CONFERENCE PROCEEDINGS

CONFERENCE HOSTS
Jane Kucko
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Kristin Maki

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Seunghae Lee

2020 CREATIVE SCHOLARSHIP AWARDS

Best in Category – Design as Art

Jeffery Haase – Ohio State University
Pepinsky Guest House Selfie

Best in Category – Design as Interior

Clay Odom and Kory Bieg – University of Texas at Austin
Robotic Interiors: Machinic Domains

Best in Category – Design as Idea

Nick Safely — Kent State University
FiiLuff

Best Presentation – Member's Choice

Patrizio Martinelli – Miami University
From Photo-Collage to Montage: Representation and Reinvention of Interior Space

2020 IDEC AWARDS OF EXCELLENCE

Best Presentation – Scholarship of Teaching & Learning

Tina Patel and Bridget Tipton – Kent State University
Empathetic Design Studio: Projects + Strategies + Reflection

Best Presentation – Scholarship of Design Research

Amanda Gale and Anna Marshall-Baker – University of North Carolina at Greensboro
Multidisciplinary Views Regarding Interior Design Features that Promote Student Wellbeing

Best Poster Presentation

Miyoung Hong – Indiana University Bloomington, Ashlynn Engelhard – University of Nebraska-Lincoln, and Annie Mimick – University of Nebraska-Lincoln
New Evidence Educates Future Informal Learning Environments

Best Graduate Student Presentation

Anne Farniok – University of Northern Iowa
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CREATIVE SCHOLARSHIP

Creative Scholarship | Design as Art | Presentation

A Participatory- Cross- Disciplinary - Vertical- Design-Build Studio

Milagros Zingoni, Arizona State University
Magnus Feil, Arizona State University

ABSTRACT

Diverse societies call for multiple ways of creating and designing interiors beyond indoors. Interiors not only addresses and reflects on the identity of self, but they are responsible for the human condition leveraging our place and cultural flux beyond the physical context (Perolini, 2011).

As academics and scholars, we have the responsibility to create new pedagogical approaches that advance the profession and expose students to the expanded field of interior architecture. This paper presents "Cumulus" a cross-disciplinary-design-build collaboration between ten graduate students in interior architecture, 34 junior students in industrial design and 120 sixth graders from a local title one school carried out during Fall 2018. Cumulus was funded by a local public art agency for an annual ten-day event that brings twenty world renowned artists along the water canal in a city in the Southwest of the United States. Cumulus was the only installation done by students and it was experienced by over 200,000 visitors. Following the Festival's theme on water- art- light, the design students designed and fabricated an interactive installation that reflects on the youth's view about the value of water in their community.

The studio aimed "to feed four birds with one cracker". First, it aimed to bring design and design thinking to youth, and empower them to be agents of change in their community as they grow. Second, it aimed to demystify college and project youth voices, often unheard in participatory planning. Third, it exposed design students to the development of empathy and to design with

non-designers. And fourth, it exposed everyone involved to the value of collaboration (Zingoni, 2018).

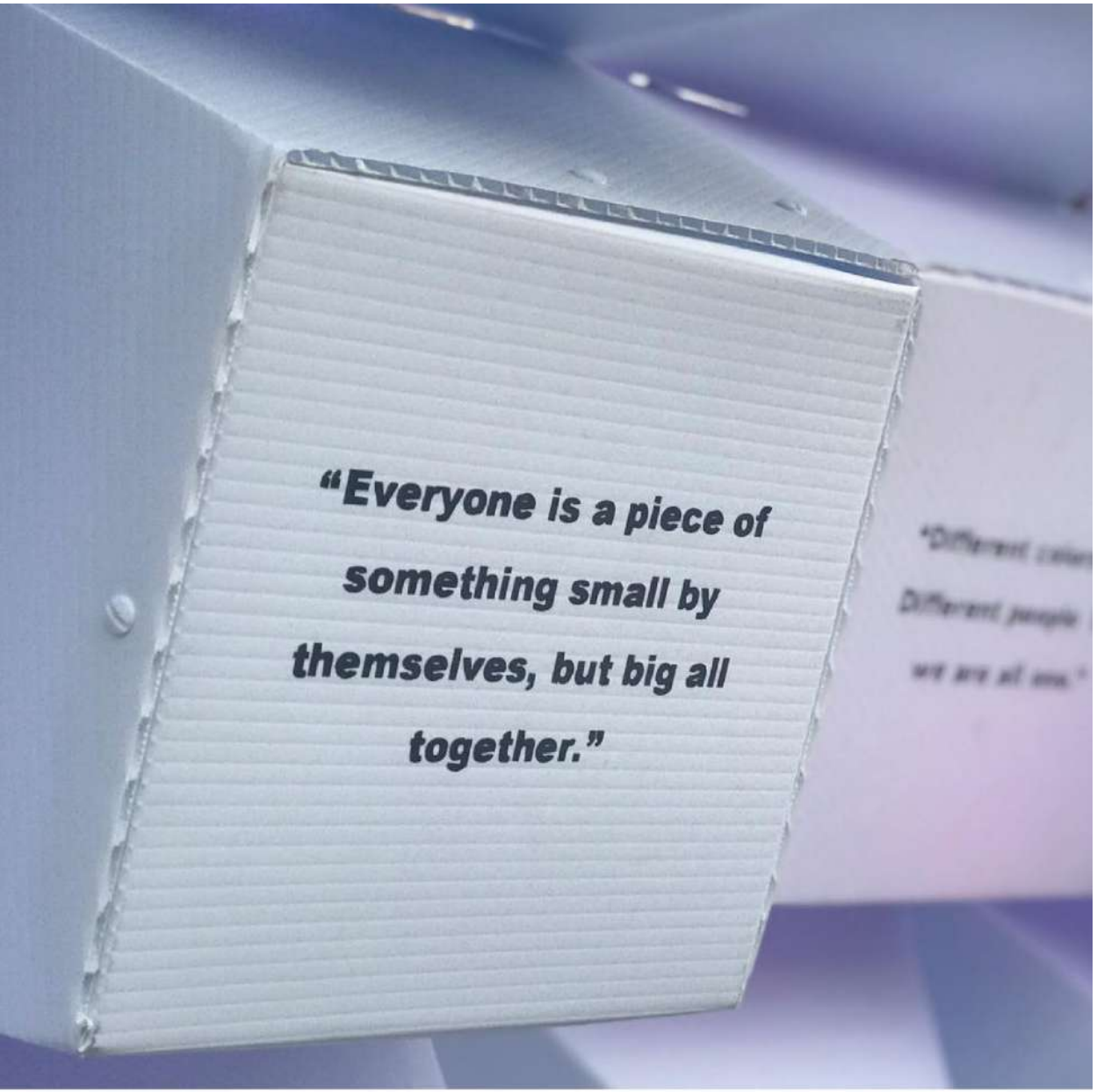
Due to accreditation standards that both disciplines are required to teach, the faculty designed a hybrid learning experience, leading as two different studios but interdependent of each other. The project was introduced as an ecosystem, a symbiotic relationship in which two or more systems are depending of each other and they inform each other. In order to help students visualize this notion, the transdisciplinary faculty employed the metaphor of the bees and the beehive, in which both elements are dependent of the other one, and without the other part cease to exist. This concept was carried out through the semester and it was manifested within the built installation. Both studios had the following outcomes expectations: (1) engagement with youth from local Title I school, (2) cyclical design iterations that responds to the data collected during the interaction with the youth, (3) design development and implementation including construction drawing sets, (4) fabrication, and (5) post occupation evaluation. The scope of the IA studio addressed the spatial experience, including a variety of programming such as wayfinding, storytelling, seating and interaction. The ID studio scope addressed interactions at the scale of the body.

Throughout the activities developed with the youth, a clear shared value was the fascination for the monsoon season, the anticipation it creates and how their parents do not allow them to be in the storm; and consequently they experience it through the windows of their living rooms. Cumulus parti is funded by this premise. Cumulus has three components: an interactive cloud that lights up mimicking lighting as the user moves through the site, the windows of the living room that encourage visitors to stay, and seventeen interactive drops that allow the user to explore how we used to play in the ponds after the storm.

REFERENCES

Perolini, P.S., 2011. "Interior Spaces and the Layers of Meaning." Design Principles and Practices: An International Journal, 5 (6).

Zingoni, M. (2018). Leveraging design education to empower youth to be agents of change in their community. In conference Proceedings Great Asian Streets Symposium / Pacific Rim Community Design Network / Structures for Inclusion Singapore. 14-16 December 2018.



CUMULUS

A Design-Build-Participatory Collaboration Between 120 6th graders, 34 Junior Industrial Designers and 10 Graduate Students in Interior Architecture.

IDEC 2020 National Conference- Creative Scholarship- Design as Art

Participatory Engagement with Youth #1

CROWNS & HEADDRESSES

REPRESENTING COMMUNITY

GAME DAY

BREAKING THE ICE

Participatory Engagement with Youth #2

"MY COMMUNITY IS MY IDENTITY. IT IS CULTURALLY DIVERSE AND ACCEPTING OF EVERYONE."

"MY COMMUNITY REVOLVES AROUND THE OUTDOORS, AND MY CROWN REPRESENTS WHERE WE GATHER IN NATURE."

"MY COMMUNITY IS DIVERSE, CHEERFUL AND EMPATHETIC."

"MY COMMUNITY IS ABUNDANT AND STRONG."

"MY COMMUNITY HAS A RICH HISTORY AND PRIDE TO CHERISH. PEOPLE ARE HAPPY."

"MY COMMUNITY SHARES LIFE WITH NATURE SO FUTURE GENERATIONS CAN HAVE THE OPPORTUNITY TO LIVE A MORE COHESIVE LIFE WITH NATURE."

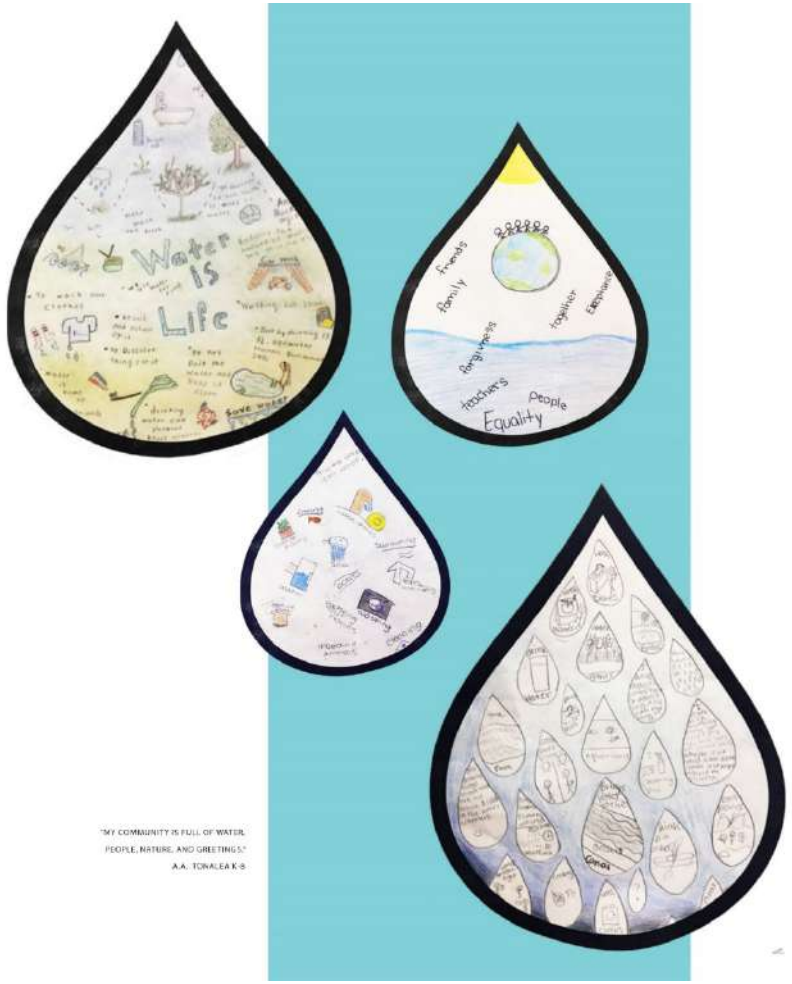
"MY COMMUNITY DARES TO BLOOM IN THE DESERT WHERE OTHERS REFUSE TO TAKE ROOT."

"MY COMMUNITY IS DIVERSE AND CREATIVE."

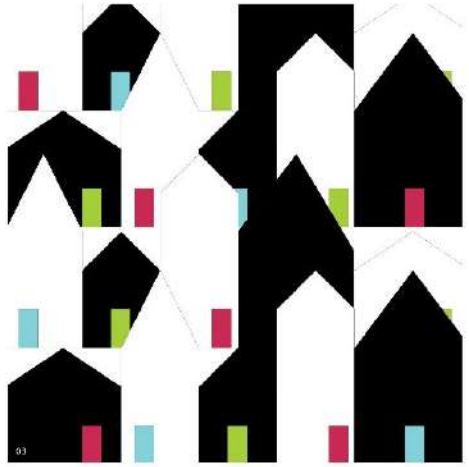
"MY COMMUNITY IS COLORFUL AND DIVERSE WITH DIFFERENT CULTURES COMING TOGETHER AS ONE."

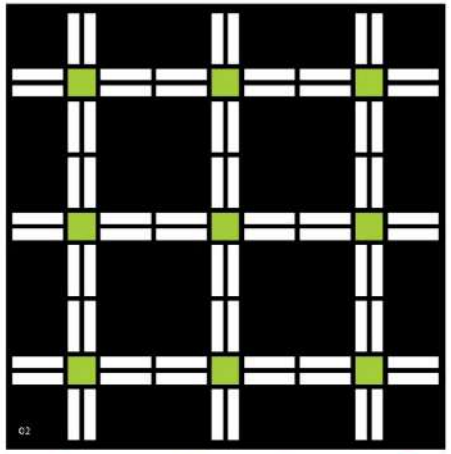
"MY COMMUNITY IS RICH WITH BEAUTIFUL ARCHITECTURE AND GEOMETRIC MOTIFS."

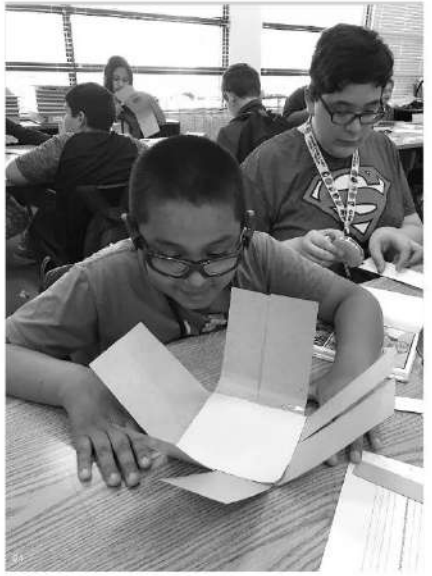
Participatory Engagement with Youth #3 and #4



A place to chill- A place of discovery -A place where I belong





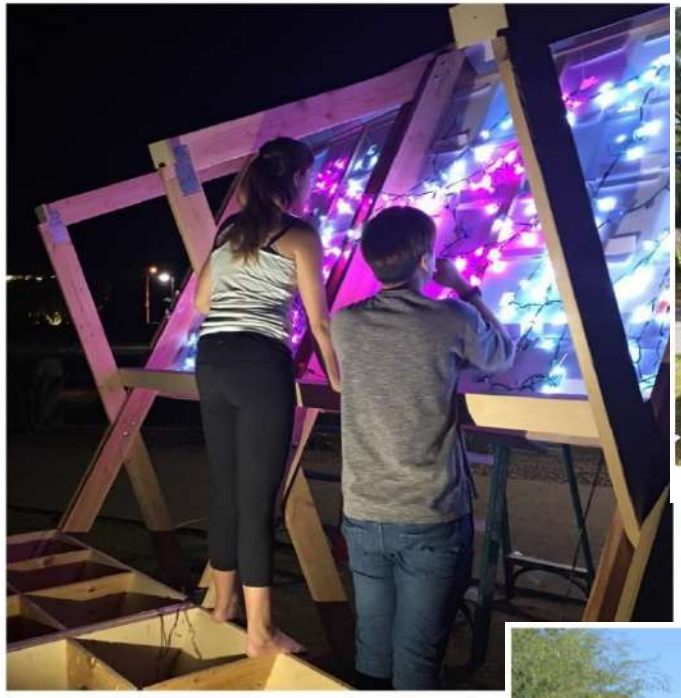


Monsoons: the **clouds** and the **drops**…. and the **windows of their home**

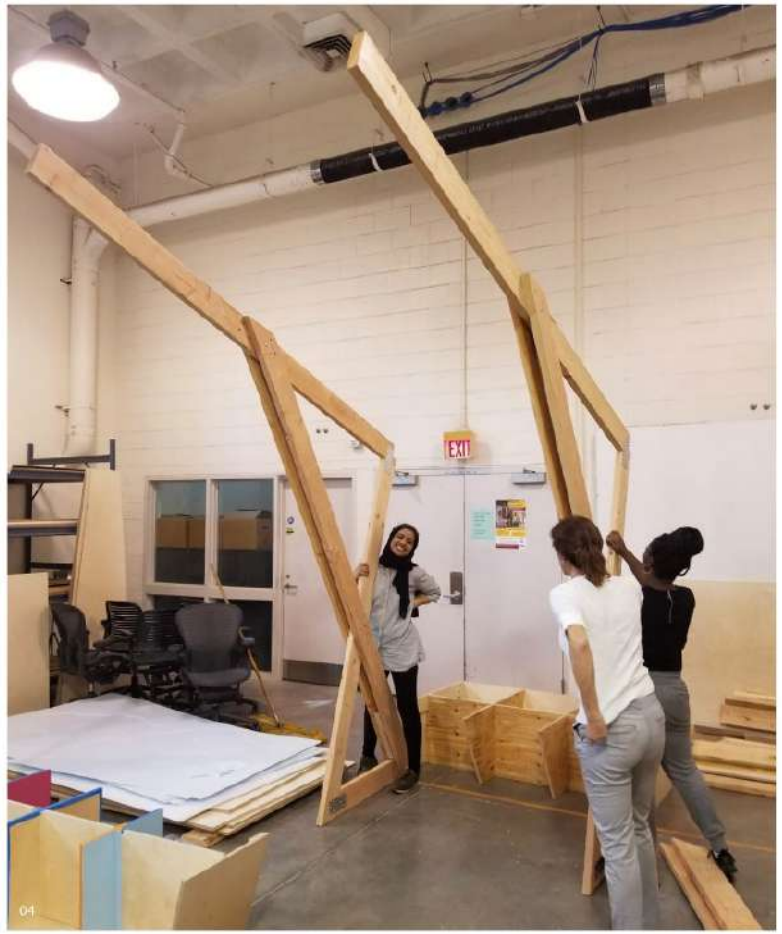
INSTALLATION RENDERING

CUMULUS AT CANAL CONVERGENCE

Fabrication and installation



CLOUD CONSTRUCTION



THE APPROACH

CUMULUS AT CANAL CONVERGENCE


CLOUD BY NIGHT
CUMULUS AT CANAL CONVERGENCE

Creative Scholarship | Design as Art | Presentation

Agents of Retrieval, Re-Collection and Retention: Sketching and Its Role in Memory-Making

Jim Dawkins, IA&D, Florida State University

ABSTRACT

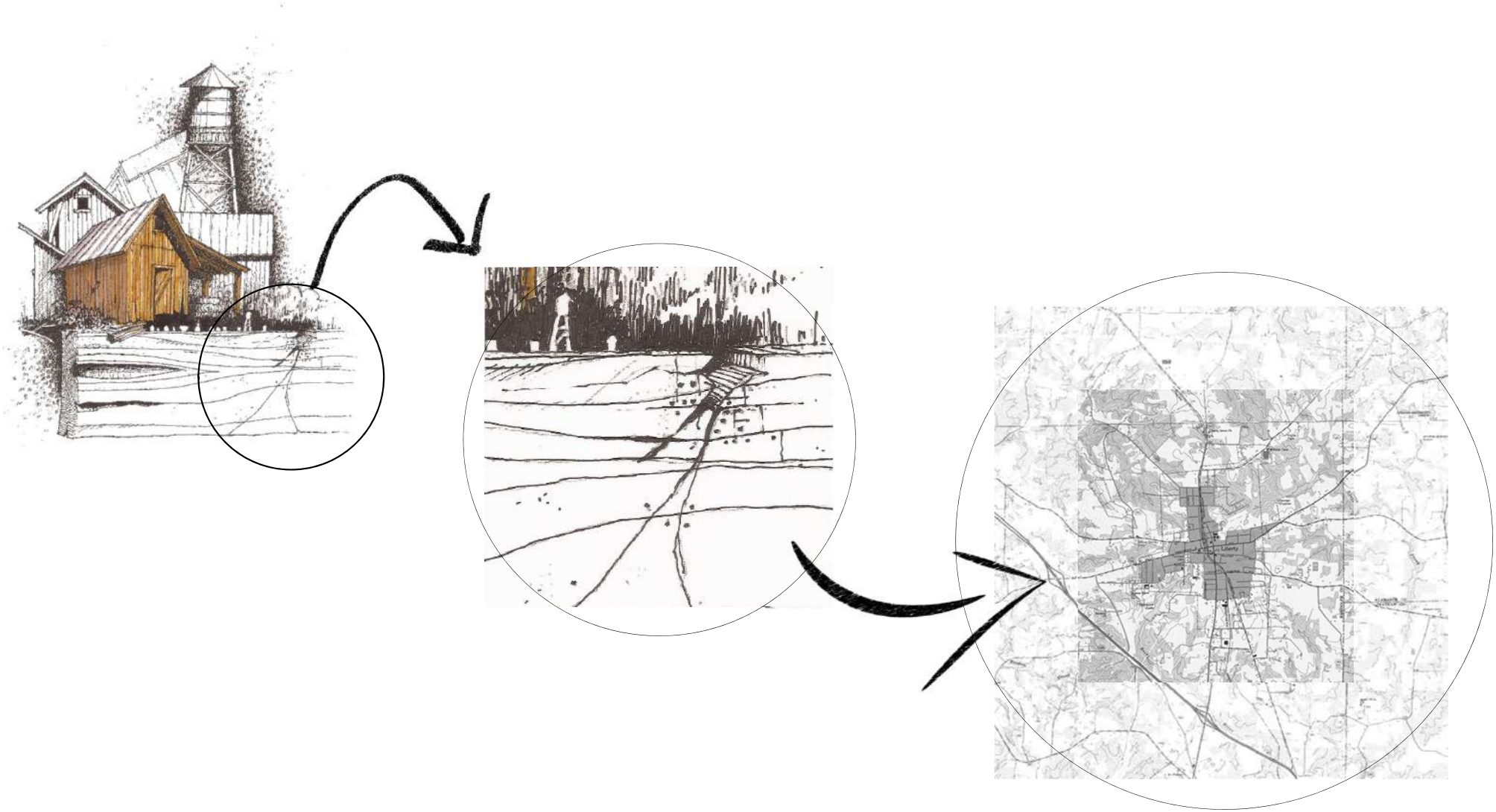
Memory…when do we create it, how do we access it, and how do we retrieve or re-collect it? Vivid memories of my youth can be found in an architecture rural in its roots and eternal in its existence: the barns and outbuildings of small tobacco farms. The visual backbone of many a rural North Carolina tobacco farm, the tobacco barn is a most fascinating building – the farmer as accidental architect. It preoccupies a vivid childhood memory of mine of a summer picking tobacco in Randolph County – 'priming baccer' as we called it. It was very much an 'of the earth' experience. My younger brother and I picked tobacco in the early morning heat and humidity of a piedmont North Carolina summer. We loaded the tobacco in a decaying wood sled Mr. Flint pulled behind his tractor which he would haul to the barn. The rows were never-ending, but thankfully the day was. Mr. Flint worked us hard but fair and did not let us broil too long. Mrs. Flint would bring us homemade peanut butter crackers and cold Cokes in those little glass bottles when we were done. Mr. Flint would hand us a $10 check, load us onto his flatbed truck, and haul us into town to the local bank when the day was over.

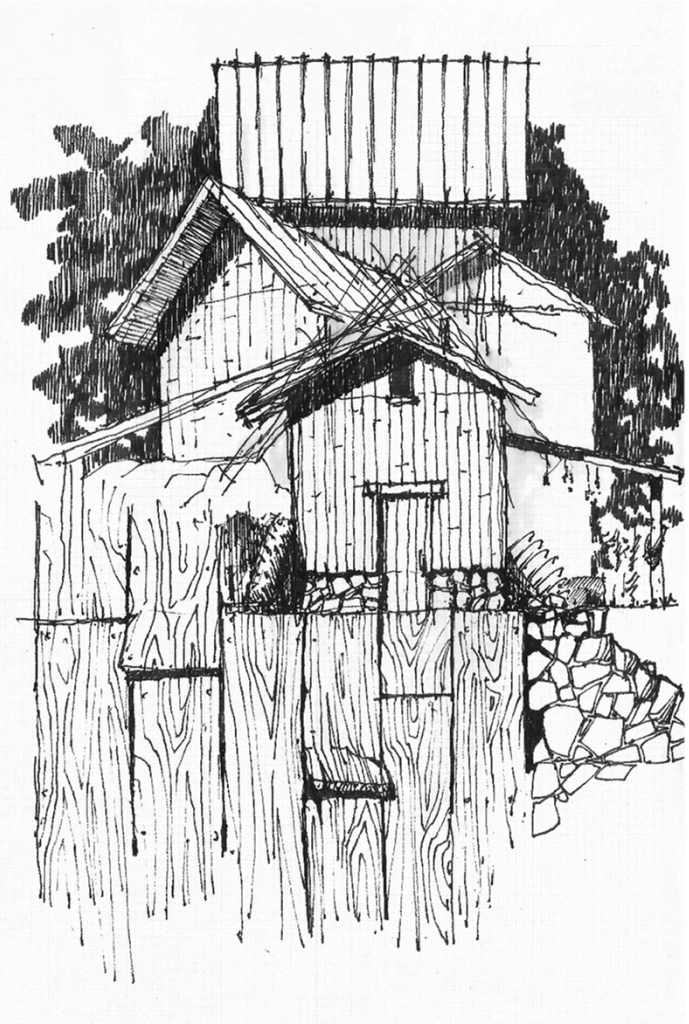
My curiosity with memory retention and retrieval and the role drawing may play in their effectiveness has crept up on me with my own age. I sense this subtly comes from the realization that memories do indeed wax and wane with the finer points becoming a bit dulled with each access attempt. Diaries or journals are often used to record thoughts, mapping moments and feelings via word in the hope that by writing clearly about them one will be better able to understand them. One records the parts (words) so that one can understand their relationship to the whole (a story). The barns I sketch, along with the other rural structures and silhouettes I

endeavor to recall, generally come in fragments – specific shapes and forms strewn about a familiar context in a random rather linear timeline. They are a loose collection of parts needing linkages that are essential to the reassembly of a more complete *picture*. It is in the process of drawing that I find a measure of re-collecting, connection and re-creation.

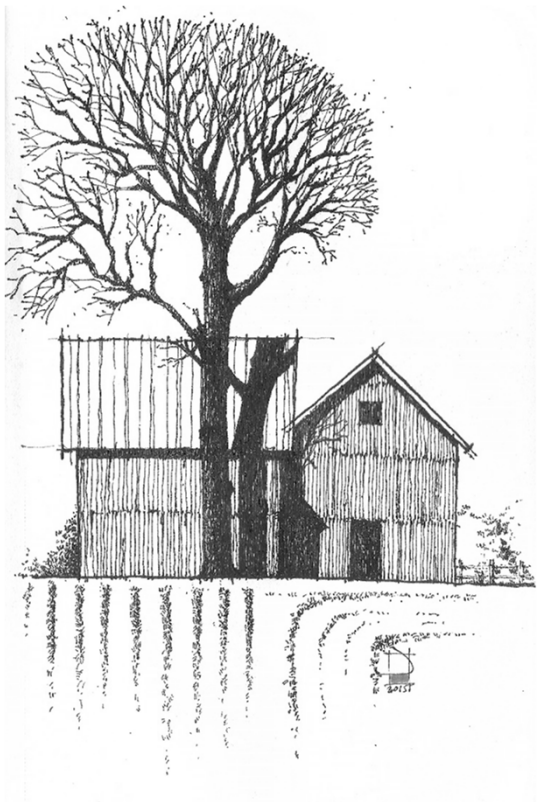
A unique (and *antique* I'm afraid) mapping system utilizing linkages can be seen in old, fold-out paper road maps used by pre-GoogleMaps travelers. Within this particular framework (*textured with a wood grain topography*) it is easier to think of memory fragments as the small rural towns and farm intersections that dot the geographic landscape. Back country roads form the neural (rural?) links and in some way help make sense of the *connections* between communities (events and experiences). This paper map – *the sketch* – organizes the memories into a gridded framework where one can make sense of the fragments and connect the smaller to the larger, where one is able to evaluate scale and proportion relative to time and distance.

Forty years span the distance between the first 'real' barn I drew and the fragments of the ones I now create. It was a curing barn adjacent to a house in a field in Turkey, North Carolina where my grandad was born. My uncle, brothers and I pulled all kinds of wood items from it before it was razed to the ground; fireplace mantelpieces, stair treads, massive baseboards and floorboards from the kitchen among other salvageable parts. I remember the dust and dirt and the rotted wood. I took a photograph of the barn before we left and it vanished quite a while back. But the drawing remains, solidifying one memory and providing rich paths down others, much like the textures and patterns of the wood grain itself. My sketches of rural structures are backgrounds to my own adult transience. I see similar places now but only from a distance and always in motion. I am drawing with words and pictures, literally and figuratively, on my past to define a measure of my present.






Rolling Springs
Rolling Springs



Creative Scholarship | Design as Art | Presentation

Alternate Measures and the Phenomenology of Pattern: The Big Daisy Textile Project

Annie Coggan, Pratt Institute

ABSTRACT

A collaboration between a master printmaker and a designer created an experimental textile space for a summer exhibition. This project's origins are from the print maker's large-scale woodblock printing practice and specifically from her *Flower* (2018) project where she inserted a textile panel of 100 woodcut daisies in her native New Hampshire landscape.

The designer proposed the inverse of the woodblock prints in the landscape, a room in a small Brooklyn gallery. This test of the power of scale and pattern continues the designer's focus on the potential of textile space and furthers the printmaker's textile printing practice. This project's goal was to investigate textile space as a completely immersive environment, examining how pattern can influence a sense of scale and positions the body in space. The project also brought forward a method of measuring space between the print maker and the designer that preferences the pattern printed on the textile rather than a feet and inches convention.

The precedents for the space ranged from the painterly (landmark photographs by Gordon Parks of Helen Frankenthaler immersed in her abstract expressionist paintings) to the scholarly (the venerable Robert Adams Tapestry Room at Osterley Park). Most dramatic of precedents studied are the Giant Room at Palazzo Te: a jump in scale from human to mythic. The Frankenhalter photos discuss the closeness of the canvas and the abstract expressionist's desire to be "in" the painting, while the Tapestry Room illustrates an interior preoccupation with furniture and the wall melding. The Palazzo Te illustrates the Renaissance devise of making the human body feel diminutive in comparison to a heroic underworld. All three precedents establish the aspiration of

radically changing perception of inhabitation in a room through measure, scale and manipulation of pattern.

The evolution of the textile space began with a method of multiple physical textile mockups and scale models with digitally printed small-scale daisies. These models were derived from a napkin sketch by the designer and the daisy motif was derived from the printmaker's alternate color studies of her original flower project. These models were constructed at a 1" = 1 foot in order to gage the impact of the daisy motif in the small confides of the gallery.

When textiles enter the realm of the built environment two units of measure are at odds: the yardage and the foot. The models enabled the makers to quantify the yardage needed in order to cover the space, and therefore the exact amount of wood block printing could be assessed. The woodblock used to make the daisy textile was 34" by 34". Using the Daisy as a unit of measure allowed for a shorthand and common language between the designer and the printmaker in order to plan and construct the space; the room was measured in "daisies" rather than inches. The ceiling was "smocked" to create an additional texture in the small interior and also to test acts of "daisy measured space". In order to smock this surface of the room three times the amount of yardage or daisies needed to be printed.

The daisies were centered and aligned to create the most scale-based impact. The loveseat covered in daisy textile melding into the background is reminiscent of the historic rooms were patterns meld into the wall. This phenomenon of the furniture and the wall visually combining in the space is another device to change the inhabitants' sense of scale.

This installation illustrates the potential of textile-based interiors and an alternate rigor in which to construct them.

Big Daisy Textile Space- images

1-Big Daisy Textile Space- June 2019

2-Helen Frankenthaler by Gordon Parks

3-Palazzo Te- Hall of Giants

4-The Tapestry Room- Osterley Park

5-Scale model- Big Daisy Textile Space

6-Smocked ceiling detail- Big Daisy Textile Space

7-Big Daisy Textile Space

8-Big Daisy Textile Space

9-Big Daisy Textile Space- Detail

10-Big Daisy Textile Space at night.

Creative Scholarship | Design as Art | Presentation

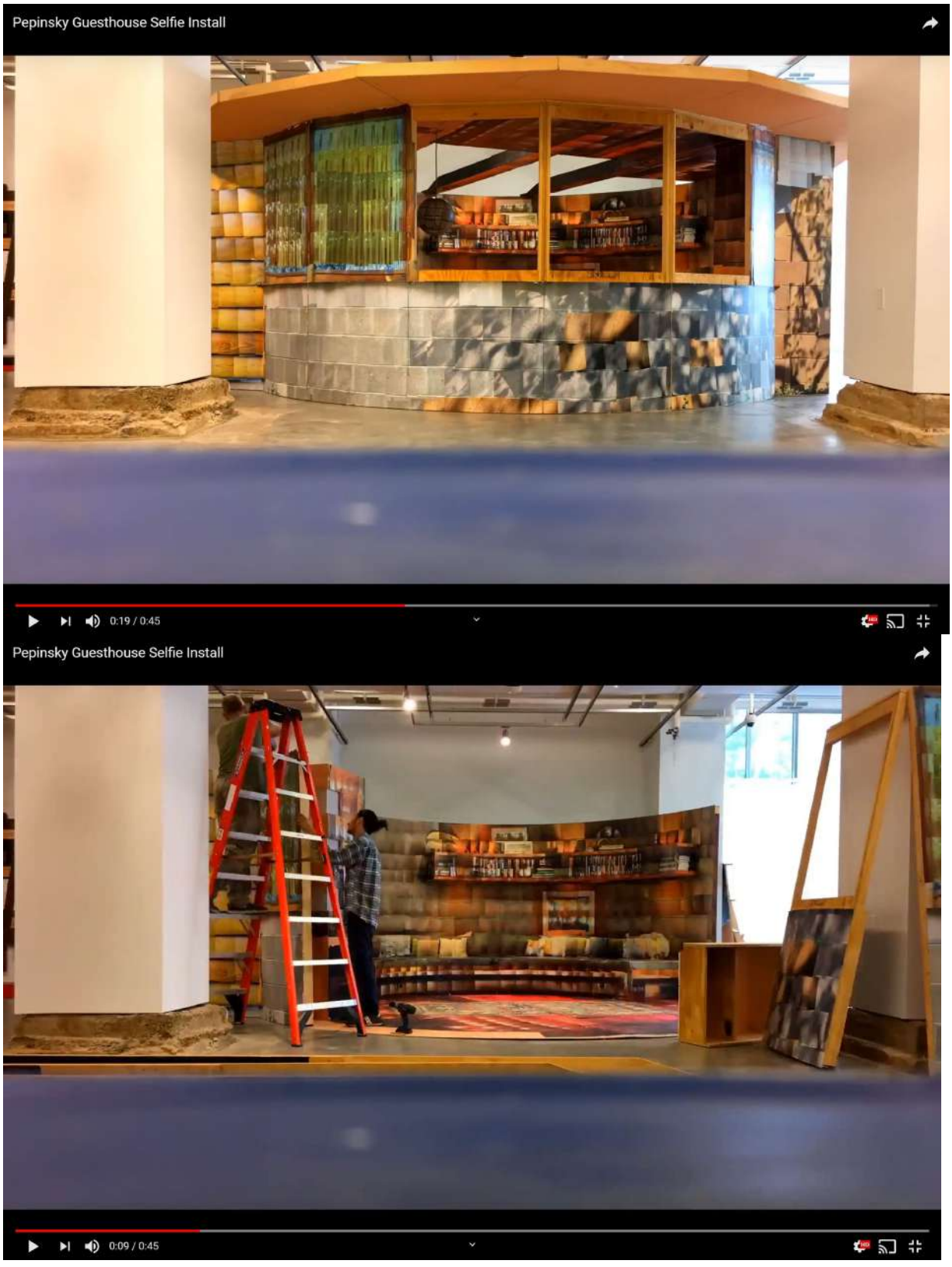
Pepinsky Guest House Selfie

Jeffrey Haase, The Ohio State University Department of Design

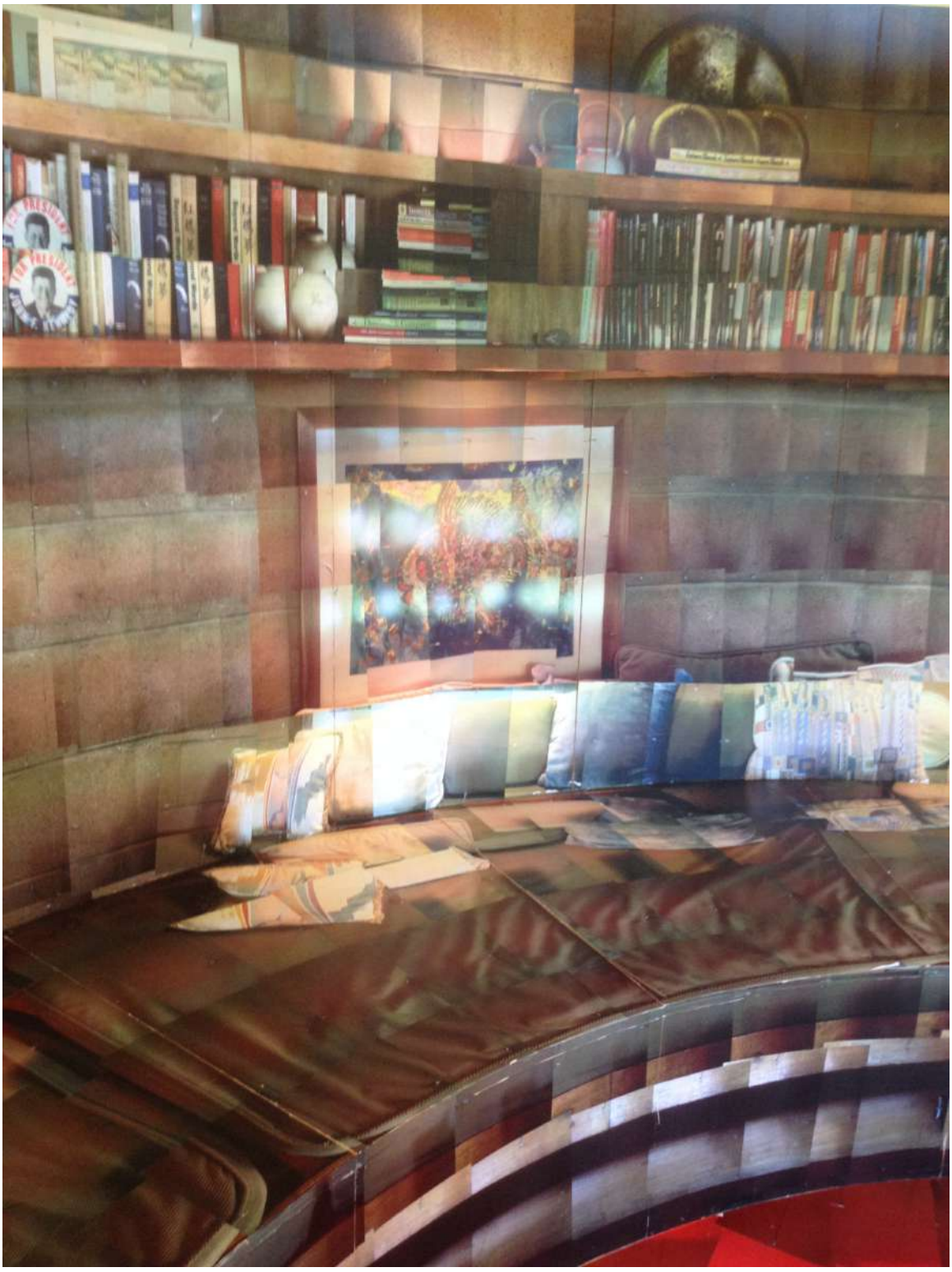
ABSTRACT

Architects and Interior Designers have an insurmountable problem within the process of design. Our language consists of two-dimensional explanations about three-dimensional environments. The two-dimensional explanations are drawings that include floor plans, sections, elevations and perspectives. Our ability to educate is stifled by the dynamic difference in scale that exists between the explanations and the environments they represent. We often explore designs at 1/50th to 1/100th their actual size. Our design ideas of experiencing a space are about being on the inside looking out, but our representation and curricular techniques are always placing us on the outside looking in.

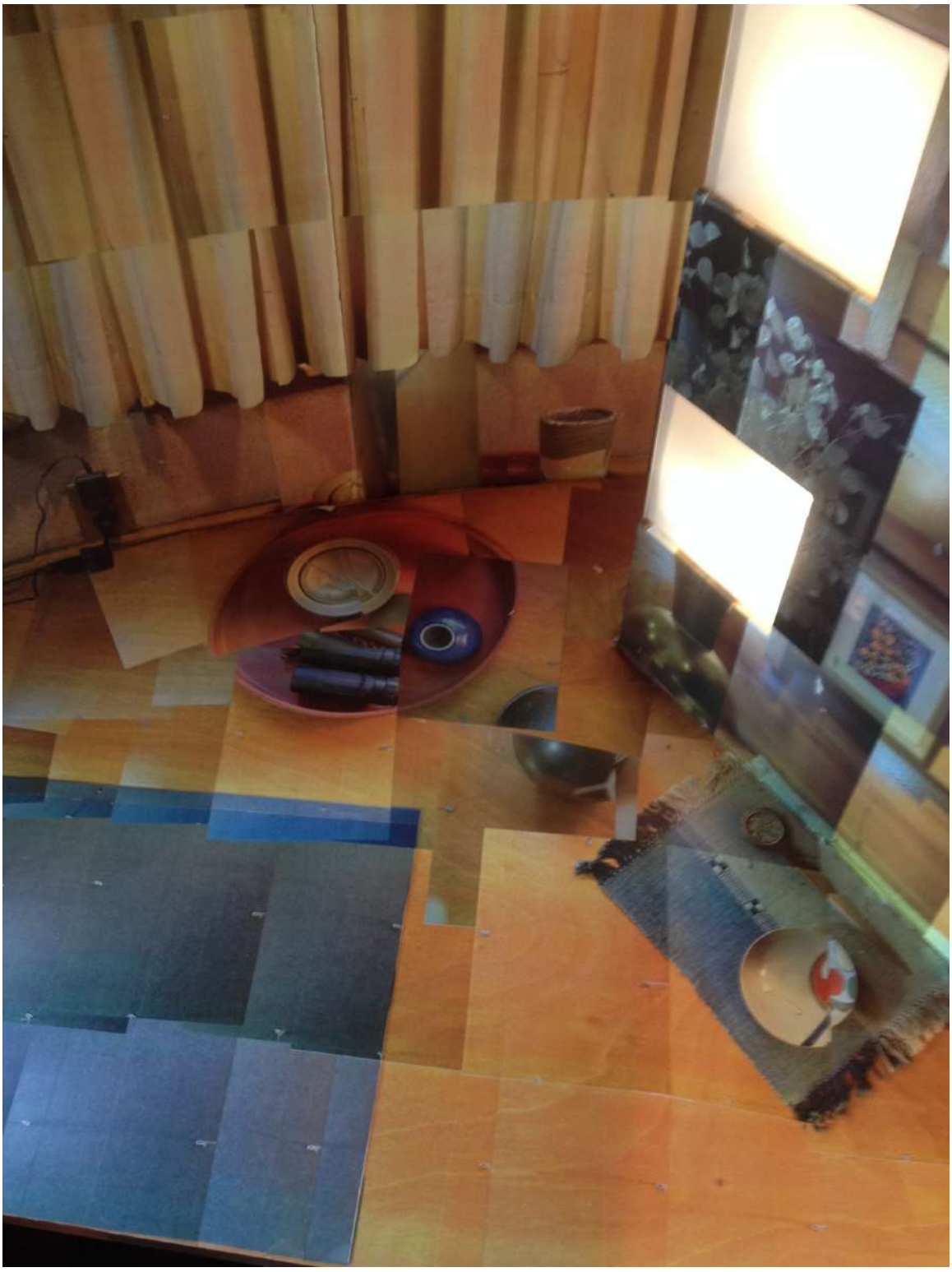
It is estimated that there will be 200million photographs taken with a smartphone today. This amazing "capturing" phenomenon is growing every year and flooding the Internet with uploaded moments and places for all to see. Capturing life's moments at this alarming rate and as instant as it may be are still recording a history of an event. I challenged myself to move smartphone photography from instant recording of a place and experience to actually creating a place of experience. I created a custom made tripod that kept my iphone at a calculated distance from the surface of a famous house on the national historic register so each picture when sent directly to a printer resulted in a 8 1/2" x 11" scalable "piece" of the house. The 4,000+ photos were painstakingly wheat pasted onto a wooden substructure created with graduate student, Kyle Wallace, to create the "Pepinsky Guest House Selfie"



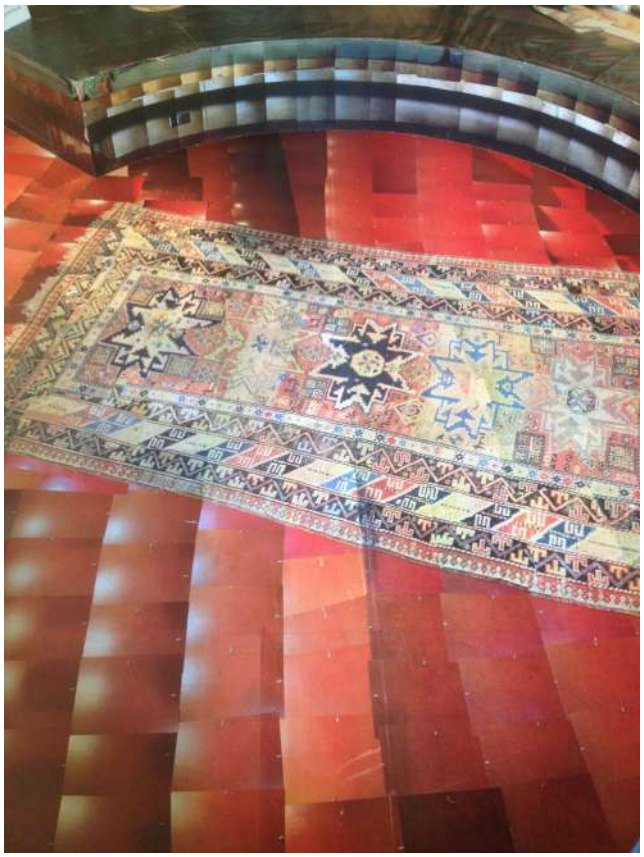
Screen shots from installation video



Detail of bench/bed



Detail of Desk



Detail of Floor

Detail of Exterior

Creative Scholarship | Design as Idea | Presentation

City Creatures

Nerea Feliz, The University of Texas at Austin
Joyce Hwang, University at Buffalo School of Architecture and Planning

ABSTRACT

City Creatures was the outcome of a nomination to participate in the 2019 invited Ps1 MoMA Summer Pavillion competition. Looking at MoMa's PS1 courtyard as an outdoor room, this unbuilt competition entry uses traditional elements of the interior, such as curtains, to produce a sense of public interiority. The project explores how design can communicate current concerns on climate change utilizing elements of the interior in the context of public space. City Creatures aims to cultivate intimacy between the environment and the multiple life forms that inhabit it.

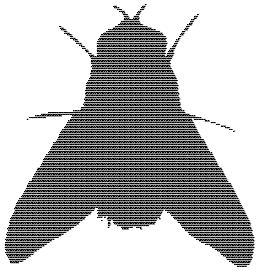
The notion of "city life" typically signifies the vitality of human life, but rarely does it evoke the idea of "life" more holistically, as a web of diverse and interdependent species. While we often think of cities as human-territory, the reality is that they are home to a multiplicity of life forms. Among the most plentiful and diverse living populations in cities are insects and arthropods. According to a recent studies, 40% of insect species are in danger of extinction in the coming decades due to the extensive use of pesticides and climate change. They constitute over 80% of the world's species population, but often elude visible recognition. In urban environments, insects are a significant part of the ecosystem. They are pollinators, seed dispersers, decomposers, and serve as a food source for other species such as bats and birds. Various insect species are bioindicators, or "living barometers" of environmental conditions. Contemporary research shows that in New York City, insects compete with rats as waste scavengers – not only keeping the rodent population from increasing, but also performing ecosystem services as 'waste

managers.' City Creatures tries to make visible the under-acknowledged world of insects as active participants of urban life, by attracting and magnifying their presence.

Project description: To cultivate a selected insect habitat, the project incorporates an elevated garden. Wildflowers attract a variety of pollinators, including fireflies, ladybugs, bees, butterflies etc. A golden corrugated metal wall is designed as a light plane to conceal a basic structure elevating the planters, an irrigation system. The golden hue attracts certain insect species and boosts the presence of the garden in the courtyard. The wall undulation dialogues with the natural wave of the curtains. Its golden reflectivity provides a festive backdrop, enlivening the atmosphere of the PS1 courtyard.

After sunset, the design uses "positive phototaxis", or the tendency for insects to be attracted to artificial light sources. A series of curtains, constructed from mosquito netting fabric, are hung from catenary cables spanning the MoMA PS1 courtyard. Located at the end of each series of layered curtains, an artificial light source would be employed to both attract insects and cast shadows of them on the hanging scrims, which would also filter and reflect the light to produce an ephemeral glow. We imagine that pre-recorded documentation of insects could also be projected through the layers of scrims against one that is playing out in real time. Against the monochromatic backdrop of mosquito netting, the visualization of insects – whether through projected shadows or through video – becomes a form of both spectacle and awareness-raising, an immersive insect shadow play bringing the space to life. During the day, the hovering curtains provide shade and transform the courtyard into a softer and interiorized urban condition. At the end of the installation, the mosquito nets could be donated to one of many humanitarian organizations combating malaria. City Creatures deploys light projections on curtains to both enhance insect desirability, while also provoking human curiosity through a new spatial and perceptual experience, where the Ps1 courtyard is transformed into an interior environment that celebrates the many species that inhabit the city.

City Creatures



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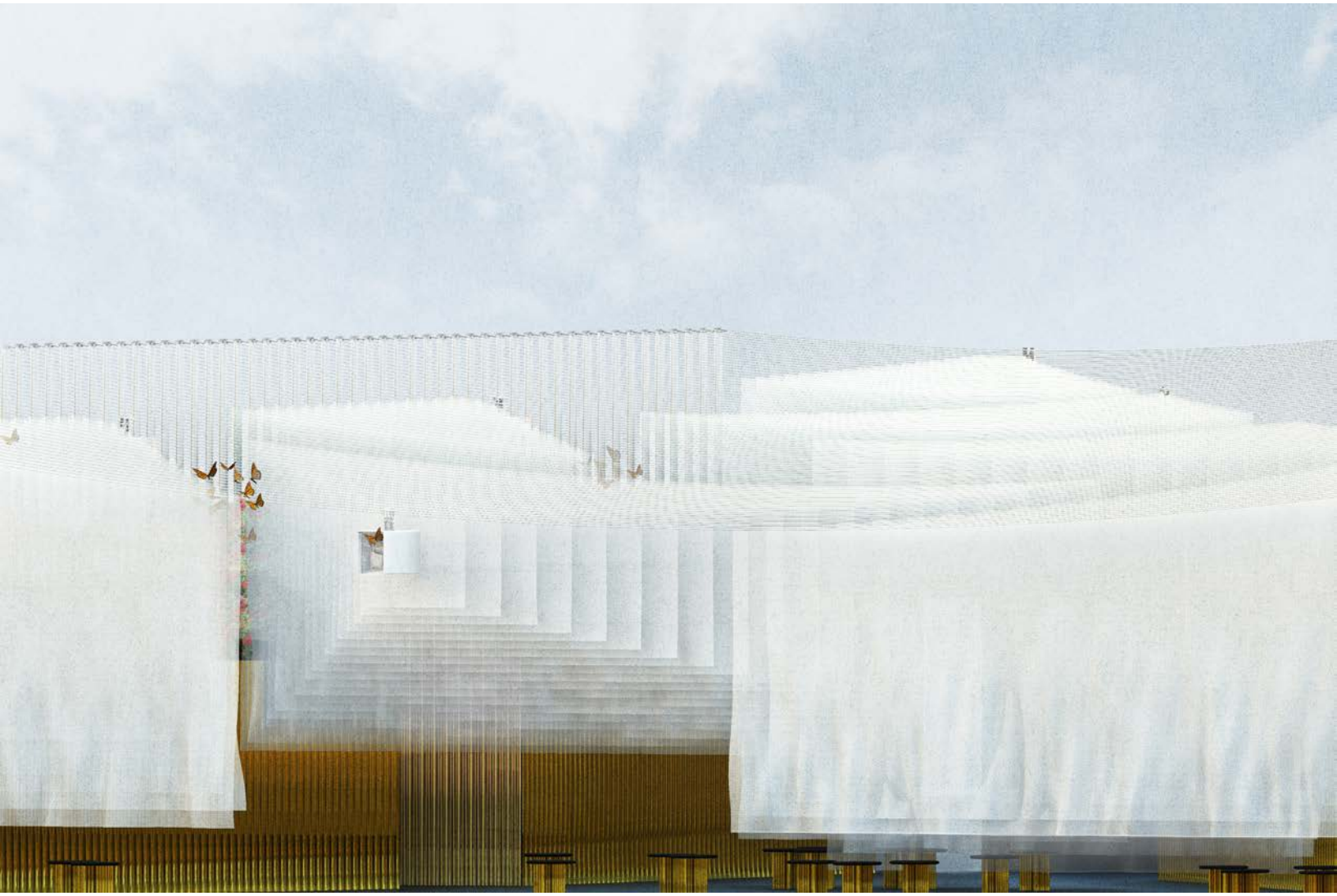
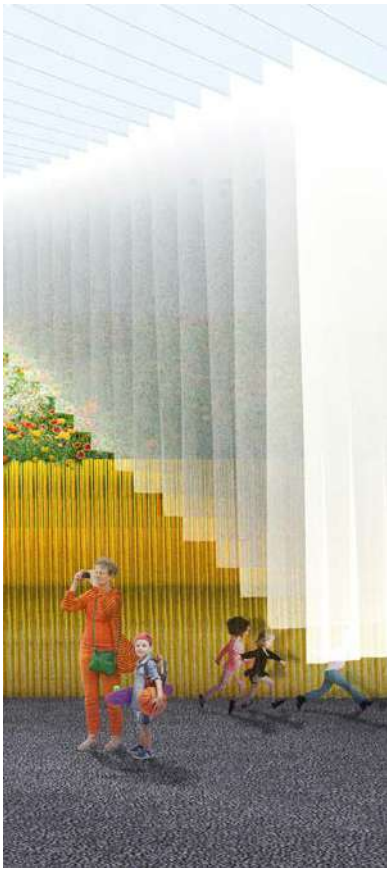
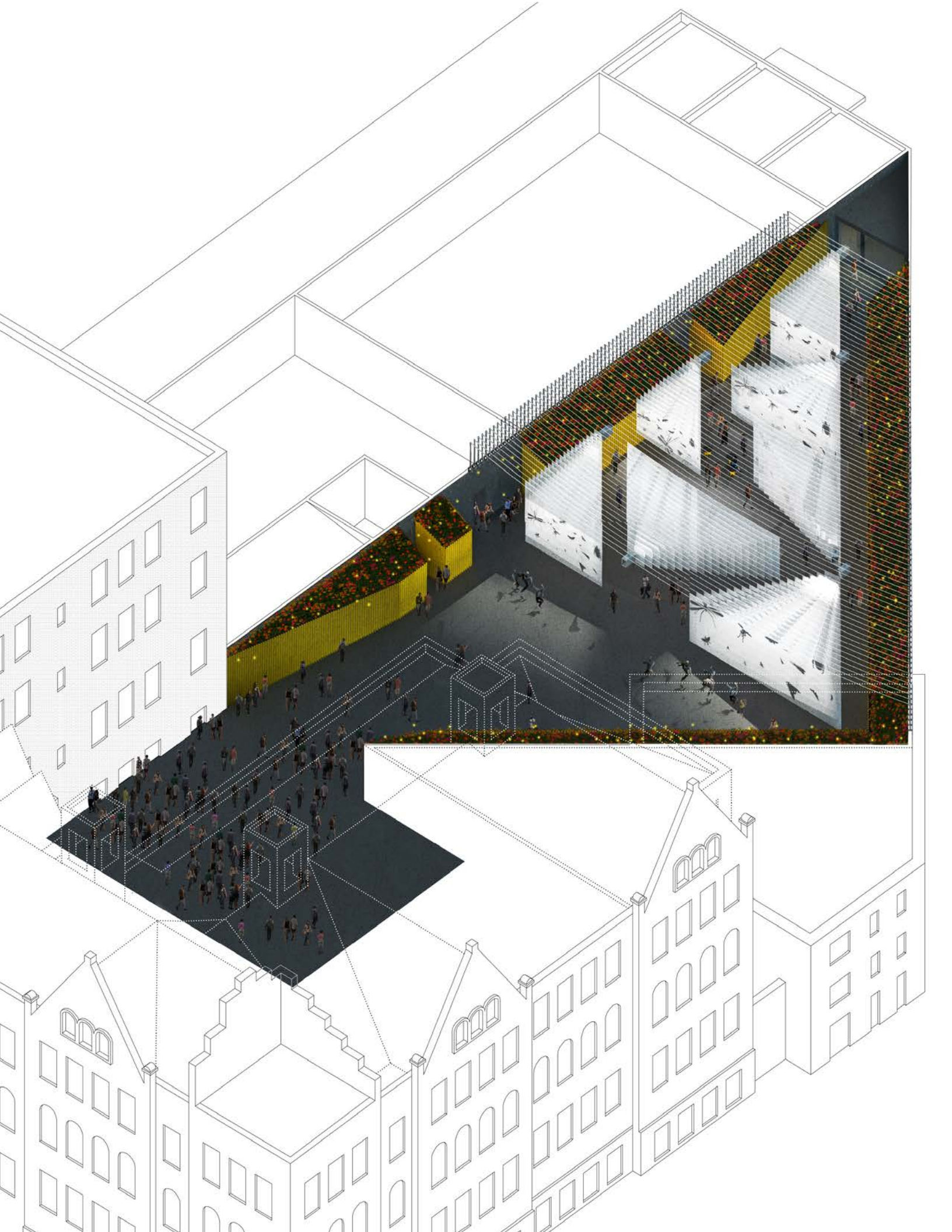
Part of this project's research includes experiments with positive phototaxis, or the tendency for insects to be attracted to artificial light sources and white surfaces, as a means to attract and celebrerate the presence of insects at night. Above, photographs illustrating a series of light projections.



Hovering Curtain Field

Perspective Views - Daytime





Perspective Views - Nightime

Dialogue in the Translucent & Walking in the Book

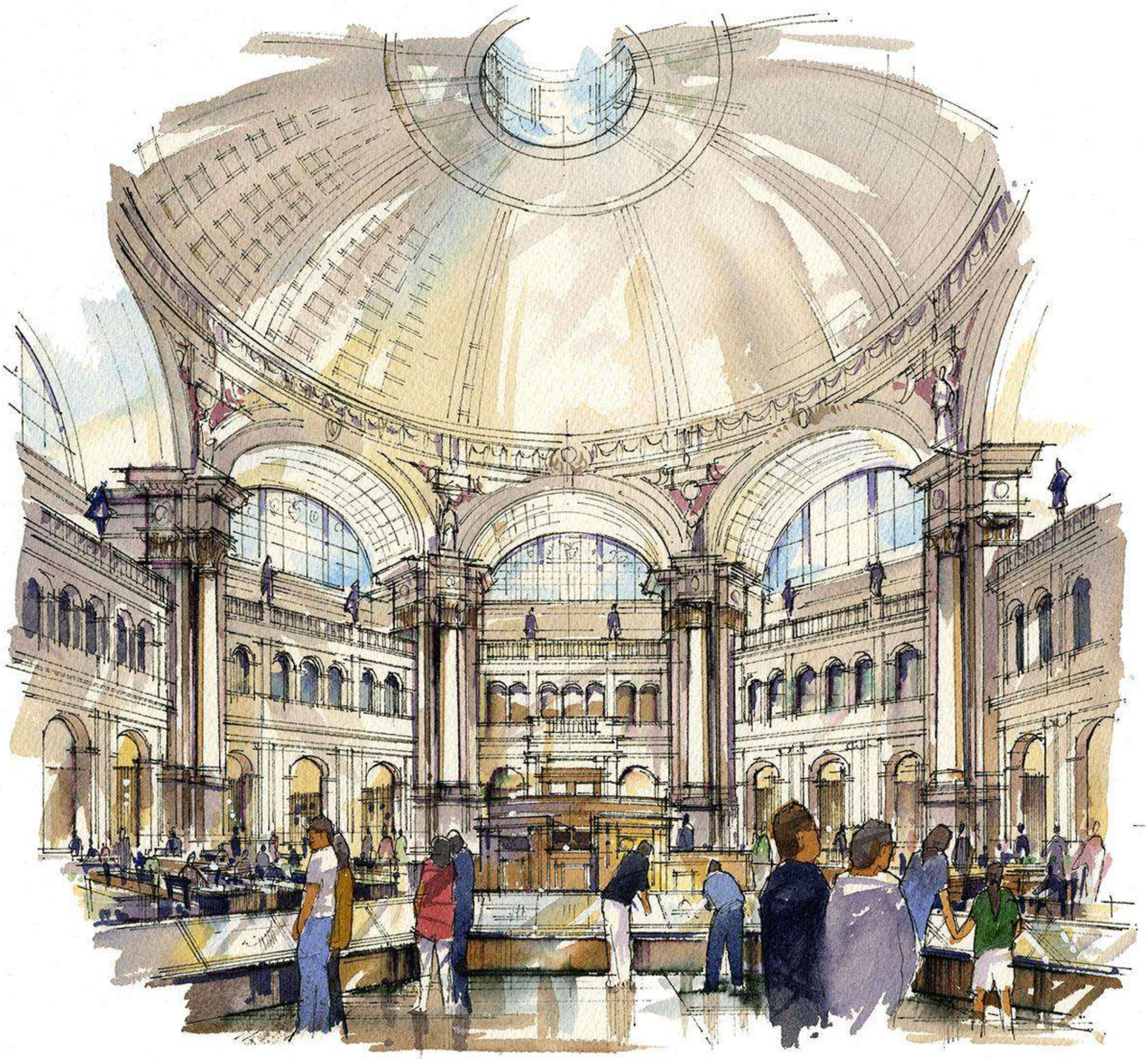
Peili Wang, Savannah College of Art and Design

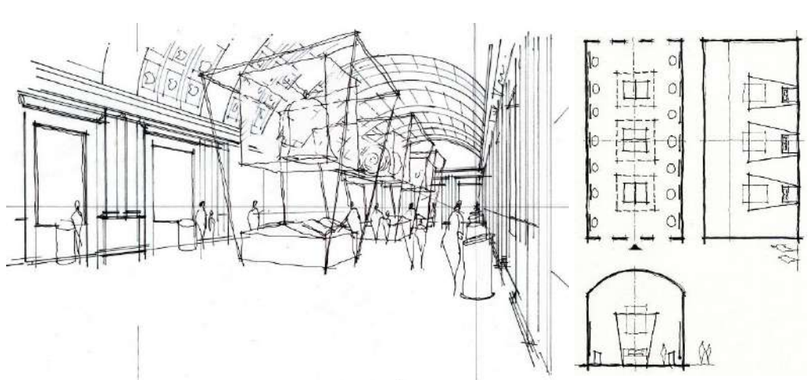
ABSTRACT

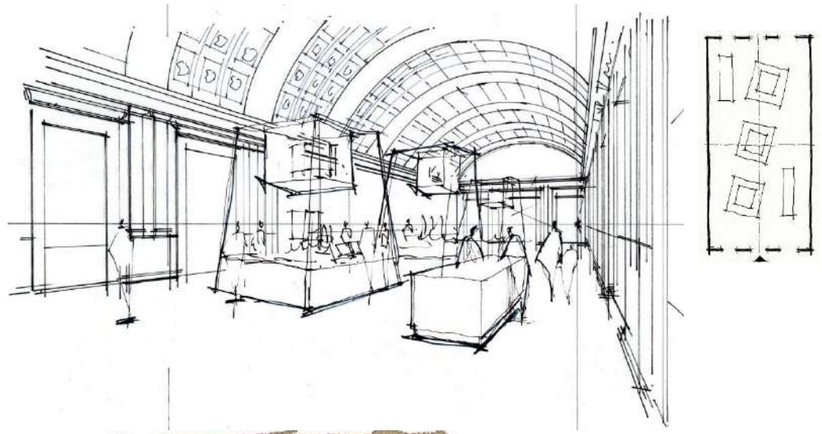
The presentation is provide a sample of exhibition design. The purpose is to explore and demonstrate the progresses of interior design especially at early phase. It is a good sample to show how to transfer initial design from concept to design, and discuss the visualization presentation technique. It is also a good presentation resource for interior design education.

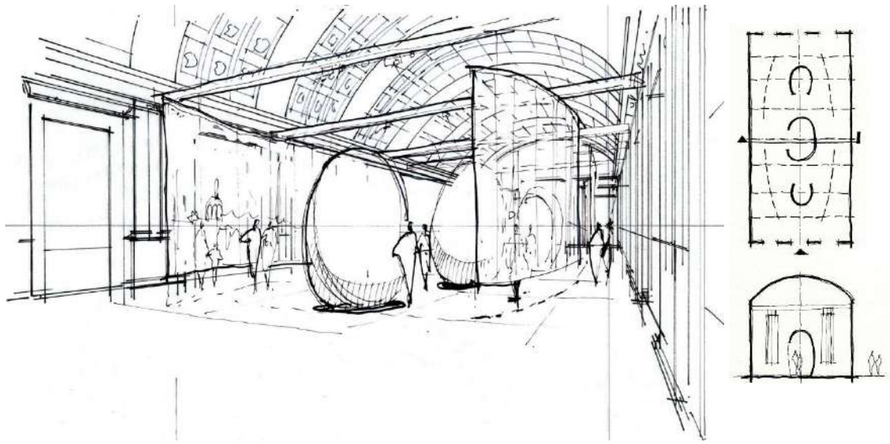
It is important to teach interior design student the ability to transfer the design idea to design. Designers need to express design ideas and concepts; rendering is one of the most important visual representation elements. Visual representations of designs can enhance a specific project, and to document or clarify the construction specifics of a structure to be built. In addition, renderings also used to portray or interpret the essence of particular structures for design proposals, competitions, or marketing purposes. There are many methods to create architectural and interior renderings. At an early phase of design; freehand sketch rendering is an excellent tool to work through process. Designers can spend a brief period of time to create color sketches that visually depict the desired outcome of the proposed design. Of the methods/media available for freehand sketch rendering, ink mixed with watercolor is one of the good methods.

The presentation provides the sample progresses for the rapid freehand sketches of ink and watercolor. The existing pictures are the good references to start the work. There are several design concepts and rough sketches have been created without fully developed floor plans and elevations.

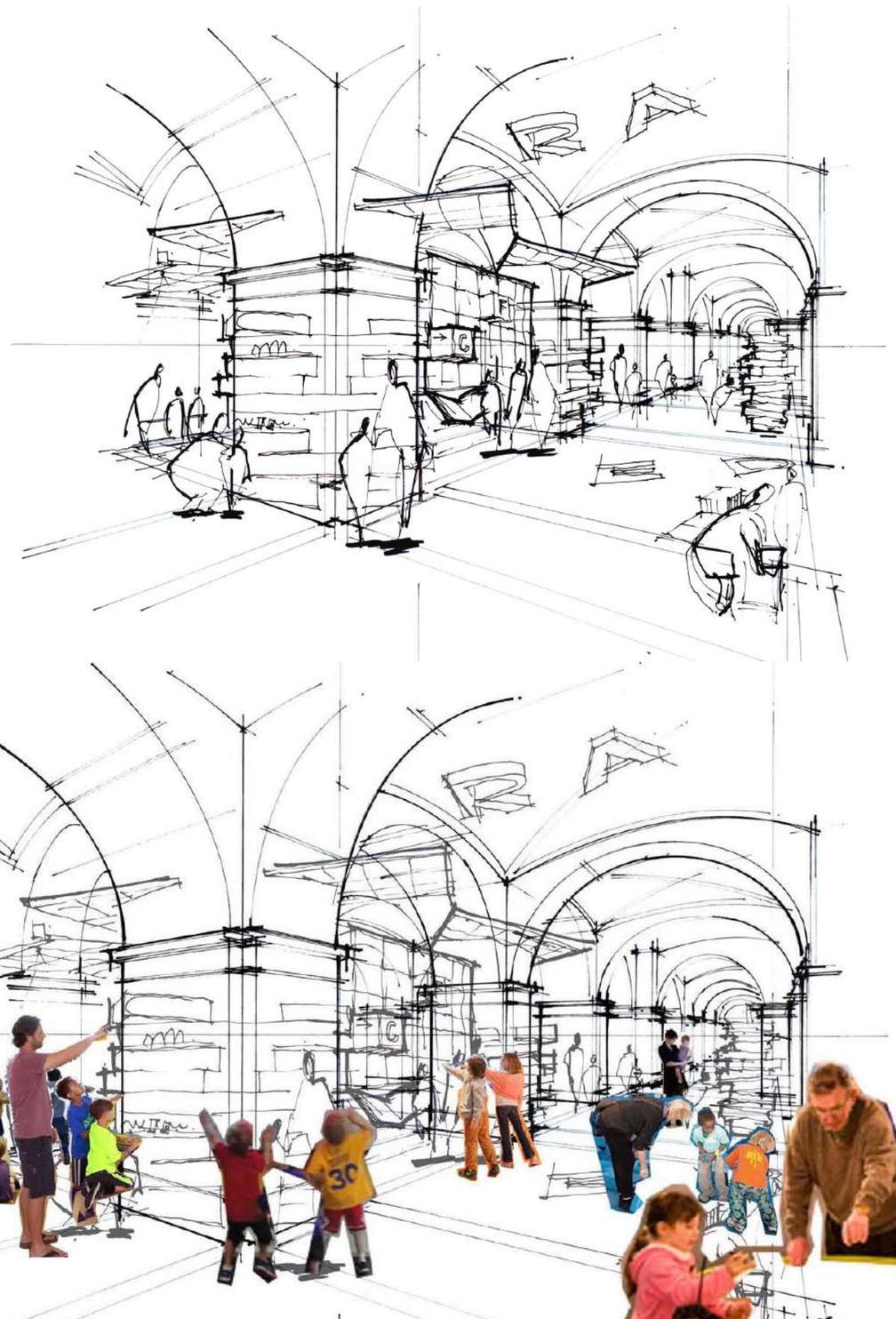


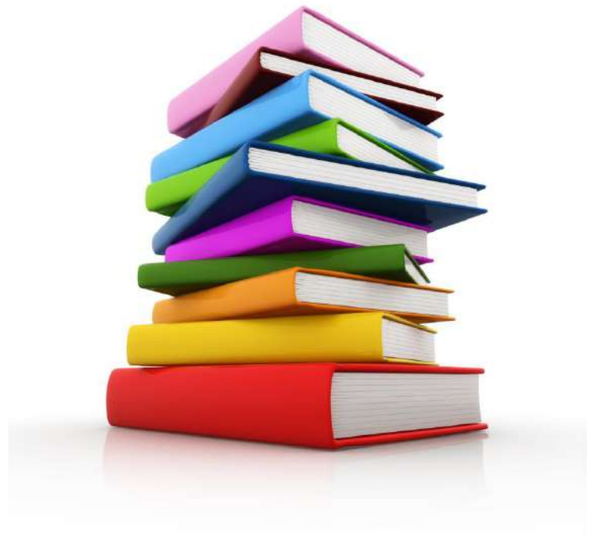




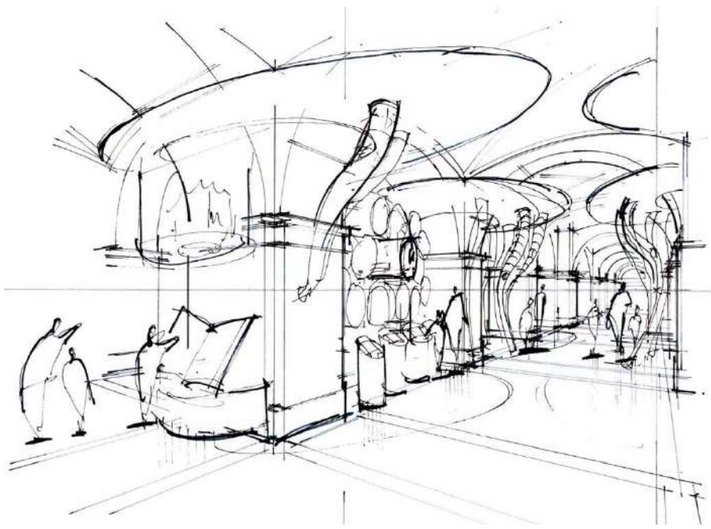


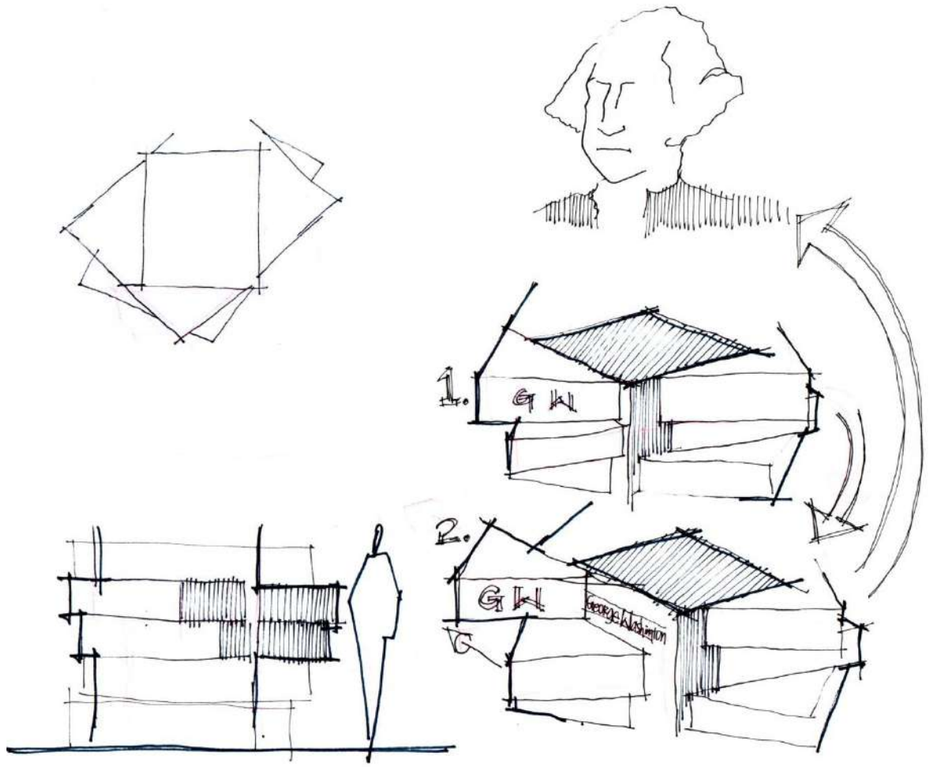
Dialogue in the Translucent



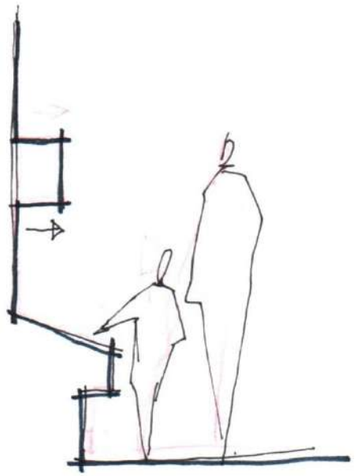


Walking in the book

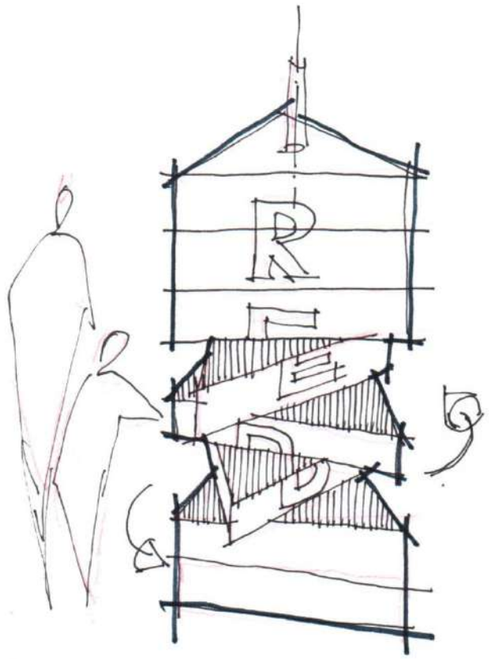




Big Suspend Banner



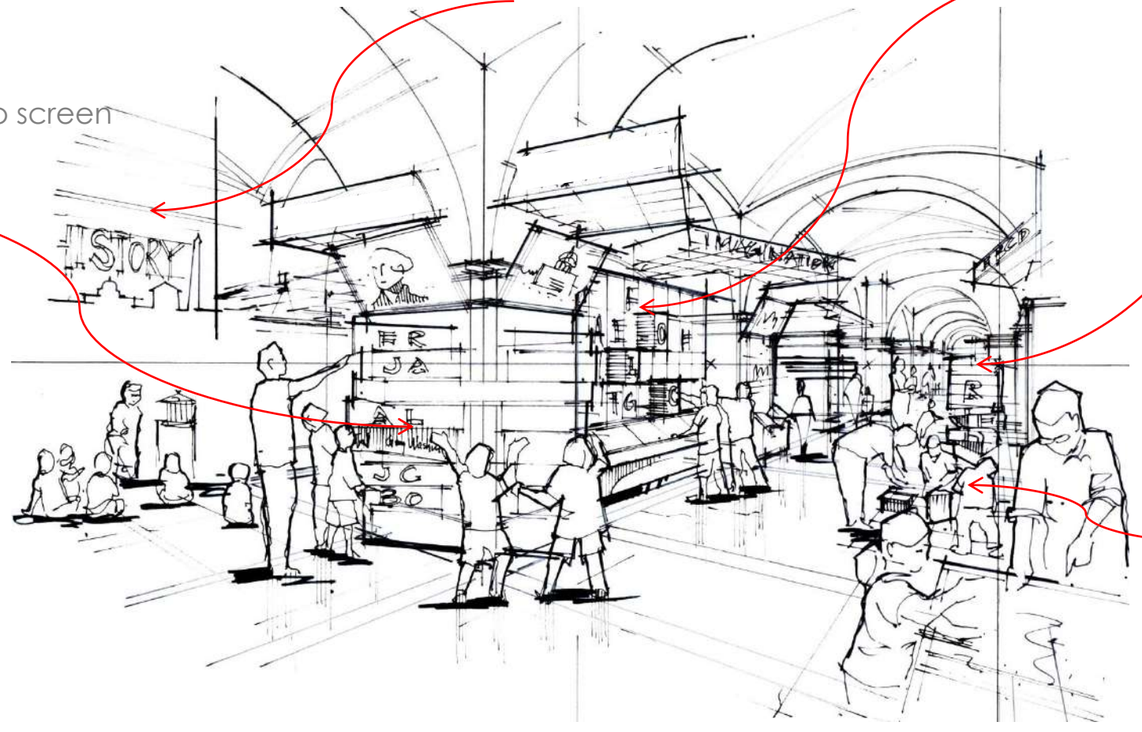
Pop Up Puzzle

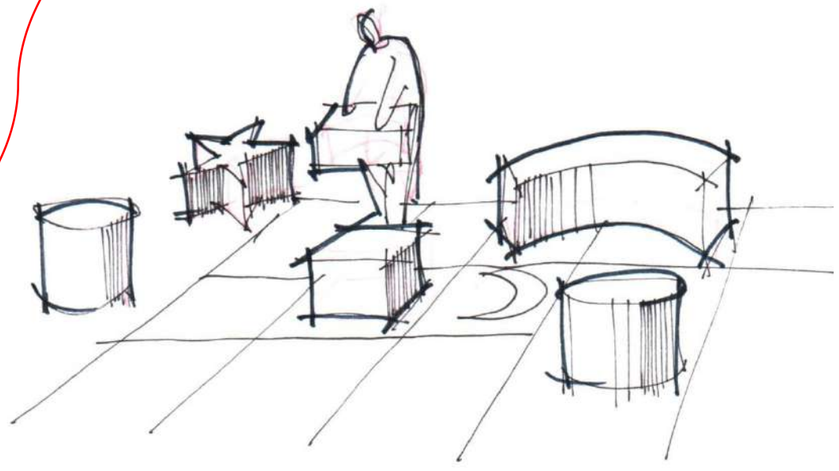


Rotating Triangle

Sliding Cube

Display information on the top screen while sliding the cubes.





Lego Forms


COLLECTIONS
CONNECTIONS
IMAGINATION

Creative Scholarship | Design as Idea | Presentation

Elevating the Domestic: Speculations on Post-Digital Cake Ornament + 3D Scanning

Bridget Tipton, Kent State University

ABSTRACT

Ornament is used to denote power and position, taste and craft (Massey 2018, 499). What if the most domestic of ornament, cake piping decoration, was an indicator of strength? This project aims to elevate deeply domestic tools and techniques to a significant scale, reflective of the importance of domestic life. Through a process which combines analog cake piping decoration, 3D scanning and digital scale manipulation, familiar and nostalgic icing becomes monumental ornament.

The design process sourced inspiration in a historical reference of French pastry (Carême 1815) and the designer's own 1860 home, embracing the quirks of each. In the case of pastry, the analog tools of piping tips, piping bags and icing became generators of interior ornament. The home provided an exploration of strange corners, resultant of more than a century of modifications by previous residents.

At the scale of the interior, the project explores the idea of each room of a house as a cake corner, served on a plate. The discrete corners are treated as slices with explicit interiors and exteriors. When arranged, these slices become less isolated, yet the original corners are indicated through the application of a coded decoration.

At the level of the ornament, the investigation began with vegetable shortening and confectioners' sugar to make a shelf-stable icing consistency. These icing 'pieces' were then sprayed with talc to improve the ability of a 3D scanner to read the surface. The successful 3D scans were used to aggregate into larger patterns and swatches for application on the room

corners. The digital scans of the traditional icing revealed nuances and glitches, providing new texture information about the material. The scale of the ornament was manipulated digitally and began to better embody the strength of the domestic.

In the physical model reinterpretation of the digital model, drywall patching compound was used in place of icing for longevity and a comparatively greater strength. It was important to build the model through the same hand extrusion method so as not to lose the nuance developed in the process.

The strength of the method, while speculative, only begins to access the potentials for this way of analog making coupled with translation to digital space. The nuance available in digital production of the 'material swatches' provided a level of detail that often eludes digitally-native work. The hand making of pastry decoration provided an appreciation for craft and exploited a traditional building material and common domestic practice, in a new way.

REFERENCES

Carême, M. A., Harry Schraemli, and Vincent K., Mrs Smith. 1815. Le Pâtissier Royal Parisien : Ou, Traité Élémentaire et Pratique de La Pâtisserie Ancienne et Moderne ; Suivi d'observations Utiles Aux Progrès de Cet Art, et d'une Revue Critique Des Grands

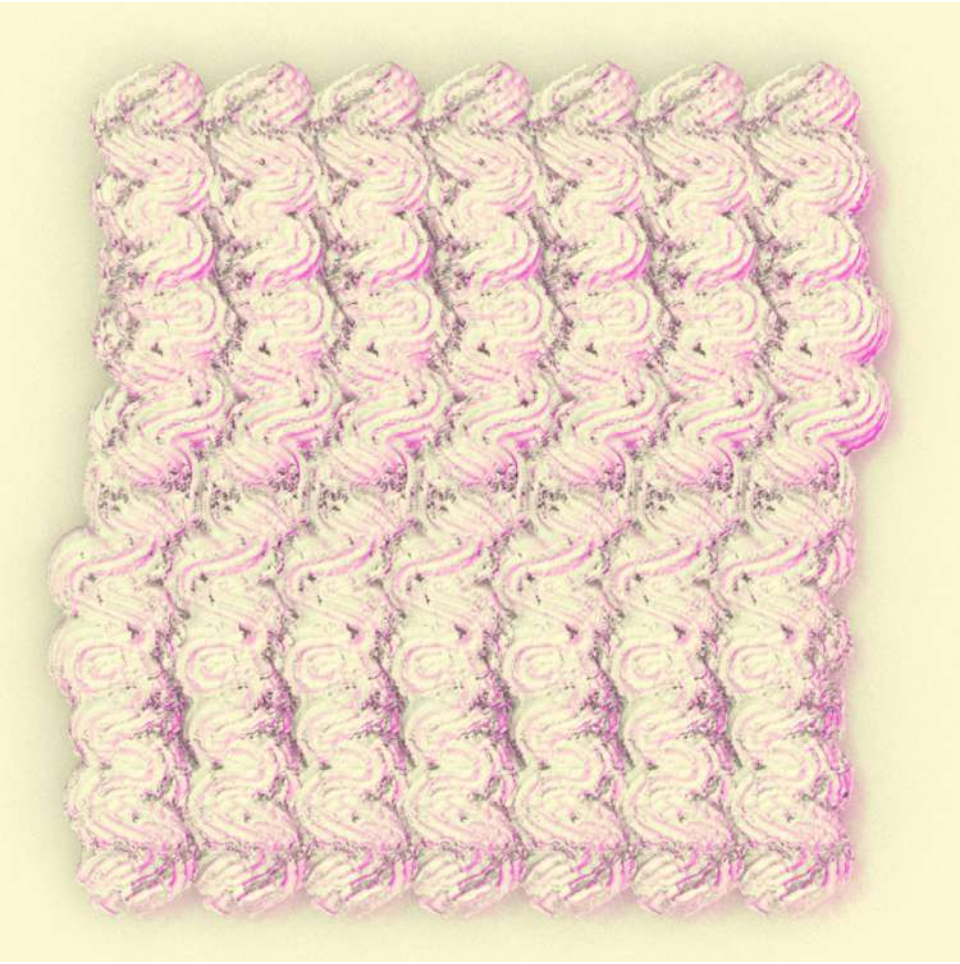
Lavin, Sylvia. Kissing Architecture. Point: Essays on Architecture. Princeton University Press, 2011.

Massey, Jonathan. "Ornament and Decoration." In The Handbook of Interior Architecture and Design, edited by Graeme Brooker and Lois Weinthal, 497–513. New York: Bloomsbury Visual Arts, 2018.

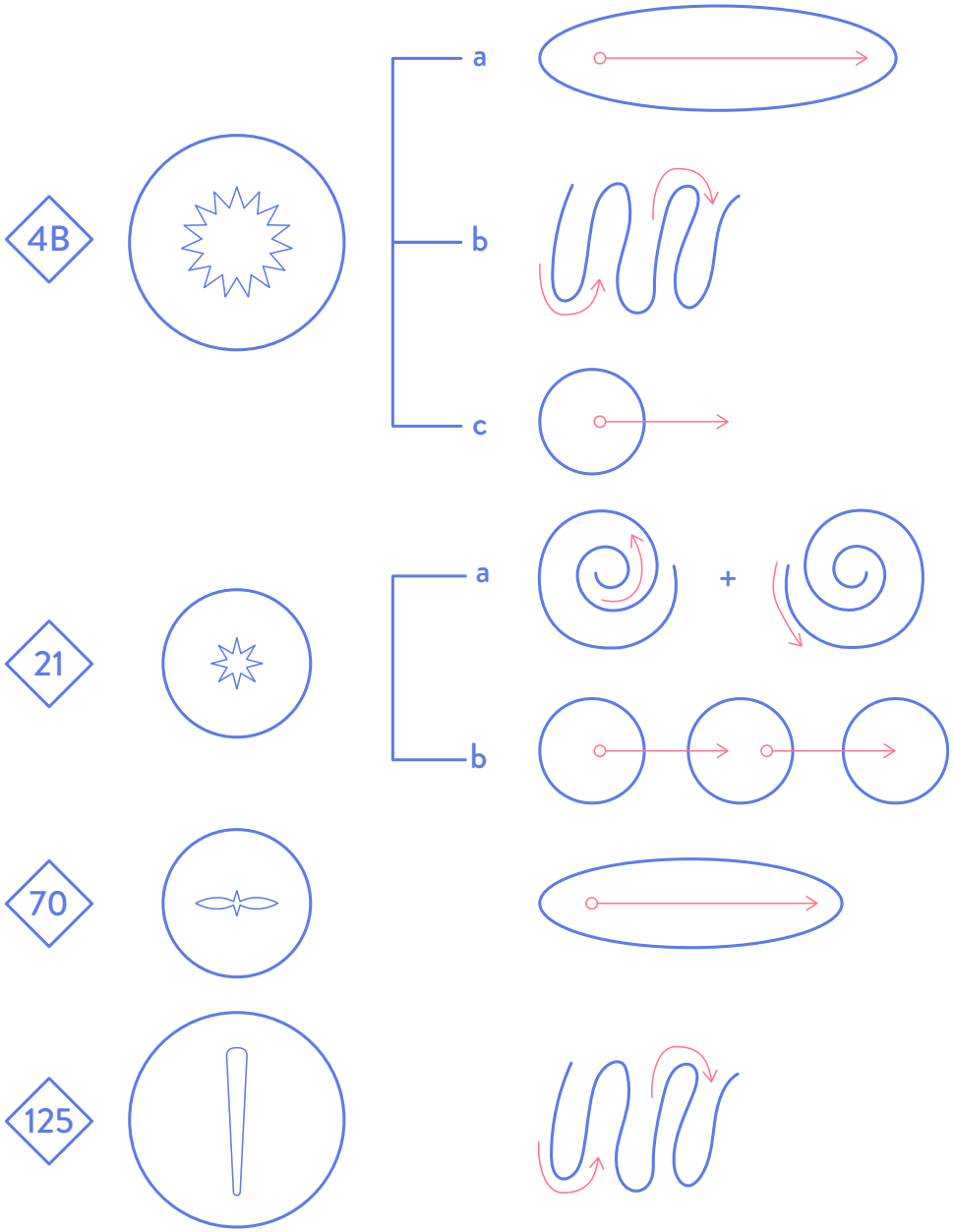
Payne, Jason. "Hair and Makeup." Log, no. 17 (2009): 41-48.

Traditional cake icing, made of shortening and confectioners' sugar, piped with tip 4B, then sprayed with Talc to improve 3D scan (left).

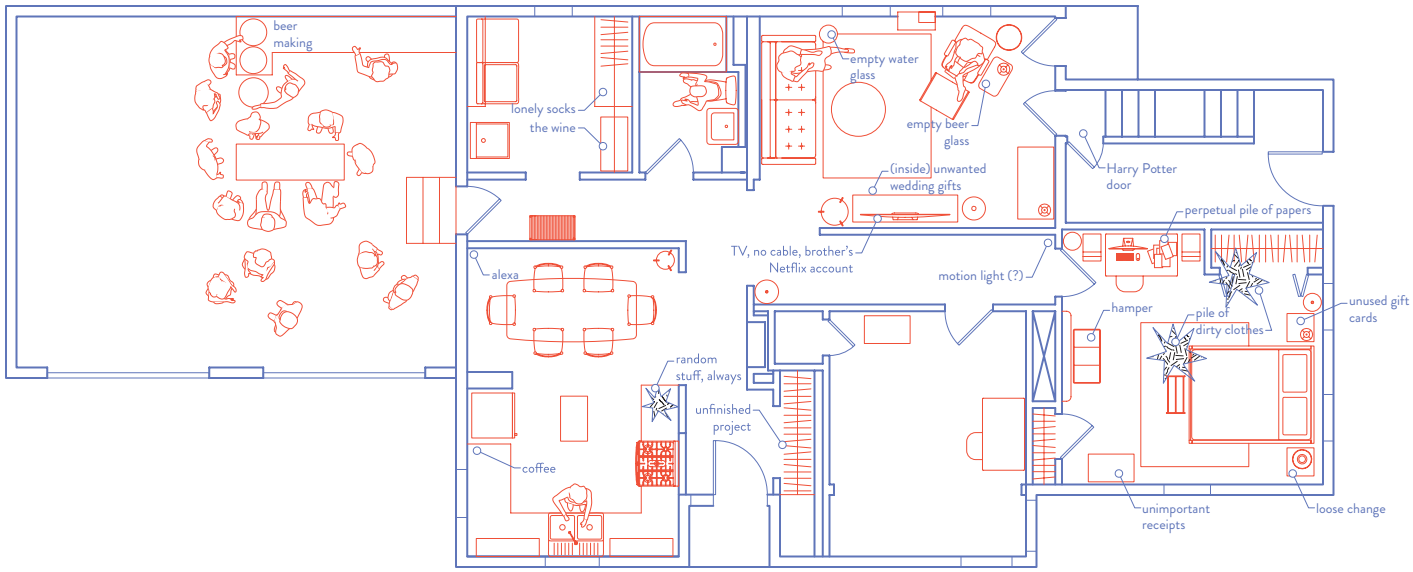
Ornament, piped with 5 minute drywall patching compound (right).



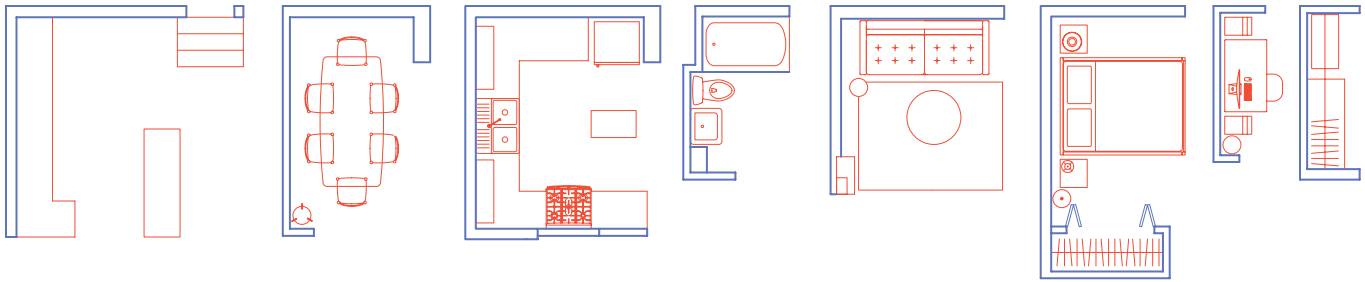
Digital scan of traditional icing, arranged to develop a material swatch. The nuances and glitches in the scan provide a new texture and new information about the material.



This *piping diagram* indicates the seven types of ornament developed. The nomenclature is borrowed from standard cake piping tips.



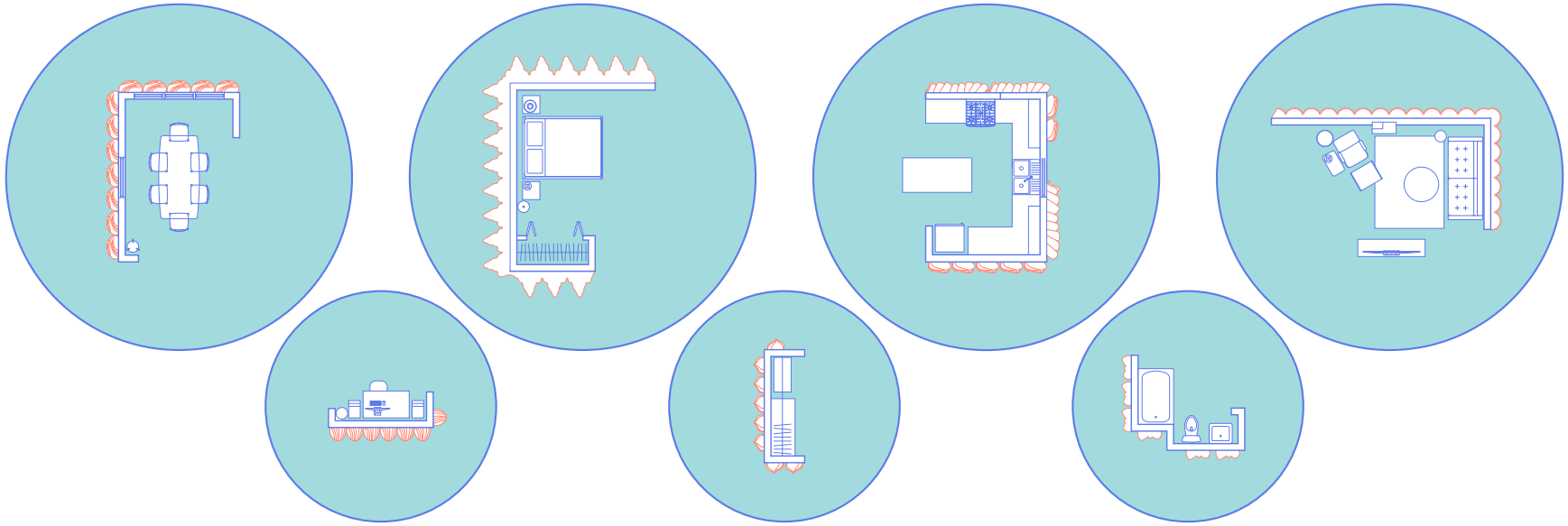
The study used the designer's own 1860 home as source material, embracing the quirks of all of the strange corners, resultant of more than a century of modifications.



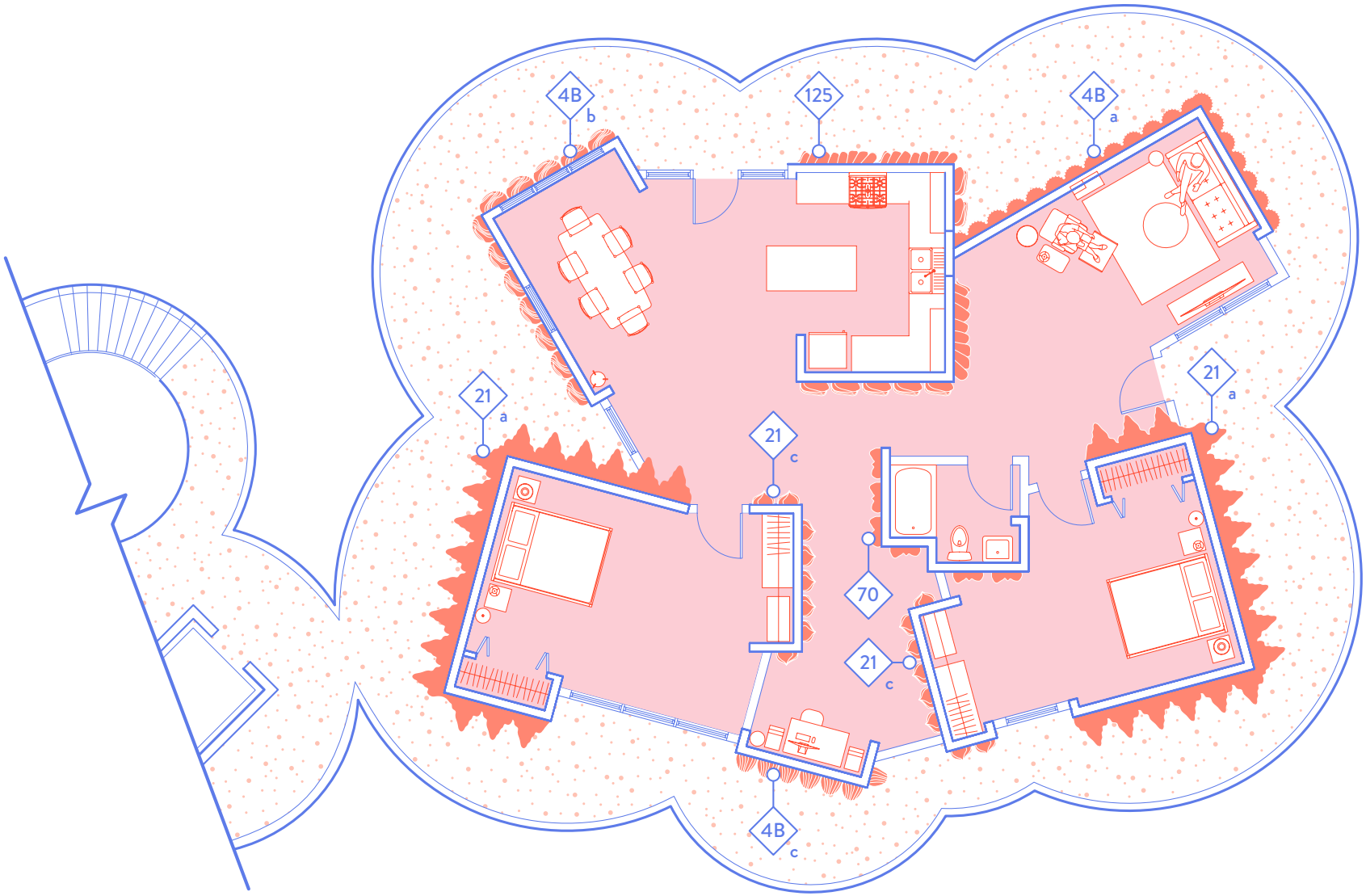
public

private

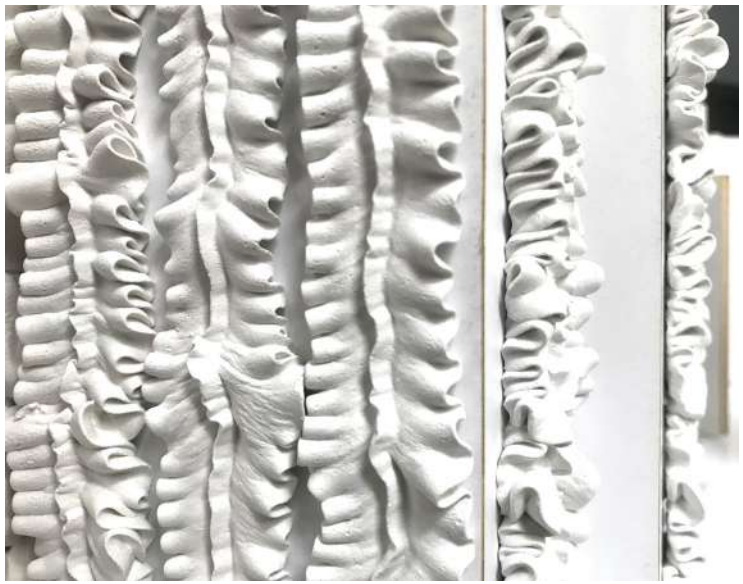
Kit of Corners extracted from the house.

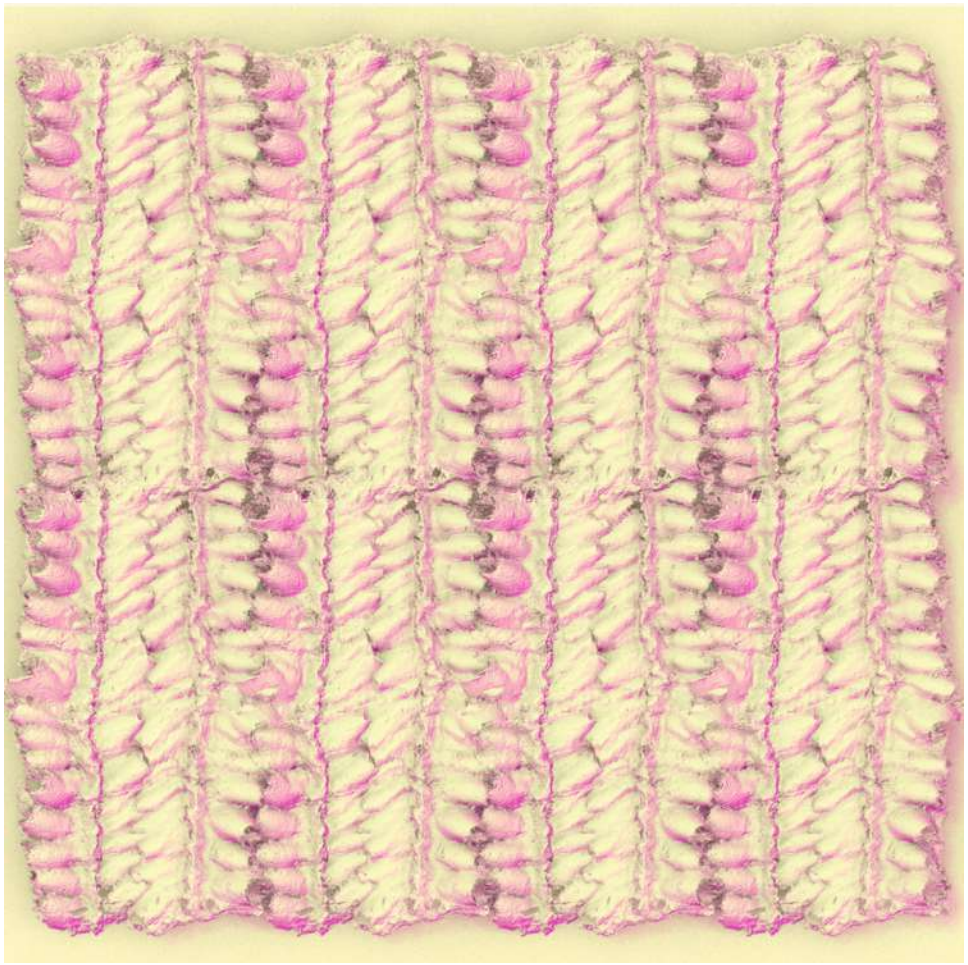


source corners, decorated with new ornament



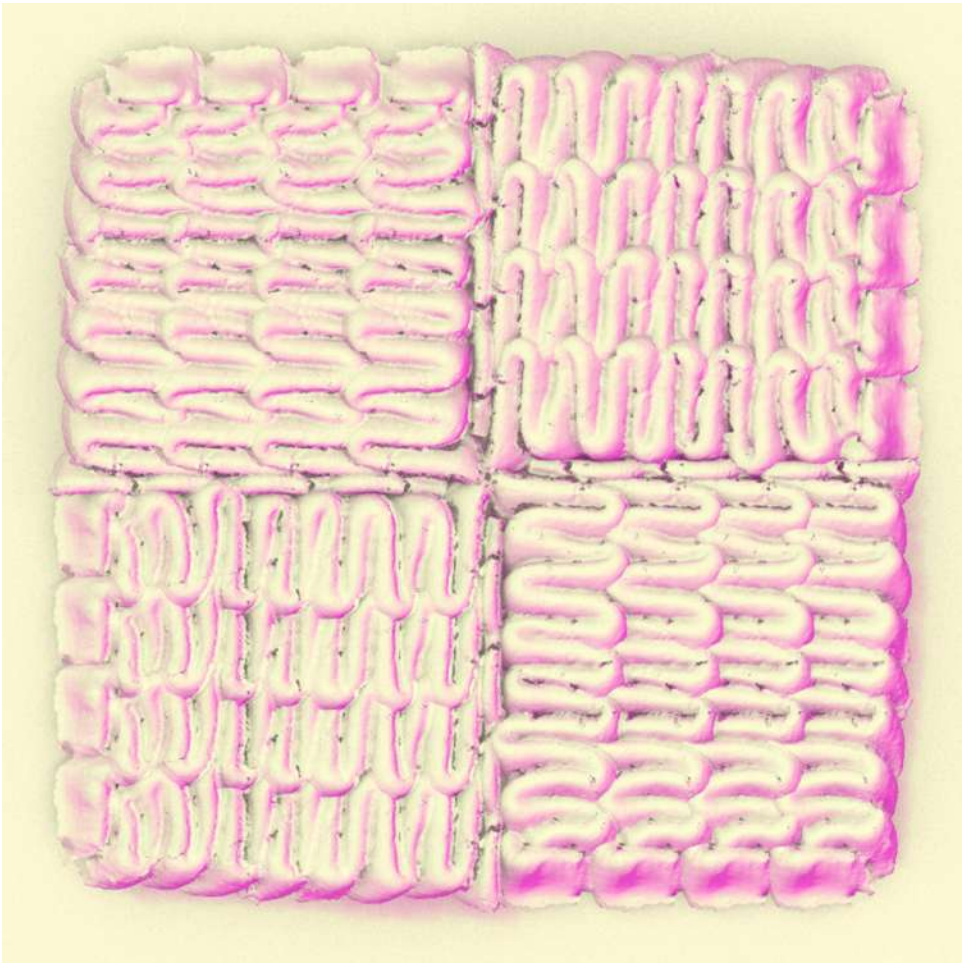
Decorated corners are
reassembled as a new interior.





drywall patching compound, manually piped with tip 70

Digital scan of traditional icing, arranged to develop a material swatch.



drywall patching compound, manually piped with tip 125

Digital scan of traditional icing, arranged to develop a material swatch.

1/2” = 1’-0” scale model
ornament piped manually at 1:1

Creative Scholarship | Design as Idea | Presentation

FiiLuff

Nick Safley, Kent State University

ABSTRACT

FiiLuff is a furniture object made to explore how a clear understanding of materiality can be subverted to give an object multivalent allusive qualities and imply internal subjectivity to an object. The stool's precise formal, surface, and material organizations produce loose multivalent associations to animals and geology. These allusive qualities give the object a wide array of characteristics, difficult to close into one category, thus allowing the object to take on an imagined subjectivity. Each decision authored in FiiLuff's qualities creates ambiguity of understanding and removes easily identifiable material qualities questioning traditional notions of tectonic thinking.

Allusion as a design method exists between abstraction and representation equally. Avoiding direct representation skirts symbolic meaning in favor of compounding multiple qualities in the object that can solicit longer attention. Architect Ellie Abrons outlines this strategy as producing "quasi-forms that are evocative and provocative but unknowable and unnameable. They are evocative because they can be identified as being "almost" many things, but are none of them."(1) Allusive objects are "unknowable in part because they are unnamable, but also because they do not reveal their materiality and formal origins." (2) The stool has a foot-like form and face-like extension of one vertical support member, though the qualities that would make them directly recognizable as faces or feet have been reduced, abstracted, and overlayed with additional qualities to open their allusions. Allusion as a vehicle for an aesthetic experience

solicits life and a quazi-subjectivity into the stool object through its factual and perceived materiality, construction, and details.

Ferda Kolatan in his recent writing In Pursuit of the Allusive Object relates the technical in aesthetic in allusive objects saying, “Ultimately, the (technical) process is never the thing in itself and neither is its output. (3). Factually, the stool is constructed from wooden 1-¼” diameter wooden members, drilled dowel connections, 3D printed joints between some members, and a thick rough finish coating or black truck bed liner. Rough texture covers and conceals the material grain without obscuring the form of the underlying material members, thus removing only part of the tectonic understanding of the object. This ambiguation prompts prolonged contemplation and frustrates embodied perception of the materiality to maintain attention through a perceptual vibration and an inability to find a stable perceptual closure.

While not overtly designed, or titled, to be allusive in this way, Max Lamb’s Scrap Poly Pastel furniture (2014) series operates on a similar aesthetic register; utilizing EPS foam blocks covered in heavy multicolored pastel polyurethane rubber coatings. (4) The construction technique in this series harkens association of rocks and geology in rough, broken geometry similar to the way FiiLuff solicits animal associations in smooth transitions and joints. Each grouping of association asks the viewer to imagine that an internal subjectivity may rest somewhere within what otherwise would be an inert material, not through material embodiment but placelessness. In FiiLuff and Lamb’s project, the objects are more “real” in their allusive associations than in the object implied by their technical and material compositions. The compounding of the technical and associative aspects of the objects form a complex overlapping of qualities where the allusion occurs, never neatly enclosed within either realm. Each process draws disciplinary value in addition to the aesthetic value in their ambiguity.

REFERENCES

“Ellie Abrons.” ACADIA, March 19, 2015. http://acadia.org/papers/VZH9HD.

“Ellie Abrons.” ACADIA, March 19, 2015. http://acadia.org/papers/VZH9HD.

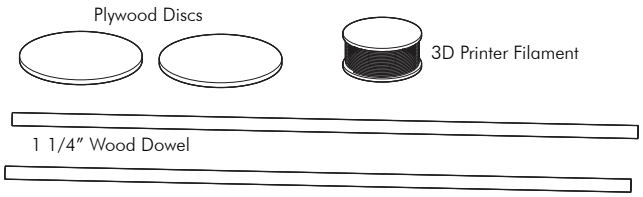
Kolatan, Ferda. “In Pursuit of the Allusive Object.” In Aesthetics Equals Politics: New Discourses across Art, Architecture, and Philosophy, 83–97. The MIT Press, 2019.

183 – Scrap Poly Pastel. Accessed September 22, 2019. http://maxlamb.org/183-poly-pastel/.

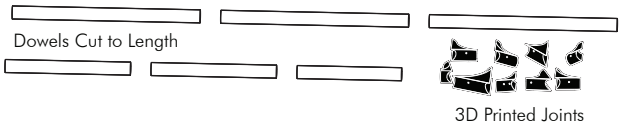
FiiLuff

FiiLuff

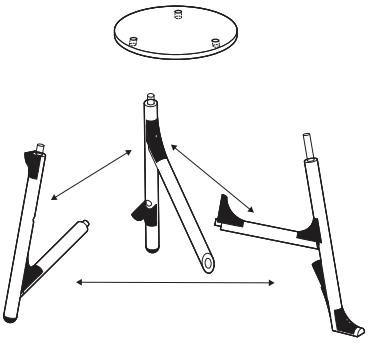
1 Material in clear discernible state ready to be cut and formed



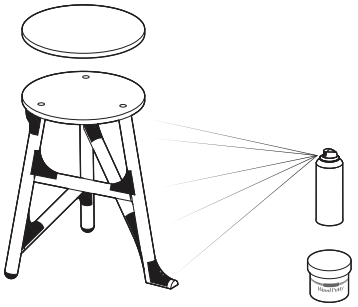
2 Plastic joints are printed from a digital model and all dowels are cut to length



3 Parts Assembled in to 3 legs and cross members



4 All connections parts are doweled and screwed into place. 3D Printed joints are then wood filled smooth with the woodenmembers before receiving a primer coat



5 All joints and tectonics are covered in a thick rough truck bed liner spray coating

From Photo-Collage to Montage: Representation and Reinvention of Interior Space

Patrizio M. Martinelli, Miami University

ABSTRACT

PREMISE

The investigation is the outcome of a series of trips in the American Midwest/North-East, in order to visit and experience places and buildings, with the aim of representing their (urban and architectural) interior qualities. Being aware of how difficult is to express the spatial and sensorial experience of interiors (what Le Corbusier called “ineffable space”), with these visits I tried to answer to a question: how can we try to represent the experience of space? Perspective drawings, diagrams, renderings, models, movies, photography, words: all try to explain this. But what can be done, more than that?

PHASE 1. PHOTO-COLLAGE. Learning from Cubist paintings and collages, from the studies on spatial perception, and from the photography of David Hockney, the first phase of my research has been to represent space using the photo-collage technique. Photo-collage, as a composition of several shots, breaks the rule of the monofocal perspective (that we inherited by Renaissance); introduces the concept of movement in space and time; overlaps focused and not focused visions; considers the peripheral perception; breaks the concept of vision as making static and accurate frames. Every shoot has been kept “as it was”, with no manipulations or post-productions, in order to give all these impressions, keeping all the flaws as a testimony of the moment: the sum of the fragments builds the mosaic of the whole visual experience.

PHASE 2. FROM PHOTO-COLLAGE TO MONTAGE. The second and final phase's aim was to go beyond the pure photographic representation linked to the act of visual perception. I needed to extract the character, the primal architectural themes, and the experiential quality of these spaces. This necessity of an analytical dissection, both theoretical/intellectual and practical/graphical, took me to the de-construction of the photographs, and to the de-composition of the spaces represented. This has meant to select the essence of the place, removing the unessential, adding, juxtaposing, overlapping, pasting other images coming from each my own cultural, artistic and iconographical knowledge and sensibility. The outcome has been a montage that represents the character and the experience of space, and the reinvention of its architectural and spatial qualities: a sort of reinvention of that place, based on an actual act of design, where analysis and project overlap and bring the interior space (both urban and domestic) to its primal character and essence. Although we can consider them synonyms, in this context I prefer to use the term montage rather than collage. While collage introduces in the artwork the actual presence of real materials, montage uses photographic representations of objects or images. Montage is strongly related to the concept of construction, both linked to building technique, and to a more general spatial composition of elements. Finally, montage is also used in theater and cinema, whose essence is the composition of a series of juxtaposed and often discontinuous fragments, images and visual impressions in a sequence that considers movement in time and space.

TEACHING AGENDA. I strongly believe in the relationship between research and teaching. This is why these montages are now an essential part of my teaching agenda, both in seminar courses and design studios. In class I focus on understanding interior spaces from a phenomenological approach that goes beyond the visual aspects; on how the spatial experience transcends the geometrical and abstract dimension and becomes a multisensory event; how the quality of a space, and a place, is made of multiple layers (history, memories, feelings, meanings, character, genius loci). Photo-collage and montage, used and interpreted through these lenses, become a useful tool that students could apply in the process of analysis and investigation and, at the end, in the design and representation process.

