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2013 IDEC CREATIVE SCHOLARSHIP AWARDS

Best in Show
  Tom Allisma, University of Nebraska
  *Blue Sushi + Sake Bombers Lounge*

First Place Design as Art
  Helene Renard, Virginia Tech,
  *Studies in Felt: Structure, Form, and Light*

First Place Design as Interior
  Carl Matthews & Scott Biehle, University of Arkansas
  *Palo Verde*

First Place Design as Idea
  Judy Theodorson, Washington State University
  *Light, Like Water*

Members Choice
  Helene Renard, Virginia Tech
  *Studies in Felt: Structure, Form, and Light*

2013 IDEC AWARDS OF EXCELLENCE

Best Presentation Scholarship of Teaching and Learning
  Katherine L. Swank, Rebecca J. Sweet - East Carolina University
  *Biomimicry Informs Sustainable Design*

Best Presentation Scholarship of Design Research
  Jung-hye Shin, Myounghee Jorn - University of Wisconsin - Madison
  *Living in Affordable Housing as Immigrant Elders: Focusing on the Residential Experiences of Korean Immigrants in the Greater Chicago Area*

Best Poster
  Joori Suh, Iowa State University
  *A Typology Study: Exploration of Interior Archetypes in Museums and Exhibition Spaces Focusing on Art Museums and Memorials*

Members’ Choice
  Amy Campos, California College of the Arts
  *Material Misuse Studio: Looking For Alternative Strategies For Addressing Materials & Excess in Interior Design*
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CREATIVE SCHOLARSHIP
Attrition

Thomas Houser

University of Georgia

ABSTRACT

Attrition: “the gradual wearing away of morale and the powers of resistance by persistent attacks” (Encarta Dictionary).

This 1400sf installation was inspired by a foray to a landfill near the Murano glass works in Venice. Everywhere discarded glass fragments were resurfacing in surrealistic second-life tangos with newly-planted, aggressively-spreading groundcover. The hollow beauty of shattered shards was reminiscent of rising bones summoned before the Last Judgment, as seen and heard throughout history, from Ezekiel to Signorelli, Bach to Mozart. At a less esoteric level, the struggle between glass remnants and the landfill raised issues of stewardship of this fragile planet with questions and condemnations surrounding sustainability and recycling. This installation looks at contradictions and similarities in spiritual and temporal thoughts and practices, at hope, despair, promise, and loss.

Although not intended as a religious statement, there are unmistakable sacred references here. The 99 Koranic names for Allah are presented on non-representational forms in 3 rising spirals, a number important in many traditions, like the Three Pillars of Buddhism or the Holy Trinity in Christianity. Names for God from Hebrew Scriptures are invoked on the overhead canopy, where floating orbs bear sheet music of the Kyrie Eleison from a mass the artist wrote. The Kyrie offers an appropriate plea when considering sustainability: “Lord, have Mercy. Christ, have mercy. Lord, have mercy on us.” The canopy itself references mandalas and baldachins.
crossing many cultures and religions. Significantly, all sacred traditions include mandates for us to be stewards of the Earth.

The 99 recycled bottles being symbolically raised from the landfill serve as reminders of hope. Because of its mathematical relationships to nature, music, art, and the Golden Mean, the Fibonacci sequence starts each arm of the spiral. The locations of sequential numbers are demarcated by bottles filled with silver glitter in colloidal suspension.

All remaining bottles repeat the colors in the rainbow: the sign of the Ark of the Covenant between God and Man. This use of the rainbow is a positive sign of hope and redemption. However, the same colors are removed systematically one row at a time from the canvas mat at the installation’s base. Symbolically, “hope” is eroded; “attrition” is born. Overhead, storm clouds on the canopy part for the orbs of the Kyrie to pass through.

Technology made this installation possible. The basis was a digital photo with iterations altered in Photoshop. The canvass mat was printed on a wide-format printer. The rising forms were engraved and cut by a laser. The overhead structure was cut on a CNC router. Finally, the backlit canopy employed digital photos altered in AutoCAD and Photoshop. Not everything was automated: 99 fishing lines were measured and crimped by hand; 792 plastic parts were pinned together manually; 273 combinations of bolts, acorn nuts, fender washers, and hooks were screwed into place on the canopy; and 1601 snaps were pounded together to assemble the floor mat. With concerted effort, the suspended canopy was hoisted into place by 8 men receiving instructions from 2 nervous ladies.
Illustration 1: Murano Landfill. This is the base image taken at the landfill near the Murano glassworks in Venice, Italy. Note the slag glass resurfacing beneath the groundcover. There is a gem-like quality to the re-emerging fragments.
Illustration 2: Attrition Installation Overview. Most viewers chose to walk on the canvass mat to experience the backlit canopy from below. The fact they were asked to remove their shoes suggested a sacred quality to the installation, as noted by the participants.
Illustration 3: Canvas Mat Details. Snaps connected 81 20" square mat panels. Snaps are positioned in a repeating Fibonacci sequence (1, 1, 2, 3, 5 and then reversed 3, 2, 1, 1). The snaps are raised and feel like stones or dull glass shards when walked on without shoes. Each row of panels has a color filtered from it. Variations can be seen in the four segments positioned next to each other in this image.
Illustration 4: Canvass Mat and Shoes. Eighty-one panels were snapped together in 9 rows. The first row had a print of the landfill photo from Murano (see Illustration 1). The image in each subsequent row was filtered to remove a color.

The AutoCAD drawing at the left shows the print of one panel. After the ink on the canvas set, hoes and corners were laser cut and the edges were folded under to receive snaps.
Illustration 5: Helix Rising. Three helixes start their ascent from the symbolic landfill.
Illustration 6: Lifting Forms and Their Development. In Islam calligraphy is the greatest art form. The shapes lifting the reclaimed bottles here bear basic calligraphy indicating a name for Allah in the Koran.

In a nod to Islam the artist created non-biometric forms to lift the bottles upward. The above drawings show the development of this part of the project. Eventually three basic designs were used for the bottles contained dyed water and three more were developed for the bottles in the Fibonacci sequence.

The final design, although not representational, could have been less biological in nature.
Illustration 7: Helixes Rising. View towards gallery door during daylight hours creates silhouettes.
Illustration 8: Helix Ascent. Viewers see all iterations of the rising form as they circle the helixes.
Illustration 9: View of Canopy from Center of Base. Photos of storm clouds were taken at eye-level from atop Mount Vesuvius looking over the Bay of Naples and from the summit of a Tuscan hill town. The lunar eclipse was photographed at home in the States.

The Maypole-like ribbons reference festive Tibetan mandalas and provide a ploy to the storm clouds that stretch across the canopy. The colors are deeper shades of those found in a rainbow. The ribbons were added in AutoCAD, after the study included in this illustration was made in the project development drawings.
Illustration 10: Edge of Canopy with Top Members of a Helix. Each form lifting a recycled bottle bears an Islamic name for Allah (left). The circles in the canopy carry Hebrew names for God. The orbs visually lifted throughout the canopy (right), offer parts of the Christian liturgy. With this final invocation, “the one true God” as known in three major religions is visually called upon in this installation.
Rethinking Scholarly Communication in Interior Design

Cynthia Milota
College of Dupage

ABSTRACT

New paradigms are evolving for the communication of academic information. Many fields, particularly business, recognize that “online video sharing technologies offer promising new ways for disseminating breakthroughs to wider audiences, making the latest research accessible and easier to share,” (Rokka, 2012). Adapting the format and expanding the audience need not dilute the learnedness. Scholarly endeavors and YouTube are not mutually exclusive, as video can serve as a rigorous, valid, reliable method to bring research to practitioners. This submission investigates short video abstracts as an empirical, non-discursive path in conveying information, blending theory and practice.

The first in a series of four 3 minute videos is submitted for consideration. The subject reports on my graduate investigation of Focus Work in the Multigenerational Workplace. The videos reside in a web site which serves as a repository for the full text writings, bibliography, other references and resources. The focus of this creative scholarship presentation is not about the findings of my research, but rather about video as a creative reporting mechanism. In her article on scholarly culture, Joy Dohr suggests a “venue for sharing” (Dohr, 2007, p. xiii) as the final component of “interpreting and delivering” (p. xii) outcomes, unique to the context and setting. As such, a video methodology can add to the body of knowledge and enrich the learning experience.
In the same way that photography did not stop painting, or film did not kill the theater, videos of research findings will not replace written scholarship, but rather enhance and extend its reach.

DVDs of the sample video have been submitted to the IDEC Creative Scholarship Coordinator or can be viewed via this anonymous YouTube link:

http://www.youtube.com/watch?v=qyLl8dyemwU

RESOURCES


Rokka, J. (2012). Use video not journals to disseminate research. Retrieved from:

http://www.ft.com/cms/s/2/61d5a18a-9aab-11e1-83bf-00144fcbdec0.html#axzz21Kr7F94u
From Sand and Fire: Focal Points to Capture Color Light

J. Alex Poorman
Appalachian State University

ABSTRACT

Focus on the light, the flame, the color. Visualize light moving through space, then through glass, then transformed by color creating delight. Light as focal point to hold your attention, change your perspective, to add wonder to the every day. Like layers of transparent petals folded upward to capture and twist the light, the forms create a bed of colors in the room. These are the concepts behind “From Sand and Fire.”

Creating sculptural glass forms from shards of color takes patience, practice and persistence. The focus of this project is to explore the materials and processes as the molded forms and colors interact to create groupings of glass sculptures. The final product is part design and part unpredictable reaction.

The goal is to create two sculptural groupings based on the concepts. Two fundamental color palettes were used: monochromatic in the green group and complementary in the purple/blue-amber group. Sketches were converted into cut pieces of colored and clear glass sized to fit a flattened pattern. The design must consider overlapping transparent colors which can only be planned to an approximate location due to the firings. This is not simply a two dimensional exercise. The three dimensional forms must be visualized to predict how light will interact with colors as the final shape creates overlaps. Understanding color mixing and transparency is essential. In creating these sculptures, an initial square sheet of glass was utilized to create a finished form where the pointed tips were visible. The design
placed a dominant contrasting square in each of the four corners to emphasize the pointed tips. The squares skewed during firing which further emphasized the final diamond-shaped points.

Final shapes are designed around a molding process. The molten glass must be able return to a solid state without breaking or encapsulating the mold. The process requires two, twenty-four hour firings. Layers of glass pieces are first fuse-fired into a single fifteen inch sheet and then molded into their finished form by a second firing. In this project, the final eight inch high forms are created upside-down inside the kiln by perching the fused sheet atop a cylindrical mold. As the temperature increases, the glass slowly melts downward over the mold to the final shape. Many factors must be taken into consideration during the initial design or the molten glass will end up fused to the kiln floor. The annealing process slowly returns the glass back to room temperature and a solid state. During annealing, if the temperature changes too rapidly, the piece will shatter. The mold is carefully removed revealing the final form when the piece is turned right-side up.

The finished forms are often used as focal points with candles placed inside each piece. Once again, fire returns to the glass, only this time to capture the light and please the eye.
From Sand and Fire: Focal Points to Capture Color and Light
Monochromatic Green Grouping
There are three pieces in the green group: one five-inch and two eight-inch pieces. The sculptures’ interiors show the cylinder marks from the molds used in the second firing.
The detail image shows folds and petals tightly spaced like foliage.
Green glass is transparent, opaque and iridescent.
Complementary Purple/Blue-Amber Grouping
Sculpture piece on the right uses double layers to produce the intersecting folds and points. The smallest three-inch piece in the middle balances the left’s ten-inch profile.
The blue/amber piece was the first in the series and shows the trapped air imperfections which reminds the viewer of the molten nature of the process. The blue points highlight the tips of the sculpture and shows the layering of transparent blue and clear glass.
The pieces are often displayed with a single candle in the base. This returns flame to the glass for a final time.
From Sand and Fire: Focal Points to Capture Color and Light
Studies in Felt:
Structure, Form, and Light

Helene Renard
Virginia Tech

ABSTRACT

Felt is a versatile, highly tactile material that has a simple elegance from an engineering standpoint.

When subjected to moisture and friction, scaled wool fibers interlock, creating a dense, durable, nonwoven fabric. This humble material has recently enjoyed a renaissance in the design fields, partially due to its inherent sustainability, and perhaps also due to the human need for tactility in an increasingly sleek and technology-driven environment. I propose the following question: How can felt be a catalyst for innovation in interior design?

My research and creative scholarship focus on exploring felt as a spatial medium. The pieces in this series celebrate the material’s versatility and haptic qualities. The Cones, Folding Tubes, Window Box, and Light Pods are the results of a process that began with an inquiry into the use of seams to create structure and culminated in an investigation of felt’s interaction with light and the interior.

Using darts to shape tubes into cones, I discovered that structural integrity could be added with seams and by doubling the form over on itself. The first image shows the interior of a Folded Cone study for the full-scale space, Cone of Silence. The Cone of Silence, a soft and sound-isolated sanctuary for one person, was part of an exhibit entitled Big Felt: Collaging Interiors. The show was billed as “an assemblage of highly tactile, interactive, site-specific spatial
constructs” seeking “to explore the limits of felt as a building material while considering how felt might mediate the relationship between the built environment and the human occupant.” Some discoveries I made during the design and fabrication processes and from watching gallery visitors interact with the Cone prompted the next set of studies.

While the Cone requires reinforcement to stand with its larger end down, (thus comfortably accommodating a person seated on a chair inside) it is self-supporting with its larger end up (as seen in the second Cone of Silence image). The Cone turned halfway inside out is self-supporting and creates two concentric layers of interior space.

In search of other configurations that would exhibit similar structural and transformational characteristics, I created a series of Folding Tubes, all shaped by using long, rectangular pieces of felt. While folding and shaping these malleable forms, I discovered that they not only create intriguing prototypes of layered interiors, but they also interact in impactful ways with light. Images of the Folding Tubes demonstrate the forms’ capacity for containing light. These images allow us to imagine an interior atmosphere made possible by felt.

The element of light played a significant role in the design of the next two pieces, Window Box and Light Pods. My intention was to focus on the interaction of felt and natural light as it relates to the interior. The site for these pieces is the sunlit window, and the constructions act as an extension of the space of the window, filtering light as the light animates their forms. The seams in Window Box become dark lines when lit by the sun, in a reversal of the notion that carpentry seams, like those used to construct the window jambs, sill and head, should be invisible. Here, the seam is accentuated by the light shining through the felt, which draws our attention to the lines of construction. These lines provide a constant against which to track the movement of light and shadow. As the final iteration in this series, Light Pods explores the use of handmade felt and industrial felt combined to create a sculptural and colorful light filter.

From seams and structure to form and light, felt and its potential as a spatial medium is the thread that runs through these investigations. These pieces play with texture, scale, and
transformations of form. The work is made in pursuit of ideas that will lead to innovation in interior design and suggests ways in which the body of the interior might be sculpted to create more dynamic visual and haptic environments for living. I see these works as the seeds of future projects directed at the question: How might structured felt surfaces meet the architectural shell and more actively shape our interactions with interior spaces?
Design As Art

STUDIES IN FELT: Structure, Form, and Light

Industrial felt, wool roving, mixed media
Cone of Silence
Folding Tube 1, Interior
Light Pod detail
The Nadar Series

Mary Rogero
University of Arkansas

ABSTRACT

This series of charcoal drawings is based on aerial photography and is part of an ongoing exploration of my daily commute to work. I have traveled this route so many times that I began to tell the time and mileage based on roadside markers, trees, a lone shrub along the road, intersections, signs, and turns. Driving offers a horizontal experience of the landscape, while my GPS delivers an omnipotent view that only satellite tracking could offer. I “google-earthed” and through satellite photography I saw landscape features beyond the horizontal viewing experience of my car and the diagrammatic renderings offered up on my GPS.

These drawings are part of an ongoing series to explore my daily travels from various perspectives and engage with the landscape in a textural manner that otherwise becomes a blur at 55 mph. They have become my aerial mapping and I see them when I am driving as if I were a bird tracking my commute.

This series is named after the French photographer and balloonist Gaspard-Félix Tournachon, known as Nadar”, who took the first aerial photographs ever recorded.

charcoal on paper
8” x 38”
Destructive Beauty

Saral Surakul
University of Georgia

ABSTRACT

My artwork reflects the dark aspect of everyday life’s issues. In my work, I abstract the social and cultural matters that influence me to create stories of my own. The Destructive Beauty depicts the profound obsession, consciousness, and attempt of being perfect in our society. Ideal images of beauty created by public media effect people from every walk of life. We are told what attractiveness is and what it is not. Someone may easily take this beauty standard beyond limit leading to devastated results.

In “Destructive Beauty,” the scenes bear a resemblance to a disarrayed table or shelf in an old laboratory. They are full of Vintage medical illustrations, postcards, apparati, and stuffed animals. The lighting is dimmed and enigmatic, almost eerie. The cluttered objects do nothing to obscure images of beautiful dolls in various poses. Proud or despaired as they seem, they are trapped in their own hallucinating world; the world that is made of their own misery. Dolls, though often made to be beautiful objects, occasionally generate an uncanny valley effect which gives viewers a repulsive response; they are the key elements to create a dialogue between the works and viewers.

The images are digitally created by transferring manual sketches into 3ds Max where the models are shaped. The detail sculpting, such as fabric wrinkles and facial details, is done in Autodesk Mudbox. Back in 3ds Max, the textures, lights and cameras are introduced. The images are printed on canvas to mimic the feel of traditional paintings. The Destructive Beauty series is as follows:
I want to be perfect

Plastic surgery is one of the popular means to achieve ideal beauty. Like some Hollywood stars, the figure portrays the addiction of the process. The doll is stitching herself in commonly modified places. The overlaid octopuses and stitches start to claw before taking over the entire canvas. Though the medical procedures can beautify the body, they have no effects on the mind.

Narcissistic

Mirrors are good friends of the narcissistic. This psychological condition is the starting point of the destructive beauty. The image bares an image of a doll studying herself. The removed faces of pictures in the frames, the cone of vision, and the narcissus flowers suggests the effect of self-absorption.

Anorexia

Excessive food restriction caused by fear of weight gain leads to many health complications. Although not losing the appetites, the anorexic restrain the amount of food intake. To communicate the terror of subject, the doll’s lips, as well as the human images, are stitched. The superimposed eels hint at the subsided hunger. Anorexia can be a life-long battle.

The final gallery setup involves a random video projection of ballet positions on the images from three projectors. The juxtaposition between the graceful movements of the ballerinas and the images serve as a link to communicate the dichotomy between beauty and destruction. The final installation communicates the conceptual and visual renditions of the subject in a new dimension.
I want to be perfect.
Digital rendering on canvas
24” x 36”
Narcissistic
Digital rendering on canvas
24” x 36”
Anoraxia

Digital rendering on canvas
24” x 36”
Destructive Beauty

The Gallery Proposal
Retail Without Walls: Kiosk Culture

Liam Coquhoun & Matthew Holmes-Dallimore
Virginia Commonwealth University - Qatar

ABSTRACT

This research project began as a collaborative effort to investigate small-scale retail and trading points within different cultures in an attempt to better understand the DNA of contemporary retail kiosks.

The intention was to explore and document not only kiosks themselves, but also associated forms of traditional trade, such as bazaars, street markets, and souqs – ‘retail without walls’.

A series of successful faculty research grants funded visits to destinations such as Marrakech, Mumbai, Dubai and Istanbul, where particular retail environments were documented. By following a stringent qualitative research approach we identified relationships, similarities, and differences in order to better understand how relatively simple vernacular forms of trade have evolved into contemporary principles of retail design.

We believe that these key characteristics include: Economy of scale; Materials of presentation; Identity; Merchandise; Context, and Transience + Mobility. These outcomes then informed and dictated subsequent projects undertaken by students in our retail design studio classes.

We began planning an exhibition of our project outcomes thus far at the start of the 2011/2012 academic year and, after speaking to representatives from several other possible venues,
negotiated a space at Mathaf: Arab Museum of Modern Art, in Doha, Qatar. The exhibition, or 'Display of Research' as Mathaf termed it, opened on the 1st April 2012 and was open to the public for 11 days. An additional faculty research grant was received to pay for the costs of putting on the exhibition.

Display of Research
We designed the display to contain various elements. Firstly, the exhibition space was divided up and colour-coded to represent each 'characteristic' identified in our research, which was explored by way of photographic essay and accompanying text.

In addition to the 'findings' portion of the display, we included some work produced by students as part of two projects devised as a direct consequence of the project outcomes.

Materiality project
In the Fall semester of 2011, Junior level students were asked to design a functioning information kiosk, with special regard given to the materials of fabrication, which were required to be repurposed building components, sourced from within a 5km radius of their studio.

Cultural context project
The following, spring semester of 2012 saw the Sophomore students collaborate with students from the Interior Design program of an overseas College of Art and Design. Design teams from both schools were required to design a kiosk that represented each others' cultural heritage in some manner. Students performed the dual roles of designer on their own project and consultant to the other teams in their work-group.

Our display contained drawings and models from both projects as well as from our overseas collaborators. In addition, for the centrepiece of our exhibition we designed a full-size kiosk prototype, inspired by the materiality project student work, and built by a contractor to the same required limitations - found and reused materials from within a 5km radius of the school.
The work displayed on the walls was backed onto shipping crates as these are evident in one form or another in every retail culture we have so far investigated.
RETAIL WITHOUT WALLS: KIOSK CULTURE
HP2

Brian M. Kelly
University of Arkansas

ABSTRACT

“This is architecture of extreme integration, of nuanced transgressions of the extensive and intensive, of dipping in and out of poché space, pushing up against architectural surfaces, and reconstituting them in a more complex way. Poché becomes vivid, active space rather than blackened solids of classical architectural representation. Moreover, a rethinking of the problem of standardized fixtures in ceilings and walls is long overdue, in the sense that the interface between systems and surfaces can be more productive.”

Tom Wiscombe, from AD: Exhuberance (March 2010)

HP2 was a design research project into the potential of a fully digitally fabricated, high performance interior partition placed within the healthcare environment. Working within charges established through Kieran and Timberlake’s Refabricating Architecture as well as Tom Wiscombe’s Extreme Integration, this designer saw potential in a refocusing of the design lens to the assembly, a part to whole approach integrating techniques of mass customization and complete systems integration. Research indicated areas which design could assist in better delivery of healthcare, specifically in the patients’ exposure to air and surface contaminants. Altering the ways healthcare providers enter and exit the room, as well as the way air is moved through the room to could better protect the patients in these facilities. Additionally, research aimed to integrate the inclusion of digital form generation and fabrication techniques to
consider the partition of tomorrow – one that allows synergy between the various building systems.

The process investigated areas of acute care patient rooms, monocoque construction, architectural poche, narrow spectrum sanitary lighting, adjustable and variable perforation, interstitial building space, and patient room air ventilation. The aim of the research was to reconceive the conventional construction techniques of the light gauge partition in high performance, technology-specific locations. These partitions often exhibit an incredible amount of inefficiency in systems integration where poche space becomes quite convoluted. The design process, beginning with research into various internal and external influences, culminated in the manifestation of a 3d-printed scale mockup with all systems represented. The inclusion of these systems in the monocoque print allowed for parametrically controlled modification and skin adjustments responding to criteria such as structural stresses, bypassing/bifurcating systems, and curtain air distribution. As well, this technique analyzed surface geometry and varied the monocoque structural skin in ways that added material and strength where necessary, and lightened the skin where not needed. Variable perforations into the surface eliminated the need for diffusers, allowing for appropriate air and light to be delivered to point of need.

HP2 features include integrally 3d-printed building systems, monocoque sink, healthcare vitals data readout, and ventilation, hand, as well as surface sanitation through narrow spectrum lighting aimed to decrease the quantity of contaminatees entering the patient rooms. Critical anthropometric sections were established to address program requirements through pushing and pulling the poche space, accommodating various technical conditions. This in turn generated a dynamic interior partition that, with the right parametric definition, could be mass customizable for integration into both new and existing construction.
patient room space planning

bathroom morphology

healthcare worker zone
family zone
patient zone
bathroom zone

Shared poche area became the catalyst for an investigation into high-performance, hybrid partitions.
"This is architecture of extreme integration, of nuanced transgressions of the extensive and intensive, of dipping in and out of poché space, pushing up against architectural surfaces, and reconstituting them in a more complex way. Poché becomes vivid, active space rather than blackened solids of classical architectural representation. Moreover, a rethinking of the problem of standardized fixtures in ceilings and walls is long overdue, in the sense that the interface between systems and surfaces can be more productive."

Tom Wiscombe, from AD: Exhuberance (March 2010)
SECTIONAL DOCUMENTATION THROUGH MEDICAL IMAGERY

VERTICAL SYSTEMS PLACEMENT AND DISTRIBUTION
COMPOSITE PARTITION SYSTEMS STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, LIGHTING, DATA
ABSTRACT

“Homelessness is the condition and social category of people without a regular house or dwelling because they cannot afford, or are otherwise unable to maintain regular, safe and adequate housing or lack fixed, regular and adequate night-time residence.”

The goal of this project was to design and build a hand held solar powered light to be used by the homeless as a device to cope with the issues faced by this population. It is an interdisciplinary project that lasted over eight months during the 2011 to 2012 school year. An Interior Design faculty was primary researcher. Two undergraduate students were selected and acted as assistant researchers, one being an Interior Design student and one an Industrial Design student.

The initial imputes was an on-line article with this quote.

“A lot of these crazy m***f** around here like to mess with a man when he’s tryin’ to sleep. I have a flashlight that I keep in my bag that’s heavy and those big batteries cost money. Is there something I can find that has a solar power collector in it that I can charge during the day and use at night?”

The Process of this project was as follows:
1. Research - The issues associated with homelessness
   A. Interviews with experts in the area of homelessness (Social workers, Industrial designers, Psychologists, homeless shelter directors and the homeless
B. Record and video tape interviews
C. Review data

2. Brainstorming – Ideation
   A. As a team discuss ideas, concepts and relevant information
   B. Use sketching to record these ideas
   C. Review sketches to assess attributes and potential directions of project

3. Design Development - refine ideas and create three dimensional objects
   A. Use sketches a further refine project and goals
   B. Research materials and their attributes
   C. Using three dimensional models to explore ergonomics, weight, design, style
   D. Research and employ existing solar panel mechanisms and their use in the project
   E. Begin foam model construction and prototype design

4. Light Construction – finalize design and construction a working solar powered light
   A. Refine design and explore options
   B. Select solar panel
   C. Design and test on/off button
   D. Explore paint options
   E. Design construction schedule and focus on final design

5. Project Completion - refine prototype and design and build final product.
   A. This part of the project occurred in a college woodworking shop. The change from paper to a final product required a place with tools, storage, work tables, machines for cutting and sanding, a proper paining room and space for reviews

See power point pdf for visual explanation of process.
The goal of “Out Of The Darkness” was to design and build a hand held solar powered light for use by the homeless. This interdisciplinary project headed by an Interior Design faculty member includes two students; one from Interior and one from Industrial Design. The project schedule was:

- **Research** - coordinate interviews with experts in the areas of homelessness and product development. Research existing solar powered lights. Review data and purchase materials for project
- **Brainstorming** - generate ideas in sketch form
- **Design Development** - refine ideas and create three dimensional objects
- **Light Construction** – finalize design and construction a working solar powered light
- **Project Completion** - refine prototype and design and build final product
Research – At this phase we interviewed experts in the area of homelessness and product design/construction. These included, homeless shelter case workers, a homeless shelter director, a psychologist, industrial designers and the homeless. Below are selected quotes from these interviews.

- “You Can’t read to a child after 8pm” (in the shelter)
- “Design is not accidental, maybe the initial idea is but you take it and morph it”
- “There are 35 people in this shelter and 35 different stories”
- “Most are situational reasons for being here, lost job, medical bills, eviction, and abuse”
- “If you help people with non-choice items they will use it – a choice item is to bathe, change, and cut hair and be groomed – non choice are food, water, sleep, light and bodily functions”
- “Sketch models – if you are making a physical thing you need to make physical models”
- “You can’t help someone if you don’t respect them”
- “Public bathrooms are inaccessible”
- “P.O. Boxes are not a residence – difficult for documents and I.D to be delivered”
- “You should not judge a homeless persons life and don’t judge what you think their needs are”
- “One of the most dangerous places is in the shelter at night often more dangerous than being on the street”
- “The whole point of design is a series of incremental changes purposeful changes unit it works god enough”
- “When you design a physical thing you have to get it off the paper or computer to see if it’s going to work”
- “It’s a full time job to be homeless”
- “There is no direct route to navigate government agencies”
- “The government would rather give money to a homeless shelter then rent an apartment for the homeless to establish residency”
- “The homeless must have their medication in the correct bottle”
- “Sometimes finding a water fountain can be difficult”
- “Direct help for the homeless from people can be difficult”
- “Getting information to people is difficult it is cell phone dependent”
- “The homeless need a connection to family”
Brainstorming – At this phase of the design process the goals was to explore and generate ideas for the light. The initial designs were generated from research of existing solar lights and what possible features the light might have. The sketches below are an example of the ideas explored.

Issues Explored:
- How the light would rest on a surface
- Would a designated “base” be used
- The size and shape of the solar panel
- How would color affect the design
- Would the shape be symmetric
- Would the light have other functions
- Would it fit in a pocket or be able to hang
- What material might be used, material properties
Design Development – At this phase the prototype materials changed to a foam material. Foam was used for its lighter weight and is easily manipulated. There are two types of foam used in the process. Green Insulation Foam Board is typically used in home construction. It was used as the initial prototype foam because its light weight and its easy cutting and shaping ability. It is shaped with sculpting knives but also hot wire guns can be used to create multiple curved and angled areas. Polyethylene Yellow Plastic Foam is denser than the green and may be used for the final finished light. It can be sanded, cut, shaped, primed and painted. Its properties allow for a smooth finish and quality paint application. Both foams allowed for multiple design ideas to be explored in a quick and complete fashion.

Green Insulation Foam Board:
- Easily cut and shaped
- Lightweight
- Inexpensive
- Melts under low heat
- Not sandable
- Painting issues

Polyethylene Yellow Plastic Foam:
- Dense foam for finished light
- Cut and shaped with machine tools
- Can be sanded, primed and painted
- Will support solar panel and light system
Design Development, The Solar Light Mechanism and Prototype – To be cost effective existing solar light mechanism were explored. A custom design panel was not possible. The goal was to find an existing solar panel system that would give off the most light output and be as small as possible. The smaller the panel the more options for the design the light had. As typical in the design process there is much research on a topic. Finding solar panels that would work was difficult in the fact that there are many types available online but not in retail establishments. The panel had to be purchased and delivered before it could be dismantled and used in a prototype. The solar light used has a panel approximately 1.25” x 2.75”. It also contained a battery backup with a rated life of two years. The unit contained three LD lights that would give off sufficient light for its intended use. The size of the panel, battery and lights allowed for multiple design options. Its cost was also acceptable at $3.00. Six units were purchased for the project.

- In the above prototype the body was cut and the interior foam was removed.
- On top of the body a recess was carved out so the solar panel would fit flush
- In the front three openings were made for the lights to protrude out and allow light to be focused
- The prototype was not painted or finished
**Design Development** – The initial success of the Prototype was quite exciting. The design of it while pleasing to the eye did not successfully address some of our concerns. It was a bit clunky and the ergonomics were not fully developed. Our goal was to design a light that could be used by as many as possible from multiple age groups to those with disabilities that might affect its use. We then focused on a more user friendly design with a organic feel. At this time how the light would be held was addressed. A test was to have volunteers pick up the light without saying what it was. The result was startling in that it was picked up in multiple ways. There were no clues to the user of what it was. Volunteers did comment on its shape as “comfortable” and “smooth”. We assumed that this issue would be addressed when the on/off switch was put in place. This would be a clue as to how to hold it. The next design is below. It started to sleek, organic and have a direction. We also started to consider the aesthetic and potential paint/color finishes.
Light Construction - The design has been finalized now the focus has turned to the construction of the light. At this point the foam was cut, shaped and sanded. The solar light mechanism was tested. A design change was to add the “bridge” across the top of the light. The gave stability to the light and had minimal impact on light output.
Light Construction—The sanding had to be precise and have an extremely smooth finish. In areas that required strength, car auto body Bondo was used. This is a very strong material when dried. It's also sandable and takes paint well. In minor rough areas, sandable plaster was used.

- Ergonomic light body. Can be used in either hand.
- On/off switch being tested—it needed to be pushed forward and pulled back.
- Solar mechanism inside the body.
- Button mechanism.
- Bondo used here.
- Plaster used here.

Sanded and primed body.
Light Construction – At this phase we started to paint the light. We chose a neutral gray for its cool tone and conservative feel. An updated green was selected as the accent color for its association with nature. The painting process required a painting room with proper ventilation. Three coats of acrylic paint were applied. Acrylic was chosen for its water based properties. The paint required 48 hours to dry between coats. This phase was most crucial the finish could not contain blemishes.

To achieve the green design line the whole body must be painted
The painting process requires a sweep left to right of paint to avoid clumps and over-painting
Painting has been completed

Modern Light Emitting Diodes (LED) They can last up to 100,000 hrs
Recyclable plastic body Polyethylene (PE)
Blue light spectrum for better illumination
Outlet for AC wall charger in case of no sunlight
Power on/off switch
Full length solar panel
Battery for reserve power supply.
About 4 hours on full charge

Light features
OUT OF THE DARKNESS

**Project Completion** – With painting complete the solar panel and mechanism was installed. The button was attached solar mechanism switch using plastic cement. The upper portion of the light was adhered to the lower portion with contact cement. It was allowed to dry for an additional 48 hours. Below is the final product!!!
Drawing as Provocation: Developing Architecture

Andrew L. Nance & Thad J. Reeves

ABSTRACT

In his book Graphic Thinking for Architects and Designers” (2001), Paul Laseau explains the title as “thinking assisted by sketching” during the conceptual stages of a project - a time where thinking and sketching work closely together as stimulants for developing ideas.

In “Architecture and the Lost Art of Drawing” (NYTimes, 9/2/2012), Michael Graves incites a call for the case for drawing and reminder: drawing is part of the thought process for design. His recent article maintains the position outlined in “The Necessity for Drawing: Tangible Speculation” (1977), that the role of drawing in conceptualization is characterized by three types: the Referential sketch, Preparatory study, and Definitive drawings, each dealing with a particular way of remembering or studying something.

Laseau and Graves discuss recording, speculating and experimenting, but it’s our contention that provocation leads to refinement in the design process. A frictional force during, and between, the phases outlined by Laseau and Graves, provocation exists as dialectic engine propelling the design, informing the author’s decision-making process. Provocation persists as dialogue between the designer and the design.

Within this context, a question arises: how does the dialogue between graphic thinking, tangible speculation and provocation address the influence of recent technologies on drawings and the design process?
This was the question in mind for the authors when invited for a university exhibition of design-work. Self-entitled: “Drawing as Provocation: Developing Architecture”, the exhibit explored the provocative nature of drawing while offering pedagogical examples in the “process” of design, rather than artifacts of built works (1).

A survey was taken identifying key attributes of selected works representing fifteen years of academic and professional projects. The operative processes in each project were classified as Manual (of the hand) and Digital (of the fingers, i.e. computing) providing insight into the authors’ workflow (whose careers began with ubiquitous personal computing in the 1990's) (2). Though various digital processes were implemented in the workflow, hand-sketching remains constant throughout.

The exhibit placed Manual processes at the center of the room with Digital projects encircling this fundamental activity (3). Additionally, the thirty-five projects exhibited were carefully designed to illustrate sequences of development in the design process (4-7).

"McMillan House" (6) illustrates Laseau’s Graphic Thinking process, exploring many different ideas, diverse in method and scale. The amalgamation of drawings evoke Graves’ Referential drawings evolving to Preparatory studies, and ultimately to “early” Definitive drawings recorded by the digital model (note speculative sketches over the model-“drawings”).

A speculative transformation, "Garage Apartment" is refigured through a series of steps representative of the Preparatory Study into the "CDO Office" creating a lineage of proportion and organization between the two projects (7).

A time-lapse of Sink Creek Residence records Building Information Modeling over an 84 hour period (8-9). These Definitive drawing snapshots reveal increasing detail over time where it’s interesting to see section and elevation information are present very early in the process. Indicative of the paradigm shift for working in B.I.M., where the model prefigures the drawings,
the model continues to participate in the dialogue by provoking continued development of the design.
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<th>Year</th>
<th>Project</th>
<th>Sketching</th>
<th>Hardline Sketch</th>
<th>Manual Drafting</th>
<th>Physical Model</th>
<th>Autocad</th>
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- Manual Processes
- Digital Processes
- First use of a particular 3d modeling software

FIGURE 2
Section 1

TSU DANCE STUDIO KUROSAWA
OSLO
R.A.S.
WINES LIBRARY
ADAMS
SOM
SILVER BROWN, GRN

DIGITAL PROCESSES

MANUAL PROCESSES (THE CORE)

PROJECTED IMAGES

MCINTYRE
BLEY

SINK CREEK BIA

FIGURE 3
SPECULATION: REFERENTIAL – PREPARATORY

A SPECULATIVE PROJECT LOCATED IN PALM SPRINGS, CALIFORNIA, THIS HOUSE WAS DEVELOPED THROUGH A SERIES OF CONCEPTUAL INVESTIGATIONS INTO CLIMATE REGION, SITE, AND ELEMENTAL SYSTEMS. DISPARATE PARTS WERE ROTATED: ICEBOX HANDLE, BILLBOARD SUPERSTRUCTURE, AND FRAGMENTS FROM THE AIRPLANE GRAVEYARD OF TUCSON, ARIZONA. REVEALING POSSIBILITIES FOR HABITABLE SPACE, LAYERED SYSTEMS WATER RECYCLER, GEOTHERMAL HEATING AND COOLING, AND EXCAVATED SITE REPLICATE KINDS OF NATURAL INTRICAES FOUND WITHIN THE NATIVE YUCCA TREE. ANTICIPATED EXPERIENCES WITHIN THE DOMICILE PROVIDE INTRINSIC LINKAGES TO THE CONTEXT OF THE AMALGAMATION.
FIGURE 5
PREPARATORY
REFERENTIAL/GRAPHIC THINKING
DEFINITIVE
DEFINITIVE GARAGE APT.

PREPARATORY TRANSFORMATION

DEFINITIVE CDO OFFICE
BUILDING INFORMATION MODELING

A successor to COMPUTER AIZED DESIGN, CAD, BIM SOFTWARE ALLOWS DRAWINGS TO BE REMOVED FROM DIGITAL MODELS FOR COMPLETION IN VARIOUS PHYSICAL, PARAMETRIC, OBJECTS, NOT TO SIMPLIFY LONG, COMPLEX MODELS, BUT TO REACH THE CAPABILITY OF BUILDING PHYSICAL CONSTRUCTION FROM A SIMPLE DIGITAL MODEL.

THIS SERIES OF DRAWINGS RECORDS THE SYSTEMATIC DEVELOPMENT OF CONSTRUCTION DRAWINGS FOR THE VARIOUS RESIDENTIAL LEVELS AS THE DESIGN PROGREES. EACH LEVEL IS DEVELOPED THROUGH DETAILED VIEWS, DRAWINGS, SURFACES, AND VARIOUS DEPICTIONS OF THE CONSTRUCTION PROCESS. THE TRANSLATION OF THESE GESTURES INTO THE LANGUAGE OF CONSTRUCTION EACH TIME PROVIDING CONSULTATIVE WORK. PROGRESSING EACH SUCCESSIVE VERSION.

VARIOUS SKETCHES, MODEL IMAGERY, DRAWINGS, CAD WORK, ETC

DEFINITIVE: BUILDING INFORMATION MODELING

FIGURE 7
Bayou-luminescence

Igor Siddiqui & Matt Hutchinson
University of Texas at Austin

ABSTRACT
Bayou-luminescence is a full-scale site-specific installation presented at a weeklong public design event in New Orleans in December 2011. The intent was to investigate and discover a novel, technologically informed method of constructing spatial environments, in particular temporary and interior spaces. To that end, the project investigated the synthesis between digital and material processes in design production. Throughout the design process, computation-based techniques were integrated in order to impact three distinct aspects of the project: (1) the non-standard nature of the overall structure; (2) the custom cladding membrane modulated in relation to its behavior in tension; and (3) the long-distance collaboration between the team members for the entire duration of the project.

The non-standard form, that is the form in which no two constituent parts are geometrically identical, is a result of the oblique intersections between two interlocking volumes and their relationship to the ground plane. The volumes were parametrically scaled, dimensioned and positioned to respond to both anticipated material constraints and opportunities for occupation. The base model served as the source of the wireframe, which was extracted to generate the structural system. Top and bottom edges of the wireframe were thickened to produce templates for the CNC laser-cutting of steel plates, while the vertical curves were output as full-scale plots used for mechanical steel-tube bending. The digitally fabricated steel plates provided a means of self-jigging connections, which in turn streamlined manual tasks such as TIG welding and eliminated the need for additional dimensioning and setup.
The same digital model was used to produce the geometry of the twelve custom cladding panels stretched between the steel members. Through a series of digital operations we were able to simulate the behavior of the flexible skin in tension and as such transition from the form of the skin as one that is intrinsically double-curved to one that is flat when not in tension. In their flat state, the panel templates were further differentiated in order to synthesize the demands of fastening details, material properties, and sensory effects. Three interlacing layers of vectors are translated into three separate sets of paths used for the CNC-routing of shallow-relief formwork, from which final translucent rubber panels were cast. The intricate non-standard pattern that gives the liquid rubber its form is as much a result of tooling constraints and the materiality of the formwork as it is an outcome of digital data.

The two designers collaborated long-distance throughout the entire design and fabrication process. The steel structure was made in one city, the skin in another, and the installation took place in a third city inaccessible to both. Such a reality required a single digital model that integrated all design information in one location as well as a careful calibration of dimensional tolerances within and between the two material systems. The project serves as a model for a collaborative design practice in which material agency is capitalized upon through the strategic articulation of a digital workflow.
installation view; inspirational image of bioluminescent squid
drawings: plan, elevation, flattened panel elevations
digital design process: from parametric volume to fabrication templates
digital design process: tension simulation, parameteric control, dimensioning
steel frame fabrication: analog tube bending and digital plate cutting
rubber skin fabrication: digital formwork routing and shallow-relief casting
on-site installation

BAYOU-LUMINESCENCE
Light, Like Water

Judy Theodorson
Washington State University

ABSTRACT

Light, like water, is transparent and fluid: light fills and falls and flows and floods; it trickles and dribbles and seeps and leaks; it puddles, it pools; it is watery, inky, milky. These metaphors are rich and abundant in literary narrative, providing substantive description to an otherwise intangible substance. Light itself is not visible until it enters into reciprocal relationships with physical material. In other words, light reveals while being revealed. We simultaneously see the light, the space, the forms. And more. From the union of light and material, there emerges potent architectural ambiances: atmospheres, moods, markings of time, stirring of memories, suggestions of meaning. It is a paradox that light is invisible yet responsible for all visualization. As such, we have limited means to conceptualize and create with light. Therein lies the issue of this project: the extension of design vocabularies around light. Specifically, this project presents a conceptual poetic that explores the analogous relationship between light and water by coalescing verbal, constructed, and visual vocabularies.

Verbal vocabularies consist of singular words and narrative passages culled from a variety of sources including fiction, travel literature, poetry and memoir. The writings use water as a metaphor for light’s behaviors and characteristics, describing interior or environmental conditions from the perspective of human observation and experience.

Constructed vocabularies are developed with a limited palette: three dimensional spaces, textures, and filters configured into vignette models to capture and manipulate natural light.
The vignettes are not representations of a specific literary narrative. Rather, they are the result of a process that was intentionally exploratory and informative in the pursuit of the fluid and ephemeral nature of the medium.

Visual vocabularies employs black and white photography to record the luminescent moments captured by the model vignettes. The processes of modeling and photography were mutually reinforcing as discoveries emerged and vision was sharpened. The images expose patterns of luminescence and begin to codify visual metaphors of light and water.

The merging of allied perspectives -- literature, design and photography -- begets a fuller and more expressive understanding of the subjective, qualitative and performance aspects of light. This type of conceptual poetic serves to develop and inspire design language, through methods and applications consistent with design processes. In conclusion: Describe light, make light, see light.
"The way you can have light in a line coming through a window," he pointed to the left where a ray of sunlight was angling in and splashing on the pale wood of a table. R. Merulo

...awash in powdery light that spilled down onto the southern cloister. C. Zafon

In the dark of the room, the diamond began to spill light. T. Hill

...a feeling of unreality settles into me like the light of late afternoon that spills over the canyon walls. A. Condie
A modest geometry of morning light lay on the floor, a small rhombus falling through the grate....The geometrical shape began to leak light, became shifty, exited slithering up the walls. K. Desai

The light's all leaking away. I wished the day stayed longer so it wouldn't be night. E. Donoghue
The road led southwest toward the streak of pale watery light that glimmered in the leaden sky. W. Cather

A mellow golden light seemed to suffuse everything. It was as if the very air were liquid gold, and tonic. E. Ferber

…the milky light of the early morning W. Cather
In the distance, a vast pool of light, the sun, and the sea that melded with the sky to a single canvas... All that light flowing in. K. Barnes

It was dark by the time I got there, and the foyer to the studio was a pool of cheerful yellow light. C. Dederer
He goes over to the shutters and folds them back, flooding the room with light. T. Hill

.. the early light bathed the ruts in the ruptured macadam and made the surface of the playground appear as smooth as the surface of a lake unruffled by any wind. J. Irving

Slanting afternoon light flooded the room and brightened two children on the bed. A. Roy

The sun through the flowering trees bathes us in gold sifted light. F. Mayes

We walked along unnatural galleries floored with natural materials and bathed in natural light. C. Cleve
...heavens raining down celestial light... De los Santos

The light seemed to fall like a benison on everyone beneath it. I, too,

wanted to soak my skin under such a sun. Mayes

...the soft fall of light... W. Stegner

He sat in the dappled light among the stones. C. McCarthy
No, I’m in Bed, Skylight’s starting to drip down light, it must be morning. E. Donoghue

...the light trickled down her forehead and into her eye. T. Kooser

Late-evening light trickled through the blinds of a window next to the dusty bed. J. Klemen
One morning when we came along below the gate the sun was pouring in through the branches against the treehouse gable, lighting the little porch like a spotlight. W. Stegner

...when the sun is high, it pours a light of paradise into the nave. U. Eco

If you sit on one of the ledges around the base, the light pours over you, while also seeming to seep into your back from the walls. F. Mayes

The silver light from the enormous moon poured over them, blending with the golden quality of the day, flowing over the children, over Mrs. Whatsit, over the mountain peak. L’Engle
The last of the sun streamed into the large, woodpaneled room...C. Dederer

...under the yellow stream of light from the stained glass windows....G. G. Marquez

It was ten o'clock in the morning. The day was warm for April and the golden sunlight streamed brilliantly into Scarlett's room through the blue curtains of the wide windows. M. Mitchell

A fine strip of light still touched the main alter, whose frontal seem to flow with a golden radiance. The side naves were immersed in gloom. U. Eco
I like colors that change as the light does and the intense glow of golds when it rain, as though the sun seeps into the walls. F. Mayes

The gold letters of its title gleamed in the light bleeding from the dome above. C. Zafon
Folding Forms

Susan Tibbitts
Utah State University

ABSTRACT

“Folding Forms” is a creative research project that examined the process of converting two-dimensional graphics into three-dimensional forms for architectural and interior use. The work required a non-linear, design process involving hand sketching, digital graphics, printing, scoring, cutting and folding, resulting in conceptual, folded paper forms. Extensive prototype and exploratory models were built to achieve the desired outcome. The seemingly simple graphics produce complex forms.

Design Methodology

Although a designer, a conscious choice was made to navigate through the process like an artist, which required keeping the intended outcome vague. This change in process allowed for the scrutinizing of parts rather than a whole. The initial focus was on designing a basic building unit and determining how it could repeat to produce an architectural system.

Abstract, visual and volumetric thinking were integral to the creation of the transformative graphics. The geometry was generated and refined using functional mathematics to create the desired paper forms, therefore a non-linear process had to be adopted. Beginning as a rough sketch, the design was made into a digital pattern then printed, cut, scored and folded into a scaled model to test the geometry. Once the discrepancies were discovered the design was digitally revised and assessed again. Substantial learning came from physically manipulating the paper rather than working digitally with three-dimensional forms.
This developmental process has the ability to perpetuate many experimental and innovative designs.

Hex, the first of many designs, helped to define and outline the scope of the project. The self-imposed design constraints became the following:

- Graphic to transform into a tangible form
- Foundation of a six-sided hexagon
- System of repeated parts that multiply to form a whole
- Lack of color (truly see the form as it is)

Design Outcome

“Folding Forms” has generated a series of prototype models for use in architectural and interior product designs. Both two and three-dimensional versions of the graphics are intended for use. The products include but are not limited to, wall coverings, textiles, wall panels, acoustical tiles, and light fixtures. The conceptual designs have been developed in paper. Ideally, if the designs develop into products, they would be produced in a variety of mediums to best suit the needs of a specific product. Materials such as resin, aluminum, wood, cork, tile and fabric have been considered for future design production.

The two-dimensional graphics and three-dimensional paper forms will debut in a public gallery. To provide the appropriate experience, the scale of the prototype graphics will be altered to reflect a real-life application. The evolutionary process has been documented with still imagery and documentary filming.
single graphic

[hex] two-dimensional graphic
[hex] sketches & process models
[hex] three-dimensional prototype
single graphic

single repeat

[triglyph] two-dimensional graphic
[triglyph] two-dimensional graphic
[triglyph] three-dimensional prototype
original hexagon

process diagram

[x] two-dimensional graphic
[x] three-dimensional prototype
Blue Sushi + Sake Bombers Lounge

Tom Allisma
University of Nebraska - Lincoln

ABSTRACT

The location of this 5600 square foot restaurant and bar is on West 7th street in Fort Worth, Texas. The building is located across the street, to the North, from both the Modern Art Museum by Tadao Ando and the Kimball by Louis Kahn. Locals have described the building that this project is located in as the “Flat Iron” of Fort Worth and it truly has a unique layout. It has floor to ceiling glass on two of its three sides and the actual interior volume is very impressive with 22’-6” ceilings. The owners traveled to Japan before the conceptual stage of the project and came back with some inspired ideas about atmosphere and lighting that could fill this unique volume of space. I was hired in the spring of 2010 to design the project and it was completed on August 25, 2010.

The overall goal for the owners was to bring elements of light, origami, and also showcase a 20 foot long, 1000 gallon fish tank. The plan was carefully laid out to accommodate all the functional needs of the owners and the elements were then used to tie all the spaces together. In the dining room blue illuminated panels were used to line the base of the bar and also within six animated sculptural origami elements that set over the dining room seating. On the lounge side, the bar is lined with red illuminated panels and a large fabricated airplane wing was inserted over the entire space. The owners really enjoyed the tradition of “sake bombs” with their meals, which has become a huge trend within Japanese cuisine, so they wanted to bring this underlying idea into the lounge space. The dividing wall between the lounge and dining room is a
composition of liquor display, 12 foot projection screens, and the massive fish tank which helps tie the sides together.
Floor Plan and Building Exterior
Entry and reception
View of bar and lounge (1000 gallon fish tank upper left)
View of bar and lounge
Dining area
View of dining room on the left and bar on the right
View of sushi bar (1000 gallon fish tank upper right)
View of dining room and origami overhead
View of dining room and origami overhead
The Other Side of the Mask

Thomas Houser
University of Georgia

ABSTRACT
This 1400SF installation is subdivided into 8 spaces; uses 80 sheets of MDF, 30LF of mirrors, and 17 suspended panels; features 105 photographs, 8 TV monitors, 3 digital projectors, and 34 speakers; and simultaneously broadcasts 6 videos and 8 soundtracks, including original poetry recorded in English and Italian and original music recorded in a Tuscan chapel.

This site-specific installation addresses issues raised in my poem The Other Side of the Mask: contradictions we project, active and passive illusions, self-deceptions. It addresses the world as we see and attempt to portray it. Cynically, it’s about being trapped.

The gallery includes two rooms accessed through double-doors referencing masks with monitors mounted outside and inside each door. Loop videos play continuously, including positive and negative observations from diverse locations in North America, Europe, the Middle East, and India. Topics range from quiet waves on an Arabian shoreline, to muck in an Italian fountain, from trips through a trailer park, to forays along packed roadways in New Delhi, to quiet viewing of Pomodoro’s Sphere spinning at the Vatican. Positive images are portrayed outside the masks; negative within.

Like masks, work room interiors are rawer and less polished than their exteriors. Speakers, electrical wires and hardware are exposed. Surfaces are unfinished. While working in these enclosed rooms feelings of shelter give way to entrapment.
A panel of 24 backlit images in the East room offer representative project development drawings. Scraps of paper and receipts evidence the installation’s development. Inside the West room, another 24-image panel records facial expressions made by dozens of people reacting to key words in the poem: squint, search, mock, panic, hurt, hope, pain. Digital images were altered to emphasize emotions behind the expressions.

An angled corridor on the West side offers a positive, and dramatic, series of large digital photos captured at dusk in the Arabian desert opposite a series of 24 images of mostly disintegrating objects and abused environs. Seven-pointed stars dip down overhead. The centers of the stars reference the rainbow. Sound compresses as the viewer travels along the narrowing corridor, while stars lower along the vertically arched exterior of the West room. A similar corridor on the East side addresses the “gazing,” if not “staring” we do from within our masks. Compression here comes from the narrowness of the corridor: Artwork is literally “in your face.”

Along the gallery’s South side, laser-cut masks offer opportunities to look into mirrors. Both are positioned to make this seemingly simple task difficult.

Throughout, a cacophony of spoken, environmental, and musical sounds abound. Audio tracks include recitations of the poem and musical performances of the plaintiff Miserere from A Quest, a unison mass I composed. Overlapping disparate sounds from six simultaneously broadcast videos: water gently lapping a shoreline, graffiti-splattered trains clamoring through the Italian countryside, fanfares blaring through cobble-stone canyons in a walled medieval town, and a muezzin intoning a seemingly contradictory call to prayer at a typically western Dubai shopping mall.

The Other Side of the Mask: We’re always looking out.
**Illustration 1: Installation Panorama.** The view begins at the southwest corner of the gallery showing 5 of eight masks, and pans right to include the western interior room, a glimpse of the *Desert Suite* on the West wall, a video projection of Pomadore’s rotating *Sphere* on the north wall, and the entrance to the eastern room at the right. Room entrances are through mask-like doors having monitors inside and out.

**Illustration 2: Combined Floor and Reflected Ceiling Plan.** The main gallery entrance is on the south wall. The panorama in Illustration 1 is taken from just inside the entrance looking west and panning towards the top of the plan. Ceiling panels include the round shapes on the left, the rectangular ones on the right, the 7-armed form over the entrance, and the irregular shapes centered in the interior rooms.

*NOTE: North is up in this illustration.*
The Other Side of the Mask

Life within a mask is a safe haven.
I can float with no one knowing who I am.
   Squint, search, stare, hide.
   Judge, mock, cover-up — and hide.

It’s a lonely path.
I can’t get out lest someone knows who I am.
   Wend, seek, lose, stay hidden.
   Wonder, panic, prowl — and stay hidden.

It’s a cold refuge.
I can’t feel for my cover-up.
   No touch, no smell. [Dark, dank, hiding place.]
   No breeze, no light. [Stale tunnel of a hiding place.]

Searching the mirror makes me tremble.
I fear what’s on the other side of the mask.
   Ghosts, demons, plots, threats?
   Help, hurt, hope, pain?
   Saint, sinner? [Do I dare gaze?]

My mask fends others.
It pens my Phoenix;
   Keeps me hidden from my soul.
   [Who is my reflection?]

I must shed this mask — unfetter my Psyche.
The clutch of loneliness is too cool.

I need to feel moonlight’s warmth;
See night’s haze lifting;
Escape Erebus’ path and Echo’s doom.

Please...
Help release this knot.
I beg.

Illustration 3: *The Other Side of the Mask*, an Original Poem by the Artist, Serves as the Basis for This Installation. This image is a detail of the 66"w x 36"h panel on the exterior southeast end of the eastern interior room. The image has been cropped to facilitate reading of the poem in this document.
Illustration 4: Mask-Clad Doors Leading to Interior Rooms. The doors on facing interior spaces stand ajar in this image. The degree to which they stood open was determined by the end-users. While closed, the observer sees the same video projected on two TV monitors, like reflections in one’s eyes. From the inside, each TV displays a different image, an autobiographical admission of the artist’s habit of focusing with one eye at a time.
Illustration 5: Images within the West Room Reflecting Emotions Elicited by Key Words in the Poem. There are 24 backlit images in the 40sf panel on the west wall and a composite 60’w image on south wall. View is through the arched entrance behind the doors shown in Illustration 4.
Illustration 6: View Inside East Room. 24 backlit images track project development at the left. A detail of a 3-part 60” w image is at the right and more is shown in Illustration 9. The roughness of the inside of a mask is disclosed here with exposed hardware, unfinished MDF dividers, and exposed speakers.
Illustration 7: The Desert Suite Installation in the West Corridor. The passageway features 4 large (48"x36") desert photos printed on canvas, which emphasizes the texture of the sand and the painterly quality of the images; 24 contrasting desert images on a 40sf backlit panel (see Illustration 8); 7 panels arching overhead that show the promise of a rainbow. The star-like panels increase from 18" - 42" in diameter as the passageway expands from 3' to 10', as they arch up from 6'-8" to 10'-0" and back to 9'-6". Eight Arabian oryx-inspired masks are placed on stands in front of mirrors on the South wall of the installation.
Illustration 8: 24 Images within the 40sf Backlit Panel on the Wall Opposite the Pristine Desert Photos Shown in Illustration 7. Most of these images attest to natural and man-made negative impacts on the incredible wonders shown on the opposite wall.

Row 1: Shifting dunes revealing their destructive power
Row 2: Roadside litter cluttering a theoretically refreshing oasis
Row 3: Endangered indigenous Arabian wildlife along the roadside
Row 4: A make-shift house, a deteriorating truck, and a tear-stained camel
Row 5: Scorched and new litter strewn in desert
Row 6: Human, wildlife and vehicular tracks in coastal sands
The 10’ long photograph is tacked to the installation wall in a manner similar to the way the large photograph by Avedon, Andy Warhol and The Factory, is mounted in its museum setting. The wood surrounding the photo references the framing used in the museum.

Witness the disproportionate amount of attention paid by the viewers to naked subjects. Music, shown here and playing in the background, was written by the artist and recorded in a Tuscan chapel. It is a setting for the Miserere from the traditional mass. The text begins “Create in me a clean heart, O God, and renew a right spirit within me. Cast me not away from Thy presence Lord…..” It is a fitting plea to make from within a mask.
Illustration 10: 24 Images within the 40sf “People Watching” Backlit Panel. A camera can serve as a mask as a photographer snatches images for diverse purposes. The watching depicted here occurred from San Francisco, CA, to Delhi, India, with stops in Italy, New York, and Dubai. Only one subject was a knowing participant.

Row 1: Brooklyn | Dubai | Dubai | Delhi
Row 2: Caserta, Italy | The Vatican | Cortona, Italy | New York
Row 3: Image series: storefront encounter, Perugia, Italy
Curiosity is not subtle.
Row 4: Cortona | Farnsworth House, Plano, IL | Cortona | New York
Row 5: Villa d’Este, Tivoli, Italy | Cortona | San Francisco | Abu Dhabi
Row 6: San Francisco | Dubai | San Francisco | San Francisco
Island Summer House, Maine

Ben Jacks
Miami University

ABSTRACT

Area: 2145sf
inside-outside

This house in the woods stands at the edge of a tidal cove on an island in Maine. Arranged like a pavilion—a sheltered place—it is never separate from the trees and the changing elements of light, wind, and weather. The interior feels exterior, like a series of well-proportioned rooms within woods. At the heart a half-room, informed by the classical design virtues of order, balance, elegance, and coherence—incomplete without the forest and the rising and falling surfaces of water—hums with the activity of daily life. Cooking, dining, and dwelling gather into a single space.

A topographic shift in the granite ledge lowers the floor of the main room by two feet, increasing its height and scale while maintaining the proportional/modular order (12 feet x16 feet). The shift reiterates the connection between inside and outside, as does the choice of material. Paneled in native Birch plywood with exposed fasteners, accented with oxidized, recycled steel, the materiality of the forest is never far away. Red oak, salvaged from a road-building operation, solidly constructs four furniture pieces that together anchor every space on the ground floor.
simplicity-clarity
A guiding design principle, simplicity and clarity determine every detail in the house, contrast ing and accentuating the inherent chaos of the forest outside. In every case, details resolve through the most technically direct method, and a clear aesthetic approach. The question, “Can we make it simpler?” guides every decision.

Lighting is simple, spare, and casually ordered—in keeping with the dominant reliance on natural light and daily awareness of the solar path. Shallow troughs in the plywood ceiling contain multiple lamps that illuminate tasks and wash walls. Free-standing luminaires provide accent; recycled glass spheres and half-spheres demarcate significant thresholds and transitions. art for a house without art.

The art-collecting owners decided to eschew art in this, their periodic and temporary home, allowing interior surfaces to quietly resonate through material, hue, tone, and detail, rendering art of the surrounding land- and water-scape. Because of this radical decision, specific elements of the interior blur the lines between building, architecture, furniture, craft, nature, and art. A massive timber bench, a sheet of curled and folded steel, and a geometric puzzle of cabinetry—sculptural elements all—play across aesthetic categories and satisfy the Deweyan principle of art as experience. What critic Edward Ford calls “the autonomous detail” reaches its apogee here in a thick plate of steel that stands on the line marking the topographic shift between the half-room’s higher and lower volumes. The wall is a sculpture, inspired by Jean Arp and David Smith, and it reiterates the overall scheme (six-modules) and theme (outside-in) of the house itself, and yet, in daily life it quietly recedes into the background, as it must to yield to natural surroundings.

As dwelling, the interior lives easily, allowing comings and goings through multiple pathways; food, exercise, light, breeze, work, and leisure shape the inhabitant’s days.
ISLAND SUMMER HOUSE, MAINE

The house stands within a mixed hardwood forest at the edge of a tidal cove. Conceived as a series of outdoor and indoor rooms, a wood walkway accentuates the connection between topography and interior. The play of interior and exterior begins with a twenty-four foot long entry porch leading to the front door.
half-room

Viewed from the front entry, cooking, dining, and dwelling gather into a single space, conceived as a half-room, 16’ wide by 48’ long (four modules of 12’x16’). Topography allows for a 2’ shift in floor level at the mid-point of the room.
inside-outside

The topographic shift permits a monumental scale in the heart of the house, the pavilion-like room. Informed by the classical design virtues of order, balance, elegance, and coherence, the room feels connected to trees, light, wind, and water. Interior feels exterior.
simplicity-clarity

Lighting is simple, spare, and casually ordered—shallow troughs in the plywood ceiling contain multiple task lamps. A wall of curled and folded steel protects and partially conceals kitchen work.
art for a house without art

The ¾” thick plate of recycled, patinated steel stands on the line marking the topographic shift between the half-room’s higher and lower volumes, reiterating the six-module layout of the house interior.
detail

Specific elements of the interior blur the lines between building, architecture, furniture, craft, nature, and art. A sheet of curled and folded steel, a sculptural element, plays across aesthetic categories, rendering art as experience.
building, craft, furnishing, art

One of the five custom furniture pieces built of salvaged red oak, this interlocking boot bench and cabinet in the mudroom announce the transition from ground floor to stair hall.
stair hall

Recycled glass spheres mark significant transitions. In keeping with the dominant reliance on natural light and daily awareness of the solar path, natural light interacts with luminaire in ever-changing composition.
material-immaterial

Paneled in native Birch plywood with exposed fasteners, accented with oxidized, recycled steel, the materiality of the forest is never far away.
a sheltered place

In touch with the changing elements of light, wind, and weather, the interior feels exterior, like a series of well-proportioned rooms within woods.
Palo Verde

Carl Matthews, Interior Designer; Scott Biehle, Landscape Architect
University of Texas at Austin

ABSTRACT

One of the most enduring relationships between creatures is that of man and horse. In mythology, literature, and art, the horse represents freedom and connectivity to unseen worlds. The garden is a contemplative space for humans. By cultivation of plants and soil we stay connected to the earth and all her fluctuations. The home presented here is a mediating device for two men and their greatest joys: horses and gardens.

The 1920s farmhouse is situated at roadside's edge on a narrow 8.3 acre lot. Thirty tons of garbage was removed from the site, prairie grasses and wildflowers restored, and gardens featuring native vegetation created. Butterflies and birds quickly returned. When purchased, the primary rooms faced passing pickup trucks. Renovation entailed reorganizing space to face horses grazing peacefully in reinvigorated pastures. Barns were built within direct sight lines of major rooms and straddle the fence between human and equine landscapes.

Layers of garden cradle and envelope the house in ever-changing color and texture—the gardens were created as much for the enjoyment of passersby as the owners. The visually delicate yet physically rugged and drought-tolerant palo verde tree (parkinsonia aculeata) is used as both metaphor and organizing specimen. With equal expressions of monetary, material, and aesthetic value a language of frugality is not devoid of poetry. Colors of plantings and interior accessories reflect and echo one another in a game of call and response. The many large windows of the house serve as thresholds allowing maximum connection between indoors and out.
Black and white equine coats inspire the property’s primary non-color scheme and visually link interior spaces and inhabitants to their muses. Construction materials such as flooring and doors were sourced through a Habitat for Humanity thrift store. Bookcases and cabinets were salvaged from friend’s home renovation projects. Dark stain penetrates the wide plank, larch floors on the ground level, evoking the house’s relationship to its blackland prairie site. Black-and-white striped drapery recalls the property’s linear black fences. Tree canopy inspires the natural finish, salvaged maple flooring and green accent color scheme of the second floor.

Conceptually, the project transcends time. 1920s architecture merges seamlessly with mid-20th century furniture, all unified with textile and art collections gathered from friends and travels. Rural and urban entwine. Expression of interior design creativity surfaces through subtle tricks of space manipulation and maximization: a windowless bathroom draws natural light and views to the gardens via a small opening into the adjoining studio; formerly 8’ high ceilings on the second level gain height through exposure of joists; and clever use of nooks store and highlight objects the men love such as colored pencils and seed packets.

Just as living creatures evolve so must our houses. As culture becomes more open so do our homes. Old houses can adapt to social change without losing their inherent qualities. This project reminds us that design is not just about creating pretty objects, rooms, and spaces. Good design is about creating ways of living.
Palo Verde
Inside and Out

At time of Purchase

During Renovation
Site Development Diagrams

- **Phase I**: Purchase demolition clean-up
  - Design process: master plan
  - Restore existing out-buildings, salvage; store, re-use
  - Landscape clean-up, haul-off
  - Interior/exterior residence demolition & renovation

- **Phase II**: Renovate, private space; design reconfigure construct
  - Grassland restoration strategy
  - Construction: equestrian barn, pasture fences, water supply

- **Phase III**: Expand, public space; equine design construct
  - Grassland restoration strategy
  - Construction: dressage arena, round pen
  - Construction: farm lane realignment

- **Phase IV**: Annex, purchase design incorporate
  - Residential renovation complete
  - Implementation of garden/landscape design

- **Phase V**: Integrated, build-out, maintain
  - Implementation of garden/landscape design
  - Grassland restoration design & regime
  - Implement turn-outs and rotational management strategy

- **Secondary phases**: Palo verde farm
  - Rotation: gardens

- **Restoration**: Rotation: gardens
  - Measures in rotational management strategy
  - Grassland farm in process/functional

- **Maintenance**: 2007-2008

- **Site Development Diagrams**
Riding Arenas

Horse Pastures

House, Gardens, Dogs, Chickens, & Ducks

Trellis is made with re-bar grid intended for concrete reinforcement.
Existing first floor plan had primary views facing the road.

New first floor plan capitalizes on view of horses.
Two existing parlors were reconfigured to add a more formal entry. Maximum openings between the 3 spaces allow expansive views to the east, north, and west.

Mid-20th-century modern furniture contrasts the traditional architecture of the farmhouse.
Walls between two existing bedrooms and a bathroom were demolished to create the new kitchen and family room.

Rather than a traditional kitchen all storage and appliances are built into pantries and a painted maple island topped with polished statuary marble. The avoidance of overhead cabinetry enhances the feeling of light, space and views.

Lighting throughout is schoolhouse style globes with dark bronze housings.
The existing kitchen was transformed into a drawing studio (or guest room) and an efficient bathroom. The opening between spaces allows for view and natural light.

Display of seed packets and color pencils creates visual interest and color linkage between interior and exterior.
Bely Sleeping House

Andrew L. Nance & Thad J. Reeves

ABSTRACT

Faced with a growing family, the clients were interested in expanding their existing 1200sf home with a larger master bedroom suite and separate rooms for their two young children in a “Sleeping House”(1). With the added request that the addition be painted “red”, to contrast the existing home and neighborhood, two questions were asked of this project:

1. How does one revise the existing organization to extend, rather than overpower, the home?
2. How can openings, views and light be used to affect the perception of interior spaces, particularly within a compact plan?

The addition, limited by existing structures, trees and building setback lines, was conceived as a mediator to the existing living room and master suite wings, mitigating an already awkward adjacency(2). The insertion of this “hub” resolves the intersection of public zones and access to the private Sleeping House.

