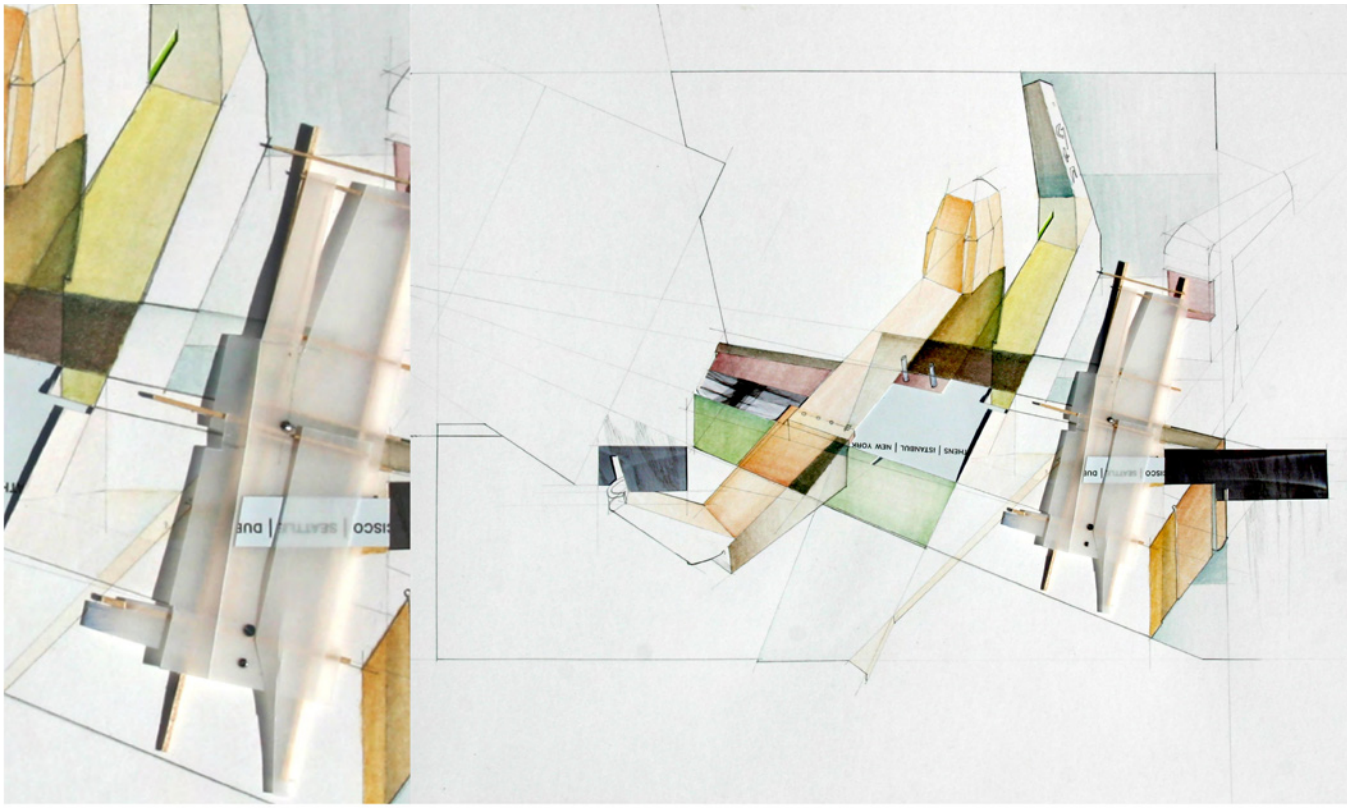

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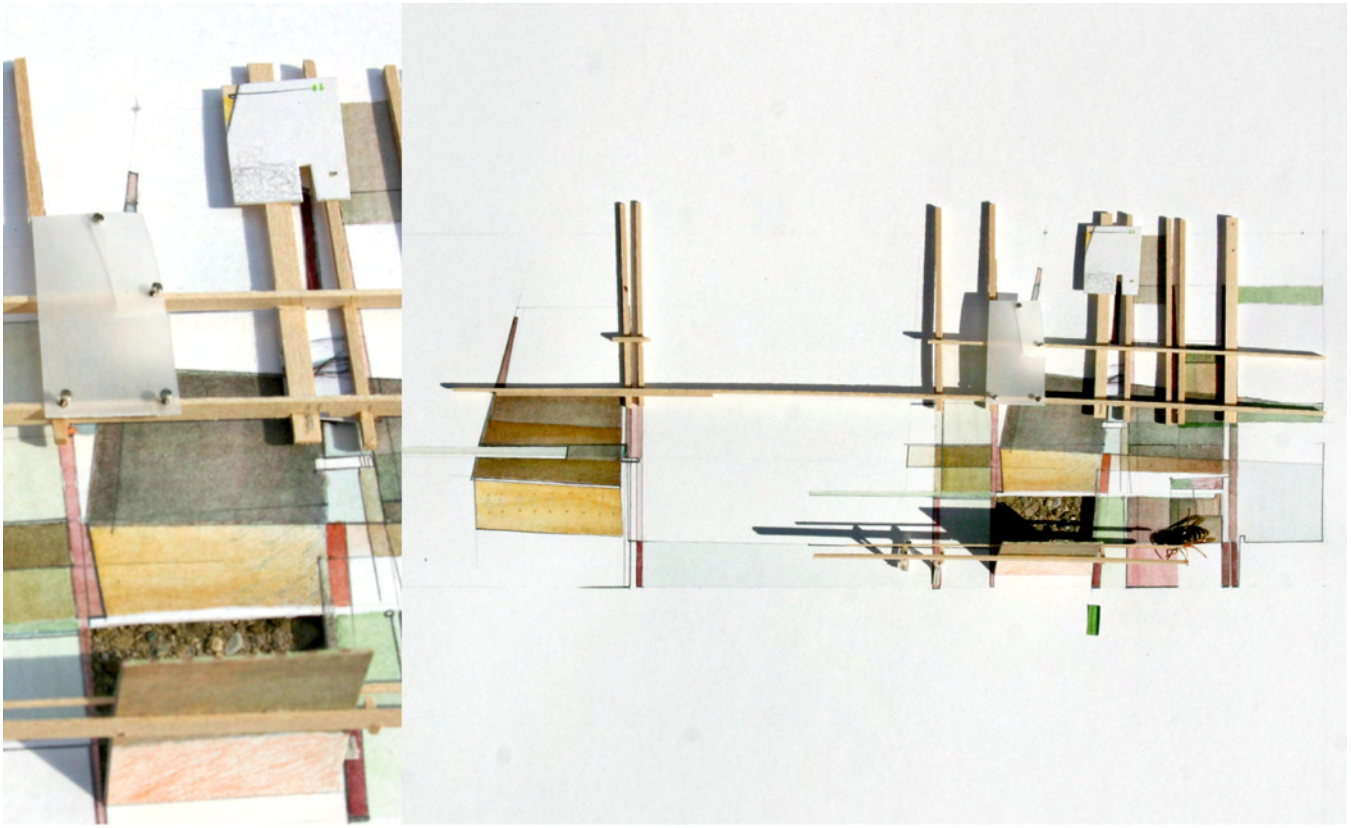

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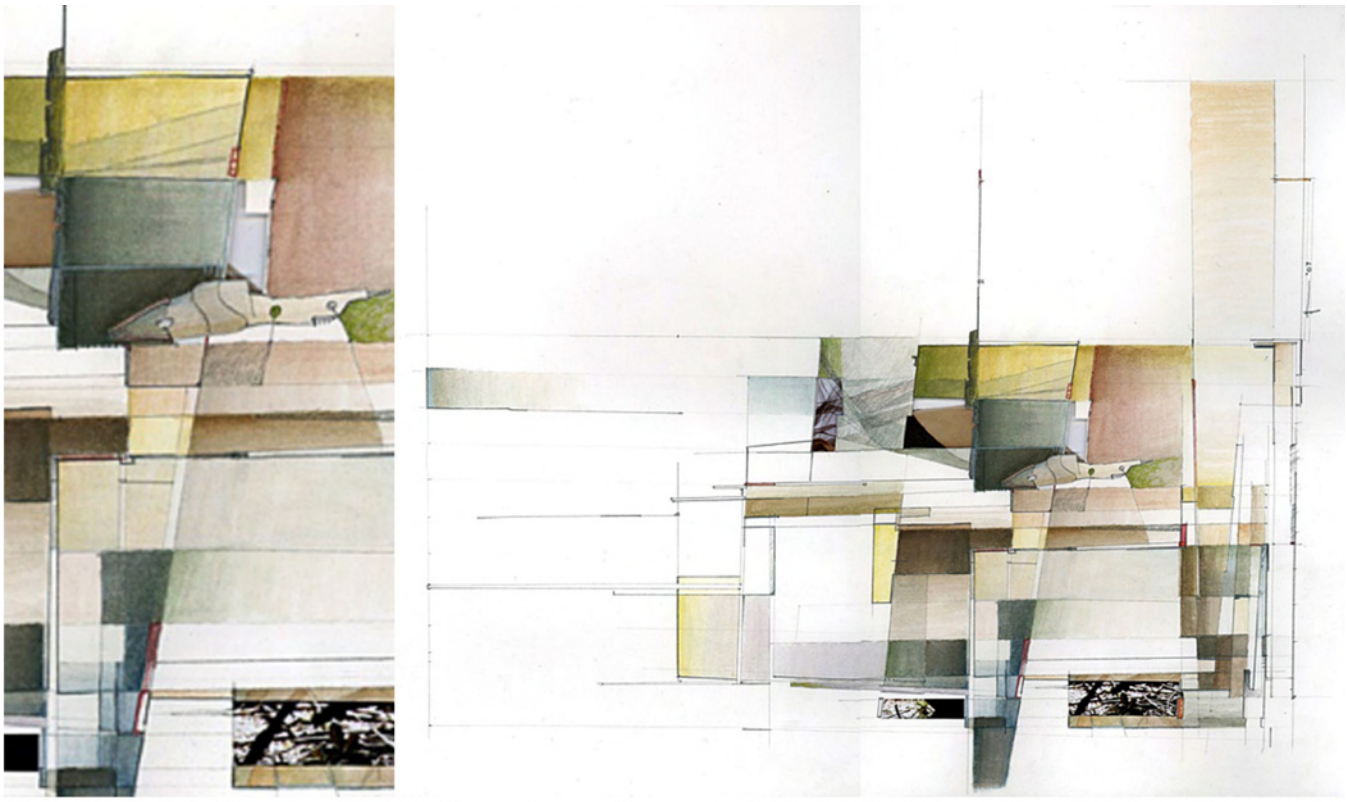