REFERENCES

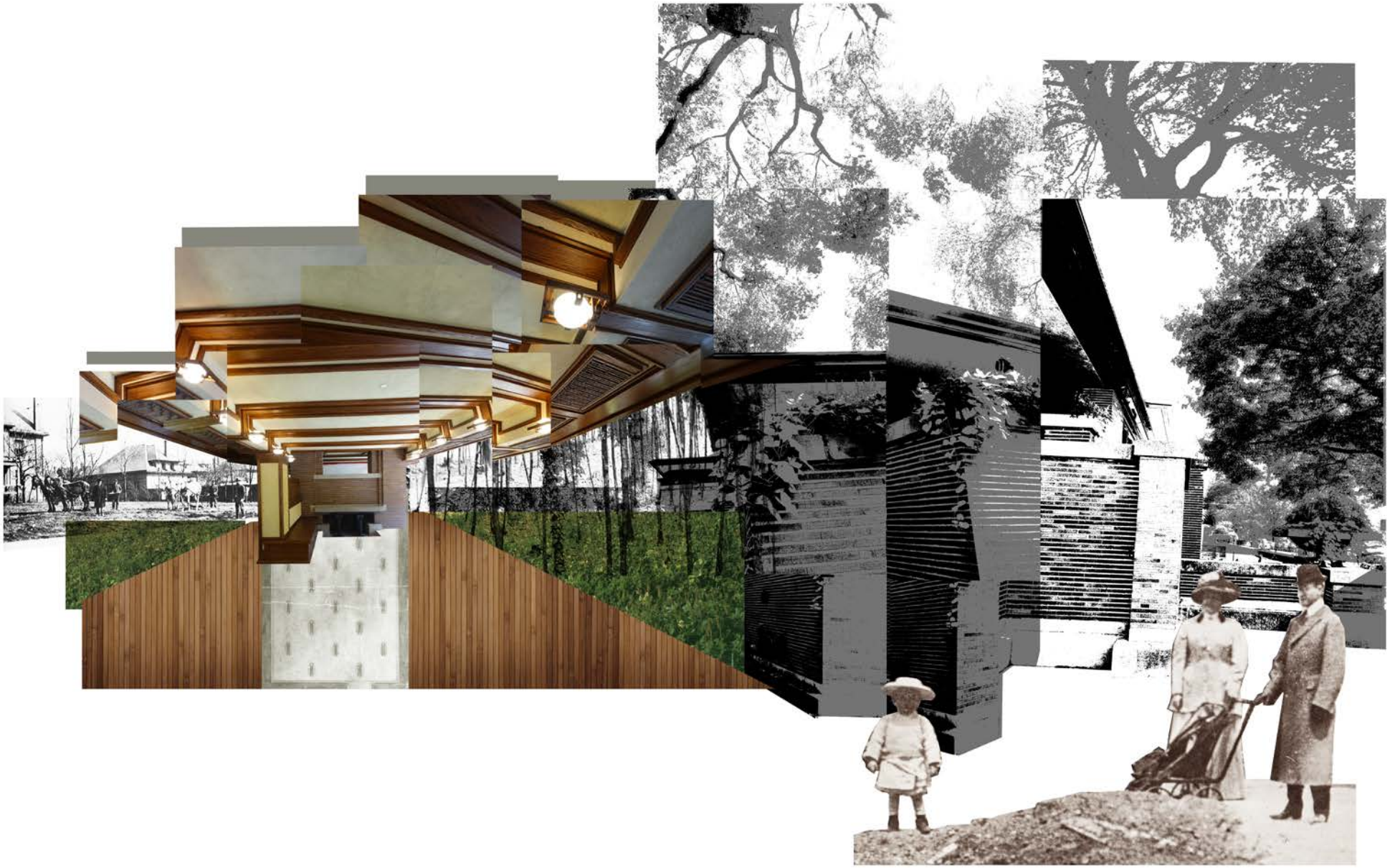
Katherine Hoffman (ed.), Collage: Critical Views (Ann Arbor: UMI Press, 1989)

Rem Koolhaas, Delirious New York: A Retroactive Manifesto for Manhattan (New York: The Monacelli Press, 1994)

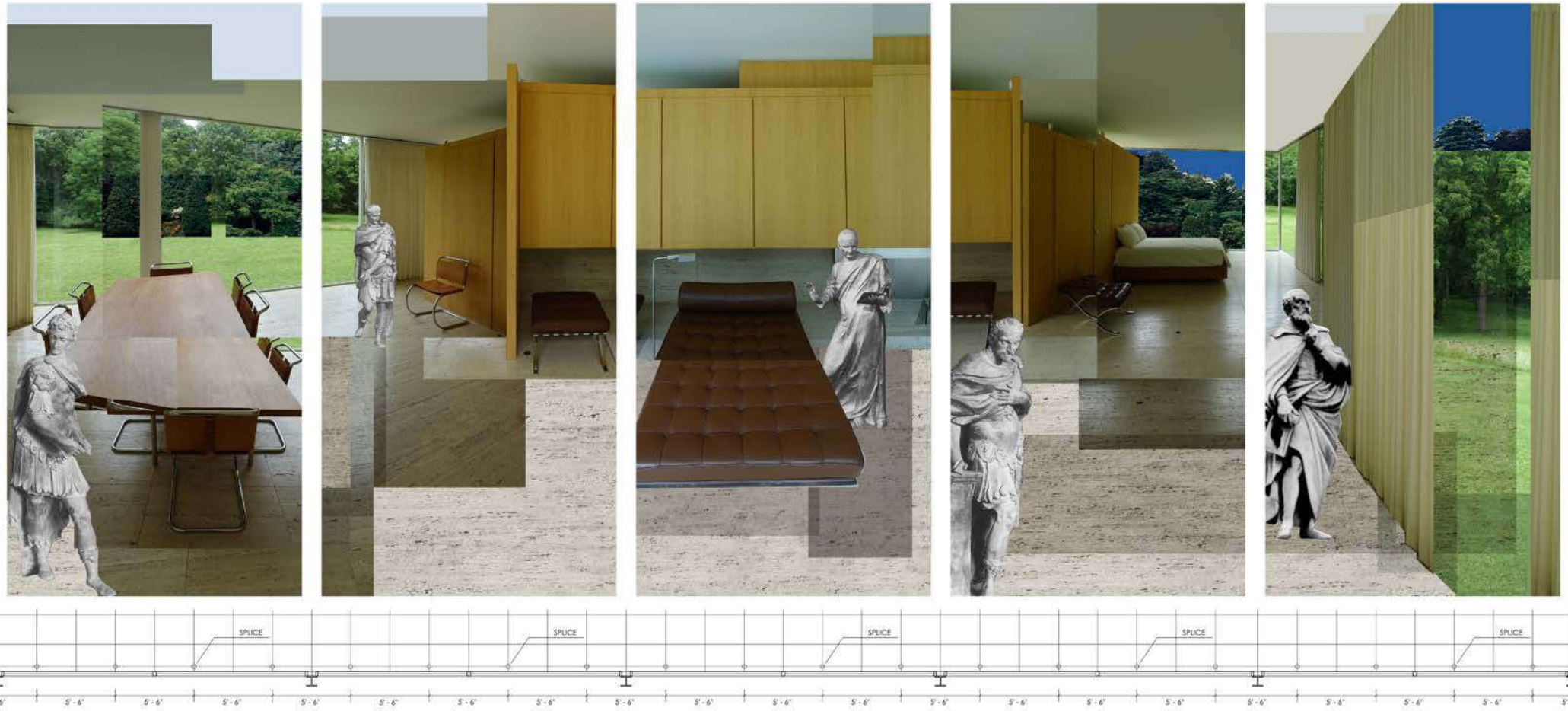
Nils-Ole Lund, Collage Architecture (Berlin: Ernst&Son, 1990)

Paul Melia (ed.), David Hockney, (Manchester, New York: Manchester University Press, 1995)

Martino Stierli, Montage and the Metropolis: Architecture, Modernity and the Representation of Space (New Haven, London: Yale University Press, 2018)



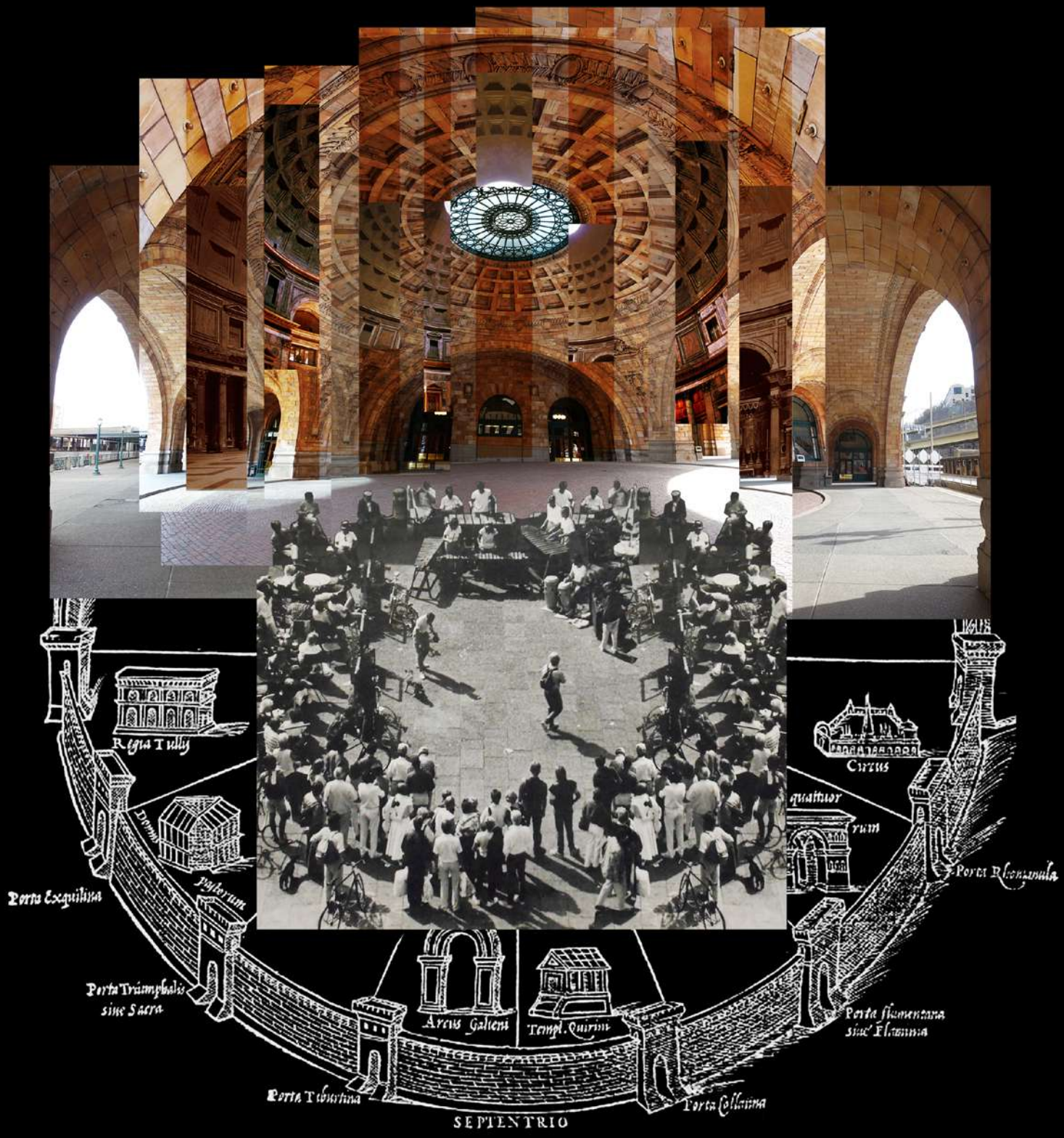
The Robie House, Chicago.
A roof, a floor, a fireplace, a wall



The Farnsworth House, Plano.
Framing, staging, observing

Chicago.
The scene of the street

North Christian Church, Columbus.
A gathering space in the suburban landscape



Union Station, Pittsburgh.
The (urban) interior as palimspest

Creative Scholarship | Design as Idea | Presentation

Harmonious Spaces: Feng Shui Culture

Wei Dong, University of Wisconsin - Madison
Yi Chen, TongJi University of China
Xiaoyang Guo, Suzhou University of Science and Technology
Qinghau Xiong, South-Central Minzu University

ABSTRACT

The ancient Chinese principle of Feng Shui is a principle that fosters harmony among human beings, earth, and universe, in all aspects of life. Feng is wind, Shui is water. Recognizing that wind and water serve as both destructive and creative forces in the universe, the ultimate desire of Feng Shui is to achieve and sustain a state of active balance, or harmony between these forces. Feng Shui is sustainability. Seeking balance among conflicting forces is integral to all aspects of life (Hale, 1999 and Mak & So, 2015).

This Feng Shui exhibition design creates a multi-sensory experience through the use of three-dimensional space, paths of travel, layering vistas, and diverse materials, textures, and sounds. The tension created by the coexisting yet disparate aspects is resolved by placing elements in such a way to create a sense of harmony.

Artist, designer, scholar, and teacher, the creator of the exhibition is fluent in the traditions of Eastern Feng Shui and has been immersed in Western concepts of space, environment, and culture for several decades. The goal is for Eastern and Western audiences alike to find a common path to a sustainable balance with the earth and universe.

As one enters the Feng Shui exhibition, there is almost an unconscious awareness that everything within is integrally related, part of a sensorial whole. It is a place of oppositions in balance, Yin and Yang in harmony. The traditional symbol of this balance is portrayed in the entry: the square

on the floor represents earth, the circle on the ceiling represents universe, and the person standing in between represents the human (Hale, 1999).

From here, one can proceed in two ways: through a moon gate to the left where one can see to the back of the whole exhibition, or to the right into a Yin space comprised of natural elements.

The essence of the Yin space is illustrated with the soft, organic features of water, plants, and trees. The curvilinear walls patterned randomly with plants and rocks move the traveler through the space. Paintings of the four seasons demonstrate the I-Ching principle of the life cycle of nature: seasons change but the universe remains eternal; a season is simply a moment within the cycle of life; the seasons represent the time, spaces, and experiences of a life.

The transition from the Yin to the Yang space is accomplished with a three-dimensional sculpture. A ribbon of white sweeps upward from the floor and becomes a bridge into the Yang space while changing to black. Where the bridge meets the floor is the traditional Yin/Yang Tai Chi symbol embodying balance among coexisting opposites.

The Yang space holds essence in its strong, hard structure. Yang is often representative of the human-built world, as opposed to the natural world. Rectilinear lattice work creates an entry into the Yang space, and connects the Yin and Yang spaces. Leaving the Yang space, once again experiences the layered views when entering the exhibition may now be viewed in reverse.

Continuing on, the next section explores the power of the rock as surrogate for human, and as an expression of the virtue of patience. It takes 1,000 years for a rock to form; each patiently growing individually in wisdom and knowledge over time (Ronald G. 2011). A painting of 36 rocks expresses the individuality of human as they travel the life cycle.

The traveler then returns to the Yin space, reinforcing the concept of seeking harmony among all coexisting opposites.

Holding several records, the exhibition demonstrates a multicultural experience that can provide the design community an example of the connection between Eastern and Western cultures. The Feng Shui Exhibition is not only a scholarly artistic show, but also a hub for the community and a classroom for students.

(The artist created all of the paintings, 3D structures, “rocks”, “pond” and other exhibition displays. The 5 pieces of Chinese furniture were not a part of the artist's creations).

REFERENCES

Mak, Michael Y. & So, Albert T. (2015). Scientific Feng Shui for the Built Environment: Theories and Applications, City University of Hong Kong Press. Hong Hong. 16-18, 138-139

Hale, Gill. (1999). Feng Shui: Understanding the Ancient Arts of Placement, Hermes House, London. 12-14.

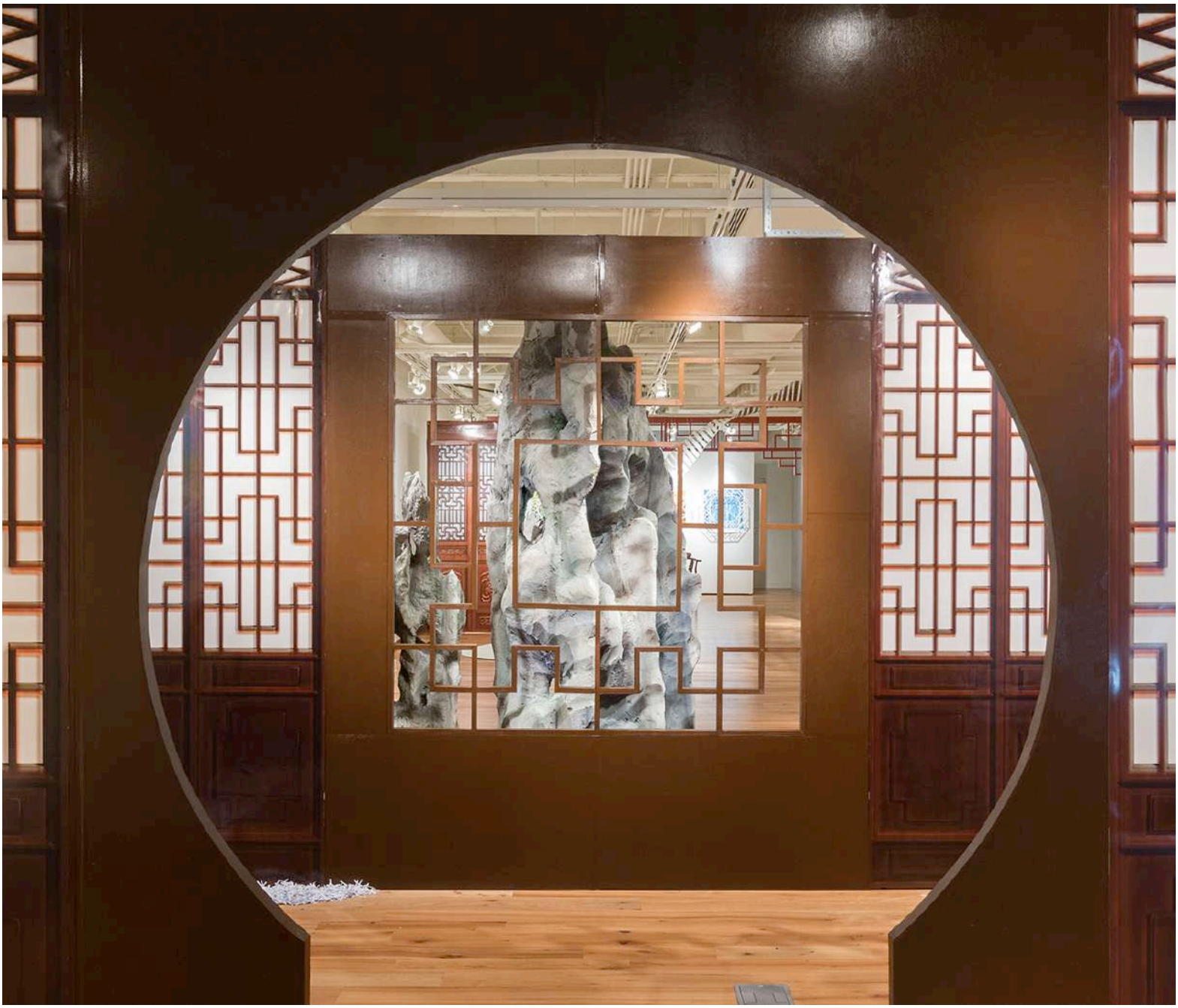
McHarg, Ian L. (1971). Design with Nature, Doubleday & Company, Inc. Garden City, New York.

Knapp, Ronald G. (2011). Things Chinese, Tuttle Publishing, North Clarendon, Vermont. 24-25, 77-79.

Appendix for Harmonious Spaces and Feng Shui Culture

Note: The artist created all of the paintings, three-dimensional structures, exhibit dividers, “rocks”, “pond” and other exhibition displays. The five pieces of traditional Chinese furniture were not a part of the artist's creations.

Entrance Screen: A screen or spirit wall made of stone, brick, wood, or ceramic is the first element that one encounters when entering a traditional Chinese living environment.



Moon Gate: Chinese architectural design also incorporates focused views that give a glimpse at what is beyond. The circular “moon gate” featured is a typical element in many Chinese gardens. This is essential for the Chinese principle of layering a space. The visual attraction creates a sense of mystery, as one must wind their way through the layered spaces

Pond: Ponds represent the yin element of motion and movement and they provide a reflection of the changing garden throughout the seasons. It is a perfect counter-balance to the stagnant yang elements such as the rocks and architecture. The pond is an organic, curvilinear piece of nature that balances the contrasting manmade structures that surround it (Hale, 1999)..

Chinese Painting: All paintings use traditional Chinese watercolors with gouache on top of traditional Chinese rice paper. The paint was applied to both sides of the paper several times in order to maximize the depth, a sense of mystery, and richness of the color, textures, and the meaning. The foundation for these paintings is white ink on white rice paper, both crucial for the layering process. The next phase involves a tremendous amount of emotion in which several initial paintings help map out ideas. The artist continues to paint on both the front and back, flipping the paper over and over many times. Then using analytical thought, a front and backside are chosen so that details can be added to the front. Upon drying, the artist crumples the painting in designated areas. This unique process will generate an organic feeling within the texture along with a sense of mystery.

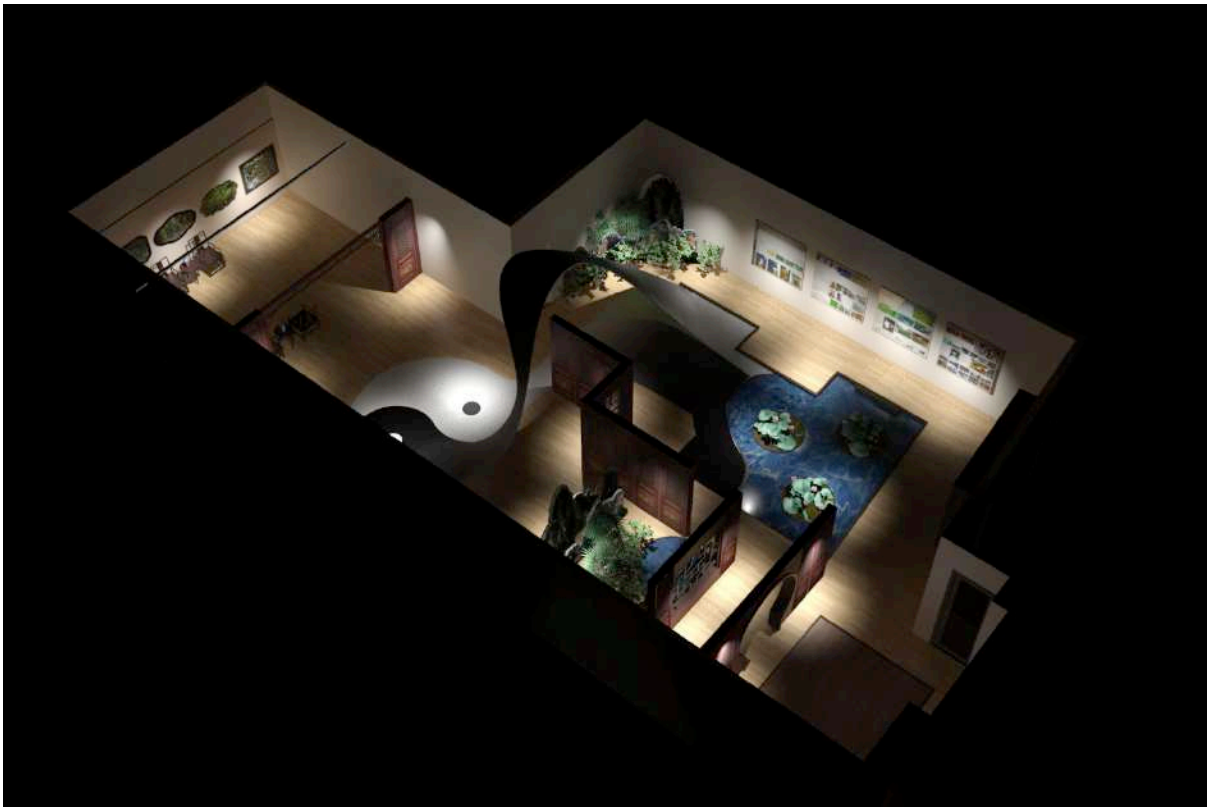
Yin and Yang Sculpture: Transition from the yin space and energy, to the yang space and energy beyond is accomplished by a three-dimensional sculpture that forms a bridge linking the two areas. A course of white (yin) sweeps upward from the floor reversing into black (yang) and landing on the floor. The sculpture evokes the ancient Daoist symbol often associated with the tai chi where interpenetrating whorls in black and white embody the balance among coexisting opposites.

Rocks: Each rock represents one of the four seasons. As time passes, the rocks will continue to change as the elements of nature work on the rocks. The rocks were constructed in multiple phases. First, pieces of foam board insulation were glued together and then the artist used power tools to carve the rock according to his vision and inspiration. According to Chinese tradition, there are four criteria for a scholarly rock: they must be proportionally slender and have penetrations, round holes, and wrinkles. The general shape of each rock was planned out in advance but the details were not.

Furniture: Chair design in the Ming period (1368-1644) represents the most ergonomic and simplified design in the history of Chinese furniture. This space is typical of a living room that is symmetrically balanced and includes a strong piece of artwork on the back wall.

NOTE: the artist did not make the furnitures.

Long landscape album ink drawing deliberately invite the viewer to enter the landscape at various points as if the viewer were entering and traveling through the changing landscape.



Computer rendering of the space in conceptual design stage. Study how Chi, one of important concepts of Feng Shui can be flow in the space.

Creative Scholarship | Design as Idea | Presentation

Multispecies Urban Furnishings: "Hidden in Plain Sight"

Nerea Feliz, The University of Texas at Austin
Joyce Hwang, UB School of Architecture and Planning

ABSTRACT

Hidden in Plain Sight is a proposal for a series of urban furnishings that aim to bring awareness to various forms or urban "life" and supports an inclusive web of interdependent species, both human and non-human. This body of research is part of a multi-year initiative to turn the outdoor courtyard of an arts center in Madrid, Spain – into a laboratory for testing solutions that frame global climate changes as a challenge that is as much cultural and political, as scientific and technological. Hidden in Plain Sight explores how design can amplify current discourse on climate change in the context of public space.

From the perspective of the Anthropocene, Buckminster Fuller's understanding of Earth as a "mother spaceship" brings to mind contemporary philosopher Peter Sloterdijk's notion of our planet as a "grand interior", a constructed environment heavily manipulated by humanity. The extent of human intervention in our urban environments is such that we often think of cities as human-centered territory, however, non-human species are also a significant part of our city's ecosystem. The project seeks to make visible the under-acknowledged world of insects as active participants of urban life, by attracting and magnifying their presence in our shared urban spaces. In urban environments, insects serve as pollinators, seed dispersers, decomposers, and as a food source for other species such as bats and birds. According to a recent study, 40% of insect species are in danger of extinction in the coming decades due to the extensive use of pesticides and climate change. To support and cultivate beneficial insect populations, the project identified

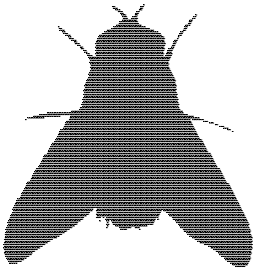
some local butterflies and moth species. The prototypes are designed as supportive habitats for caterpillars and butterflies. Gardens, filled with nutritious plants for caterpillars, are mesh-enclosed to protect them from predators; open planting beds house brightly-colored wildflowers specifically curated to attract nectar-seeking butterflies.

In dense cities like Madrid, urban interiors form a network of public spaces that are both indoor and outdoor. Hidden in Plain Sight is conceived of a series of urban furnishings that improve the quality of these public spaces by providing seating, lighting, shade, and vegetation. This family of prototypes operate between and across scales – from the scale of humans to the scale of the insect. A series of urban rooms, walls, and furniture can function as individual units or in aggregation – setting the stage for public programming, such as film screenings and small concerts. Borrowing from models of interior occupation - not streets but corridors, not squares but rooms - “Hidden in Plain Sight” introduces a sense of public interiority and cultivates urban intimacy between the environment and the life forms that inhabit it.

Hidden in Plain Sight deploys interior design tactics to both enhance insect habitability, while also increasing people’s comfort and provoking human curiosity through new spatial and perceptual experiences. Stemming from the fascinating world of insect vision and perception, the project uses colors, patterns, and light for both insect and human benefit. To provide a sense of camouflage for butterflies, patterns are imprinted on the prototypes’ fabric-like curving walls, and color-coordinating with adjacent wildflowers. To promote habitability by birds, bats, bees, and other insects, distinct ‘pods’ are fabricated and inserted into the upper portions of the prototype walls, adding a textural and volumetric dimension to the prototypes’ undulating surfaces. At night, the design uses ultraviolet black light to attract insects, a phenomenon that can be video-recorded and projected as a form of spectacle. The aim of Hidden in Plain Sight is to create a sense of shared interiority across species at the heart of an urban environment.

Multispecies Urban Furnishings,

“Hidden in Plain Sight”

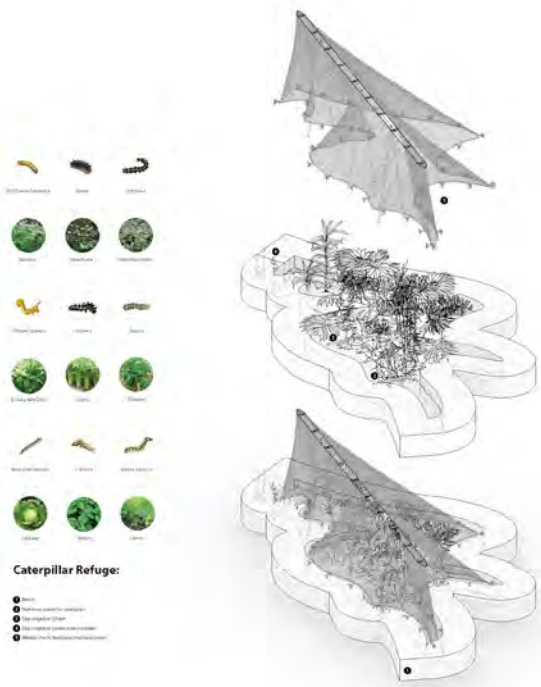


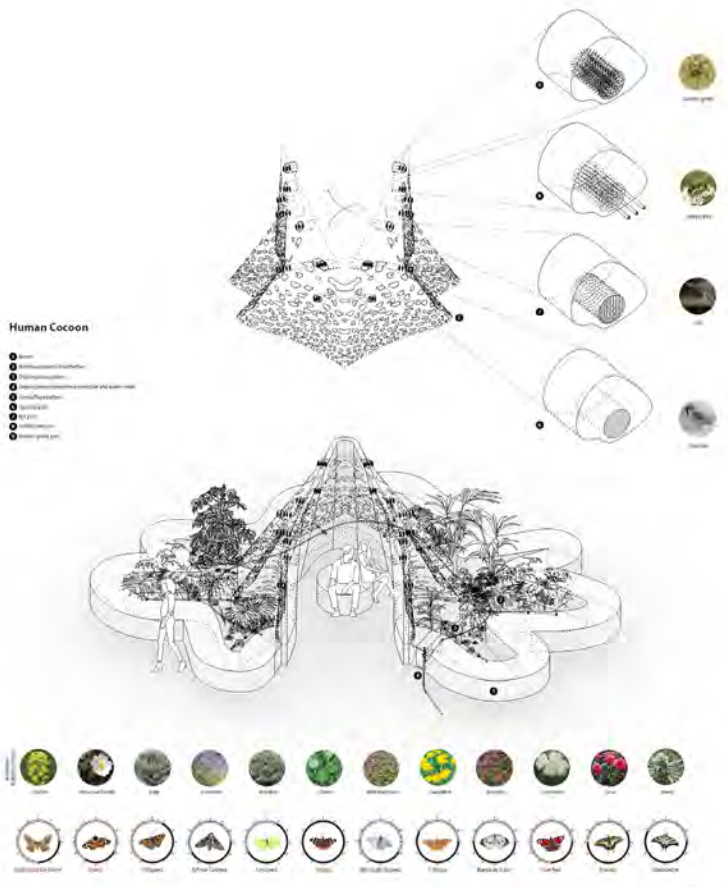
Hidden in Plain Sight is a proposal for a series of multispecies urban furnishings that aim to bring awareness to various forms or urban “life” and supports an inclusive web of interdependent species, both human and non-human. This body of research is part of a multi-year initiative to turn the outdoor courtyard of an arts center in Madrid, Spain – into a laboratory for testing solutions that frame global climate changes as a challenge that is as much cultural and political, as scientific and technological. Hidden in Plain Sight explores how design can amplify current discourse on climate change in the context of public space.

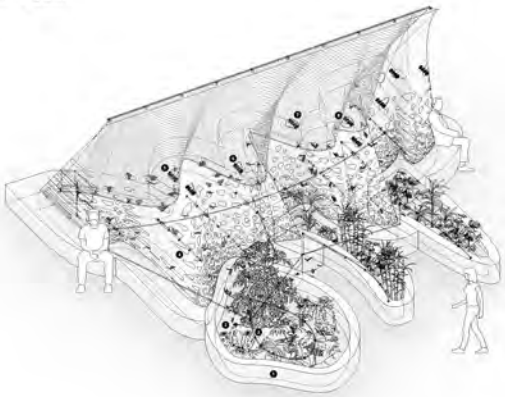
The extent of human intervention in our urban environments is such that we often think of cities as human-centered territory, however, non-human species are also a significant part of our city’s ecosystem. The project seeks to make visible the under-acknowledged world of insects as active participants of urban life, by attracting and magnifying their presence in our shared urban spaces. In urban environments, insects serve as pollinators, seed dispersers, decomposers, and as a food source for other species such as bats and birds. According to a recent study, 40% of insect species are in danger of extinction in the coming decades due to the extensive use of pesticides and climate change. To support and cultivate beneficial insect populations, the project identified some local butterflies and moth species. The prototypes are designed as supportive habitats for caterpillars and butterflies. Gardens, filled with nutritious plants for caterpillars, are mesh-enclosed to protect them from predators; open planting beds house brightly-colored wildflowers specifically curated to attract nectar-seeking butterflies.

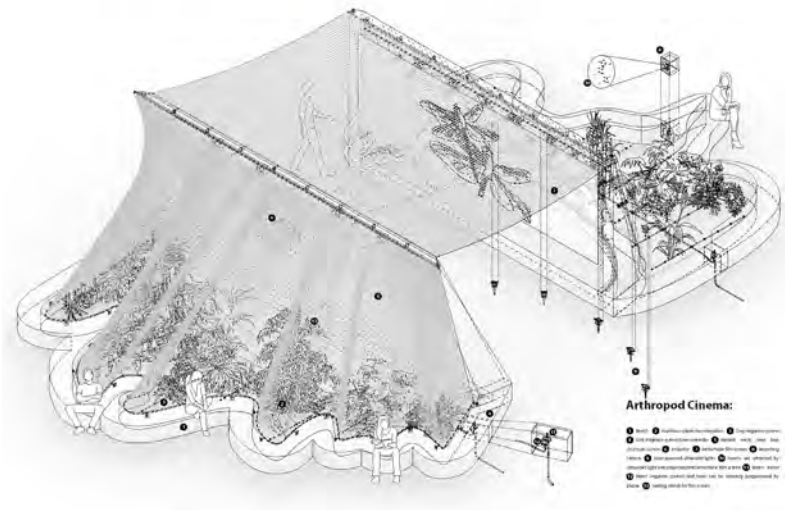
In dense cities like Madrid, urban interiors form a network of public spaces that are both indoor and outdoor. Hidden in Plain Sight is conceived of a series of urban furnishings that improve the quality of these public spaces by providing seating, lighting, shade, and vegetation. This family of prototypes operate between and across scales – from the scale of humans to the scale of the insect. A series of urban rooms, walls, and furniture can function as individual units or in aggregation – setting the stage for public programming, such as film screenings and small concerts. Borrowing from models of interior occupation - not streets but corridors, not squares but rooms - “Hidden in Plain Sight” introduces a sense of public interiority and cultivates urban intimacy between the environment and the life forms that inhabit it.

Hidden in Plain Sight deploys interior design tactics to both enhance insect habitability, while also increasing people’s comfort and provoking human curiosity through new spatial and perceptual experiences. Stemming from the fascinating world of insect vision and perception, the project uses colors, patterns, and light for both insect and human benefit. To provide a sense of camouflage for butterflies, patterns are imprinted on the prototypes’ fabric-like curving walls, and color-coordinating with adjacent wildflowers. To promote habitability by birds, bats, bees, and other insects, distinct ‘pods’ are fabricated and inserted into the upper portions of the prototype walls, adding a textural and volumetric dimension to the prototypes’ undulating surfaces. At night, the design uses ultraviolet black light to attract insects, a phenomenon that can be video-recorded and projected as a form of spectacle. The aim of Hidden in Plain Sight is to create a sense of shared interiority across species at the heart of an urban environment.



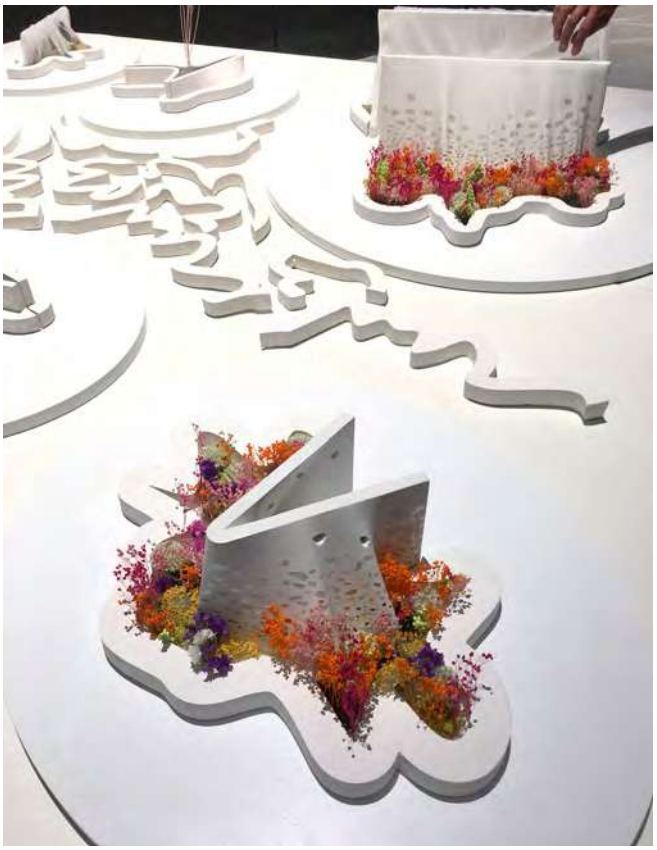


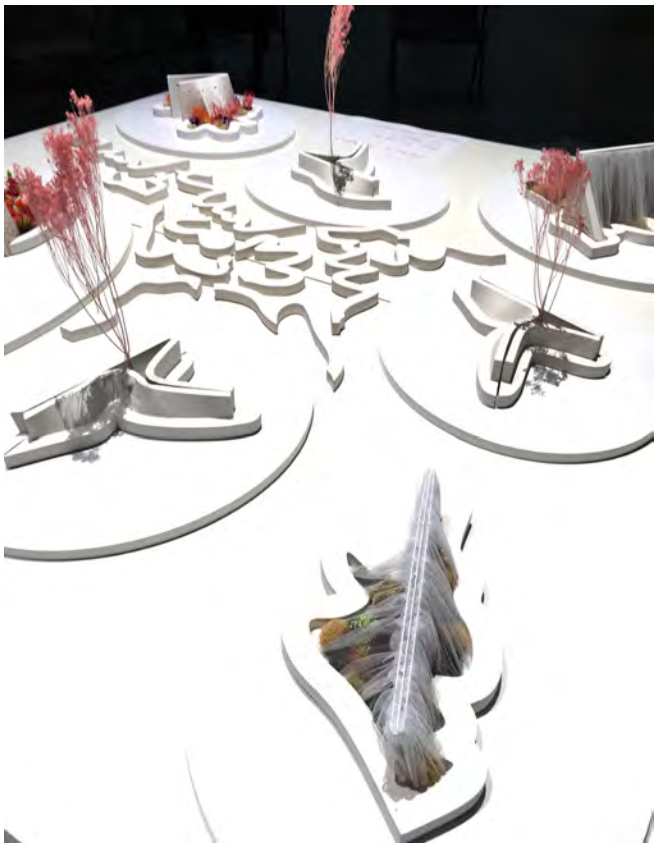




Urban Furnishings Drawings *(Selected plants and corresponding insect specie)*

***Casting process**: combination of digital and analog casting techiques*

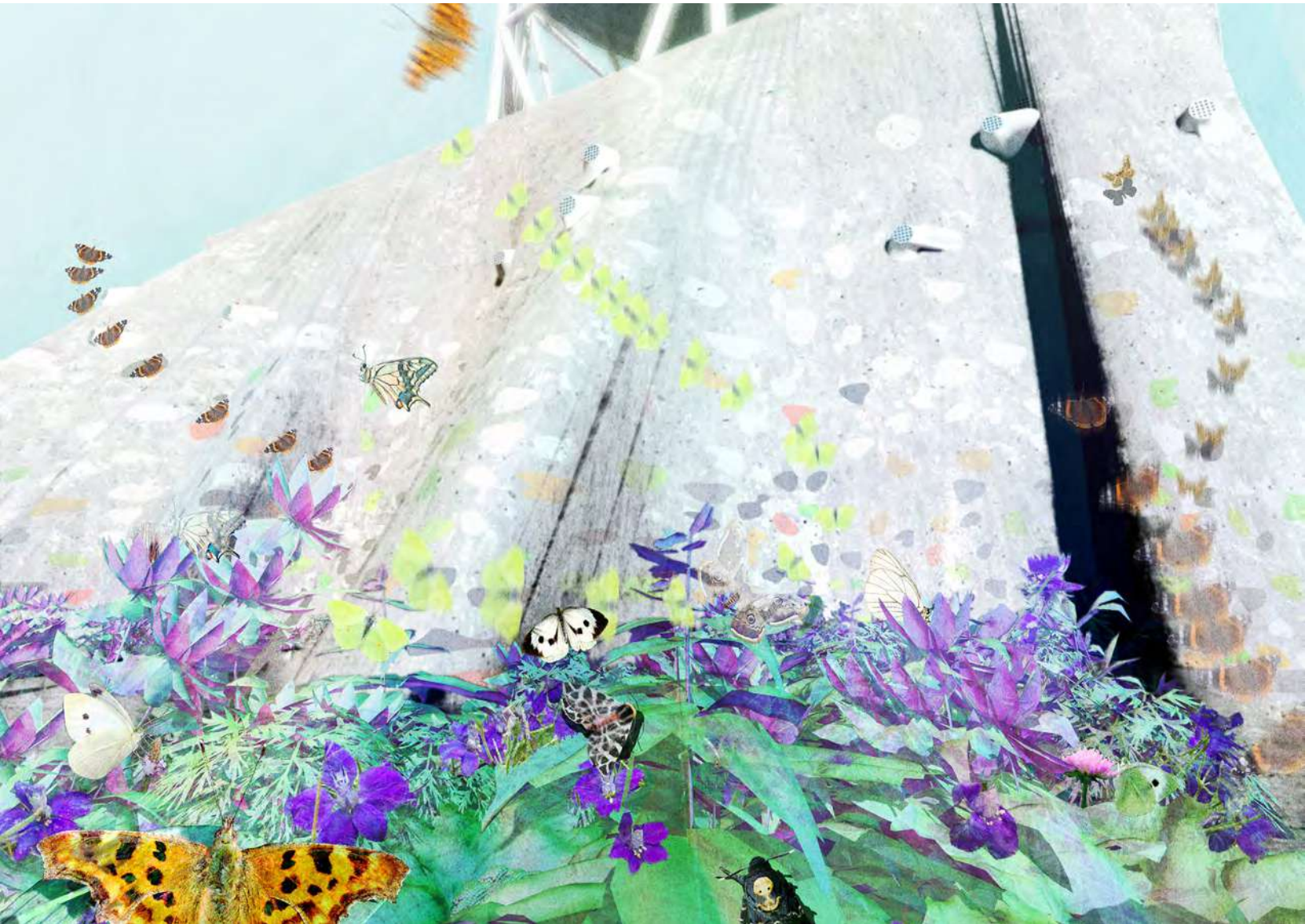




Prototype Models *(Plaster, steel rod, and tulle)*

Caterpillar Refuge
Human Perspective (above) / Insect Perspective (below)

Butterfly Camouflage
Human Perspective (above) / Insect Perspective (below)



Human Cocoon
Human Perspective (above) / Insect Perspective (below)

Anthropod Cinema
Human Perspective (above) / Insect Perspective (below)

Anthropod Cinema
Human Perspective (above) / Insect Perspective (below)

OPEN/CLOSED: ROOMS/CORRIDORS

Linda Zhang, Ryerson University
Jonathon Anderson, Ryerson University School of Interior Design
Monica Beckett, Ryerson University School of Interior Design

ABSTRACT

Conceptual Significance

This design/build project examines the reshaping of the typical user experience of a trade show by rethinking the relationship between booth and corridor; between wall and door; between room and circulation; and between inhabitation and movement. The first modern trades show, Great Exhibition of 1851 (Crystal Palace, London, UK), established the double-loaded corridor flanked by independent booths as the central organizing feature of the interior architecture of tradeshows, which is still widely influential today. However, learning from 14th to 17th-century interiors, our project, a 20' x 50' booth for 18 independent vendors, reframes the function of the corridor in modern interiors.

Strength of Aesthetic Value

Architectural historians have argued the modern corridor emerged in the 18th-century as a reflection of their "new status as a colonial empire, namely, speed and connectivity" (Jarzombek, 764) as well as new and growing sensibility and importance placed on the notion of privacy (Evans, 70). Before the corridor, Italian Palladian and French Beaux-Arts traditions established circulation through a series of rooms where the most desirable spaces had the greatest number of openings (Evans, 64). Circulation was not seen as a pejorative space or as traffic, but rather an

essential part of the inhabitation and experience of space itself. Examples include Palazzo Antonini, Udine by Palladio in 1556, Villa Madama in Rome by Raphael, and Antonio da Sangallo the Younger in 1525. This understanding and framing of *circulation as inhabitation* became the starting point for our design/build project for an international design tradeshow.

Ingenuity or Novelty

Reinventing the modern corridor as well as rethinking the 16th-century enfilade circulation, our design reimagines and recombines walls, openings, and paths to produce a series of corridor-ish rooms and room-ish corridors. Drawing visitors in from the main circulation path, the 20' x 50' booth invites visitors to move freely through the interconnected booths. Here, movement has become the primary experience itself, blurring the hierarchy between served and service spaces, traffic and place, travel and destination.

Visual Presence

The visual presence of this blurring is archived by beginning from a standard grid of 10'x10' booths and cutting openings at the intersections of walls. While the quality of a room in the 16th-century was evaluated based on the number of openings, we assessed the placement of opening to maximize the number of rooms that could be connected through a single opening. Thus, allowing visitors to move seamlessly between booths in a multitude of directions. These estranged corner openings produce a strong and uncanny visual presence; they are at once strange and familiar. They simultaneously disrupt conventional notions of inhabitation versus traffic (unfamiliar) while maintaining a conventional series of linear paths (the familiar corridor). While the booth is composed of conventional elements (doors, walls, and corridors), the unconventional combination encourages meandering, lingering, and encounters amongst visitors and vendors.

Mastery in Craftsmanship

The design/build process combined ‘thinking’ with ‘making’, ideas with craft, and design with its realization. The project was designed, built, and installed by a team of two faculty and four second-year interior design students. The walls were fabricated by CNC cutting plywood torsion box systems, which were then skinned in 1/4” MDF. All walls were screwed, on-site, to an ‘x’ shape unit that structurally reinforces and ties together the system while providing the numerous openings. Critical to the visual presence and structural integrity of the project was its craftsmanship in terms of how planar and square the wall panels were made. Thus, a jig for skinning the torsion boxes was used to ensure the process yielded square panels.

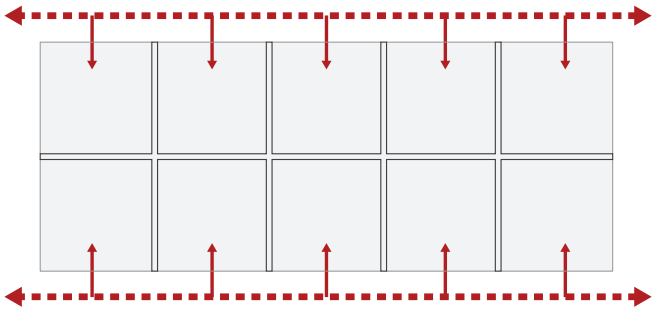
REFERENCES

Mark Jarzombek, "Corridor Spaces," Critical Inquiry 36, no. 4 (Summer 2010): 728-770.

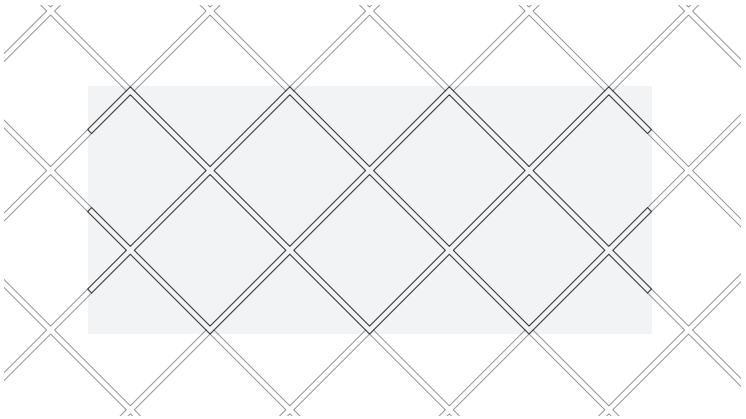
Robin Evans, "Figures, Doors and Passages," Translations from Drawing to Building and Other Essays, MIT Press, 1997, pp. 33-91.

OPEN/CLOSED: ROOM/CORRIDORS

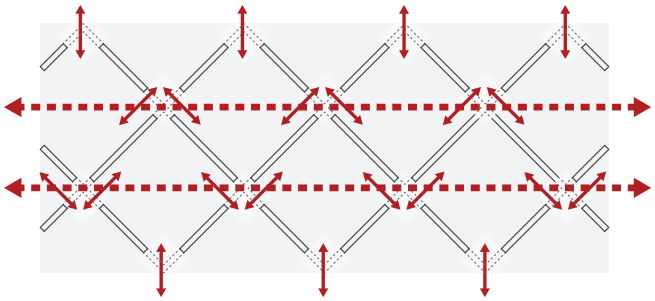
OPEN/CLOSED: ROOMS/CORRIDORS



1. 50’ x 20’ Booth
   with conventional system of 10’x10’ booths
   along double loaded corridors



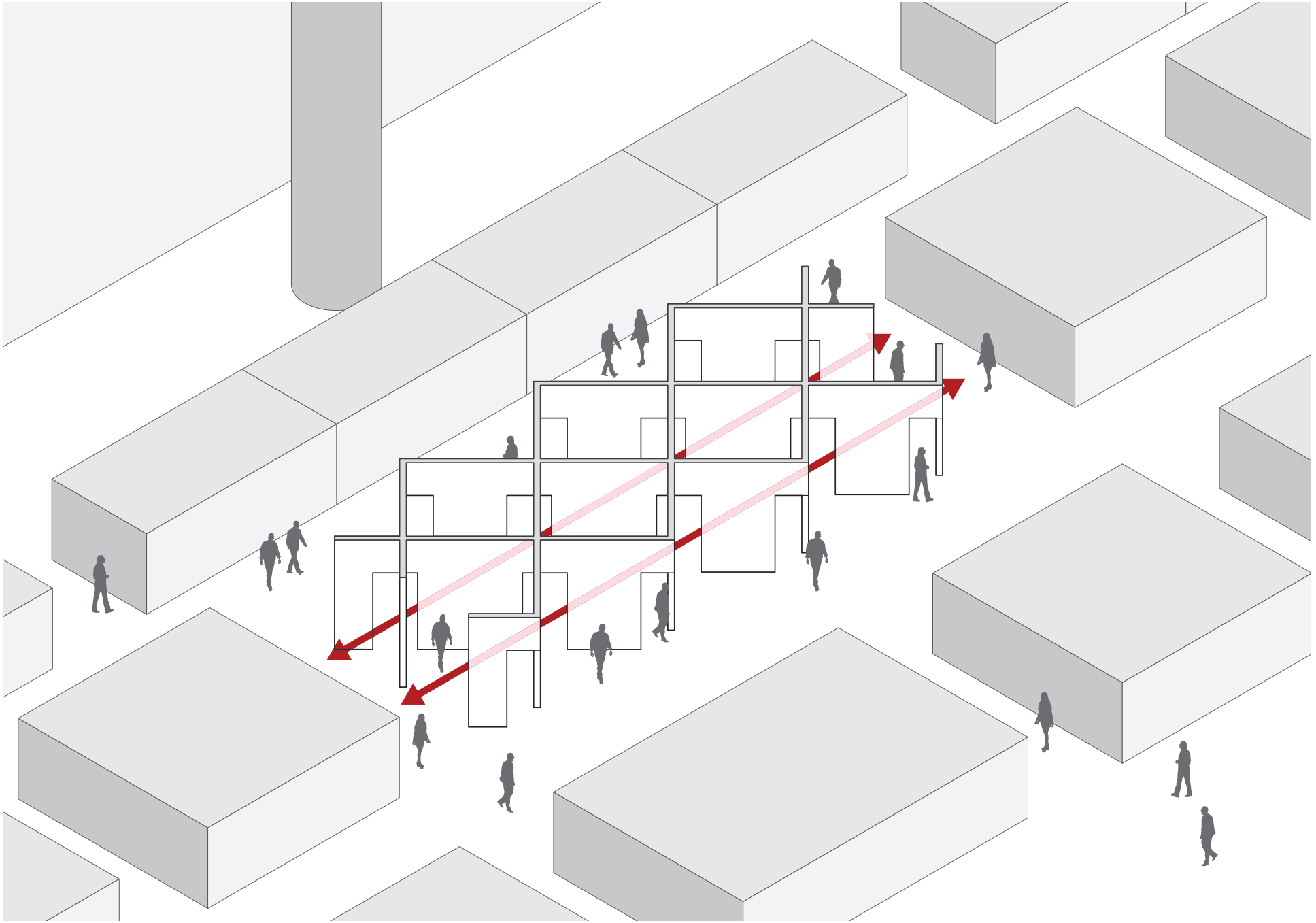
2. Rotating the system
   by 45 degrees

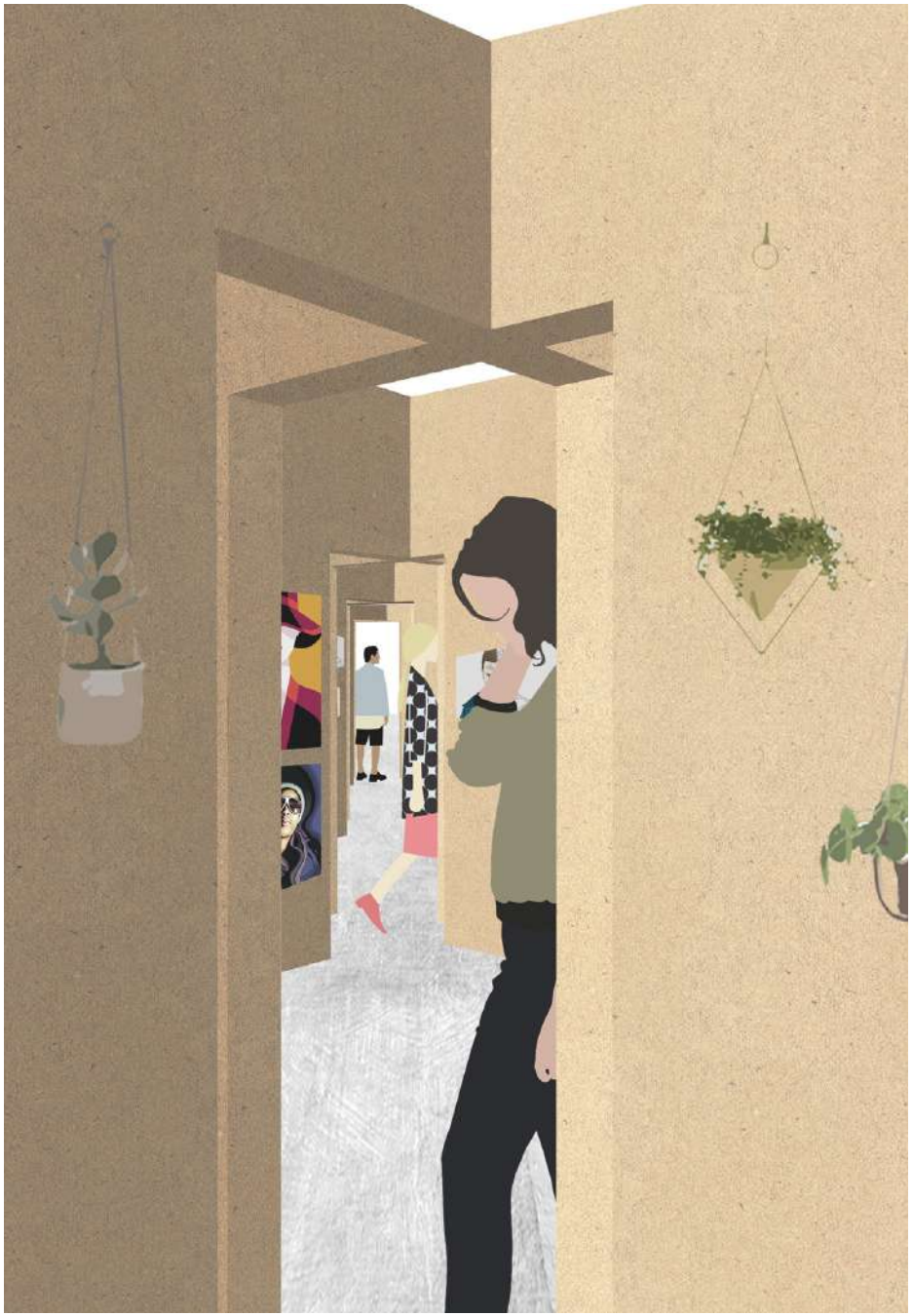


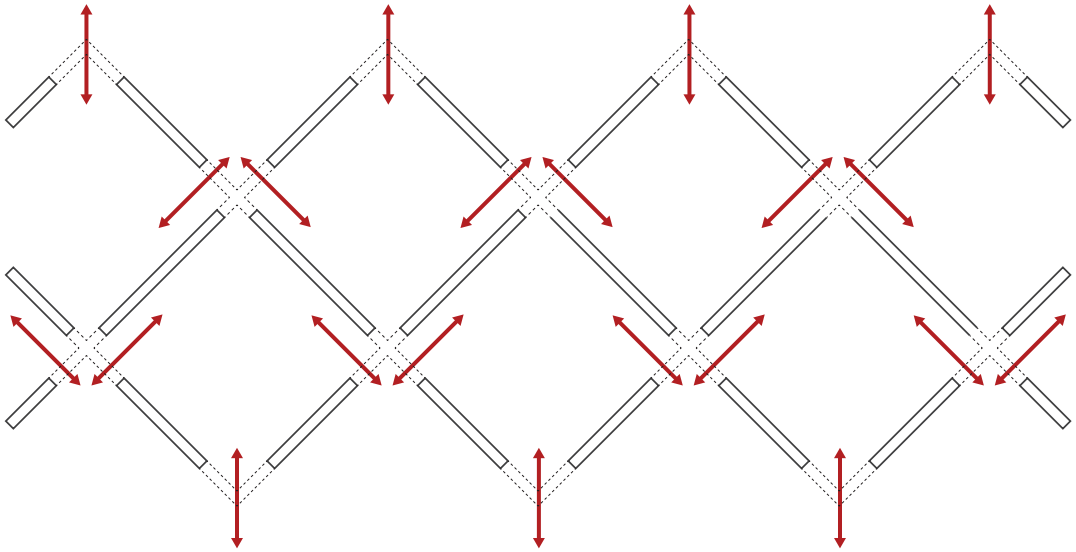
3. Placing openings
   to connect to the
   max number of rooms

OPEN/CLOSED: ROOMS/CORRIDORS

| Primary Circulation |

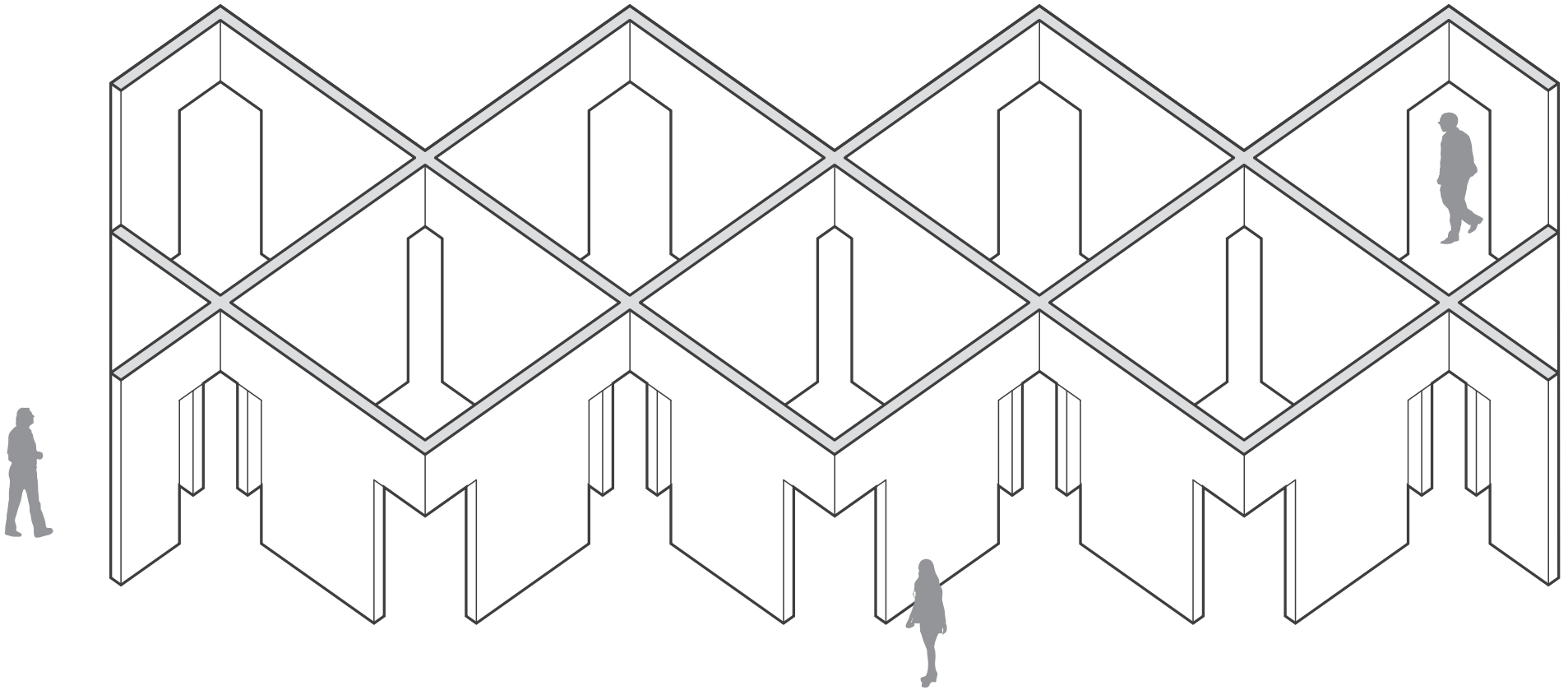






OPEN/CLOSED: ROOMS/CORRIDORS

| Axonometric View |



Pattern Project

Rene King, Columbia College Chicago
Petra Probstner, Columbia College Chicago

ABSTRACT

The Pattern Project grew from our love of urban environments and a desire to connect pedestrians to the multilayered city. *In Cities for People* (Gehl et.al., 2010*),* the authors state that fifty percent of the worlds' population live in urban areas and forecasts predict an increase to 80% by the year 2050. The design of cities; the architecture, and the spaces between buildings tell stories of place, time, and people, and hold considerable possibility to promote civic and social engagement. The project searches to rebuild environmental attachment and focuses on issues surrounding identity, movement and empirical experiences in the urban fabric.

The project expands upon precedents in data visualization; *Envisioning Information* (Tufte, 1990), and *Dear Data* (Lupi et al, 2016), to build new representations of empirical data collected in the urban environment. The designers used sample walks that began as they crossed the threshold of their residences, entered the public realm, and continued to the train which acts as a connector between neighborhoods in the city. Standard lot sizes were drawn on templates for the collection of binary data which was later used to drive the pattern making process.

The Idea Zoo represents a series of explorations into form and the material representation for the data collected. The iterations suggested two themes: time and dynamic experience. The experience of place is in constant flux. The seasons, time of day, weather patterns, and people

that we encounter or do not encounter on our path impact our perception of the environment. The shadows cast by an object become of higher importance than the object itself as they attempt to capture the ever-changing nature of time and place. The project aims to engage viewers from a variety of vantage points and to encourage movement that unveils additional layers of information and understandings of the artifacts. The models were grouped into genus's and cataloged for later large-scale experimentation.

The inaugural installation of Pattern Project will be situated in two windows at street level approximately one block from another. It was critical that the site would engage pedestrians and offer an experiential component for those who choose to engage. The first window consists of a series of small portals that house six iterations from the Idea Zoo; the second contains a large scale 8-foot box that reveals a series of patterns. In the tradition of the Situationist Movement International and Flaneurs, the two spaces are connected by walk that invites participants to engage the city on foot for a short time and to get lost in the surrounding fabric of the city. **The installation will be complete by the end of September 2019 as part of an Architecture Biennial.**

Living in a moment when the virtual environments often make us glance over the magic embedded in our physical environments. This project aims to reconnect participants to their physical environment through simultaneous perception; the cross-sensory patterns of information that can only be recognized when information from two or more senses are working in concert with their surroundings.

REFERENCES

Gehl, Jan, et al. Cities for People.

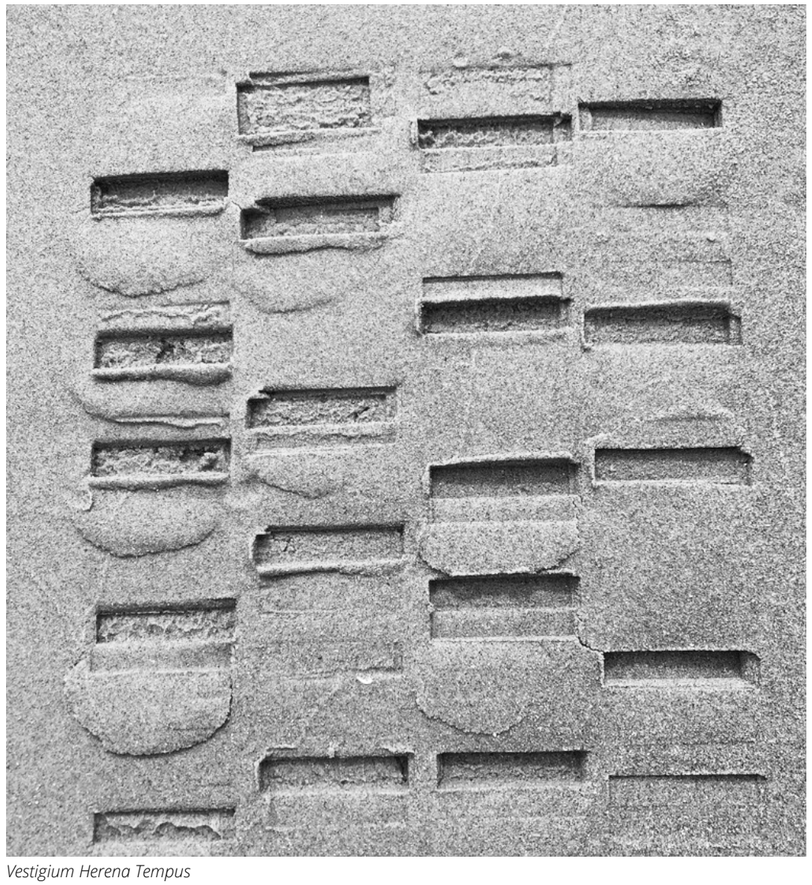
Tufte, Edward R. Envisioning Information. Graphics Press, 2013.

Lupi, Giorgia, et al. Dear Data. Flow Press Media, 2018.

Modulari

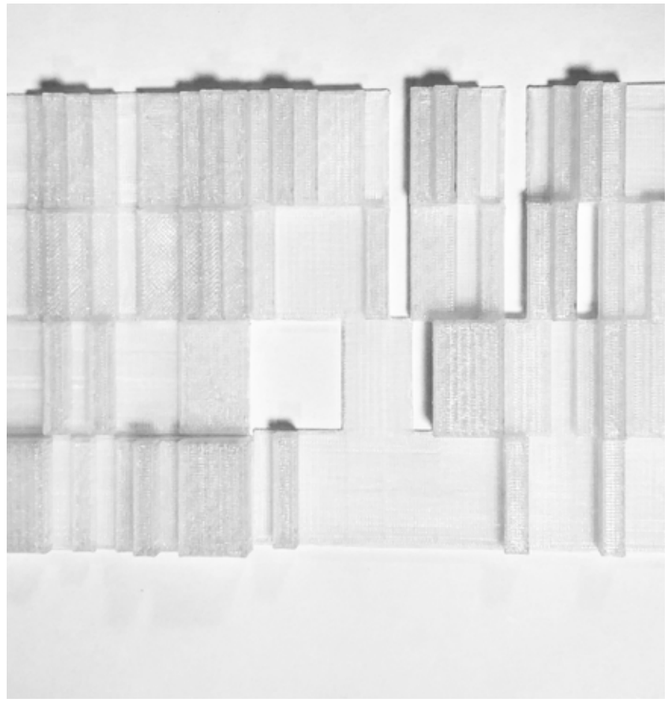
Standardization + Flexibility

The models in this genus are constructed of components which represent an average city lot and offer responses to empirical data collected on site. Materials selected speak to the passage of time; from particle to perceptible and beyond.



Vestigium Herena Tempus

Premeris Ovium



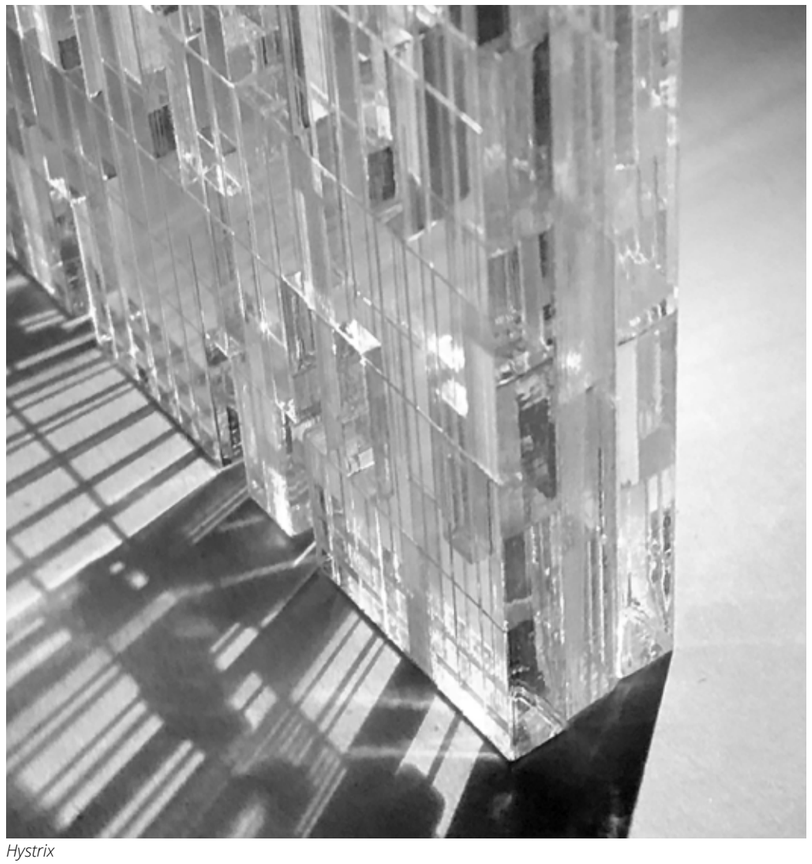
Facticius Crystallo

Muscus Mollis

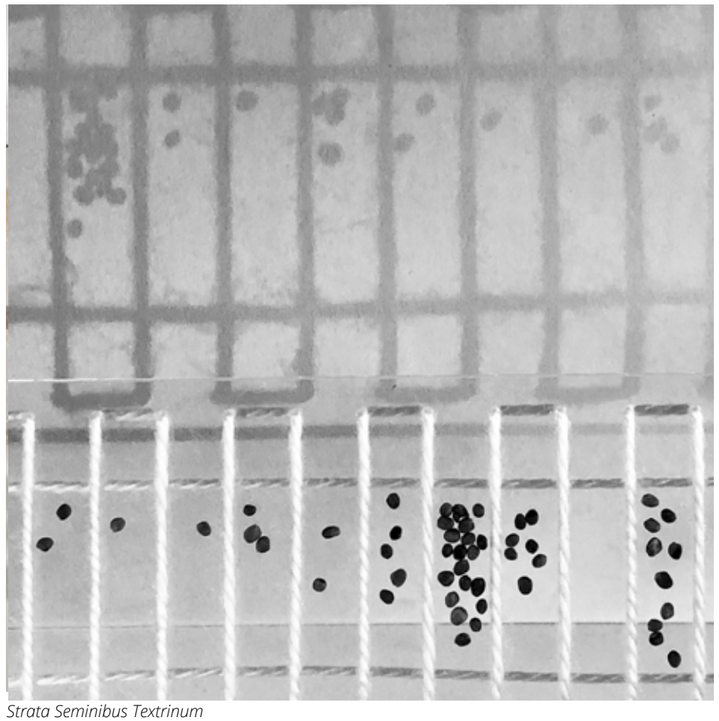
Stratis

Stacking, Layering, Weaving

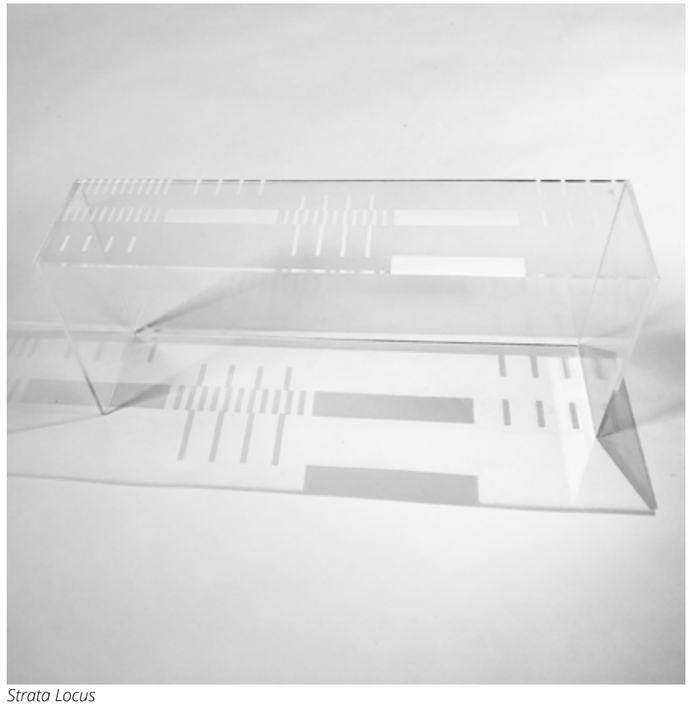
This genus is composed of layered artifacts responding to data collected. The combining of forms creates new interpretations and the complexity of the urban experience.



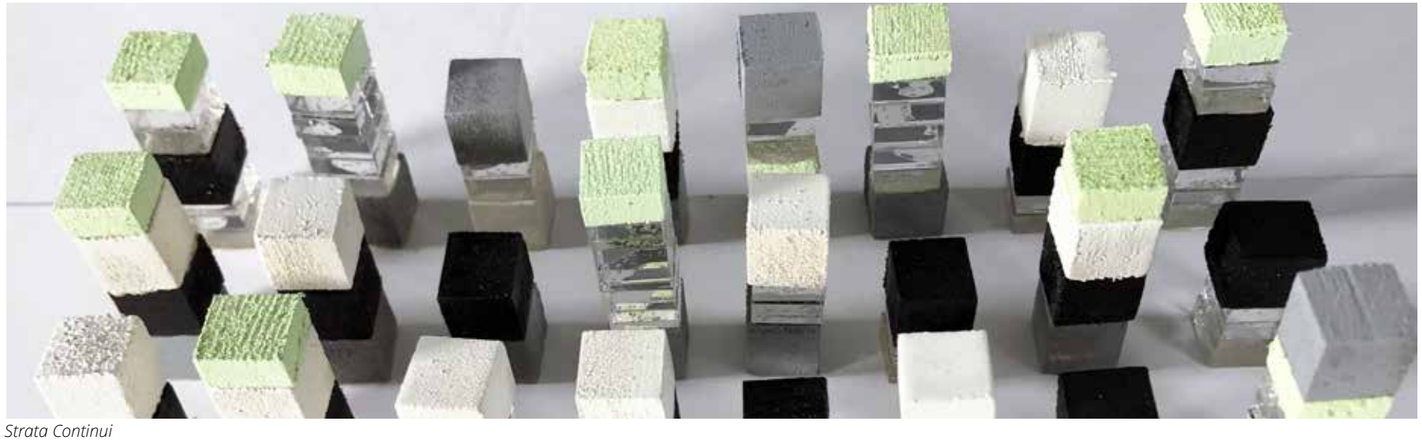
Hystrix



Strata Seminibus Textrinum



Strata Locus



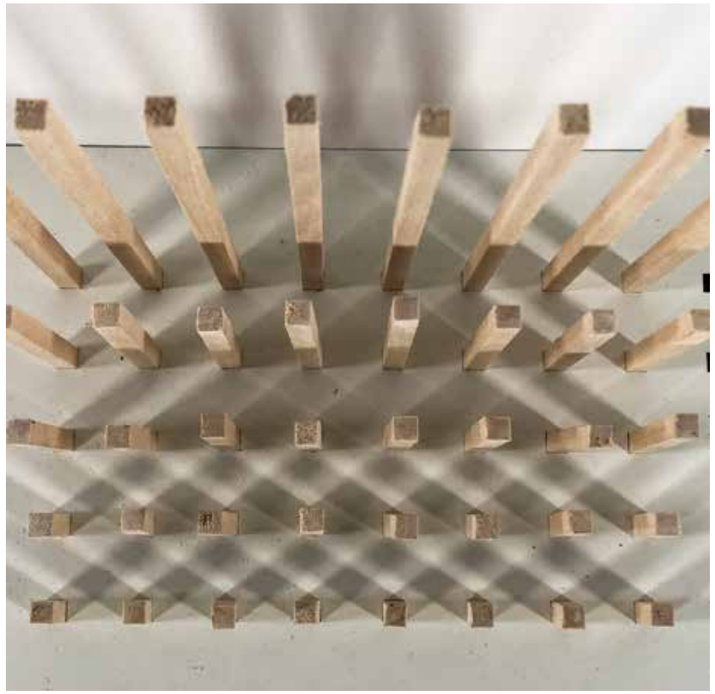
Strata Continui

Virga

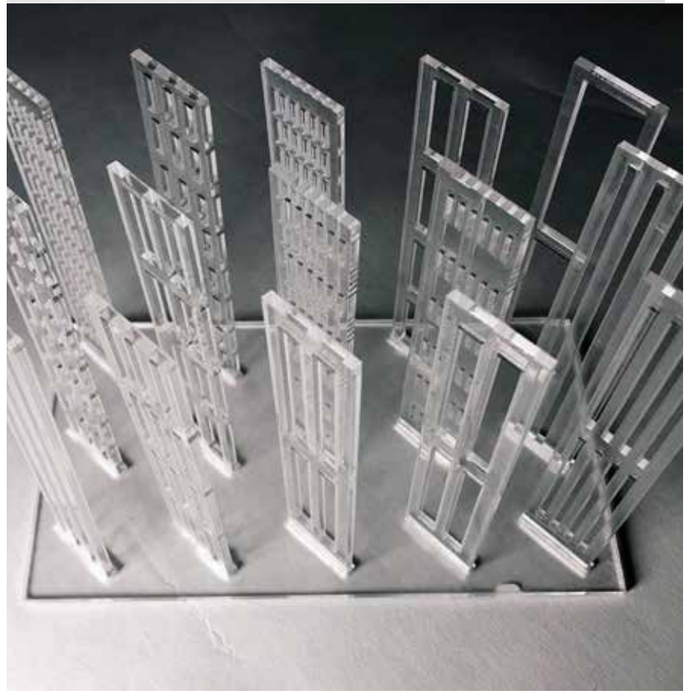
Shape, Height, Color, Pattern

The members of this genus are characterized by the field of punctures that organize each base. The openings act as a vessel for data points represented by size, shape, pattern, and color. Each data point is understood as an individual element or a member of the array depending upon the viewers vantage point and the way in which shadows are cast.

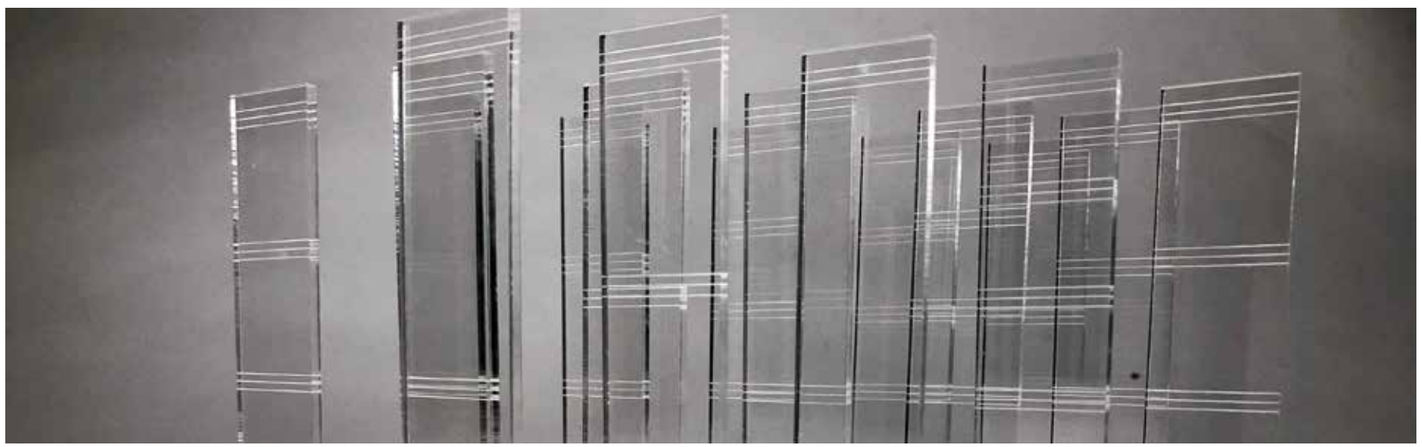
Hystrix



Silva



Crystallo Urbs

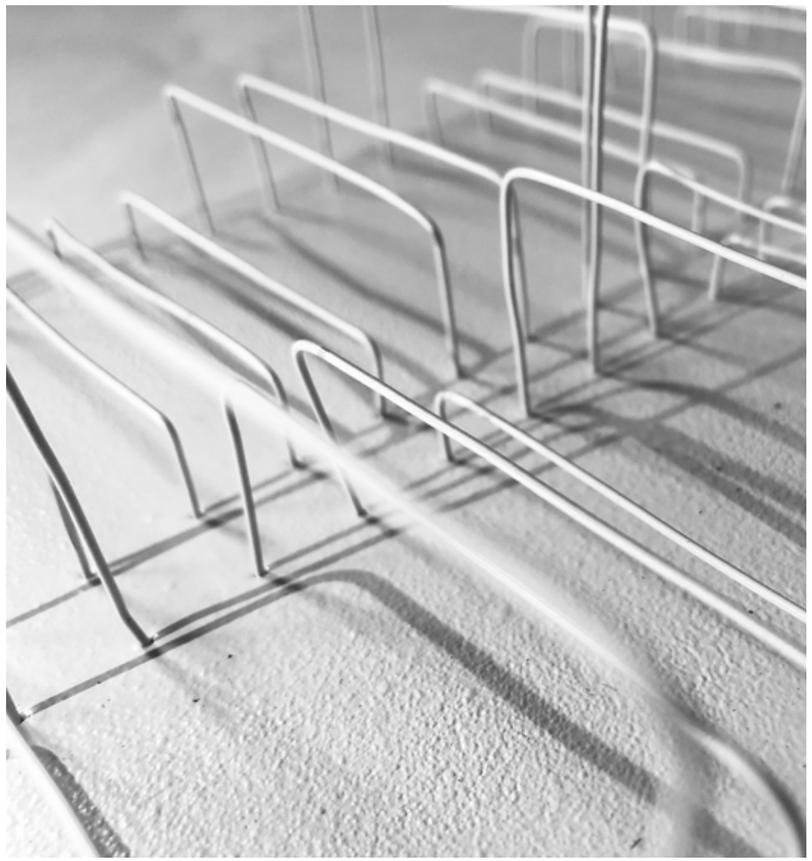


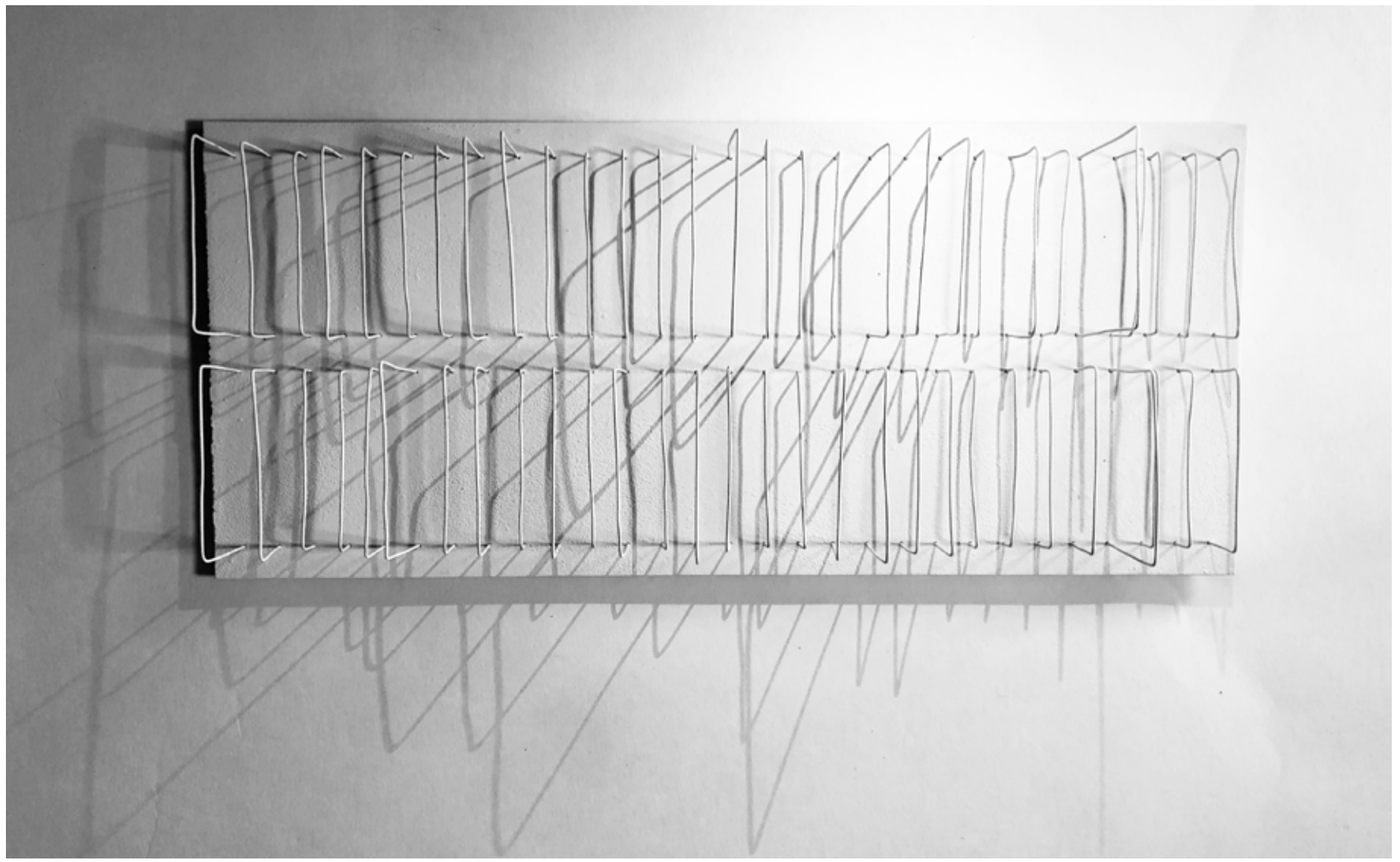
Crystallo Urbs

Filum

Positive, Negative, Shadow

The models in this genus are constructed of wire components that outline data responses and create dynamic shadows that shift with the viewer as they move through space. The experiments consider how shadows would interplay with vertical and horizontal surfaces to create additional readings of place and time.





Process

Iterations, Fabrication, Installation

Models were constructed to explore material options, scale of patterns, and light sources that would create crisp shadows in the storefronts and would be visible in daylight to pedestrians passing by. Reflections of the city become an additional layer of the viewing experience. The installation will be finalized at the end of September to coincide with the Architecture Biennial.

View of Large-Scale Box Aperture (in progress)

View of Large-Scale Box Aperture (in progress)

Zoo Installation (in progress)

Zoo Installation (in progress)

Creative Scholarship | Design as Idea | Presentation

Scenic Design for Steve Martin's "Picasso at the Lapin Agile"

Ahna Packard, University of Nebraska at Kearney

ABSTRACT

Steve Martin's script "Picasso at the Lapin Agile" takes the audience to the historic Cabaret Lapin Agile in Montmartre, France at the beginning of the 20th century. The play centers on the fictional meeting of three famous visionaries Pablo Picasso, Albert Einstein, and Elvis. Themes center on the interior psychological workings of two famous forward thinkers, Pablo Picasso and Albert Einstein through their dialogues, monologues and eureka moments. Pablo Picasso a pioneer in art and expression as he progresses to his cubist period engages with Albert Einstein whose theory of relativity is on the brink of recognition. They exchange ideas and philosophies as adversaries and comrades, debating the concepts of creation, inspiration, art, science, criticism, love and women. These interactions are multifaceted by the inclusion of nine other characters some historic others symbolic. The audience is witness to Einstein's revelations on relativity as well as Picasso's convergence of inspiration and creation as he mentally moves from one inspired style to his next artistic movement. "This is the moment I leave blue behind." Elvis, the third in a trinity, arrives out of the mist to guide the final moments of the play. He awakens Picasso to a place where the thought of an idea and creation converge. The play introduces Picasso's painting Les *Demoiselles d 'Avignon 1907*, which becomes another character in the play, physicalizing and projecting his future to come. As Elvis conjures the physical painting Picasso and the audience to move beyond the time and space of the physical location. Here the mental and physical walls fall away to the future possibilities leaving internal debates behind and presenting the expansion of the mind and universe. The play ends with the feeling of expansion looking ahead to the future.

This scenic design for “Picasso at the Lapin Agile” works to complement the fictional; meeting of minds, theoretical debates, and expansion of space as the displaced historic figures intermingle within the historical location at a transitional time. The historic Cabaret Lapin Agile creates the structural inspiration for this production. Known as a gathering place for artist, musicians, and thinkers in the late 1800s into the early 1900s the original cabaret has a very long history and still exists today. Historic and modern photo references inspire the textural qualities of grit, clutter, age and functionality in the design. The scenic design uses thick textured paint to transport the audience to a coarse environment where the characters work, love, sweat, dream, and debate. The composition works to reinforce the play’s ephemeral quality while presenting the displacement of time, characters, and discourse through a disconnected structure with collapsing walls within an ambiguous black void. The theme of trinity is seen in three main structural areas. Concurrently through color, the design works to physicalize Picasso’s stylistic transitions while maintaining an homage to location. The design’s color palette as well as paint texture has influences from Picasso’s rose phase paintings. Walls thick with layers of warm reds and earth tones obscure remnants of cool undertones create texture and age. The floor transitions from cool gray and blue to impressions of a course, dark-wood dado and moves up the walls of warm rose tones. These stylistic influences are derived from Picasso’s paintings *Garçon à la Pipe* (*Boy with a Pipe*) 1905*, Famille d’dcrobates avec singe 1905 and At the Lapin Agile 1905.* The transitions and paint layering physicalize Picasso’s stylistic progression. The design elements of a disconnected composition, transitional color, course texture and structural movement are subtext; they reinforce the themes of personal and social transition, displaced characters, trinity of change and the expansion of vision within the play.

REFERENCES

History of the Lapin Agile in Paris. EUtouring. Retrieved from https://www.eutouring.com/history_of_lapin_agile_cabaret.html

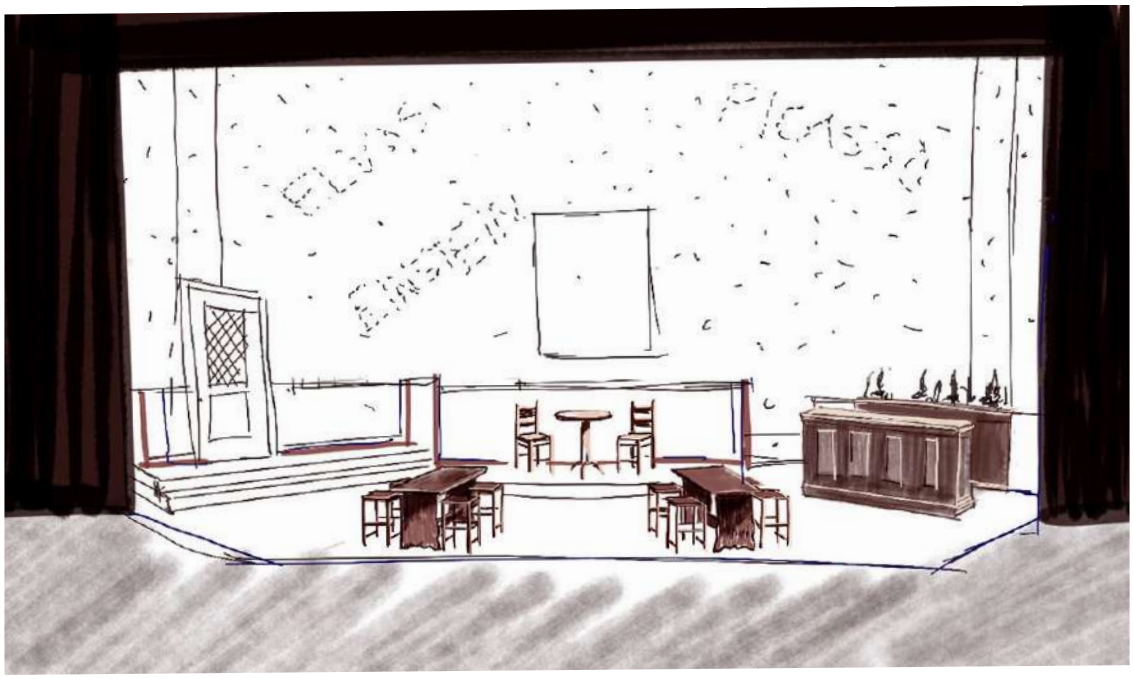
Long, T. (2007). Nov. 21, 1905: It Was a Very Good Year, If You Were Einstein. Wired 15 (11). Retrieved from https://www.wired.com/2007/11/dayintech-1121/

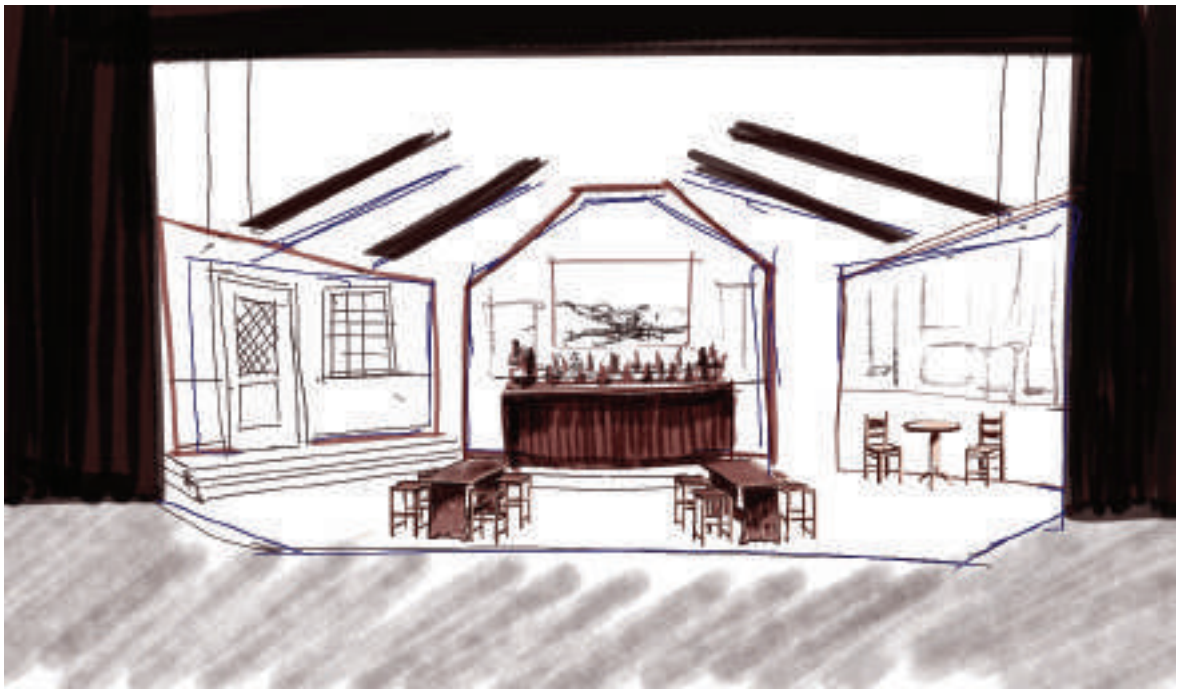
Mafi, N. (2018, October 25). Pablo Picasso: 5 Facts You Didn't Know About the Famous Artist. Architectural Digest Art + Auctions. Retrieved from https://www.architecturaldigest.com/story/pablo-picasso-facts-didnt-know-about-famous-artist

Meakin, A. (2011, September 12). Cafe Au Lapin Agile in Montmartre: Lolo the Ass and the Infamous Art Hoax. Bonjour Paris: the Insider's Guide. Retrieved from https://bonjourparis.com/archives/cafe-lapin-agile-montmartre-lolo-infamous-art-hoax/

Pablo Picasso and His Paintings. Pablo Picasso: Paintings, Quotes and Biography. Retrieved from https://www.pablopicasso.org/

Preliminary Sketches





Design Renderings

Production Photos

Opening scene of the play.

Final moment of the play.

Einstein's enters the cabaret Lapin Agile.

Elvis floats in on a cloud of fog.

The walls fall away expanding the world of the play.

The expansion of the physical and metaphysical universe.

Creative Scholarship | Design as Idea | Presentation

The Imperative of Creative ReUse

Keena Suh, Pratt Institute

ABSTRACT

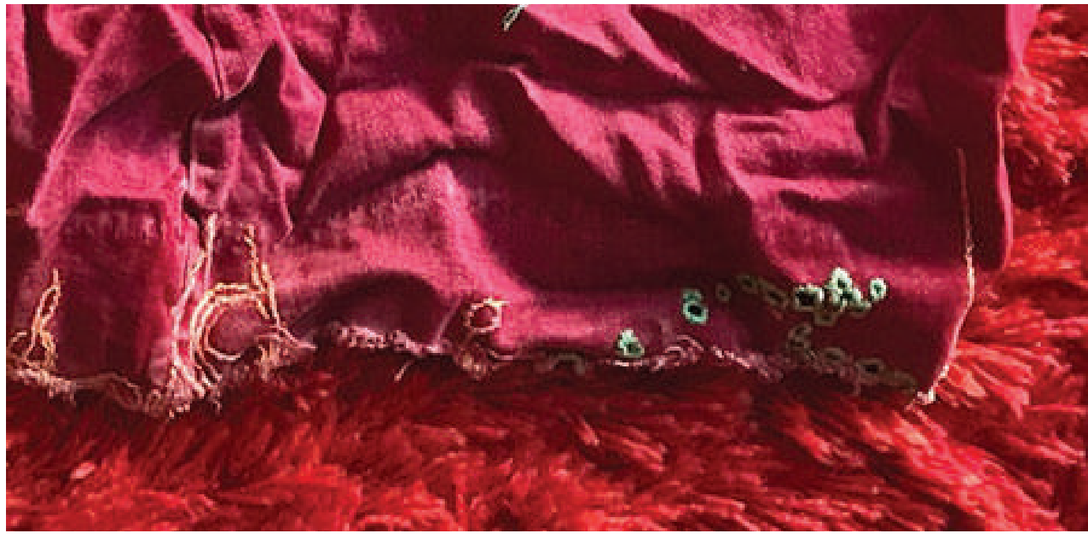
This project examines cultural attitudes toward age, wear, and waste as reflected in the infrastructure and mechanisms that either facilitate or hinder the extended life of objects and elements in our inhabited realms. Specifically, the interiors of one mid-century modern house is the subject of an archeological "delamination" wherein the process of cleaning and removing the accumulated possessions in the house created an opportunity to identify and question paths for sustainable disposal, reuse, or repair for the various materials and objects. Through this case study, the project seeks to identify paths and obstructions to sustainable thinking about reuse and renewal—of subjective and culturally formed values—mapping existing and possible networks as alternative pathways to existing "convenient" processes that feed, inundate, our current waste stream. These alternative pathways not only create opportunities for innovative strategies for renewal but also reveal or engender community.

The project begins with a narrative of the dismantling of the layers of an interior dwelling, the scope of which expanded from an intensely personal undertaking to one that necessitated the participation of community networks and infrastructure to support a collective, sustainable attitude toward renewal rather than easy abandonment. The private realm, through this process of mindful divestiture, necessarily becomes part of an exigent public, global discussion surrounding material waste and its impact on the environment which demands scrutiny of our actions beyond merely being able to sort plastics, paper, and metal in their designated bins. In an effort to not simply discard used material or imperfect goods, the process of finding a viable "next life" of repairable or renewable objects required research into people and organizations with the awareness, interest, and skills to be able to provide a new, extended, or reinvented life specific to

each material category. Connections emerged, for instance, when a search for donation sites for materials for the arts and yarn lead to a meeting with a volunteer at a cancer ward who would then (re)use the yarn to knit clothing and blankets for patients, thus connecting unused as well as used material to sites of new-found value. Additionally, the project focuses on specific elements of the architecture of the house as well as interior materials, finishes, equipment, and personal material possessions to reveal histories, contexts, and changing values that are reflected, for instance, in contemporary media, such as advertisements and real estate listings which contribute to what is deemed disposable, renewable or (too) easily replaceable for novelty.

Adaptive reuse as a sustainable strategy in architecture and interiors has been embraced by the design community, championed, for example, in the writings of Graeme Brooker. Exhibitions, such as “Scraps: Fashion, Textiles, and Creative Reuse” at the Cooper Hewitt Museum in New York in 2017, positioned attitudes that reconsider what is deemed waste or scrap. Designers, such as Piet Hein Eek, reconfigure scrap wood into bespoke furniture. Based on this initial research prompted by the dwelling, this project ultimately seeks to foreground creative strategies for reuse and renewal within the interior, designing for adaptation, transformation, and supporting change rather than disposal to support sustainable ecologies.

Embroidered jeans found in house during “removal” process. The embroidery technique was used to cover worn and threadbare areas, offering repair strategies for renewal as an alternative to disposal, even by the original inhabitants.



Embroidered jeans found in house during “removal” process. The embroidery technique was used to cover worn and threadbare areas, offering repair strategies for renewal as an alternative to disposal, even by the original inhabitants.

Samples of wallpaper found in house reflecting eclectic taste in comparison to the perceived homogenization of interior palettes found in advertisements for dwellings.

The Teasel: A Place to Imagine, Experiment and Create

Angela McKillip, South Dakota State University
Kay Cutler, South Dakota State University

ABSTRACT

Teasel.

A place to imagine, experiment and create.

Theory.

Claudia Guidici, a pedagogista, discussed spaces in early childhood education. "Our theoretical intuition suggests new elements are needed in schools to make work more complex and to encounter children's complex ways of knowing the world around them."

The work aims to heighten the importance of *design and aesthetics* in furniture design for early childhood education. Outlined by the *Domus Academy* in *Children, Relations and Spaces*as counterparts in an inquiry-based early childhood learning environment, nine spatial metaphors (Overall Softness, Relation, Osmosis, Multisensoriality, Epigenesis, Community, Constructiveness, Narration, Rich Normality) are utilized as a catalyst for theoretical frameworks.

Question.

The question in focus for this study is "in what way would processes of learning and teaching be modified and enriched if school culture welcomed the poetic languages and aesthetic dimension as important elements for building knowledge?" (Cooper, 2012). All too often, interacting with furniture is perceived as an ordinary occurrence. Within the Reggio Approach, the environment

is considered a third teacher. This exploration was to consider how environmental experiences, or interactions with furniture elements, could enlighten and enhance the learning process. This study explores how an open-ended, inquiry based object deploys the Domus Academy spatial metaphorsthrough observation, documentation and discussion.

Process.

The Teasel was created in a unique faculty-directed research investigation, in collaboration with an on-campus laboratory school and industry partner. This process also includes interior design undergraduate students in multi-perspective design process, undergraduate participatory research, innovation, patented intellectual property and entrepreneurial endeavors through market immersion of prototypes.

The design process explored the relationship between digital and physical construction methodologies. The piece utilizes 1/3 of a standard 4x8 sheet of plywood. FSC certified wood and natural linseed oil assist in providing a sustainable and environmentally friendly asset to any classroom.

Product.

As a flexible and transformable piece, the Teasel offers teachers a variety of uses with the classroom. Soft edges and an inviting form create an approachable place for children to imagine, experiment and create. Loose parts act as a facilitator for provocation.

STEM. A place to experiment. Through the use of ramps and balls, children can experiment with physics. Utilizing a flexible material like pipe-cleaners, ramps can be secured to the Teasel through the slots by teachers and children alike. The ramps can be manipulated to drop off balls into buckets or onto other ramps. Other provocations could include tubing and marbles, dumping, light/shadow and counting.

DRAMATIC PLAY. A place to imagine. Imagination can run wild in any Teasel orientation. A great provocation for dramatic play would be a rocket ship. Wrapping the Teasel in tin foil and placing red cups through the cup holders creates an inviting environment for children to explore. Including space gear enhances the experiences. Other provocations could include a school bus, puppet show, tent or post office.

ART. A place to create. The Teasel is perfect for artistic endeavors. By adhering contact paper to the acrylic surfaces, children will be provided with a temporary work surface to create their own collage masterpieces. The table top can be used to hold materials like buttons, pompoms, tissue paper and feathers. Other provocations could include clay, white board, drawings, weaving and painting.

"The best play comes from things that allow children to play in many different ways and on many different levels." Simon Nicholson. With each orientation and varying provocations, children can discover and explore space in new ways.

REFERENCES

Cooper, M. (2012). Is beauty a way of knowing? In C. Edwards, L. Gandini, & G. Foreman. The Hundred Languages of Children: The Reggio Emilia Experience in Transformation. Praeger, Santa Barbara, CA.

Dewey, J. (2005). Art as Experience. Penguin: Cambridge, MA.

Hämäläinen, R., & Vähäsantanen, K. (2011). Theoretical and pedagogical perspectives on orchestrating creativity and collaborative learning. Educational Research Review, 6(3), 169-184.

Vecchi, V. (2010). Art and Creativity in Reggio Emilia: Exploring the Role and Potential of Ateliers in Early Childhood Education. In G. Dahlberg & P. Moss (Series Eds.) Contesting Early Childhood. Routledge: London, England.

Reggio Children & Domus Academy Research Center. (1998). Children, Spaces, Relations: Metaproject for an environment for Young Children. Reggio Children: Reggio Emilia, Italy.

TEASEL

TABLE + EASLE

Teasel.
A place to imagine, experiment and create.

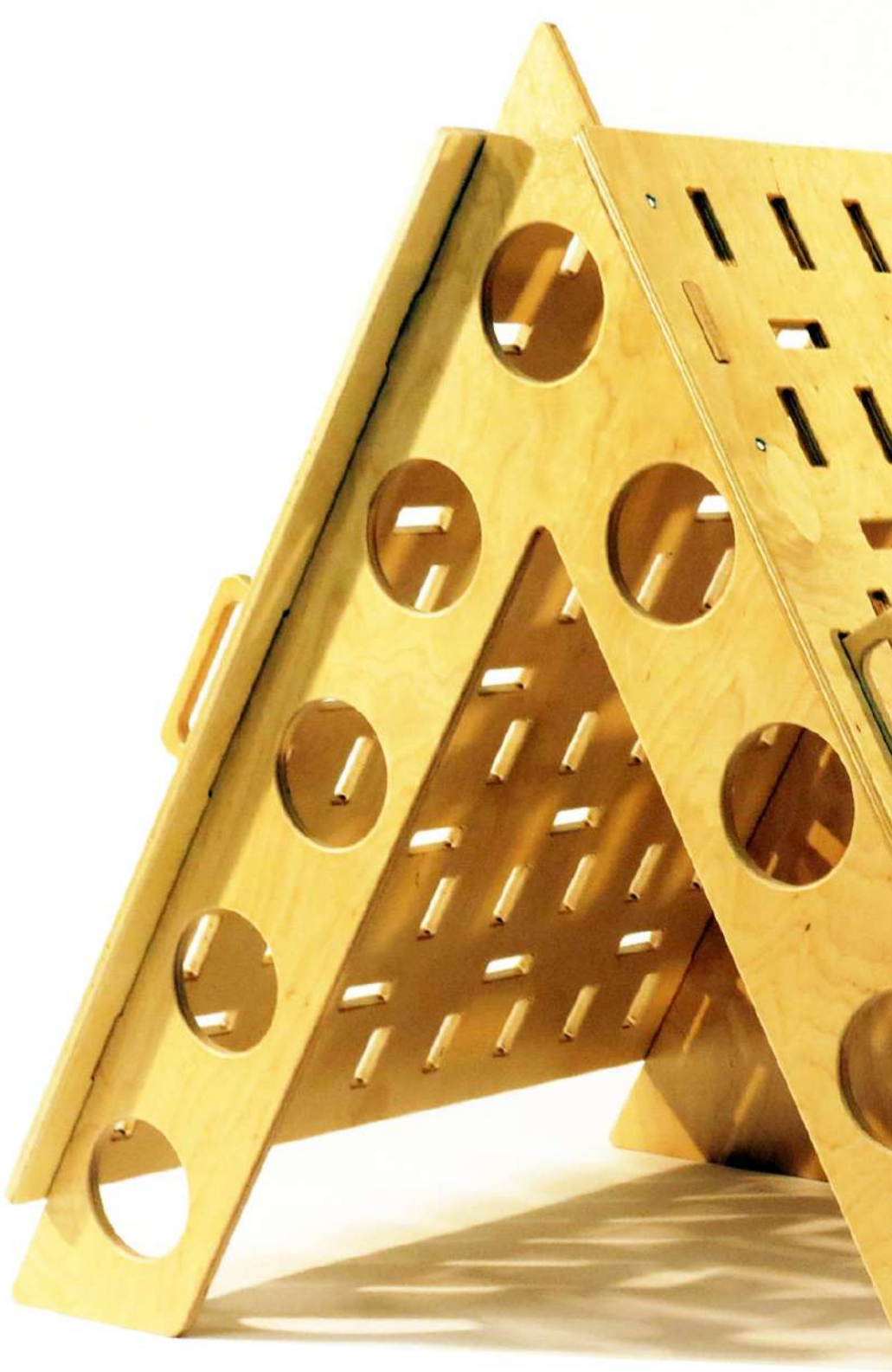
Theory.
Claudia Guidici, a pedagogista, discussed spaces in early childhood education. "Our theoretical intuition suggests new elements are needed in schools to make work more complex and to encounter children's complex ways of knowing the world around them."

One of the aims of the project was to heighten the importance of *design and aesthetics* in furniture design for early childhood education, including the spatial metaphors highlighted through Domus Academy Research Center, including:

Overall Softness
Relation
Osmosis
Multisensoriality
Epigenesis
Community
Constructiveness
Narration
Rich Normality

As a flexible and transformable piece, the Teasel offers teachers a variety of uses with the classroom. Soft edges and an inviting form create an approachable place for children to imagine, experiment and create.

Loose parts act as a facilitator for provocation. They are open-ended, providing an infinite amount of possibilities for the children to engage in play.



Question.
The question in focus for this study is “in what way would processes of learning and teaching be modified and enriched if school culture welcomed the poetic languages and aesthetic dimension as important elements for building knowledge?”

All too often, interacting with furniture is perceived as an ordinary occurrence. Utilizing the Reggio Approach as a catalyst for early childhood education, the design was to consider how this experience could enlighten and enhance the learning process. Though engaging in multi-perspective practice, design iteration and national product testing, theoretical underpinnings of initial prototypes were vetted, reconsidered and revised.

STEM

A place to **experiment.**

Through the use of ramps and balls, children can experiment with physics. Utilizing a flexible material like pipe-cleaners, ramps can be secured to the Teasel through the slots by teachers and children alike. The ramps can be manipulated to drop off balls into buckets or onto other ramps.

Other provocations could include tubing and marbles, dumping, light/shadow and counting.

DRAMATIC PLAY

A place to **imagine**.

Imagination can run wild in any Teasel orientation. A great provocation for dramatic play would be a rocket ship. Wrapping the Teasel in tin foil and placing red cups through the cup holders creates an inviting environment for children to explore. Including space gear enhances the experiences.

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A place to **create.**

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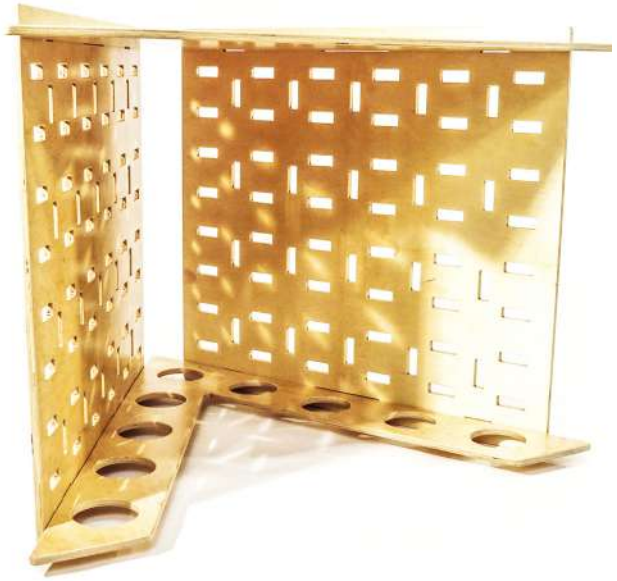
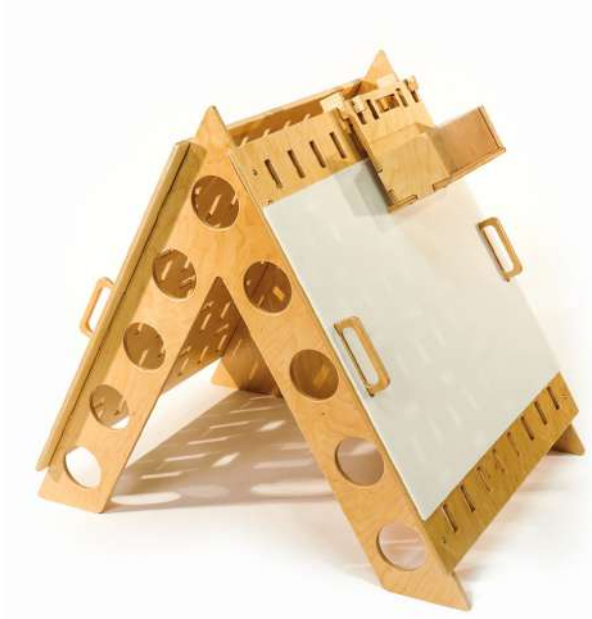


Table Orientation.

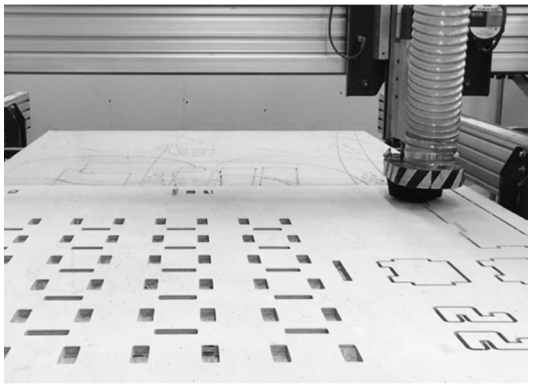


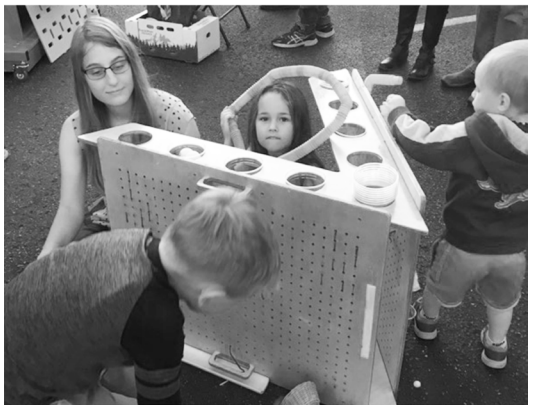
Easel Orientation.

Platform Orientation.

"The best play comes from things that allow children to play in many different ways and on many different levels." Simon Nicholson.

With each orientation, children can discover positive and negative space in new ways.





Inquiry-Based

Multi-Perspective Practice

Industry Partnership

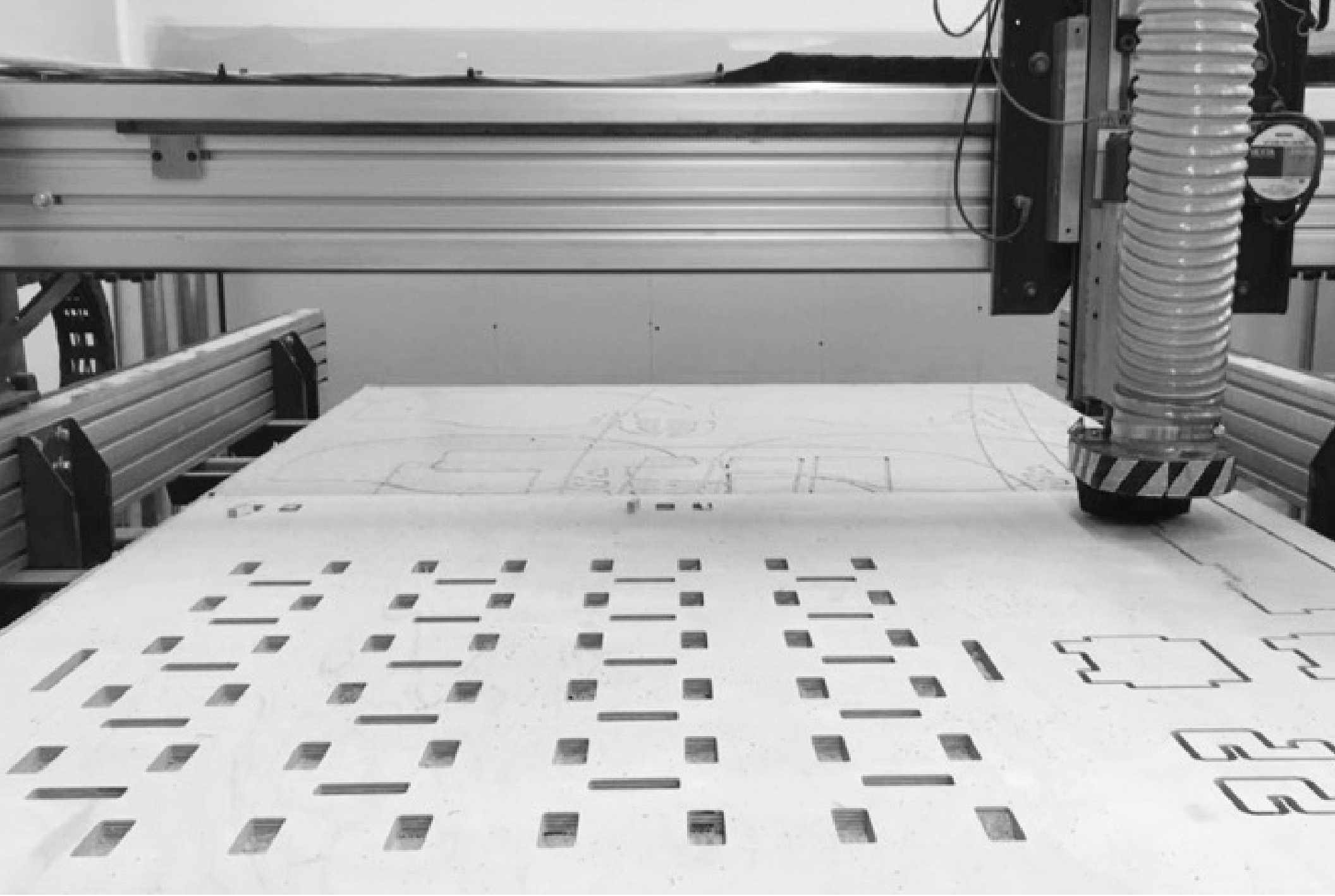
Reggio-Inspired

Participatory Research

Experiential Learning

Furniture Design

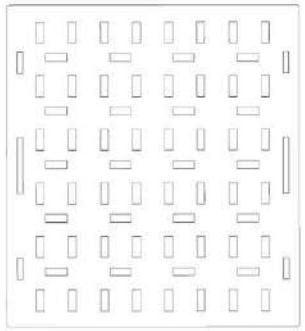
Process.
The Teasel was created in a unique faculty-directed research investigation, in collaboration with an on-campus laboratory school and industry partner. This process also includes interior design students in multi-perspective design process, undergraduate participatory research, innovation, patented intellectual property and entrepreneurial endeavors through market immersion of prototypes.



The design process explored the relationship between digital and physical construction methodologies. The piece utilizes 1/3 of a standard 4x8 sheet of plywood. Zero VOC paint, FSC certified wood and natural linseed oil assist in providing a sustainable and environmentally friendly asset to any classroom.

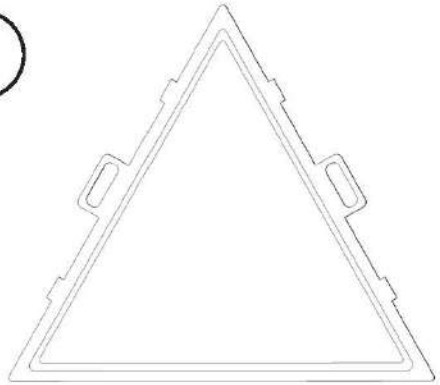
Product Pack:

A



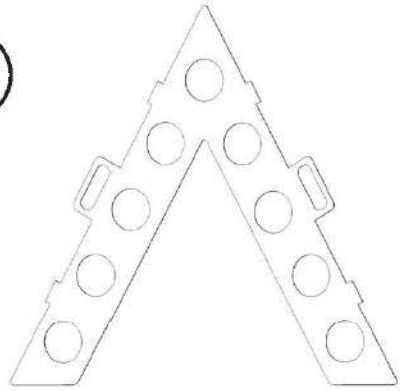
Slot Side x 2

B



Platform Side x 1

C



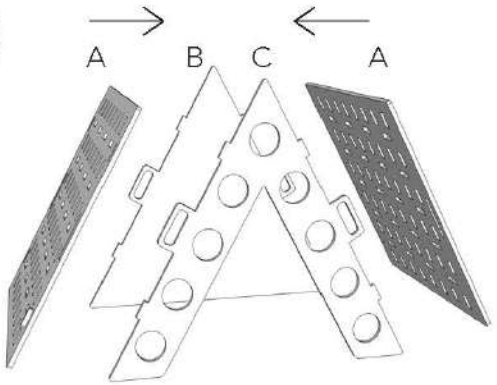
Cupholder Side x 1

D

Flathead Screws x 16

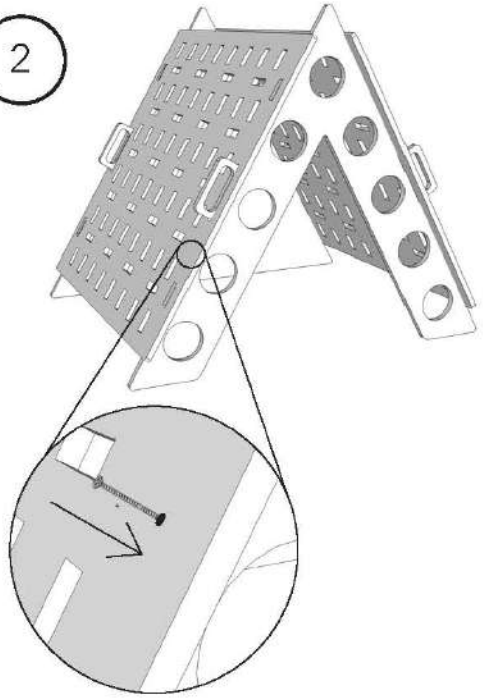
Assembly Instructions:

1

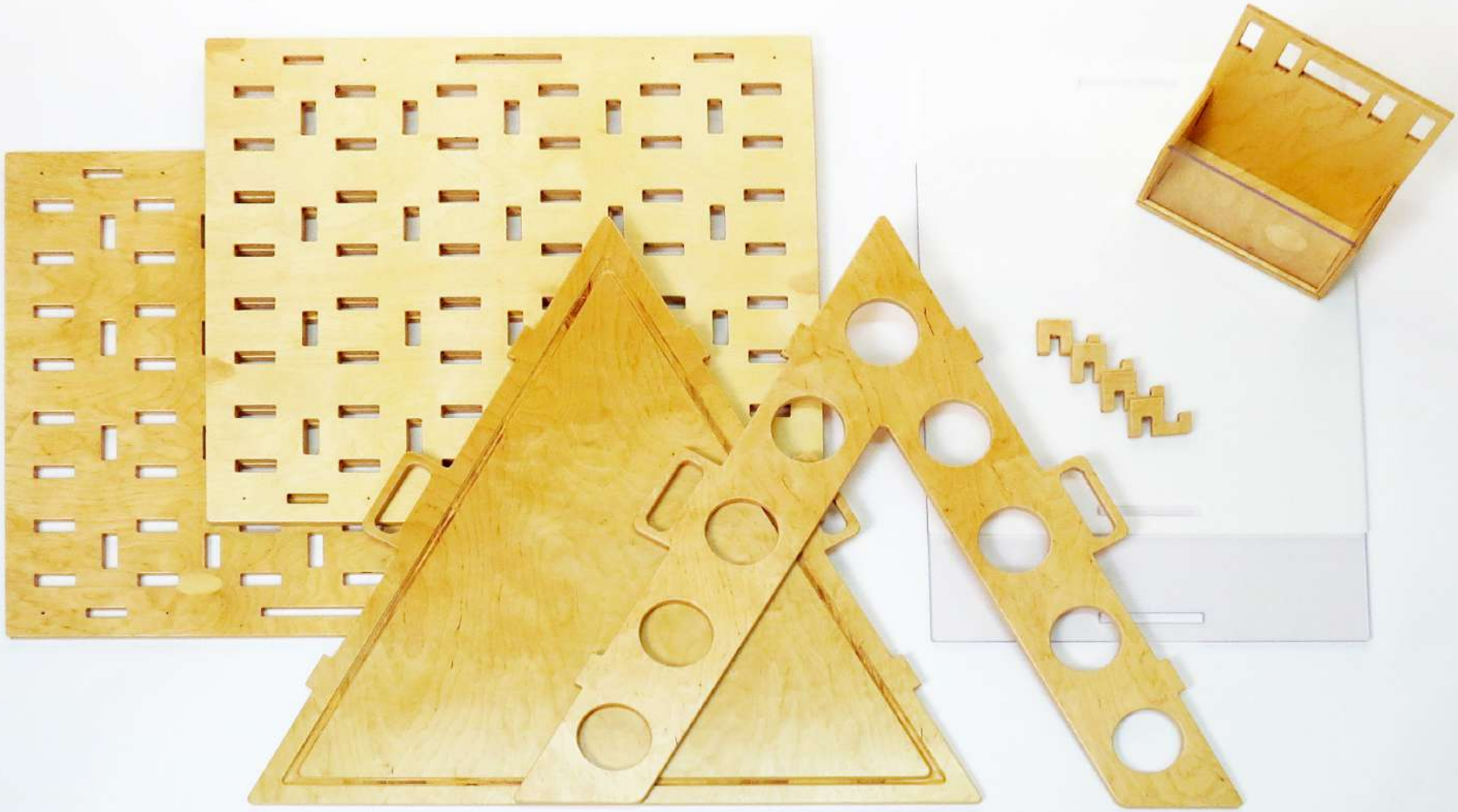


Stand B and C in their upright positions with smooth side of B facing inward towards C. Move openings in sides A onto handles of B and C with countersink screw holes on A facing outward.