A $150,000 budget controlled the scope of the addition and remodel. High concrete costs during design encouraged a two-story addition to be linked to the one-story home(3). Careful planning, coordination, and judicious use of materials allowed the 1494sf project (1056sf addition, 438sf remodel) to be constructed for just over $100/sf.
Four design strategies were utilized in designing the interiors: daylighting, focal-points, volumetric articulation, and materiality.

Integral to the design, daylighting is provided by strategically placed windows and translucent polycarbonate walls at the stairwell(4). Oriented to admit morning and afternoon light, the stairwell doubles as a lightwell channeling light into the childrens’ bedrooms, master bathroom, library and living room at the main level(4-6). Ambient light provides visual clues to the organization of the interior spaces while reinforcing the architectural promenade.

Focal points were carefully considered throughout the project. Each room’s character is largely influenced by, not only its volume location and natural lighting, but its view to the landscape beyond. The long horizontal windows at the childrens’ bedrooms frame the horizon, bounded by the trees and sky(7). The master bedroom is dominated by floor to ceiling glazing responding to the clients’ desire to feel as if they were sleeping outdoors(8).

Taking cues from the volumetric articulation of the vaulted ceilings found in the kitchen and living room, the addition utilizes articulated ceiling planes providing programmatic hierarchy while influencing the perception of scale and variation throughout the rooms (5,7,9).

Materiality and color were chosen to work in concert with the natural lighting strategies complementing the existing home. As intermediary, the limestone wall at the library juxtaposes the rustic nature of the existing home and the clean lines of the addition(9,10).

Intending to reveal the subtle hues of color transmitted into the spaces, the walls are treated as a canvas, “receiving” the colored light. Openings near trees transmit slightly green light, while red pools form at the stairwell from the exterior siding(6). Warm, afternoon light in the library enters a clerestory window, bounces from honey-stained millwork to similarly stained ceiling; across to the rust/white limestone and finally absorbed by the black/brown concrete(9).
Exterior photos of existing house and property.

1. Entry (South) Elevation.
2. View of North elevation.
3. View of South Elevation at Garage and Master Suite Wing.
**Existing Organization.**
Cruciform in plan, the obvious location for an addition is by extending the wings outward. Mature trees, the existing garage and a building setback negated this strategy.

Located on the West side of the home, the Master Bedroom suite opens directly into the Kitchen resulting in an awkward private/public interaction.

The children's shared bedroom, far removed from the Master bedroom, was proposed to be converted to a Guest suite.

**Proposed Organization:**
The final scheme utilizes an interstitial public space or "Hub" between the existing home and the addition.

This public zone connects the new Family Office and Mud-room, while simultaneously acting as a mediary to the private functions of the new Master suite and stairs to the Childrens' rooms above.
The Resulting Form and the Mass:
The decision to minimize the footprint was influenced by site constraints and rising concrete costs during design resulting in more program area relegated to the upper level. With the goal of maintaining an efficient floor plan layout, the upper level was shifted Northward to provide a landing for the stairway linking the two levels. Situated outboard of the first level, the form of the cantilevered stairwell is expressed as a volume on the East facade.
Daylighting: Stair / Lightwell
A. East Light-wall: 9:30am  June 3, 2012
Diffused Eastern morning sunlight enters through a translucent polycarbonate wall and is channeled into the Childrens’ rooms and stairwell.

B. West Light-wall: Western afternoon sunlight is diffused through a second translucent polycarbonate wall into the stairwell, reflecting down into the Master Bathroom and Library below.

C. Clerestory lighting in the library provides indirect, ambient light throughout the day.
Daylighting: West Light-wall.
5:00pm  June 3, 2012
Diffused light spills into Library below.

Volumetric Articulation.
The perceived scale of the narrow stairwell is influenced by the height, clarity of volume, and daylighting of the narrow circulation space.
Daylighting: Stair / Lightwell.
5:00pm   June 3, 2012
The West facing light-wall bathes the stairs in natural light and reflects back into the Master Suite and Library.

Materiality.
Subtle pools of red light are reflected from the exterior siding.

Materiality.
Nearby trees form green pools of light from the East facing light-wall.

Materiality.
Warm yellow-orange zones of light reflect from the carbonized bamboo floor.

Materiality.
Subtle pools of red light are reflected from the exterior siding.
Focal Points
The children's rooms are characterized by long horizontal windows, recessed to block the high summer sun, and positioned to frame views of the tree canopy, sky and horizon beyond.

Volumetric Articulation
The nested study carrel creates a defined space, carved from the mass of the closet. The recessed windows provide a sculptural datum throughout the upper level rooms.

Materiality
The deep blue sky is reflected into pools of light from the adjacent metal roof.

Materiality
A red line is reflected from the siding at the recessed window.
Focal Points.
In each room throughout the addition, the compactness of the interior spaces is counteracted with a visual connection to the landscape beyond.

A large patio slider linking the veranda to the master bedroom is paired with a fixed panel of glass. The perceived glazed corner connects the owners to the oak grove and meadow beyond responding to their desire to feel as if they were sleeping outdoors.
Daylighting and Materiality.
Late afternoon light enters through a clerestory window and bounces from the top of the bookshelf to the ceiling, across to the iron oxide limestone wall and down to be finally absorbed by the black/brown stained concrete floor.

Volumetric Articulation.
The vaulted ceiling recalls the vaulted kitchen and living room of the existing house.

Focal Points.
As the sun moves across the sky throughout the day, alternate readings of hierarchy appear in this triptych of circulatory apertures, promoting variations in procession of the architectural promenade.
SLEEPING HOUSE ADDITION - BLEY RESIDENCE

MATERIALITY

MAIN LEVEL PLAN
Scale: 1/8" = 1'-0"

UPPER LEVEL PLAN
Scale: 1/8" = 1'-0"

1. LIBRARY
2. OFFICE
3. MUD-ROOM
4. BEDROOM
5. STUDY NOOK
6. BATHROOM
7. CLOSET
8. STORAGE
9. MECHANICAL
10. LIGHTWELL
11. KITCHEN
12. LIVING ROOM
13. VERANDA
14. MUD-ROOM ENTRY
15. OUTDOOR SHOWER

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MATERIALITY
Gachet Coffee Lounge

Thad J. Reeves & Andrew L. Nance

ABSTRACT

The Coffee Lounge is located near a dense urban center amongst a mixture of high end, one-off retail stores and live-work units. The tenant lease space is 43'-6"w x 39'-9"d by 19'-3"h and the tenant finish-out budget for the 1700 sf space was $150,000 ($88.00/sf).

The program is comprised of three main elements, the Coffee Bar, the Bookstore, and the Art Gallery. A primary directive from the client was that each element should be able to function autonomously during special events. This desire, coupled with a nearly square footprint, provided a challenge; how to accommodate nearly equivalent programmatic requirements while maintaining a sense of spatial hierarchy and a cohesive design strategy?

Coffee Bar

The coffee bar occupies the main portion of the space with the serving bar and two seating areas. One contains a relaxed, lounge atmosphere while the other is more organized and has several worktables. To maintain the mandated flexibility for art and events, permanent banquet seating was avoided. A central, glazed partition wall mediates the scale of the tall proportions of the room while creating a clear division between the seating areas while providing additional wall space for the gallery functions. An operable curtain provides additional separation of the spaces as needed.
Bookstore

The bookstore was conceived as part newsstand, part outlet for sophisticated art and architecture periodicals. Occupying a long, narrow slot within the main space, the two long, parallel walls act as thick-wall conditions housing the product displays. The central reading table provides customers a place to preview their future purchases. The glazed partition dividing the space, maintains the overall spatial connection to display merchandise to both coffee shop and bookstore patrons.

Art Gallery

The theme of display winds its way through the entire project. Rotating exhibits, art, books, and custom floral arrangements as well as the clientele all become participants. Art display panels stand proud of the demising walls, painted charcoal grey acting as backdrops to the display wall and rotating exhibitions. Seemingly random oblique views from one space to another reinforce the layered spatial readings. The folded mirror at the bar frames alternate views through the bookstore and captures newly arrived customers as they enter by the front door.
Gachet Coffee Lounge

Size: 1700 sf

Plan

01-Entry
02-Lounge
03-Work Tables
04-Bar
05-Restroom
06-Restroom
07-Bookstore

View-01
View-02
View-03
View-04/07
View-05/06
View-07
View-08/09
View-10
View-01-Bookstore Glass Display Wall
View-03 Work Space and Art Walls
View 08-Bookstore Storage Wall

View 09-Bookstore Glass Display Wall
Belying Age

Gayla Jett Shannon, Stacie McCans, Michael Shannon, Robbin Lyon & Gordon Ramsey Construction
Texas Christian University

ABSTRACT
Submitter is a full-time educator at a CIDA accredited university and directs a design firm assisted by 3 part-time associates; 1) interior designer, 1) architect, 1) office manager. The contestant designed, supervised, or specified lighting, materials and finishes, plumbing, hardware, millwork, furniture placement and procurement, window treatments throughout.

Program Summary
Client: 70 year old medical education professional with advancing mobility difficulties
• Remodel recently-purchased 2300 s.f. ranch for aging in place
• Accommodation of hobbies, including crafts, music practice and instrument display
• Planning for future need of walker, wheel chair or scooter, live-in essential caregiver
• Create vibrant and energetic character

Objectives
The client was comprehensively interviewed on multiple occasions to determine critical needs and goals. As a medical professional, the client proved invaluable in articulating her desires based on her extensive knowledge of current advancements in home medical care and residential requirements for home-based rehabilitation. Through these conversations and subsequent schematic design proposals, we collaboratively developed and refined both functional requirements and aesthetic concepts to be achieved by the design and within budget.
Our shared objective was to create residential spaces supportive of aging and declining mobility, but also creating an environment demonstrative of the client’s emotional aspirations in experiencing her progressing age; participation in hobbies and self-improvement, self-satisfaction and actualization, individual empowerment, outward engagement and social connection, and perceptibly positive and forward-looking surroundings.

Pragmatic requisites: widening key doorways, flush flooring transitions, increased lighting levels, glare reduction utilizing knee-level pathway illumination, lowering controls and switches, removing kitchen island to allow for rolling access, incorporating lower cabinets fitted with drawers instead of doors, creating roll-in shower, seated showering, providing exercise equipment within master bath, accommodating toilet transfer, comfortable living quarters for future essential caregiver.

Aesthetic intentions: restricted color palette throughout for visual cohesion and suiting client color preferences for red and orange hues, contrasting color harmony utilizing complementary hues for dynamic and energizing affect while providing areas of visual relief using achromatic harmony in some spaces, clean-lined and modern-inspired furnishings for youthful charisma, sturdy, simple, and functional furnishings accommodating client’s insomnia and decreasing mobility.

Outcome
Our client expresses a very high level of satisfaction with the resulting environment. Color proved to be one of the most significant factors affecting the success of the project. Rational color application increased the ease of spatial orientation and visual hierarchy was realized by varying color in terms of contrast, value and saturation levels. Brisk complementary contrasts of value and hue in textiles and furnishings were integrated gracefully with background finishes to achieve a polished and refined character, slightly whimsical and fun that belies the stereotypical elder environment. Ceiling treatments were especially significant, and were chosen according to formality, function, and time of habitation. Color context and object treatment affirms the aesthetic and spatial stipulations and improves the client’s ability to perceive form contours and
surface transitions  Every programmatic objective of the above listed pragmatic and aesthetic intentions was realized. The client dramatically improved her ability to navigate within her environment and more completely engages in fulfilling activities.
Belying Age
Furniture / Floor Plan
Not to Scale
Note: Gray poche’ indicates new construction
According to statistics from the Census Bureau, by 2050, 88.5 million Americans will be 65 or older; more than double the current population in that age bracket.

Simple and inconspicuous design choices such as a pedestal table allow for a wheelchair to roll directly up to the edge of the table.

A restricted palette of silvery beige and white lend elegance while more casual plastics take center stage.

Window coverings are simple, easily cleaned, and easy to operate.

*Dining / Breakfast Room*
A darker achromatic warm charcoal establishes an evening and sleeping environment for the client. The bed was custom designed for two specific purposes; 1) to fit the client’s height requirements for sitting on the mattress and 2) to allow for the client’s cherished standard poodles to sleep under the bed as was their custom.

The design was “future-proofed” to span a lifetime both aesthetically and technologically. All interior doors, except for the caregiver’s suite, were expanded to accommodate a wheel chair or scooter and wiring was planned for internet and media advancements.

Master Bedroom
The doorway into the master bath was moved to allow for better bed placement in MBR and doorway was widened for accessibility. Existing raised tub was removed and replaced with an area for exercise equipment. Shower and toilet area allow for wheelchair and/or caregiver maneuverability. Color selection utilizes white materials and finishes with subtle pink ceiling for enhancement of skin tone. Chamfered counter top corners increase safety.
The existing island was removed for mobility with a walker, scooter, or wheelchair. Base cabinets were fitted with generous drawers to access deep into the cabinet. Heavy-duty glides were specified to accommodate storage of pots and pans. Even dishes and glassware may be stored in lower cabinets. The cased opening between living room and kitchen was widened for accessibility. Lighting was designed and specified to increase visibility.
The designers simplified the details, resulting in a sophisticated, crisp, and welcoming environment. The color palette emphasized complementary hues of blues and oranges, resulting in a vibrant, active setting. The caregiver’s suite was designed to accommodate future television watching and computing capabilities, personal paperwork and desk tasks, as well as a potential short-term area for entertaining a guest. A full bath is located between the sitting area and sleeping quarters.
Color choices are aimed at creating an environment conducive to “active aging.” The amount and placement of each hue was carefully considered in creating a dynamic and invigorating interior character.

A balance of warm and cool hues were utilized and emphasized large areas of bold color contrasts. Orange/coral is placed in combination with various blue hues with different degrees of value and chroma throughout the residence. This establishes cohesion without monotony.

Caregiver Bedroom
The exterior view out the windows along the opposite wall is in line with the deciduous treetops. Even during the winter, this room connects the inhabitant with nature.

This room was designed to accommodate the clients various hobbies, musical activities and collections.
PANELS
iDO: Interior Design Optimism about the Future among Emerging Educators

Bryan Orthel
Kansas State University

ABSTRACT

Design is an optimistic action. In theory, teaching, and practice, designers and educators research and expand the possibilities for crafting a better future (Rittel & Webber, 1973). Our “What if...?” questions presume success. We view design problems as opportunities to challenge, improve, enrich, and do more for our built and social world. Design raises human possibility. Despite this optimism, critics and research point to failures and recurring challenges in areas such as health and wellbeing, design thinking leadership, environmental responsibility, social equity, and technology (for example: Navarro, 2012; Kimmelman, 2011). Further, the value of interior design remains open to question and dismissal (Pable, 2009). Knowing this past and present, we continue to look forward optimistically to the future of interior design. This panel discussion will explore how emerging educators envision their contributions to interior design’s future.

Emerging educators have doubled down on design’s optimism. We cross the Generation X–Y boundary and came to understand design during the technological expansion of the ’80s, ’90s, and new millennium. We learned our foundations in interior design from individuals who fought for its legitimacy and built its current research and pedagogical roots. These people are our mentors. Yet, as we begin our careers, our vantage point to interior design’s pedagogy and research paths is distinct. We are thinking forward to our eventual impact, critically examining current ideas, linking our interests to structural change, and committing to ideas about societal and social improvement (Twenge, Campbell, & Freeman, 2012). We choose to teach and research interior design for the benefit of an unknown future.
R. Buckminster Fuller asked about the problems of the future, not about the problems that we fixate on in the present. What problems will interior design address in our future? Those problems may be framed as approaches, methods, technology, social consciousness, resources, or relationships. The panel discussion accepts design’s optimism and Fuller’s question to frame three questions for how we look forward:

- What should interior designers be thinking about next in an increasingly interdisciplinary design world?
- What ideas are interior design researchers exploring now that change future thought and creative action, but we have not yet recognized their ultimate impact?
- What possibilities exist for rigorously interior and rigorously interdisciplinary design and research?

This panel presentation will feature five interior design educators who have three to ten years of teaching and research experience in CIDA-accredited programs across the United States. Each panelist will respond to the three questions in presenting their individual frameworks for teaching philosophies and scholarship. The panel moderator will provide a contextual opening and engage the audience in an open discussion about the three questions. As optimistic, emerging interior design educators, we look forward while recognizing our roots.

REFERENCES (APA)


Are We International Enough? What Constitutes an International Professional Association? Questions along IDEC’s Journey.

Hans Peter Wachter, Lynn Chalmers & Jane Kucko
University of Oklahoma, University of Manitoba & Texas Christian University

ABSTRACT

Shifts in the international economic order and strategic realities have resulted in greater academic interest and design activity. Interior Design as a service profession must place an increased emphasis on intercultural awareness and sensitivity with concrete knowledge about foreign establishments and environments. Interior design education must prepare students so that they are prepared for that business world, with its international frame of reference (Guerin 1992).

Many institutions recognize the importance of understanding the world and provide for students to become international citizens. A strong international education can serve the world’s interest and national and international education enhances the quality of life for citizens and society (Oblinger, 1999). Institutions provide study abroad and the National On-Campus Report (2004) identifies three key issues regarding international education: 1. students join college expecting institutions to offer quality international opportunities; 2. students must be exposed to international experiences; 3. We must develop policies resolving the difficulty for international students to study in the US.

Professional association exists when members of an occupation band together to perform functions they cannot perform in their separate capacity as individuals. Members of IDEC per a 2011 survey, define an international organization being represented by: 1. International member population; 2. international leadership; 3. International conference locations; 4. International accommodation of publication; 5. international journal.
But how is the Interior Design educator Council prepared to be an international player? And how can the Association assist their individual or institutional membership to become educators with an international frame of reference in mind?

The educators presenting in this panel have an insightful understanding of IDEC’s aspirations and objectives to illuminate the feasibility and the possible benefits for Association and membership to internationalize. The intent of the panel presentation is to address a North American perspective as a Segway to evaluate an internationalization need for IDEC. Included in the discussion will be the surveyed positions of current membership and perceived values for national and international students in interior design programs within North America, possibly resulting from an “International Interior Design Educator Council”. Presentations will also address the international and global perspective as a focus of interior design programs and what institutions of higher education have done to accommodate such perspective. A Canadian view, as a minority within the current IDEC family, will offer an understanding what distinguishes Canadian interior design education. Finally, how does global citizenship challenge IDEC and do we understand the interior design teaching and practice challenges outside of the United States to support an internationalization of IDEC?

The panel will engage the audience in a lively discussion about the risks and benefits of internationalization.

REFERENCES (APA)


Codifying Sustainable Design: Where Do We Stand?

Charles Boggs
Savannah College of Art & Design

ABSTRACT

In March 2012, the International Code Council released the second version of the International Green Construction Code (IgCC) in cooperation with the AIA, ASTM, ASHRAE, IES, and the USGBC and after years of research and development that began in 2009. Along with ASHRAE 189.1, this development marks the beginning of true codification of environmentally friendly and sustainable building practices. While select municipalities have begun incorporating LEED protocols into their codes, the USGBC itself has acknowledged that LEED was never meant to serve as a building code, thus these new developments represent a first step towards widespread adoption of green building practice standards on a large scale. While the IgCC has not yet been fully adopted on a national or state level, the State of Maryland passed a bill authorizing its use as a voluntary compliance alternative beginning in 2012 and the State of California has created its own regulations, the 2010 California Green Building Standards Code (CALGREEN), which went into effect in 2011. Additionally, the U.S. Conference of Mayors has endorsed the code, urging local jurisdictions to adopt it. When viewed collectively, these developments represent a significant moment for the design community, as the way in which environmentally friendly and sustainable design practices are addressed moves from recommendations on how we should design to standards of how we must design.

As building design and construction is a collaborative process, interior designers must play an integral part in addressing these issues and shaping how they are implemented and regulated. Notably absent from the list of IgCC collaborators and sponsors are the professional interior design organizations. With the building interior being the primary interface of the public to the built environment, it is imperative that the profession establishes a clear position on these issues and how it feels they should be addressed. What is that position and how do we define it?
This panel seeks to encourage discussion about the future of environmentally friendly and sustainable building practices from three perspectives: the ethical professional, the business professional, and the interior design educator. Three invited panelists will discuss their views on where the profession exists today, where it should apply its resources and influence going forward, and how interior design educators can shape interior design education to ensure that interior design is a leading voice in these issues and not merely a responsive entity, adapting to every change in code and certification standard. As these developments change the way environments are designed and built for human habitation, will interior design help shape that change or become subservient to it?

REFERENCES (APA)


Biophilia in Interior Design Education and Scholarship

Beth McGee, Anna Marshall-Baker & Lisa Tucker
The University of North Carolina at Greensboro & Virginia Tech

ABSTRACT

When addressing participants at the 2012 annual meeting of the Interior Design Educators Council, Rosalyn Cama, FASID, EDAC, indicated that biophilia is a next looming challenge, opportunity, and conversation necessary for professionals involved with the built environment. Biophilia was first proposed by E.O. Wilson (1984) following his observations of the positive effects of natural environments on human behavior and development. The purpose of this panel is to share recent efforts of faculty in interior design education who have begun to include biophilia in their teaching and scholarship.

Stephen Kellert and colleagues (2008) have articulated elements and attributes of biophilia that operationalize effective conditions occurring in natural environments that may be employed effectively in interior environments. This work provides a foundation for investigations that reveal the effects of biophilic conditions. In one report by a member of this proposed panel, biophilic conditions in healthcare environments were collected and explained to participants at a conference regarding the social and physical environments of patients, family members, and medical staff in newborn intensive care units. In the work of a second panelist, healthcare facilities were assessed regarding the number of biophilic attributes and elements apparent in areas that supported particularly the health, wellness, and recovery of hospitalized children. In the classroom, a third panelist has used Kellert’s (2008) principles of biophilic design with her students in an upper level vertical studio focused on healthcare design and corporate design. Using a biophilic approach, students were asked to design a series of projects using an evidence-based design in order to make informed decisions.
Following this introduction of work regarding biophilia in interior design education and scholarship, the panelists intend to facilitate a conversation that extends the presented work and also addresses comments, concerns, or questions regarding integration of biophilia into teaching and research. Although sustainability can be overwhelmed by qualitative measures such as energy conservation and LEED credits, biophilia is directly relevant to those involved in the design of interior space. Because conditions of the natural environment clearly impact the quality of life of human beings, discerning how best to integrate features of naturally occurring environments into our built environment is critical to the design of interior space.

REFERENCES (APA)


ABSTRACT

The emergence of graduate education in interior design is based on the premise that further education is needed to satisfy the needs of burgeoning research and advanced skills in the interior design industry. Distinguished from the professional undergraduate education, the master’s degree is often seen as the terminal degree for interior design that is required to be able to teach in universities. The practice of interior design is also evolving and becoming more complex and nuanced requiring new areas of expertise and skills that cannot simply be fulfilled by undergraduate education. In recent years however, much discussion have revolved around the value of graduate education especially in the light of what is perceived as a “low return of investment” during times of economic recession (Simon, 2011; Pappano 2011). Other discussions include the necessity of specializing graduate education towards what the profession and industry need and require. Continuing the conversations from the panel discussion on graduate education held at the IDEC conference in 2007 (Weigand and Harwood, 2007; Dohr, 2007), this panel attempts to advance the discussion by highlighting the dialogue between academia and the profession within the context of the recent changes in the economy, culture and politics. Following recommendations by Boyer and Mitgang (1997) in their landmark study on architecture education and practice that “educators and practitioners should establish a more unified profession based on a new, more productive partnerships between schools and the profession,” the panel will underscore the need for creating a practice-oriented graduate program as a strategy to bridge the connection between academia and industry.

Specifically, the panel poses the following questions:

- Is there a need for a type of graduate education in interior design that focuses on a practice-oriented curriculum?
• What are the types of graduates and the skill sets being developed by a practice-oriented graduate education in interior design?
• How can the dialogue between academia and the profession be strengthened through graduate education?
• What are the potential academic and professional research collaborations?

The panel will include three graduate academicians/professors and three practitioners from different regions / practice formats for cross-pollinating discussion. The goal is to provide a simulating and engaging discussion directed toward understanding research needs in practice and academic opportunities for collaboration tied to graduate study. The academicians will discuss skills sets developed in a practice-oriented graduate research program. The practitioners will address experiences with recent interiors master graduates and future research agendas to help determine what future graduates should be like. It is hoped that panel participants and audience enter into a dialogue to offer suggestions and recommendations as to how practice-based graduate programs in interior design can be shaped and structured to better respond to research challenges and needs within the profession.

REFERENCES (APA)


R.O.I.

By CECILIA CAPUZZI SIMON

Graduate school has long been a recession hideout, a place to add new skills and credentials that, presumably, increase job opportunities and salary in a market recovered by graduation. A year after 2008’s economic meltdown, applications to graduate school rose more than 8 percent. Last year, as the country hobbled toward recovery (or not), 27 percent of college seniors said they planned to attend immediately after graduation, up from 21 percent in 2007, according to the National Association of Colleges and Employers.

Students will invest, typically, two or more years in advanced study and thousands of dollars in tuition and expenses. A little more than half of students working toward a master’s will borrow an average $31,000, on top of any undergraduate debt they may already have.

So as a strictly financial calculation, does the investment pay off?

Some academics balk at the return-on-investment question. “Universities don’t sit around and say, ‘We will only have graduate schools in which the starting salary is higher than the tuition,’ ” says Nicholas Lemann, dean of Columbia University’s Graduate School of Journalism. Journalists, like others who are pursuing a passion, he says, “do not think of their lives in pure R.O.I. terms.”

Indeed, when it comes to gauging the value of education, considering only payback is seldom sound, especially for programs steeped in traditions of “knowledge for knowledge’s sake.” But if schools of applied learning aren’t asking the tough questions about the financials of a degree, potential students should, says Anthony P. Carnevale, director of Georgetown University’s Center on Education and the Workforce. “No one’s telling them what it’s worth. Certainly the colleges aren’t.”

Looking at the big picture, the case for grad school seems indisputable: in 2009, the median salary of master’s recipients was nearly 25 percent more than that of colleagues with only a bachelor’s, according to a report released in May by Dr. Carnevale that analyzed never-before-gathered Census Bureau data on compensation by major and degree level.
Dr. Carnevale concludes that grad school is “the best place to ride out a recession” for those who can afford it and are young enough (under 35) to reap the long-term benefit, or who are in fields like health or social work where a master’s or certification is critical to advance. For new college graduates, he says, entering the current job market with a diminished starting salary and job description could compromise a lifelong career and earnings trajectory.

Think of grad school as a 40-year investment, Dr. Carnevale says. Over time, it can move you out of the rank and file into elite positions. The key is determining where the jobs and compensation are. Consider, in your calculation, these variables: institutional quality, tuition costs, debt incurred, and the economic outlook over all and for particular specialties. So-called opportunity costs — lost wages and possible career advancement had you stayed in the job market — also change the cost-benefit picture.

“Field matters,” Dr. Carnevale and others caution. As the Census study shows, in some fields the bump from an advanced degree is minuscule (meteorology), or relatively small because it’s coming off an already low salary (counseling psychology).

But over all, in every major, more education results in more money, and in some (engineering) the increase can be significant.

Engineers are in such demand that those fresh out of undergraduate programs land well-paying positions, and it’s a field that values skills learned on the job.

Still, a graduate degree can identify candidates in the workplace for higher-paying management positions or jobs that require specialized knowledge, says Jeff Strohl, an economist who worked on the Georgetown report. In that report, engineers with master’s degrees in 2009 earned a median salary of $99,000 — $24,000 more than those with only a bachelor’s. With research grants covering tuition for many students, a master’s degree in engineering can provide a great return on investment.

That is not usually the case for doctorates, however, unless they move into high-tech fields or supervisory roles. K. Mani Chandy, chairman of the engineering school at the California Institute of Technology, makes clear to Ph.D. candidates at the outset that they will give up significant income and five years of marketplace experience — perhaps the bigger sacrifice, he says, in the fast-changing world of engineering and information technology.

“The R.O.I. for them,” he adds, “is intellectual happiness and not money.”

Which brings us back to journalism students’ labors of love. Hopefuls can spend between
$18,680 (in-state for Kansas State University’s two-year program) and $50,000 (for Columbia’s one-year degree) for a master’s that, according to an annual survey by the University of Georgia, adds about $9,000 to starting salary. That’s on average $39,000 for those lucky enough to find a job in the worst employment market for journalists in 25 years. (By graduation, 31 percent of Columbia’s class of 2011 had full-time job offers; half had lined up paid internships, which Mr. Lemann insists often lead to jobs.)

If a degree in journalism seems risky, the financial benefit of an M.B.A., while taking a hit during the recession, is clear. The average expected starting salary of an M.B.A. in 2011 is $91,000, according to the Graduate Management Admission Council.

The institution attended can influence R.O.I. as well. Using data from GMAC and other sources, two business-school professors set out to calculate the financial impact of an M.B.A. In 2007, the 50 top-ranked M.B.A. schools averaged a 17 percent return on investment — that’s starting salary compared to tuition costs, according to the two professors, Brooks C. Holtom at Georgetown and Edward J. Inderrieden at Marquette University.

The top-10 M.B.A. schools, with their higher tuition ($102,000 at Harvard; $108,000 for Wharton), scored a lower R.O.I. of 12 percent. But with corresponding raises and bonuses and institutional cachet, the net value of the investment in an M.B.A. from an elite institution is greater over time, according to Dr. Holtom and Dr. Inderrieden.

Business is on Dr. Carnevale’s “you’re-crazy-if-you-don’t” list, along with life sciences, physical sciences and social work.

The master’s in social work has become “absolutely essential” to advance in the profession, says Jacqueline B. Mondros, dean of Hunter College’s School of Social Work, of the City University of New York. Ninety percent of the members of the National Association of Social Workers, the field’s largest professional organization, have an M.S.W. But the return on investment won’t tempt. For social workers with the advanced degree, the median salary in 2009 was $55,000, according to the group’s research. Social workers with a B.A. earned $15,000 less, while Ph.D.’s added $17,000 to their median pay.

And the investment? Students seeking an M.S.W. borrow an average $35,500; a degree can cost about $20,000 at Hunter or $80,000 at Columbia. By comparison, their M.B.A. counterparts borrow on average $32,000, and more M.S.W. candidates borrow (three-quarters of them; half of M.B.A. students borrow).
The rule of thumb for borrowing, says Mark Kantrowitz, publisher of finaid.org, is that debt should never exceed starting salary. Ideally, he adds, it should be half that.

“I’d be the last person to say not to pursue a dream,” Mr. Kantrowitz says. “But do it with your eyes open.”

It’s easy to see how students can get into financial trouble, and how the economics of postsecondary school can affect choices, and so the professions themselves.

That’s what’s happening in veterinary medicine. Vet students pay tuition comparable to medical students. They also take on comparable debt. At Cornell University’s highly regarded program, tuition for three years totals $85,200 ($128,250 for nonresidents) at 2010 rates, and students incurred a mean debt of $92,700. Last year, half of Cornell graduates went on to jobs with an average starting salary of $75,000. Counting the half that went on to low-paying internships brings the average to $68,000.

The field, dominated by small businesses, was hit hard in the recession as practices cut back on staff vets. To pay off debt, most graduates are choosing more lucrative urban “companion animal” practices over rural, large-animal practices. This has caused a shortage that will worsen as practitioners retire, and applications have stagnated.

“The debt-to-salary ratio is something we worry about,” says Michael I. Kotlikoff, dean of the Cornell veterinary medicine program. “It’s not like philosophy or literature,” fields notorious for turning out unemployable Ph.D.’s. “But at some point you start to wonder whether that investment is financially sound.”

Meanwhile, many law school graduates are taking what work they can get. Last year, while law schools continued to overpopulate the market with J.D.’s (43,000 in 2009, or 11 percent more than a decade ago), 17,000 jobs were cut from the field, and there were 33 percent fewer summer associate offers.

Those who graduate from the top schools have the best opportunities for the high-paying jobs out there. But many newly minted lawyers are picking up hourly work, or taking staff jobs that typically pay $65,000 a year.

That happens to be the “break-even salary” that makes the investment in law school worthwhile, according to research from Northwestern University School of Law. (Many believe that figure to be low.)
A law degree can run $100,000 at low-tier schools, and upward of $140,000 at top ones. According to the National Postsecondary Student Aid Study, 89 percent of law students borrow an average $80,000. You don’t need a master’s degree in finance to see what kind of investment that might turn out to be.

*Cecilia Capuzzi Simon covers education from Washington, D.C., and teaches writing at American University.*

**This article has been revised to reflect the following correction:**

**Correction: August 7, 2011**

An article in the special Education Life section on July 24 about a degree’s return on investment misstated the program cost for a master’s of social work at Hunter College. It is $20,440, not $34,000. The article also misstated the cost of Cornell’s veterinary medicine program. At the 2010 rate of $27,700 a year ($41,700 for nonresidents), the four-year program would cost $110,800 ($166,800 for nonresidents), not $85,000 ($128,250 for nonresidents).
Wit and Humor in the Interior Design Classroom: 
Link between Laughter and Learning

Stephanie Clemons  
Colorado State University

ABSTRACT

“Humor is by far the most significant behavior of the human brain.” Edward DeBono

Problem/Purpose
Interior design students today are anxious (e.g. course expectations), stressed (e.g. work, debt, family) and daily inundated with new information. This pressure in and out of school can lead to mental disorders such as anxiety and depression. Cognitively and affectively humor reduces anxiety, builds confidence, and encourages divergent thinking in the classroom. The purpose of this presentation is to discuss strategies for incorporating appropriate humor to encourage student knowledge retention, enhanced learning, creative exploration, and divergent thinking.

Significance and Relevance
Limited educational humor research exists due to the many impacted disciplines (See Table 1). Existing educational research is classified in three categories: use of humor for learning (cognitive outcome), student evaluations of teachers who use humor (affective outcome), and student performance (outcomes based) (Ziegler, 1998). Historically, humor has been regarded as a distraction that reduces classroom teaching efficiency (Torok, McMorris, Lin, 2004); but today many benefits are recognized for both students and teachers (See Tables 2-4). Laughter stimulates the cerebral cortex of the brain that improves mental and physical health (Lei, S. A., Cohen, J. L., & Russler, K. M., 2010; Watson, et al., 2007) and laughter relieves stress allowing learning to take place. Humor allows the expression of ideas that might otherwise be rejected or criticized (Ziegler, 1998), thereby enhancing creativity and divergent thinking. Yet, for humor to be effective it must be offered in moderation and support course content.
Panel
This engaging panel will be comprised of three interior design educators (versed in the skill of humor integration) of different gender, diverse years of experience, from different institutions, who have taught in different classroom formats: studio (space planning), small lecture (history), and large lecture (introduction to interior design). Both dominant and diverse viewpoints will be offered in an innovative way regarding the four key issues:

- Faculty confidence in appropriately using humor and wit; no need to be a stand-up comedian to enhance student learning
- Strategies to connect with students in various classroom formats
- Humor strategies that encourage creativity and divergent thinking
- Sensitivity to humor usage that may challenge classroom management (disruptive vs. engaging)

Case studies, key teaching examples, appropriate visuals and testimonials will be offered to illustrate pros and cons of humor integration. An educator-moderator will lead discussions to stimulate fun, non-threatening engagement with the audience.

Outcome + Summary
The perception and creation of humor is possibly the most complex of all human activities and behaviors. Humor has a solid place in the classroom due to its many psychological, social, and cognitive benefits towards teaching (Torok, et al., 2004). Humor should be constructive, and excessive humor should be avoided to prevent the credibility of the teacher from being undermined. Both students and instructors benefit from a fun environment where students are encouraged to take risks and think creatively to solve problems. Students’ outcomes indicate that humor integration is an integral component for enhanced student learning.

REFERENCES (APA)


Table 1. Theories by discipline concerning humor

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological</td>
<td>Views humor as a primitive adaptation to stress. Laughter will induce well-being and euphoria. Physiological and biochemical effects of laughter have been described (Fry, 1994).</td>
</tr>
<tr>
<td>Psychoanalytical</td>
<td>Humor is a response to stress with release of psychic energy and resulting anxiety reduction. Humor is a way of making a comment while avoiding censorship. It relieves tensions induced by society (Robinson, 1991).</td>
</tr>
<tr>
<td>Sociological</td>
<td>Views laughter as a means of assisting the integration of an individual into a group (Robinson, 1991).</td>
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Note: other disciplines include: sociology, linguistics, theatre, performing arts, visual arts, literature, medicine.

Table 2. Benefits of humor on student learning from instructor perspective

<table>
<thead>
<tr>
<th>Psychological (Students)</th>
<th>Benefits</th>
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<tbody>
<tr>
<td></td>
<td>Improves mental and physical health</td>
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<td></td>
<td>Releases endorphins that assist in alleviating pain</td>
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<td></td>
<td>Stress reliever, Alleviates tension, fear, anxiety, depression</td>
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<td></td>
<td>Enhances social bonding</td>
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<tr>
<td></td>
<td>Enhances student well-being; self-image; self-esteem</td>
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<tr>
<td>Social (Teacher to student)</td>
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</tr>
<tr>
<td></td>
<td>Improves student morale</td>
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<tr>
<td></td>
<td>Establishes professional relationships with students</td>
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<tr>
<td></td>
<td>Encourages sense of trust</td>
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<td></td>
<td>Breaks ice, reduces fear and tension</td>
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<tr>
<td></td>
<td>Reveals humanness of professor</td>
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<tr>
<td></td>
<td>Creates relaxed atmosphere for learning</td>
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<tr>
<td></td>
<td>Creates positive learning climate</td>
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<tr>
<td>Cognitive (Educational)</td>
<td></td>
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<tr>
<td></td>
<td>Captures student interest; increases attention</td>
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<tr>
<td></td>
<td>Increases motivation</td>
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<tr>
<td></td>
<td>Inspires creativity; assists in problem solving; encourages risk taking</td>
</tr>
<tr>
<td></td>
<td>Facilitates comprehension of course information</td>
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<tr>
<td></td>
<td>Elevates student's self-confidence</td>
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</table>

Table 3. Benefits of humor pedagogy for instructor

<table>
<thead>
<tr>
<th>Benefits</th>
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</thead>
<tbody>
<tr>
<td>Makes teaching more fun</td>
</tr>
<tr>
<td>Motivates student participation</td>
</tr>
<tr>
<td>Teaches academic content in innovative way</td>
</tr>
<tr>
<td>Maintains student attention; verifies they are awake</td>
</tr>
<tr>
<td>Enhances critical thinking and analysis</td>
</tr>
<tr>
<td>Energizes students to listen, learn, and engage</td>
</tr>
<tr>
<td>Improves morale and team building</td>
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Table 4. Drawbacks of humor on student learning from instructor perspective

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<table>
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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Student to student</strong></td>
<td>Degradng remarks of other students related to gender, ethnicity, religion, intelligence, physical appearance</td>
</tr>
<tr>
<td></td>
<td>Offensive humor (sexual, morbid, hostile, ethnic, demeaning, vulgar, sarcasm, cynicism)</td>
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<tr>
<td></td>
<td>Makes students feel self-conscious</td>
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<tr>
<td><strong>Student to teacher</strong></td>
<td>Undermines credibility of instructor</td>
</tr>
<tr>
<td><strong>Classroom management</strong></td>
<td>Lose focus of instructional objectives</td>
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<tr>
<td></td>
<td>Offends other students; attitude shift</td>
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<tr>
<td></td>
<td>Loss of student attention</td>
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Fostering the Connection: Examining the Impact of Team-teaching and Collaboration within an Interdisciplinary Design Studio

Nazanin Khodadad
Miami University

ABSTRACT

The divide between the architecture and interior design professions is evident in the professional world and is, unfortunately, often begun and perpetuated in academic settings as well. Traditionally, studios have been taught separately, thereby reinforcing the division between the disciplines. This mindset of separation beginning in design school creates and reinforces an incomplete, and often inequitable, view of the roles and relationships between architects and interior designers that lasts long after their academic work is finished. “It is assumed that the student will learn how to cooperate with colleagues, respect their varied expertise and become good team players, without any special emphases being placed on the development of these skills. Evidence suggests otherwise.” (Manley, & Claydon, 2000, p. 147)

Fostering the connection between the disciplines, architecture and interior design professors are combining the sophomore studios into a singular team-taught, collaborative studio with design problems borrowed from both disciplines. This approach to studio highlights the integrated process needed to work between disciplines, between team members and with and between professors. These collaboration helped students recognize each other’s strengths and explore the various aspects of design looking through the lens of an interior designer as well as the perspective of an architect. In addition, professors model teamwork and the collaborative design process as a daily example of the roles and relationships between architects and interior designers.
Expanding on this approach, a five-member panel, consisting of professors and students from the sophomore class, will examine, teacher-teacher collaboration, student-student collaboration, interdisciplinary lesson design, and student achievement. Building on the premise that, “Negotiating goals and sharing tasks in team projects encouraged students to become more aware of the strengths and limitations of their own particular disciplinary approaches to their subject” (Ritchie, et al, 2008, p. 193), the panel will reveal initial biases, discuss group dynamics, and evaluate shared goals and course outcome in an interdisciplinary, collaborative studio. Results of student surveys conducted at the end of the semester will be included to show how students challenged their preconceived notions of their own discipline in relationship to the strengths and contributions of others within the design profession.

REFERENCES (APA)


Teaching Software or Teaching with Software: Exploring the Relevance of Interior Design Courses Focusing on the Teaching of Industry Standard Computer Aided Drafting and Design Software Programs

Michelle Rose
The University of Southern Mississippi

ABSTRACT

Introduction
Technology utilized in the field of interior design is rapidly changing and increasing. In order to stay abreast of new technology and software programs, educators and interior design programs are under a great deal of pressure to constantly modify existing technologies and/or implement new technologies in courses. Whereas, some interior design programs have designated courses for teaching specific software programs, other interior design programs may incorporate courses from related disciplines or incorporate software into existing interior design course, requiring the addition of teaching software to the already strenuous curriculum requirements of the course.

Problem
Learning a new software program on a computer is similar to learning to play a musical instrument. In order to become skilled, the learner must understand how to operate the device and develop technique through experience. In essence, the learning process is through the active engagement of the learner. Widely recognized as a constructivist approach to learning, teaching software with a focus on the active engagement of students within the context of the project increases student success and motivation. Providing step-by-step demonstrations projected on a screen lacks the interaction needed for enhanced learning. Additionally, with constructivism becoming more prevalent in educational environments, hence the recent thrust of focus on
student-centered learning, the shift of teaching roles are moving from lecturer to collaborator (Wang, 2011).

Comparing the passive learning style derived from the traditional lecture format and step-by-step demonstration method of teaching to the constructivist model of hands-on active learning, it is the author’s opinion that a mixture of styles should be utilized in order for enhanced learning to occur (see Appendix A). In order to achieve this blend of passive and active learning, a variety of delivery methods should to be presented along with structured reinforcement through hands-on engagement with the learners. Additionally, the content must present a problem that can be solved with multiple answers or design solutions. However, some educators feel passionately toward one method over another, arguing that either the learning should be strictly passive with no design problem, or that the learning should be strictly active with the teaching role of a facilitator.

Relevance
The purpose of this panel discussion is to examine the context of the Wang (2011) study, along with a variety of other studies in similar discipline areas of art, architecture, and design, and to explore the diverse opinions of the panel members and participants in order to reach a better understanding of successful integration of software into interior design programs of study. Additionally, the context in which students learn the software will be discussed in direct relation to the style of teaching and learning, lending on the experiences of the panel members. The framework will further question whether, or not, students must be able to think through individual problems related to the design of an interior design project in order to provide engagement, as opposed to replicating a drawing or predesigned project.

REFERENCES (APA)
Appendix A

Diagram of enhanced learning through the integration of passive and active teaching methodologies.
Physical and Psychosocial Factors in Classroom Design for Elementary Level Schools

Rehab Aburas
Texas Tech University

ABSTRACT

Issue
There are different factors impacting classroom design including physical factors such as ergonomics, furniture arrangement, indoor air quality, lighting, materials and finishes and sound. Also, psychosocial factors such as personal space, crowding, privacy, and territoriality have an influence on the learning spaces (Kopec, 2006). The growth in technology, social networks and media, as well as different teaching and learning methods, require dynamic teaching spaces which changed the way of designing classrooms. Kuuskorpi, Kaarina, Finland & González. (2011) found that students’ perceived the traditional classroom as a passive area, which slowed down the full use of space. These changes in the in students’ needs require changes in the classroom environment. Therefore, the present report examines the effects of the physical and psychosocial factors in designing elementary classroom. Based on the recommendations and guidelines from the literature review, the report suggests a prototype for elementary classrooms, the new design provides a flexible multi-purpose environment that can be used for a variety of learning activities such as collaboration and workshops.

Methodology
A literature review was conducted in order to highlight the effects of physical and psychosocial factors on learning environments including classrooms. The review was analyzed using two approaches: 1) analyzing the information related to classroom environment and, 2) coding data by the type of physical and psychosocial aspects related to the learning environment. Based on the design recommendations from the literature review, two classroom design prototypes were created; one for learning activities including reading, discussions, and collaboration and another for visual art activities.
Discussion
The unique aspect of classroom function is that these environments serve two users: it is a place for student’s to participate in learning activities, and at the same time, a place where an adult teacher must be in control and authority while providing the course information (Kopec, 2012). According to Kollie, classrooms should support easy transitions to different learning modes, offer several areas for different activities and support the constructivist pedagogy by its five phases: engage, explore, explain, evaluate and extend (Kollie, 2010). In recent years, there were significant social and cultural changes caused by the unique advances in communication and information technologies, as well as the introduction of the internet to school environment. These factors have incorporated in shaping teaching and creating shifts in users’ expectations of the physical learning environment (Kuuskorpi et al., 2011). Brook (2009) mentioned in her explanations of the requirement for the 21st century classrooms that for such learning environments, designers need to consider the student at the heart of the design. Additionally, the principles of design must be considered for the best learning outcomes, and the necessity of providing environments equipped with rich ICT resources (Brook, 2009). Moreover, schools should provide spaces that improve interaction, participation in social networks, and control over the time (Conners, 2001). Finally, it will be beneficial to provide educational planners and designers with updated guidelines to create the proper environment for variety of students’ and instructors’ needs.

REFERENCES (APA)


Symbiosis between Stress and Privacy: Impacts on Patients’ Well-being

Rehab Aburas
Texas Tech University

ABSTRACT

Issue
According to Stewart-Pollack and Menconi (2005) healthcare environment design rarely addresses the concept of privacy or its therapeutic impact. However, the discovery that stress can suppress the immune system and effect recovery has created an interest in how privacy functions to reduce stress. Patients who are treated by chemo and radiation therapy suffer from inhibited immune system. Different design issues in Southwest Cancer Center include: noise, and lack of privacy in different parts of the center and low level of lighting can cause stress, anxiety and weakened the patients’ immune systems. Internal factors such as stress have been implicated in causing a deficient immune system because of the nature of the body’s response in dealing with this problem (Beaton, 2003). The purpose of this paper is to investigate different design solutions to solve the privacy and stress related issues to help patients to feel better.

Methodology
The research design was based on a qualitative investigation using a grounded theory approach involving evidence based design including an interview with the coordinator of the SWCC center, and observation. Also, a literature review was conducted in order to highlight the environmental design issues and its solutions. Southwest Cancer Center was the target sample. Data were analyzed using two approaches: 1) analysis and critique of the SWCC to highlight design deficiencies as related to privacy and 2) open coding of the literature review (Strauss & Corbin, 1990), which consisted of breaking down, conceptualizing, and reconstructing data in new ways and underscoring redundant themes.
Discussion
There are different design solutions that can be applied in order to improve the SWCC environment such as giving the patient a choice concerning their individual level of privacy, especially when the chemo-treatment typically involves being connected to an IV for 90 minutes (Better healthcare design, 2009). Also, Access to nature and other positive distractions in one’s physical surroundings can reduce stress, create psychologically supportive healthcare environments, and support the patient’s ability to deal with illness (Pollack & Menconi, 2005).

Daykin, Byrne, Soteriou and O’Connor, (2010) redesign the Mental Health NHS Trust in England and one of the study suggestion was adding visual art to the healthcare environment as a solution to solve privacy issues. Daykin, et al. mentioned that particular issue for service users and staff was privacy; the new environment was seen by some service users as offering more privacy than the old one (2010). Other factors and elements can be added through design to enhance a positive attitude and support the patient’s immune system, such as exposure to sunlight. According to Rod Von Essen (2010), vitamin D is critical to T cell function. Without sufficient sources of this vitamin in the blood, the cells will be incapable of ‘activating’ to fight foreign pathogens. More exposure to day lighting is an essential solution for improving the patient’s immune system and reducing stress. Also, associate some colors in design will evoke the healing power and reduce stress. For example, yellows and gold heal stress and worry and blacks and deep purples heal fear and depression (White, 2005).

REFERENCES (APA)


Evaluating a Retail Space Using a Systematic Design Approach

Kyuho Ahn & Kelsey Buzzell
University of Oregon

ABSTRACT

Background
The case study used a design analysis framework, the A2S model (Ahn, 2012; Appendix 1), that conceptualizes systematic store stimuli and consumer shopping experience relationships by integrating three theories; Kaplan & Kaplan’s cognitive theory (1982), Berlyne’s aesthetic theory (1971), and Mehrabian and Russell’s theory (1974); to evaluate a local bike shop in a Northwest city and to suggest improvements based on the analysis findings. The main objective was to answer the following questions: How do you successfully analyze retail design using a systematic approach? Can spaces be evaluated with specific criteria that allow for adjustments that affect the business/brand? Is the A2S model a design analysis tool that can be used to determine design improvements for retail environments?

Methods, Procedure, & Approach
The shop and brand identity were documented through drawings, pictures, interviews, Myers-Briggs analysis, SWOT diagram, and research into business practices and outreach (seasonal trends, website/online presence, competition). Then, the A2S model was used to generate a series of diagrams that analyzed the zoning of the store layout and comfort and arousal levels (Appendices 2, 3, 4). Initially the investigation was broad and intuitive (big picture), but then it focused on analyzing environmental factors, both ambient and spatial (lighting, temperature, color, goods, etc.). Once specifics were examined, the project aimed to look again at the big picture to make informed design suggestions. The findings, then, suggested design recommendations on how to adjust stimuli to affect approach behaviors of consumers.
Results & Findings
The case study resulted in the generation of a simplified version of the A2S model (Appendix 5), which was then used to analyze the levels of comfort and arousal experienced in the current environment and also to predict an ideal environment. This led to design suggestions that dealt with reorganization of product, improved way finding (visual guides), and creating nodes of high arousal to sell specific seasonal products (Appendix 6). By basing the design results on the motivation of the consumer and the existing environment, the A2S model helped deter impractical design solutions (expensive or trendy) that may have been the outcome of a conventional design studio project.

Conclusions
In the end, this project reinforced that brand identity and retail design are intricately tied. Motivation of the consumer and environmental qualities must be looked at holistically in order to come up with a set of criteria for design. Understanding the target consumer and brand will influence design decisions (balance arousal zones and comfort levels), and the end result should be a designed space that reinforces brand identity to the consumer – a total package. The design should sell the brand. The A2S model allows the evaluator to look at the relationship between the small picture (specific environmental factors) and the big picture (comfort & arousal to brand image), which then leads to an encompassing design process.

REFERENCES (APA)


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<thead>
<tr>
<th>STIMULI</th>
<th>ORGANISM</th>
<th>RESPONSE</th>
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<tbody>
<tr>
<td>Ambient factors</td>
<td>Comfort</td>
<td>Cognitive Satisfaction</td>
</tr>
<tr>
<td>Lighting</td>
<td></td>
<td>(High comfort + Low arousal)</td>
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<tr>
<td>Ambient lighting</td>
<td></td>
<td>(Utilitarian)</td>
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<tr>
<td>Task lighting</td>
<td></td>
<td>Intuitive</td>
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The physiologically and/or mentally comfortable feelings. Functional aspects to support shopping activities. Bipolar quality.

- Functionality
- Perceived service quality
- Relaxation
- Physiological Desire

The feelings that subjects experience and the degree to which these subjects are aware of environmental stimuli and of environmental cues for service/product quality inference.

Arousal Control Devices
- Increasing devices
- Complexity
- Novelty
- Ambiguity
Moderating devices
- Coherence
- Familiarity
- Legibility

Approach
- Liking
- Affiliation
- Exploration
- Desire to Stay
- Willingness to Return
- Willingness to Buy

Appendix 5. Simplified A2S Model – Design Assessment and Findings.

[Diagram with notes]

- Concentrate majority of bikes in one organized area.
- Allow the rear retail space to house bikes - get system that allows 2-3 bikes to be stacked vertically.
- Remove planter and relocate highlighted bike display.
- Create seasonal display, which leaves the shoe and cashwrap in more of an open view from the door.
- Redo window display.
- Redo window display.

Better group merchandise to relate to possible footpaths.

Redo window display.

Clear cluttered bikes away from window and create a clean view through the store - where you can see the bikes and merchandise, as well as the employee/shop area. This will reinforce the community aspect and will appeal to passersby who may want to browse or talk to someone about their bike.
Voices of the Homeless: How Design Defines a Place Called Home - A Narrative-Style Traveling Exhibition on Homelessness and Design

Jhoana Mae Antiquino
Florida State University

ABSTRACT

In the United States the issue of homelessness is becoming more prevalent, with an estimated 649,917 people experiencing homelessness on any given night (US Department of Housing & Urban Development, 2010). Many of the homeless flock to shelters, but are turned away due to over capacity (National Coalition for the Homeless, 2009; U.S. Conference of Mayors, 200). In addition, the few shelters that exist rarely provide an environment that promote a sense of self and belonging, important aspects that enable homeless individuals to get back on their feet, and become contributing citizens again (Vandermark, 2007).

The design industry has a great potential to contribute to environmental solutions for homelessness, developing greater outreach to the other 90% of the population that design has neglected to serve (Design for the Other 90%, 2011). For example, new designs for shelter facilities may offer further comfort than current building styles do. According to MacLeod & Shivers, “severe shortage of shelter for the poor and indigent is forcing the profession to confront its obligations to a public beyond that of clients who can pay for their services” (1991, p. 40).

While interior designers often undertake pro bono work, they may not fully understand homelessness nor consider the situation applicable to their skills. This master’s thesis project proposes a narrative-style traveling exhibition with the goal of heightening designers’ awareness of homeless peoples’ plights. Its target audience is both interior design students and interior design professionals. Using a narrative approach, the design of the exhibition will be developed to meet three criteria: inform with accurate information, change negative perceptions of this
issue, and describe various concrete means to take action. The project will be executed in three
action research phases - interviews using narrative inquiry, development and creation of the
exhibition, and lastly a post-evaluation of the developed exhibition by the study’s constituent
groups.

In the first phase, a design practitioner, design student, homelessness expert and homeless
person will be interviewed to gather various perspectives. These interviews will frame the
content of the narrative-style traveling exhibition and convey the lived experience of homeless
individuals while exploring the specific impacts of the built environment. The second phase is
the development and creation of the exhibition space that will communicate design strategies
that address homelessness, and provide examples of how to increase designer involvement.
Lastly, using the virtually developed model of the exhibition, the phase 1 constituents will
virtually tour the exhibition to provide feedback regarding its effectiveness in conveying
information, prompting attitude change and calling for action.

The study’s overall objective is to begin an evolution in the mindset of interior design students
and interior design professionals that their actions can make a difference and that they can
become advocates of this cause by using their design skills. This poster will share the results of
interviews and provide a preview of the current progress of the exhibition, prompting viewers to
consider the importance of this issue and the potential designers can offer for change.

REFERENCES (APA)

Smithsonian Cooper Hewitt, National Design Museum (2007). Design for the other 90%.
Retrieved from http://archive.cooperhewitt.org/other90/other90.cooperhewitt.org/

National Coalition for the Homeless (2009). How many people experience homelessness?

http://usmayors.org/usc/h/ome.asp

U.S. Department of Housing & Urban Development, Office of Community Planning and
Development (2010). The 2010 annual homeless assessment report to congress (HUD
Quiet or Riot: A Proposed Framework for Integrating the Introvert into Collaborative-based Ideation Methodologies

Amy Huber
Illinois State University

ABSTRACT

Introduction
In today’s media one can recognize the prominence of collaboration as an antecedent to business success and personal achievement. In design domains collaboration is seen as increasingly ubiquitous and a necessary component in production of the most valued ideas. Popular culture has shifted the societal ideal (see Fig 1) from individuals considered conscientious and thoughtful to those perceived as charismatic and outgoing (Cain, 2012). This shift is exemplified in both business and academic environments where emphasis is placed on shared spaces (Pesek, 2011). The private office is nearly extinct and workstation panel heights are inching lower. In classrooms students sit in groups to facilitate group based learning and sharing. This can be at the expense of those considered introverts who comprise up to 50% of the general population (Briggs Meyers, McCaulley, Quenk & Hammer, 1998) and 43.6% percent of the interior design student population (Russ & Weber, 1995). These individuals often listen quietly; waiting until they assess an idea and its implications before sharing their thoughts. This perceived quietness can be viewed as lackadaisical or even standoffish. Although design educators have identified an introvert population (Russ & Weber, 1995); research has yet to provide a framework for incorporating both preferences into design charettes.

Purpose
Design is a fast-paced, dialogue-driven industry often using variations of Osborn’s 1948 concept of brainstorming to produce ideas. Yet, empirical testing of brainstorming has found it can be less successful in generating both quantity and quality of ideas compared to multiple individuals given the same problem (Lehrer, 2012). Participants can feel coerced into
supporting ideas they haven’t fully vetted and the most articulated ideas not always the best can become the remembered outcomes of the session. Introverted traits are seen as detrimental and can cause students and practitioners to lose opportunities to advance credible ideas (Cain, 2012). Design instructors need to create a classroom climate inclusive of a spectrum of personality types while preparing students for ideation methodologies commonly found in practice.

Methodology
This poster proposes a methodology (see Fig 2) for integration of introverted individuals based on experiences from three different ideation sessions-7 member student workshop, 20 member studio session, and a 15 member faculty design visioning session. By introducing pre-ideation thought prompts and enabling opportunities for further contemplation; outcomes from the sessions included an observable increase in the number of active participants relative to similar sessions. As a component of the poster additional teaching methods and engagement strategies which can facilitate inclusion will also be illustrated.

Discussion
The goal of the framework is not to shift an individual’s introverted personality traits pushing them out of comfort levels but to enable the individuals to have opportunities for contemplation prior to group engagements, a gradual shift to larger group discussions, and finally having opportunities to further build upon the ideas discussed after reflection. By using this proposed methodology in the classroom instructors may find increased levels of active participation and leadership from students once identified as peripheral. This participation can enhance learning for all individuals both introvert and extrovert2

REFERENCES (APA)


Appendix

Figure 1. Societal shift in personality ideals.

Figure 2. Proposed framework for increased introvert inclusion in ideation methodologies.
Color-Me-Boomerful:  
A Design Toolkit for Analyzing and Understanding Color Preference in Hospital Environments

Violet Lee & Miyoung Hong  
Arizona State University

ABSTRACT
The significant role of color in health and healing environments has long been championed, from Florence Nightingale’s (1860) early claim that ‘variety of form and brilliancy of color in the objects presented to patients are actual means of recovery’ (p. 45) to recent studies and guidelines describing the functional, affective and aesthetic impact of color schemes in elder care facilities. Within the burgeoning field of evidence-based design, leading health care experts continue to focus on interior visual elements as a primary source of impact. However, there is an identified lack of scholarly research directed towards the systematic analysis and understanding of the use of color in hospital environments. As aging baby-boomers begin to place growing demands on the US healthcare system, hospitals need to update, expand and innovate to cater to the needs of this strongly consumer-oriented group. Understanding and accommodating the needs, preferences and expectations of this diverse new client base will be fundamental in creating affordable, efficient and attractive healing environments.

Our approach to this problem is to adopt an iterative design framework, where results from initial studies inform the design and implementation of subsequent explorations. The work encompasses four broad phases: 1) Develop a systematic method/toolkit for evaluating current color design practice in hospital environments; 2) Evaluate the efficacy of this method in a formal study 3) Investigate color preference in baby boomers using a survey instrument developed using findings from the toolkit study; 4) Develop pragmatic color design principles and guidelines through sharing boomer preference findings in investigative interviews with healthcare design practitioners.
In phases 1 and 2 of our research, we have developed a systematic tool for evaluating color design in hospital environments and obtaining comprehensive visual records for analysis. We describe the design and implementation of the Color Evaluation Toolkit, and present results and findings from its use in a study of 5 hospitals in Phoenix, Arizona. We discuss the potential of the toolkit for evaluating existing healthcare buildings and for determining the strengths and weaknesses of hospital designs at various stages of development.

Using data and results from this study, we are currently developing a survey instrument in the form of focused exercises and semi-structured interviews. This survey will be administered to targeted groups of baby boomers in order to determine and analyze their color preferences in regard to hospital environments. Results from this survey will subsequently form the basis of the final stage of our research, where a series of investigative interviews with healthcare design professionals will help develop pragmatic color design guidelines for healthcare environments.

Contributing findings from our research can be used to systematically analyze color design in hospitals, provide insights into baby boomer design preferences and identify functional, affective and cost-effective design opportunities in healthcare environments.

REFERENCES (APA)


Internship Opportunity on a University Campus

Sally Ann Swearingen, Leisha Bridwell, Mitzi Perritt, Rhonda Calhoon & Shannon Williams
Stephen F. Austin State University

ABSTRACT

Issue
A question often arises as to how can interior design programs at universities assist in securing successful internships to students who cannot move to metropolitan areas or relocate due to budget restraints. In other words, how can faculty at universities in remote locations create an “In-house” Internship? As programs the CIDA accreditation standards, program expectations of “Work experience/internships” and “Program expectations” refer either to opportunities, experiences, or information presented to students in the program. CIDA standards state that the curriculum, teaching methods, learning experiences, and opportunities made available to students are sources for evaluating program expectations. (CIDA, 2011).

Process
Research suggests that the built environment has an effect upon the users of that environment (Altman, 1970). Thus it becomes important to understand how to design an environment for students in school classrooms (Earthman & Lenmasters, 1996). Effective decision making for interior selections requires research and an understanding of one’s environment. Our research on our campus made us aware that departments were specifying and selecting their own furnishings without input from interior designers or other professionals. This gave us an opportunity to set up a center on campus to select and train students to purchase appropriate furnishings for classrooms, offices and public spaces. It also provided an opportunity for interior design faculty and procurement/purchasing to review furniture standards for the university. This creative approach provides for great collaboration between the interior design program and the procurement (purchasing) department on campus.
Students who have completed this internship have reviewed and studied learning styles, communication styles, and reviewed technology in the classroom. Through collaboration with the procurement office, students have the opportunity to work with their interior design internship coordinator to secure an “in-house” internship to assist in laying out classrooms and specifying appropriate furnishings. In addition, students have met with manufacturers to gain understanding of all types of interior products and furnishings. Students are required to tour university departments to evaluate furniture and products and functionality classrooms layouts based various on teaching styles.

Summary
Departments are excited about the assistance. Students’ response has been extremely enthusiastic from the different departments served on campus. Benefits of this hands-on internship far exceeded expectations. Departments praise this strategic approach to creating functional, ergonomic appropriate layouts of the classroom. Students have the opportunity to meet with different manufacturers of products, attend seminars/lectures on communication in the classrooms, learned about teaching styles and factors influencing design. In addition, providing an in-house internship has kept faculty and students up to date on educational trends and has provided an opportunity for students to stay on campus to meet the needs of their internship criteria.

REFERENCES (APA)


Students listening to a speaker series, sponsored by Design Center

Welcome Center - Design with Interns

Office Design with Interns assistance

Graduate Assistant Intern

View in Design Center of Products
MISSION OF THE DESIGN CENTER

The Design Center is a collaboration partnership between the Department of Human Sciences Interior Design Program and Procurement Services. The collaboration enabled us to create a Furniture Manual to assist the University community. The Furniture Manual is a document that can assist the University Departments in selecting furniture used in offices, classrooms, public spaces and more. This manual provides a select group of manufacturers and furniture that are proven quality pieces with an excellent price point from TXMAS contracts. The Design Center is an educational in-house showroom that has been set up for departments and for students to come and view products specified in the furniture manual. In addition, manufacturers come yearly and give presentation to department and students to learn about the furniture industry. Design Center is located in the Human Sciences South Building, Room 104.

GUEST SPEAKERS 2011 – 2012

- Sustainability in Design  
  September 15, 2011
- Hospitality Furniture  
  October 7, 2011
- Fabric Trends  
  November 9, 2011
- Commercial Wallcoverings  
  November 9, 2011
- Kitchen Cabinetry  
  November 9, 2011
- Lighting & Day Lighting  
  January 26, 2012
- Design Requirements & Changes  
  February 8, 2012
- Color Trends  
  February 29, 2012
- Solid Surfaces  
  March 1, 2012
- Networking  
  April 16, 2011
- Marketing yourself  
  April 20, 2012
Interior People Places: The Impact of the Built Environment on the Third Place Experience

Dana Vaux
Washington State University

ABSTRACT

The built environment, more than the physical structures that fill locations, is also a setting where emotional ties bind and build community relationships. Designers have the capacity to create built environments that support community, however all too often the built environment instead becomes a barrier. Some researchers suggest a disconnect exists between psychological and sociological research and the application of findings to the built environment by designers (Jarrett, 2006). This study proposes that part of the problem is the lack of research that connects the two.

The purpose of this study was to establish a better understanding of how students and faculty on college campuses utilize public interior plazas for social gathering, and to identify the design attributes and properties of those spaces most widely used. The researcher viewed these “third places” in the context of sense of community and place attachment theories to determine the impact of the built environment on present-day socializing trends and preferences. The objective of this study was to further the understanding of design attributes that are common among public interior plazas on college campuses with high levels of public use. The design intent of this study was to create a prototypical setting for a social gathering space on a college campus and to provide—through example—design guidelines for other such spaces.

As a non-participant observer, the researcher conducted two series of observations on two sites of a state university campus, one urban and one rural, over a five month period. The study was
qualitative in nature and included non-participant observation and behavioral mapping techniques. The data derived from the observations were first analyzed within the context of each setting to determine which physical attributes were present or not. The design features recommended by leading researchers for increasing the use of public space were then compared to the results of this study (Whyte 1977, Alexander, et al 1977, Cooper-Marcus & Francis, 1998, Oldenburg, 1989).

The criteria that emerged from the observations as important to the success of a public space for social gathering coincided with the design guidelines outlined in the four publications. The observational studies confirmed that these general design principles are transferable to widely used public interior plazas. Six design criteria, which emerged from the study, were used as the primary guidelines for the design of a third place, social gathering space on an urban university campus.

Understanding connections between sense of community and place attachment in the context of third places could assist designers in creating social environments that promote human well-being by providing venues for social connection. When designers create barriers instead of bonds in social environments through design applications, it is often because they do not design with information. If sociologists are right that American communities are experiencing a loss of social capital, and need new ways to provide connections among individuals, then understanding how design decisions impact those spaces can only aid the process.

REFERENCES (APA)


Innovative Seating Design:
Interpretation and Integration of Historical Styles

Marie Gentry
University of Arkansas

ABSTRACT

In a program that requires one semester of interior design history, the plethora of information presents a challenge. Another challenge is that the course is taken during the first semester when design vocabulary and technical skills are limited. The rationale for introducing history early in the program is to encourage development of a historical repertoire that can be applied to subsequent studio projects.

Given course constraints, the most expedient method to assess understanding of content is through exams. Traditional testing can effectively measure knowledge. However, CIDA Standard 8 requires that students be able to apply historical precedents to inform design solutions. Because testing cannot appropriately assess compliance with this standard, two performance-based assignments were developed as an assessment tool and learning activity. Their purpose was to demonstrate students’ understanding of how historical precedents can inform the design of contemporary furniture. Additionally, assignment two provided students with an opportunity “to develop innovative and creative thinking and solve a simple (to complex) design problem,” as communicated in CIDA, Standard 4.

Not only are creative problem-solving skills integral to the development of innovative, effective design solutions, these skills are valued by employers across disciplines (Employers seek workers, 2010; Griffin & Kaleba, 2006; Shalley, C.E., Zhou, J. & Oldham, G., 2004; Workforce readiness, 2008). According to a report of 400+ employers, nearly three-fourths of respondents predict creativity and innovation will increase in importance for future graduates (Workforce readiness, 2008). By recruiting graduates with creative problem-solving skills, employers will have the benefit of employees who can produce “novel, potentially useful ideas about organizational products, practices, services or procedures” (Shalley, et al., 2004, p. 1). This
poster will present strategies used to develop creative problem-solving skills necessary for success in school and professional practice.

For Project One, students interpreted contemporary furniture in relation to historical stylistic influences. The intent was to increase understanding of how the historical repertoire may be a springboard for new ideas. Each student found one contemporary furniture product (not historic reproduction) that exhibited features derived from historic styles. See examples in Appendix.

For Project Two, students developed a seating unit that combined 3 styles into a single unified and original design. Requirements included a description of the design concept, design derivation, and rationale for the stylistic features used for the seating design. Also included were annotated images of 3 styles from which the design was derived, a rendered drawing of the seating unit, and a scaled model. See examples in Appendix.

To encourage an open dialogue about these exercises in particular and performance-based strategies in general, the poster will present student examples of projects, a summary of outcomes, and recommendations for future activities.

Outcomes

Student responses indicated the exercises were enjoyable and constructive, increasing their appreciation and knowledge of historical styles. Based on evaluation of the assignments, the outcomes, although variable in terms of presentation quality, reflected understanding of historical concepts and ability to apply historical references in innovative and relevant, rather than superficial, ways to furniture design.

