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Interior Design: Preparing for the Battle Against Fire

Fred Malven

Interior design’s efforts to certify its role in protecting public health, safety and welfare (HSW) have often been slow going—until recently (Guerin, 2008). In the past few years, a variety of governmental and respected non-governmental entities have sponsored research focused on critical new interior-related dimensions of the HSW issue. Nowhere has this research been more persuasive and significant than with respect to interior design’s impact on fire safety (Kerber, 2010).

The findings of this research make it clear--interior furnishings, assemblies, materials and finishes pose some of the most serious threats of fire ignition, fire development and spread and attendant threats to fire survival. As such, virtually overnight, interior design finds itself on the “front lines” of fire safety. Unfortunately, interior design’s current technical and theoretical basis for responding to this challenge is far from sufficient. It is comprised primarily of a fragmented collection of focused scientific reports and a few fire-related references in introductory texts.

This paper reports on the progress of a project aimed at developing and refining a robust and accessible theory of fire-safe interior design. It has utilized a multi-step process that summarized and translated the burgeoning body of interior design-related fire research into a set of fire-safe design principles tailored to the needs of practicing designers and design educators. It concluded with a uniform set of principles augmented by a standardized set of “patterns” (concise, individual verbal/graphic summaries) fashioned after the pattern language work of Christopher Alexander (Alexander, Ishikawa & Silverstein, 1977), Edward Allen (Allen, 1993) and others. Initially, the project searched for a taxonomy of fire safety issues suitable as a contextual framework for the project.

Very quickly, the National Fire Protection Association’s Fire Safety Concepts Tree (NFPA, 2007) emerged as the most frequently cited framework for defining critical building fire safety objectives. With this in hand, a four-step, content analysis and translation method was used to transform the reports of key fire research undertaken by the, U.S. Fire Administration, the National Institute of Standards and Technology and Underwriter’s Laboratories into field usable concepts: 1) key word analysis was used to organize content around the constructs of the Fire
Safety Concepts Tree, 2) a contextual semantic analysis—simply stated, a look at how conclusions were stated—was used to identify language in the reports that was most immediately adaptable to theory formation, 3) “pattern” statements—brief narrative summaries—were developed for each theoretical building block, and 4) a simple illustrative graphic (symbol) was used to represent and reinforce the content of each pattern. This presentation will show examples of patterns related to: a) interior materials as potential fire “fuel”, b) influences of construction and arrangement of furnishings and materials on fire severity, c) the impact of spatial geometry and interior systems on fire spread, d) effects of space planning and materials on successful evacuation, e) managing toxic hazards, etc. It will conclude with remarks on the application of the patterns-- in the classroom and in practice-- to improve fire safety outcomes.

References: APA


In some states where the built environment is not as old as in many regions of the country, there may not be the long tradition of respecting historic resources often seen in areas with properties dating from the beginning of our country. This, coupled with the demands of contemporary life, makes it all too easy to destroy or compromise the integrity of historic buildings still in existence to provide services for current societal needs. However, there continue to be those who seek out historic properties for both personal and professional reasons. In some cases, a person feels a sense of attachment to a community resulting from connections formed over time (Trentelman, 2009, p. 202).

In others, architectural features contribute to a sense of historic “character” that is appealing (Kartikawening, 2003). Whatever the motivation, it is important that property owners have financial and educational resources that support their efforts to rehabilitate or maintain historic buildings. The purpose of this study was to gather information from property owners in nationally registered historic districts across a southwestern state about the experience of owning this type of property. A phenomenological approach to data collection was combined with an interpretivist approach to data analysis to investigate the meaning behind the experience of owning property in these historic districts.

A sample of 13 historic districts was selected, and included residential and commercial districts in both rural and urban areas. For the first phase of data collection, a short demographic survey was mailed to each property owner in the selected districts; the survey provided the opportunity for respondents to participate in a second phase of data collection—focus groups held within each district. The researcher conducted 18 focus groups with 51 participants; data analysis included line-by-line coding of each transcript, with individual comments applied within 30 identified themes. Seven key findings resulted from analysis and interpretation and were applied to one of the three research questions for the study. This presentation will provide interpretation of three of those findings that address place attachment for the community and state, appreciation of architectural features, and the historic character of the district. Based on participant comments during focus group discussions, these factors enrich the experience of owning property in historic districts in meaningful ways.
The “visual richness” (Herzog & Gale, 1996) of architectural detail that often typify a historic district may be what draws a potential owner in, but based on the focus group discussions in this study, learning the deeper history of the community and the architectural styles represented there significantly added to their appreciation and drive to maintain the district. This has implications for practicing interior designers as they strive to provide the most appropriate design for their clients, but this knowledge begins with interior design educators as we teach our students to go beyond providing aesthetic appeal to create an environment that nurtures and contributes to communities as well as individual homes and businesses.

References: APA

Expanding the Service-Learning Model in Interior Design

Marsha Cuddeback and T.L. Ritchie

The role of service-learning practice and pedagogy in higher education has been the focus of experiential education scholars since the evolution of service-learning on university campuses in the 19th century. The codification of service-learning in the academy was, in part, reaffirmed by National and Community Service Trust Act 1993, which defined service-learning to include meeting the needs of the community, fostering civic responsibility, integrating service and learning outcomes in the academic curriculum, and providing, “structured opportunities for participants to reflect on their service experiences.”