2



Using pre-drilled holes, screwdriver, and provided screws (D), attach sides A onto B and C. There will be four screws located along each side.



TEASEL

TABLE + EASLE

Creative Scholarship | Design as Interior | Presentation

Robotic Interiors: Machinic Domains

Clay Odom, The University of Texas
Kory Bieg, The University of Texas School of Architecture
Ben Rice, The University of Texas School of Architecture

ABSTRACT

This project involved curation, design, fabrication and installation of an exhibition featuring current robotic techniques. The exhibition was an experiential, spatial environment, a demonstration project, and a repository of examples from which students and visitors could imagine beginning their own investigations. The collaboratively executed exhibition was designed to showcase techniques and methods within the exhibition itself while simultaneously displaying objects as didactic, informational content. The overall effect was a synergy between furniture, displays, lighting, video and physical artifacts which all communicated notions of space and technical innovation.

Suspended somewhere between the conceptual, material, and digital realities of the design discourse within the <SCHOOL NAME>, Machinic Domains aimed to refocus the typical assumptions relating to architectural robotics as complex replication and repetition machines. Instead of simply looking towards robotic output as the ends, the installation asked: how can it become the means from which to move forward regardless of the initial production method? In order to explore this question, the installation moved away from the standard one off, object-oriented approach and, instead, focused on creating a unitized display system calibrated to hold beta design objects only recently robotically fabricated within the school. This reversal, of putting the unproven conceptual material at the forefront, forced those who experienced the space to confront their typical assumptions and begin to elaborate their own possible futures relative to the material provided. By avoiding a single, finalized form to be critiqued the

installation could only be used for potential - as a springboard to jump into possible, alternative realities.

Traversing from bent steel rod and tubing, to extruded polyurethane and silicone, to machinic and gestural drawings, to stochastically melted wax, each component of the installation offered varied trajectories from which to depart and examples were pulled from both student and faculty research. Taken as a whole the installation prevented a singular view of what was on display in an effort to provide an alternative viewpoint of how our discipline relates to, and interacts with, contemporary technology - it provided an experience within which to harness reflection, contemplation, and projection as tools for computational and robotic production.

The digitally designed was fabricated using robotic bending, CNC milling and 3d printing. The robotic arms with custom end effectors (tools) were controlled through the use of Grasshopper to interface with Kuka PRC to create tool paths for fabrication.
The exhibition featured fabrication tests, which were displayed on video screens and as objects located on the backlit displays. The exhibition design itself served as a test and demonstration. The display was created as an exploration of robotic bending. We were also interested in using a limited number of parts which were designed to allow for multiple types of spatial organization which produced apparent difference of each unit. In this way, the units themselves became spatial actors and extended through the existing gallery, aggregating and clustering in interactive and effective ways. The overall impact was one that was simultaneously holistic yet composed of discrete elements.

Finally, the integration of lighting and lighting effects were key to the design of each unit and to the overall impact of the exhibition. The project uses led light sources which are integrated into each display. These elements create glowing platforms and under-lit objects. This allows for the gallery lighting to be turned off, generating new experiences for visitors.

REFERENCES

Hight, Christopher. “Putting out the Fire with Gasoline: Parables of Entropy Homeostasis from the Second Machine Age to the Information Age.” In Softspace: From a Representation of Form to a Simulation of Space, edited by Sean Lally and Jessica Young (New

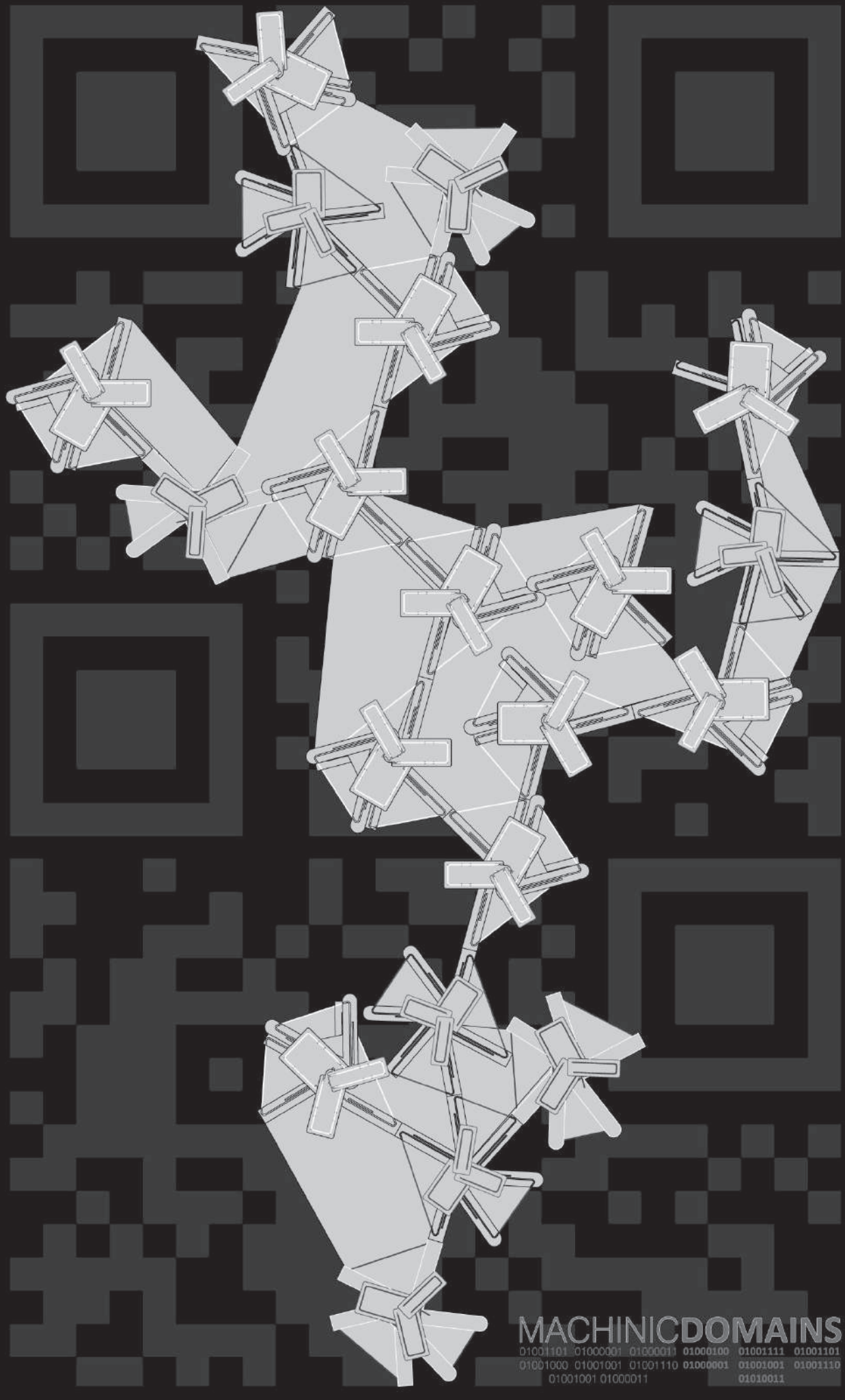
Roberts, Tom. "Thinking Technology for the Anthropocene: Encountering 3D Printing through the Philosophy of Gilbert Simondon," Cultural Geographies 24, no. 4 (2017).

Odom, Clay. “Productions: Spatial Practices, Processes, and Effects.” In Interior Architecture Theory Reader. edited by Gregory Marinic. Routledge / Taylor and Francis, February 2018. 242-252.

Merleau-Ponty, Maurice. The Visible and Invisible. Chicago: Northwestern University Press, 1964.

Addington, Michelle. "Magic or Material." Perspecta 42 (2010): 199-204.


MACHINICDOMAINS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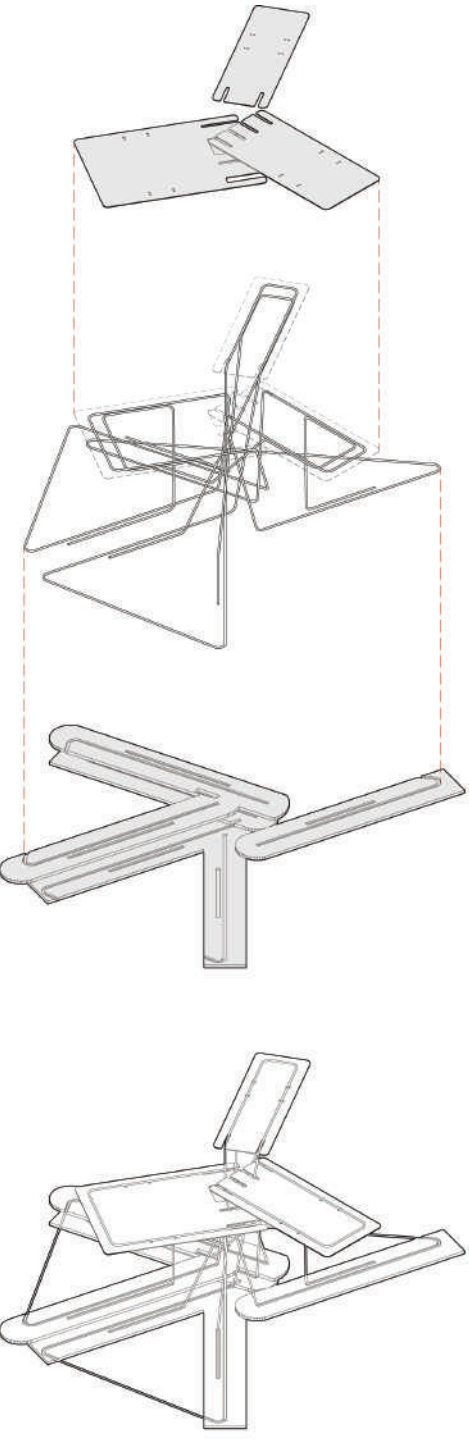
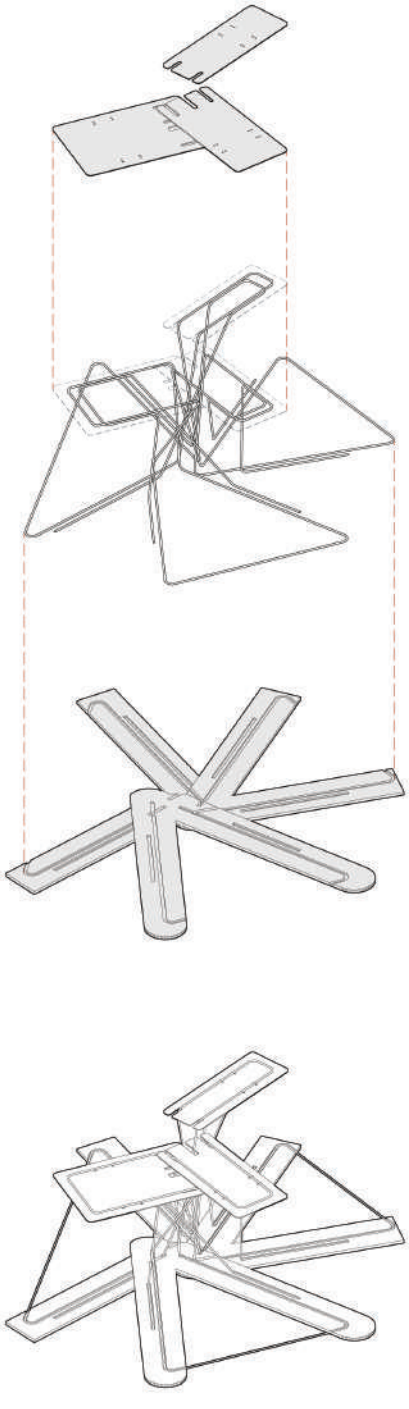


Module 1



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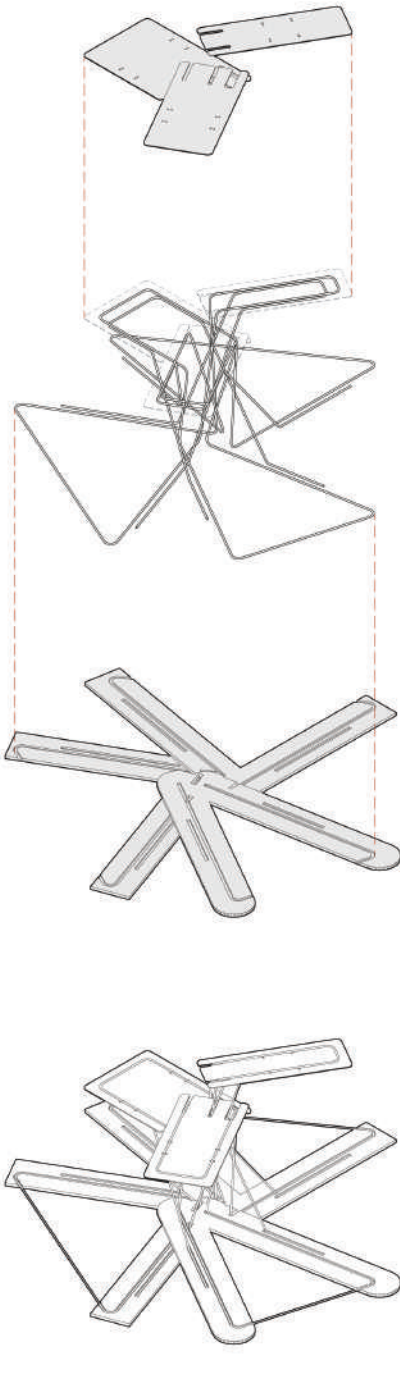
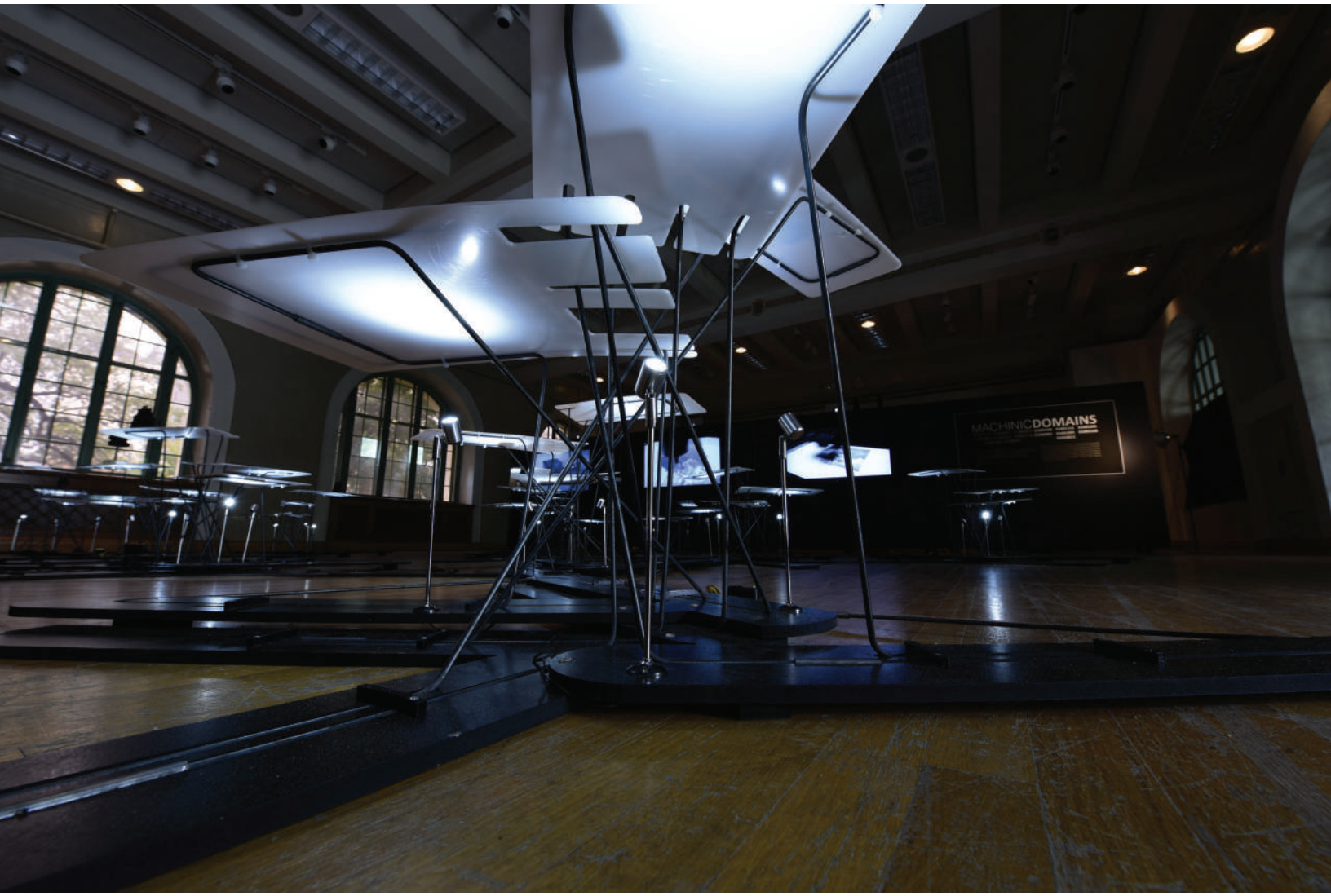


Module 3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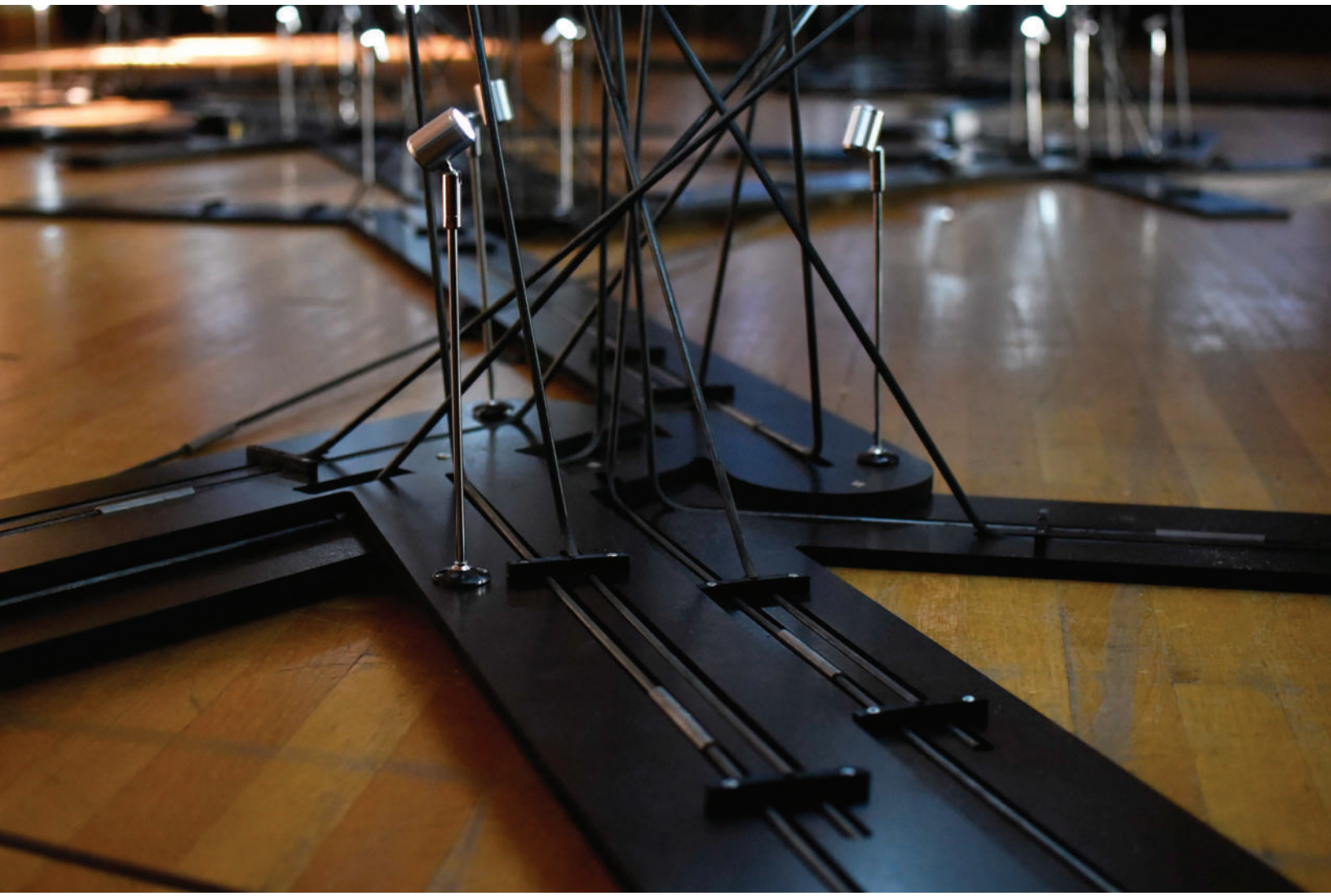


PANELS

Pedagogy | Scholarship of Teaching & Learning | Panel

Burning Down Silos: Collaborative Curriculum Development that Fans the Flames of Integrated Learning

Valerie Settles, University of Central Oklahoma
Amy Jacobson-Peters, University of Central Oklahoma
SeonMi Choi, University of Central Oklahoma
Adrienne Wright, University of Central Oklahoma

ABSTRACT

Interior Design curriculum provides students with practice in skills necessary for entry-level work. Programs often look to the profession to guide the competencies needed to enter the workforce. In a study by Cheryl Myers (1982), desired skills were identified and ranked by members of two professional organizations; results identified beginning competencies ranging from understanding furniture construction to material estimation to a basic knowledge of contracts. With topics requiring such specific knowledge, unique courses are necessary.

However, with emphasis placed on specific topics, students may lose sight of how individual skills connect within the profession. A 2010 study on optimizing the studio experience (Zehlner, 2010) identifies quality of projects as a key factor of success in these courses. By learning from projects that develop multiple competencies simultaneously, students observe how skills connect, resulting in experiences that build a broad view of the profession. Today's student is different from those a generation before and prefer to learn from "real-world" problems (Ankerson, Pable, 2008). Reorganizing curriculum away from skill-specific classes to broader studio practices enables students to mimic complete design problems, creating productive learning experiences.

Conversely, typical academic units are organized to facilitate the perpetuation of "silos," described in Bowers (2006) as departments that focus on individual outcomes. Each instructor is viewed as content expert and expected to develop their course(s) to provide what they know to be appropriate learning outcomes. Faculty may prefer to operate within their silo rather than adapt to systems thinking, also described by Bowers as "a perceived whole whose elements 'hang together' because they continually affect each other over time and operate toward a common purpose." In academia, this common purpose is getting students successfully to graduation with the requisite skills to become employed professionals.

A useful tool to create a more holistic curriculum that avoids the silo effect is curriculum mapping. Mapping guides the process to identify content gaps, integrate course content, and link learning outcomes across levels. The process relies on faculty collaboration to develop each course through group evaluation to review content that is organized into maps, with areas identified for revision. Upon implementation, course amendments are continually reviewed and analyzed (Jacobs, 2004). This process improves course quality and reduces discrepancy among the curricula, leading to integrated learning across courses and improved student performance by embracing innovative strategies based on pedagogical knowledge and professional experience.

In Fall 2012, interior design faculty at a southwestern university met to revise the curriculum to be more connected, and continue to gather annually to discuss the program. Reflecting on the previous year, faculty fine-tune each course to enhance students' experience and align learning with the dynamic landscape of the profession, collaborating across classes to assess the efficacy of course projects, subject matter, and sequencing. This resulted in the current interior design degree sequence in which classes are interwoven, allowing students to apply skills in a comprehensive manner. The practice has evolved to include feedback from alumni and professionals through forums and surveys. The insights provided were applied to a curriculum mapping document to create and track specific learning outcomes tied to potential student success as a graduate. From its inception, results were noticeable and significant. Students produced work at a higher quality and began to make the critical connections between subjects necessary to the broad, involved project scope seen in successful professional practice. Session attendees will contribute to the conversation with their own best practices for curriculum development.

REFERENCES

Ankerson, K., Pable, J. (2008). Interior design: practical strategies for teaching and learning. Fairchild Books, New York, NY.

Bowers, B.J. (2006). Executives transitioning from a silo to a systems-based approach in a complex healthcare organization: Implications for continuous leadership development (Doctoral dissertation). Walden University, Minnesota.

Jacobs, H. H. (2004). Getting results with curriculum mapping. Alexandria, VA: Association for Supervision and Curriculum Development.

Myers, C. (1982). Entry level competencies needed by interior designers. Journal of Interior Design Education and Research, 8(1). 19-24.

Zehner, R., Forsyth, G., de la Harpe, B., Peterson, F., Musgrave, E., Neale, D, and Frankham, N. (2010). Optimising studio outcomes: guidelines for curriculum development from the Australian Studio Teaching Project. Sydney, Australia. International Conference on Design Education.

C

F
F1
E

CURRICULUM MAPPING 5/23/19

ID STUDIO I / VIS I

- SHOW CASE STAND — MAY ADD FIELD TRIP TO POPS TO SEE APPLICATION
- URBAN PIONEERING
- WOOF WOOF MEOW
  - 3 BOARDS - PROCESS & INSPIRATION / MATLS / FURN / RENDERING

ADD LECTURE / DISCUSSION OF BASIC VOCABULARY

MATLS

- QUIZZES & LECTURES
- MANUFACTURER RESEARCH
- ANALYSIS OF MATL APPLICATION

* ADD CALCS TO VARIOUS SECTIONS OF MATLS YARDAGE FOR WINDOW TREATMENTS RENDERING?

* ADD FIELD TRIP TO FABRICS UNLIMITED TO LOOK @ STYLES OF WINDOW TREATMENTS & LEARN HOW TO CALC YARDAGE FOR EMBELLISHMENTS

CHANGE QUIZZES TO F2F

* ADD LECTURE GUIDE? INCLUDE OPEN-ENDED QUESTIONS FOR GROUP DISCUSSION

CONTINUE MATL REPRESENTATION DWGS - FLOOR FINISH PLAN BE CONSISTENT W/ INFO GIVEN IN FINISH & FURN

ADD WEEKLY ASSIGNMENT MATL SHOW & TELL - PUT INTO ONLINE FORMAT AS GROUP RESOURCE (PINTEREST) - CHECK SARAH'S IDEC PRES.
GIVE THEM TEMPLATE FOR INFO REQ.

REPLACE QUIZZES W/ LECTURE GUIDE FOR EACH CHAPTER AS PART OF GRADE

REDUCE LECTURES - USE OPEN DISCUSSION FROM LECTURE GUIDE - REST OF GUIDE FOCUSES ON

CHANGE ASSIG. 2
STUDENTS CHOOSE A SPACE ON CAMPUS - PHOTOGRAPH, IDENTIFY SURFACES DISCUSS MATL OPTIONS

Vis. 4 -
Hotel - mid sized / price Lower has competition w/ Champion)
or the HD competition

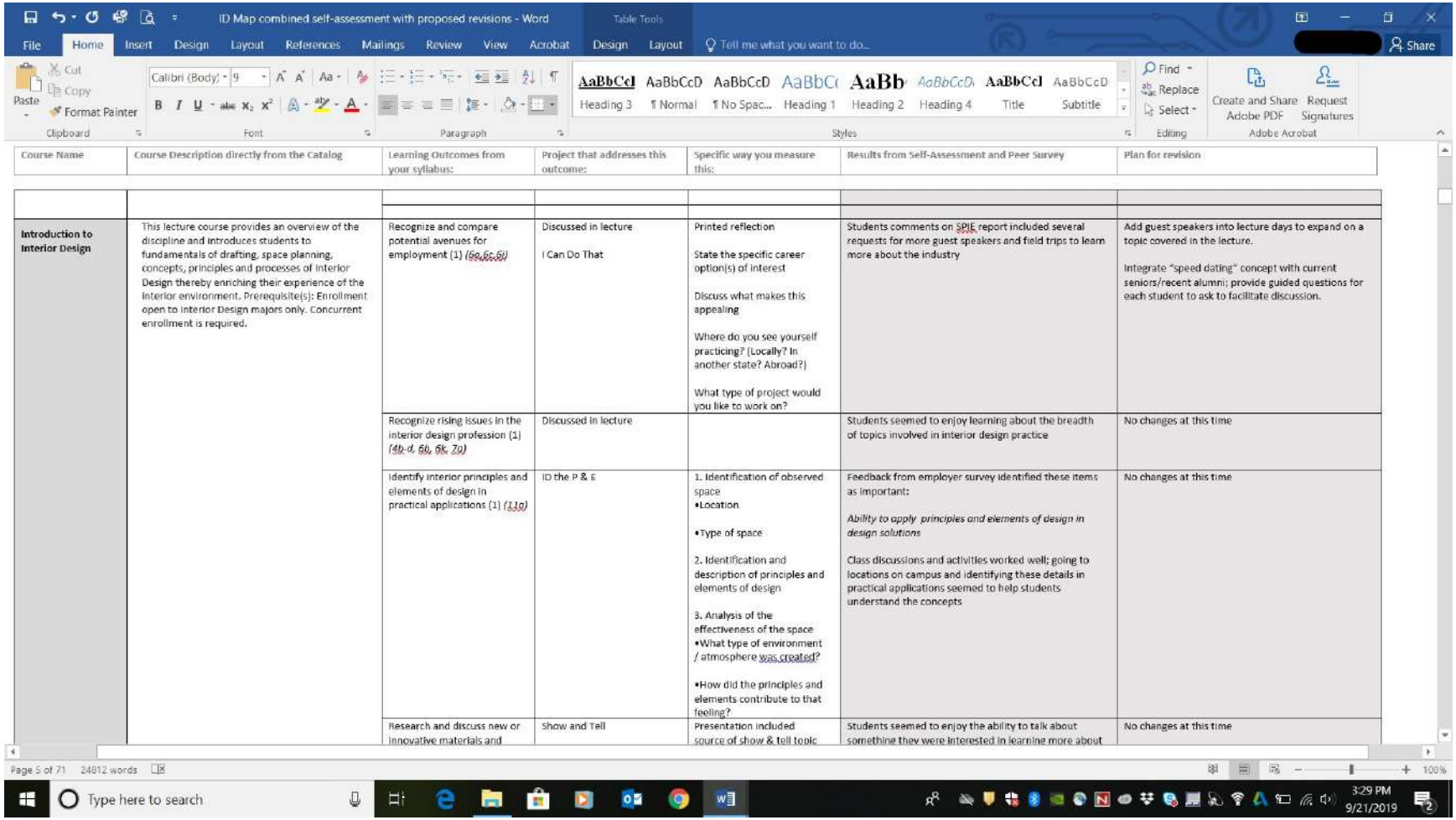
Commercial office space - need more commercial furniture typically specified.
They are given a shell - could consider site analyses

Research - stays the same
Thesis - have posters include more of the research findings - try to incorporate more critiques of the posters along the way to help guide final results.

Foundation 1 -
Do an exercise a week of the basic perspective rules / shading / cast shadows
Foundation 3 - Keep the same
2 + 4 Little tweaks

Intro. - 8 assignments

"Tell Me About It" - what do they want to know about ID?
"Cream of the Crop" -
"ID the Peony" -
"3 Things Associated w/ Itty Bitty" Come up w/ questions for their "client."
Reflection of Interview w/ clients.
"I Can Do That!" - paper.
. "Show and Tell"



Course Name	Course Description directly from the Catalog	Learning Outcomes from your syllabus:	Project that addresses this outcome:	Specific way you measure this:	Results from Self-Assessment and Peer Survey	Plan for revision
Introduction to Interior Design	This lecture course provides an overview of the discipline and introduces students to fundamentals of drafting, space planning, concepts, principles and processes of Interior Design thereby enriching their experience of the interior environment. Prerequisite(s): Enrollment open to Interior Design majors only. Concurrent enrollment is required.	Recognize and compare potential avenues for employment (1) *(6a,6c,6i)*	Discussed in lecture I Can Do That	Printed reflection State the specific career option(s) of interest Discuss what makes this appealing Where do you see yourself practicing? (Locally? In another state? Abroad?) What type of project would you like to work on?	Students comments on SPIE report included several requests for more guest speakers and field trips to learn more about the industry	Add guest speakers into lecture days to expand on a topic covered in the lecture. Integrate "speed dating" concept with current seniors/recent alumni; provide guided questions for each student to ask to facilitate discussion.
		Recognize rising issues in the interior design profession (1) *(4b-d, 6b, 6k, 7a)*	Discussed in lecture		Students seemed to enjoy learning about the breadth of topics involved in interior design practice	No changes at this time
		Identify interior principles and elements of design in practical applications (1) *(11a)*	ID the P & E	1. Identification of observed space •Location •Type of space 2. Identification and description of principles and elements of design 3. Analysis of the effectiveness of the space •What type of environment / atmosphere was created? •How did the principles and elements contribute to that feeling?	Feedback from employer survey identified these items as important: *Ability to apply principles and elements of design in design solutions* Class discussions and activities worked well; going to locations on campus and identifying these details in practical applications seemed to help students understand the concepts	No changes at this time
		Research and discuss new or innovative materials and	Show and Tell	Presentation included source of show & tell topic	Students seemed to enjoy the ability to talk about something they were interested in learning more about	No changes at this time

Project: first semester, second year (before curriculum mapping)

Project: first semester, second year (after curriculum mapping)

Exit Survey Assessment Strategies to Measure Program Success and Student Engagement

Doug Seidler, Marymount University
Amanda Gale, The University of North Carolina at Greensboro
Michelle Pearson, Texas Tech University
Lindsey Fay, University of Kentucky

ABSTRACT

As interior design educators, our goal is to prepare students to enter the workforce with the necessary skills to succeed. Assessment methods (at both the course and program level) are used across institutions to measure achievement towards this goal. Traditional assessment methods at the course-level and program-level include course project/assignment rubrics and end-of-semester course evaluations. At the program level, assessment commonly occurs through student retention rates, program enrollment, job-placement rates, acceptance to graduate schools, and external accreditation such as the Council for Interior Design Accreditation (CIDA). Regardless of the assessment method, it is a collective effort of the faculty, staff, and curriculum that contributes to the success of the students.

Context + Purpose

The literature reveals established arguments for and against various assessment methods. The majority of research on curricular assessment revolves around assessing student knowledge on a specific topic. While publications document the pitfalls of teaching evaluations such as gender or racial bias (Falkoff, 2018), neither performance-based metrics nor accrediting bodies (such as CIDA) address topics like inclusivity, department culture, or student values and expectations

(Mattson, Corrigan, & Gabb, 2013). In addition to measuring program goals and accreditation standards, it is increasingly important that departments understand student perception of department culture and belonging.

This panel will explore the advantages and disadvantages of expanding the department exit survey beyond program goals and accreditation standards. When looking through the last decade of IDEC proceedings and the Journal of Interior Design, no studies or investigations can be found regarding the development or use of exit surveys for interior design students, which spend more contact hours than other disciplines. Therefore, this purpose of this panel is to: 1) develop a departmental assessment tool that could be used by a diverse range of interiors focused programs, 2) expand the conversation beyond the initial pilot programs to improve the exit survey/assessment tool, and 3) explore opportunities to aggregate data across institutions in an effort to better understand national and global trends in interior design-focused education.

Method

First, existing published exit surveys were reviewed from a variety of universities. The reviewed surveys were general and not specific to design-focused or studio-based curriculum. Because of this, an exit survey was developed specifically for interior design-focused programs. This initial draft was then shared with and modified based on discussions with faculty from two interior design programs and their corresponding departments. The survey was then piloted at multiple universities in Spring 2019.

This panel will be comprised of four faculty members from different programs throughout the U.S. Each panel member will share their experiences piloting the exit survey including discussion how the information from exit surveys has been used within their program. Further, the panel will share the survey with other programs so that the results can be aggregated to reveal a comprehensive understanding of student perception of their educational atmosphere.

Outcomes

The presentation and interactive discussion will demonstrate how the information gathered can have a range of different uses. Questions to be discussed with the audience include:

How can exit surveys help with CIDA Accreditation?

How can exit surveys help with Alumni relations?

How can exit surveys help with departmental annual reviews?

How can exit surveys help with assessing student experiences?

What strategies are being used to increase responses?

REFERENCES

Falkoff, M. (2018). Why we must stop relying on student ratings of teaching. The Chronicle of Higher Education. Retrieved September 1, 2019, from https://www.chronicle.com/article/Why-We-Must-Stop-Relying-on/243213

Mattson, H., Corrigan, H. and Gabb, B. (2013). CIDA accreditation standards: Past and future evolution. Journal of Interior Design, (38)4, v-xii. https://doi-org.libproxy.uncg.edu/10.1111/joid.12015

Othman, N.T., Misnon, R., Abdullah, S.R., Kofli, N.T., Kamarudin, S.K., and Mohamad, A.B. (2010). Assessment of program outcomes through exit survey of chemical/biochemical engineering students. Procedia social and Behavioral Science, 18, 39-48. doi:10.1016/j.sbspro.2011.05.007

Congratulations on your approaching graduation from [*department or program*] at the [*university name].* We are proud of each of our soon-to-be graduates and would like to stay in touch. In addition, we value your opinion and would like feedback on your experience with us so we can improve for future students.

1. Student name:_____

2. Personal email address (i.e., not associated with [university name]: _____

3. How would you describe yourself [check all that apply]?

   □ Traditional student (18-24 yrs when started w/the program)

   □ Nontraditional student (25+ yrs when started w/the program)

   □ International student

   □ Transfer

   □ 1st generation

4. Did you study abroad?

   □ Yes □ no

   That's wonderful! Where and when did you study? _____

5. Do you have a job offer or have you accepted a full-time position after graduation?

   □ Yes □ no (skip pattern to question #12)

6. Congratulations! What is the name of the organization? _____

7. Where is the organization located? _____

8. What is your salary or salary range (so we can advise future students of what they should expect)?_____

9. What is the focus of your new job?

   □ Product
   □ Residential
   □ Hospitality
   □ Healthcare
   □ Retail
   □ Government
   □ Non-profit
   □ Corporate/Office
   □ Education
   □ Multifamily residential
   □ Historic preservation
   □ Other:_____

10. Have been accepted to attend Graduate school ?

    □ Yes □ no (skip pattern to question #12)

11. Congratulations! Where will you be going to grad school and to earn what degree?

12. What areas of design are you interested in, so we can forward position announcements to you?

□ Product	□ Non-profit
□ Residential	□ Corporate/Office
□ Hospitality	□ Education
□ Healthcare	□ Multifamily residential
□ Retail	□ Historic preservation
□ Government	□ Other:_____

Think of this section as a formal opportunity to share your experience and suggestions with the [*department name*].

13. Please indicate the extent to which you agree or disagree with the following statements

	Strongly agree	Agree	Disagree	Strongly disagree
I feel a sense of belonging to my department	□	□	□	□
The department's atmosphere is intellectually engaging and collegial	□	□	□	□
The overall morale among faculty is positive	□	□	□	□
The overall morale among students is positive	□	□	□	□
I feel the curriculum challenged me intellectually	□	□	□	□
I feel I could adequately balance my educational experiences and personal life while here	□	□	□	□
It was easy for me to access needed resources to complete my work effectively and efficiently	□	□	□	□

14. Please indicate the extent to which you agree or disagree that your department provides a supportive environment to students who are of varying:

	Strongly agree	Agree	Disagree	Strongly disagree
Economic backgrounds	□	□	□	□
Sexual orientations	□	□	□	□
Political orientations	□	□	□	□
Gender identities	□	□	□	□
Religious beliefs	□	□	□	□
Countries, cultures, and ethnicities	□	□	□	□
Ages	□	□	□	□
Abilities (such physical, psychological, or social)	□	□	□	□

15. What do you think is the major strength of [*department name*]?_____

16. What do you think is a weakness of [*department name*]?_____

17. How can [*department name*] be improved?_____

18. What was the most impactful project and **why**? _____

19. What was the most impactful field experience (field trip, site visits, etc.) and **why**? _____

The last section will help us better meet assessment needs identified by CIDA (Council for Interior Design Accreditation) and support our goal of striving for continual improvement.

20. Please indicate the extent to which you agree or disagree with the following statements

	Strongly agree	Agree	Disagree	Strongly disagree
I can select and apply color principles and theories regarding the functional, behavioral, aesthetic, and/or cultural needs of the users of interior environments and in aspects of visual communication	□	□	□	□
I understand that design solutions affect and are affected by building distribution (HVAC, plumbing) and interior construction systems (staircases, elevators)	□	□	□	□
I understand and apply laws, codes, standards, and guidelines that affect the design of interior spaces, particularly through fire detection and suppression	□	□	□	□
I can work in teams and recognize the value of integrated design practices. I am prepared to maximize my effectiveness in leadership roles or as contributing team members.	□	□	□	□
I understand the principles and processes that define the profession and the value of interior design to society.	□	□	□	□
I understand human-centered design and can identify, analyze, and apply information from a variety of stakeholders /sources to develop a successful response to user needs and promote health and wellbeing.	□	□	□	□
I comprehend and use all aspects of the design process to identify and explore design problems through generation of multiple design concepts or design responses to programmatic requirements and generation of creative solutions that enhance the human experience in interior environments.	□	□	□	□
I have a global view and consider social, cultural, economic, and ecological contexts in all aspects of my work.	□	□	□	□

Congratulations, all your hard work has paid off! Thank you for your feedback and for spending the last 4+ years with [*department name*]. Please stay in touch through email, LinkedIn, or in person.

PECHA KUCHA

Pecha Kucha

Blind Spot: How I Get in the Way of Making Interior Design More Inclusive

Roberto Ventura, Virginia Commonwealth University

ABSTRACT

Motivation

For the last three years, an assignment given to a senior level seminar class asked interior design students to identify five "design mentors." These mentors should be designers who practiced design in a way that the students admired.

A peculiar trend appeared immediately and continued in each successive semester: most of the design mentors the students admired were architects, not interior designers.

Question

Why so many architects? Moreover, why did the mentors identified have so little in common demographically with the students (Figure 1)?

Eighty students identified just under 180 unique design mentors. Of these, 67 mentors were cited each year; these role models were then compared to the student composition of the three classes in aggregate.

Of these students, 84% were women; only 18% of the design mentors were.

Whereas 53% of students were non-white, less than 17% of the design mentors were.

Intriguingly, over 77% of design mentors were architects, and over 43% of the design mentors were deceased.

Why is this diverse and inclusive group of students so exclusive in terms of the role models they highlighted?

Hypothesis & Methods

Perhaps the students admire them because they are who I teach them to celebrate.

I studied my own teaching materials and examined them for unconscious bias. In particular, I selected a lecture that I typically give in introductory studios. Around 100 minutes in length, it focuses on design vocabulary, design elements, and design principles. This talk establishes the foundations upon which we build our introductory discussions of design.

Ninety-four images are in the presentation (Figure 2). These images were analyzed along the same criteria as the student demographic and design mentor results were.

Results

Of the 94 images, less than 4% were of interior designer-led projects; 73% were led by architects. Less than 9% of images originated from work by non-white designers, and under 12% were works by women (Figure 3).

Reflections

When it comes to promoting diversity and inclusion in design, I have a serious blind spot. It is inconceivable that I should expect my students to be more inclusive in their design studies when I practice the opposite.

I am trained as an architect, by architects, and this bias is stitched into my design DNA. In doing so, I imply that architects—specifically, white, male ones—are the paragons of design.

However, as Weber states in "Empowering Students Through Classroom Discussions," it is imperative that once one recognizes a systematic omission or oppressive action, one is obligated to work to repair it (1990).

Teaching in a discipline where about 10% of conferred degrees are awarded to latinx students and less than 6% to African-America students ("Interior Design," n.d.), my obvious bias is causing harm.

I have committed to reversing this bias.

I have modified the design mentor assignment into two parts. In the second, students introduce their colleagues to new designers who cannot be listed in the original roster of mentors; extra encouragement is given to historically underrepresented demographics.

In guest jurors, I strive to find interior designers who reflect the composition of the studios.
I am systematically auditing my course materials—from precedents to introductory quotes—to make them more representative to what interior design should aspire.
I am requiring images of designers to be included in case studies, because if students do not see reflections of themselves in the profession, it is difficult for them to project their place into future practice.
I am seeking guest speakers who embody different cultural perspectives.
I hope I am alone in the egregious bias I have found in my teaching. Regardless, the hard work of addressing diversity and inclusion in interior design must begin with our individual teaching if we expect to enact real change in our discipline.

REFERENCES

Interior Design. (n.d.). Retrieved from https://datausa.io/profile/cip/interior-design#demographics

Weber, L. (1990). Empowering Students Through Classroom Discussions. Women's Studies Quarterly 18 (Spring/Summer): 126-134.

FIGURE 1

	QUANTITY	% INTERIOR DESIGNERS	% ARCHITECTS	% WOMEN	% NON-WHITE	% LATINX	% ASIAN	% AFRICAN	% DEAD
STUDENTS	80	100	0	83.8	52.5	5	28.8	18.8	0
DESIGN MENTORS	62	9.7	77.4	14.5	16.1	3.2	11.3	1.6	43.5

WHY SO MANY ARCHITECTS?

Design mentors had little in common demographically with the students who admired them.

FIGURE 2

UH OH.

Of the 94 images, less than 4% were of interior designer-led projects; 73% were led by architects. Less than 9% of images originated from work by non-white designers, and under 12% were works by women.

FIGURE 3

	QUANTITY	% INTERIOR DESIGNERS	% ARCHITECTS	% WOMEN	% NON-WHITE	% LATINX	% ASIAN	% AFRICAN	% DEAD
STUDENTS	80	100	0	83.75	52.5	5	28.75	18.75	0
DESIGN MENTORS	62	9.7	77.4	14.5	16.1	3.2	11.3	1.6	43.5
LECTURE IMAGES	**94**	**3.2**	**77.6**	**11.7**	**8.5**	**1.1**	**5.3**	**1.1**	**39.4**

Pecha Kucha

Scribbles on a Page: Writing and Drawing

Madison Sabatelli, The Ohio State University

ABSTRACT

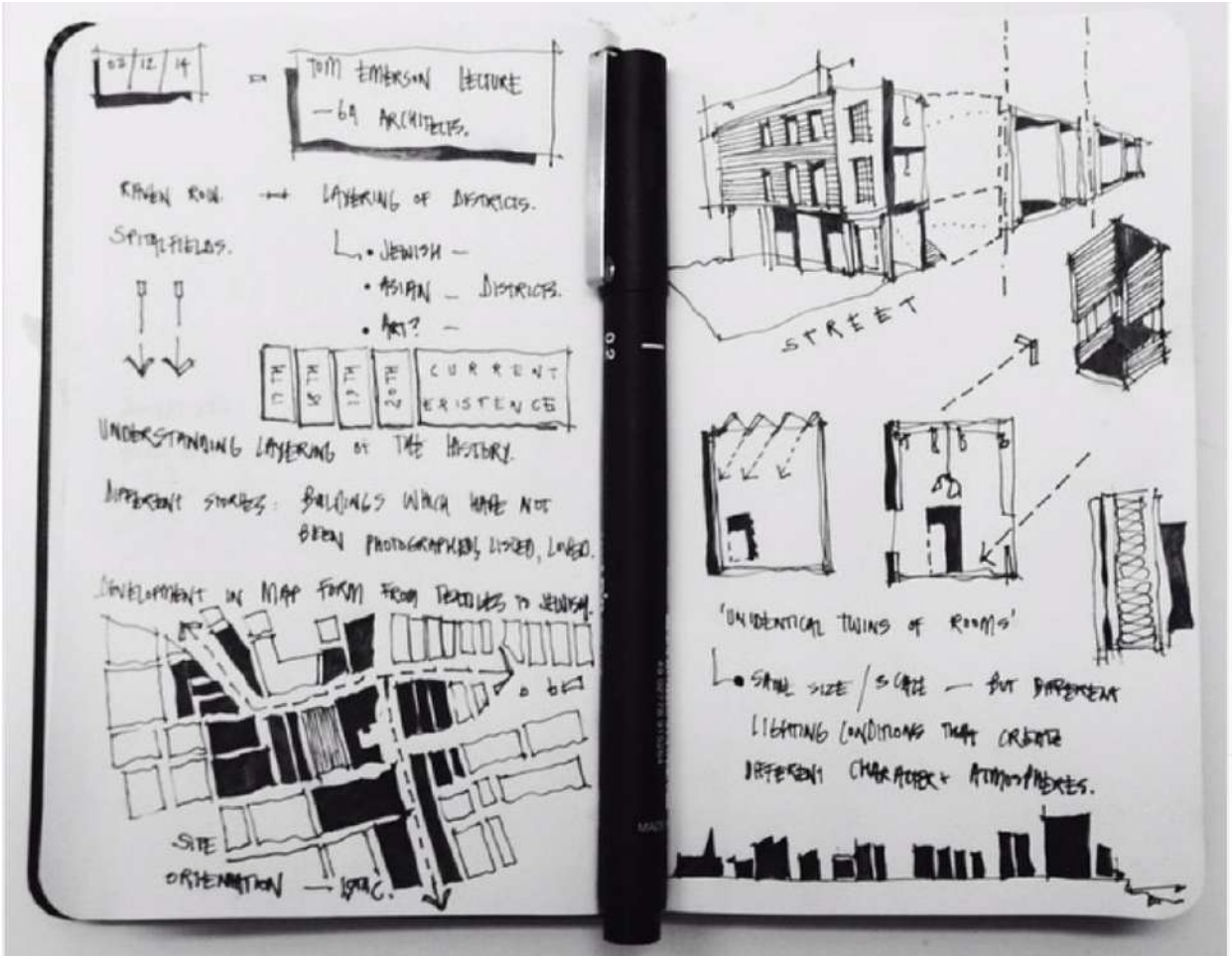
The act of externalizing thoughts is a difficult one met with many choices, first and foremost being the mode in which an idea is conveyed. When pen is put to paper, the result can either come in the form of 1) written words conveying a description or list of features, or 2) a sketch, visually delineating a picture in one's mind or a representation of something before them. While architecture and other fields of design are often thought of as visual fields defined by renderings, models, and sketches, the use of writing can be just as pertinent and necessary.

This presentation sparks an investigative discussion on how writing and drawing work together to effectively communicate a design idea. Examples from the sketchbooks of design students serve to create a corpus referencing the many ways in which writing and drawing work to exemplify information in different ways. These works are exhibited, analyzed, and compared on a contextual and structural level to reveal the role of and relationship between writing and drawing in design. Through these works, the ways in which words and sketches serve to crystallize design ideas, impart additional details, and provide a more effective conversation with viewers.

By exploring these visual and textual literacies, we can better understand how designers are already using both forms of communication in their work to maximize their potential. Moreover, further understanding the nature of this multiliteracy approach will aid in formulating a process for formally incorporating writing in design education and practice. By reflecting on a compilation of design practices using writing and drawing in tandem, this study serves to examine the modes in which we communicate design and reconsider the possibility for new ones.

REFERENCES

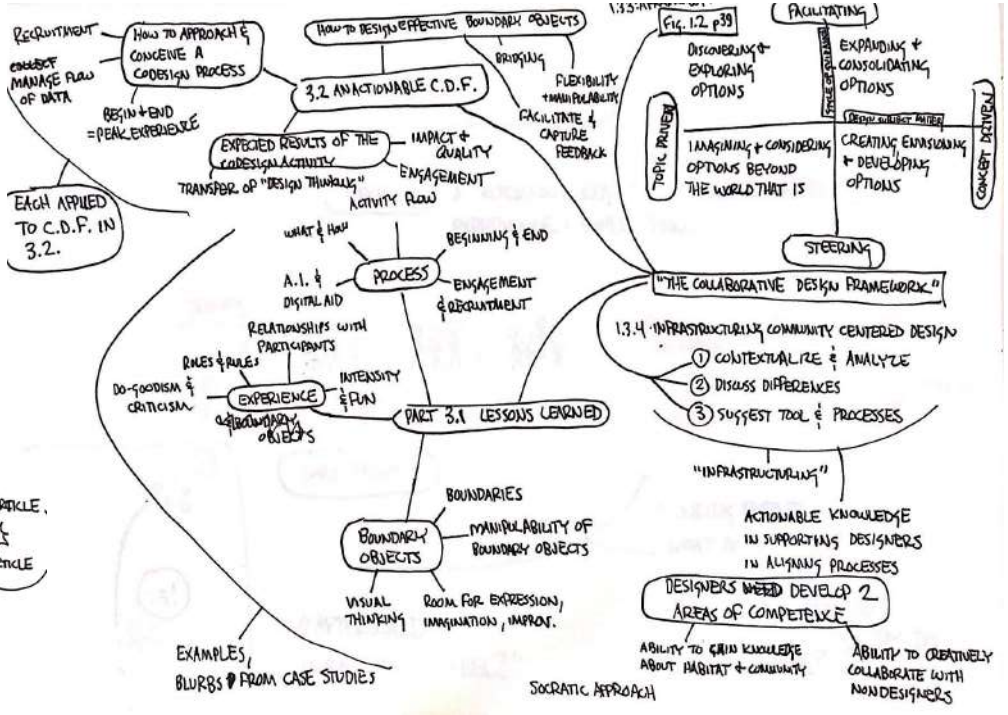
Dove, C. [@chrisdove]. (2014, December 12). Tiny sketchbook Tuesday today, learning from some local architecture #london #architecture#arqsketch #architecturestudent#arch_sketch #urbansketchers#illustration #design #detail #drawing#pen #graphic #design #a

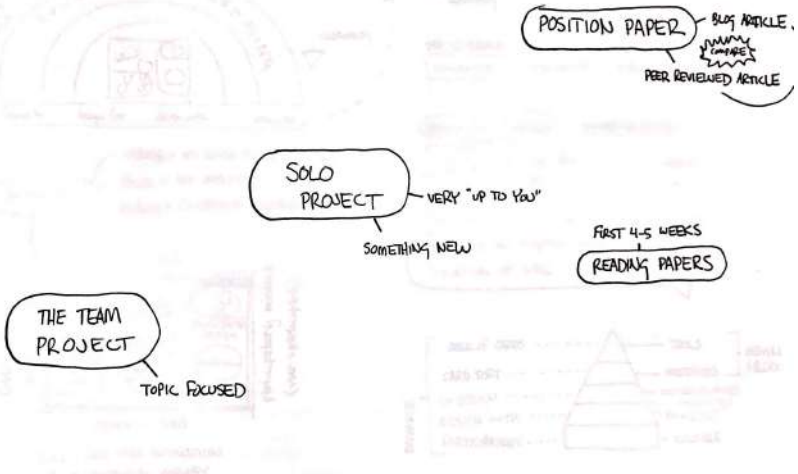


Dove, C. [@chrisdove]. (2014, December 12). Tiny sketchbook Tuesday today, learning from some local architecture#london #architecture#arqsketch #architecturestudent#arch_sketch #urbansketchers#illustration #design #detail #drawing#pen #graphic #design #arquitetapage#building #facade #6a #architects#ravenrow #gallery #spitalfields#minimal #vsco #vscocam [Instagram photo] Retrieved from https://www.instagram.com/p/wGoPOPLQ7j/.

The “Mapper”

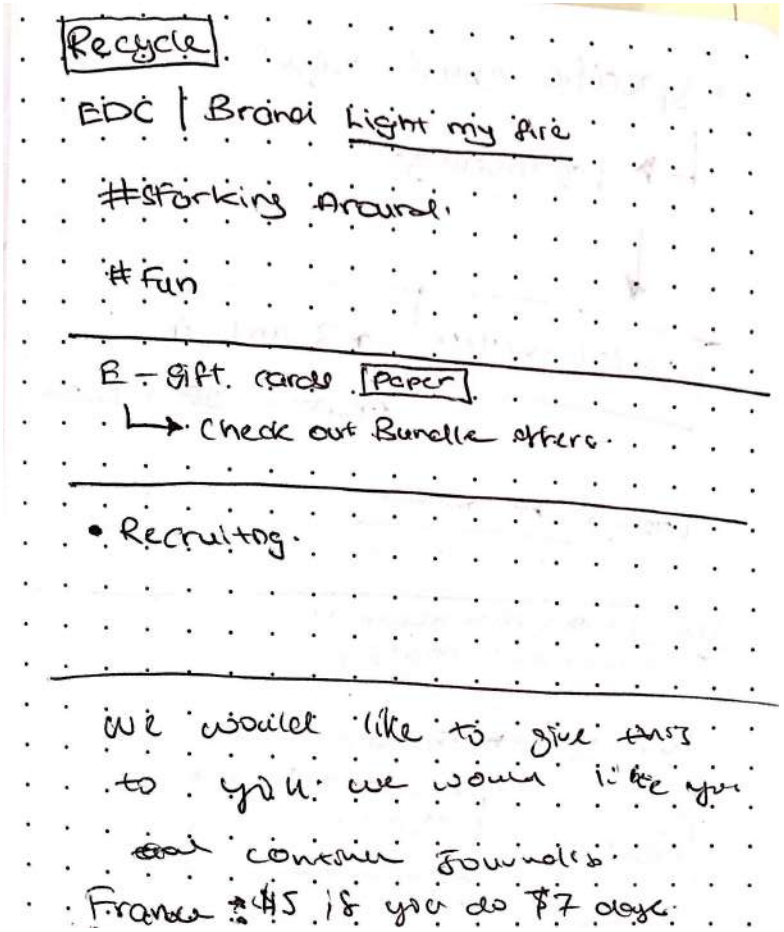
- Heavy on diagramming (note that “class notes” were all Liz’s diagrams)
- Ideas expressed as space on the page





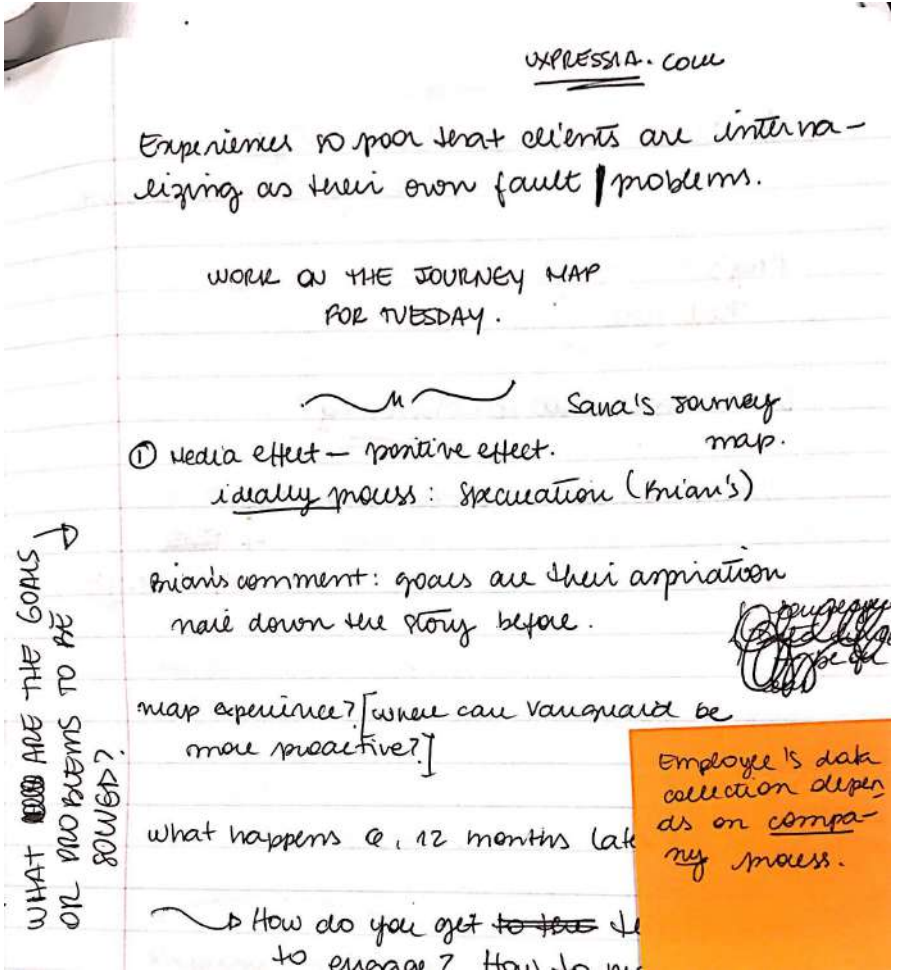
The “List-Maker”

- Mostly organized notes as lists separated by horizontal lines
- Sees ideas as tasks



The “Question Master”

- Content driven by questions
- Did not seem to have direct class notes, but rather follow-up thoughts



Pecha Kucha

Tried and Tested: The Uncertain Terrain of Community-Engaged Teaching and Learning in Interior Design Education

Travis Hicks, University of North Carolina at Greensboro

ABSTRACT

SUMMARY

Community engagement and service-learning offer students and faculty real world opportunities to address community issues and to solve problems through design for social impact. The stories that faculty often share are of the successes in community engagement and service-learning. The author will explore successful community-engaged design by sharing a multitude of challenges and failures through a series of case studies.

BACKGROUND

Interior design faculty encourage students to fail quickly and often, as the fear of failure can paralyze a student in her or his studio work. Sawyer identifies six themes emerging from his research into the role of failure in art and design studio pedagogy: 1) Learning outcomes, 2) open-ended assignments, 3) intentional failure, 4) student frustration, 5) student requests, and 6) constructive feedback (2018). Design thinking and the design process rely on multiple iterations, trial, error, success, and a cyclical process, and interior design faculty reinforce this process to their students. In the world of business and entrepreneurship, failure is also held up as a virtue or something to aspire to. Olaison and Sorenson (2014) point out how "research and public policy on entrepreneurship has shifted from neglecting failure to embracing failure as an integral part of

the entrepreneurial process." Faculty encourage art and design students to fail. Entrepreneurs encourage one another to fail as a badge of honor.

PROBLEM

In the realm of community-engaged design, students and faculty engage in real-world research and design problems. In this world of developing projects for community partners, nonprofits, neighborhoods, or government agencies, the messy uncertainties that accompany the real world can collide or conflict with the neat and tidy student learning outcomes outlined in a course syllabus. In a relatively short amount of time, an idealized syllabus can be rendered null and void. This presentation promises to expose potential risks involved in getting students and faculty off-campus and into the murky waters of community engagement.

MULTIPLE FAILURES

As illustrated in the sample slides, the author will share first-hand experience from community-engaged projects that faced difficulties. In one case study, a community garden project gained overwhelming community and university support and funding before closing down as a result of a land dispute between the property owner and the garden's founder. In yet another project, a tiny house community to serve a population of people experiencing homelessness received overwhelming praise from the community partners involved in the design and construction; however, this project hit a roadblock in the political arena as a city council member moved to oppose the project after months of faculty and student development. Elsewhere, the site for a community to serve adults with Autism Spectrum Disorder, designed inside and out multiple times by students, continues to struggle to find a construction site. This site has changed multiple times over the past three years. A university clinic, designed by students with the intent to be carried through by a professional design firm all the way to construction, has been shelved indefinitely as a result of university politics. And a community-engaged studio to explore the preservation of modest bungalow houses, staged through a neighborhood block party, hit a snag when a neighbor called the police on the students, faculty, and community partners.

FORMAT

These projects and more will be presented with rich photographs and stories via a Pecha Kucha format to emphasize the risks of community engagement and will be balanced by stories of successful community engagement through interior design education. Faculty and students who have experienced the real world of community engagement and service-learning will be able to identify with--and learn from--this presentation.

REFERENCES

Andrea Lane, Oliver Mallett & Robert Wapshott (2019) Failure and entrepreneurship: Practice, research, and pedagogy, Journal of Small Business &Entrepreneurship, 31:1, 97-99,

Olaison, L., and B. M. Sørensen. 2014. "The Abject of Entrepreneurship: failure, Fiasco, Fraud." International Journal of Entrepreneurial Behavior & Research 20 (2): 193–211

Manu Kapur & Katerine Bielaczyc (2012) Designing for Productive Failure,Journal of the Learning Sciences, 21:1, 45-83,

Sawyer, R. Keith. 2018. "The role of failure in learning how to create in art and design." Thinking Skills and Creativity, https://doi.org/10.1016/j.tsc.2018.08.002

Finn, D. & Broday, J. (2014) The State of Community Design: An Analysis of Community Design Center Services. Journal of Architectural and Planning Research, Vol. 31, No. 3 (Autumn, 2014), 81-200.

This community garden closed within 2 years due to a dispute between gardener and propery owner

This bedroom was designed for a tiny house community that was ultimately rejected by a vocal city council member.


The site for a residential village has changed twice in the past three years.

This exam room is from a university clinic project that was put on hold indefinitely due to campus politics.

This photo of a student staged home tour was taken minutes before a neighbor called the cops on us.

Pecha Kucha

Design Through Prototype

Emily Baker, University of Arkansas

ABSTRACT

This advanced studio combining both interior design and architecture students sought to teach students the nuance of material systems through hands on engagement in digital and analog fabrication processes while designing playful interventions at a local children's museum. Students began the semester by crafting models around conceptual ideas for play, seating, shade and interactive art. Rapid fire abstract physical modeling allowed students to discover their shared affinities and ideas, and this led to the formation of six teams of two to four students each. After merging and clarifying their ideas, students made initial presentations to the museum's staff, who offered insights related to design for parents and children. Field trips to 1) the City Museum in St. Louis, a renowned space for imaginative play through the built environment, and 2) Zahner Metals in Kansas City, an cutting-edge metal fabricator, allowed students to consider the scale and design of play objects/spaces and to get feedback on the construction of their ideas from experienced professional fabricators. Students quickly began prototyping their ideas using real materials. Access to CNC equipment for cutting steel and other materials informed many of the designs. 3D printing was also employed, as well as more traditional methods of working metal, wood, concrete and foam. Students arrived with very little fabrication experience, and the studio not only offered a way for students to gain experience making but also deep insight into the necessity and power of understanding a material process as it informs design. The six teams iterated their prototypes through the semester, and produced six very different designs for the museum, each with a full scale prototype of part of the design installed as a temporary outdoor exhibition by the end of the semester The museum was thrilled by the results of the studio and plans to continue the collaboration with the school to produce one or more of the designs for

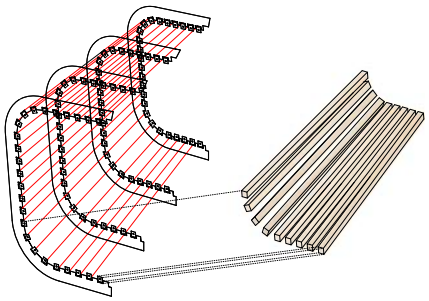
permanent installation. This presentation will illuminate insights about teaching fabrication-based studios, digital design processes, prototyping and design for play.

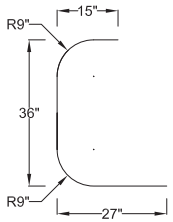


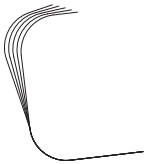


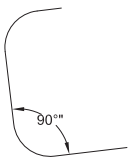

DESIGN THROUGH PROTOTYPE

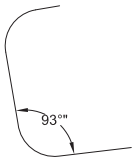
ADVANCED STUDIO - DESIGN / PROTOTYPE PLAY/SEATING/SHADE/ART STRUCTURES FOR A LOCAL CHILDREN'S MUSEUM

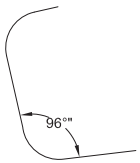


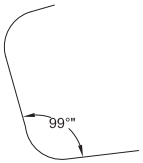


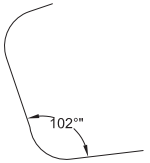




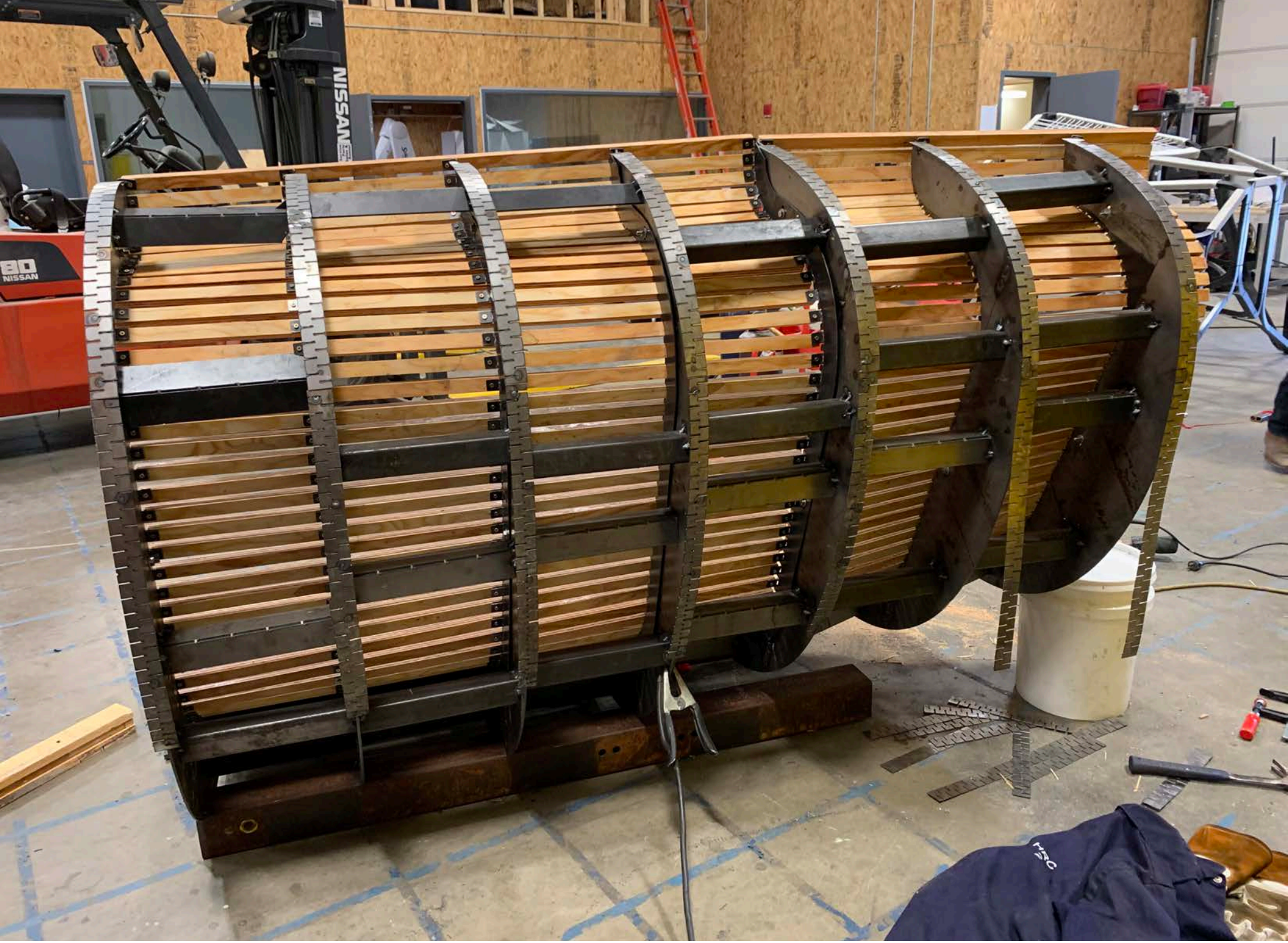




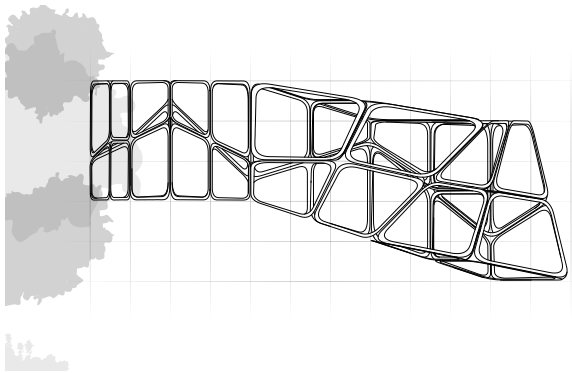


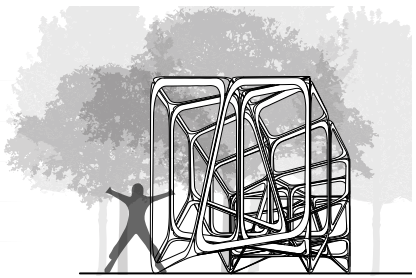


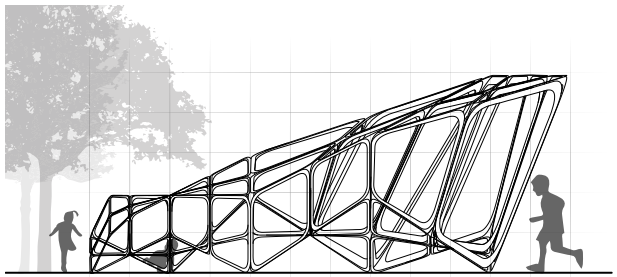
“TWISTER” PROTOTYPES two iterations for the “Twister” design for outdoor play/seating at the children’s museum

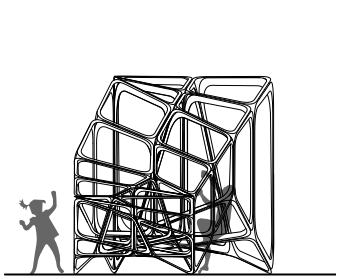


“TWISTER” PROTOTYPE final prototype assembly for outdoor play/seating at the children’s museum



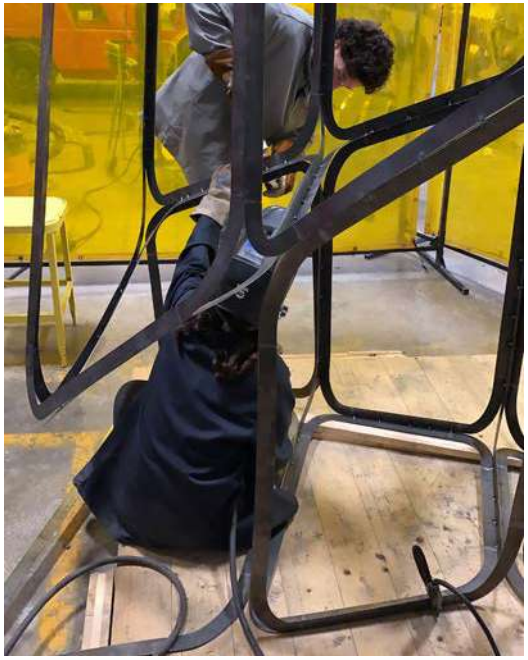






“MISSING LINK” CLIMBING STRUCTURE

digitally cut steel and nylon rope



“MISSING LINK” CLIMBING STRUCTURE digitally cut steel and nylon rope

POSTERS

Creative Scholarship | Design as Idea | Poster

Concept Sketching: A Hybrid Approach for Sculpting Interior Vignettes

Jake Tucci, Unversity of Arkansas

ABSTRACT

In 2019, practical hand drawing is not dead; clients still request it… though digital technology can make sketching interiors far more efficient.

"Sketches answer every need for interiors work. The very process of sketching encourages new design ideas. Sketches are quick to execute and are enormously responsive to depicting the look and feel of surfaces and finishes. And sketching can also persuasively convey the mood or spirit of a space." IVO D. Drpic 1988

I love a well-crafted digital graphic but, a drawing or sketch that looks effortless always charms me the most. Therefore I consider my IVO D. Drpic book *Sketching and Rendering Interior Spaces* my favorite drawing reference.

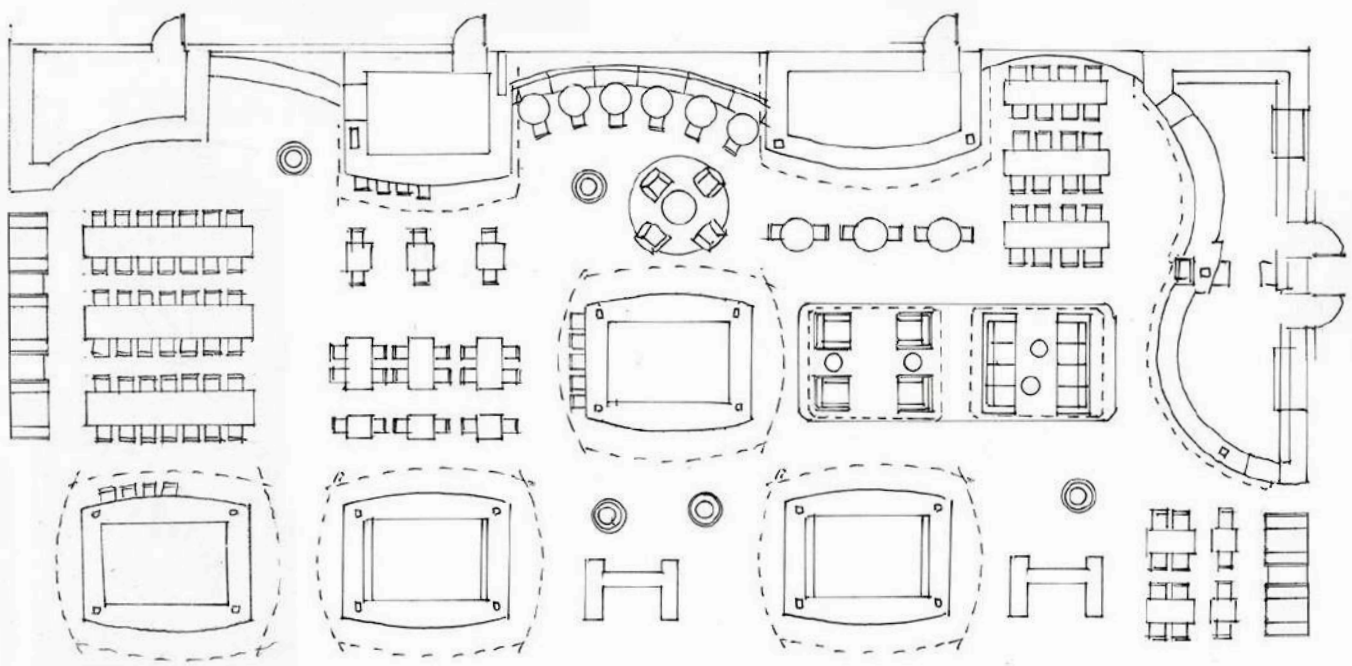
This presentation showcases a collection of several hand-digital hybrid conceptual sketches contracted out to one of the largest food service providers in the U.S. More like the movie industry and less common in the building industry, these sketches were produced early in the continuum of the design process as both inspiration and to establish a brand aesthetic. The proposal would later be developed by a contracted designer. The projects range in scale from a large food market, to a variety of food service counters to a cooperate catering service.

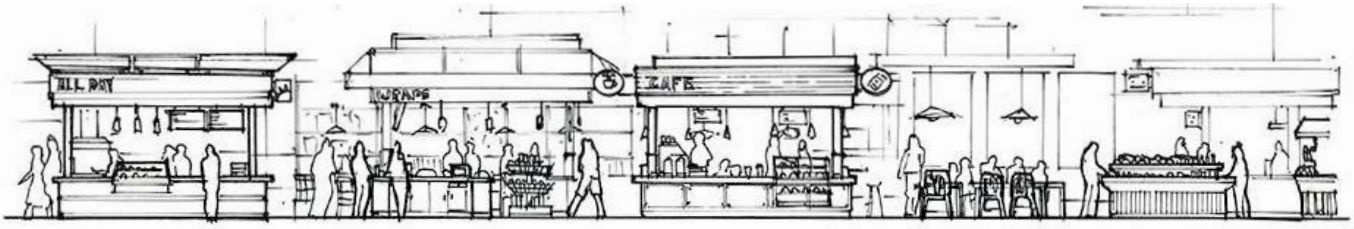
The client requested drawings with a hand sketch appeal to convey the conceptual status of the project proposal yet with fleshed out interior details to establish design distinction. While the client knew they were hiring a good sketcher, they quickly realized the advantage that the

consultant was also an instructor of interior design. For example, on the large “Foodiverse” project, special attention was given to table spacing, seating type variety and egress. Given a list of required food service equipment, a logo, graphic branding standards, inspiration images and sometimes an equipment layout plan, I was asked to develop three-dimensional sketch proposals. The proposals were used to pitch high-quality food service alternatives to corporate and universities campuses.

Due to the temporal nature of the design process. I developed a method for producing quick, accurate perspectives, with a loose and “lived-in” aesthetic while retaining the ability to meet significant change requests with out starting from square one. The method included, small loose sketches, sculpting the space in Sketchup, capturing perspective views, hand drawing on top and adding entourage help the space feel “lived-in”. After digitally scanning the hand drawing, Photoshop is used to render the materiality using a variety of techniques. I have continued to refine the efficiency of these techniques over the last few years.

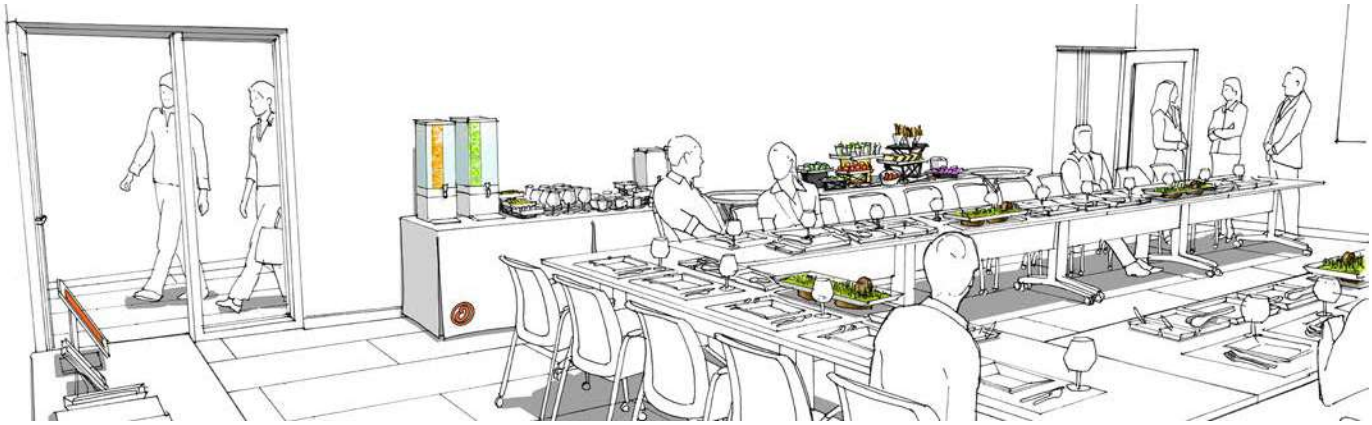

HANCOCK & MITCHELL

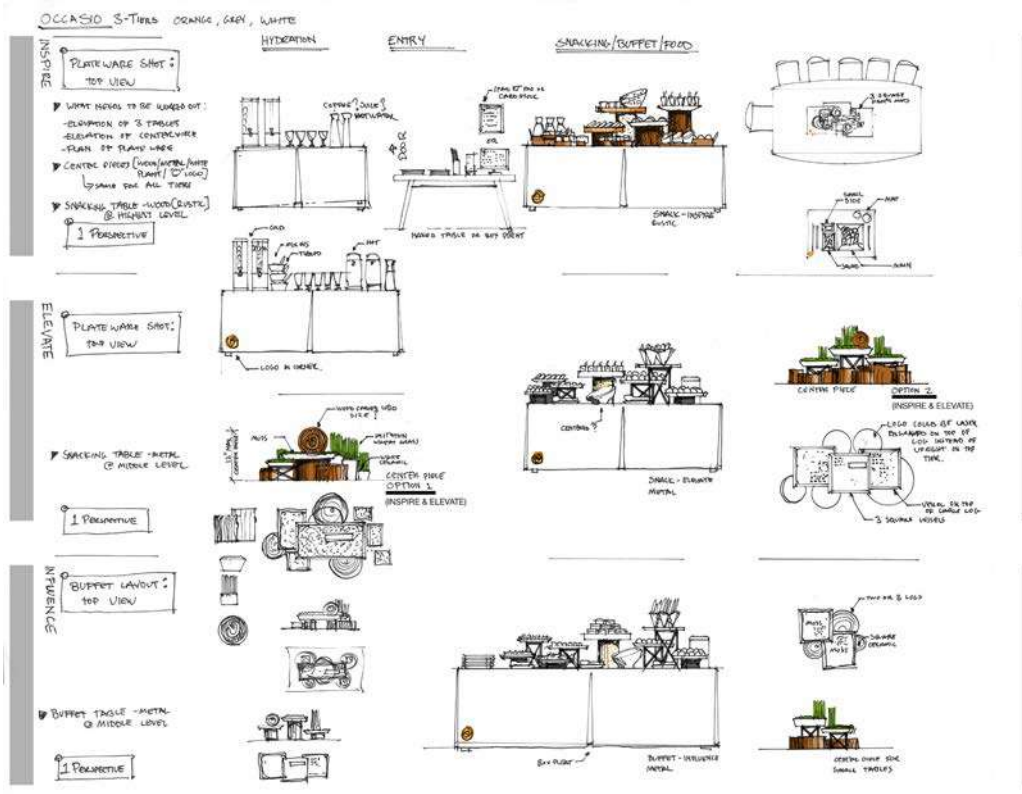


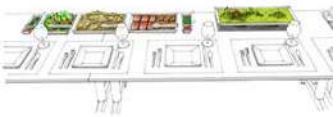

ALL DAY
WRAPS
CAFE


COFFEE

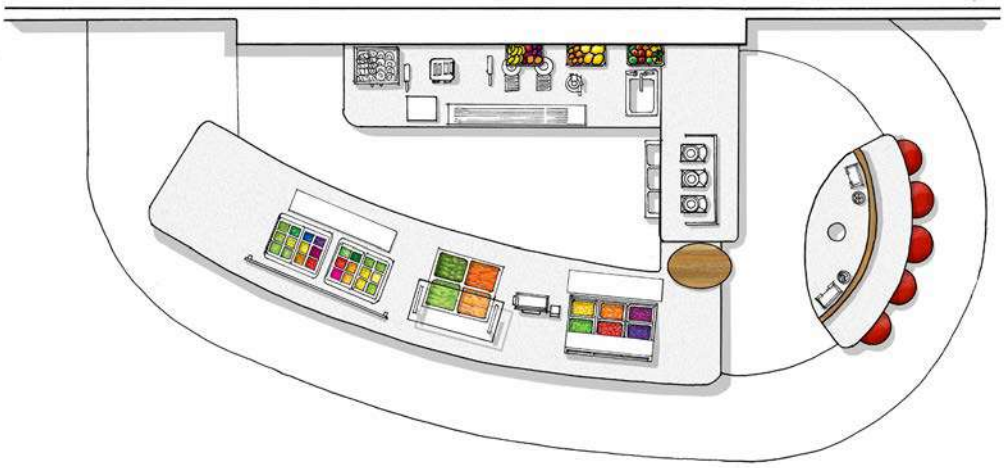

LOCAL CHEF
LOCAL

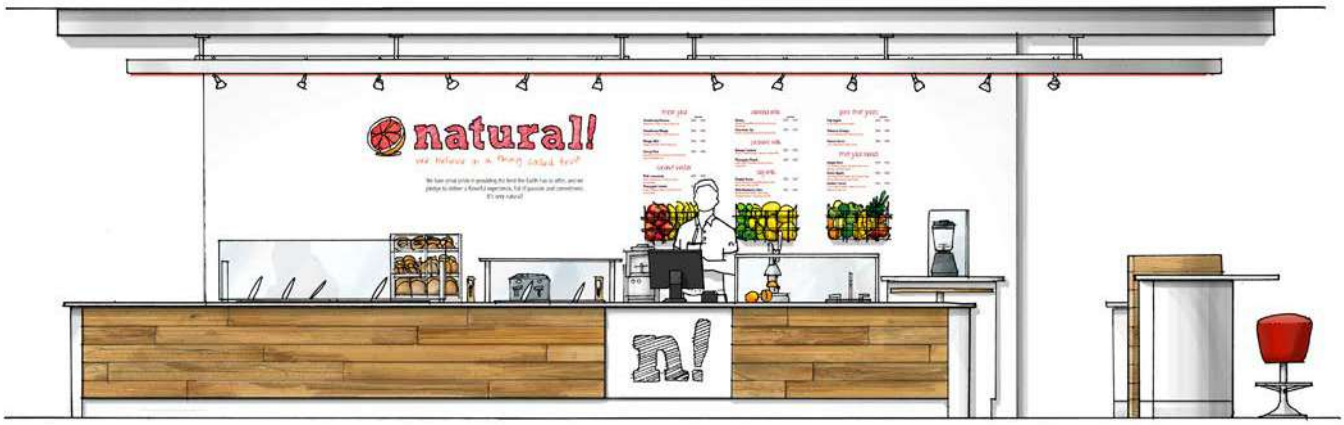



OCCASIO 3-TIERS ORANGE, GREY, WHITE
HYDRATION
ENTRY
SNACKING/BUFFET/FOOD
INSPIRE
PLATEWARE SHOT: TOP VIEW
WHAT NEEDS TO BE WORKED OUT:
-ELEVATION OF 3 TABLES
-ELEVATION OF CONTENT/WARE
-PLAN OF PLATE WARE
CENTER PIECES (FLOWER/GREEN/PLATE PLANT/ LOGO)
SAME FOR ALL TIERS
SNACKING TABLE - WOOD (RUSTIC) @ HIGHEST LEVEL
1 PERSPECTIVE
ELEVATE
PLATEWARE SHOT: TOP VIEW
SNACKING TABLE - METAL @ MIDDLE LEVEL
1 PERSPECTIVE
CENTER PIECE OPTION 1 (INSPIRE & ELEVATE)
CENTER PIECE OPTION 2 (INSPIRE & ELEVATE)
INFLUENCE
BUFFET LAYOUT: TOP VIEW
BUFFET TABLE - METAL @ MIDDLE LEVEL
1 PERSPECTIVE




natural!
we believe in a thing called fun!




natural!
we believe in a thing called fun!
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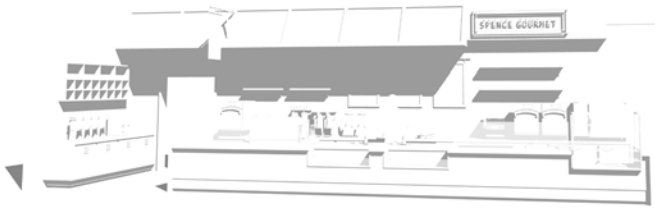
SPENCE GOURMET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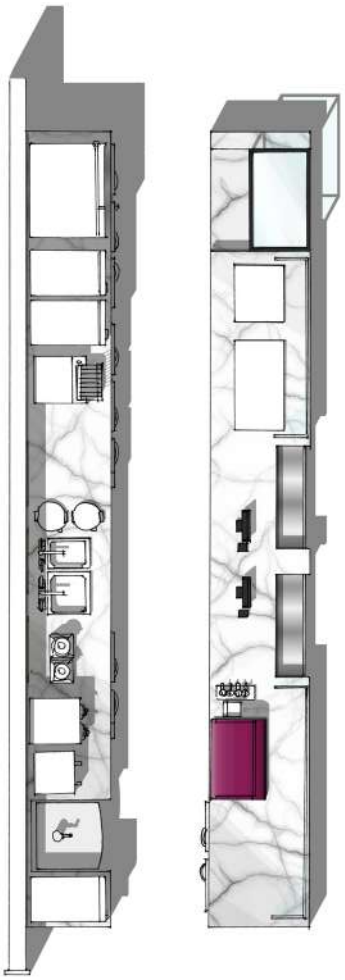

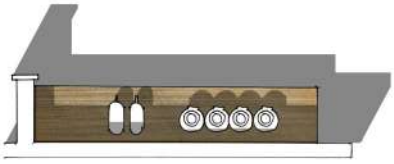


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STUDENT WORK

Creative Scholarship | Design as Interior | Poster

Taiba Cultural Center: An Approach Toward Sustainable Tourism Development in AL- Medina, Saudi Arabia

Rana Bazaid, Texas Tech University
Martha Añez, Philadelphia University previous, Thomas Jefferson University
Barbara MacAulay, Philadelphia University previous, Thomas Jefferson University

ABSTRACT

Objective: This project is an investigative study about redesigning an existing travel agency office to become a visitor center influenced by Saudi culture. This study introduces the concept of a natural park and cultural experience center to design a place that promotes the growth of tourism in Saudi Arabia while exposing visitors to the culture. I propose building a visitor cultural center in AL- Medina, Saudi Arabia, which is surrounded by 200 historical sites. The building will include a travel agency, gallery, theater, and gift shop. The building will support Saudi Vision 2030, an initiative to develop the economy by showing and encouraging visitors to see different historical and cultural sites in Saudi Arabia.

The center is designed using Islamic principles to provide visitors a sense of the culture and make a connection between the past and the future of Saudi Arabia. The center's design is environmentally friendly and uses wellbeing design philosophy to create a positive experience for all occupants.

The building design is inspired by Saudi culture; its design is rooted in Islamic style principles, such as continuous geometric forms. These forms will be slightly simplified from their traditional configurations. Secondly, the building will include a courtyard to circulate fresh air

into space. This courtyard will include Biophilic principles and universal design to make the building sustainable and comfortable.

REFERENCES

Tourism Investment in Saudi Arabia. Accessed September 14, 2017,6-7 https://www.scta.gov.sa/en/TourismInvestment/SupportTourismInvestment/Documents/Touristic_investment_eng.pdf

MacErlean, Neasa. "Can Saudi Arabia Build a Popular Tourist Destination?" Hospitality Net. September 1, 2017. Accessed September 10, 2017. https://www.hospitalitynet.org/news/4084394.html

"Facts about Saudi Arabia." Worldfacts.us. Accessed September 12, 2017. http://worldfacts.us/Saudi-Arabia.htm Tourism Investment in Saudi Arabia. Accessed September 14, 2017,6

Piccolo, by Cynthia. "Historical/Ancient Sites in Saudi Arabia." Helen Ziegler and Associates. Accessed September 14, 2017. https://www.hziegler.com/articles/historical-ancient-sites-in-ksa.html

D'Ambra, John and Nina Mistilis. "Assessing the E-Capability of Visitor Information Centers." Journal of Travel Research 49, no. 2 (2010): 206-215, 207. http://journals.sagepub.com.ezproxy.philau.edu/doi/abs/10.1177/0047287509337415

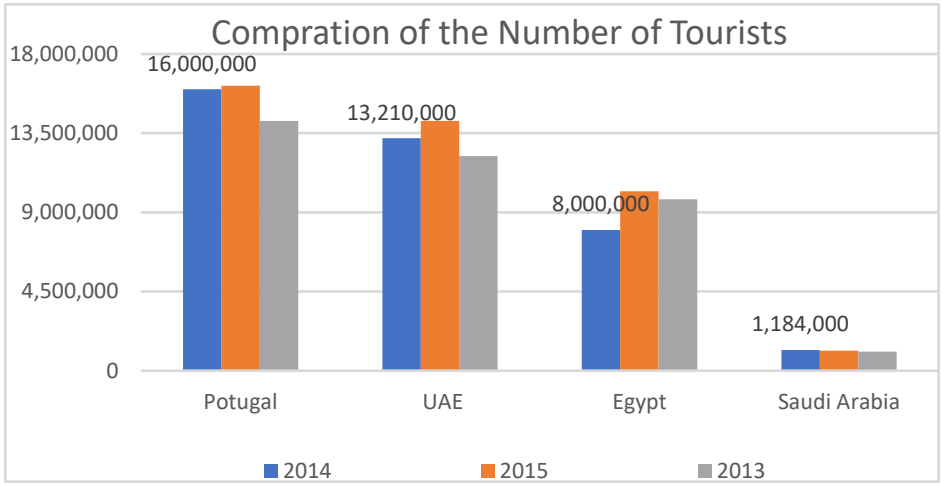


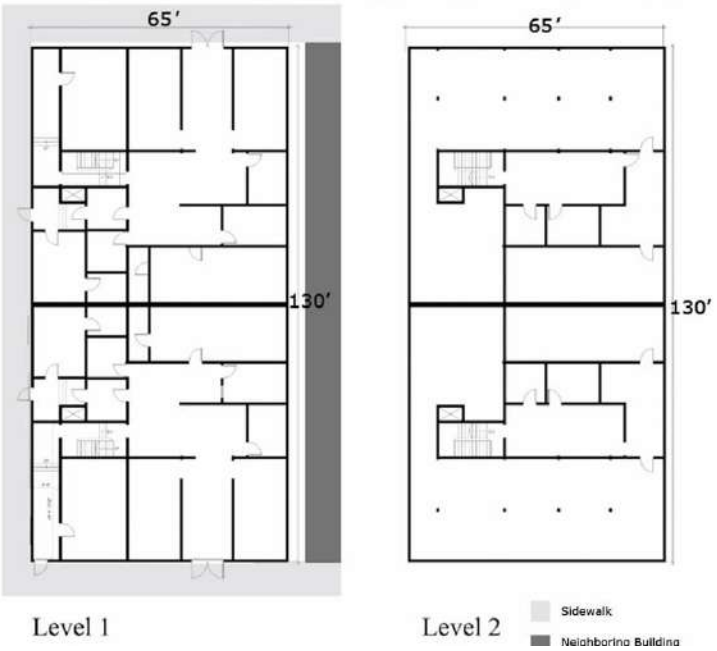
Figure 1.3: Computation of the number of visitors to Portugal, UEA, Egypt, and Saudi Arabia

DESIGN VISITOR CENTER & TRAVEL AGENCY

- Adaptive Reuse.
- Design a Plaza.

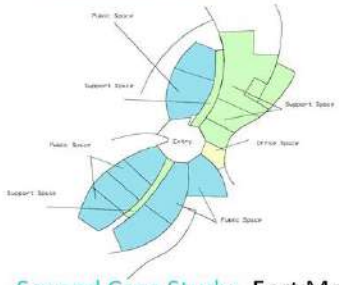
THE BUILDING

The building includes a travel agency, gallery, gift shop, coffee shop, multi purpose room.



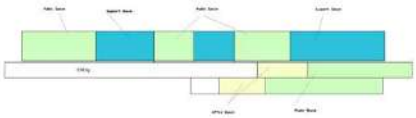
NATIONAL PARK & VISITOR CENTER

First Case Study: VanDusen Botanical Garden Visitor Centre, BC, Canada

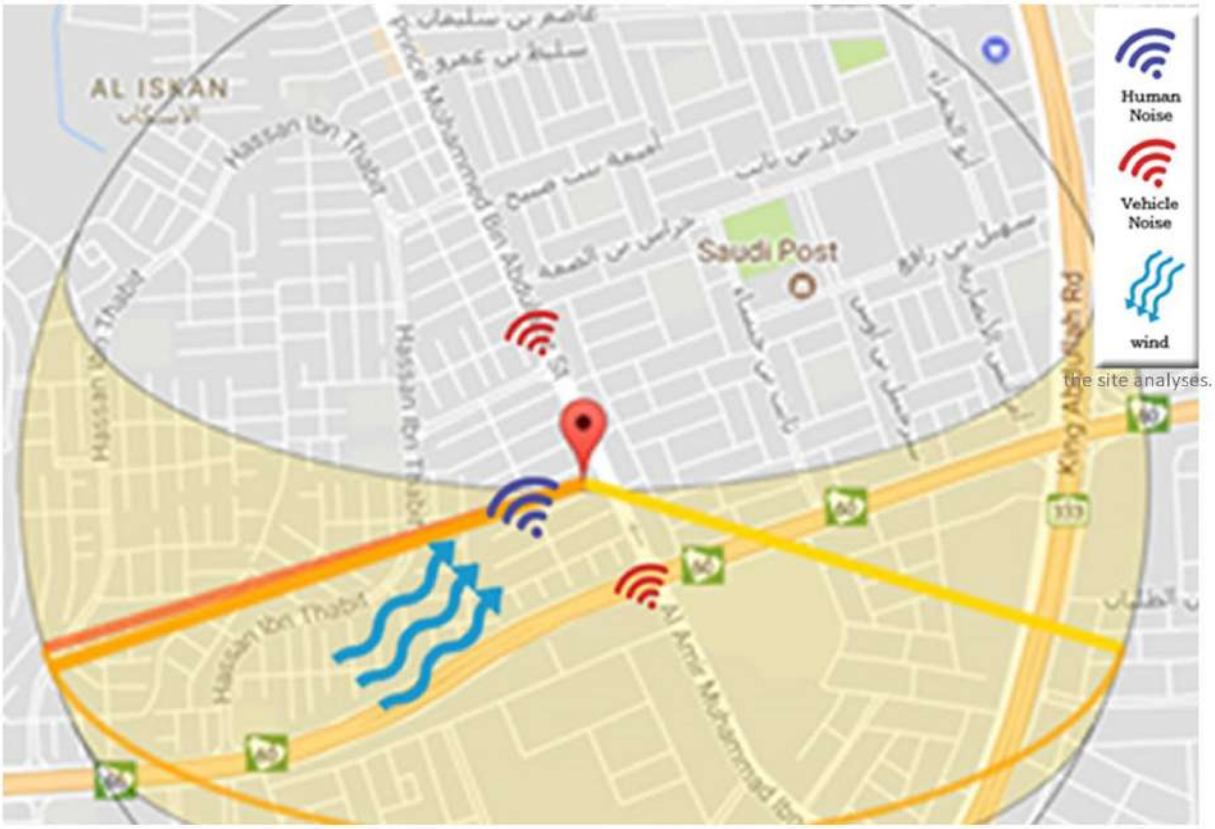


Second Case Study: Fort McHenry National Monument and Historic Shrine Visitor and Education Center, Baltimore, MD, United States

Third Case Study: Independence Visitor Center, Philadelphia, PA United State.



CITY SITE ANALYSES

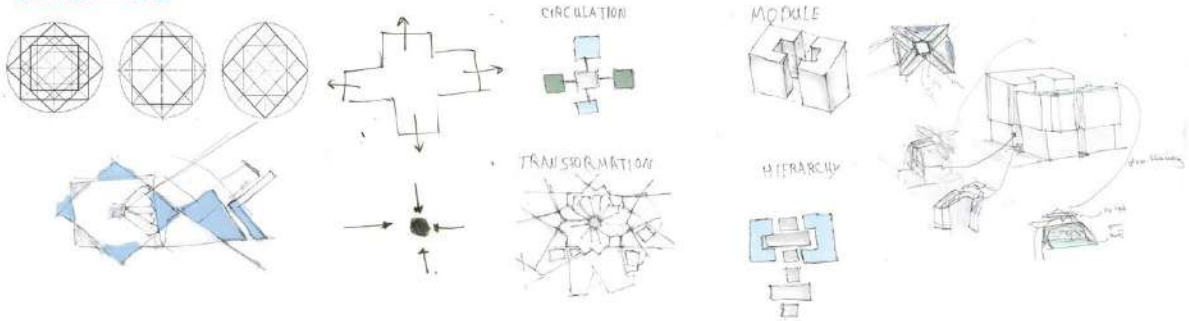


the site analyses.

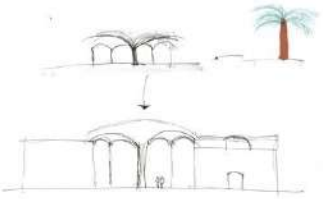
CONCEPT

- concept is to make a connection between the past and the future of Saudi Arabia, so visitors will experience and get information at the same time.
- The visitor center is designed to invite visitors and to show them places they may not have planned to visit during their stay.
- The building design is inspired by Saudi culture. Its design is rooted in Islamic style principles, such as continuous geometric forms.
- These forms is slightly simplified from their traditional configurations.
- Secondly, the building will include a courtyard to circulate fresh air into the space.
- This courtyard is include Biophilic principles and universal design to make the building sustainable and comfortable.

DIAGRAMS



SKYLIGHT



Connection Between inside and outside.
Human Behavior in Interior places (Customers & Workers).

SUSTAINABLE STRATEGIES (WELL BUILDING GUIDELINE):

AIR WATER NOURISHMENT LIGHT FITNESS COMFORT MIND

Human Behavior and Interior Design (Customers & Workers).

SUSTAINABLE STRATEGIES (WELL BUILDING GUIDELINE):

AIR

Ventilation Effectiveness:
Radiate Floor
Operable Windows

Healthy Entrance
Entrance clean and sealed
Fundamental Material Safety
Hazardous Materials Avoided
Easily Cleanable Environment

VOC Reduction
Low VOC Materials
Toxic Materials Avoided
Limestone Used to Removes Odors, Harmful CO_2, and Improving Interior Air Quality.
Limewash Paint used to Removes Odors, Harmful CO_2, and Improving Interior Air Quality.

ENTRANCE VIEW

ENTRANCE VIEW

GALLERY AREA

GALLERY AREA

LIGHT

Daylight
LED Light Fixtures

WATER

Treated Grey Water and Reuse it for Flush Toilet and the Plaza landscaping.

MIND

Beauty and Mindful Design:
Human Delight
Celebration of culture.

NOURISHMENT

Biophilia
Nature Light in all Spaces
Harmony pattern through design
Views of Plaza Landscaping
Interior Plants

History & Theory | Scholarship of Design Research | Poster

"Entities," Modern Interiors as a Selling Tool

Grace Ong Yan, Thomas Jefferson University

ABSTRACT

This paper introduces and contextualizes the theory of "entities" – unearthed for the first time from archival research—as a late 1920s interior design theory conceived by William Lescaze, architect and interior designer best known for his design with George Howe of the Philadelphia Saving Fund Society or PSFS building (1929-1932). Considering this theory offers an opportunity to problemmatize the modern interior as we know it and re-examine the individualistic tendencies of modernism as not only a historical study, but as a valuable lesson for contemporary issues in interior design. My research questions the understanding of the modern interior from an International Style perspective that is based on a standardized model. Instead, I will demonstrate through relevant histories and theories that the modern interior was, in fact, more individualized, and as such, comprised a rich assembly of spatial effects, including colored, varied, and contrasting materials and finishes. I will trace a selected history of modern interior design as it developed as a selling force- in its capacity for human persuasion through cohesive environments.

In 1927, as a young interior designer in New York, William Lescaze created the theory of "entities" which he defined as comprised of "four walls, the ceiling, and floor, [which] should not any longer be passive features, but they should become live parts of the entire design." He thought of modern interior design as a composition—as bringing together the three-dimensional planes of a space into inter-relationship. Lescaze demonstrated his theory of entities with a commercial interior for the S.T. Meyers Company, and a modern exhibition installation for Macy's Exposition of Art in Industry, both completed in 1928. (Both designs will be shown in

my presentation). The competence he gained from these projects would lead to the PSFS interior design which will be detailed in my presentation.

We can understand Lescaze's theory of "entity" within the context of avant-garde movements of the 1910s and 20s, including DeStijl and Constructivism, which were major influences on him. But "entity" also shared similarities with the nineteenth concept of gesamkunstwerk, or a total work of art that synthesizes different aspects of an artistic medium. Certainly, the appeal of the room setting over individualized items of furniture lay in its strong visual impact and its ability to evoke an idealized version of a suggested lifestyle. With commercial projects for business clients, the idea of the gesamkunstwerk was transformed into a selling tool. That modern design would provide a unique competitive strategy in a commercial context was an idea that Lescaze discussed with Austrian émigré designer, Frederick Kiesler during this time. Kiesler's design work and publication on store window displays offers another context for Lescaze's "entities." As modern manufacturing filled the marketplace with standardized products and displays, individuality in design was increasingly recognized as an attribute.

My method of investigation will be primary archival research combined with historical and theoretical analysis. This presentation's outcome will be a fuller, richer understanding of the history of modern interiors that grew out of individuality rather than standardization. It also presents a new design theory that can be applied to contemporary design of environments today, especially for retail, branding, and business clients. This presentation's significance is that it advances the body of historical knowledge on twentieth century modern interiors, as well as provides important insights to current design practice. This presentation will inform us of a rich trove and discussion of historical precedents as we re-think the urgent question of how interior design serves selling today. In an age of digital consumerism, my research will instigate the design of innovative interior environments of engagement.

REFERENCES

Sparke, Penny. The Modern Interior. London: Reaktion Books, 2008.

Jordy, William. "PSFS: Its Significance and its development in Modern Architecture," Journal of the Society of Architectural Historians, Vol. 21 No. 2, May, 1962; (pp. 47-83)

Colqhoun, Alan. Modern Architecture. London: Oxford University Press. 2002.

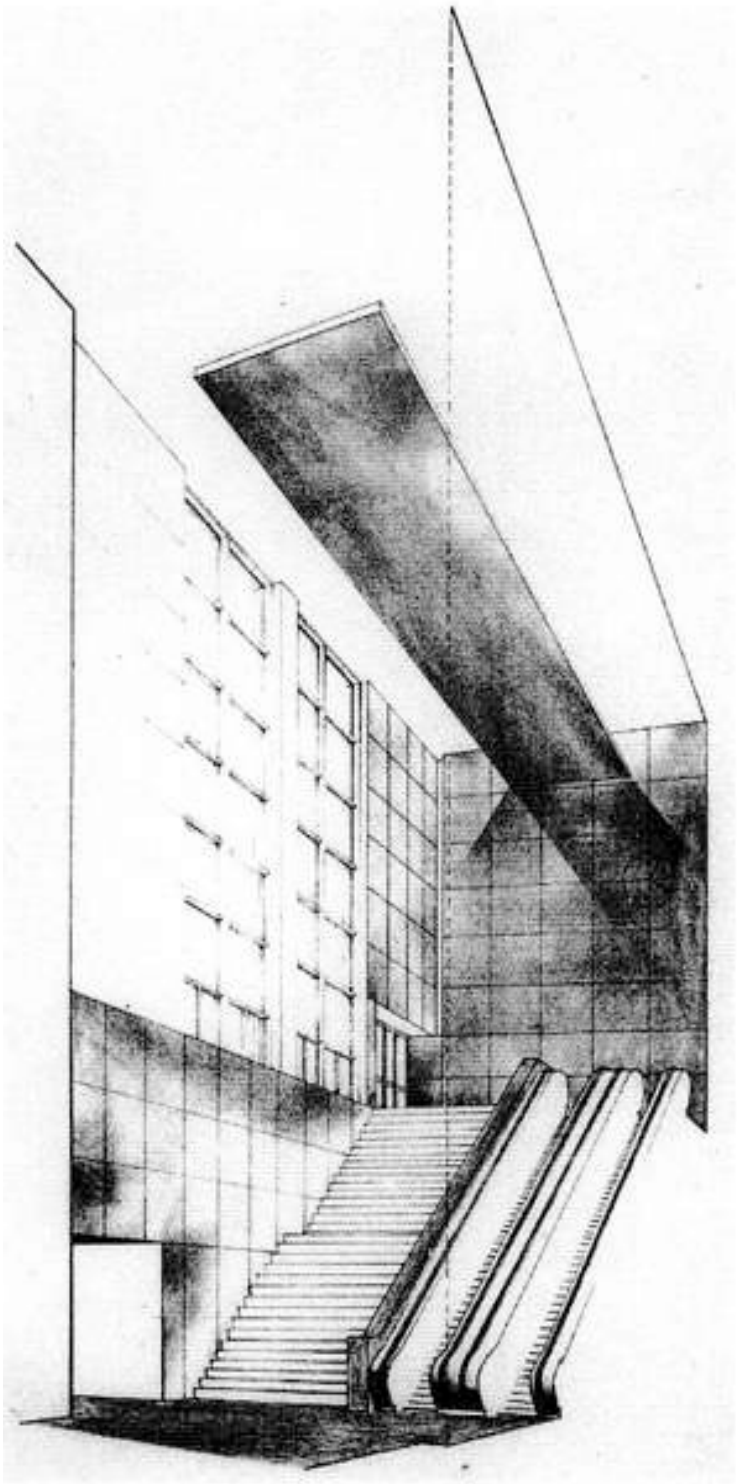
Kiesler, Frederick. Contemporary Art Applied to the Store and its Display. New York: Bretano's Press, 1930.

William Lescaze Papers. (ARCHIVAL MATERIALS) Special Collections Research Center. Syracuse University Library.

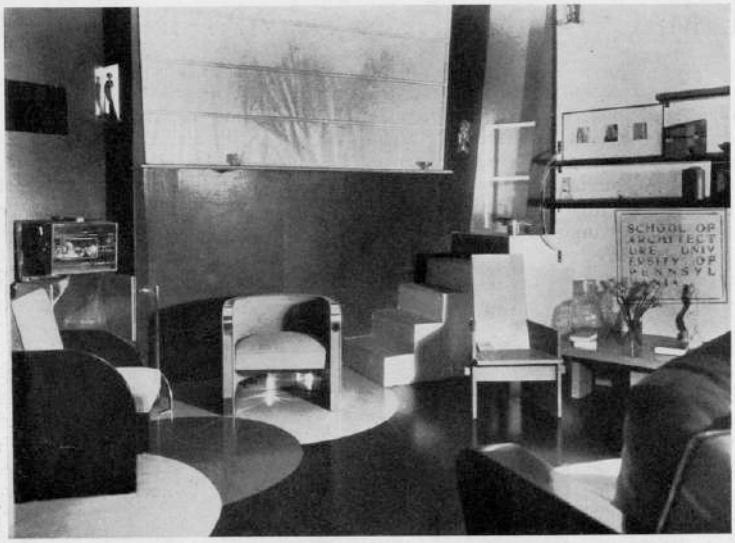
SUPPORTING IMAGES FOR
“ENTITIES,” MODERN INTERIORS AS A SELLING TOOL

PSFS Banking Hall, Photograph by Richard T. Dooner, 1932, Courtesy of Philadelphia Saving Fund Society Collection, Hagley Museum and Library.

PSFS Banking Hall, Photograph by Richard T. Dooner, 1932, Courtesy of Philadelphia Saving Fund Society Collection, Hagley Museum and Library.



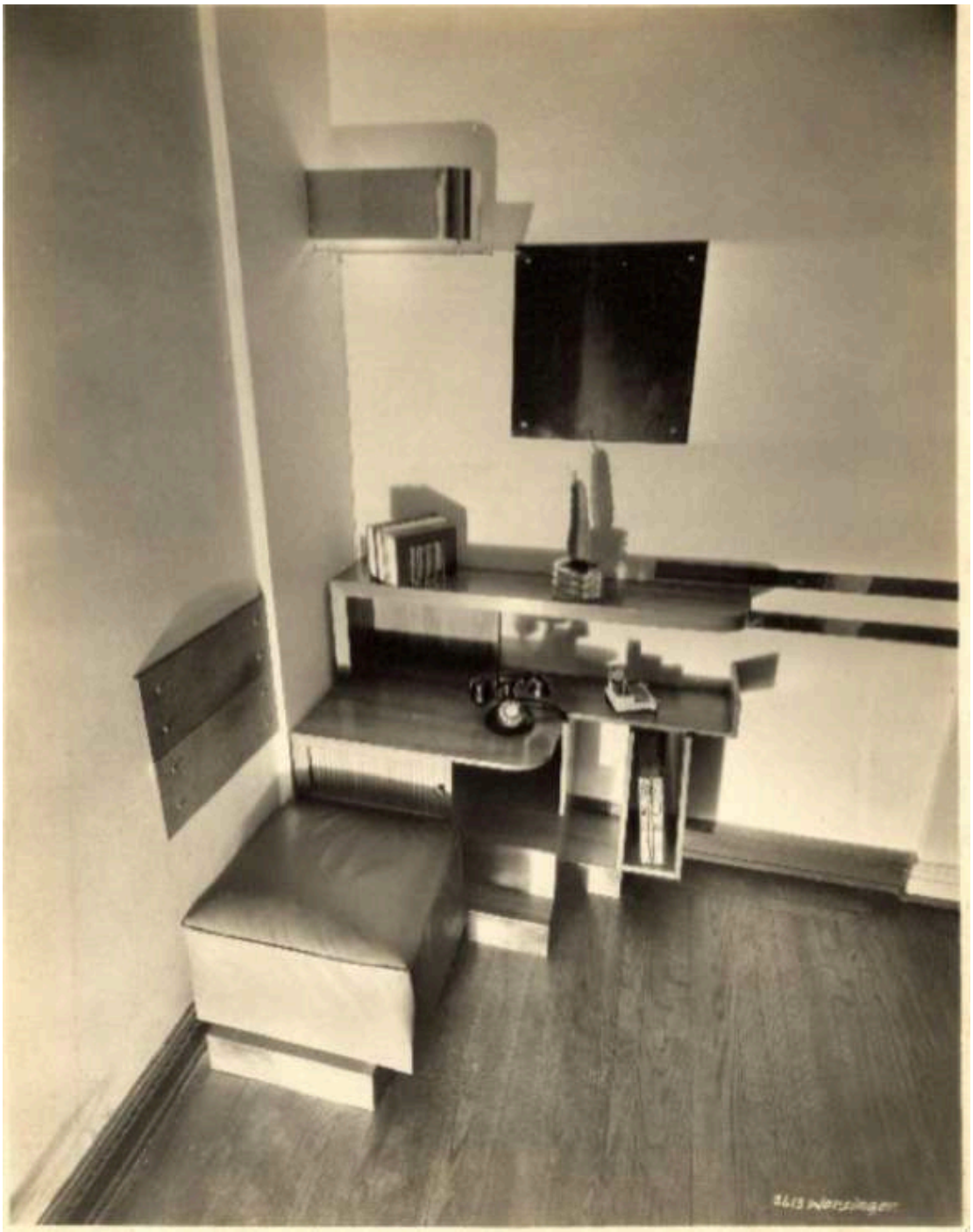
Howe and Lescaze, Perspective Study, View to banking Hall Floor from Entrance, 1932, Courtesy of Syracuse University Library, Special Collections



Herbert Photos

PENTHOUSE STUDIO APARTMENT
WILLIAM E. LESCAZE, ARCHITECT
INTERNATIONAL EXPOSITION OF ART IN INDUSTRY, MACY'S, NEW YORK

William Lescaze-designed installation of a penthouse studio apartment for The Macy Exposition of Art in Industry, Reproduced in *Architectural Record,* August 1928, 137-143.



William Lescaze design for S.T. Meyers Company telephone foyer, 1928, Courtesy of William Lescaze Collection, Special Collections Research Center, Syracuse University Library.

A Classical and Modern Interior: Eero Saarinen's Miller House, "A Contemporary Palladian Villa" in the American Midwest

Patrizio M. Martinelli, Miami University

ABSTRACT

The Miller House, in Columbus, Indiana, is considered one of the most important private residential buildings of mid-century Modernism, and a perfect example of the fertile collaboration between the architect, Eero Saarinen, the interior designer, Alexander Girard, and the landscape designer, Dan Kiley. In 1958, the magazine "Architectural Forum" presented the Miller House as a "contemporary Palladian villa", and the paper that I present is focused on developing this interpretation. In the first place emphasizing the compositional principles of the spatial organization of the interiors, strongly related to that thread that from Palladio get to the Modernist era, through the interpretation of Wittkower and Rowe, up to the "nine-square grid" exercise developed by the Texas Rangers in the '50s. Then understanding how the Renaissance idea of the "city as a big house and house as a small city" (that connects Alberti, Palladio, Aldo Rossi, Aldo Van Eyck) is clearly the framework for the interiors in the composition of public and private space of the house, remembering as well how Kevin Roche, a collaborator of Saarinen for that project, defined it: a house conceived "as a village". Another key to interpreting the interior spaces of the building is how the structure is the opportunity to an exceptional *mise-en-scène* of the tectonic datum, coupled to the idea of using the skylight system as a theatrical device. Therefore, the topic of theatricality emerges very clearly, here, also considering the formative years of Saarinen: and again it's useful the comparison to Palladio's villas, designed as stages for the aristocrats and their life, with windows and porticos as frames to enjoy and control the landscape in the Venetian country landscape.

The research has been conducted analyzing the historical and theoretical contexts, and dissecting the Palladian precedents and the Miller House, through drawings and analytical diagrams, in order to understand the elements and parts of the “play” and the mechanism of the “theatrical machine” of the interior. This approach wants to bring the attention, also in the educational environment, on the compositional strategies that, coming from the past, and then through the Modern Movement revision, are still fundamental tools for the spatial arrangement of the interior, emphasizing the fertile duality house/city, domestic/urban, and its role of stage for representation, theater of memory (private/domestic, public/collective), and frame for the events of everyday life.