REFERENCES (APA)

http://0-search.proquest.com.library.uark.edu/docview/227016685?accountid=8361


http://www.shrm.org/research/articles/articles/documents/08-0175wv_final.pdf
**History of Interior Design**

**Short Assignment:** Contemporary Interpretation of Historical Style  
**Value:** 50 points

The intent is to interpret contemporary examples of furniture in relation to early historical stylistic influences and help you understand how the historical repertoire of visual ideas can be used in the creation of new products.

**Guidelines**  
For this exercise you will find one contemporary/modern furniture example that exhibits features derived from the historic design styles presented in class.

- Locate contemporary furniture piece created within the last 2 years and published within the last year. Include the source: title of publication, page #, month and year, or complete web address.

- Look for an example that is modern in style, but borrows ideas from the past. Such examples will typically incorporate selected features from traditional models, but will not share all features with that source. Also avoid generic styles that have been used in almost every period.

- Look for historical borrowing that is seen in combination with other features that create a new, modern idea. In selecting images that appear to display historic influence, do NOT choose designs that are intended as historic reproductions, such as period reproduction furnishings intended as copies made for the purpose of creating a "traditional" interior.

- Include a clipping or clear photocopy of the example from recent (no earlier than August 2008) issues of magazines such as Interior Design, Dwell, Interiors and Sources, Metropolis, Abitare, or other leading design magazines. Examples from manufacturers’ websites may be used; check with instructor for approval.

- Black and white photocopies are acceptable as long as they have the necessary detail, but use color copies if color is a factor in the analysis.

**Directions**  
For the contemporary example, include annotations discussing the historic influences. In addition to identifying the historic styles that influenced the furniture piece/furniture components, you must discuss how the historic style has been applied. Questions to be addressed:

- How do material types compare and/or contrast to the original period/style(s)?
- How do material types compare and/or contrast to the original period/style(s)?
- How do decorative elements compare and/or contrast to the original period/style(s)?
- How does the form(s) compare and/or contrast to the original period/style(s)?
- How does the color scheme or textiles selected compare or contrast to those for the original style/period(s)? Is the application similar to the original or has it been adapted? Elaborate.
- Does the contemporary example improve upon any characteristics of the original(s)? Be specific.

*Your responses must be a thoughtful analysis and not just a description of the item.*

**Graphic Presentation**

- Include minimum 4” x 6” image of contemporary piece; must be high resolution.
- Include representative images from the historical periods from which the contemporary example is derived. For example, you find a contemporary chair, and its back is similar to the back of a klismos chair, and its legs resemble those that are characteristic of a Queen Anne chair. Include a small image of both a Klismos chair and a Queen Anne chair and point out the similarities.

*Format:* (1) Images and annotations may be mounted directly on high quality paper (8 x 11-1/2 or 8-1/2 x 14 or 11 x 17 sheets) OR if preferred, the presentation may be produced in an electronic format (e.g., PPT), using scanned images. (2) Corresponding annotations must be mounted next to the image. Leader lines from text to parts of the image should be included. All annotations must be typed or neatly printed (using guidelines and architectural lettering).
- For each image include reference/bibliographic entry at the bottom of each page.

**Evaluation Criteria** (50 pts)

- Written analysis: Accuracy, thoroughness, grammar, spelling, references (30 pts)
- Selection of work or product to be annotated (10 pts)
- Quality and organization of graphic presentation (10 pts)
Examples: Project One
Contemporary Interpretation of Historical Style

The Klimos Chair

Canapé d’alcove
French Neoclassical Louis XVI
- back and sides all the same height
- legs
- upholstered

In the 18th C, their materials were more limited than they are today. Oak was far more durable and versatile when it came to molding, patterns, and finishes.

The use of metal differs because then they used ironed and glazed wood to frame their furniture. The contemporary piece is more simplistic and not glazed as much of the furniture was in the Louis XVI era. The similar arm and back seats are able but the modern one is exaggerated higher and the stated拥护st effect is different than the other. Dried red wasn’t used in the Neoclassical Louis XVI period because they were all using light and airy rich source. The contemporary example would be an improvement because of the materials used. It would last longer. The construction of the materials has improved as well, the use of machines to construct furniture makes it affordable and available.
History of Interior Design

Seating Unit Design
Value: 100 points

In the previous assignment, you explored historical influences on a contemporary furniture piece. For this assignment, you will design a seating unit that combines 3 styles into a single unified and original seating unit. The styles must be from those studied this semester. Project components include:

- A written, well-composed description of the design concept and how the styles have been combined into a unified seating design.
  1. Clearly describe the design derivation and analyze the stylistic features that characterize each of the 3 styles.
  2. Next, identify and provide a rationale for those stylistic features that you have used for your seating design.
  3. Specifically identify materials and finishes used for the final seating unit design. Clearly support your choices of materials and finishes (e.g., Are they characteristic of the original designs?).
  4. This should be typed (12 pt. Arial) and mounted to back of board. Must include references.
- Images of 3 styles from which design is derived. Be sure to clearly annotate the major stylistic features of each. These must be neatly mounted on the presentation board.
- Rendered drawing of your design of the seating unit.
- Scaled model of seating unit. The actual scale used will depend on the dimensions of the unit. Overall height of the unit should be no more than 6 inches. Materials should reflect materials specified in the text. If the model is not attached to the board, include your name somewhere on the model.
- Mount project components on 11 x 17 boards.

Evaluation Criteria:

Design description and design derivation (30 pts)
- Design description and derivation are clearly communicated, stylistic features of the 3 styles clearly identified; rationale for stylistic features selected; materials, decorative features, and finishes specified and justified; design solution is creative and unified.

Images and descriptions of styles from which design is derived (10 pts)

Rendered sketch (25 pts)
- Quality of sketch, detail and accuracy, rendering quality, clear communication of concept

Presentation quality (15 pts)
- Craftsmanship, board composition, mounting, labeling

Model (20 pts)
- Correspondence between sketch and model, correspondence between text and model; fabrication quality
Examples: Project Two
Seating Unit Design
Boomers’ Lifestyle and Their Housing for Later Life

Hyun Joo Kwon & Julia O. Beamish
Purdue University & Virginia Tech

ABSTRACT

Boomers, people born between 1946 and 1964, comprised about 30% of the U.S. total population (U.S. Census Bureau, 2009). This big consumer group is now between 48 and 66 years old and has been retiring. However, due to Boomers’ diverse characteristics in terms of their lifestyles and attitudes toward their living environment, few factors have been recognized when explaining Boomers’ housing for their later life (Lynn & Wang, 2008; Schriener & Kephart, 2010). The aim of this study is to investigate Boomers’ lifestyles, their intention to move after they retire, their reasons for intending to move, and their future housing preferences.

A self-administered questionnaire included demographic characteristics, lifestyle factors (Beamish, Goss, & Emmel, 2001; Lee, 2005; Wells & Tigert, 1971), intention to move, future housing preferences (Beamish, Goss, & Emmel, 2006; Shea & Inman, 1994), and reasons for intending to moving (Rossi, 1980; Wiseman, 1980; Wiseman & Roseman, 1979). An on-line survey using a self-administered questionnaire was conducted during April, 2011. The target population was Boomers living in the U.S. Descriptive statistics, factor analysis, cluster analysis, Chi-square analysis, and analysis of variance (ANOVA) were employed (N=403).

Mean age of the total respondents was 57 years old. Sixty-six percent of the participants were female and 51% had a college degree or some higher education. Almost 62% of the respondents were married. Almost 70% were living in single-family, detached housing and 81% were owners. Almost 44% of residents were living in a city suburb and the average household size was 2.26.

From exploratory factor analysis, 18 items out of 49 activity, interest, and opinion (AIO) statements were grouped into four major lifestyles: the comfortable lifestyle, the economical
lifestyle, the cosmopolitan lifestyle, and the involved lifestyle. This four-factor solution explains 56.5% of the total variance of the 18 statements. Cronbach’s alphas of the four factors ranged from .581 to .880. From K-mean cluster analysis, the three-cluster solution was selected for further analysis: the cosmopolitan-involved lifestyle seekers (n=152), the economical-cosmopolitan lifestyle seekers (n=145), and the comfortable-involved lifestyle seekers (n=106). Chi-square analysis and ANOVA detected significant differences among three lifestyle seekers groups in terms of demographic characteristics, intention to move in the future, future housing preferences and reasons for intending to move.

The cosmopolitan-involved lifestyle seekers were more likely to be married couples, employed, highly educated and to make more income. They were more likely to intend to move for easy access to job opportunities, leisure and cultural activities, and for loss of spouse reasons. They were more likely to prefer to live in rural areas compared to other groups. The economical-cosmopolitan lifestyle seekers were more likely to have less than two households and to intend to move after they retire. They prefer services for daily activities and more likely to move into age-targeted communities. The comfortable-involved lifestyle seekers were more likely to be lower educated, make less income and were less likely to be employed. They were more likely to age-in-place and want independent living in their current housing.

REFERENCES (APA)


Design Implications of the Evolving University Library as a Student-Learning Center

Nicole Peterson & Lori Brunner Stone
Iowa State University

ABSTRACT

The university library has developed into a center of learning and collaboration that can truly become the heart of campus within the university community (Hisle, 2005). Third places are “public places on neutral ground where people can gather and interact. The character of a third place is determined most of all by its regular clientele and is marked by a playful mood, which contrasts with people’s more serious involvement in other spheres” (Oldenburg, 1989). The library is neither home nor work, but a “third place” for students to study and socialize (Codispoti and Frey, 2010).

Recent trends in the design and renovation of libraries concentrate principally on the library as place, and as a social space (Bisbrouck et al., 2004). The third place role of the library has led the design of the physical environment to include a café, collaborative areas to gather and interact, and large open spaces in lieu of small study rooms (Hisle, 2005).

How do university students currently use the library? Do students primarily use the library to gather and interact, or are they using it to learn as in the suggestive traditional role of the library? What physical, social, and psychological effects do environments have on student study behavior in the library?

A case study of a main library at a midwestern university was used to examine these research questions. Observation of three study areas within the library was conducted, including individual study carrels, group study area, and student learning commons. An undergraduate student survey was used to engage users of the space and recognize how they use the library. The analysis from this mixed method approach was used to reveal how students use the study spaces.
in the library and how the interior spaces of the university library can be designed to respond to student behaviors and preferences.

Student survey results revealed that students value the library. The most significant finding was that sixty-two percent of survey respondents stated the main reason they choose to study at the library is for quiet study space. This finding is in opposition to the literature on the library as a social space (Codispoti and Frey, 2010). While we are designing libraries to foster collaboration, we must also maintain the notion that libraries should provide patrons with a welcoming and comfortable quiet study environment that promotes prolonged use. The survey also examined group and individual study preferences related to space, and current versus ideal study environments.

Two 36”w by 24”h posters present the observation and survey results in an info-graphic format. The first poster layout defines the three areas of observation (Appendix A-C). A photograph and floor plan depicting each area observed give the viewer reference to the space. The results are displayed in the form of bar graphs and pie charts. The second poster focuses on the survey results. Information about student perceptions of study spaces at this library is displayed, along with data on individual and group study environmental preferences.

REFERENCES (APA)


APPENDIX A

Observation of group study area
APPENDIX B

Observation of individual study carrels
APPENDIX C

Observation of student learning commons
A Typology Study: 
Exploration of Interior Archetypes in Museums and 
Exhibition Spaces Focusing on Art Museums and 
Memorials

Joori Suh
Iowa State University

ABSTRACT

Since the inception of the history of exhibition space and the earliest use of the name museum, the ideology of museums has developed and changed according to shifts in social and political as well as cultural paradigms. These changes consequently brought new typologies of museums and exhibition spaces. Underlying each pattern is the assumption that its identical characteristics and significant meanings reflect social and cultural frameworks throughout time. This research identifies some of the recurrent interior design patterns that have been adopted for museums and exhibitions in terms of creating spatial experiences through configuration, lighting, circulation, color, view, and display aesthetic systems.

The predominant philosophy regarding museum design has been “the white cube,” a “neutral” space for the exhibition of museum-quality artifacts. O’Doherty (1999) described the white cube as “a specially segregated space, a kind of non-space, ultra-space, or ideal space where the surrounding matrix of space-time is symbolically annulled.” This dominant aesthetic concept for museums and galleries made objects untouchable exclusives by displaying collections on a null white wall as a neutral canvas. In the last 20 years, however, this model has become suspect as artists, architects, and curators began to question its motifs and values. Recently, new museum buildings have broken away from “the white cube” model. Museums and exhibition spaces conform to the demands of the dynamic of contemporary art that tends to interweave art with the context of the museum instead of setting them apart in a gallery (Putnam, 2001).
However, little research exists about interior design elements of museums and their theoretical relationship to enhancing museum experiences. Few scholars or critics have classified interior design precedents for museums and exhibition spaces, particularly those attributes of space, lighting, circulation, views, and display aesthetic systems. The intention of this research is to fill this gap in design education for a better understanding of the design elements designers use to make dynamic places. This research centers on classifying and characterizing recurrent patterns, typologies, paradigms or precedents in the design of contemporary museums, exhibition spaces, and display systems. Each type defines, describes, and traces a typology through a historical timeline from its emergence and development in relation to the effect of transitions of design frameworks. Primary research included content analysis of architecture and interior design trade magazines, observations at significant new museums in the United States, England, and Germany, and interviews with curators. Twenty-one typologies, including context as medium, spatial drama, and memory path, that resulted from this study will be presented in a poster format for further discussion with viewers.

This research is important for its conceptual contribution to the field. The research will add to the body of knowledge about the interior design of museums, galleries, and exhibition spaces. Like geometric patterns and other ordering devices, these types will be defined as starting points of a designer’s activities (Moore, 1996). The results of this research will serve as effective tools for approaching design problems in museum design for students and designers.

REFERENCES (APA)


Adaptive Reuse of Old Factories: Challenges and Opportunities for Interior Designers through Sustainability

Elizabeth Dull & Doris H. Kincade
High Point University & Virginia Tech

ABSTRACT

While reduce, recycle, reuse, repurpose and even regift are often associated with being environmentally responsible, the idea of reusing, reinventing, or repurposing old buildings (i.e., adaptive reuse) still seems to be a job of last resort. Older buildings present challenges for reinventing spaces that are aesthetic, functional and legal. On the other hand, adaptive reuse can support sustainability through reinvigorating a community, providing good stewardship of resources, and maintaining a sense of continuity in the urban fabric. "[A]daptive reuse can help restore the vibrant and lively activity of aging urban city neighborhoods and central business districts. Such development can make these places once again an exciting physical place for people ... to live, work, and play" (Faircloth, Kaiser, & Steinmann, 2009, p. 41). Adaptive reuse, a major initiative of the 1970’s and early 1980’s (Harwood & Hing, 1987; Pettinari, 1980), deserves new consideration as an opportunity to further stretch the definition of sustainability. More recent research has focused on the structural analysis and other architectural aspects of reuse (Langston, Wong, Hui, & Shen, 2008) meanwhile challenges and opportunities still exist for interior designers to be leaders in this aspect of sustainability.

The purpose of this research is to examine abandoned factories that were successfully repurposed and given new life. With the continued shift of manufacturing to off-shore sources, numerous empty factories in many regions offer opportunities to ID professionals and students for experiences in sustainability. This study involves mixed-method research in a two-step exploration. Step one is a census process documenting the number and location of abandoned textile, apparel, and furniture factories in a selected geographic region. Step two is a case study examination of buildings identified as rescued and reclaimed for a variety of purposes.
Documentation included interviews, site visits, and various print and internet sources. Triangulation of data, saturation of information and industry experience of researchers improved reliability and validity.

Using content analysis on the qualitative data, four major design themes emerged associated with the adaptive reuse of these factories: space planning appropriate for living/working environments, upgrade of interior systems, life/safety codes, and inclusive design criteria. In all cases, the role of the interior designer was multifaceted. Issues that at first glance might be conflicting (i.e. efforts to meet guidelines for sustainability vs. demands of customers) were satisfied through creative design solutions. This information could be an invaluable resource for interior design students and professionals interested in repurposing existing structures.

The study offers expanded ideas on sustainability for ways in which interior design education (student projects) and ID professionals may consider options for the built environment. For example, faculty at schools in regions where old factories or other abandoned buildings exist could challenge their students to seek adaptive reuse solutions for buildings while providing service learning and sustainability information to local businesses. Through extensive photographs, the poster’s focus is to highlight interior solutions of successful adaptive reuse projects and to engage viewers in discussion.

REFERENCES (APA)


Bridging Collaboration and Environmental Education: Student Perceptions of Sustainability and Collaborative Learning

Amanda Gale, Kelly Martin & Melanie Duffey
Auburn University

ABSTRACT

Critical thinking, teamwork, and communication skills are fundamental components to the design process, yet with sustainable design there is a greater need for interdisciplinary collaboration among professionals during the early stages of a project (Steig, 2006; USGBC, 2011). It is essential that students emerging into the profession are knowledgeable of, and committed to, sustainable design while being able to learn in a collaborative environment. Therefore, this exploratory study was designed to 1) investigate the differences in perceptions of sustainable concepts among students, 2) determine the variances in attitudes toward collaborative learning among students, and 3) depict the relationship between collaboration and sustainability through a graphic model.

Previous studies have been conducted on the importance of sustainability (Ruff & Olson, 2009) and others on the benefits of collaborative learning (Byun, Kim, & Duffey, 2012). Ruff and Olson (2009) found that interior design students, despite having learned about sustainability, believed the environment would regenerate itself from the damage created by humans. This finding corroborates Steig’s (2006), discernment of shortfalls in knowledge of sustainable design in education. Collaborative learning is a tool that can promote the successful integration of environmentally responsible education (USGBC, 2010). Collaborative learning fosters the development of social and cognitive learning through development of critical thinking, interpersonal relations, social support, and creativity (Byun et al., 2012). Sustainability and collaborative learning are both addressed in several standards (2, 5, and 14) for program accreditation as stated in the 2011 professional standards of the Council for Interior Design Accreditation (CIDA, 2011).
The cross-sectional survey utilized a convenience sample of 84 undergraduate interior designer students. The twelve-item, self-administered questionnaire was disseminated to the student body at the beginning of the spring semester and had a 93% response rate. A combination of descriptive and inferential statistics was used for data analysis.

The findings revealed that upper level students had more favorable perceptions toward sustainability than lower level students (M=4.65, SD=0.627). Within the curriculum, an emphasis in sustainable education occurred in the junior and senior level through visual, oral, and applied teaching methods. The results indicate that a formal education that emphasizes sustainability had a positive impact on students’ perceptions. The findings also revealed that lower level students had more positive attitudes toward collaborative learning than upper level students (M=4.65, SD=0.627). Collaborative learning occurred throughout each level of the curriculum within the interior design program. However, in the upper level courses the projects were more complex; therefore, collaboration also had increased complexity, which may explain the results.

The results provide insight into students’ perceptions of sustainability and collaborative learning. This study adds to the growing body of knowledge of environmentally responsible interior design. Results can be used to modify existing curriculum by providing justification for the integration of sustainability into all levels of education. This study also provides an opportunity to understand the dynamics of collaborative learning and sustainable design, which can be used to facilitate a dialog among educators.

REFERENCES (APA)


An Interdisciplinary Art and Design Program: Development, Production and Evaluation of the Furniture Design Projects

Tolga Benli
Izmir University of Economics Faculty of Fine Arts and Design

ABSTRACT

FFD 301 Furniture Design course program emphasizes on design methodology, fabrication skills and presentation techniques, allowing students to effectively express their designs through drawings, mock ups and full-scale finished pieces. Furniture is a manufactured product closely integrated with the needs of the human environment, culture and everyday life. Although there is a demand for furniture with high standards in Turkish market, basically there is no identity that we could possibly call “Turkish Furniture”.

This year two students from different design programs formed groups and worked together as a team. The main focus was creating the high quality “Turkish Furniture style and identity” or “Furniture that inspired by Turkish culture, lifestyle, also reflects history or folkloric characteristics” with competitive prices that relevant to global and environmental standards.

Each group created a new one of a kind furniture that is innovative functional and aesthetically exciting. The first mission of the students were to demonstrate their ability to research a situation in order to interpret a need. From an academic perspective; the brief has been defined through broad based research about “Turkish history, arts and crafts, tools and equipment, culture, cultural symbols, traditional motives, regional historical background, regional symbols or cultural changes, written culture-alphabet, folkloric costumes and demographic shifts.” From a practical perspective; students researched manufacturing techniques, materials and joints, the forces acting on furniture, bracing techniques and ergonomics.
The second mission was to build a User or Product Scenario by brainstorming and mind mapping activities. In the next step of the design process, student groups were expected to generate design ideas of their furniture through conceptual design drawings. Students geometrically analyzed the found forms, patterns and symbols by intensive sketching through “metamorphosis” and “transformation”.

Through 10-week period, students also received additional lectures on materials, ergonomics, construction techniques, and history of furniture design. They were asked to identify standard dimensions associated with reach heights and seating dimensions, and were expected to recognize some period-furniture after weekly presentations. One step before the final phase, they were expected to refine, finish and present the final design and full scale cardboard mock-up. Finally, they constructed and exhibited an actual furniture piece using real materials and construction techniques.

During all these phases of furniture design process they all considered materials and technology, ecology, impact to environment. Wood-shops were used to familiarize students with the skills of furniture construction and model making.

Conclusion; As an important approach to design education in our program, like furniture design courses, some of the courses are planned and conducted as common courses open to different design departments. Furniture design course is an example of this interdisciplinary effort. With collaboration, faster concept to product processes, creating full-scale prototypes, hands-on approaches to materials and construction, students not only learned to develop a number of possible ideas but also learned to make decisions about the best solution quickly in order to reach to final products.

REFERENCES (Chicago)

AN INTERDISCIPLINARY ART AND DESIGN PROGRAM: DEVELOPMENT, PRODUCTION AND EVALUATION OF THE FURNITURE DESIGN PROJECTS

Keywords: furniture design; interdisciplinary, industrial design.

Appendix:
WHEN HUMAN RISE. ONE TREE IS PLANTED...
TREE BOOKCASE FOR CHILDREN

MATERIAL
- On walnut: Covered with oak
- Velvet: Mattress

 AIM
- Comfortable seating place
- Acquiring reading habit by using Turkish culture

Endearing of the design process we have been influenced from the form and floral art. We followed daily new shape and using layer by layer as a productive method for realizing the idea of Emir’s flower feature.

Due to being used as interior usage, we choose material that is also allowed to use outdoor in a design detail.

It can be used in interior or exterior places from its modular property which prevents need of manufacturing, assembling and packaging. This feature makes our product cost-competitive.

Side view 150
First of all we influenced from ray motifs. We transformed this motifs to abstract forms. Also we made this abstract form to 3 dimensional.

This shelf design is modular and customizable. People create their own design with using this units.

In Turkish culture shelves are multi-functional. According to this our shelves are also multi-functional. We have triangular units and also small hexagon units. So people can put everything on our shelves.

Dreptals end points are Lumpardy. Six end points create pattern at front views.
Incorporating Service Learning within the Curriculum

Lynn Capirsello
The Sage Colleges

ABSTRACT

As educators, we strive to create projects and assignments that incorporate the best learning practices for our students. Service Learning has become a standard in which the academic performance of students can be enhanced. Students who participate show significant positive effects in their overall academic performance, values, sense of activism, leadership, and choice of service after college. (Higher Education Research Institute, 2000) These outcomes are a strong argument to prove that every interior design program should incorporate service-learning projects within their curriculum.

Over the past year and a half, it has been our program’s duty to create a strong service-learning component for our program, and for our college community. Growing connections with various local and global non-for profit organizations. These connections have allowed for a variety of research and design projects, while allowing the students to gain practical knowledge and skills.

One such project was designed to assist the local chapter of Habitat for Humanity to change the face of affordable housing forever, not only on the outside in, but from the inside out. The charge from the organization was to bring together rich architectural and interior design expertise, to transform and develop communities.

The student’s challenge was to design their first ever two-story townhomes that were to be built in the south side of the city. This property needed to accommodate eight to ten units, and would be a complete departure from their standard building model. The units had to be sustainable, incorporate the latest in new urbanism and smart growth principles.
This project was to be completed in five phases:

Phase one – To have the interior design student’s research and develop design concepts for the overall design and architecture of the home and the community.
Phase two – Present these ideas to the Habitat for Humanity board of directors, and the architectural firm assisting with the planning and development.
Phase three – Work with a chosen family to create a livable and creative space using only materials, fixtures, and furniture from the ReStore.
Phase four – Assist with the overall construction and interior design.
Phase five – To implement the interior design culminating in an open house for the local community to learn about the project.

Overall, this service learning project allowed the students to collaborate with a well-known non-profit organization, engage in their local community, foster their understanding of how research and development assists with developing good design, and how to become contributing citizens and community members through service and dedication. The results were that the students gained knowledge of construction, collaboration, educating the public on the profession of interior design, and together built strong relationships within their program, and with the community.

This is an on-going project that has gained the support of the local community, fellow educational institutions, and local government. This project and future projects have been documented, and a documentary of the project is currently being produced so we may share the project and process with other institutions.

REFERENCES (APA)

THE LOCATION OF THE HABITAT FOR HUMANITY PROJECT IS LOCATED AT 7751 ALEXANDER STREET, IN THE DOWNTOWN DISTRICT OF THE SITE CONSISTS OF EIGHT PLOTS THAT WILL BE COMBINED TO FORM ONE SITE AND ONE COMMUNITY.

THE DESIGN GOAL WAS TO CREATE TEN NEW RESIDENCES AND UTILIZE THE PLOT FOR COMMUNITY “GREEN” SPACE.

FIRST FLOOR SITE LAYOUT

3 BEDROOM 1380 SF

THE COMMUNITY SPACE PROVIDES ALL RESIDENTS A YARD WITHIN THEIR URBAN SURROUNDINGS. THE CONFIGURATION OF THE BUILDINGS ALLOWS FOR OPTIMAL VIEWS OF THE GREEN SPACE, WHICH IS A LEED STANDARD.

FOUR BEDROOM UNIT

FIRST FLOOR PLAN
SECOND FLOOR PLAN
EXTERIOR ELEVATION

KEY
1 BEDROOM UNIT
2 BEDROOM UNIT
3 BEDROOM UNIT

EXTERIOR STUCCO COLORS
1 BROWN
2 BROWN
3 BROWN
Design Concept

In the虾 the starved woodwork details, tinted windows, and decorative engravings of the Federal Style make a home and distinguished to today's era, yet we are looking towards the future of green living. Urban community circles give a positive and distinctive influence on the community for the people. The large views of the streets will give a 60-70% less energy than comparable sized houses. The Alexander-style homes are an equal combination of community circle and historical Federal style architecture, specific to the Jefferson ERA. The exterior arches of the Jefferson style meet the criteria of a Jefferson style home but arranged in a manner like a community circle, while the interior gives a unique synthesis of both the Jefferson style and a more contemporary approach for the everyday family.

The family wouldn't move in on Monday or Tuesday, getting a chance to see the standing while appliances in the kitchen or lamp across the front forler. Before style can be found in the living room. For men, stitchers and friends would come through the new home for an open house that runs through Tuesday. To see the neighborhood and meet the new neighbors. The family manages to make this house come true for their family.

It's the first of 10 Habitat houses to be completed on the block, new homes ready to fit into the neighborhood. A by-law among the neighborhood. It was also the first to involve the interior design students at Siegel, who pulled together donated items and items they found and donated to Habitat's Niska, which sells new and gently used furnishings, appliances and building supplies, to create a showplace style home.

Angela Tingting sat on her couch and talked. For one, the taxes were happy. She came to the house when her 12-year-old son was just a toddler, taking a single suitcase. Niska's paper bag and 40 boxes. Eventually, she had to start working at Giffen Memorial Elementary School, where today she manages the cafeteria. All the 10-year-old single mother ever wanted was for her boys to have the things every two-parent household has, but she kept slipping through their grasp. In 1979, she moved out of her apartment just before she was to secure a house but then the deal fell through. With no family in the area, they stayed with friends for two weeks before staying in a hotel for two more weeks with their money ran out. They ended up homeless and were placed in a motel that was used like a family shelter.

Tingting cried then, too, but the tears were not happy. She asked God why it was happening and what she did to deserve it. She could not see a future for herself and the boys. In 2005, she sought some help from the Housing Authority and saw a flaw for a tenant for a Habitat for Humanity homeowner orientation. She signed up and waited, knowing that she'd be patient an affordable home with a zero-percent interest mortgage would await her.

In the meantime, they lived in an apartment where the boys shared a room, and they had to refer to the 321. Nazir would try to put his brother out each night just like a house cat.

So she couldn't help but mowed looking at the Geno Smith green walls in her bedroom with a modern design of pattern accent wall as she said, "It looks like a magazine," a half dozen times.

Nazir would stand in his new Pittsburgh-themed bedroom. The one he and his two students designed with a black, white and yellow border running along the wall, and run his hand down the starred word "students" saying, "This is the best part of my room!" in one word but himself.

Stopping outside the rear of nonprofit executive, Capital District Habitat for Humanity executive director Robert Fishman, Nazir said, "In the boys to an animal shelter to put out a drop, something their mother had repeatedly promised them they would have when they got settled in their home.

It's the kind of thing a single mother dreams about for her kids, the thing you might see in the two-parent household. He imagines, the kind of thing, along with their green walls and an artfully designed boy's room, that made it a home.

gohabitatrescue.com • 518-454-5000 • @Jennifer_Gale • http://rescue.com/nc team/1747

Read more
Modeling and Analysis of Proximity and Movement: Advanced Graphic Techniques as Demonstrated through Dance.

Jennifer Hamilron & Ruth Westervelt
Syracuse University

ABSTRACT

Nimble and agile, interior design responds to existing conditions deeply rooted in social, economic, political, and structural conditions. Like the anthropologist piecing together the story of humankind, a designer’s life is about formalizing that story; seeking to build upon existing armatures keen to the community and its needs. Material and constituency data can only act as framework for which to place narrative. The real story emerges from the interactions that occur through observation of and participation with users.

The immaterial resources existing as plan, section, and elevation are but a guideline to a sequence of events. The plan is not a static object; its dynamism must be unleashed during creative acts of iteration. Drawing from these actions is useful for reflection and interpretation of possibilities for existing environments- not to create entirely new structure, but integration into the existing scenario to effectively provide a delicate seam between existing and new.

To recognize the significance that the total environment holds, Professors introduced a hybrid method of spatial awareness facilitated by dance, animation software, and mapping techniques. Over the course of one week, second year design students tracked an acrobatic dance troupe’s methods of spatial awareness through physical workshops, seminars, and one-on-one interaction with the performers. The goals of the participation were to inform students of the often-ambiguous space between public and private, what happens when private space feels violated (or liberated), and how to graphically document the outcomes as narrative.
Between the workshops and studio, students documented their awareness of proximity in relation to their level of physical comfort through drawing and diagramming and manipulation of physical models. The results of these exercises were analyzed through pin-ups and group discussions that looked at relationships between the actions of the workshop and everyday activities, e.g., balancing while carrying a heavy backpack, walking into a crowded auditorium, etc. Students then synthesized the actions back into the physical model; at this point the modeling was taking shape digitally through the use of Adobe After Effects combined with various 3D modeling platforms.

The outcome of the investigation was a three-minute video that represented the emotional states that were generated from the workshop, e.g., trust, fear, or freedom, combined with the previously documented actions. The use of motion graphics software, in combination with the narrative resulted in a walkthrough that encompassed the full awareness of spatial complexities.

Two posters sized at 24 x 36 inches will demonstrate this process from the workshops to the video presentation. The videos will be demonstrated by captured stills framed in rounded rectangles portrayed as television sets.

REFERENCES (Chicago)

Em • bod • y
To give tangible or visible form to an idea, quality, or feeling

Embodied Space: An Apprehension of Spatial Behavior

This project will seek to define interior space is a spatio-temporal form, interweaved of time, space and successive events within- not as a fixed object defined by only formal qualities. Such a description indicates the phenomenal (sensory) roots of space and its complex associations with human subjectivity and temporal reality. Within this conception, the problem of habitable space can barely be understood without recognizing the issue of embodiment.

It has been suggested by Bresler et al. (2004, viii) that an embodied understanding of space suggests an integration of the two worlds – body and mind. The nature of the human mind is largely determined by the form of the human body and that all aspects of cognition (i.e. ideas, thoughts, concepts, categories) are all shaped by aspects of the body.

A Study On Notation and Space

We will practice making notations in space by considering the environment as a set of lived experiences. Interior architectural elements combined with dance will evolve around the core issues of:

Subject (body)
Event (time, movement, happenings)
Experience (embodiment)

Building – Movement

In this series of exercises, you will be exposed to a series of movement tasks based on the notion of embodiment. The intention is to develop a notion of Body Thinking and contribute to a more connected mind-body operation.

Documenting Movement

While performing this series of movements, attention should be given to the amount of space your body is consuming, and its proximity to others in the area. What is the relationship of your body to 1) other people and 2) built objects. Note this.

How does your relationship to the former and latter change when movement is restricted to certain areas of the body?

Movement with hands and arms only

Warm up: act out the fundamental associations of body and built environment. Refer to handout on ergonomics.

Step 1:
Fully concentrate on your body as a container of space. You will be asked to perform an action based on parts of a building – the ‘door’, ‘roof’, ‘corridor’, etc.

Take notes on the bigger idea lying beneath your actions/correlation of feeling and an idea. Forge a link between body and mind.

Step 2:
Body as space-maker
This will be conceptualized by accomplishing certain kinetic tasks; such as jumping, sliding, etc. Too, you will be asked to animate a built element, considering acts related to it. One example might be to consider a door. Begin by looking at related verbs– opening, entering, exiting, pivoting, hinging, etc. Then examine the type of door, ‘heavy, worn-out timber’, or ‘glass revolving’. What type of space does this act take place in and what are the mind/body reactions to the context?
Elaborate your gesture to a performance.

Divide into groups and discuss your experiences.
Em•bod•y
To give tangible or visible form to an idea, quality, or feeling

Pick up
Pull
Put down
Carry
Throw
Hold
Punch
Push
Catch
Reach

Movement with legs and feet only
Sit
Kneel
Hop
Skip
Jump
Jog
Walk
March
Tiptoe
Run
Kick

Movement with whole body
Stretch
Bend
Crawl
Drop
Lift
Climb
Fall
Lean
Crouch
Drag
Squat

Verb categories as framework:

Verbs of Placing
a.) fit, fix, install, place, space, clap, locate, situate, site, position, station, stick

Verbs of Removal
b.) remove, wrench, extract, withdraw, eject, bar

Verbs of Closure
c.) jam, seal, stuff

Atypical placement (do not specify a point of location)
d.) scatter, sprinkle

To Place: Static prepositions:
In front of
Under
Next to
Over
Around
In
On
Against

Verbs of Accompaniment
a.) guide, lead, conduct, escort, accompany, show, usher, direct, draw, tow

Verbs of Transporting
b.) carry, bear, transport, ship, dispatch

Verbs of special transport (goal and recipient can be the same)
c.) bring, fetch, deliver, take

Verbs of Pushing
d.) propel

Verbs of Throwing
e.) cast, chuck, toss

Timeline

W 4.4.12
In class movement exercises

M/W 4.9.12 + 4.11.12
Class to Landmark theatre for Diavolo workshop

M 4.16.12
Class discussion and model feedback session

W 4.18.12
Introduce basic After Effects tools

M 4.23.12
After Effects and Flash

W 4.25.12
AE + open studio

M 4.30.12
Last pin-up before final pres

W 5.2.12
Trip to NYC

M 5.7.12
Final due during normal class time for reviews
PROCESS WORK WITH DANCE TROUPE AND STUDIO INVESTIGATIONS

EXAMPLES OF PROJECT OUTCOMES IN SEQUENCE OF EVENTS
Integration of Conceptual and Residential Studios into the Entry-Level Interior Design Coursework

Jain Kwon & Tad Gloeckler
The University of Georgia

ABSTRACT
Promoting students’ creative thinking and effective visual communication can lead them to successful studio coursework (Hasirci & Demirkan, 2007). This study presents the collaborative teaching strategies used in two entry-level interior design courses, Concept Studio and Studio I, to enhance students’ leaning.

Problem
Interior design educators—as designers in the first place—acknowledge the significant contribution of well developed concepts to the design process and outcomes. Though, conducting in-depth, conceptual development in design process can be a challenge especially for entry-level students. Interior design educators often find that students struggle in synthesizing collected data and information, developing rich concepts, and fully integrating their knowledge and skills gained in the art foundation courses, such as drawing, 2D- and 3D-composition, and color, into their interior design studio projects.

The teaching strategies presented in this abstract are used in two interior design studios in collaboration between the instructors which they found as meaningful and beneficial for students in learning design process and understanding the sequence of their coursework.

Process and Instructional Method
The general subjects taught in the two studio courses are described below and the schedules are detailed in comparison in Table 1.
Concept Studio: The course contents are tailored for students to learn how to organize and visualize their creative ideas in a systematic process and how to read and analyze space and the order in buildings. The course contents consist of conceptual development (Figure 1), application of design elements and principles, two-point perspective drawing and rendering, space analysis (Figure 2), and three-dimensional formation of concepts. The final project is abstract space design based on the concepts they developed in this course.

Studio I: Students learn symbolic language of interior design, measuring and scaling interior spaces and furnishings, and the application of principles of design for a single-family, “home and office” residence (Figure 2). While conducting the project, students practice manual skills throughout the design process which are drafting, one-point perspective drawing, and model-making. For the final projects, students use a 1,800 sq. ft. interior space to design residential interiors. The project outcomes are closely linked to their outcomes from the Concept Studio project. While taking these two courses, the first-year interior design students comprehensively learn and practice conceptual development, technical skills, and interior design application.

Outcomes
At the poster presentation, students’ final projects will be exampled as outcomes of the collaborative teaching methods. As described above, students design one abstract and one residential space using the same building plan. On one hand, such two different applications to the same-sized interior space might challenge students. However, on the other hands, it can give students an opportunity to find how closely their conceptual exploration and pragmatic approaches relate each other and improve the depth of their design process and the quality of the outcomes, and to prepare themselves to be able to successfully conduct their future projects throughout their undergraduate coursework.

REFERENCES (APA)
<table>
<thead>
<tr>
<th>Week</th>
<th>Concept Studio</th>
<th>Studio I</th>
<th>Concept Studio</th>
<th>Studio I</th>
<th>Friday</th>
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<tr>
<td><strong>Week 1</strong></td>
<td>Introduction to Interior Design</td>
<td>Studio 1</td>
<td>Introduction to Interior Design</td>
<td>Studio 1</td>
<td>Due: bring dwg. supplies to class</td>
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<tr>
<td></td>
<td>Discussion: Definitions of design and interior design</td>
<td></td>
<td>Due: bring dwg. supplies to class</td>
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<td>Topic and key words</td>
</tr>
<tr>
<td></td>
<td>Introduce: Syllabus, Schedule</td>
<td></td>
<td>Due: bring dwg. supplies to class</td>
<td></td>
<td>Due: plan,</td>
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<tr>
<td></td>
<td>Concepts + Studio 1</td>
<td></td>
<td>Due: bring dwg. supplies to class</td>
<td></td>
<td>Demo: orthographic projection plan, elevation</td>
</tr>
<tr>
<td></td>
<td>Broad St. Orientation, Access Cards, Plumbing, etc.</td>
<td></td>
<td>Due: bring dwg. supplies to class</td>
<td></td>
<td>Demo: orthographic projection plan, elevation</td>
</tr>
<tr>
<td><strong>Week 2</strong></td>
<td>Conceptualization &amp; concept statement</td>
<td></td>
<td>Lecture: Design elements</td>
<td></td>
<td>Demo: orthographic projection</td>
</tr>
<tr>
<td></td>
<td>Due: plan, elevations - all 4</td>
<td></td>
<td>Due: plan, section, elevations</td>
<td></td>
<td>plan, elevation</td>
</tr>
<tr>
<td></td>
<td>Demo: sections, doors/ windows</td>
<td></td>
<td>BSP - Group Critique</td>
<td></td>
<td>Demo: paraline drawing</td>
</tr>
<tr>
<td></td>
<td>Lecture: Concept mapping &amp; diagramming</td>
<td></td>
<td>Demo: library/campus tour</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Week 3</strong></td>
<td>Circulation planning &amp; diagramming</td>
<td></td>
<td>Due: all dwgs. corrected; complete</td>
<td></td>
<td>Concept model</td>
</tr>
<tr>
<td></td>
<td>Due: plan oblique</td>
<td></td>
<td>Demo: one-point perspective grid, entourage in perspective</td>
<td></td>
<td>Due: blocked-out one-point persp.</td>
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<tr>
<td></td>
<td>Demo: one-point sketch method</td>
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<td></td>
<td>Demo: one-point perspective grid</td>
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<tr>
<td></td>
<td>Due: Diagrams and abstraction</td>
<td></td>
<td>Lecture: Form, volume, and space</td>
<td></td>
<td>Introduction to rendering</td>
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<td></td>
<td>Lecture: Concept model</td>
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<td>Concept model</td>
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<td>Color media</td>
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<td><strong>Week 4</strong></td>
<td>No Classes</td>
<td></td>
<td>Due: all dwgs. corrected; complete</td>
<td></td>
<td>Demo: individual assistance</td>
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<tr>
<td></td>
<td>Lecture &amp; Demo: Two-point perspective grid</td>
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<td>Demo: one-point perspective grid</td>
<td></td>
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<tr>
<td><strong>Week 5</strong></td>
<td>Drawing and rendering three-dimensional forms</td>
<td></td>
<td>P2 - Group Design Critique</td>
<td></td>
<td>P2 - Group Design Critique</td>
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<tr>
<td></td>
<td>Due: BSP – Complete dwg. set</td>
<td></td>
<td>Due: ideas and sketches</td>
<td></td>
<td>Due: remodeled 1st &amp; 2nd plans</td>
</tr>
<tr>
<td></td>
<td>Critique Basic Space Project</td>
<td></td>
<td>Demo: design concept</td>
<td></td>
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<tr>
<td></td>
<td>Presentation of forms in two-point perspective grid space</td>
<td></td>
<td>P2 - Group Design Critique</td>
<td></td>
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<tr>
<td></td>
<td>Due: remodeled 1st &amp; 2nd plans</td>
<td></td>
<td>Due: remodeled 1st &amp; 2nd plans</td>
<td></td>
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<tr>
<td></td>
<td>Demo: model making</td>
<td></td>
<td></td>
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<tr>
<td><strong>Week 6</strong></td>
<td>Introduction to abstraction and parti</td>
<td></td>
<td>Parti planning</td>
<td></td>
<td>Demo: Stairs, building section</td>
</tr>
<tr>
<td></td>
<td>Remodeled 1st &amp; 2nd plans</td>
<td></td>
<td>P2 - Group Design Critique</td>
<td></td>
<td>P2 - Group Design Critique</td>
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<tr>
<td></td>
<td>Demo: model making</td>
<td></td>
<td>Due: remodeled 1st &amp; 2nd plans</td>
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<td>Due: remodeled 1st &amp; 2nd plans</td>
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<tr>
<td></td>
<td>Abstraction of concept</td>
<td></td>
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<td><strong>Week 7</strong></td>
<td>Parti planning</td>
<td></td>
<td>Field trip to the ** Museum of Art (** word omitted for blind-review)</td>
<td></td>
<td>Intro Project 2 (P2)</td>
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<tr>
<td></td>
<td>Introduction to space analysis</td>
<td></td>
<td>Due: study model</td>
<td></td>
<td>Demo: individual assistance</td>
</tr>
<tr>
<td></td>
<td>Due: remodeled 1st &amp; 2nd plans</td>
<td></td>
<td>Demo: one-point perspective grid</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demo: Stairs, building section</td>
<td></td>
<td>Due: study model</td>
<td></td>
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<tr>
<td><strong>Week 8</strong></td>
<td>Desk-critique: Space analysis Analysis revision</td>
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<td>Midterm Review</td>
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<td>Instructor research responsibility</td>
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<td></td>
<td>Due: completed cross section blocked-out one-point perspective</td>
<td></td>
<td>Due: 2nd blocked-out one-point</td>
<td></td>
<td>Assignment to be announced</td>
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<tr>
<td></td>
<td>Demo: individual assistance</td>
<td></td>
<td>Demo: sheet layout, individ. assist.</td>
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<td><strong>Week 9</strong></td>
<td>Pre-design research</td>
<td></td>
<td>Determination of design problems and objectives</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Due: 2nd blocked-out one-point</td>
<td></td>
<td>Due: 2nd one-point perspective</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demo: final drawings, work habits, individual assistance</td>
<td></td>
<td>Demo: longitudinal section</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 10</td>
<td>Lecture: Application of design concept in interior space</td>
<td>Due: both sections, 4th blocked-out one-point Demo: individual assistance</td>
<td>Introduction to the final project Concept project + Residential design project</td>
<td>Due: all dwgs, incl. 4 perspectives Demo: final drawing presentation, inking, individual assistance</td>
<td>Parti refinement (Concept project)</td>
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<tr>
<td>Week 11</td>
<td>Introduction to schematic design (Concept project)</td>
<td>Due: Project 2 Demo: FP issues/questions</td>
<td>Schematic design Critique Project 2 Demo: FP issues/questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 12</td>
<td>Design development (Concept project) Critique Project 2 Demo: FP issues/questions</td>
<td>Design development FP - Group Design Critique Due: plans, ideas, and sketches Demo: design concept</td>
<td></td>
<td>Design development desk-critique and revision</td>
<td>FP - Group Design Critique Due: remodeled 1st &amp; 2nd plans</td>
</tr>
<tr>
<td>Week 13</td>
<td>Detail planning Work on drawings and model Demo: individual assistance</td>
<td>Detail planning Work on drawings and model Demo: individual assistance</td>
<td>Model</td>
<td></td>
<td>Work on drawings and model Demo: individual assistance</td>
</tr>
<tr>
<td>Week 14</td>
<td>Perspective drawing (studio I project course collaboration) Work on drawings and model Demo: individual assistance</td>
<td>Perspective drawing (studio I project course collaboration) FP - Group Design Critique Read: HH chap. 16</td>
<td>Perspective rendering (studio I project course collaboration)</td>
<td></td>
<td>Work on drawings and model Demo: individual assistance</td>
</tr>
<tr>
<td>Week 15</td>
<td>Perspective rendering (studio I project course collaboration) Work on drawings Demo: individual assistance</td>
<td>Lecture: Visual communication and presentation Work on drawings Demo: individual assistance</td>
<td>Presentation materials prep</td>
<td></td>
<td>Work on drawings Demo: individual assistance</td>
</tr>
<tr>
<td>Week 16</td>
<td>Presentation materials prep Final desk-critique</td>
<td>Due: Final Project P3 - Final Critique Final presentation No class</td>
<td></td>
<td>Final presentation Due: Process-book</td>
<td>Progression Project 6:30PM</td>
</tr>
</tbody>
</table>
Figure 1. Conceptual Development
Figure 2. Space Analysis
Figure 3. Studio I Residential Design: Home & Office Design Example
The Capstone Pedagogy: The Rapid Prototyping Model as Process and Product

Henry Hildebrandt
University of Cincinnati

ABSTRACT

At Issue
Using physical models to develop and work out design concepts has a long history. Brunelleschi used models to refine the Florence Cathedral dome, Bauhaus instruction integrated design and construction, and Mrs. James Ward Thorne miniature rooms at the Art Institute of Chicago are detailed period designs. Today, professional firms mostly use well-crafted, elaborate models for formal presentations. Models utilized in architectural schools are frequently developed as process tools, where as in interior design, with its intimate focus on detail, surface, and texture favors graphic illustrations for design iteration and development. Rapid prototyping technologies and interactive software now allows models to be a facile and an interactive design tool for interior design.

Purpose
This presentation details the use of the rapid prototyping technologies for the senior capstone project. The purpose is to demonstrate the application of these technologies as iterative process tools in bringing design solutions toward a final resolution and to portfolio quality. The goal is to demonstrate how to utilize these new technologies as design generative tools as well as for formal presentations.

Methodology
Traditionally, in teaching design, quick sketches, fast marker illustrations, or digital ‘SketchUp’ models are utilized in the design development process. Ideally, upper level students develop acute skills in fast recall and iterative processes to quickly give scale, character and surface to a
design. Using rapid prototyping technologies and enhanced digital modeling tool paths has expanded opportunities for iterative model-building applied to interior projects.

Incorporating model technologies for design explorations has helped students explore volumetric developments with surface and detail and has accelerated the design process. Requiring 3D modeling in early design iterations brings to the forefront critical issues of spatial enclosure and volumetric conditions in realizing the full condition of the interior, particularly within the capstone project. This encourages moving away from rectilinear designs often conditioned by traditional drywall / stud construction. Interiors expressive of form, fabrication and materials are now validated in a ‘building mode’ with spatial sequence, scale and shell realities. Graphic abstractions now become scaled realities. Rapid prototyping, adapted from product design, pedagogy also requires a management reality that mirrors professional practice. Students have to learn to manage digital files in converting design polygon-based software to NURB-based prototyping language for the CNC mill, laser cutter and 3D printer. This software is based on precise faceting application in the tool path application, and requires advanced material selection, cost analysis, and machine time scheduling, all of which are common practice in the office design production routine.

The authors will demonstrate the use of rapid prototyping as an iterative design tool as well as a formal communication method in developing the senior capstone project. Students utilize several prototyping technologies in building models that are an integral part of the iterative process in developing resolved capstone solutions. The iterative tool path process and final model is the basis of the capstone portfolio.

REFERENCES (APA)


PRESENTATIONS
Centralized Nurses’ Stations in a Resident-centered Care Skilled Nursing Facility: Is It Working?

Emili J. Carlson
University of Missouri

ABSTRACT

Historically, resident care within nursing homes has been structured and designed around the efficiency of the facility. The traditional medical model of long term care consists of four distinct areas: “the resident room, the nursing unit, the common facilities shared by all residents, and the support spaces” (Perkins et al., 2004, p. 28). A focus to this study, nurses’ stations have been described as being centrally located within the nursing unit, a physical barrier between nursing staff and residents, and an area for congestion for staff, residents, and visitors (Perkins et al, 2004; Schwarz, 1996). Medical model nurses’ stations have developed a bad reputation for being unfriendly due to being cluttered with staff supplies for charting, filing, and other office work; noise from talking and auditory alarms; and crowded with staff on the phone, talking between staff and with residents, writing in charts, and staff standing around. Adopted from hospitals, nurses’ stations were originally designed to oversee and supervise nursing home residents and staff (Schwarz, 1996). Over the last several decades, nursing home practices have evolved to create resident-centered care to eliminate the barrier between caregiver and resident (Regnier, 2002). Nursing home staff members no longer provide care from a fixed location at a nurses’ station.

The purpose of this study was to understand how a centralized nurses’ station was being utilized by staff and residents at a skilled nursing facility. The chosen facility was built in 2002 and houses 132 residents within 5 neighborhoods. Two mirror-image 24-hour skilled nursing neighborhoods licensed for 34 beds each were observed for this study and selected because of the centralized medical model layout of the nurses’ station. The two neighborhoods consist of a nurses’ station measuring 16-feet wide by 7-feet deep connecting two corridors creating an L-shaped neighborhood. A qualitative grounded theory research study was designed using direct
observation (5 hours), unstructured interviews with staff (9) and residents (16), and a focus group with staff (8).

In this pilot study, observations and interviews revealed five central themes of how staff members and residents utilized a centralized nurses’ station: communication, wayfinding, privacy, confidentiality, and territoriality. The findings indicate there is a complex relationship between the organizational, social, and physical environments to create successful resident-centered care. By first understanding these relationships, further research can take place to make orchestrated changes to increase quality of life for residents and a better work environment for nursing home staff. This paper presentation provokes thought and discussion around the dichotomy of models of care: medical versus social (Agich, 1993). Is a centralized nurses’ station still the answer?

REFERENCES (APA)


A Conceptual Framework for Understanding the Physical Environment – Creativity Relationship

Susan Sung Eun Chung & Alan Hedge
Cornell University

ABSTRACT

The constant demand for creativity drives the need for workplace design to change accordingly. In response to this societal demand, many organizations have turned their attention to the design of the physical environment as a source for fostering creativity (Moultrie, Nilsson, Dissel, Haner, Janssen, & Van der Lugt, 2007). A prominent approach in elucidating creativity utilizes the 4Ps—Person, Process, Product, and Place (Runco, 2004). While research on the attributes of a creative person, different phases of the creative process, and assessments of creative products have been quite fruitful, few empirical studies have examined the creative place—especially in regards to the physical environment. Research on creative place has yet to explore the impact of the physical environment on creativity and to identify the physical characteristics of a creative place; consequently limiting our knowledge on how the physical environment fosters creativity and what characteristics can be recognized (Amabile, 1997; Kristensen, 2004). A framework that depicts physical environment attributes that impact creativity is needed for designers to make effective decisions in designing creative environments, for researchers to identify specific areas of research, and for both designers and researchers to better understand the relationship of how the physical environment can foster or inhibit creativity.

The initial step in creating this conceptual framework was through an extensive literature review. Literature gathered by database searches using the keywords “creativity” and “physical environment” for full-text peer-reviewed articles in English were screened to determine the study’s relevance. Literature was further expanded by using each physical attribute (noise, color, lighting, odor, temperature, size, shape, rectilinearity, space, layout, furniture arrangement, open-plan, window, nature, view, plant, sign, poster, material, wood) as a keyword in a joint
search, and also by reviewing reference lists for cited articles. Only studies elucidating a clear connection between some physical environment attribute and creativity were included for final review.

Based on this review, elements of the physical environment can be categorized into ambient, spatial, and symbolic attributes. Ambient attributes are atmospheric elements of the indoor built environment including thermal, acoustic and lighting conditions, air quality, and ventilation. Spatial attributes describe the layout of structural elements including the shape and size of the space, and the layout of the furnishings. Symbolic attributes are features that add meaning turning spaces into places, such as signs, symbols and artifacts, and the materiality and style of the furnishings. Each of these attributes can impact sensory, cognitive, and psychosocial processes associated with creativity. Sensory processes are simple behavioral responses from the sensory modalities; such as visual, auditory, and olfactory processes, plus overall physiological processes. Cognitive processes include perceptual and intellectual processes that shape behavioral responses to environmental stimuli. Psychosocial processes are emotional and social behavioral responses. All behavior starts with sensation, proceeds through cognition and often culminates in a social behavioral response. From this organization, connections are made between attributes and impact processes to understand how each attribute is related to creativity. This framework can prospectively lead to creative environment design guidelines and future advancement in creative place research.

REFERENCES (APA)


Space, Place, and Privacy: Preschool Children’s Secret Hiding Places

Kristi Gaines, Malinda J. Colwell, Michelle Pinson & Kimberly Corson
Texas Tech University

ABSTRACT

Question
Westin (1967) and Altman (1975) have written extensively on privacy. Additionally, Edward Hall’s “Theories of Proximics” defines four basic zones of interpersonal distance: intimate, personal, social, and public. Children begin to develop body boundaries around age three or four. The idea that children have a world that they wish to keep separate from others is evident in studies on children’s sense of space and their child constructed play places. Corson and Colwell (2010) noted that children as young as three understand and can define the concept of secrecy and that they tend to associate secrets with secret hiding places. These places have relevance for young children’s peer relationships and social interactions.

The current study focused on preschoolers’ descriptions of what is important in a secret space, as well as the materials that are best for creating these spaces. The researchers examined the process preschoolers use to create their own spaces when provided with requested materials and observed interactions that occur within and around these spaces. Specific research questions included the following: What materials are important for preschoolers in the creation of secret places? How do preschoolers create a space when given a variety of materials? Do children work together in the creation of secret places or is it an individual activity? Are secret places secret for only one child at a time or can multiple children utilize and designate the space as secret?

Framework of Exploration
Specific Population: The participants for this study were 10 children between 3 and 5 years old and were recruited from a child development center. A grounded theory perspective was used in
analyzing the actual planning and construction of these spaces and how they relate to peer relationships.

Procedures
The study used an interpretive phenomenological, narrative approach as well as observational methodology.

(A) Parents were asked to complete a consent form and family demographic form.
(B) Semi-structured interviews took place in the child’s classroom. A second investigator operated a video camera in order to record the children’s narratives. The PI asked the children to describe the types of places that are secret hiding places for them. They were invited to draw examples. They were also asked what they would need to create their secret places.
(C) The children were provided with these materials the following day to create their own secret places in the classroom.

Conclusions
Initially, the children selected objects individually but soon divided into three groups to create their distinctively different secret places. A collaborative effort was put forth on how children in this sample shared these spaces. Some of the materials illustrated in their pictures were not utilized although provided. Often, the spaces were separated by only an invisible barrier created by the child. The results from this study have implications for studying preschool children’s hiding places in terms of socio-emotional development. This boundary setting resonates with Hart’s (1979) assertion that children like to separate themselves from the adult world.

REFERENCES (APA)


Programming:
A Community Engagement Model

Travis Hicks & Stephanie Sickler
University of North Carolina at Greensboro & The University of Alabama

ABSTRACT

The programming phase of the design process is understood as the intense investigation of a client’s needs, goals, and existing conditions (Rengel, 2003). Although this phase includes analytical techniques, there is a tendency towards one-sided analyses. Either the designer elicits responses to pre-determined questions from the client, or the client hands the designer a set of standards, guidelines, or sometimes even a previous programming document from another designer. What’s missing in this discussion?

Problem

The programming phase sets the tone for a design project. While much has been said about other phases of the design process (Poldma, 2009), the programming phase has gone too long unexamined. The standard techniques used in programming, such as client interviews, existing space documentation and analysis, or surveys, tell a certain portion of the story; however, more can be gained during the programming phase by introducing a more collaborative, engaged model into this phase. This study aims to establish a dialogical model for programming based around community engagement by examining case studies from two different universities in different states.

Relevance

As academicians become more open to community engagement, i.e. extending one’s work beyond the campus and into the community, there is the familiarity of designer-client relationships in working with people outside the university. One distinguishing attribute of this community engaged approach, however, is that the client or user becomes a collaborator in the process, not merely a bystander nor a research subject. Design students who are exposed to new
programming techniques around engagement will enhance their future practices and change the shape of the design profession.

Methods
At two different universities faculty and students are engaging user groups and community partners by utilizing techniques that are dialogical. Methods used to engage community groups are inspired by the work of product design firm IDEO, among other sources. These methods resemble focus group sessions at times, with interactivity a key differentiator in these sessions. Three different case studies, each involving a studio assignment that engaged a community organization or group, are examined.

At one university there is a rich history of community-engaged design work. The case study from this university is a multi-year, multi-phase research and teaching project with a local public library system. Engaged programming strategies have included focus groups of different age groups, dialogues with library staff, and the library staff’s collaboration in design reviews. At the second university community-engaged design work is contained in single semester experiences connecting studio courses with community charity organizations and government sponsored programs. Engagement strategies include site visits, interaction with the residents in planned service activities, dialog with the facility staff, and collaboration with the design teams.

Pedagogical Advancement
Preliminary outcomes of these community-engaged courses suggest that students are excited by community engagement that develops interpersonal skills otherwise not established by more traditional programming pedagogies. Courses dealing with programming should have a higher level of engagement with “clients” in which these groups should not be talked “at” but instead collaborated “with,” resulting in higher quality programming and, by extension, practice.

REFERENCES (MLA)


ABSTRACT

Purpose and Relevance

The term “burnout” usually brings to mind a person working in a highly stressful and emotionally charged profession such as nursing or the military. While interior design (ID) may not seem to fit the mold as a burnout-prone profession, informal observations made by the authors, both as practitioners and academics, suggested that this topic warranted formal consideration. High levels of burnout can translate to job turnover, absenteeism and physical/emotional ailments which impact not only personal well-being, but also a design firm’s financial stability (Nobscot Corporation, 2012). This original research project explores burnout among practicing interior designers while identifying both potential individual and work-related factors that may be contributing to the syndrome.

Method

Research relative to burnout is based on a multidimensional theoretical framework addressing three factors: Exhaustion (EX), Cynicism (CY) and Professional Efficacy (PE) (Maslach & Jackson, 1981). The Maslach Burnout Inventory (MBI) instrument (Maslach, Jackson, & Leiter, 1996) was developed in response to this theoretical framework and was used as the primary instrument for this study. Supplemental instruments focused on demographic and work-related variables. The surveys were mailed to 250 ID practitioners across the US and the response rate was 52% (n=130) (see Table 1).

This presentation discusses the findings relative to two research questions:

1. What degree of burnout do practicing interior designers report experiencing (low, moderate, high)?
2. What is the relationship between the three burnout factors (Exhaustion, Cynicism, Professional Efficacy) and key demographic factors (e.g. age, income, years of practice)?

Results and Implications
The findings revealed that the degree of burnout for ID participants in the present study was moderate (see Table 2). While a “moderate” rating may not seem like cause for alarm, it clearly indicates that a segment of the sample population is on the high end of the burnout scale (see Appendix 1). Additionally, when comparing the burnout scores of ID with other burnout-prone professions (e.g. nursing, psychiatric workers, etc.), interior designers actually reported higher levels of cynicism and exhaustion than workers in those professions. Expanded discussions will address this finding and the implications for both academia and practice.

Contrary to the belief that years of experience lead to burnout, correlations and regressions revealed that the individual factors of “age” and “years of professional practice” have a strong negative relationship with exhaustion and cynicism. As designer’s years in practice increased, their cynicism and exhaustion scores decreased. In fact, for every unit increase in age (20-29 years, etc.) scores for exhaustion and cynicism decreased. As Leiter and Maslach state, “idealistic expectations about organizations or their clientele predispose people to experiencing burnout especially during the initial phases of career development” (1999, p. 483). The findings of the present study clearly support this statement and raise a discussion point for both academics preparing millennial students to enter practice and firms hiring/mentoring young designers. Exploring what appears to be a mismatch between the expectations and realities of early practice may help mitigate burnout and empower firms to retain young design talent more effectively.

REFERENCES (APA)


Table 1. Demographic Profiles of the Respondents

<table>
<thead>
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<th>Demographic Profiles</th>
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<tbody>
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<td>Male</td>
<td>12</td>
<td>9.2</td>
</tr>
<tr>
<td>Female</td>
<td>115</td>
<td>88.5</td>
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<tr>
<td>Age (n=130)</td>
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<tr>
<td>20-29 years old</td>
<td>43</td>
<td>33.1</td>
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<tr>
<td>30-39 years old</td>
<td>42</td>
<td>32.3</td>
</tr>
<tr>
<td>40-49 years old</td>
<td>29</td>
<td>22.3</td>
</tr>
<tr>
<td>50 years and older</td>
<td>16</td>
<td>12.3</td>
</tr>
<tr>
<td>Relationship Status (n=129)</td>
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<td></td>
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<tr>
<td>Married/Partnered</td>
<td>84</td>
<td>64.6</td>
</tr>
<tr>
<td>Single</td>
<td>45</td>
<td>34.6</td>
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<tr>
<td>Parental Status (n=130)</td>
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<td></td>
</tr>
<tr>
<td>Have school age children</td>
<td>42</td>
<td>32.3</td>
</tr>
<tr>
<td>Do not have school age children</td>
<td>88</td>
<td>67.9</td>
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<tr>
<td>Education (n=130)</td>
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<tr>
<td>Associate Degree</td>
<td>3</td>
<td>2.3</td>
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<tr>
<td>Bachelor’s Degree</td>
<td>108</td>
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<tr>
<td>Master’s Degree</td>
<td>19</td>
<td>14.6</td>
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<tr>
<td>Current Job Title (n=129)</td>
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<tr>
<td>Principal</td>
<td>20</td>
<td>15.4</td>
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<tr>
<td>Associate</td>
<td>18</td>
<td>13.8</td>
</tr>
<tr>
<td>Project Manager</td>
<td>14</td>
<td>10.8</td>
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<tr>
<td>Designer</td>
<td>70</td>
<td>53.8</td>
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<tr>
<td>Junior Designer</td>
<td>2</td>
<td>1.5</td>
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<tr>
<td>Other</td>
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<td>3.8</td>
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<tr>
<td>Years of Practice (n=130)</td>
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<tr>
<td>1-2 years</td>
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<td>3-5 years</td>
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<td>6-8 years</td>
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<td>10.8</td>
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<tr>
<td>9-10 years</td>
<td>10</td>
<td>7.7</td>
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<tr>
<td>11 + years</td>
<td>62</td>
<td>47.7</td>
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<tr>
<td>Hours of work per week on average (n=130)</td>
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<tr>
<td>40 hrs/wk or less</td>
<td>41</td>
<td>31.5</td>
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<tr>
<td>41 hrs/wk or more</td>
<td>89</td>
<td>68.4</td>
</tr>
<tr>
<td>Income (n=129)</td>
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<tr>
<td>Less than 30,000</td>
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<td>30,000-50,000</td>
<td>58</td>
<td>44.6</td>
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<tr>
<td>50,001-75,000</td>
<td>35</td>
<td>26.9</td>
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<td>75,001-100,000</td>
<td>16</td>
<td>12.3</td>
</tr>
<tr>
<td>More than 100,000</td>
<td>16</td>
<td>12.3</td>
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Table 2. *Interior Designers Means for Maslach Burnout Inventory (MBI-GS) with Subscales and items within subscales of Exhaustion (EX), Cynicism (CY), and Professional Efficacy (PE) (n= 130)*

<table>
<thead>
<tr>
<th>MBI EX Subscale with 5 items</th>
<th>Means (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel emotionally drained from my work</td>
<td>2.90 (1.48)</td>
</tr>
<tr>
<td>I feel used up at the end of the workday</td>
<td>3.39 (1.52)</td>
</tr>
<tr>
<td>I feel tired when I get up in the morning and have to face another day at the job</td>
<td>3.03 (1.76)</td>
</tr>
<tr>
<td>Working all day is a strain for me</td>
<td>1.82 (1.59)</td>
</tr>
<tr>
<td>I feel burned out from my work</td>
<td>2.45 (1.57)</td>
</tr>
<tr>
<td>Overall EX</td>
<td>2.72 (1.32)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MBI CY Subscale with 5 items</th>
<th>Means (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have become less interested in my work since I started this job</td>
<td>1.88 (1.87)</td>
</tr>
<tr>
<td>I have become less enthusiastic about my work</td>
<td>2.22 (1.82)</td>
</tr>
<tr>
<td>I just want to do my job and not be bothered</td>
<td>2.63 (1.81)</td>
</tr>
<tr>
<td>I have become more cynical about whether my work contributes anything</td>
<td>2.07 (1.80)</td>
</tr>
<tr>
<td>I doubt the significance of my work</td>
<td>1.65 (1.59)</td>
</tr>
<tr>
<td>Overall CY</td>
<td>2.07 (1.41)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MBI PE Subscale with 6 items</th>
<th>Means (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can effectively solve the problems that arise in my work</td>
<td>5.61 (0.81)</td>
</tr>
<tr>
<td>I feel I am making an effective contribution to what this organization does</td>
<td>4.60 (1.50)</td>
</tr>
<tr>
<td>In my opinion, I am good at my job</td>
<td>5.29 (0.93)</td>
</tr>
<tr>
<td>I feel exhilarated when I accomplish something at work</td>
<td>4.57 (1.30)</td>
</tr>
<tr>
<td>I have accomplished many worthwhile things in this job</td>
<td>4.17 (1.50)</td>
</tr>
<tr>
<td>At my work, I feel confident that I am effective at getting things done</td>
<td>4.98 (1.13)</td>
</tr>
<tr>
<td>Overall PE</td>
<td>4.86 (0.83)</td>
</tr>
</tbody>
</table>

*Note: Scale 0-6. Where 0= Never; 1= A few times a year or less; 2= Once a month or less; 3= A few times a month; 4= Once a week; 5= A few times a week; 6= Every day*
Appendix

*Categorization of MBI-GS Scores regarding degree of burnout based on Maslach Burnout Inventory Manual (Maslach, et al, 1996):*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaustion (EX)</td>
<td>≤2.00 (low)</td>
<td>2.01-3.19 (average)</td>
<td>≥3.20 (high)</td>
</tr>
<tr>
<td>Cynicism (CY)</td>
<td>≤1.00 (low)</td>
<td>1.01-2.19 (average)</td>
<td>≥2.20 (high)</td>
</tr>
<tr>
<td>Professional Efficacy (PE)</td>
<td>≥5.00 (low)</td>
<td>4.01-4.99 (average)</td>
<td>≤4.00 (high)</td>
</tr>
</tbody>
</table>

Note: the PE scale is interpreted in the opposite direction of EX and CY.
Green House Homes:  
A Look at Noise Levels and Elders’ Quality of Life

Jane Hughes & Allison Carrl-White  
Converse College & University of Kentucky

ABSTRACT

The purpose of this research was to document existing noise levels found in assisted living facilities using the Green House model as a case study. In this exploration, extant noise levels were compared against recommended levels documented by research within assisted living facilities. Ultimately, a better understanding of the application of design research within the Green House model can assist designers in improving quality of life and autonomy for elders.

Lawton and Nahemow’s ecological model (1973) illustrating environmental press was used as the study’s framework to explain the connection between environment and the individual. When environmental press and the competence of the individual are balanced, a feeling of comfort occurs. The level of press can then be raised to increase individual competence. Without this press, learned helplessness may become the norm.