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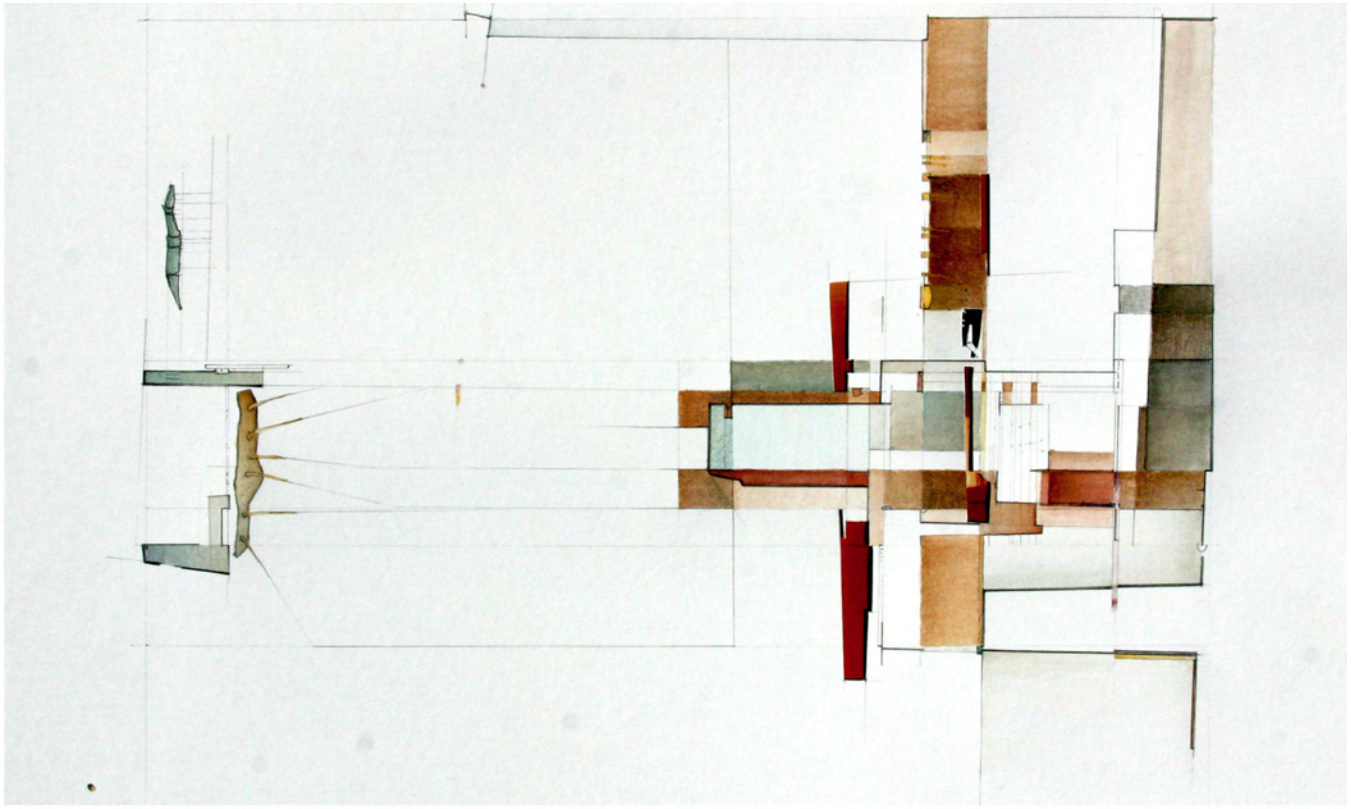


character sketch with detail illustrating analogous tectonic assemblies **media: watercolour drawing** **size: 11x14”**

INTROSPECTION / projection

CHRIS JOHNSON
Georgia Southern University

ARTIST STATEMENT

The digital work "INTROSPECTION/projection" was created as a site-specific series of projected images that respond to the challenges and rewards of teaching design and living life as a designer in a complex time of transition in the world, the world of design, and the vocation of interior design instruction.

The intent was to use a digital projector in a common/circulation area to project each image into a vertical plane 8' x 8'. The images would project onto anyone standing in or passing through the projector's beam.

As more people would inhabit or pass through the space, the images would become increasingly difficult to read/interpret, reflecting the potential diversity of reactions to the images, and the complexity of establishing and teaching a body of knowledge for interior design. The views posited by the questions/statements in the images are not a reflection of a specific pedagogical approach or an attempt to persuade the viewer to shift or share a perspective; rather, the subjective aspects of the objective body of knowledge are being called forward.

"How many high-end residential designers does the world really need?" is not a condemnation of the residential design profession, but a question about realistic job opportunities in the current housing market for aspiring students, the impact of design television programming on interior design education, etc. Questions are also raised about the perceived value of different design professions and professional organizations.

"Does grammar even matter anymore" is an immediate response to the emails, texts, tweets, Facebook posts, etc design educators encounter each day. If a student's design intent is communicated effectively, does it matter if the student cannot spell, or use words properly?

"Teach gratitude by example" suggests that students learn not only how and why to design in the educational setting, many of them also learn there about the attitudes and behaviors of designers.

"The timeless classics are getting repetitive" questions the profligacy of mid-century modern furnishings in student designs.

"There are no symbols of authority…… authenticity is only valued by those who have it" addresses the values of different generations in academia and the workplace.

"Personal expression devalues the single largest investment of most Americans" questions the practice of teaching students to create responsive, meaningful residential interiors for clients whose savings are represented by their dwellings.

"The perils of a dead-end corridor should be self-explanatory" is a direct response to a student inquiry.

"The thought of your feet on my sofa makes me sick with rage" is a statement and question of identity: who would feel this way and why (or why not)?

"All design has consequences" suggests that even the most seemingly ordinary design projects, in and out of school, may have lasting and unintended results.

"Can an eco-resort even exist" calls into question how sustainability is being taught: Is teaching students to use rapidly renewable resources helping make them better citizens, or more marketable graduates? Does

it matter?

"Why do we still build tall buildings" is a response to the writing of Mark Wigley in his 2002 essay "Insecurity by Design," and in the context of the IDEC conference, questions the role of interior designers in designing environments for human occupancy in skyscrapers post 9-11.

"The right answer is almost inevitably boring" suggests that design project programs, not the design solutions, might themselves be at fault, if there is a right answer.

"If design isn't fun, are we doing it right?/Were the Eamses wrong?" is a suggestion that the idea of serious pleasure is one that has lost currency in many design studios, where a focus on systems, codes, mechanics and business of design have overshadowed, instead of providing support to, the joy of design.

"The instant of discovery is amazing to behold" is a suggestion that despite the challenges of being an interior design educator, participating in the growth and development of another person does have intangible, if infrequent, immeasurable benefits.

A range of responses is being elicited through the work, to engage viewers in considering and sharing their own responses to a range of contemporary topics. The multiplicity of roles held by interior design educators requires a vast amount of knowledge, as well as the ability to disseminate it meaningfully in the classroom. At the same time, personal beliefs projected into the classroom may impact what students take from their as much as any defined learning objective. This work is an opportunity to reflect on those shared and unshared values.