Notably, the foundation for service-learning in the academy has emerged from the tradition of volunteerism, aspirations for a democratic society, progressive education (Dewey), and application of a pragmatist philosophy (Pierce). Ongoing research has strengthened the perception of service-learning as a rigorous academic pursuit, including the neuroscience research of James Zull, founding Director of the University Center for Innovation in Teaching and Education. Zull documents the relationship of the brain and learning, suggesting that for true learning to take place, “there must be a conscious effort to build understanding from the experience, which requires reflection, abstraction, and testing of abstractions.” We are moving beyond validating service-learning as a credible, if not exceptional, practice and pedagogy.

This movement deeper in the academy and further from the margins creates opportunities for service-learning to evolve as an agile pedagogy that suggests service-learning’s center of gravity might shift in multiple directions. Here, service-learning can extend its impact and level of engagement to other forms of experiential education while maintaining rigorous academic outcomes. Where this condition exists, there are opportunities to consider service-learning as a centering device for alternative forms of learning. This research builds on Robert Sigmon’s Typology of Service and Learning, and subsequent development, Distinctions Among Service Programs (Furco 1996), and demonstrates a conceptual framework that employs many years of experience in publicly engaged scholarship in the design disciplines as a means to demonstrate the efficacy of this model and its application in interior design.
Service-learning is not new to interior design and opportunities to engage students are abundant. This presentation demonstrates the value of an emerging service-learning model through a comparative study of two distinct service-learning projects. A traditional, semester-long model engaged third year undergraduate students in the re-design of an existing urban pediatric center with a single community partner, and an emerging model engaged students, department-wide, multiple faculty, and complementary community partners to improve the livability of an existing group home for homeless women with special needs.

This emerging model was predicated on a nimble approach to formal service-learning and complemented by non-traditional service-learning activities including high impact and immersion learning, volunteerism, peer and professional mentoring, and opportunities for students to test abstractions (Zull 2002), to demonstrate a new method to amplify the reach and value of the experience for all participants.

References: Chicago


TRADITIONAL SERVICE-LEARNING MODEL
Pediatric Center Project Overview
ID 3753, Spring 2014

ID 3753 is an advanced design studio where students will have the opportunity to develop design thinking and implementation skills through a sequence of design propositions that culminate in design proposals and branding for an actual client, user and space. Emphasis will be given to methods of creative inquiry, systematic investigation, and innovative communication of outcomes. The assignment is a service-learning, community outreach project for a local pediatric unit in a regional hospital. The scope of the project includes three main components: 1) Comprehensive undergraduate research documented as an infographic that presents complex information and ideas quickly and effectively, utilizes visual thinking as a means to communicate, and helps the intended audience to understand trends, patterns, and relationships, 2) Analysis and program development including precedents, codes, existing context, site surveys and field documentation, and client interviews, and 3) Creation of a new identity for the pediatric center and a design proposal that addresses the needs of special users, the public areas, family and patient support, and patient rooms. At the conclusion of this project students will be able to perform advanced design development of interior environments at various levels of scope and detail; be aware of the value of community service through participating in a service-learning community outreach project; be aware of the needs for special user populations and apply their knowledge to interior environments and physical improvements for these users; understand the value of working collaboratively and apply their knowledge to team projects; will utilize numerous approaches and methods of inquiry, such as research and infographic communication and paradigm investigation and manipulation, to advance creative thinking during the design process; and be able to evaluate material selection and apply their knowledge to two and three-dimensional design projects.
EMERGING SERVICE-LEARNING MODEL
Access Your Life: Metamorphosis House of Destiny
Spring 2012 - Fall 2013

“Everyone can be great because everyone can serve.” (MLK)

Service-Learning:
- active participation
- meets needs of the community
- foster civic responsibility
- integrated into the academic curriculum
- structured time for students to facilitate transformation
Achieving Diversity through Intercultural Collaboration

Mia Kile, Andy Milligan, and Yuehao Chen

Statement of Problem
Given the economic challenges in most countries, interior designers are taking on projects globally. This international presence necessitates the diversity of designers. Cultural awareness and global issues are often stressed in interior design education through various pedagogical formats. However, discussion and reading about cultural awareness is one thing, but experiencing the differences personally is far more enriching. According to Hadjiyanni, “Interior design students who are taught to navigate an interconnected global reality should feel competent and secure to identify problems and their consequences as well as be empowered to take responsibility and action.” (Hadjiyanni, 2013)

This presentation contributes to the current discourse that reflects on the changing world environment and the direction of the profession of interior design. Recognizing the need to culturally enrich our students, three professors from different international institutions developed a workshop that organized (face to face) students and faculty from each institute for a one week design charrette. This experience engaged students in a service learning project addressing a need from the local community of the host institute (see appendix 1 for program description).

Design/ Methodology
This quantitative research explores Contemporary Applied Linguistics, which covers research and theory related to second language acquisitions (SLA) and to real-world problems centered on language. The program focused on content based decision-making process and task-oriented instruction. This phenomenon evaluates integrative experiences which often occur as learners address real-world problems, which require multiple areas of knowledge, multiple modes of inquiry, and offering multiple solutions that benefit from multiple perspectives. The Integrative Learning Value rubric (see appendix 2) was used to assess the outcome of the workshop.