Information was gathered on-site at three Green House Concept homes. The homes are all designed with open floor plans and elders’ rooms located around the perimeter of the communal living area. The researcher recorded existing noise levels over a 13-hour period throughout the homes, with readings taken at consistent times throughout the day. An early morning reading supplied the base background noise level. The locations where noise levels were measured are indicated on Figures 1 and 2: and included the hearth room, dining room, front and rear hallways, entry, den, and public restroom. The expectation that noise levels would increase at meal times when all who were able were present in the dining room was confirmed.
Noise levels were measured using an Amprobe A-weighted sound level meter, model SM-10. The measurements obtained at the homes were then compared to the Recommended Criteria for Steady Background Sound in Typical Building Spaces (Cavanaugh, 2010). Overall, the noise levels measured in the Green House homes were consistently higher than the recommended noise levels supported by research.

The findings revealed an insufficient number of noise-reducing materials in the spaces. Recommended noise levels should not be higher than 47dBA in public living areas for elders and 42 dBA in private bedrooms. By utilizing recommended background noise levels, elders can sustain a proper signal to noise ratio (SNR) of 10-20 decibels, resulting in a speech level of 60-66 dBA during a typical conversation at approximately a three foot distance (Lau & McPherson, 2002). If noise levels are higher than recommended, elderly residents will need to either raise their speaking voices, causing strain and fatigue over time, or lose the ability to communicate effectively, leading to feelings of isolation and a decline in quality of life (Lau & McPherson, 2002; Schneider, Daneman, & Pichora-Fuller, 2002).

As attractive as the Green House homes are in comparison to their more institutional counterparts, improvements are still needed in the areas of acoustic control and noise levels. There continues to be a disconnection between research and application.

REFERENCES (MLA)


Figure 1 The Barbaro House Floor Plan with Noise Level Measurement Locations Indicated
Figure 2 The Rambling Cottage Floor Plan with Noise Level Measurement Locations Indicated/
The Giacomo House is an Exact Mirror Image of this Floor Plan
Exploring the Effects of Display Lighting in a Retail Environment

Yu-Fong Lin & So-Yeon Yoon
University of Missouri-Columbia

ABSTRACT

Display lighting is known to be an important environmental stimulus in a retail space. Successful display lighting design can not only attract consumers’ attention and interest on the merchandise, but can also raise consumers’ approach intention and shopping desire (Baker et al., 1992; Steffy, 2002). Despite the importance, the impact of retail display lighting on consumers’ emotions, intentions, and satisfaction have rarely been examined. In addition, as marketing efforts have become increasingly globalized, designers have more opportunities to join various international design projects (Chiu, 2002). However, knowledge of consumers’ cultural differences that influences the effects of display lighting on psychological and perceptual responses in a retail store have not yet been built. Due to the lack of empirical evidence, designers and retailers have limited information about optimal display lighting design to satisfy consumers’ psychological needs and to meet the needs of different cultures in a retail environment. The primary purpose of this study is to empirically explore the effects of display lighting on consumers’ experience. Secondly, this study attempts to understand how individual differences in information processing influence the effects of lighting on consumers’ psychology and perceptions in a retail environment.

This study consists of two parts with four conditions representing different intensities and patterns of lighting developed for the experiment. The study first tests participants’ emotional reactions (pleasure and arousal); approach-avoidance intentions; and store satisfaction. Next, individual differences in perceptions, including attention and spatial complexity, are tested. To investigate individual differences in perceptions that may influence consumers’ psychological and perceptual responses, different cultural groups, Americans and Taiwanese, are examined. Sixty students participated in the study. A high-fidelity 3D Virtual Reality simulation is utilized...
to create a store that sells electronic devices with four different lighting conditions. Participants’ emotional responses are collected immediately after the experiments. Multiple regression analysis is used to examine direct effects of light on the subjects’ psychology variables. Differences between the two participant groups’ responses to the four lighting conditions are statistically analyzed for comparison. The cultural effect of retail lighting environments and display lighting effect are also examined.

The potential contributions of the study include new knowledge regarding display lighting and the theories of environmental stimuli in environmental psychology. In addition, this study can offer useful guidelines for effective display lighting in retail environments. This study also provides a better understanding on experience by consumers with different cultural backgrounds.

REFERENCES (APA)


## Appendix

Table 1. Lighting combinations

<table>
<thead>
<tr>
<th>Diffuse Light [Bright]</th>
<th>Directional Light [Bright]</th>
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</thead>
<tbody>
<tr>
<td><img src="image1" alt="Diffuse Light Bright" /></td>
<td><img src="image2" alt="Directional Light Bright" /></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Subtle Pattern [Dim]</th>
<th>Strong Pattern [Dim]</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Subtle Pattern Dim" /></td>
<td><img src="image4" alt="Strong Pattern Dim" /></td>
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</table>
Framing the Holistic Post-Occupancy Evaluation: The Potential of the Heath, Safety and Welfare Paradigm

Jill Pable & Kenan Fishburne
Florida State University

ABSTRACT

Post occupancy evaluations can confirm project outcomes, provide quality assurance, and predict future success of similar projects (Preiser, 1999). In his meta analysis of POE methods, Preiser identifies main categories of elements in a POE as technical, functional and behavioral performances (1999, p. 87). These allow project assessments to address success holistically, confronting both objective measures and human perceptual aspects. Some interior design POE’s address only a focused aspect of a building’s performance, allowing detailed analysis. However, there is a growing awareness that for design endeavor to be systemic (Levy, 1990), projects must be assessed comprehensively, linking physical, social and psychological considerations.

The purpose of this presentation is to discuss the authors’ quest for a comprehensive POE framework so that a POE could address a project’s outcomes holistically. This recognizes that a wide range of factors in project performance affect users, the earth and society including budget, maintenance, emotional satisfaction, function, and meaning.

A variety of POE frameworks were considered for applicability, including Vitruvius’ test of fitness (1914). After much discussion, the authors elected to explore the health-safety-welfare (HSW) paradigm. This scheme may seem an interesting choice, as HSW is often used to justify interior design professional licensing. However, it may be reasonable to examine the HSW paradigm to also define the diverse performance objectives that buildings should meet. That is, if HSW is a series of ideas that “identify the [positive] effect that professionals’ work has on...
people’s lives” (Guerin & Martin, 2010, p.76), it might logically follow that the outcomes of a
designed project might be similarly assessed using HSW.

In order to test the application of the HSW paradigm to a POE, the authors structured a POE
inquiry of a completed design project around the HSW model. The project was sufficiently
small to accommodate a comprehensive POE approach—the design of a 150 square foot family
bedroom in a homeless shelter. The authors developed eight POE performance objective
categories including materials and structure, safety, aesthetics, meaning and durability.
Interview questions were derived under each category to facilitate POE data collection. To
check for adequate coverage of the three realms of HSW, questions and categories were then
organized under one or more new HSW definitions (Martin & Guerin, 2010). These
associations were then scrutinized by three other design researchers to confirm their logic (see
Figure 1).

This process confirmed the potential utility of HSW for a holistic POE framework, and
provided questions that may lead to further POE evolution. For example,
Martin and Guerin’s new broad definition of welfare justified the inclusion of questions raised
by the project’s budget. Also, the process prompted many categories to be grouped under
welfare such as maintenance, aesthetics and meaning, echoing others’ suggestion that designers
should further acknowledge the value of welfare (Guerin & Kwon, 2010).

The HSW framework enabled the authors to ensure their POE interview questions covered a
broad realm of psychological, social, and functional considerations, suggesting that HSW can
assist in addressing the full human experience in design solutions.

REFERENCES (APA)

Guerin, D. & Kwon, J. (2010). Welfare: can you talk about your specialized knowledge? In D.
New York: Fairchild.

Guerin, D. & Martin, C. (2010). The interior design profession’s body of knowledge and its
relationship to people’s health, safety and welfare. Retrieved from
http://www.idbok.org/BOK_Studies.asp


Figure 1. POE performance objectives with interview questions and their HSW category associations

Health
Definition of health: Interior designers create interior environments to support people’s soundness of body and mind; to protect their physical, mental, and social well-being; and to prevent disease, injury, illness, or pain that could be caused by occupancy of interior environments.

1. Maintenance (also repeated under welfare)
   a. What is the shelter’s cleaning regimen (when, who, with what)?
   b. Are the components and room able to be cleaned without undue effort?
      i. Has the cleaning process been difficult to manage?
      ii. Are components put back in place without problems after cleaning (draperies, bed covers)?

Safety
Definition of safety: Interior designers create interior environments to protect people against actual or perceived danger; and avoidance of risk from crime, accidents, or physical hazards; and to prevent injury, loss, or death that could be caused by occupancy of interior environments.

2. Materials & Structure
   a. Have the components’ materials proved suitable for use?
   b. Has the solution been structurally sound?
   c. Have the finishes supported health and worn well?

3. Safety in Use
   a. Have components supported the need for safety (climbing to upper beds; storing hazardous materials out of reach)?

4. Protection
   a. Has theft of the solution’s components occurred?
   b. Has the solution reduced theft or fear of theft of possessions?

Health/Safety

5. Durability (justification for safety: disrepair can cause slipping, structural failure. Justification for health: high-use dirty environments could spread illness)
   a. Are all components performing durably?
i. Which components get dirty the quickest and may need the most frequent replacement?

ii. To what extent have components required repairs?

iii. Have durability faults negatively affected use of the room’s features?

Welfare

Definition of welfare: Interior designers create interior environments to support people’s physical, psychological, social and spiritual well-being; and assist with or contribute to their financial or economic management, success, and responsibility.

6. Maintenance
   a. What is the shelter’s cleaning regimen (when, who, with what)?
   b. Are the components and room able to be cleaned without undue effort?
      i. Has the cleaning process been difficult to manage?
      ii. Are components put back in place without problems after cleaning (draperies, bed covers)?

7. Use
   a. Have the residents used the room’s features as envisioned?
   b. Have residents found new ways to use, adapt or augment the environment?
   c. Has the solution increased the room’s flexibility in use?

8. Aesthetics and Meaning
   a. Is the bedroom’s character considered aesthetically desirable by residents?
   b. Does the solution have a utility and meaning beyond its simple reality? (empowerment, control, personalization, self esteem, privacy)
   c. Were residents’ lives enhanced by these features (rank and likert scale):
      i. LED-type bed lighting
      ii. Bedside table
      iii. Cubicle-style bed draw curtains
      iv. Wall marker magnetic boards
      v. Bulletin boards
      vi. Divided dutch entrance door with privacy lock
      vii. Lockbox
      viii. Changeable hallway signage holder
ix. Bookcases and shelving
x. Clock radio with headphones
xi. Laptop writing desks
xii. Roller shade window treatment
xiii. Personal fan
xiv. Mirror
xv. Wall hooks
xvi. Storage bins
xvii. Combination lockbox for valuables
xviii. Area rug
xix. Wall-located bolster cushions
xx. Seating cubes
xxi. Fitted bed covers

9. Replication & Production (Justification: assists with financial/economic success of the environment)
   a. How important are room improvements to residence support/state of mind?
   b. Are there persons that perceive the design as a neutral change?
   c. Has the solution been effective in its cost based on its impact on residents?
   d. Would a fund raising initiative be considered for further rooms’ treatment? If not, why not?
   e. What cost would staff estimate is feasible for the price of one room if funds were to be raised for renovations to future rooms?
   f. Is the solution sufficiently effective to consider expanding to other rooms?
   g. How many units would it be feasible to upgrade at one time?
   h. Could the installation procedure and schedule be improved?
   i. Are parts of the solution more desirable than others? Could certain parts be removed or altered in future versions?
   j. Are there any associations of furniture materials to this situation that designers should be aware of?
   k. Is a modular approach a good idea to accommodate donor purchases and also different user needs (such as men in barracks situations)
Consumer Preferences in the Retail Environment: The Effect of Color Combinations on Perception

Nam-Kyu Park & Yu-Ting Chang
University of Florida

ABSTRACT

Although the effects of color on personal perceptions and preferences in interior environments have been widely studied, most studies compared only single-color applications (Bellizzi & Hite, 1992; Brengman & Geuens, 2004; Kwallek, et al., 2007). The results of these previous studies enhanced color knowledge and reinforced the effects of interior color. However, the contribution of these studies on preferences for a single color is rarely helpful for interior designers and color planning. The colors are always presented with other colors and never seen in isolation in natural surroundings or interiors (Ou & Luo, 2004; Smith, 2008). Further, the effects of color combinations have not been studied as broadly and intensively as single colors. No research has looked at those effects on preference within a retail environment.

Considering this lack of knowledge about the effects of color combinations, this study examined the effects of two-color combinations within a boutique store on consumer color perceptions and preferences employing two theoretical frameworks: The Kaplan and Kaplan environmental preferences and the Mehrabian and Russell emotional responses. Complementary hues (yellow/purple) with different values and saturations were manipulated to two distinct levels of complexity (simple vs. complex) and coherence (coherent vs. incoherent) in both regular and irregular ceiling patterns. A sample of 153 participants between the ages of 18 and 30 (43% male and 57% female) was screened for color vision deficiency before participation in the experimental study. A 2 x 2 between-subjects analysis of variance was conducted to examine dependent measures (perceptions of complexity, coherence, color emotion, store image, arousal and pleasure states, and preference). To understand the qualitative data and compare it to the quantitative results, types and frequency of comments on color preference were analyzed using a content analysis.
Quantitative and qualitative data both revealed interior coherence characteristics perceived as playing a pivotal role in color preferences. Due to the simultaneous contrast effect and instability of the yellow hue, the simple color palette, appearing as a tonal, the pastel complementary color combination, was perceived to be more coherent with the overall context, especially the “high-end” store image of the boutique store, and thus more preferred. Despite no direct statistical support, the irregular color pattern was perceived as being more coherent and more preferred than the regular pattern.

Further, the highly contrasting complementary color combination aroused more active vibrant emotions and was perceived as more complex, less pleasing and less preferred color scheme. The less contrasting complementary color combination aroused moderate active and vibrant emotions and was perceived as more coherent and pleasing, thus a more preferred color scheme in a retail boutique store. These color choice findings can help retailers and interior designers establish an ideal brand identity for a high-end retail environment, but should not be followed blindly without considering consumer needs in specific retail settings and the dimensionality issue when planning colors for an interior environment.

REFERENCES (APA)


Retail Lighting Design Preferences and Consumer Motivations

Nam-Kyu Park & Lee Hsuan Liao
University of Florida

ABSTRACT

Lighting is recognized as a valuable design element for retail environments and their brand images. While many lighting researchers have examined the physical characteristics of lighting in shopping environments (Areni, & Kim, 1994; Quartier, Christiaans, & van Cleempoel, 2008; Summers, & Hebert, 2001), most of these studies have only focused on the effects of illumination and color of light on shopping behaviors and perceived atmosphere. To attract customers by creating a stimulating store atmosphere, designers are applying the concept of light contrast to retail environments. However, no study has been dedicated to the influence of light contrast on consumers’ shopping experiences.

Kaltcheva and Weitz (2006) found that consumers’ shopping motives can enrich or diminish their store experiences, suggesting that retailers should design each store separately according to their target shopper typologies. It follows that retail lighting, as a major design element, should be designed with particular shopping motivations in mind. Another issue overlooked in the lighting literature regarding customers’ preference based on different shopping motivations. Thus, the current study seeks to explore the relationship of different lighting conditions to preferences according to shopper’s motivational orientations in a women’s handbag store.

Based on Flynn’s lighting preference framework (1977), the experimental research was designed to examine interaction effects of two light color temperatures (warm and cool) and two light contrasts (uniform and non-uniform) on preference between task-oriented and recreation-oriented shoppers. A total of 208 females between the ages of 18 and 35 were participated. Based on randomization, 104 task-oriented assignments and 104 recreation-oriented assignments were distributed respectively within a digitally generated handbag store design.
For quantitative data, two inferential statistical measures were employed to examine lighting preference: 1) A 2x2x2 factorial design with repeated measures to identify the impact of shoppers’ motivational orientations, light color temperatures and light contrasts, and 2) the chi-square analysis was performed for the most and least preferred lighting among four store lighting conditions. The final set of analyses explored sources of the most and least preferred lighting through a content analysis of the open-ended responses.

Findings indicated that regardless of motivation orientation, for both groups, the store with uniform lighting was rated as more preferable than non-uniform lighting. Regarding the most and least preferred lighting in the handbag store, the task-oriented group as opposed to the recreation-oriented group selected the store with cool/uniform lighting as the most favorite one. Interestingly, both groups selected the warm/non-uniform lighting as the least preferred one. The qualitative data from the open-ended responses confirmed that participants were assigned task-oriented motivation preferred cool/uniform lighting than participants were assigned to recreation-oriented motivation.

Overall, the findings suggest that design criteria for store lighting should be adapted by retailers to create their store environments according to shopping motivations of their targeted customers. Besides, the results of this study could benefit designers and retailers by offering a direction of evaluating existing store environments and future store designs in terms of lighting arrangement as a design component to fulfill consumers’ cognitive and emotional requirements.

REFERENCES (APA)


Legislation, Certification, Credentials and Other Myths

Catherine Pliess
Art Institute of Ft. Lauderdale

ABSTRACT
The continuing conflict in the profession of interior design over regulation through legislation raises many questions. For some organizations and individuals, regulation via legislation is the next perceived step in the professionalization process which has been evolving for over 40 years and is needed to protect the health, safety and welfare (HSW) of the public. For other organizations and individuals, legislation is deemed unnecessary and an affront to the free trade market and serves only to create anti-competitive barriers resulting in the formation of a “design cartel” (Campo-Flores, 2011; Carpenter, 2007).

Research exists on the professionalization of interior design and on the reasons stated for and against legislation (ASID, 2010, Anderson, Honey, Dudek, 2007, Martin, 2008). However, there is little research on understanding how the actual stake-holders view legislation. For the purpose of this research, the stake-holders are the professional interior designers themselves. The purpose of this study was to examine the current status of relevant issues to the subject of regulation in interior design and to pose the question if there is an option to legislation. If so, could third party certification be an acceptable alternative?

An on-line survey was developed and posted on interior design networking sites on LinkedIn. The results of the survey suggest that interior designers are completely divided on the issue of legislation but favorably view certification. The survey has also revealed the lack of understanding of the legislative process in interior design and confusion in the role that interior design organizations play. The study has also revealed that interior designers feel one of the biggest problems in their industry is the distorted view the public has of this industry. Interior designers surveyed in this study also see a need to separate commercial and residential interior
design. Overall, this study has concluded that interior designers would actually prefer a certification process to legislation.

REFERENCES (APA)


3D Visualization “Collage” as an Integral Tool to Support Design Ideation

Petra Probstner
Columbia College Chicago

ABSTRACT

As educators, we see many students being restricted by their sketching ability when investigating three-dimensional design. This leads to students feeling most comfortable in communicating spatial ideas in plan view, often adding materials specifications to their spaces at the very end of the spatial planning process. As a result, their project materials tend to feel “stuck on” and the materiality and human-centered aspects fail to become a driving force for their designs.

My motivation is to encourage students to use contemporary visualization software effectively to aid the design process. I aim to take advantage of students being comfortable with using technology and learning new software, as well as their thirst for instant feedback, while developing my methodology.

In my Sophomore and Junior level design studios, I urge students to use visualization methods as design tools - not only presentation tools.

First, we use traditional processes such as ideation, blocking, and hand sketching to create a conceptual framework for our design project. Soon after, when only these rough outlines of the idea are ready, we start utilizing Photoshop and SketchUp to create “spatial situations”. Spatial situations are sketch like visual collages of the critical points of a spatial design. The aims of these visuals are to focus on small scale moments in the space, to formulate the design’s attitude, to capture an atmosphere, and to help in resolving functional requirements through visualizing how people would a certain space. The focus is on the components of the near environment, the user of the space, and the materials. Key to the successful use of “spatial situations” is to only
deal with simple views of the critical design moves, containing only a few components at a time. Hence, these “spatial situations” can be created early in the process without a finalized plan, allowing for free visual speculation, and promoting the development of options while avoiding the trap of virtual specificity. This leads to students starting to find answers for the questions that they haven’t even started asking themselves yet – in 3D! Local materiality gets investigated, and starts to dominate the project. As the studio progresses, these “micro scale” spatial situations get embedded in the overall “macro” planning strategy that is developed.

In my experience, using sketch-like visuals are most influential when used early on in the design process (approximately week 4 out of 15), however students do tend to return to this solving method numerous times during their design process.

I feel that creating the “spatial situations” is not only a success in terms of design outcomes, but a positive educational tool. Students experience a sense of security about the direction of their designs by having “seen” the key components very early on in the process. That way a plan is never going to be a series of lines on paper, but a three dimensional space with users, real materials and atmosphere!

REFERENCES (Chicago)


Appendix 1 - Spatial situations - (produced after 1 hour of Photoshop tutorial) answering questions of attitude, materiality, overall atmosphere and activities taking place. These are produced very early in the design process without a finalized plan.

Same tool- leading to distinctly different results.

These drawings are produced in week 4 out of a 15 week project. These collages are rarely used in the final presentations, but are used as a design tool, to think about small moments in the space.
Appendix 2 - Spatial situation collages answering questions such as: What does the space going to feel like? What is going to be happening in this space?

Spatial situation visuals produced at the early stages of the design process aim to capture the overall atmosphere and vary in complexity and focus.
Appendix 3 - Spatial situation collages aiming to get a direction for the design without needing to be specific.
Appendix 4 - Spatial situation collages together with 3D renderings from final presentations showing the effects of spatial situations produced at the early on in the design process.

Week 4
Spatial situation

Week 14
Presentation rendering

Week 4
Spatial situation

Week 14
Presentation rendering
Appendix 5 - Spatial situation collages together with 3D renderings from final presentations showing the effects of spatial situations produced at the early on in the design process.
Can't We All Just Get Along?  
Twelve Interior Environment Aspects that Influence the Outcome of Conflict Mediation

Anthony Purvis & Jill Pable  
Florida State University

ABSTRACT

Consensus building is a strategy in the field of conflict resolution that involves a neutral third-party facilitator leading stakeholders through a dialogue process to help them develop mutually agreed-upon solutions to their problems (United Nations, 2011). Effective communication in a consensus building process is key to a successful outcome (Susskind et. al., 1999), and multiple experts across diverse fields of study stress the fact that communication is profoundly impacted by the built environment in which it occurs (Lewin, 1936; Rappoport, 1982; Gudykunst & Kim, 1984; Rodriguez, 2005). It stands to reason, then, that the design of a built environment used for consensus building may impact the quality of the communication, and ultimately the success of developing solutions to conflict.

Scholarly conflict resolution literature, however, contains little discussion of the built environment’s potential impact on communication and consensus building outcomes. This author’s study therefore sought to (1) identify interior environment qualities or features that enhance consensus building in Western societies; (2) generate guidelines for dispute professionals that aid them in selecting and/or modifying interior spaces for successful consensus building processes and events; and (3) inform design professionals responsible for creating such supportive spaces.

Review of literature identified twelve environmental aspects that likely influence communication and behavior within a space, including symbolic meaning; personal space; space planning; materials/finishes; windows/views of nature; lighting; indoor air quality/odor; ambient temperature; sound/noise; auxiliary spaces; security/safety/surveillance; and
environmental control. The study used questionnaire and interview quantitative and qualitative methods in a two-phased process involving 476 members of the Association for Conflict Resolution, the largest trade organization of dispute professionals in North America (Association for Conflict Resolution, 2012). Respondents assessed and verified the potential impact of each of the proposed twelve aspects on communication in a consensus building process, identified key factors that related to each, and proposed additional or alternative categories based on their personal professional experience.

Results showed that each of the twelve environmental aspects was valued by participants, and that each of these aspects can exert at least some influence on consensus building processes. Perhaps most interestingly, the degree of response from study participants revealed a vast, nuanced understanding of the intricacies of environment and communication behavior that has until now remained anecdotal in their professional field. Respondents were eager to share their stories and their knowledge, and expressed a strong desire for this knowledge to be shared for the benefit of their peers. Many professed the strong belief that environment matters.

The specific intersection of interior environmental design and conflict resolution reveals an opportunity for design thinkers to positively impact the human condition in an altruistic, outward-looking approach, treating the built environment as one facet in a holistic approach to ending conflict. The twelve environmental influences recognized by dispute professionals will be discussed in this proposed session to both inform and gain valuable feedback from attendees. Additionally, this session will be an opportunity to highlight how purposeful design has the potential to help those enduring conflict reach resolution.

REFERENCES (APA)


Addressing the Dissonance: Examining Designers’ Attitudes toward People with Disabilities

Sarah Sherman
Florida International University

ABSTRACT

“The everyday freedoms to access the built environment and to live as autonomous individuals are fundamental human rights that many people without disabilities take for granted” (Hannon, n.d.).

A study exploring designers’ perceptions of the ADA identified a disconnect between interior designer’s understanding of the legal requirements of the ADA and their appreciation of the true intent of the mandate. Results of this earlier study indicated that interior designers, no matter how well intentioned, see the ADA as a legal hurdle that impedes creativity rather than as an opportunity to positively impact peoples’ lives.

Given the initial findings, the need to further understand this phenomenon and identify barriers to accessible design emerged. Continued research on the topic moves beyond the original study by adding the question, “Does attitudinal resistance towards the ADA hinder its intended goal?” This additional question was included to help ascribe some causal factors to the apparent knowledge dichotomy.

Licensed interior designers were surveyed to measure their understanding and attitudes (precursors) towards people with disabilities and accessible design mandates. Two quantitative written surveys (Attitudes toward Disabled Persons Scale and the Disability Rights Attitude Scale) and a demographic questionnaire were distributed via Survey Monkey to interior design professionals across the nation. 258 survey responses were received and provided empirical data for examining attitudes and beliefs.
Upon review of the survey results, it was discovered that interior designers educated after the passage of the ADA in 1990 possess a more positive attitude towards accessibility standards and people with disabilities. Identifying when and how designers are educated regarding people with disabilities and the ADA presents a starting point from which we may actualize a deeper understanding of the dissonance between designers’ knowledge and designers’ actions. Further, it may help us better understand how to address the education of designers on the spirit of the ADA, the adoption of its core principles as a routine practice and ultimately, how designers may contribute to a change in society’s overall attitude towards people with disabilities. The true value of this research lies in its indications for potential new strategies for educating interior designers—those individuals who are responsible for creating the environments in which we live, work, and play about the reasons why accessible design is good design.

REFERENCES (APA)

Organizational Patterns

Igor Siddiqui
University of Texas at Austin

ABSTRACT

Digital technologies – including drawing, imaging, modeling and fabrication software – are increasingly allowing designers to generate, manage and implement complex geometric patterns within the contemporary interior. Through computation, intricate patterns that were once only achievable through painstaking manual labor can now be realized with levels of efficiency unimaginable less than two decades ago. Such geometric patterns inform everything from wallpaper, textiles and tiling schemes to room dividers, screens and customizable furnishings. Their appeal lies not only in their beauty, but also in their increased flexibility and customization. In this way, digitally generated patterns can be designed specifically to fit a site, program, or individual taste. However, innovative use of such patterns in interior design typically stops at a certain scale, missing out on the potential to treat them not only as aesthetic devices, but also as tools that can organize interior space in new in meaningful ways.

Our advanced interior design studio recognized this deficiency by setting up a number of conditions that would encourage students’ exploration of digital patterns in the realm of spatial organization. First, we identified the students’ skill level with digital technologies and used this information to adjust the parameters of the technique-based assignments, provide supplemental software tutorials, and encourage group work based on complimentary skill sets. Second, we set aside a part of the semester to conduct research into natural self-organizing systems, focusing not on their aesthetic character, but rather on the principles that order and sustain them. Third, we selected the type of site and a program for the main project that would require a strong, but accommodating organizational strategy, in other words, in need of a type of pattern that is at once repetitive and flexible.
The main project was to design the interior environment for a contemporary art fair. Art fairs are an emerging type of temporary interiors, typically covering thousands of square feet with numerous individual gallery booths arranged according to various criteria at play. Conventional modes of organization (grids, isles, and orthogonal partitions) yield results that narrowly satisfy those criteria, but largely fail to provide an innovative design solution. By considering an actual client and through extensive case studies, we learned that spatial novelty was in fact a real asset in this context. As such, the studio recognized that there was much to be gained by synthesizing novel patterns of organization with innovative interior aesthetics.

By conducting design research, generating digital patterns through open-ended exploration, and applying the learned principles to a specific project, the studio gained a better understanding of the benefits and challenges of incorporating large-scale digital patterns as devices for spatial organization. The issue of variation, both as a benefit and an obstacle, is a common thread through our findings, as it impacts both the space itself and the physical devices (structure, surfaces, furnishings, fixtures) that define it. Overall, the preliminary analysis of student projects reveals that while variation is generally desirable spatially, it remains a significant challenge in terms of materials, construction, and lifecycling.

REFERENCES (Chicago)


null
student work sample #2: PATTERN EVALUATION BASED ON SIZE AND PROGRAM
student work sample #3: OVERALL FLOOR PLAN
Lighting Controls – Energy Savings and Design Integration

Erin Speck
George Washington University

ABSTRACT

Energy conservation is now a standard consideration when designing interior environments. When we examine the energy usage in a commercial building, lighting accounts for 30-40% of electricity usage. Accordingly, lighting controls have been developed to provide flexible lighting adjustments in a way that saves energy while meeting occupants’ needs. However, Interior designers are not always aware of how lighting controls might be incorporated into the design process when creating suitable environments. What is demonstrated here are effective strategies that designers can apply in selecting lighting controls.

When considering a typical commercial office building, lighting is the largest user of electricity. (source; Energy Information Administration, 2003, Commercial Buildings Energy Consumption Survey, released September 2008, the Department of Energy, http://www.energy.gov) Light is also the most easily varied building system. Along with traditional manual switches, turning lights off when no one is around and dimming lights as sunlight increases can be done automatically without depending on human interaction or sacrificing comfort. Lighting can quickly and easily be changed to meet the spaces needs and operate efficiently when a space is empty or lit by the sun. Other energy intensive systems cannot be completely turned off as readily when a room is vacated. HVAC, for example: if deactivated, the temperature would take too long to come back into range once the space is re-occupied.

With ASHRAE/IESNA Standard 90.1-2006 or IECC 2009 as the basis for many Commercial State Energy Codes in the United States the importance of integrating lighting and lighting
controls earlier in the design process not only provides energy savings and potential LEED Credits but can also meet a current trend - interiors that offer flexible use spaces which requires lighting to be equally adaptable. Lighting can be controlled to provide newly partitioned areas with the appropriate amount of light needed and the suitable levels controllable by the occupants of the spaces.

Methods to incorporate lighting controls early in the design process will be demonstrated using a typical office plan of approximately 6400 sq. ft as an example to explore lighting control zones and strategies in combination with interior space and furniture layout.

In addition a full explanation of the direct and indirect benefits of lighting controls in terms of both energy savings and the end user will be addressed.

In summary, key points that will be covered in the presentation include; lighting as the largest user of electricity in commercial buildings and many spaces are over lit, up to 60% reduction in light energy can be realized with lighting controls, and lighting control strategies improve building efficiency and occupant performance through the use of; occupancy sensing, vacancy sensing, daylight harvesting, personal dimming, time clock/scheduling, demand response, high end trim/tuning, shading, and plug load control, and energy codes and standards state the results not the strategies to achieve the results.

REFERENCES (Other)


Spatial Distortions:
Making Cognitive Connections between Hand and Digital Visualization

Dana Vaux & Kathleen Ryan
Washington State University

ABSTRACT

The intent of this study is to understand the connections between cognitive thinking skills and the application of hand-graphic and digital visualization tools in the design process. The Design disciplines focus on design thinking: the study of design practice, principles and procedures encompassing how designers work and think, develop and apply new design methods. Designers acquire knowledge through engaging and reflecting on design activity, using and reflecting on the "artifacts of the artificial world" (Cross, 2001). Visuospatial skills allow designers to convert cognitive information into physical depictions with spatial characteristics, making connections between objects and space (Halpern & Collaer, 2005). As opposed to science where the subject defines the structure, rules and principles, designers discover or create a subject out of the circumstances of the problem. This requires creative thinking and a broader scope of knowledge (Buchanan, 1992). The transference of knowledge from two-dimensional graphic representations to three-dimensional real space, and vice-versa, requires the use of spatial visualization skills by Designers.

The ability to understand and transform mental images into representations of space is crucial to design. Early research on brain function focused on the two halves of the brain and their respective characteristics, or cerebral laterality. However, recent research using magnetic resonance imaging (MRIs) cognitive maps reveals that sophisticated problem solving employs both modes of processing. The right hemisphere of the brain, attributed with manipulo-spatial thinking skills and synthesis, and the verbal, linear, analytic operations centered in the left hemisphere simultaneously match operations to create solutions (Tovey, 2012). In design problems, where designers must synthesize information, make conjectures and propose
solutions through visualization skills, it becomes imperative to employ the interactions of both hemispheres. Using computer software programs for the visualization of design projects, which accesses sequential-linear thinking modes, without the development of manipulo-spatial cognitions through hand-graphic skills may potentially inhibit and bypass spatial-thinking cognition necessary for effective graphic communication and understanding.

Two series of investigations analyzed three groups of interior design student projects that applied hybrid visualization modes, using both hand-graphic skills and computer software. The qualitative study included an analysis of graphic representations based on accepted standards of perspective drawing. Comparative results were derived on the basis of individual student levels of practice and training.

Evaluation of student work revealed that students with better-developed hand skills produced better-quality three-dimensional computer-generated graphics. Additionally, students who had more experience in hand-graphic skills produced models with superior outcomes when transferring three-dimensional graphic representations initially drawn by hand into computer programs. Our proposal is that hand-generated graphics allow designers to develop necessary cognitive spatial thinking skills for three-dimensional understanding of two-dimensional spaces.

Spatial visualization is essential to a designer's ability to translate design thinking into design practice and graphically communicate interior space (Tversky, 2003). Enhancing spatial thinking skills and right-brain hemisphere development through hand-graphic skills augments a Designer's ability to represent their design thinking successfully. Further studies need to examine the role of hand-graphics in professional practice and its relevance to the professional practitioner.

REFERENCES (APA)


Prototyping a Conceptual Environmental Model for Aging in Place

Hans Peter (Hepi) Wachter, David Moxley & Dave Boeck
University of Oklahoma

ABSTRACT

As a multidisciplinary team of researchers working in environmental design for positive aging, the authors present a second cycle of research emanating from their work through the Interdisciplinary Research in Environmental Design (IRED) project. The second cycle focuses on the conceptual mapping and prototyping of a model of housing for positive aging. In the presentation, the authors will offer rationale for the conceptual design, identify dimensions of the prototypic design, and will include a schematic layout of the prototype as it is currently developed (figure 1). The house and interior is an extension of the person, a “holding space” in that it holds a person together in a distinctive, vibrant, and rich way (Huston, 2007). If we alter the parameters of home as they relate to the paradigm of “aging in place” we can see a broad scope—involving structure, contents, site, neighborhood, and environmental amenities. This is what the authors’ refer to as environmental wholeness. By coining this idea we invoke the notion that there are many dimensions to creating contexts in which people can thrive. This is integrally related to other experienced qualities of life, vitality and wellbeing (Alexander, 2002). Exposure to nature can be very important to an occupant’s housing experience including natural light and the smells and aromas of flora. Stimulating the senses in positive ways and helping navigate the rhythm of the day may facilitate functioning, particularly in cognition (Zeisel, 2006). Using the layout of the house orienting people to daily routines proves useful in positive aging. Cueing perception, posting reminders about tasks, facilitating activities of daily living may not only complement functioning but help people experience the home as an enjoyable place (Liebrock, 2000).

Among those caring for an aging relative, making the home comfortable, with a focus on accessibility in bathroom and kitchen design, is a priority. Seventy-six percent of participants in
an AARP study (Bayer&Harper,2000) indicate that they plan to age in place successfully. A floor plan that provides for social entertainment activities possessed high priority for those surveyed. Surefooted flooring surfaces including few steps between rooms and color contrasts as an aid to visual acuity provide safety and reduce the risk of fall is desirable. Reducing the likelihood of fall is also supported by grab bars installed, guiding along kitchen counters and hallways and in bathrooms making them accessible. Curbless walk-in showers can accommodate a wheelchair on slip resistance floor surfaces. The quality of lighting in the design is especially important for persons with vision problems, since falls are the most common problems faced by the elderly. Many falls are linked to some deficiency in the immediate environment compounded by improper or inadequate lighting(figures2-4).

The paradigm of housing design still favors a pathological view of aging. Such projects involve communities in which there is considerable segregation of the elderly from mainstream communities (Harrigan,Raiser&Raiser,1998). The prototype environment discussed in this paper will not fulfill the potential of aging in place within IRED’s few of aging, unless it enhances and supports connection to the community.

REFERENCES (APA)


Liebrock, C. (2000). *Design details for health: Making the most of interior design’s healing potential*.


Figure 1 Prototypes
Figure 2 curb less shower

Figure 3 open knee space and in-reach appliance kitchen

Figure 4 open kitchen with knee space and in-reach appliance
Application of a Cultural Framework for Interior Design Education: Pedagogical Examples from Design Studio

Abimbola Asojo
University of Minnesota

ABSTRACT

Introduction
Previous authors have discussed non-Western spatial design forms with regards to the significance of integrating globalism and multiculturalism in design curricula (Guerin & Thompson, 2004; Grant, 1991). However, few studies examine instructional approaches which use non-Western African forms. Research findings from ----- and ---- (2007) study of Interior design educators indicated the need for design discourse and instructional approaches on non-Western cultures that promote diverse multicultural perspectives in education. This presentation focuses on an instructional approach which uses non-Western spatial forms in Interior design studio (N=17).

Methodology
Case studies have been identified as preferred methodology when how or why questions are posed and when the study focuses on phenomenon in a real-life context (Yin, 2003; Creswell, 2007). Therefore, this methodology was suitable to study how students responded to culture-based design pedagogy. Anderson’s ACT-R theory’s three stages of skill development, which are cognitive, associative, and autonomous was used to help students learn about Nigerian and South African spatial forms. Anthropological methods were used to elucidate information about Nigerian and South African aesthetics. Grant’s 1991 pedagogical approach of introducing diversity in design education was embedded in the instruction in three steps: inclusion, contribution and transformational approaches. The following research questions guided the study:
1. How do students respond to an instructional program that utilizes Nigerian and South African spatial forms to learn about design?
2. Is there evidence that students are able to understand diverse backgrounds of design theories?
3. Is there evidence from different data sources that students were able to use examples from non-Western perspectives as references for discussing design ideas?
4. Do students report being better at problem-solving in a different cultural setting?

Both qualitative and quantitative data were collected. The qualitative data were observations and video recording of how students were engaged with instruction and problem-solving in a different cultural context, as well as, assignments, design solutions and drawings produced by the students (Figure 1 and 2). The quantitative data were pre-test and post-test questionnaires which measured students’ awareness and understanding of diverse backgrounds of design theories, students’ utilization of examples from non-Western perspectives as references for discussing design, and students’ competencies in problem-solving in a different cultural setting.

Findings
A cultural framework of five themes emerged from the data. They are social dynamics, juxtaposition of traditional and contemporary culture, visual and performance arts, elements and principles of design, and sustainability (Figure 3). Social dynamics and juxtaposition of traditional and contemporary culture were abstract themes, while visual and performance arts; elements and principles of design; and sustainability were concrete themes (Table 1). A paired-samples t-test was conducted on the pre-test and post-test questions to determine if there was significant difference at the end of instruction (Table 2). Multiple data sources indicated the instructional design process was successful in helping students’ problem-solve in a cultural setting. The cultural framework developed is currently being utilized for design problem-solving for a Native-American community college. The author will share findings to show how this cultural framework can serve as a model for design educators.

REFERENCES (APA)


Figure 1: Design solution for the Durojaiye Café in Lagos, Nigeria.
Figure 2: Design solution for Swaziburg, Johannesburg, South Africa.

Figure 3: A Cultural Framework illustrating five themes developed from the data: Social Dynamics, Juxtaposition of traditional and contemporary culture; Visual and Performance arts; Elements and Principles of Design; and Sustainability.
Table 1
A synopsis derived from different data sources collected during the study illustrating the abstract themes.

<table>
<thead>
<tr>
<th>Group</th>
<th>Culture(s)/Country</th>
<th>Data sources</th>
<th>Abstract Theme 1: Social Dynamics</th>
<th>Abstract Theme 2: Juxtaposition of traditional and contemporary culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Yoruba, Igbo, and Hausa, Nigeria</td>
<td>Observation, Interviews &amp; Posttest short essay question.</td>
<td>The idea of Lagos as a melting pot and a multicultural metropolis led to this group using three cultures, one from Southwest, Southeast, and North. Creating spaces to foster social interaction and reinforcing the importance of community were prominent notions to this group.</td>
<td>The notion of Western and Islamic influences impacting Nigeria architecture along with the indigenous influences. Emphasis placed on influences from Mosque architecture.</td>
</tr>
<tr>
<td>B</td>
<td>Swazi, South Africa</td>
<td>Observation &amp; Interviews</td>
<td>Idea of emphasis on family and community. Balance between spiritual, cultural, artistic and family life. Nelson Mandela as an iconic person to South African culture.</td>
<td>The idea that contemporary buildings still reflects culture.</td>
</tr>
<tr>
<td>C</td>
<td>Yoruba, Nigeria</td>
<td>Observation &amp; Interviews</td>
<td>Design inspiration derived from the artwork of Jumoh Buraimoh, an iconic Yoruba artist.</td>
<td>An emphasis on developing a contemporary solution based on Yoruba Culture.</td>
</tr>
<tr>
<td>D</td>
<td>Yoruba, Nigeria</td>
<td>Observation, Interviews &amp; Posttest short essay question</td>
<td>Design inspiration derived from the mythology and philosophy of the Yoruba. Oduduwa, the spiritual leader of the Yoruba as an iconic person.</td>
<td>The idea that government whether democratic or imperial was reflected in city, urban planning and architecture.</td>
</tr>
<tr>
<td>E</td>
<td>Zulu, South Africa</td>
<td>Observation &amp; Interviews</td>
<td>Derived inspiration from Shaka Zulu, a prominent Zulu prince and Zulu philosophical beliefs. Community and social interaction were major design determinants.</td>
<td>The idea of creating a contemporary expression of Zulu design in their design solution.</td>
</tr>
</tbody>
</table>
**Table 2**  
Means, Standard Deviations for Pre-test and Post-test data and t Test results

<table>
<thead>
<tr>
<th>Survey Questions</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Q1: Historical survey in design curricula should include design histories of various non-Western cultures.</td>
<td>5.8235</td>
<td>1.28624</td>
<td>5.6471</td>
</tr>
<tr>
<td>Q2: Non-Western cultures have made a significant impact on the built environment.</td>
<td>5.8462</td>
<td>1.28103</td>
<td>5.6154</td>
</tr>
<tr>
<td>Q3: Ethnicity has an impact on the design of the built environment.</td>
<td>5.6000</td>
<td>1.59463</td>
<td>5.6000</td>
</tr>
<tr>
<td>Q4: I am comfortable solving design problems in a non-Western cultural setting like Nigeria.</td>
<td>4.3529</td>
<td>1.41161</td>
<td>5.2941</td>
</tr>
<tr>
<td>Q5: I am comfortable solving designs in a non-Western cultural setting like South Africa.</td>
<td>4.3529</td>
<td>1.41161</td>
<td>5.7059</td>
</tr>
<tr>
<td>Q6: I understand how to use Nigerian precedents as references for discussing design ideas.</td>
<td>3.1818</td>
<td>1.94001</td>
<td>5.0909</td>
</tr>
<tr>
<td>Q7: I understand how to use South African precedents as references for discussing design ideas.</td>
<td>3.0000</td>
<td>2.04939</td>
<td>5.0000</td>
</tr>
<tr>
<td>Q8: Design theories have diverse backgrounds.</td>
<td>5.7333</td>
<td>1.62422</td>
<td>5.8000</td>
</tr>
</tbody>
</table>
Successful Social Space Attribute Model: A Theoretical Framework to Advance Retirement Community Social Space Design Research

Nichole Campbell
University of Florida

ABSTRACT
Continuing Care Retirement Communities (CCRCs) offer communal social spaces for informal interaction among residents. Even when these interior social spaces (such as multipurpose rooms, lobbies, and lounges) are carefully considered and included into retirement community designs, some of these spaces appear in high demand while others sit empty often. From retirement community management’s perspective, the sting of wasted space is particularly challenging for non-profit organizations, which include 81% of CCRCs (Zeigler National CCRC Listing, 2009).

Perhaps even more important than management’s concerns about wasted resources, research shows inadequate social interaction can negatively affect retirement community residents’ health (Ybarra, Burnstein, Winkelman, Keller, Manis, Chan, & Rodriguez, 2008), wellbeing (Krause, 2006), and life satisfaction (Jang, Mortimer, Haley, & Borenstein Graves, 2004) as well as residents’ satisfaction level with the retirement community itself (Street, Burge, Quadagno, & Barrett, 2007). To promote resident quality of life, it is important social spaces be planned skillfully to support the optimal use of these spaces.

To meet the need for a guide to support academics or practitioners in the understanding/development of well liked and used retirement community social spaces, a theoretical model, the Successful Social Space Attribute Model, was developed as well as a portion of the Model tested in two studies of two American CCRCs: one in the Midwest (n=303) and one in the Southeast (n=244). The key dimensions of the portion of the model tested, the Factors Unique to the Individual branch, include: Home Range, Privacy, and Active
Engagement Opportunities. (See Figure 1.) The findings of the second study confirm the branches of the model tested to be applicable to the study and design of well liked and well used retirement community social spaces.

Because of this, there is a need to foster the development of this model in full. With additional development, this is likely to increase its usefulness as an instrument to advance the understanding of the lives of retirement community residents and of successful social space design. This paper will examine the progress made on the development of this model from the collective findings of these two studies. Also this paper will look at areas where more research is needed such as in the cultural, programmatic, and environmental design factors that impact retirement community residents’ social lives.

REFERENCES (APA)


FIGURE 1. THE SUCCESSFUL SOCIAL SPACE ATTRIBUTE MODEL SHOWING THE VARIABLES AND VARIABLE BLOCKS THAT ARE SIGNIFICANT PREDICTORS OF HOW WELL SOCIAL SPACES ARE LIKED AND USED;
The Post Evaluation:  
The CIDA Standard 2; Global Perspective for Design

Hyung-Chan Kim  
Kansas State University

ABSTRACT

The post evaluation of global perspective for design is to create measurable outcomes of global competencies area at CIDA standard 2. The main reason of creating this post evaluation is that author’s previous international exchange design project was feedback from students demonstrated that it was valuable international experience and enhanced their understanding of different cultural aspects. Students expressed a greater awareness of issues associated with understanding how to work with a project that had a global client and diverse user group to interior design students.

However, the students learning outcomes of global perspective based on students self-assessment. Therefore, global perspective for design at CIDA standard 2 needs to develop measurable assessment method for defining student learning outcomes.

The international design exchange project is an on-going collaborate between a US based interior design program and an interior design program in an East Asian university. The major design challenge for the project was to develop a cell phone kiosk for two different locations. Both university students dealt with the same design requirements and clients, but they used different design locations. During the project, they had two video conferences for exchanging site analysis for partner institutions and sharing final design solutions.

This project offered an exploration of present design issues, globalization and multicultural experience.
After the finished project, both country universities student will take 5-point scale survey. The main objective of this survey is to assess students understanding global perspective through international design exchange project and to develop more enhanced global competency at interior design field.

The post evaluation survey focused on the CIDA Standards section II. Interior Design: Critical thinking, Professional value and Processes framework (Appendix 1).

The first part of the survey questions are critical thinking for global perspective. The second part of the survey questions are professional value for global perspective. The third part of the survey questions are processes for global perspective. The last part of the survey questions are another valuable area, which is in general assessment for global perspective for Interior design students that students are willing to understand diversity with open minds, and willing to take the risk of international design.

The participants included 18 students from the US based program. Overall evaluation ranged from 3.88 to 4.34 for US based program (Appendix 2). The purpose of this study was to develop a means of global competency through CIDA Standard section II. Overall, the findings were positive. The number of average mean value is 4.25 on US University on a 5-point scale across all four parts. The most interesting aspect was this project made students more interested in international design in the future.

Through this survey, instructor can assess student’s knowledge of global perspective of design. Based on the survey results, the project will be modified by student learning outcomes.

This is an on-going project. The same project will be completed after abstract submission, therefore, if the presentation is accepted, the result will be more accuracy with a larger number of respondents.

REFERENCES (APA)


Appendices

Appendix 1: Sample Survey Questions

<table>
<thead>
<tr>
<th>1 Critical Thinking for Global Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.-1 This project expanded my willingness to understand a different culture</td>
</tr>
<tr>
<td>Strongly Disagree Disagree Neutral Agree Strongly Agree</td>
</tr>
<tr>
<td>1.-2 This project helped me develop an understanding of design characters and trends</td>
</tr>
<tr>
<td>Strongly Disagree Disagree Neutral Agree Strongly Agree</td>
</tr>
<tr>
<td>1.-3 Through this project I was able to experience different approaches to design</td>
</tr>
<tr>
<td>Strongly Disagree Disagree Neutral Agree Strongly Agree</td>
</tr>
<tr>
<td>1.-4 In this project I got hands on experience and gained a deeper understanding of anthropometrics in a different ethnic group</td>
</tr>
<tr>
<td>Strongly Disagree Disagree Neutral Agree Strongly Agree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2 Professional Value for Global Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.-1 This project expanded understanding of a collaborative project with team members in another country</td>
</tr>
<tr>
<td>Strongly Disagree Disagree Neutral Agree Strongly Agree</td>
</tr>
<tr>
<td>2.-2 Through this project I was able to exercise different indirect techniques to communicate with team members in another country</td>
</tr>
<tr>
<td>Strongly Disagree Disagree Neutral Agree Strongly Agree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3 Processes for Global Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.-1 This project has made me more understanding of different social behaviors</td>
</tr>
<tr>
<td>Strongly Disagree Disagree Neutral Agree Strongly Agree</td>
</tr>
<tr>
<td>3.-2 This project allowed me to exercise the use of universal design concepts</td>
</tr>
<tr>
<td>Strongly Disagree Disagree Neutral Agree Strongly Agree</td>
</tr>
<tr>
<td>3.-3 This project gave me a better understanding of different problem solving methods</td>
</tr>
<tr>
<td>Strongly Disagree Disagree Neutral Agree Strongly Agree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4 In General</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.-1 This project made me more willing to understand diversity</td>
</tr>
<tr>
<td>Strongly Disagree Disagree Neutral Agree Strongly Agree</td>
</tr>
<tr>
<td>4.-2 This project challenged me to be more open minded</td>
</tr>
<tr>
<td>Strongly Disagree Disagree Neutral Agree Strongly Agree</td>
</tr>
<tr>
<td>4.-3 This project made me more interested in international design in the future</td>
</tr>
<tr>
<td>Strongly Disagree Disagree Neutral Agree Strongly Agree</td>
</tr>
</tbody>
</table>
### Appendix 2: Mean Score

<table>
<thead>
<tr>
<th>Categorize</th>
<th>Sub-Categorize</th>
<th>US Based Univ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Thinking for Global Perspective</td>
<td>Understand different culture</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>Understand design characters and trends</td>
<td>4.05</td>
</tr>
<tr>
<td></td>
<td>Different design approaches</td>
<td>4.44</td>
</tr>
<tr>
<td></td>
<td>Understand anthropometrics</td>
<td>4.38</td>
</tr>
<tr>
<td>Professional Value for Global Perspective</td>
<td>Collaborative work with other country</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Communication with other country</td>
<td>3.77</td>
</tr>
<tr>
<td>Processes for Global Design</td>
<td>Understand different social behaviors</td>
<td>4.11</td>
</tr>
<tr>
<td></td>
<td>Understand universal design</td>
<td>4.72</td>
</tr>
<tr>
<td></td>
<td>Understand different problem solving</td>
<td>4.55</td>
</tr>
<tr>
<td>In General</td>
<td>Willing to understand diversity</td>
<td>4.44</td>
</tr>
<tr>
<td></td>
<td>Open mind for global competency</td>
<td>4.38</td>
</tr>
<tr>
<td></td>
<td>Interested international design</td>
<td>4.16</td>
</tr>
</tbody>
</table>
Appendix 3: Project Statement

1. Learning Objectives:
   a. To have a global view and weigh design decisions within the parameters of ecological, socio-economic, and cultural contexts.
   b. To understand globalization and the implication of conducting the practice of design within a world market.
   c. To provide opportunities for developing knowledge of global perspectives.

2. Space will incorporate:
   a. Consciousness of alternate points of view and appreciation of cultural diversity
   b. Apply 3-dimensional design elements and principles to the development of the spatial envelope
   c. Understand & apply metric system
   d. Mobility, ergonomics, flexibility and electrical issues

3. Client: LG Electronics

4. Location & Business Hours:
   a. South-east side of XXX, Asian Country: new developed place for trade, finance, shopping, and entertainment
   b. XXX Mall, Millennium Plaza: Directly connected to subway station, Millennium Plaza is main entrance to XXX Mall, and creates a pleasant transition from outside to the inside of the building. All kinds of people come together here for different reasons
   c. Business Hours: 10 AM to 9 PM (Design may incorporate with exterior weather condition such as enough overhanging for computer monitor, TV screen, and raining)

5. Problem Identification:
   a. Design a moveable kiosk to sell the items:
      Three major components – sales (phones, accessories), services (downloading, upgrading, printing, internet services), and advertisements (new productions, promotion)
      In addition to storage space and electrical power storage
   b. The kiosk must have reflected the flavor of the town and its products
   c. Design must incorporate with site condition because exterior such as orientation, sun angle for both summer and winter, size of overhanging, and raining
   d. Kiosks in open space in by a building. But they are all moveable and easily stored for subsequent use: after business hours Kiosk must move to inside storage space therefore, kiosk must be disassemble for passing 180 cm by 210 cm double door
   e. Design must incorporate with green electric power system such as solar panel
   f. At least two employees work at same time - design must incorporate with security issues for checking all of Kiosk area with two people
   g. Some kiosk have a place for a flexible merchant stands outside (100 cm more to all sides)

6. Size of Kiosk:
   a. Basic structure: No larger than 270 cm (W) x 270 cm (D) or 72,900 cm² (Overhanging size will not count)
   b. The maximum ceiling height is 240 cm and total structure height is no higher than 360 cm
## Appendix 4: Project Schedule

| Week 1: | Day 1: | Introduction: project, site, and client  
*Pre metric quiz (unannounced)* |
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Day 2:</td>
<td>Site visit for Asian university</td>
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| Week 2: | Day 1: | Analysis for US site for Asian university  
Preparation for virtual conference |
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Day 2:</td>
<td>Virtual on-line video conference for exchanging site analysis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 3:</th>
<th>Day 1:</th>
<th>Review for site analysis presentation from Asian university</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Day 2:</td>
<td>Research: General background of project</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 4:</th>
<th>Day 1:</th>
<th>Development: Design concept</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Day 2:</td>
<td>Development: Design idea, sketches, start to build study model</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 5:</th>
<th>Day 1:</th>
<th>Schematic design critic /w study model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Day 2:</td>
<td>Modification of design and study model</td>
</tr>
</tbody>
</table>

| Week 6: | Day 1: | Design development  
Preparation for second virtual on-line video conference  
*Post metric quiz (unannounced)* |
<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Day 2:</td>
<td>Virtual on-line video conference for exchanging design solutions</td>
</tr>
</tbody>
</table>
Making West Africa through Furniture - A Case Study of Senegambian Furniture Makers

William Riehm & Mark Hinchman
Mississippi State University & University of Nebraska - Lincoln

ABSTRACT

This research project in the area of design history and material culture explores the relationship between West African designed objects, in this case furniture, and the aesthetic and production practices of the former colonial powers: England and France. The relationships between European precedents and the resulting West African (re)interpretations is well established in literature about politics, city planning, and architecture. We examine furniture and furniture making in order to understand the multicultural dynamics of past and present, and to probe two salient questions: is multiculturalism a modern design construct, and do indigenous furniture makers have something to teach the West about sustainability and globalization?

This research of furniture and furniture making investigates work from Senegambia, a region of Africa formed from two countries with an intertwined cultural heritage: The Gambia, a nation of 1.2 million people, and Senegal, with 13 million people. Senegal completely surrounds The Gambia, and both constitute the western tip of the African continent. Although modern political boundaries separate the former English protectorate of Gambia from the French colony of Senegal, the area’s multicultural indigenous populations are not bound to this distinction. Further complicating the cultural matrix is that the early colonial Dutch and Portuguese control of the region evaporated and was followed by English and French dominance in the late eighteenth century.

The research data was collected between 2004 and 2012. Research was first completed in Senegal’s capital of Dakar in 2004 and 2008 and included observation of carpentry workshops, archeological digs, and archival research. In 2012 a second investigation collected data through interviews, photography, and videography of furniture makers in The Gambia’s (sic) capital.
region, greater Banjul. Additionally, a range of images from Gambian furniture maker’s own portfolios was documented. These combined projects include examination of the wood species used, the transportation of materials to makers and goods to market, as well as the tastes of a multicultural customer base.

First viewed through an aesthetic lens, many of the objects reveal a connection to French precedent, specifically the rococo, seen in organic details and asymmetrical compositions. Pushing that lens forward to include meaning and identity in the 20th century, some pieces reveal French Art Deco influences that further express power and economic success. An analysis of furniture in production, and as finished products, support conclusions of these historical cultural connections, and reveal some intriguing countervailing trends.

Supporting these principal conclusions are oral histories collected from African furniture makers. Videography is not only a technology, but a perceptual framework allowing for an expanded view of contemporary manufacture and consumption and its relationship to interior design in an increasingly globalizing marketplace. Many Africanist scholars hypothesize that West Africa verges on explosive growth, and this research reveals furniture makers in Senegambia working in a “just in time” practice, utilizing available raw materials, and delivering goods from shop to sale, thereby meeting local demands with efficiency. Combined aesthetic analysis and video reveal how African craftsman address sustainability and globalization with a prescient historical sensibility that is informative and provocative.

REFERENCES (Chicago)


APPENDIX
Making West Africa through Furniture - A Case Study of Senegambian Furniture Makers

Fig 1. Tisserand nègre, 19th century, colored engraving (© Chambre de Commerce et d’Industrie Marseille-Provence.)
Fig. 2. Carpenters preparing wood, Birkama, Gambia (Photograph by the author. 2012.)
Fig. 3. David Boilat, “Signare”, 1853. from *Esquisses Sénégalaises*. Paris: P. Bertrand, 1853.
Fig 4. Women in formal chairs, Serrekunda, Gambia ((Photograph by the author. 2012.)
Fig. 5. Wooden beds, Banjul, Gambia (Photographs by the author. 2012.)
Living in Affordable Housing as Immigrant Elders: Focusing on the Residential Experiences of Korean Immigrants in the Greater Chicago Area

Jung-hye Shin & Myounghee Jorn
University of Wisconsin-Madison

ABSTRACT

We examined factors that influence the residential experiences of 140 Korean immigrant elders in affordable housing in Chicago, using qualitative/quantitative in-depth structured interviews. We examined their social networks, availability of community-based ethno-specific services, perceived housing and neighborhood quality, degree of acculturation and cultural expectations of inter-generational co-residency, and how the aforementioned factors influence their overall residential satisfaction and desire for aging-in-place.

This study is theoretically informed by Lawton’s model of environment and aging (1999), with four notable domains of environment: personal, supra-personal, social, and physical. We operationalized these domains as follows: social network (family and friends), ethno-specific services within the community, acculturation degrees and cultural norms of inter-generational co-residency, and perceived housing and neighborhood quality. Lawton’s ecological model of aging posits that environments that compensate lowered competency of the elderly increase the likelihood of aging-in-place (1982). Therefore, we tested the following hypothesis: an increase in qualities of the four domains positively contributes to overall residential satisfaction and the desire for aging-in-place.

We chose affordable housing that has more than twenty households headed by Korean immigrant elders. Then we acquired a stratified sample of a total of 140 households throughout the city. Interview data included: demographics, acculturation degree, social network, ethno-specific service network, the perceived quality of housing and neighborhood, and qualitative
questions about the reasoning behind each of their assessments. We analyzed each variable using descriptive statistics. Then we tested our hypothesis using multiple regression analysis.

Overall housing units provided a minimum amount of space, regardless of household numbers, mostly in high-rise apartment buildings without any advanced amenities. Nevertheless, the residents showed remarkably high levels of satisfaction in each domain. Qualitative analysis indicates that the following factors contributed to high satisfaction: 1) negative perceptions of cultural expectations of inter-generational co-residency; 2) desires to not be burdens to their children; 3) their gratitude toward the government that allowed their desires to be fulfilled. A critical mass of Korean households in each housing area and thick ethno-specific social networks developed in Chicago areas also strongly contributed to this trend.

We partially accepted our hypothesis: perceived housing and neighborhood quality are strong predictors of overall residential satisfaction, while social networks, service networks, and acculturation degrees were not statistically significant predictors. Our qualitative analysis suggests that the existence of a critical mass of Korean immigrants in all housing projects and densely developed ethno-specific service networks that surround them created little variation, yielding little explanatory power. Our hypothesis testing using desire for aging-in-place as an outcome variable showed a similar tendency but yielded less explanatory power by the aforementioned factors. It seems that there are other factors at work, such as a lack of alternatives and fear of nursing home admission.

Inside units, household density strongly influenced the levels of satisfaction with storage, bathrooms, and bedrooms but had modest effects on overall residential satisfaction. In addition, window configurations and the resulting indoor environmental quality (IEQ) were a major effector of overall residential satisfaction. Implications for planners, designers, and policy makers are discussed.

REFERENCES (APA)

Capitol Interiors: 
An American Beaux-Arts Design System

Diane Al Shihabi
Iowa State University

ABSTRACT

In the late Gilded Age (1890-1917), American Beaux-Arts architects and state executives sought to create noble government buildings and interiors that would communicate pedagogic content through deliberate visual symbolism, and in an artistic language that American viewers would understand. This study identifies and interprets the American Beaux-Arts interior design system in three monumental state capitol interiors, and presents new meanings of American Beaux-Arts architecture from an interiors’ perspective, expanding scholarly viewpoints from architectural historians, political scientists, and social historians. It adds to American Beaux-Arts architectural theory by identifying the organizational and planning constructs guiding the architect’s interior design plan of a holistically conceived structure that has remained nebulous.

The study constructs an argument about how American architects used, and modified, the architectural styles and forms of the French academic Beaux-Arts tradition to create meaningful American semiotics. It considers 1) how American architects transmuted the French academic architecture system in monumental American capital interiors and 2) whether architects were simply copying French precedents or creating new forms and assigning new meanings. It attests to the presence of an underlying French academic hierarchy of architecture and artistic programs, derived from Neoplatonic philosophy (Egbert, 1980), yet amalgamating American democratic functions. It also attests to the presence of French academic expressions of architectural character, derived from Aristotelian philosophy (Egbert, 1980), dictating the systematic application of styles, materials, and forms to interior finishes of capitol.
The research method was conceptualized and organized through the structural analytic framework of Crystallization (Ellingson, 2009) and integrated material culture analysis of extant objects (Prown, 1982), iconographical analysis of symbolism (Panofsky, 1995), and content analysis of documents. The design historical approach combines postmodern research methodologies and traditional document analysis with professional practice, yielding a multifaceted understanding. Evidence elucidates the evolution of the monumental meaning of high taste in interiors and the complexity of the dynamic collaborations between architect, artisans, collectors, and others contributing to American Beaux-Arts design.

Findings reveal that American Beaux-Art architects entwined American iconography, American materials, and American technology within the French design system to effectively create an American art form and American meaning, while at the same time maintaining the framework of a historic artistic code of the French Academie. Thus, manifested designs within interiors of American Beaux-Arts capitols not only reflect ideologies underlying French academic architectural theory (Blondel, 1683), but also ideologies of equity among branches of American government, clarity of government function, the voice of the people, and egalitarianism of state citizens - collectively, principles intrinsic to democracy.

The information generated from the study is timely since American Beaux-Arts buildings are currently undergoing costly restorations and the field of design is in the midst of a global Neo Beaux-Arts Classicism revival. Discoveries facilitate the cultural sustainability of the American Beaux-Arts aesthetic, and further socially and environmentally conscientious interior design practice by sustaining the built environment. The scholarship serves not only the field of historic preservation, but also the objectives of USGBC’s 2009-2013 Strategic Plan, which identifies the greening of existing buildings as a top priority.

REFERENCES (Chicago)

Blondel, Jacques Francois.


Prown, Jules David.
EnvVis:
Toward a Rhetoric of Environmental Visualization

Ruth Baker-Westervelt
Syracuse University

ABSTRACT

As a form of visual communication, interior visualization is a widely published, yet under scrutinized, genre. Whether it is referred to as presentation, representational drawing, or interior graphics, the process of visualizing environments would become more meaningful, strategic, and humane if designers were more conscious of how drawings function as a rhetorical structure. Within this structure is the designer’s opportunity to communicate through a visual eloquence that directs special attention on crafting a message to the intended audience. In this paper we seek an understanding of how environmental visualization functions rhetorically through subtle and implicit strategies for constructing, delineation, and rendering.

Clive Ashwin wrote on the topic of design drawing: “Designers of buildings and interiors are simultaneously engaged in communicating the specific facts of a scheme and persuading clients and colleagues of the quality and attractiveness of their proposals, thereby creating a response favorable to acceptance.” (1984, p. 49). The persuasive function of presentation drawing is discussed to a far lesser degree compared to the highly referential code (or, “the facts”) of construction and perspective drawing, as evidenced by countless texts on tools, technique, and software, whereas only relatively few articles exist on their rhetorical nature. Ashwin’s observation and further writing raises some fundamental questions: how do drawings such as a plan or perspective operate to influence rhetorically? What principles are employed, often intuitively, within the construction and design of presentation drawing that engage the spectator and hold their gaze—despite remaining a faithful representation of the environment to come?
In this paper we consider these questions and find that design drawing is a non-obvious kind of rhetorical image in that even construction drawings, sober and impartial as they may seem, are subject to the same automatic visual analysis processes by the viewer as that of any magazine advertisement. Although the extent of such rhetorical imagery is vast, this study seeks to identify a basic suite of common representational strategies that drawings often employ that shape a viewer’s perception about the depiction of a proposed environment such as point of viewer, sociality, movement, grouping, framing, selective rendering, and illumination. These strategies are visual rhetorical devices that combine to convey a persuasive argument analogous to such constructs in verbal rhetoric. We present a matrix with illustrations that demonstrate their conative function, with supporting evidence culled from visual culture and fine arts.

Apart from progress made in graphic design, the larger field of design has no unified theory of rhetoric (Buchanan, 1985), much less in the area of environmental visualization. This research serves to further inquiry and open up the potential for rhetoric and environmental visualization by treating presentation drawing as a designed artifact in its own right and a locus of research into its essential nature.

REFERENCES (APA)


<table>
<thead>
<tr>
<th>Strategy</th>
<th>Function</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point of viewer</td>
<td>The point from which the perspective is projected places the viewer in a powerful position. Point of Viewer considers the experience of the intended user or denizen of space in placing this locus, including eye-height based on activities, events, and focus on specific content.</td>
<td></td>
</tr>
<tr>
<td>Sociality</td>
<td>Conventionally referred to as scale figures and people textures, which are intended to establish physical relationships and context, Sociality uses scale actors to visualize activities and experience that depiction of form and space cannot reveal by itself. Gazes fix upon other human figures and draw focus to certain drawing characteristics.</td>
<td></td>
</tr>
<tr>
<td>Movement</td>
<td>Significance of formal characteristics of space is created through movement of elements within a scene toward a feature. Often achieved through the direction of locomoting scale actors, Movement can also convey importance by the directional gaze of a scale actor itself.</td>
<td></td>
</tr>
<tr>
<td>Framing</td>
<td>The creation of a balanced composition is often contingent upon the balance of the space it is depicting. However, there are techniques for the depiction of a balanced composition through a great variety of techniques for vignetting, or framing, content that guides the viewer’s attention.</td>
<td></td>
</tr>
<tr>
<td>Clustering</td>
<td>Grouping of related elements connotes importance as it becomes a dominant object. Clustering, combined with Sociality, can be effective for creating multiple narratives within one composition.</td>
<td></td>
</tr>
<tr>
<td>Selective Rendering</td>
<td>Strategic application of color and pattern to areas of intended emphasis within a composition.</td>
<td></td>
</tr>
<tr>
<td>Illumination</td>
<td>Through contrast of tones, the effect of illumination draws viewers’ attention to specific areas of a composition. Light emitting from fixtures or windows depicted in an environment provide distinct areas of light and dark. The technique is a derivation from the genre of art, chiaroscuro, characterized by dramatic tonal contrasts.</td>
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</tbody>
</table>
Experiential Interiors: Feeling Space

Tamie Glass
The University of Texas at Austin

ABSTRACT

Introduction
Besides providing shelter from the elements, the built environment has the ability to inspire, to heal, and to restore. Spaces that engage users’ senses can improve and enhance their conditions and shape their moods and emotional state. This presentation is the second in a series which explores and examines existing buildings, interior spaces, installations, and exhibits based on one of the traditional five senses of sight, hearing, touch, smell, and taste, as originally classified by Aristotle. Previous studies of sensory design by Juhani Pallasmaa and Joy Monice Malnar have explored theoretical and philosophical backgrounds and concepts; and although critical to understanding the context of this complex subject, they reveal little about their actual real-world application in the realm of contemporary interior design.