Figure 1:
INTROSPECTION / projection

Figure 2:
INTROSPECTION / projection

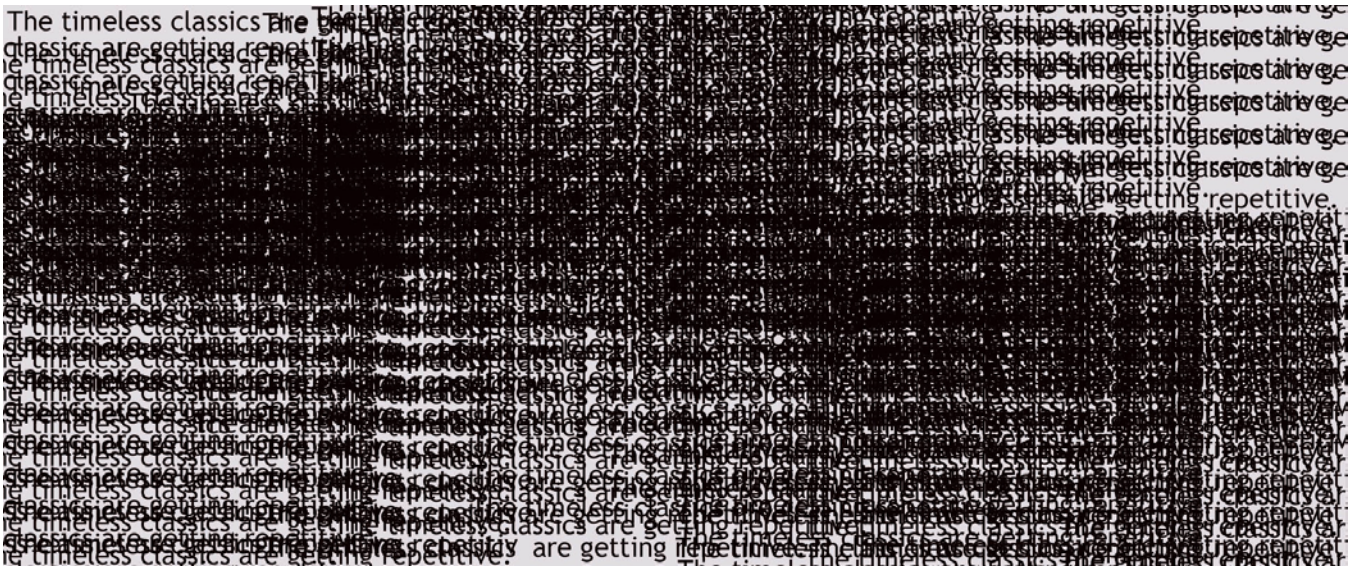


Figure 3:
INTROSPECTION / projection

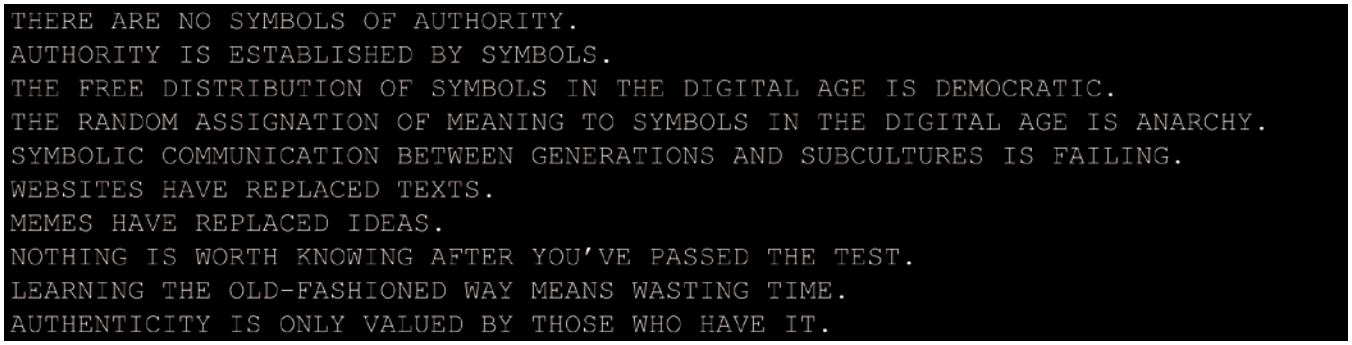


Figure 4:
INTROSPECTION / projection

Figure 5:
INTROSPECTION / projection

Memorial: Paying Homage to our Heroes

ZAMILA KARIM
Southern Polytechnic State University

ARTIST STATEMENT

The statistics are grim. Operation Iraqi Freedom, since 2003 has resulted in 4,349[1] casualties and the number is growing. We are reminded of one mother's emotions at Arlington Cemetery, where she leaves a new picture at the grave every week, "I want people to realize that this is a human being. It's not just a number. It's not just a name, I want them to see this person who's here."[2]

Memorial: Paying Homage to our Heroes, is a time-based, site-specific installation that uses the four elements earth, water, fire and air in various forms to remind us of the fragility of life that comes with war. Melting Ice is used as a metaphor for life's temporal nature. Through laser cutting techniques the names and ages of the fallen soldiers are etched into three blocks of ice, which correspond to a large-scale video projection in a narration of names. Luke Nielsen, an ex-student who is a soldier in the army, selected and recorded the names as a symbol of unity to all those who enlist themselves for the cause.

The setting of the memorial is an indoor gallery space with a video projection. Three granite memorial benches hold three blocks of ice etched with twenty names with ages, each evoking an experience of a cemetery. Three is a sacred number in many beliefs, and is used here to symbolize spirituality that unites us all. Granite in both solid and crushed forms is used in the installation as a symbol of the earth from which the first primordial man was created and with which after death he is reunited. The ice melts, changes its form becoming one with its source, and is caught in a basin as a sacred container. The sound of the dripping water resonates with the rhythm of the thumping heartbeat in the video. Four lighted candles on granite blocks, interacting with ice and projection screen, create ephemeral patterns. As an observer remarked, there is "an ambiguous feeling of souls being lifted into atmosphere, creating a serene environment of peace, tranquility and remembrance." The memorial is a work in progress as each opportunity to exhibit uses sixty different names. The memorial will be complete once all the names of the fallen soldiers are shared atleast once in a public setting.

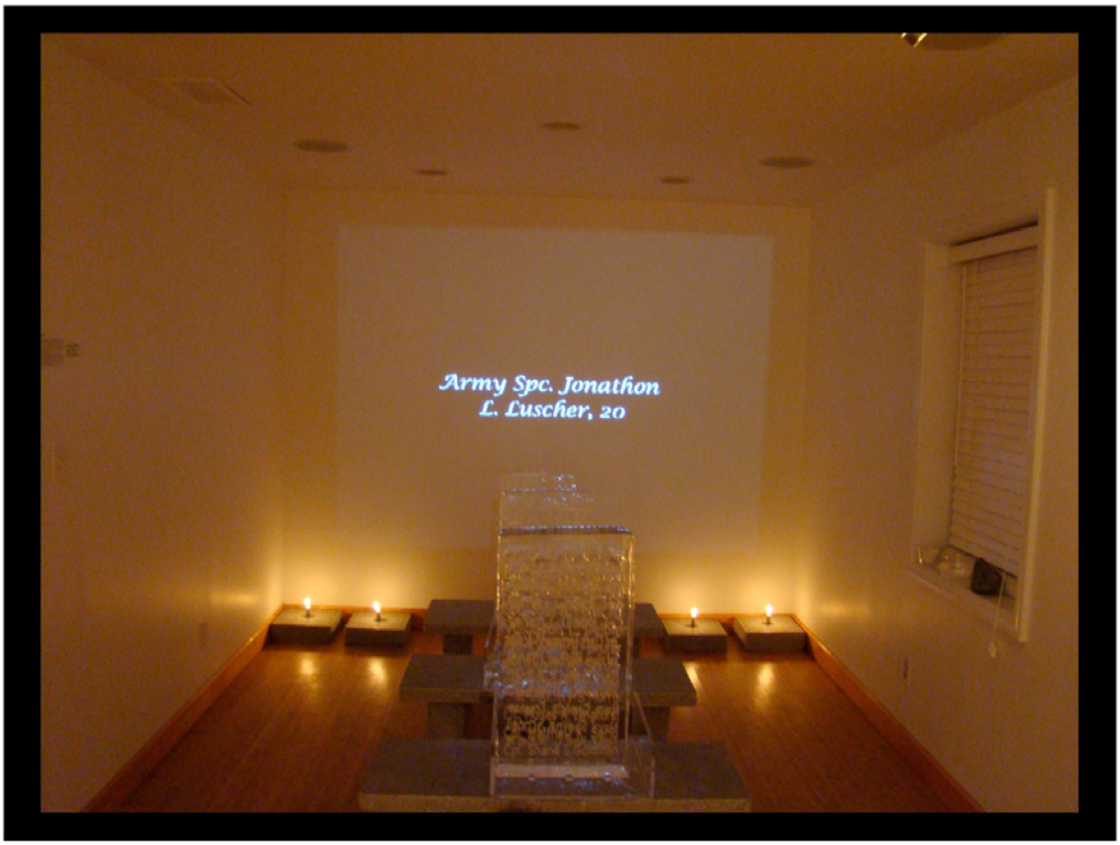
The impetus behind the exhibit is the fear that all mothers face - of losing one's child, as did my own mother when she lost a 17-year-old son in a similar situation. This memorial honors all fallen soldiers and reminds us that even if they are not with us physically, their soul will live forever in the memories that they have left behind. We salute them all for their ultimate sacrifice.