Outcomes/ Limitations
Pre-workshop communication was diminished due to the fact that the website that contained the program information and research material was inaccessible to the Chinese students. Other constraints were the lack of verbal communication the first few days of the workshop. While the
Chinese students could speak English, many were timid and did not engage with the other students. According to Littlejohn, “Western-style thinking, which values the rational and logical, is mistrusted in the Eastern tradition.” He further states that, “what counts in many Asian philosophies is intuitive insight gained from direct experience. Such insight can be acquired by observing rather than participating (not intervening), which explains why silence is so important in Eastern communication.” (Littlejohn, 2010) The outcomes were limited due to the size of the workshop and frequency of the workshop. Inclusion of data from future workshops will yield a more accurate report.

Future Implications
The next step in this initiative is to conduct a similar workshop in China. Intercultural collaboration is necessary, particularly given the on-going blurring of business markets and of disciplines. “Intercultural competence can be defined as involving ‘attitudes’, ‘skills of interpreting and relating’ and ‘skills of discovery and interaction’ and can be achieved by means of intercultural education conducted during compulsory schooling.” (Witte, 2011) Providing opportunities to engage in an intercultural exchange of ideas through communication, students will be prepared for the global marketplace.

References: APA


Appendix 1

Program Description:

This is the first of an ambitious series of international summer schools that will provide interior students with an annual design workshop focused on environments, context and cultural exchange. These will be hosted annually by one of the international partners. This is a collaboration between Interior Design / Interior Architecture from (school names have been omitted for this submission).

For this first pilot program, we are inviting international interior student teams to respond to the themes of ‘popup’, ‘mobility’ and ‘culture’ in a combined idea for a pop-up mobile museum that responds to the excitement generated by the V&A at (name omitted for this submission) waterfront development. We are delighted to have both V&A Director Philip Long and also Tara Wainwright involved in this short charrette project. The following quote (taken from the DutchCulture/TransArtist website), alongside other supporting material located on the blog site, should stimulate ideas for collaborating students. We are looking forward to meeting and working with professors and students from the three institutions.

“The Mobile Museum’s goal is to generate new insights, possibilities, and appreciation for artist’s roles in interpreting information. The Mobile Museum recognizes museums as valuable structures for learning about the world around us, and utilizes artists for guides in interpretation of that structure. It was born from the interest in collecting and why people collect.”

Pop-Up Mobile Museum: Design Brief

Working in an international design team composed of students from schools of interior design/ architecture programs from (names omitted for this submission), you are invited to develop a design proposal for a small-scale experimental structure that explores concepts of mobility, culture and pop-up. Your design for this pop up mobile museum will be located near the site of new V&A building on the waterfront at the Tay estuary.

The pop-up has become a familiar genre within the design community in recent years ranging from temporary retail to more ambitious architectural structures to cultural and artistic statements. However, this is not the new genre that we are led to believe. Indeed, pop-up retail has very clear antecedents in many ancient market places. You can see examples of new pop-up at the following URL, http://www.carmodygroarke.com/projects/public/100.html.

A useful definition of a pop-up museum however is:
Pop-Up Museum [n]:
• a short-term institution existing in a temporary space.
• a way to catalyze conversations among diverse people, mediated by their objects.

Mobility is another factor you and your team will be asked to explore. It too has an experimental and a commercial side. You can see examples for a mobile museum developed at Fabrica at the following site, http://www.fabricafeatures.com/2012/mobile-museum/.
The first Mobile Museum exhibition took place during the Milan Furniture Fair 2011, under the curatorial theme of “Family”. The second MM exhibition was staged at the Victoria and Albert Museum as part of the Friday Late Summer Camp program. Most recently it was hosted in Brussels as part of Design September 2011. The concept for the mobile museum was created and curated by Dean Brown and Philip Bone.

This workshop provides you with an opportunity to collaborate and explore different design approaches and combine individual and team skills that reflect a shared design theme. Your teams final concept proposal needs to reflect, and responds to, the imminent arrival of the world renowned Victoria & Albert Museum and their new V&A (name omitted for this submission) waterfront building at (web site omitted for this submission). This is just beginning on site, and is due for completion in (date omitted for this submission) and has been designed by the Japanese architect (information omitted for this submission).

During this workshop you be required to develop ideas by using discussion, free-hand sketching, handmade scale models, (as rough mock-ups), and digital presentation. Your team will be required to present your final ideas in a digital format to representatives of the V&A, design professors and industry guests.

This will take place over an intensive, but short one-week period between Monday 16 – Friday 20 July. The venue for this interior design / interior architecture summer school will be (school name omitted for this submission). The workshop encourages (omitted for this submission) students to develop their existing design skills and refine skilful design thinking by working with others.

Design skills are those familiar Interior Design / Architecture abilities such as technical drawing, working and expressing creative ideas at various scales, scaled model making (both rough concept models and more detailed models), detailing & assembly, materiality, communication, and visual, verbal and text based presentation etc., whereas skilful design thinking is concerned with how we develop, express and generate design ideas and see those design problems through more conceptual lenses. Design skills could be considered as practical and basic whereas skilful design thinking encourages you take risks and to think about, and resolve, problems using different methods and approaches.

Final team proposals will then be uploaded on-line
**INTEGRATIVE LEARNING VALUE RUBRIC**

*for more information, please contact valen@accu.org*

**Definition**
Integrative learning is an understanding and a disposition that a student builds across the curriculum and cocurriculum, from making simple connections among ideas and experiences to synthesizing and transferring learning to new, complex situations within and beyond the campus.