Fine Vs. Crude
Although often simply described as one of the five traditional senses, the familiar term of touch is complex and dependent on more than one sensory modality to form an impression. Two broad categorizations of touch, fine and crude, highlight differences critical to understanding this sense and how it relates to the design of physical environments. Fine touch is characterized as being discriminating. It is localized and refined with tactile information that provides an awareness of three-dimensional qualities. Crude touch, as the descriptor indicates, is the opposite. It is non-discriminative and not able to be localized. Tactile information is not refined and does not enable three-dimensional recognition but may offer a feeling. The resulting experiences fall at opposite ends of the spectrum. An end user may engage with the tactile elements in a space by actively or passively applying pressure and movement through the act of...
“touching”. On the other hand, an end user’s skin or body may literally “feel” space, which may be the perception afforded by temperature or vibration.

Case Studies
This presentation explores the sense of touch and examines how designers have used touch as an integral design element to create evocative spaces that extend beyond function and visual appeal to engage the senses. By analyzing case studies of built work, a variety of examples of fine and crude touch will be explored. Localized touch will be discussed in relation to haptic experiences, which instruct, guide, and inform end users through active exploration employing both cutaneous and kinesthetic capabilities. Additional examples will demonstrate the effects that touch may passively have on spaces by looking at traces of human interaction on the environment and how designers may make thoughtful material selections that intentionally pronounce this reaction. Finally, selected case studies will bring awareness to physical environments that engage users in a less discriminating fashion dependent on contrasts in stimuli to create an overall bodily sensation.

Conclusion
As a sampling, realized projects will illustrate that a relationship between today’s built environment and a deeper understanding of human nature does exist. They will demonstrate how designers can incorporate sensory enhancing aspects related to touch to further engage users, encouraging them to feel as an integral way of experiencing an interior space.

REFERENCES (MLA)


Appendix
Sampling of Case Studies

Fine Touch: On Tension installation by Eva Malschaert

Traces of Touch: Solid Poetry, a smart material by Frederick Molenschot and Susanne Happle

Crude Touch: "Sinta o Som" or "Feel the Sound", an event for hearing impaired at Clash Club in São Paulo, Brazil

Fine Touch: self portrait in “BLIND” art series by Roy Nachum

Traces of Touch: Interior dining area at Tensta Konsthall in Spånga, Sweden by Front

Crude Touch: Arrival hall interior transition zone at Malpensa Airport in Milan, Italy
Neuro-Imaging and Interior Design: 
Symbiosis between Design and Brain Mapping

Debajyoti Pati, Cherif Amor, Michael O’Boyle & Shabboo Valipoor
Texas Tech University

ABSTRACT

Issue
Emerging neuroscience research shows that environment-related phenomenon such as wayfinding, perception, cognitive mapping, and their behavioral consequences—anxiety, stress, happiness, arousal—are both reflected in our brain’s neural structures and electro-chemical processes (Zeisel, 2006; Eberhard, 2007; Swanson, 2011; Mallgrave, 2011).

To this date, the built environments in which we live, work, treat, play, and entertain have been designed taking into account the environment-behavior paradigm—B = F(P x E)—suggesting that human behavior (B) is the result of an interaction between the person (P) and his/her environment(E) (Bechtel & Arza, 2002; Stockols & Altman, 1987; Rapoport, 1969; Lynch, 1960).

While a large body of evidence has been developed through environment-behavior studies (Ulrich 1999; Cooper Marcus & Barnes, 1999; Kaplan & Dana, 2011), little is known about the correlation between neuroscience (brain/neural activity) and the built environment. This study attempts to add to an emerging knowledge base of neuroscience research relative to the built environment looking particularly at neural responses to different image exposures.

The study compared the behavioral and neural responses of ten adults, when exposed to four classes of images a) positive images, b) negative images, c) neutral images, and c) luminous sky compositions) using functional Magnetic Resonance Imaging fMRI technology.

Methodology
To do so, a purposeful sampling was used to obtain a sample of ten adults living in the northwest Texas. The purposeful sampling permitted the selection of gender (male and female), age (20-60 years old range), right handedness (brain lateralization), and with no prior exposition to an fMRI experiment. The study was restricted to participants who do not have metal in or attached to their body to ensure fMRI safety during participation. The study also excluded pregnant women and people suffering from illness or injury to avoid any potential skewed data generation. The participants underwent 1) an anatomical scan and 2) a functional scan while a random sequence of images (positive, neutral, negative, and luminous sky images) were projected by a computer controlled visual presentation system. Each participant evaluated 32 images (eight images in each category). Behavioral data were analyzed using grounded theory, while the neural data maps were analyzed using a basic psychometric approach.

Findings
The use of fMRI has provided an original opportunity to examine the neurological mechanisms associated with exposure to simulated nature conditions. This has permitted for the first time in the design disciplines to cross-check data validity to support or nullify existing paradigms/theories. Likewise, the preliminary findings of this exploration support precedents that exposure to nature images has a beneficial impact on people’s psychological, emotional, and behavioral responses. Furthermore, in both behavioral and fMRI data, the luminous sky compositions and the presumed positive images were both found to stimulate positive appraisal. The findings indicate that there is no significant correlation between image rating and age, sex, and right handedness. More results will be shared with the conference attendees for feedback.

REFERENCES (APA)


Louis Sullivan’s Ornament: A Case Study with Implications for Twenty-first Century Form and Function

Kennon Smith
Indiana University - Bloomington

ABSTRACT
This presentation applies the lens and methods of design history to examine the work and writing of Louis Sullivan, with an eye to better understanding his seemingly paradoxical position regarding ornament and ways his work might inform twenty-first century discourse. Sullivan is particularly important in the narrative of twentieth-century design because his statement, “Form ever follows function” (1896), usually shortened to “form follows function,” became a useful if perhaps overused dictum in rationalizing the forms of Modern design, and yet his rich ornamental programs spurred an entire tradition, known as Sullivanesque (Schmitt, 2002). Sullivan’s phrase and work sit at the heart of one of the most vexing and contentious questions of twentieth-century design—that of the place of ornament.

This same question has spilled over to the twenty-first century and will likely continue in importance, though perhaps for slightly different reasons than those which framed the debates of past generations. Ornament saw periods of embrace and scorn in the nineteenth and twentieth centuries – from fastidious efforts at cataloguing and dissemination such as The Grammar of Ornament (1856), to outright disavowal in the narratives of Modernism, to the sometimes haphazard assemblages seen during the Post-Modern era. As globalization influences design (Guerin & Martin, 2010) professionals must possess an increased awareness of and sensitivity to cultural diversity and must again grapple with questions surrounding the meaning,
use, appropriation, and development of ornament. Technologies continue to diminish barriers and increase the likelihood that current students will practice in more places and for a more diverse cliental than did previous generations. If we take seriously the importance of honoring the diversity of place and culture bound up in this globalized century, we must critically examine our approaches to the ornament that is often attached to, or developed out of, the conditions of specific times and places.

With a view to changing conditions of the twenty-first century and the various attitudes toward ornament that might be adopted by designers, this research focuses on the work of Louis Sullivan as an intensive case study to explore the complexity which may be embedded in ornamental forms. Sullivan’s work is particularly relevant for at least two reasons. First, the seeming contradiction between Sullivan’s statements and his design work serve, as noted by Sprague (1968), to expand conceptions of function from mechanistic to vitalistic interpretations. This expanded interpretation potentially resolves the paradox and opens the door to uses of semiotics and iconology in examining functions of Sullivan’s ornament. Second, Sullivan was concerned with developing a uniquely American architectural form – one rooted in personal interpretation of his own time and place. Using Sullivan’s writings to interpret this ornamental program provides insight into one way such ornament has been developed.

It is hoped that a fuller understanding of Sullivan’s work will be useful not only in appreciating the complexity and depth of this one individual’s design program, but also provide insights into alternative narratives regarding the potential place, interpretations, and uses of ornament in an increasingly globalized, twenty-first century profession.

REFERENCES (APA)


Sustainable Decision-making: How Multidisciplinary Models Reinvigorate Design Research and Promote Change

Johnnie Stark
University of North Texas

ABSTRACT

Purpose
Industrial designer and architect Ezio Manzini challenges designers to advance beyond “product-based wellbeing” and observes, “Over the past hundred years...designers have been active promoters of ... ways of living that we have recently and dramatically discovered to be unsustainable.” (Manzini, 2010, pp. 233, 234). Also commenting on twenty-first century transitions, Frankel and Racine (2010) review the evolution of design research and offer a framework to ensure continued relevance for education and practice.

These authors envision the designer’s role shifting from problem solver to collaborative enabler. They encourage social science approaches to analyze design scenarios then apply insights gained to design practice. In the context of these perspectives, this report 1) proposes research sequences for sustainable decision-making; 2) evaluates multidisciplinary research methodologies for use in the sequence; and 3) contributes to interior design research theory development. Conclusions drawn from this investigation provide implications for pilot programs and future studies.

Framework
Based on readings cited, the proposed research sequence proceeds as follows: 1) identification and analysis of a best practice case; 2) dissemination and application to specific case or user; then 3) assessment of perceptions and impact on future decision making. The research models chosen for evaluation are The Hierarchy of Walking Needs (Alfonzo, 2005), diffusion theory (Rogers, 2003), and the New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2000).
The outcomes for this paper include a review of the literature pertaining to the framework articles and the three models; a taxonomy of terms; a comparative matrix showing existing and proposed research parameters; and diagrammatic presentation of the proposed models.

The Hierarchy of Walking Needs was developed as a trans-disciplinary, multilevel theoretical model for urban planning that seeks to explain how individual, group, regional and environmental factors affect physical behaviors (Alfonzo, 2005). The process used to test variables and hypothesize how factors influence a person’s decision to walk is instructive in framing a holistic approach for studying sustainable design strategies.

In Diffusion of Innovations, Everett M. Rogers defines diffusion as “the process in which an innovation is communicated through certain channels over time among the members of a social system.” (Rogers, p. 474). Progression may be multi-faceted and requires an understanding of attributes such as “relative advantage,” “compatibility,” “complexity,” “trialability,” and “observability.”

At the intersection of social psychology and environmental belief systems, the New Ecological Paradigm (Dunlap, Van Liere, Mertig, & Jones, 2000) is a reliable instrument for profiling and tracking ecological worldview perceptions.

Conclusions
Expansion of western standard of living levels of consumption on a global scale is unsustainable in terms of both environmental degradation and social unrest arising from economic inequities (Manzini, 2010, p. 235). Design research parameters must address project complexity and contribute to shared visions across disciplines, acknowledge economic and policy implications, and confront contradictions between sustainable practices and current business models. Insights from other disciplines including industrial design, architecture, urban studies and social psychology provide opportunities to examine and redefine interior design practices relative to environmentally and socially responsible strategies.
REFERENCES (APA)


The Interior Design Studio Experience:  
A Case Study of Occupancy Patterns and 
Satisfaction of the Design Studio

Lindsay Dixon & Jill Pable  
Florida State University

ABSTRACT

In buildings where students have twenty-four hour access, the building systems must operate for maximum occupancy levels around the clock because the details of occupancy are currently unknown. Energy and money are wasted by operating these systems when it is not necessary to do so. By observing patterns of student occupancy and estimating when students are more likely to be in the building working, building operators may be able to adjust the lighting and HVAC systems to reduce wasted energy.

Currently, there is limited research focusing on higher education design students and their study behaviors. This population may be unique among college students in that the nature of their projects might cause them to occupy their academic classrooms long after regular classes have concluded each day. Thus, their occupancy patterns may impact off-hour building use more significantly than other groups. There may be various physical and social reasons that motivate students to work in the building outside of class time, or dissuade them from doing so. Understanding more about the nature of these student motivations may help building operators to better estimate when a design studio building is likely to be occupied.

To further examine the behavior of this population, this thesis case study closely examined the occupancy habits of a selected group of interior design students enrolled in a studio course at a major university during the spring and summer semesters. In addition, satisfaction surveys and group interviews were conducted to better understand the studio dynamic including occupancy behaviors, motivations, and classroom satisfaction. Guerin’s Human Ecosystem Model served as a useful model to frame likely considerations for the perception and satisfaction of the built
environment (1992). As part of the Guerin model, variables relating to the behavioral, physical and natural environments of the studio space were examined during the course of this case study.

Results of the study indicated a noticeable increase in student occupancy patterns relating to project deadlines. During the periods of low usage between project due dates, energy can be saved by adjusting building systems to run less frequently. There is a need for educators to communicate periods of expected high occupancy during non-business hours (near project deadlines) with building operators who can then program the building to run more efficiently and still meet the needs of the occupants during peak work times. Furthermore, results from surveys and interviews uncovered student motivations for working in their studio space and their satisfaction with the various characteristics of their classroom and building. These findings will prove useful to increase energy efficiency and student satisfaction of the studio building.

Future research in this area is required to verify the validity of the results of this thesis. By sharing this study model and findings, it is the hope of this author that other interior design programs will replicate this study and continue strengthen the body of knowledge in this area.

REFERENCES (APA)

Influence of Students’ Attitudes towards and Knowledge of Sustainability in Selection of On-Campus Student Housing

Connie Dyar & Laura Fetsco
Illinois State University

ABSTRACT

Sustainability is a word familiar among the general public as it is a growing trend in society. As interest in sustainability increases, society, specifically college and universities, are seeing an expansion in living, thinking and building sustainably. This growth in sustainable living has led to increased research of sustainable buildings. Particularly, research has largely begun to focus on sustainable design in college and university communities (Deninger, & Swift, 2009; Torres-Antonini, & Dunkel, 2009; Torres-Antonini, & Park, 2008; Torres-Antonini, & Park, 2010; Trinklein, 2009; Whiteman, 2009).

While previous studies have emphasized sustainable campus housing, there has been limited research in regards to the importance of students’ perspective on their housing. When considering university students, why might living in a sustainable environment be important? Is a college student part of the demand for sustainable on-campus student housing at universities? Specifically, does a college student’s attitude toward and knowledge of environmental sustainability impact their preference in their student housing choice? The purpose of this investigation was to attempt to answer these questions, using the theory of reasoned action (Ajzen & Fishbein,1980) as a foundation.

The theory of reasoned action (TRA) suggests an individual’s attitude and subjective norm create behavioral intentions (Fishbein & Azjen, 1975). For the purpose of this study TRA was utilized to address students’ attitudes toward environmental sustainability, and subjective norms of individual students to other students at their university, to influence intention to live in LEED certified housing, and in turn influencing their behavior of where they choose to live.
on-campus. Also, using the theory of reasoned action as a guide, this study merged attitude and subjective norm, together with knowledge to influence intention.

Participants included students living in four on-campus student housing units in two public universities across the United States: one in the Midwest and one in the West. Two housing units came from each university; one housing unit was the LEED certified, while the other was non LEED certified. There were 132 respondents in total. The survey consisted of five sections, adapted from the theory of reasoned action sample questionnaire (Ajzen & Fishbein, 1980).

Participants were sent a web based survey asking about the individual’s attitude towards sustainable living, their knowledge level on sustainability, their subjective norms in relation to other students at the university, as well as their previous intention to live in their dorms. Results have indicated that those students who were living in LEED certified housing, and were informed of their living arrangements, were more knowledgeable on the topic of sustainability. The study’s findings also indicated that a large amount of participants living in LEED certified housing were unaware that they were living in sustainable housing. These results could show that people can live sustainably in their daily lives without it ever being a hindrance. The findings may indicate that better marketing and awareness should be made around college and university campuses. With improved marketing of sustainable student housing the campus community may practice more sustainable behavior.

REFERENCES (APA)


Teaching Materials through the Frame of Sustainability

Peter Greenberg
Wentworth Institute of Technology

ABSTRACT

Principles of environmental sustainability have radically transformed the context of teaching materials to students of interior design. While learning about material issues in a general sense introduces students to a wide range of design issues, including performance and aesthetic properties and questions of expressiveness and character, the focus of this paper is to consider how the framework of sustainability affects the pedagogy of teaching material resources. While understanding and applying material properties involves critical issues beyond sustainability, it is the environmental concerns about materials that provide students with an integrated context (Fig. 1). When the student learns where materials come from and the resources that are used to deploy them, a door is opened to the broader implications of their designs beyond the walls of the interior.

The problem being addressed by the paper is that the traditional academic study of building material emphasizes selection criteria that lack a comprehensive and inter-connected context. It is an unsustainable approach. Making environmental issues central to the understanding of material properties provides a moral understanding for material allocation. The paper cites class assignments and the work of our students as evidence that sustainability can be the framework to unify material issues for students.

Students of Interior Design are introduced to the palette of building materials in two principal ways: first, through technical courses dedicated to material properties and second, through their creative application in studio courses. In the technical courses, the understanding of a material’s
environmental impact can be explored through an expanded role of lifecycle assessment and embodied energy to provide comparative criteria over the usable life of the material. Students are thus asked to connect the finish product with its process of production (Figs. 2-3). Examples of student projects demonstrate the complexity of the discussion and the evaluation of green-washing in the product literature (DuPont 2012). The moral frame of sustainability offers a relative standard for this lesson in critical assessment.

In studio classes, students apply this material knowledge in design projects. In the examples that are presented, Junior students are asked to consider a residential space through the filter of sustainability. (Fig. 4-5). While materials have been applied in residential projects for as long as interior design has been taught, the frame of sustainability offers a dramatic pedagogic shift. Instead of selecting materials exclusively on aesthetic and performance criteria, students make material selections based on a unified conceptual framework that simmers under their other valuable ideas (Winchip 2011). Students learn to simulate professional scenarios by addressing limited resources responsibly. The framework engages the student and invokes the morality of the discipline.

While some writers of texts on interior materials still treat sustainability as a discrete topic (Godsey), a more useful pedagogical approach is to fully integrate environmental impact while discussing particular material properties (Binggeli). As professionals and client groups demand changes from unmanageable patterns of consumption of natural resources (LEED 2009), academic material studies are recontextualized. The frame of sustainability creates moral, contextual and critical lessons for students of design.

REFERENCES (MLA)


Closed-loop models, lifecycle assessment and embodied energy

IEQ: Materials that are low-toxicity and emit zero VOCs

Certification and stewardship of natural resources

Building Re-use

Material Re-use
### SUSTAINABILITY FOR RESIDENTIAL INTERIORS

#### LIST OF RESEARCH TOPICS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
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<tbody>
<tr>
<td>1. LEED for Homes</td>
<td>Voluntary rating system that promotes the design and construction of high-performance green homes.</td>
</tr>
<tr>
<td>2. REGREEN (ASID &amp; USGBC)</td>
<td>The residential remodeling program designed by American Society of Interior Designers and USGBC.</td>
</tr>
<tr>
<td>3. NAHB ICC 700-2008</td>
<td>This ANSI approved standard defines green building for single and multifamily homes.</td>
</tr>
<tr>
<td>4. Energy Star / Water Sense</td>
<td>Government-backed programs helping businesses and individuals protect the environment through superior energy efficiency and water conservation.</td>
</tr>
<tr>
<td>5. Forest Stewardship Council / Sustainable Forestry Initiative</td>
<td>Certification processes to determine that wood products come from forests that meet strict environmental and social standards.</td>
</tr>
<tr>
<td>6. Green Certifications: Greenseal Cradle-toCradle (C2C), SCS, EPP</td>
<td>Certification programs that take comprehensive approaches to evaluating the sustainability of a product.</td>
</tr>
<tr>
<td>7. Lifecycle Assessment</td>
<td>The sum total environmental impact of a product’s / design’s beginning to end, from extraction of raw materials to disposal.</td>
</tr>
<tr>
<td>8. Universal Design / Aging in Place</td>
<td>A framework for the design of places, things, etc., to be usable by the widest range of people without special or separate design.</td>
</tr>
<tr>
<td>9. Energy Consumption Issues</td>
<td>How building a “green” residence can contribute to overall reductions in energy consumption.</td>
</tr>
<tr>
<td>10. Water Consumption Issues</td>
<td>How building a “green” residence can contribute to overall reductions in water use.</td>
</tr>
<tr>
<td>11. Indoor Air Quality and Health Issues</td>
<td>How building a “green” residence can contribute to overall health through improved air quality (healthy building products / and proper ventilation).</td>
</tr>
<tr>
<td>12. Resource Efficiency / Upcycled Materials</td>
<td>Using natural or recycled materials or taking an item of relatively low value and transforming it into a building product of increased value.</td>
</tr>
<tr>
<td>13. Sustainable Floor Choices</td>
<td>What issues might be considered when selecting a “green” floor (such as better raw materials, resource stewardship, waste, etc.).</td>
</tr>
<tr>
<td>14. Low Impact / Low-Toxic Materials</td>
<td>How selecting green choices for cabinets, paints, lighting (for example) can contribute to sustainability and overall health.</td>
</tr>
<tr>
<td>15. The Incredible Expanding American House</td>
<td>How the size of the typical American house has grown; compare with at least two non-American examples.</td>
</tr>
</tbody>
</table>
Figure 3: Slides of Student Presentations on Sustainability and Materials

- Knoll and SmART
  - Its purpose is to decrease the pollution of water, air, and the earth’s atmosphere.
  - MTS developed this system to help companies working “to achieve 90% sustainable products penetration and stop irreversible climate change by 2035”.
  - Knoll applied this system to their Life Chair.
  - Sustainable GOLD (72 points)

- Recycled Glass
  - Glass can be melted to create new products such as glass tiles, or can be added to epoxy to create terrazzo.

- National Green Building Standards

- Healthy Building Products
  - Natural paints, glues
  - Natural concrete, linoleum, ceramic tiles (ability to reduce VOC concentrations)
  - Unpainted lime-cement plasters
  - Natural solid wood (wall finishes)
  - Hygroscopic materials
  - “Breathable walls” — hygroscopic, diffuses vapor, prevents fungal growth
  - Suresol — a cement-bonded wood fiber material

- Green Seal

- Step by Step Organization of Regreen Guidelines

- What is LEED for Homes?
  - A rating system within the LEED certification system
  - A home that:
    - Uses less wood & energy
    - Creates less waste
    - Uses natural resources
    - Aids in the health of people to live in
  - All types of homes can be LEED certified:
    - Affordable housing
    - Single family homes
    - Duplexes & townhouses
In the student's design, material selections were based on a unified conceptual framework of sustainability that simmers under other valuable design ideas.
The material palette uses the lens of sustainability but is not limited by predictable or clichéd choices.
Design for Sustainable Behavioral in the Built Environment

Danya Hakky & Lisa Tucker
Virginia Tech

ABSTRACT

Environmental efforts in the building industry have been primarily focused on better ways of supplying materials and efficient ways of disposing of them. Although these efforts are immensely valuable, some argue they should be complimented by efforts to reduce energy loss during a building’s use phase (Wever, Kuijk, & Boks, 2008) (T. Tang & Bhamra, 2008). Numerous researches have pointed out that even though a building may be built with high energy efficiency in mind, what makes or breaks those savings being made is user behavior, i.e. how people use the building (Paul Torcellini & Pless, 2011). Product designers have noticed the role users play in their products meeting their efficiency potentials and have therefore dedicated research to investigate this further. In an area recently termed; “DfSB: Design for Sustainable Behavior” (Debra Lilley & Lofthouse, 2009) designers are looking at ways to influence consumer behavior through the designs of products they provide.

In the literature, there are many studies that address helping users make better environmental choices through product design. This ongoing research’s goal is to use methods of product design in interiors to encourage sustainable behavior. Therefore, the study began by surveying the literature and picking up on design ideas and concepts that were repeated amongst authors under various titles. A tentative compilation of these thoughts was then initiated in order to test their potential applicability in interiors. Some of the theories identified included efforts by Lilley, Fogg, Tang, Verbeek and others. The concepts comprised technological and design interventions with psychological and human behavioral considerations inherent in both. When a general compilation was formed, the study layered and combined two of these concepts that complement each other, namely; Lilley, et. al’s Design Intervention with Verbeek, et al.’s Levels of Influence.
Based on this compilation of ideas, a couple of pilot studies were conducted to sense the general acceptance of the concepts suggested in product design and their applicability in interior design. Those studies were comprised of questionnaires filled out by undergraduate and graduate students. As it is important for the practical success of this study that professionals involved in design are interested in its conclusions, the third pilot study looked for their input. Interviews were carried out with faculty, architects and designers in architecture companies that have committed to the 2030 challenge. The questions covered three main issues; a. whether they thought the built environment could help influence sustainable behavior, b. what interventions could help do so, c. what this research needed for it to be applicable. Preliminary results showed all respondents agreed the built environment could influence behavior, the most popular approaches were “invisibly regulate choices through design interventions” and “providing the user with a sense of ownership over space.” Most professionals felt the research had to demonstrate quantifiable results for it to be adopted.

Results from these pilot studies will be used in further stages of this multi-disciplinary research to test design’s ability in increasing a sustainable behavior in the built environment.

REFERENCES (APA)


An Introduction of Community Collaboration, as a Component of Integrative Design, to Illustrate the Benefits of the Integrative Design Process in a Sustainable Design Project

Kathleen A. Hrabovsky
Chatham University

ABSTRACT

Integrative Design, indispensable to Sustainable Design, is redefining the design process (7group & Bill Reed, 2009). Integrative Design, described as a process that forms a project team with clearly defined roles in the earliest stage of the project, requires:

- mutual respect & cooperation among members,
- collaborative meetings of all stakeholders,
- statement & alignment of measurable goals,
- periodic measurement of achievement of goals,
- and commissioning, maintenance & monitoring of goals throughout all project phases, including post-occupancy, to optimize design and to better inform the design process. (7group & Bill Reed, 2009, and Bonda & Sosnowchik, 2007). This presentation illustrates a project model that reached outside the university to teach Community Collaboration as an indispensable component of the Integrative Design Process. This project involved community leaders, design students, an interior architecture faculty member & program director, non-profit education & outreach groups, suppliers, and contractors, in a competition to renovate an upper level corridor in a city office building; and illustrated, to students, how Integrative Design generates successful Sustainable Design projects.

Project Scope:
- preservation of historically significant building materials & systems;
specification of competitively priced, local, durable materials containing either a high level of recycled content or rapidly renewable content;

design & construction of display systems to disseminate printed and digital resources promoting research on existing sustainability programs and encouraging visitors to adopt sustainable strategies;

design & construction of recycling drop-off/pick-up bins encouraging recycling of standard and hard-to-recycle items;

and adherence to a $25,000 construction budget.

Students benefited from traditional experiences:

previous studio & lecture format coursework - providing a basic understanding of aesthetics, programming & sustainable design;

additional faculty advising - discussing specific sustainable strategies applicable to this particular project;

documentation of existing conditions and analysis of traffic flow in the lobby & upper level corridor - increasing understanding of use & program requirements;

and analysis of the city history & current sustainability programs - broadening understanding of city goals & objectives.

Additional student benefits of community collaboration & Integrative Design included:

team formation, definition of roles & project goal-setting in 1-2 weeks – broadening understanding of “real-world” time constraints;

bi-weekly critiques of student work with the faculty advisor, city leaders, architects, and contractors - keeping students “on-track” with deadlines – increasing team respect and cooperation - increasing understanding of existing building systems, building codes, historic preservation, and stakeholder & budgetary requirements - simulating “real-world” integrative design team meetings;

tours of green building & conservation organizations - broadening understanding of sustainable products & strategies;

and tours of, or online contact with, green material suppliers - increasing knowledge of product availability & pricing.

Successful student outcomes resulted from the Integrative Design Process. Two teams tied for 1st Place and all students received invitations to work with officials to implement their schemes. One student elected to fulfill internship requirements by writing RFP’s for funding,
combining selected aspects of winning design schemes, and overseeing construction of the project. The faculty involved will incorporate this project model into Sustainable Design courses for further research on the model.

REFERENCES (APA)


APPENDIX: An Introduction of Community Collaboration, as a Component of Integrative Design, to Illustrate the Benefits of the Integrative Design Process in a Sustainable Design Project

Project Scope:
• preservation of historically significant & durable building materials & systems, such as windows & doors, marble floor finish, glass panel wainscot, decorative moulding, elevator enclosures & controls, HVAC & electrical systems (with permitted lighting modifications);
• specification of competitively priced, local, durable materials containing either a high level of recycled content or rapidly renewable content;
• design & construction of display systems to disseminate printed and digital resources promoting research on existing sustainability programs and encouraging visitors to adopt sustainable strategies;
• design & construction of recycling drop-off/pick-up bins encouraging recycling of standard and hard-to-recycle items;
• and adherence to a $25,000 construction budget.

Presentation Requirements:
• recyclable boards illustrating 2D & 3D descriptions of the proposal;
• a narrative describing adherence to program requirements, sustainable design and LEED ID+C criteria;
• and a detailed budget proposal defining material spending.

Criteria for Judging the Competition:
• functional response to program requirements,
• validity of budget proposal,
• students’ ability to meet deadlines & attend required activities,
• and aesthetics.
SAMPLE OF STUDENT PRESENTATION BOARDS & ENLARGED PERSPECTIVE RENDERINGS:
Assessment of Accessibility and Green Features of Michigan Park Buildings: A Case Study for the Future Proposal

Suk-Kyung Kim, Dan Lord, Monica Day, Stephanie Space & Cecilia Escobar
Michigan State University

ABSTRACT
Michigan State Parks are known for a lot of notable historic buildings with great potential to attract more visitors. One of the state parks bearing significant meaning is Cambridge Junction Historic State Park located at 13220 M-50, Brooklyn, in Michigan. This park was a very popular stop for travelers between the 1800s and 1920s. Current building conditions, however, demand serious physical improvements to provide decent and comfortable indoor environments.

This design research was conducted as a part of a course offered for interior design senior students. The research team consisted of one faculty member, 12 students, one staff, and several staff members from DNR. All research activities were relevant to the course objectives: healthy and sustainable built environments. The research was designed based on the four-year partnership between the State Department of Natural Resources and our school. This research was conducted in spring 2012.

As the first project for this long-term partnership, we selected two historic buildings in Cambridge Junction Historic State Park. They were Hewitt House building and Walker Tavern. Because these buildings in the park have not been properly updated, they do not accommodate the diverse needs of various visitors. Based on the initial site visit, three main research goals established as follows: (1) To diagnose current buildings by measuring universal design features and the energy efficiency of the buildings, (2) assess current conditions based on
official procedures (i.e., ADA guidelines for accessibility and ASHRAE standards for indoor environmental quality), and (3) suggest improvement plans.

The building accessibility assessment tool was developed for measuring the size of doors, windows, and ramps and determining if they meet the Americans with Disabilities Act (ADA) Accessibility Guidelines. The ultimate goal of this accessibility assessment was to propose improvement plans. The green feature evaluation tool was developed for measuring energy-efficiency and indoor environmental quality (IEQ) of interior spaces, and identifying problems in temperature, humidity, and indoor air quality. The ultimate goal of this evaluation was to propose alternative materials and design considerations for improving energy-efficiency of the buildings.

Based on our measurements, we examined if windows, doors, and buildings were accessible by the visitors with disabilities. Because the buildings do not provide any access to the second floor except stairs, the buildings and interior spaces were not accessible by those users. In addition, current restrooms were not accessible by handicapped visitors, thus accessible restroom designs were proposed. An analysis of green features of the buildings showed strong needs to improve insulations, window treatments, materials, and door conditions. Major findings were reviewed by the DNR and proposed for the future implementations.

The students who participated in this project presented their findings to 30 audience members and documented final reports. Based on this first project, an accessibility assessment checklist and a green feature checklist were created for future projects. These collaborative research activities that show how interior design students can contribute their knowledge and capabilities toward local park facilities will be continued with strong support by the Department of Natural Resources.

REFERENCES (APA)


Assessment of Accessibility and Green Features of Michigan Park Buildings: A Case Study for the Future Proposal

Background

Michigan State Parks are known for a lot of notable historic buildings with great potential to attract more visitors. One of the state parks bearing significant meaning is Cambridge Junction Historic State Park located at 13220 M-50, Brooklyn, in Michigan. This park was a very popular stop for travelers between the 1800s and 1920s. Current building conditions, however, demand serious physical improvements to provide decent and comfortable indoor environments.

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As the first project for this long-term partnership, we selected two historic buildings in Cambridge Junction Historic State Park. They were Hewitt House building and Walker Tavern. Because these buildings in the park have not been properly updated, they do not accommodate the diverse needs of various visitors. Based on the initial site visit, three main research goals established as follows: (1) To diagnose current buildings by measuring universal design features and the energy efficiency of the buildings, (2) assess current conditions based on official procedures (i.e., ADA guidelines for accessibility and ASHRAE standards for indoor environmental quality), and (3) suggest improvement plans.

Methods

The site provides a parking lot and preserves natural habitats and walking paths. The research process began with a site visit, then related literature and sources were reviewed for developing assessment tools.

The building accessibility assessment tool was developed for measuring the size of doors, windows, and ramps and determining if they meet the Americans with Disabilities Act (ADA) Accessibility Guidelines. The ultimate goal of this accessibility assessment was to propose improvement plans. The green feature evaluation tool for this study was developed for measuring energy-efficiency and indoor environmental quality (IEQ) of interior spaces, and identifying problems in temperature, humidity, and indoor air quality. The ultimate goal of this evaluation was to propose alternative materials and design considerations for improving
energy-efficiency of the buildings.

Major Findings and Future Direction

Based on our measurements, we examined if windows, doors, and buildings were accessible by the visitors with disabilities. Because the buildings do not provide any access to the second floor except stairs, the buildings and interior spaces were not accessible by those users. In addition, current restrooms were not accessible by handicapped visitors, thus accessible restroom designs were proposed. An analysis of green features of the buildings showed strong needs to improve insulations, window treatments, materials, and door conditions. Major findings were reviewed by the DNR and proposed for the future implementations.

The students who participated in this project presented their findings to 30 audience members in the end of April, 2012 and documented final reports. Several students also used this project for getting a credit for the Sustainability Specialization offered by our university.

Based on this first project, an accessibility assessment checklist and a green feature checklist were created for future projects. These collaborative research activities that show how interior design students can contribute their knowledge and capabilities toward local park facilities will be continued with strong support by the Department of Natural Resources.
Figure 1. Cambridge Junction Historic State Park Master Plan

(Source: Historic Structure Report, p.31)
Example of Door Measurement: Walker Tavern Building

Table 1. Door measurements

<table>
<thead>
<tr>
<th>Space No.</th>
<th>Door No.</th>
<th>Height</th>
<th>Width</th>
<th>Accessible by wheelchair users (Check ADA compliance)</th>
<th>Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>79.75&quot;</td>
<td>40.75&quot;</td>
<td>wide- Yes threshold- No</td>
<td>W</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>84.25&quot;</td>
<td>41.75&quot;</td>
<td>wide- Yes threshold- No</td>
<td>E</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>85&quot;</td>
<td>41.75&quot;</td>
<td>wide- Yes threshold- No</td>
<td>E</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>84&quot;</td>
<td>40.5&quot;</td>
<td>wide- Yes threshold- No</td>
<td>N</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>84.5&quot;</td>
<td>41.5&quot;</td>
<td>wide- Yes threshold- No</td>
<td>W</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>84&quot;</td>
<td>33&quot;</td>
<td>wide- No threshold- No</td>
<td>S</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>84.25&quot;</td>
<td>41.75&quot;</td>
<td>wide- Yes threshold- No</td>
<td>W</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>82&quot;</td>
<td>40.5&quot;</td>
<td>wide- Yes threshold- No</td>
<td>N</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
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<td>1</td>
<td>82.5&quot;</td>
<td>38.5&quot;</td>
<td>wide- No threshold- No</td>
<td>E</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>82.25&quot;</td>
<td>35.5&quot;</td>
<td>wide- No threshold- No</td>
<td>W</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>76.25&quot;</td>
<td>32&quot;</td>
<td>wide- No threshold- No</td>
<td>N</td>
</tr>
</tbody>
</table>
**INDOOR ENVIRONMENTAL QUALITY**

CO₂ LEVELS: Overall the CO₂ concentrations are not approaching dangerous levels, in fact they are generally low compared to that of a normal/occupied building. None of the CO₂ levels are above 1000 ppm, which is usually the concentration when occupants start to have complaints about drowsiness and poor air.

<table>
<thead>
<tr>
<th>Floor Level</th>
<th>Space</th>
<th>CO₂ (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Living Room</td>
<td>487</td>
</tr>
<tr>
<td>1</td>
<td>Parlor</td>
<td>426</td>
</tr>
<tr>
<td>1</td>
<td>Kitchen</td>
<td>415</td>
</tr>
<tr>
<td>1</td>
<td>Parlor Room</td>
<td>398</td>
</tr>
<tr>
<td>2</td>
<td>Bedroom</td>
<td>864</td>
</tr>
<tr>
<td>2</td>
<td>Bedroom</td>
<td>725</td>
</tr>
<tr>
<td>2</td>
<td>Bedroom</td>
<td>631</td>
</tr>
</tbody>
</table>

**Figure 2. Audience at the Final Presentations**

**Figure 3. Example of the IEQ Analysis**
Occupant Satisfaction with LEED-certified Home: An Application of the Importance-satisfaction Analysis

Eunsil Lee & Suk-Kyung Kim
Michigan State University

ABSTRACT

Today, despite an ever-increasing number of LEED-certified homes, little is known about how well a LEED-certified green home meets an occupant’s needs in terms of comfort, satisfaction and quality of life. To help designers, architects, builders and policymakers assess how best to pursue and obtain the desired results from green design, it is critical to understand how various aspects of green design are performing and how those aspects are perceived as satisfactory or unsatisfactory by residents. Thus, the purpose of this study is to evaluate resident satisfaction with the performance of a LEED-certified home, particularly employing an importance-satisfaction analysis tool (Martilla & James, 1977). Given that satisfaction with a home occurs when an expectation is met or exceeded, this study focused on the performance gap by measuring differences between a resident’s perceived importance and satisfaction with various aspects of the home environment and evaluated how well those aspects are currently meeting a resident’s needs. According to Martilla and James (1977), the performance level of various home aspects can be categorized into four quadrants: “concentrate here,” “keep up the good work,” “low priority,” and “possible overkill,” based on the means of importance and satisfaction for each aspect of a home (see Figure 1).

Mail-in surveys were conducted with residents of LEED-certified homes in the Midwest. A total of 605 surveys were sent out and 235 collected, yielding a 38.8% response rate. Residents' perceived importance of and satisfaction with 13 items of the housing environment were measured using a 7-point Likert scale. These items included: (1) four items regarding interior design - space layout, space size, furnishings/furniture, interior finishes; (2) five items for indoor environmental quality (IEQ) - temperature, humidity, air quality, daylighting, artificial...
lighting, and acoustic quality; and (3) three items for neighborhood environment - visual privacy from neighbors, outdoor views, and neighborhood cleanliness.

The paired-samples t-test between importance means and satisfaction means showed that six aspects: interior finishes, outside views, temperature, humidity, air quality, and neighborhood cleanliness, had significant mean differences (Table 1). Five items, except for interior finishes, had negative mean difference scores indicating that satisfaction with those five suffered in a housing-quality shortfall. The importance-satisfaction analysis in Figure 2 shows how thirteen aspects of the housing environment were located in the four quadrants divided based on two mean values of overall importance and satisfaction. Seven aspects: outside view, temperature, humidity, air quality, artificial light, neighborhood cleanliness, and visual privacy were located in or around the border of the “concentrate here” quadrant indicating that policy makers and practitioners should improve performance in this area. Three aspects: space layout, space size, daylight were located in the “keep up the good work” quadrant indicating they were relatively well performed and thus the current status should be maintained. Furnishing, finishes, and acoustic quality were located in the “low priority” quadrant. These study findings are expected to shed additional light on how green homes can meet occupant needs in future LEED-certified home projects.

REFERENCES (APA)

Appendix 1

Figure 1. Quadrants used in an importance-satisfaction analysis (Martilla & James, 1977)
Appendix 2

1. space layout
2. space size
3. furnishings/furniture
4. interior finishes
5. visual privacy from neighbors
6. outside views
7. temperature
8. humidity
9. air quality
10. daylight
11. artificial light
12. acoustic quality
13. cleanliness of neighborhood

A: Concentrate here. B: Keep up the good work. C: Low priority. D: Possible overkill

Figure 2. Importance-satisfaction matrix for indoor environment
### Table 1.

Perceived importance and satisfaction with 13 aspects of home environment among residents of LEED-certified home

<table>
<thead>
<tr>
<th>Aspects of indoor environment</th>
<th>Importance</th>
<th>Satisfaction</th>
<th>Mean difference</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The space layout overall (n=229)</td>
<td>6.15</td>
<td>6.03</td>
<td>-0.12</td>
<td>-1.23</td>
<td>.221</td>
</tr>
<tr>
<td>2. The size of space available for daily activities (n=227)</td>
<td>6.14</td>
<td>6.09</td>
<td>-0.05</td>
<td>-0.51</td>
<td>.613</td>
</tr>
<tr>
<td>3. Your home furnishings and furniture (n=227)</td>
<td>5.64</td>
<td>5.82</td>
<td>0.18</td>
<td>1.89</td>
<td>.060</td>
</tr>
<tr>
<td>4. The colors/materials of interior finishes (n=227)</td>
<td>5.70</td>
<td>6.00</td>
<td>0.30</td>
<td>2.96**</td>
<td>.003</td>
</tr>
<tr>
<td>5. The visual privacy from neighbors (n=228)</td>
<td>5.95</td>
<td>5.78</td>
<td>-0.17</td>
<td>-1.55</td>
<td>.124</td>
</tr>
<tr>
<td>6. Outside views (n=229)</td>
<td>5.97</td>
<td>5.74</td>
<td>-0.24</td>
<td>-2.23*</td>
<td>.026</td>
</tr>
<tr>
<td>7. The temperature in your home (n=229)</td>
<td>6.18</td>
<td>5.89</td>
<td>-0.29</td>
<td>-2.65**</td>
<td>.009</td>
</tr>
<tr>
<td>8. The humidity in your home (n=230)</td>
<td>5.98</td>
<td>5.73</td>
<td>-0.25</td>
<td>-2.36*</td>
<td>.019</td>
</tr>
<tr>
<td>9. The air quality in your home (n=229)</td>
<td>6.31</td>
<td>6.00</td>
<td>-0.31</td>
<td>-2.98**</td>
<td>.003</td>
</tr>
<tr>
<td>10. The amount of daylight in your home (n=228)</td>
<td>6.21</td>
<td>6.18</td>
<td>-0.02</td>
<td>-0.25</td>
<td>.802</td>
</tr>
<tr>
<td>11. The comfort of artificial light (n=224)</td>
<td>5.95</td>
<td>6.00</td>
<td>0.05</td>
<td>0.50</td>
<td>.616</td>
</tr>
<tr>
<td>12. The acoustic quality in your home (n=223)</td>
<td>5.70</td>
<td>5.69</td>
<td>-0.01</td>
<td>-0.08</td>
<td>.937</td>
</tr>
<tr>
<td>13. General cleanliness of neighborhood (n=227)</td>
<td>5.95</td>
<td>5.61</td>
<td>-0.34</td>
<td>-3.42*</td>
<td>.001</td>
</tr>
</tbody>
</table>

**Notes**

1. t-test two-tail with probability*p <0.05 or ** p<0.01.
2. Mean: mean scores were measured on a 7-point Likert scale; the higher the score, the greater importance or satisfaction
3. S.D.: standard deviation
4. Mean difference: satisfaction mean – importance mean
The Lived In Interior, Discovering the Authentic Self

Hollie Sutherland
Endicott College

ABSTRACT

Many scholarly disciplines are dedicated to examining and uncovering the relationship between people and their environment. In the social sciences, the fields of sociology, environmental psychology and in the sciences, neuroscience, have developed theories on the development self, self-identity and place-identity with the purpose of explaining what it means to a person to exist day to day in a place. These theories have much to say about the value of interior design practice. Interior design shares fundamental core concepts with these theories moving the purpose of interior design well beyond style, gender or social status.

A groundbreaking theory in neuroscience explains that emotion and the resulting feelings guides and solidifies our individual identity and exploring the brain body connection provides the ‘why’ people behave a certain way in their environment. (Damasio 1994) It provides the definition of neurological and cognitive processes not addressed in environmental psychology’s theory of place-identity. Feelings, memories and meanings of the physical world impact directly the person’s construction of self, their deep sense of wellbeing thus protecting the self-identity of the person. (Proschansky, Fabian and Kaminoff 1983) Place-identity provides the structure and neuroscience provides the why a person designs a place to express, protect and have awareness of themselves (Damasio 1994) in relation to their environment. Both theories take a holistic view of the human experience in environment, a process of growth and change throughout life. This paper weaves the theories with an innovative view to understand the role of a conscious self in relation to designing space. The major question posed is if the environment by reinforcing self- identity thus has the potential to impact or change future plans and behavior of the individual.
Although the findings in neuroscience are considered controversial, interweaving its theory of emotion with the function of place-identity provide a unique view lifting interior design practice above intuition and to theory based design. (Loustau 1988) It provides insights to an improved design process and aids in the functioning, (Zeisel 2006) ‘knowing’, and full integration of self in designed environments. The theories examined are based on cognitive processes and are compared to the philosophy of phenomenology which is based on a reductionist view of experience as phenomena.

These theories from multiple disciplines were applied to the interior design process as part of a residential project and were supplemented through qualitative client interviews. Analysis revealed a self-identity in transition, seeking answers and desire to anchor the individual by introducing the authentic self into the home. A desire to evoke feelings of welcome, joy, belonging, connection, simplicity and expansiveness informed a design and introduced a desire to think creatively about future career plans, location and design of home.

This presentation provides a structure to think critically about design and shift interior design education and practice from a social and humanitarian justification (Zeisel 2006) to a theory based on emotional inquiry. This structure provides a design approach transcending style by responding to the authentic self grounded by the emotional response of the client.

REFERENCES (Chicago)


Biomimicry Informs Sustainable Design

Katherine Swank & Rebecca J. Sweet
East Carolina University

ABSTRACT

Introduction
The design concept, as the pivotal idea influencing the steps taken and decisions made during a project’s design phase, has far reaching impact on the quality and level of sophistication of the design solution. The beginning design student struggles with the development of sustainable design concepts that are original, theory driven and comprehensive. This presentation demonstrates the use of the AskNature Biomimicry framework in studio instruction to improve integration of design concept development in a sustainable design project.

Framework
Biomimicry, meaning to ‘imitate life’ is a “design discipline that seeks sustainable solutions by emulating nature’s time-tested patterns and strategies” (http://www.asknature.org/article/view/what_is_biomimicry). Living organisms within natural ecosystems serve as models for innovative sustainable design. The Biomimicry Design Portal, AskNature is a digital library of solutions found in nature that are organized by function. The accompanying taxonomy provides a theoretical framework for exploring how living organisms meet different challenges. The design portal can serve as an educational tool for students seeking information that may lead to biomimicry solutions for design projects.

The methodology for integrating the biomimicry framework in studio instruction was a semester length project assigned to sophomore level students focusing on the design of a sustainable retail showroom for the trade. In a sequence of draft assignments, students were to:

1. Apply principles of concept development and space planning to develop a retail facility.
2. Apply principles of biomimicry and sustainable design to graphically articulate key components of the design concept.
3. Apply elements and principles of design to support the concept and for exploring basic space planning organization.

An underlying challenge of the studio project was to integrate creative thinking and imagination within a rational design process. Students were required to develop a design concept based on biological processes of species survival. The Biomimicry Taxonomy served as a heuristic model for branding the client’s business firm. Students selected one strategy for species survival to market green products and services. Preliminary spatial schema were developed next, utilizing aspects of a process in nature signifying a state of change (e.g., growing-dying, opening-closing, freezing-thawing, etc.). Elements of design were selected in each schematic (i.e., line, shape, color, light, and/or texture) to achieve a rhythm that represented dynamic phases of living organisms in response to the near environment. Established rhythms were utilized as spatial organization for activity areas in the showroom, culminating in a design parti.

Conclusion and Implications
The use of the AskNature Biomimicry framework in studio instruction improved integration of design concept development in a sustainable design project. Students who developed a design parti based on dynamic states in nature achieved a greater sophistication in interior spatial layout. The biomimicry framework may be useful for studio instruction at different levels of complexity. Further exploration is needed in applying biomimicry to a developmental approach to studio instruction. Emphasizing 3-D exploration that requires addressing the survival strategy with study models provides an opportunity to test and explore options of interior architectural design solutions.

REFERENCES (APA)


Addendum to IDEC Submission:
Biomimicry Informs Sustainable Design

APPENDIX A. Biomimicry Taxonomy – Go to:  

APPENDIX B. IDSN 2850 Interior Design II: Commercial Interiors – Draft Assignments

Draft E: Sustainability and Corporate Branding. (10 possible points)

Readings:
1. Blackboard Gateway:
3. Web Resources:
   a. The Biomimicry Design Portal by The Biomimicry Institute
      i. Ask Nature Articles – Featured Pages  
         http://www.asknature.org/article/view/featured_pages
      ii. Biomimicry Taxonomy: Biology Organized by Challenge  
          http://www.asknature.org/article/view/biomimicry_taxonomy
   b. Biomimetics: Design by Nature by Tom Mueller
      i. http://ngm.nationalgeographic.com/2008/04/biomimetics/tom-mueller-text/1

Objectives:
1. Integrate creative intuition and imagination within a rational design process.
2. Apply principles of creative writing to articulate key components of your design concept in keeping with your client's request for design assistance.

Challenge:
Explore one creative approach to addressing the design problem as defined in the Otto Zenke Project Overview. Develop a design concept based on biological processes of species survival. Biomimicry serves as a heuristic model for branding your client's business firm.

1. Classification System. Select a species and analyze attributes of survival with respect to the following:
   a. Specie’s Challenge. Identify one aspect of survival.
   b. Specie’s Strategy. Describe physical feature(s) used for survival.
   c. Biomimicry Taxonomy. Assign challenge (1.a.) and strategy (1.b.) within the taxonomy, identifying the following:
      a. Group. Select action from inner circle of the taxonomy that defines the goal of survival.
      b. Sub-Group. Select action from middle circle of the taxonomy that defines an objective that addresses the goal.
      c. Function. Select properties from outer circle of the taxonomy that describe the performance characteristics of the sub-group.
   d. Rationale. Describe the utility of your concept for your client's success:
      a. Sustainable design products and processes. What are the parallels between your specie's challenge, specie's strategy and aiding the design industry in going green?
b. Competitive retail market. What are the parallels between your specie's challenge, specie's strategy and corporate survival in a poor retail economy?

e. Psychological stimulus and meaning. Describe two levels of meaning to be conveyed through your design:

a. How will the emotional messages motivate the purchase of sustainable design products and services?

b. How will the intellectual message motivate sales?

2. Concept Statement. In 200–300 words, describe your specie and its survival strategy as a metaphor/analogy for marketing green products and services in a recessionary climate.

c. Parallel Functions. Utilize descriptive terms from biology to develop a marketing image for your client's firm.

d. Slogan/Tag Line. In five words or less, identify the key construct that captures the most important features of your parallel functions. The phrase should be distinctive and memorable.

Word process in narrative format (i.e., paragraphs). Label your submission, 'Draft E – Sustainability and Corporate Branding.' Provide your name and word count at the top of the page.

Due:
Beginning of class, the next class period. Be prepared to discuss your ideas in class.

Draft H: Retail Zone and Sustainability Parti (10 possible points)

Readings:
1. Textbook:

a. Interior Design Illustrated by Ching & Binggeli.

i. Programming – Activity Relationships: p. 61

ii. Design Vocabulary: Ch 3 pp. 81-144.

2. Blackboard Gateway:

a. Space Planning Basics by Mark Karien,

i. Bubble Diagramming, pp. 27-36.

ii. Source of Graphic, p. 31.


ii. Source of Graphic, p. 36.

Objectives:
1. Develop awareness of the components, configurations and functions of retail facility open to the design trade.

2. Apply principles of programming to locate activity areas of the 1st floor.

3. Apply elements of design to symbolize a design parti in exploring basic layouts of interior space.

Challenge:
Based on your exploration of biomimicry, develop three preliminary layouts of the 1st floor each utilizing an aspect of a process in nature that can serve as a design parti. Focus on processes in nature that signify a state of change (e.g., growing-dying, staying-moving, opening-closing, leaping-landing, freezing-thawing, etc.) and use an element of design in each schema (i.e., line, shape, color, light, and/or texture) to achieve a rhythm that represents this change. Utilize this rhythm to organize activity areas in the showroom.

1. Three Undertakings of Bubble Diagrams. In ink on tracing paper, roughly trace (avoid use of straight edge) the interior footprint of the usable floor space of the 1st floor of the showroom three times. Show openings for access to entrance, exit, and elevator (omit doors/swings). Develop
three different layouts of activities areas including a bubble for each of the following: (a) front entrance; (b) rear entrance/stairs/elevator; (c) resource manager station; (d) interior design station; (e) custom display; (f) ideation center; and (g) restroom. Label bubbles according to activity area. Copy to 50% to fit on A-size paper. Label each underlay, 'Draft G - Retail Zone.' Provide your name on every page and insert in your project notebook.

2. Three Overlays of Design Parti. In ink and/or color media on tracing paper use elements of design to graphically portray three aspects of your sustainable design concept. Provide a sub-heading naming your parti and a brief description of the state of change found in nature employed in your parti. Copy to 50% to fit on A-sized paper. Label each overlayment, 'Draft G - Sustainability Parti.' Provide your name and insert in your project notebook.

Due:

Beginning of class, the next class period.

APPENDIX C. IDSN 2850 Interior Design II: Commercial Interiors – Samples of Student Work

IDSN 2850. Interior Design II: Commercial Design
Assignment 1 – Preliminary Design Work
Sustainable Retail Design

Concept - Marine Iguana
Parti – Ability to shrink and grow

Perspective Rendering of Showroom

Student  Student 2
Tag  Versatility in a Fluctuating Market
Concept  Marine iguana
Parti  Ability to shrink and grow
Floorplan of Showroom

IDSN 2850. Interior Design II: Commercial Design
Assignment I – Sustainable Retail Design
Preliminary Design Work at 50% Project Completion
Instructor Grade Sheet

Instructor Grade \( 66.5 \times 2 = \frac{133}{140} = 95.0\% = A \)
Juror B Grade \( 061/070 = 87.1\% = B+ \)
Combined Grade \( 194/210 = 92.4\% = A \)

External Jurors:
Juror A. Qualitative Assessment – Regional Director of Sales/Marketing, Arc-Com
Juror B. Quantitative Assessment – Regional Director of Marketing, Columbia Forest Products

Student Student 2
Tag Line Versatility in a Fluctuating Market
Concept Marine iguana
Parti Ability to shrink and grow
I. Hand Out to Jury 8 1/2" x 11"

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<th>Evaluation Criteria</th>
<th>Rating* by Category**</th>
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<td>Title Page</td>
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<td>A: 4.5 B: 4 C: 5 D: 4.5</td>
<td>18.0/4=4.5</td>
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<tr>
<td>Process Statement Page</td>
<td>A: 5 B: 4 C: 4 D: 5</td>
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Subtotal – Hand Out 13.0/15

Weight x 1 13.0/15 (86.7% = B+)

II. Graphic Presentation 14" x 17" or 18" x 24"

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<td>18.5/4=4.6</td>
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<td>Perspective Sheet</td>
<td>A: 5 B: 4 C: 5 D: 5</td>
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Subtotal – Graphic Presentation 14.5/15

Weight x 3 43.5/45 (96.7% = A)

III. Oral Presentation 5-minute delivery + 5-minute Q&A

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</tr>
<tr>
<td>Question and Answer Session</td>
<td>A: 5 B: 5 C: 5 D: 5</td>
<td>20.0/4=5.0</td>
</tr>
</tbody>
</table>

Subtotal – Oral Presentation 10/10

Weight x 1 10.0/10 (100% = A+)

Total Score 66.5/70 (95% = A)

I. Handout

**Title Page:** *Versatility in a Fluctuating Market* is a strong business strategy; however, as a tag line, it may be too subtle to promote green design ("fluctuation" better describes your part). Consider "Versatility for a sustainable market". This allows you to introduce the term sustainability which relates to green design and uncertainty in the marketplace. The tag line may not be memorable and so I encourage you to consider variations that will engage the target market. Work on page layout to create a stronger hierarchy in the information conveyed an integrate photograph with layout. **Concept:** *Marine iguana* is a strong concept for guiding future development of the space plan and branding of the showroom. Excellent narrative utilizing a technical writing style; however, consider if elements of creative writing could be interjected to engage the reader, conjuring through usage of action verbs, the fluctuation of the iguana. Excellent link of adaptation of iguana in natural habitat to that of sustainable design as a survival strategy in the mercantile environment. Excellent use of 'wallpaper' half tone, integrating visual imagery with narrative in a Professional layout. **Parti:** *Ability to shrink and grow* is a strong parti to address flexibility in showroom design. Application of contrast in shape (geometric/organic) and light (dim/intense) to arrangement of the interior footprint captures the bimodal essence of the survival strategy found in nature. Sophisticated use of schemata to convey parti. Manipulate type and size of fonts and arrangement of page layout. Work on the integration of schemata with narrative in a professional layout (text is presented more like a term paper than a magazine layout).

II. Graphic Presentation

**Inspiration:** Concept and branding are clear through choice of images. Message is appealing and use of color contrast is striking. Good cross-reference listing of sources to images.

**Floorplan:** Excellent mechanical drafting; although greater variation of line weight would differentiate architecture (i.e., nomenclature used to convey changes in floor level) from changes in surface treatment. Good plotting of highlights and cast shadows and tonal rendering from directional light source; however, render for greater contrast to convey a perception of depth. Good circulation and egress throughout, including good circulation paths for wheelchair, assuming floorplan shown is on one level with no changes to elevation of floor. Strong development of parti (organic/geometric contrast) translated into space layout.

**Perspective:** Excellent translation of parti into interior space plan. Good detailing of architecture, millwork, lighting and furnishings. Good tonal rendering; however, consider shading darker to create a stronger sense of depth.

III. Oral Presentation

**Delivery:** Sophisticated concept. Strong development of inspiration, floorplan and perspective to illustrate key points inspired by concept. **Question & Answer:** Poised delivery of presentation and response to questions. Good job!

<table>
<thead>
<tr>
<th>Rating Scale</th>
<th><strong>Category Rated</strong></th>
<th><strong>Grading Scale (Percent &amp; Letter Grade)</strong></th>
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<td>B – Accurate application of principles</td>
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<td>C – Professional execution</td>
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<td>D – Sophistication in idea dev’t</td>
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<tr>
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<td>Above</td>
<td>Below 60% = F</td>
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</table>
Sustainable Interiors: 
Integrating Professional Voices into the Classroom

Lois Weinthal
The University of Texas at Austin

ABSTRACT

Introduction
“How much plastic do we touch every day,” was a question raised by author Susan Freinkel in her book, 'Plastic: A Toxic Love Story'. (1) This question was a starting point for her to better understand the implications of plastic on the environment and our health. Plastic is just one material that opens up a swell of issues surrounding sustainability and interior design.

Sustainable practices are critical in order to address current problems of building energy as a major contributor to greenhouse gas emissions. As a result, architects are responding with sustainable practices by updating building systems to provide environmental relief. But how can interior designers make an impact in a profession that has traditionally been built upon consumption and the short life span of changing fashions? This is a significant undertaking since the average American spends 18 hours indoors for every hour spent outdoors. (2) This averages to about 90% of our time spent indoors. This abstract addresses the development of a sustainable interior design seminar for a curriculum where a course dedicated to the topic had yet to be implemented.

Problem Addressed
The range of sustainable methods and materials utilized for shaping the interior is expansive. Publications, textbooks and media neatly organize topics for teaching interior design students about sustainability. The development of this course sought to build upon these resources and integrate voices with expertise in these areas. This was accomplished with guest speakers that included an engineer, interior designers, lighting architect, historic preservationist, director of sustainable communities, director of campus sustainability, and Life Cycle Analyst to name a
few. At times, this challenged guest presenters to restructure their knowledge to see through the lens of interior design.

Strategies Used to Address the Problem
A single seminar dedicated to sustainable interiors can only begin to scratch the surface of what is a vast body of knowledge. In order to convey pertinent topics in the course, guest lecturers were integrated into the course to provide expertise in areas while at the same time, building upon resources within the university and professional community. There was a need to ensure that students thoroughly understood the material. Rather than students memorizing facts and data for an exam, they were expected to be in dialogue with the visiting guests and speak a language of sustainability to apply in case study assignments as a final project. Please see the Appendix for a sample of topics covered by student case studies taken from a greater comprehensive list of topics.

Outcomes
Assignments help students gain knowledge as they seek out answers, and in this course, assignments were developed to open their eyes to alternative ways of examining their surrounding environment by looking for biological or technical materials as a starting point. (3) Assignments, case studies, guest lectures, and field trips as a whole were used to convey the outcomes. Additionally, in order to understand if the course structure successfully conveyed material, student feedback of the instructor and course were measured through mid-semester and end-of-semester course evaluations.

REFERENCES (Chicago)


William McDonough and Michael Braungart, Cradle to Cradle: Remaking the Way We Make Things (New York: North Point Press, 2002).
Sustainable Interiors: Integrating Professional Voices into the Classroom

The following pages consist of student work for research on case studies as a final project for a course on sustainability and interior design. The images are a sampling of research and organization of material undertaken by two different students, each assigned a case study.

Student Example 1:

USGBC HEADQUARTERS

Case Study: USGBC HEADQUARTERS

Natural:
- glazed facade
- Cradle to Cradle Certified Ecoviel programmable window shades that draw information from rooftop sensors
- glass for partitions (97% view outside)
- Eco-Corridor (200% increase of lighting 30 feet in on south)
- lighter colored carpet

Artificial:
- one half watt per square foot lighting load (half the code requirement)
- energy-efficient, fluorescent lighting or small dimmable LED task lights
- Mod2 by Litecontrol Energy-efficient T5 lamp
- Cradle to Cradle Silver with 25% preconsumer recycled steel, and manufactured 390 miles away
- daylight control system on every light
- occupancy sensors for desk areas
- remote controlled linking devices
- avoiding lighting in hallway spaces
- lighting output works at 80% capacity
- 54% below the ASHRAE standard
Student Example 1 Cont.:

Water:
- Low-flow aerators
- Low-flow shower heads
- Solar panel-powered motion sensors on faucets
- High-efficiency fixtures (saved 80% of domestic hot water energy use)
- Point-of-use water heaters helped prevent energy loss
- Sloan waterless urinals, Sloan double flush toilets, and Bosch kitchen appliances (water saving of 40%)

Ventilation:
- Good existing ventilation
- Command control ventilation systems in high occupancy areas triggered by occupancy sensors
- Conference room ceiling panels connected to CO2 sensors that trigger more ventilation
- As air passes through a wheel in the ventilation system, temperatures even out and energy is regained
- VOC-free and low-VOC products
- Eco-Corridor as a temperature barrier
- Water wall in the staircase area is kept chilled to 55 degrees Fahrenheit (helps condition air and pulls out humidity)

Materials:
- Synthetic gypsum product (98% recycled content from power plant)
- Board room perforated wedge-shaped metal ceiling tiles (manufactured regionally, 90% recycled aluminum, acoustic backing)
- Tack panels (wrapped in HBF Textiles 100% recycled polyester fabric printed with soy ink - no adhesives)
- Material wall paper (FSC certified, 30% recycled content, from a mill run on 100% green power)
- Material wall poster board (100% recycled content)
- Salvaged sweet gumwood walls (found sunk at the bottom of the Tennessee River from the 1800s, restored in kilns, color variance)
- Clear finish on salvaged gumwood (Waterborne Pre-Cat Lacquer 375 by Fuhr Industrial, water-based, surpasses VOC requirements)
- Metal-panel acoustic ceiling (Geometrix by USG, 70% recycled content, manufactured 476 miles away)
Materials Continued:

- terrazo lobby floors (mixed and poured on site, recycled glass)
- oak veneer (FSC-certified, bonded with low-VOC adhesive, 100% recycled wood core)
- porcelain tile (extracted and manufactured regionally)
- energystar-rated appliances
- no plastic or styrofoam allowed (all china and silverware)
- acoustic ceiling tile (Optima Open Plan in Techzone Grid System by Armstrong, high reflectance, 73% recycled content, manufactured 110 miles away)
- countertops (Icestone, 100% recycled and recyclable glass, no VOCs, gold-level Cradle to Cradle, manufactured 230 miles away)
- Glass film (PS2 by Llumar Window Film, polyester, manufactured 224 miles away)
- plastic-laminate millwork substrate (Nu-Green by Uniboard, no added urea-formaldehyde, 100% recycled wood fiber, manufactured 492 miles away)
- linoleum flooring (marmoleum by Forbo, 40% recycled content, 33% rapidly renewable materials)
- ceramic tile (Stonepeak)
- rubber (EcoSurfaces)
- tile (Terra Green)

Furniture:

- midcentury modern furniture accents (long life cycle)
- conference chairs (SCS Indoor Advantage Gold, wool)
- table (made of salvaged local walnut tree)
- cafe tables (fold and stack)
- stools (walnut wood stumps from leftover local materials)
- white chairs (pre- and post-consumer recycled content with recyclable shells)
- white tables (GreenGuard certified, 78% recycled content)
- Piero Lissoni chairs (ISO certified 100% wool)
- Workstation (GreenGuard certified, 50% recycled content)
- Chairs (31% recycled content, 100% recycled upholstery)

Lecture room chairs (Kart chair by Vecta, easy storage, 41% recycled content by weight, completely recyclable, Indoor Advantage Gold for IAQ, 100% wool upholstery, manufactured in Texas)

conference room tables (by Datesweiser, FSC-certified red-oak veneer, 60% recycled content, manufactured 292 miles away)
Student Example 2:

ARCHITECT:
Weber Thompson

LOCATION:
Seattle, Washington

SIZE:
40,500 sq. ft.
4-story building

COST:
$97 million

PROGRAMS:
Office building:
- Weber Thompson Architecture Firm
- Marketing Firm
- Real Estate Firm
(typically occupied by 170 people; 40 hours per person per week)
Ground floor retail space
Underground parking

U.S. GREEN BUILDING COUNCIL LEED - COMMERCIAL INTERIORS V.2
Level: Platinum (43 points) in 2009
- majority of tenant space (62%)
- lost substantial points in materials category (reuse & rapidly renewable)

U.S. GREEN BUILDING COUNCIL LEED - CORE AND SHELL 2.0
Level: Gold (39 points) in 2009
- lost substantial points in site category

DRAWBACKS:
- no evidence that LEED buildings are any healthier
- the list of pollutants in LEED are not necessarily correlated with health (except formaldehyde and ETS)
- low-VOC is not necessarily better (low-VOC paint omits non-harmful VOCs and prolongs smell)
- largely disregards FF&E - furniture, fixtures, and equipment

AWARDS:
- AIA/COTE Award Winner: Top Ten Green Projects in 2009
- AIA Seattle Chapter: AIA Honor Awards - Commendation in 2008
- NAIOF - Washington State: Sustainable Development of the Year in 2008
- Eco-Structure Magazine: Evergreen Awards, Third Place, Commercial Interiors category in 2008
- Northwest Design Awards, Seattle Design Center: Second Place, Commercial Interior Design in 2008

LEED scoring system

the terry thomas building
Student Example 2 Cont.:

**LAYOUT**
Narrow floorplates and central courtyard plan
- minimize need for artificial light
- allows uniform daylight

Perimeter circulation paths along glass windows
- mitigate extremes in light, temperature and solar gain
- optimize ventilation at the workstations

**MATERIALS**
Light colors: walls, furniture, work surfaces, partitions, roof
- reduce heat-island effect (LEED)
- reflect daylight

Energy Star-rated appliances, desktop computers, printers, & copy machines; CRT computer monitors replaced with flat panel LCD monitors (voluntary labeling program by the EPA and U.S. Department of Energy) (LEED)
- 59% plug load energy reduction

**REINFORCEMENT**
Tenants pay gas, water, and energy separately (LEED)
- it is in their best economic interest to sustain resources

Sub-metering (LEED)
- measure effectiveness of overall scheme

No photovoltaic panels due to budget constraints; building was designed to be retrofitted for the panels at a later time

**TOTAL ENERGY SAVINGS** 41.8% (LEED)
(goal was 30%)

**ELIMINATES HVAC**
100% passive cooling

**GREEN POWER**
50% of the office’s energy consumption is green power (LEED)

---

**CEILING-MOUNTED ACOUSTICAL PANELS**
Ecophon Focus D, Armstrong Optimia Plank & Cort

Dual-functioning
- maximizes reflectance of light
- sound absorption (necessary for outside noise)

**WALL-MOUNTED ACOUSTICAL PANELS**
Homasote Company (New Jersey)
- the nation’s oldest manufacturer of building products from recycled material; made from post-consumer recycled paper; no formaldehyde additives

Dual-Functioning
- pin-up space
- sound absorption (necessary for outside noise)

---

energy efficiency
BluePath Survey: Empathy for Accessibility Beyond ADA Regulations and Enhancement of Diversity Awareness

Kyuho Ahn
University of Oregon

ABSTRACT

This paper disseminates two class projects exploring accessibility, a topic often seen as a regulatory obstacle to creativity among architecture and interior design (ID) practitioners/students (Ostroff & Hunter, 2003; Sherman & Sherman, 2012). This view may suggest that accessibility in architectural education has been taught in negative ways, in that people with a disability are treated as users rather than as possible colleagues for collaboration, and that, therefore, accessibility is not relevant to designers. This paper suggests instructional methods to embrace the intents of the Americans with Disabilities Act (ADA) via class projects that integrate ADA, universal design principles, and diversity. As we acknowledge that the US population will be quite diverse in many aspects by 2050 and that the 21st century global economy has already become interdependent, diversity awareness is a vital aspect of the interior design profession and education (Cramer & Gaboury, 2012; Martin & Kroelinger, 2010). Students should recognize that design suggestions without diversity considerations might discriminate against those with various physical, socio-cultural, political, and/or religious orientations and, therefore, lead to failure of human performance and dignity.