REFERENCES

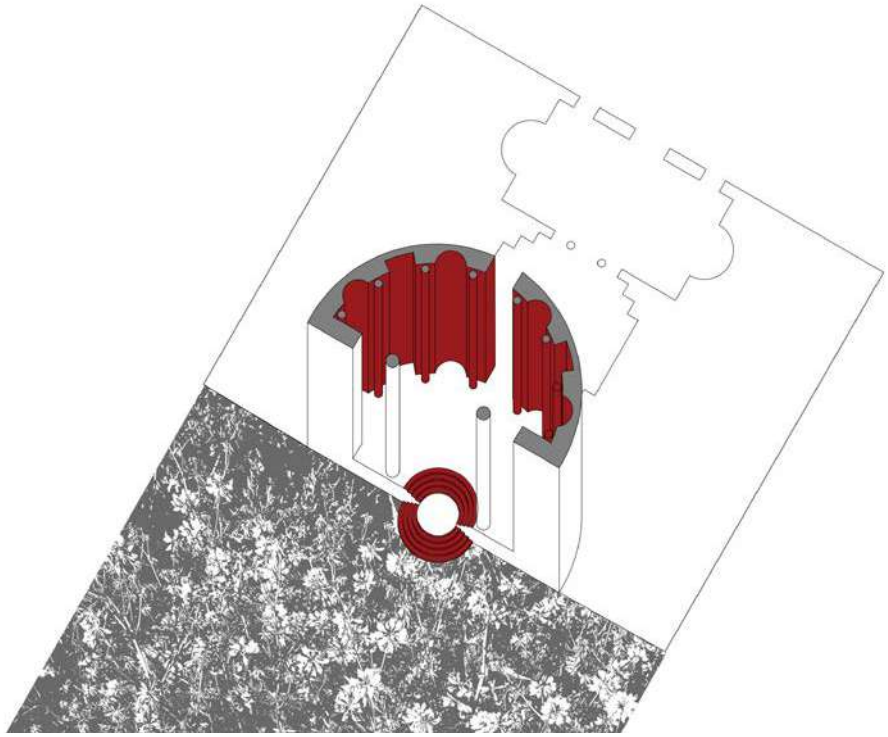
Erving Goffman, The Presentation of Self in Everyday Life, (New York: Doubleday, 1959)

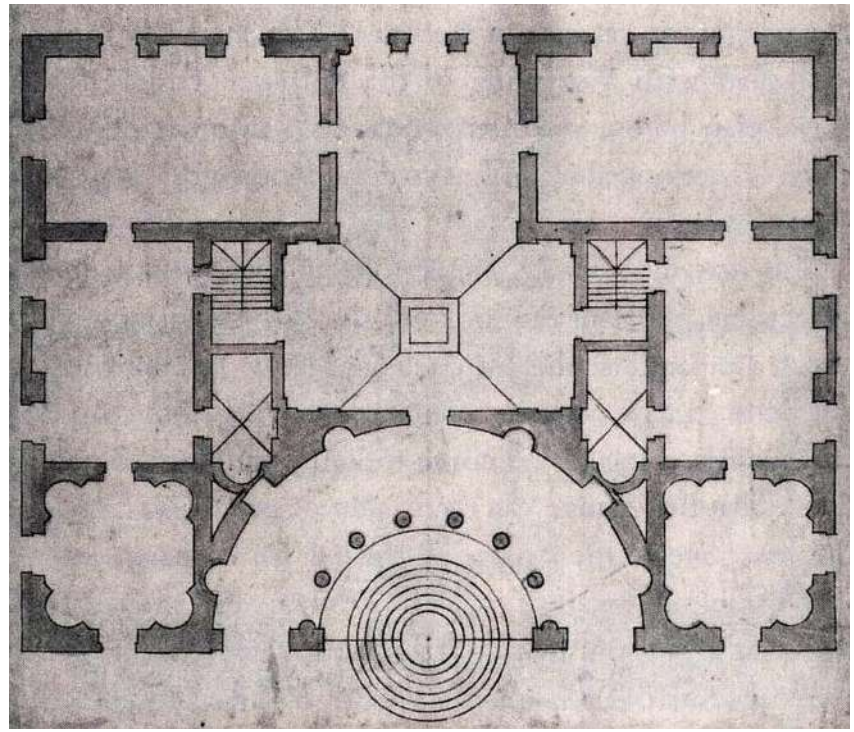
Manfredo Tafuri, “Il Luogo Teatrale dall’Umanesimo a Oggi,” in in Teatri e Scenografie (Milano: Touring Club Italia, 1976)

Ludovico Zorzi, Il Teatro e la Cittá. Saggi sulla Scena Italiana (Torino: Einaudi, 1977)

Eeva-Liisa Pelkonen and Donald Albrecht (eds), Eero Saarinen: Shaping the Future (New Haven, London: Yale University Press, 2010)

Holger Kleine, The Drama of Space (Basel: Birkhäuser, 2018)





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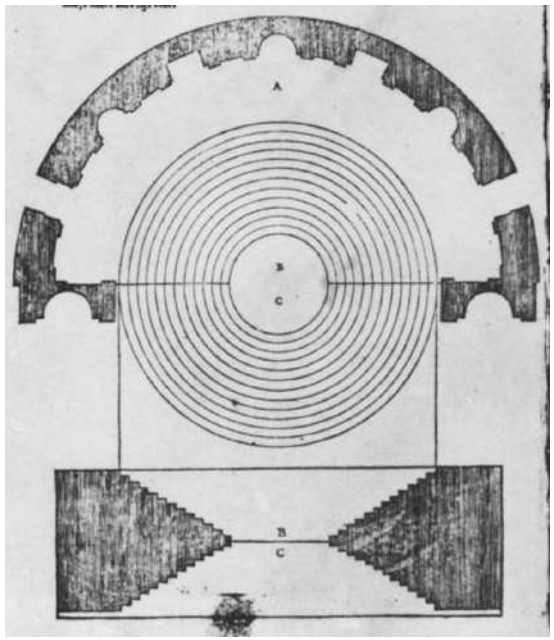

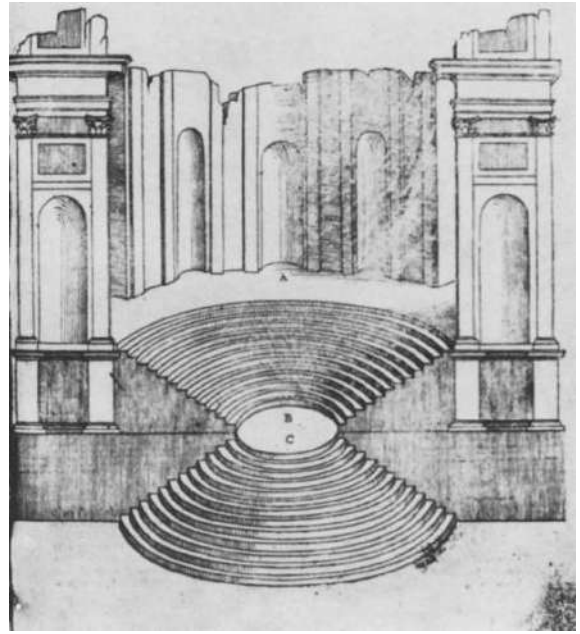

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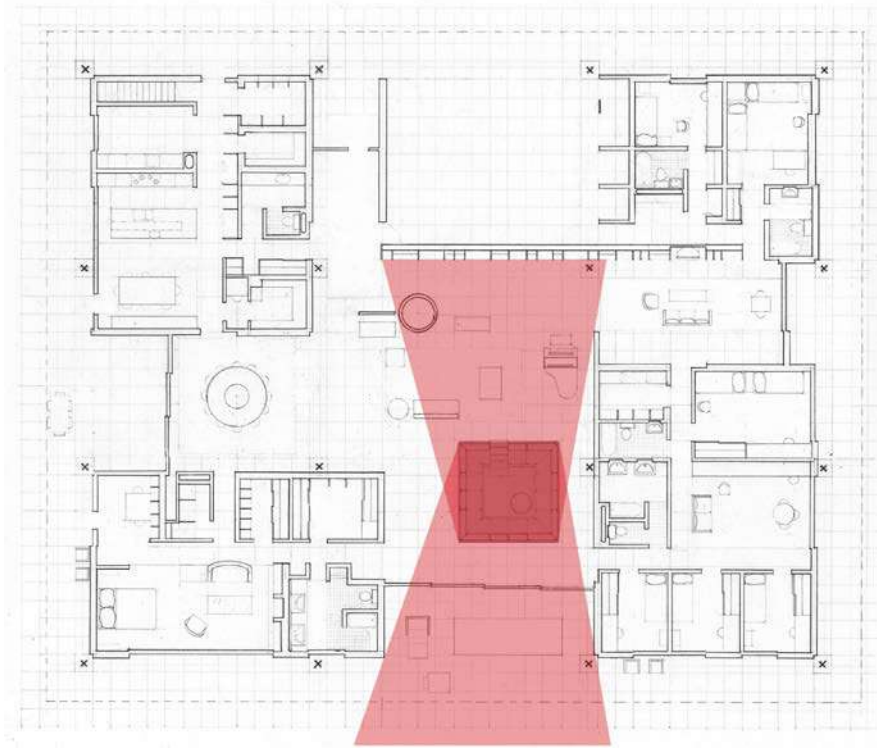
EXEDRA OF BRAMANTE'S BELVEDERE IN ROME, 1566

GIULIO ROMANO
BATTESIMO DI COSTANTINO, 1520



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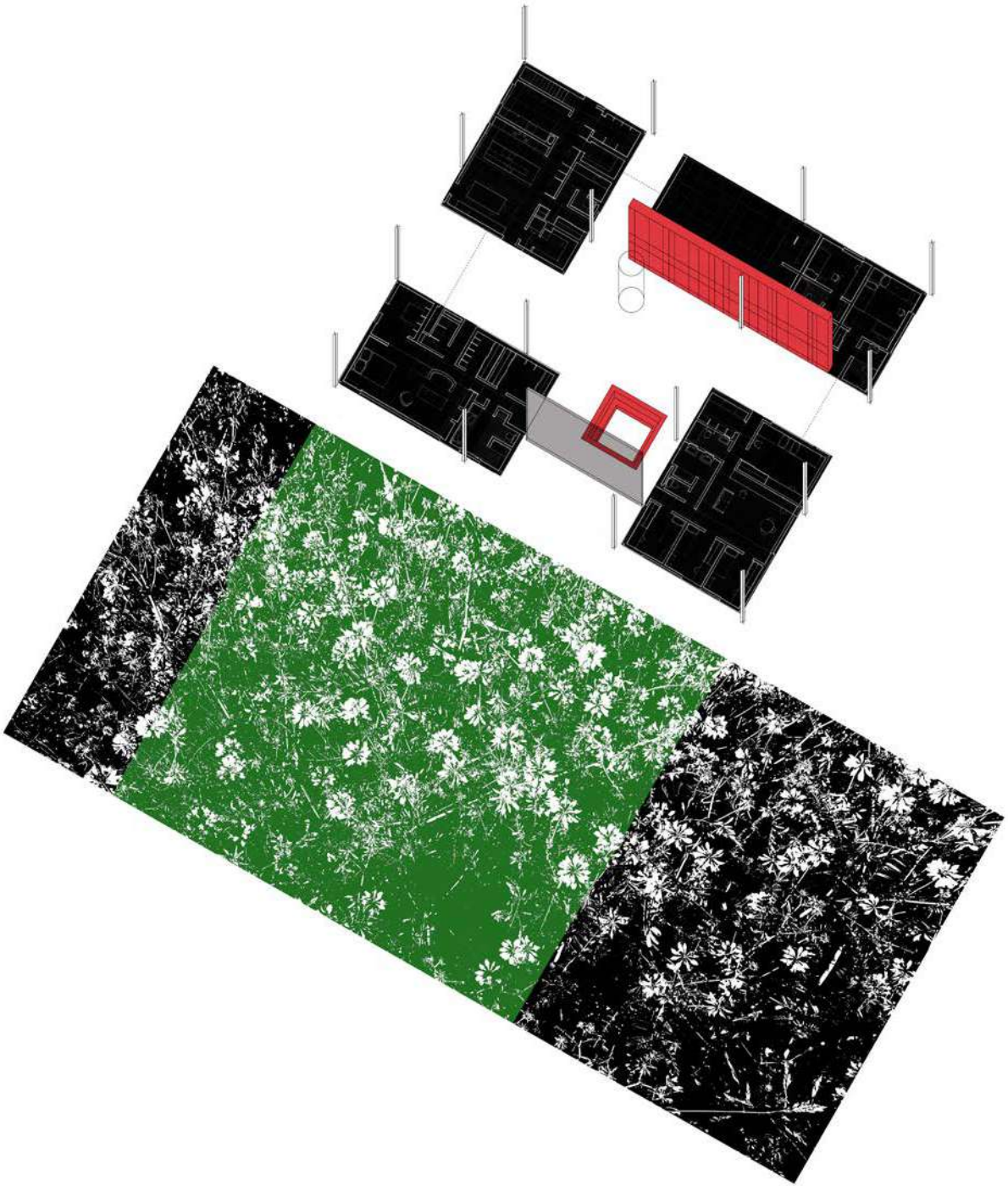

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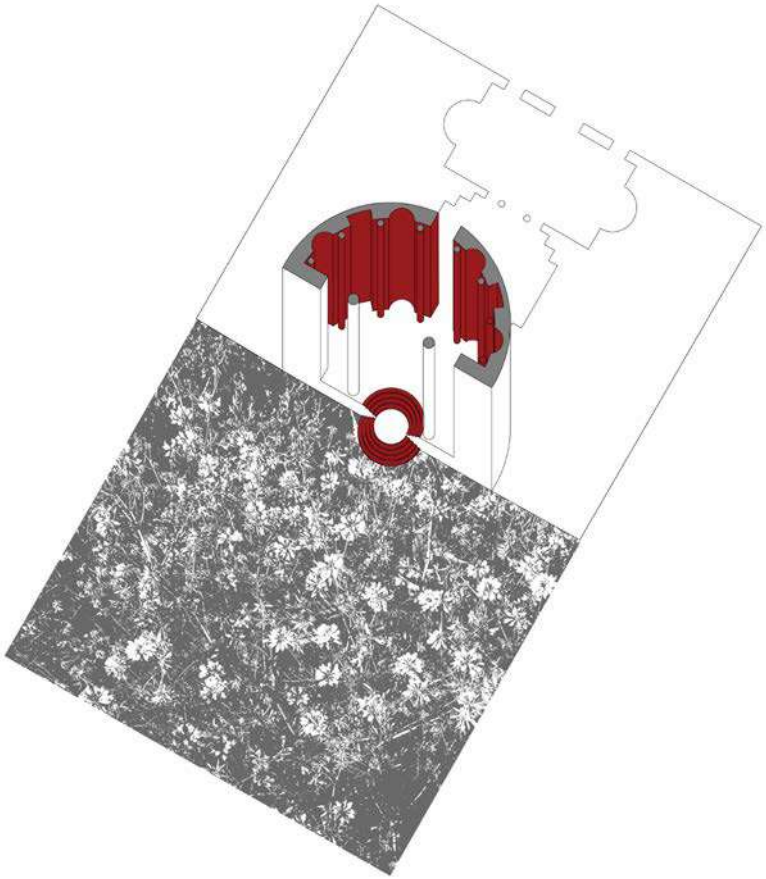
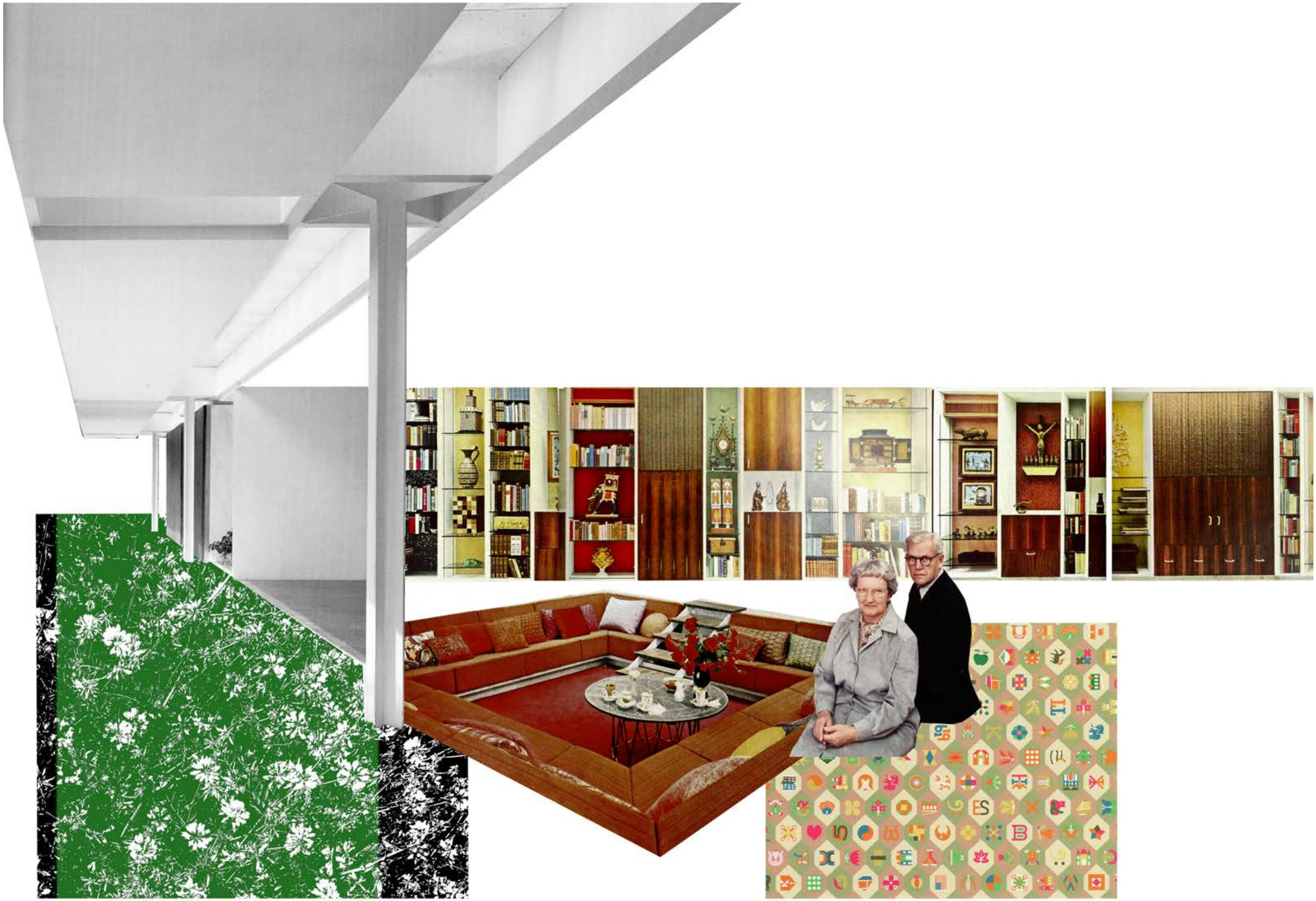


A. PALLADIO
VILLA PISANI

E. SAARINEN, MILLER HOUSE

ROOF PLAN-STRUCTURE AND SKYLIGHTS



THE THEATER AND THE HOME digital college by the author

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Restorative Aesthetics | Designing for Stress Reduction with Fractal Geometries and Soft Fascination

Maria Decker, Semple Brown Design
Matt Melcher, Washington State University
Judy Theodorson, Washington State Umiversity

ABSTRACT

Stress is known to have a profound impact on human health and well-being from cardiovascular disease to depression (APA, 2015). Researchers in the fields of psychology and design often look to nature as an antidote to physiological and psychological stress with large bodies of literature in support of its benefits. With 90% of time spent indoors, the question of how to translate the restorative benefits of nature into the built environment for improved occupant well-being represents a problem especially suited to those who design them (EPA, 1987). In an effort to translate these restorative benefits to the built environment, two underlying properties found in nature and previously identified for their restorative potential were applied to the interior environment: soft fascination (Kaplan, 1995) and fractal geometries (Wise & Taylor, 2002). A window screen design was chosen to capitalize on the soft fascination inherent in the Heraclitean flux observed in natural light as a result of planetary patterns. The design was adapted from a nature scene using a series of digital parametric operations and manipulated to adhere to a mid-range fractal dimension shown to optimize restorative outcomes (Taylor, 2006). Study models were produced to assess the effect created by a set of preliminary designs. The final design was chosen based on a comparison of the qualitative effect of each model. It was then produced at full scale and installed for observation which included a photo series assessing the varying light conditions. Observation outcomes showed a successful adherence to the restorative properties of soft fascination and fractal geometries. Other outcomes included a set of guidelines for designing

fascinating effect using fractal patterns in order to promote stress reduction in the built environment.

REFERENCES

American Psychological Association. (2015). Stress in america: Paying with our health. Retrieved from https://www.apa.org/news/press/releases/stress/2014/stress-report.pdf.

U.S. Environmental Protection Agency. (1987). The total exposure assessment methodology (TEAM) study: Summary and analysis . (EPA Publication No. 600/6-87/002a). Washington, DC.

Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. Journal of Environmental Psychology, 11, 305-328.

Wise, J. A. and Taylor, R. P. (2002). Fractal design strategies for enhancement of knowledge work environments. Paper presented at The Human Factors and Ergonomics Society.

Taylor, R. P. (2006) Reduction of physiological stress using fractal art and architecture. Leonardo, 39(3), 245-251.

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Shopping Environments: A Systematic Analysis of the Evolution of Places for Shopping

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Debajyoti Pati, Texas Tech University

ABSTRACT

The aim of this study is to analyze the evolution of shopping spaces in history. Trading is one of the fundamental human activities, and places designated for trading activities has been an important part of cities. Factors such as war, population growth, and the industrial revolution have led to major design shifts during the evolution of shopping spaces. This study is an attempt to systematically identify the major design changes and their potential causes. In doing so, seven eras in history were recognized in which major design shifts occurred. For any of the identified historical period, a number of buildings were selected that best represent the architectural trend in that period. By utilizing a structuralist method, seven architectural facets were identified and were considered in the analysis to track the significant changes. These architectural facets are: 1) design of individual stores, 2) aggregation of shops, 3) urban placement, 4) circulation, 5) pairing with other building types, 6) inward/outward design, and 7) arrangement. The findings regarding any of these factors were discussed in detail. Also, a graphical representation of the findings was presented.

REFERENCES

Geist, J. F. (1983). Arcades: the history of a building type: MIT Press Cambridge, MA.

Eppli, M., & Benjamin, J. (2009). The evolution of shopping center research: a review and analysis. Journal of Real Estate Research.

Coleman, P. (2007). Shopping environments: Routledge.

Pevsner, N. (1976). A history of building types (Vol. 327): Thames and Hudson London.

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The Spiritual Architecture of Philip Johnson: Design as a Reflection of Life

Daniel Harper, Ohio University

ABSTRACT

"God brought you to me", said Dr. Robert Schuller in 1975 to the design team of Philip Johnson and John Burgee. So began a partnership that would result in Philip Johnson's most famous work in spiritual architecture, the Crystal Cathedral, in Garden Grove California. In a career that spanned more than seven decades and work in multiple styles, Johnson's practice in spiritual architecture includes nine constructed works and at least one unrealized commission. Unfortunately, little is known about Johnson's body of work in the realm of spiritual architecture which, like many of his other works, has been overshadowed by the more well-known Glass House. This study examined the correlation between Johnson's outcomes in spiritual architecture and their relationship to his personal life, his career aspirations, and shifts in design and architectural styles through an understanding of environmental symbology (Tan, 2011) and functionalism (Schwarz and Brent, 1997). As a result, this study found that Johnson's personal life and career aspirations played a role in shaping the outcomes of each work of spiritual architecture and, to some extent, the attention, or lack thereof, they receive today. From personal struggles identifying as a gay man to overt admiration of fascist propaganda, Johnson's life as a member of the privileged class and his desire to attain fame and recognition influenced his work in spiritual architecture and can be seen as both penitence for and subordinate to a life lived largely beyond reproach.

REFERENCES

Bjone, C. (2014). Philip Johnson and his mischief: Appropriation in art and architecture. Victoria, Australia: The Images Publishing Group Pty Ltd.

Lamster, M. (2018). The man in the Glass House. Philip Johnson, architect of the modern century. New York, NY: Little, Brown and Company.

Schwarz, B. & Brent, R. (1997). Eero Saarinen's Firestone Baars Chapel: Poetics of a sacred place. Journal of Interior Design, 23(1), 37-47.

Tan, L. (2011). A review of environmental symbology: Origins and contributions toward a theoretical framework. Journal of Interior Design, 36(2), 39-49.

Whiting, C. (2016). Philip Johnson: The whence and whither of art in architecture. Journal of the Society of Architectural Historians, 75(3), 318-338.

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Active Design: Potential Energy Beats Out Sprawl in 1960s Era Suburban Tract Housing

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ABSTRACT

Motivation: Suburban housing is being given renewed scrutiny in the United States. As a complement to a recent population movement toward urban cores, adjacent suburbs still comprise 79% of the total population in the country's 50 largest metro areas (Urban Land Institute, 2016). Suburban dwellers are also younger (75% of 25 to 34-year-olds) and more racially and ethnically diverse (76% of the U.S. minority population) than one might expect. Many varied challenges and issues therefore await those pondering opportunities in residential housing design. The concurrent effort to integrate wellness into the built environment offers even more opportunity in the design of existing and new suburban housing stock. To understand the potential of extending wellness research to the suburban domain, this study will elaborate on a key portion of a 2017 MFA thesis research project that focused on the principle of Active Design, by incorporating "natural movement" into the built environment.

Issue: Nearly all Active Design research has focused on public buildings and adjacent exterior environments in the urban context. Yet U.S. adults spend 68.7% of their time in a residence (Klepeis, et al., 2001). It is therefore critical to undertake more research on how Active Design measures can be engaged at home. Research into "Blue Zones" has examined five areas of the world where austerity and hardship have created environments that encourage people's bodies to work harder. While "[c]heap, high caloric food and technological advances" create conveniences that have significant negative health impacts for most Americans (Buettner, 2015), Blue Zones residents have been shown to live longer, with less chronic disease. The key, according to Blue

Zones researcher Dan Buettner, is to effectively “deconvenience” our homes so that we move naturally throughout the day.

Methods: Case studies will explore the benefits of folding the Active Design principle of natural movement into residential design by examining three 1960s era homes in suburban Virginia. Each of these homes incorporates a variation of the ubiquitous split level floor plan scheme: the traditional side split; the bilevel, or split entry; and the raised ranch. This inquiry will focus on the health benefits of living in these popular residential housing types. It will be shown that split level designs optimize paths of movement for building occupants by maximizing the path of travel in plan and section. Occupants in these homes use unique stair runs throughout the day to negotiate the layout of “quiet” and “noisy” floors. It will also be shown how the use of building features can maximize the movement of residents in a split level home. Finally, design details and technologies will be analyzed for their potential to encourage or discourage natural movement.

(Preliminary) Results: Because of its proximity to Washington, D.C., Virginia was a leading center for experimental residential design in postwar tract housing. “[L]ocal builders and architects associated with these and other local examples were instrumental in the national effort to promote builder-architect collaboration” (Martin, 2000). This history would suggest that understanding the hidden benefits of living more active lifestyles in 1960s era tract housing in suburban Virginia would have important implications for Americans nationwide.

Conclusions: An analysis of three typical 1960s era split level housing types in suburban Virginia will show that these homes have a built-in potential for encouraging natural movement. Interestingly, with their characteristic stair runs as the defining feature, the popular split level design contrasts with the oft-stated goal of creating barrier-free one-level living for a rapidly ageing U.S. population. The challenge, therefore, is to convince more Americans that living in a home with easy-to-navigate levels can actually lead to a longer, stronger and healthier life span.

REFERENCES

Urban Land Institute. Housing in the Evolving American Suburb. Washington, DC: Urban Land Institute, 2016.

Klepeis, N. E., Nelson, W. C., Ott, W. R., Robinson, J. P., Tsang, A. M., Switzer, P., … Engelmann, W. H. (2001, March 1). The National Human Activity Pattern Survey (NHAPS): A resource for assessing exposure to environmental pollutants [Article]. Retrieved September 20, 2019, from Journal Name: Journal of Exposure Analysis and Environmental Epidemiology; Journal Volume: 11; Journal Issue: 3; Other Information: Journal Publication Date: May-Jun. 2001 website: https://digital.library.unt.edu/ark:/67531/metadc719357/

Buettner, D. (2015). The Blue Zones Solution: Eating and Living Like the World's Healthiest People (1 edition). Washington, D.C: National Geographic.

Martin, C. (2000). Tract -house modern: A study of housing design and consumption in the Washington suburbs, 1946–1960 (ProQuest Dissertations Publishing). Retrieved from http://search.proquest.com/docview/304619634/?pq-origsite=primo

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Designing Learning Spaces of the Academic Library: The Need for a Sensory Design Approach

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SeonMi Choi, University of Central Oklahoma

ABSTRACT

Learning spaces in the academic library provide students with the opportunity to undertake individual or group learning activities, socialize with other students, and use library sources, therefore, these spaces must meet students' needs and expectations for improved learning outcomes and better quality of academic life. Students require different types of learning spaces depending on their individual or group work, for instance, spaces for private/alone, public/alone, private/together, and public/together, learning commons, and reading areas ("Learning Spaces", n.d; Andrews & Wright, 2015).

"Sensory impressions obtained through hearing, seeing, touching, tasting, and smelling contribute to the way in which people experience their surrounding environment" (Sonneveld, Ludden, & Schifferstein, 2008). The sense of sight makes people recognize and understand the "visual" information from the space, such as color, light, pattern, visual texture, and shape elements (Ching & Binggeli, 2012), while the sense of touch helps people to perceive and feel their environments by touching the object and keeping the actual connection like tactile texture and haptic technology (Magagula, 2018). These visual and tactile sensory design features create a harmonious, aesthetic, and impressive ambience and have a positive effect on user behavior, experience, mood, and emotion (Sufar, Talib & Hambali, 2012). It is expected that students tend to be more engaged in the library with attractive and functional learning spaces designed by the sensory design approach.

To redesign the library learning spaces at a southwestern university, the aim of this research was to explore how well existing learning spaces met students' needs in terms of satisfaction and expectation with physical environments and sensory design attributes, especially visual and tactile features. The researcher observed existing learning spaces (i.e. furniture, lighting, finish materials, layout, arrangement, circulation, technology usage) and identified current issues that should be modified or upgraded based on her experience and other good cases. A survey questionnaire composed of close- and open-ended questions was used to collect data from university students (n = 146) who have used learning spaces for their individual and group study work, and use of library sources. A 7-point Likert scale was used to ask students' satisfaction, agreement, and expectation levels.

Research findings indicated that students frequently used private/alone learning spaces for their individual study work, and public/together spaces for collaboration and communication activities. Students were satisfied with the overall learning spaces (i.e. furniture arrangement, space layout, location), but many respondents were not satisfied with sound and visual privacy, furniture size and type, aesthetics, and technologies. They mentioned that library furniture was uncomfortable due to poor ergonomics. Some students responded that ceiling lighting fixtures were not bright enough for their study, and motion sensor lights were actually inconvenient. They expected accessing to natural light and having more task light options. The aesthetics of learning spaces were major concerns, for instance, color, pattern, and texture were bland. To enhance the aesthetics of physical environments, students suggested adding green plants, art installation, and decorations. These findings showed that many students were not satisfied with visual and tactile design features of learning spaces. The researcher utilized research findings to solve existing problems and support design solutions by applying visual and tactile stimuli to meet students' needs and expectations.

The researcher will use visual diagrams, charts, and pictures for explaining research findings as well as hand-drawn sketches, computer-generated perspective renderings, and virtual reality tools for presenting design solutions and outputs.

REFERENCES

Andrews, C., & Wright, S. E. (2015). Library learning space: Investigating libraries and investing in student feedback. Journal of Library Administration, 56(6), 647-672.

Ching, D. K., & Binggeli, C. (2018). Interior design illustrated (4th Edition). Hoboken, New Jersey: John Wiley & Sons, Inc.

Magagula, S. (2018). 6 tools to optimize classrooms: Learning through the Senses. Retrieved from https://www.healingplaces.nl/single-post/2018/04/03/6-Tools-To-Optimize-Classrooms-Learning-Through-the-Senses

Sonneveld, M. H., Ludden, G. D. S., & Schifferstein, H. N. J. (2008). Multi sensory design in education. ResearchGate. Retrieved from https://www.researchgate.net/publication/286043976_Multi_sensory_design_in_education

Sufar, S., Talib, A., & Hambali, H. (2012). Towards a better design: Physical interior environment of public libraries in peninsular Malaysia. SciVerse ScienceDirect, 42, 131-143.

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Interior Imagery as Historical Documents of Spatial Domestic Experience

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ABSTRACT

Seminal study "History of Private Life" (1990) emphasizes the interiors as a setting for quotidian but crucial aspects of private life that is the cornerstone of human life. In spatial context "History" emphasizes Interiors as "a staging ground" that enables an understanding of interior consumption and familial and social structure, gender relations and cultural attitudes of the particular historical period. Fossil-like the traces of the inhabitants are "imprinted in the interior" and can be unveiled by what Benjamin called "a detective story" where the interior is not only an image but also is a representor of a certain spatial conditions - "the etui of the private individual" (Benjamin, 1990). The concept of privacy became an important topic since the publishing of the study. This image investigation analyses interior imagery of a Soviet-era apartment typology proliferated throughout the Eastern Block in the 1960-80s. The new typology of multi-storied mass-produced standardized apartment buildings was launched by Khrushchev in the late 1950s to eliminate USSR's extreme housing shortages. It became a vivid symbol of privacy and autonomy that provided unprecedented opportunity for the private life and real privacy. This particular residential typology serves as a document of design history, giving insight and context to a current understanding of the interior in the historical context. The evidence of key features of Soviet-era domesticity is surfaced in layouts, in arrangements of furnishings, its material content, signs of wear, proxemics and visibility conditions that contribute to or hinder a sense of privacy and comfort. Reflecting on theoretical perspectives of privacy and drawing on extensive literature and analysis of apartment's plans and photographic imagery, the paper focuses on issues of privacy within the family and the ways the spatial environment had defined women

experiences. Examination and analysis of late Soviet-era interior conditions and domestic arrangements shows, firstly, its close relation to a gender role's discourse. The discourse is evident in how the space was experienced and managed solely by women and functioned as a normative feminine space that displayed a never resolved contradiction of an official Soviet discourse that had publicly celebrated a female empowerment but, at the same time, promoted a reality of a double shift life for working women. It had an impact on gender roles and family relations, raised familial tensions and contributed to growth in divorce rates. Secondly, since the principle of privacy is affected by scale, planning for privacy and maintaining it is more realistic in larger size residences than in micro-scale dwellings such as fore above Soviet-era apartments.That assumption lead the researcher's attempt to link this historical precedent to a contemporary global trend in development of micro-size living spaces, similar in size to a historic precedent discussed here, in response to high real estate and rent prices, increased population density and inadequate supply of affordable housing. As based on conducted research of the historic precedent, the trend of micro-scale housing might to be not conducive to privacy as it would function better for single people or a childless couple and thus, further contribute to declining marriage rates in generation of 20-30s.

REFERENCES

Perrot, M. (1990)A History of Private Life: IV. From the Fires of Revolution to the Great War. Cambridge, MA and London, England: The Belknap Press of Harvard University Press

Rice, C. (2007). The Emergence of the interior: Architecture, Modernity, Domesticity. London and New York: Routledge

Geffner, T. (2018).Towards a Smaller Housing Paradigm: a Literature Review of Accessory Dwelling Units and Micro Apartment. Accessed https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1636&context=honorstheses on September 9, 2019

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Navigating a STEAM Collaboration: Outcomes and Lessons Learned

Dana Vaux, University of Nebraska Kearney

ABSTRACT

Relevance /Problem: "Interdisciplinarity reflects the reality that is beyond academic boundaries" to solve real world problems (Repko, 2008, p.38). Designers working with other scholars and practitioners in interdisciplinary collaboration face unique opportunities and challenges. When designers bring their knowledge and design problem solving skills to a STEAM project, they contribute a holistic perspective that might not otherwise be considered.

Context: Studies conducted over several decades on nature elements in the built environment reveal psychological benefits of human interaction with nature and that contact with nature may promote and benefit human health, including ill health and mental illness (Maller, Townsend, Pryor, Brown, & St Leger, 2006). This project brought together scholars from varied STEAM disciplines to study the economic and health benefits of small scale aquaponic systems—a combination of aquaculture and hydroponics that uses fish in aquariums to fertilize plants (Nichols & Savidov, 2012). In addition to the study outcomes, the project tested the viability, rewards, and challenges of interdisciplinary STEAM collaborations (Sible, 2017).

Method: The study included three phases. The first phase consisted of an iterative design process for designing and fabricating an aquaponic unit. The second phase included two waves of data collection. The first wave employed a photo sorting method to examine predictors of preference for aquaponic systems compared to only aquariums or plants. This initial data set established a baseline for human preference of environments containing aquaponic systems. In the second wave, a separate group of participants responded to a survey in which they viewed the

same image sequence based on complexity, coherence, and mystery (R. Kaplan & S. Kaplan, 1989). The second data set established a baseline for human perception of these qualities in environments containing aquaponic systems. The third phase included installation and observations of the aquaponic units in built environment settings: home, office, and classroom. Additionally, the interdisciplinary team of scholars met monthly for collaboration on problem solving and to advance the study.

Outcomes: The design phase resulted in the production of a small-scale aquaponics unit, but not without challenges of divergent terminology and knowledge transfer between research team members as well as some frustration by non-designer team members with the design process. In the second phase, the photo sort showed that eight of the top ten preferred images had a combination of water, fish, and plants. Participant comments from the photo sort overwhelming linked preference with design and aesthetic style, frequently mentioning nature and color, while fish and water were commented on significantly less. The survey yielded similar results. Participants rated seven out the top ten preferred images with high complexity, coherence, and mystery. Many images rated low in preference in the first wave were also rated low in complexity, coherence and mystery. Results from the observations revealed benefits from direct human interaction with nature, but also showed that even a small-scale aquaponics system required knowledge of aquariums and diligent maintenance in order to be viable. The complications and benefits of the transference of knowledge and research practices between a diverse set of scholars revealed implications for STEAM collaborations.

Advancement of Knowledge: Results from this study indicate that small-scale aquaponic systems may positively contribute to human health as an interior nature element with aspects of complexity, coherence, and mystery. The study also revealed the importance of design and the contribution of designers, both in process and outcome, for the design of the aquaponics system as well as STEAM collaborations.

REFERENCES

Kaplan, R. & Kaplan, S. (1989). The experience of nature: A psychological perspective. Cambridge, MA: Cambridge University Press.

Maller, C., Townsend, M., Pryor, A., Brown, P., & St Leger, L. (2006). Healthy nature healthy people: ‘contact with nature’ as an upstream health promotion intervention for populations. Health promotion international, 21(1), 45-54.

Nichols, M.A. and Savidov, N.A. (2012). Aquaponics: A nutrient and water efficient production system. Acta Hortic. 947, 129-132.

Repko, A. (2008). Interdisciplinary research: Process and theory. Thousand Oaks, CA: Sage Publications, Inc.

Sible, J. (2017). 4 Things STEAM could achieve on your campus. STEM Facilities Planning and Design Institute Conference Proceedings, June 2017, Denver CO: Academic Impressions.

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New Evidence Educates Future Informal Learning Environments

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Annie Mimick, University of Nebraska-Lincoln

ABSTRACT

Objective:
The goal of this study is to examine the various informal study zones provided to students at five disparate locations at a large midwestern public university to determine student's acoustical, aesthetic, and spatial needs. It also aims to understand how the higher education environment impacts student health and well-being.

Background:
A strategically diverse design is necessary for creating an environment that supports the various needs of learners. Conversation and community have been shown to be significant in learning spaces as students are more likely to interact with their peers to facilitate learning (Painter, 2013). In order to best support students, environments should offer flexibility in supporting both individual learning and group collaboration (Harrop & Turpin, 2013).

Methods:
Data for this mixed methods study were collected between August of 2017 and May of 2019. Researchers conducted 302 hours of unobtrusive observations across all 5 sites, recording the

activities and locations of 23,790 individuals. Next, researchers gathered a multi-modal user activity profile of each zones through random-sample walk-up surveys (N = 991). Focus groups (N = 20) were then conducted to elicit deeper reflection regarding the user's personal needs and successful aspects of design.

Results:

Through updating the furniture plans in all five sites, researchers found many of the spaces had been changed since their initial move in. This is encouraging to note, as students and faculty feel comfortable in these spaces and use them as such. Observational findings suggest that study spaces containing more visual and audio privacy are more frequently used, especially by those studying alone. These spaces were often found farther away from high traffic areas. Additionally, within public study spaces, students are more frequently studying alone (48.26%) rather than in groups of two or more. According to survey results, students expressed their need for individual study spaces, audio/visual privacy, and more control over their environment, such as control over lighting and temperature. Focus group participants provided insight detailing their experiences within these spaces. Many of them noted their enjoyment of studying independently, their need for functional and comfortable furnishings, and their preferred audio/visual privacy necessary to succeed. From this research, it was concluded that visual privacy has become a key necessity for students in all sites. Likewise, acoustical privacy became a common issue due to a large amount of open space in current design trends, which does not accommodate a large range of learner activities. These conclusions help to identify the key characteristics of students wanting control over their environment, especially as most of them are alone and focused on independent work.

Implications:

Findings from this study will inform which practices designers could consider as they design informal learning spaces for higher education, as well as identify the most impactful design characteristics of successful informal learning spaces in order to accommodate the diverse learning needs of today's college students. Additionally, this study is unique in examining five different sites in close proximity while comparing the use of general spaces such as the Main

Library, Learning Commons, and student union with colleges including College of Business and College of Nursing.

REFERENCES

Harrop, D., & Turpin, B. (2013). A Study Exploring Learners Informal Learning Space Behaviors, Attitudes, and Preferences. New Review of Academic Librarianship, 19(1), 58–77. doi:10.1080/13614533.2013.740961

Painter, S., Fournier, J., Grape, C., Grummon, P., Morelli, J., Whitmer, S., & Cevetello, J. (2013). Research on Learning Space Design: Present State, Future Directions. Society for College and University Planning. Retrieved from https://www.uwsuper.edu/facilities/upload/ResearchOnLearningSpaceDesign.pdf

Open Track | Scholarship of Design Research | Poster

The Experimental Design Research with Virtual Reality (VR) Technology

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ABSTRACT

This abstract presents an application of Virtual Reality (VR) technology for interior design research project. VR is an emerging technology with a wide range of potential applications. Rapidly progress of digital technology is strongly involved in all of the design fields. 3D modeling provides a natural way of sharing design information among designers and other participants in the production process (Jezernik and Hren, 2003). Traditionally, this 3D modeling technique was developing by not only computer design application but also full-scaled mock-ups at the Healthcare and Hospitality design fields. The 3D modeling offers the opportunity to comprehend proposed designs more clearly during the planning, thus enabling the greatest influence on design decision (Dunston et al., 2007). The static rendering and full-scale mock-up are effective for showing designs to stakeholders (Autodesk, 2017). However, it is limited in their ability to communicate an experiential view of the final design result. VR modeling and display technologies offer the greatest potential to improve design through early design visualization (Dunston et al., 2007). Thus, VR technology offers enable designer and clients to better understand design from the occupants' perspective (Autodesk 2017).

This study is a collaborative study with other disciplines that presents and where the possibilities to use VR in design research processed are examined. The faculty and students at both Interior Design and Hospitality Management program exam the relationship between employees' breakroom setting at the hotel and improving employees' well-being through the experimental VR technology. Previous studies have found that taking a break can reduce fatigue and increase

productivity (Demerouti et al., 2009). However, the theoretical process underlying the unique relation between work break characteristics and employees' psychological well-being is not to be tested. Although the physical interior environments profoundly influence employees' physical and psychological health to a great extent (Otterbring et al., 2018). Thus, this study examines how to break room design factors or constrains employee well-being. Finally, how space layout and design consideration in employee breakroom at the hotel offers possibilities for employees themselves to foster job satisfaction and to reduce employee' emotional exhaustion.

Research Stage

1) Participants for this study were recruited from Mechanical Turk and a total of 198 participants were invited to this study. Our results revealed that control of break, preferred break activities and physical environment of employee breakroom were positive to a feeling of energy.

2) After data collection, authors have defined the design problem identification of interior environment at hotel breakroom. The proposed breakroom was considered four main design goals and each goal also identified several design objectives.

3) We conducted an experimental design using VR technology. The total of 32 students was invited to the experiment. The participants were instructed to experience the existing condition and rate the questionnaire. After completing the first set of experiment, they were asked to experience the manipulated treatment and answer the same questionnaire. The virtual reality simulation was created based on the actual employee break rooms of hotels located in Mid-west.

This study contributes to knowledge on the effect of workday breaks on employees' psychological well-being in a hotel context. 1) The physical environment of the employee break room, preferred break activities, and control of break were positively related to psychological well-being by revealing the mediation effects of feeling of energy. 2) Given the physical environment of the break area as the strongest predictor of employee well-being. This study examined that VR technology worked conveniently to bring advanced visualization into a design research process.

REFERENCES

Autodesk (n.d.). Six best practices for immersive visualization. Retrieved from https://pages.autodesk.com/Six-Best-Practices-for-Immersive-Visualization-eBook-US.html

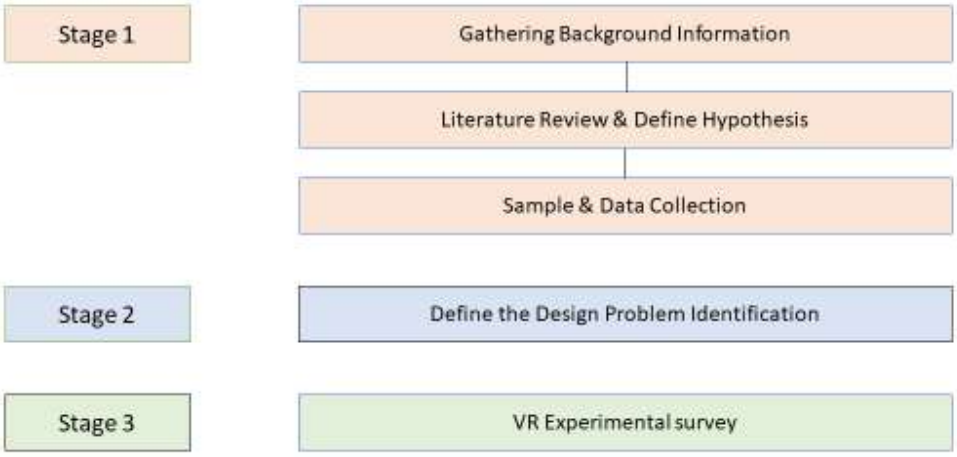
Demerouti, E., Bakker, A. B., Geurts, S. A., & Taris, T. W. (2009). Daily recovery from work-related effort during non-work time. In Current perspectives on job-stress recovery (pp. 85-123). Emerald Group Publishing Limited.

Dunston, P., Arns, L., & McGlothlin, J. (2007). An immersive virtual reality mock-up for design review of hospital patient rooms. Collaborative Design in Virtual Environments, 167-176.

Jezernik, A., & Hren, G. (2003). A solution to integrate computer-aided design (CAD) and virtual reality (VR) databases in design and manufacturing processes. The International Journal of Advanced Manufacturing Technology, 22(11-12), 768-774.

Otterbring, T., Pareigis, J., Wästlund, E., Makrygiannis, A., & Lindström, A. (2018). The relationship between office type and job satisfaction: Testing a multiple mediation model through ease of interaction and well-being. Scandinavian Journal of Work, Environment & Health, 44(3), 330-334.

Appendix 1: Stage of Research



Appendix 2: Design Problem Identification

Appendix 3: Means, Standard Deviations, and Pair Sample t Test

Variable	Time					
	Existing Condition		Proposed Design		Pair Test	
	M	SD	M	SD	t	df
1. Emotional Exhaustion	3.82	1.12	2.84	1.17	5.08**	32
2. Workplace Friendship Opportunity	5.08	0.91	5.52	1.02	-2.04*	32
3. Job Satisfaction	4.76	1.17	5.76	1.11	-4.90**	32

Pedagogy | Scholarship of Design Research | Poster

Cognitive Load as a Measure of Acceptance in Immersive Virtual Reality Environments

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ABSTRACT

Virtual reality (VR) has been used to visualize proposals in design and architectural disciplines (e.g. Portman, Natapov & Fisher-Gewirtzman, 2015: Natapov & Fisher-Gewirtzman, 2016). The use of this technology allows the evaluation of future designs in multiple aspects of the design proposal. VR visualization not only allows designers but also other stakeholders, users, and administrators to better understand the implication of design decisions that are being made.

An example of this is urban design, where design mistakes have high usability and cost implications. In urban spaces, higher acceptance from the public is influenced by pedestrians' features, greenery, and people (Noland, Weiner, Gao, Cook & Nelessen, 2017). Research conducted on pedestrians' routes has shown that the paths are result of visibility attributes and cognitive demand (Natapov & Fisher-Gewirtzman, 2016). Cognitive demand is defined through the cognitive load theory and plays a major role in the usability and acceptance of spaces. Cognitive Load Theory (CLT) is structured in three elements: Intrinsic cognitive load, extraneous cognitive load and germane cognitive load (Szulewski et al. 2017). Noland et al. (2017) used eye tracking in combination with visual preference surveys as tools for better understand people´s design acceptance, nonetheless, their research did not experiment with immersive environments. This study proposed the use of immersive VR with eye-tracking and a

functional near-infrared spectroscopy (fNIR) device to measure cognitive load as a measure of acceptance.

In this study, a walk-by through two different urban areas was documented using a 360-degree video recorder. Thirty participants were recruited and randomly assigned to one of two different VR environments. Participants were asked to view a walk-by video wearing an HTC VIVE headset which included eye-tracking. An fNIR device was attached to the participants' scalp recording oxygenation levels of the brain to account for cognitive load in addition to a NASA-TLX questionnaire administered as control.

The collected data was analyzed. The generated heat maps and the calculated cognitive load of the two groups were compared. The analysis revealed how different designed attributes influenced cognitive load of the users, hence, affected their perception and acceptance of the urban space. The results of this study provide an example for the use of immersive virtual reality and cognitive load as a measure of acceptance for interior or architectural design.

REFERENCES

Natapov, A., & Fisher-Gewirtzman, D. (2016). Visibility of urban activities and pedestrian routes: An experiment in a virtual environment. Computers, Environment and Urban Systems, 58, 60-70.

Noland, R. B., Weiner, M. D., Gao, D., Cook, M. P., & Nelessen, A. (2017). Eye-tracking technology, visual preference surveys, and urban design: preliminary evidence of an effective methodology. Journal of Urbanism: International Research on Placemaking and Urban Sustainability, 10(1), 98-110.

Portman, M. E., Natapov, A., & Fisher-Gewirtzman, D. (2015). To go where no man has gone before: Virtual reality in architecture, landscape architecture and environmental planning. Computers, Environment and Urban Systems, 54, 376-384.

Szulewski, A., Gegenfurtner, A., Howes, D. W., Sivilotti, M. L., & van Merriënboer, J. J. (2017). Measuring physician cognitive load: Validity evidence for a physiologic and a psychometric tool. Advances in Health Sciences Education, 22(4), 951-968.

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Conveying Sustainable Concepts Through a Multifaceted Approach

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Bryn Bassett, George Washington University

ABSTRACT

Sustainability is a common component of Interior Design/Interior Architecture programs. Many programs introduce students to Leadership in Energy and Environmental Design (LEED) since it is one of the most recognized programs. "LEED, or Leadership in Energy and Environmental Design, is the most widely used green building rating system in the world. Available for virtually all building, community and home project types, LEED provides a framework to create healthy, highly efficient and cost-saving green buildings. LEED certification is a globally recognized symbol of sustainability achievement." https://new.usgbc.org/leed

What if students of a Sustainability and Human Well-Being class explored several Green Certifications to determine the common threads that run through them? How would this influence their studio projects moving forward?

The educator will explain the strategies for selecting the Green Certifications and the organizational format of the class while a student from the class will explain the values of exposure to several Green Certifications and the benefits of measuring temperature, lighting and decibel levels as required by several Green and Well strategies. Student examples of the applications of strategies to a Studio project and Pre-Design research will be a component of the presentation.

Using Green Globes, BREEAM, Living Building Challenge, and LEED as Green Certifications to explore, Graduate and Undergraduate students in a Council for Interior Design Accreditation

(CIDA) accredited program embarked on a understanding of the four certifications and the concepts that are common to them.

On the first day of the five-week class students were divided into four groups; each group researching one of the Green Certifications. The groups were tasked with gaining a thorough understanding of their groups' certification and developing a graphically strong and straight-forward format to present their findings to the class.

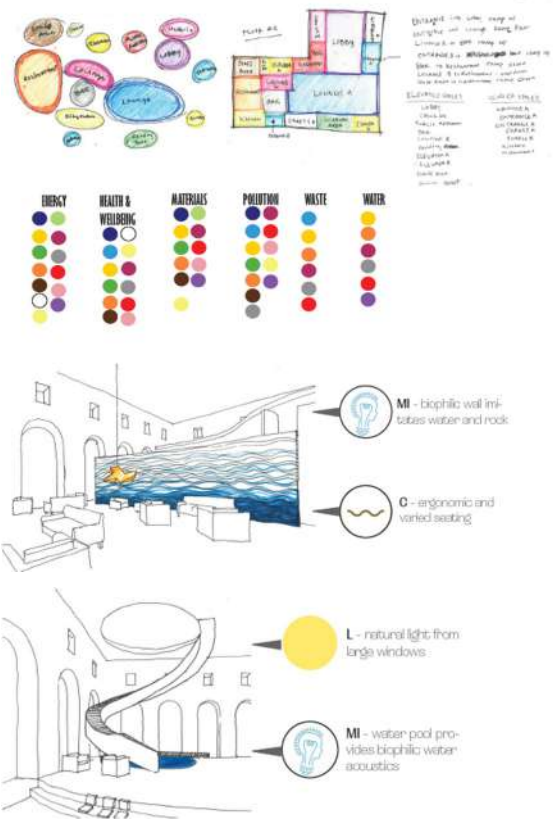
Experiential components to the class included site visits to; the Lutron Experience Center where an understanding of the benefits of energy savings via lighting controls, integrated building systems, and window treatments were demonstrated, the American Society of Interior Designers (ASID) Headquarters, "the world's first space to earn LEED and WELL Platinum Certification", https://www.asid.org, and opportunities to record and document temperature, light, and decibel readings in a variety of settings, both indoors and outdoors. The temperature, light, and decibel readings were referenced to the Green Certifications and WELL Standards as a guide in the application of these strategies.

The presentation will include examples of student group Green Certifications, data collected from temperature, light, and decibel readings from a variety of environments and their connection to the strategies, and application of the strategies to Studio projects.

REFERENCES

https://new.usgbc.org/leed

https://www.asid.org



Sketches

Indoor/ Outdoor Market
Recylcling/ Compost Program
Living Walls

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Experiential Learning Through Virtual Field Trips in History of Interior Design Education

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ABSTRACT

Interior design educators have been studying the implications of incorporating virtual reality as a design support tool in studio-based courses (Wang, Newton, & Lowe, 2015). Other fields such as K-12 and higher education researchers support the integration of virtual reality to enhance the delivery of information and improve student learning. For example, the virtual field trip is one of the virtual reality applications that can provide the user with an immersive and interactive experience of real-world environments when actual field trips might be impractical for multiple reasons (Kenna & Potter, 2018).

Previous research regarding interior design education argues that studying interior design history creates connections between tangible artifacts and the contextual meaning of the built environments through different eras, leading to a broader and deeper understanding of interior design (Cunningham, 2014). Therefore, interior design educators are encouraged to introduce interior design history in a context that motivates students to stay engaged in the learning process (Stevenson, 2015). This study aimed to utilize virtual field trips to provide students with an experiential learning experience when actual field trips are precluded. Experiential learning is one of the active learning techniques that strengthen students' motivation and metacognition. According to Kolb (1984), experiential learning is a holistic learning process in which the learner learns through experience. This study suggests that virtual field trips to historical and contemporary sites could enhance students' learning about the history of interior design during a lecture-based course.

This study utilized Google Cardboard, which is a low-cost virtual reality headset used with smartphones to display 360 images through Google's street view application. The 360 images were preselected and aligned with interior design history course materials by the instructor. This research incorporated formative and summative approaches to measure students' learning. For formative assessment, each student was given an outline guide with major topics and associated URLs for the content that they were asked to watch. During class time, students were asked to take notes on the main interior design features of virtual sites that they experienced. This class assessment technique (CAT) intended to check students' learning of key content during class. The summative assessment took place at the conclusion of the interior design history instructional period, where the students' information retention was assessed through a final exam.

Finally, the students were asked to voluntarily participate in a questionnaire that asked them about their perception of incorporating virtual reality in the history of interior design curriculum. The activity used in this research is expected to enhance the students' engagement in the learning process. As a result, the students are expected to ascend Bloom's Taxonomy from remembering to creating, which result in higher satisfaction with the learning experience. The process and the findings of this study could be used by other instructors for improving interior design students' learning experiences.

REFERENCES

Cunningham, E. (2014). Navigating the past: What does history offer the discipline of interior design? Journal of Interior Design, 39(3), v-xi.

Kenna, J. L., & Potter, S. (2018). Experiencing the world from inside the classroom: Using virtual field trips to enhance social studies instruction. The Social Studies, 109(5), 265-275.

Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. FT Press.

Stevenson, S. P. (2015). Raising the bar on Pinterest: History of interiors in a new context. Proceedings from Interior Design Educators Council Annual Conference: Catalyst for Innovation (pp. 442-444). Fort Worth: Texas

Wang, R., Newton, S., & Lowe, R. (2015). Experiential learning styles in the age of a virtual surrogate. International Journal of Architectural Research: ArchNet-IJAR, 9(3), 93-110.

Classroom Assessment Technique

Outline Guide

Romanesque

Check Out Pisa Cathedral

https://www.google.com/maps/@43.723314,10.3957104,0a,75y,91.86h,60t/data=!3m4!1e1!3m2!1sAF1QipPYOb63Jpuoeqs70EOxK90la6T-a2_KCg1azV4v!2e10

Gothic

Check Out Notre-Dame

https://www.google.com/maps/@48.8527794,2.3497221,0a,75y,90t/data=!3m4!1e1!3m2!1sAF1QipMfmOElNSN0sQ2lU1G5knzqwjS6ftwGrtduy4Yz!2e10

Art Nouveau

Check Out La Sagrada Familia

https://www.google.com/maps/@41.4026451,2.1754777,0a,75y,19.41h,60t/data=!3m4!1e1!3m2!1sAF1QipOhIY9Mm49EB_l3OD7sDMK_2vMJyVjNwRBO1NLD!2e10

Eclecticism

Check Out New York Public Library

https://www.google.com/maps/@40.7531029,-73.9820234,0a,75y,213.41h,66.91t/data=!3m4!1e1!3m2!1sAF1QipN3l2kSs7J2nmh_LCvxZrTvyfY-Zc5PdziDGgX-!2e10

Check Out The Metropolitan Museum of Art

https://www.google.com/maps/@40.7794366,-73.963244,0a,75y,182.67h,61.64t/data=!3m4!1e1!3m2!1sAF1QipOzm7Lwsy5VPXYuhYEaEBYzV17uVYYsAhwr-_pH!2e10

Modernism

Check Out Robie House

https://www.google.com/maps/@41.7895833,-87.5961117,0a,75y,260h,70t/data=!3m4!1e1!3m2!1sAF1QipMrxbhtU9TiERJl1PqZ8AHximga4Nq3CebmqTEo!2e10

Check Out Solomon R. Guggenheim Museum

https://www.google.com/maps/@40.7829796,-73.9589706,0a,75y,340h,90t/data=!3m4!1e1!3m2!1sAF1QipM2GH1g_L6nOqJcbS-JVsJ-9tBHAxYLdd_kehNk!2e10

Check Out Barcelona Pavilion
https://www.google.com/maps/@41.3704746,2.1500091,0a,75y,332h,69.44t/data=!3m4!1e1!3m2!1sAF1QipPaeqKTE1zBJaogJgsBvPtZ5ciHsjPm1iO_2cEP!2e10
Check Out Rietveld Schröder House
https://www.google.com/maps/@52.0852928,5.1476159,0a,75y,220h,90t/data=!3m4!1e1!3m2!1sAF1QipNp1kfMdBSkJVmtzgh94K71SGhAFaHaY2vGxr5U!2e10

Check Out Farnsworth House
https://www.google.com/maps/@41.6349167,-88.53577,0a,75y,320h,90t/data=!3m4!1e1!3m2!1sAF1QipNPS2IGPJEDR7jGdYhtYDTP4G1aJnvtjq9njSlz!2e10

Check Out Villa Savoye
https://www.google.com/maps/@48.9244694,2.02835,0a,75y,240h,80t/data=!3m4!1e1!3m2!1sAF1QipMqyASxpmCvG4F6_g0DVA_Hea6EPl1OsHfFan1G!2e10

Post Modernism
Check Out Allen Memorial Art Museum
https://www.google.com/maps/@41.293594,-82.216549,0a,75y,200h,80t/data=!3m4!1e1!3m2!1sAF1QipO9zhgQppJnVojhiwQiOQI7nnnnCMptBjLfthbB!2e10

Check Out Humana Building
https://www.google.com/maps/@38.257222,-85.758922,0a,75y,70t/data=!3m4!1e1!3m2!1sAF1QipNQPZ9eH_MxpEsUtIFF4jYg4vabwAdc6vahWKMe!2e10

Deconstructionism
Check Out Guggenheim Museum Bilbao
https://www.google.com/maps/@43.2690453,-2.933802,0a,75y/data=!3m4!1e1!3m2!1scufn_zYad1FMzj22y9UbYA!2e0

Check Out Dancing House
https://www.google.com/maps/@/data=!3m4!1e1!3m2!1sAF1QipNX3ABjP6ySrl6RtfeUFt20xSe2IAQkr9Ip69EQ!2e10

Check Out Seattle Public Library
https://www.google.com/maps/@47.606768,-122.3324951,0a,75y,279.95h,72.26t/data=!3m4!1e1!3m2!1sAF1QipOzkomZWhQCn08Pi_S971GxQle_AXH2cWhiOI8V!2e10

Questionnaire

1- How satisfied are you with the incorporation of virtual reality to learn about history of interior design?

Extremely Dissatisfied	Moderately Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Moderately Satisfied	Extremely Satisfied
O	O	O	O	O	O	O

2- How would you rate the importance of incorporating virtual reality to learn about history of interior design?

Extremely Unimportant	Moderately Unimportant	Slightly Unimportant	Neutral	Slightly Important	Moderately Important	Extremely Important
O	O	O	O	O	O	O

3- Incorporating virtual reality helped me to remember the information about history of interior design (recall, recognize, or identify concepts)

Extremely Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Extremely Agree
O	O	O	O	O	O	O

4- Incorporating virtual reality helped me to understand the information about history of interior design (comprehend meaning and explain in own words)

Extremely Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Extremely Agree
O	O	O	O	O	O	O

5- Incorporating virtual reality helped me to apply the information about history of interior design (use or apply knowledge in practice or real-life situations)

Extremely Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Extremely Agree
O	O	O	O	O	O	O

6- Incorporating virtual reality helped me to analyze the information about history of interior design (Interpret elements and structure relationships between individual component)

Extremely Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Extremely Agree
O	O	O	O	O	O	O

7- Incorporating virtual reality helped me to evaluate the information about history of interior design (assess effectiveness of whole concepts in relation to other variables)

Extremely Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Extremely Agree
O	O	O	O	O	O	O

8- Incorporating virtual reality helped me to create a new point of view given the information about history of interior design (display creative thinking and develop new concepts or approaches)

Extremely Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Extremely Agree
O	O	O	O	O	O	O

The rest of the questions are for classification purposes only.

9- What is your age?
   a. Less than 18
   b. 18-20
   c. 21-23
   d. 24-26
   e. 27-29
   f. 30 or more
   g. Prefer not to answer

10- What is your gender?
   a. Male
   b. Female
   c. Other Please specify:
   d. Prefer not to answer

11- How would you describe yourself? (Please select all that apply)
   a. American Indian or Alaska Native
   b. Asian
   c. African American
   d. Native Hawaiian or Other Pacific Islander
   e. White
   f. Other Please specify:
   g. Prefer not to answer

12- What is your classification in college?
   a. Freshman/first-year
   b. Sophomore
   c. Junior
   d. Senior
   e. Unclassified
   f. Prefer not to answer

13- Which filed that best Describes you major, or your anticipated major? (You may indicate more than one if applicable)

14- What have most of your grades been up to now at Michigan State University?
   a. A
   b. A-, B+
   c. B
   d. B-, C+
   e. C, C-, or lower

Thank you for your time and consideration!

Pedagogy | Scholarship of Teaching & Learning | Poster

Problem-Based Learning in a Collaborative K-12 Museum Design Project

Abimbola Asojo, University of Minnesota
Hoa Vo, University of Minnesota

ABSTRACT

Providing interior design students authentic experiences is one primary goal of interior design education. Hence, the authors incorporated a problem-based learning project to provide their students with hands-on experiences. Problem-based learning (PBL) initiates students' autonomy in critical inquiry of the problem, clients' requirements, and evaluations of potential solutions. A design-oriented interpretation of PBL involves students following 5 steps (1) introduction to problems, (2) critical thinking, (3) identifying learning needs (self regulation), (4) application of new knowledge to solve problems, (5) reflection on the learning experience (Albanese & Dast, 2013; Galford, Hawkins & Hertweck, 2015; Huber, Waxman, & Clemons, 2017).

In a seven-week PBL experience, 32 interior-design-sophomores engaged in hands-on experience of designing a state natural history museum in collaboration with a global architecture and design firm. They worked on the museum's South education wing, including the K-12 education area and hands-on exhibition, taking into consideration fixed elements such as the shell, structure, and vertical circulation. In week one, students were introduced to the project and context by the instructors and firm professionals (PBL step 1). Also, students were assigned to teams of three. The teams spent time researching and familiarizing themselves with the project requirements and building systems (PBL step 2). In week two, the teams worked on their preliminary concepts and designs (PBL steps 3 & 4). Week three was the time for critiques. The teams presented their preliminary concepts to the instructors, firm professionals, and the museum representative. Based on the comments they got, the teams developed their concepts into design

solutions in week four (PBL step 5). During these weeks, instructors gave the teams lectures and desk critiques on rendering, technical drawings, and K-12 design principles. In week five, the teams pitched their proposals with the floor plan, experience plan, RCP, and sketched perspectives. The purpose was to allow sufficient time for the teams to revise their work. Students used week five and six to enhance their designs based on the received critiques (PBL steps 3, 4, & 5). The teams presented their final solutions to the instructors and firm professionals in week seven.

All teams provided rich-in-context and insightful solutions that met the project requirements. They were able to incorporate the state-official sustainable design guidelines into the specifications of materials and furniture and fixtures. The key themes that emerged from all the teams solutions were a *sense of place*, *connection to nature*, *sustainability*, *universal design* and *interactive technology*. The museum representative, firm professionals, and the instructors were pleased with the in-depth research and design solutions of the student teams. Through the teams' reflections of their design solutions and process, they expressed ample understanding of the site, the existing building's structures and systems, the community, and target audience (K-12 students). This poster presents findings from the problem-based learning project with student design solutions and their learning experiences via written reflections.

REFERENCES

Albanese, M. A., & Dast, L. C. (2013). Problem-Based Learning. In Understanding Medical Education: Evidence, Theory and Practice: Second Edition (pp. 61-79). Wiley Blackwell.

Huber, A. M., Waxman, L. K., & Clemons, S. (2017). Students as Researchers, Collaborators, & End-users: Informing Campus Design. International Journal of Designs for Learning, 8(2).

Galford, G., Hawkins, S., & Hertweck, M. (2015). Problem-based learning as a model for the Interior Design classroom: bridging the skills divide between academia and practice. Interdisciplinary Journal of Problem-Based Learning, 9(2), 8.

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Project-Based Learning: A Multidisciplinary Collaboration between Freshmen and Capstone Students

Silvana Polgar, California State University Fresno

ABSTRACT

Actively engaging first semester freshmen Interior Design (ID) students in a community project about homelessness, a complex social problem, presents several challenges. These challenges increase if the project is a multidisciplinary and collaborative project with senior students from a Capstone class. The study prompts two questions: How early should social awareness be introduced to higher education students? Can freshmen and senior students both benefit from a collaborative work?

The course was related to the Project-Based Learning (PBL) teaching and learning model (Thomas, 2000). A team of 18 ID and 4 Construction Management (CM) students, mentored by faculty and a local architect, was assigned to design and build a temporary shelter prototype for people experiencing homelessness. The ID students worked in teams of three students, researched the topic and design solutions, initiated group and class discussions, conducted class presentations, collaborated with the CM students, designed a logo, made a poster, and presented the project at the HIP (High Impact Practice) Student Symposium.

For the ID students, qualitative data was collected, through empirical observation, during the project. Qualitative and quantitative data were collected at the end of the semester through the distribution of a survey/reflection. The data assessed the level of awareness of the students about homelessness and the effect that the project had on the students at the end of the semester. Partial empirical qualitative data were collected through weekly empirical observation and written notes

about: the ID students' behavior and attitudes during the project, a field trip to a homeless shelter, research, class discussions, group presentations, and collaboration and interaction with the CM students.

As a result, the PBL project raised student awareness about people experiencing homelessness and their various needs. It increased students' empathy, encouraged engagement with the community, and volunteerism. It provided a platform for a valuable collaboration and integration with CM students (Bear & Skorton, 2019). The project enriched the Interior Design course curriculum and the students' learning experience.

REFERENCES

Thomas, J. W. "A review of research on project-based learning." Autodesk Foundation (2000). http://www.bie.org/research/study/review_of_project_based_learning_2000

Bear A., & Skorton D. "The World Needs Students With Interdisciplinary Education." Issues in Science and Technology 35, no. 2 (Winter 2019): 60–62

Survey at the End of the Semester
Homelessness

1. Regarding the homeless project, what did you learn from the experience?

Why does it matter?

2. Before working on the project, what was:
   a)Your knowledge about homeless people?

   b) Your views/thoughts about homeless people?

3. As a result of researching, analyzing, and contributing to poster production, what impact did the project have on you:
   a) Academically-Explain:

   b) Personally-Explain:

4. Did the project make you think about the importance of advocacy for the homeless? Why?

5. Was the project a transformative experience? If it was a transformative experience, explain why:

6. During the project, did you feel invested in yourself (involved in the project, besides working on the project because you needed a grade)? Explain:

7. If you felt invested in yourself, at what phase of the project did you feel invested?
   Circle one or more:
   a) From the beginning of the research and/or class presentation
   b) When we started to work on the colors and accent wall
   c) During the development of the poster

8. Do you feel it is important to intervene as a designer to help reduce the urgent homelessness crisis? Explain:

9. Did the project raise your interest to collaborate with other students, faculty, the community, and local organizations to help minimize the homelessness crisis?

Thank you. Have a good winter break.

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Post-Occupancy Evaluation and Integrated Lighting Analysis Strategies: A Classroom Building Case Study

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Mary Guzowski, University of Minnesota
Hoa Vo, University of Minnesota
Suyeon Bae, University of Missouri

ABSTRACT

Overview

The original three-story U-shaped classroom building opened in 1926 on the historic Mall of a Midwest University. The renovation and addition of a new four-story was completed in 2017. The four-story addition was integrated into the center of the original U-shaped building to include a toplit atrium with two east-west "daylight streets" that wrap around a vertical four-story volume that houses laboratories, a large lecture hall, classrooms, and offices (Figure 1). The design was shaped to provide "daylight democracy" and to optimize access to natural light and views in all public and private spaces. The facility renovation was designed using the State Sustainable Building Guidelines. The Guidelines track state-funded buildings as a means of demonstrating real outcomes aimed at the conservation of energy resources, creation and maintenance of healthy environments, and occupants' satisfaction with their environments. A Post-Occupancy Evaluation (POE) was developed to assess human outcomes in compliance with the Guideline's project tracking requirements. After 14 months post-occupancy, a survey was conducted in October 2018. To further study the integration of daylighting and electric lighting design strategies, a fourth floor east-facing classroom was selected for analysis of the lighting design strategies (Figure 2). This presentation discusses and compares findings from the POE and the analysis of the classroom.

Post-Occupancy Evaluation

The POE focused on students' satisfaction with the physical environment as related to indoor environmental quality (IEQ) criteria such as lighting, thermal, and acoustic conditions in their primary classrooms. The survey focused on students' satisfaction with the facility (site, building, and interior) and the effect of the facility's physical environment on their perceptions of their academic performance and health. The POE survey provided descriptive information about students' perceptions of the IEQ of their classroom environments. An IEQ Satisfaction Score in the primary classroom is a statistical combination of the 11 category-level criteria (Acoustic Quality, Appearance – aesthetics, Cleaning and Maintenance, Daylighting Conditions, Electric Lighting Conditions, Furnishings, Indoor Air Quality, Technology, Thermal Conditions, Vibration and Movement, and View Conditions). The mean IEQ Score for students' satisfaction with the physical conditions of the building primary classrooms was 5.58, which falls at the moderately high end of the satisfied range (Figure 3).

Daylighting and Electric Lighting Analysis.

A 940 square feet classroom with 220 square feet of floor-to-ceiling east-facing windows for daylight, and 136 square feet of interior glazing for borrowed light from a hallway was analyzed (Figure 4 and 5). The electric lighting includes four rows of LED recessed downlights with four switching scenarios for on/dimming/off. The visible light transmittance (VLT) of the east exterior glazing is 58% and the west interior glazing at the hallway is 52%. Levels of daylight and privacy are modified with perforated black shades on the east windows and perforated white shades on the interior glazing adjacent to the hallway. Six rows of moveable tables and chairs are oriented to the south in rows running east to west. The podium, marker board, and computer projection screen are on the south end of the room.

REFERENCES

Rocca, M. (2017). Health and well-being in indoor work environments: A review of literature. IEEE. 978-1-5386-3917-7/17

Sanni-Anibire, M., Hassanain, M., & Al-Hammad, A. (2016). Post-Occupancy Evaluation of Housing Facilities: Overview and Summary of Methods. Journal of Performance of Constructed Facilities, 30(5), 1–9. https://doi.org/10.1061/(ASCE)CF.1943-5509.0000868.

Van Duijnhoven, J., Aarts, M. P. J., Rosemann, A. L. P., & Kort, H. S. M. (2017, December). Personal lighting conditions in relation to occupational health. In 2017 Dutch Data Science Summit, December 4, 2017, Eindhoven, The Netherlands.

Walerczyk, S. (2012, June). Human centric lighting. Architectural SSL. Retrieved from https://humancentriclighting.org/wp-content/uploads/2012/07/Stan-Article-SSL1.pdf

Wong, L. (2017). A review of daylighting design and implementation in buildings. Renewable and Sustainable Energy Reviews, 74, 959-968

Appendix A

Figure 1: Left: Section of the courtyard and classroom addition looking east, center: atrium, right: east façade.

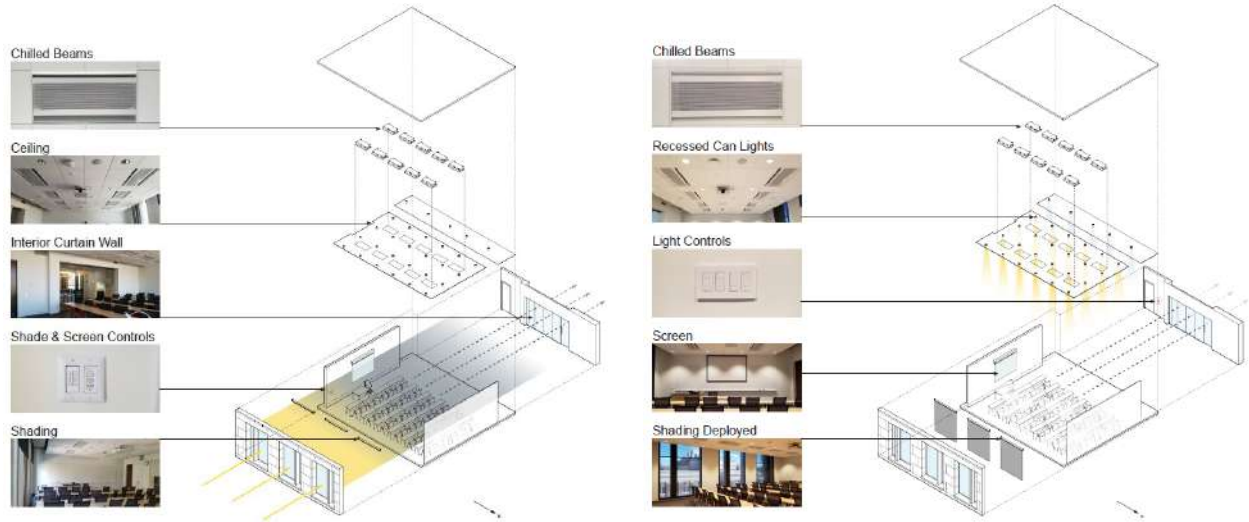

Figure 2: Left: daylighting strategies; right: electric Lighting Strategies.

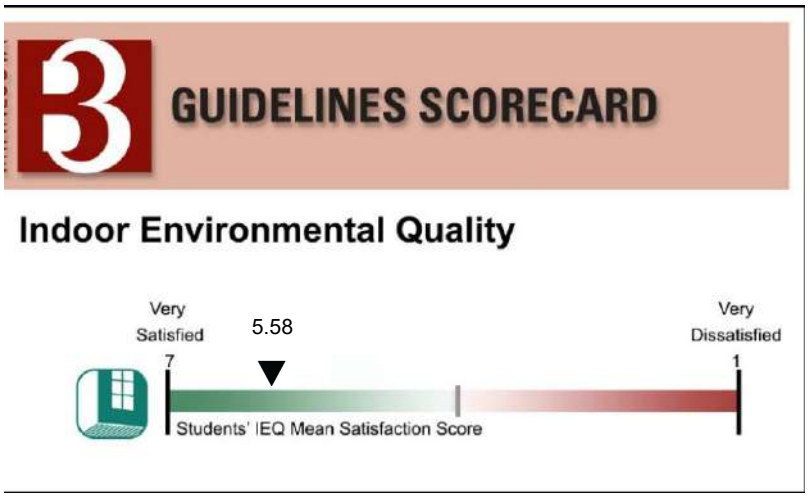

Figure 3. Primary Classroom - IEQ Satisfaction Score

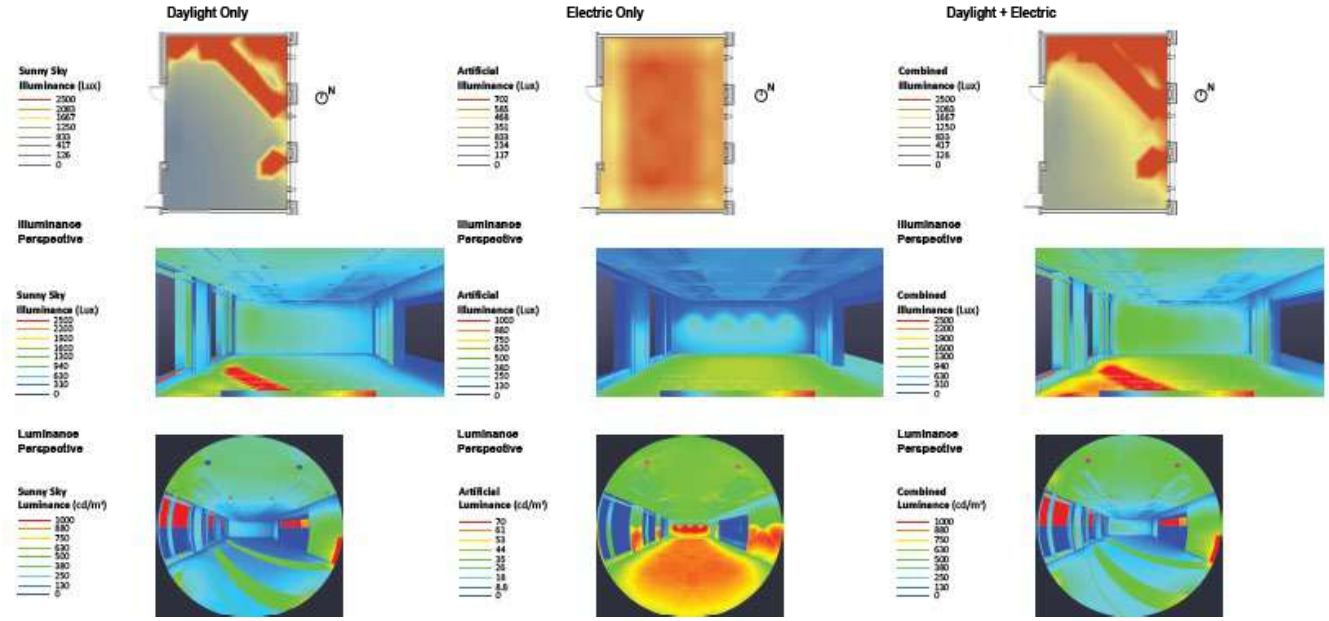

Figure 4: Comparative studies: Left: daylight only, center: electric only, and right: combined.

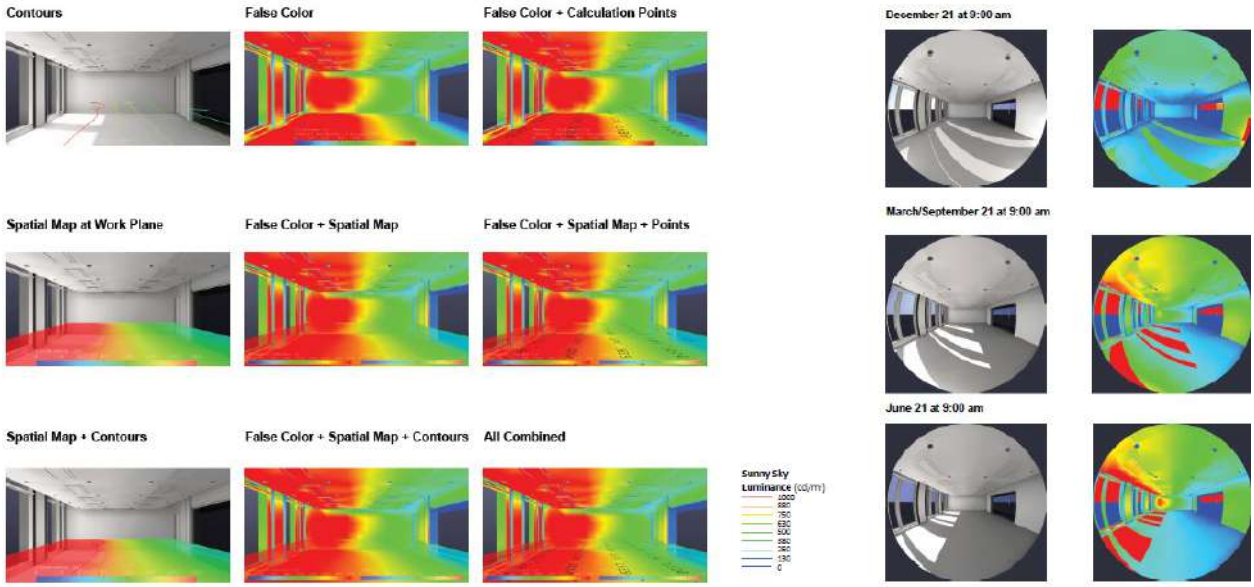

Figure 5: ElumTools: Comparative visualization formats: left: illuminance; right: luminance.

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Reclaiming Beercraft: A Sensory Experience

Zishan Zeng, Virginia Commonwealth University

ABSTRACT

The senses are directly a source of stimulation, pleasures and pains, and therefore inherently important to the human organism. They are important also because it is typical of many cultural artefacts that through them sensory experience is given specific intensities and extensities, shapes and meanings. The city's history has been intertwined with beer culture going back more than 150 years. To promote the local craft beer culture, the sensory design will be incorporated into the interior design. From the sense of the human body, sight, taste, smell and touch, it stimulates the sensory functions of beer lovers at multiple levels, enabling consumers to understand the brewing process of beer more realistically and deeply. By creating a comprehensive experience space that integrates education, history, experience, production and entertainment, more beer knowledge is popularized to people, so that people can learn the difference of crafts and raw materials between different beer types, and how to taste and distinguish the quality of beer, which is conducive to people's better choice of beer and improve the industry standards of the beer market.

The way we feel, smell, and even taste is hard to capture. This difficulty points to the deep-rooted position of visual tyranny. Sensory studies incorporate a sensory approach to culture, the challenge here being to give full weight to the role of the senses in cultural life. It also includes a cultural approach to the senses, where this suggests setting impacts and employments of the senses in their cultural context, particularly in the ways in which they are given and contribute to shareable meanings. Nowadays, people have the opportunity to visit the brewhouse to see the brewing process and enjoy the finished brewed beer. However, they can only see the boring

equipment and the repeated operation of the workers, and can not participate in it to feel the charm of the craft beer culture.

My plan is to carefully dissect several precedent studies concerning breweries, wine museums, cellars, and roastery. Previous studies include Cehegín Wine School by of Inmat Aarquitectura, Antinori Winery by Archea Associati and Starbucks Roastery. In-depth interviews with employees of Hardywood Park Craft Brewery and Stone Brewery, local beer lovers and local designers who have designed breweries will be included in my methods of research. Besides, the designers concerning the sensory design, including Juhani Pallasmaa, Steven Holl and Peter Zumthor, will also be one of my key research parts.

Sensory design or consciously designing a full range of sensory experiences can better connect us to the physical world and help people find the right place. The multi-sensory design concept not only brings a tactile experience to consumers, but also makes people feel sublimated in their hearts, realizes the integration of information, and maximizes the expression of product information.

My idea is to create a maker space of craft beer, where history, learning, production, tasting, education and design are combined. Here people can learn about the local craft beer history, participate in the beer brewing process through vision, smell, taste and sound, absorb the knowledge of beer, such as raw material, classification, storage, tasting, identification and so on. During the process of experience and interaction, they could make their beer and even participate in the design of beer containers and packaging design, which allows people to experience a process from learning, production, designing to purchasing.

REFERENCES

Heywood, L. (2017). Sensory arts and design. London; New York: Bloomsbury Academic, an imprint of Bloomsbury Publishing Plc.

Bucknell, A. (2018). Architecture You Can Smell? A Brief History of Multisensory Design. Retrieved from https://www.metropolismag.com/architecture/multisensory-architecture-design-history/

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A Public Education Model for ASD Therapies

Ed Williams, Virginia Commonwealth University

ABSTRACT

In 2018, the CDC determined that approximately 1 in 59 children in the US is diagnosed with an Autism Spectrum Disorder (ASD). The percentage of children being diagnosed with ASD has risen annually in recent history (CDC, n.d.). With this alarming escalation rate and the implications on the future classroom, motivations for this research are as follows:

Gain a clear understanding of how people on the spectrum experience the world and apply design strategies to assist them.
Alleviate the burden placed on educators in classrooms.
Provide an accessible model for therapy, designed to help children diagnosed with more severe cases (DSM-5, F84.0, Level 3) to develop coping skills for the classroom.

ASD is a "developmental disability that can cause significant social, communication and behavioral challenges." The CDC states, "The learning, thinking, and problem-solving abilities of people with ASD can range from gifted to severely challenged. Some people with ASD need a lot of help in their daily lives; others need less" (CDC, n.d.).

A common challenge for children on the spectrum is sensory overstimulation. Symptoms are often exacerbated by an inability to escape or to communicate a desire for change. The DSM-5 categorizes severity into a range of three "levels", with the third level being the most severe and labeled as "Requiring very substantial support" (APA, 2013).

Public “Special” Education classrooms in the US often lack funding or resources to appropriately manage students with the most severe cases of ASD. Without proper resources, academic and personal development may be stunted. When staff’s attention must be focused on one student exhibiting severe symptoms, the needs of other students are difficult to meet.

Research for this project will examine common curricular practices and studies of environments that have successfully catered to inclusion and development of students on the spectrum.

Research on “autism-friendly” interior environments, to include case studies of:

New Struan School in Alloa, Scotland
Netley Autistic Unit at Netley Primary School in Camden, London, UK
Center for Autism + The Developing Brain at NY Presbyterian Hospital in White Plains, NY

Personal Interviews with: A Special Educator who has worked in several public school settings. This process will provide continuous feedback, introductions to a wide peer network and potential opportunities to interact with hypothetical users in their typical classroom environment.

Mostafa’s Autism ASPECTSS Design Index defines parameters that have proven helpful in designing inclusive spaces for children with ASD. These are: Acoustics, SPatial sequencing, Escape space, Compartmentalization, Transitions, Sensory zoning, and Safety (Mostafa, 2018).

Conflicting research shows two common approaches to the design of schools for children on the spectrum. Mostafa’s is an “autism-friendly” approach designed to eliminate triggers. Opponents suggest this approach does not allow for the development of coping skills that will allow children with ASD to thrive in “real-world” settings.

A public therapy center may allow children with severe cases of ASD to develop healthy coping skills in a safe environment that both nurtures and challenges.

This center would be designed to pull the most severely affected students from district schools, alleviating the burden placed on the classroom. Students will progress through a curriculum designed to help them develop the skills to succeed in the classroom before, ultimately, returning to their home classrooms.

Consideration will go into currently-celebrated principles, such as Mostafa's Design Index, as well as case studies involving Biophilic Design. In contrast to most contemporary education spaces for children with ASD, this environment will be designed as a transitional space in itself, with the ultimate goal being the reintegration of students into typical classrooms.

REFERENCES

APA, American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders : DSM-5. (Fifth ed., DSM library. (NL-LeOCL)374538921 (OCoLC)875868450).

CDC, Centers for Disease Control and Prevention. (n.d.). Autism spectrum disorder (ASD). Retrieved from https://www.cdc.gov/ncbddd/autism/index.html.

Mostafa, M. (2018). Designing for autism: An ASPECTSS post-occupancy evaluation of learning environments. ArchNet-IJAR: International Journal of Architectural Research, 12(3), 308. doi:http://dx.doi.org.proxy.library.vcu.edu/10.26687/archnet-ijar. v12i3.1589

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Addressing Sustainability, Wellbeing, Social Equity and Resilience at the Schematic Design Level

Saglinda Roberts, Chatham University
Rob Fleming, Jefferson University

ABSTRACT

The Interior Designer's role and knowledge base are increasingly expanding. Sustainable design, social equity, wellbeing, and resiliency are currently at the forefront of the design industry and are critical areas of concern for the future. Design itself is a complicated process requiring multiple areas focus to be applied simultaneously. Sustainable design increases the number of considerations, many of which are new to interior design students. The question was if a methodology for guiding students through the complicated process of holistic sustainable design in a clear, concise way could to be created and where it should take place in the design process.

The approach for investigating the question was to first analyze, distill and categorize the broad scope of information required for holistic integral sustainable design along with the past tenants of architecture. Integral theory was identified as a viable basis for a new methodology, which proposes that all human understanding can be categorized into four broad areas of Beauty or Experience, Cultural Connection, Performance, and Inter-related Systems.

The research consisted of the applying the theory to a single design project seeking to discover: (a) if it was a valid approach, (b) if a step by step process could be designed and used at a larger scale, (c) if it would really make a difference in the design outcome. The exploration revealed a holistic analysis method applied at the beginning of the process, resulted in a deeper level of design, resonated with occupants, and created net-zero energy use.

The process was then applied to a Master's level collaborative design studio with interior design students and sustainability majors to test its use at a larger scale. This revealed an increased depth of knowledge evident in student work and their thinking. Because of these results, it was decided that this approach should become the new norm for the collaborative design studio in the Masters of Sustainability Program.

To facilitate the use of this process, a studio companion textbook was written to expand and concisely convey the process. The exercises, lectures, explanations, and processes were tested with students as the book was being written. The result is a clear, concise step-by-step process that introduces broad level sustainability thinking that students can take forward into their professional careers.

Site location, climate forces, cultural context, and social equity are all aspects that deeply effect user experience, productivity, cognitive learning, and creativity. Though not historically part of interior design education, these aspects are critical to successful space planning, daylighting, maintaining occupant health, creating biophilic experiences, establishing connections to the outside community, and shaping corporate culture. By incorporating these aspects into each project Interior Designers can help reduce ecological damage while creating projects that holistically meet the needs of their clients, create cultural connections, are resilient, and beautiful. The research and process will be explained and illustrated with case studies, matrices, and sample design problems, as well as how it can be applied to traditional design studios.

REFERENCES

DeKay, M., & Bennett, S. (2011). Integral sustainable design : Transformative perspectives. London; Washington, DC: Earthscan.

Peter Buchanan. (2012). The big rethink: Integral theory. The Architectural Review, , 1/25-25/25.

Wines, J., & Jodidio, P. (2000). Green architecture. Köln; New York: Taschen.

Alexander, C., Ishikawa, S., & Silverstein, M.,. (1977). A pattern language : Towns, buildings, construction. New York: Oxford University Press.

Kibert, C. J. (2008). Sustainable construction : Green building design and delivery. Hoboken, N.J.: John Wiley & Sons.

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Biophilic Interior Design Preferences of Generation Z for Hotel Guest Room Visual Art and Technology

Kelly Lesh, Georgia Southern University
Beth McGee, Georgia Southern University

ABSTRACT

Purpose: The primary purpose is to better understand Generation Z preferences, specifically in regard to hotel guestrooms. This is currently the largest generation and just starting to make purchasing decisions that could result in lifelong loyalty (William, 2019). This generation values experiences and the ability to travel is a priority. Additionally, Generation Z people are uniquely digital natives and their use of technology may influence preferences (Cetin, & Dincer, 2014). They are also a generation that values healthy living and as such understanding their preference for biophilic interior design could influence design decisions, as well, understanding how to optimally incorporate nature inside for this group is unknown. This work focuses on looking at visual art as an opportunity for nature integration as well as a choice for integrating technology, as a replacement for more traditional art media.

Review of literature: Generation Z consists of people who currently are 9-24 years old (Williams, 2019). Generation Z is unique in the fact that they grew up experiencing the Great Recession and they are conscious about where their money goes. They are very aware of not only how much they spend but also what they choose to spend it on. Another unique characteristic of this group is that they expressly value healthy living. With growing research support for biophilic design and the resulting benefits that include improving health and well-being, biophilic interior design offers fifty-four design attributes that can be used to assess nature-based design preferences (McGee, Park, Portillo, Bosch & Swisher, 2019).

Since Generation Z values healthy living, they tend to seek out spaces that support these values. Nature-based interior design can support optimal well being, but hotel guest rooms have not been tested nor has biophilic interior design been researched for Generation Z preferences. Research has found that visual art can provide health benefits such as reducing stress responses (Lankston, Cusack, Fremantle, & Isles, 2010). This makes visual art a key feature in hotel guest rooms which aligns with another study where guestroom aesthetics were the main indicators of expected satisfaction (Bogicevic, Bujisic, Choi, Smith, & Li, 2017). Therefore, looking at visual art is an important first step in understanding how nature is preferred in guest rooms.

Methodology: The researcher is using a sequential data collection procedure for a mixed-method inquiry. The first step is an initial questionnaire of Generation Z participants, who are local undergraduate students, to establish general preferences for hotel visual art. The second step will include designing the visual art for a hotel guestroom where participants can customize the art based upon given criteria in a virtual reality simulation. The simulation will be designed based upon the initial questionnaire results including biophilic attributes, as well as findings in relation to technology desired. This method of using potential customers to evaluate images of interior hotel rooms was supported by Bogicevic et al in 2017.

Outcomes/Implications:T his work as an interior design educational project with student participants aligns with CIDA standards 7b, which looks at the relationship between the natural and built environment as it relates to the human experience, well-being, behavior, and performance. The results of this Generation Z inquiry will help practitioners and the hotel industry create user-centered designs that can support the well-being and experiences for the upcoming Generation Z. It also highlights the use of the emerging method of virtual reality as a research tool to better understand the immersive characteristic of interior design. This work allows for visual presentation of the survey and the results along with example images of the virtual reality designs selected by participants to easily illustrate the findings.

REFERENCES

Bogicevic, V., Bujisic, M., Choi, H., Smith, S., & Li, I. (2017). Impact of computer-generated images on LODGSCAPE perceptions and visit intentions. Journal of Hospitality Marketing & Management, 26(4), 416–442. https://doi.org/10.1080/19368623.2017.12545

Cetin, G., & Dincer, F. I. (2014). Influence of customer experience on loyalty and word-of-mouth in hospitality operations. Anatolia, 25(2), 181–194. https://doi.org/10.1080/13032917.2013.841094

Lankston, L., Cusack, P., Fremantle, C., & Isles, C. (2010). Visual art in hospitals: Case studies and review of the evidence. JRSM, 103(12), 490–499. https://doi.org/10.1258/jrsm.2010.100256

McGee, B., Park, N.-K., Portillo, M., Bosch, S., & Swisher, M. (2019). DIY biophilia: Development of the Biophilic Interior Design Matrix as a design tool. Journal of Interior Design, 44(4). DOI:10.1111/joid.12159

Williams, C. (2019). Generation Z: What do they want from their hotel stay experience? Hospitality Net. Retrieved from https://www.hospitalitynet.org/opinion/4094050.htm

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Designing a Primary Health Community Center Using Biomimicry, Natural Architecture, and Sustainability Principles

Reem Bagais, Texas Tech University
Mahnaz Ensafi, Virginia Tech University

ABSTRACT

The purpose of this project was to improve preventive care to enhance population health. This project included a primary health destination and it examined the use of sustainable design and renewable energy. A literature review was conducted by searching different databases and websites. Potential studies considering biomimicry, natural architecture, and sustainability principles were identified from the review and were considered in the project.

The objective of the project was to examine the fundamentals of sustainable design rather than merely adopting the instructions and recommendation provided by different sustainability rating systems. In other words, the project examined scientific principles and key concepts in natural architecture, explored and comprehended the essence of biomimicry and design solutions developed in the domain, and analyzed the project from the perspective of (1) enhancing the biosphere; (2) ecosystem; (3) the carbon and water cycles, and the food chain; and (4)health and wellbeing of the community.

The project encountered two types of environmental challenges. First, site challenges included the amount of dust and sunlight, solutions to which were explored through biomimicry concepts. The amount of dust in the air can cause problems, the solution to which was inspired by camels that live in deserts with a lot of dust. A camel's eye lashes and nostrils can avoid dust by closing. The other site challenge included excessive amount of sunlight which causes excessive heating.

The solution to it was inspired by the rotation of sun flower petals and also by color changes in chameleons. The two inspirations were used in the façade to avoid dust, control the amount of sunlight entering the space, and also to increase or decrease light absorption by the façade's color, depending on the outdoor temperature.

The second challenge included addressing site-specific (Lubbock, Texas) weaknesses and strengths through natural architecture. Lubbock receives a considerable amount of wind during the year. Consequently, part of the building was rotated for natural ventilation by attracting wind into the building. To complement Lubbock's amount of sunlight, sun panels were placed on the roof to produce electricity. Moreover, since the project area floods during heavy rain, an underground system was designed to collect rain water, and use it as a source of water while simultaneously decreasing flood levels. Yet another common problem in Lubbock is bird waste on buildings. This issue was addressed by designing a pigeon tower inspired by those in Iran. It attracts birds, prevents waste, and adds a visual attraction to the site. In addition, geothermal system was included in this project since Texas has a good source of geothermal energy.

REFERENCES

Buffoli, Maddalena, et al. "Sustainable Healthcare: how to assess and improve healthcare structures' sustainability." Ann Ig 25.5 (2013): 411-8.

Guenther, R., & Vittori, G. (2008). Sustainable healthcare architecture. John Wiley & Sons.

USGBC. (2014). LEED Core Concepts Guide (Third Edition). Washington, DC: USGBC.

Pati, D., Gaines, K., & Valipoor, S. (2016). Delivering rural health in a changing health model: A qualitative study involving four hospitals. HERD: Health Environments Research & Design Journal, 10(1), 76-86

Designing a Primary Health Community Center in Light of Biomimicry, Natural Architecture, and Sustainability Principles

Goal

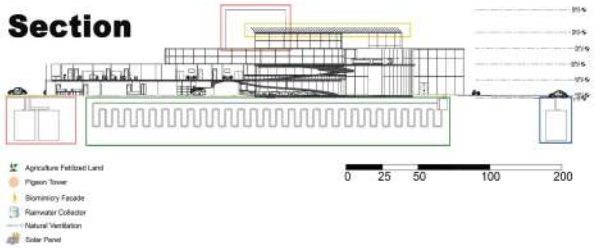
The new concept of healthcare focuses on creating a regenerative design by restoring, renewing or revitalizing the project sources of energy and materials, and including sustainable systems that integrate the needs of society with the integrity of nature.

Methodology

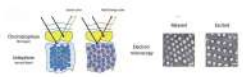
A literature review was conducted by searching different databases and websites. Potential studies were identified from the review and were included in the project.

Floor Plan

Section

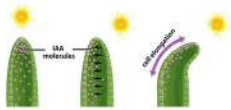


Biomimicry Concept



Panther chameleons rapidly change color by actively tuning the photonic response of a lattice of small guanine nanocrystals in S-iridophores. It is likely to be that the increase in mean distance amtttong nanocrystals in excited male panther chameleons causes S-iridophores to shift their selective reflectivity from short (blue) to long (red or infrared) wavelengths. This feature has been implemented in the facade by changing its color depending on the amount of sunlight.

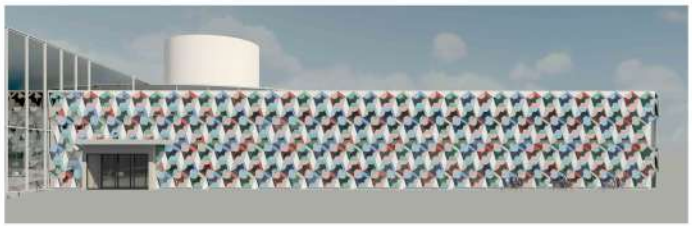
Eyelashes protect eyes from wind-blown sand. Nostrils close to keep sand out.
To keep sand from blowing into their noses, camels can shut their nostrils. When there is no sand blowing in the wind, a camel can open its nostrils and breathe through its nose.
The building's facade has been inspired by these features of the camel to avoid the entry of dust into the building by closing the openings in the facade.



When sunlight is overhead, the IAA molecules produced by the apical meristem are distributed evenly in the shoot. Once the sunlight shines on the shoot at an angle, the IAA molecules move to the far side and that results in the bending of the shoot toward the light.
The process of the sunflower can be observed in parts of the facade. Each part can change its angle according to the direction and amount of sunlight, to control the amount of light that enters the interior.

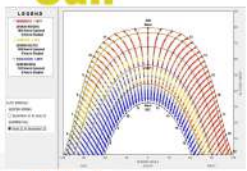
Facade

The angle of each part depends on the amount of sunlight, the time of the year, and the amount of dust. In other words, when there is the facade will be closed to avoid more sunlight and dust. On the other hand, when the temperature is low, the facade opens to allow the sunlight to enter the interior.
Also, the color of each part depends on the amount of sunlight and the temperature. More sunlight causes a lighter color while less sunlight



Natural Architecture

Sun

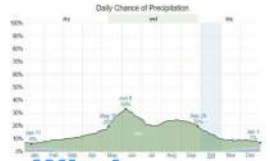


- Temperature ranges through the year in Lubbock

Solution:

- Using solar panels to produce energy
- Controlling the amount of sunlight entering the building by the facade

Water

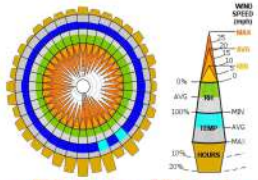


- Lubbock has low precipitation
- Lubbock lacks sources of water
- It has Flood in specific times of the year

Solution:

- Collecting and storing water when there

Wind



- The highest wind velocity is during February and it continues until end of March.
- The direction of the wind is usually from south and west.

Solution:

- The wind can be used for natural ventilation and the openings

Pigeon Waste and Biomass

- The acid content in pigeon droppings can lead to the deterioration of the exterior facade

Solution:

- Having a pigeon tower that can attract pigeons a

-This tower can be used as an attraction

- Anaerobic digestion is a unique treatment

solution for generating clean energy and fuel from the waste

References

Antonovsky, A. (1996). The salutogenic model as a theory to guide health promotion. Health promotion international, 11(1), 11-18.
Argyle, M., & Dean, J. (1965). Eye-contact, distance and affiliation. Sociometry, 289-304
Barrow, M. (2013). Camels. Animal Adaptations and Survival, (2). Retrieved from http://www.primaryhomeworkhelp.co.uk/adaptations/camels.htm
Buffoli, Maddalena, et al. "Sustainable Healthcare: how to assess and improve healthcare structures' sustainability." Ann Ig 25.5 (2013): 411-8.
Camels. (2004). Retrieved from http://www.atsinai.info/sites/fauna/camel.htm
City of Lubbock 2016 Water Quality Report. (2016). Retrieved from https://cl.lubbock.tx.us/docs/default-source/water-department-file-library/water-quality-report-2016.pdf?sfvrsn=c6a25fc9_2
Current Lubbock, Texas Population, Demographics and stats in 2017, 2018. (2017). Retrieved from https://suburbanstats.org/population/texas/how-many-people-live-in-lubbock
Green building and LEED core concepts guide (Second ed.). (2011). Washington, DC: U.S. Green Building Council.
Guenther, R., & Vittori, G. (2008). Sustainable healthcare architecture. John Wiley & Sons.
How to Reduce The "No Show" Rate at Your Physician Practice. (2018, March 22). Retrieved from https://www.ibmc.com/blog/how-to-reduce-physician-practice-no-show-rate
Kaushik. (2015). The Pigeon Towers of Iran. Retrieved from https://www.amusingplanet.com/2014/11/the-pigeon-towers-of-iran.html
Kellert, S. R., Heerwagen, J., & Mador, M. (2011). Biophilic design: the theory, science and practice of bringing buildings to life. John Wiley & Sons.
Mackenzie, Ashley. (n.d.). What Is It Called When Sunflowers Turn & Face the Sun? Home Guides | SF Gate. Retrieved from https://homeguides.sfgate.com/called-sunflowers-turn-face-sun-74133.html
Mahon, C. M. (n.d.). Why do we 'like' social media? Retrieved December 1, 2017, from https://thepsychologist.bps.org.uk/volume-28/september-2015/why-do-we-social-media
Pati, D., Gaines, K., & Valipoor, S. (2016). Delivering rural health in a changing health model: A qualitative study involving four hospitals. HERD: Health Environments Research & Design Journal, 10(1), 76-86
Singh, J., Pigeon Infestation & Health Hazards in Buildings. (2014, October 28). Retrieved from https://www.ebsurvey.co.uk/news/14/63/Pigeon-Infestation-Health-Hazards-in-Buildings.html
Shiue, I. (2016). Gardening is beneficial for adult mental health: Scottish Health Survey, 2012–2013. Scandinavian journal of occupational therapy, 23(4), 320-325.
Solar Power in Lubbock. (2016). Retrieved from https://solaractionalliance.org/texas/lubbock/
Teyssier, J., Saenko, S. V., Van Der Marel, D., & Milinkovitch, M. C. (2015). Photonic crystals cause active colour change in chameleons. Nature communications, 6, 6368.
Wakefield, S., Yeudall, F., Taron, C., Reynolds, J., & Skinner, A. (2007). Growing urban health: community gardening in South-East Toronto. Health promotion international, 22(2), 92-101.
WeatherSpark.com. (n.d.). Retrieved from https://weatherspark.com/y/4735/Average-Weather-in-Lubbock-Texas-United-States-Year-Round#Sections-Clouds
Wells, Nancy M .; Ashdown,; Davies, Elizabeth H. S. ; Cowett, F. D. ; Yang, Yizhao, (2007), Environment, Design and Obesity, Environment and Behavior, Volume

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Embracing Retail Sustainability: Attracting the Millennial Consumer with Adaptive Reuse

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ABSTRACT

With the maturing of the Millennial generation, which is quickly becoming the dominant consumer in the retail market, retail design must develop into a more distinct and specialized field to accommodate the need of this growing consumer group. (Calienes, Carmel, Portillo, 2012). The rapid advancement of technology and the demanding values of Millennials invites a tech savvy, innovative, social, and engaging experience in retail design (Calienes, Carmel, Portillo, 2012). Millennials are more demanding in their search for retailers, and they support business who share the same values as them. These values include sustainability, a concept of maintaining the needs of the present without compromising the ability of the future generation (Plevoets, Cleempoel, 2012).

While many builders focus on new construction buildings to achieve sustainability, historic buildings offer a unique opportunity for sustainable retail design. With the minimization of construction waste and pollution, less toxic chemicals, and increase use of local and recycled materials, adaptive reuse offers retail businesses the ability to identify with local communities while reducing waste (Plevoets, Cleempoel, 2012). Adaptive reuse allows for interiors to feature superior craftsmanship, authenticity, and historic beauty in a modern setting. By having more retailers realize the potential for a sustainable and unique experience that will attract Millennials, historic buildings and surrounding areas can be revitalized in contemporary society.

By researching successful retailers that are resided in adaptive reuse buildings, there will be a better understanding on what is drawing consumers into these spaces. Small businesses that

utilize technology and stimulating design elements, like lighting, decorative details, and signage, will be further investigated to determine what aspects of their designs are drawing customers to visit. The urban planning of these businesses will be assessed to determine how the surrounding area may be influencing attention and traffic. A qualitative case study into what Millennials expect for their retail experience, their desired locations for stores, and how they view the preservation of the environment will provide further insight into their values and views on sustainable interiors.

From preliminary research and precedent studies of retail designs in adaptive reuse buildings, findings conclude that retail stores build upon the experience and values of its users to achieve success. A luxury clothing retailer in Chicago blended ADA compliance, community bonding, and sustainable practices with a flexible entry sequence. This entry features a rolling stair/ramp that acts as both as a sense of entry and as a multi-purpose space for musical performances and lectures (Rao, 2019). This retail design space preserves the historic beauty of the original building, reduces waste that would have taken place during construction, and engages with the community. The adaptive reuse of the building invites creativity, identity, and sustainability for a retail business and its users.

With the average lifespan of a retail design being less than five years, retail stores are relying more on sustainable practices and materials to maintain a consistent branding and imagery for its Millennial consumers (Plevoets, Cleempoel, 2012). This research will advise retail designers on the current demands of Millennial customers in the retail industry and how the adaptive reuse of buildings supports sustainability to attract to the largest generation since the Baby Boomers. By appealing to the demands of Millennial experience and mindful environmental practices, the retail industry can promote sustainability and communities while supporting brand identity.

REFERENCES

Calienes, E., Carmel, G. C., & Portillo, M. (2016). Inside the Mind of the Millennial Shopper: Designing Retail Spaces for a New Generation. Journal of Interior Design, 41(4), 47–67. https://doi.org/10.1111/joid.12085

Plevoets, B., Cleempoel C. (2012) Creating Sustainable Retail Interiors through the Reuse of Historic Buildings, Interiors, 3:3, 271-293, DOI: 10.2752/204191212X13470263747031

Rao, A. (2019). Out of the box: In chicago's west loop, a store reaches beyond the usual retail typology. Metropolis, 38(9), 46-46,48. Retrieved from http://proxy.library.vcu.edu/login?url=https://search.proquest.com/docview/2280480144?accountid=14780

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Finding Children's Secret Spaces: Perceived Secrecy in Early Childhood Environment

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Charles Klein, Texas Tech University
Malinda Colwell, Texas Tech University

ABSTRACT

Introduction

Built environment is one of the main factors affecting the non-traumatic secret as an indicator of social development and emotional maturity in children. Research indicate that the physical design features of the childcare facilities can directly impact children's social behavior by either preventing or facilitating social skills considering the time children spend in the such facilities daily. Most childhood environments are planned and monitored by adults and there are very few places that they have more attachment to because of the control they don't have over such environments. In secret spaces, children create and control environments which they can claim as their own.

Ability to control the environment will improve confidence and place attachment in children. Sense of control over the environment alongside with the sense of privacy are important factors contributing to a positive experience in an environment. On the other hand, experiencing the uncontrollable situation may lead to anxiety, depression, blood pressure increase, and reduced immune system. Children prefer places and activities which provide them the opportunity to set their own rules in order to gain more control. In a secret hiding space, the critical issue is that

they can control when, where and from whom they desire to hide. This will help children to develop their place identity and environmental competency and will promote social and personal development.

The main framework behind the concept of secret space is the theory of prospect-refuge. The ability to see (prospect) without being seen (refuge) fulfills the biological need of a secured environment. Being away from adult's supervision, having control of the space, and feeling secret is interesting and motivating for children. Thus, they try to find or build places with these features to create secrecy. Children tend to commit to their special and secret places because of the place attachment that they have with the environment. Secret spaces provide a sense of control over the environment and activities for children and creates the opportunity for active participation in certain activities. It is an important indicator for an early childhood environment.

This qualitative study tries to address the following research questions:

- How children perceive different types of secret spaces?
    - Which settings have more effect on perceived secrecy in children?
    - Which settings afford higher level of perceived secrecy?
- Which type of secret space provide more opportunities for cooperative behavior?

Methods

Methods including focus groups and interview have been used for this research, exploratory questionnaires were given to parents and the focus group with experts was conducted for generating the interview sessions during the class activity in selected childcare facilities. Semi-structured interviews occurred during normal days at school during the regularly scheduled free play time and each group of children were interviewed for approximately 10–15 minutes.

Participants were recruited purposefully based on the research questions, theoretical frameworks, and evidence informing the study; from children age 3-5 from 4 child care centers in Texas.

Conclusion

This study tries to investigate children's understanding and experience of the concept of secret space by exploring the impact of different settings on the level of secrecy and cooperative behavior of children, and to make suggestions for creating child-friendly environments, associating children's perspectives.

REFERENCES

Kopec, D. A. (2012). Environmental psychology for design: Fairchild New York.

Gibson, J. J. (1986). The Ecological Approach to Visual Perception: Psychology Press.

Colwell, M. J., Gaines, K., Pearson, M., Corson, K., Wright, H. D., & Logan, B. J. (2016). Space, Place, and Privacy: Preschool Children's Secret Hiding Places. Family and Consumer Sciences Research Journal, 44(4), 412-421.

Appleton, J. (1996). The experience of landscape: Wiley Chichester.

Barker, R. (1978). Theory of behavior settings. Habitats, environments, and human behavior: Studies in eco-behavioral science from the Midwest Psychological Field Station, 213-228.

Interior Design-Based Evaluation of a University Learning Environment

Katherine Price, Georgia Southern University
Sarah Zenti, Georgia Southern University

ABSTRACT

Purpose

This research project will evaluate the background noise levels of a frequently used classroom computer lab in the Interdisciplinary Academic Building at Georgia Southern University and suggest modifications to the design of the classroom to promote noise absorption and improved acoustics.

Hypothesis

The noise levels in the Interdisciplinary Academic Building computer lab will exceed the recommended background noise level of 35 dB recommended by ANSI.

Review of Literature

It is already known that performance and learning are impacted by noise. For example, it has been shown that university students perform better in school when they study in a quiet room versus a noisy room (Onchang & Hawker, 2018). The American National Standards Institute specifies a standard for a maximum sound level in elementary school classrooms of 35 dB, but studies have found that even many elementary classroom settings do not adhere to that standard (Flagg-Williams, Rubin, & Aquino-Russel, 2011). As a result, students are prone to mishear or misinterpret instruction, especially at an early age. Teachers also suffer from voice strain due to having to speak above background noises in the classroom (Choi & McPherson, 2005).

Additionally, experimentation has indicated that acoustic conditions of a classroom significantly affect young adults' interpretation of spoken instruction, and they benefit from better acoustics and sound amplification systems, which are frequently used in elementary classrooms (Larsen et al., 2008).

Methodology

To evaluate current acoustical conditions in the Interdisciplinary Academic Building computer classroom, I will first, take sound level measurements in the classroom during and after class times using the "dB Meter Pro" application on an iPhone interface. I will be collecting data during several computer skill-based classes. After collecting the readings for each class, I will compile the data, find the average noise level of the background noise in the classroom, and compare it to the recommended standard. After compiling my findings I will research effective interior design solutions for classroom noise control based on the identified amount of background noise. I will then implement and demonstrate the design solutions through a model of the classroom created in Revit.

Implications

The implications of this study will highlight a current issue associated with this classroom which needs addressing. The classroom has very little acoustic controls which leads to lectures that are difficult to hear. With my research and proposed solution, the university will be obligated to address this issue on campus and provide a better learning environment to its students. Additionally, in the future when more classes move toward digital-based teaching, classrooms will need effective ways to control the noise produced by computers.

REFERENCES

Choi, C. Y., & McPherson, B. (2005). Noise levels in Hong Kong primary schools: Implications for classroom listening. International Journal of Disability, Development and Education, 52, 345-360. doi:10.1080/10349120500348714

Flagg-Williams, J. B., Rubin, R. L., & Aquino-Russel, C. E. (2011). Classroom soundscape. Educational and Child Psychology, 28, 89-99. Retrieved from https://www.bps.org.uk/.

Larsen, J. B., Vega, A., & Ribera, J. E. (2008). The effect of room acoustics and sound-field amplification on word recognition performance in young adult listeners in suboptimal listening conditions. American Journal of Audiology, 17, 50-59. doi:10.1044/1059-0889

Onchang, R., & Hawker, D. (2018). Community noise exposure and annoyance, activity interference, and academic achievement among university students. Noise and Health, 20, 69-76. doi:10.4103/nah.NAH_54_17

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Natural Light and Its Effect On Student Perceptions of Learning Performance and Well-being In Classroom Environments

Hannah Smith, Georgia Southern University
Angelita Scott, Georgia Southern University

ABSTRACT

Purpose

This study will investigate how natural light effects perceived learning performance and well-being within a classroom learning environment. It is necessary to understand how college student learning performance is effected to implement positive outcomes within interior space. When students feel greater levels of well-being in their education, they are able to perform at higher levels. There is limited literature understanding the intersections between natural light and student learning performance.

Hypothesis

1. Students in a university classroom environment prefer rooms with natural light than those without related to perceived learning performance.
2. Students in a university classroom environment prefer rooms with natural light than those without related to perceived well-being.

Review of Literature

Natural light is an important resource in school environments because it is key to influencing occupant well-being (Tureková, Lukáčová, & Bánesz, 2018). Research has found that people are prone to spend more time in areas with windows because it promotes activity, communication, and engagement in university study areas (Etheredge, Waliczek, & Zajicek, 2014). Studies show

that students are easily distracted by windows, however, the presence of them have benefits to overall student learning performance (Samani & Samani, 2012). According to Tanner, it has been established that classrooms without windows can result in students experiencing daily feelings of jet-lag. To prevent this, a balance between natural light and artificial light in a classroom would be ideal to improve student learning performance (Tanner, 2009). The Naturalness, Individuality, and Stimulation conceptual model (SIN) (Barrett, Davies, Zhang, & Barrett, 2015) will be used as the theoretical framework for this study. The SIN model reflects the human "hard-wired" response to the availability of healthy, natural elements of our environments. People desire to interact with such spaces which addresses our individual preference to improve student learning performance. The theory goes on to identify three design principles: naturalness, individualisation, and stimulation (Barrett, Davies, Zhang, & Barrett, 2015). This study will focus on the principle of naturalness.

Methodology

The researcher will conduct a comparative study in a university interdisciplinary building surveying students in classrooms about their satisfaction with natural light and its effect on various elements in the environment. Data will be collected using a questionnaire developed from established literature and existing surveys. The questionnaire will be piloted for reliability and validity. It will consist of Likert scale questions and minimal demographic questions regarding gender, age, and area of study. The population will be made up of a convenience sample of approximately 100 participants (n = 100). Participants will consist of undergraduate students from various majors within the same college at a University in the Southeastern region. Descriptive statistics and cross-tabulation data will be analyzed using SPSS software.

Implications

The results of this study have implications for learning environments as college students are often focused on their learning performance. Natural light is important to regulate circadian rhythms in the human body (Tanner, 2009) and regulating our sleep and wake cycles (Barrett, Davies, Zhang, & Barrett, 2015). Therefore, investigating natural light in classroom settings is an important concept to explore as it supports alertness and concentration which are both factors of learning performance and well-being. Interior designers have the capability to implement natural light solutions to support students' overall well-being and learning performance.

REFERENCES

Barrett, P., Davies, F., Zhang, Y., & Barrett, L. (2015). The impact of classroom design on pupils' learning: Final results of a holistic, multi-level analysis. Building and Environment, 89, 118-133. https://doi.org/10.1016/j.buildenv.2015.02.013

Etheredge, C. L., Waliczek, T. M., & Zajicek, J. M. (2014). The impact of plants and windows on building space usage and perceived stress of university students. Journal of Therapeutic Horticulture, 24, 25-37. Retrieved from https://www.ahta.org/publications

Samani, S. A., & Samani, S. A. (2012). The impact of indoor lighting on student's learning performance in learning environments: A knowledge internalization perspective. International Journal of Business and Social Science, 3, 127-136. Retrieved from http://www.ijbssnet.com/journals/Vol_3_No_24_Special_Issue_December_2012/14.pd

Tanner, C. K. (2009). Effects of school design on student outcomes. Journal of Educational Administration, 47, 381-399. https://doi.org/10.1108/09578230910955809

Tureková, I., Lukáĉová, D., & Bánesz, G. (2018). Quality assessment of the university classroom lighting - a case study. TEM Journal, 7, 829-836. https://doi.org/10.18421.TEM74-21

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One Step Closer to Achieving Inclusive Design: Design Considerations for Clients with Low-Vision

Lauren Hughes, Mississippi State University

ABSTRACT

Every design decision made throughout the design process can create a positive or negative experience within the interior built environment for a person with low-vision. Research has shown that it can affect the level in which they are willing to participate within that environment (Jenkins, Yuen & Vogtle, 2015). As designers, we strive to create an inclusively designed space to accommodate people with many different mobility, cognitive, visual and hearing ability levels. The question is, "Can we do more?" The number of people with visual limitations is expected to increase by 6.31 million by the year 2020 due to the aging population of baby boomers (Akpek & Smith, 2013) plus the addition of those who are genetically predisposed to have low-vision. This increase elevates the need for consideration in the design of interior spaces to allow this combined population of people to safely navigate and participate in the built environment.

When the term "inclusive design" is used in the design community, many professionals equate the term with the Americans with Disabilities Act. Interior designers follow the requirements outlined in the ADA to ensure access to those with limitations, but these requirements favor those with mobility limitations and only address protruding objects for those with vision limitations (Sokol, 2007). The purpose of this research is to contribute to the body of knowledge for the interior design profession by developing recommendations for designers to consider when designing a project to accommodate users with low vision.

This study will use quantitative research methods to investigate the following research questions. Is there a relationship between the contrast levels of interior finish materials and the accuracy of a person with low-vision's perceptions of the interior environment? Is there a correlation between the contrast of finish materials and the level in which a person with low-vision is willing to participate within that environment? Does a person with low-vision perceive the interior environment differently than a person who is normal-sighted? Demographic data including their low-vision diagnosis has been gathered similarly to a previous study completed by Barstow, Bennett and Vogtle (2011).

A previously conducted pilot study comprised of observations revealed the need to narrow the research topic. This study investigates the factor of contrast and how it affects people with normal and low-vision. The final research utilizes an online survey and a virtual reality study. The survey was completed by 100 normal-sighted and 100 low-vision participants. Preliminary results show that 85% of normal-sighted participants and 86% of low-vision participants agree that contrast plays an important role in their ability to perceive the interior space. An observational study utilizing a virtual reality environment will allow 20 participants to explore a room with different wall, base and floor materials of varying contrast levels. The preferred contrast levels between floor, base, and wall materials as well as behaviors exhibited by participants will be documented. Behavioral frequency recordings will be executed to determine if there is a correlation between contrast in the interior environment and behaviors exhibited by participants while within that environment.

The poster will exhibit a graphic representation of data and information on a major issue that is facing the interior design profession today. The poster will list the key issues resulting in the need for the study. Research questions will be presented which guided the survey instrument development. Data collected will be exhibited by numerous charts to show implications of the study. Final conclusions derived from the data will be shown on the poster. The poster on display will open a dialog of discussion among educators from the United States and Canada.

REFERENCES

Akpek, E. K. & Smith, R. A. (2013). Overview of Age Related Ocular Conditions. American Journal of Managed Care. 19. 67-75.

Barstow, B. A., Bennett, D. K., & Vogtle, L.K. (2011) Perspective on Home Safety: Do Home Safety Assessments Address the Concerns of Clients with Vision Loss? The American Journal of Occupational Therapy. 65. 635-642.

Jenkins, G. R., Yuen, H.K. & Vogtl, L.K., (2015). Experience of Multisensory Environments in Public Space among People with Visual Impairment. International Journal of Environmental Research and Public Health. 12, 8644-8657.

Sokol, D. (2007, May). Baby Boomers teeter on edge of Vision Crisis. Architectural Record. 195. 5.

Demographic Information

1. What is your age?

- o 18-25
- o 26-35
- o 36-45
- o 46-55
- o 56-65
- o 66-75
- o 76 or older
- o Prefer not to answer

2. What is your gender?

- o Male
- o Female
- o Prefer not to answer

3. What race do you most closely identify yourself with?

- o Caucasian/White
- o African American
- o American Indian
- o Hispanic
- o Other
- o Prefer not to answer

4. How would you identify your level of visual impairment?

- o Normal (20/20- 20/25)
- o Near normal (20/30-20/70)
- o Moderate (20/80-20/160)
- o Severe (20/160-20/400)
- o Profound (20/400-20/1000)

5. What is your low-vision diagnosis?

- o Age-related macular degeneration
- o Diabetic retinopathy
- o Temporal arteritis
- o Corneal transplant
- o Optic Neuritis
- o Optic Nerve Hypoplasia or Nystagmus
- o Central areolar choroidal dystrophy
- o Coloboma or glaucoma
- o Myopic macular degeneration
- o Unknown
- o None
- o Other

Example Survey Instrument Questions- Phase I

6. Please evaluate the importance of these aspects of the interior environment for people with your level of vision.

a. Contrast levels within the interior environment is an important issue for people with your level of vision.