Evaluator are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

<table>
<thead>
<tr>
<th>Connections to Experience</th>
<th>C</th>
<th>Milestones</th>
<th>Benchmark</th>
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</thead>
<tbody>
<tr>
<td>Connects relevant experience and academic knowledge</td>
<td>Meaningfully synthesizes connections among experiences outside of the formal classroom (including life experiences and academic experiences such as internships and travel abroad) to <strong>deepen understanding</strong> of fields of study and to broaden own points of view.</td>
<td>Effectively selects and develops examples of life experiences, drawn from a variety of contexts (e.g., family life, artistic participation, civic involvement, work experience), to <strong>illuminate</strong> concepts/theories/frameworks of fields of study.</td>
<td>Identifies connections between life experiences and those academic texts and ideas perceived as similar and related to own interests.</td>
</tr>
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</table>

| Connections to Discipline | Serves connections across disciplines, perspectives | Independently creates wholes out of multiple parts (synthesizes) or draws conclusions by combining examples, facts, or theories from more than one field of study or perspective. | When prompted, connects examples, facts, or theories from more than one field of study or perspective. | When prompted, presents examples, facts, or theories from more than one field of study or perspective. |

**Transfer**
Adapts and applies skills, abilities, theories, or methodologies gained in one situation to new situations to solve difficult problems or explore complex issues in original ways.

| Integrated Communication | Fulfills the assignment(s) by choosing a format, language, or graph (or other visual representation) **in ways that enhance meaning**, making clear the interdependence of language, meaning, thought, and expression. | Fulfills the assignment(s) by choosing a format, language, or graph (or other visual representation) **explicitly connect content and form**, demonstrating awareness of purpose and audience. | Fulfills the assignment(s) (i.e., to produce an essay, a poster, a video, a PowerPoint presentation, etc.) **in an appropriate form**. |

| Reflection and Self-Assessment | Envisions a future self (and possibly makes plans that build on past experiences) that have occurred across multiple and diverse contexts. | Evaluates changes in own learning over time, recognizing complex contextual factors (e.g., works with ambiguity and risk, deals with frustration, considers ethical frameworks). | Articulates strengths and challenges (within specific performances or events) to increase effectiveness in different contexts (through increased self-awareness). | Describes own performances with general descriptors of success and failure. |
Appendix 3- Images from the workshop

Day One

Day 2

Day 3
Students at the project site.
Most design educators, students, and practitioners list the elements and principles of design with the least provocation: color, shape and form, light and texture, balance, emphasis, and so on. Even when not fully articulated, principles and elements are the structure of all design solutions. Critically, one element generally overlooked is time though Rion Willard (2011) states that “architecture is an event or series of events in time much like a performance complete with characters and protagonists both human and architectural” and these reciprocal relationships experienced over time, whether a day, a lifetime, or generations, contributing to the complexity of design problems and their solutions.

A review of literature reveals a lack of discourse on time as a design element and existing studies focus on issues of historic preservation or housing and community development. For this reason, the present exploratory study examines constructs of time, introducing both scientific and philosophical origins as well as its influence on our experience of the built environment. Most importantly, the potential of time as a critical component of design solution is explored and diagrams of time are provided as teaching and learning tools. Sir Isaac Newton (1687) explored concepts of time and asserted that time “flows equably” and can only be understood mathematically in equally divisible, unending units. His scientific premises were based in objectivity.

This unit driven approach contributes to a design solution in pragmatic ways: return on investment, durability, efficiency, programmatic needs, and maintenance are but a few. The solution can also respond to objective, time-related factors such as movement of the sun and seasonal pressures and events. In contrast, Immanuel Kant purported that time was subjective and experiential, a phenomenon altered by our senses and thus unique to each individual (Warburton, 2011). Subjectively, sense of place is created over time (Jackson, 1994) and is crafted of individual moments and unique memories.

We can understand architecture experientially as the sun moves across the sky, temperatures change, materials record human activity, and memories connect each user uniquely to the place. The future holds great potential yet human consciousness provides a buffer, never allowing one to fully anticipate the physical and emotional changes associated with life and, for
these reasons, associated demands on built environments. These opposing frameworks allow for a broad examination of the influence of time on the built environment, both in the process of its creation and in our understanding of its effect on the solution and its occupants.

This presentation provides examples from historical and contemporary interior spaces for the purpose of exploring these important questions: How does a designer begin to understand and manipulate the subtleties of space in relation to light, color, temperature, and sound over time? How do designers accommodate the human need for emotional connections to their environments as well as the meaning that will be ascribed at some future time? How does the designer anticipate ever evolving demands for functionality when future use cannot be envisioned?

References: APA


Knowledge and Attitudes Toward Sustainability
Among Interior Design Students in Kuwait
Ahmad Alansari and Robin Wagner

Background
Environmental education, which has become increasingly popular in North America and some European countries, could also become a viable tool in Kuwait. To date, the Interior Design program at the School of Basic Education, however, has not integrated sustainable design into its curricula. The Council for Interior Design accreditation in North America requires that sustainable design aspects be addressed throughout a program’s curriculum. Thus, to remain globally competitive, Interior Design students in Kuwait should be exposed to sustainability. Sustainability education is needed to prepare environmentally informed students who can actively work to protect the environment through informed decision making and ecologically responsible action (UNESCO–UNEP, 1991, as cited in Makki et al., 2003). Research has shown that environmental attitudes and knowledge influence ecologically responsible behaviors (Dillon & Gayford, 1997). Research in other countries (Tikka, Kuitunen, & Tynys, 2000; Michalos, Creech, McDonald, & Kahlke, 2009) has indicated that most young people do not have adequate environmental knowledge.

Purpose
The purpose of this study is to evaluate the level of knowledge and attitudes of Interior Design students in the School of Basic Education in Kuwait regarding green design for the purpose of developing a curricular framework for incorporating sustainability into the Interior Design program.