Based on Nussbaumer’s (2001) instructional theory in that all learning styles should be considered with emphasis on right-brain activities (visual, holistic, and experiential), the projects were used to teach accessibility in an entry-level ID course with an enrollment of 104 students. The course is intended to engage major and non-major students in a basic understanding of the interior design profession. First, in collaboration with a local ADA chapter and a university museum, students were engaged in a service learning project, BluePath
Survey, a checklist developed by Northwest ADA Center to promote ADA to local businesses/organizations. Groups of three or four students were assigned to a portion of the survey as a team and asked to document reflected observations individually. A guest lecture, a forum moderated by the local ADA chapter, and on-site survey training by volunteers of the organization were arranged to enhance right-brain activities. The second project focused on inclusive design and diversity. Each student was asked to document design observations and suggestions, based on universal design principles and social contexts, on a self-selected public space in one of two given buildings. At the end of the projects, a class survey was conducted to analyze student learning experiences. A total of 67 students participated in the survey.

The projects’ results suggest that a holistic approach to accessibility, diversity, and inclusive design principles yields a more positive learning experience while providing opportunities to explore the complex issues of inclusive design. The survey indicates that, for a large lecture class, an individual project that allows flexibility is preferred over a strongly structured team project. Anecdotal pedagogical experience suggests, however, that it is difficult to organize the projects in a step-by-step manner as Nussbaumer (2001) suggested. Rather, experience suggests that structurally optimized projects that engage all learning styles are encouraged for positive student learning experiences and that educators should make contexts of accessibility relevant to students’ diverse learning styles and personal backgrounds.

REFERENCES (APA)


Appendix 1. BluePath Survey Project - Overview and Description

Objective
Current accessibility barriers hinder many members of the general public, as well as students and staff of the university, from being able to fully experience and appreciate the university art museum. By partnering with a local ADA center, students and volunteers will conduct an ‘accessibility survey’ of the space. The completed survey will then be returned to the museum with recommendations to make the space fully accessible for all patrons.

Activity
Part 1
During lecture (8:30-9:50) on Wednesday, November 9th, students will split into groups and partner with a volunteer from the local ADA center. Each group will have 25 minutes to survey the assigned space within the museum. During this time, students will navigate the space with the volunteer and document accessibility barriers. Although an accessibility checklist will be given to each team member, students should try to recognize additional barriers that may not be noted on the checklist. Students should take advantage of this time by conversing with the ADA center volunteer about accessibility barriers that they may be encountering as they navigate the space. The time on Wednesday should be used to gain a general understanding of the accessibility barriers within the space. Students will need to commit an additional few hours outside of class time to visit the museum in order to fully complete the survey with the required detailed information. A completed survey (1 per group) is due the following Wednesday, November 16th.

Part 2
After viewing the space and completing the survey, each student will outline one major accessibility barrier that he/she encountered. This could be a barrier that was documented within the survey OR something that was not documented within the survey but that is still an important consideration. Consider and address the following:

* Is this barrier specific to someone with a visual, auditory, or mobility impairment?
* How can the barrier be resolved, both short-term (more-economical) and long-term (integrated)?

Using the attached template as a guide, develop an overview of the problem with a photo as well as a short summary of the documented barrier. Then, use diagrams and sketches to illustrate your intended design solutions. Utilizing principles of ‘inclusive design,’ consider solutions that may benefit a variety of user groups, for example, signage that incorporates a large, easily readable font as well as simple graphics. Such signage would be beneficial to those with low vision, children, or anyone whose first language isn’t English. Be sure to include the location and the appropriate survey section in the document title. Due in combination with Part 1 on Wednesday, November 16th.

Appendix 2. Template for Part 2 of the BluePath Survey Project (11X17)
Appendix 3. Summary of Student Works (BluePath): This image shot is of a poster that summarizes student outcomes. The poster was displayed in the college after the term.
Appendix 4. Inclusive Design Project (Place for People) – Overview and Description

Objective
A Hall & adjacent B Hall are home to the many departments in the college. Numerous renovations and additions over the years have allowed for all academic departments of the college to be accommodated in one building. However, due to the various additions, the building lacks cohesion and ease of accessibility. Major problems include difficult way finding, mobility barriers, limited social space, and overcrowded studio and classroom space. In order to be a successful educational facility, A & B Hall must solve these problems. By objectively analyzing pertinent spaces within the building, students should be able to identify problems and provide creative design solutions that will benefit a variety of users.

Activity
The main goal of this project is to understand how built-in environments affect and support the quality of social/personal life & behaviors. Through this project, I hope you will find that you as an interior designer have a great influence on the quality of personal/social life, health, and safety via your design. Select a public interior space within A or B Hall that you will be able to visit several times. The space should be small enough to qualify as a specific interior. Be careful that it is large enough and contained enough to allow for an adequate survey. Try to choose a place visited by a wide variety of people and accommodating a variety of activities. There must be some sort of furniture in the interior as well as a variety of materials and colors. Try to select a place that has enough ‘interest’ to hold your attention.

Accessibility
Keeping in mind the information learned from the RIBA case studies (The Eden Project, The Roundhouse) and the BluePath survey, as well as your readings on human proxemics and interaction, include an example, illustrated by sketches or photos of three of the seven UNIVERSAL DESIGN principles. Clearly describe and diagram how design elements in the space work to satisfy or not satisfy the selected principles. You may need to imagine (or observe) how a person with a disability, a child, an older person, or someone who isn’t fluent in English might negotiate the space successfully. Make sure to include visual notes suggesting improvements that could make the space more universal. (5 Points each)

Proxemics
Part of your observation should also include how the design supports or engages users into various social/personal activities (10 Points). For instance, what role does proxemics play in the design of your chosen space? Observe people using the space and note what seem to be the preferred distances that people maintain from one another while using the space. How does the design reinforce spatial distances and make them easier to maintain? How does the design allow individuals to feel comfortable while maintaining a high density of people? How do people ‘mark’ their territory in the space? You may supplement your notes with drawings or diagrams. In addition, be sure to point out successful/unsuccesful aspects of the layout of this place/space.

Design Recommendations and Future Use
Based on your observation and survey, you will make recommendations to improve the design for people. Choose one important design principle and come up with recommendations that will help solve some of the problems you found with the space. Consider and explain how the innovative design and implementation could help to improve the following: (5 Points each)

1.) Universal accessibility (inclusive design – mobility, vision, hearing, culture, non-traditional student body, etc.)
2.) People’s engagement in social activities
3.) Intended function of the space (educational/social/mixed)
4.) Possible design changes for the future

For possible design changes, you can predict how future lifestyle or technology advancements will change our design for public spaces. For instance, the invention of wireless Internet and laptops brought a strong impact on our lifestyle and the way we design spaces. Do you think that your selected space successfully accommodates or will accommodate current or future lifestyles? How about energy use in the future, for instance? People may need access to sunlight to charge their electronic devices instead of power outlets. How might this affect the design of the space? You can use sketches, diagrams, or photo reproductions with written descriptions.

PRESENTATION FORMAT:
Use an 11 x 17 flat format to present your survey and recommendations (minimum of 2 and maximum of 4 sheets). The sketches of PLAN and REFLECTED CEILING PLAN must be included. Your analysis should be written using full sentences and acceptable grammar. However, it can be organized in any way that you find compelling. Please write and edit your work carefully using a computer to ‘process’ your words. Make sure to use illustrations to help convey your ideas. These can be in the form of sketches, diagrams, photocopies, or photographs.
Appendix 5. Summary of Student Works (Inclusive Design): This image shot is of a poster that summarizes student outcomes. The poster was displayed in the college after the term.
### Appendix 6. Individual Student Work Sample (Inclusive Design)

![Design for Future Use](image)

1. To remove the left bench and small entry wall, the graphic decal can be replaced with a larger version which contains a wider array of information.

2. Instead of using only 2 "directional" lights housed in the ceiling near the entrance, hanging sphere lights will be used to give a more natural semi-directional lighting experience.

3. Since the rear counter has been removed, more storage will be needed. To allow bookshelves can accommodate most storage needs.

4. The alternative L-shape seating will help promote social interactions by not placing visitors in comfortable setting (opposed to sitting awkwardly across from each other).

5. The short entry wall has remained on the right side; however, it is rounded for safety purposes.

6. Previously, the benches were solid, altering their form factor will create more space. The heater vents can be placed underneath, greatly promoting safety. Also, this new found space could be used for storage.

### Appendix 7. Summary of the Student Survey

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<th>Major (Frequency/Percent)</th>
<th>Overall Experience (Mean/SD)</th>
<th>Understanding of ID (Mean/SD)</th>
<th>Benefit to Major (Mean/SD)</th>
<th>BluePath Survey Project</th>
<th>Inclusive Design Project</th>
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<td>Enjoyment (Mean/SD)</td>
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<td>4.04/1.021</td>
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(1=Lowest, 5=Highest)
Architecture Meets Fashion: Inspiration Interchange - A Collaborative Project with Interior and Apparel Design

Greta Buehrle & Mary Simpson
Baylor University

ABSTRACT

Research has shown early exposure to interdisciplinary activities may contribute to a professional’s appreciation of perspectives from diverse fields (Vincenti 2005). This exposure is the founding principle behind a collaborative project developed for sophomore-level interior (ID) and apparel (AD) design students. This presentation highlights the objectives, method, and outcomes of the project, and addresses the future of this collaboration. This presentation will be a foundation for discussion of the possibilities, challenges, and progression of interdisciplinary projects.

Objectives & Method

There were three main objectives for both the ID and AD projects:

1. Encourage students to interact with others outside their comfort zone
2. Advance the students’ presentation and language skills to communicate effectively outside their discipline
3. Challenge the students with a source of inspiration dependent upon specialized knowledge from others

The project was developed as two distinct assignments. The AD students designed garments using the work of famous architects as inspiration. The ID students designed an Apparel Research Center using collections from famous fashion designers as inspiration. Students in both disciplines worked in teams to complete the projects, paring an ID with an AD team.
Interdisciplinary teams met at key points throughout the design process to gain feedback for their designs.

Phase One of the project involved concept development. The students met in their interdisciplinary teams and obtained information about their respective designers and architects. Concept boards were developed by both disciplines based on knowledge and research gathered in these collaborative meetings.

Phase Two of the project was the implementation phase. Prior to moving forward to final designs, students met again in their interdisciplinary groups to present their concept boards and obtain feedback on the representation (or misrepresentation) of their designer or architect. The project culminated in a final presentation with both classes in attendance.

Outcomes
The educators believe the collaborative approach was successful and overall the initial objectives were met; however, there is room for improvement.

Objective 1
Students reported positive comments regarding working in their interdisciplinary teams, specifically a deeper respect and understanding of the others’ discipline.

Objective 2
This objective met with strong success for the ID students, and weaker success for the AD students. The educators believe this resulted from the ID students having more opportunities for presentation practice throughout their semester.

Objective 3
This objective met with partial success. Based on the constructivist perspective of learning, this project put a strong emphasis on the understanding and application of design from two discipline areas (Posner 2004). The collaboration of the different design programs encouraged all students to construct their own knowledge based on what they already knew and use that knowledge to engage in problem solving activities.

The educators need to challenge the students further to promote more creative outcomes. Recommendations include a longer “incubation” for concept development which could produce more depth in the final results. Additionally, the educators should provide more
direction for the collaborative effort in order to assist the students in plumbing the depths of their respective knowledge bases.

REFERENCES (Chicago)


Sampling of Interior Design Assignment

Project 4 - Fashion Inspired: From the Runway to the Interior

There exists a strong relationship between fashion design and design of interior spaces for any given time period. One often inspires the other. The same design elements and principles are shared by both disciplines in the creative process—reinforcing the fact that all design is “a sign of the times.”

Listed below are 5 top fashion designers whose works may be used for inspiration in the selection of materials and finishes used in interiors. As a team you will draw one of the following designers. Research and study their background, design philosophy, current works, etc. Work together with the apparel design team to which you are assigned to hone your understanding of the design aesthetic of your selected fashion designer.

Document your research including references in a professional format (i.e. in a detailed Outline, binder, or other creative method). Analyze their current works/creations (you may need to focus on a specific area i.e. women’s fashions, accessories, men’s fashion---this will be dependent on their fashion and design expertise) based on the elements and principles of design. From the information that you glean from your research, find an example of the designer’s work to use on your board as your major source of inspiration.

Refer to Project 9 &10 and design a sample/inspiration board for that interior space, influenced/inspired by the works of the fashion designer. Remember that inspiration is not reflected in a copy but rather in being able to identify the connection that results in a new creation. These boards will serve as a starting point and as concept boards for the design of project 9/10.

Along with your sample board, turn in your documented research with references and documentation of analysis based on the elements and principles of design. This must be in a professional format.

Project 9 and 10 - Fashion & Apparel Research Center

Background on the Project:
A Fashion & Apparel Research Center has been designed for a mid-sized state university. Space planning and furniture layouts have been completed. Your design firm has been chosen to select the materials and finishes for the interior of the new Fashion & Apparel Research Center on campus. The Board of Directors has requested a materials/finishes board with rendered perspective. They would also like a copy of all the selections and specifications for the floors, walls, windows, and any permanent fixtures (i.e. counter tops in kitchen(s), vanity in bath, and reception desk). A copy should be supplied for each board member and prepared in a professional manner.

Building Description:
The floor is an exposed concrete slab-on-grade. The interior wall surfaces are gypsum wallboard, with 4” high vinyl cove base. The ceiling is acoustical tile at 9’0” AFF, suspended with plenum above. Window sills are 2’6” AFF and heads are at 8’6” AFF.

Make selections/specification for all flooring, walls, kitchen counters, appliances, bathroom vanities, reception desk, and window treatments. A sample specification sheet is supplied for your reference.

Deliverables:
Presentation boards should include: concept board (showing concept development/ideation (project 4)), color-rendered floor plan at 1/8 scale (or larger), perspective of reception area, a custom designed wall, flooring, ceiling, or textile treatment by each group member.

Client folder with all specifications required. (2 copies to professor—one for each member.)
Sampling of Apparel Design Assignment

“Architect Inspired: From the Exterior to the Runway”

There exists a strong relationship between fashion design and design of interior spaces for any given time period. One often inspires the other. The same design elements and principles are shared by both disciplines in the creative process – reinforcing the fact that all design is “a sign of the times.”

Listed on a separate sheet are several top architects / designers whose works may be used for inspiration in the creation of three garments. As a team you will select one of the following designers. Research and study their background, design philosophy, current works, etc. Work together with the interior design team to which you are assigned to hone your understanding of the design aesthetic of your selected architect.

Document your research including references (using APA format) in a professional format. (i.e. in a detailed outline, binder, or other creative method). Analyze their current works/creations based on the elements and principles of design. From the information that you glean from your research, find an example of the designer’s work to use on your board as a major source of inspiration.

Remember that inspiration is not reflected in a copy but rather in being able to identify the connection that results in a new creation. These inspiration boards will serve as a starting point for your final concept board.

DATES:

- Team Meeting Report #1 --- Due February 21
- Sample / Inspiration Board --- Due March 6
- Team Meeting Report #2 --- Due April 3 (via Blackboard)
- Groups will present projects in a joint presentation with Interior Design students on April 25, at 7pm

Presentation:

Two presentation boards / group will be prepared. The first presentation board should include the inspiration for the total project. (This will be the same inspiration board turned in on March 6).

The second presentation boards will depict each of the three coordinating garments, which reflect the inspirations noted on the concept board. Each designer will design one garment and should be prepared to discuss: how their individual garment coordinates with the other two garments in the line, the effective use of the principles and elements of design, and the impact the inspirations have on the final designs.

Note: The garments need to be rendered by the person who designed the garment. Flat are not required. The same croquis pose can be used in the renderings. All croquis need to be in proportion. The recommended size of the board is 20 x 30. Color the garments using markers and accented with color pencil. There will be a total of 15 minutes, which will include time for any questions, for each presentation.
Sampling of directed questions provided for students to generate discussion during interdisciplinary team meetings.

Questions to be addressed during your First Team Meeting / Research Phase

1. Who is/was this designer? Lifestyle, location, influences.
2. What type of clothing/accessories is this designer especially known for?
3. Are there particular trademarks or is there a specific design aesthetic that is a signature for this designer?
4. Does this designer tend to work within a particular color scheme?
5. What sort of textures might be prevalent in a collection by this designer?
6. What type of material might be used in a collection by this designer?

Questions to be addressed during your Second Team Meeting / Research Phase

1. Share your concept boards with your apparel team. What are their initial thoughts/impressions?
2. Can they “see” the fashion inspiration in your concept?
3. Is there anything missing from your concept that would make it stronger?
4. Show them your project 9/10 floor plan, explain the project scenario, and walk them through your next steps. Explain some of the thoughts you have had regarding implementing your concept into a full-fledged design. Have an open dialogue about the space – do the fashion students see areas of opportunity that you have missed? What are their thoughts on the design of the space?
Sampling of Questionnaire sent to students following project completion.

Section I. **Teamwork between the interior design or apparel design group:**

<table>
<thead>
<tr>
<th>Team Work with Interior or Apparel Students</th>
<th>Rating 1 - 5</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of participation everyone in the team had between the two teams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process influenced the interactive learning environment by keeping communication positive, constrictive, and respectful toward other team members</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The longer the group or team stayed together the higher the quality of the communication and the quality of the final design became</td>
<td></td>
<td></td>
</tr>
<tr>
<td>As the process progressed, the team participants became less self-limiting in their thinking and were more likely to engage in experimentation and reflection of the designs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This process helped the teams to discuss the errors on the project or design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The team work helped the designs to become more interesting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working with a team helped build a shared vision on how to work together with other people</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Examples of Finished Student Projects
Material Misuse Studio: 
Looking for Alternate Strategies for Addressing Materials and Excess in Interior Design

Amy Campos  
California College of the Arts

ABSTRACT

The Context:  
“Material Misuse”, a junior-level Interior Design Materials Studio – questions the monumentalizing and erasing of sites as a way of rethinking design and material culture. What properties of material (durability, construction, evolution, inherent cultural value and embodied knowledge) would we deem critical in the context of a 10,000-year timeline, a one-day timeline? Our values in relation to what lasts, what is left behind and what disappears over time would shift. Material experiments in this course are buoyed by a critical analysis of permanence, impermanence and durability in relation to the design and construction of the built environment.

The Process:  
Students examine these issues in relation to qualities of inhabitance specifically through material interrogation. The students are asked to explore materiality from three simultaneous points of reference – parallel strains of research that culminate in a final installation.

The first strain is traditional analytical research. Students research existing materials used in the construction of the built environment: material content, raw material sourcing, manufacturing, consumer distribution, recycling and / or disposal sites are mapped. The content of the research is intended to culminate in a user’s manual for ecological impact in the choosing of materials – similar to the way we use nutrition labels to guide decisions about the make up of our diet.
The second strain of experimentation questions established construction and fabrication techniques as a site of innovation. Pure creativity and the building of a practice of making, in the form of prolific testing, are encouraged in this strain.

The third form of production operates intentionally in error – deliberately misusing material and its corresponding applications and manipulations to produce undiscovered terrain for materiality and space. These three strains of weekly or bi-weekly iterative production come together at the end of the semester to produce one full-scale material prototype.

Additionally, this course is part of the “Waste Land” initiative – a college-wide program that aims to explore ways to integrate science in design education thematized around global issues of waste. Embedded scientists are invited to participate in the studio. The course production regularly intersects practitioners working on similar topics through field trips, including fabrication shops, waste management facilities and materials engineering labs.

The Outcomes:
In the production of the final prototype, the class will partner with a local belt manufacturer to explore post-production and post-consumer architectural-scaled uses for their excess leather products.

The coursework is most concerned with restructuring how we evaluate opportunities in global crises, like waste, to identify new opportunities for design at the extremes of sustainable approaches: extreme permanence and extreme impermanence in order to more directly provide for engrained and growing cultural dispositions towards consumption and renewal.

The students are asked to shift overarching assumptions about how we consume and what that means for our participation in the design of the environment by providing clear and directed research, a rich and comprehensive knowledge of construction and material manipulation and a prototypical approach to material misuse and reuse. This paper presentation will present and contextualize work produced during the Fall 2012.

REFERENCES (Chicago)
Syllabus: Materiality and Space 3

“Getting food from the farm to our fork eats up 10 percent of the total U.S. energy budget, uses 50 percent of U.S. land, and swallows 80 percent of all freshwater consumed in the United States. Yet, 40 percent of food in the United States today goes uneaten. This not only means that Americans are throwing out the equivalent of $165 billion each year, but also that the uneaten food ends up rotting in landfills as the single largest component of U.S. municipal solid waste where it accounts for almost 25 percent of U.S. methane emissions.” – from Wasted: How America is Losing up to 40 percent of its Food from Farm to Fork to Landfill by Dana Gunders, Natural Resources Defense Council

COURSE DESCRIPTION
This third sequential course in Materiality & Space focuses upon processes suggested by the distinct intention, application, and detailing of materials themselves. Through a series of projects, creative uses and innovative combination of methods, tectonics, research, performances, and synthesis are explored. Students will study the quality of inhabitance, where the dimension of the interior affects the body’s senses, such as the sound of space, movement through space, and the materiality of space. The course also highlights the evolving breadth of sustainable building design through methods of representation, life cycle of spatial systems, research, and issues of waste. This puts into perspective, student’s role as designers within the larger context of the global environment. Through the realization of studio projects, the class will examine the characteristics associated with systems, materials and the endless possibilities to reinterpret their meanings in order to create new relationships. This course is one of five course at the school selected to be a part of the Waste Land Initiative. These courses are thematizing issues around waste in their discipline, and inviting “embedded scientists” to participate in the studio. MS3 will also partner with G Hensler, a San Francisco-based belt manufacturer, to explore post-production and post-consumer interior design focused uses for their excess leather products. The work of studio will be exhibited at the Waste Land Exhibition on the Oakland campus in November, as well as at the Design Lab at G Hensler’s offices in December.

Pre-requisite: Inter-220 (Materiality and Space 2)
Co-requisite: Inter-300 (Studio Practice 3)

Learning Outcomes
Materiality and Space 3 provides students with the following skills and learning outcomes:

- Understanding of the relationship between materiality and human perception
- Understanding of the relationship between the development of detail and the spatial quality of the environment
- Understanding of the relationship between ergonomic design and the interior spatial systems
- Knowledge on the relationship between spatial systems, their details and potentials
- Understanding of the correlations between spatial systems and basic gravity/lateral support systems
- Understanding of importance of the technology as part of the design / manufacturing process
- Familiarity with tools in the Workshop and digital fabrication in the Rapid Prototyping Shop
• Ability to delineate and create drawings/models to illustrate the assembly of materials, components, and systems of the design
• Research materials and systems both in an individual and group setting
• Intermediate techniques of fabrication related to the development and understanding of spatial, interior, and furniture systems
• Intermediate ability to make technically clear drawings and models, illustrating and identifying the assembly of materials, systems and components at the scale of the detail
• Intermediate/Advanced ability to gather and track information (individually and collectively) pertaining to design materials (CSI digital Resource Library) and catalog in an online and offline setting (Evernote and the Material Resource Library)
• Cultivate an online presence as a designer (Level 3 Lore blackboards, Evernote, etc)
• Intermediate/Advanced research of building materials, textiles, paint and surface treatment (history, application, innovation, properties, qualities, and environmental impact)
• Understanding of concept of sustainable design and its relationship to durability and habitability of an interior environment
• Awareness of LEED, USGBC and GBCI

Waste Land Initiative learning outcomes:
• Interdisciplinarity and Collaboration: Connecting Science with Art and Design
  - Ability to frame a complex challenge or problem involving issues of sustainability and climate change from the perspectives of at least two academic fields—one from within the student’s major, and one from a scientific perspective.
  - Ability to produce, independently or collaboratively, an investigative, creative or practical work that draws on specific theories, tools and methods from scientific fields.
  - Understanding of how methods of inquiry and research in the sciences can be brought to bear on a problem or challenge; judges the likelihood that the combination of scientific and art/design perspectives and methods would contribute to the resolution of the challenge; and justifies the importance of the challenge in a social or global context.
• Literacy in Sustainability and Climate Change
  - Understands the essential principles of Earth’s climate system and how actions on Earth can affect the climate.
  - Knows how to assess scientifically credible information about climate change and the sustainability of resources.
  - Communicates about climate, climate change, and sustainable resources in a meaningful way.
  - Is able to make informed and responsible decisions with regard to actions that may affect climate and the Earth’s resources.

Readings
Reading, in the form of assigned articles and excerpts, and reference resources posted on our Lore site will be used throughout the semester to frame the discussion of the studio. Students will be asked on a roughly bi-weekly basis to read, present and participate in reading and reference discussions. These discussions will count towards the “Participation” portion of the final grade.

The instructor and the students will actively add to the preliminary bibliography below throughout the semester.
• Model Making by Megan Werner
• Material Change by Eve Blossom
• The Transmaterial Series by Blaine Brownell
• Materials for Design by Victoria Ballard Bell
• **Wasted:** How America is Losing up to 40 percent of its Food from Farm to Fork to Landfill by Dana Gunders
• **Toward a New Interior** by Lois Weinthal
• **After Taste** by Kent Kleinman, Joanna Merwood-Salisbury and Lois Weinthal
• **Intimus** by Mark Taylor and Julieanna Preston
• **A History of Interior Design** by John Pile

**Digital Material/ Resource Catalogue** (shared with TT3 & SP3)
Each student is required to maintain and cultivate a rich collection of materials and inspirational information culled from diverse sources and cataloged online using the current CSI format. Each student will continue to use the online free cataloguing system, Evernote, started in Level 1. ‘Notebooks’ will be titled by CSI Category.

**Sketchbook & Process drawings**
Each student is expected to keep process drawings archived throughout the semester (see archiving guidelines for information on digitally archiving this information for your own portfolio). Each student is expected to use a clean, unlined sketchbook throughout the semester to develop ideas through drawing, writing and noting inspiring and relevant information and resources.

**Lecture Attendance**
Students are required to attend all Interior Design lecture events. Students are expected to turn in a brief written response after each lecture attended on our Lore site.

**Archiving**
Students will be expected to submit an archive of all process work and finish work at the end of the semester from the studio. Guidelines for archiving distributed towards the beginning of the semester will be used at the end of each project to archive. More detailed instructions about submitting your archive at the end of the semester will be distributed before finals week.
Enhancing Cultural Sensitivity in Healthcare Design: Creating Secure Environments that Convey Meaning

Candy Carmel-Gilfilen
University of Florida

ABSTRACT

Purpose
The collective challenges of healthcare reform, population shifts, the aging of the baby boom generation, and the introduction of new medical technologies requires a new approach to health care delivery. Instead of being regarded as detached and institutional, the 21st century hospital must become the nexus of the community promoting patient-centered care (Kurrasch, Steinberg, & Levy, 2011). These changes have forced healthcare providers to strive for cultural competence to attain efficient and satisfactory health care (Ahmad, 2007). Previous research has uncovered racial and ethical disparities in both access to and quality of care including disproportionate social vulnerabilities among minority populations (Saha, Beach, & Cooper, 2008) as well as examined patient and provider attributes and behavior patterns that influence outcomes in multicultural health care interactions (Galanti, 2008). However, little research exists linking these interactions to the physical environment. Therefore, the purpose of this study is to examine and propose opportunities within the interior environment of primary care facilities to support and enhance cultural sensitivity.

Method
This study investigated the impact of design on cultural sensitivity by creating a prototype hospital that improves the health of minority populations (Appendix B). The first step involved the creation of a database on cultural considerations within healthcare environments. Emphasizing the move toward evidence-based design (EBD), data was gathered from peer-reviewed empirical studies. Guided by exploratory work by Joseph and authors (2011), central cultural issues were investigated to determine the potential of interior design in meeting the needs of diverse patients and families in a primary care setting. These issues included: conveying
meaning to the cultures represented, integrating way finding strategies that assist diverse user groups, celebrating the role of family and social relationships in healthcare environments, and creating safe, secure, and welcoming healthcare environments (Appendix A). Students were also encouraged to conduct empirical research to gather first-hand evidence through design analysis studies, behavioral mapping, and user interviews.

After research was compiled and the pertinent EBD principles established students then applied this research to their healthcare design projects. The project centered on designing a primary care facility for a non-for-profit hospital in a region that caters to individuals with diverse cultural backgrounds and beliefs. Project objectives included encouraging students to be sympathetic to the cultural conventions they encounter in their design work. Religious beliefs, practices, and definitions of privacy were incorporated into designs, as these moves engage users thereby enhancing personal experience and contributing to long-term sustainability of the building. The project emphasized deliverables that addressed cultural sensitivity, including the design of patient and family areas, and way finding components. These solutions will be explained and illustrated in detail.

Conclusions
Projects were evaluated by design practitioners at Gresham, Smith and Partners, Inc., experts in healthcare design, at multiple points throughout the design process. These reviews provided dialogue, direction, and analysis of the strategies employed by students. In addition, questionnaires with students provided detailed information in regard to the impact and reach of this project particularly in employing socially and environmentally responsible designs.

REFERENCES (APA)


Appendix A: Framework for Literature
(Joseph, Keller, Taylor, & Quan, 2011)

Conveying meaning to the cultures represented
Design of the physical environment conveys meaning to people, through the organization and layout of spaces, visual cues, and symbols. Expressing cultural sensitivity is particularly important in the healthcare environment as it often contains important events including births, illnesses, and deaths which relate deeply to cultural meanings, rituals, and customs. Design of the physical environment can demonstrate empathy and provide connection to religious and spiritual beliefs. Signs, symbols, and design elements can be used to signify health and healing in a specific culture. Further, artwork can be used to illustrate diverse populations and practices while providing positive distraction. Finally, providing a connection to nature through gardens and green spaces can hold meaning across cultures.

Integrating way finding strategies that assist diverse user groups
As the US population grows in diversity with many minority groups expanding, patients and family-members may not be proficient in English. Physical design strategies including interior layout as well as building cues through materiality, color, and signage offer opportunities to streamline navigation for patients and families. In addition, integrating symbols and other information enhance way finding opportunities. Overall, strategies that allow patients and families to easily locate their destinations can enhance the overall experience.

Celebrating the role of family and social relationships in healthcare environments
Many cultures approach decision-making differently. For example, in Asian or Hispanic cultures the family often ranks superior to the individual therefore decision-making is often approached collectively. Further, issues of personal space and privacy may also vary based on ethical and racial dimensions. Physical design considerations that celebrate the role of family and social relationships might include enhancing and expanding waiting areas to accommodate family members, ensuring consultation
spaces are large enough to house multiple family members, and designing to promote flexibility and patient-centered care.

*Creating safe, secure, and welcoming healthcare environments*

Maintaining a safe health care environment reflects a level of compassion and vigilance for the patient. Cultural safety included designing environments that are spiritually, socially, emotionally, and physically safe. Cultural safe practices include actions which recognize and respect the cultural identities of others and safely meet their needs, expectations, and rights. These can include creating physical spaces that foster safety, quality, and operational effectiveness.
Appendix B: Project Outline

Phase 1: Pre-Design and EBD Research
1. EBD Healthcare Research Principles
   a. Cultural Sensitivity
      i. Conveying meanings to the cultures represented
      ii. Integrating way finding strategies that assist diverse user groups
      iii. Celebrating the role of family and social relationships in healthcare environments
      iv. Creating a safe, secure, and welcoming healthcare environments
   b. Caregiver needs
   c. Patient needs
   d. Environmental factors in healthcare (Light, Materials, Color, Infection Control)
   e. Implementing green design in healthcare
2. Precedent Design Research
   a. Non-for-profit hospitals with specializations
   b. Hospitals that integrate cultural sensitivity practices into design
3. Empirical Analysis
   a. Design analysis
   b. Behavioral mapping
   c. User interviews
4. Creation of Evidence-Based Design Checklist

Phase 2: Design Project
1. Programmatic development
   a. Patient areas
   b. Family areas
   c. Staff areas
   d. Way finding components
2. Conceptual development
   a. Design concept statement
   b. Design drivers
   c. Design goals
3. Design and drawing development
   a. 2D: Floor plans, Rcps, Sections, Elevations, Details
   b. 3D: Perspectives, Axonometrics, Models
   c. Materials and Furniture
4. Final presentation/deliverables
   a. Power Point presentation
5. Design Documentation
   a. Pages developed using template that illustrate culturally sensitive design moves for all projects
   b. Integration of these into booklet

**Phase 3: Design Analysis**

1. Design reviews with Gresham, Smith, and Partners
   a. Research review with Research Director
   b. Conceptual design review with healthcare experts (video-conferencing)
   c. Mid-point design review with healthcare experts (video-conferencing)
   d. Final design review with healthcare experts

2. Student questionnaires
   a. Knowledge of cultural sensitivity (pre/post)
   b. Impact of this project on design philosophy/outlook
   c. Knowledge/Impression of healthcare design
Promoting Thought Development in Design Education: Insights into the Minds of Advanced Interior Design and Engineering Students

Candy Carmel-Gilfilen
University of Florida

ABSTRACT

Purpose
Research provides numerous views on what qualities and abilities the interior design graduate should possess, among these is the ability to think critically and solve complex problems as well as engage in multi-disciplinary collaborations with allied disciplines that may represent a variety of perspectives and points of view. Further, the rapidly shifting nature of knowledge in design as well as the specific competencies professional’s target for entry-level employment place additional pressure on seniors. However, the question remains, are graduating design students adequately prepared to manage the professional demands placed on them? The purpose of this study is to examine advanced interior design and engineering student’s level of intellectual development to inform our understanding of how the college experience affects their aptitude, and professional abilities. It is imperative that design educators understand cognitive and emotional needs of students in order to provide appropriate challenge with support to nurture growth and development.

Theoretical Framework
The study uses the Perry Scheme of Intellectual and Ethical Development which proposes a distinct evolution of thought development that occurs during the college years (Appendix A). Extensive research using the Perry scheme exists in engineering (Marra & Palmer, 2004) and current research has also extended this model to interior design (Carmel-Gilfilen & Portillo, 2011). Research in both disciplines has confirmed that students seldom achieve the highest positions of thought development during their undergraduate experience. The current study
explores this concept by understanding how students approach their learning, subject matter, and view of allied fields to propose strategies to advance levels of development.

Method
The sample included 63 interior design and engineering students in the final year of their professional studies. All participants completed the Measure of Intellectual Development (MID) and structured interviews were conducted with ten participants who exhibited the highest levels of thinking (Appendix B). The interviews were particularly useful at probing post-contextual relativistic thinking as well as patterns of thought influenced by disciplinary specialization. The study examined:

1.) What positions of thought development characterize interior design and engineering students? Do differences exist?

2.) Do students in the final stages of their professional degree reach the highest levels of development, and if not, what evidence is provided that may explain this?

Findings
Findings identify students in the final stages of interior design and engineering education as dualistic and multiplistic thinkers. No significant differences between global thought development and disciplinary focus were found (p=.124), however interior designers did illustrate a higher intellectual mean (3.13) when compared to engineering students (2.99) (Appendix C). Supporting research across professional fields (Moore, 2003) no students were found in the advanced stages of the Perry scheme and even the most advanced students exhibited mistaken beliefs in regard to the professional demands of the field. Qualitative data including strong opinions in regard to the learning environment, instructor quality and pedagogical structure, and design process and application further amplify possible explanations. These findings will be paired with pedagogical strategies that could be used to enhance student learning experiences and promote the highest levels of thought development within education.

REFERENCES (APA)


Appendix A: Perry Scheme of Intellectual and Ethical Development

<table>
<thead>
<tr>
<th>Developmental Stage</th>
<th>View of Knowledge</th>
<th>View of Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dualism</td>
<td>Knowledge is absolute</td>
<td>Professor is an authority figure and the dispenser of knowledge</td>
</tr>
<tr>
<td>Multiplicity</td>
<td>Knowledge is uncertain and subject to interpretation</td>
<td>Teacher may not have all of the answers</td>
</tr>
<tr>
<td>Contextual Relativism</td>
<td>Knowledge is seen as relative or contextually bound</td>
<td>Shift responsibility for learning to themselves</td>
</tr>
<tr>
<td>Commitment in Relativism</td>
<td>Knowledge is constructed not given</td>
<td>Establish own personal view of world</td>
</tr>
</tbody>
</table>
Appendix B: Instruments for Data Collection

<table>
<thead>
<tr>
<th>Measure of Intellectual Development (MID)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assesses global epistemology based on stages of the Perry scheme</td>
</tr>
<tr>
<td>One open-ended essay stem</td>
</tr>
<tr>
<td>Prompts students to write about their college learning experiences including content subject matter, types of teachers, classroom atmosphere, role as a student and evaluation procedures</td>
</tr>
<tr>
<td>Evaluated by two trained raters (at CSID) using standardized rating criteria and reaching acceptable levels of inter-rater reliability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Structured Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assesses global and discipline-specific thought development based on stages of the Perry scheme</td>
</tr>
<tr>
<td>5 open-ended questions with follow-up probes</td>
</tr>
<tr>
<td>Prompts students to reflect on their ideal college education and changes that have occurred as a result of their educational experiences, their decision making process and clarifying convictions, and goals they have for the future.</td>
</tr>
<tr>
<td>Questions also probed disciplinary distinctions.</td>
</tr>
<tr>
<td>Interviews transcribed and coded by principal investigator for underlying themes.</td>
</tr>
</tbody>
</table>
Appendix C: Findings

Demographics (n=63)

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Mean</th>
<th>Stddev</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>22</td>
<td>3.05</td>
<td>.34</td>
</tr>
<tr>
<td>Male</td>
<td>41</td>
<td>3.02</td>
<td>.33</td>
</tr>
<tr>
<td><strong>Major</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interior Design</td>
<td>45</td>
<td>2.99</td>
<td>.34</td>
</tr>
<tr>
<td>Engineering</td>
<td>18</td>
<td>3.13</td>
<td>.30</td>
</tr>
</tbody>
</table>

Measure of Intellectual Development (MID) (n=63)

<table>
<thead>
<tr>
<th></th>
<th>Dualism</th>
<th>Multiplicity</th>
<th>Contextual Relativism+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior Design</td>
<td>4 (22.22%)</td>
<td>14 (77.78%)</td>
<td>0</td>
</tr>
<tr>
<td>Engineering</td>
<td>17 (37.78%)</td>
<td>28 (62.22%)</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>21</td>
<td>42</td>
<td>0</td>
</tr>
</tbody>
</table>

Underlying Themes of the MID

**Learning Environment**

**Interior Design Student**
"Over the course of the last few years I have become a much more confident designer, I feel that is due to the studio environment. I flourished in studio that was relaxed and open to ideas. My peers and instructor also provided support to help me grow as a designer."

**Engineering Student**
"Learning outside of the classroom and actively participating in project was much more enjoyable thank any classroom experience. These labs were generally administered by TA’s who facilitated excellent communication and a support structure."

**Instructor Quality and Pedagogical Structure**

**Interior Design Student**
"Of all my specific learning experiences, one semester sticks out to me as one in which I found my first bit of confidence as a designer. A majority of this is due to the teaching style of the professor. I think a lot of instructors miss the fact that in this time of our lives we are looking more for encouragement and direction in the paths we have chosen than for harsh criticism that seem to stem from a need to make the college program stand out... I was so encouraged by the confidence the instruction had in the work I produced that I had an overwhelming desire to investigate further on my own."

**Engineering Student**
"It’s hard to generalize my learning experience as a whole. I have had some great classes and some terrible classes. I think what distinguishes the great classes was an energetic/vibrant professor who used modern examples to illustrate a point."
## Design Process and Application

<p>| | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>Interior Design Student</td>
<td>&quot;I use the design process in every aspect of my life. Analysis has become part of my life. I use my process to further develop certain parts of projects. If not for this process, I would have nothing to base my future decisions on.&quot;</td>
</tr>
<tr>
<td>Engineering Student</td>
<td>&quot;As a student, I felt that my classes taught me more how to think as an engineer thank to actually design. The entire emphasis of the engineering curriculum is to become an efficient problem-solver and that is stressed through practice. I have always worked harder when I was given open-ended problems and had to provide a solution.&quot;</td>
</tr>
</tbody>
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A Study of Online Versus Offline Group Communication and Collaboration in the Interior Design Process

Ji Young Cho
Kent State University

ABSTRACT

This paper contains a discussion of an exploratory study of online versus offline group communication and collaboration in the interior design process. The Council of Interior Design Accreditation (CIDA), which oversees the quality of interior design education in the USA, expects interior design majors to be proficient in collaborating with others.

Online collaboration tools now in use, such as WebCT, Blackboard, and Learning Space (Malins et al, 2003), were introduced in higher education 20 years ago; however, how such tools can be effectively used in the context of the interior design studio remains to be checked.

The main purpose of this study was to determine whether online collaboration using Blackboard supports student collaboration in the interior design process. The other purpose was to find a relationship between the use of technology and the collaboration pattern and satisfaction of interior design students.

Thus the hypothesis was "Differences in student experience, satisfaction, and collaboration pattern will be apparent when interior design students engage in online collaboration using Blackboard and offline face-to-face collaboration."

A total 35 junior-year interior design students in one Midwestern university participated in the study. Students were given two assignments as a part of class activity. The first was to conduct a collaborative research project (as a part of senior community housing design project) using Blackboard. Students were required to carry on discussions on Blackboard, keeping a journal of...
their collaborative activities as well as gather their research in one place. The second assignment was to complete another collaborative research project (as a part of workplace design project) not with Blackboard but through offline face-to-face collaboration.

After the completion of each collaborative project, a survey questionnaire was administered to determine satisfaction with each type of collaboration and perceived learning through the collaboration. At the end of semester, students completed an open-ended questionnaire about their comparative experience with online and offline collaboration. In addition, students' collaboration logs from Blackboard were downloaded for analysis. Collected survey data were analyzed using a statistical program (SPSS), and collected discussion board logs were analyzed qualitatively using the content analysis method.

At the IDEC conference, relationships between (a) technology use in collaboration and (b) collaboration pattern and satisfaction will be discussed. The discussion may improve understanding of the use of technology in collaboration and encourage interior design educators to implement strategies appropriate to the tasks in collaborative design projects.

REFERENCES (APA)

Sensory Spaces: A Design Studio Experience on Universal Design

Nisha Fernando
University of Wisconsin-Stevens Point

ABSTRACT

This paper presents the design process as well as the design learning outcomes of an upper-level interior design studio that specifically concentrated on universal design. This particular studio emerged from the dire need to educate interior design students that universal design in its true sense must be all-inclusive (Preiser & Smith, 2011; Nussbaumer, 2011). The primary learning objective was to shift the more prevalent focus on designing for wheelchair accessibility and to refocus on other disabilities that are relatively less discussed in the interior design discipline—namely, designing for those who cannot see and/or who cannot hear. The theoretical approach taken in teaching this studio was based on the observation that visual features are given a predominant role in interior design and in dictating how spaces are to be designed and experienced. Media of design communication also promote design as primarily a visual language. This visual hegemony in design can negatively affect the potential spatial experiences of users who cannot see (Howes, 2005). Additionally, research data also point out that visual aspects of spaces are experienced differently by those cannot hear (Imrie, 2000), as they rely heavily on certain visual information otherwise taken for granted by those who can hear. Based on these two significant views, students in the studio course stepped outside the familiar territory of vision-centric design to venture into, investigate, analyze, and apply how non-visual sensory cues play a significant and deliberate role in an interior design of a multi-use hospitality facility. The primary pedagogical objectives in this endeavor were three-fold: (1) students gain a deeper understanding that spatial design is not always limited to visual aesthetics, while non-visual aesthetics can be essential; (2) students learn that universal design is not a specialty branch of design but an all-important humane design approach that does not exclude any population; and (3) students develop a deep conviction that universal design that is not a mere accommodation of certain disabilities but it is rooted in creating pleasant, attractive, and
positive spatial experiences that address all sensory modes of the human body. Students conducted research on sensory-based spatial experiences and how tactile, thermal, auditory, and olfactory cues of spatial volumes, lighting, and materials and finishes can affect user behavior, using literature reviews and analyses, case study research, observations, and spatial inventory analyses. Design programs were essentially founded on this research evidence. The presentation will showcase the design solution outcomes that included effective way finding techniques and unique, truly inclusive, and sensory-rich spaces.

REFERENCES (APA)


SENSORY SPACES: A DESIGN STUDIO EXPERIENCE ON UNIVERSAL DESIGN

APPENDIX: A STUDIO EXERCISE & PROJECT BRIEF

MULTI-USE SPA FACILITY FOR THE VISION AND HEARING IMPAIRED

RESEARCH AND PROGRAMMING PHASE

This phase included multiple research methods to gather data for creating the Design Program.

1. Literature review on spatial experiences of people with vision impairments and hearing impairments
2. Case study research on various facilities that have been designed with a focus on users with either vision loss or hearing loss, or both.
3. Actual observations and notes: students conducted empirical research on how people with vision and/or hearing loss might experience spaces through other senses. In one research approach, students were grouped into pairs, one of them was blind-folded, and was asked to experience various spaces on campus (walking, sitting, buying food, etc). The other student in the group followed closely ensuring the safety of the first student, but also making detailed observation of his/her experiences and taking down notes. The same process was followed with one student plugging both ears and the other making observations. Students also used wheelchairs to experience the spaces. These observations provided an eye-opening experience for the students and also provided them with first hand information as to how ‘others’ experience spaces through sounds, textures, and thermal differences.
4. Students also conducted unstructured, casual interviews with professional who work with people with these disabilities.

Students combined the research data gathered from the multiple methods and sources as listed above and put together several design directions for the project. These design directions were included in the Design Program, along with the broader design goals, the specific user requirements, interior space requirement analysis, square footage information, and other information. The program also consisted of a general Design Concept, along with design sub-concepts for each space based on the above mentioned design directions.

MULTI-USE SPA FACILITY FOR VISION AND HEARING IMPAIRED

PROJECT BRIEF

Background:

A proposed brand new building, the Multi-Use Spa Facility for Vision and Hearing Impaired, is located in the outskirts of Phoenix, Arizona. The building is designed with a focus on not only serving the public as a contemporary spa and restaurant facility, but also creating a cutting-edge inclusive design
that serves a large community of vision- and hearing-impaired people living in Phoenix. The proposed building is modern and contemporary in style and it is required that the interior spaces will follow the same theme, while focusing on fulfilling unique, user-specific design requirements.

**Location and Site:**

Phoenix is the largest city in Arizona with a 1.6 million population. It is also the state capital of Arizona. The climate of the region is semi-tropical and arid. The surrounding area is open without many trees except for brush and cactus trees; it has a semi-desert like environment. The climate is hot and dry most days of the year, with temperatures ranging from $60^\circ F$ during winter (and some night temperatures $40^\circ F$ at their lowest) and $120^\circ F$ during summer. With little rainfall and very mild winters, Phoenix receives bright sunlight 85% of the year.

The proposed building is located on the northeast edge of the city, in the foothills of Phoenix Mountain Park. The surrounding area is much quieter than the city of Phoenix with less traffic and noise. There are stunning views of the mountains as well of the city from the site. Yet, it is not too isolated and separated from the community either. There is an outdoor parking lot right next to the facility with direct access to the building. There will also be a service road leading to the facility.
There are several large hotels and other hospitality uses in the area and some of them include spa facilities. However, such facilities allow the use of a spa only for patrons lodging at their hotel. The proposed facility will focus on creating a day spa that does not require overnight lodging for its clientele. The other unique feature that will distinguish the Maricopa Spa from others will be its commitment to be an inclusive facility that serves a community with a range of physical disabilities.

The Client:

The *Multi-Use Spa Facility for Vision and Hearing Impaired* is privately owned by the Mesa Hotels and Spa Inc. The client’s primary intention is to create a day spa, high-end restaurant, and several other spaces that will generate unique hospitality services to the visiting tourists and the Phoenix community in the area with a specific goal in mind: inclusive design. Another important goal the client has in mind is to make this multi-use facility a truly sustainable design that will potentially earn LEED Platinum status. The Mesa Hotels and Spa Inc., chain is well known in the area for their community-oriented and eco-friendly business practices, as well as for preserving the serenity and natural environments of their hotel and spa locations. They want to see a very contemporary interior design.
that addresses sustainable practices and has a strong theme of design considerations for disabled people who find it a struggle to function efficiently and effectively in public spaces. The client also wishes to house an art collection (several small paintings and sculpture) in the facility as well. For the restaurant & cafe, they buy 100% locally produced organic food. They also use only natural and biodegradable products in the entire spa.

**Project Requirements:**

The proposed Multi-Use Spa Facility for Vision and Hearing Impaired is a multi-use facility, with the spa areas and the restaurant as the primary focus. The spa spaces need to accommodate a variety of activities including massage therapy rooms, medicinal bath treatment spaces, salons, etc. It is expected that the spa facilities will attract anyone regardless of their gender, age, disabilities, physical size, ethnicity, or race.

The building is a two-storey contemporary building with glazed façades. The partial transparency of the exterior walls enhances the beautiful views around, while bringing the feeling of outdoors in. The building also has a dramatic shape with perfect symmetry (see the CAD drawing of the building footprint on D2L). The flat roof will be converted into a green roof. There is a large outdoor pool for patrons’ use; it is beautifully shaded by nearby trees. There are two courtyards that can be treated as extensions of the interior. The courtyards are each shaded with a roof to prevent direct and harsh sunrays. These roofs are tiled with PV cells for generating solar power.

For the interior, the client wishes to deviate from the formal expression of the symmetrical building form and venture into more organic, fluid spaces while keeping it very contemporary and sleek. It is their belief that the interior environment is very critical for setting the right mood of the facility, as well as for addressing many functional and aesthetic needs of those who have visual and hearing disabilities. They expect this facility to be very unique, and not just a functional space that simply works. One other important requirement of this facility is that it should essentially be a sustainable design. Considering all these aspects, the Maricopa Spa Facility for Vision and Hearing Impaired will not only be a very creative and eco-friendly design but also an exemplar to others as a socially responsible and inclusive design.

The interior spaces will include a large public entrance lobby with a front desk and waiting area, large restaurant (that serves breakfast, lunch, and early dinner), a café (only daytime), a retail store that sells spa products, massage therapy rooms, medicinal bath areas, saunas, salons, a smaller reception area for spa areas (as necessary) a yoga studio, lounges in spa areas, locker rooms and laundry room, offices (General Manager, Public Relations Manager, Accountant, Food & Beverage Manager, Spa Manager, & Receptionist), storage spaces for Restaurant, Café, Retail Store, and Spa rooms, public restrooms, and utility rooms for mechanical spaces as well as for storage.

The total floor area for the interior space is approximately 43,000 sq.ft. The minimum floor areas for each major space are on a list on D2L.
Learning with a Different Pencil: Comparing Student Spatial Intelligence between Haptic and Digital Assignments

Michael W. Fior
Endicott College

ABSTRACT

Computers have become important tools in design education. Educators have found them useful for systems and materials research, for preparation of complex construction documentation, and to aid in the coordination of design work with that of consultant disciplines. Computer systems have been less effective and even counterproductive as an aid to creative conceptual design and the exploration of spatial intelligence. For most humans, creative conceptual thought is nonlinear, ambiguous and indeterminate while all computers are based completely on linear, unambiguous and precisely set forth logic.

A number of researchers have studied the creative conceptual design process with the goal of better informing the development of more advanced computer systems that can simulate nonlinear thinking. Other researchers have tested current computer systems through the decades to assess the capability of these systems to aid the designer in creative conceptualization. No research was located specifically addressing the important component of spatial intelligence in the creative conceptual design process.

This study was formulated working with sophomore interior design students in their Spring Design Studio. The Studio syllabus was redesigned to focus all work on the understanding and application of spatial intelligence. The study specifically looks at the results of two mid-semester design charrettes, one created using traditional media as a physical model and one using Google's SketchUp to create digital space models. These models were scored by volunteer
evaluators working to a rubric prepared for the study, and their evaluations were analyzed using the SPSS statistical analysis package.

The results of the study indicate that the computer systems used in the design project work do not support the nonlinear thinking which has been found to be important in creative conceptual design. It did, however, indicate that at least some learners more easily grasp two- and three- dimensional design concepts through the use of computer devices than through the use of the more traditional haptic methods.

Limitations on this study include a narrow demographic range and restrictions on both the hardware and software available to students that could be used in the digital charrette.

REFERENCES (Chicago)


Spatial Intelligence Rubric

Definition

According to Howard Gardener in his book “Multiple Intelligences: New Horizons” (Gardner, Multiple Intelligences: New Horizons 2011), an intelligence is “a computational capacity – a capacity to process a certain kind of information – that originates in human biology and human psychology”. Spatial Intelligence may be broadly “defined as a capacity to perceive the visual-spatial world accurately and to perform transformations on one’s initial perceptions.” (Gardner and Hatch 1989)

Framing Language

The book “Spatial Intelligence: New Futures for Architecture” proposes that “we have become so complacent about our ability to house our activities that we have lost our awareness of what space does to us.” (van Schaik 2008) Architecture, and, in my view, Interior Architecture / Interior Design, has been made into a kit of parts – symbols systems and ideas that, put together “correctly” can successfully embody a current theory at any time in any place on the planet in response to any given program. A more spatially intelligent approach for interior design will begin with an understanding of the human need for space that nurtures and supports; of a basic longing for spatial wonderment. It will respond to the specific time and place in which it exists, and to the cultural norms, as well as the functional needs, of the intended users.

Spatial Intelligence, as defined for the purpose of this Study, is the conscious manipulation of form and proportion in the interrelationships of three-dimensional spaces so as to create a sense of specific place and time that, in the cases reviewed, responds to the corporate cultural history and needs of a client.

The student must have a strong foundation in the strategies and skills of design in order to make connections and synthesize. While demonstrating solid knowledge of the design parameters, the creative thinker, at the highest levels of performance, pushes beyond those boundaries in new, unique, or atypical recombinations, uncovering or critically perceiving new syntheses and using or recognizing creative risk-taking to achieve a solution.

Works Cited
**Spatial Intelligence Rubric**

**HOLISTIC RUBRIC**

**Definition**
Spatial Intelligence, as defined for the purpose of this Study, is the conscious manipulation of form and proportion in the interrelationships of three-dimensional spaces so as to create a sense of specific place and time that, in the cases reviewed, responds to the corporate cultural history and needs of a client.

**Note**
Evaluators are encouraged enter a level of “0” should they feel that the project does not meet Benchmark standards.

<table>
<thead>
<tr>
<th>Conceptualization</th>
<th>Capstone</th>
<th>Milestones</th>
<th>Benchmark</th>
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<tbody>
<tr>
<td>Takes chances with the manipulation of space. Creates a strong sense of unity among the elements used and a clear sense of spatial intent. Shows boldness in handling the relationships between / among forms. Emotional impact is compelling and strong.</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Well thought-out organization of forms; sense of variety in the use of relationships between / among elements. Obvious thought in creation of a coherent spatial impression. Spatial design intent is clear and effective.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The organization of the parts is clear and understandable. Variety of forms and elements appears tentative and relationships between / among elements is understandable. Spatial design intent may seem confused or unclear.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visually unenthusiastic. Confused impression; forms and relationships appear arbitrary and without a sense of purpose. Design intent is unclear and appears unplanned.</td>
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</table>

| Identification | | | |
|----------------|----------------|----------------|
| Connection between the spatial concepts demonstrated in the model and the designer’s written intent is clear and easily understood. | | | |
| Connection between the spatial concepts demonstrated in the model and the designer’s written intent is clear and easily understood. | | | |
| Connection between the spatial concepts demonstrated in the model and the designer’s written intent is visible, but difficult to discover. | | | |
| The work and the statement appear unrelated to one another; the model presents generic space. | | | |

| Use of Media | | | |
|---------------|----------------|----------------|
| Exceptional workmanship. Model makes an exceptionally strong impression and strongly influences the understanding of the work. | | | |
| Careful workmanship. Model makes a good impression and makes a positive contribution to understand the work. | | | |
| Competent workmanship. Model makes a workmanlike impression and does not impact positively or negatively the ability to understand the work. | | | |
| Inadequate workmanship. Appearance of the model is poor and hinders understanding of the work. | | | |
Spatial Intelligence Rubric

**Definition**
Spatial Intelligence, as defined for the purpose of this Study, is the conscious manipulation of form and proportion in the interrelationships of three-dimensional spaces so as to create a sense of specific place and time that, in the cases reviewed, responds to the corporate cultural history and needs of a client.

**Note**
Evaluators are encouraged to enter a level of “0” should they feel that the project does not meet Benchmark standards.

**PROJECT NUMBER:**

<table>
<thead>
<tr>
<th>SCORE</th>
<th>COMMENTS</th>
</tr>
</thead>
</table>
| Conceptualization  
A consideration of the work as a whole, applying prevailing professional standards as developed through personal experience in practice and in teaching. | Please feel free to continue on the back of this sheet if necessary. |
| Identification  
Accompanying statements explain how the work is intended to demonstrate some essential aspect(s) of the project. | |
| Use of Media  
Refers to the skills exhibited in the use of materials and the creation of the physical model. | |
Histograms
Cumulative Data

Charrette One - Cumulative

Charrette Two - Cumulative

Charrette One - Conceptualization

Charrette Two - Conceptualization

Charrette One - Identification

Charrette Two - Identification

Charrette One - Use of Media

Charrette Two - Use of Media
Putting Critical Thinking Skills Back into Design Drawing

Kelly Gagliardo
Rochester Institute of Technology

ABSTRACT

In Interior Design practice and education, we have come to accept that computer aided design software is an integral part of the field. The emergence of new design tools can enhance the profession and educational experience however they also have the potential to hinder the fulfillment of core educational goals (Kellner, 2001). As a design educator, it is a challenge to balance teaching current computer software for a graduate to thrive in the workforce while producing a student that is an active problem solver and critical thinker. The aid of computer software such as Autodesk Revit has made it easy for students to create a section drawing without knowledge of the construction process. They can produce a drawing by literally a touch of a button without having to understand what the drawing represents. (see Figures A1 - A3). When Revit is removed, students have difficulty drawing the same section in the two-dimensional drawing software, AutoCAD. This demonstrates a student’s ability to operate a tool is not synonymous with understanding of the objective. The goal is to prepare a student to integrate design software and critical thinking with regard to the materials and processes they are using.

The strategy that has been developed to meet these goals is to use the three-dimensional modeling tool, SketchUp, to simulate the job site experience as a way to guide students to correctly draw a cabinet section with AutoCAD. The first step of the assignment, students will use SketchUp to create each construction component needed to complete the project. They will draw each construction member to its actual size. Once all pieces of the construction detail are created independently, students are asked to move them in the model to assemble the wall and cabinetry (see Figure A4). This assembly process simulates what takes place at an actual
construction site. Once the SketchUp model is completed, students are asked to draw a section in AutoCAD using the model as a guide (see Figure A5).

Outcomes of projects have demonstrated students are able to correctly illustrate and determine the construction materials of the cabinet section when using the model as a guide. Students were also able to tailor the cabinet section to match their personal design intent by making alterations to the model first. This process encourages critical thinking skills through simulating the construction decisions that a carpenter would have to make on a job site. This is illustrated by student’s deciphering the order materials have to be assembled in to achieve a successful end product.

The skills students develop from this assignment include; increased ability drawing with AutoCAD, increased knowledge in utilizing the modeling program SketchUp, comprehension of the difference between nominal and actual size of lumber, the ability to select appropriate construction materials, and an understanding of how to assemble walls and cabinetry. Additionally, the students have developed critical thinking and problem solving skills that provide them with a technique that can be used to draw more advanced construction details in the future.

REFERENCES (APA)


Appendix

Illustrations of the drawing process

Figure A1. The image is example of the Autodesk Revit interface. Users are able to import complete cabinetry and wall systems from a component library. Along with each component imported come predetermined material identities for the object.
Figure A2. Users are able to click on a single button to generate an elevation drawing of the kitchen cabinetry.

Figure A3. Users are able to click on a single button to create a section drawing of the kitchen cabinetry. Material thicknesses, dimensions, line types and weights are generated automatically.
Figure A4. This is an example of the SketchUp interface where students draw individual construction pieces to their actual dimensions. The final assembly of these pieces is represented on the left side of the screen. In order for a successful arrangement, students had to put the pieces in place in the order they would be constructed in the field. The kitchen cabinet assembly includes; base cabinets with a drawer and door, countertop, tile backsplash, wall cabinet, and crown molding mounted to a typical residential wall composed of 2 x 4 wood framing and drywall.
Figure A5. The drawing is an example of the final outcome of the assignment. The student has successfully drawn a kitchen cabinet section and accurately labeled all materials. This drawing was created with the two-dimensional AutoCAD computer drafting software. Students were able to alter their cabinet section to represent their design intent.
Engaging Undergraduates in Interior Design Research: A Process to Promote Ownership, Development and Achievement

Jessica Goldsmith
Radford University

ABSTRACT

Universities and accrediting agencies are calling for undergraduate engagement in research (1). Simultaneously, research in many disciplines is growing increasingly complex and inaccessible at the undergraduate level. Research programs in interior design, evolving from an inquiring, studio-based learning culture (Polda, 2009), are uniquely situated to provide a positive example of how undergraduates can work to develop research agendas and fully engage in the research process. This presentation shares the experience of acquiring an internal grant to support a two-semester undergraduate research project for upper level interior design students, developing an achievable research agenda and engaging students throughout the research process. Particular attention is given to the process of guiding and engaging undergraduate students in a research agenda with human participants and how these methods can be used in interior design research classes and studios.

Boyer and Mitgang’s (1996) recommendations on how to improve studio education and Scanzoni’s (2005) research on active, student led learning, established the framework for student management. For example, Boyer and Mitgang suggest creating a less competitive or hostile learning environment; therefore, group work strategies and grading structures were actively used to encourage participation and the creation of a single learning group, rather than individualization and competition. Also based on their recommendations, the class consisted of
two grade levels of students: a vertical studio to promote sharing, learning and teaching among students.

In studies on both creativity (Hennessey & Amabile, 1987) and student learning and retention (Scanzoni, 2005), intrinsic motivation is a significant tool to engage students in learning and research-discovery. When students take ownership of their research questions within a supportive learning environment, one that guides them and pushes them to explore new questions, they will learn and discover new knowledge with greater success. This presentation shares how these theories were used in a successful 2011-12 interior design research class to guide students as they learned the research process, developed research tools and instruments, collected data and analyzed their findings to develop preliminary results. Student success and engagement is measured through positive course evaluations, retention from the first to the second semester of this elective class (75%), the transition from group to individual research questions, and individual student presentations at local and regional conferences.

1. See Valdosta State University, Stonybrook University, Virginia Tech, Georgia Tech, University of Houston and University of Nebraska-Lincoln for examples of institutions that have recently developed undergraduate research support structures.

REFERENCES (APA)


Appendix A

Excerpt from course outline, illustrating how grading emphasized teamwork

<table>
<thead>
<tr>
<th>Course requirements</th>
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<tbody>
<tr>
<td><strong>Attendance</strong> (worth 45% of your grade)</td>
</tr>
<tr>
<td>Attendance at each hour of regular class time is worth 1% of your final grade. Attendance and participation are very important. Please let me know as soon as possible if you will be absent or are having/had an emergency.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participation (worth 55% of your grade)</th>
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</thead>
<tbody>
<tr>
<td>Fully participating by completing critical readings, building models, assisting in data analysis, preparing and conducting interviews, attending all field trips, preparing for a final presentation to be given in January and being a great class participant. Where you will participate:</td>
</tr>
<tr>
<td>- Completing and being able to discuss readings</td>
</tr>
<tr>
<td>- Building models</td>
</tr>
<tr>
<td>- Constructing a data analysis method</td>
</tr>
<tr>
<td>- Collecting student generated data</td>
</tr>
<tr>
<td>- Practicing interviewing skills</td>
</tr>
<tr>
<td>- Interviewing assisted-living facility residents</td>
</tr>
<tr>
<td>- Cataloging participant data</td>
</tr>
<tr>
<td>- Preparing a formal presentation</td>
</tr>
<tr>
<td>- Practicing formal presentation in class</td>
</tr>
<tr>
<td>- Delivering formal presentation to area students and faculty</td>
</tr>
</tbody>
</table>

Appendix B

Excerpts from students’ writing

Student statement read during a presentation on the impact of research

Interior Design is a focused career major with competitive job search after graduation. Becoming a part of the QEP allowed for me to explore a different side of interior design and has opened up a new range of job opportunities. While focusing on assisted living facilities during my research, I have come to the understanding that design can be used to better the lives of older adults in the future. Not only is an interior designer uniquely qualified to create functional, livable environments for older adults; we are also able to produce a safe and healthy atmosphere that can enhance quality of life. After graduation, I plan to choose a career path that focuses on the improvement of interior design relevant to health care facilities and alternate housing. It will always be in my interest to use what I learned during my research in the QEP to help me with future design challenges.

Abstract from individual student research program

Moving from a private home into an institutionalized setting, such as a student dormitory or an assisted living facility, gives new residents the opportunity to create new homes for themselves. This study examines how students and older adults used the decoration and interior design of their private rooms within institutionalized living facilities to transition to their new environment. Did individuals use current or new furnishings? Were they able to create a comfortable environment for themselves in their new living environment? The majority of students transitioning to a new environment purchased new furnishings, in contrast to the older adults, who brought furnishings from their homes. Surveys found that both older adults and students did not entertain as frequently in their new institutionalized living space. Equally, older adults and students did not redecorate their new living space as much as their previous living space. Both
the students and older adults felt their furniture adequately set-up their space. Eighty-five percent of students surveyed felt their institutional space was not large enough. The older adults believed their space needed an area for guests to come visit.

Results from these studies help us better understand the intermediary characteristics for those who leave their home for an institutionalized setting. Findings are significant to those helping people design a new home within their institutional living space. Architects and designers can use this research to help design personable institutionalized living spaces. Through spatial layout, design elements, color and materials, designers can give residents opportunities to express their individuality. Study findings will also help design students creating an institutionalized space. It will help them think more about residents and how they would use the space.

Abstract from individual student research program

Institutional living can make privacy and security challenging for people (Regnier, 2009). Regnier’s ten design trends utilize residential design approaches to the physical environment while relying on home care style methods for service delivery. It is believed that these home care style methods combined with Regnier’s ten design trends can make group residential settings more friendly and humane. By studying the ten design trends allowed for this study to compare and contrast the quality of living environments in public student housing and assistant living facilities in a midsize city in the southeast.

Out of 20 participants, half were freshmen dormitory students and half were residents from an assisted living facility. While interviewing both types of residents, they completed a questionnaire that assessed their impressions of the facility and its staff. These questions contained concerns of issues dealing with comfort, spatial layout, over all privacy, quality of the on-site food, frequency of visitors, and enjoyment of the group activities. Findings suggest that students feel they do not get enough privacy, tend to feel uncomfortable and disapprove of the hired staff. They also believe there is an inadequate amount of space in order to have visitors in their personal living quarters, and rarely attend the on-site activities provided by the facility. Assisted living residents feel they have sufficient privacy and space, and feel comfortable in their surroundings. Most assistant living residents approve of the staff and the activities that are provided for them, though, similar to the students they rarely have visitors in their personal living unit. Facilities that implemented more of Reginer’s design principles had residents who were comfortable in their surroundings. These findings could help institutional managers, interior designers, and individuals considering moving into an institutional setting.

References

Abstract from individual research program

Greater relative happiness is an important quality of life indicator for older adults in assisted living (Eshelman & Evans, 2002). Smith and Hogan (1987) explore the relationship between nurses’ efforts and how effectively senior citizens can carry out everyday task at assisted living facilities. People’s emotions are related to their social and physical environment. This study looks beyond the physical indicators of an active older adult, such as, spending a limited amount of time in their room or actively participating in facility activities, to examine the emotional aspects of adaption and self-reported happiness among assisted living residents. This research was conducted through a series of open-ended interviews with ten older adults in three assisted living facilities in the southeast. Interviews focused on how residents have adapted to their private rooms, whether or not they would change anything about their rooms and how socially involved they are at the assisted living facility. While conducting these interviews, it became clear that the amount of friends and social interactions each resident had, and residents activity level, greatly influenced their perceptions of themselves and their environment. During interviews, participants commented: “You can never have enough friends,” and, “I would like
more activities and outings.” Interviews indicate that many assisted living residents are more concerned about companionship and staying active socially than private room size or living quarters. Findings are beneficial to interior designers when implementing social spaces into designs for assisted living facilities. Since many assisted living facility residents enjoy activities, useful, multipurpose activity spaces should be implemented within designs. Additionally, more intimate settings should be provided for quality time with family and friends.