'The first thing any new mother asks is, 'Does it get better?' " Beth pauses, lost in thought. "I have to tell them, 'No.' " Time does not heal all wounds; it just gives you a few more seconds each day before the loss begins again.'[3]

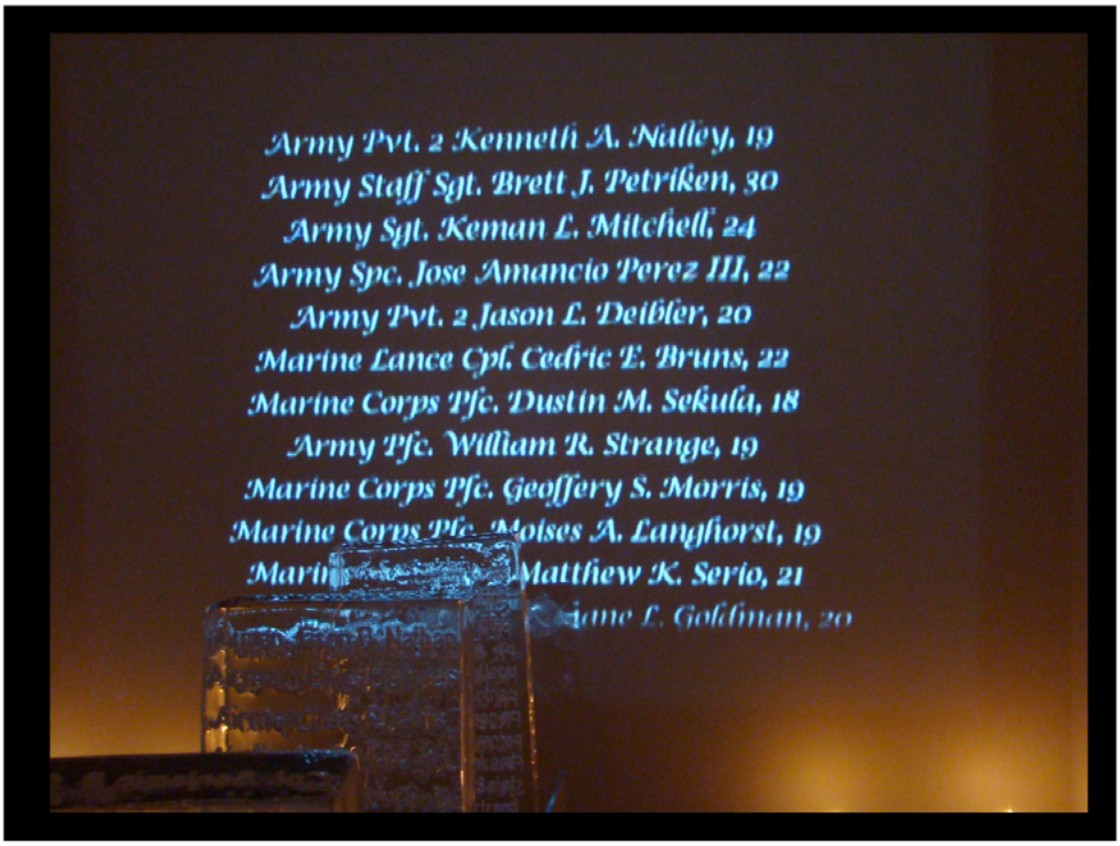
1 http://www.icasualties.org/

2 http://www.msnbc.msn.com/id/27578185/ns/today-today_people/

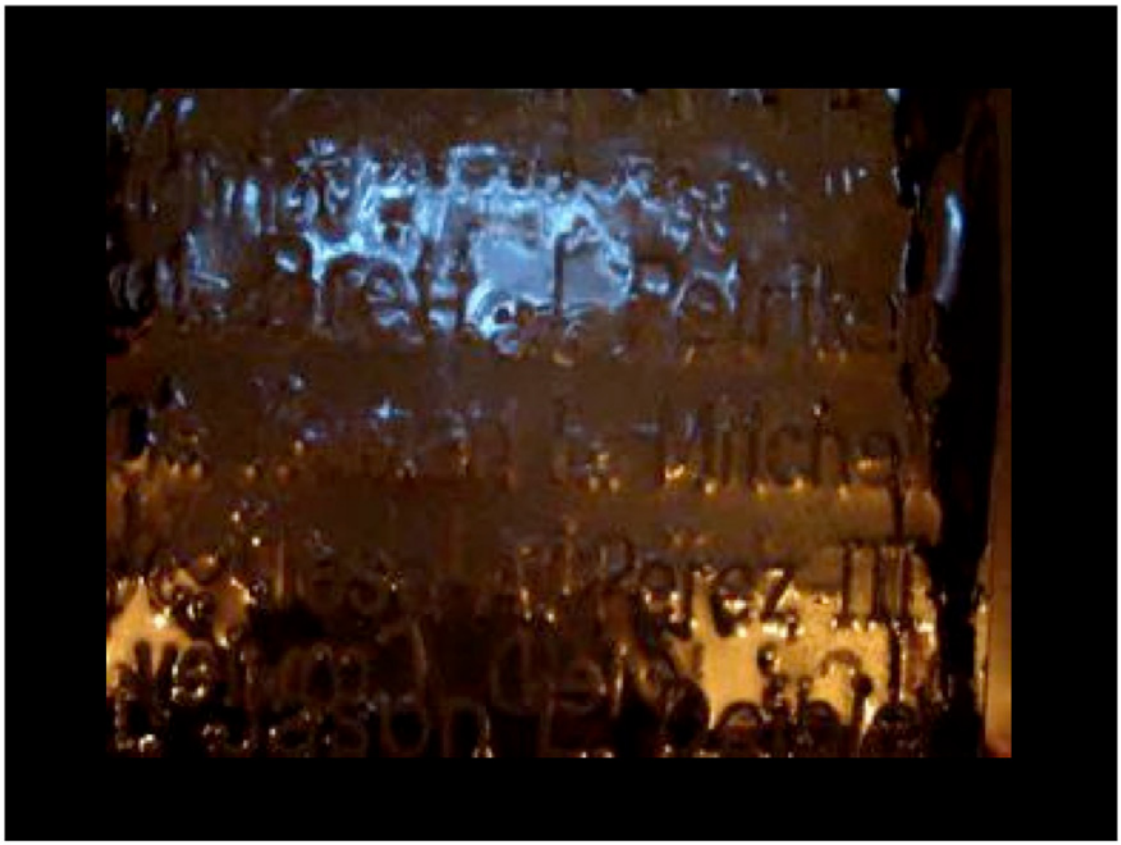
3 http://www.msnbc.msn.com/id/27578185/ns/today-today_people/


Army Spc. Jonathon
L. Luscher, 20

Army Pfc. Bryan R. Thomas, 22
Army Pvt. Vincent C. Winston Jr., 22
Army Pfc. Patrick W. May, 22
Army Spc. Michael L. Gonzalez, 20


Army Pvt. 2 Kenneth A. Natley, 19
Army Staff Sgt. Brett J. Petriken, 30
Army Sgt. Keman L. Mitchell, 24
Army Spc. Jose Amancio Perez III, 22
Army Pvt. 2 Jason L. Deibler, 20
Marine Lance Cpl. Cedric E. Bruns, 22
Marine Corps Pfc. Dustin M. Sekula, 18
Army Pfc. William R. Strange, 19
Marine Corps Pfc. Geoffery S. Morris, 19
Marine Corps Pfc. Moises A. Langhorst, 19
Matthew K. Serio, 21