Methodology
A self-administered survey questionnaire was used as the data collection method for this study. The survey was distributed to design students in their classes, which resulted in high response rate of 180 (n = 180) participants. To ensure the reliability of the findings, both close-ended and partially close-ended questions were used in the survey. Therefore, both qualitative and quantitative research methods were employed. The study was conducted among the entire population of Interior Design students in the School of Basic Education in Kuwait in the fall of 2011.
Findings
Almost half of design students were aware of recyclable materials and alternative energy resources. However, the majority of the interior design students in the College of Basic Education in Kuwait could not identity sustainable water conservation products, methods for saving energy, or indoor air pollutants. Judging from the mean percent of correct responses (38.3 %), the average knowledge of interior design students regarding sustainability is low. Almost half of the interior design students did not have clear perceptions of or clear attitudes on questions related to their awareness and experience of green design. On the other hand, participants expressed moderately positive perceptions in general of learning and participating in environmentally responsible design. Implication: The researcher developed a curriculum framework for incorporating sustainability into the Interior Design program at the School of Basic Education in Kuwait based on the findings of this study, the literature review, and LEED green building system.

References: APA


Lighting and the Character of Interiors in Selected Mid-20th Century Houses

Designed by Bruce Goff and Fay Jones

Georgina Marie Gentry

Context
The appeal of architecture is chiefly through vision and the impression of proper proportions, a decorative value of details, and the harmony of the whole is gained through the distribution of light, shade, and color...lighting is of extreme importance in modelling form...Furthermore, the distribution of light upon the various surfaces influences the mood, spirit, or impression of the interior as a whole. (Luckiesh, 1917, p. 7)

Both Goff and Jones have received praise for their sensitivity to lighting in interior space. Of Goff, Sergeant stated, “...he is a master of light. He uses reflected and water-dappled light to animate the daytime experience and glimmering firelight and sparkle to accentuate his spaces at night” (p. 4). Likewise, Ivy (2001) asserted, “…he [Jones] understands light’s ability to transform interiors, to suffuse space with light, and to highlight texture, color, and form” (p. 206).

Purpose
This presentation will examine how Bruce Goff and Fay Jones utilized lighting as a key variable in the interiors of selected houses built in the Oklahoma-Arkansas region. Through the interaction of light, shadow, and color, the perception of structure, objects, surfaces, and other visual and emotive qualities of a space can be controlled. Nevertheless, lighting, particularly in residential design, continues to be an after-thought. By reviewing examples completed by Goff and Jones, it will become apparent that natural and artificial lighting can be integrated effectively, regardless of budget, size, style, or building configuration. This presentation will also compare lighting strategies used by Goff and Jones to enhance interior space.

Methods
This investigation builds on an earlier analysis of lighting in Goff-designed residences (Anderson [Gentry], 1986). The framework for analysis includes two principal objectives associated with the lighting design process: to reveal and express the character of the space and objects and to integrate lighting and luminaires within the space (Anderson [Gentry], 1986; Russell, 2008). Resources used to examine the luminous environments in selected residences included on-site assessments, evaluation of archival photographs and construction documents of selected interiors, and a review of commentaries by the architects and others.

Findings
Interior and architectural features frequently dictated appropriate artificial and/or daylighting techniques in interior spaces designed by Goff and Jones. For example, fireplaces, an important feature in residences by both architects, were often emphasized with variable daylighting from skylights above the fireplace and from perimeter artificial lighting for night-time grazing. Likewise, custom luminaire designs were often a derivation of the plan form and/or structural elements. The resulting interaction of architectural/interior features, color, and light contributed significantly to the animation of and visual interest in their residential interiors.

Conclusion/Implications By examining the lighting in these mid-20th century houses, one is
reminded that successful spaces of any period require careful synchronization of lighting with other variables, including site, structural elements, interior features, and users. This presentation will confirm that lighting, through its interaction with other variables, contributed significantly to the enduring character of the interior environments in houses designed by two of the region’s best known architects.

References: APA


Analyzing the Safety of the Built Environment

Kevin Steiner

Safe rooms, storm shelters, and tornado shelters are proven to save lives and reduce injuries to occupants. Traditionally, shelters are common spaces found in the geographical area known as “Tornado Alley”, which is a region stretching from western Iowa down to southern Oklahoma and over to southeastern Mississippi (Perkins, 2002). These spaces are now being incorporated into the layout of a building or constructed as free standing structures more than ever.

In residential occupancies these places are often designed in conjunction with another space that has an alternate primary function, such as a pantry, interior bath room, or closet. However, extra structural reinforcement is needed to make these spaces safe for the occupants. Due to the placement and combination with other functional spaces, the design of these shelters becomes an integral part when establishing these as safe places. These spaces are being included in commercial occupancies, but due to the age of the structure in which shelters are housed, these safe locations may be retrofitted into or designated in an existing place. However, in new construction shelters are planned into the overall space plan.

Before the incorporation into new construction, the exterior envelope and engineering of the structure of these shelters are constantly tested, evaluated, and analyzed to determine if they are adequately protecting the occupants. However, when making a place for these safe areas in existing structures, the current design of the interior is often analyzed and evaluated but unchanged. Placement of particular architectural features may not be considered. These features include glass, exterior doors, hollow-core doors, generators, architectural finishes, and violations of American with Disabilities Act (ADA) codes.