Reference


Appendix C

Student learning outcomes assessment tool, developed for required for grant justification

Name: Administration number:

Learning Outcome 1

1) Where are scholarly peer-reviewed journals in interior design found?
   A. Blackwell website
   B. IDEC website
   C. Books-A-Million
   D. University Bookstore

2) Which of the following is a scholarly peer-reviewed journal?
   A. *Wall Street Journal*
   B. *Dwell*
   C. *Journal of Interior Design*
   D. *Interior Design*

3) Which of the following is a scholarly peer-reviewed journal?
   A. *Metropolis*
   B. *Environment and Behavior*
   C. *Architectural Digest*
   D. *Architecture*

Learning Outcome 6

4) Why should you share the results of your research with a large audience?
   A. Attention
   B. Class grade
   C. Fame and fortune
   D. Share information

5) Where can you share the results of your research with the scholarly community audience?
   A. IDEC conference
   B. Continuing education class
   C. DesignUSA conference
   D. ID conference
6) What is the first step to a conference presentation?
   A. Prepare a PowerPoint
   B. Submit an abstract
   C. Prepare a lecture
   D. Register

Learning Outcome 2

7) Which statement most accurately describes the kitchen's degree of openness?
   A. Approximately 50% open
   B. Expansive, there are walls on only two sides
   C. Limited, there is only one entrance/exit.
   D. Approximately 20% open

8) Which statement most accurately describes the kitchen's degree of openness?
   A. Approximately 50% open
Learning Outcome 3

9) Which scale is the most appropriate to build a scale kitchen model at?
   A. $\frac{1}{4}^" = 1'-0"$
   B. $1'-0" = 1'-0"$
   C. $\frac{1}{16}^" = 1'-0"$
   D. $1\frac{1}{4}^" = 1'-0"$

10) Which of the following should you have while working in the woodshop?
   A. An iPod
   B. Safety Goggles
   C. Bose Headphones
   D. Long, loose hair

Learning Outcome 4

11) As an interior design student, which of the following is an appropriate question to ask during an interview?
   A. Marital status
   B. Sexual orientation
   C. Medical conditions
   D. Number of marriages

12) Which question is worded the best for use during an interview?
   A. You must be at least 80, right?
   B. You look younger than my grandma, you’re under 80?
   C. What year were you born?
   D. How old are you?

Learning Outcome 5

13) What presenting on your class experience, which of the following should you not do?
   A. Present your literature review
   B. Explain what you found challenging
   C. Compare yourself favorably to your classmates
   D. Explain a mistake you made

14) What presenting on your class experience, which of the following should you do?
   A. Drop your notes
   B. Have note cards
   C. Prepare
   D. Write notes on your arm
Trash to Treasure: Exploring the Complete Design Process, Collaboration, and Environmental Responsibility through Furniture Design

Amy Jacobson-Peters
University of Central Oklahoma

ABSTRACT

The academic experience of most interior design students is very unique. Unlike a graphic design student who can see a project through to the end by printing off a final design, or a fine art student who can see their concept go from beginning to end by producing a sculpture or painting, the interior design student spends their academic career producing projects that are only partially complete. To be able to produce an entire interior design project from concept to the final installation involves time and financial constraints that most academic institutions cannot provide. The “Trash to Treasure Project,” as part of an undergraduate Interior Design program, allows an interior design student to fully explore the design process from start to finish creating an extremely valuable experience.

The “Trash to Treasure Project” is part of a Custom Furniture class students are required to take their second semester, sophomore year. For this project, students work in groups of 2 to 4 developing designs for a piece of furniture or a light fixture that is made from materials that would otherwise have gone in the trash. Since McDonough and Braungart’s book, “Cradle to Cradle” came out in 2002, the design industry has been steadily working to develop products and spaces that aspire to the philosophy of sustainability and eco-effectiveness. To this day, however, our society still faces serious issues when it comes to dealing with excess waste. This is especially true in the Southwest region of the United States where according to the Environmental Protection Agency, many states rank poorly in recycling practices. This type of statistic illustrates why it is still important to teach students the value of environmental responsibility.
Through the Trash to Treasure project, students must research their chosen material; how much is produced in a year, and how much ends up in landfills? They must look at what other designers are doing with that same material, and through this, begin to develop their own designs. The entire design process is explored, from early concept sketches and sketch models to material experimentation, and finally, full scale mock-up construction. As part of the project requirements, students produce renderings and working drawings and present their final project to the class in a formal presentation. Each group also collaborates with students in the Graphic Design program who develop such branding materials for the interior design students as logos, hang tags, web pages or brochures that represent the furniture pieces and the interior design student’s groups.

Through inner and intra-disciplinary collaboration, the Trash to Treasure project has been a great success. The experience has been ranked by many students as one of their favorites while in school, and has changed many attitudes about recycling and sustainability while providing students with practical experience on a project from beginning to end. The project has garnered local attention through newspaper articles and local exhibits, impacting society and spreading the word about the importance of utilizing our precious resources in the most environmentally responsible manner possible.

REFERENCES (APA)


Appendix

Figure 1. The project statement:

The Trash to Treasure Project

As responsible Designers for the 21st Century, it is imperative that we incorporate the principles of green design and sustainable design into our projects whenever possible.

- **What is Green Design?**
  A design, usually architectural, conforming to environmentally sound principles of building, material and energy use. A green building, for example, might make use of solar panels, skylights, and recycled building materials.

- **What is Sustainability?**
  "Meeting the needs of the present generation without compromising the ability of future generations to meet their needs."
  --1987 Brundtland Report

- **What is Sustainable Design?**
  The art of producing objects using only renewable resources, and which themselves, in operation, deplete only renewable resources.

For your final project, you will explore these principles through a group project that examines the full design process from concept to completion requiring research, design development, construction and presentation. Your assignment is fashioned after the EnvironDesign Convention’s competition in which participants are asked to create objects d’art from recycled materials.

From the EnvironDesign website:

**Trash to Treasure—An Adventure in Imagination**

"In the United States, 32 truckloads of waste are created for every truckload of goods produced. In fact, 90% of things made in America are thrown away within one year. But as we all know, there is no away! Creative solutions to deal with waste is the raison d’etre behind the Trash to Treasure competition. Here’s how it works:

Pull something out of the waste stream and turn it into something of value. Find anything that has been “tossed” into your home trash container, the office waste bin, a dumpster at a construction site…wherever you find trash. Then, turn this trash—pieces/parts/duplicates—whatever moves you, into an object of function or beauty….”

**CRITERIA FOR THE PROJECT:**

Design a piece of furniture from “trash.”

1. Begin by forming groups of 2 to 4 students. Once you have chosen your group, you must inform the instructor.

2. **Document, document, document!** It is important to point out right here that you will be discussing your design process in the final presentation as well as throughout the semester during critiques. So, from the start, take pictures, scan drawings, record ideas. You will be showing this important information throughout the development of your “Trash to Treasure” piece.
3. Develop some design concepts. Decide what materials you wish to use for your project along with what type of furniture you would like to build. Preliminary research must be done at this point so that your group is sure your designs are compatible with the materials you’ve chosen. This will be the beginning step in the overall design process of your “Trash to Treasure” piece. After some initial research, each group member must create a minimum of 5 color conceptual drawings illustrating different ideas for the final project.

4. When concepts are established, do further research on your material and design concepts. Some areas to explore:

**Materials:**
- Where will you get your material?
- How it is manufactured or produced?
- What is the original use for the material as well as other ways it is utilized?
- How much of your material is thrown away each year?
- How much does this material cost brand new?

**Construction Techniques:**
- How will you manipulate the materials?
- How will you join the materials?
- Play and experiment!

**Type of Furniture Piece:**
- Look at other styles of chairs, tables, headboards, etc.
- What are their characteristics?
- What are their dimensions?
- Study ergonomics; what are the measurements?

**Marketability:**
- How much will it cost to produce your piece?
- Who will buy it (target market)?
- How will you manufacture/produce it?
- Where/how will you sell it?

5. Develop and finalize your design. From your groups conceptual drawings, create 3 sketch models exploring your top picks in a three dimensional study. The models can be made of cardboard or paper. They do not need to be fancy, but should allow you to start exploring building techniques. Evaluate your three models to decide which design should be built for the final. Include outside sources in the evaluation process (along with feedback from class critiques).

6. When the final decision has been made on a design, each group must produce working drawings showing a plan, a front elevation, a side elevation and three sections (top, side, and bottom) of the design.

7. Create a full color perspective rendering of your design.

8. Build a mock-up of the design. Each group will periodically meet with the instructor to check progress. (See semester schedule.) Your craft and creativity will be evaluated. Use the best sources you can find to produce the strongest possible design you can create.

9. For the final, each group will present their project. Presentations must discuss your original design concepts, your group’s design development process, information about the products you used, and where you found it. (Refer back to #4.) Also, discuss how your group would market
your piece. Each group will work with a Graphic Design II student or team of student’s to help you develop your branding and marketing concept.

10. Each group will turn in a written report documenting research, showing the design process as well as the production of the mock-up. List where all research information was obtained. Copies of pages run off of the internet will not be accepted. This is to be an original document created by your group. It can be a copy of a PowerPoint presentation used for the final presentation, but it must also contain scaled down copies of your working drawings, copies of your conceptual drawings and your perspective rendering, as well as pictures of your mock-up. Also include information about marketing and branding that you develop with your Graphic Design team.

Grades will be determined based on the creative use of materials, the originality of the design of the piece, neatness, craftsmanship, and construction of the mock-up. Grades will also be determined on the neatness and accuracy of the working drawings; the written material which includes grammar, spelling, sentence structure, and thoroughness of research; the presentation (how interesting and informative you make it), and individual participation within the group. All group members must participate equally in the final presentation. Each group member will also fill out an evaluation sheet on the other group members to rate levels of participation.

Prizes will be awarded for the best overall design, and for the most innovative use of materials. These awards will be determined by a panel of faculty judges from the Design Department. There will also be an award for the group who gives the best presentation. This will be determined by a class vote.

Each group will be responsible for transporting their piece to school for the presentation, and picking it up again after the pieces have been graded. They must be picked up by the end of finals week.

For the final you will turn-in:

- A book documenting your design process. It will include a written copy of your presentation that includes copies of the working drawings, original concept drawings, the rendering, photos of your mock-up, and your research.
- Your mock-up.
- Full size copies of your working drawings, concept drawings, and the rendering.
- Marketing and branding information your group develops.
- Evaluations on each group member.

Figure 2. A chair made from old car and tractor parts.

Figure 3. Looking for materials.

Figure 4. Interior and graphic design students together with their projects on presentation day.
Figure 5. The “Re-Fab Furnishings” Collection.

Figure 6. Pieces on display with graphic design student’s work.

Figure 7. Part of the group’s presentation materials illustrating fun in collaboration during the construction process.

Figure 8. Bicycle Tire Inner Tube Chair.

Figure 9. A canoe chair and coffee table.
Figure 10. The Farmhouse Collection features a bench made from recycled barn wood.

Figure 11. Rendering for a bench from the “Farm House Collection.”

Figure 12. A lamp made of acrylic and glass from broken wine bottles.

Figure 13. Close-Up of Inlaid Gift Card Detail

Figure 14. Light Fixture and Coffee Table with Gift Card Details
ABSTRACT

Premise:
Personal connection and engagement is an active component of experiential discovery and is often required to process complex problem sets related to the interior design profession. (Dee Fink, 2003) Many first year students, unfamiliar with the dynamics of studio environments, lack the perspective to see project opportunities and resolve complex economics of space, client needs of function, and appropriate form. They are unaware of broader social, cultural, and environmental responsibilities. (Aspelund, 2010) Concurrently, professors have trouble establishing effective evaluation and feedback methods that meet individual needs and foster multidimensional problem solving skills for a wide range of student profiles.

The qualitative, personal narrative is an interdisciplinary tool used both pedagogically and professionally to understand personal dynamics within a professional setting. (Hinckley, 2005) Additionally, storytelling merges the history of human experience and the development of cultural awareness. (Scott Momaday, 1976) Therefore, narrative used in introductory design studios can establish a foundation of problem solving experience for both students and professors building interactive studio experiences. (Magolda, 2001)

This study designed a questionnaire based narrative for students to gain broad perspectives on programming issues and build a database of personal connections prior to subsequent design processes. The professor used the data to provide feedback and create a customized studio experience to promote individual development.
Methods:
The narrative was presented to thirty students enrolled in an introductory interior design studio with the introduction to their studio project, as an integral component of the planning and programming process. (Appendix 1) The students were allotted two weeks to complete the narrative and were given a rubric for evaluation. The forty-five narrative questions related to the individual, the project, and its context within the profession. (Appendix 2) The professor used the completed narratives for studio feedback during the programming phase of the project. Students then conducted project programming reports which required establishing the main goals, needs, opportunities, and problems. The narrative was used to establish correlations between the individual’s thought processes and approaches to the project via programming. The fundamental question asked was: did the self-reflection at the beginning of the planning process, along with related studio feedback, lead to self-discovery of the project’s needs and opportunities?

Outcomes:
The data shows that overall students were able to build on their personal reflections and document broad understandings of major issues and opportunities related to the function of their project within a personal and community context. (Appendix 3) They were genuinely inspired by their own realizations contained within the narratives and developed broader concepts that positioned them to advance successfully into schematic design and visual concept development. (Appendix 4) The professor used the narrative to effectively gauge the student’s viewpoints, illuminate new perspectives on the issues, and highlight opportunities through feedback and evaluation. The study will continue tracking the development of student projects using the same methodical narrative referencing as the basis for student design development and professor feedback. These processes and final conclusions will be presented at the IDEC conference in 2013.

REFERENCES (APA)


Appendix 1: Studio Project Description

Project Title:

LIVE- WORK SPACES: FEELING AT HOME IN THE WORK ENVIRONMENT

Purpose:

To design a LIVE- WORK space for yourself upon graduation from XXXX. It is likely that you may have a period of time after graduation where you are searching for your next experience, be it going on to graduate school, finding a job, or simply figuring out what you want to do next and where you might move to. So that you don’t have to live with your parents, and you can begin to gain professional, entrepreneurial skills and experiences, your challenge is to design a LIVE-WORK unit for yourself. You are your own client 3 years from now. Whatever your passion, and however it connects to your image and view of yourself, and what you want to do in this world, is the basis for developing A LIVE- WORK SPACE. The “Designer Narrative” questionnaire is the basis for your self-exploration into what kind of designer you are or want to be and thus how you should begin to vision the qualities and functions of the custom LIVE WORK SPACE.

The reality of the world is that a design job may not exist in the traditional sense upon graduation. You may need to be creative, and take a personal risk and start your own business, just to get your feet wet. Since you have to live somewhere, why not have an adjacent space that you can call your own work environment and with some sweat-equity, you create your own business. A business that lets you do something you have a passion for, but one that can earn some money as well.

There are many specializations within the field of design, and design is a part of every aspect of life, from gardening to repairing bikes. Your skills of design can be applied to starting any type of business or job, with design flair, and thus a greater chance of success. Do not feel limited in what your possibilities can be. This is your opportunity to explore new ways that design can and will shape the world of business. This is your opportunity to begin planning for an uncertain future. This is also your opportunity to begin to shape your own design persona, your own objectives with design and your own destiny. The choices you begin to make today can and will effect the rest of your life. It is both a scary and uncertain time yet exhilarating and free.

Main Functional and Conceptual Criteria:

Your main criteria is to create two distinct, yet related spaces; one for your personal living, and one for your working. This first criteria is critical. You must understand yourself to design an effective personal space, and you must understand how you want to work, and what the public demands from a working space. While the two have clearly distinct functions and design criteria, they are of course linked through you in some way. This link may be expressed physically, symbolically, culturally, or using other subtle connections such as light, circulation, color, material, geometry, yin- and yang, etc. As mentioned, this will be both an inwardly scary yet free time in your life. How can your spaces respond to this emotional reality?
Appendix 2: Narrative Questionnaire Sample

**Directions:** The following questions are meant to elicit your personal reflection and viewpoint. There is no correct or incorrect answer. If you feel uncomfortable answering any of the following questions you may leave it blank. Your answers will remain completely anonymous. It is advisable to not attempt to answer these all at one sitting. Take time to think about your responses.

**Name:**                             **Age:**                          **Gender:**

1. Why are you in this major?

2. What is Design?

3. What is the Design Profession?

4. What kind of designer are you now?

5. What kind of designer do you want to become?

6. What are your ideals, goals, aspirations with design (i.e. how do you want to use design?)

7. What specific skills do you think you need to be a successful designer?

8. Do you see design more as an art or science or equally both?

9. What is design thinking?

10. What specialties of design are you aware of?

11. Which of these interests you the most?

12. If you could not earn money as a designer and you had to make a living on your own or in some other way, what would you want to do? What are your other interests?

13. If you had to start your own business based on one of your responses to question 32, what would it be?

14. Could you see of a way to combine your interest in design with your other interests/business?

15. What are the needs of your community that you think you could be helpful with?
Appendix 3: Sample Student Responses and Programming Data

Student “A” narrative responses

6. What are your ideals, goals, aspirations with design (i.e. How do you want to use design?)

“I think that one of my goals in design is to be involved in preservation and restoration work. I think that buildings can help to tell stories from the past and that history is something that should be held onto. I would also like to be able to create spaces to which people are able to relate. I would say that I have the most interest in residential and hospitality type of projects, but that I also want to keep my options open and be flexible enough to operate in a variety of areas.”

15. How does history relate to design?

“History is an extremely important part of design in a couple of ways. First, it is important to know that as a designer, it is likely that there are a number of others in the past who have dealt with the same issues you are currently facing, and it could be beneficial to examine their solutions to help you arrive at yours. History is also important in a broader sense. In the preface of the book Plantations of the Low Country: South Carolina 1697-1865, the author writes that each of the buildings, “reflecting the aspirations of its owners, and documenting their daily needs, tells what its owner wished to be as well as what he was.” Buildings can tell the history of the people who lived and worked in them, and I think that when restoring or modifying a preexisting building, that history needs to be considered and respected. I also think that this should be taken into account when you are designing something completely new because in doing so you are basically creating a new story and putting forth an image, which will hopefully last to speak to future generations.”

Student “A” Programming Report Excerpts

**CONCEPTS**

**Time:**
- Past: The main thing that I plan to carry on from the past with regard to my business is the focus on personal service. This may be accomplished in a variety of ways. I plan to create an environment that provides an experience and allows people to meet each other and interact. A knowledgeable staff that is available to give suggestions and answer questions is important. Offering memberships that provide discounts and specialized suggestions based on past history is also a possibility.
- Present: The present trend that will most affect my design is the fact that small movie and bookstores are regarded by many as obsolete. I need to overcome this by creating an inviting environment and making the experience of my store more valuable than the convenience of internet shopping.
- Future: I think that in the future, my design will most be affected by advance in technology, and my business will need to be able to grow and evolve to some extent to keep up.
Appendix 4:
Sample Student Responses and Programming Data

Student “A” Programming Report Excerpts

PROBLEM STATEMENTS

Function: The primary challenge here is to keep the live and work areas physically separate to keep the two parts of life symbolically apart, but still have them connected with a historic/entertainment based theme. There should be a polished yet relaxing atmosphere; the goal is to create spaces where people can both interact with others and be alone, feeling equally comfortable in each situation.

Form: The most important issue with regard to form are the physical characteristics required for the maintenance of the theme and atmosphere. Lighting is important throughout the different areas to create the mood, especially in the work space. Customers need to be able to move about easily in the space, and material is important, especially in the seating area, where they need to feel comfortable enough to sit and stay. The counter area needs to be situated so that the employee working there has a good view of the rest of the store. The living and work areas need to be distinct from one another, and in the living area, it is important to create both an area for privacy, and a more public area for entertaining. The same atmosphere should be maintained in the live space as the work space through the use of lighting and materials.
Appendix 4:
Sample Student Responses and Programming Data

Student “B” narrative responses

1. Why are you in this major? “– I chose this major because I’ve always been interested in design; from building with Legos, to playing the Sims as a young man to today being able appreciate art and design more than ever. I want to be able to express my art and design through architecture and hope to achieve a distinct roll in the architecture/design community. “

34. Could you see of a way to combine your interest in design with your other interests/business? “– I can see a way of combining my interests with design is perhaps to have my drawings mounted in certain spaces almost as a signature of my design. “

Student “B” Programming Report Excerpts
The Urban Workplace: A Case for Intricacy

Kevin Moore
Auburn University

ABSTRACT

Paradoxically, the global electronic economy has intensified dense urban centers, reinforcing the value of places for concentrated physical interaction. This 10-week studio for an office-share and conference center attempts to reinvent an existing warehouse on the fringe of the Chicago Loop. The reuse of the building leverages its proximity to a global financial center, regional and metropolitan transportation and a local neighborhood gradually developing a 24-hour vitality.

The problem was to design an incubator—a place of economic innovation and social interaction—based on the physical arrangement of generous spaces on a tight floor plate. The hypothetical client asked for a distinct sense of vibrancy for companies and individuals craving an interactive workplace. Students were asked to develop a lively interior without resorting to visual distraction.

The design focused on overlapping program and arranging events in time as well as space. The primary method of investigation was the development of a spatial sequence to privilege direct physical experience by acknowledging the fundamental difference between a sedentary and seeking viewer. The goal was to balance places of focused work with spaces for serendipitous encounters. In this way, spatial sequences were developed as overlapping events and paths of discovery rather than singular narrative processions. This concept was introduced first through readings and then by the creation of a video sequence through a memorable urban space. Video walkthroughs were continued as a primary design tool, and they were instrumental in testing the balance between active and passive visual effects.
In many cases, the constraints of the tight floor plate resulted in solutions with poise. These projects create a sense of repose but are visually rich when in motion. Related to the sequence, materials heighten or suppress other physical effects. For example, reflective or matte surfaces modulate visual connections, especially movement. Absorptive or resonant surfaces tune aural connections. In some cases, curtains become crucial elements, adjusting the size of spaces as well as their visual and acoustic properties.

In retrospect, these projects fit the definition of intricacy offered by Jane Jacobs. In her seminal urban analysis, intricacy overlaps events in time and is immediately recognizable at eye level. Surprisingly, intricacy often results in deceptively simple plans. The development of a spatial sequence tested in walkthroughs acknowledges such subtle yet profound effects. Because the studio is embedded in a year devoted to urban studies, this transfer of concepts from the city to the interior is strategic. It also suggests lessons from the initial video walkthrough reappear in the final projects.

In the end, the studio rethinks the urban office as nodes of concentrated social interaction supporting an expanded set of personal work habits. The proposed incubator assembles a disparate workforce in an intricate interior—a deceptively simple place designed to enhance a vibrant and collaborative workplace.

REFERENCES (Chicago)


Although this type of facility exists on the market, the client complains they feel “rented.” She eloquently describes an alternative, one that pulses with its own life. The problem is a cultural one. In her estimation, office and conference, working together, can become a vibrant place to develop and share ideas. She has used the term “synergy” in meetings. You prefer the term “mutually reinforcing.” She also likes the word “serendipity.” You like it too. She has no idea what you mean by “spatial sequence.”

**SITE**
The building is on an odd street, and the client has requested a rare interior that compensates for this disadvantage. Immediate assets include MARTA and CTA trains, the Chicago Board of Trade, Columbia College, the Federal Building, a new Cardiac Children’s Center and the bustling restaurants, bars and residents of Printer’s Row.

**OFFICES**
15,000 s.f. net rentable office space (based on the financial *pro forma*)
Includes exterior wall but not elevators, elevator lobbies, restrooms, mechanical rooms, service hallways or stairs. The client hopes small start-ups will appreciate the strategic location and “buzz” created by a revolving cast of conference activities.

**CONFERENCE CENTER**
Concierge/Security Desk
Meeting Rooms
required:
- 1 lecture hall—75 people (with coats and AV closet)
- 1 executive boardroom—15 people (with coats closet and server station)
- 5 small meeting rooms—10-40 people
required:
- 1 large multi-function—25-100 people (with storage and AV closet)
- 2 large meeting—15-50 people (with storage)
Dining—75 people (combine with lecture hall or large multi-function room)
Lounges—to accommodate people on each floor for pre-function and exhibit activities
Business Center—6 computer stations, printer/copier and mail drop
Restrooms—adequate fixtures for men and women on each floor
Catering—staging area for server stations including separate restrooms
Conference Center Offices—1200 s.f. including reception and break room

**SERVICE**
Elevators—passenger and service access with lobbies
Fire Stairs—as required by occupant load
Circulation and Mechanical—as required

**PARKING**
The client has purchased the one storey garage immediately to the east as parking for the facility and as a venue for occasional but memorable parties. It helps explain the odd choice of site, but it creates an entry from the back.

**NOTE:** If a penthouse is required, it must be set back 10’-0” from the street.
Located on the edge of Chicago’s Printer’s Row (a 24-hour neighborhood with multi-modal transportation), the innovative re-use of a 30,000 sq. ft. historic building provides a collaborative workspace for creative entrepreneurs to develop and share ideas. The conference center assumes a nomadic work style and a diverse workforce, offering rentable collective spaces for both planned meetings and serendipitous encounters. Because creative collaboration is often spontaneous and chaotic¹, a variety of informal common areas encourages face-to-face employee interaction and supports a range of work styles. These face-to-face meetings are effective because they cultivate an intimacy and trust that virtual meetings lack, allowing for nonverbal communication to enrich collaborative imagining². Offset provides a venue for these face-to-face meetings, promoting clear transfer of tacit knowledge and shared understanding through direct interaction³. The result is greater productivity, creativity, and synergy. Offset’s employee-centric approach allows patrons the freedom to choose how and where they meet within the office landscape. This control over the environment builds trust by allowing patrons to take ownership of a space⁴. The constantly revolving cast of conference activities creates a buzz that stimulates innovative ideas—enhancing productivity, efficiency, and employee wellness.

⁴ Don Goeman and Ricky Duggy, “The New Office Landscape” 3(6) magazine, Herman Miller, Fall 2004, p. 16.
The main idea for OffSet is to activate and expand the small floor plates of the existing building by creating glimpses into pools of space that pull patrons through the building, allowing them to continually experience and rediscover spaces. The formal strategy of OffSet heightens discovery, encouraging the flow of knowledge through an unexpected environment. To achieve this, walls are strategically misaligned (and offset) to create an intriguing series of sequences threaded together by the partial views. This ensures that the building always feels active and encourages shared energy. Several punctures through the skin of the existing shell create skylights adjacent to windows to vertically connect meeting spaces and bring in additional natural light.

The program is organized with office space on levels 1-2 and 6-7, taking advantage of storefront property at the bottom and views to the Sears/Willis Tower at the top. The Conference Center occupies the middle three floors to promote interaction and collaboration among the diverse patrons. Plans are designed for flexibility by overlapping programmatic elements and employing a variety of movable furniture and curtains that give employees greater control over spatial configuration and visual privacy. This lean conference solution results in a fluid workplace that maximizes space and economic savings by ensuring that each area is active during office hours and afterwards.

2 Herman Miller, Inc., and Gensler, "Why and How We Meet," internal report.
The material palette reinforces the brand, demographics, and multi-functionality of OffSet. The materials are refined to appeal to a broad spectrum of users and establish the conference center as an appropriate venue for the creative class. The reflectivity and partial translucency of the materials promotes awareness of adjacent activity without being distracting, further energizing the space. Additionally, materials control the acoustic and thermal qualities of the spaces to allow for a variety of meetings.
Aware that effective creativity requires the ability to move to a variety of environments, OffSet proposes that several thermally active surfaces work to remove heat from spaces as necessary based on the amount of people occupying each space. This system lowers energy costs as the buildings is never working to remove heat from spaces that are unoccupied. In addition, thermal furniture saves energy expenditures as it controls body heat at the scale of the chair. When desk chairs are occupied, the furniture works to regulate body temperatures, reducing the need to condition the building on a large scale. This creates a variety of micro-climates so that each employee can work under conditions that are most suitable to their needs.
Observing the Present, Engaging the Past: Social Research as an Agent for Critical Historical Inquiry

Laura Morthland
Southern Illinois University

ABSTRACT

In her 1998 article published in the Journal of Interior Design [JID], author M.A. Beecher presented an argument in favor of “…a new framework for teaching history as a critical model…” which stressed that the “…construction of history often promoted by interior design texts potentially limits students’ abilities to understand that time can be modeled in many shapes including the cyclical, the polarized, and the discontinuous – models that draw upon current methodologies of scholarship in related fields of history and material culture studies” (pg. 10).

Social research has historically been viewed as a powerful tool for architectural design fields; particularly when it is employed in conjunction with programmatic efforts. “Social research incorporated into the design process can broaden the…orientation of most programming…” (Zeisel, 1975, pg. 19). In more recent design publications, the blend of social research and design still appears to be concentrated on strengthening the process of programmatic inquiry (McFall & Beacham, 2006; Whitemyer, 2006). This paper builds upon the long history of scholarly efforts to examine the man-made environment via social science research. However, the work presented here features a shift in the pedagogical focus of social research within interior design. The paper chronicles the integration of social research methods as part of a phased research project which spans a standard 16 week academic semester in a 300 level interior design history course [see appendix for details].

According to the Center for Ethnography (UCIrvine, 2012) the practice of ethnography is not uniform nor is its definition singular. However, a guiding principle of ethnographic inquiry is
that it seeks to record, uncover, and/or interpret social and cultural conditions. In contrast to ethnographic inquiry, which relies heavily on an independent (and potentially unbiased) observer to collect data, autoethnography “...is an approach to research and writing that seeks to describe and systematically analyze personal experience in order to understand cultural experience” (Ellis, Adams, & Bochner, 2010, Abstract) [Emphasis added].

The pedagogical intent of an autoethnographically based historical research project is to engage students in making critical connections (or contrasts) between the design and use of contemporary living environments with those of the past and/or those of alternate cultures by making the issue salient to them as individuals. This notion of using critical observation of present conditions as a gateway to actively engaging the past addresses Beecher’s call to present “…history as interaction by rejecting chronological continuity in favor of creative inquiry and critical thinking” (Morgenthaler, 1995 as cited in Beecher, 1998).

The pedagogical strategy described here is currently being incorporated into the Fall 2012 term. Students in the interior design history course have completed phase one (documenting the dwelling) and phase two (recording use and movement) of the research project [see appendix] and are now working on phase three (interpretation). The final research product will be completed by students in November and will be available for full analysis and presentation at that time.

REFERENCES (APA)


Each student enrolled in ID 331 will complete an extensive, semester long, research project. This project will utilize, in part, data content generated through research methods based on autoethnography.

To complete the research project each student will:

1) Conduct a personal investigation of their interior dwelling environment using critical observation methods.
2) Reflect on the personal investigation in order to propose an expanded historical research topic/thesis related to the design of interior environments.
3) Conduct topical research using historically relevant information (personal interviews, books, journal articles, etc) to support the proposed topic/thesis.
4) Synthesize all relevant research content into a written article and graphic poster presentation.

The intent of this research is twofold;

1) To begin a systematic documentation process of residential interior environments with the possibility of providing relevant data for future research.
2) To enable critical connections (or contrasts) between the design and use of contemporary living environments with those of the past and/or those of alternate cultures. This directly addresses syllabus objectives four through six.

What is Ethnography?
Ethnography is a qualitative research method used frequently in anthropology and other social sciences. Although not common place, ethnography is also emerging as a relevant research method for design fields such as architecture and interior design (Whitemyer, 2006). According to the Center for Ethnography (UCIrvine, 2012) the practice of ethnography is not uniform nor is its definition singular. However, a guiding principle of ethnographic inquiry is that it seeks to record, uncover, and/or interpret social and cultural conditions. In order to obtain social and cultural data, ethnographic study relies heavily on the use of field observation (personal observation, pictorial record, video record, audio record, artifact study, etc), participant interviews, and other methods. It is inquiry which is well suited to “study…unpredictable outcomes, complex emerging social formations, and technological and market change” (UCIrvine, 2012).

What is Autoethnography?
In contrast to ethnographic inquiry, which relies heavily on an independent (and potentially unbiased) observer to collect data, autoethnography “...is an approach to research and writing that seeks to describe and systematically analyze personal experience in order to understand cultural experience” (Ellis, Adams, & Bochner, 2010, Abstract) [Emphasis added]. As with ethnography, the practice of autoethnography can take many forms and, because of its personalized nature, it is often viewed as being somewhat ‘unscientific’ in its approach and content. However, the focus of autoethnography is on analysis of observable conditions, spaces, artifacts, interactions, etc which is then compiled into writing that is both aesthetic and thickly descriptive (Ellis, Adams, & Bochner, 2010).

Why is this relevant?
As you will discover this term, the record of interior environments (in written or visual form) can often be very limited. This is particularly true for ancient civilizations as well as geographic regions which have severe climatic limitations and/or cultural norms which make it difficult to document the interior environment. Often it is the exterior form (the architecture) or the more extravagant interiors (the cultural elite) which history records for future generations. As a class studying and striving to understand the history of interior design, we have a unique opportunity to become part of the historical recording process. In particular, we have the opportunity to document, for future generations, the reality of interior environments for students living and studying in a 21st century, “American” culture. We can examine what impact interior design may have on contemporary society as well as what impact contemporary society has on the design of interiors. As with our study of historical environments, we will need to pay attention to social, environmental, and technological influences with regard to how we dwell in the 21st century.
RESEARCH PROJECT DETAILS

Phase 1: Documentation of the dwelling
(Weeks 1 + 2)

- Type of structure (detached single family home, duplex, multistory apartment, mobile home, etc)
- Year structure was built
- Designer(s)
- Do you currently rent this property or do you own the home
- Surrounding environment (urban, rural; town, country; residential neighborhood, mixed use area, etc)
- Description of the basic interior finishes (drywall, carpet, tile, hardwood floor, etc)
- Floor plan drawing of your interior with a legend of spaces (A: Entry, B: Kitchen, etc) and an arrow indicating North
- Furniture plan drawing of your interior indicating the general layout of fixtures and furniture within your interior (your fixtures and furniture need to be drawn to scale as closely as possible)
- Total usable square footage of your interior
- Total number of occupants dwelling in your interior
- Age and gender of occupants dwelling in your interior
- Square footage per occupant in your interior
- Digital pictures documenting the state and use of your interior

* The intent of photo documenting is to record the environment in as natural a state as possible. Therefore, try not to stage the pictures; simply record the spaces as you feel drawn to record them. Take pictures at multiple scales (detail images and overall room images). However, please keep in mind that privacy and propriety are issues to contend with. Do not include images of other occupants and do not include potentially lurid or pornographic content. Use common sense in this endeavor. The instructor will have final editorial discretion on removing content that invades privacy or propriety.

- Generate a hard copy summary of documentation to the instructor on the specified due date

Phase 2: Recording use and movement
(Weeks 3 + 4)

- Use of a graphic chart (see attached) to track your use of the living environment over a 24 hr period for a one week (7 days) time span (September 2nd – September 8th)
- Throughout the week, keep a diary log of how you interact with the interior environment (how you use the spaces, what you enjoy about the spaces, what you dislike about the spaces, what you have modified within the spaces in order to function as you want/need to function, etc)
- Translate the data gathered from the daily use chart to generate pie charts which provide information on % of use per space and % of use per use code (see example chart) for the entire 7 day period (168 hrs).

- Generate hard copies of data findings to the instructor on the specified due date

Phase 3: Interpretation of data and selection of research topic
(Weeks 5 + 6)

- Examine the data (charts, diary entries, space documentation, etc) and make note of any items of interest or significance to you personally. Think about how you might use the data you have gathered on your own contemporary living environment as a starting point for research.

- Generate a one page research direction/discussion paper to be presented to the class and handed into the instructor in hard copy form on the specified due date

- Generate the 1st draft of a 24x36 (landscape format) research poster to be presented to the class and handed into the instructor in hard copy form on the specified due date

Phase 4: Historical research and article compiling/writing, finalizing research poster
(Weeks 6 - 16)

- The culmination of data collection and research is to compile your findings into a
written work that is formatted as an article which you might find in a major periodical.

- In addition to the written article, you are also asked to finalize a research poster which graphically (with strong emphasis on aesthetics) conveys the key essence of your autoethnographic findings and the subsequent research topic/thesis.

**ARTICLE WRITING DETAILS**

- Minimum 3,000 words, maximum 5,000 words; totals do not include supporting material such as images, notes, or references.

- Research shall include a minimum of three sources from books, periodicals, or journal articles. You can use the internet to gain source material but this can not constitute the entirety of your research.

- Suggested image sources include: images scanned from peer reviewed journals and/or books as well as images downloaded from the ARTstor (a link to the ARTstor can be found under “Databases by Title” in the ‘A’s on the Morris Library web site). Please include an images reference section at the end of your article; this section should directly follow your main reference section.

- All sources and illustrations referred to in the text (whether quoted or paraphrased) MUST be documented in accordance with APA standards. Web sites referred to or quoted from must be referenced like any book or journal article.

- Each page should be a left justified, 2 column layout; just as this document has been formatted. The majority of written content should be typed, single spaced, with Arial font style in size 10 point. The references section should be separated from the main written work by a table line and should be Arial font style in size 8 point. Some leeway will be given to formatting for tables, charts, or images that you want to include within the flow of the written work. In general, written work using non standard type style and/or formatting will be returned ungraded.

- Articles in both draft and final form shall be submitted shall be submitted to the instructor on the specified date in digital format, saved as Word 97-2003 documents.

- Submittal location on specified due date (refer to course calendar) shall be: Z:drive; Drop Folder

- Name your submission: ID331_2012_Last Name_Article

- **Note:** All written work has a required submission to “turnitin.com” which the instructor will due upon digital submission.

**RESEARCH POSTER DETAILS**

The exact content and layout of the research poster shall be up to the creativity of each student. However, some basic requirements include:

- 36 x 48 Printed sheet (portrait layout, full color, presentation paper)

- A main title for the poster

- An overview of the main article points

- Relevant visual content (tables, images, etc)

- Basic citation of textual and visual content to credit original sources

- The graphics of the presentation should be visually compelling and should entice the viewer

- The textual information must be of a size and font style that is easy to read from a five foot viewing distance

- Class title and date (ID 331, Fall 2012)

- However, please do not include your name or other identifying information on the final poster

**References:**


RESEARCH PROJECT PHASE 1: DOCUMENTATION OF THE DWELLING

Name: [Redacted] Date: 08/27/12

Type of Structure: Single Family Home
Year Built: 1997
Designer(s): Unknown; Modifications by [Redacted] (Father)
Owned or Rented: Owned
Surrounding Environment: Country/rural
Basic Interior Finishes: Carpet, Vinyl, Painted GWB
Total Usable Square Footage of Interior: = 3400 sq. ft.
Total Number of Occupants in Interior: Four
Age and Gender of Occupants Dwelling in Interior: 52 yr. Male, 53 yr. Female, 21 yr. Female, 18 yr. Male
Square Footage per Occupant in Interior: = 850 sq. ft.

---

**Main Floor Room Schedule**

<table>
<thead>
<tr>
<th>Room</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Garage</td>
</tr>
<tr>
<td>B</td>
<td>&quot;Porch&quot; Room</td>
</tr>
<tr>
<td>C</td>
<td>Kitchen</td>
</tr>
<tr>
<td>D</td>
<td>Dining Room</td>
</tr>
<tr>
<td>E</td>
<td>Living Room</td>
</tr>
<tr>
<td>F</td>
<td>Laundry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Room</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Bedroom</td>
</tr>
<tr>
<td>H</td>
<td>Bedroom</td>
</tr>
<tr>
<td>I</td>
<td>Bathroom</td>
</tr>
<tr>
<td>J</td>
<td>Master Bedroom</td>
</tr>
<tr>
<td>K</td>
<td>Master Bathroom</td>
</tr>
<tr>
<td>O</td>
<td>Dock</td>
</tr>
<tr>
<td>P</td>
<td>Porch</td>
</tr>
</tbody>
</table>
Partial Student Example - Phase 2

FALL 2012 RESEARCH PROJECT
Pie Charts - % of Use for 24 hr Period

**DAY 1**

<table>
<thead>
<tr>
<th>Spaces/Zones</th>
<th>Hrs</th>
<th>Total Hrs</th>
<th>% of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Garage)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>B (Porch/Breakfast Rm)</td>
<td>2</td>
<td>24</td>
<td>3.75%</td>
</tr>
<tr>
<td>C (Kitchen)</td>
<td>1</td>
<td>24</td>
<td>2.08%</td>
</tr>
<tr>
<td>D (Dining Rm)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>E (Living Rm)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>F (Laundry Rm)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>G (Bedroom)</td>
<td>7</td>
<td>24</td>
<td>27.42%</td>
</tr>
<tr>
<td>H (Closet)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>I (Bathroom)</td>
<td>1</td>
<td>24</td>
<td>4.17%</td>
</tr>
<tr>
<td>J (Master Bedroom)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>K (Master Bathroom)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>L (Living Room - Basement)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>M (Office - Basement)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>N (Bathroom - Basement)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

**DAY 1**

<table>
<thead>
<tr>
<th>Use Code</th>
<th>Hrs</th>
<th>Total Hrs</th>
<th>% of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Eating)</td>
<td>0.4</td>
<td>24</td>
<td>1.67%</td>
</tr>
<tr>
<td>2 (Sleeping)</td>
<td>6.5</td>
<td>24</td>
<td>27.08%</td>
</tr>
<tr>
<td>3 (Watching TV)</td>
<td>0.5</td>
<td>24</td>
<td>2.08%</td>
</tr>
<tr>
<td>4 (Reading)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>5 (School Work)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>6 (Cooking)</td>
<td>0.5</td>
<td>24</td>
<td>2.08%</td>
</tr>
<tr>
<td>7 (Dressing/Bath)</td>
<td>1</td>
<td>24</td>
<td>4.17%</td>
</tr>
<tr>
<td>8 (Hanging with Boyfriend)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>10 (Computer - School)</td>
<td>0.7</td>
<td>24</td>
<td>2.82%</td>
</tr>
<tr>
<td>13 (Computer - Web Surfing)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>15 (Texting on Mobile)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>16 (Talking on Phone)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>17 (Hanging with Family)</td>
<td>0.5</td>
<td>24</td>
<td>2.08%</td>
</tr>
<tr>
<td>18 (Personal Projects)</td>
<td>0</td>
<td>24</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

09/05/12

I enjoy the layout of our bathroom; however my only complaint would be its proximity to my room. I think though that this is largely due to the fact that I share a bathroom with my brother (i.e. someone aside from a significant other). I look forward to the day where I can move about through a master suite where the bedroom and bathroom are connected to one another. That would make the whole showering and dressing experience more relaxed, instead of having to quickly transition from one space to another in a discreet fashion.

09/06/12

My room is a very relaxing space. A few years ago, I repainted the walls and bought a new bed set. The walls are light blue with a light brown accent wall with matching comforter and sheets. This I feel gives my room a warmer appeal to it. Other than sleeping, I have found that I also enjoy reading and occasionally doing homework in my room. It is much more comfortable than the breakfast/porch room and the dining room for working. Doing these activities in my room later in the evening and at night time help to wind me down from the day. I feel as if I can more easily transition into getting ready for bed when I have been spending time in this space. Although I don't spend a whole lot of time in my room aside from sleeping, I feel as if it is an 'escape' space from the world outside – that is my room, my space.
Teaching Creativity?  
Designing Thinking with Non-designers

Bryan Orthel  
Kansas State University

ABSTRACT

Does design education begin at the university door? Often design educators assume that first-year students were not exposed to design thinking or creativity and consequently lack experience in thinking as designers. The implication is that we, the design educators, must teach them to design creatively. Or, alternatively, design is viewed as a creative ability that is neither logical nor learnable. By prejudgment, where have we missed possibilities to connect? This research reports information from a multi-year study of high school seniors’ creative abilities and offers context for considering the current generation of new interior designers. Through clearly rethinking what designers do and what our student may already know, it is possible to capitalize on the existing knowledge of first-year students and adjust interior design’s pedagogical approach.

This research is part of continuing exploration on the overlap of critical and design thinking in design and non-design courses. The presentation reports data collected from two summer courses taught to high school seniors in 2011 and 2012 and supported through design and SoTL literature. Course One used design thinking and critical questioning to discuss design and context. Course Two explored contemporary cultural issues through comedy to develop inductive, deductive, and abductive reasoning skills. Discussions and assignments were framed as wicked problems (e.g., few boundaries, no stopping point) in both course. The students represented a diverse geographic, cultural, and economic sample of college-bound students from a southern state. Although students in Course One preference the design-based course as an interest, neither the student nor instructor controlled which students were assigned to the courses. The students in both courses were assumed to be unfamiliar with design processes and design thinking. Data collection methods included pre- and post-course tests, document and
artifact analysis, observations, researcher journaling, and student record analysis. Anecdotal evidence from seven previous years teaching the courses supported the analysis. Although day-to-day activities varied, the students in both courses demonstrated inherent characteristics of design thinking and creativity (as characterized by Pedersen and Burton, 2009, and Coyne, 2005).

Regardless of the course, students demonstrated similar abilities for creatively solving wicked problems. Interestingly, the framing of problems as design problems (as opposed to comedy situations) hindered students’ progress. Both ‘design’ students and ‘comedy’ students struggled to break from expected outcomes (e.g., re-creating the known), but the comedy students more readily transitioned into creative resolutions. Are the groups’ performances a characteristic of their preparation and/or self-identified interest in design? How did instruction influence the results? Or, are the differences in how students have been prepared to think about problems? As design educators, we must consider how to connect to our students and how to prepare them for future interior design practice. Research and critiques of higher education, interior design, design thinking, and wicked problems (e.g., Amit & Roksa, 2011; Nussbaum, 2011; Coyne, 2005; Friedman, 2000) encourage us to reappraise what and how we design and how we teach design. This research on student creativity supports further discussion of how interior design education engages design students.

REFERENCES (APA)


Service Learning in Interior Design Studios: 
A Comparison of Outcomes

Rosemary Peggram & Abigail Dickinson
Texas Tech University

ABSTRACT

Introduction & Purpose
Community-engaged scholarship and community-academic partnerships are gaining momentum in higher education institutions (Wenger, L., Hawkins, L. & Seifer, S., 2012). Service learning, or community-based learning, is a flourishing concept in education that enables students to apply what they are learning in the classroom to real world settings in their community. Faculty who use service learning discover that it brings new life to the classroom, enhances performance on traditional measures of learning, increases student interest in the subject, teaches new problem solving skills, and makes teaching more enjoyable. In interior design education, service learning has risen to such a level of importance that it is now included in the accreditation standards (Council for Interior Design Accreditation, 2009).

Where experiential learning, or service learning, is well integrated, students demonstrate a greater understanding of the complexity of real-world problems than those without field experiences (Eisman, 2000). Eyler and Giles (1999) argue that service students become more thoughtful and effective, obtain a deeper, more complex understanding of issues, and feel more confident about using what they have learned than students with no-service-learning experience. This study sought to compare achievement of learning outcomes from two sections of the same sophomore-level interior design studio course—one taught as service learning and one traditional—in which students were assigned similar projects in scope.

Methodology
The data collected consisted of midterm grades, individual project grades, final course grades, as well as, written reflections of learning experiences and student end-of-course evaluation
comments to incorporate a mixed-methods approach. Student reflections were collected from students in both sections at three intervals during the semester and analyzed to extract dominant themes that evolved throughout the semester.

Findings
Student reflections from both sections yielded common themes of: greater appreciation for the quality of simple, affordable housing design; respect for the construction process; applicability of field trip experiences to course content; enhanced perception of drawing scale; and client awareness. However, the students in the service learning section expanded on additional themes, such as inspiration and gratitude, sense of humanity, and personal interest in community involvement. Average midterm grades for each section were used to compare learning outcomes quantitatively, with students in the service learning section receiving a mean score of 84.29% (ranging from 59% - 95%) and those in the traditional learning section receiving a mean score of 74.47% (ranging from 8% - 95%). Final grades for each section revealed the service learning section had a mean score of 88.28% (ranging from 78% - 95%) and those in the traditional learning section received a mean score of 77.76% (ranging from 32% - 94%).

Conclusions
It is apparent that service learning implemented into an interior design studio course has benefits over traditional projects. As reflected by average increased midterm and final grades, average increased individual grades on project components, and positive student reflections and end-of-course evaluation comments, student in the service learning section performed better and achieved course learning outcomes at a higher level than the students in the traditional learning section.

REFERENCES (APA)


Part I: Field Trip Reflection

- Answer all three questions.
- For each question, write a one or two paragraph thoughtful and in-depth response with specific information that addresses your experiences.
- Please remember that while your reflections are required (10% of your overall grade), there are no right or wrong answers and the content will not influence your grade, so please be honest.
- Please turn in a printed version of your reflection assignment on the due dates listed below.

ID 2380 (M/W) Due: Monday, Feb. 13th

1. How did the field trip affect your perception of the Habitat for Humanity organization?
2. How did the field trip influence your awareness of "simple affordable housing"?
3. From your field trip experience, what did you learn about construction that you didn’t know before?

ID 2380 (T/TH) Due: Tuesday, Feb. 14th

1. How did the field trip affect your perception of the builder, Creative Homes?
2. How did the field trip influence your awareness of "starter home" design?
3. From your field trip experience, what did you learn about construction that you didn’t know before?
My Instructor Expects Me to Do What? Promoting Clarity between Learners’ and Instructors’ Expectations

Julie Peterson
University of Wisconsin - Stout

ABSTRACT

It is the intention of instructors to have classrooms that promote positive learning environments. What defines positive learning environments? Students might say it includes having clear course materials, succinct schedules, and instructors who are not boring. Instructors, on the other hand, might state having students who are engaged, actively participating with discussions, and reflecting an overall desire to learn define positive learning environments. What is apparent in these examples is a gap between what students expect and what instructors expect in the day-to-day operations of effective classroom experiences.

Because instructors expect and prepare for one kind of experience while students desire another, this disconnect can foster students’ disengagement and hinder their motivation and self-efficacy, while also creating less-than-ideal learning environments for both students and instructors. To make this environment even less ideal, communication patterns between instructors and students are often problematic (Sutton, 2011) and tend to follow the format with instructors at the forefront and students rarely being given the option of openly articulating ideas and expectations.

One way to both close this apparent gap between expectations and improve communication in the classroom is for instructors to adopt a more learner-centered approach. The purpose of this study was to identify gaps between student and instructor expectations and to close them through improved instructor-student communication. Additionally, it was of interest to determine whether improved communication could impact student motivation, metacognition, and the overall learning environment.
During this two-year multidisciplinary research project of approximately 692 students, including interior design undergraduate students, students were surveyed at four regular intervals throughout the semester. The first week pre-survey gauged the students’ expectations of the course, the instructor, and themselves, and their motivation to learn in the course. The survey given at weeks five and ten of the course asked about identifying instructional methods which met the students’ needs, in addition to addressing gaps between student and instructor expectations. Students identified potential gaps between their original expectations and what was actually happening, both in regard to their efforts and the course instruction. The instructors would report all survey responses to the students and delve into deeper discussions after each of these surveys. The final week post-survey gathered student perceptions of motivation, instructor communication, learning environment, and metacognition resulting from the project.

Results indicated that gaps do exist between student and instructor expectations. Despite research showing that student-instructor interactions are a factor in student motivation (Rugutt & Chemosit, 2009), the results in this project noted no change in motivation during the semester. Student-instructor communication improved with students being more willing to discuss issues of concern with the instructor and vice versa. This provided a mechanism for instructors to explain their reasons for employing the teaching practices they do, while at the same time gaining insight from students into teaching practices which may lead to better learning experiences. Finally, this process provided an opportunity for students to consider their own role in the course, take more ownership of their learning, and support their own metacognition.

REFERENCES (APA)


Appendix A – Expectation / Motivation Survey Instrument Questions

**Week 1 Survey:**
1. What are your hopes/expectations for this course?
2. What are your hopes/expectations for your own performance?
3. What are your hopes/expectations for the instructor’s performance?
4. On a scale of 0-5 what is your level of motivation to learn in this class?
   - 0 = not motivated at all
   - 1 = slightly motivated
   - 2 = moderately motivated
   - 3 = very motivated
   - 4 = highly motivated
   - 5 = extremely motivated

**Week 5 and 10 Surveys:**
1. Relating to clearly communicating course content, expectations and outcomes…
   a. In what ways has the instructor demonstrated this?
   b. How can/should the instructor improve this?
2. Relating to creating meaningful, relevant learning experiences for you…
   a. In what ways has the instructor demonstrated this?
   b. What can/should the instructor do to improve this?
3. Relating to creating student-centered teaching/learning experiences for you…
   a. In what ways has the instructor demonstrated this?
   b. What can/should the instructor do to improve this?
4. Relating to using instructional technologies to engage you with the instructor, with other learners, and with the content…
   a. In what ways has the instructor demonstrated this?
   b. What can/should the instructor do to improve this?
5. Relating to encouraging you to engage in problem solving and creative and critical thinking relating to the course content…
   a. In what ways has the instructor demonstrated this?
   b. What can/should the instructor do to improve this?
6. Relating to providing you with prompt, high quality feedback about your performance in the course…
   a. In what ways has the instructor demonstrated this?
   b. What can/should the instructor do to improve this?
7. Relating to encouraging you to reflect on the course content…
   a. In what ways has the instructor demonstrated this?
   b. What can/should the instructor do to improve this?
8. Relating to ensuring your own success and adhering to the expectations you stated for your own performance…
   a. In what ways have you demonstrated this?
   b. What can/should you do to improve this?
Week 15 Survey:
The following questions relate directly to the research project you participated in this semester. For clarity, the term “research project” refers to the process that you, the student, went through in completing the various surveys and listening/reading the instructor responses at various times throughout the semester.

1. On a scale of 0-5, what has been your level of motivation to learn in this class?
   - 0 = not motivated at all
   - 1 = slightly motivated
   - 2 = moderately motivated
   - 3 = very motivated
   - 4 = highly motivated
   - 5 = extremely motivated

2. How has your motivation changed since the beginning of the semester?
   - 1 = decreased greatly
   - 2 = decreased slightly
   - 3 = no change
   - 4 = increased slightly
   - 5 = increased greatly

3. What factors contributed to your change in motivation?

4. On a scale of 1-5, how has the research project affected your motivation to learn in this course?
   - 1 = greatly decreased motivation
   - 2 = moderately decreased motivation
   - 3 = did not affect motivation
   - 4 = moderately increased motivation
   - 5 = greatly increased motivation

The remaining questions had yes or no answer choices:

5. I read through the instructor feedback to the survey responses posted on the course website.
6. I more clearly understand my roles and responsibilities as a student as a result of participating in this research project.
7. I more clearly understand the roles and responsibilities of the instructor as a result of participating in this research project.
8. I have become more aware of how I think and learn as a result of participating in this research project.
9. I have found that student-teacher communication has improved as a result of participating in this research project.
Appendix B – Select Survey Results

*Note – Variables were added to the study during the 2011-2012 academic year. This supports why some of the following results only have documentation from Fall 2011 and Spring 2012.

**CHANGES IN MOTIVATION**

A few of the final survey questions were asked during both years of the project. A common question from both years is summarized in Table 1. Note that the wording was slightly changed from year one to year two of the project. The wording in parentheses was used in year two.

**Table 1**

<table>
<thead>
<tr>
<th>On a scale of 1-5, how has the research project affected your motivation to learn in this course?</th>
<th>Fall 2010</th>
<th>Spring 2011</th>
<th>Fall 2011</th>
<th>Spring 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = greatly (strongly) decreased</td>
<td>3%</td>
<td>3%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>2 = moderately (slightly) decreased</td>
<td>8%</td>
<td>2%</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>3 = did not affect</td>
<td>59%</td>
<td>72%</td>
<td>54%</td>
<td>47%</td>
</tr>
<tr>
<td>4 = moderately (slightly) increased</td>
<td>23%</td>
<td>19%</td>
<td>37%</td>
<td>40%</td>
</tr>
<tr>
<td>5 = greatly (strongly) increased</td>
<td>6%</td>
<td>4%</td>
<td>6%</td>
<td>9%</td>
</tr>
</tbody>
</table>

In year one of the project, the researchers hypothesized that frequent survey/feedback activities would have an effect on student motivation to learn course content. However, results have shown only a limited impact on motivation. In contrast, the instructors observed increased levels of student engagement in their courses.

**STUDENT-INSTRUCTOR WORKING RELATIONSHIP**

Some other common questions included the following, for which students answered simply “yes” or “no”:

- I more clearly understand my roles and responsibilities as a student as a result of participating in this research project.
- I more clearly understand the roles and responsibilities of the instructor as a result of participating in this research project.
- I have found that student-teacher communication has improved as a result of participating in this research project.

Results from these questions are summarized in Table 2. Values in the table represent the percentage of students completing the survey who answered “yes,” rounded to the nearest percent.
Table 2

<table>
<thead>
<tr>
<th>Survey Question Topic</th>
<th>Fall 2010</th>
<th>Spring 2011</th>
<th>Fall 2011</th>
<th>Spring 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>understanding of roles and responsibilities as learners</td>
<td>70%</td>
<td>71%</td>
<td>80%</td>
<td>87%</td>
</tr>
<tr>
<td>understanding of roles and responsibilities of instructor</td>
<td>78%</td>
<td>78%</td>
<td>82%</td>
<td>85%</td>
</tr>
<tr>
<td>student-instructor communication</td>
<td>69%</td>
<td>67%</td>
<td>90%</td>
<td>94%</td>
</tr>
</tbody>
</table>

*SELF-EFFICACY, METACOGNITION, AND ENGAGEMENT*

**Self-efficacy**
Post-survey students were asked “As the semester has progressed, how has your confidence in your ability to master the subject material in this course changed?”

<table>
<thead>
<tr>
<th>Table 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
</tr>
<tr>
<td>Decreased greatly or slightly</td>
</tr>
<tr>
<td>No change</td>
</tr>
<tr>
<td>Increased greatly or slightly</td>
</tr>
</tbody>
</table>

When prompted “As a result of completing these surveys and discussing the results throughout the semester, I have become more confident in my ability to master the subject material in this course.”

<table>
<thead>
<tr>
<th>Table 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
</tr>
<tr>
<td>Strongly disagree or disagree</td>
</tr>
<tr>
<td>Neutral</td>
</tr>
<tr>
<td>Strongly agree or agree</td>
</tr>
</tbody>
</table>

**Metacognition**
Post-survey students were asked “As a result of completing these surveys and discussing the results throughout the semester, I more often think about the planning strategies I will use to learn that material.”

<table>
<thead>
<tr>
<th>Table 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
</tr>
<tr>
<td>Strongly disagree, disagree, or slightly disagree</td>
</tr>
<tr>
<td>Strongly agree, agree, or slightly agree</td>
</tr>
</tbody>
</table>

**Engagement**
Pre-survey students were asked two qualitative questions on engagement. In response to “Please describe what it means to you to be engaged with the instructor and the learning process,” their top three responses for both semesters were active participation in class, comfort with instructor, and open communication. For “Please describe some examples of how the instructor has engaged you in learning in the way you described above,” the top three examples for both semesters were types of interactive instruction methods, instructor policies, and the instructor’s personality and approachability. Post-survey students were asked follow-up questions on engagement:
“How has the degree to which you have been engaged in learning in this course changed since the beginning of the semester?”

**Table 6**

<table>
<thead>
<tr>
<th>Response</th>
<th>Fall 2011</th>
<th>Spring 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreased greatly or slightly</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>No change</td>
<td>28%</td>
<td>25%</td>
</tr>
<tr>
<td>Increased greatly or slightly</td>
<td>67%</td>
<td>65%</td>
</tr>
</tbody>
</table>
Renovating the Underground House: An Exercise in Applied Spatial Cognition and Experiential Learning

Elizabeth Pober
University of Oklahoma

ABSTRACT

Purpose
Interior design is inherently spatial. Designers must be able to “think visually and volumetrically” (CIDA, 2006). Spatial thinking is based on three elements: concepts of space, tools of representation, and processes of reasoning. “By understanding the meaning of space, we can use its properties as a vehicle for structuring problems, for finding answers and for expressing solutions,” (National Research Council, 2006). Educators often find teaching interior design students to visualize space to be a daunting task. Design concepts are communicated with a technique and in a context that is a representation of the real-life version. Students must learn to visually make the connection between the techniques for communicating the design, and the design’s real context. This paper will explore the beginning design student’s perception of space with a renovation project of a local underground house, and a method for teaching them to more accurately visualize spatial design solutions through experiential learning.

Methodology
In order for students to learn at a higher level, they must utilize a diverse set of knowledge sources, evaluate this knowledge for relevance, translate it in a new way and then apply it in solving a problem (Ankerson & Pable, 2008). Kolb’s experiential learning theory defines learning as “the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience,” (Kolb, 1984, p. 41). This theory supports a process that involves learning through experiencing and becoming aware, reflecting, thinking and understanding and finally acting and applying.
The student’s analyzed the space of the underground house with the provided drawings at the beginning of the project, visited the project site to complete site surveys, and completed a series of drawing and models at representational and full-scales to communicate the development of their design solutions, each stages focus relating to Kolb’s experiential learning theory and its four stage cycle. The students understanding, perception, and application of spatial cognition and reasoning was examined and tested throughout these project and stages.

Summary
With this teaching method, applied spatial cognition was taught to design students using Kolb’s theory and its four stage cycle including concrete experiences, reflective observation, abstract conceptualization and active experimentation (Kolb, 1984). Concrete experience was provided to the students through the visit to the underground house where the students completed the full survey of the existing home. Reflective observation occurred when the students had to think about the inconsistencies and consistencies between their initial spatial perceptions before and after the site visit to the home. Abstract conceptualization was applied when the students developed new designs for underground home. Active experimentation occurred when the students built study models of their designs and again when the students reproduced portions of their plans 2-dimensionally at full scale.

After the completion of these processes, the students showed an increased accuracy of spatial perception. Their ability to develop feasible and functional design concepts correctly was strengthened through their experiences, and they had a heightened sensitivity to the importance and necessity for utilizing space accurately.

REFERENCES (APA)


The division recently received a request from a local couple for some design assistance with developing ideas to renovate their underground house. The house was recently purchased by the couple who wants to renovate and restore it to meet their current needs. They would like some design ideas to reallocate space within the current house in order accommodate an open living floor plan and two new bedroom suites. Our focus will also be to improve the functional and aesthetic qualities of the underground environment to make it more efficient and inviting.

The main focuses for this project is to help you develop your ability to think spatially. Your spatial cognition will be challenged and will develop throughout the various stages of this project. The ability to study and work with the existing project site will provide you with a good opportunity to develop your ability to visualize space. You will also be able to talk with the real clients, and work with the unique challenging constraints of an underground home in developing your design solutions.

This project has two focuses:
- Problem analysis (programming)
- Problem Synthesis (design concept)

You will be researching the facility, its users, and their needs while developing your overall design program and your initial design concepts. You will then refine your initial design ideas, present them to your clients, and get feedback from them as to how your ideas meet their needs and expectations. Upon the client accepting your initial design ideas and making some suggestions, you continue ahead in further development of the design for this project. At the end of the project you will have a completed design that you will present to the client.

**Project Requirements:**

*Part I: Initial Spatial Perceptions*
- With the provided basic floor plan of the house and photographs, please summarize your overall perceptions of the existing spatial conditions

*Part II: Site Visit, Site Survey and Client Interview*
- Complete a comprehensive survey of the existing conditions of the underground house during the site visit
  - Take photographs of the existing conditions
  - Verify all provided measurements of the house floor plan and add details not provided on given drawing such as existing windows, doors, walls, fixtures, millwork, etc.
- Interview the client and expand the given program
  - Include more specific requirements for each space—-for example: adjacency requirements, furniture and fixture requirements and sizes, lighting needs, millwork needs, overall creative concept and feel of the home and various spaces, etc.
- After completing this site visit and interview, summarize your overall perceptions of the existing spatial conditions based on your site visit and compare those to your perceptions prior to visiting the house
Part III: Design Development-stage 1

- Completed design program
- Underground house research
- Concept development-overall creative concept for the project
- Initial design development sketches and space planning progression
  - adjacency and criteria matrices
  - bubble diagrams
  - block plans
  - initial floor plans
- After completing this stage, summarize your overall perceptions of the spatial conditions based on your design solution. Compare and contrast your new solution to the existing solution and spaces within the house.

Part III: Design Development-stage 2

- continued design development sketches and space planning progression
  - revised floor plans
  - scaled model to look at the overall volumetric design
- present your design to the client
  - summarize dialog and feedback from the client and how it will be applied to revise your design
- After completing this stage, summarize your overall perceptions of the spatial conditions based on your current revised design solution. Compare and contrast your new solution to the previous one and existing solution and spaces within the house.

Part III: Design Development-stage 3

- continued design development sketches and space planning progression
  - revised floor plans
  - elevations
  - basic computer generated model representing overall volumetric design solution
  - reproduce part of plan as defined by professor for your specific project at full scale
    - test the design for functionality and appropriate spatial use
- After completing this stage, summarize your overall perceptions of the spatial conditions based on your revised design solution. Compare and contrast your new solution to the previous one and existing solution and spaces within the house.

Part III: Final Design Solution Requirements

- Revise design for final solution
- Technical Drawings: 11”x17”
  - Demolition Plan (existing floor plan with proposed demolition identified)
  - Technical floor plan
  - Millwork drawings: plans, elevations, sections, labeled, dimensioned
- Presentation Drawings: 20”x30” presentation boards, duplicate copies 11”x17”
  - Rendered floor plan
  - 4 elevations: showing prominent areas (do not repeat what is shown in perspective)
  - 2 Perspectives: depict an interesting design solution for a chosen area
- Computer generated walkthrough-not rendered
**Project timeline:**

Week 11:
- Oct 29: project introduction, research, concept development
- Oct 31: site field trip, client interviews

Week 12:
- Nov 5: analysis, program development
- Nov 7: schematic design development

Week 13:
- Nov 12: schematic design development
- Nov 14: design development

Week 14:
- Nov 19: design development/refinement
- Nov 21: design development/refinement

Week 15:
- Nov 26: design refinement
- Nov 28: presentation/technical drawings

Week 16:
- Dec 3: presentation/technical drawings
- Dec 5: final design solutions due, presentations

**Basic plan of Underground house:**
*note: existing attached garage can be used for new interior renovation space; carport will be utilized as primary parking for clients*
Provided client program: (must be expanded and detailed further with client interviews)

Kitchen:
- Open to living room and dining room
- Standard refrigerator, gas range, dishwasher, microwave
- Island with prep, serving and dining space
- Open and closed storage for dishes
- Closed storage for cooking equipment and utensils
- Separate small pantry room
- Daylight/views needed

Dining Room:
- Open to kitchen and living room
- Must accommodate clients large antique dining table that seats 10 and a buffet

Living Room:
- Open to kitchen and dining room
- Two sofa’s, one large club chair and ottoman, coffee table, side tables, entertainment center
- Fireplace
- Daylight/views a priority

Master Suite
- King bed with two night stands
- Small sitting area with one lounge chair and ottoman
- Dresser
- Daylight needed
- Bathroom
  - Toilet closet
  - Two sinks
  - Shower
  - Large tub
  - Linen storage
- Two closets

Guest Suite
- Queen bed with two night stands
- Small sitting area with one lounge chair and ottoman
- Dresser
- Daylight needed
- Bathroom
  - Toilet
  - Sink
  - Shower/tub
  - Linen storage
  - Must be easily accessible from living space
- Closet

Study/library:
- Shelving for extensive library
- Built in small desk/writing area
- Club chair and ottoman with side table for a cozy reading area
- Daylight and views not a priority

General Info:
- Building codes unique to this home will be presented to the class by local code official and must be utilized in the design solutions
The Millennium Dream Home – Combining Quality of Life and Quality of Surroundings

Sandra Reicis
Villa Maria College

ABSTRACT

The complexity of interior design is clearly evidenced in design studios that address both the pragmatics of design as well as the aesthetics. Beautiful interiors that do not address the needs of the user are equally deficit as functional interiors that do not inspire or touch our aesthetic sensibilities. The Millennium Dream Home is a complex project that challenges to re-define the paradigm of the Dream Home, provide students with a solid understanding of Universal design, and direct their design sensibilities through the use of fine art as a source of inspiration for creating beautiful interior space.

The United States and other industrialized nations are becoming a highly aged society with a growing need for design to address the specific needs of aging and the desire for aging in place (Rosenfeld and Chapman 2008) Public opinion towards special needs is shifting towards an inclusive model evidenced in universal design applications. However, features of luxury homes generally are limited to high-end finishes and expanded spatial offerings with limited attention to the potential for changing spatial requirements. Renovation to existing homes to accommodate the effects of aging, illness or physical condition is currently a lucrative business, clearly indicating a deficit in the original design. Contractor solutions are often one dimensional, addressing only a pragmatic response.

The principles of universal design do not define the elements of good design nor provide a standard for pleasing aesthetics. The challenge is combining both quality of life with quality surroundings. Occupants will benefit from a new approach to the domestic environment that can meet changing needs over time. Studies outline strategies and solutions that improve the range of capabilities for people with limited abilities (Joines 2009). Students take practical
solutions and re-invent them as beautiful and integral components of the home garnering a sophisticated approach to universal design solutions.

The studio begins with an exploration of the essence of domesticity, exploring the history of domestic design innovation for precedent. Critical awareness of daily environments is synthesized with the fundamentals of universal design with a goal to improve people’s health and welfare (Baker and Weidegreen 1996). The search for a design aesthetic reaches beyond superficial stylistic applications. Embracing an appreciation for fine art, and the specific selection of an inspirational art piece provided substance and clarity for significant design solutions and unity in the overall project. Students engaged in a formal art analysis including historical context, formal properties, color theory, and artist perspectives.