y Spc. Ronald A



Contempo: Interior Design as Inspiration for Fine Art

SELENA NAWROCKI, PH.D., M.F.A.
Valdosta State University

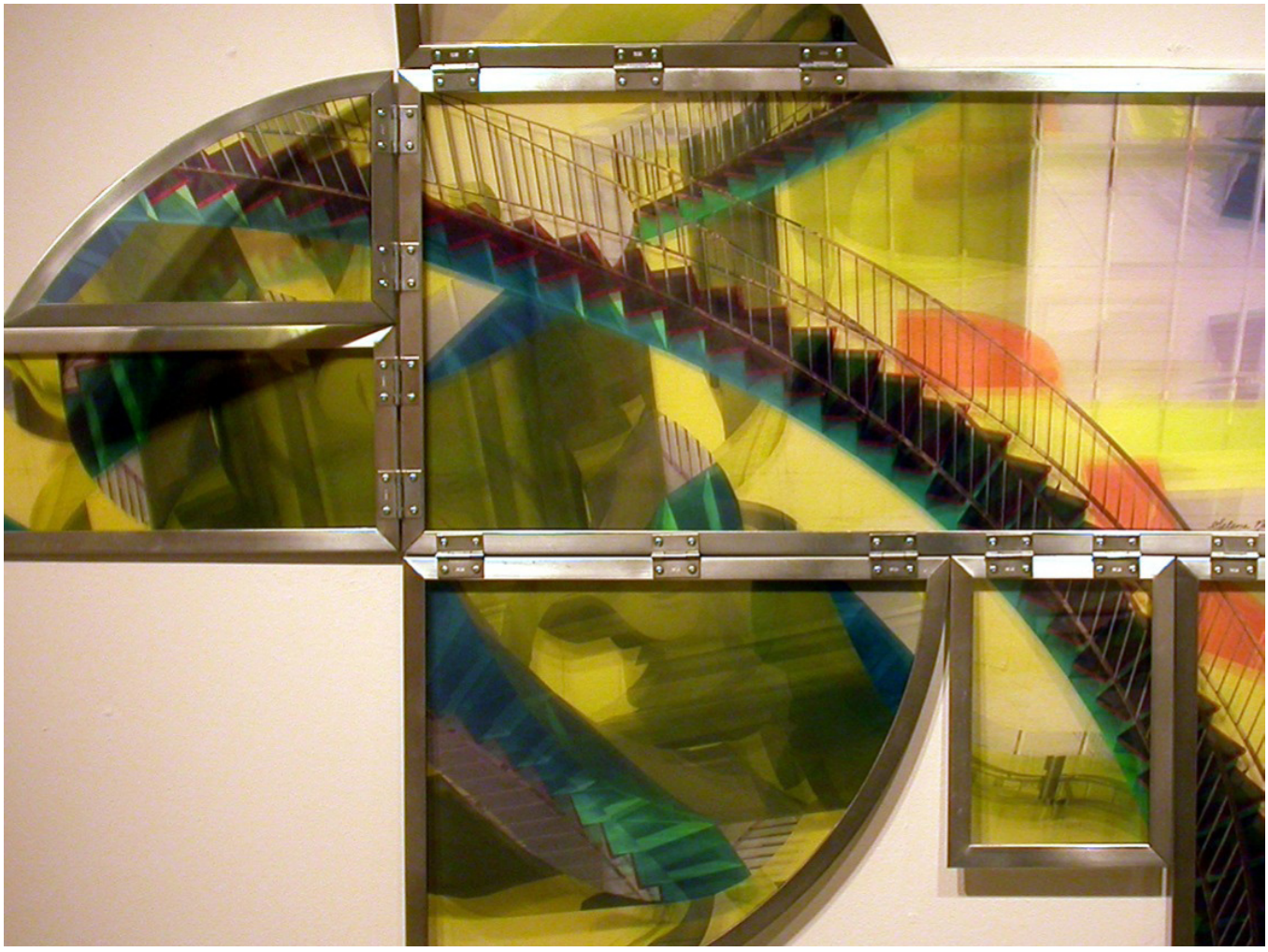
ARTIST STATEMENT

"*Contempo*" is part of a series of compositions utilizing architectural room interiors with emphasis on stairways as the principle motif. Traditional boundaries of Applied Arts have been shattered, with the use of axonometric drawings and computer renderings as pre-production cartoons to yield mixed media Fine Art bas-relief works of art. I am interpreting nature in its purest abstract state - room interiors are created with line, plane, unique color, and transparent floors to suggest a surreal environment. A rhythm of pictorial lyricism is achieved by exploring interior space traffic flow with door swings and stairways. I place great emphasis on edge and the interrelationship of form and color in maintaining a harmony of visual balance. Objects never end - forms intersect with infinite combinations of sympathetic attunements and clashing aversions. No object may be viewed in isolation, but absorbs its surroundings, just as it contributes to the total composition.

My work has been inspired by the architecture of Richard Meier, who has been praised for his "single-minded pursuit of new directions in contemporary architecture." Meier is known for "his search for clarity and experiments in balancing light, form, and space", in the creation of "works, which are personal, vigorous, and original". Meier is a modernist in the functional tradition of Le Corbusier, who defined architecture as "the masterly correct and magnificent play of mass brought together in light." Le Corbusier also related his work to technology calling his structures "machines for living". Meier has developed a personal, elegant style that renders him not only insightful but also avant-garde. His gleaming white and silver buildings utilizing clean lines are often high-tech in appearance but are actually elaborate, picturesque sculptures relying on light and shade. Meier has said, "my meditations are on space, form, light, and how to make them."

For the planning of the cafeteria of the Daimler-Benz Research Center in Ulm, Germany, Meier simplifies the building creating a basic geometry incorporating the circle, square and rectangle, to produce a curvilinear visual orientation. As Richard Meier's work utilizes geometry of straight and curved lines to provide an irregular enclosure for the interior space, I have used the same technique to create a sculptural frame for my work.

Photoshop is used to manipulate AutoCAD and perspective drawings, sharpen the image, establish low and high key values, and create a full range of contrasting colors. The composition is printed 36"x50" on clear film using a large format plotter. The final multi-shaped image is placed between two sheets of clear Plexiglas and framed in custom-made zinc utilizing both angular and curvilinear silhouettes. Hinges are added, suggesting an industrial machine age quality of motion, to create the partially or fully animated affect and connect the various units together, which form the completed composition. Even with the constant threat of chaos with the extensive use of diagonals, sharp angles, and bold color, I have sought an intuitive sense of ideal order.



Fabrication

CHARLOTTE PEASE
Grand Rapids Community College

DESIGNER STATEMENT

The process of creating interior environments involves much more than the formulation of an initial conceptual idea. At a rudimentary level, the complete realization of a design concept involves a fundamental understanding of materials and construction methodologies inherent in the process. How can the educational environment create a greater understanding of this design and fabrication process that exists in the industry?

There lies the potential for enhanced learning of abstract ideas, such as the assemblage of design parts, through supplementing it with hands-on experience. The benefits of which, can be seen in professions outside of the design discipline. This may be accomplished not only through the process of critical thinking and observing, but by participation in the outcome. A student may better understand the inherent properties of materials if they are involved in its fabrication and implementation within the context of other materials and the design concept.

The increasing capability of technology to simulate realistic environments has opened up other avenues in which to further explore how the process of making a virtual facsimile of an idea, can inform the fabrication process and vice versa. To effectively utilize a computer model, there must first be an inherent understanding of the capabilities and limitations of the materials, in so far as; they begin to inform the design process.

Expanding the definition of what is considered important for design knowledge and innovation in the interior design field by studying the pragmatic aspect of construction through the development of an interactive relationship between thinking and doing provides and alternative method of studying design. It is an understanding of the process of making that has the potential of informing the initial ideas.

This interior design studio project was the implementation of these ideas. Within the timeframe of one semester, the students designed and built a project within their own studio space. This space was selected, in part, because the students could function as one of the user groups and could give instant feedback on the inherent problems with the space, and it gave them a vested interest in the outcome.

Through programming, three goals were established; the studio fabrication should function as a learning tool for all students in the program, it should feel like a design studio rather than a generic University classroom, and the project should help to establish an identity for

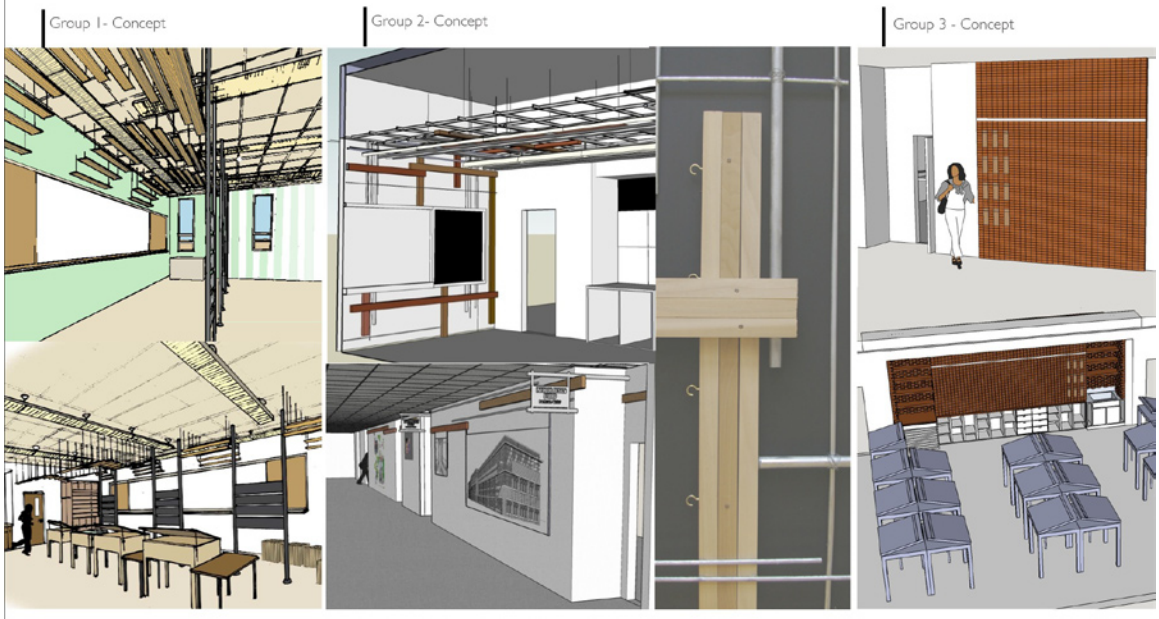
the interior design program within the broad context of the University.

The material used for the project was a pre-consumer recycled material that was a by-product of the manufacturing process of an internationally recognized, and local site furniture company. The students were given a tour of the manufacturing facility so they understood what materials they could use to develop their designs. They were then divided into three groups. Each group developed an approach to the project, and initially presented their ideas to the faculty, and then formally to a panel of critics largely comprised of members from the site furniture company. It was this panel that selected which of the three projects was to be fabricated.

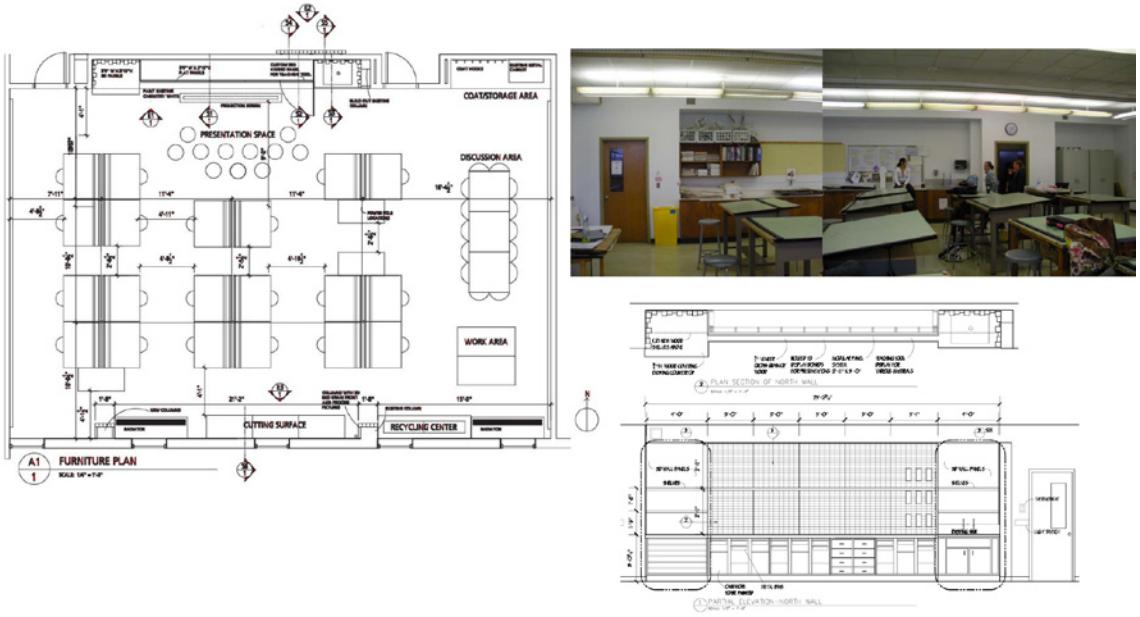
The students then formed one group that further refined the design based on critic's comments and developed construction documents. The balance of the semester was then spent in the shop and studio, until the final presentation of the completed project was made to members of the University community, the furniture company who donated the "waste" material, and other students in the interior design program.