How “safe” are these architectural features and finishes that are included in these shelter places or in the circulation spaces leading to the shelters? In this presentation several aspects of the built environment is analyzed and evaluated to determine if they are working together to make the shelter a safe place. The analysis and evaluation of the built environment completed in this study was done in existing buildings housing shelters on a campus of a large mid-western university in “Tornado Alley”. This setting was chosen due to placement of it in Tornado Alley and the volume of people on campus at any given time.
The buildings included into this study were selected based on construction dates, access to buildings, location of the shelter in the building, and architectural features of the built-environment that could impact the placement of the shelter affecting the safety of the place. The evaluation of these buildings and architectural features was completed by an assessment tool. This tool was developed after the analysis of similar forms produced by ADA and Federal Emergency Management Agency (FEMA). The development of this tool is the original contribution of this study. The tool allows for an in-depth analysis and evaluation of several architectural features that are present in many commercial interiors that are probably not considered when making the shelter a place for safe refuge in an existing building.

References: APA

Biophilia and Placemaking: Influencing Design Decisions

Joy Wagner

Creation of sense of place and placemaking has been a focus of research in the design of the built environment and urban planning disciplines. According to the Project for Public Spaces (2014) “Placemaking strengthens the connection between people and the places they share.” At the same time, the focus on sustainability in the built environment and the creation of places and spaces that not only meet the physical needs of the occupants, but their psychological needs as well has altered the way we think about our environments.

Biophilia or “the connections that human beings subconsciously seek with the rest of life; the urge to affiliate with other forms of life” (Wilson, 1984) and biophilic design which is the “deliberate attempt to translate an understanding of the inherent human affinity to affiliate with natural systems and processes (known as biophilia) into the design of the built environment (Kellert, 2008) can provide occupants with the connections to the natural world that they are seeking.

When attempting to use this approach in sense of place and placemaking, the biophilic design element of place-based relationships (Kellert, 2008) and its attributes can be particularly useful. The session will briefly cover the elements and attributes of biophilic design and their application in the creation of sense of place and placemaking strategies for the built environment. It will also provide real-world examples from interior design and architecture in an effort to provide visual examples of how these elements and attributes might be applied to placemaking.

References: Chicago


The human spirit of creating and making has supported survival, positive coping and promoted growth in every civilization and every age (Dissanayake, 1999). Evidence demonstrates that creativity contributes toward positive physical and mental health for people. Improved health for the individual contributes toward strengthened internal morale resulting in broadened problem-solving awareness, perception shifts or even the ability to transcend the challenge altogether (Lombranz, 2007).

Introducing creative opportunities enhances relationships and communications with fellow creators, who share the artistic and creative language, leading to community, meaningful interactions and mutual support (Cohen, 2000). These are all positive attributes, desirable in a design studio setting. Central to the creating-making pedagogy is the analogous link between the creator’s idea and form expression. Design outcomes are the manifestation of creative thought and these two endeavors ideally work hand in hand to the end result. Design studio has long held the educational process of learning by doing or in a broader sense a practicum of learning and reflection (Schön, 1992), where instructors share information to and possible solutions for a design problem with students and instructors in a mentorship-apprenticeship role.

Since studio instructional models reflect the individual instructor’s personal inclinations, student learning outcomes vary widely. By expanding the apprentice-mentor studio model to include theoretical application, a heightened learning experience is provided for the design student. Incorporating theory into the design process ensures that students develop critical thinking skills which serve to develop an enhanced and creative foundation, resulting in tangible solutions that are unique and well rounded. The presentation will outline a theoretical model curriculum that support the practicum studio outside and during the studio lab time and demonstrates student support and the enabling of design solution synthesis.

Light, color, design history, and human behavior theory instruction have long been design course staples outside the studio, but the theories quickly vaporize the moment a student receives the first studio design project in favor of theoretically ungrounded and superficially
attractive designs. Integrated theory within studio instruction often has been perceived by educators as a design creativity limiter instead of a creativity enhancing opportunity. Model testing and in-class observations demonstrate findings, expanding the pedagogical design, including a theoretical instruction framework (Appendix figures 1-8) during studio lab time coherent with support classes, will result in evolving the student’s imaginative process and an understanding of how to synthesize theory, including historical references, into a tangible and appropriate design solution.

Resistance is to be expected from instructors and students when known paradigms are modified (Ghaziani, Montazami, & Bufton, 2013). The model of creating-making serves to demonstrate that final design solutions benefit from theoretical framework connections. Bridging the creative and constructed design problem out of theoretical approaches contributes to fertile instructional ground. The benefit of this approach would be beneficial toward graduating well-grounded future practitioners. Through the connective platform of theory, enhanced design studio education benefits students, instructors, and ultimately project clients.

References: APA


Figure 1
### Assumptions: Pedagogy vs. Andragogy

<table>
<thead>
<tr>
<th></th>
<th>Pedagogy</th>
<th>Andragogy</th>
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<tbody>
<tr>
<td>Self-concept</td>
<td>Dependency</td>
<td>Increasing self-directedness</td>
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<tr>
<td>Experience</td>
<td>Of little worth</td>
<td>Learners are a rich resource for learning</td>
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<td>Readiness</td>
<td>Biological development, social pressure</td>
<td>Developmental tasks of social roles</td>
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<td>Time Perspective</td>
<td>Postponed application</td>
<td>Immediacy of application</td>
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<td>Orientation to learning</td>
<td>Subject centered</td>
<td>Problem centered</td>
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Knowles, 1984

Figure 2
Figure 3  Bloom’s Revised Taxonomy. (Anderson, Krathwohl, Ausubel, CE, Mayer, Piaget, Raths, Wadrook, 2000)
Figure 4  Theorizing the Studio Curriculum: STUDENT LEARNING MODEL
Meta-cognition: Change over time

Theory of Self-Regulated Learning (Zimbardo, 1990)

Reflection in Learning

Development of Critical Thinking

Double-loop: Inquiry-based Learning

* What is this the best answer?
* Why is it applicable?