At the conclusion of the project student exit surveys indicated a deeper understanding of the broader benefits of universal design that impact individuals, families and care-givers. Students developed an awareness of the economic impact of aging in place to both the individual and the state. Students increased their knowledge of fine art and demonstrated their ability to analyze art on multiple levels. Finally, students demonstrated the ability to creatively and innovatively identify spatial requirements, select finishes, furnishings and products, and design interiors that are beautiful, usable and accessible for a range of ages and abilities.

REFERENCES (APA)


Appendix

Project Statement

IND 210 – Interior Design Studio 2

DEPARTMENT: Art  CREDIT HOURS: 3
SEMESTER: Fall  SECTION: A

The Millennium Dream Home
Exploring the Dream – Evading a Nightmare

“What is needed is a sense of domesticity... a feeling of privacy... and atmosphere of coziness...”

Witold Rybczynski, Home

As a society we value freedom and independence. This is epitomized by the American Dream.....ownership of the single family dwelling. Promoted in the post depression era and politically encouraged, suburban home ownership provided a long-term program for economic recovery from the depression. However, an analysis of currently available residential designs will demonstrate an architecture of inequality and planned obsolescence for the freedom and independence of its inhabitants. As designers, an acceptance of what has been designed for inequality should not be tolerated. With this project you will be challenged to spatially re-design and create an effective transformation resulting in a satisfying, environmentally friendly domicile for people of all abilities, particularly addressing requirements across a range of ages and capabilities.

Your search for solutions in this project will explore the design implications of appropriate housing for an ever increasing, aging population. You will consider the principles of both sustainable and universal design as applicable to the ‘American Dream Home’ to provide a better solution for this unique set of challenges. Your design solution should reflect creativity and an innovative approach.

Objectives:

- to gather and analyze information about human needs and aspirations
- to evaluate objects/environments in terms of meeting basic standards of human safety and comfort
- to extract implications for design from behavioral information and criteria
- to discriminate between and to evaluate design alternatives on ethical, aesthetic, and technical grounds
- to apply the seven principles of universal design as well as sustainable design
- to convey the essentials of a design through a variety of means such as freehand drawing, diagrams, and models
- to go beyond the current accepted pattern and design an ideal environment for aging.

Assignment:

You are required to redesign a typical ‘luxury’ residence to reflect flexibility and adaptability over time. Your program can include but need not be limited to the following:

- Typical luxury home amenities: entry area, living area, food preparation area, dining area, office area, hobby area, sleeping area(s) as well as bathrooms and/or powder rooms, laundry rooms etc.
- Adaptable space that would be appropriate for family/guests and/or professional care givers
- Practical considerations such as storage, utility rooms etc.
- Provision for unexpected weather related occurrences.
- Appropriate solutions for vertical circulation
Development of ideas in the early stage of the design process is critical to the final success of a design idea. Designers must be adept at both visual and verbal reasoning in order to convey a creative concept for a design……”  Kathleen Ryan, ASID, Washington State University

We can consider design to be a set of systems and orders. Designers will consider the physical, perceptual and conceptual in their work. Comprehension of the ordered or disordered relationships among a building’s elements and systems and responding to the meanings they evoke is a product of the Conceptual order and fundamentally deals with images, patterns, signs, symbols and context.

Assignment:

*Frequently students have used images to represent a desired concept. Development of a design vocabulary can be achieved by undertaking an analysis, or parti of the image.*

**Part One:**

Visit the XXXXXXXXXX Art Gallery – suggested date is First Friday (of each month) when admission is free Select a work of art that speaks to you and reflects your thoughts and/or ideas about the Millennium Dream Home. This will be the basis of the concept exercise. It would be desirable if an image of your painting were available.

While at the Gallery, in your sketch book, draw several representations of your selected piece, which should include one over all sketch and several details.

From these images select one to simplify and represent it with simple shapes. Using 5 values (including white and black) analyze the values used in the composition. Make several of these studies in your sketchbook in pencil. No shading or modeling of form. Use flat, 2D shapes only.

**COMPUTER USE (suggested):**

Use Photoshop to help you in the process of simplifying value shapes. Although it may seem to simplify the process, it does not always accurately describe the generalized areas of value. Manual adjustments (on paper with pencil) have to be made.

**Considerations: Make annotations on your sketches and/or notes addressing the following**

**Formal Qualities – Physical Properties**
1. Relationship of scale
2. Repetition or similarity
3. Linear and Planar organizations
4. Awareness of emphasis
5. Awareness of visual pathways
6. Use of verticals and horizontals

**Analysis – May require some research**

<table>
<thead>
<tr>
<th>Art is not made in a vacuum; it is the product of the world around it.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptual Qualities - The Ideas or Spirit of the Art work</td>
</tr>
<tr>
<td>1. Historical Context</td>
</tr>
<tr>
<td>2. Cultural Context</td>
</tr>
<tr>
<td>1. Emotional Quality of Piece</td>
</tr>
<tr>
<td>2. Cultural Quality</td>
</tr>
<tr>
<td>3. Psychological Quality</td>
</tr>
</tbody>
</table>

625
Part two:

On XXXXXXX we are scheduled to work in the glass workshop.

- Following your observations, dissections, and annotations this will be the process of re-interpreting the image by using the elements and principles of design. 
  *Remember that annotations are critical to provide verbal opportunities to express ideas.*

- Re-interpretations include expressions of the geometry of the object, de-construction of the object, stylizing the object, abstracting the object.

- **Multiple examples of a parti analysis should be attempted and recorded**

  *for additional guidance regarding ‘parti’ refer to page 43, Mitton text –Interior Design Visual Presentation.*

Introduce color to your analysis and apply this design to your glass fusion concept interpretation.

**Student Project #1 – Concept Development Process and First Floor of Completed Project**

Student Inspiration

Art: Kenneth Noland, *Yellow Half*, 1963

Student analysis and abstraction

Glass fabrication as visual concept articulation
Diagram of student process work using rotation as a design tool to modify the existing floor plan and expand on the student concept of ‘breaking out of the box’

First Floor Design of Student Project.
Student Project #2 – Concept Work and First Floor of Completed Project

Student Inspiration

Art: Georgia O’Keefe, *Green Patio Door*, 1955

Student Interpretation of artwork fabricated as fused glass tile

Student Project using concept of passageways, adopted from original art, and incorporating courtyards, sliding doors, pivoting book cases to create flexible space. Student utilized original footprint of existing design.
Claiming a Slice of the Sun: Daylighting in Interior Design Education

Tina Sarawgi
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ABSTRACT

Louis Kahn eloquently captured our fascination with daylight by stating that through daylight one “can claim a slice of the sun” (Kahn, 1973). In practical terms, besides providing a pleasant and dynamic visual environment for the occupants, the advantage of daylight lies in responding to climate, lowering energy consumption in buildings both for electric lighting and its associated cooling load, and providing appropriate lighting for visual tasks (Millet & Loveland, 1998).

Day, Theodorson & Wymelenberg (2012) lament that interior design considerations associated with daylight have not been studied widely. They suggest an increased role for interior designers to become a part of the daylighting design process. Sorrento (2012) supports this thought by stating that in her experience she “learned that interior design is often underrated for its effect on daylighting.” She opined that daylighting can be ineffective if interior design considerations are not taken into account early in the design process. Moreover, current emphasis on sustainability requires a deeper understanding of daylighting by interior designers to provide thoughtful input during the design process.

Thus, along with claiming a slice of the sun, today’s interior design students need to claim a place at the center of discussion on daylighting. Given that most interior lighting design textbooks include a quick overview of daylight, dedicating a majority of their pages to electric lighting, what teaching strategies could interior design educators employ to help students develop an integrated design approach that includes daylighting as an important element of the interior environment?
This paper discusses learning strategies developed to address daylighting holistically in an interior design course over the past few years. The learning experiences are based on McCarthy’s 4Mat system with Nussbaumer’s modifications used as a theoretical framework (Nussbaumer, 2001). The students went through the four stages of experiential education by experiencing, reflecting, thinking and acting as follows:

i. Integrating experience with ‘self’
The students actively observed and recorded daylighting in an existing interior space over the course of a semester to develop sensitivity to both diurnal and seasonal changes of light. A lighting design journal was maintained in which the students reflected on their observations of this space (See Figure 1).

ii. Concept Formulation
This phase involved lectures on daylighting tools and techniques, following which the students explored, researched and analyzed daylighting of select projects (See Figure 2).

iii. Practice and Personalization
The students designed interior daylight models informed by the concepts learned in the previous stages (See Figure 3). During this phase, the emphasis was on personalizing the material on daylighting.

iv. Integrating Application and Experience
Finally, the students designed integrated daylighting and electric lighting for an interior design project (See Figure 4). The students also explored LEED and energy implications of daylight.

The student self-assessments at the end of the experiential learning process demonstrated an advanced understanding of daylight and its impact on interior spaces, which may not have been otherwise possible. The teaching strategies in this course would be helpful to interior design educators who are interested in leading their students towards an integrated design process including daylighting.
REFERENCES (APA)


ASSIGNMENT 1: LIGHTING SKETCHBOOK

‘Architecture is the masterly, correct and magnificent play of masses brought together in light. Our eyes are made to see forms in light; light and shade reveal these forms….’ – Le Corbusier: Towards a New Architecture

Think of the Lighting Sketchbook as a vehicle for seeing and thinking; as a tool to record and analyze different lighting and acoustics scenarios that you experience in your daily life in sketch form. It is intended as an independent hands-on learning experience that provides you with the opportunity to integrate the light and sound design material with your experiences.

Sketch Series 1:

- Choose an interior space that admits daylight that you will record through the lighting module part of the semester. Sketch this place once every week close to the following days from the same viewpoint/s: August 30, September 6, September 13, September 27, and October 4.
- Observe how daylight changes throughout the day – choose any ONE day to do this part of your evaluation.
- Observe how daylight changes through the seasons from summer to fall.
- Sketch your observations; study the change in daylight, shadows, color, texture, activities in this space.
- Note how the space ‘feels’ or ‘works’.
- Use photographs only as supplementary information.

In addition to the above, you should also start collect information about lighting. This information could be magazine articles, pictures of lighting scenarios or fixtures, inspirational pictures or sources and any other pertinent information. This collection in combination with your drawings should provide a source of product information to use in your lighting designs.

Start putting these lighting observations/ notes on your sketchbook and blog. At the end of the semester, you will distill your sketches to produce a well-designed, printed sketch series book. This will account for 15% of the course grade.

ASSIGNMENT 3: DAYLIGHT MODEL

“…..Light is really the source of all being……All material in nature, the mountains and the streams and the air and we, are made of Light which has been spent, and this crumpled mass called material casts a shadow, and the shadow belongs to Light.” - Louis Kahn

Through this project, we will CELEBRATE daylight in its myriad forms and manifestations. As a dynamic source, daylight offers the designer an opportunity to explore the variety of experiences that its constant motion brings to a space.

Choose daylighting strategies of one or more of the following designers known for innovative daylighting design as precedents for a daylighting model: Alvar Aalto, Eero Saarinen, Jean Nouvel, Jorn Utzon, Le Corbusier, Luis Barragan, Louis Kahn, Mies van der Rohe, Santiago Calatrava, Steven Holl and Tadao Ando. You are not limited to this list for your explorations. Design an interior daylight model in groups of two, which demonstrates strategy for daylighting using the precedent studies as your inspiration.

CONNOTE
Give a suitable name to your project.

COMPOSE

Develop a narrative. Articulate the visual qualities of the space, evoking its emotional impact and experience through a narrative of 300 words. The narrative should be creatively and thoughtfully written in third person. Check for spelling and grammatical errors before including in the final presentation.

CREATE

Construct physical daylight model of the space. Build a model at 3/4” = 1’-0” scale or larger. This model should be built out of neutral materials so that the focus is on daylight. Indicate north direction on your model. Again, consider all possible qualities of the materials you plan to use – texture, color, sound, touch, etc. Make sure that the connectors and adhesives you use are not accidental. Ensure that the proportions of the model are thoughtfully and skillfully crafted. Incorporate ways of examining the model that will allow the viewer to see the interior well enough to experience the designed lighting effect.

CONCOCT

The presentation of your model must include reference diagrams to the site and its orientation. Think of ways to present the model that will allow the viewer to see the interior well enough to experience the designed daylighting effect.

A well-composed presentation: two 11”x17” posters (pdf format) should include images of this model discussing your precedent study (with pictures, name of projects + designers), explaining the daylighting principles and strategies that you have used, their function and impact on the interior space. Also, include at least one sectional-elevation drawing showing daylight penetration at a labeled time of the day and year + one plan view in section. Include your names, date, and indicate building orientation.

Figure 1. Integrating experience with ‘self’: Students maintain a design journal recording daylight in a space of their choosing.
Figure 2. Concept Formulation: Students investigate daylight and sun movement in a chosen project.
Figure 3. Practice and Personalization: Daylight scale model investigations by students informed by lighting concepts and techniques of prominent designers.
Figure 4. Integrating Application and Experience: Student projects illustrating the analysis of daylight to develop an integrated approach to overall lighting design in an interior design project.
Full-Scale: Prototyping the Interior

Deborah Schneiderman
Pratt Institute

ABSTRACT

Considering making in full-scale is a topical conversation for Interior Design. At the Interior Design Educators Council Annual Conference in 2012 both Catherine Dowling and Peter Greenberg discussed the significance of full-scale detail fabrication in interior design pedagogy. According to Dowling, “The action of hand building full scale enables an immediate connection, long term memory and understanding of material qualities and interior design space.” (2012) This paper expands upon that premise but rather investigates the prototyping of projects built in large-part or in their entirety at full-scale. The expanded investigation encourages the designer/student to appreciate the relationship of design to the measure of the body and the sensual experience of inhabiting interior space. (Weinthal 2011, 24)

The work discussed in this paper includes projects from multiple studios including, undergraduate thesis studio, graduate thesis studio, and senior design studio. Students within the thesis studios, where appropriate, were encouraged to build inhabitable segments of their proposals at full-scale as part of their design process and in order to test and further develop their designs. All students in the senior design studio were given a preliminary assignment to investigate and make a considered demountable intervention into a threshold. The threshold as site was specifically selected for its proportion and proximity to the human body, and because it is a “transitional space that divides both interior from exterior and room from room.” (Winton 2013) After completing a series of scale studies for their threshold investigations, the students were challenged to further develop, build and install their complete threshold prototypes at full-scale within the studio building. The thresholds were tested, modified and re-built based on experiential findings from the full-scale application. In all full-scale design applications discussed in this paper, the students were able to test their constructs for relationship to the body, sensorial experience and function.
As noted by Lois Weinthal in discussing the work of Alan Wexler, “He realizes that using small-scale models to explore ideas becomes confused in full-scale constructions, while drawings have trouble making the transition from two dimensions to three dimensions.” (199) It is critical for the Interior Design student to appreciate the scale of the human body and a gain a real understanding of the inhabitation of designed space. Through the full-scale prototypes, students confronted the limitations of designing at small-scale and discovered that their designed investigations did not have the relationship to the body that they had anticipated. In all projects students modified their designs based on the full-scale prototype and many built multiple prototypes. By building projects or significant portions of projects at full-scale students gained a clearer understanding and appreciation for the relationship of the human body to designed interior space.

REFERENCES (Chicago)


PROCESS

Elevations

Axon

Section Sequence

Scale: 3/4" = 1'-0"

DRAWINGS

Explored Axon
Scale: 1" = 1'-0"

Details

Experience

FINAL MODEL
PRELIMINARY STUDIES

STUDY SKETCH MODELS

1. TETRIS PULL + PUSHPUSH

2. SELF-AWARENESS

FINAL THRESHOLD

PLAN
1/4" = 1'-0"

SEQUENCE OF MOVEMENT
Appendix A

Senior Studio Threshold Intervention Assignment

**Assignment 1**

**Threshold (group project)**

“The threshold, that transitional space that divides both interior from exterior and room from room - The threshold itself can be defined in many ways: by location, function and material. Etymologically it can mean an opening or beginning as well as an obstacle”

(Alexa Griffith Winton)

Develop a “threshold intervention” to be sited at one of the studio doorways/thresholds. This threshold intervention should act as a membrane that mediates a *simple* exchange, passage, filtration, etc. - an interaction, visual or physical - across the threshold. How does the threshold become enhanced – what does it mean to cross from one side to the other. The threshold (material and form) and the terms by which it acts as a mediator (program) should be developed simultaneously and should respond to each other. The Intervention must be mountable and demountable, with each assembly/disassembly taking no more than 15 minutes.

Part 1
Working in Teams, Propose 25 schemes for your threshold Intervention

Part 2
Developed from the previous schemes – design, build, install and test 2 full-scale prototype interventions

Part 3
Developed from the previous full-scale interventions – Design, build install and test a final threshold prototype intervention at full scale.
Interior Design and Historic Preservation - Allies in Environmentally Responsible Design

Valerie Settles
University of Central Oklahoma

ABSTRACT

Interior design education often focuses on developing new spaces; however, it is increasingly important for designers to utilize existing building stock in pursuit of environmentally responsible design strategies. It has been noted that addressing preservation through sustainable design strategies can be a valuable addition to the body of knowledge for the disciplines of both interior design and historic preservation (Hyllegard, Ogle, & Dunbar, 2003). Historic preservation can also serve as a potential field of expertise for interior designers, a critical concern in the difficult job market into which our design graduates are emerging. Unfortunately, although interior designers practice in a variety of areas that involve preservation (from individual home rehabilitation to the National Main Street program), students may be unaware of these opportunities for future employment if they are not exposed to the field during their undergraduate degree program.

A natural opportunity for incorporating historic preservation into interior design could occur during any course that discusses sustainable design. The use of sustainable materials is often incorporated into design projects, and these products are an inherent part of adapting historic resources for contemporary uses (Meryman, 2005). For educators, another benefit of incorporating historic preservation into the curriculum is documentation of compliance with several CIDA accreditation standards (CIDA, 2011).

In an effort to expose interior design students to historic preservation and its relevance to interior design and sustainability, a recent capstone project asked students to rehabilitate a historic building on a university campus for a new community art center. The project required students to incorporate administrative, educational, and public spaces into the existing
building, utilizing such environmentally responsible design strategies as daylighting and the use of recycled materials. Students researched the history of the building as well as sustainable materials to develop their design solutions. They were also required to follow the Secretary of the Interior Standards for Rehabilitation with regard to the arrangement of interior spaces and the selection of new finishes in those areas with existing surfaces remaining (National Park Service, n.d.).

The resulting designs not only exposed students to the rigors and rewards of connecting interior design and historic preservation; it also helped them develop valuable skills in historical research that informed their designs while developing awareness that environmentally responsible design involved a broader scope than simply specifying recycled materials for new construction. Although the project above was applied within a capstone course, it could easily be implemented in the curriculum at every level – from investigating historic use of spaces in an introductory space planning course, to the study of historically appropriate materials and textiles, to a thesis project comparing the preservation of historic commercial and residential applications. By “recycling” an existing historic building, students learned to create new spaces without sacrificing the historic fabric of a community, gained valuable experience in researching and utilizing historical research and sustainable design strategies, and learned of a new avenue to pursue for their future as an interior designer.

REFERENCES (APA)


Commercial Design
Program for the All-Purpose Arts Center

The Department
An arts center within a university setting will be moving into a historic building on campus. The arts center will require space for administrative purposes as well as performance spaces and a small residential apartment for visiting artists who may be located on campus for extended periods of time.

The Building
The Central Building is located within a university campus and is listed on the National Register of Historic Places. This was the first building constructed on campus and was partially completed in 1893 to house classes for students attending this first institution of higher learning in the area. Over the years, many repairs and changes have taken place, but it has recently undergone an extensive renovation to address structural issues and become compliant with current building and accessibility codes. The exterior is clad in rust-colored sandstone indigenous to the area.

Since university by-laws mandate that no other building on campus may be higher than this original structure, the windows on the upper floors allow unobstructed views of the campus and city beyond. As this structure was completed prior to the time of artificial climate control for the interior, there is an abundance of windows throughout the building that allow fresh air as well as generous amounts of daylight into the interior of the building. The structure also contains a bell and clock tower that serve as a focal point for the campus.

Utilities
Existing building
All plumbing, electrical, data and communication lines will be housed within the new partitions dividing the building.

All sinks and bathrooms will require plumbing cavity partitions that form a chase for supply and drainage piping. Cavity walls are constructed to be 1’-2” thick. The HVAC system will be supplied to each level through ductwork located in a ceiling plenum space.

Building Codes
- All spaces with an occupancy load of 30 or more must have doors that swing in the direction of egress and two remote means of egress.
- Any door that swings into a corridor must be recessed so that no more than 7” of the door extends into the corridor.
- Dead-end corridors of more than 15’ are not allowed.
- The facility must meet ADA barrier-free requirements, including door openings, corridors, and restrooms.
- In all other matters the International Building Code applies.
**Project Requirements**

- New construction should utilize sustainable design strategies such as daylighting and “green” materials as much as possible. All spaces inhabited for a majority of the time should have access to a window.
- New construction should follow the Secretary of the Interior’s Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings in that it should not duplicate the exact form or style and should not imitate an historic style so that it is possible to distinguish between new and old construction.
- All spaces should contain durable finishes and furnishings that are easily maintained and long lasting without appearing to be dull or utilitarian.

**Space requirements**

**Administrative Areas**

- Director
- Curator
- Administrative Asst. (Director & Curator)
- Art Center Reception Area
- Office Manager
- Public Relations & Event Planning
- Security
- Administrative Staff
- Volunteer Hoteling Space (Docents)
- Breakroom
- Conference Room
- Resource Library
- Copy / Storage Room
- Women’s and Men’s Restrooms
- All Administrative Areas – trash receptacles, plants and art as appropriate.

**Facilities**

- Archives
- Janitorial Staff / Maintenance
- Facilities Manager
- Elevator
- Mechanical/Electrical Room

**Public Areas**

**Retail**

- Sales Floor
- Manager Office
- Storage / Inventory
- Cash Wrap Area
- Dressing Rooms
Café
• Serves Gallery and Administrative Area.
• Seating
• Food Prep & Service
• Manager Office
• Storage
• Restroom
• Point of Sale Area

Gallery
• Seating
• Theater
• Women’s and Men’s Restrooms

Educational / Meeting Spaces
• Classrooms
• Studio
• Conference Room
• Ballroom
• Ballroom Storage Area
• Women’s and Men’s Restrooms

Residential Apartment
• Living Area
• Kitchenette
• Dining Area
• Studio/Office
• Bathroom
• Bedroom
• Laundry room
• All areas should have lighting and rugs as appropriate.

Submittal Requirements
Plans – 11” x 17” bound
• **Floor Plan** – rooms named and numbered, all built-ins shown, building section reference mark, elevation reference marks.
• **Longitudinal Building Section** – all rooms intersected must show elevations with room names, major finishes noted, heights dimensioned.
• **Interior Elevations (4)** – wall with custom reception desk in reception area, wall in café, wall with cabinet and counter storage in breakroom, main wall in apartment bathroom; all finishes and dimensions must be noted.
• **Partition Section** – interior partition (wall) section; must be referenced on floor plan.
• **Custom Furniture Design** - custom-designed reception desk, apartment entertainment center, conference table, and buffet; must have appropriate
materials, dimensions and views (plan, elevations, at least one section, and applicable construction details); selected pieces must be labeled and referenced appropriately on furniture plan and plan for individual piece.

- **Room Finish and Color Schedule** – spreadsheet showing each type of finish and associated color selection for every surface; should include any relevant notes to insure correct installation.
- **Floor Pattern Plan** – floor finishes depicted for each space (with accompanying legend).
- **Furniture Plan** – all furniture with identification that coordinates with furniture specification booklet.
- **Power Plan** – systems furniture panels and required power, electrical receptacles (identify GFI receptacles), and placement of security system elements (with accompanying legend).
- **Reflected Ceiling Plan** – lighting, ceiling material, fire suppression elements (sprinklers and smoke detectors), air distribution, exit lighting, emergency lighting, ceiling heights noted in each space (with accompanying legend).

**Presentation Board** – required size of boards 11” x 17”; renderings may be matted together or on separate boards as size of rendering dictates.

- **Hand-rendered 2-pt. perspective color rendering** – Reception area.
- **Hand-rendered color rendering** – furniture plan with associated floor finishes.

**Specification booklets** – 8 ½” x 11”

- **Materials specifications** – includes concept statement, adjacency matrix, conceptual sketches, materials and finishes for all surfaces, floor material calculations for each area, 2 specifications (CSI format) of materials selected.
- **Furniture specifications** – image of every furniture item (including custom-designed pieces and systems workstations) and luminaires with selected material and specifications (must have reference number that coordinates with Furniture Plan).

**Grading Divisions**

20% Development of project program, site visit, concept statement, adjacency matrix, conceptual sketches & projected timeline

60% Project requirements (construction drawings)

- 30% Mid-term Submittal (Floor Plan, Furniture Plan, Floor Pattern Plan, Power Plan)
- 30% Final Submittal (Revisions to previous submittal + Reflected Ceiling Plan, Building Section, Interior Elevations, Custom Furniture Plans, Sections & Details, Room Finish & Color Schedules, and Renderings)

20% Specification booklets

100% Total
Sample of Projects Submitted
Service-Learning and Community Engagement: Speaking the Language of Engaged Scholarship in an Interior Design Curriculum

Stephanie Sickler & Travis Hicks
University of Alabama & University of North Carolina at Greensboro

ABSTRACT

Background
Service learning has been extensively studied (Boyer & Mitgang, 1996; Jacoby & Associates, 1996; Seifer, 1998; Van de Ven, 2007), even as it relates to interior design students (Zollinger, et al., 2009). Many definitions exist which outline what is and what is not service learning. Each definition draws the same conclusion: service learning outcomes must include a tangible product or design solution (Jacoby & Associates, 1996; Seifer, 1998; Zollinger, et al., 2009). The benefits of service learning experiences are far reaching and undisputed, but not all courses are capable of including projects such as these to promote deeper learning. This study asserts that through community engagement, higher levels of learning can be attained.

Purpose
Engaged scholarship is the umbrella of participatory learning that covers many pedagogical techniques. A main goal of engaged scholarship is to, “obtain the advice and perspectives of key stakeholders to understand a complex social problem” (Van de Ven, 2007). As a result, student work products are generally more insightful, and exhibit a deeper learning than when students work without the benefit of collaboration with a stakeholder (2007). Of particular importance in interior design, a connection with the end user has the potential to affect a greater sensitivity among students as they create design solutions. Zollinger et al. (2009) identified four criteria for a framework for service-learning in interior design education. In their model, service-learning projects must relate to course objectives, apply course knowledge, connect to the community, and reflect on learning.
True service-learning projects have challenges and limitations. This study works toward developing a framework for engaged scholarship by analyzing community-engaged design studio courses and their outcomes. An important goal of this study is to help design educators prevent experiential learning from being overlooked in academia simply because it does not produce a tangible design or product.

Method

Through the examination of three case studies of interior design courses from two different universities, a framework for engaged scholarship utilizing community-based partnerships will be presented. These case studies include 1) a local public library branch, 2) a VA hospital, and 3) a Ronald McDonald House; each of these case studies has been integrated into a design studio as well as a faculty member’s research agenda. Questions posed for developing this framework are, “Does a community-based partnership offer the same benefits to student learning as service learning?”, “What does the community partner gain from the experience?”, and finally, “What is the value of a community-based partnership?”.  

Discussion

In accredited design programs, community service or other community partner-related projects help meet the learning objectives of interior design studios. Engaged scholarship of any kind where students are involved with community partners, enriched by site visits or service activities should be welcomed by interior design programs, regardless of title. For design students, interacting with community partners may be the most effective means of engagement because it is easily facilitated within one semester, offers hands-on learning, provides insight into clients’ needs and provides a rich learning opportunity.

REFERENCES (APA)


Studio + Service: Assessing the Impact of a Community Service-Based Studio Using the Community Service Self-Efficacy Scale

Stephanie Sickler, Casey Faulkner & John Peaslee
University of Alabama

ABSTRACT

Context of the Problem
Programming can be challenging for young designers, especially when charged with designing for special populations such as the homeless, the aging, or persons of differing cultures. As the Council for Interior Design Accreditation has strengthened its emphasis on students’ global perspective for design, it is pertinent to enhance the learning experience for students by engaging them in community-based projects which might aid in accomplishing this goal. Literature has highlighted the effectiveness of service learning initiatives (Conway, et. al, 2009; Reeb, 2006; Reeb, et. al, 1998; Simons & Cleary, 2006; Zollinger, et al., 2009), but with limited focus on courses which incorporate community service, yet do not meet the important service learning criteria of producing a product for the end user. As a result, there has been little attention to the effectiveness of community service-based courses.

Purpose of the Study
The purpose of this presentation is to highlight a studio project in collaboration with a local Veteran’s Affairs (VA) Hospital. In addition to site visits and research required by the project’s program, students are required to complete at least ten hours of community service at the VA over the course of their project. Research suggests that through a service experience with reflection students will develop a greater sensitivity toward the end user and gain an expanded awareness of cultural differences between themselves and the veterans at the hospital (Conway, et. al, 2009; Simons & Cleary, 2006). With more insight into their client, students could develop a program rich with empathy for the needs of VA patients, enabling them to produce more sensitive design solutions; a positive outcome this service experience.
Methods
Students collaborated with the local VA facility for a junior-level studio project and to examine the cutting-edge, assisted-living cottages and other buildings at the local branch which are becoming a model for other facilities around the country. Students completed community service activities where they interacted with patients as well as the design team on multiple occasions. Additionally, reflection exercises were required for all service experiences. The Community Service Self-Efficacy Scale (CSSES) (Reeb, et. al, 1998) was used to assess the impact of the project on the students’ experience, measuring students’ efficacy for community service before and after their experience at the VA. The reflection exercises were coded for content to assess where the deeper levels of learning, if any, were occurring.

Discussion
This presentation will outline successes and student learning outcomes enhanced by this project and strengthened by the reflection exercises. Data from the CSSES and reflections will be presented and discussed as a tool for measuring learning from service. Results of this study can be of benefit to others looking for similar ways to incorporate meaningful service into studio projects, without tackling an entire service learning project. Overall, the goal is to encourage a community partnership for our students that will spark a lifelong desire for community outreach, richer design solutions, and a cultural sensitivity highly desirable in the realm of design.

REFERENCES (APA)


Please answer the following questions to the best of your ability.

1. Age ___
2. Male ___ Female___
3. Do you have personal military service experience? Y___ N___
4. Do any of your parents, siblings, or grandparents have military experience? Y___ N___
   a. If you answered Yes, who? __________________________________________
5. Do you have any personal experience with a VA Hospital? Y___ N___
6. Has anyone in your immediate family ever been (or is currently) in an assisted living facility or nursing home? Y___ N___

Please answer the following questions rating them on a scale of 1 to 10 with 1 being quite uncertain to 10 being certain. (Reeb, et al., 1998)

7. If I choose to participate in community service in the future, I will be able to make a meaningful contribution.
8. In the future, I will be able to find community service opportunities which are relevant to my interests and abilities.
9. I am confident that, through community service, I can help in promoting social justice.
10. I am confident that, through community service, I can make a difference in my community.
11. I am confident that I can help individuals in need by participating in community service activities.
12. I am confident that, in future community service activities, I will be able to interact with relevant professionals in ways that are meaningful and effective.
13. I am confident that, through community service, I can help in promoting equal opportunity for citizens.
14. Through community service, I can apply my knowledge in ways that solve “real life” problems.
15. By participating in community service, I can help people to help themselves.
16. I am confident that I will participate in community service activities in the future.

ID Number: ______
Design Studios: Developing a Framework for Evaluating Their Place in a Twenty-first Century Profession

Kennon Smith & Barbara L. Young
Indiana University - Bloomington

ABSTRACT

Studio has been the predominant pedagogical framework for educating designers in the United States for generations. It persists in spite of statements such as that in the title of Rapaport’s 1984 Architectural Record article: “There is an urgent need to reduce or eliminate the dominance of the studio.” As schools face increasing pressure to justify the expenses of costly studio programs, as technology radically changes ways of thinking about and practicing design, and as increased attention to the possible benefits of design thinking shines a spotlight on the ways such habits of thought are traditionally inculcated, it is imperative that design educators possess a clear-eyed view of how and why studio education has evolved into the system we use today. Such a view requires a questioning of what features of this system are legitimately beneficial to the desired learning outcomes, which features might be vestiges of traditional practices no long applicable in twenty-first century conditions, and which features might actually be counter-productive in at least some, if not all, contexts.

This presentation will focus on exactly these questions, specifically:

- What are the major precedents which have shaped the studio traditions that permeate today’s design programs?
- What features of these programs have been challenged by design scholars and educators, and should be re-examined in the face of changing, twenty-first century opportunities and constraints?

This research is conducted and presented as a literature review – drawing on major publications that have explored the strengths and weaknesses of studio education (e.g., Koch, Schwennsen,
Dutton & Smith, 2002; Salama & Wilkinson, 2007; Schön, 1985) as well as contemporary and historical texts which provide insight into the evolution of the studio system (e.g., Ockman, 2012). It represents a small part of a larger research agenda studying the development of design studios across a variety of design disciplines (including, but not limited to, interior design), as well as identifying patterns of convergence or divergence in these histories, and surfacing areas of potential strengths and weaknesses in these related, but individually distinct, studio traditions.

It is anticipated that this presentation will provide two outcomes: (1) an historical perspective which can serve as an explanatory framework when looking at pedagogical practices and environments in today’s studios, and (2) an overview of critical factors that are emerging in current critiques of studio pedagogy which can serve as an evaluatory framework in gauging the merits and short-comings of today’s studios. Neither framework is intended to be the only such organizing structure to guide either task. Instead, each if presented as a tool, situated in and emerging from scholarly literature, to assist scholars and educators in critically reflecting on current studio pedagogy.

REFERENCES (APA)


Rapaport, A. (1984). There is an urgent need to reduce or eliminate the dominance of the studio. Architectural Record, 172(10), 100-103.


Breaking Boundaries between Practice and Academia: A Collaborative Approach to Studio Education

Jihyun Song & Cameron Campbell
Iowa State University

ABSTRACT

Issue
It is a dilemma for many creative disciplines: How do you encourage the students while incorporating enough real-world, practical parameters to help graduates effectively transition to the workplace? In academia interior designers and architects have a unique perspective because they don’t practice in a traditional sense. With this freedom to conceptualize without the burden of typical practice come the separation and sometimes ignorance associated with that distance. Typically, these two entities are completely separate from one-another. Why, one might ask, does the separation occur and what alternative do we have to engage faculty in a practice other than to have them practice as individuals on small projects or be employed by other firms? The liability issue is what stands in the way. The alternative is not to have their own faculty design university buildings and interiors, but rather to have academics strategically partner with design practice. Such insight into the inventive partnership could portend much for the educational experience. How can the practice and the academy benefit from one-another through a strategic relationship? How could we provide integration of practice knowledge in design education? What is the role of design educators in this process? These are the questions to be explored from the teaching model of professional collaboration with faculty, students and related professionals across disciplines.

Teaching Method
A positive experience with a practice-sponsored studio was modeled to study this type of relationship that presents a point of discussion and an opportunity for interdisciplinary study in other institutions. In this partnership a firm provides their expertise, in-kind lectures and real
world projects and clients. The students’ project was chosen through careful consideration of location, giving exposure to both the reality of the project type and stage, and the reality of working with clients. The benefit to the student is that the student receives the real-world scenarios and the expertise from the professionals in the field. Practicing interior designers and architects create topical lectures and present their experience to students.

Summary
From everyone’s point of view—students, faculty, and professionals—the collaborative studio offers distinct advantages and opens up potential for the future of education and practice. Professional collaboration between academia and practice added another layer to the educational experience by introducing research-based, real-world practice that is both credible and cutting edge. Practitioners take benefit from an opportunity to have an academic engagement about the project without expending project costs to do so—in essence, they receive an outside critic. Under the sponsorship of the partnering firm, student’s collaborative learning experience is further enriched by the presentation to a jury of professionals at initial, midterm, and final critiques. Moreover, student teams’ interdisciplinary collaboration creates new perspectives that can enliven the profession. Reflection on student learning outcome suggests future models of partnering with practice in other learning environments. As design educators develop new instructional models and concepts, a new collaboration will result in fresh approach to studio education.

REFERENCES (APA)

Appendix: Course Materials

Collaborative Studio: Strategy—Three Disciplines
Architecture, Interior Design and Landscape Architecture

Studio Opportunities:

• The studio prepares students to tackle the complex design problems that face this growing healthcare industry.
• The studio prepares students for a specialty that will be in high demand.
• Students practice working in an interdisciplinary context.
• Communication technology is practiced.
• Opportunities for links with the industrial design program
• The work produced in the studio has many potential competition and award opportunities that we encourage our students to take advantage of.

Course Description
Design Studies 546 is an option studio with the focus of healthcare design. In this interdisciplinary option studio we focus on the expanding field of healthcare design. We are on the cutting edge of this specialization, gone are the times where healthcare is the least desirable specialty in design.

Project Outline
Students in this option studio spend approximately one-third of the semester researching healthcare precedents and learning about this area of specialization. The remainder of the semester is spent on a design problem associated with a given site. Students practice various forms of digital analysis, communication and documentation.
**Collaborative Studio:**

**Studio Details**
6 credits

2 required field trips – one to Chicago during the first week for the site visit, and the office of HDR and Gensler. Also looking at comparable project types. Second visit is for a final presentation at the HDR office in Omaha. A series of lectures were provided to assist in the design process from experts in various facets of healthcare design including practicing architects, interior designers and landscape architects.

**HDR Involvement:**
HDR is a design firm specializing in healthcare design and is sponsoring the spring 2012 studio - they will provide lectures, critiques, project types and research for our study. The firm has a vested interest in advancing the education in this specialty both to train future professionals as well as engaging the creative process. Students will have direct contact with professionals to gain valuable experience.

**Collaborative Studio: Method**

As students progressed through the design process, they engaged in video conferencing for input from experts and specialized practitioners at initial, midterm and final critiques.
Utilizing Activity Theory as a Framework to Evaluate Globally Dispersed Teamwork in a Retail Interior Design Studio

Lori Stone, Cigdem Akkurt, Pia Schneider & Alessandro Cece
Iowa State University

ABSTRACT

Design projects are becoming global, and utilizing digital technology for communication among team members is important (Bender, 2005). Providing authentic learning experiences for interior design students helps prepare them for real world challenges in the workplace, where design firms have multiple offices around the world. In this study we employ activity theory (Choi & Kang, 2010) as a framework to evaluate a team’s communication activities and how these activities predict the team’s success.

An interior design program at a large Midwestern university in the United States offers a semester study abroad experience in Italy. Both the Italy studio and the US studio work on the same design problem in teams of three to four students. The teams are a mixture of US based students and Italian based students where they utilize a collection of online and digital tools for collaboration and communication within teams.

Activity theory is a philosophical and multidisciplinary framework to research various human behaviors. In activity theory, learning is viewed as a social activity and the basic unit of analysis is an activity (Kaptelinin, 1996). An activity system contains six components: subjects, objects, tools, rules, division of labor and community (Engeström, 2000). Choi and Kang (2010) defined and examined three activities of teams: learning behaviors, conflicting factors, and facilitating factors.

This research study includes the following research questions:
1. Examining learning behaviors, conflicting factors, and facilitating factors (Choi & Kang, 2010), what are the differences in high and low performing dispersed groups in their online communication activities?

2. Does frequency of learning behaviors, conflicting factors, and facilitating factors predict a dispersed design team’s success?

3. Are there differences in communication tool usage between the low- and high-performing groups? Do multiple communication tools facilitate or hinder the flow of information? How important is the verbal and facial interaction (skype) compared to just dropping the files or interact by writing (-mails/blogs)?

Participants in this study include 54 junior level interior design students, where 20 students are in Italy and 34 students are in the United States for the life of the project. The participants are guided by two European instructors in Rome, and two American instructors in the US.

Using a constant comparative method (Zenzin & Lincoln, 2005), a coding scheme was generated and emerging themes were identified in learning behaviors, conflicting factors, and facilitating factors in the online collaborations of the two highest and two lowest performing groups. The data was organized to calculate the frequency of each code and by five phases of the project based upon the deadlines outlined in the project description.

At the end of the project, teams were divided into two groups—high performing and low performing teams, based on their final project grades. Results indicated that the high performing groups witnessed less conflicting factors, included more facilitating and learning factors than the low performing groups. High performing groups also indicated more verbal and facial interaction than the low performing groups, which relied more on file sharing than more dynamic and direct interaction.

REFERENCES (APA)


Monitoring Change in the Content of Introductory Interior Design Textbooks

Julie Temple & Joy Potthoff
Radford University & Bowling Green State University

ABSTRACT

Authors of introductory interior design texts present information they judge relevant to today’s teaching of interior design. According to one author, they provide a “survey of the field of interior design as it now exists” (Pile, 2007). Content and amount of coverage may vary among authors, but the primary purpose of the text is to present both historical and current topics that can be applied to the student’s understanding of interior design.

Based on this premise, the purpose of this study was threefold. First, to replicate a study by Potthoff and Woods (1995) titled “Content Analysis of Seven Introductory Interior Design College Texts Published between 1986 and 1994”. The outcome revealed those introductory books most frequently used by interior design educators in the first two semesters of their introductory courses. The second purpose was to compare the texts from the original study with the texts from this study for changes in the amount of coverage devoted to 18 topics as defined in the original study and to reveal new topics.

Third, the authors of the 1995 study recommended additional topics to enhance future publications, based on their observations as longtime educators and monitoring trends. To evaluate this purpose, which includes change over time, the three comprehensive texts represented in both the original study and the current study (Allen (1994) and Jones, L., & Allen, P. (2008), Pile, J. (1998) (2007), and Nielson, K., & Taylor, D. (1990) (2007) were analyzed for the amount of change in content in five recommended topics.
Research methods included a survey question and content analysis. The survey question was an open-ended inquiry, sent to members of the Interior Design Educators Council (IDEC), as to which interior design textbooks they use in the first two semesters (introductory courses) of their program (administered via Qualtrics.com with anonymous responses). Then, following the methodology from the original study; the top texts were examined on a topic-by-topic basis using a technique by Holsti (1969) which allows for data to be categorized in a quantitative manner. The amount of text is recorded by placing a transparent template, divided into 10 equal units, over a page and counting the amount of units of text devoted to each topic.

As shown in Table 1, the findings indicate that there was an increase in the level of five topics consistent with the recommendations. The relationship between the content of academic training and the knowledge and skills required for design practice continues to be of great interest to educators responsible for preparing emerging designers for integration into the professional market. A position statement released by IDEC underscores this importance: “Formalized, accredited interior design education transmits to future interior design practitioners...” (IDEC, July 2010). The presentation will conclude with a discussion regarding additional topics the authors of this study recommend be broadened in future editions of comprehensive texts for interior design education.

REFERENCES (APA)


Table 1: The amount of change in specific content of three selected texts.

<table>
<thead>
<tr>
<th>Recommendations from 1995 study</th>
<th>Topic</th>
<th>Change in Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased professionalism of interior design and emphasis on the business aspects, costs, and budgets</td>
<td>Interior Design Profession</td>
<td>+13.2%</td>
</tr>
<tr>
<td>Design for life span and disabilities</td>
<td>Human Factors</td>
<td>+11.4%</td>
</tr>
<tr>
<td>Broadening the scope to include commercial as well as residential design</td>
<td>Planning Commercial Interiors</td>
<td>+18.1%</td>
</tr>
<tr>
<td>Increased emphasis on safety and building codes</td>
<td>Codes and Regulations / Interior Support Systems</td>
<td>+7.6%</td>
</tr>
<tr>
<td>Continuation of energy conservation ideals started in the 1970’s</td>
<td>Ecological Concerns</td>
<td>+17.8%</td>
</tr>
</tbody>
</table>
A Light Moment: Exploring Visual Ambiance

Judy Theodorson
Washington State University

ABSTRACT

Purpose:
Light is a potent condition of interior ambiance. As light interacts with form, space, and materials, it has inherent influence in creating visual and experiential environments that influence our mood and behaviors. Boyce (2006) refers to this as “message lighting” as differentiated from “functional lighting” -- noting light’s influence on mood and behavior is an important new area of lighting research. As such, the ability to create ambiance with light represents critical knowledge for the designer. This purpose of this paper is to advance pedagogical approaches in teaching light through constructivist design methods in the studio venue. Specifically, this project promotes the study of light early in the design process with the intent of shaping the trajectory of a design solution.

Theory | Method
“Functional lighting” is generally taught in a subject course, through teacher-centered, deductive methods. “Message lighting,” on the other hand, is more appropriately studied in design studio where learning is grounded in constructivist methods: a spiral of concrete experiences, reflective observation, formation of abstract concepts, and active experimentation in new situations (Kolb, 1984). Unfortunately, lighting is often considered late in the design process, as a separate or additive element (Polma, 2009), thereby losing the potential benefit of engaging light in the constructivist learning spiral. This project intentionally embraces light as generative by literally inverting the design process: rather than considering the entire problem...
and working toward the parts, the proposed process begins with the challenge of a “light moment”. The design problem is to use light, materials, and creative writing to create a vignette model that explores conditions of visual ambiance. Eventually, this vignette informs the direction and outcome of the design problem, a weekend retreat for an artist.

Reflection
The “light moment” is exploratory, a method that promotes discovery and experimentation to study the atmospheric conditions of light and space. There are four noted pedagogical benefits: students are exposed to multiple representation of light with meaningful opportunities to actively construct knowledge; students report newfound appreciation for the role of light in making memorable interiors and human experiences; light (the material) and lighting (the visual effect) is integrated into design thinking and design language; and, spatial / experiential vignettes open alternative paths to designing the “whole.”

REFERENCES (APA)


light moment, a one week exercise as part of painterly space, a three week project

painterly space

design process

1. select inspirational art piece

2. create abstract composition, playing with light, form, materials

3. create a spatial light moment model

4. design artist retreat, leveraging understanding of light and experience

light moment

assignment

create a spatial vignette where light and space and material unite to create a memorable place of human experience

rules

• work in model form
• work with light
• work with representational materials
• convey how the "light moment" is occupied
• use language to describe the experience of light and space
light moment

a place of refuge
soft glow
smooth reflection
faded with shadows
warm peace
protection
safety
Problem Based Learning and Hands-on Group Projects in the Introductory Interior Design Classroom

Sarah Urquhart
Utah State University

ABSTRACT
The introductory Interior Design classroom serves the critical purpose of introducing Interior Design students to the field of Interior Design. It also frequently serves as the first formal introduction to fundamental topics such as design elements and principles, color theory, lighting, and universal design. In the case of combined courses that serve both Interior Design pre-majors as well as non-majors, such a course may also serve the role of providing a basic understanding of design in our everyday surroundings and the role that Interior Designers play in the formation of these surroundings. The challenge in an introductory environment is how to move students beyond the basic cognitive domain levels of remembering and understanding these important topics to the levels of analyzing, evaluating and creating (Bloom, 1956).

Problem Based Learning (PBL), an instructional method which uses active learning through collaborative student experiences applied to realistic problems relevant to future practice, is a natural fit for the introductory Interior Design classroom (Kamp, 2012). When combined with hands-on collaborative activities, not only does this method of instruction deal with a variety of basic classroom management issues including keeping students’ attention, it has the potential to powerfully enhance student learning and move students beyond the basic levels of cognition. Extensive research shows that when compared to students enrolled in traditional direct instruction, students enrolled in project-based learning curricula are better at applying their knowledge (Kamp, 2012). This is of direct relevance to the Interior Design classroom where the ability to apply data, concepts and theories to practical applications is a key element prescribed by the CIDA Professional Standards (2011). The group project presented here addresses the
ability to apply universal design concepts which is addressed by CIDA Standard 3: Human Behavior, Student Learning Expectation “d” (CIDA, 2011).

As a part of a freshman level Interior Design course serving both Interior Design pre-majors and non-majors, students participated in a collaborative group activity where after listening to a lecture and participating in a class discussion on accessibility and universal design, were assigned to “build” a full scale single user restroom using painter’s tape, a water closet and lavatory, both two dimensional but full scale. Students had to correctly place the walls, water closet, lavatory, grab bars, door and door swing. The exercise included a pre and post evaluation based on the levels of cognitive domain from Bloom’s Taxonomy as well as a reflection question to gauge student perceptions of the activity and their self-reported learning gains. Student groups were also evaluated on the accuracy of their built restrooms.

The self-reported learning gains averaged a jump of two cognitive domain levels between pre and post activity evaluations. All students moved at least to the cognitive level of knowledge application, while the majority of students moved to the cognitive levels of analysis or evaluation. Student reflection responses were also overwhelmingly positive on how the activity improved their perceptions of accessible spaces, the detail and difficulty involved in creating them, and what it means to be an Interior Designer.

REFERENCES (APA)


Pre-Activity Survey
Mark each statement that applies to your knowledge of ADA and accessibility concepts at this point in time.

(1) I recognize accessibility concepts
(2) I understand and could discuss accessibility concepts
(3) I could apply accessibility concepts to a sample situation
(4) I could analyze a public restroom and distinguish between the various accessibility components
(5) I could evaluate an existing public restroom and identify accessibility features and/or issues
(6) I could create a new accessible public restroom layout without an example

Post-Activity Survey
Mark each statement that applies to your knowledge of ADA and accessibility concepts at this point in time.

(1) I recognize accessibility concepts
(2) I understand and could discuss accessibility concepts
(3) I could apply accessibility concepts to a sample situation
(4) I could analyze a public restroom and distinguish between the various accessibility components
(5) I could evaluate an existing public restroom for accessibility features and/or issues
(6) I could create a new accessible public restroom layout without an example.

Reflection
How has your understanding of accessibility in your everyday world changed as a result of this activity?
Figure 1 Student Groups Working on Project

Figure 2 Student Group Working on Project
Figure 3 End Result of Group Project
Out of Failure

Brian Davies & Stephen Slaughter
University of Cincinnati

ABSTRACT

Overview [The Problem]
Recent disasters have eradicated infrastructure and transformed civilized settlements around the globe into environments very challenging to human survival; from Hurricanes Katrina and Isaac to the earthquakes in Haiti, Chile, Afghanistan, and Japan, to the effects of climate change and economic crisis.

The seminar Out of Failure appropriates the techniques of digital form making by realigning it’s precepts and agenda to support a pedagogical proposition that employs technology to a greater aim; to provide shelter for displaced people. The seminar hypothesized that contemporary technique and processes and their resultant spatial artifacts could be refined to respond to the extreme environment of the modern condition, post calamity.

Process
Students began documenting existing models of disaster relief housing. They analyzed how rapid prototyping technique and technology have been leveraged to address the issue of shelter—from the inside out. This provided common reference material when the students formed small teams to explore:

a. the relationship between typology, morphology and economy

b. appropriate methods of investigating, modeling and assembling forms that economically accommodate the human body(s) and simple activity(s)?
Students analyzed confined spaces through time-motion diagrams of people executing simple tasks interacting with the constructed environment. Imagine a flipbook of Henry Dreyfuss mannequins. These diagrams created a generative process for directing technology. Restricting the material palette to plywood and shrink-wrap, students were challenged to achieve harmony between a custom fit interior and a taught exterior surface for specific disaster scenarios. They were further challenged to adopt techniques developed in the computer to produce these shelters for continued investigation through representational models culminating in a full scale prototype that is easy to build, ergonomically supportive, weather resilient and cheap.

Background

The techniques of digital description in interior design and even more so in architecture have shift the basis by which places for people are conceived and evaluated. To date, digital design and fabrication have yielded environments not responsible for anything greater than the successful execution of technique for aesthetic effect. The academe has even been seduced to shift its mode of investigation and production toward more representations of procedural, script-based design (Colletti 2010). Concurrently, online media outlets such as The Cool Hunter promote and celebrate the cult of imagery. However, the overall built environment has yet to reap great benefit from these explorations.

Outcome

Our attempt was not to resolve the posed questions in a single term, but to participate in a discourse on two issues: the first of morphology, function and fabrication and the second on empathy. We sought to systemize a process for students to achieve empathy to anticipate the needs and behaviors of displaced persons to envision temporary shelters to support their physiological and psychological well being under extreme circumstances and confined personal dynamics.

The outcome of Out of Failure is a compendium of research documents, analysis, and prototypes to be shared as open source material for temporary disaster relief shelter, to be developed through further experimentation towards future adoption and deployment.
REFERENCES (MLA)


Integration and Uses of Mobile and E-Publishing Technologies in Design Education

Marlo Ransdell
Florida State University

ABSTRACT

The students encountered today in higher education have been socialized and taught differently than previous generations. Before these students graduate college they have engaged in over 200,000 emails, 10,000 hours of video games, over 10,000 hours talking on smart phones, and 20,000 hours watching television (Prensky, 2011). Many college students today interact with technology on multiple levels throughout their day and have become accustomed to the format of digital information delivery. In educational environments the application of computer technology can improve teaching when used appropriately (Barak, Lipson, & Lerman, 2006). The success of technology application centers on student learning and effectiveness of teaching strategies.

New e-publishing tools available on the market today allow for students and teachers to engage in new ways that support increased communication, information gathering, and documentation of learning goals. The question is not if schools will engage in mobile and e-publishing technologies, but it is rather when and how will they integrate their uses (Marceglia, Bonacina, Zaccaria, Pagliari, & Pincirol, 2012). The digital methods presented here are already in place in many higher education academic programs, including the sectors of healthcare, education, and special education (Marceglia, et al. 2012). Their applications are also being explored in multiple K-12 programs across the country (Harmon, 2012). This presentation focuses on e-publishing application for design education that not only develops students as consumers, but producers of information. E-publishing tools allow students alternative ways to interact and create information. Traditional book media views the reader as a consumer, but e-publishing applications such as ibooks allow students further interaction with content such as
embedding 3-D files and audio within the text and allowing for opportunities to link to outside websites or videos for further information and the ability to create their own resources.

This presentation will explore examples of e-publishing within interior design courses. The uses include content delivery, collective resource sharing, and design process documentation. Content delivery is presented in the form of disseminating syllabus and schedule information via e-books in lecture and studio courses. Collective resource sharing is explored through a student created resource on a variety of materials and finishes for use in interior design projects (see appendix). Design process documentation is explained through a digital book that follows the design process of students through sketches, audio and video interviews and interactive 3-D models embedded within the book. The applications of e-publishing will be discussed for their appropriateness within design curriculums for students and faculty benefit.

REFERENCES (APA)


Materials and Methods
Resource Book
CHAPTER 1

Synthetics, Linoleum, and Rubber
Ecoresin, plastic laminate, (Vinyl Composition Tile) VCT, sheet vinyl, solid surfacing, linoleum, rubber, and melamine are all examples of synthetic materials. Although rubber and linoleum are found in nature, in interiors synthetic versions are frequently used.

Synthetic materials are a combination of man-made and naturally occurring substances. In recent years, the development of these synthetic materials have played a major role in the reduction of building material costs, decreasing the environmental impact of the building industry, and providing creative and inexpensive solutions to design problems.

Synthetic materials typically come in sheets, planks, and tiles in a variety of designs and colors. They are often preferred in high traffic areas as they are easily maintained, resistant to stains, scratches and water and are comfortable under foot.

They are also desirable in non-allergenic homes and healthcare facilities because they are made of organic materials and are non-allergenic in nature. Though there are concerns regarding the impact of chemicals found in the materials and adhesives used in synthetic’s installation.

In summation, synthetic materials have been developed to mimic more traditional materials, but with superior qualities. The qualities of the materials differ, but most are significantly less expensive, hugely versatile, more durable, and perhaps most importantly more environmentally sustainable. Although these synthetic materials are dramatically different and are used in a wide range of design applications, they are all recently developed composite materials that are less expensive, more sustainable and superior to the traditional products they are meant to replace.
Section 1

Ecoresin

Introduction: Ecoresin is a proprietary translucent, co-polyester sheet material that contains a significant amount of recycled content but also retains its core physical properties. It is used as the building block to produce products resulting in architectural panels that have superior optical, mechanical and fire properties that promote clean air quality. The company 3-Form is a major manufacturer of ecoresin panels and is known for their quality of designs. Although it can be used for function, the panels are mainly used for aesthetic reasons because they come in a variety of colors, textures, patterns, shapes and sizes.

Properties: Ecoresin is Greenguard certified for interior air quality by being durable and chemical resistant. Greenguard is an environmental institute that promotes improving public health and the quality of life through programs that improve indoor air. Ecoresin has no plasticizers or stabilizers and is certified to contain at least 40% recycle material. It is produced from Spectar® co-polyester PETG—a non-toxic, polyester resin that stems from and is compatible with the PET family of materials. A panel consists of an outer layer of ecoresin on both sides and the interior can be almost anything you choose, from slices of fruit to branches of a tree. The layers are then put together to form one solid panel. Ecoresin’s chemical resistancy makes it easy for cleaning and is a reliable use in a variety of demanding environments. It’s a very tough material that easily exceeds the stringent impact requirements for safety glazing (40 times the impact strength of glass). It can be compared to laminated glass, in the way that it will shatter when broken and not form jagged edges. It does not contain any hazardous materials. Ecoresin is code compliant by it’s self-extinguishing flammability performance which en-

Links:
http://www.3-form.com/
http://inhabitat.com/ecoresin/
http://www.youtube.com/user/3formVideo
ables the material to be used in a variety of interior applications.

Polymer resin and glass material sold primarily in 4'x8' and 4'x10' sheets. Cut and finish edges on site prior to delivery.

The average manufacturing lead time is 2 weeks for standard products and 4 weeks for specialty products.

Fabrication can add another 2 weeks to the lead time depending on the scope of the project and the level of complexity.

Panels come not only in sheets but can also be curved with curved edges. Panels can be framed or left unframed and won’t have sharp edges.

Use / Maintenance: Ecoresin can be used for decorative use or material use because it is easy to clean. Uses range from decorative wall coverings, cabinet inserts, or light box inserts to table tops for everyday use. Harsh chemical cleaners should not be used because they can slowly deteriorate the ecoresin. For small scale alterations to the product, water and a paper towel can be used.

Safety / Environmental Concerns: Ecoresin is safe and non hazardous to the environment. It should not be put into direct sunlight, but a minimal light would not cause it to become hazardous. Depending on the thickness, it can become heavy so when installing, all safety precautions need to be made.

Cost: $$.
Reading the Mind and Body Responding to Color Environments: Computer Simulations with Self-Reports and Physiological Signals

So-Yeon Yoon & Kevin Wise
Cornell University

ABSTRACT

Color is known to stimulate psychological reactions and thus a critical consideration for facility planning and design. While the spectrum of published research on color is very broad, a recent meta-analysis of over 3,000 citations on the topic by Tofole, Schwarz, and Yoon (2004) reveal conflicting outcomes and little empirical evidence regarding the psychological impact of color. Two important challenges must be addressed before progress can be made on accurate empirical assessment of color effects. The first challenge pertains to controlling and manipulating color variables as well as other potentially confounding variables such as light quality. This is particularly difficult to achieve in color studies using real world environments. The second challenge is in accurately measuring the psychological impact of color. Self-report measures are often used to assess emotional responses to environmental stimuli including that of color. Exclusive use of self-report measures such as semantic-differential scales runs the risk of introducing the concept after the fact and thus may fail to capture the true mental state of the participant. Due to the above limitations, previous research tends to provide inconsistent findings and limited generalizability for the implications.

In this study we explored a new strategy to overcome these limitations in prior empirical investigations on the psychological impact of color. To overcome the first challenge described above, we employ high-fidelity computer simulations which offer great advantages in controlling the variables of interest and the experimental settings, thus minimizing confounding elements. Current 3D computer simulation technology affords realistic representation of environmental settings that can lead to results similar to what would be found in actual environments (Bateson & Hui, 1992). Psycho-physiological measures are used in
addition to self-report to better capture users’ emotional responses to different color environments. Physiological measures capture people’s emotional and cognitive states while interacting with media by tapping into their physiological states (Stern, Ray, & Davis, 2001). By using appropriate physiological measures corresponding to that of valence (pleasant-unpleasant) and arousal (aroused-unexcited), most affective states can be mapped on to a two-dimensional space as proposed by Russell (1980).

For the study, nine color palettes based on Kobayashi’s color image theory were developed and they were applied to two different interiors—one bedroom and one public dining space. Forty subjects participated in the study. Color stimuli were presented on the computer screen. While viewing each stimulus, a subject reported their emotional responses using adjective rating scales while physiological data was recorded via Biopac MP150 bio signal acquisition system. Physiological data including electrodermal activity (EDA) and heart rate variability (HRV) and answers of the self-report survey were collected and statistically analyzed. This study presents a new experimental research protocol, data analysis, results, and our interpretations from both self-report and physiological measures. Important implications include the feasibility of the method for user groups with difficulties in articulating their emotional responses without the control over their own color environments.

REFERENCES (APA)


ADDENDUM
Overcoming the Young Designer’s Bias: Instructional Techniques that Create Fresh Perspectives in Dwelling Design

Steven Webber
The Florida State University

ABSTRACT

Residential design is a key component within any comprehensive Interior Design program. Each student is intimately familiar with this project type which leads to biased design thinking and presents an inherent challenge to the young designer. The problem for the studio instructor is assessing the students’ understanding of dwelling design and helping the students overcome obstructive personal bias about the design challenge at hand and focusing on the needs of the client instead.

Research on the meaning of home is extensive, sometimes contradictory, and exposes complexities that exceed the realm of the interior design discipline. The literature does agree on several points that influence the design process relevant to interior design students: home can be defined as a geographical region, emotion, idea, and/or a physical space depending on cultural background, upbringing, and heritage (Bowlby); home provides a positive sense of belonging and place (Mallett); end users desire freedom of control over their living space (Darke), yet design professionals can limit end users’ choices (Chapman and Hockey); design of the interior does influence the user’s idea of home (Giddens); privacy and an understanding of inside and outside world is critical; both women and men are engaging in paid work from the home which affects perception of home; diverse backgrounds within western culture favor a single-family free-standing house with a yard; individual meaning of home results from the tension between the ideal and real; personal experience of home is critical to a personal understanding of home; the “ideal” home tends to focus on romanticized and nostalgic underpinnings (Mallett).
Following early observations of design students, and in light of the complexity of the research on home, the proposal’s author developed design exercises that focused on design process and design discovery to break the student away from personal biases and channel efforts towards the client. To this end, the author created an invented scenario for the class: design for a specific classmate/client 30 years in the future; explore specific physical needs through anthropometric measurements; explore specific desires based upon culture/heritage discovered through questionnaires; design a space for an exotic pet (App. A and B). The student was limited to 1,000 square feet of floor area to accommodate energy and material use constraints as well as the project’s limited duration. The students developed research and programming conclusions (App. C) that informed their design development and final solution visuals (App. D).

Several outcomes were observed by evaluating the student work outcomes by the author through the course of the class. As predicted, student designers default to what they find to be most familiar (their “ideal” home). Consequently, it is the instructor’s responsibility to demonstrate the error in retreating to this safe haven during the design process. Lastly, students who took each milestone exercise seriously were able to disengage from their own “ideal” of home and become personally invested in the project for the sake of the client and the quality of the design.

REFERENCES (APA)


APPENDIX A: PROJECT BRIEF INTRODUCTION

Project 1: Dwelling

Scenario
The time is 30 years in the future. Energy costs now consume nearly 50% of a person’s income. The Detroit Zoological Institute has dissolved due to lack of funding, and the small animals have been raffled off to concerned and big-hearted residents of southeast Michigan. Your client has won one of these animals. Your client has also just received a modest inheritance and now wants to build a modest new home that addresses his/her physical needs, provides a place for his/her new pet, and also minimizes energy costs to maintain and operate the home.

Client
Your client is one of your classmates, and is randomly drawn/assigned to you. Using a copy of Panero and Zelnick’s Human Dimension and Interior Space (Whitney Library of Design, 1979), or another reference on human dimension and factors design with ergonomics and anthropometric concerns in mind in relation to your client. Measure your client to specifically understand his/her ergonomic needs, percentile measurements, and design a dwelling around this person specifically. Develop a questionnaire for your client to answer in a verbal interview to learn more about him/her in order to design an appropriate dwelling.

Companion
The rescued animal is randomly selected for each project. Design an integrated dwelling for the pet based on its behavioral characteristics and physical needs. Conduct detailed research on this animal before designing.

Location
The site is located in Michigan. Your particular site characteristics (urban or rural) will depend upon your individual concept, client, and client pet.

Pragmatics
Program
You are required, at minimum, to provide a place to sleep, bathe, eat, and work for your client and space for your client’s pet. Any additional program elements are at your discretion based upon your client and client’s pet. Keep in mind the project scenario.

Space Quantity
You have 13,824 cubic feet maximum volume to work with. Your maximum square footage is 850 square feet for your client, and a maximum of 150 square feet for the animal. Allowances for more space for the animal can be made on an individual case-by-case basis.
APPENDIX B: PROJECT BRIEF DETAIL

Part 1: Analysis
Duration: 2.5 weeks

Meaning of Home
Ask yourself these generic questions to determine your philosophy about a dwelling, or home:
  What does it mean to sleep?
  What does it mean to eat?
  What does it mean to bathe?
  What does it mean to work?

These questions are a starting point only. Expand upon them. Reference the accompanying student work as an example. Express your thoughts in a creative project involving any combination of writing genre, imagery, or another creative expression of your choice.

Questionnaire
Develop a questionnaire for your client. Write questions before conducting the interview and present the questions to your group for review before you present them to your client. Revise the questionnaire as necessary. Questions/Answers should help guide you in the design process, but will not be a strict law as you design the project. Remember, you as the designer also have authority in the design process. If your client’s needs/wants are conflicting, or irrational, or may lead to a poor design outcome, it is your professional obligation to propose an excellent design solution no matter what the circumstances. No excuses.

Anthropometrics
Gather the anthropometric data on your client (see example provided in studio), and ask these questions about your findings:
  What measurements, if any, are outside of the 5%-95% range of the population?
  How do these particular extremes potentially affect your design of the space(s)?
  How might the “normal” measurements affect your design?

Companion Research
Research the animal that has been assigned to be your client’s pet and prepare a summary of notable needs and characteristics of the animal by asking some of the following questions:
  What are the physical traits of the animal (weight, dimensions, color, texture, etc.)?
  What are the animal’s capabilities of (running, flying, swimming, screeching, etc.)?
  What are the animal’s social needs (territorial, pack, reclusive, human interactive, etc.)?
  What are the animal’s environmental needs (water/land, warm/cold, light/dark, etc.)?

Additional Factors
Based upon your findings above regarding your client and the animal, what type of site will this project occupy (urban or rural, flat or sloped, north/south/east/west orientation, etc.)? How will this begin to affect views, space adjacencies and other important factors?

Based upon the Project Scenario on the previous page, what other issues will you incorporate into your design?

Concept Statement – Program Document – Project Goals
Synthesize a concept statement, and list of project goals, based upon what you find in the steps outlined above. Synthesize a simple program document listing the various spaces and the approximate spatial requirements of each.
APPENDIX C: STUDENT WORK SAMPLE – PROGRAMMING/RESEARCH

### Structural Body Dimensions

<table>
<thead>
<tr>
<th>Description</th>
<th>Measurement</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>65</td>
<td>5.8</td>
</tr>
<tr>
<td>Eye Height (Standing)</td>
<td>25</td>
<td>20.5</td>
</tr>
<tr>
<td>Forward Reach (Standing)</td>
<td>32.7</td>
<td>22.6</td>
</tr>
<tr>
<td>Reclining (Standing)</td>
<td>32.2</td>
<td>22.6</td>
</tr>
<tr>
<td>Axial Body Width</td>
<td>51.7</td>
<td>45.4</td>
</tr>
<tr>
<td>Sitting Height</td>
<td>29.5</td>
<td>21.5</td>
</tr>
<tr>
<td>Bone Length (Standing)</td>
<td>103.3</td>
<td>103.3</td>
</tr>
<tr>
<td>Bone Length (Sitting)</td>
<td>103.3</td>
<td>103.3</td>
</tr>
<tr>
<td>Bone Length (Reclining)</td>
<td>103.3</td>
<td>103.3</td>
</tr>
<tr>
<td>Bone Length (Resting)</td>
<td>103.3</td>
<td>103.3</td>
</tr>
<tr>
<td>Bone Length (Sitting 1)</td>
<td>103.3</td>
<td>103.3</td>
</tr>
<tr>
<td>Bone Length (Sitting 2)</td>
<td>103.3</td>
<td>103.3</td>
</tr>
</tbody>
</table>

---

**Note:**

- The dimensions were measured using a portable anthropology tool and were compared to the average anthropometric data for individuals of similar age and height.

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**Personal Information**

- Name: [Student Name]
- Age: [Student Age]
- Gender: [Student Gender]
- Major: [Student Major]
- Expected Graduation Date: [Expected Graduation Date]

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**Physical Attributes**

- Height: [Height]
- Weight: [Weight]
- Body Mass Index (BMI): [BMI]

---

**Exercise Routine**

- Preferred Exercise: [Preferred Exercise]
- Frequency: [Frequency]
- Duration: [Duration]

---

**Future Goals**

- Career Objective: [Career Objective]
- Achievements: [List of Achievements]

---

**Mental Health**

- Current Stress Level: [Stress Level]
- Coping Mechanisms: [Coping Mechanisms]

---

**References**

- [List of References]
- [Contact Information]
APPENDIX D: STUDENT WORK SAMPLE – DESIGN PROJECT

First Floor Furniture & Finish Plan
Scale: 1"/8" = 1'-0"

Second Floor Bathroom

Anthropometrics

Sections
Scale: 1"/8" = 1'-0"

Raccoon Butterflyfish Aquarium