Strongly Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly Agree
1	2	3	4	5

b. Contrast levels between wall and floor finishes is an important issue for people with your level of vision.

Strongly Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly Agree
1	2	3	4	5

c. High contrast between wall and floor finishes is helpful in aiding a person with your level of vision to accurately perceive the interior environment.

Strongly Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly Agree
1	2	3	4	5

d. Medium contrast between wall and floor finishes is helpful in aiding a person with your level of vision to accurately perceive the interior environment.

Strongly Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly Agree
1	2	3	4	5

Example Behavior Frequency Instrument for Virtual Reality Observation- Phase II

Participant #: _____ Observer: _____

Behaviors Observed:

A- Blinking Eyes B- Slow down C- Reaching for/touching the wall
D- Stopping to ask for assistance E- Avoid/leave the space F_____

Behavior Observed	Environment/ Level of Contrast	Number of Occurrences	Totals
A – Blinking Eyes	**1. High Contrast** C. Light Wall/Dark Floor G. Dark Wall/Light Floor **2. Medium Contrast** B. Light Wall/ Medium Floor D. Medium Wall/Light Floor E. Medium Wall/Dark Floor H. Dark Wall/ Medium Floor **3. Low Contrast** A. Light Wall/ Light Floor E. Medium Wall/ Medium Floor I. Dark Wall/ Dark Floor	**1. High Contrast** C. _____ G. _____ **2. Medium Contrast** B. _____ D. _____ E. _____ H. _____ **3. Low Contrast** A. _____ E. _____ I. _____	**1. High** C. _____ G. _____ **2. Medium** B. _____ D. _____ E. _____ H. _____ **3. Low** A. _____ E. _____ I. _____

Note: This is an abbreviated form due to page limitations. All observed behaviors are included on the final behavioral frequency form that will be used during the virtual reality study.

Example Study Environments Ranking form for Virtual Reality Observation- Phase II

Participant #: _____ Observer: _____

Preferred Contrast Levels:	**Wall/Floor Conditions**	**Participant Comments**	**Preference Rankings**
Rank each study environment in order of preference with 1 being the most preferred and 4 being the least preferred.	**1. Light Wall** A. Light Wall/ Light Floor B. Light Wall/ Medium Floor C. Light Wall/Dark Floor **2. Medium Wall** D. Medium Wall/Light Floor E. Medium Wall/ Medium Floor F. Medium Wall/Dark Floor **3. Dark Wall** G. Dark Wall/Light Floor H. Dark Wall/ Medium Floor I. Dark Wall/ Dark Floor	**1. Light Wall- Comments** A. _____ B. _____ C. _____ **2. Medium Wall** D. _____ E. _____ F. _____ **3. Dark Wall** G. _____ H. _____ I. _____	**1. Light** A. _____ B. _____ C. _____ **2. Medium** D. _____ E. _____ F. _____ **3. Dark** G. _____ H. _____ I. _____

Example of Study Environments Finishes for Virtual Reality Observation- Phase II

1. Study Environment A (Low-contrast study environment/Lightest wall & lightest floor)

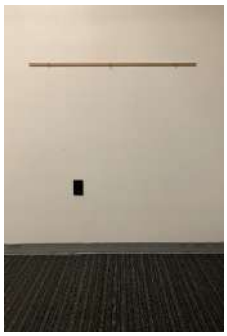
Finish Location	Manufacturer/Style	Color
Wall Finish	Sherwin Williams	SW 7064 Passive
Base Finish	Johnsonite/Tarkett	28 Medium Gray
Floor Finish	Shaw/Minimal	Limit 64515

2. Study Environment B (Medium-contrast study environment/Lightest wall & medium floor)

Finish Location	Manufacturer/Style	Color
Wall Finish	Sherwin Williams	SW 7064 Passive
Base Finish	Johnsonite/Tarkett	28 Medium Gray
Floor Finish	Shaw/Minimal	Verge 64555

3. Study Environment C (High-contrast study environment/Lightest wall & darkest floor)

Finish Location	Manufacturer/Style	Color
Wall Finish	Sherwin Williams	SW 7064 Passive
Base Finish	Johnsonite/Tarkett	28 Medium Gray
Floor Finish	Shaw/Minimal	Fringe 64585



Note: There are nine separate study environments being investigated within the same identical virtual reality room. The environments depicted on this form show the lightest of three wall colors. A medium gray and dark gray wall color are also used along with these same three carpets to create 9 separate study environments.

Virtual Reality Backpack computer and goggle set used during Phase II Observational studies.

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Parking Plaza: Reconnecting Farms to Cities

Houria Boumzairig, Virginia Commonwealth University

ABSTRACT

"There is a close relation between the beginning of agriculture and the birth of architecture. Our cities were shaped by food". Precht, C. (2019). We need agriculture back in our cities and minds. As the agricultural revolution ended our presence as hunters and gatherers, grain was a stable food source that allowed us to permanently settle. Farming and living were interconnected – they needed to be in proximity due to a lack of efficient transportation and refrigeration, according to Precht, C. (2019). So, all ancient settlements were dense areas centered around farmlands; it was a story of community! Early farmers knew exactly who their customers were, and every customer knew exactly where their food came from. With transportation and new technologies now, living and farming became disconnected. Corporate farms today no longer tell the story of community, instead a story of disconnection and destruction. In recent decades it has become increasingly clear that the way we live and eat is a big threat to our health and the health of our ecosystem. Our food system is facing challenges of feeding an exorbitantly increasing population, with a non-efficient farming model. To compensate for the obvious gaps, the agricultural industry resolves to using fertilizers and chemicals that bring serious damage to the environment: water pollution, soil depletion, air pollution caused by food transportation from farms to cities… Altogether resulting in massive Greenhouse gas emissions. Climate change is forcing us to rethink our way of life. Our cities need to become part of our agricultural system, again!

Dickson D. Despommier's genius idea of vertical farms in 1999, has excited scientists, architects and politicians around the globe. Today, these urban farms are gaining global awareness and construction is blooming in places like the Middle East, Europe, and the United States. These

multi-story intensely managed indoor farms are capable of growing produce anywhere even in cities, all year long and with less use of transportation, according to Despommier, D. D. (2010). The Vertical Farm : Feeding the World in the 21st Century. 1st ed. New York: Thomas Dunne /St. Martin's. Growing food in the city means it is closer to where it is consumed, so it stays fresh longer and generates less loss for the businesses that use or sell it. Urban farming operations train and employ local people, generate local tax revenue, supply local stores and restaurants, and encourage the consumption of local products—all of which are good for the local economy. The benefits extend to environmental and social impact. Furthermore, any plant starts losing nutrients the minute it is harvested from the earth. Which is why the sooner we eat the food the better it will be for our health. Fresh produce is healthier, contains more nutrients, and is bursting with flavors.

Architecture and Design are at the core of this equation. Urban agriculture isn't just limited to growing food on rooftops, it encompasses turning any place in a city into a productive source of food. I am especially interested in converting vacant spaces and buildings to show that it can be done anywhere! That's why I chose to turn a parking lot into an urban farm. This thesis merges the concept of city farms with farm-to-table style restaurants, a hybrid program that hopes to reconnect agriculture back into our urban fabric and thus reconnect people back to their food. The program also focuses on community engagement and creating an immersive learning experience where users can interact with the farmers and learn directly about how the produce is grown, participate in the process, touch, feel, smell and engage their entire sensory spectrum in the action. And then, they would slow down and sit in a restaurant to savor every fresh bite, all under one roof. As designers we must strive to implement this concept locally so that in the next decades, our farms will once again tell a story of community!

REFERENCES

Precht, C. (2019). We need agriculture back in our cities and minds.

Despommier, D. D. (2010). The Vertical Farm : Feeding the World in the 21st Century. 1st ed. New York: Thomas Dunne /St. Martin's.

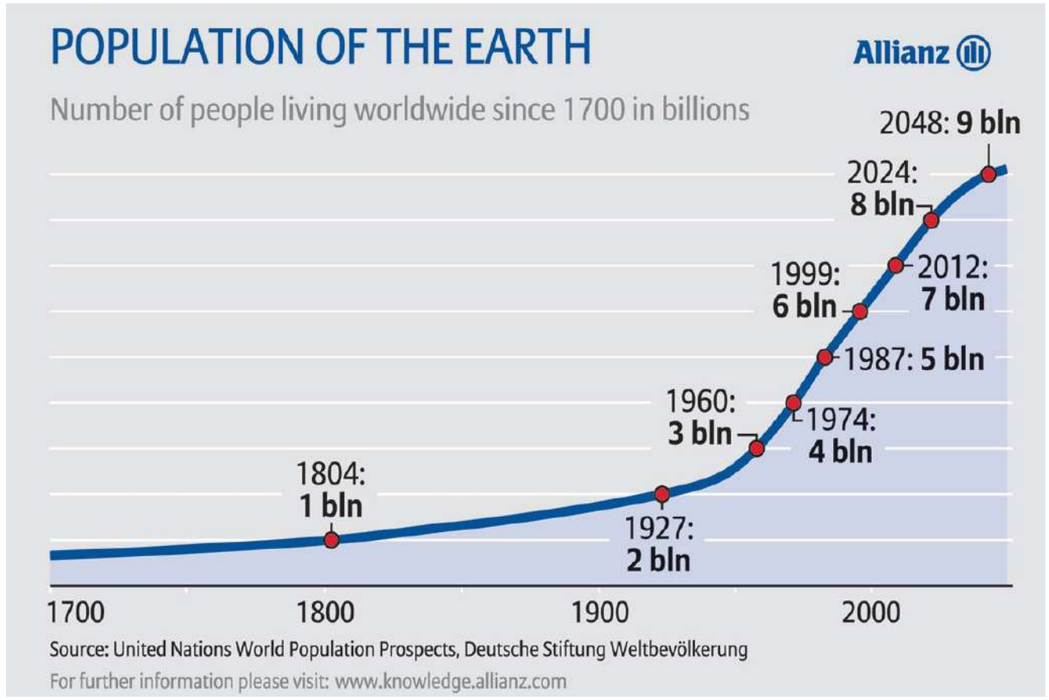
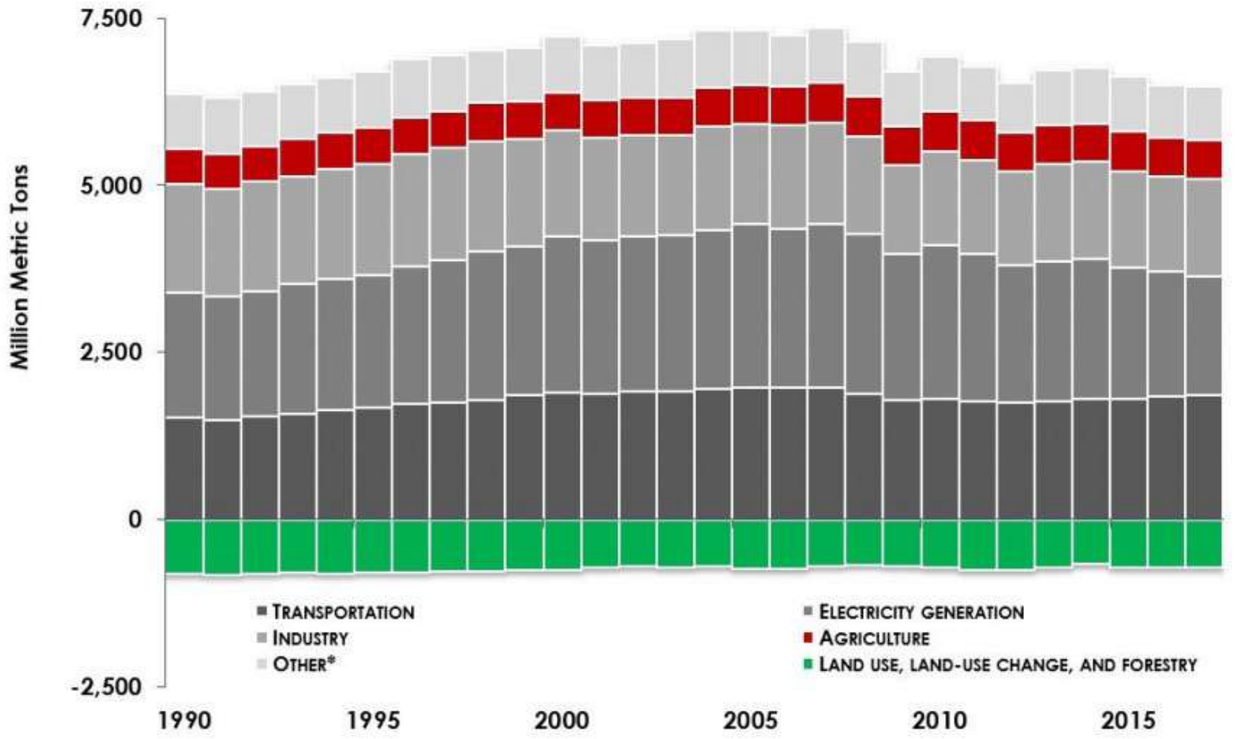
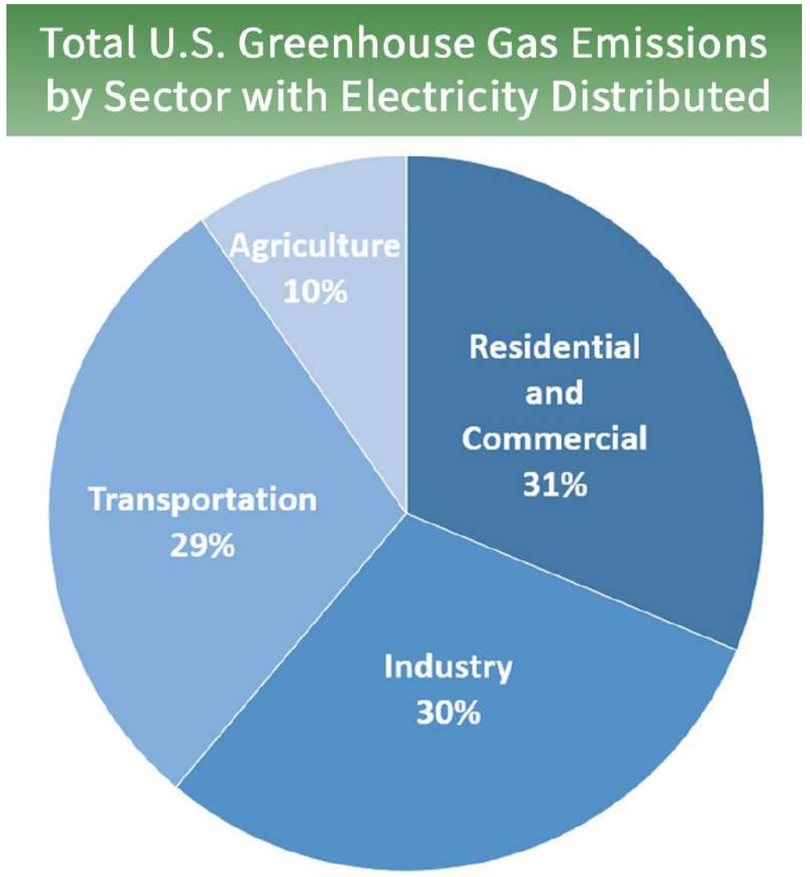


Figure 1. Total U.S. Greenhouse Gas Emissions by Economic Sector, 1990 to 2017 in CO_2 Equivalents



FARM BUREAU®

*Source: Environmental Protection Agency, Farm Bureau Analysis; *Other includes the Commercial, Residential and U.S. Territories Economic Sectors*



U.S. Environmental Protection Agency (2019). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017

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Restorative Spaces in Title I High Schools

Lindsey Slater, Florida State University's Department of Interior Architecture and Design

ABSTRACT

Children from low-income backgrounds face multiple obstacles throughout their life including inadequate nutrition, exposure to environmental toxins, and homelessness (Brooks-Gunn & Duncan, 1997). Exposure to these stressors can affect a child's behavior (Needleman, 1992), their cognitive abilities (Farah, Noble, & Norman, 2005), and their academic performance (Ford, 2016). As children of low-income struggle to compete with their non-low-income peers, some issues in the educational system come to light, such as school funding (Baker, Farrie, & Sciarra, 2018; EdBuild, 2019) and residential segregation based on income (Duncan & Murnane, 2014). Low-income students are more likely to attend low-income schools (National Research Council, 1993) characterized by lower quality teachers, less rigorous curriculum, and a higher student-teacher ratio (Lee, Byrk, & Smith, 1993). These factors can make it difficult to reach the state mandated academic standard. However, it is not only low-income students that are affected by these issues. When a school reaches a 25% poverty rate, academic achievement for the entire student body decreases (Bainbridge & Lassley, 2002).

Interior design might be able to able to intervene. Through the modernization of school infrastructure (Caufield, 2018; Chmielewski, Herber, Jauregui, O'Donnel, & Silsby, 2017), dynamic space planning (Chmielewski, Herber, Jauregui, O'Donnel, & Silsby, 2017; Herr, 2018) and meaningful decoration (Fisher, Godwin, & Seltman, 2014), design can be used to enhance the educational experience of low-income students and promote academic achievement. A growing movement within the design community focuses on user health and well-being. Groups such as the International WELL Building Standard have created guidelines that the built

environment may follow to promote health and well-being. Some spaces include restorative spaces which aim to provide users a place to take a break and mentally recharge (International WELL Building Institute, 2019). The presence of a designated break time and the space to do so reduces stress and mental fatigue, promotes a healthy work-life, or school-life balance (International WELL Building Institute, 2019), increases attentional capacity (Larson, et al., 1998), and hopefully improve academic performance.

In a school setting, restorative opportunities can be before and after school, lunch time, and any other breaks students get throughout the day. During these times, mainly before school starts and during lunch time, students have access to the courtyard and cafeteria. To this end, the courtyard and cafeteria can serve as restorative spaces that promote student health and well-being. These spaces have critical design considerations that include promoting community, empowering students, encouraging healthy choices, adequate indoor environmental quality, and efficiency and maintenance which are factors that have a positive psychological effect on students as it increases user satisfaction. Restorative opportunities and spaces are especially important to students of low-income because low-income individuals are more likely to encounter stress from homelessness, family violence, food insecurity and other environmental stressors. By further developing these spaces, students would be able to relax and recharge during the school day, develop a third-place attachment to school, and improve their mental health and well-being, which in turn can improve their academic performance.

REFERENCES

Caufield, J., (2018). Modernizing schools is paying off in creating better learning and teaching environments. Retrieved February 4, 2019 from

Chmielewski, E., Herber, K., Jauregui, H., O'Donnel, S., & Silsby, J. (2017). Measuring Up: Using Pre- and Post- Occupancy Evaluation to Assess High-Performance School Design. Impact of Design, Vol. 2

International WELL Building Institute (2019). WELL Building Standard. Retrieved from https://v2.wellcertified.com/v/en/overview

Fisher, A., Godwin, K., & Seltman, H. (2014). Visual environment, attention allocation, and learning in young children: When too much of a good thing may be bad. Psychological Science, 25(7), 1362-1370.

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Spatial Narrative in Biophilic Interior Design

Kendra Ordia, University of Nebraska - Lincoln

ABSTRACT

As stakeholders increasingly seek evidence-based rationale for design decisions to provide healthy spaces for users, understanding the influence of nature on interior environments is a growing topic of interest for researchers and designers. More specifically, concepts such as the connection to nature (biophilia), wellbeing, and indoor environmental quality have progressed from the realm of sustainable design to mainstream outlets. Experts like Steven Kellert have publicized biophilic design implementation strategies and the consulting firm Terrapin Bright Green has distilled these down into guidelines. In addition, biophilic design has also impacted building rating systems like LEED, WELL Building Standards, and the Living Building Challenge. Yet, despite the increasing influence of biophilic design, most efforts seem to stall at a surface-level of implementation by filling interiors with living walls or plants. While this is an admirable and aesthetically pleasing approach to "greening" interiors, it falls short of the true physiological and psychological benefits biophilic design can provide. Influential leaders in this arena, including Bill Browning of Terrapin and Jason McLennan of McLennan Design, have recently identified the "greenwashing" of plant-filled interiors disguised as holistic biophilic design, and are arguing there is a critical need for a new scale or refocused application.[1,2]

To meet this need, the goal of this project is to provide measurable and applicable approaches for deepening the human-nature connection in interior environments by pursuing the following research questions:

- How do biophilic design spatial applications – beyond living plant material – support renewed focus, attention, and mindfulness in the corporate workplace?
- How do narrative and sensory experiences enhance the benefits of nature integration in interior environments?

  Current research on the psychological and physiological response to biophilic design is primarily based in Connection to Nature Theories as a subset of Environmental Psychology. A complementary approach to nature appreciation is also explored in Ecological Aesthetic Theories, which have been less prevalent in research related to natural interior environments. We are also analyzing additional studies and literature surrounding these topics as part of this project.

  To explore the proposed research questions the team is employing a mixed-method approach typical of research on interior environments. These methods include conducting interviews, participant observations/ethnographic studies, and case study(s). As part of the interviewing process, we are evaluating existing questionnaires and scales for relevance and adapting them for interior environmental nature applications. Several relevant scales the team identified include:

- Nature-relatedness Scale[3]
- Perceived Restorativeness Questionnaire[4]
- The Mindful Attention Awareness Scale[5]

This study will provide improved understanding of how projects in which biophilic design is approached as a place-based, narrative, and spatial overlay – as opposed to an overt representation of living materials – increase the experience of connection to nature. We will evaluate data gathered from interviews, surveys, and ethnographic research from the site visits through these theoretical lenses, allowing us to understand how biophilic design is intended to function with respect to spatial utilization. This is foundational for evidence-based guidelines/framework for actionable, applicable, and place-based solutions for the increased

integration of nature to promote aspects of attention-restoration. Ultimately, this tool will assist designers in creating spaces for symbiotic focused/mindful work and exposure to nature.

The poster will graphically display the story of the project and engage viewers with visual representations in the form of 2D diagrams, project photography, conceptual renderings, and related text.

REFERENCES

Browning, Bill. "Biophilic Design, More Than Just Plants!" Terrapin Bright Green, September 27, 2018. https://www.terrapinbrightgreen.com/blog/2018/09/biophilic-design-just-plants/

McLennan, Jason F. "Biophilic Design: A New Scale Emerges." Trim Tab. Living Future Institute, December 13, 2018. https://trimtab.living-future.org/trim-tab/issue-36/biophilic-design-a-new-scale-emerges/.

Nisbet, Elizabeth K., John M. Zelenski, and Steven A. Murphy. September 2009. "The Nature Relatedness Scale: Linking Individuals' Connection With Nature to Environmental Concern and Behavior." Environment and Behavior 41, no. 5: 715–40. doi:10.1177/0013916508318748.

Hartig, Terry, Kalevi Korpela, Gary W. Evans & Tommy Gärling. 1997. "A Measure of Restorative Quality in Environments." Scandinavian Housing and Planning Research, 14:4, 175-194, DOI: 10.1080/02815739708730435

Brown, K.W. & Ryan, R.M. 2003. "The Benefits of Being Present: Mindfulness and Its Role in Psychological Well-Being." Journal of Personality and Social Psychology, 84, 822-848.

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Sustainability Initiatives in Luxurious Hotel Environments: Consumer Satisfaction or Skepticism?

So-Yeon Yoon, Cornell University
Annice Lee, Cornell University

ABSTRACT

The purpose of this study is to identify how sustainability cues (linen and towel reuse signs) placed in luxurious and budget hotel room environments affect customer satisfaction towards their hotel experience. While previous studies have shown that hotels with sustainable incentives generally increase customer satisfaction and revisit intention, this study will examine the moderating effects of a luxurious (vs budget) hotel environment and environmental consciousness of the consumer as potential variables that can explain differences in satisfaction when consumers are exposed to sustainability cues. The study will also investigate the mediating effects of consumers' perceived motives of the luxurious (vs budget) hotel in influencing customer satisfaction toward their hotel experience.

The hospitality industry has increasingly promoted sustainable practices in recent years. They have engaged in multiple sustainable initiatives that save energy and water while reducing waste (Berezan et al., 2013; Gao and Matilla, 2014). Becoming a "green hotel" is especially favorable for hotels in their need to embody corporate social responsibility (CSR) to consumers as well as promote an eco-friendly yet relaxing hotel experience (Gao and Matilla, 2014).

However, there are controversial stances on the adaptations of sustainable practices in the hospitality industry. A myriad of literature that asserts the positive benefits of sustainability initiatives, including increased customer satisfaction (Lee and Heo, 2009; Luo and Bhattacharya, 2006) and revisit intention (Berezan et al., 2013). Some, on the other hand, claim that consumers may perceive very opposite motives for sustainable initiatives in hotels and exhibit "green skepticism" (Leonideu and Skarmeas, 2015) by questioning the hotel's intrinsic motives of sustainable actions as "self-serving" rather than "public-serving" (Becker-Olsen et al., 2006; Raska and Shaw, 2012). Moreover, consumers fear that their comfort and hotel experience could potentially be sacrificed because hotels are reducing their resources (Chong and Verma, 2013; Gao and Matilla, 2014). Robinot and Giannelloni (2010) and CarbonTrust (2011) suggest, due to this issue, that hotel's do not reveal their sustainability initiatives at all.

A 2 (hotel environment: luxurious vs budget) x 2 (sustainability cue: present vs absent) was employed. Environments are created in Revit, 3D studio Max and Enscape and presented using HMD to experience the scenarios in realistically represented hotel rooms. A within-subjects design was used (N=18). After viewing the stimuli and appropriate scenario, participants completed a questionnaire measuring perceived luxury (Vigneron and Johnson, 2004) as a manipulation check, perceived motives (Becker-Olsen et al., 2006) to identify its mediating effects, and customer satisfaction (Oliver, 2010) to identify the moderating effects of luxurious (vs budget) hotel environment and consumer environmental consciousness (Bohlen et al., 1993). Using high fidelity Virtual Reality simulation, the study presents findings on differences in satisfaction depending on how the sustainability cues are perceived by the consumer in luxurious (vs budget) hotels, moderated by consumers' environmental consciousness.

This investigation broadens previous research by taking a design-oriented approach and shows how the surrounding environment can change consumer's psychology towards sustainability initiatives. Furthermore, both design and marketing implications pertaining to sustainability for the hospitality industry are discussed.

REFERENCES

Becker-Olsen, K.L., Cudmore, A.B. and Hill, R.P. (2006), The impact of perceived corporate social responsibility on consumer behavior, Journal of Business Research, Vol. 59, January, pp. 46-53.

Berezan, O., C. Raab, M. Yoo, and C. Love. 2013. Sustainable hotel practices and nationality: The impact on guest satisfaction and guest intention to return. International Journal of Hospitality Management 34:227-33.

Bohlen, G.M., Schlegelmilch, B.B. and Diamantopoulos, A. (1993), Measuring ecological concern: a multi-construct perspective, Journal of Marketing Management, Vol. 9 No. 4, October, pp. 415-30.

Robinot, E., Giannelloni, J.L., (2010). Do hotels' "green" attributes contribute to consumer satisfaction? J. Serv. Mark. 24 (2), 157–169.

Gao, Y. L., & Mattila, A. S. (2014). Improving consumer satisfaction in green hotels: The roles of perceived warmth, perceived competence, and CSR motive. International Journal of Hospitality Management, 42, 20–31.

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Sustainable Design: A Biomimicry Approach for Designing a Green Building

Seyedehnastaran Hashemi, Texas Tech University
Ashley Rose Marino, Texas Tech University
Debajyoti Pati, Texas Tech University

ABSTRACT

The aim of this study is to develop design solutions inspired by nature that makes buildings more sustainable by reducing wastes. Sustainability is not an option; it is a necessity. Buildings should be designed in a way that their negative impacts be minimized. While it is crucial to design new buildings based on sustainability principles, existing buildings should also be modified in order to get as close as possible to sustainable approaches. Thus, in this project, an existing building was selected with the aim of implementing innovative design solutions that make it more sustainable. To do so, principals of LEED certifications and the operational idea of LEAN served as the framework for this project. A commercial building (9,968 sq. m) which was previously designed by the first author was selected as the base condition for further analysis and modifications. The building was located in Bushehr which is a coastal city in Iran. According to the Koppen Climate Classification system, Bushehr is considered a warm semi-arid climate (BSh). Principles of LEAN was utilized to identify potential sources of wastes in the projects. Based on an in-depth climatic analysis of the site of the project, a biomimicry model was adopted to generate several design solutions. A natural cooling system inspired by rabbits' ears was designed and implemented in the existing building with the aim of reducing energy use. Based on the computer simulation of airflow, the layout of the building was modified to maximize the use of natural ventilation. Other existing technologies were also incorporated.

REFERENCES

McCombs, H. C. (2015). LEED Green Associate Exam Preparation Guide, LEED V4 Edition. American Technical Publishers.

Liker, J. K. (2004). The Toyota way: 14 management principles from the world's greatest manufacturer. New York: McGraw-Hill.

Radwan, Gehan. A. N., & Osama, N. (2016). Biomimicry, an Approach, for Energy Effecient Building Skin Design. Procedia Environmental Sciences, 34, 178–189. https://doi.org/10.1016/j.proenv.2016.04.017

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Taking the Water - For the Third Age and Beyond

Alison Ho, Virginia Commonwealth University

ABSTRACT

"The impact of an aging population is felt on the population as a whole and cuts across the entire physical environment," said Helen Castle, Editor of Architectural Design (Farrelly, 2014, p. 5). By 2030, one in five residents will be of retirement age and by 2050, the population of those over the age of 60, will reach 2 billion.

Young old is a term that describes persons age 55-67 (Farrelly, 2014, p. 47). This demographic is living longer than previous generations and are entering a very transitional period in their life. They are towards the tail end of their career, are looking at early steps of retirement and, if they have children, have become or are soon to be empty nesters. This transitional period is difficult for many, as they must realign their priorities and fill the void that used to be career and children. The concept, third age, coined by Peter Laslett in the 1980s, describes the period for those who are post-career and children but before the onset of illness and physical decline. It is a period when one is free of obligations and responsibilities to their career and children and when good health makes it possible to enjoy leisure time. Evidence-based design will be a critical component of this project and will help inform and support the design of an activity center to help this demographic transition into the next phase of their life. This space can hope to keep this population integrated into their community, sustain their social life, and keep their minds and bodies active.

Robert Havighurst's definition of successful aging is considered one of the earliest in gerontology literature. His theory seeks to suggest that the science of gerontology must have conditions promoting maximum happiness and satisfaction (Martin, Kelly, Kahana, Kahana,

Willcox, Willcox, Poon, 2015). The study of successful aging is considered a central theme for the discipline of gerontology and a number of theories of how to age successfully have been discussed by gerontologists since the early 1950's. Aging theories such as J.W. Rowe and R.L. Kahn's model of successful aging, activity theory, disengagement theory, voluntary organization, and the social agency model can be studied to help make informed programmatic and design decisions.

Matthias Hollwich, a leader in the field, and co-owner of firm Hollwich and Kushner (HWKN) has spent several years studying architecture and design and its effect on aging. His New Aging model seeks to make aging an empowering process. Hollwich and his firm have designed a few facilities based on this model including, Boom Palm Springs, Max, and Skylar. All these facilities encompass elements of shared amenities with public programs in highly livable urban environments. Precedent studies concerning senior community centers, multigenerational living facilities, community centers and assisted living facilities will be included in methods of research. These precedents can give an insight into function and structural organization, spatial sequence, materiality, and other programmatic elements for this population. In-depth interviews with professionals at the Department of Gerontology will be included in methods of research along with site visits to various facilities.

By drawing on past research and precedents, this activity center for the young old and third age population will forego the typical model of "flex spaces" in senior community centers. Structured spaces with dedicated activities will enhance, entice and excite this demographic and support them socially, physically and mentally during this transitional period. The activity space will have structured activities such as an art studio, a piano room, and a yoga studio. An on-site cafe will feature local restaurants and chefs through a pop-up style restaurant. This activity space will help give this demographic a new focus, sense of responsibility and self-worth post-career and post children.

REFERENCES

Farrelly, L. (2014). Designing for the third age: Architecture redefined for a generation of 'active agers' (Profile (Chichester, England); 228).

Martin, P., Kelly, N., Kahana, B., Kahana, E., Willcox, B. J., Willcox, D. C., & Poon, L. W. (2015). Defining successful aging: a tangible or elusive concept?. The Gerontologist, 55(1), 14–25.

Morley, J. (2012). Aging in place. Journal of the American Medical Directors Association, 13(6), 489-492.

Stowe, J. D., & Cooney, T. M. (2015). Examining Rowe and Kahn's Concept of Successful Aging: Importance of Taking a Life Course Perspective. The Gerontologist, 55(1), 43–50.

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The Impact of Lighting Type on Consumer Behavior in the Purchase of Healthy Products

Sarah Hartmann, Georgia Southern University
Sarah Zenti, Georgia Southern University

ABSTRACT

Purpose

This project will explore how lighting in the produce section of a supermarket influences a consumer's decision to purchase produce. There is research in this field that examined this theory in restaurants, however, this specific area has not been researched and needs more testing to determine any correlation.

Hypothesis

Consumers shopping in the produce section at a supermarket will select healthier options and possibly more produce when the lighting is brighter or adjusted to a certain warmth.

Review of Literature

One research articles states “In terms of consumer well-being, dining in brightly lit ambient settings might be a good option if the goal is to enhance choice likelihood for healthy options.” (Biswas, Szocs, Chacko & Wansink, 2017, p. 2) which if used correctly, could influence healthier shopping among individuals when used in a supermarket setting. Research also concludes that “Food retailers, in particular at supermarkets, are key shapers of the food environment which influences consumers’ diets” (Martinez, Rodriguez, Mercurio, Bragg &

Elbel, 2018, p. 1) and if lighting can help change consumer's choices positively without them being aware, then this is an important topic to research further.

A source states "most of the purchasing decisions of shoppers in supermarkets are not planned at all but are made in-store based on unconscious processes" (Wijk, Maaskant, Kremer, Holthuysen & Stijnen, 2018, p. 4) which tells us that many other aspects, such as lighting, strongly affects what consumers buy. One source shows that the "mere element of lighting can be employed to change the atmosphere within a commercial environment and to help to create a specific store experience" (Quartier, Vanrie & Cleempoel, 2014, p. 2) which explains how this topic can greatly impact the success of a store. If the environment of a store is tailored to mimic positive findings in research, then the feeling associated with shopping in that store will be positive, thus potentially encourage and promote specific more desired shopping habits.

Methodology

The researcher will conduct a pre-survey inquiring about the participants shopping habits including questions regarding the percentage of the produce he or she buys per week and their approval of their primary store's selection. Participants will then be introduced to a virtual reality model of three grocery produce sections with various lighting displays. Following the simulation, participants will complete a post survey that will ask them questions about their experience with the simulation and any lighting (or design) preferences seen in the models. The study population will consist of about 20 participants of a convenience sample. The surveys will be conducted using a Qualtrics survey and the data collected will be evaluated and the result will be determined using graphs.

Implications

The results from this study can help inform the design of supermarkets as owners and designers work together to consider how a stores' atmosphere, specifically lighting, can impact and influence customers and their healthy shopping habits. This research will seek to explain how lighting plays an important part in consumers' decision-making process when it comes to purchasing fresh, healthy produce. This study will seek to demonstrate the impact of interior

design, specifically lighting design, can have on encouraging customers to make healthier decisions while shopping, thus leading to increased well-being and a healthier lifestyle for themselves and their families.

REFERENCES

Biswas, D., Szocs, C., Chacko, R., & Wansink, B. (2017). Shining light on atmospherics: How ambient light influences food choices. Journal of Marketing Research, 54(1), 111-123. doi: 10.1509/jmr.14.0115

Glenza, J. (2017, November 17). Only one in 10 Americans eat enough fruits and vegetables, CDC study finds. Retrieved from https://www.theguardian.com/us-news/2017/nov/17/just-12-of-americans-eat-enough-fruit-and-vegetables-cdc-study-finds

Martinez, O., Rodriguez, N., Mercurio, A., Bragg, M., & Elbel, B. (2018). Supermarket retailers' perspectives on healthy food retail strategies: In-depth interviews. BMC Public Health, 18(1),1-16. doi:10.1186/s12889-018-5917-4

Quartier, K., Vanrie, J., & Van Cleempoel, K. (2014). As real as it gets: What role does lighting have on consumer's perception of atmosphere, emotions and behaviour? Journal of Environmental Psychology, 39, 32–39. doi: 10.1016/j.jenvp.2014.04.005

Wijk, R. A., Maaskant, A. M., Kremer, S., Holthuysen, N. T., & Stijnen, D. A. (2018). Supermarket shopper movements versus sales and the effects of scent, light, and sound.

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Design for Health Initiative: Appalachian Community Health Challenges Related to Poverty

Shelby Hicks, Western Carolina University
Sara Duncan, Western Carolina University
Amy Murphy-Nugen, Western Carolina University
Kae Livsey, Western Carolina University

ABSTRACT

After viewing appendix 1, consider 40 million live in poverty, 18.5 million in extreme poverty in America. (Alston, Philip Human Rights Council, 2018) Chronic psychosocial stress is gaining recognition as a major mechanism through which poverty exerts a negative toll on children and adults. Ongoing stress associated with poverty, or the stress of living with less than one needs, creates constant wear and tear on the body, dysregulating and damaging the body's physiological stress response system and reducing cognitive and psychological resources for battling adversity and stress. (Wadsworth, 2012). A rapidly growing body of research has shown that stress responses can have suppressive effects on immune system functioning. (Kennedy, 1990)

The design industry is picking up speed and focus on social justice. CIDA has three specific standards that address areas of social, environmental, cultural and economic contexts of interior design work. Standard 4. Global Context Standard 7. Human-Centered Design, And last, Standard 14. Environmental Systems and Comfort (Council of Interior Design Accreditation, 2018)

"Design is a universal language for social justice: Every designer is now a member of the global community. Concerns of social justice underlie environmental design activities at all scales in the 21st century. Increasingly, interior designers are called upon to articulate the benefits of their

work to the individual, the group, and the larger community, and to find a balance of the greatest good in meeting competing demands. Access and use by all, ecological impacts, and participation of end-users in the activity of design are just some of the examples of the new criteria for ethical design." (Staff Inhabitat, 2019)

The purpose of this presentation is to conduct a preliminary inquiry to prepare for this year-long collaboration between Interior Design, Nursing, and Social Work students. Graphics will include statistics of poverty, food insecurity, drug and opioid use. Images of typical built environmental issues that affect health, safety, and welfare within the Appalachian community. Common health issues will be presented in visual images and or graphics such as pie-charts. Public policies, access to public services will also be shown in a visual format.

Design for Health Initiative: This is a collaborative effort, integrating Interior Design, Nursing, and Social Work. This project looks to investigate the Appalachian community's generational poverty and health-related issues pertaining to poor housing conditions. Interior Design students will research WELL Building Standards and use these standards as the foundation for their design solutions.

Students will complete research and participate in a poverty simulation experience. (Appendix 2) The students will participate round table discussions with participant community members, local community non-profit organizations that address the issues of poverty, health, wellbeing, drug addiction, aging in place, and native American communities.

The students will form teams representing each of the disciplines, complete an assessment of the volunteer community member. Interior design students will develop solutions and plans to remediate the built environment issues. Pre and post-assessments will be completed with both students and community members. Students will be encouraged to present at appropriate conferences.

REFERENCES

Alston, Philip Human Rights Council. (2018). Report of the Special Rapporteur on Extreme Poverty and Human Rights on his Mission to the United States of America. United Nations.

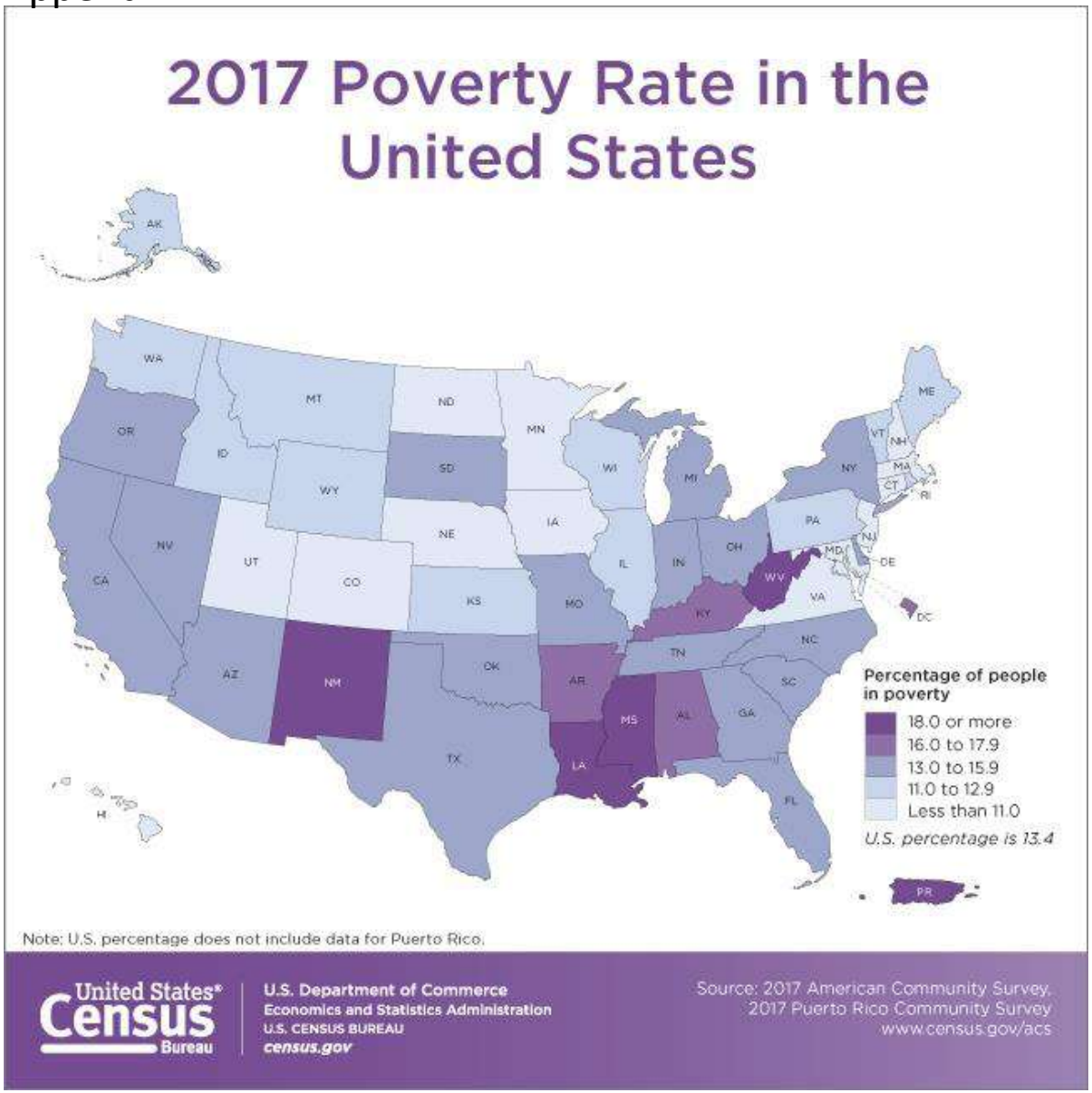
Council of Interior Design Accreditation. (2018). CIDA Standards . CIDA .

Kennedy, S. G.-G. (1990). Principles of Psychophysiology: Physical, Social, and Inferential Elements. In J. T. Cacioppo, Psychoneuroimmunology (pp. 177-190). New York: Cambridge University Press.

Staff Inhabitat. (2019, September 14). https://inhabitat.com. Retrieved September 14, 2019, from https://inhabitat.com/the-top-5-issues-affecting-interior-design-today/.

Wadsworth, P. M. (2012, July). CYF News. Retrieved from American Psychological Association: https://www.apa.org/pi/families/resources/newsletter/2012/07/stress-mechanism

Appendix 1


2017 Poverty Rate in the United States
Percentage of people in poverty
18.0 or more
16.0 to 17.9
13.0 to 15.9
11.0 to 12.9
Less than 11.0
U.S. percentage is 13.4
Note: U.S. percentage does not include data for Puerto Rico.
United States Census Bureau
U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov
Source: 2017 American Community Survey,
2017 Puerto Rico Community Survey
www.census.gov/acs

Appendix 2

How the Poverty Simulation Works

The Community Action Poverty Simulation breaks down stereotypes by allowing participants to step into the real life situations of others.

Poverty is often portrayed as a stand alone issue - but this simulation allows individuals to walk a month in the shoes of someone who is facing poverty and realize how complex and interconnected issues of poverty really are.

- A single parent with limited resources and no transportation must find a way to get to work and get their child to daycare.
- An elderly person must find a way to pay for both utilities and medication.
- A young adult must care for siblings while their parent is incarcerated.
- An elderly couple must raise their grandchildren and deal with their own health and employment issues.

After the experience, individuals then have the opportunity to discuss what they've learned with their peers.

The Community Action Poverty Simulation is a tool that helps participants rethink the challenges that millions of low income individuals must face each and every day. More importantly, this tool helps people identify areas of change that can directly impact the effects of poverty on individuals, families and communities.

Missouri Community Action Network
2014 William St.
Jefferson City, MO 65109

Phone: (573) 634-2969

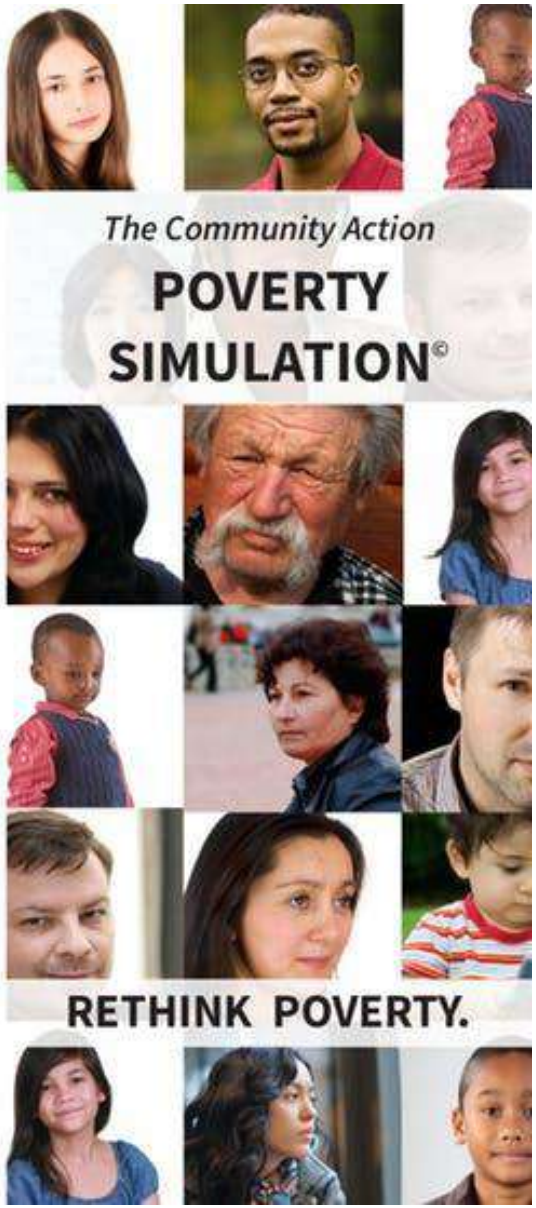
www.povertysimulation.org

The Community Action Poverty Simulation is a profoundly moving experience. It moves people to think about the harsh realities of poverty and to talk about how communities can address the problem. Most importantly, it moves people to make a difference.

The Community Action Poverty Simulation is the first step to get people and communities moving.

Some examples of groups who have used the Community Action Poverty Simulation experience include:

- Customer Service Groups
- Health Care Professionals
- Educators
- Clergy and Congregations
- Social Service Providers
- Elected Officials
- Management Staff
- College Students
- Community Organizations
- Corporations



PRESENTATIONS

An Investigation of Cultural Well-Being in the Workplace Environment

Angelita Scott, Georgia Southern University
Abimbola Asojo, University of Minnesota

ABSTRACT

Purpose

The purpose of this study is to investigate the concepts of culture, well-being, and their importance to employees in the workplace. There is minimal research related to culture and well-being in the profession of interior design and even less related to the workplace physical environment. Therefore this study was designed to explore these variables.

Review of Literature

Culture is a part of our values and identity. Identity is an area of well-being that is directly tied to quality of life impacting our perspectives from which we make all life decisions (Diener, 2009). Scholars posit that cultures have differing concepts of well-being, which influence an individual's desirable feelings (Diener, 2009). Diener (2009) states this concept "speaks to the fundamental nature of well-being, and therefore understanding in this field cannot proceed without acknowledging the influence of culture" (p.1). Findings from Sagiv and Schwartz's (2000) study reveal that values have weak direct effects on well-being when the environment is not considered. Therefore this study is important to address in the interior design profession and uses Hofstede's (1984) cultural dimensions model as a theoretical framework to ground the concepts of culture defined as nationality and ethnicity. The Council For Interior Design Accreditation (CIDA) (2018) requires that all "Interior designers have a global view and consider social, cultural, economic, and ecological contexts in all aspects of their work." (p.16). Though research has been conducted around culture and interior design very few discuss an

explicit connection to well-being. Guerin (2014) states that a factor shaping well-being is designing for people's cultural identity, cultural aesthetics, and/or cultural norms.

Research Questions

1. Does culture influence employee well-being in the overall physical work environment?
2. Does culture mediated by satisfaction with the physical workplace environment influence well-being?

Methodology

The survey used in this study was an existing validated and reliable post-occupancy evaluation tool. Questions related to culture were developed and added from existing literature. The questions were piloted and demonstrated an acceptable value of reliability (p =.726). All questions were developed using a 7- point Likert Scale and demographic questions. This study used a purposive convenience sample of full and part-time faculty and staff who were culturally diverse and taught courses related to culture in a midwestern University building located in a major metropolitan area. The survey was administered to 215 faculty and staff who officed in the building with 75 participating in the study resulting in a 30% acceptable response rate. Data analysis was conducted using descriptive statistics and bivariate analysis.

Findings

The majority of employees believed that culture is important in the workplace environment (95.4%) and that culture does influence well-being in the workplace environment (81.5%). These findings support the literature reviewed in this study.

Implications

Designing with culture in mind can address diversity and well-being in workplace environments by influencing employee well-being and workplace retention. In doing so, employees may feel valued. As employees are exposed to cultures outside of their own, there is a greater awareness and appreciation of their similarities and differences. Organizations addressing employee well-being should understand that employees who feel valued by their companies create a deeper connection with the organization. The connection is reflected in employees' satisfaction and loyalty to the company, which may result in less turnover and a higher return on investment.

REFERENCES

Council for Interior Design Accreditation. (2018) Council for Interior Design Accreditation: Professional Standards. Grand Rapids, MI: Author. Retrieved from: https://accredit-id.org/wp-content/uploads/2018/01/Professional-Standards-2018_Final.pdf

Diener, E. (2009). Culture and Well-being. Dordrecht, NL: Springer.

Guerin, D. (2014). Changing people's lives: Interior designs that focus on well-being (and Health & Safety). Continuing education course presented to New Jersey Coalition for Interior Design Legislation.

Hofstede, G. (1984). The cultural relativity of the quality of life concept. Academy of Management review, 9(3), 389-398.

Sagiv, L., & Schwartz, S. H. (2000). Value priorities and subjective well-being: Direct relations and congruity effects. European journal of social psychology, 30(2), 177-198.

Multicultural Interiority: Shared Interior Roles in Balinese Compound Housing

Gregory Galford, Virginia Tech

ABSTRACT

Relevance:

The Balinese compound house is a series of small pavilions arranged around shared interior and outdoor spaces set within a perimeter wall. It is constructed according to established guidelines that reflect a broader view of Hindu religious and family structure. It is architecturally evocative, but is often used by Western designers only for its allusion to a particular style based on culture and place. It provides the interior design educator with alternative ways to utilize multicultural options to emphasize issues of ergonomics and anthropometrics when conducting exercises in residential design and the principles of design.

Problem:

The interior design educator needs to have alternative models of residential environments to present to students. This requires a preliminary knowledge of other global models to help us to understand options within our own context. This presentation focuses on explaining the structure and layout of the Balinese compound house as a means to achieve this broader knowledge.

Context:

This presentation relies on existing literature on the topic combined with the author's own experiences with Balinese compound housing. An explanation will be provided of the social, historic and economic guidelines that are unique to the region. This will illustrate the ways in

which we can use the past and present to inform future models of housing and empower the interior design student to be prepared for the future.

Method of investigation:

This presentation is a review of the literature surrounding the Balinese compound house as a means to establish a broader research study. The questions that are to be addressed review the compound house as a tool to establish a unique dialogue with interior design in the U.S. The ultimate research objectives are to investigate whether an understanding of that particular housing style provides relevance for designers in America. The author has made four visits to Bali, and has established research ties with faculty at a local university. Particular case studies may be utilized, as well as interviews and observation. The purpose of this review of the literature and the presentation is to begin the process of research design that will inform next steps in the research.

Outcomes:

The questions to be addressed within this presentation are:

- How can international models rooted in the past inform interior design educators in the study of residential design and design principles?
- Is this an appropriate way for interior design educators to incorporate multicultural elements into their curriculum?
- How can this knowledge advance American residential design?

Significance of presentation:

The expected implications for this literature review and presentation are that the particular questions that are to be addressed will be modified and clarified. This will be done with a focus on utility and relevance for future U.S. design research. This will be followed by the next phase of study.

REFERENCES

Nas, Peter J.M., ed. (2006). The Past in the Present: The Architecture of Indonesia. Rotterdam, NAi Publishers.

Kusno, Abidin. (2010) The Appearance of Memory: Mnemonic Practices of Architecture and Urban Form in Indonesia. Durham, NC. Duke University Press.

Schefold, Reimar., Nas, Peter, Domenig, Gaudenz. (2003) Indonesian Houses: Tradition and transformation in vernacular architecture, Leiden, KITLV Press.

Dawson, Barry and Gillow, John. (1994) The Traditional Architecture of Indonesia. London, Thames and Hudson, Ltd.

Wijaya, Made. (2003) The Architecture of Bali. Honolulu, HI. University of Hawaii Press.

History & Theory | Scholarship of Design Research | Presentation

Brewing Artisanal Pasts: Craft Beer, Spirits, and the Manufacturing of Historic Interiors

Erin Cunningham, University of Florida
Nam Kyu Park, University of Florida

ABSTRACT

Craft breweries and craft distilleries are extremely popular across the United States. Responding to large scale production and globalization, these businesses showcase an interest in local products, sustainable practices, and community welfare (Kohn, 2010). Often these values are expressed through the rehabilitation of historic buildings. Among the many historical resources available, abandoned industrial buildings have surfaced as particularly desirable "host environments" (Matthews & Picton, 2014, p. 340); their redesigned spaces capturing an interior aesthetic of a manufacturing past.

In many ways these preservation efforts are positive. These businesses are creating desirable places that we want to visit; and they are giving abandoned buildings a new life. Often these businesses demonstrate an investment in their communities — fostering local music, art, food, and products. At the same time, these interior preservation efforts embrace market solutions that might be understood to overlook broad social and economic inequalities. In fact, it is possible that their enormous popularity allows us to underestimate the extent to which they are perpetuating inequalities, accelerating gentrification, white-washing history, and — through a creative interior interpretation of a romanticized industrial era — generating pasts that never existed.

Using cross-case analysis, this research looks at two Florida examples of craft breweries and distilleries that have adapted historic buildings for their venues: the Ice Plant Bar and St.

Augustine Distillery in St. Augustine, Florida, and the Cypress & Grove Brewing Company in Gainesville, Florida. Both these businesses reside in early-twentieth-century factory buildings that were originally used as ice plants – producing and storing ice for businesses, residential customers, fisherman, and shrimpers. Located in a historically African American neighborhood, the Ice Plant Bar and St. Augustine Distillery is a contributing building to the Lincolnville National Historic District. Its current use — as a bar and a distillery — reflects its industrial history; small quantities of ice are still produced on site and used in craft cocktails, distilling takes place on site, and the interiors celebrate the history of manufacturing with details like metal cranes and cooper stills. As the owners proclaim "we wanted to restore the feeling of walking into an old factory" (Janzen, 2015, para. 3). Likewise, Gainesville's Cypress and Grove Brewing Company also celebrates its industrial past — the old, onsite artesian well, which was historically used for producing ice, now produces craft beer and the interiors feature materials salvaged from the factory floors.

Scholars have examined the reuse of historic buildings for beer and spirits production through the lens of inner-city gentrification (Mathews & Picton, 2014), place-making (Fletchell, 2016), and the commodification of history (Kohn, 2010). This paper proposes that these sites, which present exciting reuses of historical buildings, also invite critical questions about the preservation of interior spaces: How do these reimagined industrial interiors celebrate production, and the past? How do they obscure the past? And, what is the social cost? Within the larger framework of case study research, this work couples site analysis with an analysis of an extensive range of source materials, including preservation documents, media coverage, and publicity materials, to demonstrate how an interior aesthetic of manufacturing contributes to creating a nostalgic reinterpretation of the industrial era, the impression of authenticity through a language of making, and privileged spaces of middle class consumption.

REFERENCES

Baudrillard, J. (1995). Simulacra and simulation. Ann Arbor: University of Michigan Press.

Fletchell, A. M. (2016). Place-making through beer-drinking: A case study of Montana's craft breweries. Geographical Review,106 (4), 539-566.

Janzen. E. (2015). Inside look: Ice Plant Bar. Imbide. Retrieved from https://imbibemagazine.com/bars-we-love-ice-plant-2/.

Kohn, M. (2010). Toronto's distillery district: Consumption and nostalgia in a post-industrial landscape. Globalizations, 7, (3), 359-369.

Matthews, V., & Picton, R. M. (2014). Intoxifying gentrification: Brew pubs and the geography of post-industrial heritage. Urban Geography, 35 (3), 337-356.

The Ice Plant Bar and St. Augustine Distillery
St. Augustine, Florida

Figure 1. Exterior of Ice Plant building. September 8, 2019. (photo by author)

Figure 2. Interior of Ice Plant Bar. September 8, 2019. (photo by author)

Figure 3. Interior of St. Augustine Distillery. September 8, 2019. (photo by author)

Figure 4. Interior of distillery gift shop. September 8, 2019. (photo by author)

Cypress & Grove Brewing Company
Gainesville, Florida

Figure 1. Exterior of Cypress & Grove Brewing Co. January 22, 2019. (photo courtesy of C. Liu)

Figure 2. Interior of Cypress & Grove showing beer production. January 22, 2019. (photo courtesy of C. Liu)

Figure 3. Interior of Cypress & Grove showing event space January 22, 2019. (photo courtesy of C. Liu)

Figure 4. Interior of Cypress & Grove showing bar area. January 22, 2019. (photo courtesy of C. Liu)

Capability Design: Developing a Big Tent Theory for Interior Design

William Riehm, University of Louisiana at Lafayette

ABSTRACT

Design professions have always taken theoretical inspiration from the disciplines of history, archeology, literary criticism, and philosophy. Alberti wrote to actualize Plato's concepts, Winckelmann's archeology laid a foundation for the Neoclassical movement, and Edith Wharton famously read Darwin, Veblen, and Nietzsche as a teen. Over the past few decades, post-structuralist philosophers such as Derrida, Foucault, and Deleuze have formed much of the basis for post-modern and deconstructivism design theory. And still today many young design students are asked to confront Heidegger's *Being and Time* or Merleau-Ponty's *Signs* while pondering the theories of phenomenology expressed in the designs of Zumpthor and Libeskind. The Interior Design academy, while attentive to these past and recent theoretical movements, has been challenged to find an anchored home in them. Our scholarly efforts in evidence-based, user-centered, biophilic, and universal design have placed us on a string that runs through many theoretical models but doesn't weave particularly tight. In their 2011 study of theories found in *The Journal of Interior Design*, Clemons and Eckmann found over 200 references to design theories, but the highest frequency of any specific theory was five (41).

This paper proposes that Interior Design look to the economic and political philosophy of the Capability Approach as founded by Amartya Sen and Martha Nussbaum to find a big tent theoretical model that empowers design. The Capability Approach has a core focus of understanding human wellbeing as a function of what one is capable of doing rather than having the right o permission to do (Nussbaum and Sen 1993, Sen, 1999, Nusbaum 2011). Discussing these ideas Martha Nussbaum says, "The right question to ask seemed to us to be: what are

people actually able to do and to be? … And we look at capabilities rather than functioning because we think it's the opportunities that are important" (Taylor 2010). A tenant of the Capability Approach is that freedom has little use if one is not capable to actualize that freedom and that wealth does not correlate to well-being. If one has the right to eat, one must also have the capability to find food and the agency to fast.

Nussbaum establishes ten core capabilities: 1. life 2. bodily health 3. bodily integrity 4. senses, imagination, and thought 5. emotions 6. practical reason 7. social and family affiliation 8. interface with other species and nature 9. play and 10. control over one's environment. Each of these measures are founded in economic and political theory, so to form a design theory from this, we should consider how these core capabilities are experiences in space over time. Embedded in the Capability Approach is a necessity for human wellness that is directly tied to the Interior Designer's ethical responsibility to maintain and improve the health safety and welfare of building occupants. It also calls for universal access, something designers have promoted with universal design, and it highlights the importance of Biophilia calling for access and potentials for engagement for nature. The connections to design are many.

One of the best known applications of the Capability Approach is the Human Development Index which is an analytical tool intended to asses a society's success through wellbeing rather than monetary gain (Gross Domestic Product). Perhaps as we consider the Capability Approach spatially, a framework for measuring the success of design emerges. (A Capability Design Index?) Reviewing each core capability individually, reveals complex interrelated sub-metrics currently examined in Interior Design scholarship and others that provide new areas of research. In conclusion, the assertion here is that the Capability Approach can be adopted by the interior design community as a big tent "Capability Design" weaves us more strongly together and broadens the scope of impacts on society and peer design disciplines.

REFERENCES

Clemons, S. A., and M. J. Eckman. 2011. "Exploring Theories Identified in the Journal of Interior Design." Journal of Interior Design 36, no. 4: 31-50.

Nussbaum, Martha and Amarttya Sen. 1993. The Quality of Life. Oxford: Oxford University.

Nussbaum, Martha. 2011. Creating Capabilities: The Human Development Approach. Cambridge, Massachusetts: The Belknap Press of Harvard University Press.

Sen, Amartya. 1999. Commodities and Capabilities (2nd ed.). Oxford: Oxford University Press.

Taylor, Astrid, dir. 2010. Examined Life. Montréal: National Film Board of Canada. DVD.

Exploring Frank Lloyd Wright through the Lens of 'Big Data'

Elise King, Baylor University
Qiannan Wu, Baylor University
David Lin, Baylor University

ABSTRACT

Frank Lloyd Wright remains one of America's best known and most prolific architects, credited with designing more than 1,000 structures. Such a sizable oeuvre holds hundreds of thousands of data points, contained in artifacts such as writings, photographs, and architectural drawings. Much of this data, however, remains untapped. Wright's floor plans, for example, are full of rich layers of information (e.g., tracking room names over time can indicate changing societal preferences/shifts). But to utilize the data in hundreds or thousands of these plans, requires either reproducing them in CAD or BIM or measuring and recording the information by hand. Both are time consuming and prone to error. In response, we developed a web-based tool that allows users to analyze large corpora of architectural floor plan images (i.e., scans of original drawings). The Building Database & Analytics System (BuDAS) unites complementary manual data entry and image recognition to automate the process of floor plan detection and analysis. By utilizing floor plan data, researchers can explore the historical narrative in new ways, analyzing data points longitudinally over the course of an architect's or designer's career. In this study, we explore Wright's changing conception of space through an analysis of his residential floor plans using BuDAS.

Space is a topic Wright discussed frequently throughout his career, including in his autobiography and principles of organic architecture, among other venues (Wright, 1928; Wright, 1931; Wright, 1932). But do Wright's pontifications on space stand in accordance with

his built work? Using floor plan images of Wright's residences uploaded to BuDAS, we collected information on room relationships, doors/openings, room sizes, and room names/categories. After uploading plan images, BuDAS automatically detects and collects information related to room sizes, types, and relationships. This, along with contextual information entered manually (e.g., location, date of construction, cost, name of client), is stored in the database for analysis.

Using the data collected from Wright's residential floor plans, we explore interior and exterior space usage (minimum, average, and maximum square footage) and room relationships (connectivity, adjacency, and openness) over the course of his career. The results are explored alongside Wright's writings on space, comparing major points (destruction of box, fireplace, public/private) with numerical data. The study provides a novel, data-driven historical analysis of Wright's residential architecture and space usage.

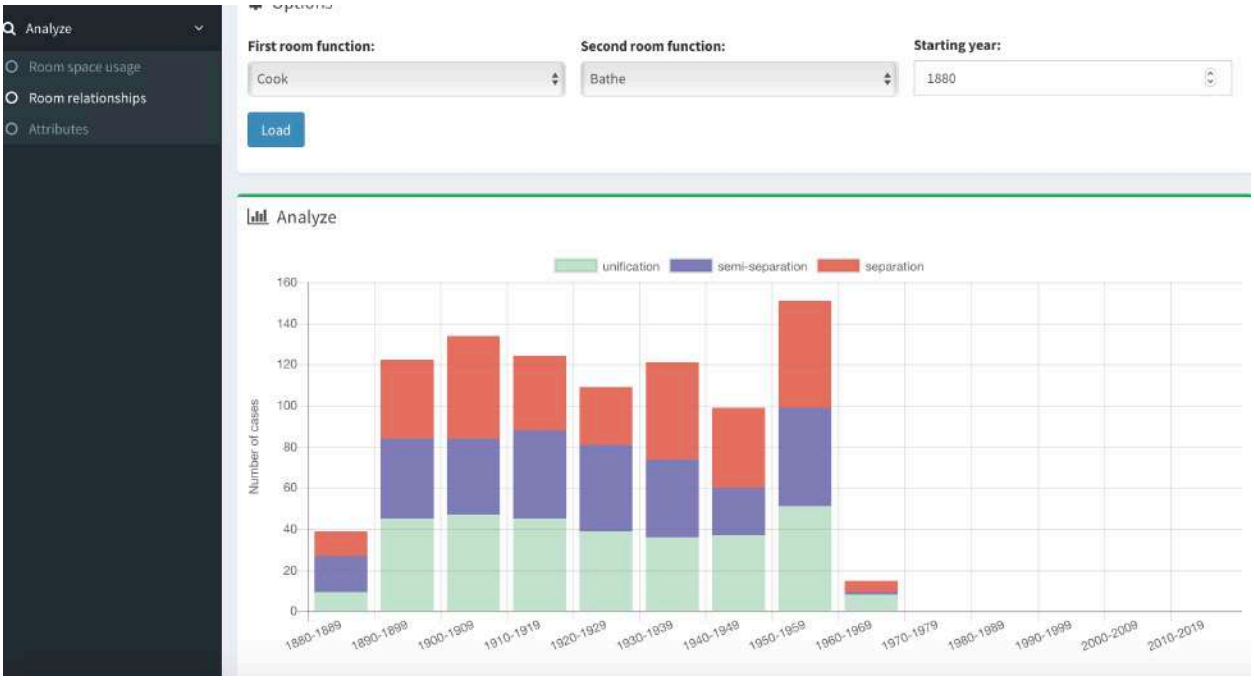
REFERENCES

Alkhoven, P., Stenvert, R., & Elpers, S. (2016). Comparing architectural floor plans: New strategies new digital tools for architectural historians. Paper presented at Digital Humanities. Retrieved from http://dh2016.adho.org

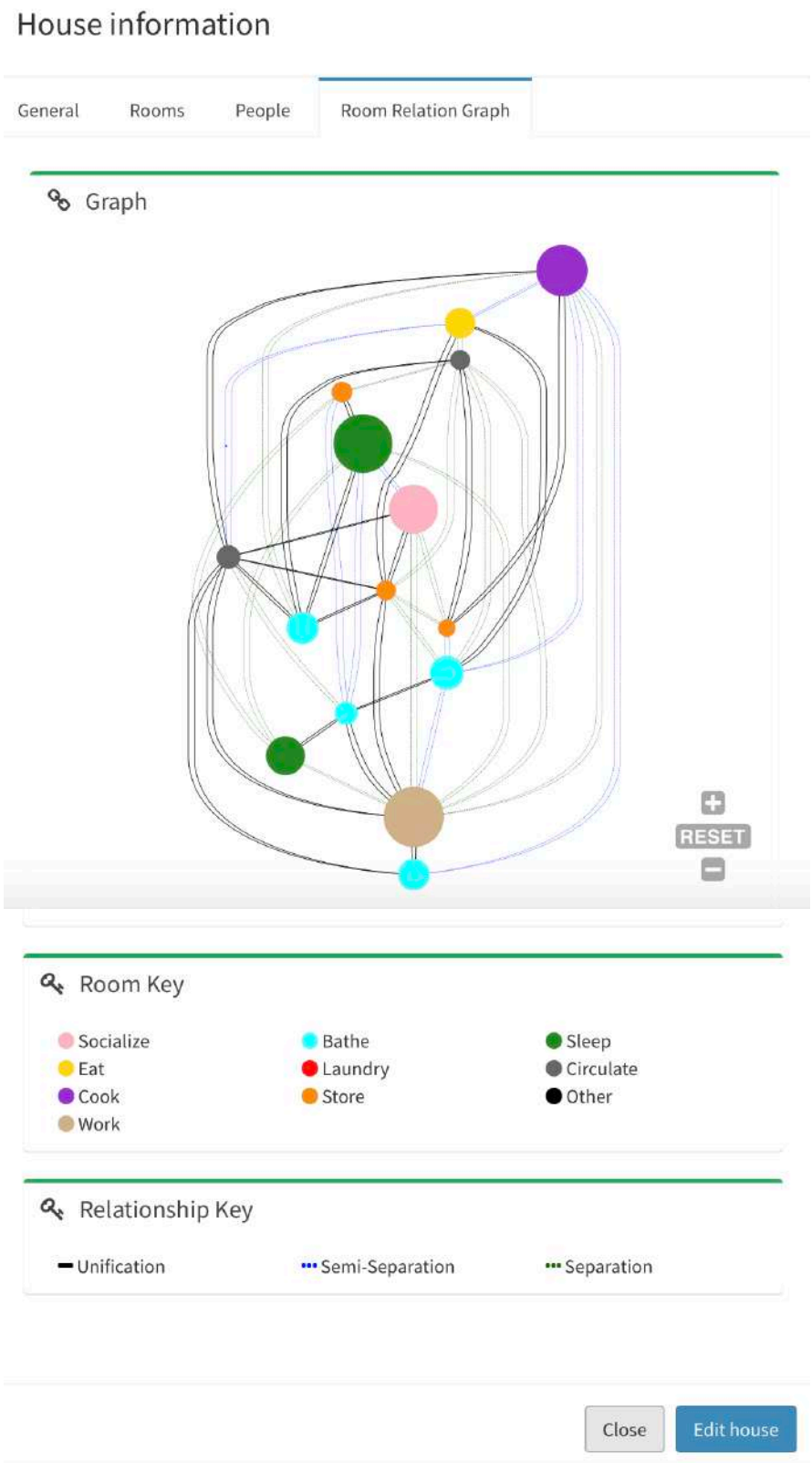
Wright, F. (1932). An autobiography: Frank Lloyd Wright. London: Longman's, Green and company.

Wright, F. (1928). In the Cause of architecture. I. The Logic of the plan. Architectural Record, 63(1). Retrieved from http://search.proquest.com/docview/1289922835/

Wright, F. (1931). Modern architecture; being the Kahn lectures for 1930. Princeton, N.J: Princeton University Press.



Example of room relationship companion



Example of a room relationship graph

Fashion Interiors and Historic Preservation: The Commodification of History and Taste

Chunyao Liu, University of Florida
Erin Cunningham, University of Florida

ABSTRACT

Artistic expression overlaps, from high fashion to high architecture (Berry, 2018). Specifically, throughout the 20thCentury and up until present times, fashion companies have drawn on historic architecture in their branding, merchandising and brick-and-mortar locations. For instance, Ralph Lauren rehabilitated a historic mansion to its flagship store in New York City in 1986. Hermès opened its Mumbai flagship store in a grand Victorian residence in 2011, and its Shanghai store in a historic mansion in 2014. Maison Louis Vuitton Vendôme, one of Louis Vuitton's stores in Paris, was transformed from two hotels particuliers (Parisian townhouses) in 2017. In the same year, Prada restored a 1918 Beaux-Arts mansion in Shanghai and held its spring fashion show inside. Notably, these projects demonstrate a fascination with the domestic environment, especially the homes of the elites. Therefore, the exploration of fashion, commodification, and the preservation of historic domestic interiors forms a valuable area of inquiry.

This research explores the following questions: 1) How do fashion companies alongside interior designers preserve, reinterpret, translate, and sell buildings' history and showcase the tastes of the elites? 2) How are fashion and the preservation of historic domestic interiors connected? 3) How is the preservation of historic interiors driven by fashion and commodification in the context of globalization and 4) What are the potential drawbacks?

Based on theories of authenticity (Peirce, 1974; Jokilehto, 1994) and taste (Bourdieu 1984) in the fields of both historic preservation and consumer culture, this research examines two historic

preservation projects initiated by fashion brands in global cities — one is Ralph Lauren's Flagship Store (Gertrude Rhinelander Waldo House) in New York City, the other is Prada Rong Zhai in Shanghai. Both cases are historic mansions located in global cities, built in the late 19th Century, originally owned by wealthy elites, and finally adapted and reused by global fashion companies. The two cases share these similarities yet are different in a number of critical ways, which allows for a fruitful comparison. Ralph Lauren's Flagship Store was completed in 1986 — a time period when historical reproductions and novel retail experiences gained popularity together with the rise of a consumer society (Malamud, 1998). It was rehabilitated as a staged retail space to convey an upscale home-like setting while selling merchandise. In contrast, the interiors of Prada Rong Zhai, completed in 2017, does not stage a domestic environment; instead, its emtpy historic interiors serve as a backdrop for art exhibitions and fashion shows, showcasing growing "cultural tastes for authenticity" in the 21st Century (Zukin, 2010, p. 228). The two different approaches reveal how the evolution of the preservation of historic interiors is impacted by changing concepts of taste and authenticity.

This project couples a historical analysis of archival materials gathered from the New York Public Library, the New York City Landmarks Preservation Commission, and Shanghai Municiple Archives in China with site analysis and a content analysis of social media posts; it uses these methods to examine changing ideas of taste and how this dovetails with larger social, economic, and political contexts. Notably, this research sheds light on how the history is uncovered, preserved, conveyed and exploited by the fashion companies through preservation. And it argues that with a thorough understanding of the double-sided influences brought by the consumption of history and authenticity, interior designers can better enhance taste-making and place-making in global cities through historic preservation.

REFERENCES

Berry, J. (2018). House of fashion: haute couture and the modern interior. London: Bloomsbury Visual Arts.

Bourdieu, P. (1984) Distinction: A Social Critique of the Judgement of Taste, trans. Richard Nice, Cambridge, MA, Harvard University Press.

Jokilehto, J. (1994) “Questions about Authenticity: A General Framework”. in Conference on Authenticity in Relation to the World Heritage Convention: preparatory workshop. Trondheim: Tapir.

Malamud, M. (1998). As the Romans Did? Theming Ancient Rome in Contemporary Las Vegas. Arion: A Journal of Humanities and the Classics, 6(2), 11-39. Retrieved from http://www.jstor.org/stable/20140439

Zukin, S. (2010). Naked city: the death and life of authentic urban places. New York: Oxford University Press.

Figure 1. Historical exteriors of Rhinelander Mansion. From New York City Landmarks Preservation Commission

Figure 2. Historical Photos of the interiors of Rhinelander Mansion from Regina M. Kellerman papers, the New York Public Library

Figure 3. Interiors of Ralph Lauren Flagship Store after rehabilitation. from Naomi Leff: Interior Designer, published in 2008

Figure 4. The interiors of the Rhinelander Mansion before rehabilitation. from Naomi Leff: Interior Designer, published in 2008

Figure 5. Interiors of Ralph Lauren Flagship Store after rehabilitation. from Architecture Digest, October 1986.

Figure 6. The current interior spaces of the Ralph Lauren Flagship Store. Photos taken by the author on Feb 8, 2019.

Figure 7. Current exteriors of Prada Rong Zhai. From *http://www.chinadaily.com.cn/weekend/2017-11/04/content_34104357.htm*

Figure 8. The current interior spaces of the Prada Rong Zhai. from *https://www.prada.com/cn/zh/prada-highlights/rong-zhai.html*.

Figure 9. The current interior spaces of the Prada Rong Zhai. Photos taken by the author on Jan 1, 2019.

Graffiti in the Corner Bar: Discourse, Interiors, and Historicized Space

Bryan Orthel, Indiana University

ABSTRACT

Relevance / Problem

Humans have marked spaces with graffiti for millennia. Can examining graffiti help designers respond to twenty-first century expectations for co-created interiors and their meanings

Graffiti—whether carving in furniture or painting on walls—is associated with transgression against authority or prevailing norms. In contrast, encouraged graffiti ties informal cultural exchange. For example, graffiti in Pompeiian houses recorded guests and their well wishes (Benefiel, 2016). Encouraged graffiti records the development of culture and ideas. Individuals are rarely invited to mark their ideas into a space's physical form. Markings, wear, and patina are generally viewed as injuries to design.

Bars often allow or encourage patrons to mark their interiors. This presentation examines a case study of one bar to explore the cultural, historical, and design implications of a user-generated interior in the twenty-first century.

Context

The Corner Bar is a familiar, town-and-gown establishment in a Midwestern town. The establishment has a multi-generational community history. The bar serves drinks, food, and hosts themed events (e.g., trivia nights, local musical acts) targeting college students, as well as academics and the general public. The walls of the Corner Bar are paneled in tongue-and-groove wood. Patron-generated writing and carvings cover the surface of the paneling, tables, and booth

seating. This encouraged graffiti features common themes (e.g., X was here), as well as social media handles and commemorative tags. Many markings reference the last time a group anticipated meeting at this place (e.g., graduation) or milestone moments.

The motivations and art form of graffiti are well documented and critiqued. Graffiti modifies an environment to communicate the "concerns, values, interests, and views of self and others" as individuals "strive to differentiate themselves from the surrounding world and establish their own sense of identity" (Lucca & Pacheco, 1986, 466 & 473). Graffiti invokes an individual's memory, community, and humanity to maintain a presence after leaving a place—and acts as an inversed souvenir (Chenoweth, 2017). Such socialized interior space relies on collective experience and co-creation (Popov & Ellison, 2013).

Method

This analysis borrows a cultural discourse methodology from geography to examine the physical space as a cultural actor (Schein, 2009). A four-part sequence guides the analysis (history; individual and collective meaning; space as facilitator of action and debate; and exploration of materialized discourse). This approach identifies how physical and cultural forces intertwine in reproducing practices, beliefs, and power. For the Corner Bar case, the methodology involved close observation of the interior space, contextual research about the history of the place, critical analysis of the graffiti in the context of theory, and assessment of the resulting discourse.

Outcomes

The analysis revealed seven marking categories: phrases; names/initials and dates; drawings; social media tags; declarations of affection; responses; and mark outs. These categories support three distinct discourses: neutral awareness, self-awareness, and social engagement. Neutral awareness reflects some individuals' disengagement with the markings. Self-identity addresses proclamations and explorations as individuals mature and encounter life. Social engagement involves intra- and inter-group communication and meanings. Collectively, the discourses use the interior to set markers in time and culture.

Advancement of design knowledge

Millennial and younger consumers engage with brands, identities, and group membership through expectations for co-creation of values and meaning. The case study explored user-modified markings and interior spaces. The results, while limited by type, suggest designers can co-create meaningful, targeted interiors for contemporary users by looking to historic examples.

REFERENCES

Benefiel, R.R. (2016). The culture of writing graffiti within domestic spaces at Pompeii. In R.R. Benefiel & P. Keegan (Eds.), Inscriptions in the Private Sphere in the Greco-Roman World (pp. 80-110). Boston, MA: BRILL.

Chenoweth, J.M. (2017). Natural graffiti and cultural plants: Memory, race, and contemporary archaeology in Yosemite and Detroit. American Anthropologist, 119(3): 464-477.

Lucca, N. & Pacheco, A.M. (1986). Children's graffiti: Visual communication from a developmental perspective. Journal of Genetic Psychology, 147(4): 465-479.

Popov, L. & Ellison, M.B. (2013). Performance, space, time: The production of interiority in Black Rock City. Interiors, 4(1): 53-74.

Schein, R.S. (2009). A methodological framework for interpreting ordinary landscapes: Lexington, Kentucky's courthouse square. The Geographical Review, 99(3): 377-402.

History & Theory | Scholarship of Design Research | Presentation

ID'ing Realities Made by Material Culture

Shai Yeshayahu, Ryerson University

ABSTRACT

Emerging in the late twentieth century and centered upon humanmade objects, material culture speaks of the physical environments leading to the definitions and histories of culture. Numerous researchers address material culture from the studies of artifacts yet, rarely are they interested in fabricating material culture as a tool to display the nature of space-making. Thus, the intent of this study is twofold: first to deliver on CIDA's material culture mandate which seeks evidence of students understanding "the social, political, and physical influences affecting historical changes in design of the built environment" (2018, p. II-24 Standard 10. History); second to unveil design techniques that identify space-making processes.

As the built environment becomes interactive, adaptive, and animated the crux of this study lies in uncoverings of the spatial and cultural productions that affect our understandings of space-making.

- Will material culture encompass augmented realities[AR], virtual realities [VR], and the interconnectivity of objects via the internet of things[IoT]?
- And how will the future of space-making remain within the purview of material culture?

These questions propelled the analytics for the development of this paper, which investigates a mostly unexplored area in the production of space-making, one that continues to impact the development of varying realities. Thus, focused on data from philosophical-theories, technical-briefings, and spatial-analysis the paper touches on the changing perspectives amass from the design creations of one map, a painting, a film, and gaming machines. It threads the intellectual

approach defining alternate realities through time and strives to link technological discoveries from art and science, per spatial recognitions made from the following acts:

- The Pianta Grande di Roma: an architectural drawing unveiling the socio-political strategies developed to link the interior-exterior mobility of an entire city.
- 89 Seconds at Alcázar: A cinematographer's re-fabrication of a painting's narrative and its endless reconstructed photographs.
- Addiction by Design: A documentary from a cultural anthropologist's whose research work depicts the spatial mechanics utilized to create immersive spaces for gaming.

What this triangulation unveils is a nonlinear approach to research that remains historically grounded on evidence. It points to the spatial paradigms developed from novel discoveries that led to even newer types of spatializing via material-making and material-culture. Although the projects, as mentioned above, did not yield a direct rife of our fabricated realities, they signaled an upward trajectory towards the coupling of material-immaterial spaces. Each of the projects poured new foundations to continue reviewing the creation of alternate realities as a product of material culture. They are, after all, design explorations and tools that link design praxis with the coexistence of mixed realities.

REFERENCES

aa vv. (2014). Roma interrotta. Dodici interventi sulla pianta di Roma del Nolli nelle collezioni MAXXI architettura. Italy: Johan & Levi

Foucault, M. (1970). The Order of Things: An Archaeology of the Human Sciences. UK: Pantheon Books.

Lus-Arana, L. (2014). CONSTRUYENDO UNA UTOPIE AUTRE [AMAZING ARCHIGRAM! - 50 AÑOS DE ZOOM!/ ZZZZRRTT!/ THUD!/ BLAAM!]. Sevilla: Revista Proyecto.

Schüll, N. (2014). Addiction by Design: Machine Gambling in Las Vegas. New Jersey: Princeton University Press.

Sussman, E. (2007). 89 Seconds at Alcazar. United States: Rufus Press.

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Mediating Interiors' Past, Present, and Future with Emerging Technology

Mary Anne Beecher, The Ohio State University

ABSTRACT

The theme of this conference reminds us of time's trajectory and the ephemeral nature of the designed world. Interiors' vulnerability to alteration is neither hardship nor advantage—it is a reality that only presents challenges when the desire to document the impact of change on a space emerges. Historic preservation practices accept alteration but recommend the creation of a thorough and accurate documentation of change to a building over time. Of course, narratives of spatial experience also disappear with the erasure of previous interior configurations and materiality. If Bachelard was right in his assertion that spaces are containers of memories, what happens when renovation re-shapes their nature and redefines their purpose? What might we do to create an echo of their existence?

Because buildings on university campuses seem especially vulnerable to spatial change and generations of shifting occupants disrupt the ability to keep an accurate sequential history of spatial character and arrangement, this research project focused on the grand former site of our state's historical museum, the university's library, and home to multiple academic units over the years. We documented its multilayered and convoluted history using a combination of archival resources and interviews. Our team identified key points in time and space to interpret with new multi-modal and interactive digital content. These included a virtual three-dimensional model of the building's most historic interior space that was lost to demolition as part of the building's most recent renovation. Smart phones served as screens for viewing this 360° space and three other places where augmented and virtual realities revealed features that no longer exist. Sites with little or no visual documentation presented the greatest challenge. In these instances,

methods of visual storytelling informed virtual experiences with information using a fictionalized visual vehicle for communicating reality.

Our team explored the role of emerging technology in designing new mediated experiences of lost (hi)stories in the interior environment with the goal of generating a new *sense of place* for those who encountered them. Geographer Edward Relph frames the interwoven elements that define place as physical setting, activities, and "territories of meaning" (Relph, 2007: 18). By leveraging digital and mobile devices to enliven visitors' experiences of space, we attempted to facilitate meaningful interactions between people, places, and the stories that are associated with them. In the process, we also experimented with projects that challenged Relph's assertion that *sense of place* is a synaesthetic condition that combines the senses with movement, memory, imagination, and anticipation. (Relph, 2007: 19).

Despite facing the challenge of programming for multiple platforms in conjunction with difficulties created by the use of Bluetooth beacon technology, user feedback on this series of test projects confirmed several of our initial propositions. First, the ability to create a "complete" mediated sense of place is directly affected by the level of detail presented in the data, and the more vivid the spatial experience, the more memorable it becomes. Second, because mediated interactions are physical *and* mental, every sensory aspect of the experiences require attention. Third, imaginative visual storytelling has an important role to play in digital place-making, especially when limited documentary source material of a space exists. Using fictionalized visuals to communicate intangible attributes of space can be a successful (and fun!) way to augment more verifiable conditions, however. Finally, the project in total demonstrated its potential to provide a supplemental learning infrastructure of mediated experiences that can serve as a model for promoting creative thought and raising historical consciousness in a range of environments.

REFERENCES

Gaston Bachelard, The Poetics of Space (Boston: Beacon Press, 1969).

Edward Relph, “Spirit of Place and Sense of Place in Virtual Reality,” Techné: Research in Philosophy and Technology 10:3 (Spring, 2007): 17-25.

Modern Day Medici: The Walton Family's Transformation of Bentonville, Arkansas

Carl Matthews, University of Arkansas

ABSTRACT

During the Renaissance the Medici family transformed Florence, Italy with their patronage of artists and architects such as Botticelli and Michelangelo. Their wealth provided seemingly unlimited funds for the creation of enduring creative works. Today, the Walton family, led by art collector, Alice Walton, is doing a similar thing for Bentonville, Arkansas. Projects vary from a thirty-six mile bicycle path stitching together natural and designed landscapes to the world-class Crystal Bridges of American Art by Moshe Safdie. This paper compares the impact of the Medicis on Florence and the Waltons on Bentonville. It examines the evolution of the patron/artist relationship and exposes challenges for artists and designers. How does a designer/artist make peace with the demands of the patron (Henning, p. 466)? How does a small community benefit and grapple with the immense patronage from one family and their interests?

In the 1400's the population of Florence was approximately 60,000 comparable to the current Bentonville population at 50,000. Lorenzo Medici calculated his family spent approximately $460 million in 2013 terms in thirty-seven years. In comparison the Crystal Bridges Museum of American Art is just one of Alice Walton's projects and over $317 million of the cost was donated by her. This does not include the extensive collection of art she amassed prior to the opening. Through 2008 total art acquisitions were at least $222 million. The museum has Walton family endowments totaling $800 million (Brettell, p. 386). When Walton announced the plans for a major museum in Arkansas some in the coastal art elite scoffed at the idea (Goldstein). Now with the curation of multiple shows per year the art elite and general public are making

their way to remote Bentonville. This increase in tourism has led to the opening of a 21C Hotel designed by Deborah Berke and several restaurants by Tom Walton's hospitality group.

Northwest Arkansas is one of the top growing metropolitan areas in the United States (Hughey) which drives new housing projects, several by Walton family members. In 2018 they funded an international design competition for five large multi-family projects. Winning entries were completed by top international architects. The work of contemporary patrons is often couched in altruistic language. However, upon deeper investigation it is oftentimes as much an expression of personal fancy, hobby, and passion or ultimately contributes to the bottom line of the family fortune.

The proposed paper compares works of design in Florence with similar ones in Bentonville and examines transactional patron/designer relationships. The method of investigation compares historic communications between Florentine designers (Chambers) with personal exchanges the author has had with Bentonville project designers. Comparisons of historic and contemporary mapping and building analysis will also be included. The presentation adds to the body of knowledge relative to the differences between typical client/designer relationships versus the sometimes more intense patron/designer relationship.

The Medici contribution to Florence has thrived for six hundred years. Will the Walton contribution have similar long-term effects? The Medicis often housed designers within their palaces. In a globally connected context the Waltons draw upon a much wider range of talents. Indeed, they have established a roster of pre-approved designers for projects in the metro area. Have they created a metaphorical palace?

REFERENCES

Brettell, Richard. (2012). The Crystal Bridges Museum: American Art in the Heartland. Southwest Review, 97(3), 385-389.

Chambers, D.S. (1971). Patrons and Artists in the Italian Renaissance. Columbia: University of South Carolina Press.

Goldstein, Andrew M. (1994, September). Crystal Bridges President Don Bacigalupi on His Epic Searcch for America's Best Unknown Artists. Artspace. Retrieved from https://www.artspace.com/magazine/interviews_features/expert_eye/crystal-bridges-president-don-bacigalupi-on-searcing-for-americas-best-unknown-artists-52462

Henning, Edward B. (1960) Patronage and Style in the Arts: A Suggestion Concerning Their Relations. The Journal of Aesthetics and Art Criticism. 18(4), pp. 464-471.

Hughey, Haley. (2017, March). Northwest Arkansas makes List of Top 25 Fastest Growing Metro Areas. NWA Homepage. Retrieved from https://www.nwahomepage.com/news/northwest-arkansas-makes-list-of-top-25-fastest-growing-metro-areas/.

On "Pivot" in Traditional Chinese Interior Architecture and Urban Planning

Jun Zou, Louisiana State University

ABSTRACT

For well-known walled compound layout of traditional Chinese architecture, an implicit feature -- the "pivot" (*ji*) -- is identified in this inquiry as inspired by Paul Wheatley's monograph *The Pivot of The Four Quarters*. Such a notion is critical to in-depth understanding of detailed structure within enclosing walls. By making connection to astronomical observations and their practical usage in early civilization era, we demonstrate the underlying logic of this notion in interior architecture and urban design, which to a large extent is still live and applicable.

More specifically, the book title was quoted from a famous poem: Hymn of Shang (S*hang song*). In plain English: *The capital city of Shang opens its wings, it is the summit from all four directions*. Obliquely, *the capital of Shang was full of order, it is the model for all parts of the kingdom*.

Such a theme reflects a profound research method that is to set off investigation from the beginning of civilizations. New archaeological findings, in particular those from Erlitou offer new pieces of evidence. Figures 1-2 from Erlitou ruins (17^{th}-15^{th} Century B.C.) depict the walled compound layout and its approximately south-facing orientation. The main palaces (No. 1 and No. 2) are both placed in a position resembling the North Star in the northern sky.

The character *ji*, sounding as "gee", is translated into the "pivot" in the aforementioned book. While this interpretation deviates from more common translations such as "extreme" or "summit", they are all related to the North Star and carry multiple connotations accordingly: (i)

Enclosure (ii) South-North axis (iii) Pivot of rotation (co-center of daily and annual rotations) (iv) High Altitude (v) Almighty and (vi) Invariance. See Figure 3 for illustrations.

While the first three features were widely discussed to study the layout of walls and buildings, (iv) immediately brings 2D perspective to 3D formation, and (v)-(vi) induce strong metaphysical and social reasoning that are predecessor to Taoism and Confucianism thoughts. By integrating above mentioned meanings of (i) - (vi), it is suggested that the North Star is not only at the geometric center of the whole surrounding region, but also a focal point for everyone to look up, to respect, and to follow. Mapping the celestial signs down to earth, palaces and other important ceremonial buildings are all raised high above the ground level and situated on the northern part of the central south-north axis.

The following facts form a logical chain to explain the importance of the North Pole in early civilization era -

1. Xia/Shang Dynasties (21 -11 century BC) are primarily agriculture-based;
2. Agriculture requires substantial knowledge to tell time of the year;
3. During Xia and Shang period, the knowledge of astronomy is relatively low. There is no evidence of accurate calendar system available to tell time in order to guide agricultural activities. Therefore, real-time observations of celestial phenomena and events (instead of mature calendar systems) had been a vital knowledge to the society;
4. From the movement of the Sun, one knows the time in a day (through shadow);
5. From the movement of the Moon, one knows the time in a month (through moon phase);
6. From the movement of the Big Dip, one knows the time (season) in a year. See Figure 3(b) for illustration. According to He Guan Zi: when the handle of the Big Dip points to the east, it is spring. to the south, summer; to the west, autumn; and to the north, it is winter. Through Big Dip, time as four seasons and cardinal orientations of four directions are coordinated.

In summary, the North Star was significant to Xia and Shang people and its image has been passed down and embedded in the walled compound layout. By making such connection

explicit, future design and research for interior environment will be founded in sensible understanding and respect to the long lasting tradition from the dawn of civilization.

REFERENCES

Walton, David. Doing Cultural Theory, SAGE Publications, 2012

Berger, Arthur. Semiotic Analysis, SAGE Publications, 2004

Guojun, Yin. Empire Symbols, Chongqing Publications, 2008

Wheatley, Paul. The Pivot of The Four Quarters. Chicago, Aldine Publishing Company, 1971

Hsu, Min-fu. Origin of Chinese Architecture, University of Edinburgh, 1986

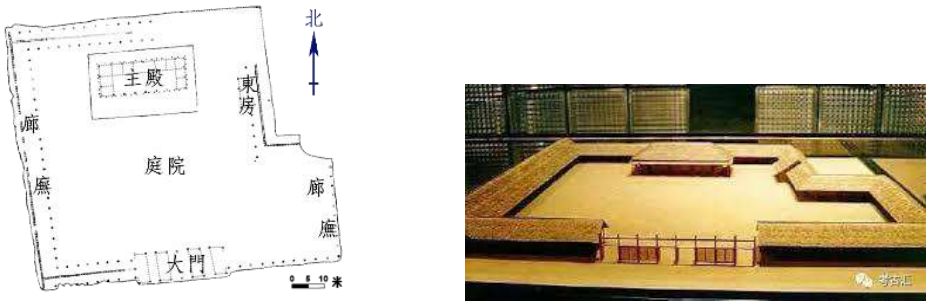

Figure 1. Palace No. 1

Figure 2. Palace No. 2 and Walled Palace Complex

Figure 3. (a) Daily (b) Annual Rotation around the North Pole

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Truth in Rasterizing: The Ethics of Sketching in the Digital Era

Roberto Ventura, Virginia Commonwealth University

ABSTRACT

All design process is incomplete, and therefore imperfect. The designer decides what to include and omit. Only the final, realized project can be considered finished; any representation of it—in essence, a sketch—cannot.

The foundation of design process is the sketch. Inherently incomplete and imperfect, it expresses the values and ambitions of its author. Uniquely authentic because of its connection to its composer (Fig. 1), it, by virtue of its obvious fiction, could not be mistaken otherwise.

Digital design software yield mathematically perfect representations of space, but are disconnected from the author (Fig. 2).More troubling, the imperfection of the unrealized design is not acknowledged. In "Sketching Reality: Realistic Interpretation of Architectural Designs," the authors deny the fact of imperfection with their initial sentence: "Achieving realism is one of the major goals of computer graphics (Chen et al, 2008)."

Therefore, an inevitable tension exists between the increased reliance on precise digital representations and the imperfection inherent in the design process. How might designers reconcile the fact that their sketches can at best authentically and honestly express an aspirational arc with the increasing ubiquity and utility of software tools that suggest completion and perfection?

In other words, have designers become liars?

The truthfulness of design representation could be examined from philosophical and emotional perspectives. From these bases, a framework for defining truthful design expression might be established.

Philosophically, Dennis Dutton provides a framework for understanding authenticity by articulating its two conceptual pillars: nominal and expressive authenticity ("Authenticity of Art," 2003). Nominal authenticity places the sketch within a temporal and situational context revealing what connects the designer to her work. Expressive authenticity addresses the honest communication of one's belief system, referencing existential philosophy's tenet that living truthfully requires an independent, critical perspective.

From an emotional perspective, Storyteller Kevin Kling asserts narratives—or sketches—originating from an authentic, personal place, Kling their truths cannot be denied. Why a story should be told is its essential critical foundation (Interview, 2018). Kling echoes Tolstoy, who argues that only when an art-object expresses the truth of the artist's intention does it possess the power to affect people ("What Is Art?" 1960).

From Dutton and Kling, four ethics of truthful sketching can be articulated: Uncertainty, Honesty, Unpredictability, and Inimitability.

Uncertainty: if a sketch is a representation of a design idea in progress, it is incumbent upon the designer to impart uncertainty this into it.

Honesty: sketches communicate their uncertainty with integrity. Ruskin's non-authentic character activates the imagination once these parameters—e.g., "this is not real"—are established (Balhoun, 1997).

Unpredictability: when the designer sketches, media and exploration exist as capricious colleagues, foiling any attempt at a preconceived ending.

Inimitability: a sketch exists in a moment, where it is a rumination on a specific conceptual idea. Any effort to reproduce a sketch is by default a new expression.

In context of these four filters, an honest sketch cannot be made exclusively via digital means. By blending it with imperfect analog methods, akin to the "Over Drawing" of LTL Architects (Fig. 3), the soul of the sketch can be preserved. The sketch retains the power to suggest and resists its demotion to illustration.

Contemporary designers now have the complete toolkit of their forebears as well as technologies that offer staggering potential for understanding. The truthfulness of the sketch demands a critical attention to these ethics. Ignoring them puts design's very soul in jeopardy.

REFERENCES

Balhoun, C.J. “Interpreting Ruskin: The Argument of The Seven Lamps of Architecture and The Stones of Venice.” The Journal of Aesthetics and Art Criticism 55, no. 4 (1997): 401-414.

Chen, X., Kang, S.B., Xu, Y., Dorsey, J., & Shum, H. “Sketching Reality: Realistic interpretation of architectural designs.” ACM Transactions on Graphics. Volume 27 Issue 2, April 2008. Article No. 11.

Dutton, D. (2003). “Authenticity in Art.” In J. Levinson (Ed.), The Oxford Handbook of Aesthetics. New York: Oxford University Press.

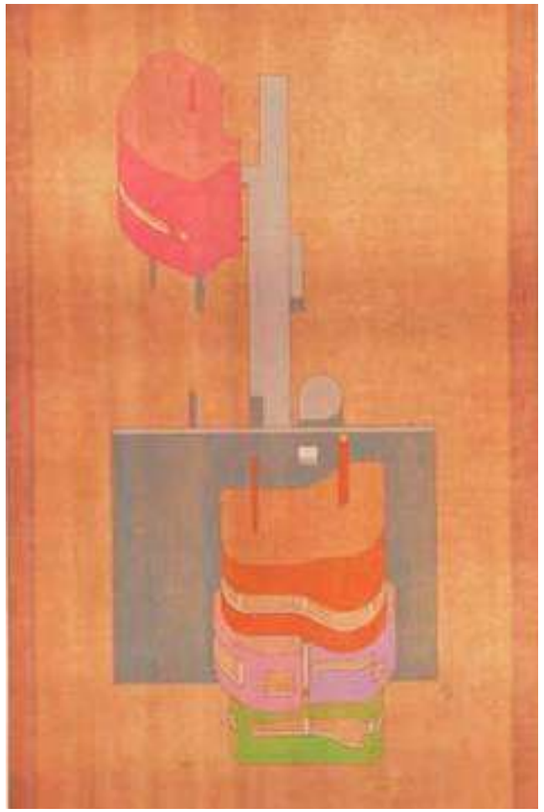
Kling, K. (2018, March 30). Personal interview.

Over Drawing. (n.d.). Retrieved from http://ltlarchitects.com/over-drawing

Figure 1

Inherently incomplete and imperfect, a sketch expresses the values and ambitions of its author. Obviously fictional, it cannot be mistaken otherwise.

Zaha Hadid
The Peak
Hong Kong



John Hejduk
A.E. Bye House
Ridgefield, Connecticut

Le Corbusier
Immeuble Clarté
Geneva, Switzerland

Figure 2

Digital design software yield mathematically perfect representations, but author voices are indistinct and, more troubling, the imperfection of the unrealized design is obfuscated.

HOK
Shanghai International Hospital
Shanghai

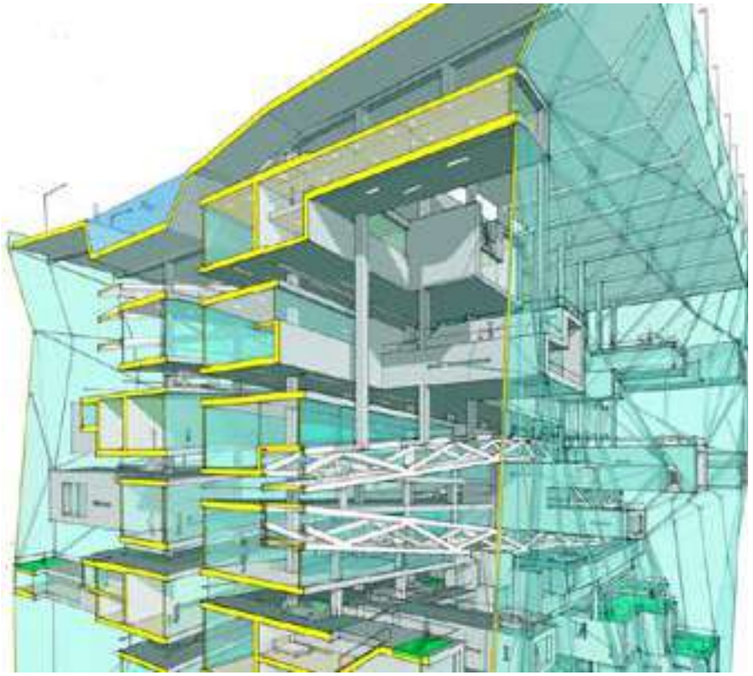
SOM
Dawangjing CBD Masterplan
Beijing

HKS
Cleveland Clinic-Abu Dhabi
Abu Dhabi

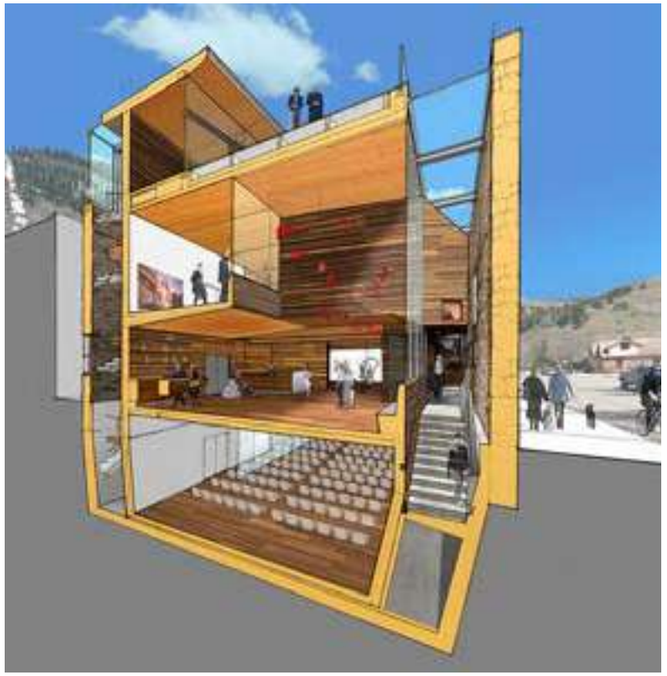
Figure 3

Honesty cannot be achieved exclusively via digital means; LTL Architects' "Over Drawing" blends digital and analog and retains the power to suggest.

LTL Architects
Office Building



Park Tower Residential



Telluride Transfer Warehouse

Internet, Image, Affect: Social Media and Interior Design

Karin Tehve, Pratt Institute

ABSTRACT

Beatriz Colomina declared that design became modern through its engagement with media (Colomina, 1997), in the context of her analysis of work from the beginning of the twentieth century. Marshall McLuhan theorized that the medium of any form of communication was more important than its content in shaping our perception of the world around us (McLuhan, 1964). Colomina wrote primarily about photography, early print publishing and museum exhibits. Our theory requires an update in the beginning of the twenty-first century: as media has developed and changed, so should its impacts on design.

Teaching students about how mediation influences both what we see and how we value what we see is of paramount importance: not only do interior designers conceive, execute and publicize work through representations, but the vast majority of the work with which we are familiar has come to us in mediated forms, through images. The context of those images is now (more than ever) the internet, less obviously itself a form of media.

In the spring of 2019, I assigned a short project to students enrolled in a graduate-level interior design theory course to theorize the effects of internet mediation on design content. Students were asked to examine the online platform of their choice (Instagram, Pinterest, etc). Students were to explain the platform's mechanics (how it works), to describe its history (when), and to identify its users (who); its potential impacts on how value might be assessed was to be framed through a comparison to a reading or theme assigned as part of coursework. This exercise was designed to help students hone a critical method with which to consider images in different contexts, both as consumers and producers.

Several projects (notably “the mechanics of Pinterest’s image-search parameters”) discerned the power of search algorithms to affect access, perceived relevance and excellence of image content. Text-based searches (for sites using tags or descriptions of images) revealed that access was still predicated on the user/uploader’s own understanding of the content, whether that was #residential, #artDeco or #interior. These oversimplified connections between work based on user-selected categories, such as subject, style, or designer. Image-based searches produced results across categories of use, author, and type. Image-based searches were much more likely to produce results that included designers not already well-known, or projects not already well-published. These results were radically de-contextualized, decoupling access from taste or knowledge (for better and for worse). These projects used Pierre Bourdieu’s theories about cultural capital and Roland Barthes’ “Death of the Author” to frame their inquiries.

Several projects (notably “Instagram & Instagrammable Spaces”) looked for discernable impacts in the designed environment. The tendency of internet images to replicate is proposed as a precondition to spaces like “The Museum of Ice Cream” and “Color Factory” that choreograph participants through a series of tableau with colorful backdrops to support selfies, ensuring significant similarities in the images produced, no matter how diverse the body of users. This project was informed by Barthes, Debord and McLuhan’s writing about interior design and images.

What design (and education) will become through its engagement with distributed digital media is emerging. Because most factors affecting its access and distribution are invisible, their impacts are unlikely to discerned or understood by a casual viewer. With this project, students were be able to identify, distill and visually communicate their collected evidence, making visible the power of the examined platforms to alter contexts and affect understanding and assessment of our environments.

REFERENCES

Barthes, Roland, and Stephen Heath. 1977. Image, Music, Text. New York: Hill and Wang.

McLuhan, Marshal. 2003. “The Medium is the Message”. Understanding Media: The Extensions of Man. Corte Madera, CA: Gingko Press.

Bourdieu, Pierre. 1986. “Introduction.” Distinctions. London: Routledge.

Debord, Guy. 1994. The Society of the Spectacle. New York: Zone Books.

Colomina, Beatriz. 1994. “Publicity” (excerpt). Privacy and Publicity: Modern Architecture As Mass Media. Cambridge, Mass: MIT Press.

Assignment #7 Project 02> A Synthetic Analysis
due: 05/09/19

How do contemporary forms of media affect how we learn to value design? Each student will select a phenomenon as well as a medium or platform as a case-study (of their approved choosing) to make a prediction about the future of taste (or a related concept).

Parameters:
1
Select a medium or platform (how).
An incomplete list: Pinterest, Instagram, Snapchat (especially filters), Tumblr, YouTube, preference aggregators for Amazon/Netflix/Spotify/sim., ISSUU, design blogs/ design aggregator sites or other forms of digital publishing, virtual spaces/ portals, etc. You may also propose particular online retailers or sim: example: AirBnB, Farrow &Ball (paint), etc.
Explain the platform's mechanics (how it works), describe its history (when), users (who).
What are some of the key details of these new contexts? How are images linked/ classified? What do we have to learn from the new ways that design is represented & distributed?

2
Select a phenomenon, the subject being mediated (what). Interior Design and/or Architecture and/or Industrial Design should be made central to the inquiry. Keep your subject focused & narrow.
Examples (a very incomplete list/ feel free to propose your own):
- Case-Study House #22 on Tumblr vs. Instagram…compare/ contrast the image/ house produced
- The films (sets/ lighting) Wong Kar-wai on Instagram, beautiful or agreeable?
  - aka more important as films or as interior design precedents?
- Definitions of luxury in (2) recent NYC high-end residential projects

3
Students should compare the transformation of taste back to some of the source texts upon which this course relies.
At least one key concept or definition from a required reading MUST be part of the analysis:
Examples (a very incomplete list/ feel free to propose your own):
- Immanuel Kant & his definition of taste
- Immanuel Kant vs. Clement Greenburg: autonomy
- Walter Benjamin vs. Jean Baudrillard vs. Virginia Postrel: authenticity
- Pierre Bourdieu: taste, habitus & identity

4
As with all good analysis, start with a hypothesis & come to a conclusion.

5
Deliverables will be in the form of a powerpoint presentation, notes, and a bibliography.
You will have 5-6 minutes to present, with about 10 minutes of feedback from a jury.

Initial project proposal (platform + phenomenon + hypothesis): due Thursday, April 18
Refined project proposal + research strategy + initial bibliography: due Thursday, April 25
Final Presentation: due Thursday, May 09

Final presentation to be a digital format (additional printed material ok/ not required).

Pinterest

Course: INT-735 Taste
Name: Mengjia Gao
Professor: Karin Tehve

Pinterest

Hypothesis:
Pinterest push the idea of grouping similar image together instead of categorized them by their content. The absent of language and content allows viewers to engage more with their own interpretation for what they perceived from the image. The different grouping system gives whole new value and function on visualization of design.

Pinterest

Pinterest is a social media web and mobile application company. It was designed for users to visually share and discover ideas through images. Pinterest CEO Ben Silbermann summarized the company as a "catalogue of ideas".

2009 – Development of Pinterest began in December

2010 – Site launched as a closed beta in March

2011 – The launch of an iPhone app in early March

2012 – The most popular categories were home, arts and crafts, style/fashion, and food.

2013 – In late October, Pinterest secured a $225 million round of equity funding that valued the website at $5.8 billion.

2015 – In June, Pinterest unveiled "buyable pins". Rich Pins – pins which have more information than a normal link – will get a new button that allows users to purchase things directly from partners that it's working for.

2016 – In October, Pinterest announced 150 million monthly active users, 70 million in the U.S. and 80 million outside the U.S.

2018 – In September, Pinterest announced that it had 250 million monthly active users

Pinterest

Demographic:

Globally, the site is most popular with women.

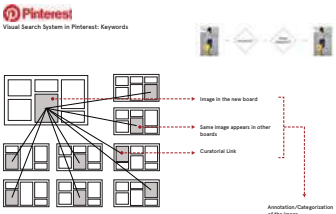
In 2012, a report found that 85% of the global users were women.
In 2016 the proportion of women users was lower at 30%.

Britain, however, is an exception. As of March 2012, 56% of the users were male with different age profiles.

The predominant age range in U.S. was typically 35–44. Britain would be about 10 year younger.

Pinterest

Visual Search System in Pinterest: Keywords



Human-curated User-board-image:
1. Content of the image
2. Semantic relationships

Pinterest

Visual Search System in Pinterest: Object Detection

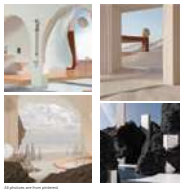
How to create visual related pin:
1. Local feature
2. Deep feature
3. Salient color signatures (first detect salient region and then the cluster centroid and weights)
4. Create a color signature of the image

Pinterest

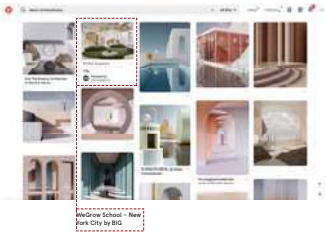
Visual Marketing

The roots of this way of interpreting objects lie in Susan Sontag's essay Notes on "Camp", written back in the 1960s, the author points out that objects are not interesting in themselves but rather in the way they are represented, being the result of a series of considerations that touch upon the object's history, its symbolism, its manifestation and realization in the eyes of the beholder

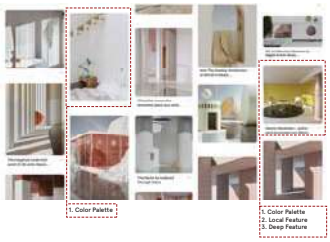
Alexis Christodoulou (3D Rendering Images)

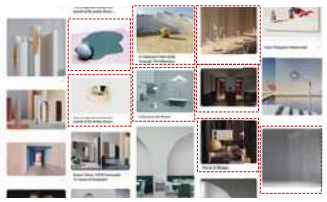


All pictures are from pinterest



WeGrow School – New York City by BIG





Other Firms that share similar aesthetics promoting different objects and content

Anders Breuch-Willumsen , Creative Director and Founder of Studio Breuch

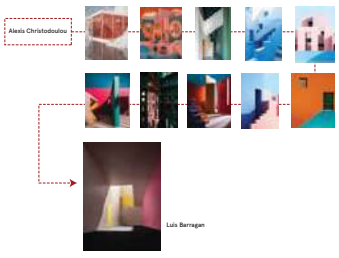
Milan-based studio Matrice has created a collection of Italian-made furniture for Australian design brand

Alex Proba from Studio Proba New Metallic Rugs! Interior imagery of the series is the result of a collaboration with designers andrés reisinger and six n. five.

Bjarke Ingels Group has collaborated with Vektork to design the first WeGrow school,located in New York City, New York.

Alexis's work are inspired by Luis Barragan

Discover photo: 2014



"The absence of the Author (with Brecht, we might speak here of a real "alienation:"the Author diminishing like a tiny figure at the far end of the literary stage) is not only historical fact or an act of writing: it utterly transforms the modern text (or—what is the same thing– the text is henceforth written and read so that in it, on every level, the Author absents himself."

The Death of the Author – Roland Barthes

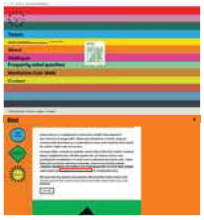
Project 02 A Synthetic Analysis

Instagram & Instagrammable Spaces

Xinchun Hu

Museum of Ice Cream

Color Factory



Even though visitors "participate" and "experience" the spaces, it is a passive "participation"; people go to these places just to replicate the same images/backdrops for Instagram.

Museum of Ice Cream

$38

"The spectacle manifests itself as an enormous positivity, out of reach and beyond dispute. All it says is "Everything that appears is good; whatever is good will appear." The attitude that it demands in principle is the same passive acceptance that it has already secured by means of its seeming incontrovertibility, and indeed by its monopolization of the realm of appearances."

Debord, Guy. "Separation Perfected." Society of the Spectacle.

"It looks like they're closer to reaching that sweet spot of mindfulness, fully enjoying the moment, and creating connections." We all know that we're currently distracted, so how do we bring some focus and intention to things? Everyone needs to do their part. And my part is, building a real world that's so captivating and engaging with humans, that things like dependency on devices and social media don't need to be in the conversation. That's our goal, hopefully we'll succeed. We'll keep trying till we do."

-. Bunn (who was named among Forbes' "30 Under 30" in 2018 and an All-Star in 2019) wonders what a Museum of Ice Cream experience would be like if visitors left their phones at the door.

-. Bunn isn't implementing a no-phone policy or forcing visitors to leave their phones at the door anytime soon. Although she says that at the end of the "device-free" experiment, the consensus among guests was clear: it was the best experience.

Color Factory

$38

"Each guest is registered and given a card with a QR code, which they can scan along their journey to take photos at various stations, without holding their smartphones. The images are emailed almost instantly."

"The experiences are encountered room by room, connected at times by stripy corridors or snack stops."

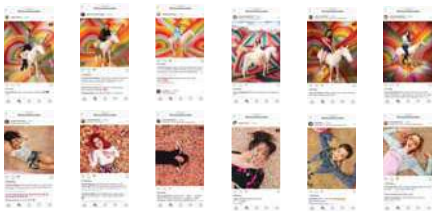
"The exhibition climaxes in a large room entirely coloured pale blue, where visitors can frolic in a huge ball pit and take photos with more overhead cameras. Stepped seats are provided for spectators, and small booths offer gelato and colourful knick-knacks."

"The Color Factory is the latest in a series of installations targeted at Instagrammers determined to snap the perfect pictures."

"Others include the **Museum of Ice Cream**, which took over several US cities with candy-themed spaces – although the Miami outpost was fired after its plastic sprinkles were found littering the streets."

https://www.dezeen.com/2018/08/17/the-color-factory-exhibition-surfaces-news-york-city-artworks-instagram/

Museum of Ice Cream



Instagram – Hot medium – Passive participation

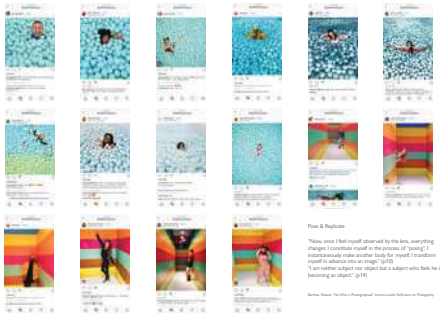
"Since the spectacle's job is to cause a world that is no longer directly perceptible to be seen via different specialized mediations, it is inevitable that it should elevate the human sense of **sight** to the special place once occupied by touch; the most abstract of the senses, and the most easily deceived; sight is naturally the most readily adaptable to preeminently society's generalized abstraction."

Debord, Guy. Society of the Spectacle.

"A hot medium is one that extends one single sense in "high definition." High definition is the state of being well filled with data. A photograph is, visually, "high definition." (p22)
"Any hot medium allows of less participation than a cool one…" (p23)

McLuhan, Marshall. "Media Hot and Cold." *Understanding Media: The Extensions of Man.*

Color Factory



Pose & Replicate

"Now, once I feel myself observed by the lens, everything changes: I constitute myself in the process of "posing". I instantaneously make another body for myself, I transform myself in advance into an image." (p10)
"I am neither subject nor object but a subject who feels he is becoming an object." (p14)

Barthes, Roland. "He Who is Photographed." Camera Lucida: Reflections on Photography.

"Understood on its own terms, the spectacle proclaims the predominance of appearances and asserts that all human life, which is to say all social life, is mere appearance. But any critique capable of apprehending the spectacle's essential character must expose it as a visible negation of life and as a negation of life that has invented a visual form for itself."

Debord, Guy. "Separation Perfected." Society of the Spectacle.

Bibliography

Barthes, Roland. "He Who is Photographed." *Camera Lucida: Reflections on Photography.* New York : Hill and Wang, 1981. 10, 14

Debord, Guy. "Separation Perfected." *Society of the Spectacle.* New York : Zone Books, 1994.

McLuhan, Marshall. "Media Hot and Cold." *Understanding Media: The Extensions of Man.* Cambridge: The MIT Press, 2001. 22-23

https://www.dezeen.com/2018/08/17/the-color-factory-exhibition-surfaces-news-york-city-artworks-instagram/

History & Theory | Scholarship of Teaching & Learning | Presentation

Scale + Figure

Andrew Furman, Ryerson School of Interior Design

ABSTRACT

Scale + Figure

This presentation follows the history of the drawing conventions used in interior design and architecture. Also, the work presented is of first year student drawings--representing the spaces that define the interior using human form as an intermediary between the space of ideation and the presence of engaging in space.

Using examples of first semester drawing exercises in an interior design program, a thesis is presented that the knowledge of self and the representation of form is intertwined and the recording of both of these ways of knowing are tested by representation through drawing.

A series of simple first year exercises are used to test and explore how spatial constructs are understood through a series of related and built-upon drawings. These drawings are fraught with contradictions even as they are simple exercises, meant to address the representation of the space of appearance. Students begin with the basics of drawing and drafting representations before moving onto the diagramming of space through the conventions of plan, section, elevation, etc.

The notion of scale, the size of the paper space and the conventions of gravity are starting points in a series of drawing investigations that explore the meanings of hand drawing and working within the parameters of two- and three-dimensional spatial representation.

There are particular ideas about entourage and the usefulness of details that are explored through discussion demonstrated through historical examples about the key role that the hand plays in designing as well as in the tools used to create spatial logic. The type of paper, pencil selection,

and the terms of how the sheet is to be used is offered as a logic for how space is borrowed for the exercise of drawing/designing.

Scale is connected within this exploration of how the hand establishes the variables used to represent space and spatial arrangements. The presentation relies on the writings of Haldane, Wilson, Belardi and Sansom, to build an interconnected system of knowledge to posit a parallel system of foundation drawing to be welded with contemporary explorations of technology and representation.

In the presentation, examples will demonstrate the challenges of representing space and the human figure that build an awareness of past techniques of drawing representation. The students' drawings also offer alternative viewpoints for representational techniques that demonstrate the charge and latent abilities implicit in hand drawing that merit continued examination in the pedagogy of interiors.