over **6,500** pieces of cut wood
20 motivated and hardworking hands
10 designers putting their heads together
1 semester to create and construct

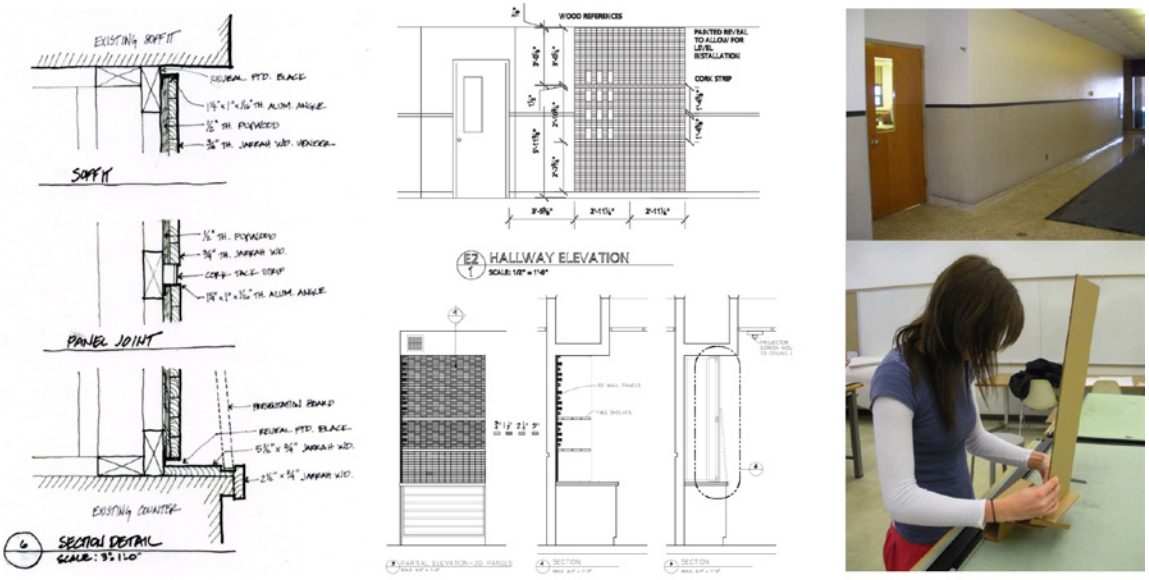
Critical collaboration with local site furniture company



Formal presentation to critics - one project selected for fabrication



Concept refinement and documentation

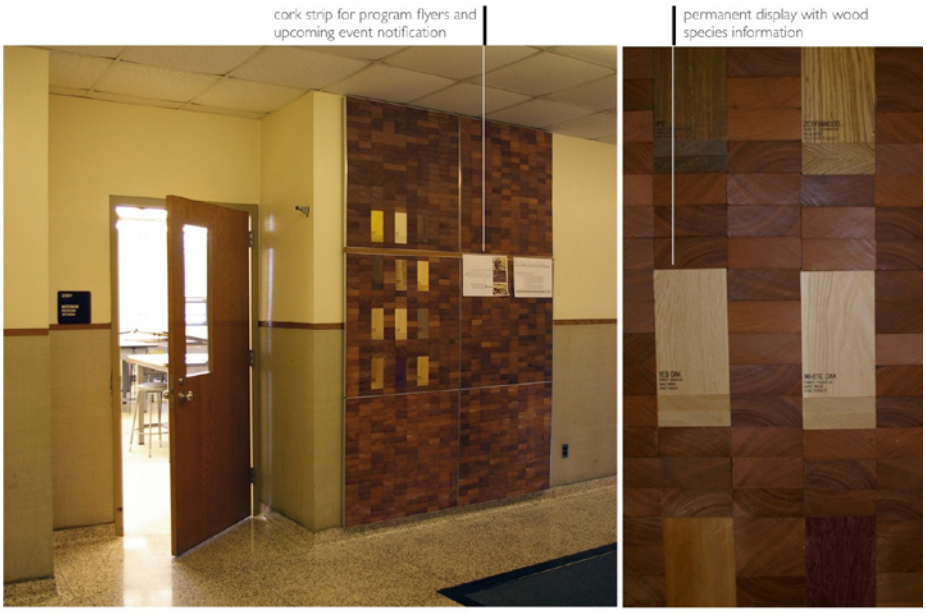


Concept refinement and documentation

System was panelized - much of the work done off site in the woodshop

On-site installation

Completed project in the studio space



Completed project at entry to studio space, along main corridor

SHEAR: SWELL

JULIEANNA PRESTON
College of Creative Arts, Massey University, New Zealand

ARTIST STATEMENT

SHEAR: SWELL (2009) is a pair of art works that examines industrial sheet good materials typical to interior environments: gypsum wall board and medium density fibreboard. This work critiques the manner in which these materials promulgate uniformity, modularity and generic installation, and subsequently, discipline interior living and workplace environments. In the process of re-doing and un-doing each type of sheet good, I am seeking to draw out a latent potentiality within each material in order to over-ride a social and cultural construction signalled by smoothness and homogeneity. I believe these traits are linked to an unspoken, unarticulated and unacknowledged condition of gender in many contemporary interiors.

In each of these works I am employing concepts and processes aligned with feminist philosophy dependent on the use of non-violent, affirming and liberating strategies as part of a search for the political agency of interior surfaces. Each material has been re-made as a form of civil disobedience against the industrial normative condition. In both cases, tools of an industrial nature have been used in order to detour nostalgic notions of craft and assumptions that industrial processes lie outside the language of feminist art practice and discourse. Manipulation, tools, instruments and conceptual narratives were performed on each sheet in a manner that linked the civil disobedience motto “Go Limp!” with techniques associated with textile design such as distressing, cutting in and drape. I observe that each of the art works moves significantly closer to a state of fabric as it yields to gravity and yet maintains a structural integrity. The literature surrounding issues of ‘weak’, ‘pliant’, ‘soft’, and ‘surface’ has fuelled my work and as such, I declare these works as material thinks, or as Mieke Bal might name them, theoretical objects, where each work arouses an exchange between acts of theorizing and making.

SHEER (2009) exploits the nature of gypsum wallboard to be thin, relatively lightweight, and easily malleable along with its virtues of offering thermal, acoustic and fire retardant protection and covering large areas of interior walls and ceilings quickly and cheaply. This matter of fact description cloaks what lies between its two paper faces that have been heated, pressed and wrapped around a part of a mountain that was extracted, pulverized, fired and set by a hydration process. This history denies a haptic interior.

As the images document, I have used an oscillating saw to shear the sheet. As a result, the interior of the sheet is