Inclusive of Theory Models

* Instructor as Facilitator
* Student owned (pedagogy)

Typical Instructor - Student
Non-structured

Single-loop: Type I Replicate

* Just tell me the solution
* How can we do what we do better?

Desire for Constancy
* Instructor as Director

Pedagogy: Reflective Learning
Mirror Magnetique: Bringing the Individual’s Character Into Place

Amy Jacobson-Peters

The Mirror Magnetique project was developed as part of a course for a Master of Fine Arts in Product Design. The objective of the project was to choose an existing company and through research and ideation, develop a product that could be included in the company’s line. The organization chosen produced well-made home furnishings and décor specializing in unique accent pieces.

They also considered sustainable design practices, and invested in their employees by providing them with solid training in construction and craftsmanship. Initial research began by diving deep into information about the company. This included studying the existing product line and exploring the types of retail shops that carried the merchandise. Interviews with local store owners exposed information about the strengths and weaknesses of the existing product line which helped to reveal areas of exploration.

Further research included distributing a survey about furniture and home accessory buying habits. The survey determined what people were spending their money on for their homes, and what styles they were drawn to most. A brainstorming session was also conducted with individuals who would be considered part of the target market. The session produced some interesting ideas, but it was not until after conducting some observational research that the idea of easy customization came to the surface.

For observational research, people were invited to “decorate” a piece of accent furniture in a home. They were provided with all sorts of accessories like lamps, runners, candlesticks, bookends, vases and other knick-knacks, then told to decorate a chest of drawers in an entryway. The research helped to illustrate the individual’s desire to make something their own. They were eager to accomplish the task, and very interested in the results of other participants. These observations led to the concept of customization.

How do you create a way to easily customize a piece of accent furniture to meet the ever changing decorating whims that come with shifting seasons and altering styles? At this stage, multiple sketches were produced to explore different concepts. From these early sketches,
several different ideas emerged that looked at ways to easily move or change components of a piece so that the end result would be different depending on how the user put it together. In order to evaluate three dimensional aspects of several of the emerging concepts, sketch models were created out of foam core and other materials.

For feedback, members of the brainstorming team, known as “stake holders” were brought back in to evaluate the designs and offer insight. The final result of the research, ideation and exploration was Mirror Magnetique, a line of accent mirrors that includes areas for decorative magnets in the wooden frame. The magnets made out of glass domes, feature an array of designs that can be easily changed for seasons or changing styles, allowing for personal expression. Mirror Magnetique; easily customizable accent mirrors that allow the user to bring their own personal character into place.
Appendix for:

Mirror Magnetique

A project for an MFA product design class that required the student to choose an existing company, and through research and ideation develop a design that could possibly be added to the company’s existing line.
Mirror Magnetique

Above: An Inspiration Wall which features images and information about the chosen company and its product line.

Above Left: An inspiration board that works to capture a desired look and style for the designed pieces.

Middle Left: A hand rendered study of an existing piece offered in the product line.

Lower Left: Original artwork created for the glass dome magnets.
Right: One of many conceptual sketches used to explore and develop the final product concept. Drawings were produced in design marker and colored pencil on marker paper.

Right: Finishing the star shaped mirror.
Far Right: Example of interchangeable magnets.
Below Right: The finished scalloped shaped mirror with magnets.

Below: Finishing the scalloped mirror.
Utilizing heat mapping technology to prioritize lighting intervention needs in an adult congregate living facility

Kathryn Adams, Paulette Herbert, and Gregory Clare

As part of a study of employee behaviors, interior design researchers wanted to understand the patterns of caregiver employees’ movements in their older adult congregate living workplace. This facility had limited resources to make lighting improvements administrators suspected were needed. Researchers anticipated often-visited work areas would be the best targets for potential lighting improvements.

In the absence of RFID monitoring for tracking employee traffic patterns, heat maps offered a relatively new method for identifying traffic patterns. In this study, 12 frontline caregivers were asked to utilize a computer mouse to click on areas on a workplace map that they remembered visiting during a recent week. Researchers then utilized Qualtrics software to create a two-dimensional visualization of participant click frequency data with color-coded areas denoting visit volume (number of click responses).

The resulting heat map indicated the Main Entry, Nursing Station, and Hallways were the three highest areas of employee visit frequency. The heat map data was then compared to daytime light meter measurements the researchers took at the facility with an Extech LT300 digital light meter and to current Illuminating Engineering Society of North America (IESNA) lighting level recommendations for older adults. Mean light levels in all of the high traffic areas were found to be less than IESNA recommendations. From these findings the researchers will be able to prioritize recommendations for lighting design intervention in the future. This study supports ecological modernization theory and both interior designers and researchers will benefit from the methodological aspects of this novel study.