REFERENCES

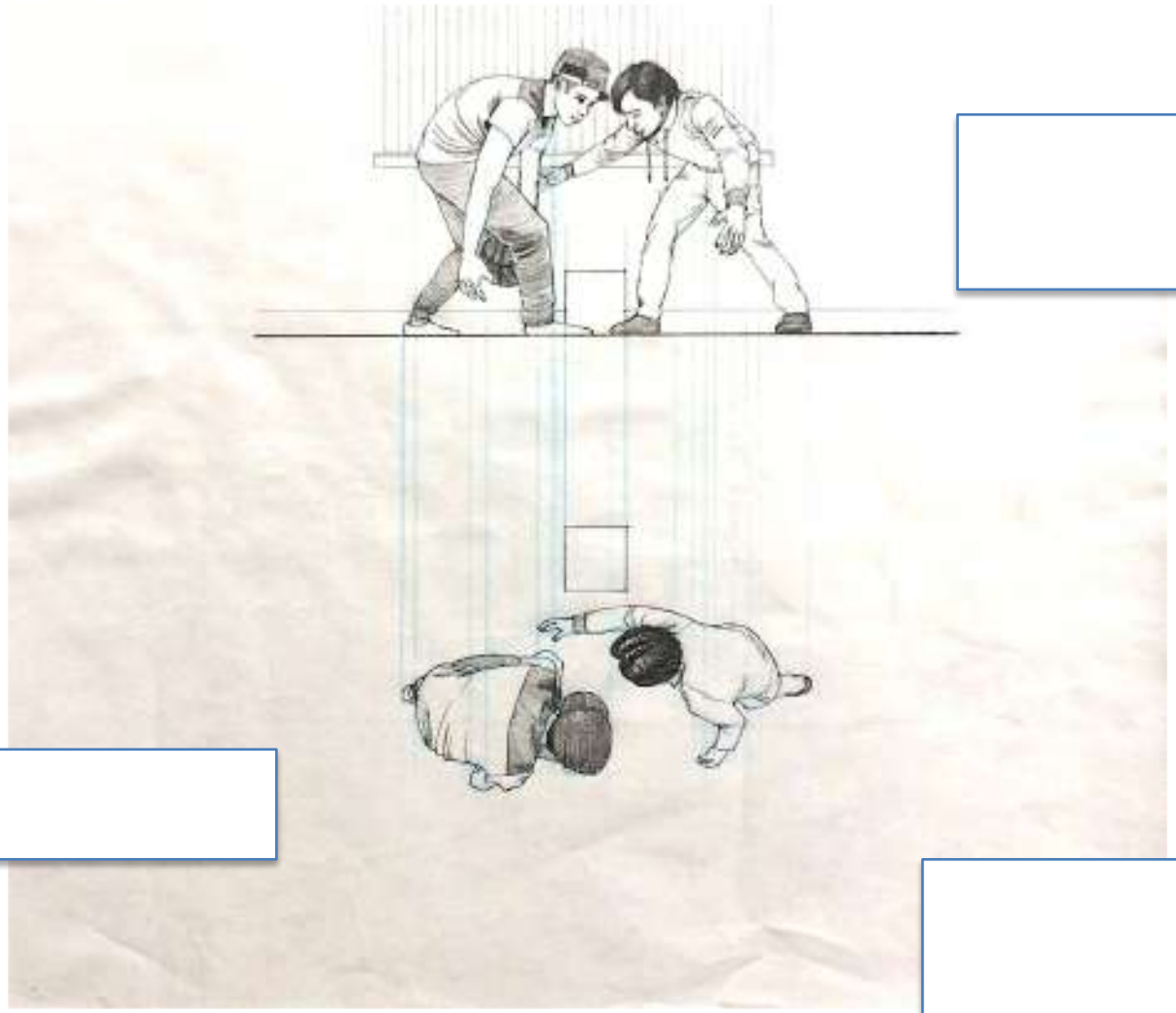
Abbott. Edwin, A. (1992).Flatland: a romance of many dimensions. New York: Dover Publications, Inc.

Wilson, Frank, R. (1999). The hand. New York: Vintage Books.

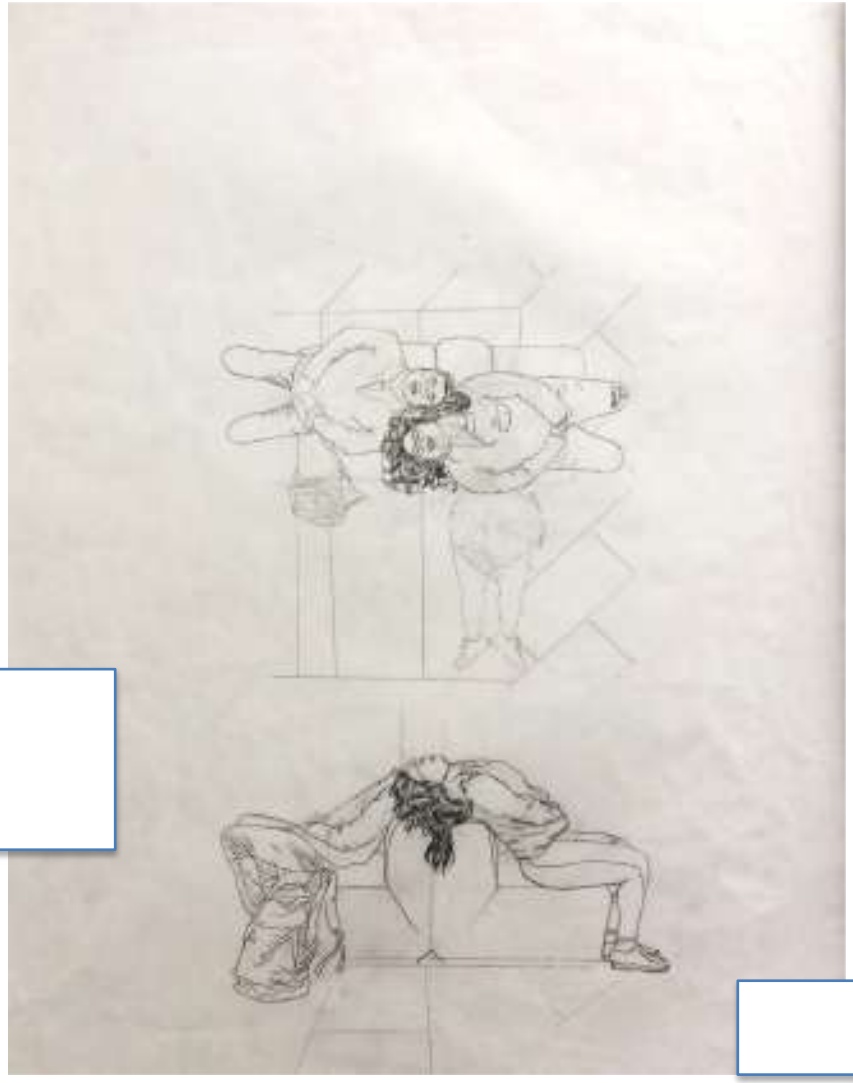
Belardi, P. (2014). Why architects still draw. Cambridge, MA: The MIT Press.

Sansom, I. (2012). Paper, and elegy. New York: William Morrow.

Haldane, J. B. S. ((1985). On being the right size. New York: Oxford University Press.




1"=1'



Open Track | Scholarship of Design Research | Presentation

#INSPO: Aspiring Interior Designers and the Implications of Digital Design Inspiration in the Era of Social Media

Leah Scolere, Colorado State University

ABSTRACT

Many designers refer to the work of browsing, searching, collecting, and curating visual imagery as a type of design research that inspires new work, serves as a form of "idea generation" for the design process (Herring, Jones & Bailey, 2009, p.5) or provides a benchmark of what has been done previously (Eckert & Stacey, 2003). Interior designers continue to adopt social media technologies such as Pinterest as a part of the early stages of the inspiration design process (Scolere & Humphreys, 2016) and to collaborate with client-stakeholders (Author, 2019). With the rise in design centric social media platforms, design blogs, and design inspiration aggregators, the term "inspiration" has become increasingly popular terminology for the creative work by designers that is served up across a digital ecology. As Pinterest has become a key tool in the design process for finding and curating sources of inspiration, this study seeks to understand how aspiring interior designers—interior design students—are using social media platforms as a part of the design process and the evolving meaning of inspiration as the process becomes increasingly digital.

The project explored the following research questions: 1) How are aspiring interior design students thinking about the role of digital inspiration platforms in the design process and 2) What meaning is being assigned to digital inspiration as a part of the design process by design students?

Method: To investigate how interior design students are thinking about the role of digital inspiration platforms as a part of the design process and their understanding of the meaning of

digital inspiration, this project draws on the data from 20 in-depth interviews and image elicitation from upper level interior design students in a CIDA accredited Interior Design Program.

Findings: Overall, the interviews and image elicitation highlight how interior design students are using multiple social media platforms such as Pinterest and Instagram as a part of their design inspiration process. Interior design students discussed how digital platforms such as Pinterest and Instagram afforded them an efficient way to browse, collect, and share inspiration as part of the project process. The interviews revealed a continuum of meaning around the term inspiration along with a range of search approaches that interior design students were taking to ensure that they were drawing on sources of inspiration outside of the interior design industry—including following, filtering, and combining digital and physical inspiration sources. One key tension that emerged from the interviews was the filtering strategies students used to manage the overwhelming abundance of digital inspirational images that were available to them through their feeds and subscribed platforms. Student designers' filtering strategies or a technique Davis (2017) refers to as 'consumptive curation' of media served as a way to try to avoid being overly influenced by the same digital sources of inspiration. Moreover, students described how these platforms were places not only for them to find inspiration but to also experiment with inspiring others with their own creative work.

Implications: This study identifies the 'digital inspirational economy' where, inspiration becomes a form of currency that is exchanged by designers—one designer's creative content becomes another designer's inspiration for a new design solution. As aspiring interior designers increasingly rely on social media platforms as sources of design inspiration, tensions emerge around the continual investment of time and effort on these platforms, the publicness of the inspiration process, and the way in which digital inspiration is incorporated into the design process. As such, this research has implications for critical thinking about inspiration in design studio education and developing literacies around social media technologies as digital sources of inspiration.

REFERENCES

Author, 2019

Davis, J. L. (2017). Curation: a theoretical treatment. Information, Communication & Society, 20(5), 770-783.

Eckert, C., & Stacey, M. (2000). Sources of inspiration: A language of design. Design studies, 21(5), 523-538.

Herring, S. R., Jones, B. R., & Bailey, B. P. (2009, January). Idea generation techniques among creative professionals. In System Sciences, 2009. HICSS'09. 42nd Hawaii International Conference on (pp. 1-10). IEEE.

Scolere, L., & Humphreys, L. (2016). Pinning design: The curatorial labor of creative professionals. Social Media+ Society, 2(1), 2056305116633481.

Open Track | Scholarship of Design Research | Presentation

Design as a Creative Discourse: Investigating Ways of 'Interacting, Representing, and Being' Within Design Teams

Mohammad Reza Dastmalchi, University of Missouri
James Hopfenblatt, University of Missouri
Bimal Balakrishnan, University of Missouri

ABSTRACT

Globalization and increased professional specialization in the past few decades within design disciplines including interior design have transformed design from an individual pursuit to a collaborative, team-based endeavor. Creativity is a central goal of these teams as their objective is to create innovative spaces and experience (Leigh, 2011). Design research movement in the last few decades investigated design from an objective point of view exploring nuances of the design process and their impact on the outcome. However, scholars like Csikszentmihalyi (1999) argue that such approaches cannot capture the essence of the phenomenon of creativity which is shaped in part by cultural and social influences. Csikszentmihalyi believes creative process is not an outcome of a person per se, but rather it is consequence of judgments by social systems about one's artifacts. Previous attempts to study interior design teams used narrative inquiry method to tackle creativity by documenting the collaboration between the client and designer in an interior design project (Portillo and Dohr, 2000). In this paper, we build on the above approaches by studying creativity of designers within a team as shaped by their communication process. We adapt the discourse analysis method borrowed from the linguistics and communication disciplines to create a new framework for research into interior design process.

Fairclough (2003) proposes that the *order of discourse* emerges in three ways; "*genres, discourse, and styles*" (p. 24). '*Genre'* refers to the way of acting and interacting and occurs

through speaking or writing, in the course of a social event. For instance, interviews, lectures, and news reports are all genres. '*Discourse'* deals with ways of representing things or practices. Finally, '*style*' deals with bodily behavior in creating specific way of being or identity. We adapted this framework to study creativity within a design team to gain new insights. The proposed framework (Appendix A) has three strategies in each order of discourse that facilitates data analysis. For example, 'behavioral communication' and 'Jefferson's notation' strategies found out many instances of *disagreement* that had occurred prior emergence of creative ideas. These conflict instances took place in different formats, such as direct and indirect reactions. By applying the 'lexicalization' strategy, we found a pattern of repeated word choice of *question-response*, which would instead happen after emergence of creativity. Moreover, number of team members participating in the question-response conversation appeared to an important factor. We found that the instances where multiple members participated in the question and responses had more influence to the creative instance in terms of quality and quantity of ideas. Our analysis of the discourse during the instances of disagreement revealed that it could be beneficial to the process by helping team members build a shared mental model of the design problem and solutions. Additionally, disagreements can support the creative process during instances of design fixation. We further analyzed *style* based on team member's voice and mood. We found that disagreements also can appear in a judgmental form that results in elimination of a creative idea. This form of disagreement can be detrimental to a creative event if it dismisses an idea without having an in-depth evaluation. Furthermore, our framework helped us identify one particular designer that facilitated the conversations. Although she was not assigned to do so, but based on her behavioral communication patterns we recognized that she was actively taking conversation turns in the creative episodes. Her contribution was significant in terms of keeping everyone on the same page and making sure the team is addressing all the brief requirements.

REFERENCES

Csikszentmihalyi, M. (1999). Implications of a systems perspective for the study of creativity. In R. J.Strenberg (Ed.), Handbook of creativity (pp. 313-335). Cambridge University Press.

Fairclough, N. (2003). Analysing discourse: Textual analysis for social research. London: Routledge,

Leigh, K. E. (2011). Organizational creativity: The relationship between creativity, values, and performance in architectural practice (Doctoral dissertation, Colorado State University. Libraries).

Portillo, M., & Dohr, J. H. (2000). Creativity and narrative in Eva Maddox Associates Design beyond space. Journal of Interior Design, 26(1), 41-57.

Appendix A

The proposed framework based on Fairclough (2003) discourse analysis that has been employed for analyzing the design discourse.

Genre: **"Ways of (Inter)Acting"**	**Discourse:** **"Ways of Representing"**	**Style:** **"Ways of Being"**
Behavioral Communication - What aspects of the conversation create coherence and flow, or conflict and disharmony? - How does organizing structure such as floor holding, interruptions, and turn-taking affect the conversations? **Jefferson Notations** - What patterns does emerge from the convention? **Topic** - What topics are introduced, taken up, and dropped by the team members? - How is this conversation intertextual, drawing on other texts or voices?	**Information/ Theme** - What ideas are represented? - What information is foregrounded and backgrounded? **Lexicalization/Pronouns** - How are they represented? (lexical choices, verbs, pronouns) - What words or phrases show up again and again in the transcript? **Exclusion** - What information is possibly excluded or silenced?	**Voice** - How do the team members represent/position themselves? - How do team members enact identities through language, gesture and other modes? - What is the role of the speaker in the conversation? **Mood** - Through what forms does the speaker express his/her stance toward what is being said? **Appraisal** - What kinds of attitudes are negotiated in the text? What is the strength of the feelings involved? How are values sourced and positions aligned?

Open Track | Scholarship of Design Research | Presentation

Digital Playground for Interior Designers: Generative Ideation through Playing with Intypes

Joori Suh, University of Cincinnati

ABSTRACT

In the contemporary 21st-century, designers face new phenomena and contexts that they have never encountered before, such as the absence of predictability (Snowden & Boone, 2007) and high levels of complexity. Recently scholars have argued that generative learning within ambiguity (Nicolaides, 2015) is ideal for learners to grow to be flexible and adaptable. The approach enables one to be able to constantly tolerate uncertainty by constantly improvising alternate responses to new challenges and emerging situations (Fenwick, 2003). Among many professions that rely on inspiration and imagination in addition to practical knowledge, interior design is highly dependent on the designers' creative and explorative mind. How can educators provide generative learning opportunities that in nature include ambiguity? In this study, I developed a digital playground and explored its potentials of encouraging generative ideation within ambiguity through playing with interior archetypes.

This digital playground was developed based on the archetype theory by Schön (1988) that emphasizes its generative quality imbedded in archetypes and the author's previous research on archetypes as transformative generative abstract forms. The author's previous research on generative abstraction system conducted based on the beta version system reported the benefits of using an evolutionary system during the pre-ideation process in enhancing the creativity of students' design project. However, the system was limited due to the small number of archetypes applied to the system and needed to be expanded to cover many more archetypes. The proposed new version was designed as a generative ideation tool to aid interior designers' pre-logical thinking process, in which ambiguity is naturally involved. In this software, interior designers

can play, generate, experiment, explore, mix, match, and test various spatial phenomena without any predetermined guidelines. The current version of the proposed digital playground uses extracted forms of the principles imbedded in 24 interior archetypes as primary sources developed by Cornell's Intypes Research and Teaching. The transformative quality of interior archetypes was made to be visible through the mechanism of the evolutionary process of interactive genetic algorithms, an evolutionary metaheuristic that uses biology-inspired mechanisms of mutation and crossover. Each interior archetype was redefined based on its core principle and parameter structure so that the mechanism of interactive genetic algorithm can be applied to the archetype structure. The users interact with the system by selecting, mixing, freezing, and manipulating the parameter of each archetype. The dynamic viewing function in virtual reality allows the user to experience and view the evolution of each interior archetype as well as the combined evolution of multiple archetypes throughout the evolutionary process. The usability study was conducted for this system: the participants' general responses about the benefits of the system were positive, and their feedback provided insights in refining user interaction with the system within the virtual reality mode.

In this presentation, the online version of the digital playground will be introduced to open for discussions. This research is meaningful in that the system links the theoretical ground of archetype and its practical application in the profession. It is the researcher's hope that this digital playground provides the students and the designers with a playful digital environment that will promote generative learning within ambiguity as well as foster flexibility and a creative explorative mindset so that designers can successfully respond to emerging challenges in the imminent future.

REFERENCES

Fenwick, T. (2003). Learning through experience: Troubling assumptions and expanding questions. Malabar, FL: Krieger.

Nicolaides, A. (2015). Generative learning: Adults learning within ambiguity. Adult Education Quarterly, 65(3), 179-195.

Schön, D. A. 1988 Designing: Rules, types and words. Design Studies 9 (3), 181-190.

Snowden, D. J., & Boone, M. E. (2007). A leader's framework for decision making. Harvard Business Review, 85(11), 68-76.

Open Track | Scholarship of Design Research | Presentation

Documenting the Transformation: Interior Department as a Catalyst of Change

Nadya Kozinets, University of Louisiana at Lafayette
William Riehm, University of Louisiana at Lafayette

ABSTRACT

Resuscitation. Merriam-Webster Dictionary. An act or an instance of restoring someone or something to an active or flourishing state.

This presentation documents the process of transforming a Brutalist building that houses a school of architecture and design. Built in 1977 and modeled after I. M. Pei's Everson Museum in Syracuse, the building displays a béton brut facade, heavy scale, extensive glazing, and a large open interior space and a vague circulation. The grey indifference of the space over-rides what should be a vibrant learning environment – a learning space bogged down in traditions of budget cuts and "the way things have always been." This paper describes a process of going from "making-do" to "can-do."

Problem. How does a long-neglected Brutalist building transform into a welcoming human-centered learning environment? Can an existing attitude of "making-do" be overcome? Can the resulting interior environment better support the educational mission?

Process. Beginning with an analysis of the existing building's spatial use, the interior design faculty served as a catalyst, re-imagining ways that the space could be better utilized. Understanding that a well-designed interior space is conducive to increased productivity and a healthy bottom line established a common goal of realigning new functions with the existing

spatial organization (Inglese, E., 2019). Beyond physical interventions, altering pervasive attitudes of "making-do" required a necessary navigation of the status quo. Educating peers and implementing design that tied the buildings character with shared educational mission became imperative. Intentionality in design prioritized engaging today's diverse student population and the reinforcement of the collaborative aspects of learning. The interior design faculty became the catalyst for change, rather than an afterthought of final color selection. Implementing human-centered design guidelines enabled informed and thoughtful interior design to be the catalyst in the transformation of the learning environment (Gee, 2006). Focusing on design considerations such as creating stimulating environment and flexibility allowed the institutional culture to migrate to a mobile, technology-enhanced, socially connected, and adaptable learning environment (Kozinets, 2016). A comprehensive use of bold color palette, inspired by Alexander Girard, established the school's brand and aesthetics, strategically defined spaces, improved visual access, and added a sense of warmth (Gee, 2016, Jackson 2008).

Results. Armed with human centered-design guidelines, the interior design faculty worked with institutional leadership to create an operational plan for spatial reorganization of the building. Actions were taken to enhance student's satisfaction and to increase functionality of the space through a major re-layout of studios and classrooms. Student-centered functional nodes were established such as a social and community space for relaxed and friendly interaction. Changes included dedicated faculty meeting space and a digital fabrication lab. To best facilitate these implementations a quality furniture standard's package was established. The results of a school-wide questionnaire show changed level of student satisfaction and their perceptions. The results of the survey along with faculty and staff interviews will serve as a support document for the evolving operational plan and place interior design at the center of strategic change and growth.

REFERENCES

Jackson, L.(1998) Contemporary. London and New York, Phaidon Press

Inglese, E. (2019). This new survey just proved that interior design can be key to a business's bottom line. Accessed at https://www.architecturaldigest.com/story/survey-proved-interior-design-key-business-bottom-line/amp on August 14, 2019

Gee, L. (2006) Human-Centered Design Guidelines. In Learning Spaces. Ed. Oblinger, D. EDUCAUSE. Accessed https://www.educause.edu/research-and-publications/books/learning-spaces/chapter-10-human-centered-design-guidelines on August 20, 2019

Kozinets, N. (2016). Contemporary digital technology's implications for learning environments and its users: Review of literature. The International Journal of Design Education, Volume 11, Issue 1. Assessed at https://www.researchgate.net/publication/3117

Interiors + Sources. (3/30/2017). Designing for high-impact learning spaces. Retrieved from https://www.interiorsandsources.com/article-details/articleid/21094?title=designing%20for%20high-impact%20learning%20spaces&page=4 on August 14, 2019.

Open Track | Scholarship of Design Research | Presentation

Examining the Impacts of Interior Environmental Factors On Nurses' Job Performance

Suining Ding, Purdue University Fort Wayne

ABSTRACT

The relationships between the physical environment and medical outcomes have been confirmed by the study carried out by Rubin et al. (1998). The study conducted by Rubin et al. confirms "there is suggestive evidence that aspects of the designed environment exert significant effects on clinical outcomes for patients" (Rubin, Owens, & Golden, 1998). In addition, a vast number of studies have confirmed the impact of the physical environment on patients' medical outcomes and healthcare organizations' operational efficiency (R. S. Ulrich, 1991; R. S. Ulrich et al., 2008; Zimring, Quan, Joseph, & Choudhary, 2004; G. Tyson et al. 2002). Therefore, a growing body of research evidence exists, which reveals the impacts of the physical environment on patients and the healthcare providers. Although previous studies have examined the linkage between the environment and health outcomes and overall performance, one of the research areas remains to be explored is to understand what interior environmental factors impact significantly on nurses' job performance. What design recommendations can be provided to designers to design the facility that allows nurses to have the best job performance? The findings of this study provided answers to these questions.

The purpose of this research is to identify the interior environmental factors that have huge impacts on nurses' job performance. This research took a qualitative approach with grounded theory methodology. The method used for this research was a literature review with emphasis on reviewing the studies conducted through interviews, focus groups, and surveys regarding nurses' opinions for their job performance. When conducting the literature reviews, many sources were searched including Avery Index, Academic Search Complete, and ERIC, knowledge repository

at Center for Health Design website, Google Scholars, PubMed, ProQuest, and Scopus. As part of the grounded theory methodology, a three-stage coding paradigm was used to organize and analyze the data.

The findings of this study came out of multiple sources of data. Based on the literature surveyed, the most important factors that have huge impacts on nurses' job performance were identified. Findings show that the important factors include supervision and control over patients, connecting with nature, walking distance, lighting level, social support and safety for nurses. Furthermore, findings show that nurses prefer to have private patient rooms to have better infection control. Equally important, nurses should have supervision and control over patients in private patient rooms. Appropriate lighting design and space planning at the nurse stations are important so that medication errors can be reduced, and the efficiency can be increased. Additionally, installing ceiling lift systems in all patient rooms is an effective way to reduce the risk of injury not only for patients but also for nurses.

The implication of this study is a set of design recommendations, which includes several design strategies highlighted in the following aspects: 1) Providing all single-patient rooms and allow for more spaces for staff and families. A small nurse alcove outside the patient room is necessary to allow visibility to patients. 2) Patient rooms should be all standardized in layout as same-handed rooms, including furniture placement and location of supplies and equipment. The purpose of these design features is to reduce the cognitive burden on nurses, which is dealing with variations from room to room. 3) Designing decentralized nurse stations with decentralized supply rooms to reduce walking distance. 4) Providing positive distractions including a fireplace, strategically placed artwork, or even access to the outside via a patio or large windows. 5) While the decentralized nurse stations provide many benefits, it is important to incorporate spaces in the nursing unit, such as break rooms where social interaction for nurses might take place.

REFERENCES

Rubin, H. R., Owens, A. J., & Golden, G. (1997). Status report (1998): An investigation to determine whether the built environment affects patients' medical outcomes: Center for Health Design.

Tyson, G. A., Lambert, G., & Beattie, L. (2002). The impact of ward design on the behaviour, occupational satisfaction and well-being of psychiatric nurses. International journal of mental health nursing, 11(2), 94-102.

Ulrich, R. S. (1991). Effects of interior design on wellness: Theory and recent scientific research. Journal of health care interior design, 3(1), 97-109.

Ulrich, R. S., Zimring, C., Zhu, X., DuBose, J., Seo, H.-B., Choi, Y.-S., . . . Joseph, A. (2008). A review of the research literature on evidence-based healthcare design. HERD: Health Environments Research & Design Journal, 1(3), 61-125.

Zimring, C., Joseph, A., & Choudhary, R. (2004). The role of the physical environment in the hospital of the 21st century: A once-in-a-lifetime opportunity. Concord, CA: The Center for Health Design.

Open Track | Scholarship of Design Research | Presentation

How the Multisensory Context of Interior Environments Affects Occupants' Visual Attention in Spatial Perception

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ABSTRACT

The multimodality of human senses plays an essential role in one's spatial experience, and; the visual perceives the surroundings and responds to the sensory attributes. The scope of research on visual attention has been broadened encompassing psychophysics, cognitive neuroscience, and computer science, and eye-tracking is one of the methods increasingly adopted in design research on visual attention. This study aimed to investigate whether and how auditory inputs affect interior occupants' visual attention in retail settings and how the individual's past experiences contribute to their perception of the space. The relationship between philosophical phenomenology and experimental sciences has often been on the debates in academia since science can explain what are observed and perceived, not why and how (Albertazzi, 2013). In this regards, this exploratory study adopted the methods of experimental phenomenology, which involved quantitative as well as qualitative measures and analyses, eye tracking, short-answer survey, and interview using open-ended questions. The fundamental concept of this study was based on Merleau-Ponty's notion of perception (1945/2012), particularly the multi-sensory schemes.

The convenience sample used in this study consisted of 13 female and seven male participants, university students whose ages ranged from 19 to 23. For data collection, a SMI-iViewRed eye tracker (with a sampling rate of 30 Hz) was integrated into a high resolution 27-inch 1920x1080

pixels widescreen monitor. As visual stimuli, photo images of three franchised-brand coffee shops were used (Figure 1). As auditory stimuli, two songs in different genres were used to simulate two common types of sound-atmospheres in commercial settings: soft pop (music 1) and dance-pop (music 2). Each experiment was conducted through the following procedures: 1) each photo was displayed on the monitor while the two songs played consecutively, for 60 seconds/music and with a 10-second break in between songs; 2) short-answer questions were asked in text on the computer screen; 2) this procedure was repeated three times, paired with the three images displayed in a random order; 3) a 20-minute exit interview followed.

For data analysis, each 60-seconds associated with one music was broken down into six 10-second segments (from T1 to T6); the averages of fixation count and dwell time with music 1 (M1) and with music 2 (M2) were compared. Heatmaps—visualizations that show the general distribution of gaze points—were generated by time-segment (10 seconds per segment) to identify the areas of interest as the participants engage in the images (Figure 2). Scan-path analysis was also conducted to see any shared pattern of fixations among participants (Figure 3).

The main areas of interest (AOI) included the informative visual contents such as signs, surfaces of furniture, and points of sale. The general patterns of the scanpaths appeared differently depending on the type of the music played during the experiments. Interestingly, besides the interior elements and objects, the participants seemed to pay attention to people's interaction they found in the images. The findings from the interview analysis included that many of the participants associated each photo image with a certain (imaginary) noise level—besides the music played during the experiment—mentioning about their past experiences at coffee shops. The findings also showed that the 'reasons' for the participants' visual responses were highly varied. When the researchers attempted to find commonly mentioned (key)words during the interview, a small number of essential, meaningful words were found in the participants interview. This reiterates the importance of adopting mixed methods, including qualitative and quantitative, in studies on cognitive phenomena. Other findings and the limitations of this study will be further discussed during the presentation.

REFERENCES

Albertazzi, L. (2013). Handbook of experimental phenomenology : visual perception of shape, space and appearance. Chichester, West Sussex: Wiley-Blackwell.

Merleau-Ponty, M. and Landes, D. A. (2012) Phenomenology of perception, D. A. Landes, trans. Abingdon, Oxon; New York: Routledge [Originally 1945].

Tversky, B. (2005). Visuospatial reasoning. In K. Holyoak and R. Morrison (Editors). The Cambridge handbook of thinking and reasoning. Pp. 209-241. Cambridge: Cambridge University Press.

Appendix

Figure 1. Photo images of three franchised-brand coffee shops

Figure 2. Examples of heatmaps visualizing the general distribution of the participants' gaze points (T6 time-segment)

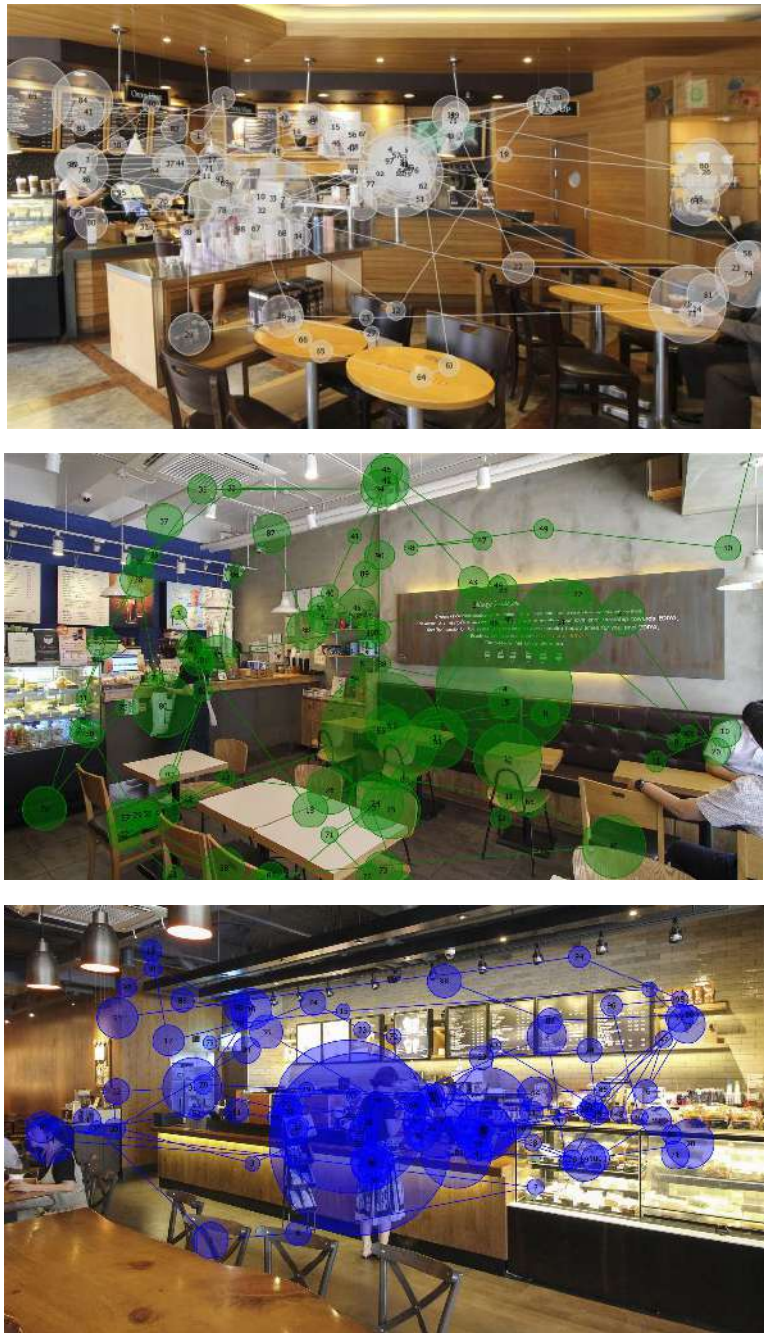

Figure 3. Examples of scan-paths and fixations

Open Track | Scholarship of Design Research | Presentation

How to Design Mindfulness Practice Areas for the Well-Being of the Design Students

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ABSTRACT

Cases of stress, anxiety, depression, learning disabilities, self-injury incidents, eating disorders, alcohol, and drug use are on the rise on college campuses across the US. A 2018 National College Health Assessment (NCHA) report from the author's institution indicated that their students' individual academic performance is impacted by stress (30%), anxiety (28%), sleeping difficulties (18.6%), depression (13.1%), ADHD (8.8%), and alcohol and drug dependency (2.9%). This author wanted to find a drug-free, side-effect free solution to assist her design students affected by these mental health issues. Her preliminary research revealed a growing scientific body of knowledge emphasizing the impact of Mindfulness practice in reducing stress, anxiety, anger, depression and other mental illnesses. Brown and Ryan, (2003) describe Mindfulness as a "state of consciousness in which there is an enhanced attention to moment-to-moment experience." Mindfulness-based Stress Reduction (MBSR) therapy was developed based on the Buddhist contemplative tradition, which teaches one to be in the moment, and observe each thought and feeling without judgement. Mindfulness-based interventions have been found to reduce many forms of psychological distress, including generalized anxiety disorder. (Kabat-Zinn et al., 1992). It also helps reduce social anxiety disorder (Goldin and Gross 2010), depression (Kumar et al. 2008; Shapiro et al. 1998; Speca et al. 2000), depressive relapse (Ma and Teasdale 2004; Teasdale et al. 2000), anger (Speca et al. 2000), attention deficit hyperactivity disorder (Zylowska et al. 2008), and para-suicidal behavior (Linehan et al. 1991). This author wanted to provide Mindfulness practice areas in her college to reduce stress and anxiety of the design students. She adapted a mixed-method research approach: First she

reviewed published literature on this topic, then researched Mindfulness program offered at different institutions. This research revealed that these programs did not describe the environments within which the Mindfulness therapy were offered or conducted, nor did they report the impact of these environments on students' mental well-being. Since 85% of design students' time is spent within the college, this author recognized the need for well-designed environments to practice Mindfulness. This author visited selected precedents for observations and documented her observations through photo and video recordings. These observations and studies of images of the Mindfulness practice areas helped her in identifying the spatial, furniture, and environmental needs. To understand what kind of environments the design students would feel comfortable in to practice Mindfulness, she developed and distributed an online survey for her college. The survey was designed to understand: 1) the stressors that impact design students' academic success, 2) Design students' knowledge of Mindfulness practice, 3) Design students' environmental preferences for the Mindfulness Learning Porches. The data collected was analyzed using ALITO, and AEIOU framework (A= Activities, E= Environment, I = Interactions, O = Objects, U = Users.) Based on this survey results, and the findings from her observations, this author, her colleagues, and selected graduate students designed Mindfulness practice areas, known as "Mindfulness Learning Porches" within her college. In this paper this author will discuss her research findings and share design strategies that other educators can adapt to develop Mindfulness practice areas in their learning environments.

REFERENCES

_____University, (2018). American College Health Association, National College Health Assessment II Report. Retrieved from the university website on 4/4/2018.

Brown, K. W, and Ryan, R. M., (2003). The Benefits of Being Present:Mindfulness and Its Role in Psychological Well-Being. Retrieved from https://selfdeterminationtheory.org/SDT/documents/2003_BrownRyan.pdf on 4/4/2018

Kabat-Zinn, Jon & Massion, AO & Kristeller, Jean & Peterson, Linda & Fletcher, Kenneth & Pbert, Lori & Lenderking, William & Santorelli, Saki. (1992). Effectiveness of a Meditation-

based Stress Reduction Program in the Treatment of Anxiety Disorders. The American journal of psychiatry. 149. 936-43. 10.1176/ajp.149.7.936.

Goldin, P. R., & Gross, J. J. (2010). Effects of mindfulness-based stress reduction (MBSR) on emotion regulation in social anxiety disorder. Emotion, 10(1), 83-91. Retrieved from http://dx.doi.org/10.1037/a0018441 on 4/7/4018

Shapiro, S. L., Schwartz, G. E., Bonner, G. (1998). Effects of Mindfulness-Based Stress Reduction on Medical and Premedical Students. Journal of Behavioral Medicine, Vol.21, No.6.

Open Track | Scholarship of Design Research | Presentation

Lessons Learned: Design Students as Post Occupancy Evaluators

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ABSTRACT

Problem/Context. Student success is influenced by variables ranging from socioeconomic background to influence of specific teaching styles. Rarely does the role of the built environment emerge during such discussions. Yet, research studies show aspects within the built environment impact students' retention, motivation, and learning (Scott-Webber, et. al, 2013).

Post-occupancy evaluations (POE) gather human-centered evidence for analysis, yet the design industry rarely use them (Hosey, 2019). What lessons are learned when students participate in a POE and by those using interior design students as post-occupancy evaluators? This research study explores design students as post-occupancy evaluators using pre-post, design-related buildings with learning spaces.

POE studies often appear in healthcare design journals (Fay, et. al, 2017) but rarely in higher education publications. Literature studies capture design POEs that relate to indoor environmental qualities (e.g. lighting, Asojo, et. al., 2019) and manufacture's assessment of classroom design impact on engagement (Steelcase, 2014). Few studies place design students as post-occupancy evaluators in a higher education setting.

Significance of this study is two-fold. Quantitative data and qualitative findings make it possible to relate statistical data to qualitative referents in the educational settings. Most POE's are

survey-based only, which collects user data at one point in time. Second, identical participants served as post-occupancy evaluators fall 2018 (as juniors) and fall 2019 (as seniors).

Relevance. POEs focus on two questions: Is the building behaving as intended, and are occupants satisfied? Research by U.S. Army's Construction Engineering Research Laboratory estimates an 80-fold return on POEs. Despite results, POEs are rarely used due to lack of training, time, and funds (Hosey, 2019). CIDA Standards (2018) indicate students should learn impact of human-centered design to inform responses to user needs.

The Interior Design Program was housed in a 1957 building (previous dormitory) before relocating to a new building in 2019. Students conducted a POE on the pre-post learning spaces. Kolb's experiential learning model and validation theory framed this study.

Outcome A convenience sample was used (n=38). Assessed spaces included classrooms, studios, bathrooms, computer labs, gathering spaces, and offices. Students responded to 52 questions selected from previous culture and benchmarking surveys. Variables: culture, ambient conditions, safety, faculty, specific building spaces, finishes, accessibility and overall satisfaction. Participants developed a photo journal based on 14 prompts. Variables: architectural details, sense of belonging, restorative needs, collaboration, creativity, wayfinding, and motivation. The photo journal helped develop connections between themselves and the world around them.

POE analysis include demographics (Table 1), analysis of data (Tables 2-3), findings (Table 4) outcomes and lessons learned. Of the 38 participants, 33 provided survey responses and 38 submitted photo journals. Quantitative analysis revealed that the 1957 building provided all deterrents and no affordance. Qualitative analysis revealed eleven themes including safety, ambient conditions, architectural design, sense of belonging, communication, lifting "spirits," motivation, creativity, collaboration, and wayfinding. Using both quantitative data and qualitative findings made it possible to correlate statistical data to the qualitative referent. If a student response indicated, "I don't feel safe" photos revealed the "unsafe" location. Major lessons learned: Use of interior design students as POE evaluators benefit institutions; teaching students impact and importance of POEs and research prior to graduation is beneficial, and using

interior design students as PO evaluators position the Program central to campus design, construction, and evaluation processes.

REFERENCES

Asojo, A., Bae, S., and Martin, C. (2019). Lighting conditions and perceived learning experience among students in classroom buildings: A post-occupancy evaluation study. Proceedings of the 2019 Interior Design Educator Council Conference, Charlotte, NC.,

Fay, L.L., Carll-White, A., & Harrell, J. (2017). Coming full cycle: Linking POE findings to design application. Health Environments Research & Design Journal, DOI: 10.1177/1937586716672856.

Hiromoto, J. (2015, May 13). Architect & design sustainable design leaders: Post occupancy evaluation survey report. Skidmore, Owings & Merrill, New York.

Hosey, L. (2019, February 6). Going beyond the punchlist: Why architects should embrace post-occupancy evaluations. Metropolis, http://wwwmetropolismag.com/architecture/architecture-post-occupancy-evaluations.

Scott-Webber, L., Strickland, A., and Kapitula, L. R. (2013, October-December). Built environments impact behaviors: Results of an active learning post-occupancy evaluation. Planning for Higher Education, 1-12.

Table 1. Survey Demographics – Open Ended Responses

Race 24 white 1 Asian 2 Hispanic 1 Mexican 1 Multiracial 1 not-white	Sexual Identity 23 heterosexual/straight 2 N/A 6 female Gender identity 30 female 3 male
Religious, spiritual, existential worldview 16 Christian 3 agnostic 3 atheist 1 Latter-day Saint 2 spiritual 1 utilitarian non-denominational 6 none	US Military veteran or active duty member 1 male

Table 2. Survey Sample Results – 1957 Building

Building (Positive)	Building (Negative)
▪ Ability to move furniture ▪ Adequate storage ▪ Easy navigation ▪ Sidewalk accessibility ▪ Classroom accessibility ▪ Meets my needs ▪ Feel a part of [university] ▪ Poster, etc. makes me feel comfortable and valued	▪ Poor interior and exterior ▪ Poor interior finishes ▪ Noise issues ▪ Artificial lighting ▪ Cleanliness issue ▪ Poor technology ▪ Poor furniture ▪ Not safe at night ▪ Poor bathrooms ▪ Poor study spaces ▪ Poor classrooms ▪ Poor faculty offices ▪ Does not enhance creativity

Post-occupancy Evaluator Expectations for 2019 Building (n = 33 respondents; more than one response allowed)	
Aspiring spaces	12
Better building facilities	5
Calling it home	1
Convenience	2
Design Community	2
Furniture (resources)	1
Maker spaces	3
Views	4
Proper design (pride)	3
Technology	8
Maker spaces	4

Table 3. POE Survey Results - 1957 Building – From Highest to Lowest Mean Scores

Please indicate your level of agreement with the following statement (1=strongly disagree to 6 = strongly disagree)	
Mean	
2.24	I think faculty who teach classes in the1957 building pre-judge my abilities based on my identities or background.
2.38	I feel safe at night walking around the 1957 building.
3.59	I feel comfortable storing/monitoring my personal possessions in 1957 building.
3.62	I feel safe in the 1957 building
4.22	While in 1957 building I feel motivated to engage in the learning environment.
4.43	Faculty who teach classes in 1957 building turn controversial topics into constructive discussions.
4.49	When I am in the1957 building I feel as though I belong to this [university].
5.08	I feel close to classmates.
5.08	I can express myself authentically in class.
5.16	I think faculty who teach classes in 1957 building are genuinely concerned about my welfare
5.24	All students feel welcome and supported while being in 1957 building.
5.24	Diversity is fully embraced within the classroom.
5.46	Students in the 1957 building are treated fairly, regardless of their socioeconomic status.
5.57	Students in the 1957 building are treated fairly, regardless of their religion/faith.
5.65	Students in the 1957 building are treated fairly, regardless of their race.
5.68	Students in the 1957 building are treated fairly, regardless of their gender identities.
How would you rate the overall quality of the following areas? (1=Poor, 2=Satisfactory, 3=Good, 4=Excellent)	
1.14	Bathrooms
1.81	Study spaces
1.92	Classrooms
1.92	Faculty offices
1.32	Rate the aesthetic quality/ ‘look’ of 1957 building’s interior.
1.38	Rate the aesthetic quality/ ‘look’ of 1957 building’s exterior.
1.46	How would you rate the interior finishes of the building?
1.68	How would you describe the noise in the building?
1.97	How would you describe the quality of artificial light overall in the building?
2.05	How would you rate the level of cleanliness of the building?
2.32	How would you rate the quality of technology in the classrooms?
2.38	How would you rate the quality of furniture in the classrooms?
2.38	How would you describe the amount of natural daylight overall in the building
3.22	How would you rate the ability to move furniture to meet your needs
Please indicate your level of agreement with the following statements (1=Poor, 2=Satisfactory, 3=Good, 4=Excellent)	
2.38	Materials and colors helped me find my way around 1957 building.
2.70	The building of the 1957 building enhances creativity in student work.
2.76	The 1957 building has adequate outdoor lighting.

2.76	The 1957 building is a pleasure to use.
2.84	Corridors and spaces are well organized in the 1957 building.
2.86	Does the 1957 building as a building enhance your learning?
3.00	Clear and salient signage stands out from the background can easily be seen by students.
3.00	The signs in around 1957 building were easy to understand.
3.27	The building of 1957 building enhances collaborative learning.
3.59	Furniture in 1957 building is comfortable to use for students.
3.65	The decorations and amendments (posters, paint, art, etc.) in 1957 building make me feel comfortable and valued.
3.73	Languages used on signage are easily understandable by students.
3.92	Symbols used on signage are standard and easily understandable by students.
4.00	Adequate personal storage is offered in 1957 building.
4.08	I find it easy to navigate the 1957 building.
4.27	I can easily access sidewalks around 1957 building.
4.43	I can easily access classrooms in 1957 building.
Please indicate your rating of the following statements (1=Poor, 2=Satisfactory, 3=Good, 4=Excellent)	
1.49	Overall how would you rate the general building layout.
1.54	Rate your general perception of disability accessibility.
1.78	Overall, I was satisfied with the 1957 building environment.
2.03	Overall, the 1957 building meets my needs.

Table 4. Summary Post-occupancy Evaluators' Perceptions through Analysis of Photo Journals – 1957 Building. Note: Photo images cannot be shared [in this abstract] due to potential identifying characteristics.

Theme	Summary Comments
Safety	Safety issues in 1957 building are twofold. There are long glass hallways of that create the "fishbowl effect" especially at night. The second issue is the exterior of the building (sidewalks and parking). The safest perceived spaces were classrooms such as the computer lab and senior student with coded locks/fewer windows.
Ambient Conditions	Nearly all ambient conditions perceived negative. Natural lighting noted as a positive.
Architectural Design	Very little noted as appealing. Positive comments/photos indicated brickwork on the exterior and the high ceilings and wooden beams in the interior.
Sense of belonging	Positive features related to "belonging" appear to be associated more with faculty and peers in the building rather than building features.
Communications	Features of the building that encouraged communication appeared to be the "flexible furniture" in the newly remodeled part of the building and room arrangements that allowed for group work.
Support Learning Tasks	Most often mentioned was equipment in the building. Computer lab and senior studio were most often mentioned.
Lifting "Spirits"	The 1957 building was not perceived to lift spirits. A few evaluators mentioned the "grassy" area outside of the building and the café setting in the building. Peer relationships mentioned as positive.
Restorative Features	Café and outdoor areas were most mentioned, but in general many negative evaluative comments were provided.
Motivation	1957 building was not perceived as a positive motivator. Several mention that the 1957 building was so badly designed that it gave motivation to do better. Motivation was most related to classroom experiences.
Creativity	The 1957 building evaluated as lacking ability to enhance student creativity. Most often mentioned were faculty and peer experiences. Artifacts in the building were noted as stimulating creativity – displays of previous student work for example. The "supply room" noted as containing material that fostered creativity.
Collaboration	Most often noted was moveable/flexible furniture and classroom experiences.
Wayfinding	Most often noted was that wayfinding was difficult, but with use and familiarity it became easier. Signage in the building was noted as a positive.
What will be missed	In general, the building will not be missed. Architectural features were noted that will be missed including natural, wooden beams, brick exterior, and mosaic columns.
Memories	Several "memory categories" emerged. One was "personal accomplishments" which included memory of acceptance letters, doing well on difficult tasks, and winning prizes for work. A second category included "classroom experiences". Often noted was the memory of long hours ("all nighters") in the building working on upcoming projects. A third category included "memory of friends". A final category included memory of "events" ranging from parties to an intruder in the building (homeless individual examining lockers).
Summary	The building as a physical entity seem to provide very little in terms of support for learning. It appeared that learning occurred with only minimal assistance from the building and maximum support from the human behaviors that were associated with the individuals in the interior design program (peers and faculty). The photos presented by the evaluators added additional support to their comments.

Open Track | Scholarship of Design Research | Presentation

Lighting Distributions in Senior Residential Settings: An HDR-based Analysis for Improved Nighttime Circadian Lighting

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ABSTRACT

The influence of light on circadian rhythms and sleep patterns through melatonin suppression is well-documented in the literature (Figueiro, 2008; Rea & Figueiro, 2018). The residential health standards, such as the WELL Multifamily Residential Standard (2019) also provide nighttime circadian lighting design guidelines. This issue is of particular significance for older adults whose nighttime residential circulation and sleep patterns make them more vulnerable to the effects of nighttime light exposure, such as when they get up to go the bathroom or go to the kitchen for a glass of water. Within this context, the Illuminating Engineering Society (IES) standard for lighting and the visual environment for seniors has nighttime lighting recommendations in older adults' residential settings (Barker, et al, 2016). While this standard provides guidelines for illuminance values and spectral composition (color content) of lighting, distribution of light in the environment, another critical aspect of lighting design that relates to human perception, is not discussed.

This proof-of-concept study contributes to the research in this field by suggesting an on-site data collection methodology to measure nighttime lighting distribution patterns in older adults' homes for home modification purposes. Luminance mapping using high-dynamic range (HDR) photography is a validated method to analyze lighting distribution in interior environments (Tural & Tural, 2014). However, the validity of this technique in low-light settings with monochromatic light sources, i.e. amber and red nighttime safety lighting at 2 lx per IES

recommendations, is not tested yet. This two-phased study first examined the luminance errors based on reflectance in low-light conditions to demonstrate the usability of the HDR method. Secondly, light distributions for various interior finishes were examined by using examples from bathroom, kitchen and residential stairs under red and amber monochromatic light sources.

The findings of this study will help interior designers provide improved and safe nighttime lighting, while helping maintain seniors' healthy circadian rhythms. Other implications include assisting interior designers in making informed material selections with surface reflectivity and lighting distributions in mind. The following stages of this research may have implications of improved lighting standards for institutional residential settings and community-dwelling older adults' home environments.

REFERENCES

Barker, B., Brawley, B., Burnett, D., Cook, G., Crawford, D., Davies, L., … Wilburn, D. (2016). Lighting and the visual environment for seniors and the low vision population (ANSI/IES RP-28-16). Retrieved from http://centaur.reading.ac.uk/69826/

Figueiro, M. G. (2008). A proposed 24 h lighting scheme for older adults. Lighting Research and Technology, 40(2), 153–160. https://doi.org/10.1177/1477153507087299

International Well Building Institute (IWBI). (2019). The WELL Multifamily Residential Pilot Addendum. Retrieved from https://resources.wellcertified.com/tools/multifamily-residential-pilot-addenda/

Rea, M. S., & Figueiro, M. G. (2018). Light as a circadian stimulus for architectural lighting. Lighting Research and Technology, 50(4), 497–510. https://doi.org/10.1177/1477153516682368

Tural, E., & Tural, M. (2014). Luminance contrast analyses for low vision in a senior living facility: A proposal for an HDR image-based analysis tool. Building and Environment, 81, 20–28. https://doi.org/10.1016/j.buildenv.2014.06.005

Open Track | Scholarship of Design Research | Presentation

Older Adults' Technology Readiness Impact on Perceived Knowledge and Attitudes Towards Home Gerontechnologies for Falls

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ABSTRACT

Gerontechnology is a combination of gerontology and technology, which aims older adults to lead their lives healthier, independently, and socially engaged on a continual basis (Lesnoff-Caravaglia, 2007). Recently, home gerontechnologies have been generated or adapted to be pro-active in preventing and detecting falls, as well as on monitoring older adults activities at home to rapidly respond in case of a fall (Chen & Chan, 2014; Hawley-Hague et al., 2014). These home gerontechnologies for fall prevention, detection, and monitoring act on a health problem that hinders aging-in-place, since around 25% of people aged 65 or older fall every year in the U.S., and many times the consequences result in the loss of independence, among others (National Council on Aging, 2018).

Technology readiness is defined as "people's propensity to embrace new technologies to accomplish goals in home and life" (Parasuraman, 2000, p. 308). Previous research identified that perceived knowledge has great impact on attitudes towards an innovation, but few studies have examined the role of older adults technology readiness on knowledge and attitudes towards home gerontechnology. Therefore, the purpose of this study was to examine the relationships between older adults' technology readiness and their perceived knowledge and attitudes towards fall prevention, detection, and monitoring home gerontechnologies.

Participants in this study were older adults willing to age-in-place in their own house, located in the community in the U.S. The inclusion criteria encompassed age (being 55 years or older), living in the community (not living in a long-term care facility), and being able to read, understand, and fill out a paper survey.

Data collection consisted of an in-person meeting where a self-administered questionnaire was conducted with 331 older adults of a convenient sample. The researcher had encounters with participants in pre-scheduled group meetings where a group of participants was able to answer the survey. For each group, the researcher explained the research purpose, and read aloud and explained the consent form for volunteer participation. During the 15-40 minutes survey completion, the researcher served only to clarify questions for participants.

A combination of descriptive statistics and inferential statistics was used to analyze the data in this study. Descriptive statistics was used to analyze the characteristics of the sample. Inferential statistics was used to understand the relationships between independent and dependent variables in the study, testing the hypotheses: Technology readiness will have a positive effect on an individual's (a) perceived knowledge, and (b) attitudes towards fall prevention, detection, and monitoring home gerontechnologies. The approach for inferential statistics was path analysis through multiple regressions.

The profile of the participants in this study could be defined as older adults not ready for new technology (60%), with lower levels of innovativeness (71%), and somewhat insecure when using new technologies (55%). However, even with such profile, path analysis showed that those older adults prone to embrace new technologies (40%) have higher levels of perceived knowledge and positive attitudes towards home gerontechnology for falls.

The majority of the participants were unaware of the existence of new gerontechnology for falls that could make their home environments safer for them. In terms of fall prevention gerontechnology, the hypotheses were supported. In terms of fall detection and monitoring home gerontechnologies, technology readiness was not a significant predictor for perceived knowledge, but it was a significant predictor for attitudes towards them. These results indicate the more an older adult is open to embrace new technologies, the more they will have positive

attitudes towards fall prevention, detection and monitoring home gerontechnologies, which enhance aging-in-place.

REFERENCES

Chen, K., & Chan, A. H. S. (2014). Gerontechnology acceptance by elderly Hong Kong Chinese: A senior technology acceptance model (STAM). Ergonomics, 57(5), 635-652.

Hawley-Hague, H, Boulton, E., Hall, A., Pfeiffer, K., & Todd, C. (2014). Older adults' perceptions of technologies aimed at fall prevention, detection or monitoring: A systematic review. International Journal of Medical Informatics, 83(1), 416-426.

Lesnoff-Caravaglia, G. (2007). Gerontechnology. Springfield, IL: Charles C. Thomas Publisher.

National Council on Aging (2018). Fall prevention facts. Retrieved from https://www.ncoa.org/news/resources-for-reporters/get-the-facts/falls-prevention-facts/

Parasuraman, A. (2000). Technology readiness index (TRI): A multiple-system scale to measure readiness to embrace new technologies. Journal of Service Research, 2(1), 307-320.

Open Track | Scholarship of Design Research | Presentation

Other Ways of Sharing: Poetic Transcription to Report Research Findings in a Study with Children with Autism

Julie E. N. Irish, Iowa State University

ABSTRACT

Once research is complete the researcher is encouraged, nay often desperate, to publish their research in the highest-ranking journal possible. Without access to research databases, or lacking the time or experience to find articles, far less the tedium for a non-researcher to read a journal article, this often means that the human research that we undertake that benefits a particular sector of society may never reach that group. Poetic transcription is an alternative way of sharing findings that could reach a wider audience and provides an emotive and evocative description of participants' feelings and actions (Canniford, 2012).

Poetic transcription has been used in a variety of fields, including market research (Canniford, 2012), evaluation (MacNeil, 2000), and interior design (*removed for peer review*). Glesne (1997) describes it as interviewees' words, "shaped by researcher to give pleasure and truth" (p.213). This study aims to expose other design researchers, who may be unfamiliar with the method, to its merits and demerits.

This qualitative study describes how children with Autism Spectrum Disorder (ASD) *(n=9)* navigated around a school. The research question aimed to find out what they felt about this experience. In summary, each child had to walk along a route with the researcher, once while she led, once with the child leading, indicating what they used as wayfinding aids. (For a full description of the methodology see *removed for peer review*). Data collected included written descriptions, video recordings, audio recordings, and reflective journal notes taken during the study, and a post-study questionnaire to participants.

In this study, the findings are reported in poetic transcription. Two methods of transcription are described. In the first, data from all the participants is coded using a highlighter method and organized into themes, e.g., sensory sensitivity, emotional effect, and navigational cues. Themes are assembled into lines of poems using participants' own words. The researcher provides punctuation and conjunctions (indicated by brackets) to create a flow to the poems. Each participant is identified using a different typeface, e.g., seraph, non-seraph, bold, italic, etc. In the second method, an ethnographic approach is taken by the researcher, engaging with participants over a long period and describing the outcomes. The researcher takes individual participant's words and actions during the study and transcribes them from her first-person perspective, interspersed with her own observations. This method provides a more subjective view of the participants' experiences but still uses their words and actions to tell their story. From the poems, conclusions can be drawn about the research findings, e.g., the anxiety of some children with ASD when they are wayfinding is vividly described, and the images of one child bombarded with sensory information can help explain his actions in the environment.

There are several limitations to poetic transcription. It could be viewed as insufficiently scholarly, although more social and behavioral researchers are using it to explore research questions. If large numbers of participants' data are being transcribed, it is difficult to code each so that individual identity is evident in the resulting poems. In the second method described, the researcher imposes her/his own voice, so frequent bias checks are necessary. Overall, though, poetic transcription can provide a compelling narrative, particularly for marginalized populations, and in a more accessible format for a less academic audience, and it deserves to be explored. This study hopes to gain a wider appreciation and consideration of the methodology.

REFERENCES

Removed for peer review

Removed for peer review

Canniford, R. (2012). Poetic witness: Marketplace research through poetic transcription and poetic translation. Marketing Theory, 12(4), 391-409.

Glesne, C. (1997). That rare feeling: Re-presenting research through poetic transcription. Qualitative Inquiry, 3(2), 202-221.

MacNeil, C. (2000). The prose and cons of poetic representation in evaluation reporting. American Journal of Evaluation, 21(3), 359-367.

Open Track | Scholarship of Design Research | Presentation

The Influences of Healthcare Interior Environments on Healthcare Personnel Behavior and Perception of Safety

Suyeon Bae, University of Missouri
Abimbola Asojo, University of Minnesota

ABSTRACT

Introduction

Contaminated surfaces play a key role in spreading viral infections to people in healthcare facilities. This study explored how healthcare personnel (HCP) perceive the built environment at a healthcare facility in terms of spreading infectious diseases and how they behave differently toward the environment.

Methodology

As a mixed-method design, this study consists of a series of observations and a questionnaire. Three different units (i.e., intensive care unit (ICU), pediatric emergency department (PED), and outpatient clinic (OC)) at a large medical facility located in the Midwest were studied. Each unit was observed five times for 1.5 hours to count traffic (how many people were present at the unit, and went in and out). The physical environment, such as the number of hygiene stations and sharing medical stations, was also documented during the observations. The questionnaire consisted of contamination cognitive scale (CCS), contamination-related behavioral avoidance tasks (BATs), and perception of safety. In total, 104 participants (24 from ICU, 26 from PED, and 54 from OC) completed the questionnaire.

Findings and Discussion

The physical environment of the three units were very different. The PED had very a low traffic volume (TV) and a low sharing medical equipment rate (SMER), but a high hygiene station rate (HSR). The ICU had a very high TV, SMER, and HSR. Lastly, the OC has a very high TV and SMER, but a low HSR. Based on ANOVA analyses, the three units were different in perceptions of safety from infectious disease ($F(2, 97) = 3.717$, $p=0.028$) and behaviors (e.g., avoiding touching contaminated objects and disinfecting) ($F(2, 101) = 3.868$, $p=0.024$). HCP in the three units perceived that the spatial layout of hand-hygiene stations affected hand-hygiene non-compliance ($F(2, 100) = 4.731$, $p=0.011$) (see Table 1). HCP were also asked to rank the likelihood of an object being a vehicle to carry or spread disease using a 0-100 scale. Among the three units, HCP perceived door handles ($M=53.27$, $SD=30.70$) as the most likely object spreading infection, followed by toilet handles in the restroom ($M=52.68$, $SD=31.02$), medical/sharing equipment ($M=52.00$, $SD=30.97$), and toilet seats in the restroom ($M=50.66$, $SD=32.58$). Likewise, HCP perceived medical/shared equipment ($M=45.42$, $SD=31.85$) as the most likely object causing infection, followed by door handles ($M=42.47$, $SD=28.61$). Looking at whether beliefs about contamination lead to behavior changes, there was statistical significance but very weak correlation between the behavior of trying to avoid touching door handles and perception of the contamination level of door handles ($r=0.197$, $p=0.049$). There was no statistically significant relationship between behaviors of washing/disinfecting their hands after touching/using door handles and medical/shared equipment and perceptions of the contamination levels of both objects.

Conclusion

In conclusion, the results indicate that different environmental factors (i.e., TV, SMER, and HSR) are associated with differences in perceptions of safety, and behaviors. The results also indicate that the perception of objects' contamination degree has little or no influence on behaviors (i.e., avoidance or disinfection).

REFERENCES

Institute of Medicine. (2001). Crossing the quality chasm: a new health system for the 21st century. Washington, DC: National Academy Press.

Smith, E. B., Raphael, I. J., Maltenfort, M. G., Honsawek, S., Dolan, K., & Younkins, E. A. (2013). The effect of laminar air flow and door openings on operating room contamination. The Journal of arthroplasty, 28(9), 1482-1485.

Tang, J., Eames, I., Li, Y., Taha, Y., Wilson, P., Bellingan, G., . . . Breuer, J. (2005). Door-opening motion can potentially lead to a transient breakdown in negative-pressure isolation conditions: the importance of vorticity and buoyancy airflows. Journal of Hospital Infection, 61(4), 283-286.

Wojgani, H., Kehsa, C., Cloutman-Green, E., Gray, C., Gant, V., & Klein, N. (2012). Hospital door handle design and their contamination with bacteria: a real life observational study. Are we pulling against closed doors? PloS one, 7(10), e40171.

Workplace post-occupancy evaluation (POE) benchmark and indoor environmental quality (IEQ) trend over eleven years

Appendix

Table 1. Demographic information

		N (%)
Gender	Female	1,450 (51.1%)
	Male	1,177 (41.5%)
	Others	22 (0.8%)
	No response	187 (6.6%)
Tenure (i.e., number of years in the workplace building)	Less than 1 year	400 (14.1%)
	1-2 years	894 (31.5%)
	2-3 years	864 (30.5%)
	More than 3 years	474 (16.7%)
	No response	204 (7.2%)
Hours per Week Worked	Less than 20 hours	268 (9.4%)
	20 – 29 hours	248 (8.7%)
	30 – 39 hours	841 (29.7%)
	More than 40 hours	1,330 (46.9%)
	No response	149 (5.3%)
Percent of Time in Primary Space	Less than 25%	165 (5.8%)
	25 – 50%	343 (12.1%)
	50 – 75%	870 (30.7%)
	More than 75%	1,204 (42.4%)
	No response	254 (9.0%)
Total		2,836 (100%)
		Mean (SD)
Age		38.68 (13.6)

Note. N: Number of participants, M: Mean, SD: Standard deviation.

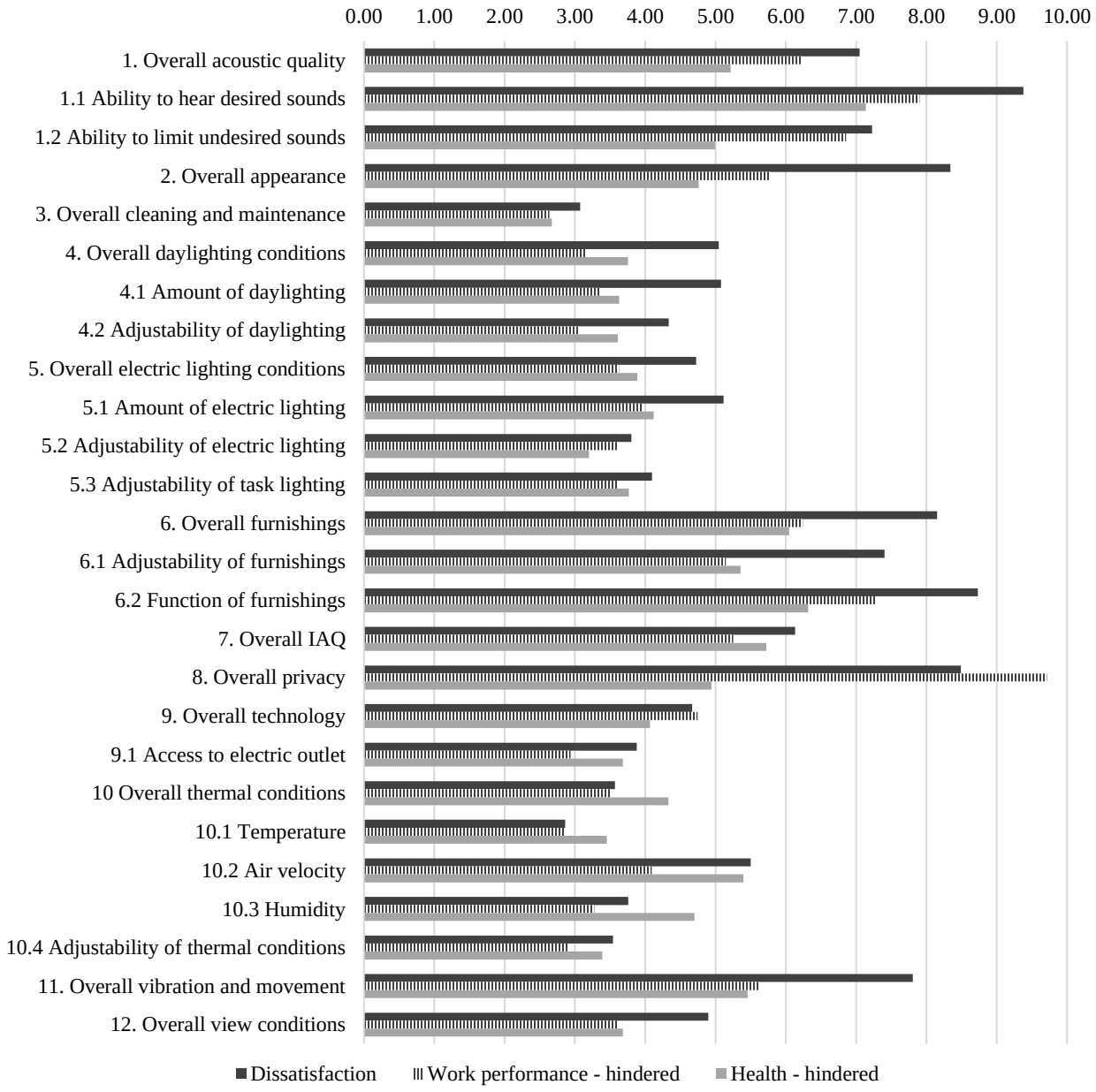


Figure 1. Likelihoods to be dissatisfied with primary workstation and perceived a negative impact on work performance and health, if each IEQ is dissatisfied.

Note. All the values (horizontal axis for odd ratios) are statistically significant.

Open Track | Scholarship of Teaching & Learning | Presentation

How to Design and Evaluate a Game-Based Studio?

Zina Alaswad, Texas State University

ABSTRACT

Interior design studios are spaces for hands-on learning where students learn new concepts and skills through "doing." The topic of designing game-based learning environments, specifically game-based design studios, is still in its infancy. The use of game-based learning in a variety of educational and training fields makes it difficult to identify just one approach to designing game-based learning courses. The successful design of game-based learning environments requires the interdisciplinary integration of game design, instructional design, and learning theories. Game design establishes engagement factors that increase student interest in the learning environment using game attributes and elements (Nadolny, Nation, & Fox, 2019). Instructional design principles provide guidance and structure for the design of the course that learners interact with (Morrison, Ross, Morrison, & Kalman, 2019). Learning theories justify and provide rational for aligning gaming elements and attributes with traditional instructional design principles and learning objectives (Giannakas, Kambourakis, Papasalouros, & Gritzalis, 2018). This presentation details the process of designing and evaluating a game-based learning environment using the learning management system Blackboard Learn for an interior design studio course.

The design of the course is based on two learning theories, instructional design practices and game-based learning pedagogy. The activity systems theory and experiential learning theory are both studied to provide a theoretical framework for the learning processes that take place in the course (Engestrom, 2000; Kolb, 2014). Instructional design practices are implemented through using the Quality Matters rubric. The rubric's standards and sub standards guide components of the course's interface via the learning management system. Game-based learning pedagogy was adopted to structure the design studio course in a format that simulates a game. The students did

not play actual games to learn, but the course used gaming elements and attributes to introduce engaging factors and to increase students' interest in their learning experience.

Activity systems theory and experiential learning theory can be used to design game-based learning environments within interior design education. Instructional design practices, learning theories, and game-based learning pedagogy must come together to create an innovative learning experience for the students. All aspects of the course must align with instructional design practices and design studios teaching strategies. The Quality Matters rubric can be used as a design and evaluation tool for studios that rely heavily on learning management systems. The evaluation of the course design by a professional instructional specialist uncovered areas for development. Student feedback on the course design was collected through interviews and a focus group session to help identify areas for further development as well.

REFERENCES

Engestrom, Y. (2000). Activity theory as a framework for analyzing and redesigning work. Ergonomics, 43(7), 960-974.

Giannakas, F., Kambourakis, G., Papasalouros, A., & Gritzalis, S. (2018). A critical review of 13 years of mobile game-based learning. Educational Technology Research and Development, 66(2), 341-384.

Kolb, D. A. (2014). Experiential learning: Experience as the source of learning and development: FT press.

Morrison, G. R., Ross, S. J., Morrison, J. R., & Kalman, H. K. (2019). Designing effective instruction. Wiley.

Nadolny, L., Nation, J., & Fox, J. (2019). Supporting Motivation and Effort Persistence in an Online Financial Literacy Course Through Game-Based Learning. International Journal of Game-Based Learning (IJGBL), 9(3), 38-52.

Weekly Learning Cycle: Illustrating the alignment between Kolb's Experiential Learning Theory phases and Dewey's physical and cognitive learning categories.

Matrix aligning design studio strategies, game-based learning factors, and Quality Matters Rubric sub-standards

Studio Strategies	GBL Elements and Attributes	Instructional design practices (QM) Standard number and description
Establish clear expectations	Rules	2.1 The course learning objectives describe outcomes that are measurable. 2.3 All learning objectives are stated clearly and written from the students' perspective. 2.4 Instructions to students on how to meet the learning objectives are adequate and stated clearly. 2.5 The learning objectives are appropriately designed for the level of the course.
Provide scaffolding	Pre-announced outcomes Guided quests	3.4 The assessment instruments selected are sequenced, varied, and appropriate to the student work being assessed. 4.1 The instructional materials contribute to the achievement of the stated course and module/unit learning objectives. 4.2 The purpose of instructional materials and how the materials are to be used for learning activities are clearly explained.
Develop complexity over time	Levels	5.1 The learning activities promote the achievement of the stated learning objectives.
Integrate self-reflection and choice	Adaptability	Not addressed by QM, but provided through weekly reflections and choice in multiples course aspects.
Support student involvement and connectedness	Leaderboard Discussion Boards	5.2 Learning activities provide opportunities for interaction that support active learning. 5.4 The requirements for student interaction are clearly articulated.
Provide timely, constructive, formative feedback	Badges and Rewards	3.2 The course grading policy is stated clearly. 3.3 Specific and descriptive criteria are provided for the evaluation of students' work and participation and are tied to the course grading policy. 3.5 Students have multiple opportunities to measure their own learning progress.
Establish clear goals for each milestone	Goals and Learning Outcomes, Levels	2.2 The module/unit learning objectives describe outcomes that are measurable and consistent with the course-level objectives.

My Grades tool in Blackboard Learn displaying quests and respective points

Leaderboard presented as an excel sheet for to review their total points in individual aspect of the course using their unique ID numbers.

Digital badges available for students to earn in the game-based studio.

Screenshot of the reward system explanation provided for students on the course

Main Menu of course page on Blackboard.

Alignment of learning objectives and a variety of course elements.

Learning Objectives	Course Elements
1) Further develop and apply visual communication skills, such as scaled drawing, free hand drawing and concept drawing	Challenge 1-4
2) Understand and apply graphic thinking relevant to problem solving and design	Challenge 3
3) Further develop an ability to visualize three dimensional forms	Challenge 4
4) Develop competency in drawing estimated perspectives	In Class Quest 1
5) Develop a drawing and rendering proficiency suitable for professional application	In Class Quests, HomeQuests, Challenges 2-4
6) Understand and apply technical drawing knowledge to a quick sketch presentation technique	Readings, Challenge 2, In Class Quests 9.1,9.2
7) Develop an appreciation and understanding of the design potential of a variety of graphic media techniques	Readings, Challenge 2
8) Develop proficiency in oral presentation	Challenge 3, Challenge 4
9) Develop proficiency in visual and verbal communication between student (designer) and the instructor (client).	Challenge 1, Challenge 3, Challenge 4
10) Develop competency in the application of elements and principles of design composition	Challenge 4 (Board layouts)
11) Research other methods of design presentation techniques suitable for professional design presentations	Challenge 1, 2, 3, 4
12) Further develop computer presentation competency	Challenge 3, 4, In class Quests 9-10, HomeQuests 8,9

Open Track | Scholarship of Teaching and Learning | Presentation

Interior Grafts: Interventions Between the Natural and the Synthetic

Rana Abudayyeh, The University of Tennessee Knoxville, College of Architecture and Design

ABSTRACT

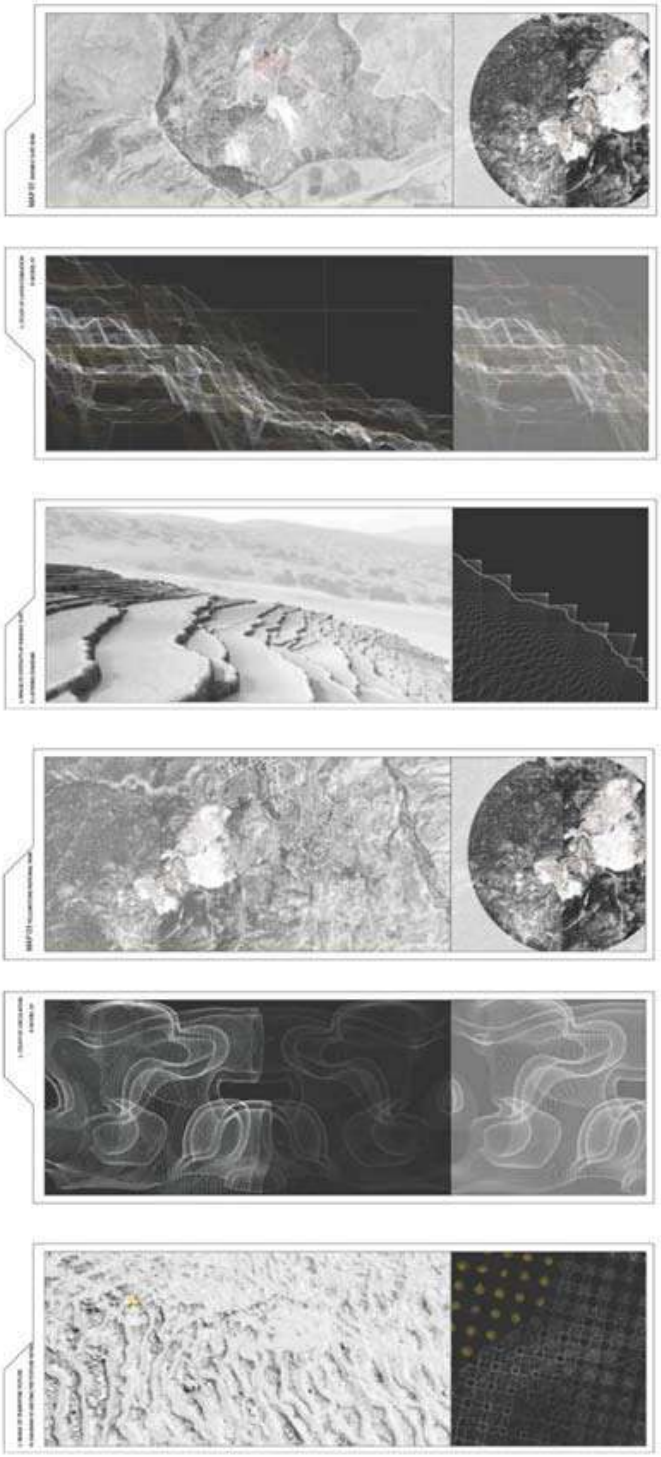
Nature offers us a magnificent array of heterogeneous landscapes and various ecologies. The biodiversity of these environments reveals a vast platform for research into natural artifacts. The ambition of this studio was to rethink existing design methodologies and exploit the potential of cutting-edge technology to formulate interior spatial strategies driven from the research of natural phenomena. Conventionally, managing the exchange between exterior and interior has been dependent on generic architectural components such as floors, openings, and walls with some consideration to materials and finishes. Within these parameters, the interior volume remains actively segmented from the exterior, while offering a juxtaposed uniform flatness to the topographic variances of the landscape it occupies. This studio challenged this disjunction between exterior and interior topographies while offering landscape extension as opposed to its severance as an operable interior design strategy. Here, landscape extension is invested in exploring the tangible topographic possibilities of interior spaces. Activated through sectional explorations, and understood as inverted landscapes, such interior topographies challenge the flatness of surfaces of occupancy to which interior spaces have commonly resorted. This is not to say that the focus entirely rests on generating formal "cave-like" settings, or that the notion of topography translates literary into its synthetic counterpart. Instead, this is an endeavor to foster a fluid exchange between exterior and interior territories. The studio was carried out through 3 phases. In the first phase, students investigated natural phenomena such as dunes, rock strata, rock bridges, canyons, gorges, and mountain formations. Exploiting the principles, logic of these

natural systems, they designed an iterative material and formal palette that corresponds to a research-based understanding of how such formations occur in nature and find their translation in the design of the artificial. These studies encompassed a range of topographic variances and resultant ecologies. They examined atmospheric conditions such as light and sound permeability and temperature changes. Phase two focused on the morphology of these topographically complex landscapes; their underlying principles and processes were analyzed within a computational context. While working towards the development of algorithmically generated topologies, several technologies were utilized to produce the premise of interior sectional diagrams. Understood as an inverted landscape and formulating the operative interior strategy for the main project, these 3D diagrams yield innovative spatial possibilities and occupancy patterns. In phase three, using the interior topographies developed, while modifying them per the proposed program and its occupancy patterns, students were asked to design "Aviary X: an ecological research facility". The unique facility provides researchers the opportunity to investigate the surrounding peri-urban ecosystems. Unlike traditional aviaries that are commonly enclosed, this aviary facilitates free-range flying. The design's complexity lies in creating inhabitable spaces for two species while establishing an integral interior topography that links the interior to the exterior context of the city, wilderness, and peri-urban zones. The aviary was to be located in an iconic spherical building in the downtown area. Constructed for a world fair exposition a few decades ago, the building housed diverse programmatic functions in the past ranging from office space to restaurants. However, the base building in its present state was not in full use due to the challenges of its elevated geometry. Nonetheless, the building has become part of the identity of the city. As such, part of the prompt of the studio was establishing the indisputable agency of interior design in asserting new value to the city's often neglected spatial volumes.

REFERENCES

Gissen, David. Subnature Architectures Other Environments. Princeton Architectural Press, 2009.

Hensel, Michael. Morpho-Ecologies: towards Heterogeneous Space in Architectural Design. Architectural Association Publications, 2006.

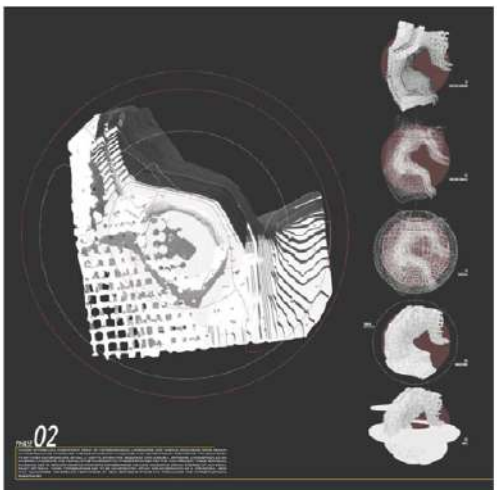


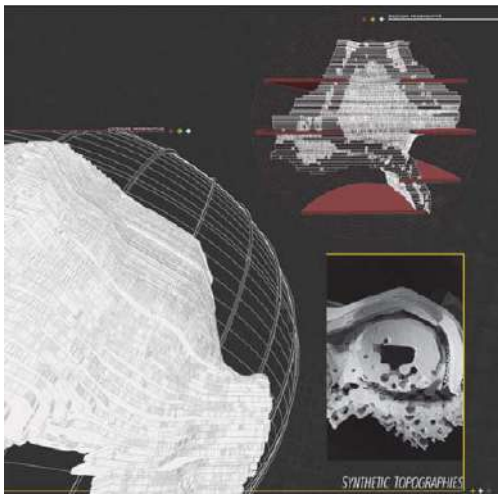
STUDENT WORK EXAMPLE 1

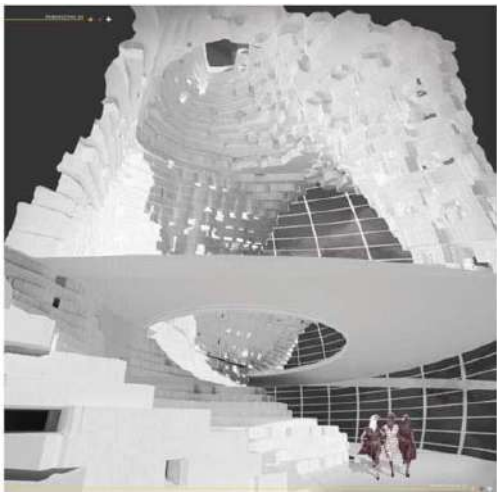
INTERIOR GRAFTS: 1\5

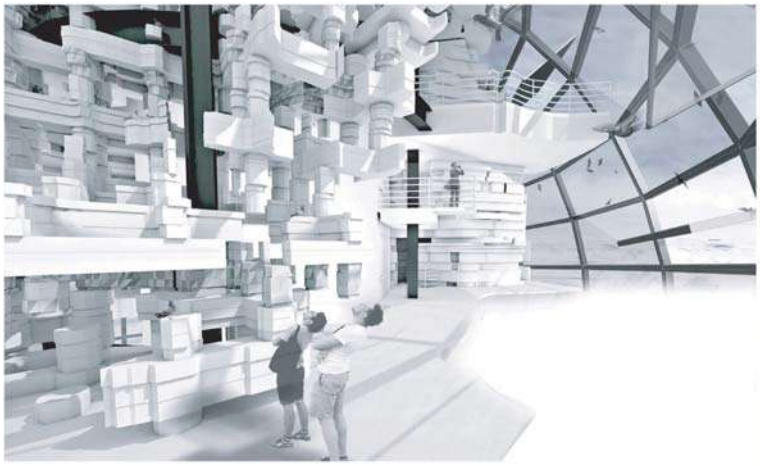
INTERVENTIONS BETWEEN THE NATURAL AND THE SYNTHETIC

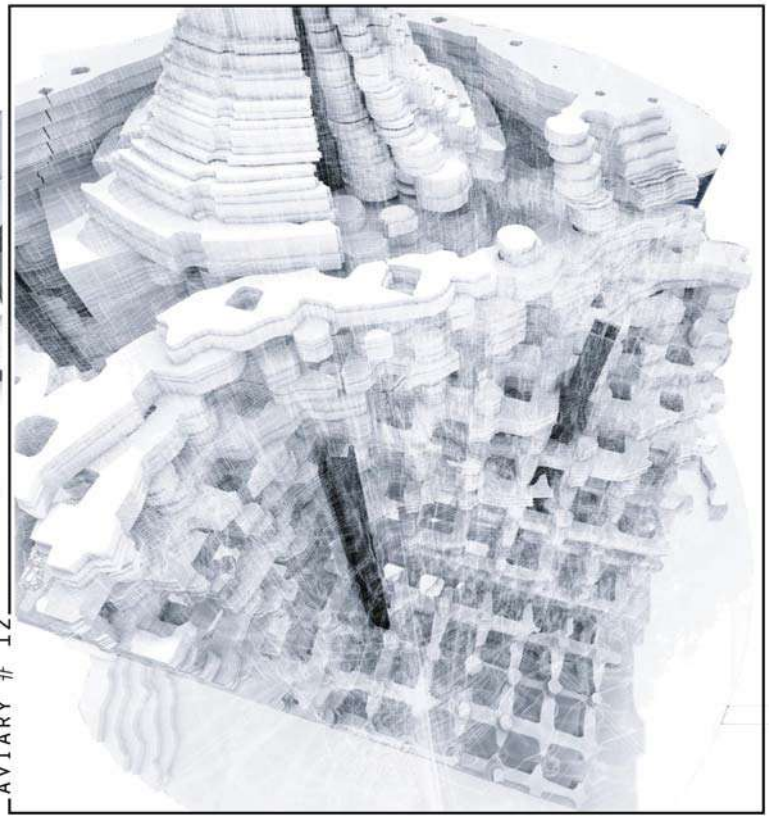
The main emphasis of this studio is the notion of inverted landscapes; extending the external topographies of place inward. Students started with studying the attributes of various natural formations. These studies beacme the bases for developing interior strategies for the design of an Aviary and an ecological research facility.









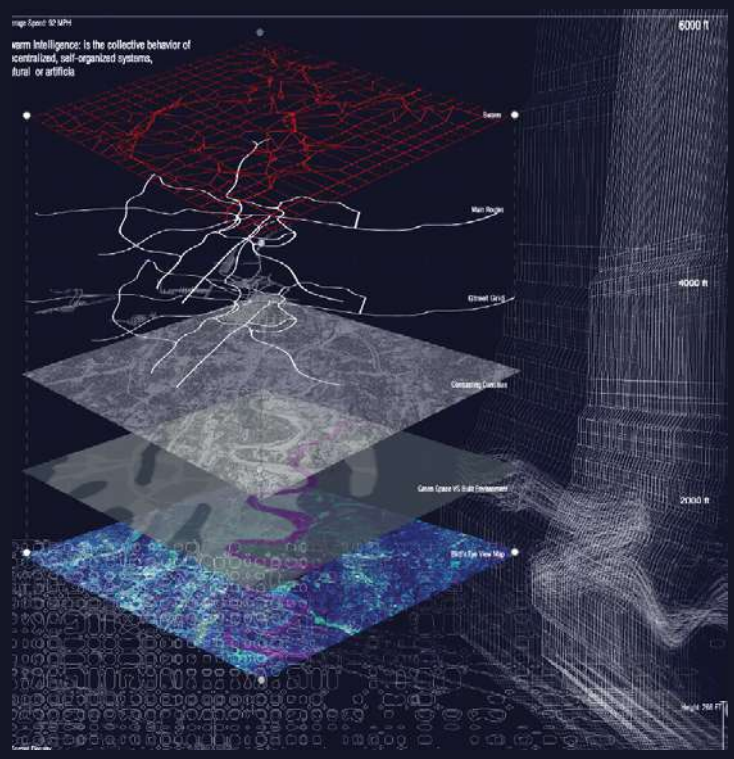


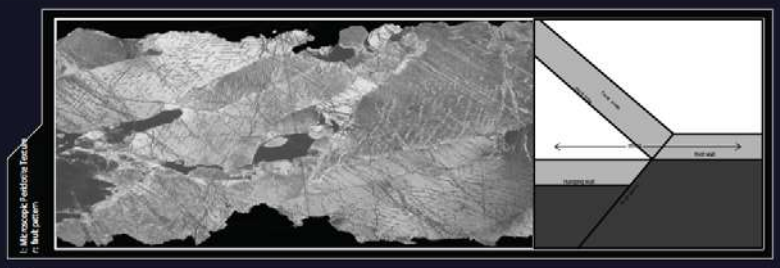
STUDENT WORK EXAMPLE 1

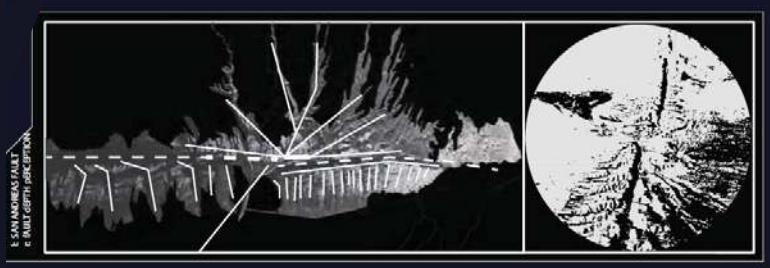
INTERIOR GRAFTS: 2\5

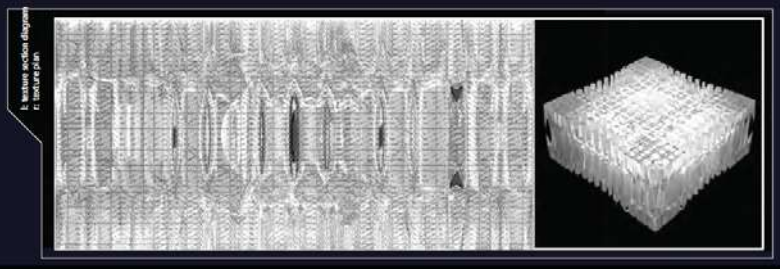
INTERVENTIONS BETWEEN THE NATURAL AND THE SYNTHETIC

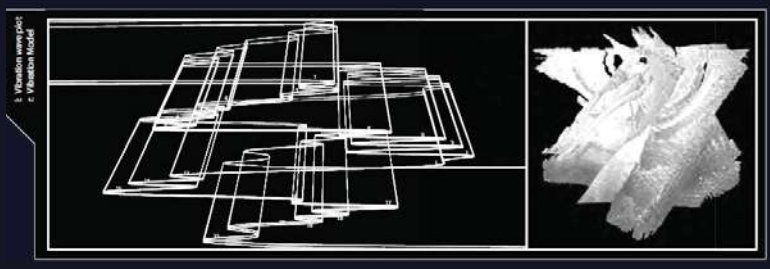
The main emphasis of this studio is the notion of inverted landscapes; extending the external topographies of place inward. Students started with studying the attributes of various natural formations. These studies beacme the bases for developing interior strategies for the design of an Aviary and an ecological research facility.









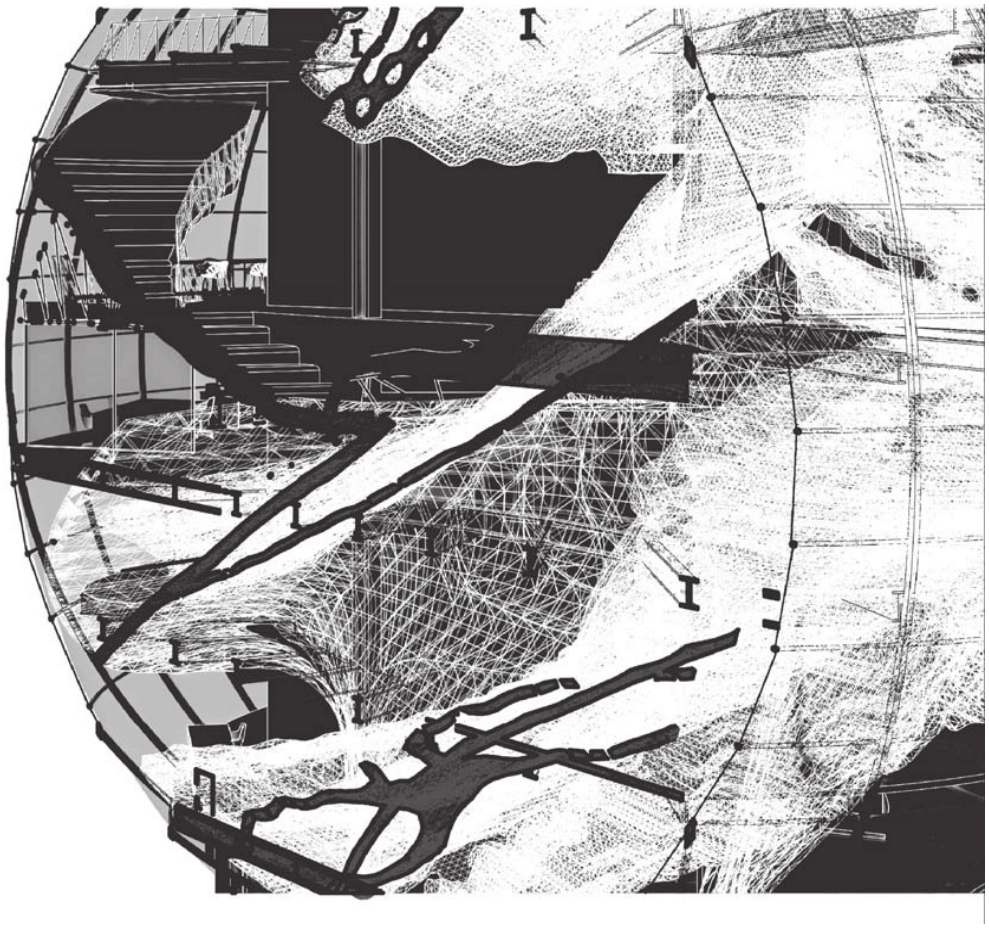


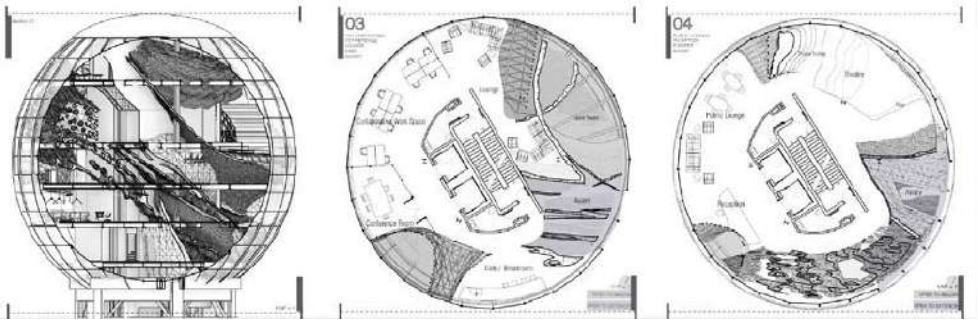
STUDENT WORK EXAMPLE 2

INTERIOR GRAFTS:3\5

INTERVENTIONS BETWEEN THE NATURAL AND THE SYNTHETIC

The main emphasis of this studio is the notion of inverted landscapes; extending the external topographies of place inward. Students started with studying the attributes of various natural formations. These studies beacme the bases for developing interior strategies for the design of an Aviary and an ecological research facility.



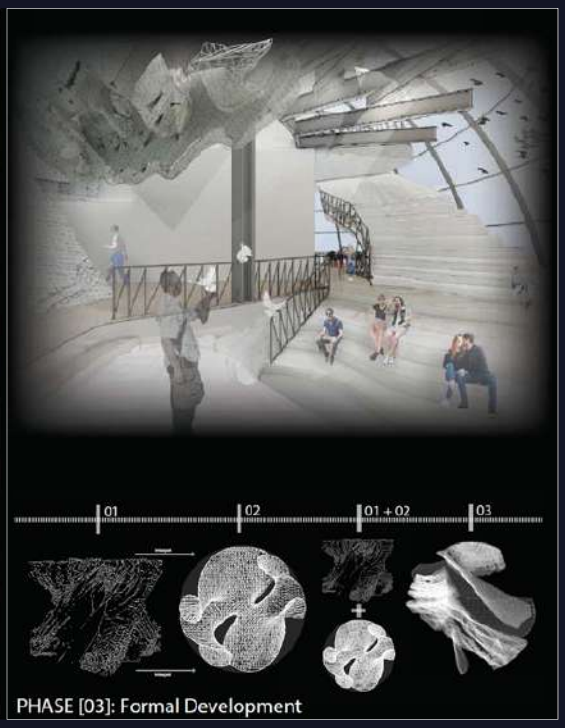


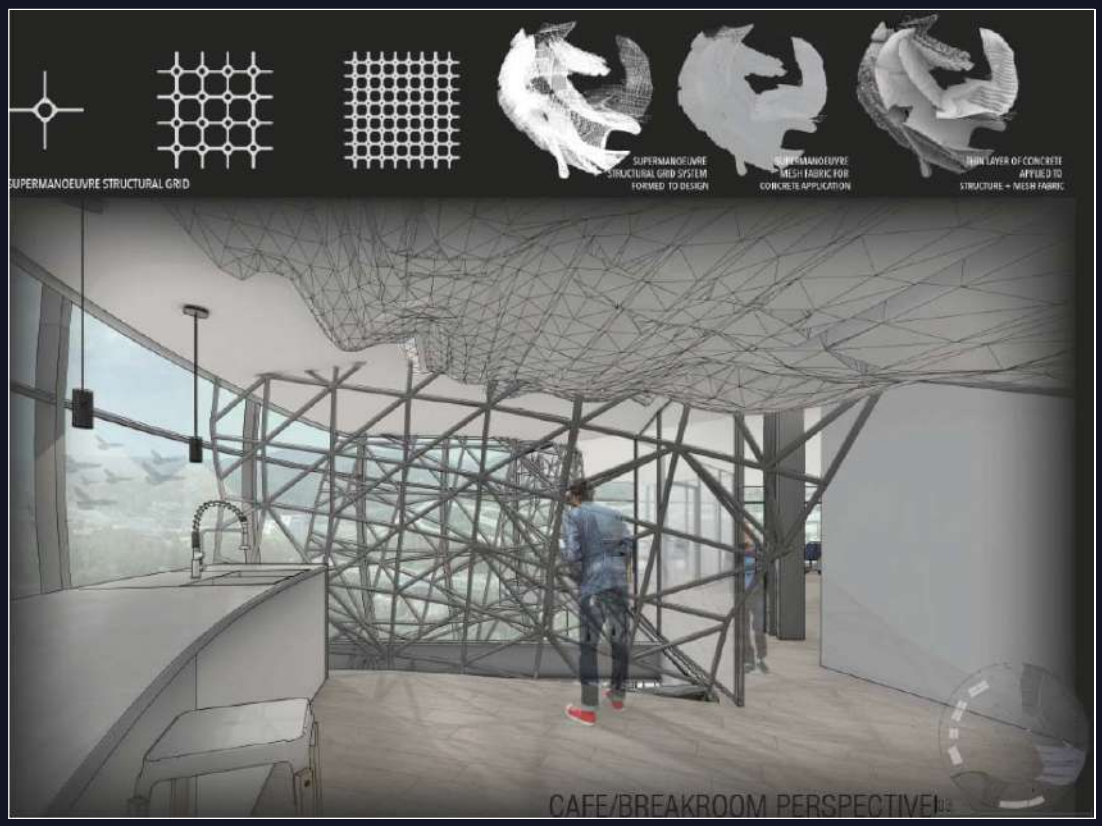
STUDENT WORK EXAMPLE 2

INTERIOR GRAFTS:4\5

INTERVENTIONS BETWEEN THE NATURAL AND THE SYNTHETIC

The main emphasis of this studio is the notion of inverted landscapes; extending the external topographies of place inward. Students started with studying the attributes of various natural formations. These studies beacme the bases for developing interior strategies for the design of an Aviary and an ecological research facility.





STUDENT WORK EXAMPLE 2

INTERIOR GRAFTS:5\5

INTERVENTIONS BETWEEN THE NATURAL AND THE SYNTHETIC

The main emphasis of this studio is the notion of inverted landscapes; extending the external topographies of place inward. Students started with studying the attributes of various natural formations. These studies beacme the bases for developing interior strategies for the design of an Aviary and an ecological research facility.

Open Track | Scholarship of Teaching & Learning | Presentation

Role of Design Educators in Enhancing Student Success and Mental Health: First Four Week (FFW) Campus-Wide Initiative

Stephanie Clemons, Colorado State University
Ryan Barone, Colorado State University
Kelly Long, Colorado State University
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ABSTRACT

Problem + Relevance. Twenty-first century living is difficult. Traditional-aged, college freshmen have higher reported levels of anxiety than previous generations (Beiter, et al, 2014). Intensified expectations by parents and peer comparisons increase pressure for academic excellence. Large format lecture classes are particularly problematic as community building and active learning are difficult to implement.

CIDA standards (2018) require 30 credits of liberal arts. Freshmen design students find themselves in large enrollment, lecture classes where final grades reflect three exams rather than studio based projects. Academic confidence may falter and grades plummet. What role can design educators play in enhancing student success and subsequent mental health?

Significance. Data indicates the *first four weeks* (FFW) of a freshmen lecture class are critical to student success. Figure 1 indicates a strong correlation between offering "early performance feedback (EPF)" and the student's final grade. EPF may be in the form of a low-stakes quiz or paper given prior the semester's fifth week. Feedback provides 1) incentive to engage and 2) glimpse of how professor assesses learning. First gen, racially minoritized or Pell-eligible students are particularly at risk in large lecture classes where contact between students and

faculty is minimal or respect for diverse ways of learning may be unrecognized. If not addressed, this issue may affect enrollment and diversity in design programs.

Context

Due to *No Child Left Behind Act of 2001*, fall 2018 marked the first freshmen class who only knew standardized testing from K-12 to high school. Statistics from 66 districts indicate that in tenth grade alone, students took an average of 10.5 standardized exams (Layton, 2015). As a result, design students enter classes seeking "the right answer," requesting detailed study guides, and sometimes lack resiliency to bounce back after a poor grade.

What is the urgency of the first four weeks? Teaching practices that enhance student learning are the paramount contributors to student success (Habley, et al, 2012). Students in their first-year campus experiences are receptive to new norms. Set early, the norms "stick." The first fifteen minutes of the freshman's first semester can be filled with inclusive messages and intentional norm-setting or a "syllabus" day that does not send signals of student engagement. There are many student success strategies that can be employed. See Table 1. This presentation will share teaching pedagogies that guided an interdisciplinary, campus-wide pilot to modify large enrollment, freshmen courses. A design educator, using typical studio-based strategies, led the program development and pilot study. Findings and success stories will be shared along with examples of correlation with studio-based pedagogies.

Instructional Methods

A design educator worked the interdisciplinary team that included administrators, associate deans, and key faculty. Twenty-eight faculty members, representing 13 courses and three colleges participated. Impact = 6,000 freshmen students. A two-day workshop. Facilitators modelled strategies faculty might consider. Concrete course take-aways included goals and strategies concerning the first 15 minutes, first day and first four weeks of a semester. See Figure 2. FFW low-stakes assessments were identified.

Teaching/Learning Outcomes/Advances

Qualitative data included video stories, reports, and reflective statements. Findings indicate that intentional minor modifications to courses, including inclusive teaching pedagogies, had positive

impact performance in class. Antidotal comments indicated anxiety decreased and mental health improved.

Pedagogies used in design studios are directly applicable to student success. Design educators can lead campus change that may positively affect student success and mental health.

REFERENCES

Beiter, R., Nash, M., McCrady, M., Rhoades, D., Linscomb, M. Clarahan, M. % Sammut, S. (2014). The prevalence and correlates of depression, anxiety, and stress in a sample of college students. Journal of Affective Disorders, 173(1), 90-96.

Habley, W. R., Bloom, J. L., & Robbins, S. (2012). Increasing Persistence: Research-based Strategies for College Student Success. San Francisco, CA: John Wiley & Sons.

Layton, L. (2015, October). Study says standardized testing is overwhelming nation's public schools. Washington Post. Retrieved https://www.washingtonpost.com/local/education/study-says-standardized-testing-is-overwhelming-nations-public-schools/2015/10/24/8a22092c-79ae-11e5-a958-d889faf561dc_story.html?utm_term=.bd8992b04b97.

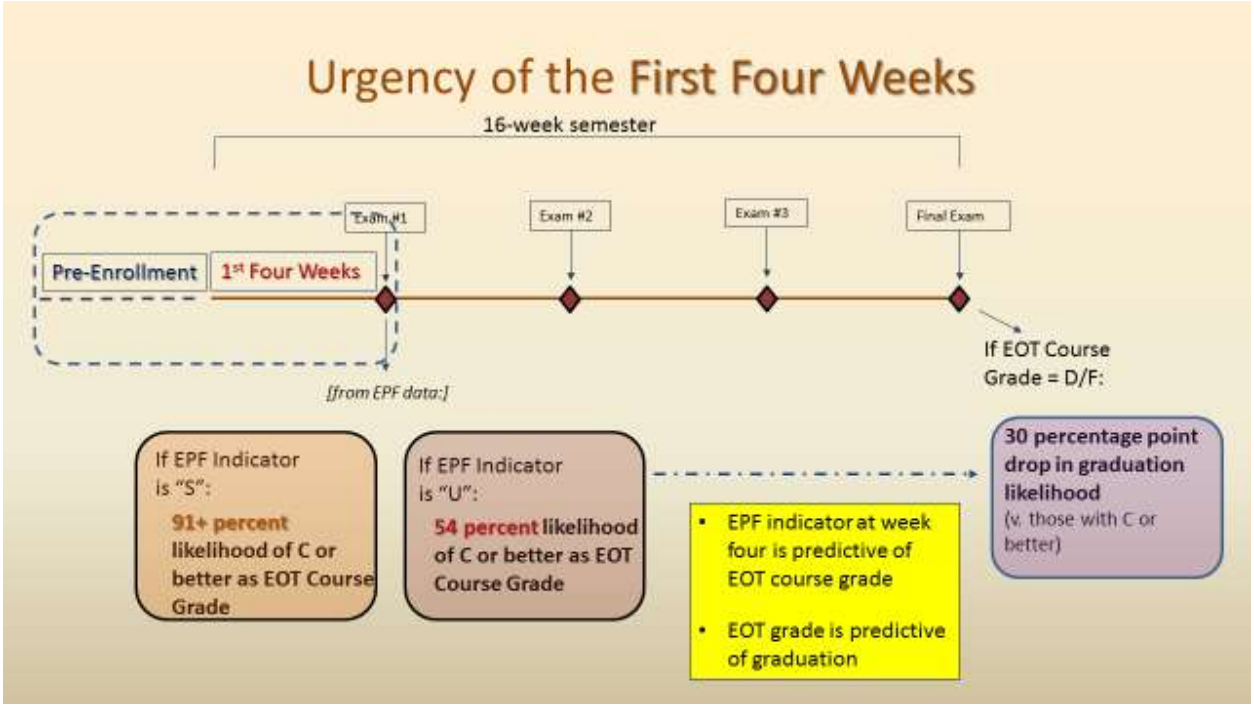
No Child Left Behind. State of Washington, Office of Superintendent of Public Instruction. Retrieved http://www.k12.wa.us/esea/NCLB.aspx.

Table 1. Sample Student Success Pedagogies Used in First Four Weeks (FFW) Pilot

	Pedagogies and Strategies Used in FFW Pilot
First Fifteen Minutes	Meet students where they are
	Communicate you care
	Offer vision of what they will be learning
	Set the stage for the class
	Give students permission to engage; model
	Send messages of welcome
	Humanize the instructor
	Establish expectations
First Day	Create/develop community; use name tents
	Prioritize teaching the student; not content
	Get rid of "syllabus day"
	Send messages of inclusivity
	Share content tidbit; video clip?
	Begin to learn students' names
	Make connections
	Share your enthusiasm for course
	Invite them to introduce themselves
	Model what "notes" might look like at end of class
	Develop engaging presentation on fundamental materials; puts everyone on same playing field
	Tell a short story about yourself that applies to content
First Four Weeks	Give low-stakes assessment
	Offer tips on assessment success (e.g. massing vs. spacing)
Next 12 Weeks	Develop rhythm
	Encourage reflection
	Introduce intrigue or novelty
	Remember "chunk" content each class period
	Use Kahoot or iClickers or Crap/Fact paddles; summary quiz
	Check "muddiest point"
	Administer a mid-semester evaluation; adjust class
	Problem-based learning
	Demonstrate and practice metacognition
	Introduce model-building; experiential learning
	Group quiz
	Engage and refresh; summarize
	Tempt them to visit during office hours
	Implement science of learning tidbits
	Send class a series of announcements on success tips for your class
	Continue to learn students' names

Note: individual faculty will share stories via video clips at IDEC presentation

Figure 1. First Four Weeks Impact on End of Course Grade and Likelihood to Graduate



EOT = end of term
EPF = early performance feedback
U = unsatisfactory grade
S = passing grade

Figure 2. First Four Weeks (FFW) Student Success Strategies for Faculty

Current Practice	Goal	**Build and Encourage Relationships**
		Learn as many of your students' names as possible or have students put up name tents. Find a way to express to your students that you want all of them to succeed. Commit to this as a regular practice. Share something about yourself and your passion for your subject content. Give students a specific reason to attend your office hours, like turning in an assignment. Anticipate challenges students may have (child care, transportation, working a lot of hours, no computer at home…). Refer them accordingly. Get students into small groups. Conduct an ice-breaker with the groups and encourage groups to share contact information. Give time for group engagement at least once a week (note comparison, concept understanding check-in, assignment check-in, questions, etc.). Give groups a specific prompt to address during these brief meetings.
Current Practice	**Goal**	**Set Expectations**
		Explain the context or "big picture" of your course. Briefly describe the topics that will be covered. Explain how this course is relevant in students' academic, professional and personal lives. Let students know what they need to do to be successful in YOUR course. Talk about it in class or post on Canvas. (OR Have students write a note to next semester's students on how to be successful in your course. Share these notes with your new students.) Demonstrate how previously successful students have taken notes in your class. Early on assign an exercise that results in students finding out the quality of their notes. Show examples of high quality notes. Find those who take excellent notes and pair them up with those who need to learn. Get students talking/writing on day 1 – to each other, to you, and to themselves in writing. It's easy to think you know something in your head; it is another to explain it aloud or to write about it. Model what you expect from students. (Start and finish class on schedule, be prepared for class, be responsive, be truthful, respectful, fair and available, etc.) Model quality. Get students actively involved in the content of the syllabus. Consider a syllabus quiz, small group discussion, PollEverywhere.com, Kahoot classroom quiz, etc.

Current Practice	Goal	**Promote Active, Engaged Learning**
		Consider your location in class. Proximity is the number one motivator of student engagement. Find a way to teach from everywhere in the room.

		Perform at least one CAT (Classroom Assessment Technique)—like a minute paper, muddiest point – per week. Have students set a goal at the beginning of class for that class period. Give students a choice of 3, for example: *1) I will stay focused, no multi-tasking 2) I will write down/highlight any concept that I will need to revisit after class to better understand, 3) I will write down any questions I have, ask the questions or find answers later.* Vary your goal choices weekly or bi-weekly. Consistently engage students in at least one active learning strategy (like think-pair-share, concept mapping, clickers, jigsaws, magic moment or service learning). Conduct activities during the first 10 minutes of class. Brain research tells us that brains are most primed to work and learn during those first 10 minutes. Save announcements for later. Connect learning activities to reading students were supposed to have completed before class.
Current Practice	**Goal**	**Integrate Student Support into Learning Experiences**
		Create an exercise that connects students to the campus learning labs/tutoring centers. Create exercises that connect students to student resources like Counseling and/or Career and Employment Services. Give specific reasons to attend office hours, "If you're unclear about _____, this would be a perfect week to come to office hours." Project office hours on screen. Make suggestions about HOW to study for specific concepts in your course. Use the first four weeks to give several tips on studying smarter not longer.
Current Practice	**Goal**	**Ensure that Students Know Where They Stand**
		Clearly communicate your course grading policy. Create rubrics that clearly define grading criteria for each assignment and provide these to your students when giving the assignment. In the first two weeks, have students complete a short in-class writing assignment or class quiz worth very few points. Grade and return this assignment the next class. Consider including helpful suggestions as to how to improve performance or make a list of positives and common errors and distribute list to students. Give students a short but rigorous test that is worth less than future tests will be worth, so students get a feel for the structure and difficulty level of tests for you course.

Todd, J. (2018).

Open Track | Scholarship of Teaching & Learning | Presentation

Socially-Mediated Design Communication: Social Media As A Tool For Critical Thinking & Engagement in Design Education

Leah Scolere, Colorado State University

ABSTRACT

Context

The vast *social media ecology* (Zhao et al., 2015) has provided aspiring interior designers with a wide range of communication platforms for sharing creative work, interacting with clients, and curating inspiration (Scolere, 2019). While today's students move deftly between digital platforms in their everyday communication, less common are opportunities for students to critically explore the implications of social media use in design education. As interior design professionals continue to adapt social media platforms for their professional careers, these case studies highlight opportunities to integrate ubiquitous digital applications in interior design education to engage with tensions of *social media affordances* (Nagy & Neff, 2016) between visibility/ vulnerability and professionalism/participation.

Method

This presentation draws on two interior design course case studies that integrate social media platforms as a strategy for learning and critical reflection at different levels of design education. The first case focuses on a junior-level studio service learning project where the student team used Pinterest to collaborate with client-stakeholders during project visioning. The second case study highlights a large introductory interior design course where students used Instagram for noticing interior environments.

Outcomes

Case Study 01: Pinterest + Collaborating with Client-Stakeholders

Pinterest has become a key tool for professional interior designers when collaborating with client-stakeholders in the early stages of a project (Scolere, 2018). While interior design students use Pinterest for their own projects, less common are opportunities for students to experiment with using Pinterest to collaborate with client-stakeholders. For a junior-level service-learning project, the students proposed and developed the structure for using Pinterest group boards to collaborate with client stakeholders. The learning outcomes included having the student team navigate ambiguity in the communication process with clients, working in real-time based on client feedback, managing the 'always on' nature of socially mediated communication, and reflecting on their choices for structuring client collaboration. Students then complemented this digital collaboration with a face-to-face image elicitation activity as part of the visioning session, allowing for reflection on engaging in physical and digital collaboration with clients.

Case Study 02:

Instagram and Noticing Interior Environments

This case highlights a re-imagined assignment (Lang, 1997) ' Noticing Interior Environments' for a 120+ freshmen interior design student introductory course where students were challenged to find the letters of the alphabet in everyday interior environments and document (photograph) their findings using the social media platform Instagram. As a way of making visible the diverse perspectives of each student in the class and their ways of seeing, students used a common course hashtag to allow the entire class to see all the different ways of seeing a particular letter in the built environment. Students reflected critically on using social media as a platform for sharing creative work and the tensions that arise between visibility and vulnerability. Moreover, the course used the assignment as an opportunity to discuss design inspiration and how to think critically about digital sources of inspiration as a part of the creative process.

Advancement of Design Education Knowledge

Both of these cases and their respective assignments provide strategies for critical thinking and reflection on the tensions that arise with social media platforms as communication tools for

professional interior designers in the digital age.
Moreover, these assignments suggest methods for developing social media literacies in design education along with engaging in social media best practices for future design careers.

REFERENCES

Lang, S. (1997). Learn to See . . . Change your perception. Cornell Chronicle. Retrieved from:https://news.cornell.edu/stories/1997/05/student-designed-abc-poster-benefit-smithsonian-provokes-viewer-see-world-creatively

Scolere, L. (2018). Pinterest as a collaborative tool: Negotiating participation in the design process. In Amy Crumpton (Ed.), Interior Design Educators Council National Conference. Boston, MA.

Nagy, P., & Neff, G. (2015). Imagined affordance: Reconstructing a keyword for communication theory. Social Media+ Society, 1(2), 2056305115603385.

Zhao, X., Lampe, C., & Ellison, N. B. (2016, May). The Social Media Ecology: User Perceptions, Strategies and Challenges. In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (pp. 89-100). ACM.

Appendix

Socially Mediated Design Communication:
Exploring Social Media As A Tool For Critical Thinking and Creativity in Design Education

PINTEREST ACTIVITY

GOAL: To use Pinterest as a tool to create a conversation between the client and designers. Pinterest uses pictures to create a visual vocabulary that creates common ground between the clients desires and the designers vision.

INSTRUCTIONS: Pin images to the "*That's so AHEAD!*" board that you feel represent how you want the space to feel and function. We have curated images in three categories that we feel may demonstrate a key aspect of the design that you may agree with, but you are also welcome to add your own images you've found. Pick 3-4 images from each category that best represent your wish for a better space. Have fun!

Function

FUNCTION

This board is dedicated to how your employees work within the space. Think about storage, lighting, and space.

Interaction

INTERACTION

This board is dedicated to how your employees work with each other. Think about how they meet, converse and share.

Branding

BRANDING

This board is dedicated to how the space represents your company. Consider finishes, architecture styles, and even logotype.

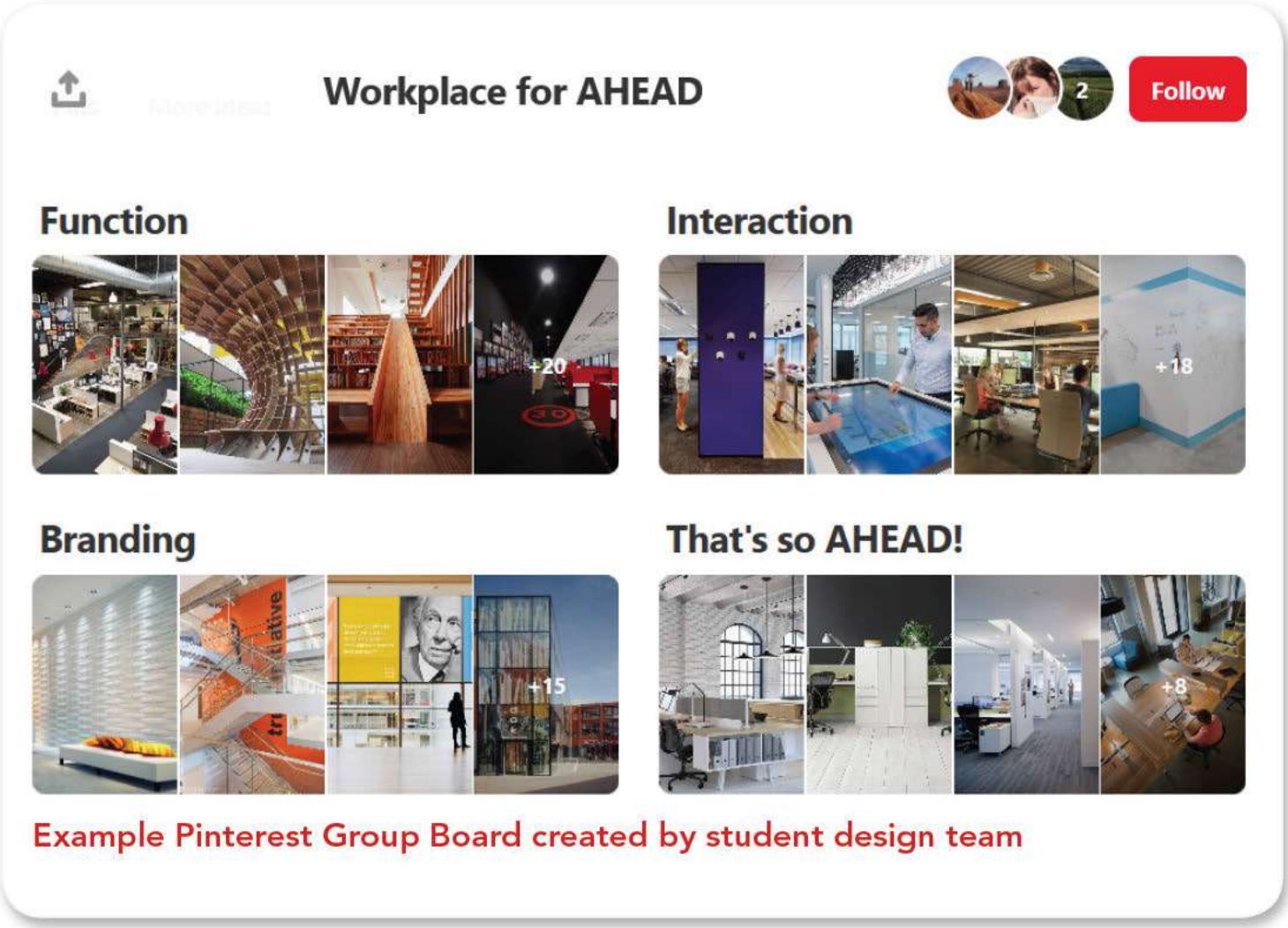
THAT'S SO AHEAD

This board is the final board that you pin to. Pin ~3-4 images from each category and comment on what you see in the image and why you think it's important.

LINK TO THE ACTIVITY:

Example Activity Sheet: Created by student design team to communicate the process to the client stakeholder team

Case Study 01: Pinterest + Collaborating with Client Stakeholders



Example Pinterest Group Board created by student design team

Key Issues: Navigating Professionalism, Promotion, & Participation

- Exploring the role of social media in the official record of client-designer communication.
- Degree of interactivity and collaboration with client stakeholders.
- Navigating the communication received through comments and pins through the Pinterest platform.
- Professional responsiveness and the 'always on' nature of social media communication.

Case Study 02: Instagram and Noticing Interior Environments

Assignment: *Noticing Interior Environments*

NOTE: This assignment re-imagines an assignment originally implemented by Professor Sheila Danko at Cornell University in the 1990s called 'ABC: Learning to See' for the contemporary digital era and emerging implications for design education and digital media.

Objective (s):
Over next week you will observe your everyday environments to 'look' for letters of the alphabet. You will document each letter of the alphabet (A-Z) using a camera to take a photo. The goal is to 'learn to notice' the built environments you encounter using a different lens. This will be an important part of learning to see like a designer and developing your skills for noticing aspects of interior and architectural built environments. Each student should develop a theme for your series of letters.

Medium/Platform: Instagram
Instagram is the proposed platform that you will use to display your alphabet series. Part of your critical reflection will be about the medium of Instagram as a tool for sharing creative work.

- Create a new Instagram account for this class. I recommend that you create an account that you don't use your real name (think Finsta).
- Post each of your letters to Instagram with the appropriate hashtag so we can see the aggregated photos for our class assignment.

Use of Instagram: I am suggesting Instagram for this assignment for several reasons associated with pedagogy- accessibility, critical reflection about social media as a tool for creative work, and awareness about diversity of perspectives (being able to see how your peers solve the assignment). After the assignment is completed, you can feel free to delete your account. The way in which Instagram is used outside of this assignment is up to the individual student and is not a part of this learning experience. We will review practices related to Instagram.