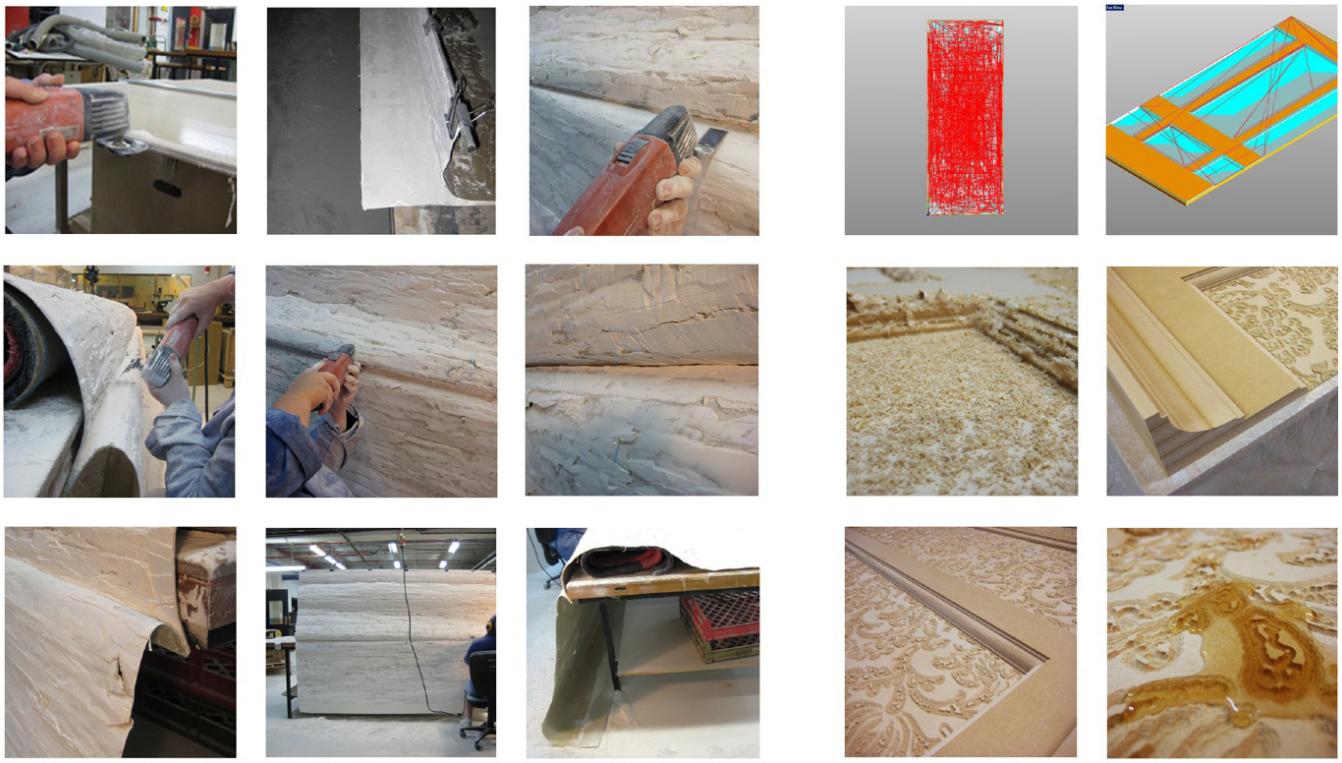
liberated, the sheet has doubled in surface area and the new sheet drapes according to the tooling path. ***SHEER*** consists of 2400mm (l) x 2400mm (h) x 10mm (w), gypsum plasterboard, polyurethane, extruded aluminium channel.

SWELL translates a formalized situation of a panelled Victorian dining room wall complete with cornice, architraves, wall paper and skirting, as recreated in a three-dimensional digital model. Within this translation the nuances of delicate timber joins and grain as well as wallpaper pattern are reduced to volumetric profiles; form without substance. This digital file was run using a large bed CNC router on a full sheet of medium density fibreboard (MDF), the same material that is used to fabricate more than 90% of domestic and office furniture, and it like manner, one of the most predominate materials in any modern landfill. Known for its short term life span, low cost, high levels of carcinogenic off gassing and asthmatic inducing dust particles, this material's pervasiveness in interior environments does not belie its dangers. In addition to its lack of real grain, its anonymous finish, and the propensity to address its formal qualities in a cookie-cutter like manner, MDF is most vulnerable to water.

Successive hours of applying a wallpaper steamer to this highly machined, so-called 'perfect' product of fashionable fabrication technology have disrupted its smoothness and exacerbated its homogeneous fibres. Swollen, slightly grotesque, slightly erotic, most certainly vivid, the surface has erupted. There is no machine or technology that could replicate this four dimensional animate object; it still responds to humidity, wind and touch six months later. ***SWELL*** consists of 1200mm (l) x 2400mm (h) x 100mm (w) medium density fibreboard.

Note: I wish to thank my research assistant Karna Sigurðardóttir for her contribution in producing these works.

shear
swell



the relations of labour and tooling

haptic details

The Visions of Spaces

SARAL SURAKUL
The University of Georgia

ARTIST/DESIGNER STATEMENT

Over the years I have had the opportunities to visit many large and small cities in different countries and continents. No two cities are identical. The uniqueness of each location comes from various sources, such as the climate, urban fabric, people, cultures, and landscape. While visiting each place, it was inevitable for me as a designer to start absorbing the surroundings and architecturally transformed them into the design possibilities. This project reflects my personal design methodology and teaching approach with the questions - "why and why not." I strongly believe that imaginations have no boundary and the design solutions are limitless.

The series of three digital paintings are my visions of the spatial designs that could be conceptually executed. They are primarily based on the recollections of the places I have visited where the context (location) defines the content (built environments). I began the ideation process by sketching arbitrary lines and shapes without having a destination in mind. As the strokes of pencil started to cover the page, the spaces started to reveal themselves as they would eventually be manifested in the end results. I employed various methods of digital imaging, including the three-dimensional models and digital matte painting techniques to bring the ideas to lives.

THE CLIFFHANGER, FLÅM-BERGEN, NORWAY

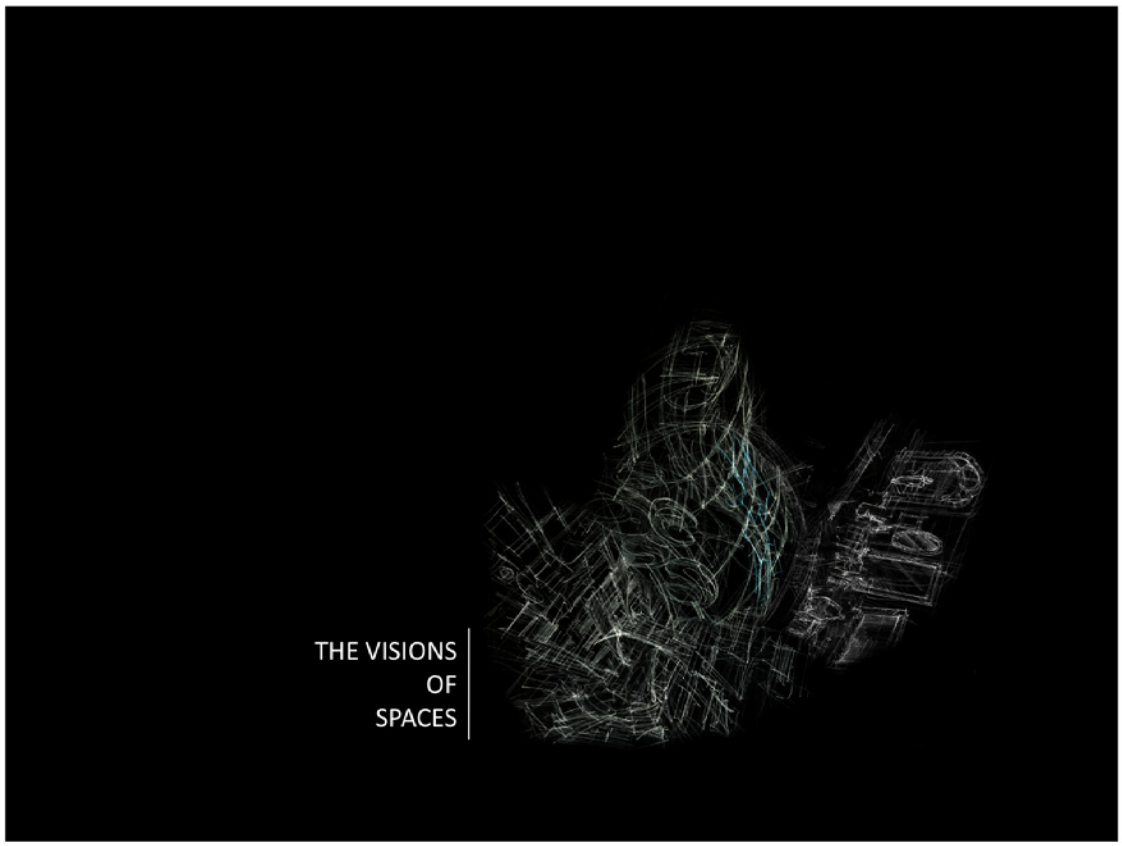
During the fjord tour from Flåm to Bergen in Norway, I was intrigued by how the Norwegian conquered the natural obstructions by building houses on top of the majestic cliffs. The image inspired me to create a digital painting of a summer resort where the buildings challenged the gravity as the houses were suspended from the mountains as though they were floating in the sky surrounded by steep mountains and waterfalls. The architecture celebrated the triumphant of human attempts to overcome any barriers.

THE RED TEMPLE, HONG KONG, CHINA

After multiple visits to Hong Kong, The images of the densely populated housing projects and traditional Chinese landscape paintings started to blend in my mind. Often referred to as a concrete jungle, it would be appropriate to give Hong Kong an oasis of a mountain with a traditional Chinese architecture in the middle of the high-rise buildings. As opposed to the modern high-rises, the red temple is the fusion of the traditional Chinese pagodas, temples, and skyscrapers. The temple would be an edifice that proudly showcased and continued the legacy of the Chinese heritage that served as a linkage between the past, present, and the future.

AL FISHAWI CAFÉ AT THE KHAN EL KHALILI BAZAAR, CAIRO, EGYPT

The pyramids and sphinxes are not the only things that Egypt has to offer. During the final day of the trip in Egypt, I stopped by the famous Khan el Khalili Bazaar and paid a visit to the most famous teahouse in Cairo, Al Fishawi. The café has been operated by the same family since 1773. Adorned in the rustic Islamic decors, the café is a small spot tucked in a narrow alley off El-Hussein Square. The impression of the café that was etched in my mind inspired the last painting of the series. My new vision of Al Fishawi examined the variation of scale and spatial perception without losing the integrity. The café was transformed into a prominent landmark where the bazaar was integrated into the project. While keeping the narrow alley feels and the simplicity of the place, the space was extended into a multi-level teahouse with the similar touches of the rustic Islamic design. The ornate lattice works were used to divide up the spaces when intimacy was required.