References: APA


An Evidence-Based Design Approach For wayfinding Applications

Ahmad Alansari and Cherif Amor

Background
The experiences of the occupants of a building and their attitudes toward that building are enriched when building environments are easily navigable. Wayfinding is defined as the ability to navigate through a space without feeling lost. The application of wayfinding principles helps new visitors travel easily through a building’s interior, enhancing their experience of the building and reducing engendered stress levels. Signage, lighting and color each have a strong influence on wayfinding. Hidayetoglu, Yildirim, and Akalin (2012) argued that both lighting and colors can be used to optimize wayfinding in the absence of landmarks in the environment of a building. O’Neill (1991) concluded that textual and graphic signage should be used in institutional settings since they address emergency egress and encounters with decision-making points. In their study, Baskaya, Wilson, and Özcan (2004) found participants could not structure a sense of direction in areas that did not differ from others because of a lack of landmarks.

Purpose
This study aims to implement wayfinding elements that help new visitors easily reach their destinations in the human sciences building, as effected via an evidence-based design, and as shaped by a Texas Tech University theme. The human sciences building at Texas Tech University has many wayfinding issues. The major objective of the project is not only to help new visitors and freshmen students navigate the building more easily, but also to improve their experiences with and attitudes toward the building.

Method
A pictorial case study was conducted to investigate the issues of wayfindings in the Human Sciences Building at Texas Tech University. The researcher retrieved the needed information about the wayfinding of a building’s environment through a review of literature. The design focused on the technique of cognitive mapping which improves the end-user’s memory of the building’s environment. Biophilic design elements, such water and plants, are incorporated in the design as a tool for wayfinding. A Texas Tech University theme, such as the use of red, black and beige brick, is considered so as to foster that identity inside the building.
Implementations
A variety of wayfinding elements were applied to the design project. The designer incorporated several of Lynch’s elements of legibility in the design, such as landmarks, edges, nodes, and paths. Lighting techniques comprise one major tool used to help people navigate an interior environment. Maps, signs and arrows are wayfinding mechanisms used in all types of environments for the purpose of helping people reach their destinations. Both textual and graphic signs were implemented to help visitors navigate easily. Also, labeling methods, such as labeling the entrances, class rooms and offices were used to help visitors identify various building zones and regions. Differentiation of wall and floor colors was used to improve the memory of new visitors of the building’s environment.

Finally, using architectural delineation, which is separation of one area from another by architectural features such as walls or ceiling height, was implemented in the proposed design to maximize the wayfinding process.

References: APA


# Conference Schedule

<table>
<thead>
<tr>
<th>TIME</th>
<th>THURSDAY 10/2</th>
<th>FRIDAY 10/3</th>
<th>SATURDAY 10/4</th>
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<tr>
<td>8:00 - 8:30</td>
<td>Breakfast Buffet +</td>
<td>Farmer's Market +</td>
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<td>Tour of FJSOA</td>
<td>Fayetteville Square</td>
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<td>Analyzing the Safety of the Built Environment,</td>
<td>Expanding the Service-Learning Model in</td>
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<td></td>
<td>Kevin Steiner</td>
<td>Interior Design, Marsha Cuddelback + T L Ritchie</td>
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<td>10:00 - 10:30</td>
<td>Biophilia + Placemaking: Influencing Design</td>
<td>Creating-Making: Theory, Modeling + Synthesis</td>
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<td></td>
<td>Decisions, Joy K. Wagner</td>
<td>to Build: Theorizing the Studio Curriculum,</td>
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<td>Natalie Elis + Heping Wachter</td>
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<td>Knowledge and Attitudes Toward Sustainability</td>
<td>Intercultural Collaboration,</td>
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<td>Among Interior Design Students in Kuwait,</td>
<td>Mia Kile, Andy Milligan + Yuehao Chen, Ph.D.</td>
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<td>Ahmad Alansari + Robin Wagner</td>
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<td>Interior Design: Preparing for the Battle</td>
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<td>Against Fire, Fred Malven</td>
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<td>11:30 - 12:00</td>
<td>IIDA Texas-Oklahoma Chapter Student</td>
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<td>Conference</td>
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<td>12:00 - 12:30</td>
<td>Lunch + Poster Session</td>
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<td>Utilizing Heat Mapping Technology to Prioritize</td>
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<td>Congregate Living Facility, Kathryn Adams,</td>
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<td>Paulette Hobert, Ph.D. + Gregory Clare, Ph.D.</td>
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<td>12:30 - 1:00</td>
<td>An Evidence-Based Design Approach for Wayfinding</td>
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<td>Applications, Ahmad Alansari + Chari Amor, Ph.D.</td>
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<td>1:00 - 1:30</td>
<td>Mirror Magnetique: Bringing the Individual's</td>
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<td>Character Into Place, Amy Jacobson Peters</td>
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<td>1:30 - 2:00</td>
<td>Thorncrown Chapel</td>
<td>Lighting + the Character of Interiors in Selected</td>
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<td>Mid-20th Century Houses Designed by Bruce Goff +</td>
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<td>Fay Jones, Marie Gentry, Ph.D.</td>
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<td>&quot;Joy in Wavy Glass&quot; The Influence of Historic</td>
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<td>Character on Property Ownership in Historic</td>
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<td>The Test of Time, Jennifer Webb, Ph.D.</td>
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<td>A First Year Foundation: Shaping Holistic Design</td>
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<td>Thinkers + Makers for an Evolving Discipline,</td>
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<td>Kimberley Furlong + Marie Gentry, Ph.D.</td>
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<td>IDEC SW Regional Business Meeting</td>
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<td>Break + Travel</td>
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<td>Drinks at Carnall Hall</td>
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**KEYNOTE SPEAKER**

Merideth Bosswell

*(+ awards)*