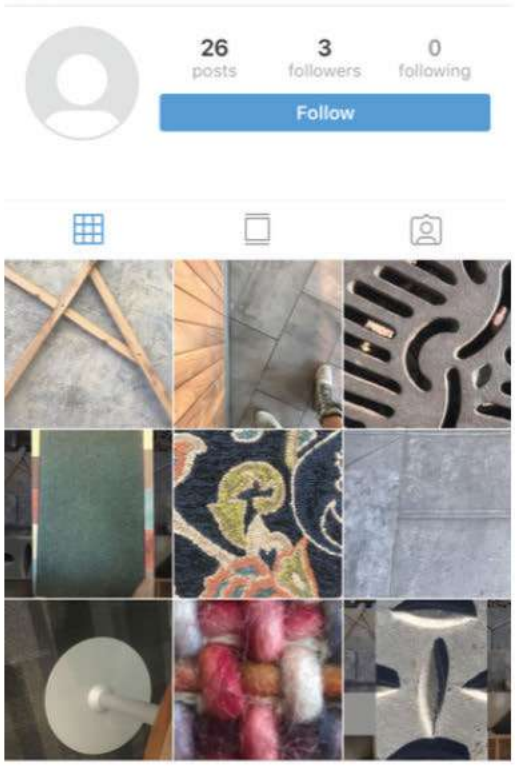
- You may opt out of using Instagram, for this assignment. Please come talk with me and we can discuss other options for how to integrate digital media to complete the assignment. There are a number of ways to complete the assignment objectives without using the Instagram platform.

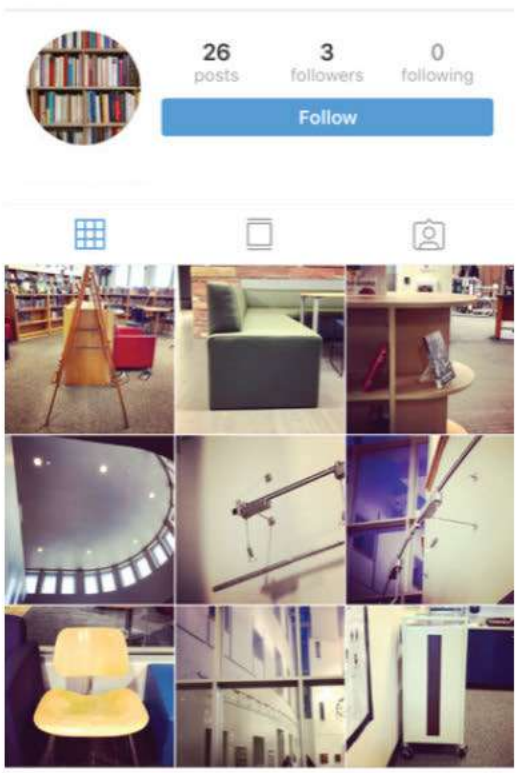
Written Reflection: You will then be asked to complete a written analysis and reflection of the experience of learning to see the built environment through the lens of the alphabet and digital media.

Assignment Overview

Case Study 02: Instagram and Noticing Interior Environments

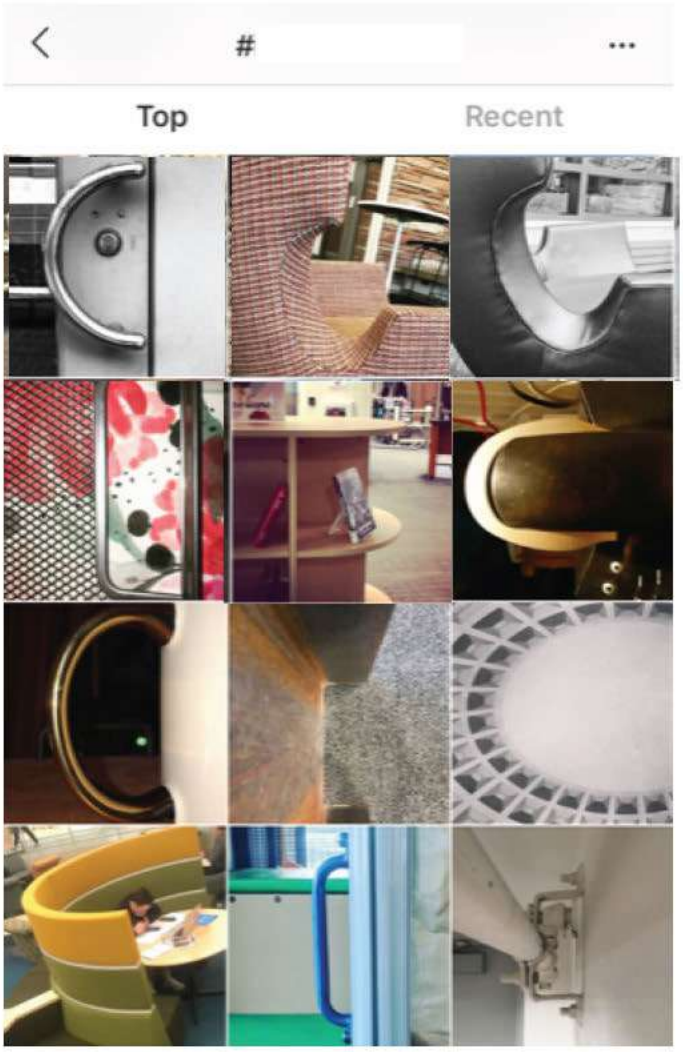
Assignment: *Noticing Interior Environments*





Example Student Series

Case Study 02: Instagram and Noticing Interior Environments



Example Aggregated Letter 'C' with common hashtag

Key Issues: Navigating Visibility and Vulnerability

- Exploring visibility of individual contributions
- Navigating digital 'inspiration' and how to engage with precedent in the creative process
- Considering degree of visibility through multiple accounts as related to professional designers who curate social media accounts based on audience, affordance, and aesthetic considerations.
- Reflecting on tensions around vulnerability for sharing creative work through social media platforms.

Assessing Interior Design Students' Domain-Specific Spatial Ability: Development of the AISAT V.2

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ABSTRACT

A domain-specific spatial ability test tool, *the 2nd version of the Architecture and Interior Design domain-specific Spatial Ability Test (AISAT V.2),* was developed to evaluate students' spatial abilities that are essential in interior design and architecture. This research reports the validity and the reliability of this tool and findings from several consecutive studies on this issue since 2012 when we first introduced this tool. In order to develop the measuring tool, we have made substantial progress to identify the nature of domain-specific spatial abilities in the interior design profession and their potential role in design performance. Spatial ability refers to "skill in representing, transforming, generating, and recalling symbolic, nonlinguistic information" (Linn & Petersen, 1985, p. 1482). Developing a tool to assess students' domain-specific spatial abilities that play a significant role in design performance is important for the development of meaningful pedagogy and the holistic understanding of students' capacities.

The three following points were the main motivations for the development of the AISAT. The first is the lack of a domain-specific spatial ability tool that measures a particular spatial ability within a large scale environment, including interior design and architecture: Most of the existing spatial ability tools, such as Mental Rotation (Peters et al., 1995) and Paper Folding (Ekstrom, French, Harman, & Dermen, 1976), assess one's innate spatial ability. These tests consist of simple geometric figures that are limited in measuring spatial ability regarding a large scale environment. The second is the inconsistent relationship between spatial ability and creativity reported in literature, which highlights the necessity to investigate this relationship not by simply

looking at the direct relation between the two, but by looking at domain-specific aspects of spatial ability that can connect both general spatial ability and creativity. The third is the mismatch between the frequent reports of males' outperformance in general spatial ability (Linn & Petersen, 1985; Maeda & Yoon, 2013) and no gender difference reported in interior design (Cho, 2017) and architecture design (Ho, 2006), which implies that existing general spatial ability may not properly capture spatial ability that is meaningful in interior design and architecture.

AISAT V.2 consists of two subconstructs of spatial ability corresponding to those in general spatial ability: mental rotation and spatial visualization. Spatial visualization consists of three subareas: SV I.A (2D to 3D visualization with abstract information), SV I (2D to 3D visualization), and SV II (3D to 2D visualization). As a validity check, the questions in AISAT V.2 were reviewed by ten experts in design education. To examine the reliability of the tool, over 200 students' scores were calculated using Cronbach's alpha in SPSS. This creates an ongoing question: Once students' domain-specific spatial ability is identified, how can one use such information in interior design education? Is it for improving technical drafting skills or design performance in the studio? Our recent research on the comparison between design performance and performance in AISAT V.2 showed the importance of the abstract version of SV I for both inventive generations of 3D volumes as well as the richness of 3D quality of interior design. Our research also reveals that students with a low level of spatial ability can achieve creative design outcomes by properly using spatial strategies.

In the presentation at IDEC, we will share the development process of the AISAT V.2, its validity and reliability, and related research findings we obtained using this tool. This research presentation will provide insights to educators regarding the role of spatial ability in design performance, which may help develop useful pedagogy for design studio teaching.

REFERENCES

Cho, J. Y. (2017). An investigation of design studio performance in relation to creativity, spatial ability, and visual cognitive style. Thinking Skills and Creativity, 23, 67-78.

Ho, C. H. (2006). Spatial cognition in design (Unpublished doctoral dissertation). Georgia Institute of Technology, Atlanta, GA.

Linn, M. C., & Petersen, A. C. (1985). Emergence and characterization of sex differences in spatial ability: A meta-analysis. Child Development, 56(6), 1479–1498.

Maeda, Y., & Yoon, S. Y. (2013). A meta-analysis on gender differences in mental rotation ability measured by the Purdue spatial visualization tests: Visualization of rotations (PSVT: R). Educational Psychology Review, 25(1), 69–94. 1.

Peters, M., Laeng, B., Latham, K., Jackson, M., Zaiyouna, R., & Richardson, C. (1995). A redrawn Vandenberg and Kuse mental rotations test: Different versions and factors that affect performance. Brain and Cognition, 28, 39–58.

Pedagogy | Scholarship of Design Research | Presentation

Awards and Competitions in the Design School: Significance to the Curriculum and Student Motivation

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ABSTRACT

Competitions in design education can be traced to academies in 16th century Italy and 18th century France. These had bearing on later education through the Ecole des Beaux-Arts, which carried on their traditions and was founded on pedagogy of design competitions (Anderson, 2012). The 20th century also emphasized competition in education, yet it was often contrasted with cooperation.Competitions are still a vibrant inclusion in academics and design offices in the 21st century (Architectural Record/Van Alen Institute, 2015). The research question in this study is, what is the impact of design competitions on the student, as well as the greater good for design education? More specifically, what is the importance of design competitions from the student recipient perspective as it relates to student motivation, personal and professional accomplishment, and design school experience?

Here, two different types of awards were investigated—a cumulative program award and a short-term semester award. The first was granted to one graduating senior in a design college each year (1972-2018), who was selected from a faculty committee. Selection criteria included GPA, school involvement, design excellence through the years, and an overall attitude of striving for quality design. The other award, given each semester to one individual or team in design studios in a school of design (2010-2018), reflected excellence in the design process and product during

a given semester. This award was reviewed by a panel of external practitioners and design faculty.

A mixed-methods approach was employed, where concurrent procedures were used to converge the qualitative, open-ended survey responses about the award meaning with closed-ended survey data addressing respondents' ratings of personal and professional significance, student motivation, and the award impact on the curriculum and educational experience. Two groups of award winners were invited to participate. *Group A*was recipients of an award for outstanding graduating seniors in a college of design at a large Midwestern university. Disciplines included interior design, graphic design, fine arts, and visual studies. Starting in 1972, one award has been given to one outstanding student every year through 2018. Of the 49 award recipients, 30 were contacted to participate and 14 completed the survey. *Group B*was winners of an award given to one individual or team in each design studio at the end of a semester at a design school in a large southwestern university. Disciplines included interior design, architecture, landscape architecture, visual communication design, and industrial design. 178 winners between 2010 to 2018 were invited to participate and 61 completed the survey.

Open-ended survey answers indicated differences between the two groups of award winners. *Group A*noted resounding respect and personal impact of winning such award. *Group B*, as a whole, was more critical. This group mentioned vague criteria for decision-making, perceived bias in the selection process, and too many awards given which lessened the overall impact. In both groups, the awards themselves, were not driving motivators in their school work. Most stated they were already highly motivated and the awards gave them extra validation of their efforts. Linear regression analysis indicated that the level of personal accomplishment from the award predicted their overall design school experience rating for both groups.

Short-term (semester) and cumulative awards (best of the graduating class) have distinct purposes and significance to student engagement and curriculum goals. Future research will look

at a larger sample of competitions to analyze design competition and award impact. Also, gaining a more comprehensive profile of high-achieving designers (design award winners) may be used for design educators as a way of implementing other skills (Beeftink et al, 2012) into the design curriculum of the 21st century.

REFERENCES

Anderson, M. (2012). Competitions and Prizes: A Beaux-Arts Legacy In J. Ockman (ed). Architecture school : Three centuries of educating architects in North America (pp.260-265). Cambridge, Mass.: Washington, D.C.: MIT Press; Association of Collegiate Scho

Architectural Record/Van Alen Institute (2015). Design Competition Survey. Retrieved from https://www.vanalen.org/projects/architectural-record-van-alen-institute-competition-survey/

Beeftink, F., Van Eerde, W.V., Rutte, C.G., Bertrand, J.W.M. (2012). Being successful in a creative profession: The Role of innovative cognitive style, self-reflection, and self-efficacy. Journal of Business Psychology, 27, 71-81.

Pedagogy | Scholarship of Design Research | Presentation

Changing the Game: Our Experience with Game-Based Studio Activity

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ABSTRACT

Gamification is gaining ground in its application in education. In recent years using educational games as learning tools has emerged as a preferred approach in many fields. Game-based learning has become a favorable approach because it not only strengthens knowledge but also reinforces important skills such as communication, collaboration and problem-solving (Dicheva, Dichev, Agre, & Angelova, 2015). Group games in general use a number of ways to encourage people to engage, however creating a highly engaging game with full-blown instruction is time-consuming and difficult (Kapp, 2012).

The researchers designed a game-based tool for the studio setting, the game was designed for peer critique throughout the design process. The game was used in their studios for two years and proved its effectiveness, from the researchers' observation during game-style critiques students seem to take the responsibility of giving peer feedback seriously, but also seemed to provide that feedback in a positive, helpful light.

To investigate how gamification can improve studio class dynamic and learning outcome, this study draws on three sources:1) an online survey via Qualtrics. 2) An in-depth interview with students two years later. In the interviews, interior design students were asked semi-structured questions on their gamification experience during studio. 3) the researchers' observation during studio and also observing the cohort and their development over the years.

Students were asked to compare the spin-the-wheel critique experience with their previous formal critique experience using an online questionnaire. Overall findings from the questionnaire found 84% of the participants preferred the game-style critique, 94% said that the game-style critique was less pressured than a formal critique.

Findings from the interviews with senior interior design students who used the game since their sophomore year revealed that by using game-based critique experience they became less sensitive, defensive, and had less anxiety that has been traditionally associated with critiques. Students repeatedly said that they no longer have a negative emotional experience associated with critique. Additionally, students expressed that now they have a positive peer dynamic and became more open to critique and feedback even when not playing the game or asked to give critique. One student said, “I think for me firstly I learned like sugar-coating things doesn't help people but also being negative doesn't help either so I think the game kind of made me realized good ways to approach that”.

Another benefit from this spin-the-wheel critique is that the students became really invested in each other’s projects and more likely to ask for critique and feedback, another student said “I think we now consider giving more constructive feedback and just-- and we value it, I think now. We look for constructive feedback rather than just getting compliment that our designs are good. We want people to tell us narrower specific things.”

Moreover, both the survey and the interview findings highlighted that critique can be stressful and using gamification helped with lowering their stress. Overall, this study finds that including more game-based activity in design education can help students to be more engaged and reinforce important skills such as problem-solving, collaboration, and communication.

This study presents the research on the application of gamification to interior design studio which aims to shed light on the emerging practices in this area. As such, this research will inform instructors who are interested in using gamification in their courses and inspire them with ideas of what to do and how to do it.

REFERENCES

Brown, J. (2014). Peer critique: Two strategies for getting students to give feedback. Faculty Focus. Higher Ed Teaching Strategies from Magna Publications.

Dicheva, D., Dichev, C., Agre, G., & Angelova, G. (2015). Gamification in Education: A Systematic Mapping Study. 14.

Kapp, K. M. (2012). The gamification of learning and instruction: Game-based methods and strategies for training and education. San Francisco, CA: Pfeiffer.

"Good feedback should be constructive, specific, kind, justified and relevant." - David Kofoed Wind

Peer critique activity - Spinning Wheel

Studio Project

Peer feedback is a communication process whereby students enter dialogue related to performance and standards. "Spinning Wheel Critique" is a fun peer critique activity to encourage peers to give each other feedback and take the pressure off a formal critique session.

Your task is to give a quality peer critique to fuel a true and open feedback session. You will have promoted questions to help direct your feedback, you are encouraged to be critical and take responsibility of giving and receiving peer critique/feedback.

The primary goal is to create a dynamic intellectual discussion about the design between the students, and by creating the activity that create a family fun game bored.

How it works:

1) Get in groups of four, one student will present his or her design/idea, and three will be critiquing using the wheel. Presentation 10 minutes' max per student.
2) Each group then gets the Spinning Wheel Critique kit. The kit included one spinning wheel and four action plan sheets for students to document their feedback (see Figure 1).

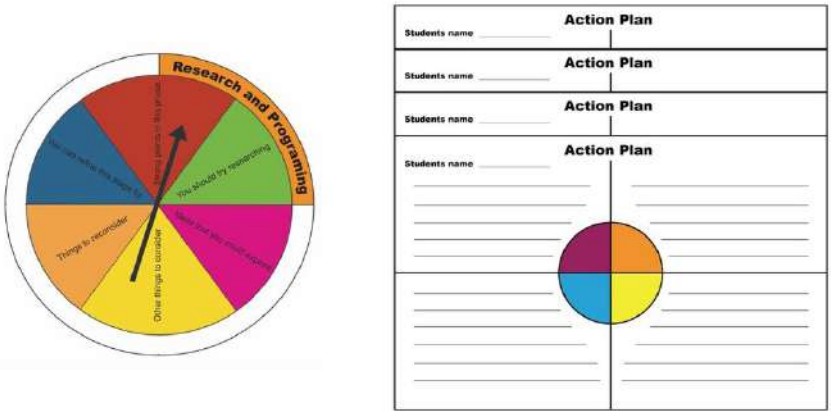


Figure 1: The Kit

3) After the presenter finishes presenting, they start with the first section (Research and programming), and the other sections will be covered up. The other three students in that group spin the pin and comment on the chosen question. After all, three students/critics give their feedback on the question for this section, they move to the next section until the process goes through all four sections (see Figure 2).

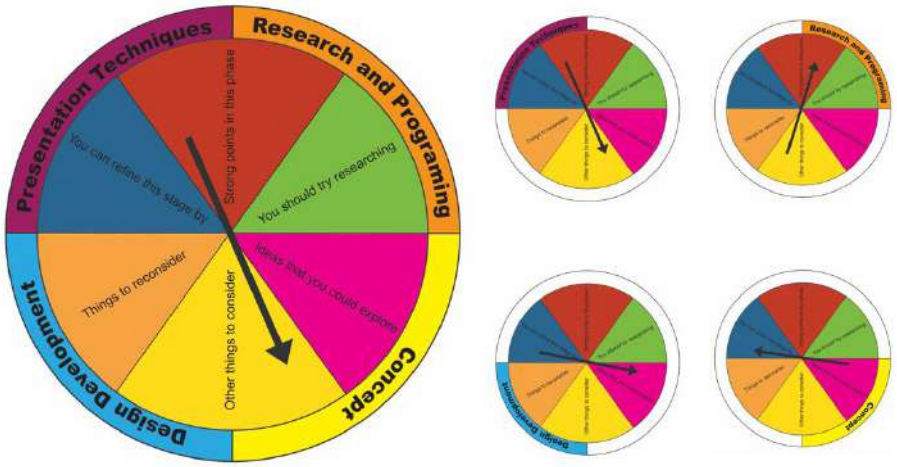


Figure 2: The wheel

4) During the critique session, the presenter will have to document the feedback in the action plan to have a tangible document of feedback for the needed development.

Note: always remember to say something positive before saying something negative.

Objectives:

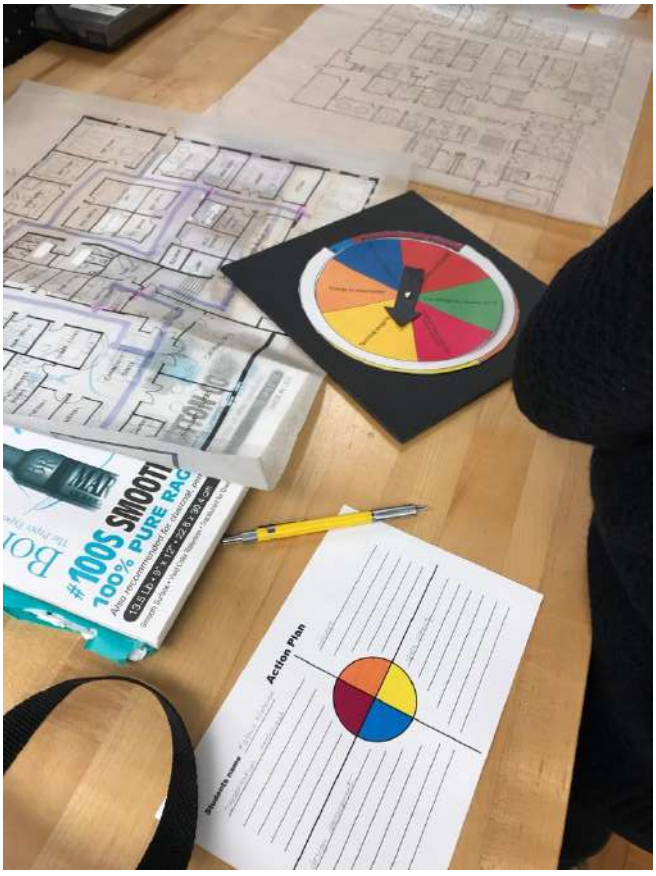
1) Ensuring meaningful critique session that discourages cronyism and obtains an unbiased evaluation.
2) Give and gain directed feedback that focuses on one element at a time.
3) Develop the ability to present an interior design solution for a distinct program and client to like-minded audience.
4) Develop vocabulary for communicating interior design concepts and solutions.
5) Having a tangible feedback that can help develop and improve the presented design solution.

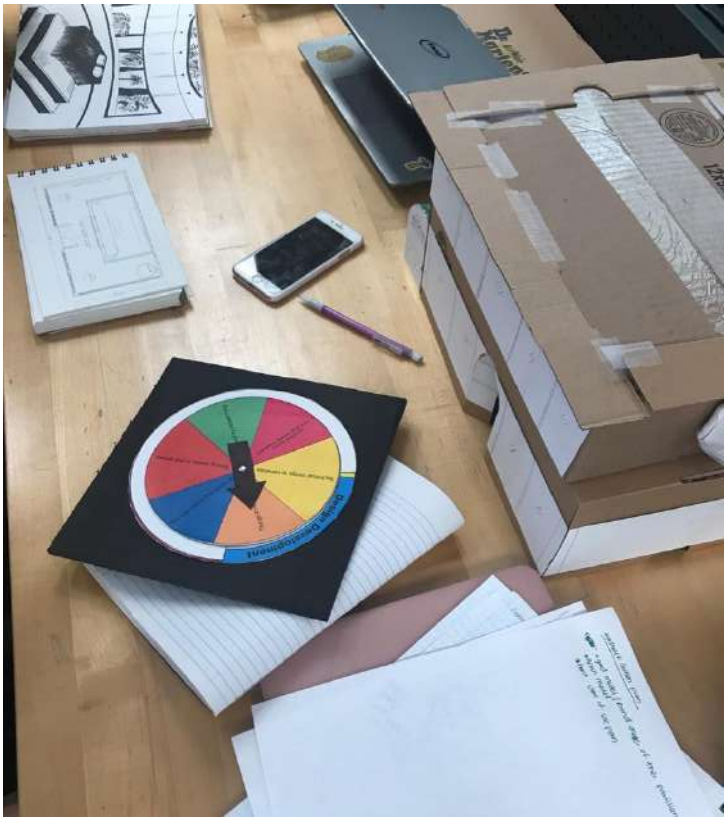
Deliverables:

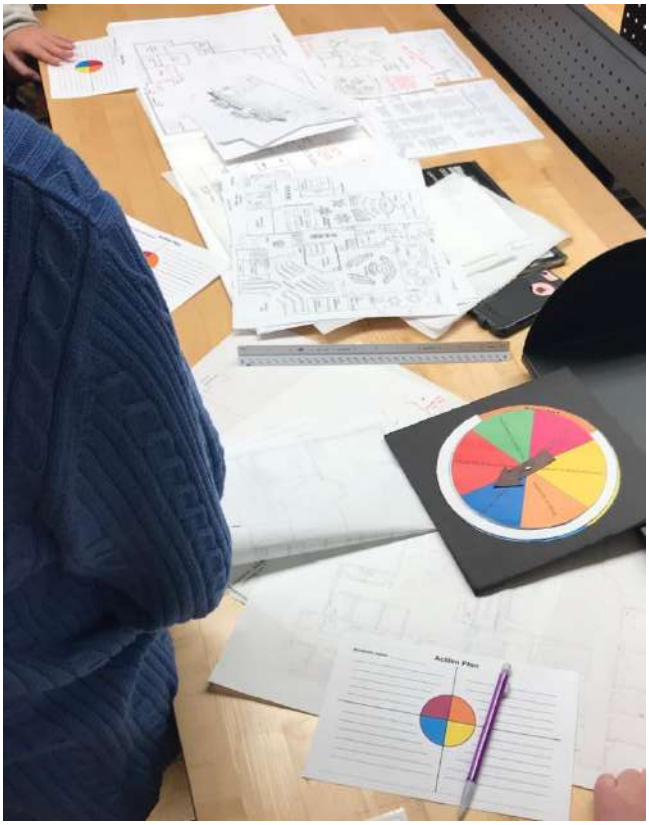
Each student has to scan and submit their action plan by end of class

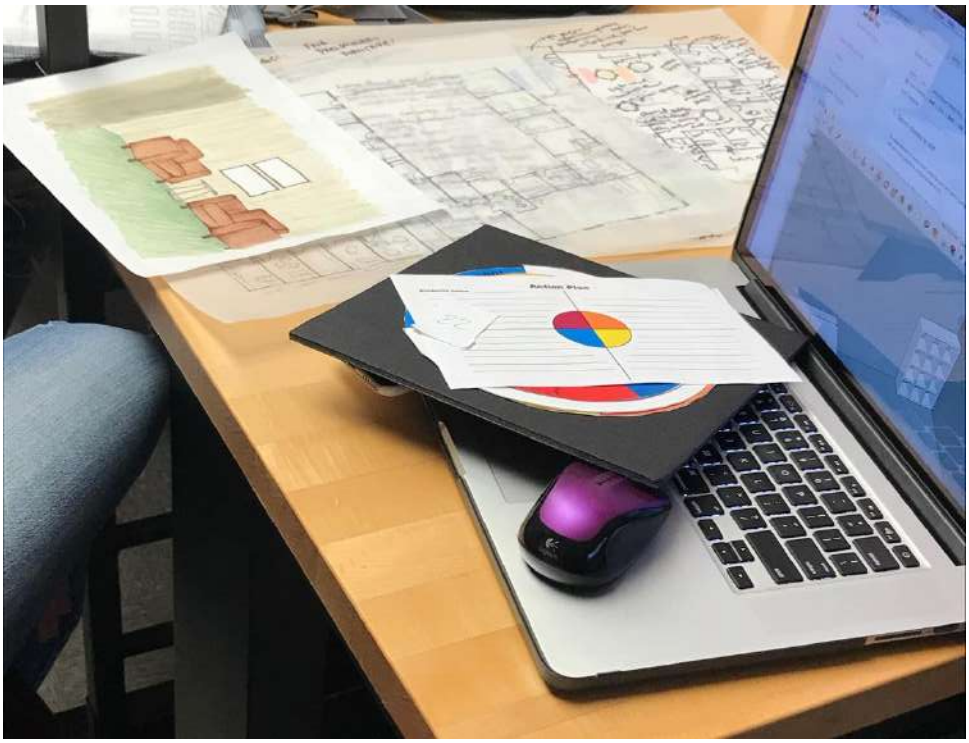
Take a Spin and have a fruitful quality peer critique session

Examples of students work during the session









Pedagogy | Scholarship of Design Research | Presentation

Characteristics of Successful Design Students after Graduation: A Look at the Big Five Personality Traits

Lori Brunner, Arizona State University
David Richardson, Arizona State University

ABSTRACT

The purpose of this study was to research past high-achieving design students (interior design, architecture, landscape architecture, industrial design, and visual communication design) after graduation. The main research questions were, do successful design students continue to be successful after graduation? And if so, in what ways do they excel? Measures of success looked at salary and overall satisfaction, and how these related to the Big Five Personality Traits. To answer these questions a sample of 178 graduates from a large southwestern design school were randomly selected to participate in an online survey. These graduates were identified as winning at least one award, the *Design Excellence Award*, given to one student or a team of students in design studio courses at the end of the fall and spring semesters. Award winners are selected by an external panel of practitioner jurors, as well as design faculty. Of the 178 invited, 61 respondents completed the survey. The sample included both undergraduate and graduate students who graduated between 2010 to 2018.

The Big Five Personality Inventory (BFI) is a measure of personality traits that has been used widely and actively in the last 30 years. The BFI looks at personality in terms of five traits: *openness, conscientiousness, extroversion, agreeableness,* and *neuroticism* (John et al, 2008). BFI researchers have tested broad areas of human endeavor such as creativity, education, career choice, and career success. With this stable model in the psychology of personality,

implications for design fields have been sought to better understand designers. Earlier research, for example by Judge et al (1999), on BFI and predicting career success is insightful, and the methods and findings have suggestions and lead to further questions and routes of inquiry. Two forms of creativity (originality and usefulness) were examined along with design students' personality traits that found that *openness* predicted the originality of creativity, and *openness, conscientiousness* and *agreeableness* predicted the usefulness of creativity (Chang et al, 2015). In addition to creativity, other employable factors leading to successful careers have been identified and studied in terms of personality. BFI and traits linked to soft skills, have been discussed by Gale et al (2017) in terms of predicting success during the first interning and hiring steps of a career in design fields. The literature suggests further research into more aspects of the design profession, with respect to BFI and personality.

In this study, multiple regression analyses were conducted that looked at the relationships between the BFI traits and students' cumulative GPA, salary, and current overall satisfaction. A secondary set of analyses investigated the relationship between the students' rating of their overall experience while at the design school and their current salary and satisfaction. Results indicated that a student's cumulative GPA predicts the BFI openness, but no other BFI traits showed significance to GPA. This result is consistent with other BFI studies in the creative fields. The students' rating of their design school experience predicted BFI openness and agreeableness. In addition, GPA predicted the respondents' current satisfaction. Satisfaction was not specified to either work or personal satisfaction, but rather overall life satisfaction. Data was also gathered on the respondent's highest degree attained by mother and father. Here, the father's highest degree predicted BFI openness.

This study provided continued research into the relationship between BFI traits and successful design students after graduation, as well as traits of successful of designers in general. The findings of openness and the connection to the creative field was demonstrated. Future research will look at a design professionals and their profile of BFI traits, cognitive style and creative self-beliefs (CSBs) (Karwoski & Lebuda (2016).

REFERENCES

Chang, C.-C., Peng, L.-P., Lin, J.-S., & Liang, C. (2015). Predicting the creativity of design majors based on the interaction of diverse personality traits. Innovations in Education & Teaching International, 52(4), 371–382.

Gale, A., Duffey, M., Park-Gates, S., & Peek, P. (2017). Soft Skills versus Hard Skills: Practitioners' Perspectives on Interior Design Interns. Journal of Interior Design, 42(4), 45-63.

John, O.P., Naumann, L.P., & Soto, C.J. (2008). Paradigm shift to the integrative Big Five trait taxonomy: History, measurement, and conceptual issues. In O.P. John, R.W. Robins, & L.A. Pervin (Eds.), Handbook of personality: Theory and research (pp. 114-158). New York, NY: Guilford Press.

Judge, T., Higgins, C., Thoresen, C., Barrick, M. (1999). The big five personality traits, general mental ability, and career success across the life span. Personnel Psychology, 52 (3), 621-652).

Karwowski, M., & Lebuda, I. (2016). The big five, the huge two, and creative self-beliefs: A meta-analysis. Psychology of Aesthetics, Creativity, and the Arts, 10 (2), 214-232.

Pedagogy | Scholarship of Design Research | Presentation

Interior Design Faculty Credentials in North America Today: A Comparative Study Between Two IDEC Regions

Laura Kimball, Radford Univeristy
Amy Roehl, Texas Christian University
Beth Miller, Mississippi State University

ABSTRACT

Two decades and counting, the deficit in qualified interior design academics presents on-going challenges for interior design programs searching to fill open faculty positions (Miller, 2017). In order to fully understand the circumstances leading to the shortage, conditions currently feeding the deficiency and ultimately determine how to overcome the deficit requires a comprehensive multi-dimensional investigation engaging colleagues across North America. In order to address one aspect of the master study, the authors launched a three-phase research study in early 2019 to assess credentials of current full-time faculty at CIDA-accredited programs in North America. For this study, university websites and LinkedIn profiles were searched to collect publicly-available data such as faculty degrees, certifications, affiliations, professional practice experience, area(s) of scholarship, and length of employment at current institutions. Study limitations include an inconsistency of listed faculty and faculty credentials on institutional and faculty web pages.

The first phase analyzed faculty credentials in IDEC's South Region. Questions surfaced including: "How does institution location impact recruitment and hiring of faculty?" and "Are there marked variances between faculty credentials found at institutions located in traditional "college towns" and those situated in large cities, dense urban environments that inherently attract top talent?" Considering these key questions, the second phase features a comparative study between faculty credentials the South and East regions. The East region was selected for 2

key reasons: 1) inclusion of Canadian institutions from the Northeast and 2) the region's numerous dense urban design centers such as Toronto, Boston, New York City, Philadelphia, and Washington D.C.. The East provides opportunities to investigate potential variances between the US and Canada and assess potential impact of dense urban centers on faculty recruitment and hiring.

A snapshot of data reveals the following: There are 37 CIDA- accredited bachelor's degree programs in the South region compared with 32 in the East Region. The South has 173 full-time interior design faculty compared with 107 full-time faculty in the East. 33 are in leadership roles such as coordinator, chair, and director positions in the South compared with 29 in the East. South hosts 2 programs in urban centers with populations more than 500,000 compared with 16 in the East. Features of programs in the urban design centers included a higher ratio of adjunct to full-time faculty where some programs rely almost exclusively on adjunct faculty. The East region also reflects a higher percentage of faculty holding exclusively architectural degrees.

Phase 3 of the study will complete analysis of full-time faculty positions at all North American CIDA-accredited programs with the intention of disseminating those findings by end of 2020. Through better understanding institutional and industry values placed on credentials, interior design education can improve academic preparation, a common language, and standards for expectations in order to support students for a career that can lead to a return to the academy. The end goal of this study is to serve the Interior Design education community in order to support the long-term viability and sustainability of full-time interior design faculty positions.

REFERENCES

Miller, B. R. (2017). Perceptions of interior design program chairs regarding credentials for faculty (Order No. 10263325). Available from ProQuest Dissertations & Theses Global. (1889556864). Retr

Interior Design Educators Council. (2007). Quantitative date supporting need for new strategies. Retrieved from http://www.idec.org

Wiedegreen, E., & Kucko, J. (2008). Entering design education. Retrieved from www.idec.org/files/NeoconEntry08.pdf

Pedagogy | Scholarship of Design Research | Presentation

Teaching Soft Skills in CIDA Accredited Programs

Amanda Gale, University of North Carolina Greensboro
Diane Bender, Arizona State Univeristy

ABSTRACT

Introduction

Scholars and educators have long debated the value of developing technical skills versus general knowledge. After all, technical skills will constantly change as a profession evolves and grows. When hiring a new designer, most designers considered technical design skills as most important (Center for Career Services, 2008). However, it should be noted that all other skills are just as important in hiring and career success. Where should educators invest their time – helping students develop technical design skills or improving their meta-, or soft, skills? How can schools provide opportunities for students to develop these generic skills?

This study looked at where soft, or generic, skills are integrated into the curriculums of CIDA-accredited interior design programs. Technical, or discipline-specific, skills are those acquired through education and training, or learned on the job. Soft-skills is a term applied to any skill that is non-disciplinary and specific, such as having a positive attitude, being creative, having confidence, and being responsible. Recent evidence is building to show employers' raised awareness of soft skills. Employers believe higher education can best prepare graduates for career success by helping them develop a broad range of skills (Hart, 2010). In two national surveys, over 1000 hiring managers and business executives agreed that soft skills such as ethical judgment, working effectively in teams, and written communication are highly valued (Hart, 2018). The acquisition of these soft skills can also give graduates an advantage for hiring, as

Huber (2018) found 106 interior design hiring practitioners likely to place soft skills higher in decision making for job candidates than the technical, hard skills.

Methodology/Process

The data collection stage of this research involved 140 CIDA accredited school. An introductory email was sent to faculty listed on the program's website explaining the research study and a link to an online survey. Sixty-one educators participated in the study. Of the 14 soft skills listed, the majority of participants (39%) felt all of these skills should be taught as part of an undergraduate interior design/architecture curriculum. Where these skills should be taught in the curriculum varied from first year lectures all the way to final year studios. When asked what strategies are used to teach the soft skills within courses, feedback concentrated on five of themes. These included modelling the skills, providing informal and formal feedback, engaging in discussions, integrating within assignments and through readings or lecture content.

Summary of Results

The implications of this research are three-fold: 1) to determine what soft skills are most valued by interior design educators, 2) to see where educators believe soft skills should be taught in their current curriculum, and 3) to provide a list of strategies used to teach soft skills in both lecture and studio environment. More soft skill training, integrated into all levels of education, may be necessary for future success in the workforce (Cerezo-Narvaez, Bastante Ceca & Yague Blanco, 2018). Demands from employers in the profession inevitably put pressure on higher education. After presenting the research findings, educational topics for discussion will include options for training students in soft skills and the accurate assessment of those skills.

REFERENCES

Center for Career Services, Syracuse University, International Interior Design Association and the American Society of Interior Designers (2008). Tips for graduates entering the interior design profession: What employers are looking for. Retrieved from ht

Hart, P.D. Research Associates, Inc. (2010). Raising the bar: Employers' views on college learning in the wake of the economic downturn. A survey of employers conducted on behalf of: The Association of American Colleges and Universities. Retrieved from https://www.aacu.org/leap/documents/2009_EmployerSurvey.pdf

Hart, P.D. Research Associates, Inc. (2018). Fulfilling the American Dream: Liberal Education and the Future of Work. A survey of employers conducted on behalf of: The Association of American Colleges and Universities. Retrieved from https://www.aacu.org/research/2018-future-of-work

Huber, A. (2018). Exploring hiring practitioner preferences for and assessment practices of prospective candidates. Journal of Interior Design (43(4), 21-44.

Pedagogy | Scholarship of Teaching & Learning | Presentation

3D Printing and the Interior Design Studio

Emily Smith, Virginia Commonwealth University

ABSTRACT

Relevance to Interior Design

New and evolving technologies influence the practice of interior design every day. Whether the impacts are felt in the design process, through instruments used to design and document, fabrication of furniture, or methods by which buildings are built, they are informing designers as well as the spaces designed. In 2018, industry partnerships between companies Fuseproject, ICON, and New Story led to a 3D printed home in Austin, TX using one of the first 3D printers designed specifically to print homes. The success of this project led to the evolution of this technology with the intention to print the world's first 3D printed community in 2019. The project claims that homes can be built in less than 48-hours using local materials, creating zero waste, and will be specifically for people in need of affordable shelter, including vulnerable communities.

Clear Identification of the Problem and Teaching Issue

As this technology evolves and impacts the practice of interior design, academic studios must explore not only the technology but the deeper questions that come with it.

- What is gained and lost through the use of 3D printing technologies in the built interior?
- How do our teaching methods and instruments inform the way design students approach design challenges?

Process of Development

In early 2019, Interior Design assistant professors met with a School of World Studies assistant professor that also serves as the Director of a Virtual Curation Laboratory. The Virtual Curation Laboratory specializes in 3D scanning and 3D printing of historic and archaeological objects. In the spring of 2019, the faculty developed an academic studio project for a Sophomore Interior Design Studio in which students would address the above questions. The project asked students to consider the ways in which design strategies reflect place and time. When examining a work of art, the art historian sees it not simply as the result of a single artist's conception but as a mirror that reflects the currents of the era from which it comes. Students used precedent studies as tools to understand examples of design communicating an era - a time and place.

Instructional Methods

Students developed a collection of artifacts from the Virtual Curation Lab archives. They decided whether the actual artifacts would be displayed alongside their 3D printed versions in a gallery space. Students then re-imagined an existing 350sf interior space, in a multi-use (student housing and offices) building located on campus, to be a gallery for their collection. Questions specific to craft, process, technology, materiality, time, and place were to extend from the collection to the built interior.

1. invitation to INVESTIGATE - collection of artifacts, story told by the collection
    1. curation sheets - documentation
2. project site analysis
3. 3D process / instruments
    1. artifact printing at the University Library Workshop - printing process, scaled artifacts
    2. design concept, iterations, design of gallery spaces and fixtures
4. detail drawings/models
    1. handcrafted (basswood, chipboard) or printed (plastic) models
5. critique - Director, Virtual Curation Laboratory, design critics

Outcomes

- 3D printing resources - more accessible through a studio project
    - more time needed for printing than expected
- use of printed artifacts could occur earlier in the studio project process
- engagement with a project site/client led to thoughtful analysis - relationships between existing / new materials - questions (what is gained/lost)
- gains
    - use of 3D printing allowed for large-scale artifacts to be scaled to a smaller environment
    - 3D printing communicates evolution/sense of now
    - 3D printing creates efficiencies - manipulation of fixtures / designed elements to explore scale, color, form
- losses
    - artifact materiality is lost entirely - replaced with texture, color, tactile quality (3D printing process)
    - understanding of original hands
    - disconnect from place/time - changes in material and craft
    - sensory experience

REFERENCES

We're building the world's first community of 3D printed homes. (n.d.). Retrieved from https://newstorycharity.org/3d-community/

Ippolito, J. (2007). From the Avant-Garde: Re-Conceptualizing Cultural Origins in the Digital Media Art of Japan. Leonardo, 40(2), 142-158. Retrieved from http://www.jstor.org.proxy.library.vcu.edu/stable/20206376

Department of Interior Design
Sophomore Studio
Spring 2019
project 1 - Invitation to Investigate

What design strategies invite us to investigate?

Access? Story? Allure? Curiosity? Confusion?

The Virtual Curation Laboratory uses 3D printers to print historical artifacts and objects. The artifacts include animal fossils, pottery, and sculpture. The Lab currently displays these artifacts within a mixed-use university building but due to a number of factors, the gallery space is often over-looked by university students, faculty, and staff and therefore the impact of the Lab's work is limited.

What is gained (what is the value) through the printing and displaying of these artifacts?
What is lost (what is the value) through the printing and displaying of these artifacts?

You will work independently and as a studio to investigate these questions and reimagine the existing space.
This includes interior architecture (walls, floors, ceilings) furniture, fixtures (display and communication), and lighting.

challenge
to re-imagine an existing interior space as an environment for the investigation of objects
to design for specific experiences
to consider views and visibility between users (you will need to define the users)

to assess the existing conditions of the designated space (approx 350sf) and the surrounding site
to investigate and understand the process, materiality, and technology of 3D printing
to investigate and understand storytelling and communication via artifacts and objects

program
observation - proximity to objects, artifacts, and written information - how close is too close / how far is too far
investigation - design strategies that invite students, faculty, staff, and other users to investigate
discussion - space, furniture, and light to support standing and seated discussions between users
contemplation - space, furniture, and light to support contemplation

work
site analysis
- material studies
- sensory experience studies
- existing documentation and architectural studies

printing
- exploring university resources to print selected objects/artifacts from the Virtual Curation Laboratory
- finding precedent and contemporary project examples

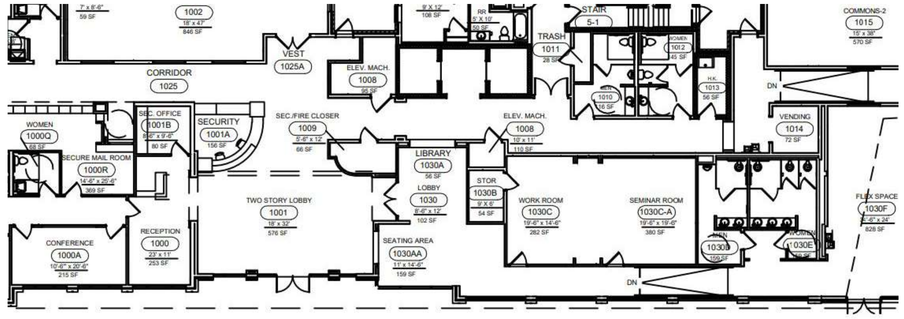
concept sketches and models
- identify inspiration that informs the concept that informs design strategies
- refer to design principles and elements to develop a design language

floorplans, elevations, perspectives, and detail drawings
- to scale, drawing titles, drawing notation, hatching, and notes

materials studies
- develop a material language that communicates a concept and an understanding of place and time
- consider sensory experiences, performance and wear, and tactile qualities

models
- handcrafted - chipboard, basswood
- printed - plastic

Department of Interior Design
Sophomore Studio
Spring 2019
project 1 - Invitation to Investigate



final work

site studies
- 1-2 sketchbook pages (new work) that communicate analysis and understanding of PLACE

curation + collection
- Curation sheets - craft, architectural lettering, content, and format

concept or "big idea"
- What is the concept or theme or big idea that guides a design language leading to thoughtful design strategies?
  - What should students, staff, and faculty think or feel as they experience this space?
  - What kinds of questions does the exhibit prompt through the use of objects, artifacts, handcraft, and digital craft (ie: 3D printing)?
- **concept statement**
- **2 concept diagrams**
- **2 concept models**
  - craft is critical - line weights and types, cut, color, scale, success at communicating - all of these will weigh heavily
  - handcraft and digital craft have their own measures of good and bad craft

existing plan + furniture plan
- **1 existing floor plan** - ¼" scale
  - line weights, line types, hierarchy, and format are critical - communicate the existing conditions.
- **1 proposed furniture plan** - ¼" scale.
  - line weights, line types, hierarchy, and format are critical - communicate the proposed design strategies

diagrams
- **2 diagrams** that communicate exhibit layout and display fixtures
  - line types, line weights, strategic color - use a straightedge and construction lines for all work

perspectives
- **2 perspectives** that communicate design strategies (exhibit display, floors, walls, ceilings, and furniture)
  - line types, line weights, and strategic color - use a straightedge and construction lines for all work
  - render perspectives to communicate shadow, perspective, and materiality

models
- **3 models** to show evolved ideas for exhibit display fixtures and designed furniture - models are to be at a scale that communicates use and design

detail drawings
- **1 set of detail drawings** that communicate the concept in at a smaller scale as well as address the project questions and intentionally support or hold the objects on display
- scale of these drawings should be the same as the scale of the model of that fixture

What is gained (what is the value) through the printing and displaying of these artifacts?

3D Printing in The Interior Design Studio

invitation to INVESTIGATE | curation

designer *student name*

exhibit concept or theme *explanation of the concept or theme that is communicated through the chosen objects / artifiacts, connect back to the questions related to process and instruments (3D printing) and decisions related to use of both actual and printed objects / artifacts*

exhibit objects / artifacts *images and descriptions including the identification code and the*

exhibit goals + strategies *explanation of how the design language stems from or acknowledges a concept and address the critical questions*

connections *description of the threads connecting the collection*

Copper Alloy Comb (3D_3667)

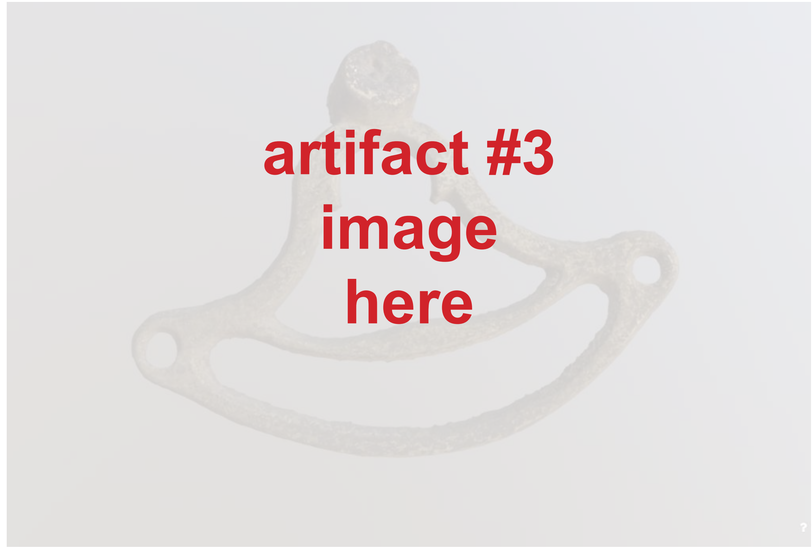
This copper alloy comb is from the south kitchen excavations at James Madison's Montpelier. It was 3D scanned with a NextEngine Desktop 3D scanner on June 15, 2018. Museum specimen 43695.HAD. Courtesy of James Madison's Montpelier.

notes

Strap Buckle (3D_2138)

Strap Buckle from the House for Families, an enslaved context at George Washington's Mount Vernon, ca. 18th-19th century. 3D scanned with a NextEngine Desktop 3D scanner in the archaeology laboratory at George Washington's Mount Vernon. Description by Virginia Commonwealth University student Jessica Evans. Digital model provided by the Virtual Curation Laboratory courtesy of the Mount Vernon Ladies Association.

notes



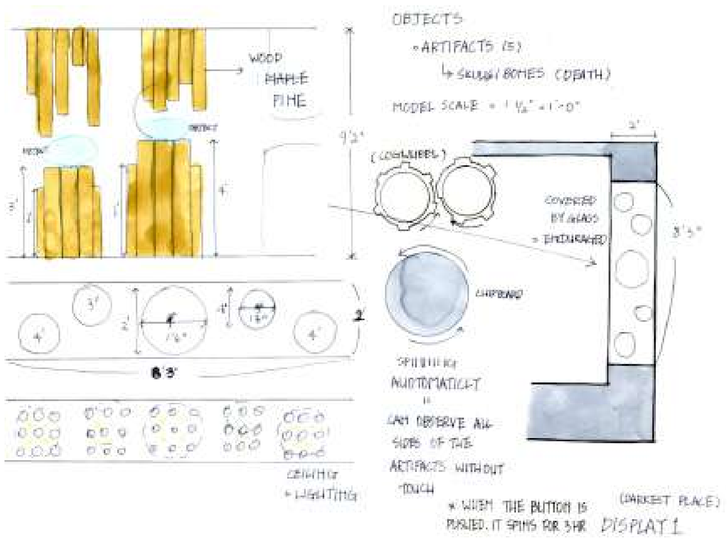
Part of Servant Bell System (3D_2818)

This is part of a bell system Thomas Jefferson would have used to call servants at Poplar Forest. More on the servant bell system at Poplar Forest and this object can be found here: https://www.poplarforest.org/servant-bells-at-poplar-forest/ . It was 3D scanned with a NextEngine Desktop 3D scanner. Courtesy of Thomas Jefferson's Poplar Forest.

notes

Project Outcomes

What is gained and lost through the use of 3D printing technologies in the built interior?

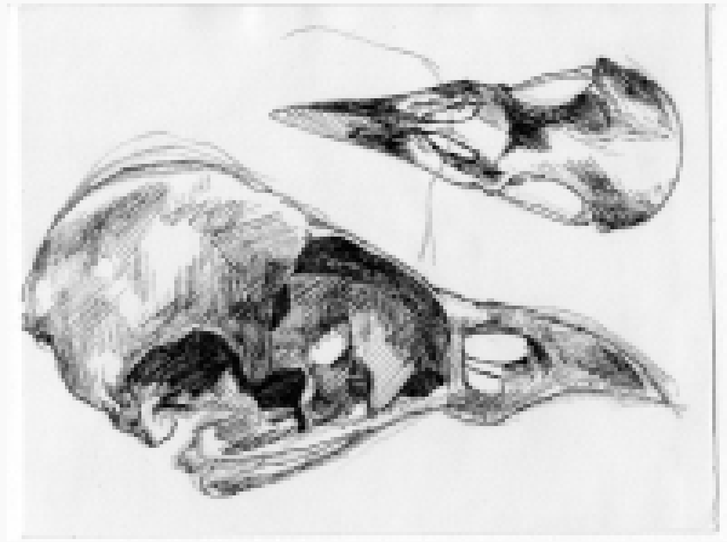


student 1

fixture design drawings

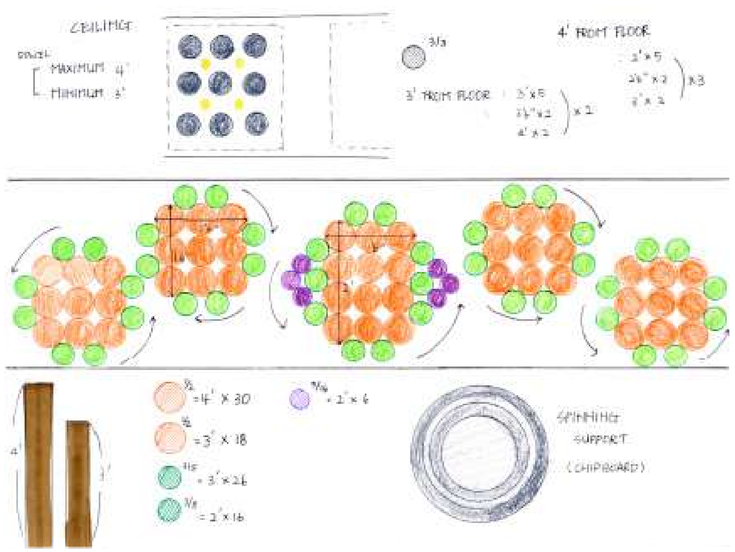
student 1

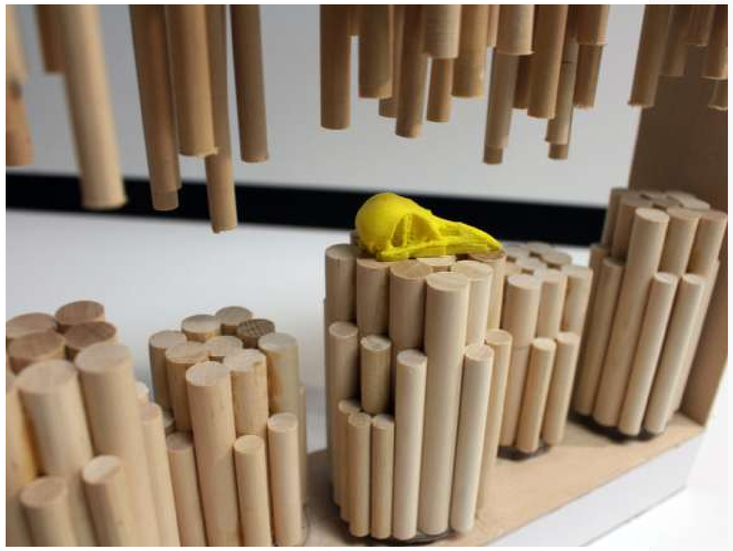
fixture design models



student 1

artifact studies





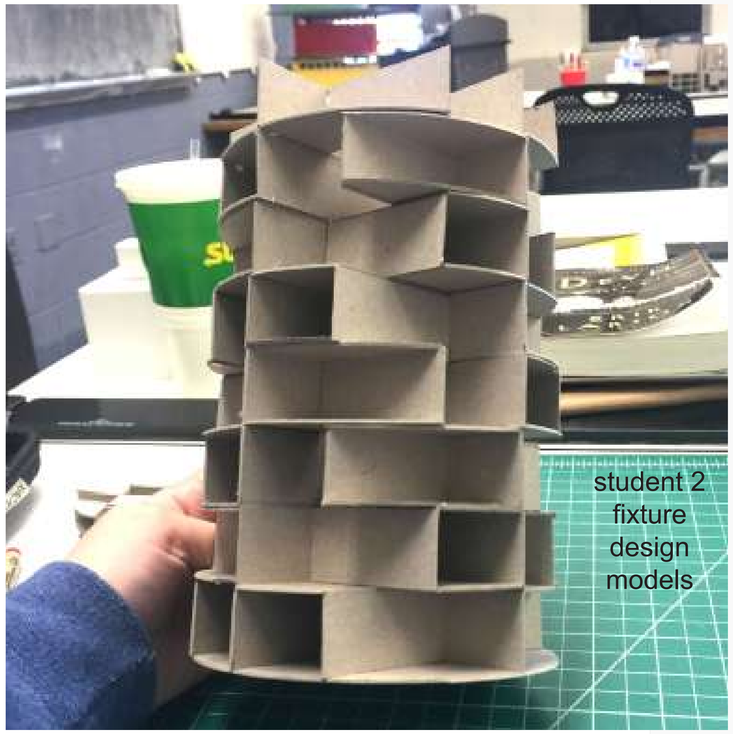
Exploring the use of handcraft and digital craft in the design process.

3D Printing in The Interior Design Studio

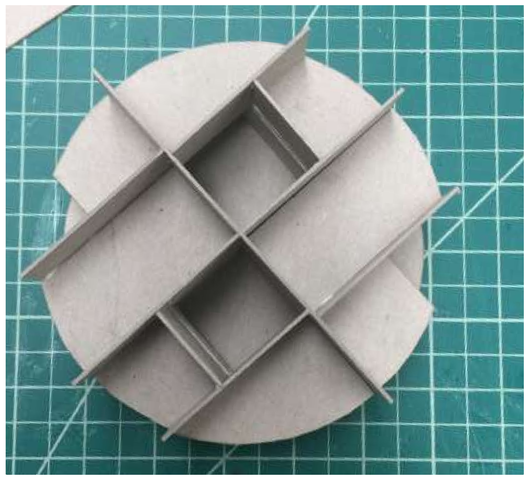
What is gained and lost through the use of 3D printing technologies in the built interior?

student 2
fixture design drawings

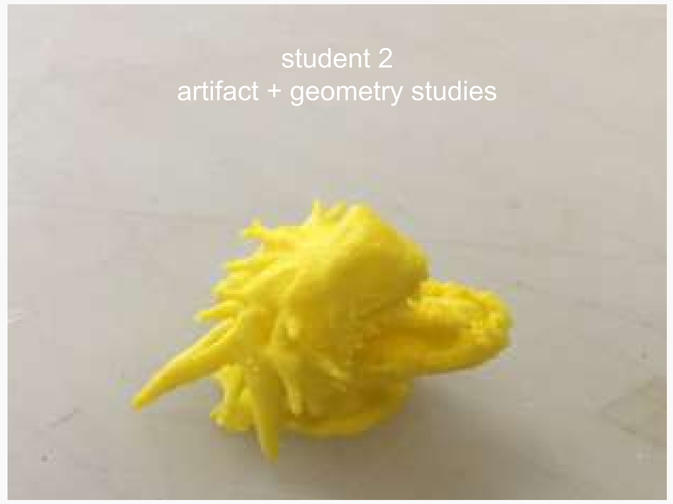
Exploring the use of handcraft and digital craft in the design process.



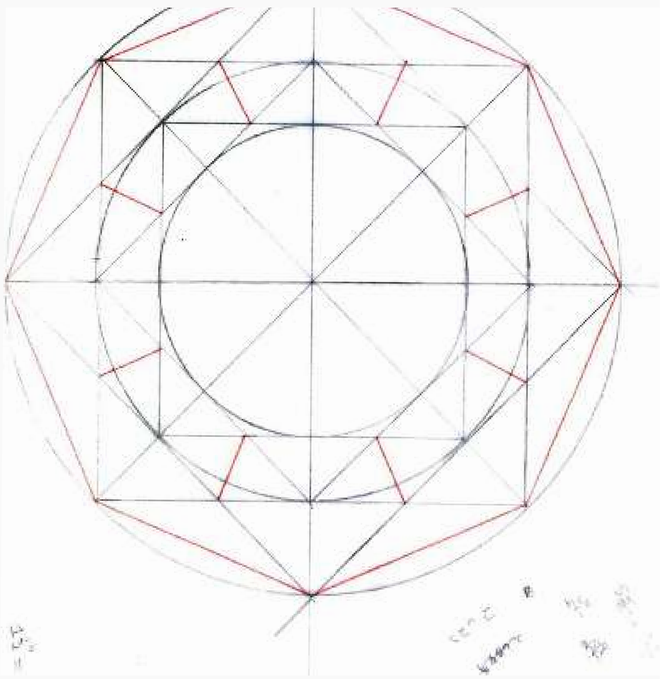
student 2
fixture design models



Project Outcomes



student 2
artifact + geometry studies



3D Printing in The Interior Design Studio

Pedagogy | Scholarship of Teaching & Learning | Presentation

Abstractions into Architecture: Facilitating Creativity in the Design Process

Susie Tibbitts, Utah State University
Steven Mansfield, Utah State University

ABSTRACT

Motivation

Educators seek to provide educational opportunities that develop novice designers into knowledgeable, contemplative designers. As Goldschmidt states, "Designers are seen as synthesizers whose craft is to respond to the various design requirements in an integrative and holistic way. The capacity for synthesis is, by wide agreement, quality of the creative designer" (Goldschmidt, 1999). Teaching beginning design students how to properly synthesis information to form highly creative, yet coherent designs is a vital learning objective.

The process of abstraction has been used by many designers, architects, and artists seeking to develop a unique perspective on reality. This concept is easily understood when looking at the artwork of Picasso. Enough reality remains to determine the representational theme, yet the imagery is a departure from reality. This concept has been used in architecture and interiors by many renowned designers. For example, the Nationale-Nederlanden building in Prague, designed by architects Frank Gehry and Vlado Milunić, is an abstraction of two dancers (Howarth, 2018). Often referred to as "Dancing House" or "Fred and Ginger," the design is unique due to its original influence. Abstract thinking is one of the most powerful tools a designer can develop.

Problem

Beginning students often struggle to evolve ideas into unique design solutions when using precedents to inform designs. Design precedents are a valuable and informative part of any

project, however, allowing students to establish a creative concept before seeking influential precedents is the key to developing creative design solutions. Once an idea has been established, the inclusion of precedents will enhance and inform the design without derailing it. However, an inexperienced designer will often rush through the design process and simply cut and paste various elements from their collected precedents to create a design. This rudimentary approach results in superficial and synthetic designs, devoid of creativity. These outcomes are frustrating to educators and incite a modification to the assignment to prevent the incident from occurring.

Method

Today, it is widely held that any curriculum that places responsibility on the students for their learning will encourage creativity (Williams, Ostwald, and Haugen, 2010). As stated by Elton, to create a better climate for creativity, teachers should serve as "facilitators of learning" and support the students in their endeavor (Elton, 2006). Using this approach to education and curriculum development, two instructors sought to teach beginning design students architectural graphic standards, construction design, residential codes, and AutoCAD software. This occurs between two courses, Architectural Graphics, and CADD I.

To facilitate learning, students were asked to design a small residence for two people. A portion of the programming is given to provide design parameters. The students are limited to approximately 500 square feet per level and must have at least two levels requiring vertical circulation. The rest of the programming is left to the students to develop. The process begins with abstracting objects and results in a preliminary plan and elevation sketches, a rough model, a set of presentation drawings, a final model, and a set of construction documents. Self-exploration, redlines, and individual critiques are highly encouraged by the instructors.

Results & Reflections

The abstractions into architecture process result in unique architectural designs for each student. This assignment teaches the students an effective approach for generating their content by abstracting designs rather than beginning with architectural influences and precedents. This project places the responsibility to learn on the student and allows the instructors to maintain a facilitator role.

REFERENCES

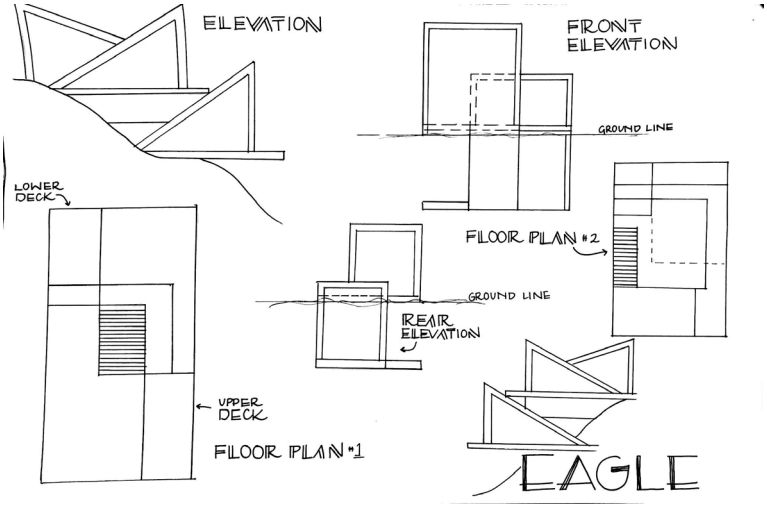
Elton, L. (2006). Assessing Creativity In an Unhelpful Climate. Art, Design & Communication in Higher Education, 5(2), 119-130.

Gero, J. S., & Maher, M. L. (1993). Introduction. In J.S. Gero & M. L. (Eds) Modeling Creativity and Knowledge-based Creative Design. Hillsdale, NJ: Lawrence Erlbaum Associates.

Goldschmidt, G. (1999). Design. In Runco, M.A. (Ed.). Encyclopedia of Creativity (pp. 525-535). New York: Academic Press.

Howarth, D. (2018, May 3). Five "Dancing" Architecture projects that command an audience. Retrieved from https://www.dezeen.com/2018/05/03/dancing-buildings-architecture-roundup-big-frank-gehry-zaha-hadid-daniel-libeskind-shop/ (Accessed September 10, 201

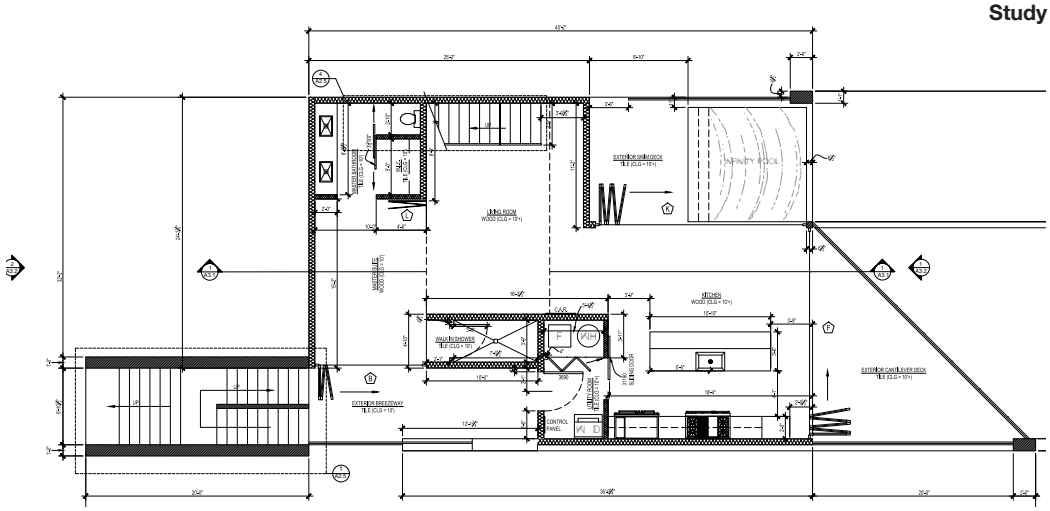
Williams, A., Ostwald, M., Haugen, A.H., Design Research Society Conference, "Assessing Creativity In the Context of Architectural Design Education," DRS 2010, Montreal, Canada, July 2010. http://www.drs2010.umontreal.ca/data/PDF/129.pdf (Accessed September 2, 2019).



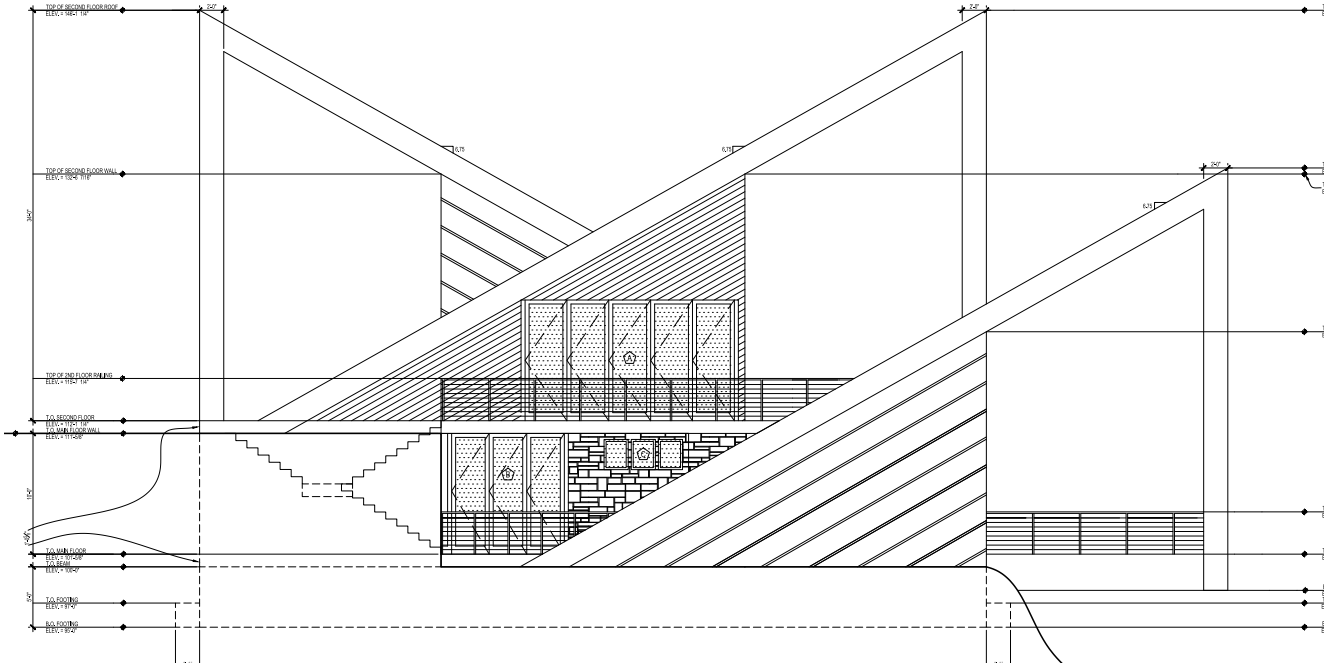
Abstraction
Eagle

Study Model

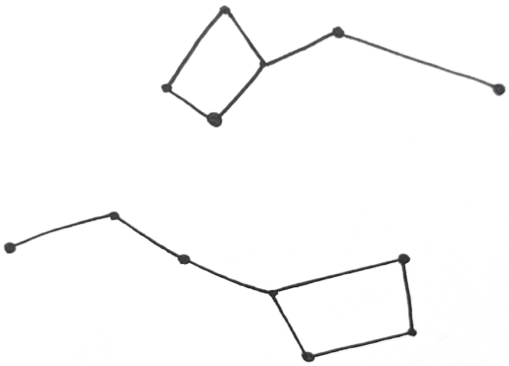
Tiny House
This comprehensive project is done between two courses, Architectural Graphics I and CADD I. The images show the beginning phase of abstrating an object which then becomes architecture.



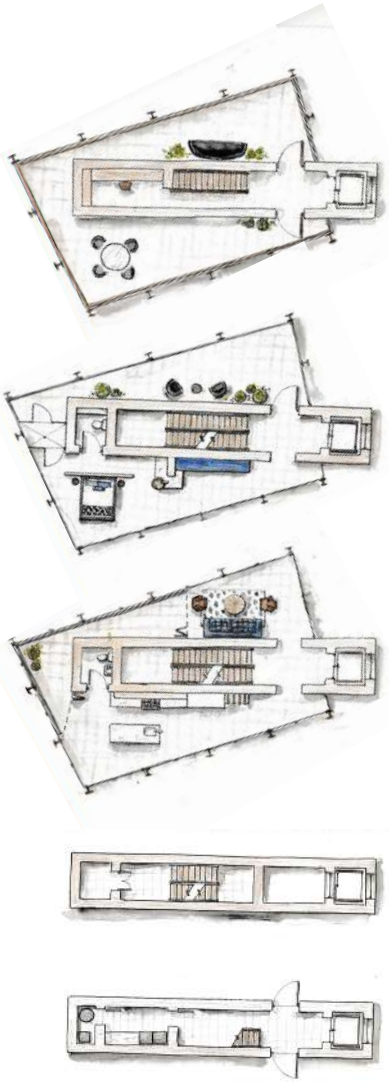
Presentation Drawings
Floor plan (above) / Elevation (below)



Final Model
Audax



Abstraction / Little Dipper



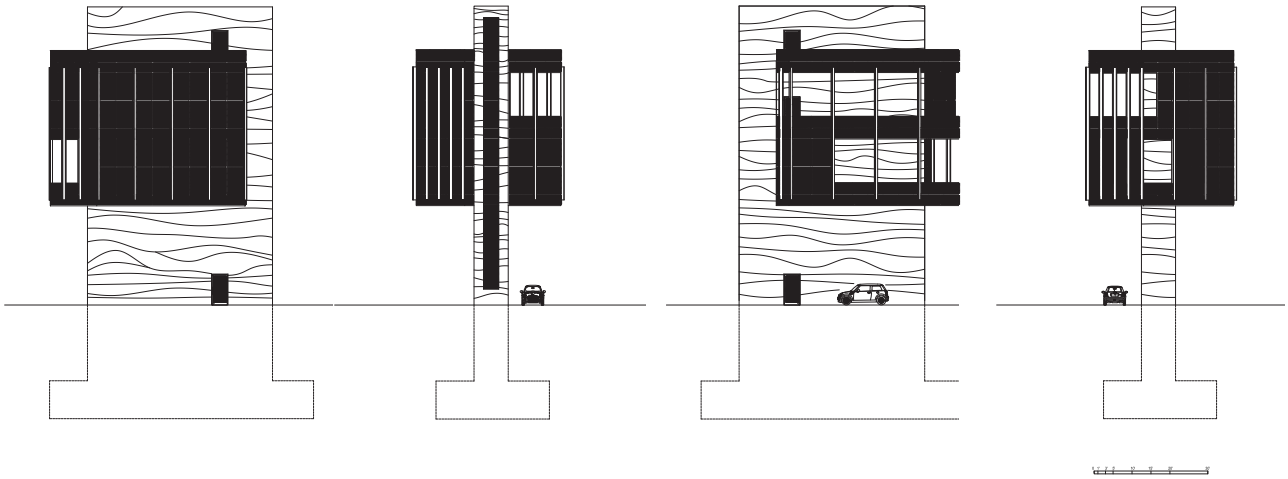
roof
garden

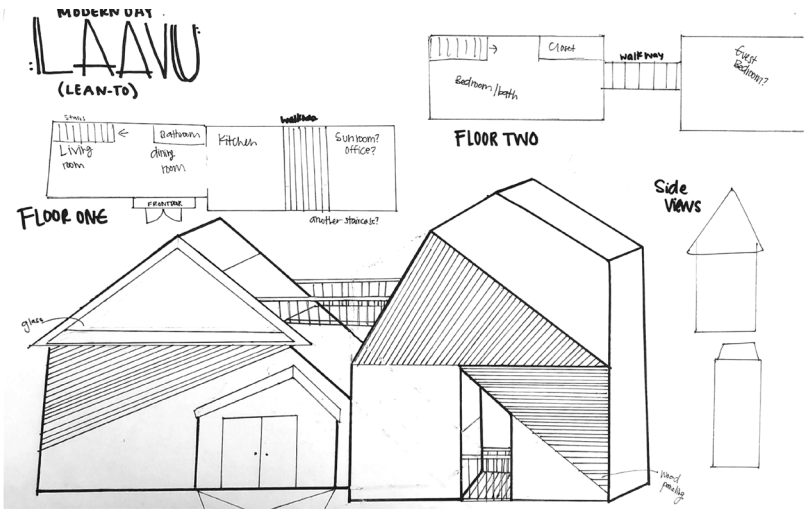
bed
room

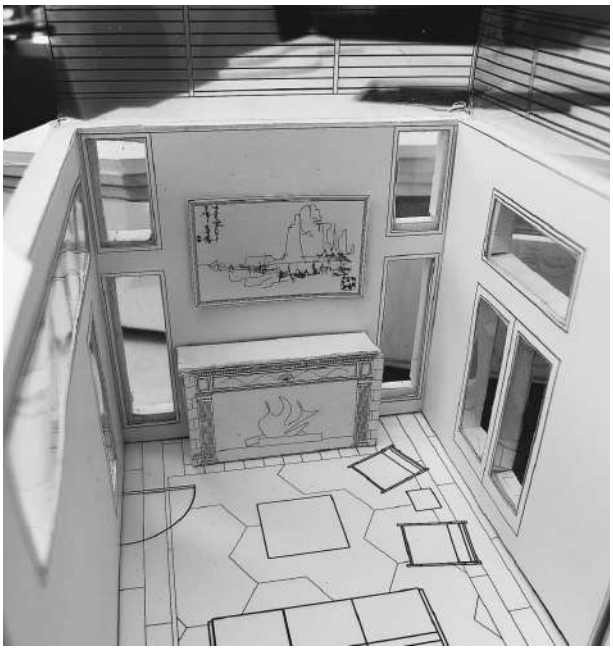
living

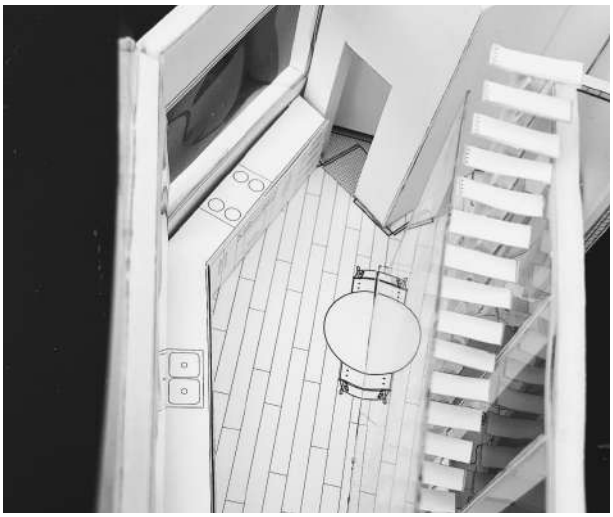
storage

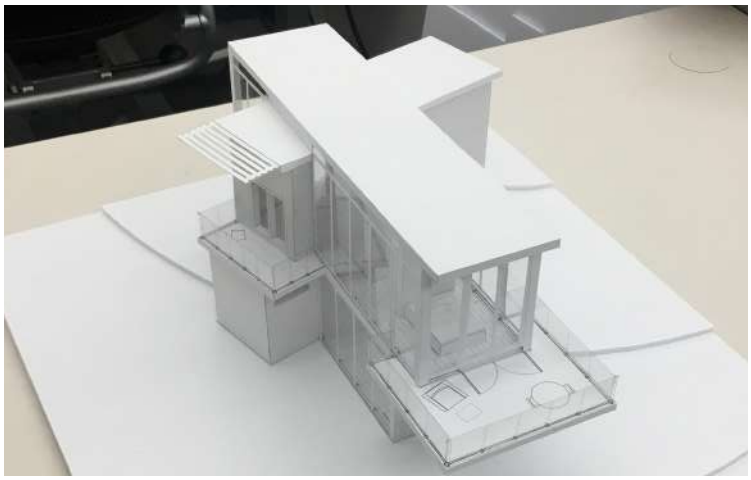
entrance



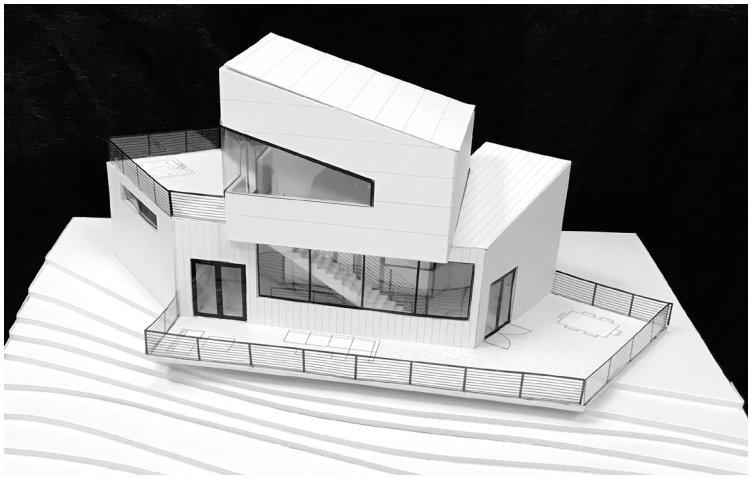

MODERN DAY
LAAU
(LEAN-TO)
Living room
dining room
Bathroom
Kitchen
Sunroom? Office?
FRONTDOOR
another staircase?
FLOOR ONE
Closet
Bedroom/bath
FLOOR TWO
Side Views
glass







Abstraction
Clock hands



Abstraction
Kaleidoscope patterns

Abstraction
Banana Leaves

Abstraction
Angels & Superheros

Pedagogy | Scholarship of Teaching & Learning | Presentation

Before and After: Architectural Transformations

Igor Siddiqui, The University of Texas at Austin

ABSTRACT

The presentation focuses on the pedagogic problem of teaching a joint foundational graduate design studio that includes both architecture and interior design students. Although the teaching of bi- or multi-disciplinary core courses in design schools is not unusual, conducting a graduate-level studio suitable to the curriculum of two separate professional programs does have its particular challenge. The following questions emerge: What constitutes core knowledge for each discipline and is this core shared or unique to each? How can one course satisfy two separate and unrelated accreditation criteria? How can students thrive in a shared environment and benefit from interdisciplinary collaboration without losing their identity as belonging to a specific discipline? The studio, titled "Before and After: Architectural Transformations," aims to develop a common pedagogy that values both the overlap and the distinct aspects of each program.

Central to the studio is the notion that buildings are both physical sites, but are also sources of disciplinary knowledge. In this way, to study a building we can imagine how we would inhabit it, but we also learn from it as an example of knowledge which has been applied to it. It is in this spirit that precedents and building case studies are approached. Through a series of canonical unbuilt houses represented only through original drawings, all students built a series of scaled models, learning along the way how to interpret archival architectural materials, but also having to fill in the gaps that exist in inevitably incomplete available documentation. Once completed, the paths of architecture and interior design students diverged. While architecture students continued analyzing the houses from the point of view of formal organizational principles, interior design students studied them as sites within which they can directly intervene. Through this process, a Richard Neutra house became an community art center; a Mies van der Rohe Villa

an art gallery and foundation; a proposal for a building by John Hejduk was transformed into a multi-purpose complex as envisioned by a first-year graduate interior design student; meanwhile a SANAA scheme became a site for art studios and a gymnasium.

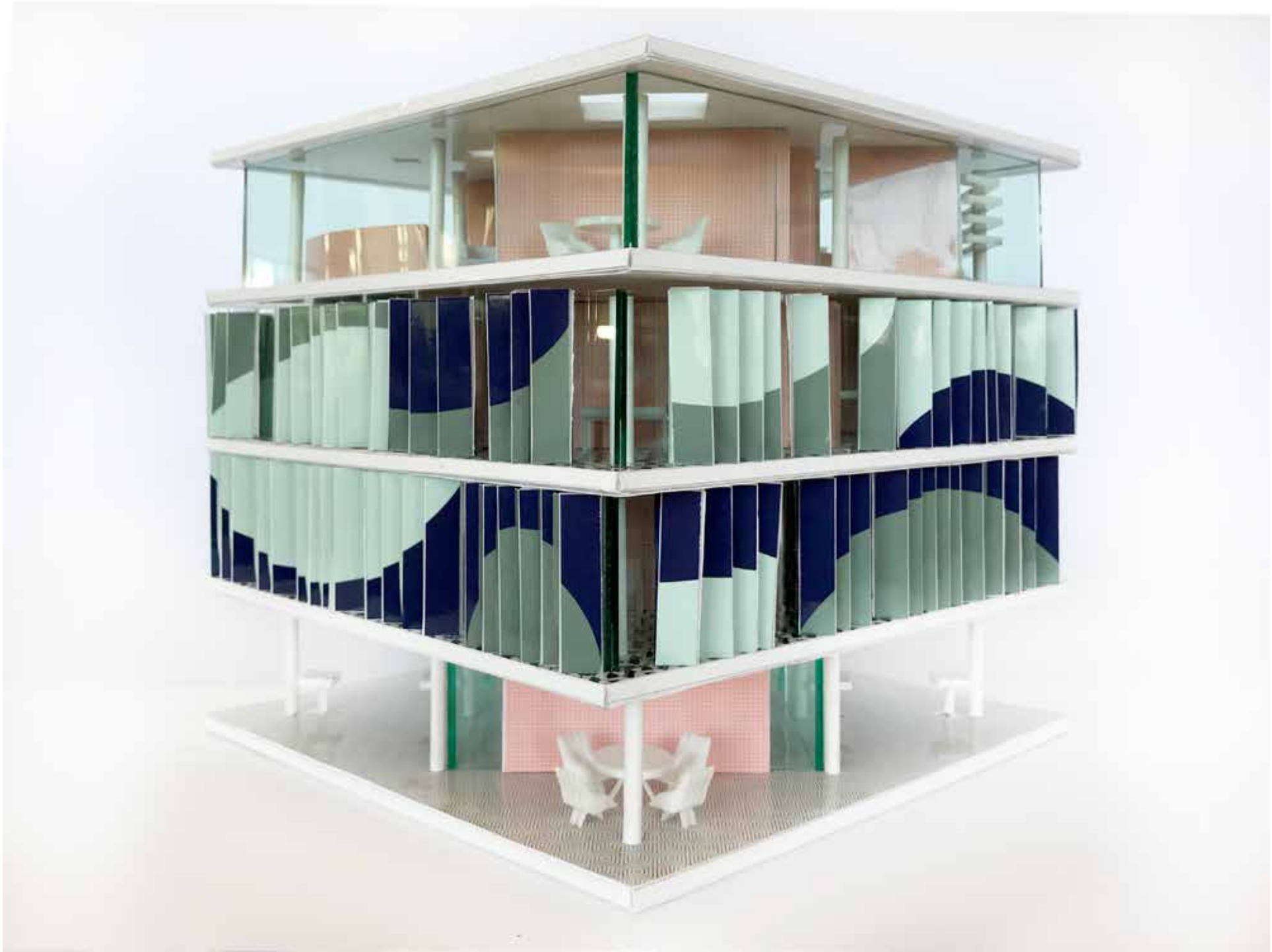
Interior design students are in this way encouraged to transform existing architecture rather than regarding it as sacred or immutable. Furthermore, because much of what is considered to be architectural is a given, encouraging the interior design students to focus on other aspects of design – such as furnishings, color, lighting, and materials, but also issues such as ergonomics, accessibility and code – elements that are often glaringly absent from some of the most inspired works of visionary architecture. The studio was a valuable pedagogic experiment that, while playful and exuberant in some ways, it deals head-on with the curricular realities of teaching multi-disciplinary coursework while striving to encourage disciplinary distinctions and unique skillsets among the allied design professions.

REFERENCES

Lavin, Sylvia. "Petra Envy: The Designs of Petra Blaisse." Harvard Design Magazine, no. 29 Fall/Winter (2008).

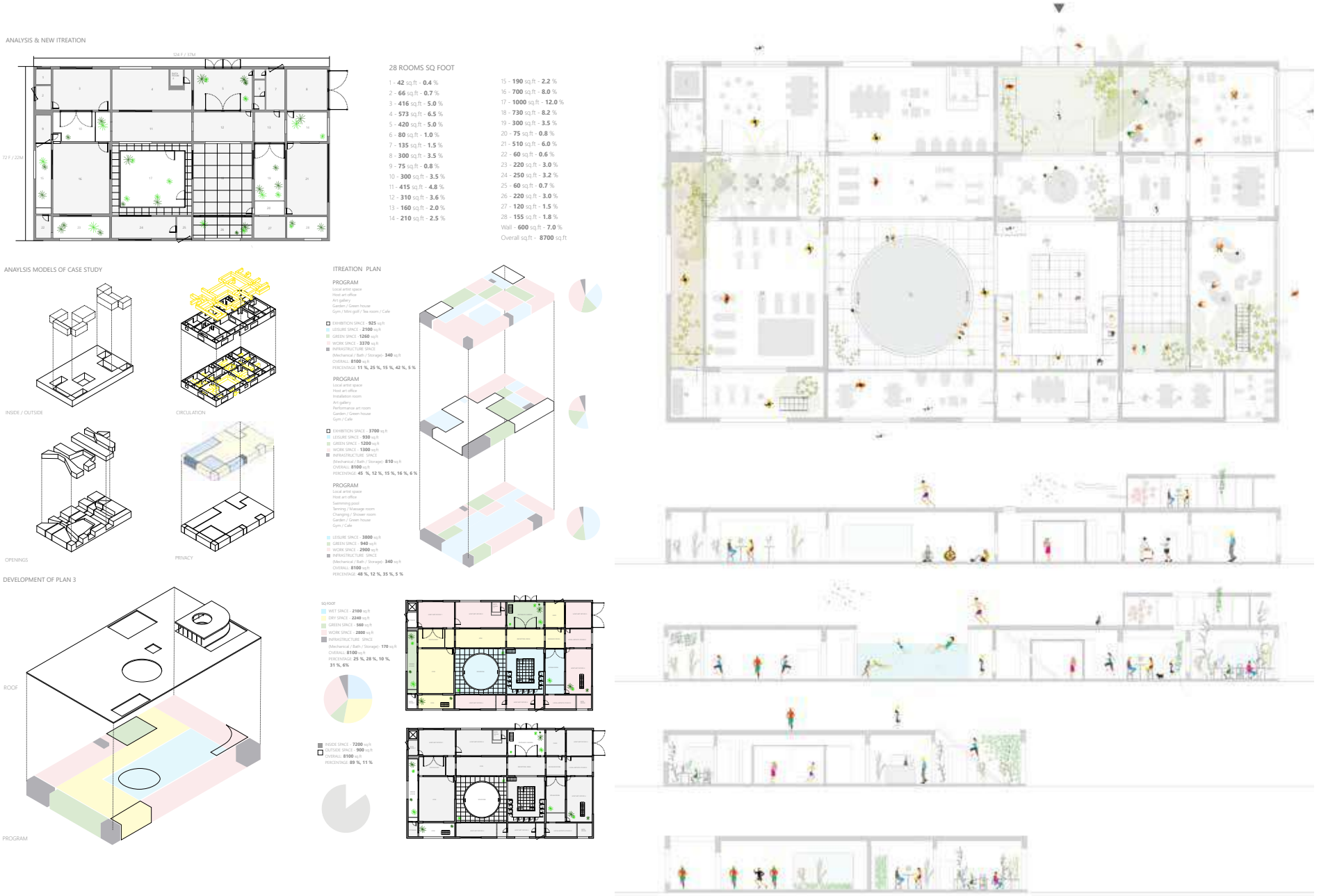
Rowe, Colin. “Mathematics of the Ideal Villa and Other Essays.” JAE 31, no. 1 (1977).

Sanders, Joel. "Curtain Wars: Architects, Decorators, and the 20th-Century Domestic Interior." Harvard Design Magazine, no.16. Winter/Spring (2002)



Student Work Sample #1: Transforming Diamond House by John Hejduk

Student Work Sample #2: Transforming Diamond House by John Hejduk

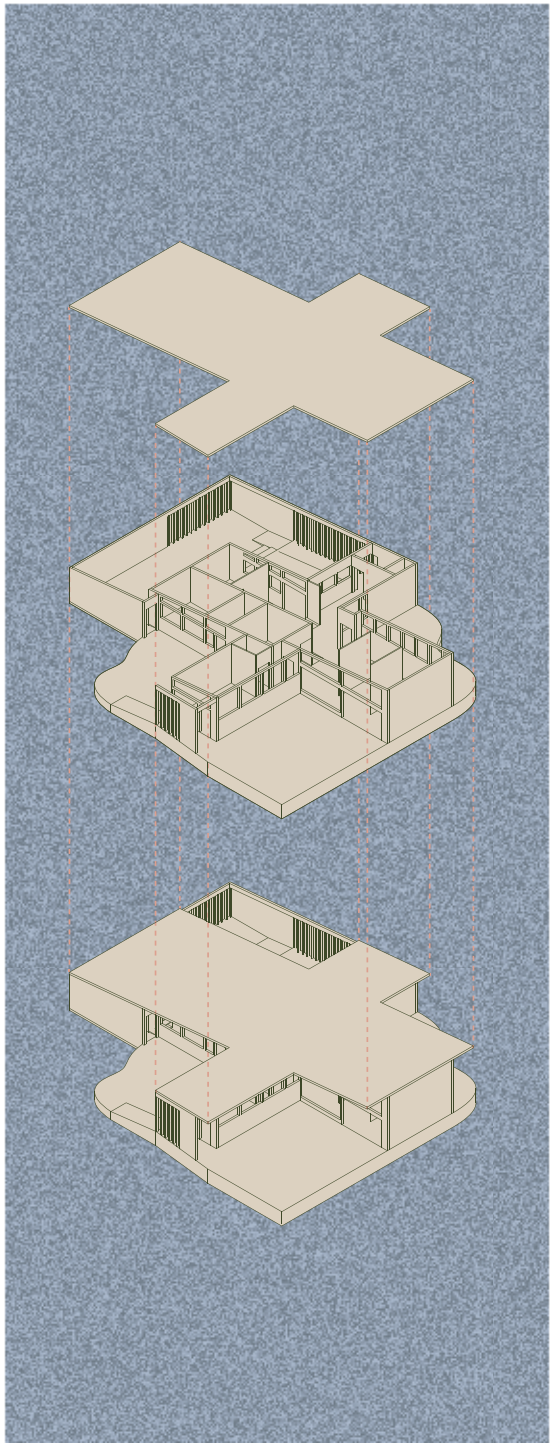


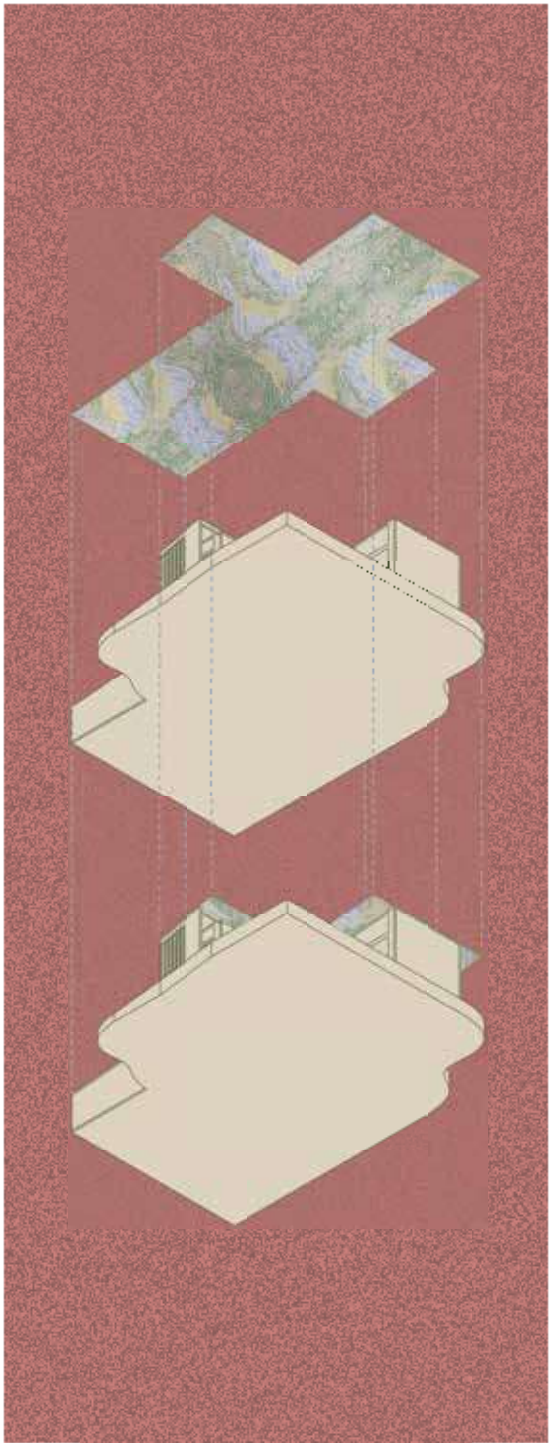
Student Work Sample #3: Transforming House in China by SANAA

Richard Neutra's Illustrations

Reflected Ceiling Plan

Reflected Ceiling Plan





Student Work Sample #4: Transforming Omega House by Richard Neutra

Student Work Sample #5: Transforming Gericke House by Mies van der Rohe

Pedagogy | Scholarship of Teaching & Learning | Presentation

Building Information Literacy Across the Interior Design Curriculum

Gloria Stafford, University of Northern Iowa
Angela Pratesi, University of Northern Iowa

ABSTRACT

This presentation will focus on a two-year collaboration between interior design (ID) and library faculty to elevate information literacy (IL) skills of undergraduate ID students at a Council for Interior Design Accreditation (CIDA) accredited program. Two factors drove this endeavor: escalating requirements within CIDA standards for IL and research skills, and the lack of focus on these skills within their university's general education requirements.

The Association of College and Research Libraries (ACRL) defines IL as "the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge" (ACRL). To understand where student IL skill level should be in the context of the undergraduate ID program, a coding and analysis of the content of the CIDA standards utilized over the last thirty years was executed, revealing a marked increase in IL requirements. The standards used in 1989 required only that students have an *awareness* that research techniques were used by professional interior designers, whereas the current 2018 accreditation standards require that students: gather and apply human-centered evidence; apply knowledge and skills learned to synthesize information to generate evidence-based design solutions; understand evaluating the relevance and reliability of information and research; effectively distill and communicate data and research; and effectively express ideas in written communication.

Faced with a challenge to meet these accreditation standards, several new learning outcomes, tools, and resources were infused into the curriculum to build IL. Whereas the CIDA standards identify specific student outcomes and skills, the ACRL Framework is comprised of six interconnected concepts on which lessons, projects, and assignments can be built. The ACRL Framework was utilized to map the six core concepts across the curriculum and corresponding writing or research components were added to course requirements.

ID courses at the freshman, sophomore, and senior levels were identified which could accommodate one or more learning outcomes rooted in the ACRL Information Literacy Framework. Two examples of how key skills within the CIDA standard: Human Centered Design—which states that "student work demonstrates *understanding* of methods for gathering human-centered evidence" and "the importance of evaluating the relevance and reliability of information and research impacting design solutions" (CIDA)—were conceptualized as IL frames include:

- First and second year students were newly required to complete online modules made up of videos, tutorials, and quizzes on a wide range of IL skills, and participate in library instruction underscoring the IL frames: *Information Has Value*, *Information Creation as a Process*, *Searching as Strategic Exploration*, and *Authority is Constructed and Contextual*.

- At the senior level, a student workshop was added to build student awareness of the value of various types of sources of information. The corresponding ACRL frames are *Research as Inquiry* and *Scholarship as Conversation*.

With evolving CIDA standards, ID faculty have a responsibility to design curricula that foster engagement with information (literacy) and scholarship. This is challenging, but the ACRL Information Literacy Framework provides an effective model for doing so. After two years of implementation, we are continuing to evolve the content delivery of these concepts and skills. Recent evaluation of these efforts through assessing student work and conducting focus groups of students to whom this content has been delivered shows the curricular changes are effective.

This presentation will outline the success of this faculty/librarian collaboration to map the ACRL Information Literacy Framework across the interior design curriculum and discuss how these strategies were implemented and assessed.

REFERENCES

American College and Research Libraries. Framework for information literacy for higher education. Retrieved from: http://www.ala.org/acrl/standards/ilframework

Council for Interior Design Accreditation. Professional Standards 2018. Retrieved from https://accredit-id.org/professional-standards/

APPENDIX *Building Information Literacy across the Interior Design Curriculum*

Explanatory images to support the Abstract

Key to this project was the use of the ACRL Information Literacy Framework, shown below, as a concept map for delivery of content

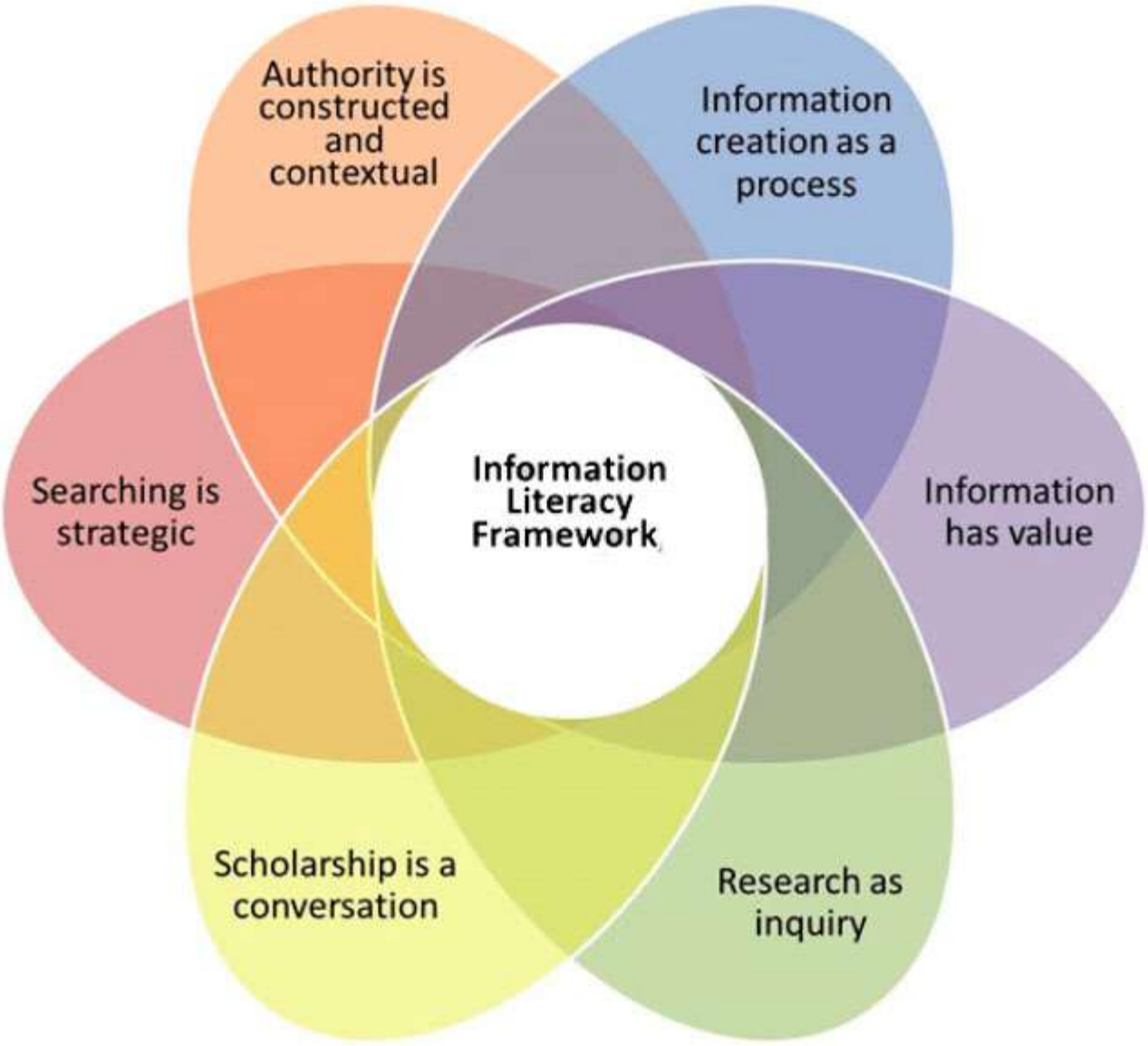


Image 1: The ACRL Information Literacy Framework illustrate. Retrieved from https://www.researchgate.net/figure/The-ACRL-Framework-for-Information-Literacy-and-the-Six-Major-Frames-From-Burress-T_fig6_320992321

Select Credo Instruct (online) modules were assigned at key points

CREDO Building Information Skills for Lifelong Success

Instruct (formerly known as InfoLit Modules)

Extend the reach of your library's instruction

Today's college students arrive on campus without well-honed foundational skills like information literacy and critical thinking. Creating high-quality, standards-driven instructional materials to cultivate these skills requires extensive time, staff, and technical expertise. Instruct offers a solution to this growing problem, providing tools for libraries to conduct formalized ACRL and AAC&U-aligned instruction, both in-person and online.

How can Instruct help you and your library?

- **Teach students essential foundational skills** that will help them throughout their academic and professional careers.
- **Maintain accreditation requirements** around information literacy standards.
- **Simplify collaboration with faculty** with in-demand instructional content that is easy to embed in course pages and LibGuides. View some of our supporting faculty engagement resources to see how your collaboration can be enhanced.
- **Align faculty to high-impact practices** with a faculty-focused module covering topics like "How to Design Research Assignments".
- **Devote more time to hands-on instruction** by using multimedia to "flip the class".
- **Assess student progress** with the Credo Insights analytics platform.

Librarians are using Instruct to teach crucial information literacy and critical thinking skills students need to thrive in their academic careers and beyond.

Higher education institutions struggle to equip students with the foundational skills they need to succeed. Today's students require information literacy, critical thinking, communication, and other skills to excel throughout their education and in the workplace. From teaching first-year students to supporting distance and online learners to honing the techniques of more experienced researchers, your library can play a pivotal role in this institution-wide instruction goal with Credo's learning tools ...

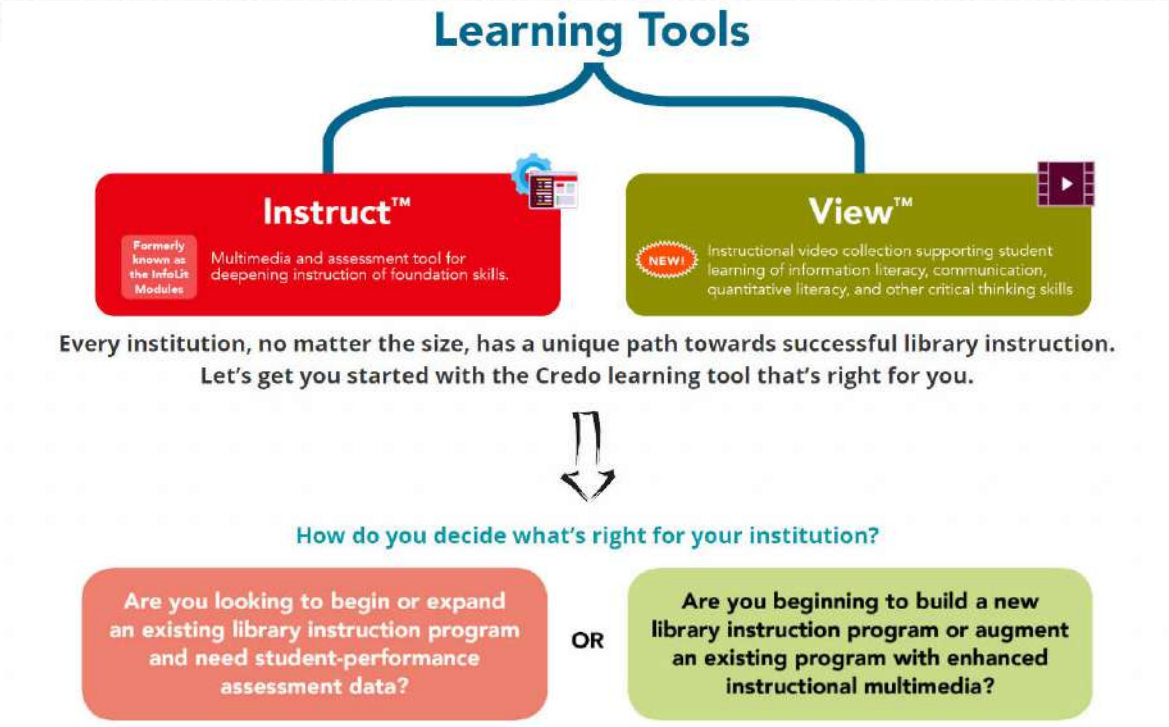


Image 2: Information from the website of Credo Instruct. Retrieved from https://corp.credoreference.com/product-services/learning-tools/instruct.html

Students receive IL instruction from a librarian to learn source type and evaluation, search skills, peer review, and other core IL concepts.







Image 3: Photographs of class sessions

Examples of student outcomes:

Shown here are completed annotated plans showing students' implementation of current hotel and restaurants design trends, which were identified and synthesized from searches into a variety of information sources.

These illustrate the CIDA learning expectations:

CIDA Standard 8 Design Process:

Student work demonstrates the ability to apply knowledge and skills learned to:

e) synthesize information to generate evidenced-based design solutions.

CIDA Standard 9 Communication:

Students are able to effectively:

a) Distill and visually communicate data and research

c) express ideas and their rationale in written communication.

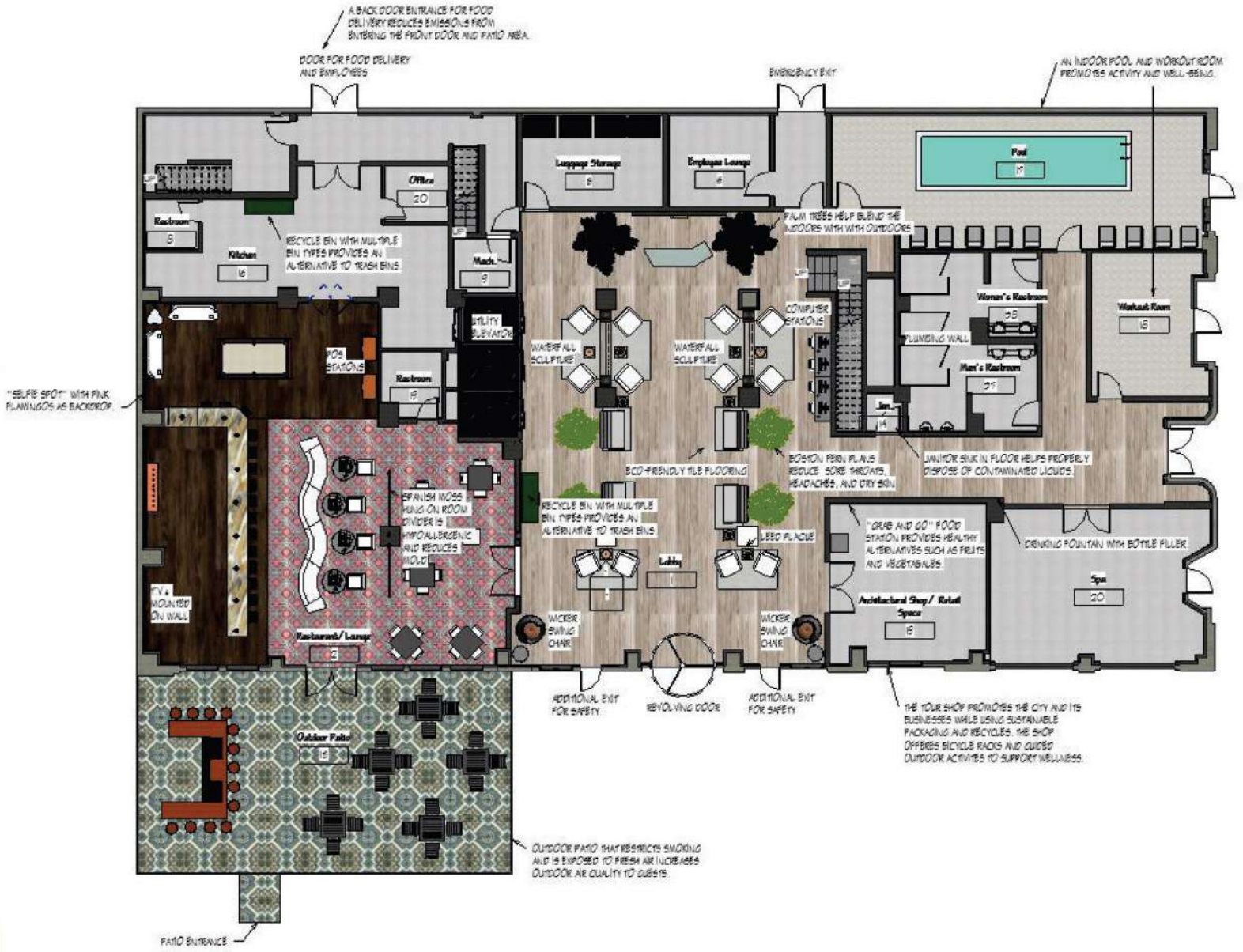
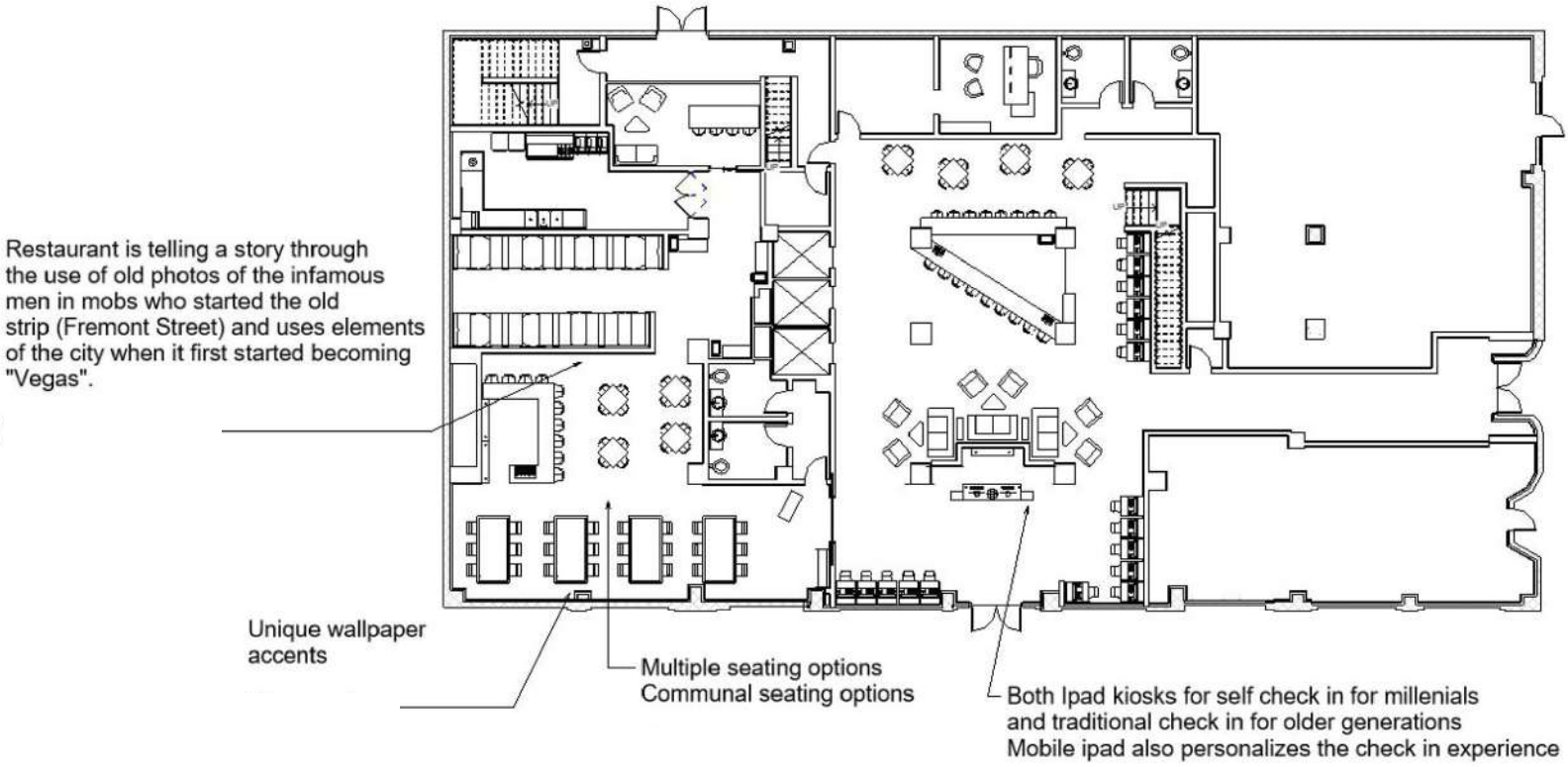


Image 4: Student's annotated plan showing proposed implementation of researched trends



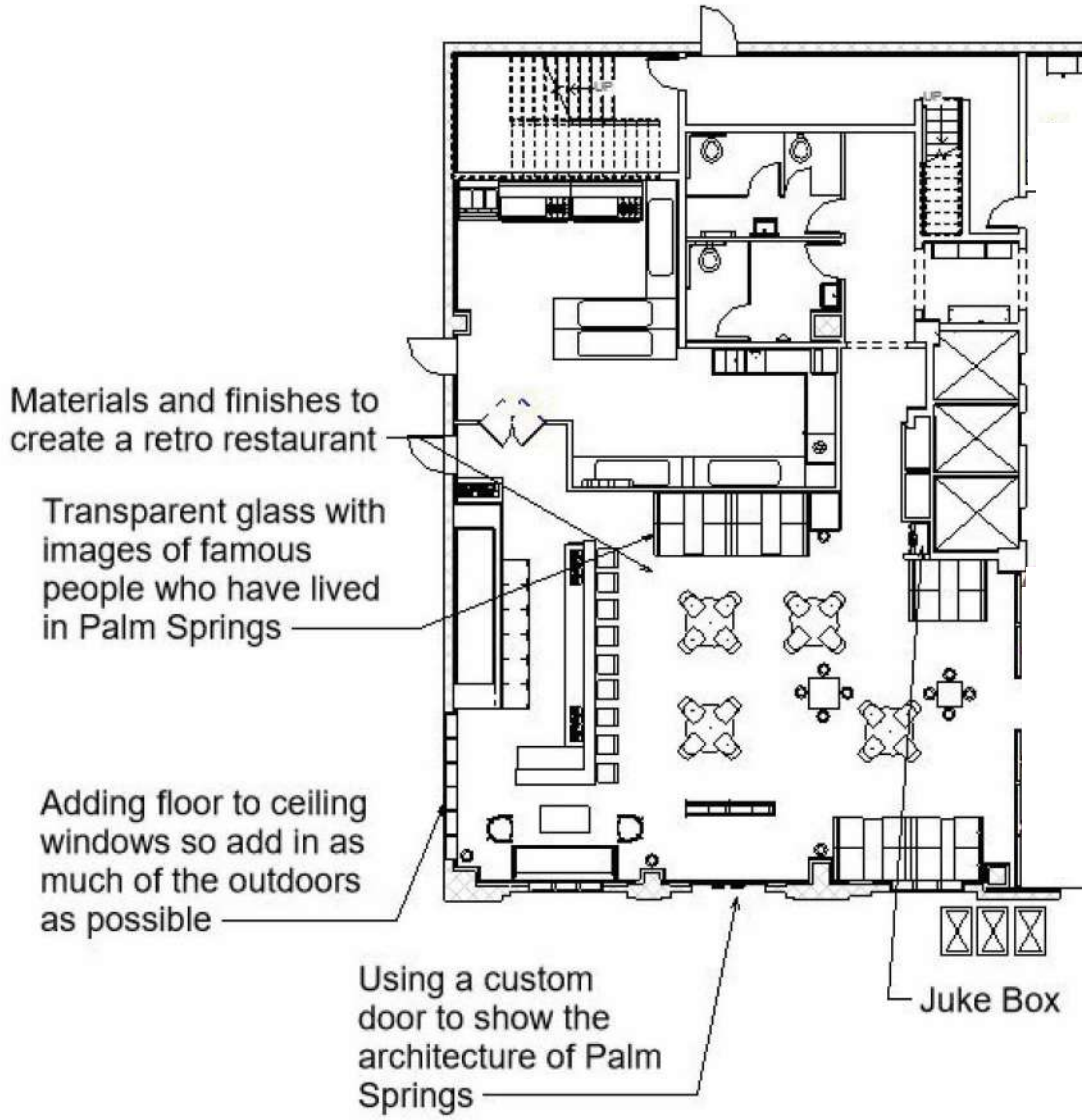


Image 5 and 6: Students' annotated plan showing proposed implementation of researched trends

Pedagogy | Scholarship of Teaching & Learning | Presentation

Community Engaged Studio: Revitalization of the Community 'Inside-Out'

Tina Patel, Kent State University
Cary Johnson, Kent State University

ABSTRACT

Introduction:

Community engagement projects in the curriculum enable discoveries of relationships and collaborations outside the academic environment (Zollinger et al, 2009). Many community-engaged design-build programs in architecture programs began in the 1990s (Schuman, 2012). National models such as Auburn's Rural Studio and now many Interior Design Programs across the country are embracing community engaged workshops and studios in their curriculum. By engaging stakeholders and students, design faculty can identify opportunities to rethink design as a catalyst for social activism (Hicks & Radtke, 2015, p.158). This interior design capstone studio posed the question on how can design education make commitments to community and civic engagement that value communities' expertise? Taking cues from community, urban fabric and histories, can this project engage the full extent of interior design and concepts to inform the recalibration and renewal of a challenged community? Rooted in community engagement, the main purpose of this capstone studio was to establish a foundation for interior design interventions, engaging the impact of interiority at an urban scale.

Project:

The instructors for the studio identified the corridor of the city, which was in decline due to social and economic reasons and needed to be restored. The instructors approached the city officials and main street revitalization committee to see if they would participate in this capstone

studio experience. Though, a little skeptical but eager to see how interior can impact this community, these stakeholders agreed. There was no promise of built solutions, the community and instructors challenged students to pursue projects with the potential of being built. After surveying the site thoroughly, visiting the local historical society, the students met with city officials, design firms involved in the master plan, and attended townhall meetings to understand the meaning and significance of this corridor and their future needs. The students also met with the city engineer to understand the traffic flow, circulation and how to best utilize the in-between space to create a sense of community. They researched the place, the neighborhood context and regional design initiatives put in place by the city. Each student selected an existing building based on and supported by research and context analysis and proposed appropriate use(s) for it. The city officials and community members were invited at all phases of design to provide constant feedback. The design studio became a space for co-teaching and co-learning, and students through these interactions claimed co-ownership over the project and a sense of purpose emerged from their work. The project range varied from a piano bar, mercantile, pet salon and shelter to learning and vocational center for disabilities to name a few.

The students were further challenged to create a 500 sqft pop-up for the proposed business in the selected space. This pop-up would be a part of better block festival which the city would organize annually. The final presentation of their projects and pop-up resulted in an exhibit attended by over 100 guests from the community, each excited to see how proposed program and events inside these old abandoned building would revitalize this community.

Projected Outcome:

This engaged design pedagogy enabled students to experience being active citizens who worked to respond to a specific community need. Students reflections gathered on the project supported the idea that this community engagement project increased their awareness of their surroundings and knowledge of issues impacting the community. Reflections gathered from the community indicated recognition for interior design profession and its potential. Successes ranged from strengthening connections between the university and the community to stirring sensitivity of community issues among students.

REFERENCES

Hicks, T. L. and Radtke, R. I. (2015), Reshaping the Boundaries of Community Engagement in Design Education: Global and Local Explorations. Journal of Higher Education Outreach and Engagement, 19: 157–173.