THE VISIONS
OF
SPACES

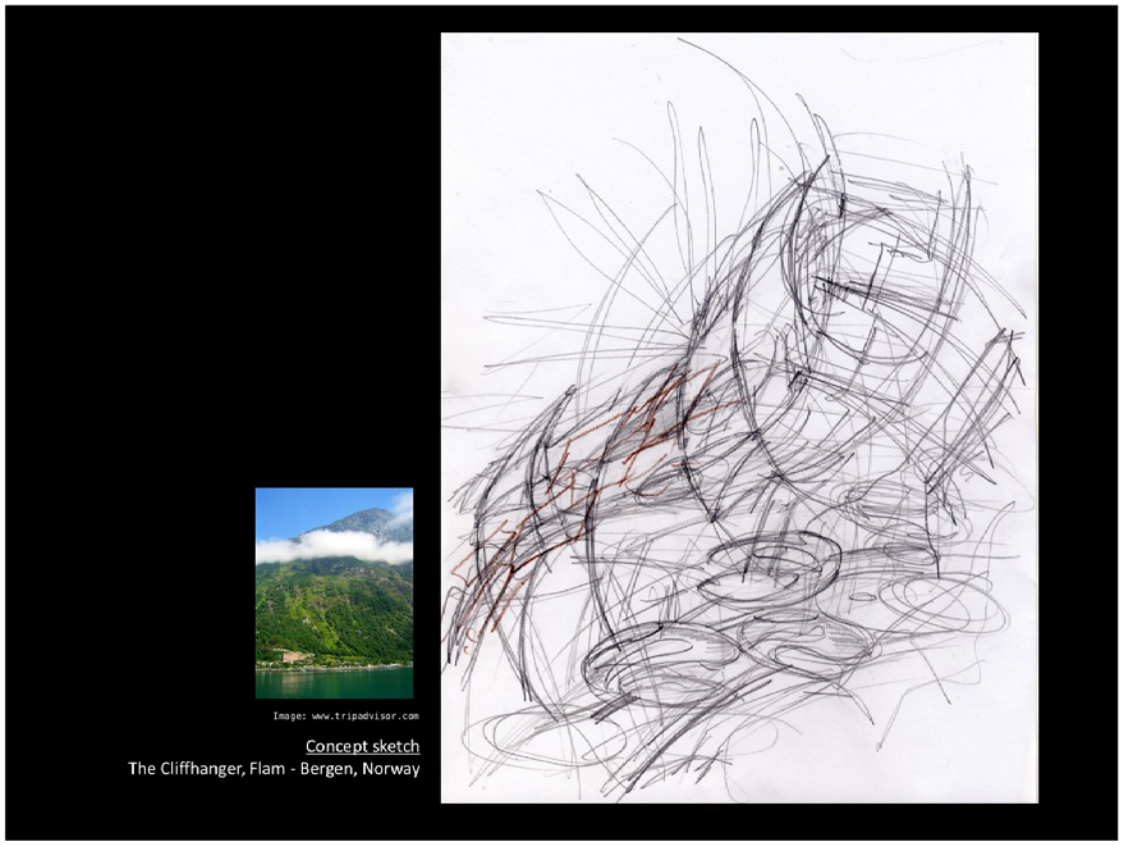
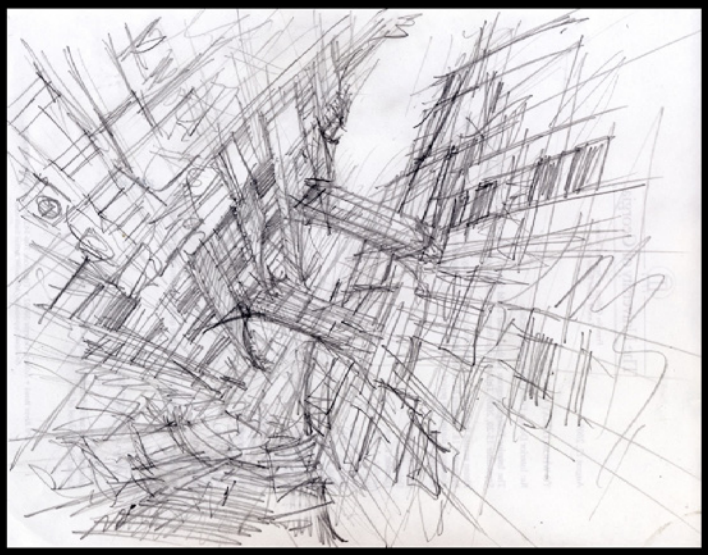


Image: www.tripadvisor.com
Concept sketch
The Cliffhanger, Flam - Bergen, Norway

The Cliffhanger, Flam - Bergen, Norway

Image: www.flickr.com



Concept sketch
The Red Temple, Hong Kong, China

The Red Temple, Hong Kong, China

Image : www.whatsonwhen.com
Concept sketch
Al-Fishawi Café, Cairo, Egypt

Al-Fishawi cafe, Cairo, Egypt

AUTHOR INDEX

A

Ahn, K 620
Akkurt, C 534, 606, 664
Allisma, T 670, 674
Amor, C 388
Anderson, B 2
Anderson, M 526
Anthony, L 8, 342
Asojo, A 592

B

Bates, L 534, 664
Beacham, C 298
Belk, J 16
Blossom, N 512
Boeck, D 600
Botti-Salitsky, R 568, 572
Bowen, A 22
Brickey, J 32
Brigham, J 396
Brooks, Darrin 38, 308
Brooks, Deborah 190, 314
Brooks, K 282
Brothers, D 48
Brown, Marcus 90
Brown, Michelle 52
Brunner, L 318
Bunker-Hermance, R 224
Byun, K 606

C

Cabrera, S 58
Carmel-Gilfilen, C 62
Caughey, C 450
Çevik, G 324, 680
Cho, J 328
Clark, J 338
Clark, L 334, 338
Clark, M 268
Clemons, S 68
Coggan-Crawford, A 684
Curry, Z 388

D

Davies, B 74
Day, J 488
Dedek, P 538
de Filippis, A 80
Dickinson, J 342, 610
Drab, T 424, 542
Dudek, M 546
Dudzik, D 440
Duff, S 346
Dyar, C 356

E

Edwards, M J 360
Eisen, S 86

F

Faulkner, C 90
Feng, J 368
Fisher, E 374, 568, 572
Floyd, L 378
Foster, S 428
Freihoefer, K 246
Furgiuele, A 584

G

Gaines, K 388
Gentry, C 94
Gibbs, C 346
Glass, T 100
Gloeckler, T 690
Goldsmith, J 106
Greer, A 164
Guerin, D 396
Gullikson, C 404
Gustina, C 694

H

Hadjiyanni, T 112
Harbin, L 616
Heltzel, M 436
Hill, C 154
Hinchman, M 568
Humphries, J 698

I

Ingham, D 568, 572

J

Johnson, C 708
Jutras, S 464

K

Kakarala, A 620
Karim, Z 712
Kelceoglu, B 562
Kim, H 396
Klein, R 282
Kobnithikulwong, S 410
Koenig, R 628
Konkel, M 118
Kroelinger, M 576
Kwallek, N 128

L

Lang, T 416
Lasalle, V 464
Lee, M 134
Lewis, D 624
Littlejohn, A 238
Love, S 22
Lucas, P 58, 148
Lu, J 140, 368
Lyon, M 424

M

Madraswala, R 610
Mahmood, A 450
Maki, K M 428
Maksic, P 636
Marsden, J 342
Marshall-Baker, A 552
Martin, C 576
Matthews, C 154
May, B 432
McCoy, J 308
McLaughlin, E 436, 562
Medvedev, K 134
Meggs, S 164
Melcher, M 636
Mendoza, H 440
Meneely, J 170, 454
Mitton, M 178
Mohr, C 650
Moore, A 184
Moussatche, H 190, 568
Murphy, B 118
Myhre, E 446

N

Nam, K 328
Nawrocki, S 718
Neumeyer, R 450
Nichols, J 572

O

Ohlenbusch, D 268
Olsen, J 38
Ownbey, S 424

P

Pable, J 404
Pae, J 454
Park, J 650
Park, N 454, 502
Parman, A 198
Pease, C 722
Pecha, S 178
Poldma, T 458, 464
Portillo, M 62, 410
Preston, J 728

R

Raizada, K 516
Ransdell, M 206, 572
Rashid-Ali, H 268
Read, M 656
Reed, R 650
Reicis, S 210
Robinson, Lily 198
Robinson, Liset 190
Ruben, D 214
Russ, R 424
Ryan, K 224

S

Salomon, M 526
Sarawgi, T 230

Sayrafi, M 644
Schneiderman, D 238, 246
Scott-Fundling, S. 254
Seidler, D 260, 378
Shambaugh, N 298
Sherringham, S 470
Shroyer, J 388
Siddiqui, I 476
Sipos, M 140
Smith, D 134
Snyder, A 480
Solovyova, I 268
Stark, J 650
Stovall, L 128
Sullivan, K 8
Surakul, S 732
Swearingen, S 568

T

Tehve, K 584
Theodorson, J 272, 488
Thompson, J 276
Tibbitts, S 38
Tissaoui, L 464
Torelli, J 494
Torres-Antonini, M 502
Tucker, L 506, 572
Turpin, J 282, 512, 644

V

VanderNoordaa, W 356
Vo, K 516

W

Wachter, H 600
Watson Zollinger, S 112, 520
Waxman, L 628
Webb, J 624
Weber, R 656
Wedderspoon, C 90
Wiedegreen, E 432, 446
Wolfe, J 290

Y

Yoon, S 328