Schuman, A. W. (2012). Community engagement. In J. Ockman (Ed.), Architecture school: Three centuries of educating architects in North America (pp. 252–259). Cambridge, MA: MIT Press.

Zollinger, S. W., Guerin, D. A., Hadjiyanni, T. and Martin, C. S. (2009), Deconstructing Service-Learning: A Framework for Interior Design. Journal of Interior Design, 34: 31–45.

Project Brief

I. PROJECT INTRODUCTION:

Revitalization: Giving new life and restoring vitality. The power to survive, live and grow.

Urban Revitalization is an initiative aimed at restoring vitality and giving new life into existing urban neighborhoods in decline due to social, economic and environmental reasons. These initiatives generally include improving features of the urban environment, such as the quality of pavement and the functionality of the sidewalks. Depending on the intended usage of the revitalized neighborhood, the projects can also address the need for improved community engagement and occupation of the public spaces, providing new entertainment facilities like parks and museums. A revitalized urban space, with effective infrastructure, can create the conditions for an efficient city, capable of promoting innovation, a higher quality of life, and economic development with shared prosperity and environmental respect.

This semester, each student will be engaging in an urban revitalization project. Students will be challenged with developing a reuse feasibility study for an existing building/site located within the North Water Street, also known as The Mill District. With its distinct white grain elevators, the building has left imprint on the skyline of city. While the Mill once produced flour, today it stands as a symbol of progress ready for the next era. The district is in area known for its tight-knit arts culture, but is also home to longstanding businesses, coffee shops, bars and services proving that the area can act as a foundation for diverse growth in business and arts culture.

The area today is positioned to be a unique space for placemaking and thoughtful renovation. With this in mind the community members and the City gathered in September of 2018 to envision a Better Block for the Mill District on North Water Street. The event took place of September 29th, 2018, and temporarily demonstrated the potential that North Water Street has to offer and what it could look like. The street was filled with community members gathering around bike lanes, improved crosswalks, pop-up shops, murals, seating and added greenery while honoring the rich history of the street itself.

II. PROJECT OBJECTIVE:

This semester's project is to be a culmination of all the design skills, knowledge, and abilities that you have acquired over the last four years. Even though new concepts will be learned during this semester, the expectations of what you bring with you from other courses are extremely high.The project will focus on research, ideation and final design documentation for the reuse of an existing building/structure located within Mill District located in the North Water Street neighborhood.

For this project each student will be required to select an existing building(s) based on and supported by research and context analysis and propose appropriate use(s) for it. In selection of a building/structure, each student will need to research and visit the site independently of class time to select a minimum of two "2" potential buildings/structures to develop for their project. The building or buildings selected must provide a minimum of 10,000 SF to be used for the project (potential scenarios: 10,000 SF can be a part of an existing building, potentially two or three floors of the building can add up to 10,000 or two adjacent buildings with approximately 10,000 sqft can be selected). You must utilize an existing building(s) for this project.

Spend time to understand the history of North Water Street and Mill District, current tenants, the neighborhood context and regional design initiatives put in place by the City. Students must submit documentation with supporting data and images for their chosen buildings/structures. Final Use and building/structure selection will be decided in collaboration with each student and their studio instructor.

Students are also required to research and explore current advancements and future innovations in urban revitalization and building reuse. Design with the understanding of future development and growth of the environment allows for innovations to be easily implemented into what will become a future existing environment with limited disruption. Designers must also be aware and understand that human behaviors and expectations contribute to the adoption or rejection of innovation. Gaining the knowledge of these behaviors and expectations will guide designers in designing an environment that makes it easier for the adoption of future innovations – *"Build for today, design for tomorrow:"*

General Project Program:

1. Project Location

North Water Street

2. Existing Building(s)/Structure(s) Selection
    - Initial Selection: two (2) existing building(s)
    - Minimum area: 10,000 SF
    - Narrow down to one selection after receiving feedback from studio instructors

3. Building Use Selection
    - Initial proposal, two (2) uses for each selection
    - Narrow it down to one or two based on the discussion with the instructors.

III. DESIGN STRATEGY AND PHASING:

Critical to the start of every project, research, investigation and a thorough understanding of the project, client and context are imperative to providing a successful, well thought out design. Context refers to everything from the physical space or in cases of new construction the site, adjacent site context i.e. buildings, streetscape, landscape, bus stops, sidewalks, etc., adjacent uses, neighborhood characteristics and regional characteristics. Beyond the physical it's also critical to understand the history and future goals and initiatives of the context. Learning how to compile contextual research and programmatic data, leads to the implementation of an appropriate solution meeting the physical, economic, social and psychological values and needs of the project.

This project consists of 4 phases: Pre-Design (Research and Programming), Concept and Schematic, Design Development and Construction Documents. This will culminate into final senior thesis exhibit.

IV. DELIVERABLES:

1. **Process Work**
    - Sketches, trace- bound by binder clip. You will include some compelling sketches from the process work into your project booklet.

2. **Work Plan (bound in the project booklet under Appendix)**
    - Gantt Chart / Spreadsheet
    - Gantt chart will be turned in week 3 to the instructors. A copy should be bound on the project booklet under appendix)

3. **Timesheets (bound in the project booklet under Appendix)**
    - Weekly timesheets to be reviewed by the instructors every monday
    - A copy should be bound on the project booklet under appendix

4. **Project Booklet (two submissions)**
    - Full color, binder clip, 11"x17" format for research and programming phase. This is a progress check for the Research and Programming phase and not the final booklet.
    - Final full color bound 11"x17" format- consists of all completed project requirements

5. **Construction Drawings**
    - One (1) Full Size Set of printed Construction Drawings (22"x34"(ANSI D) format)

6. **Presentation Boards**
    - Final Presentation: Maximum 5- 30"x40" format
    - Senior Exhibit: Maximum 6 (1 board focused on your design work from previous studios) -30"x40" format

7. **Digital Presentation**
    - Digital presentation and Digital Virtual Walk-Thru.

POP-UP

PRADA MARFA, POP-UP, TEXAS

I. ASSIGNMENT INTRODUCTION:

pop-up/ˈ***päp*** ˌ***əp:*** *appear or occur suddenly and unexpectedly.*
a temporary intervention.

For this assignment the students will design a Pop-Up structure to be located on North Water Street, for the next Better Block event, to be held in Summer, 2019. Better Block event typically shows the community members that they have the power to make changes in their neighborhoods, and they show City Hall how these changes would work. During this event many local businesses (restaurants, food trucks, entrepreneurs, social services etc.) use innovative temporary structure, where the interior becomes the exterior, to increase their awareness with consumers and communicate their brand. These temporary interventions not only promote the businesses but enhance urban vitality, engage the public in urban design decisions, and eventually support permanent development.

This Pop-Up structure will be located on or adjacent to North Water Street. Each studio section will identify the location/site after thoroughly researching the past better block event, place, context and traffic flow where these 13 to 14 structures will be located. This Pop-Up needs to accommodate display of product(s) and services, branding, and interface with consumer and owner/employee. It could possibly be a nomadic structure but designed in a way that it could be easily assembled on the site. This program should be used as baseline information, to be augmented by research about this space type, retail trends, consumer behavior etc. This imaginative and temporary installation shouldn't be more than 500 sqft in area and 12' in height. It should manifest the essence of the business you will select and carry information about their brand, and allow for creativity, freedom and innovation.

II. DESIGN STARTEGY AND PHASING:

The schedule for the deliverables of this assignment aligns with the deliverables for the project.

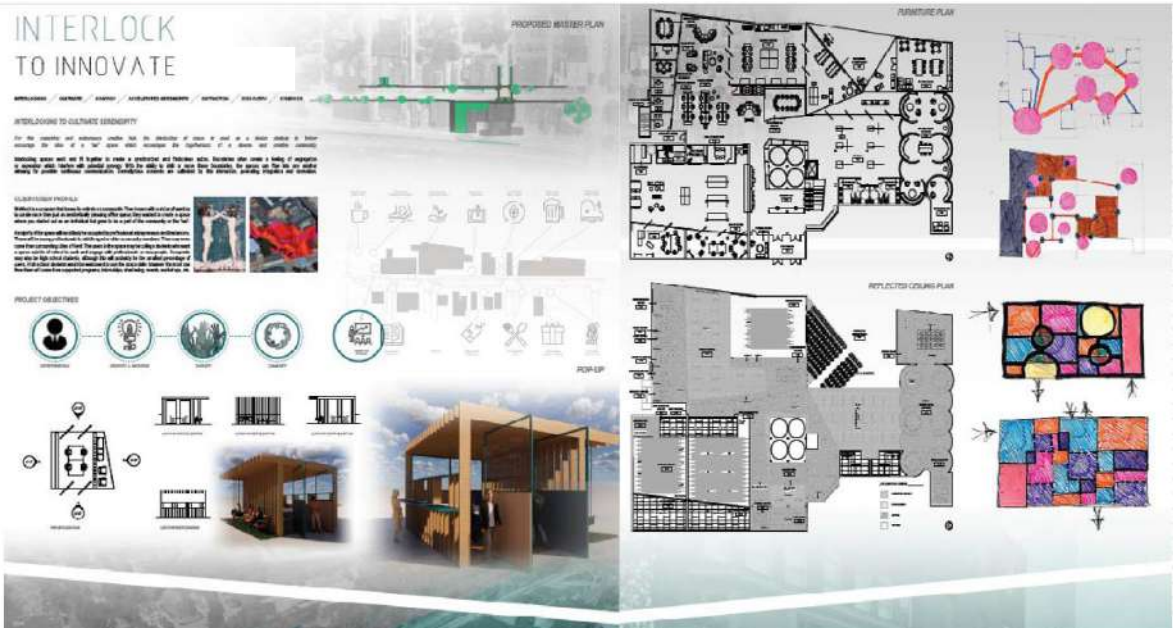
Research and Programming: Site selection and research on pop-up and their impact on businesses, consumers and city (read atleast 4 articles and write summary). Include precedent studies of minimum two pop-up retail/structures. Select the client/use for your pop-up structure.

Concept and Schematic Pin Up: Conceptual diagrams/sketches for the pop-up.

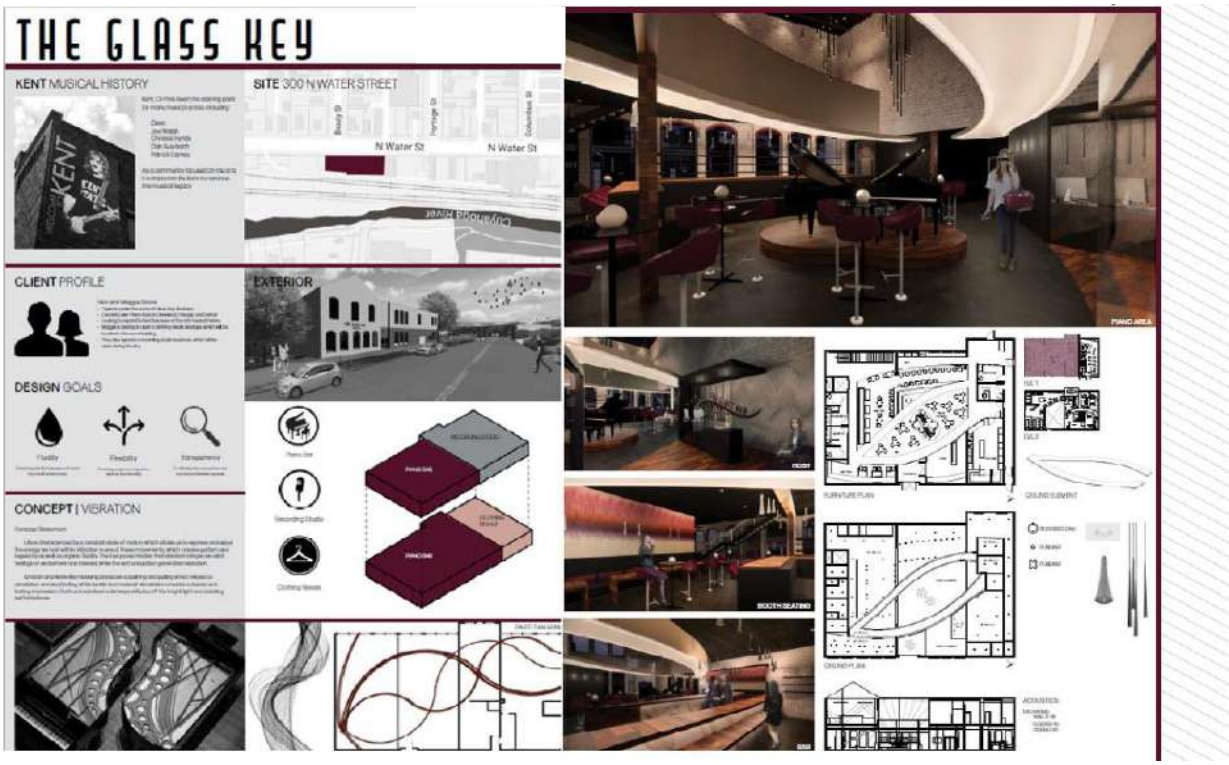
Design Development Pin Up: Site diagram, client information, plan, elevations, section (on ½" scale), axonometric and perspective of the pop up.

Final Presentation: A board dedicated to Pop-Up which includes: site diagram, client information, plan, elevations, section (on ½" scale), axonometric and perspective of the pop up and a model on ½" scale.

STUDENT PROJECTS



STUDENT PROJECTS



Pedagogy | Scholarship of Teaching & Learning | Presentation

Cultural History and Diplomatic Properties: Towards an Inclusive and Interdisciplinary Model in Studio Pedagogy

Diane Al Shihabi, Iowa State University - College of Design
Mikesch Muecke, Iowa State University

ABSTRACT

Between 2019 and 2027, student demographics in American universities are projected to shift with significant increases in dual-culture and minority students (Latinos, Asian and Pacific Islanders, African American), and decreases in white students (IES 2019). During the same period, design firms are expected to continue seeking interdisciplinary teams of agile designers who have the ability to work across disciplinary boundaries. These cultural and professional changes suggest that curriculum committees need to re-consider how design education is taught. At issue is whether the studio should be the core of a design program, whether history and design studios should have more of a cultural focus, and whether core and studio courses should be more integrated within and across disciplines. Hence, this study asks how can an upper-level interdisciplinary design studio collaborate on projects relevant to multiple cultures, while integrating core-course content in history and preservation. The paper traces development of an interdisciplinary studio (interior design, architecture, landscape architecture) that collaborates with the State Department on the research and interpretation of diplomatic properties listed on the Register of Culturally Significant Buildings Abroad. Students researched (1) Winfield House, the American Ambassador's residence in England, (2) Villa Petschek, the American Ambassador's residence in Czechia, and (3) the American Legation in Morocco.

The studio's pedagogical framework includes a systematic design process that integrates students

with global collaborators to 1) research, analyze, and document each property including its developmental history, architectural precedents, and condition using traditional and contemporary methods, 2) study and interpret shared cultural and diplomatic objectives of each property, and 3) develop website prototypes using state-of-the-art technologies and content that appeals to broad international audiences. The instructional approach utilizes a mixed-methods research and design process that integrates (1) onsite material cultural analysis, including data from LIDAR scans, interviews, videos and photography, (2) archival analysis (written and photographic), (3) interpretive analysis through film, (4) national and international preservation standards and (5) human subjects training (Creswell 2018, Prown 1982, NPS 2018, CITI 2018). Project collaborators include the State Department's Bureau of Overseas Building Operations and the Office of Cultural Heritage, Ambassador's Residence staff, American Embassy staff, American Legation staff, and the university's Institutional Review Board. Deliverables include a historic structures report, three website prototypes, and a final presentation.

Student outcomes include an interdisciplinary integration of cultural-historical and contemporary research that facilitates website development and that merges established national and international preservation standards. Students work across disciplines to apply research and generate digital drawings showing chronological changes to facades, interiors, and landscape components over multiple decades. Further, the research approach educates students on a distinct evidenced-based process that is shared across design specializations in preservation projects.

This study's information advances interior design pedagogy by (1) integrating cultural and design history, and preservation education within a studio setting, (2) expanding interdisciplinary and engaged research opportunities through national and global collaborations, and (3) educating students on the value of cultural heritage and preservation as a design specialization. Collectively, the integrated instructional methods, flexible interdisciplinary approach, and multicultural projects with global relevance synthesize and equalize diverse cultural histories, global preservation protocols, and technical design proficiency.

REFERENCES

CITI. 2019. “Human Subjects Research.” Accessed September 21, 2019. https://about.citiprogram.org/en/series/human-subjects-research-hsr/

Creswell, J. W., Peter. 2018. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. Thousand Oaks, CA: Sage Publications.

IES National Center for Education Statistics. 2019. “Projections of Education Statistics to 2027.” Accessed September 21, 2019. https://nces.ed.gov/pubs2019/2019001.pdf

NPS (National Park Service). 2018. “Technical Preservation Services, The Secretary of Interiors Standards.” Accessed September 10, 2018. https://www.nps.gov/tps/standards.htm

Prown, Jules David. 1982. "Mind in Matter: An Introduction to Material Culture Theory and Method." Winterthur Portfolio 17, no. 1 (Spring, 1982): 1-19.

Student Work, Archival Research and On-Site Photography

Physical Description of Winfield House

To fully understand the design of the official residence of the US Ambassador to the United Kingdom, it is necessary to examine all character-defining elements of both the exterior and interior of Winfield House. This is crucial when identifying the architectural style. The following physical description of Winfield House contains a mixture of data collected with photographs used for reference, as well as independently-conducted research for this report.

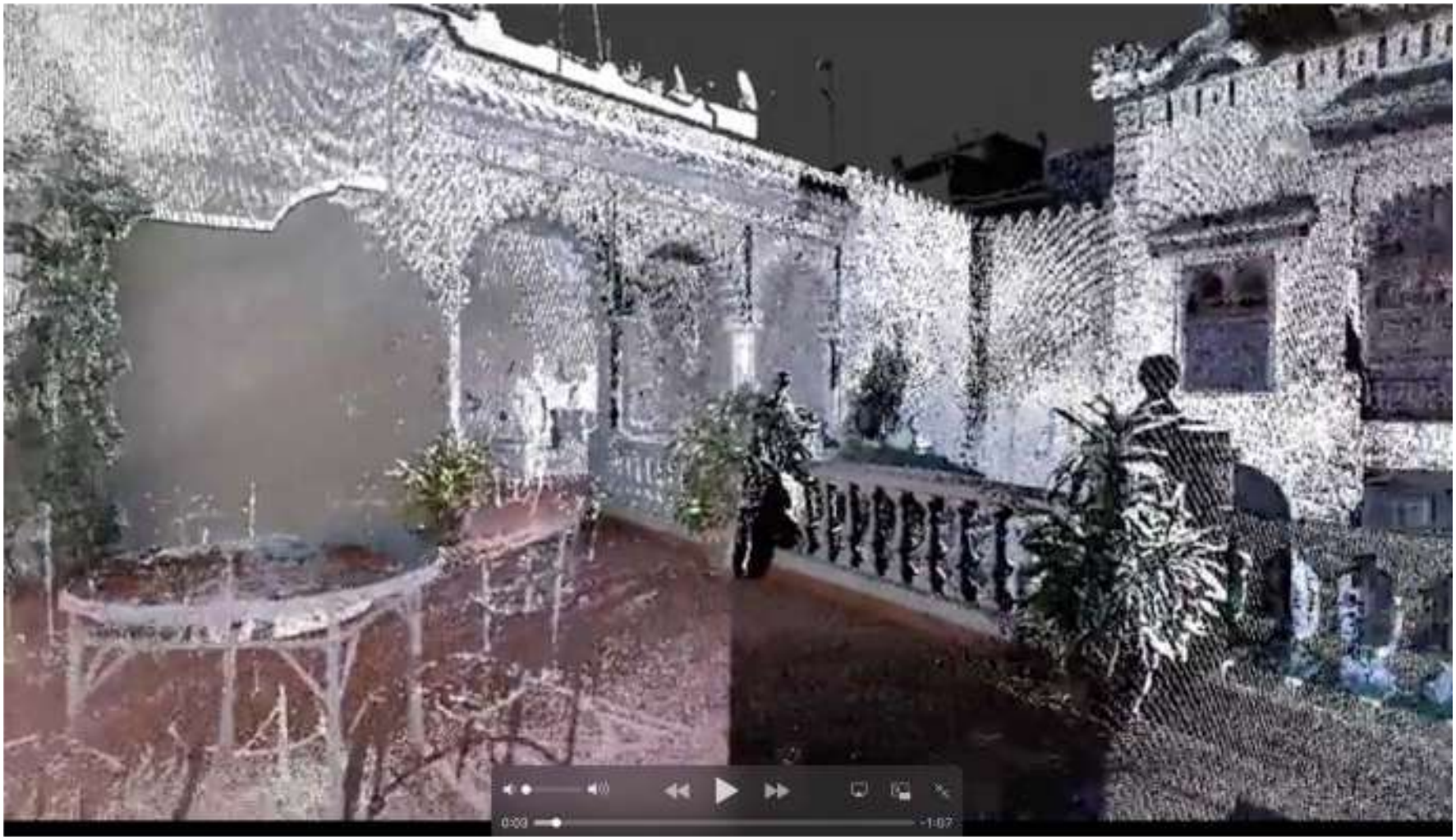
Winfield House sits on a twelve-and-a-half acre property on the northwest side of Regent's Park.[1] The façades of the residence consist of red brick, and Portland stone dressing.[2] At the time of its construction, in 1937, the color of the controversial brick material was described as a "quiet, browny sand-faced brick."[3] It was controversial because the locals surrounding Regent's Park believed a bright red brick would add a "pinkly [glow] like an open sore amidst the masterpieces of cream stucco."[4] The entrance-side of the residence boasts thirteen bays of windows.[5] Three-bay ends protrude and flank an additional single-storey entrance extension.[6] The front door of Winfield House rests inside a portico and is flanked with substantial Tuscan columns with no plinth, a simple entablature, and an arched pediment with returns, exhibiting a roundel bearing the Great Seal of the United States of America,[7] **Fig. 1**. Angle quoins in Portland stone dress all corners of the structure. The building is surmounted by a

[1] "Ambassador's Residence - Winfield House," US Embassy & Consulates in the United Kingdom, accessed February 10, 2017, https://uk.usembassy.gov/our-relationship/our-ambassador/ambassadors-residence/.
[2] Marcus Binney, *Winfield House* (London: Thames & Hudson, 2008), 26.
[3] Binney, *Winfield House*, 26.
[4] Binney, *Winfield House*, 26.
[5] "Winfield House," Historic England, accessed February 15, 2017, https://historicengland.org.uk/listing/the-list/list-entry/1389411.
[6] "Winfield House," Historic England.
[7] "Winfield House," Historic England.

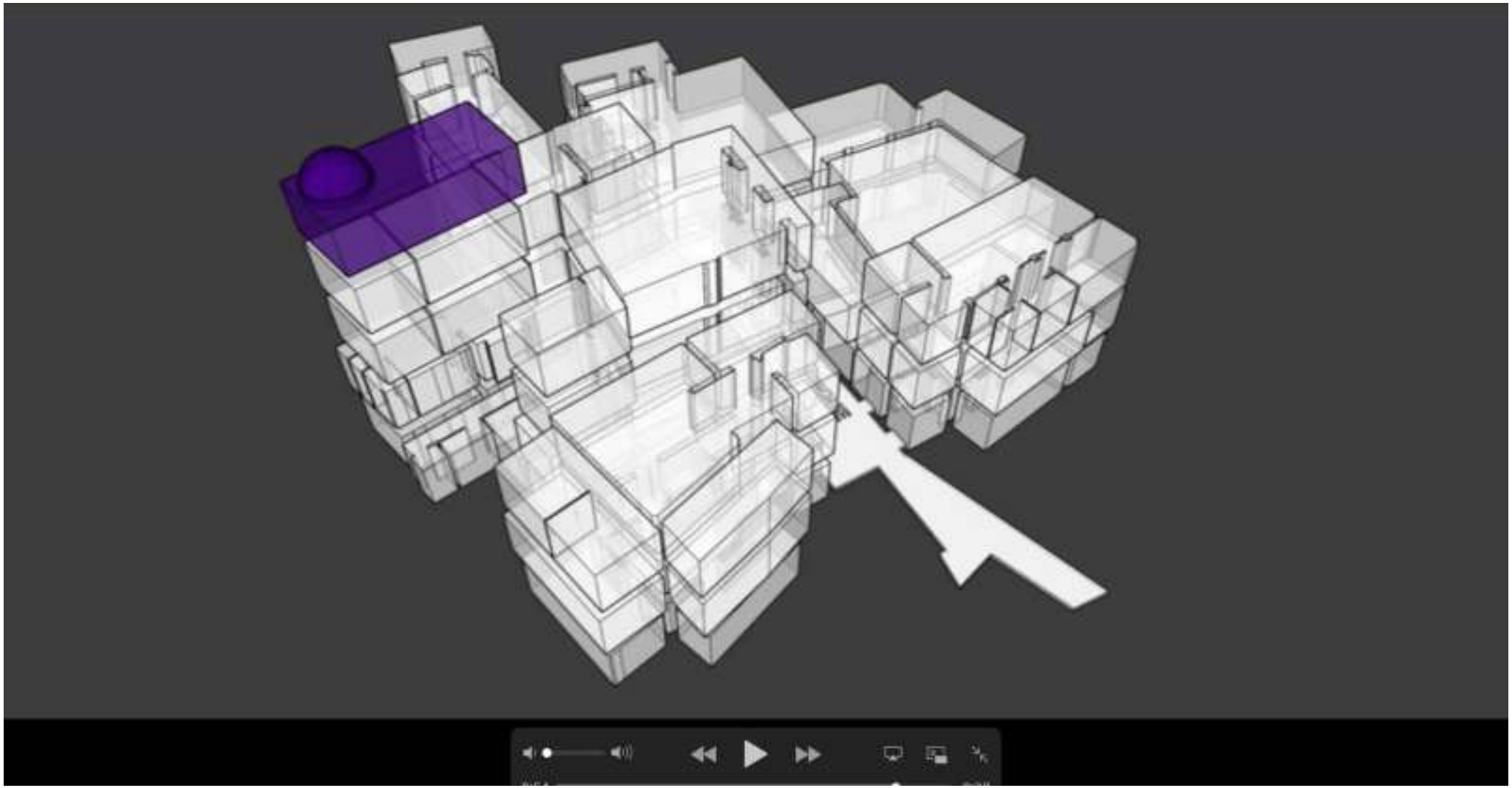
Fig. 11. The Garden Room viewed from the Reception Hall. Winfield House. 2017.

Fig. 12. One of the four painted armchairs with lattice back. Winfield House. 2017.

Student Work, LIDAR Point Cloud Animation of Main Courtyard, American Legation, Tangier, Morocco



Student Work, Digital Model and Animation of American Legation Historical Development, Tangier



Student Work, Reflection and Innovative Independent Analyses

Preservation Uniformitarianism, a multimedia mapping research that questions and criticizes the existing accessibility to historic sites in London

A three map series analyzed and illustrated the issue and advocated a new way of preservation: preserving while still maintain human engagement to the historic properties. The maps present multiple interdisciplinary methodologies to achieve that goal. These methodologies were used to study and document the Winfield House, which is a sample private property that people has limited access to physically or to access its complete history.

Map 2
Historic Observation

Student Work, Website Logo—Digital Interpretation of Ambassador's Residence; End of Semester Informal Review

Informal Student Reviews End of Semester

What I think worked:
I think what worked best is that students were able to contribute to the project in a variety of ways based on their own personal interest or skill set. This is different from a lot of other studios I've taken in the past where everyone works on the same type of project whether they're passionate about it or not. ...We didn't see 10 different hotel designs, etc., which could get a little boring for reviewers... I got to explore and apply new technology that I was really excited to share with others and it kept me engaged with reviewers throughout the final review. People really enjoyed the fact that there were so many different things happening. Also I think that having two great professors (one more conventional than the other) was a great experience as well! To see how you and [redacted] work so well together was inspiring.

What I think didn't:
I think that people need to be held responsible for their work-especially if they didn't come through with what they said they were going to do. (I know I may have been a tad guilty at this too BUT I also delivered a great project at the end). I understand that in the real world, everyone works together to complete the work if someone's falling behind. However, I had a lot of trust issues with my studiomates as far as the quality of the work they were producing; therefore, I was less willing to help those who were not pulling their weight in the class. Senioritis may have also played a part in my unwillingness to help, but that's even more unacceptable as an excuse.

How to improve:
Bring better equipment [redacted]!! The interviews would've been so much better if we had boommics and better cameras. Make sure, next year, that you rent equipment from the [redacted].

Honestly, this was one of the most memorable studios I've ever been a part of. Having the freedom to chose how I contribute to the project was a great feeling and experience! We should have more studios like this at [redacted]

Pedagogy | Scholarship of Teaching & Learning | Presentation

Derived from the Dynamic: Choreographed Time-Based Media's Influence on the Evolution of 2D & 3D Abstract Compositions

Felicia Dean, University of Tennessee, Knoxville

ABSTRACT

Derived from the Dynamic identifies an alternative method for generating 2D and 3D line, shape, form and space compositions. The project is a response to previous academic design methods of generating 2D and 3D compositions with the analysis of static imagery, such as 2D artwork or photographs of an object. *Derived from the Dynamic* proposes a change from the previous static variable to a dynamic one in order to introduce in early undergraduate design education an understanding of 2D and 3D spatial depth, movement, and multi-dimensional organization through the use of time-based media. The project addresses the ability to analyze space as a dimension with the application of time-based media and digital drawing. Students' research revolves around the visual analysis of a dance genre's choreography.

Students assess swing, break-dancing, vogueing, square dancing, and disco. They complete literary research pertaining to the economic, social, cultural, historical, and contemporary contexts of the dance movements while understanding the impact the genre has had on interior spaces. In combination, students worked in teams learning choreography from their dance genre to demonstrate and teach the class.

Next, students work with video, which should successfully demonstrate the identity of their dance genre. In Photoshop students segment the videos into frames, then export frames into Illustrator, map the body using point, line, and shape by drawing over each frame and export it as an animation. Students are challenged to understand the movement of the body in space based on

joint rotations, perspective, and the relationship of the parts of the body to the whole of the movements. Supplemental readings are supplied, such as *Dancing and Drawing, Choreography and Architecture* by Steven Spier (2005) which identifies the relationship of choreography to drawing and architecture. Spier reflects on the works of choreographer William Forsythe and architect Daniel Libeskind in relation to the geometries of space which are implied in movement rather than preexisting as physical form.

After the animation, students breakdown elements of the drawn frames into abstracted 2D compositions with research associated concepts. Students identify interior and exterior boundaries by analyzing the impact of the canvas size and placement of the composition on the page.

In the 3D composition application of the project, students translate their 2D compositions' spatial relationships into 3D abstracted form. Strengths of their various 2D compositions and concepts are identified. Students create small mockups, sketches, and sketch models of the ideas being tested. The resulting outcome is a final model displaying an abstracted re-organization of previous characteristics of the 2D compositions.

The approach of the *Derived from the Dynamic* project addresses how time-based media technology has the potential to introduce, in early undergraduate design education, the experience of developing research, ideas, design compositions and concepts based on a dynamic spatial context. The project inserts a dynamic media for research to allow for an early analysis of space within a 2D context. In addition the project with connects the body in space to time-based media and dance choreography.

The activated spatial qualities of the project's exercises transfer into the culture of the studio environment, creating an energy around studio critiques which is engaging for students. The method afforded students an alternative approach to design development of 2D & 3D compositions by combining active learning through students' dance demonstrations with dynamic time-based media research. The introduction of time-based media and its generative design qualities offered students an opportunity to understand 2D and 3D spatial depth, movement, and multi-dimensional organization through a real-time approach and response to space and its change over time.

REFERENCES

Steven Spier (2005) Dancing and drawing, choreography and architecture, The Journal of Architecture, 10:4, 349-364, DOI: 10.1080/13602360500285401

Collectif, O. (2000). Rudolf Von Laban's Choreutics, an "analysis of forms in movement". The three plans. In Danse et architecture. Nouvelle de danse 42/43 (p. 224). Contredanse.

Collectif, O. (2000). Rudolf Von Laban's Gammes Dynamosphériques, séquence de mouvement "A" et "B." In Danse et architecture. Nouvelle de danse 42/43 (p. 224). Contredanse.

Collectif, O. (2000). William Forsythe "The loss of a small detail" Choreographic diagram, Frankfurt Ballet, 1991. In Danse et architecture. Nouvelle de danse 42/43 (p. 224). Contredanse.

Forsythe, W. (2011). Lectures from Improvisation Technologies. Retrieved from William Forsythe Choreographic Objects website: https://www.williamforsythe.com/filmspaces.html?&no_cache=1&detail=1&uid=42

Design Exercise 2 : 2D mapping the body in space

Learning Objectives:

Apply a system of points and lines in order to 2D map the body in space based on assigned dance genre.
Develop a series of sequence d illustrations digitally in order to create a graphic animation
Through this exercise students will develop an understanding of human movement through space and time.

Materials :

Photoshop
Illustrator
Movie Player
Laptop based on Design major's program specs

PART A

Instructions:

Step 1

Video research & segmenting

- Online, search for videos which display the essence of your previous dance genre research. You will need to reference a minimum of 2 minutes of the chosen video based on the dance. The video should focus on the dancer, the danc er should always be in the frame , and there should not be multiple camera shots.
- Segment the video into 30 second sequenced sections.
- Save each 30 second video with a name that corresponds to the video sequence.

Step 2

Import your video into Photoshop

- Go to File ->Import -> Video Frames to Layer -> Choose your 30 second file ->Open -> Select "From Beginning to End" ->Select "Limit to Every" 9 Frames" -> Select "Make Frame Animation"
- This should output approximately 53 layers
- Check the video import to make sure the number of frames is smooth enough to distinguish the dance moves. Some dance sequences may need a limit of every 7 or 12 frames to create a smooth enough sequence. After import save your file as a PSD document.
- Repeat the step for the nex t 30 second video section

Step 3

Image Size in Photoshop

- Change the Image size to 4 inches for the smallest dimension, making sure the dimensions are constrained
- Change the Canvas Size to 4 inches for the largest dimension, make sure it resizes from the center
- Play your animation in Photoshop to make sure the figure has not been cut out from the scene .
- Reconfigure Image & Canvas size if the figure falls out of th e frame. Choose dimensions a little larger than 4" x 4" either square or rectilinear.

- *Step 4*

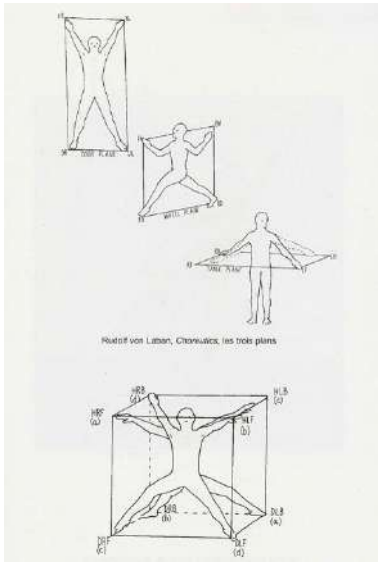
  Export Layers
  - Export Photoshop layers of each video section: File -> Export -> Layers to Files -> Choose file location and place files in their a project folder -> Type in a "File name Prefix" -> Choose file type (JPEG or TIFF) -> Click Run -> Click OK

- *Step 5*

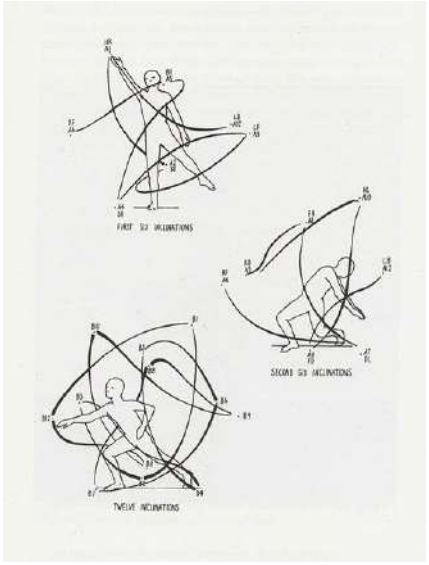
  Illustrator
  - Place each individual exported image on its own ArtBoard
  - Number each on with text so you can keep them organized later when converting to a PDF. ArtBoards have corresponding layer numbers, so if the sequence of frames does not correlate to the number sequence of the Artboard, your PDF export will be out of order.

- *Step 6*

  Point and Line mapping
  - Create a new layer in Illustrator to map the movement portrayed in each image. See examples below.



Collectif, O. (2000). Rudolf Von Laban's Choreutics, an "analysis of forms in movement". The three plans. In *Danse et architecture. Nouvelle de danse 42/43* (p. 224). Contredanse.



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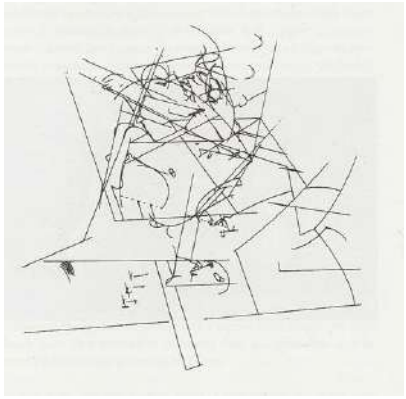

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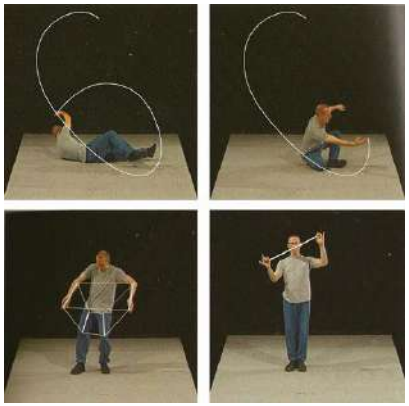

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PART B

Instructions:

- *Step 1*
  Revisions to PART A
  - Based on feedback given in class to group and individually, revise you work for PART A

- *Step 2*
  Repeat PART A for the 2nd minute of the video

- *Step 3*
  Illustrator to Photoshop
  - Place illustrator frames for the 2 minutes of drawings in Photoshop to create an animation
  - Check to see if the animation is smooth, or broken. Does the animation translate the dance genre appropriately?

Deliverables

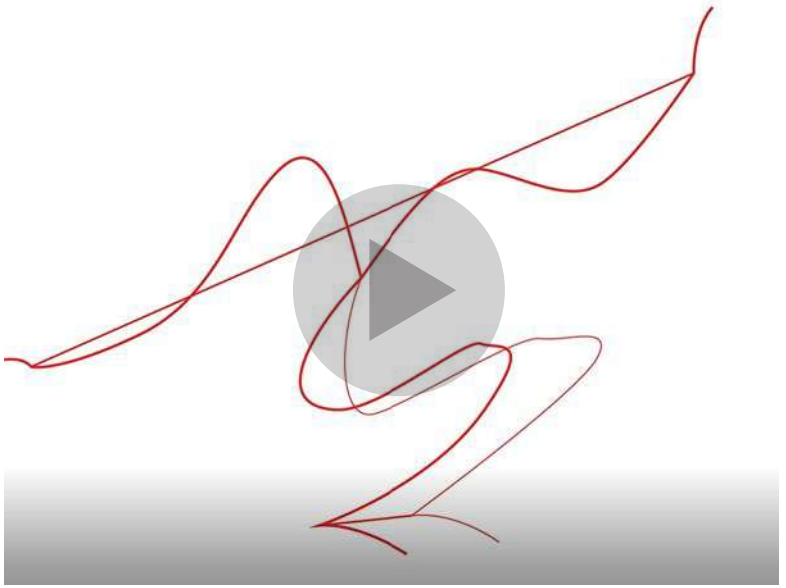
- Illustrator mapping document (PDF) for 2nd minute of video footage, documenting the movement with the use of point and line.
- Movie file of the drawing animation exported from Photoshop

Grading Criteria:

- Quality of revisions made to PART A
- Quality of translation of video movement to 2D mapping series based on genre

DESIGN EXERCISE 2_STUDENT WORK

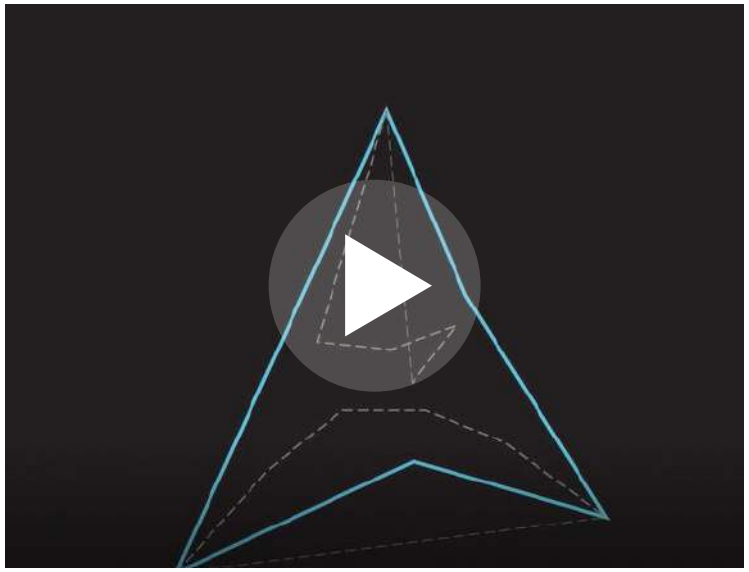
A



VIDEO ANIMATION STILLS

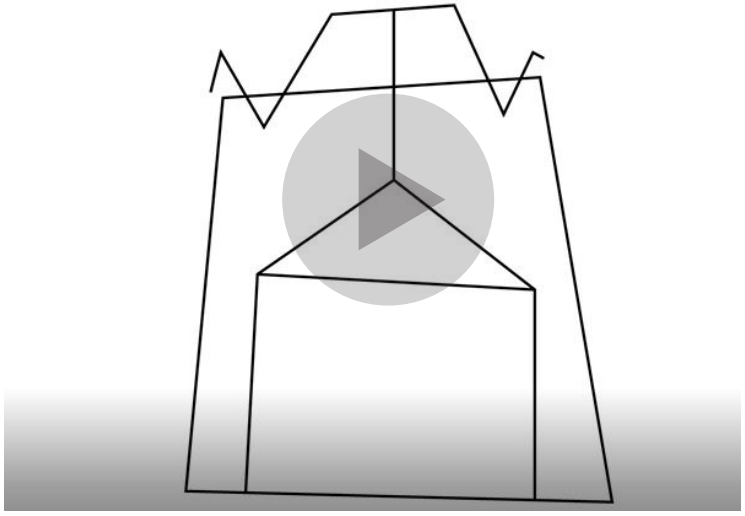
B

C



***VIDEO ANIMATION STILLS**

D



Design Exercise 3: 2D line & form composition analysis

Learning Objectives:

- To transfer 2D design principles from mapping compositions of the body in space based on dance genres
- To incorporate analytical research of abstracted form into a 2D composition
- To generate a 2D composition design that is inspired by the analysis of the body in space which is based on dance genres, but is not a literal interpretation

Materials:

- Illustrator + Photoshop
- Laptop based on Design major's program specs
- Printer

Instructions:

- *Step 1*

  Concept development
  - Based on your genre and research, develop 3 concepts for what the essence of the overall compositions should suggest.
  - Develop 3 concept titles
  - Develop 3 concept statements

- *Step 2*

  Digital 2D line + shape compositions
  - For each concept create a minimum of 4 compositions. Using Illustrator and referencing your previous line/shape work in exercise 2, create 2-D line + shape compositions that translate your mapping compositions of the body in space.
  - Guidance:
    - Review and study the ebook Architecture: Form, Space, and Order by Francis D.K. Ching Chapter 2 FORM - Sections include: ADDITIVE FORM, CENTRALIZED FORM, LINEAR FORM, RADIAL FORM, CLUSTERED FORM, GRID FORM, FORMAL COLLISIONS OF GEOMETRY, CIRCLE &SQUARE, ROTATED GRID-Chapter 4 ORGANIZATION - Sections include: SPATIAL ORGANIZATIONS, CENTRALIZED ORGANIZATIONS, LINEAR ORGANIZATIONS, RADIAL ORGANIZATIONS, CLUSTERED ORGANIZATIONS, GRID ORGANIZATIONS Chapter 7 PRINCIPLES - Sections include all that are listed in the entire chapter.

    - Are there key shapes (evident or implied) in the previous mapping compositions of the body? How do these shapes relate to each other? Are there proportional relationships? Are there forms within forms? Do these shapes repeat, and if so, how?

    - Identify the principles of design that can be found in the previous mapping compositions of the body. Identify an appropriate organizational pattern (linear, grid, centralized, radial, clustered) that your compositions should express, based on each concept and genre of dance? How does the organizational pattern reinforce each concept?

- What opportunities do the introduction of an axes of symmetry or balance; focal points; proportions; positive and negative space provide the compositions? What role does positive and negative space play in the compositional organization?
- What size artboard should be used for reinforcing the organizational pattern and essence of each concept?
- How should the elements of design, line and shape, be organized on the artboards? How does the organization speak to the essence of the concept and genre? How should the principles of design be used to organize the elements of line and shape.
- Create your compositions by manipulating, recombining, multiplying, hybridizing, distorting, regrouping, etc. the original lines and shapes discovered and separated from the mapping compositions of the body in space.

- <u>*Step 3*</u>
  Labeling compositions
  - On each composition, label the elements, principles, and organizational pattern used for the development

Deliverables

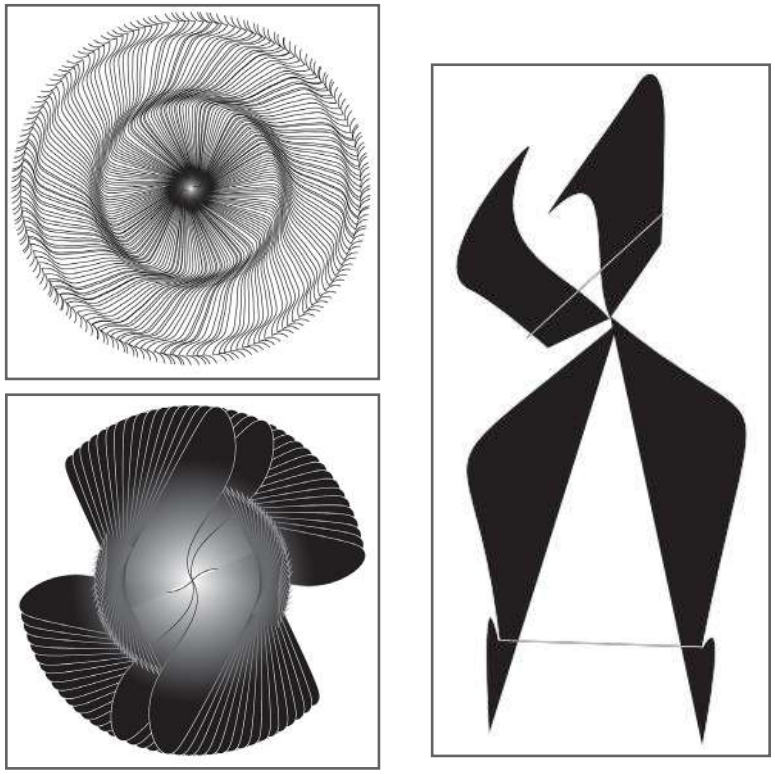
- 3 concept titles, each with a concept statement, due to CANVAS and printed
- 4 – 2D Line + Shape compositions for each concept (12 total) labeled as mentioned in step 3, due to CANVAS & printed
- Verbal presentation of work

Grading Criteria:

- Strength of the organization of the 2D composition design as related to the dance genre
- Process (extent and depth of the design exploration both by hand and digitally)
- Quality of Design (including digital craftsmanship and use of tools in Illustrator)
- Strength of verbal presentation

DESIGN EXERCISE 3_STUDENT WORK

A



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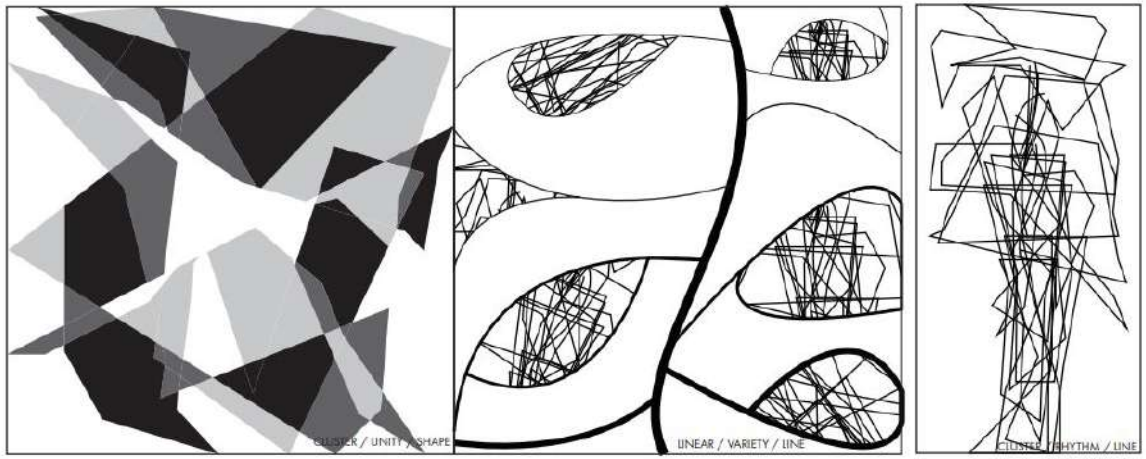

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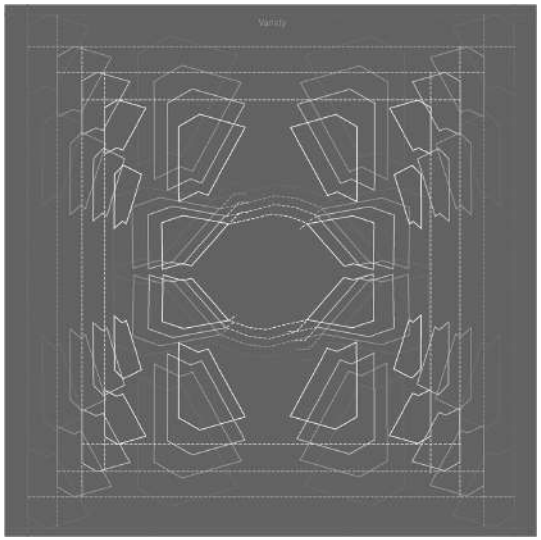

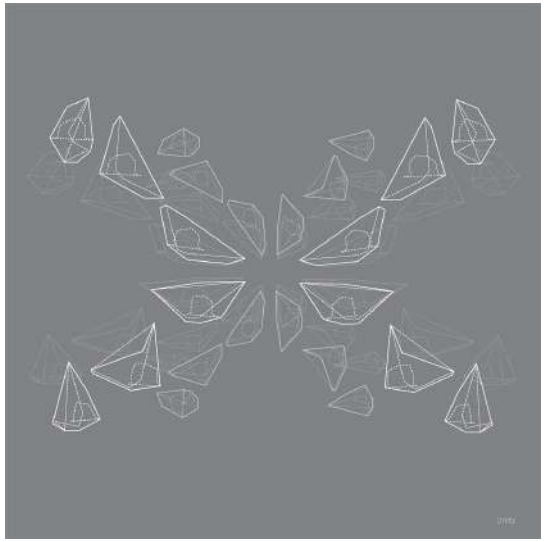

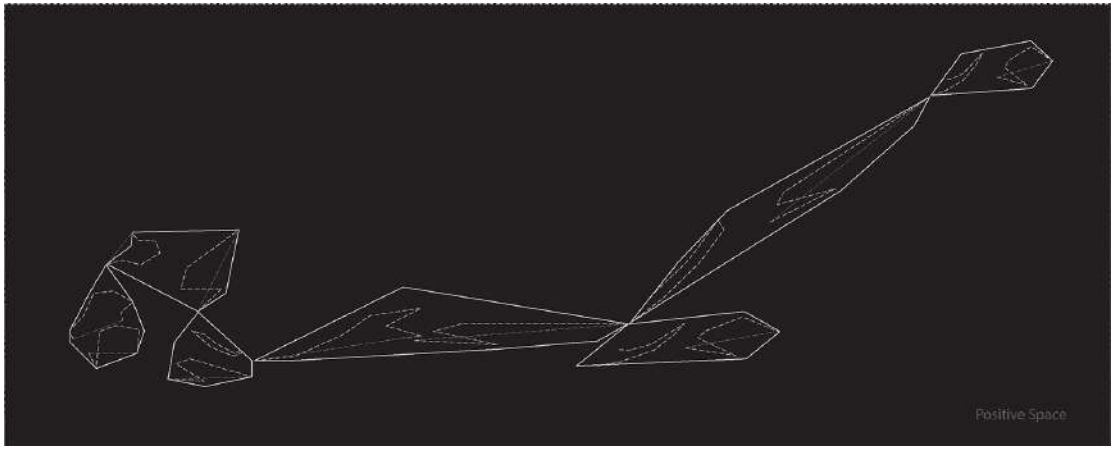

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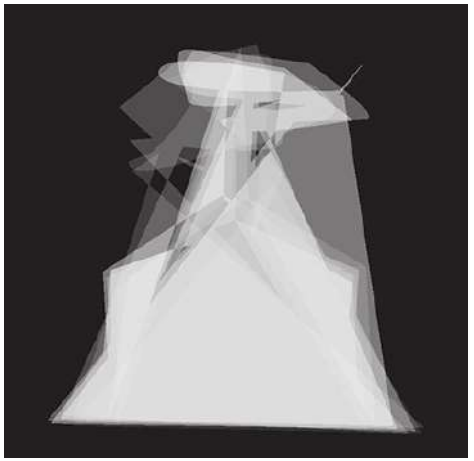
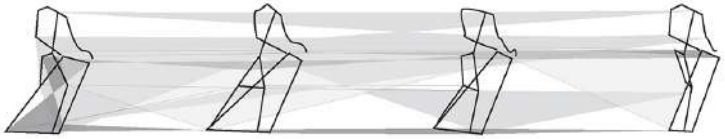




Design Exercise 4: 3D Volumetric Compositions

Learning Objectives:

- Based on dance genres, to apply design principles from 2D compositions of the body in space to 3D design solutions which manipulate form and surface properties
- To incorporate analytical research of abstracted form from 2D composition compositional analysis to 3D composition designs
- To generate 3D composition designs that are inspired by the analysis of the body in space which is based on dance genres, but is not a literal interpretation
- To develop models displaying high quality craftsmanship and joinery methods

Materials:

- Bristol or card-stock paper
- white paint as needed
- adhesives
- glue, staples, pins, thread, other means of attachment
- tape
- chipboard, matboard, museum board, corrugated cardboard, foamcore board, basswood, balsa, plywood
- fabric
- acrylic

Instructions:

- *Step 1*

  Concept Development
  - Based on your 2D line & form composition analysis and dance genre, develop a concept for what the essence of the overall composition should suggest. The concept should include a title and statement.

- *Step 2*

  3D Volumetric Compositions
  - Guidance:

    1. Before beginning, consider the following

       - The resulting compositions should reflect the design elements and principles uncovered in your 2D final & revised 2D line & form composition explorations. There should be a clear transfer from the compositional and abstracted patterns to those being created for the 3D volumetric compositions.

       -Are there key shapes (evident or implied) in the previous 2D compositions of the body? How do these shapes relate to each other? Are there proportional relationships? Are there forms within forms? Do these shapes repeat, and if so, how?

       - Identify the principles of design that can be found in the previous final & revised 2D line & form composition explorations. Identify appropriate organizational patterns (linear, grid, centralized, radial, clustered). How does the organizational pattern reinforce the concept?

       -What opportunities does the introduction of an axes of symmetry or balance; focal points; proportions; positive and negative space provide the 3D volumetric compositions? What role does positive and negative space play in the 3D compositional organization?

    2. Prior to the creation of the 3D study models create sketches and 3D mockups of the forms you want to explore in order to begin the translation process. These sketches and 3D mockups must demonstrate methods of joinery you are considering on implementing beyond butt joints (gluing edges side by side, adjacent).

    3. Create a minimum of THREE study models 3D compositions based on the feedback of your final 2D line & form compositions and the revisions you have since made to them. Be creative and do not limit yourself to just extruding the shapes—meaning, giving depth to the shapes along one direction.

       -Create your 3D volumetric compositions by applying cues of manipulating, recombining, multiplying, hybridizing, distorting, regrouping, etc. which are suggested by your final & revised 2D line & form composition explorations.

       -Using the materials listed above, build a minimum of THREE 3D compositions based on your original artwork. We will refer to these as *study models*. Each study model should fit into a virtual 12″x12″12″ cube, meaning close to these dimensions in at least one direction of XYZ. All color should be removed; the finish of all the materials should be a consistent neutral used throughout. Removing color at this point will allow you to better concentrate on working with form and its attributes.

- *Step 3*

  Revise 3D Volumetric Compositions & Concept
  - Based on feedback given on your three 3D compositions create ONE revised 3D composition

Deliverables

Stage 1

- Significant evidence of work toward
  - Sketches and 3D mockups
  - Concept with title and statement, printed or written format

Stage 2

- Sketches and 3D mockups
- Concept with title and statement, printed or written format
- THREE completed 3D volumetric study models

Stage 3

- Further explored Sketches and 3D mockups
- Revised 3D Volumetric Compositions & Concept with title and statement, printed or written format
- ONE finalized 3D volumetric study model

Grading Criteria:

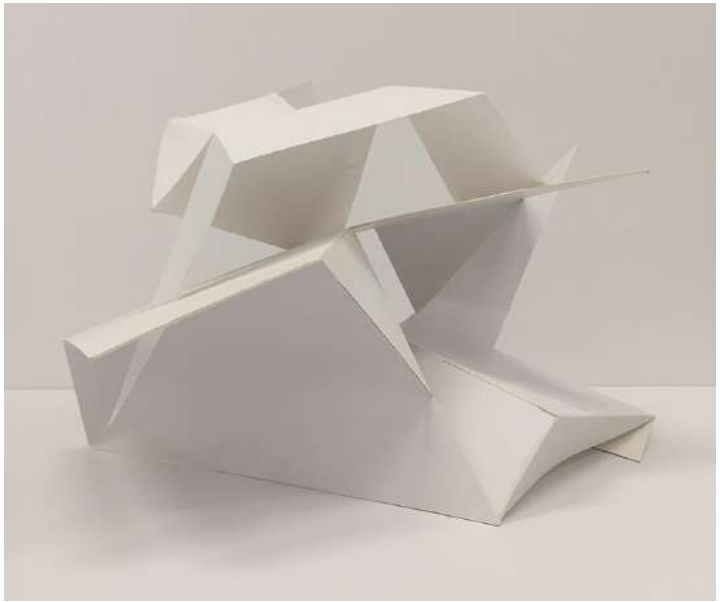
- Strength of the concept and organization of the 3D volumetric composition design as related to the dance genre
- Strength of final 3D volumetric composition design
- Process (extent and depth of the design exploration through sketches, mockups, and preliminary study models)
- Quality & Strength of Craftsmanship and Joinery Methods

DESIGN EXERCISE 4_STUDENT WORK

A

C

B



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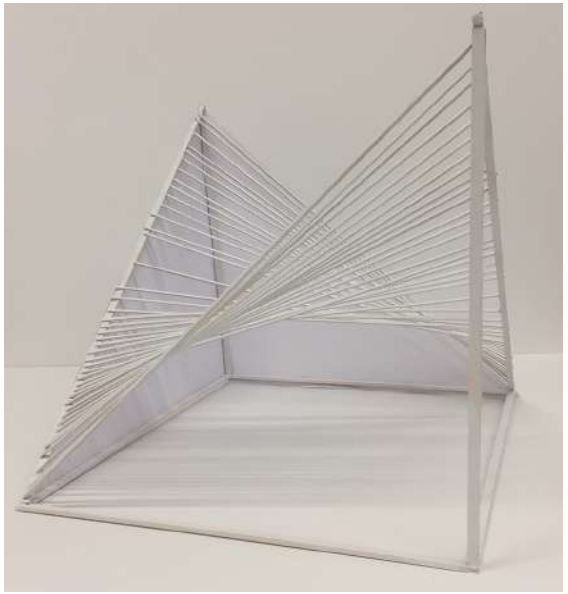


Pedagogy | Scholarship of Teaching & Learning | Presentation

Developing STEAM in Interior Design Education

Yu Nong Khew, Parsons, The New School for Design
Nadia Elrokhsy, Parsons, The New School for Design

ABSTRACT

The teaching and learning of Science, Technology, Engineering and Mathematics, known collectively as STEM (Christenson 2011) began as a government initiative in the United States of America (Kimbell 2011), with involvement from the National Science Foundation, the Department of Labor, NASA and more. Increasingly, the conversation has shifted towards Science, Technology, Engineering, Arts and Mathematics (STEAM) learning. Interior Design students often have the preconceived notion that they are not proficient in the sciences or mathematics and shy away from project work that requires STEAM/D involvement. However, the education of an interior designer inherently involves some level of STEAM learning and thinking. The Fall 2018 graduate elective, Soft Fab(brication), set out to dissipate some of the students' concerns with STEM/STEAM/STEAMD through Project Based Learning, both within the classroom as well as involving the local community and the environment.

In the first project, students were asked to design a window covering for their classroom to facilitate their level of comfort in translating interior design concepts to a full size prototype. This assignment was used as a way to get students comfortable in making prototypes in class.

In the second project, students were given the task of designing and fabricating a series of wall coverings set within a geometric repetition of 9 hexagons. At the start of this project, the class did a simple drawing exercise breaking down ancient islamic art via geometry. By connecting

drawing, art and mathematics, students felt more confident and aware of the use of mathematics in their design work. Next, students were tasked with using biodegradable materials for prototyping their wall coverings. They were asked to research and explain the materials chosen, and explain the chemical composition of the materials, if the materials are biodegradable or compostable and the impact the materials have on the environment. Students were also asked to discuss with each other the impact the chemical composition a material has on fabrication techniques.

In the third project, students were asked to design, build and install in the school conference room a new collection of wall coverings that have acoustical value and is made out of mycelium. Rather than purchasing a DIY mycelium kit available online, students were asked to grow their own mycelium from fresh mushrooms they bought from the supermarket. A guest lecturer from Queens Botanical Gardens was invited to give a lecture on the biology of spores and explained the growth conditions required for growing mycelium from mushroom spawn. By teaching the biological processes of the material students were using, it helped students better understand design considerations such as thicknesses of wall coverings, and length of time required in the design and production of their acoustical wall covering.

By studying interior design through the lens of science, technology, engineering, mathematics and art, students are not only better equipped to adapt to the rapidly changing and increasingly multi-disciplinary nature of the profession, they are also better prepared to be innovators (Obama 2013) within and surrounding the industry.

REFERENCES

Christenson, J. (2011). Ramaley coined STEM term now used nationwide. Winona Daily News. http://www.winonadailynews.com/news/local/article_457afe3e-0db3-11e1-abe0-001cc4c03286.html. Accessed 23rd September 2019.

Kimbell, R. (2011). Handle with Care, Design and Technology Education; An International Journal; Special edition: STEM – underpinned by research?, Vol 16, No.1. http://ojs.lboro.ac.uk/ojs/index.php/DATE/article/view/1586. Accessed 23rd September 2019.

Obama, B. (2013). Educate to Innovate: Third Annual White House Science Fair, April 2013. http://www.whitehouse.gov/issues/education/k-12/educate-innovate. Accessed 23rd September 2019.

IDEC 2020 ANNUAL CONFERENCE APPENDIX SUBMISSION
Developing STEAM in Interior Design Education

Course Type: Graduate Elective Fall 2018
Faculty Narrative

> *"Civilization seems in general to estrange men from materials, that is, from materials in their original form. For the process of shaping these is so divided into separate steps that one person is rarely involved in the whole course of manufacture, often knowing only the finished product. But if we want to get from materials the sense of directness, the adventure of being close to studd the world is made of, we have to go back to the material itself, to its original state, and from there on partake in its stages of change… Material, that is to say unformed or unshaped matter, is the field where authority blocks independent experimentation less than in many other fields, and for this reason it seems well fitted to become the training ground for invention and free speculation. It is here that even the shyest beginner can catch a glimpse of the exhilaration of creating, by being a creator while at the same time he is checked by irrevocable laws set by the nature of the material, not man. Free experimentation here can result in the fulfillment of an inner urge to give form and to give permanence to ideas, that is to say, it can result in art, or it can result in the satisfaction of invention in some technical way."*
>
> -Albers, A., *Selected Writings on Design, P6-7,* Wesleyan University Press, London, 2000

Course Description

In this course, we will develop an understanding of soft materials and how softness is explored in interiors. We will explore the notion of softness in interiors with particular focus on how soft materials hug and touch the human body, as well as acoustics, light transmittance and temperature. We will learn how these materials used in novel ways can produce experiential affect in spaces, especially in relation to the human body. Through the investigation of digital and rapid prototyping tools we will study how and why soft interiors are made . The goal of the course is to introduce students to soft materials used in interiors, as well as develop digital and physical skills associated with the making of soft interiors. The course format is comprised of lectures, computation and fabrication classes, workshops at the Making Center as well as off-site visits to design and fabrication facilities.

Learning Outcomes

By the successful completion of this course, students will:

1) understand the fundamentals of working with soft materials in interior design.
2) have the ability to participate in group discussions on the use of soft materials in the 21st century.
3) understand and apply soft material knowledge in design exercises.
4) understand the role soft materials play in the principles of acoustical design.
5) develop understanding of color terminology, color principles, theories, and systems.
6) develop understanding of soft materials and textures related to human centered design
7) demonstrate the ability to appropriately fabricate prototypes using soft materials to support design concepts

IDEC 2020 ANNUAL CONFERENCE APPENDIX SUBMISSION
Developing STEAM in Interior Design Education

Project 1: PAPER

Using light, porosity and translucency as inspiration, students will create a collection of at least three(3) window covering samples (10"x10") that address color and pattern using paper. Focus should be paid in the creation of the *pattern, structure and scale* in soft materials and scaled and translated via points, lines and thicknesses of line weights into a window covering and pattern. Attention should be given to concepts of repetition, rhythm and aggregation of Project 1. Consideration should be made to presentation, however the type of paper is the students' choice. Each window covering collection will be accompanied by a 1:1 black and white line drawing with line weights, as well as a colored version. See handout for more information.

- Printed/hand drawn 2D line drawings with line weights
- physical model of window coverings (at least 3)

Project 2: FELT

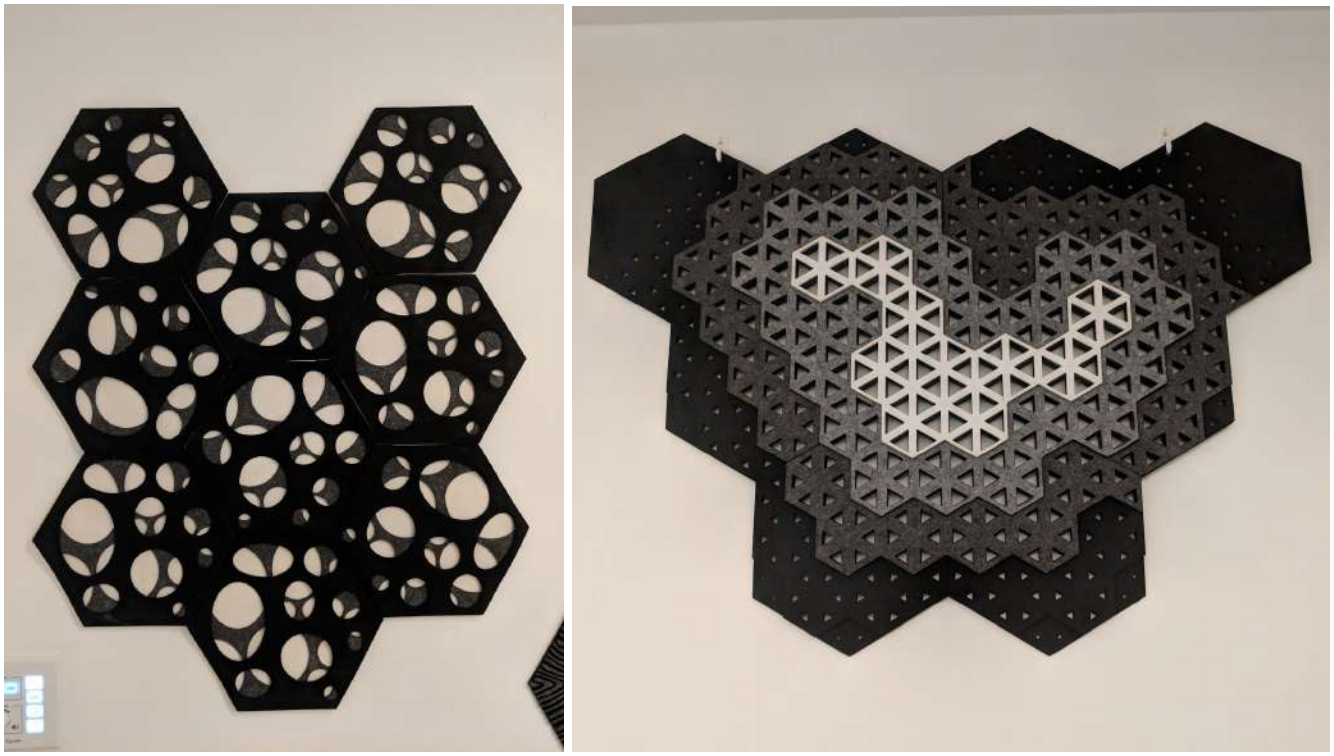
Using the knowledge from Project 1, students are now asked to create a minimum of 1:1 scale of a collection of 3 wall tiles/coverings. Students are required to develop a 2-dimensional pattern into a 2.5-dimensional form of a wall relief. Focus should be paid in the creation of the *scale, form and depth* and scaled and translated via planes and thicknesses of material into a wall covering and relief. Attention should be given to concepts of repetition, rhythm and aggregation, both as a wall tile, as well as a larger wall pattern/covering. Consideration should be made to presentation, however the material form is the students choice. Each wall tile collection will be accompanied by a 1:1 black and white line drawing with line weights, as well as a colored version. See handout for more information.

- Printed 2D line drawings with line weights,
- physical model of wall tiles
- Printed elevation showing composition of 2.5D wall tiles with pattern
- diagrams indicating translation process from 2d to 2.5d.

Project 3: MYCELIUM

Using the knowledge from Project 1 and Project 2, students are now asked to create a minimum of 1:1 scale model of a 3D wall piece, creating a 3-dimensional wall covering that takes into consideration 3-dimensional *acoustics, function and form*. Students are required to develop a 2-dimensional pattern into a 3-dimensional form of a portion of a wall of the site and show the processes used. This project may be used as part of an exhibition on the 12th floor, therefore students are asked to develop Project 3 with special focus on the fabrication aspect, paying special attention to how the panels can be installed on a wall.

- Printed 2D line drawings with line weights,
- physical model of wall tiles
- Printed composition of 3D wall tiles showing pattern
- diagrams indicating translation process from 2d to 3d.



Project 2 Student Work Samples: Left: Cheng Ma, Right: Atacan Kutlu

Project 3 Student Work Samples: Left: Kendra Clemenson, Right: Yixin Chang

Student Tan Ping's Work Samples: Left: Project 2, Right: Project 3

Student Benjamin Kapoor's Work Samples: Top: Project 3, Bottom: Project 2

Pedagogy | Scholarship of Teaching & Learning | Presentation

Elevating the Quality of Student Work: First-Year Design Students Collaborate with Rubrics to Evaluate Projects

Jill Harmon, Utah State University
Darrin Brooks, Utah State University

ABSTRACT

RELEVANCE: Prior to assigning projects in a first-year design course, students need to learn how to assess and evaluate quality deliverables. College freshmen enter design classrooms somewhat unaware of the differences in grading criteria and expectations for creative assignments, compared to what they have experienced in high school. Appleby (2014) First-year students often lack an understanding of expectations, how projects are evaluated, and are unprepared to undertake and execute their first design project. Students should understand the level of creativity, design thinking, and professionalism required on their design projects.

TEACHING ISSUE/PROBLEM: Frequently, first-year interior design students submit average or poor design work that result in low grades and student frustration. Informing students how creative projects are evaluated provides context in developing quality work. In college, students begin using and adhering to a syllabus, work independently, and submit work on-line, all of which are new to freshmen. High school students who earn an "A" on a creative assignment and often have no idea why they received the grade. Students often assume the teacher likes them or that they are naturally talented. Jackson & Larkin (2002)

CONTEXT: What can be done, from a teaching perspective, to create a design paradigm that alleviates guesswork, provides clear understanding of the grading rubric, and establish grading expectations, while encouraging more creative and professional results? This presentation will demonstrate how a collaborative studio class activity helped design students understand the

grading process and be more aware of design project expectations before projects are assigned. This activity was executed within the first two weeks of their first semester in the program.

INSTRUCTIONAL METHODS: This presentation will demonstrate a studio exercise where students collaborate, utilizing grading rubrics to assess various design projects as a way to improve student work.

- Five unique modules were set up with design work ranging in quality. Each of the modules represent a variety of projects from the previous design courses and each station had five different projects to evaluate. (See Image 1)
- Students were divided into five teams and provided five unique rubrics based on project criteria. (See Figures 1&2)
- Objective: Each team, grade and evaluate five projects work at each module.
- Teams shared evaluation outcomes and scores were recorded. (See Figure 3)
- Design instructors provided their scores with context and rational for evaluations.
- Class discussion: Results, reactions, and student conclusions.

TEACHING/LEARNING OUTCOMES: Some groups had low expectations, and other groups had difficulty selecting the best design projects. Instructional context helped shape student perception of how grades are assigned and how to utilize a rubric prior to designing a project to know how to meet or exceed expectations.

SIGNIFICANCE OF PRESENTATION: The outcome of this exercise proved valuable based on the student responses and feedback. Prior to assigning design projects in first-year instruction, students need to learn how to assess how to evaluate quality deliverables within a design course. Students concluded that this exercise gave them knowledge, confidence, and awareness in assessing their design work against assignment parameters and felt prepared to start designing and developing a successful project.

REFERENCES

Stevens, D.D. and Levi, A., (Vol. 17, No. 1, 2005-2006) Portland State Leveling the Field: Using Rubrics to Achieve Greater Equity in Teaching and Grading

Stevens, D.D. and Levi, A., (Vol. 17, No. 1, 2005-2006) Portland State Leveling the Field: Using Rubrics to Achieve Greater Equity in Teaching and Grading

Butrymowicz, S (3 Jan, 2017) Most colleges enroll many students who aren't prepared for higher education. https://hechingerreport.org/colleges-enroll-students-arent-prepared-higher-education/

Jackson, C.W. & Larkin, M. J. (Vol. 35, No. 1, 2002, pp.) Teaching Students to Use Grading Rubrics. https://journals.sagepub.com/doi/abs/10.1177/004005990203500106?journalCode=tcxa

Teaching First Year Students https://cft.vanderbilt.edu/guides-sub-pages/firstyears/

APPENDIX:

IMAGE 1: Photos Showing Modules with 5 Projects to be Evaluated by Students

FIGURE 1

ALTOID BOX 1

25 POINTS		TOTAL POINTS:	
	BEGINNER ROUGH, INCOMPLETE, MISSING ELEMENTS	**INTERMEDIATE** ELEMENTS UNDERSTOOD BUT NEEDS FURTHER DEVELOPMENT	**ADVANCED** CAN BE CONSIDERED THE WORK OF AN ADVANCED STUDENT
PROJECT OBJECTIVES INCLUDES REQUIRED ELEMENTS	1-2 POINTS	3-4 POINTS	5 POINTS
CREATIVITY & INNOVATION CREATIVE THINKING EVIDENT IN EACH ELEMENT	1-2 POINTS	3-4 POINTS	5 POINTS
ATTENTION TO DETAIL QUALITY, CONSTRUCTION, SUBJECT DETAIL	1-2 POINTS	3-4 POINTS	5 POINTS
ARCHITECTURAL LETTERING COMPARED TO LETTERING GUIDES PROVIDED	1-2 POINTS	3-4 POINTS	5 POINTS
PROFESSIONALISM COULD BE PRESENTED TO A CLIENT	1-2 POINTS	3-4 POINTS	5 POINTS
TOTALS:			

FIGURE 2

BIRD INSPIRED BY THE ART OF BURNING MAN 1

25 POINTS		TOTAL POINTS:	
	BEGINNER ROUGH, INCOMPLETE, MISSING ELEMENTS	**INTERMEDIATE** ELEMENTS UNDERSTOOD BUT NEEDS FURTHER DEVELOPMENT	**ADVANCED** CAN BE CONSIDERED THE WORK OF AN ADVANCED STUDENT
PROJECT OBJECTIVES INCLUDES REQUIRED ELEMENTS	1-2 POINTS	3-4 POINTS	5 POINTS
CREATIVITY & INNOVATION CREATIVE THINKING EVIDENT IN EACH ELEMENT	1-2 POINTS	3-4 POINTS	5 POINTS
ATTENTION TO DETAIL QUALITY, CONSTRUCTION, SUBJECT DETAIL	1-2 POINTS	3-4 POINTS	5 POINTS
Did the design include concepts of Burning Man?	1-2 POINTS	3-4 POINTS	5 POINTS
PROFESSIONALISM COULD BE PRESENTED TO A CLIENT	1-2 POINTS	3-4 POINTS	5 POINTS
TOTALS:			

FIGURE 3

COLLABORATIVE GRADING ACTIVITY - BASED ON POSSIBLE 25 POINTS EACH

	ALTOID BOXES					DRAWING					MASK					LIGHT					BIRDS				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
TEAM 1	25	15	10	18	25	23	20	22	21	23	22	20	25	15	25	18	23	18	20	23	15	20	25	15	24
TEAM 2	25	18	14	22	25	22	16	20	18	23	22	23	24	12	25	20	22	20	20	20	18	20	24	22	23
TEAM 3	25	12	15	23	22	18	15	22	20	24	23	22	25	16	25	15	20	22	15	20	15	18	23	23	22
TEAM 4	24	20	20	16	23	20	20	23	18	22	20	22	24	20	25	18	20	20	22	22	20	20	24	18	21
TEAM 5	25	15	12	23	25	20	18	23	15	22	21	20	25	18	25	20	22	20	22	20	20	22	25	20	21
AVERAGE	25	16	14	20	24	21	18	22	18	23	22	21	25	16	25	18	21	20	20	21	18	20	24	20	22
INSTRUCTOR	25	11	9	23	24	20	12	25	18	25	12	15	25	9	25	12	25	24	13	25	25	7	25	13	24

Pedagogy | Scholarship of Teaching & Learning | Presentation

Experiencing Materiality: Integrating Poetry and Writing Within an Interior Finish Materials Course Project

Rebekah Matheny, The Ohio State University
Madison Sabatelli, The Ohio State University

ABSTRACT

CONTEXT

Interior Materials courses contain significant technical content that is traditionally taught in a lecture/test format. However, this mode of teaching, where lectures are passive and disconnected, is less effective for our current students who are digital natives (Millis, 2012). In reaction to digital immersion, these generations seek to connect more deeply to humanity and physical reality. Interior Materials courses have the ability to leverage these insights by developing projects that capture emotion through sensorial storytelling. This approach also allows students to understand the importance of developing a personal connection between the user and the place while working with core design elements (Ching, 2007).

Experiencing Materiality is a new approach to the role materials play in aesthetic, sensory, and experiential qualities of interior spaces. The project encourages students to critically consider the sensorial properties of materials while exploring writing as a tool for concept development and experiential storytelling. Furthermore, the project "link[s] writing to learning based on the premise that writing can be used as a tool in the classroom to facilitate the thinking process (Guerin et.al., 1999)." In this spirit, poetry and writing are integrated into the design process as a catalyst for students to apply material properties to immaterial experiences.

METHOD

The progression of this project begins with using words to produce a materials-based outcome. Students first select one of four haikus (figs. 1a, 2a, 3a, 4a), which provide inspiration and direction to translate the experiential essence of the haikus through materials. Second, they develop Mind Maps (figs. 1b, 2b, 3b, 4b) to begin analyzing the written context, connotations, and sensorial imagery of the haikus. These serve as an exploration of the emotional and sensorial attributes that they ascribe to the poetic experience of their haiku. Expanding, students then create Attribute Experience Board (figs. 1c, 2c, 3c, 4c) with words and visual imagery to form a bridge between the written and visual. Each of these steps inform the final deliverable of the project, an Experience Material Palette (figs. 1d, 2d, 3d, 4d), which goes beyond a traditional material board to engage the viewer in a sensorial experience which utilizes sight, touch, sound, and even smell and taste, to engage the viewer and encourage physical interaction. Students are required to incorporate "found" objects (flowers, a scone, etc.) with finish materials to create a cohesive visual identity that could later be used to develop an interior space. Reinforcing writing as a tool, they also write a supplemental concept narrative.

IMPACT

Using a sensorial experience project accompanied by a writing-based approach over traditional methods of teaching a materials course results in improved student understanding of material properties. Writing in the form of haikus and word mapping exercises allows students to be more attuned to material qualities and more creative in their expression without a specific space in mind. As the first project in the course, it demonstrates the importance of early integration of materiality in the design process. Subsequent design projects are enhanced as students specify materials based on technical and emotional properties, reaching beyond aesthetics and function to create meaningful places.

Educating future designers to create interiors that value the sensorial quality of materials encourages students to consider placemaking holistically and create meaning. Furthermore, incorporating writing has been shown to result in more thoughtful design selections while reinforcing the importance of written communication within the field. Design educators should reconsider interior finish material curricula and develop projects that encourage students to approach design development in a reflective way.

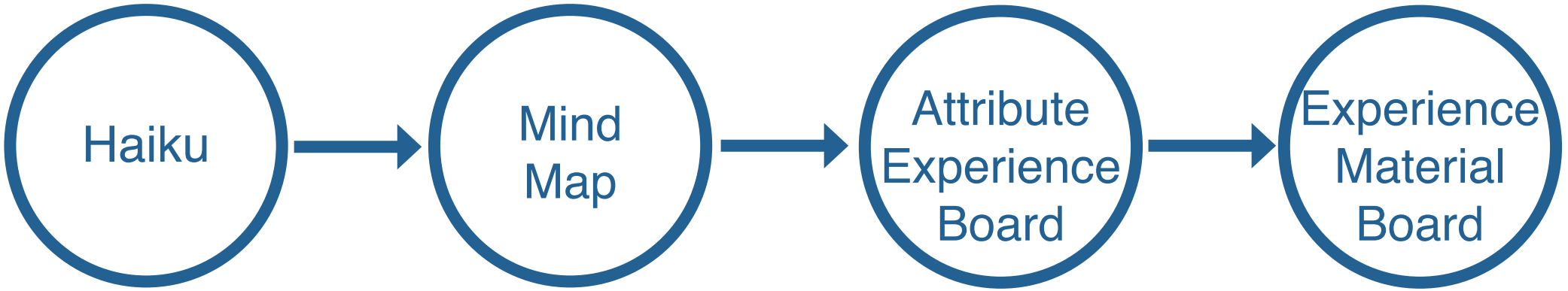
REFERENCES

Ching, F.D.K. (2007). Architecture: Form, Space, and Order. Hoboken: John Wiley & Sons, Inc.

Guerin, D., M. Jon Olson, T. Zborowsky, and Y. Lim. (1999). “Exploring Writing-to-Learn in Design.” Journal of Interior Design, 2(1), 26-36.

Millis, B. “Active Learning Strategies in Face-to-Face Course.” IDEA Center, Inc., 53.

Appendix A: Project Process



The webs of spiders
Sticking to my face
In the dusty woods

Fig. 1a

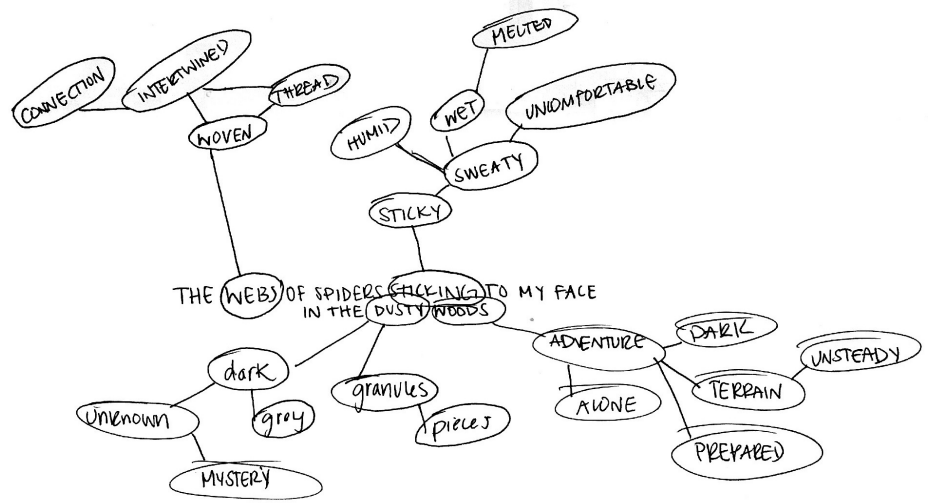


Fig.1b

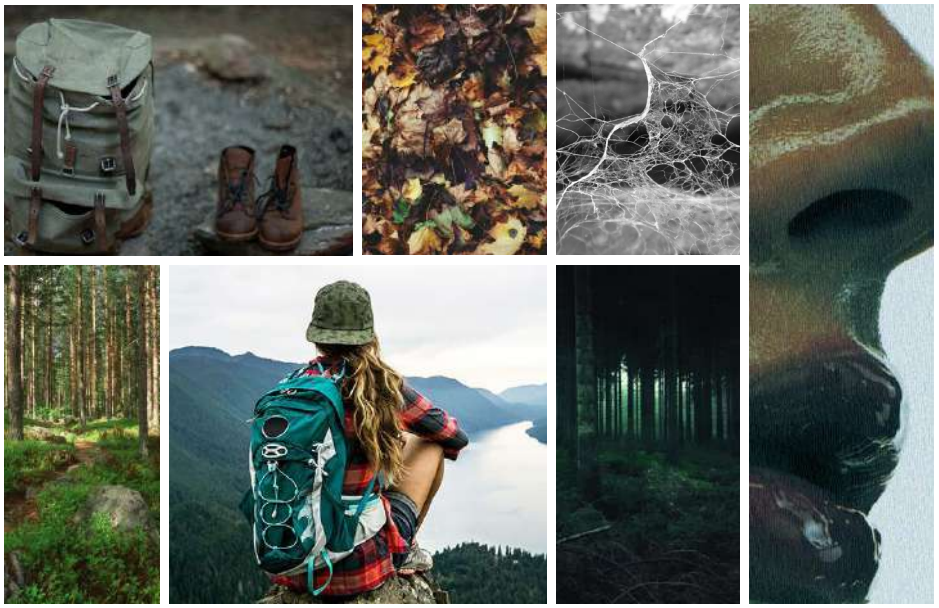


Fig. 1c

Fig. 1d

Appendix C: Student Project 2

The wind brings
Fallen leaves enough
To make a fire

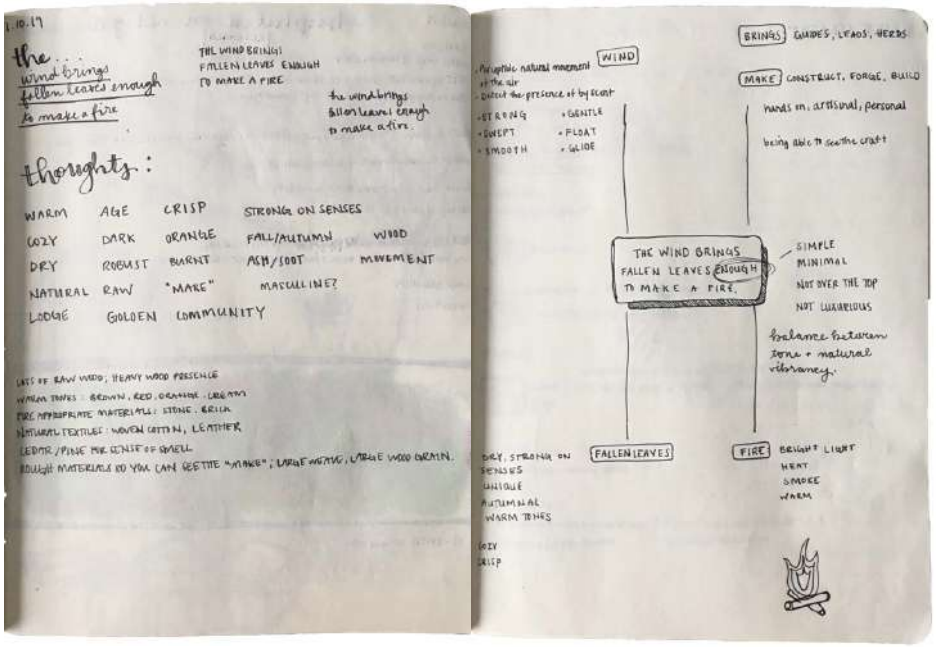


Fig. 2a

Fig. 2b

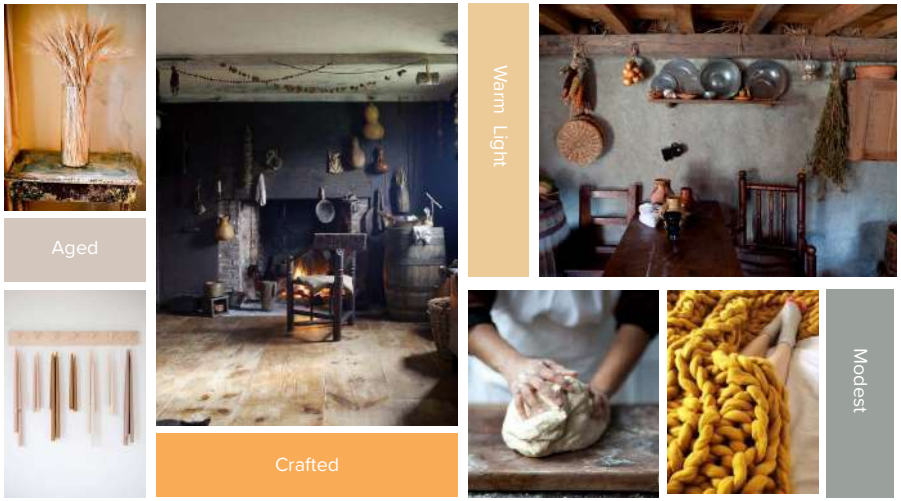


Fig. 2c

Fig. 2d

Appendix D: Student Project 3

A fallen flower
Returing to the branch
It was a butterfly

Fig. 3a

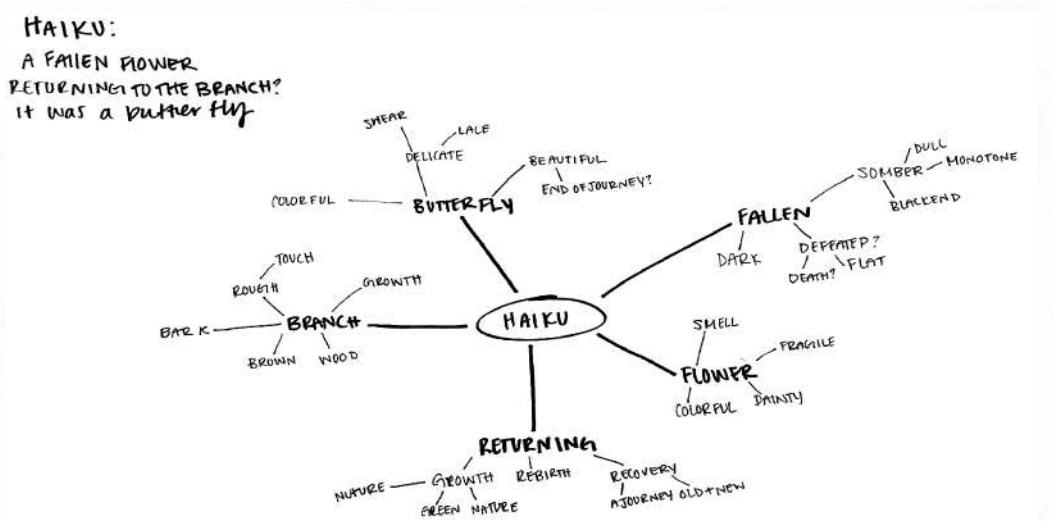


Fig. 3b

Fig. 3c

Fig. 3d

Appendix E: Student Project 4

Deserted beach
Among sand castles
Broken shells

Fig. 4a

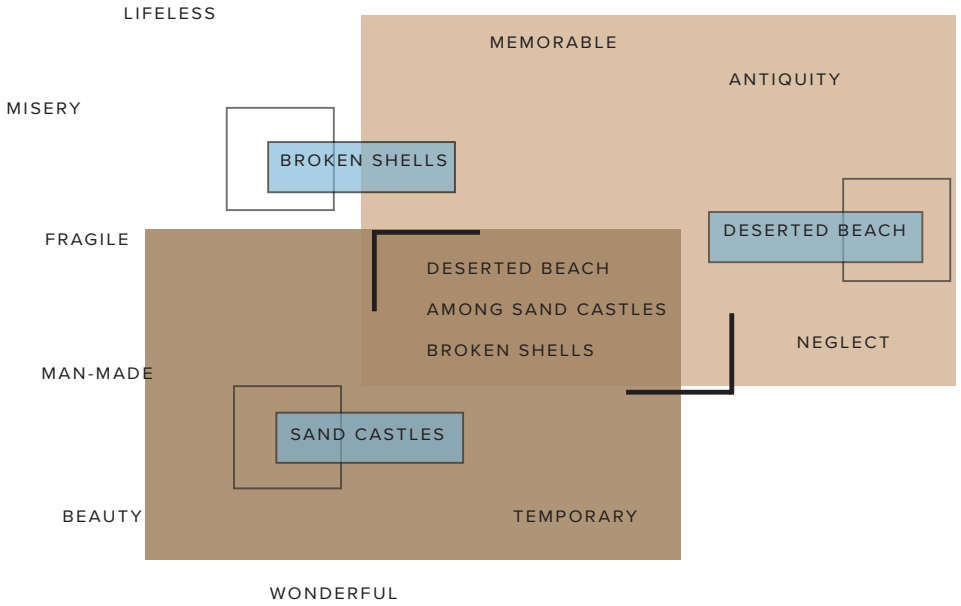


Fig. 4b

Fig. 4c

Fig. 4d

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Experimentations with Sounds, Materials, and Space

Stephen Skorski, University of North Carolina - Greensboro

ABSTRACT

There is a high degree of complexity inherent in the design of acoustically sensitive spaces. Whether a performance hall, worship space, healthcare facility or educational building, the interior designer must have a deep understanding of the relationships between the sounds within the space and the space itself. It requires the recognition of the interdependence between room finish materials, surface geometry, overall room shape, location of the listeners in the room, noise source position as well as the sound characteristics of the generated noise. As educators, we teach the fundamentals of room acoustics in building science courses and address these issues in the design studio. Often this is not enough as evidenced by the preponderance of acoustic consultants retained after a space is constructed to address basic acoustic deficiencies. It is suggested by the author that the traditional means of teaching the technical aspects of room acoustics can be effectively supplemented by incorporating a studio project that is focused on the experiential analysis of an existing space in which students design and build an intervening full-scale sound machine.

The importance of appropriate acoustical conditions has been well documented. There is a clear relationship between poor acoustics in an educational setting and decreased student performance (Dockrell & Shield, 2006; Klatte, Hellbrück, Seidel, & Leistner, 2010). Likewise, there is an established relationship between inadequate acoustics and undesirable effects on health and wellbeing (Cunha & Silva, 2015; Hagerman, Rasmanis, Blomkvist, Ulrich, Eriksen, & Theorell, 2005). Given the high stakes of room acoustics it is critical that interior design educators promote a higher level of acoustic understanding within the curriculum.

This 4-week project focused on the awareness of interior acoustics from an experiential point-of-view and the understanding of the relationships between material, sound, and space. The assignment was broken down into three phases. During phase one, each student analyzed the acoustic environment of a chosen space. There were three space options, each with a distinctly different acoustical condition. The first was a 50-foot high concrete stairwell which produced an extremely reverberant environment. The second was a 170-foot long concrete pedestrian tunnel with highly textured walls creating a semi-reverberant space with a high degree of sound diffusion. Lastly, a 160-foot long pedestrian bridge which produced a primarily free-field condition where the only sound reflections came from the ground plane. After documenting the acoustic conditions of their chosen space, each student then designed and constructed a sound generating machine that responded to the acoustic environment. The students could use any materials considered effective at sound generation for their specific location. This was an iterative process with students receiving feedback on their designs from the course professor and fellow students. Lastly, each student created a soundscape composition using their sound machine that was performed on site. The real-time, on site performance aspect of the project required the students to identify the most appropriate locations for the sound machine as well as the audience.

The results of the project were twofold. First, there was a greater understanding of room acoustic principles through first-person experience. This was most apparent in the students understanding of the relationship between reverberation time and sound clarity. This was highlighted in the end-of-project reflections written by each student (see appendix). Additionally, there was a greater understanding of material properties from both a sound production perspective but also a workability point-of-view. Student material experiments were wide ranging including wood, plastic, concrete, plaster, metals, glass, stone, fabric, and a variety of found objects.

REFERENCES

Cunha, M., & Silva, N. (2015). Hospital noise and patients' wellbeing. Procedia - Social and Behavioral Sciences, 171, 246-251.

Dockrell, J., & Shield, B. (2006). Acoustical barriers in classrooms: The impact of noise on performance in the classroom. British Educational Research Journal, 32(3), 509-525.

Hagerman, I., Rasmanis, G., Blomkvist, V., Ulrich, R., Eriksen, C., & Theorell, T. (2005). Influence of intensive coronary care acoustics on the quality of care and physiological state of patients. International Journal of Cardiology, 98(2), 267-70.

Klatte, M., Hellbrück, J., Seidel, J., & Leistner, P. (2010). Effects of classroom acoustics on performance and well-being in elementary school children: A field study. Environment and Behavior, 42(5), 659-692.

Appendix for Experimentations with sounds, materials, and space.

Figure 1. Site location A: 50-foot high, multi-level stairwell. All Hard surfaces with very little diffusion. This was the most reverberant space.

Figure 2. Site location B: 170-foot long pedestrian tunnel. Hard surface treatments create a semi-reverberant and highly diffuse environment.

Figure 3. Site location C: 160-foot long pedestrian bridge. The lack of enclosure and reflecting surfaces makes this the least reverberant of the spaces.

Figure 4. Example of a student sound machine. All materials have been constructed or manipulated by the student.

Figure 5. Student project (plan view detail).

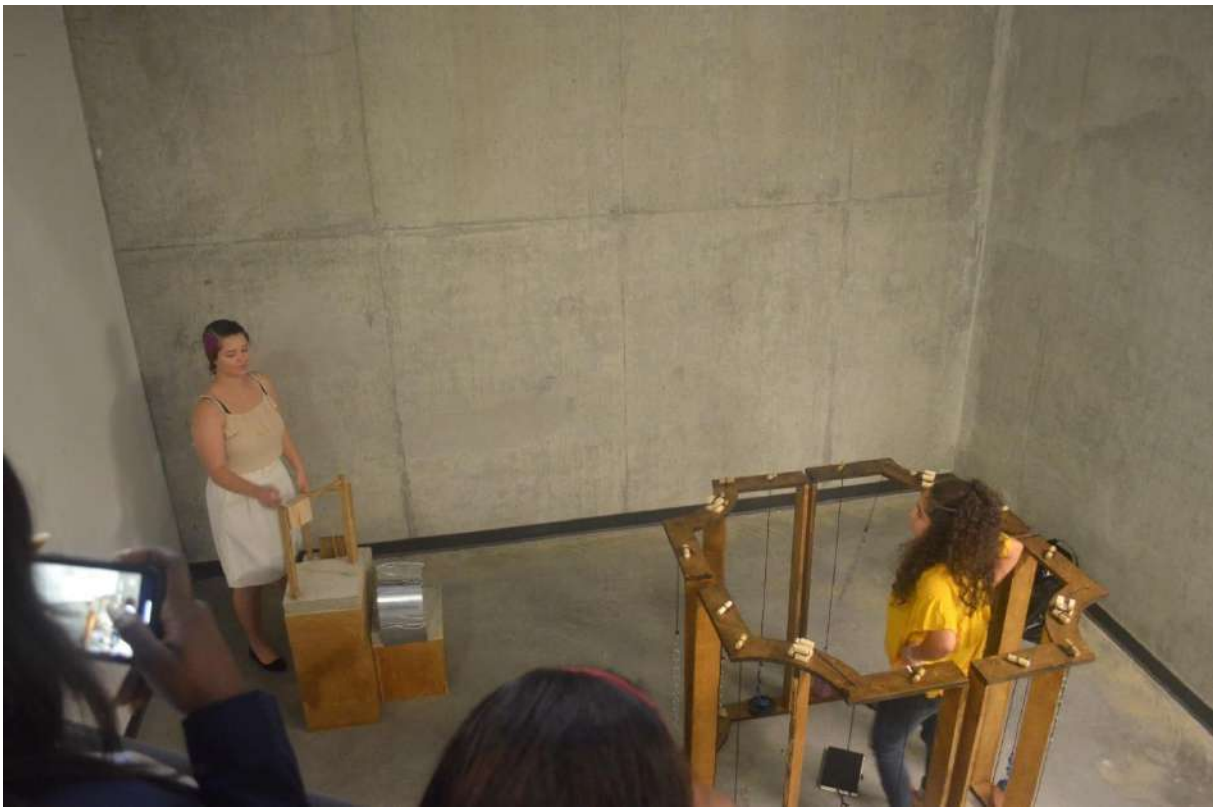

Figure 6. Students playing their sound machines on location (location A - stairwell).

Figure 7. Sound machine installed at the tunnel site (location B).

Figure 8. Student construction with intense material experimentation.

Figure 9. Student construction with intense material experimentation.

Sample of student comments / reflections submitted at the end of the assignment:

"Designing and making a sound instrument helped to make me think about sound as an element that is integral to a design. Working on this instrument helped to shift my perspective so that I was paying attention to materials or deign ideas that could incorporate acoustics. It was an interesting process… in the beginning I had to forcefully make myself think about sound… considering acoustics had never been the focus of my design project before. Towards the second half of the project I noticed that I was subconsciously thinking about how to design with sound."

"I learned about materials, sound, and the world around us. I feel empowered and didn't know I was capable of working with such materials."

"The uniqueness of this project has pushed us out of our comfort zone and gave us a strong opportunity to be creative. I has allowed me to pay more attention to sounds in a space, which is an aspect I have always overlooked within interior spaces. I know the difference between clarity and reverberation and how to detect it in a space."

"Overall this was a really cool way to understand acoustics and how design revolves around it."

"Throughout the project I learned about the relationship between space and sound. I learned how sound can be so different when you play it in different space(s)… (the project) brings a new perspective of understanding how sound travels in space and how important the role of acoustics is in the interior."

"I really enjoyed the freedom and experimentation of this project. It gave me a more in-depth understanding of sound in different spaces and how everything effects the sound… how it (material) reflects or suppresses in that space. Reverberation is a huge aspect in design that not a lot of people pay attention to… but now, after doing this project, it is definitely the main thing I will pay attention to when designing a space."

"With the encouragement of my professor and classmates, I was able to dive into this project with an open mind. I started trying new things and ways of making that I honestly didn't know would work but as I went through the process, I found what I was looking for. I have learned to think outside the box and be comfortable with the unknown."

"My understanding of performance space acoustics is that it all depends on the materials that are used for the space because some (materials) capture more sound then others. For example, hard surfaces reflect and soft surfaces absorb the sound. Reverberation and clarity are inversely related… as reverberation goes up, clarity goes down."

"It was a challenging but fun project. I appreciate the creative approach on sound since we only affiliate sound with language, music or ambient noise. But making sounds based on idea(s) and a concept was different and exciting at the same time."

"I have learned a lot during this process over the past few weeks. Acoustics is something that I never really thought about in space. Now I have learned that it's one of the most important things when creating space. I learned what reverberation is and how it should work in certain spaces. I learned that diffusion is a method which can be used to soften (sounds) in reverberant spaces."

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In Pursuit of Authenticity, Happiness & Prosperity: Spatial Agents of Change

Rula Awwad-Rafferty, University of Idaho
Hani El Hajj, University of Idaho

ABSTRACT

Relevance. "We have a city worthy of energy and capital investment" the pitch to donors and citizen groups began; "A revitalized liberty theater is at the heart of our downtown renaissance". tangible ripples of change activated through partnership and engagement of interior design studio and a not-for-profit preservation alliance community group, echoed emotional connection, sense of ownership and hope, and spatial agency for both students and community stakeholders alike.

Teaching Issue. Interior design studios afford opportunities for tackling myriad of problems ranging in scope, complexity, foci, and impact. Community based service-learning projects are perceived to be of higher risk than other project types. Dealing with an adaptive reuse of iconic structures; the opportunities and rearwards in abstract and tangible means far outweigh these risks. The risks themselves become metaphors for stepping out of one's comfort zone and opening the door for deeper and broader learning, understanding, impact, and agility.

Context. Junior interior studio in a Land-Grant institution responded to a call for action by not-for-profit preservation alliance citizen group interested in renovating and reopening a historic movie theater on Main Street in a nearby rural city. Together they envisioned an adaptive-reuse of the structure into an economically and socially sustainable venue, conceptualizing the project as a community owned and operated civic theater.

Instructional Methods. Agile instruction and opportunities for immersive experiences engaged the students in the appreciative design thinking, starting with questions about the role of theater

in today's world, and its centrality as a civic institution. Evidence based stakeholders' centered data gathering through "photo elicitation" aimed to clarify the emic and etic of the place. An elevator pitch /pecha kucha hybrid framed design thinking and making a socially, economically, and environmentally responsive business case for the adaptive reuse, while bringing stakeholders along as co-explorer and co-creators.

Outcomes. Design thinking deliberations, and deep explorations became vehicles for co-learning and co-creating for students and community members. The embodied and storied cultural capital, memories, and emotional connections shared with the students brought the structure alive. The students designs spoke with eloquence, empathy, knowledge, and passion about what was, what is, and what could become of the building. The education that occurred and the wide range of design solutions generated empowered the stakeholders to move to the next steps, utilizing all outcomes in an aspirational and generous fund-raising campaign. The resulting work spoke to stewardship of place and investment for social equity and memory in places of performance and places of representation for the community, by the community.

Advances to teaching and pedagogy. The visible stewardship of outcomes by stakeholders is a significant achievement to the studio, especially at a time when economic disparities and polarities marginalize the place of the arts and humanities in the social and economic wellbeing of communities. "In adaptive reuse, design interventions as responses to the unique DNA of structures can best be understood as actions. These actions are operations that create a new user experience through very different types of interface with the host" (Wong, 201). There is power in questions, there is power in listening, there is power in stories lived and shared through authentic service learning.

REFERENCES

Wong, L. (2017). Adaptive Reuse: Extending the Lives of Buildings. Basel : Birkhauser :Architecture

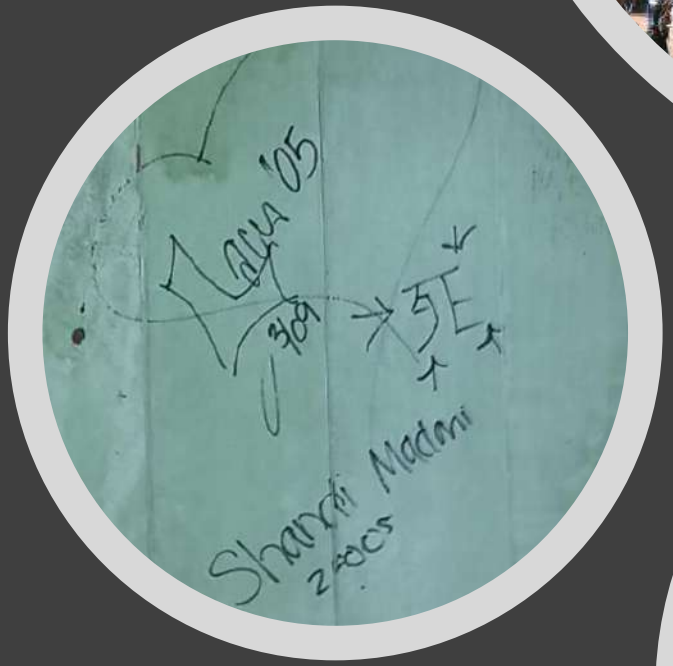
Bringle, R., Hathcher, J., Jones, S. (2011). International Service Learning Conceptual Frameworks and Research. Stylus Publishing

Community stakeholders interviews by authors, students, and alliance stakeholders. 2018

Cole, Nicki Lisa. “What is Cultural Capital? Do I Have It?” https://www.thoughtco.com/what-is-cultural-capital-do-i-have-it-3026374. Accessed August, 27, 2019.

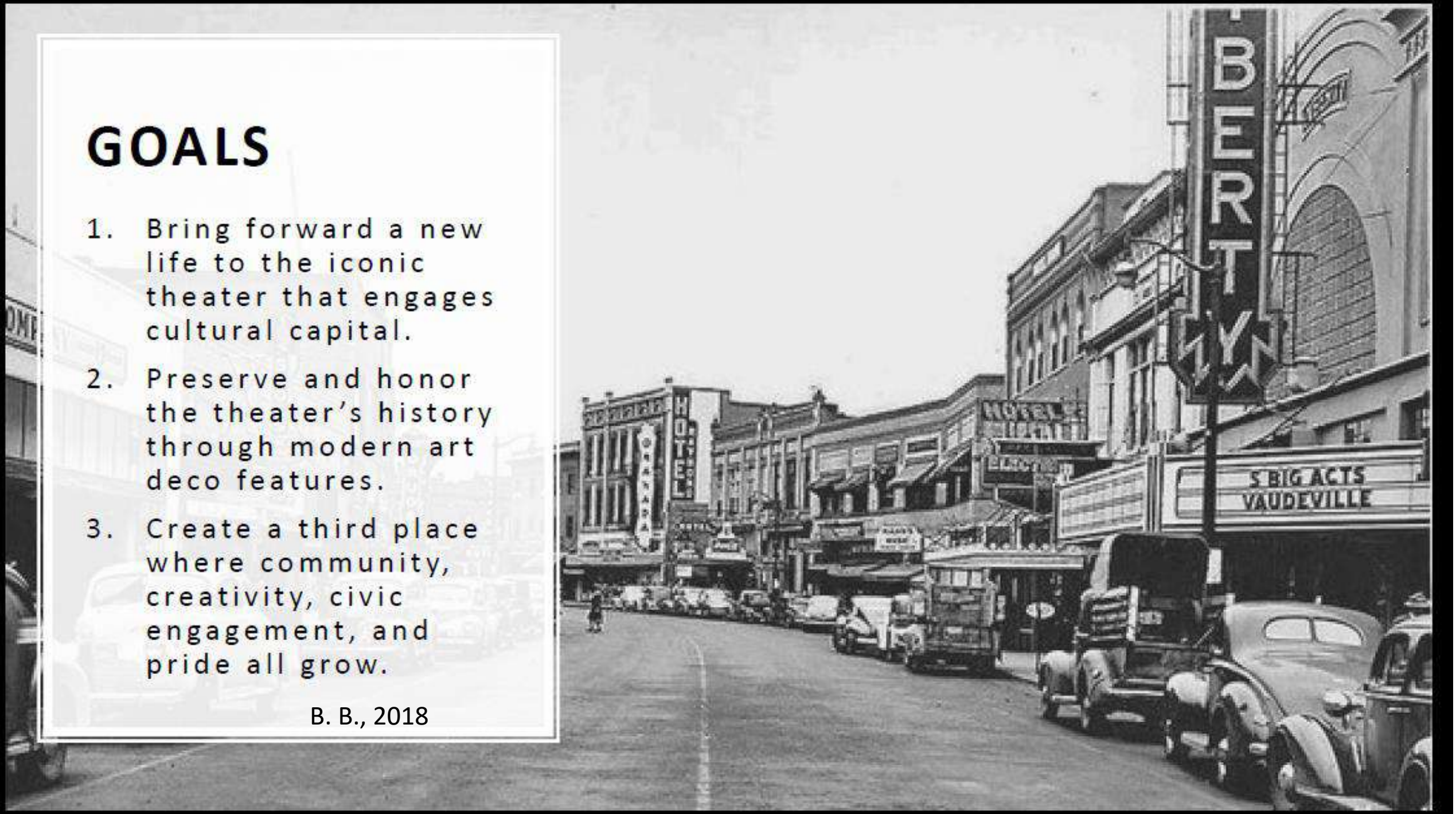
The Plan & Its Fluid Iterations

- Building rapport and relationship: Inside and outside perspectives, university and community, Etic & Emic
    - 13 students enrolled in the third-year studio are paired with the preservation alliance citizen group members
    - Other professionals: Theater technical director; actress/performer/educator
    - Fears and anxieties: stakeholders, students, professors, and all of us!
- Being in place, see the place together: neutrality of place?
    - Story telling, field visit, tour; education on what is theater today
    - Site/context and place/building: Research & Photo documentation
    - Documentation & stakeholders' engagement: Prior to visit; During visit; After site visit
- Design Process:
    - Elevator Pitch- Pecha Kucha hybrid at the public library
    - Photo elicitations and Schematics
    - Final design exhibit, community feedback, and critiques
    - Follow up with next steps for community



GOALS

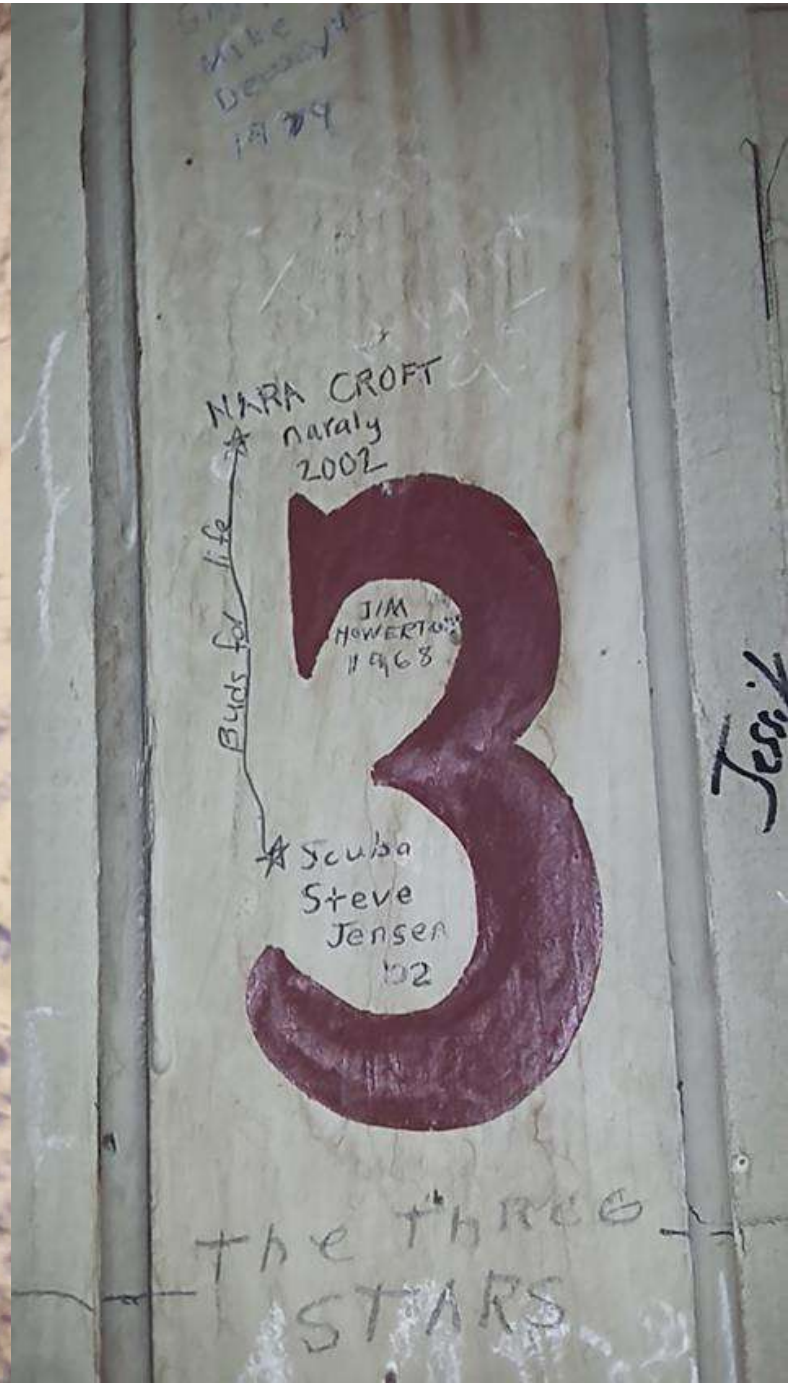
1. Bring forward a new life to the iconic theater that engages cultural capital.
2. Preserve and honor the theater's history through modern art deco features.
3. Create a third place where community, creativity, civic engagement, and pride all grow.



B. B., 2018

Work by M.C, 2018.

Imagining together the possibilities…



The Long Term Impacts of the Project for the Community & the Students

Restore the Magic

- It takes time, time, and time again!
- There is power in questions, there is power in listening , there is power in stories lived.
- Legacies preserve and continue with this type of investment of passion, talent, time, and imagination that respects and values place, guides idea generation, and empowers all participants, students and community alike, in decision making and exploration of opportunities.
- Community participation beyond immediate stakeholders in process is critical; they have the power to make dreams come through.
- Life long lessons about viability of heritage sites, social and economic sustainability of civic community buildings, and power of coalition building were imparted to the students through this experience, these lessons are evident in their approach to the future projects they engage in and their career choices
- The evolutionary process of community use of the outcomes generate options for implementations.
- Design solutions are seen in the context of place, history, identity; they are appreciated as interconnected cultural, aesthetic, functional, and economic fabric of community which citizens have the power to engage and

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Inclusion Delusion: Racial/Ethnic Diversity in Self-Selected Student Collaborations

Roberto Ventura, Virginia Commonwealth University

ABSTRACT

Collaborations are vital to interior designers. In school, they generate more information, stimulate creativity, improve retention, and inspire more satisfaction among students than individual work (Burke, 2011). Once practicing, students will work in intra- and interdisciplinary teams almost exclusively.

Students also could benefit by working with racially/ethnically diverse people in inclusive environments by gaining new perspectives and modes of thinking.

Interior Design, professionally and academically, has an anemic racial/ethnic diversity and inclusion record. Searching the Journal for Interior Design for "diversity and inclusion" yields only one article directly addressing race and ethnicity in the profession and academy (Travis, 2018). According to the U.S. Department of Education, in 2016, over 5500 interior design degrees were awarded; just over one in ten went to latinx students; less than six percent went to African Americans ("Interior Design," n.d.).

The major professional associations no statistical information about the composition of practitioners. IIDA's 2016 Roundtable on Design and Diversity report referenced the fact that only 0.3% of practicing architects are African American women (IIDA, 2016), ostensibly because there are no similar statistics available from our own profession.

This dearth of basic diversity and inclusion information and scholarship in interior design provides scant optimism for improving how designers might collaborate in a multicultural society.

Students, therefore, are left to “figure it out like adults.” Lacking scholarly or practical guidance, when students collaborate, how racially/ethnically diverse do they choose to be?

Senior level studio sections from 2015, 2016 & 2018 were analyzed to determine the racial/ethnic diversity in self-selected student project groups. Each studio used the IDEC Student Design Competition as a project, studied collaborative techniques, and worked on the charrette in groups of two or three.

Since the students attended an university with a high racial diversity index (0.70; metrics ranged from 0.77 to 0.06), inclusiveness by the senior year was hypothesized to be an ingrained practice, and, therefore, diverse teams would be found when students self-selected.

The racial/ethnic composition of each group was studied and compared to the overall composition of that particular studio. The demographics used—White, Black, Hispanic, Asian or Pacific Islander, American Indian or Alaskan Native, Multi-Race, Foreign Students, and Unknown/Unreported—mirror the ones reported in the state government database

Using a simplified white/non-white percentage, the studio composition ranged from 62.5% white in 2015, to 47% in 2016, and 21% in 2018 (Fig. 1).

Examining the racial/ethnic composition of student groups showed that in 2015, 50% of the teams were exclusively white; 20% were in 2016, and 25% were in 2018 (Fig. 2).

Investigating diversity within groups revealed that, although white students were the largest demographic overall (44%), they joined designers from other races/ethnicities only three times. Overall, six of the fifteen groups were homogenous, five of which were exclusively white (Fig. 3).

Due to the small sample sizes, a more comprehensive study is warranted, but studios with greater racial/ethnic diversity produced more diverse student groups.

These studios may provide students with more practice and familiarity working with students from different backgrounds, ideally leading to more inclusive practitioners.

Additionally, when self-selecting their own groups, many students may retreat into the comfort of familiarity and exhibit less diversity. An active faculty hand in composing the groups may promote better opportunities for growth.

Given the dismal record interior design has regarding racial/ethnic diversity, this faculty involvement is most likely one of many critically important first steps.

REFERENCES

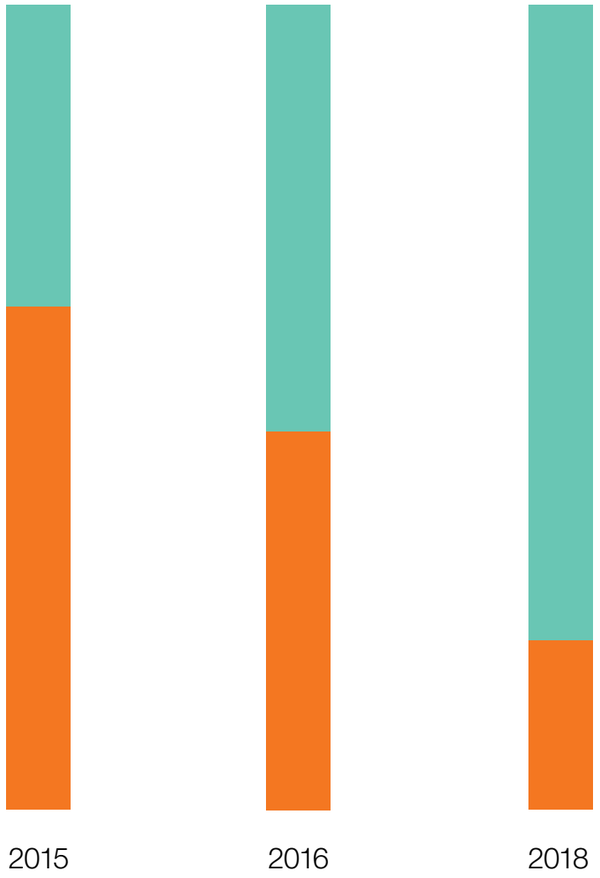
Burke, A. (2011). Group Work: How to Use Groups Effectively. The Journal of Effective Teaching, 11(2), 87-95.

Interior Design. (n.d.). Retrieved from https://datausa.io/profile/cip/interior-design#demographics

International Interior Design Association (IIDA). (2016). IIDA Industry Roundtable 19: Design & Diversity. Chicago, IL.

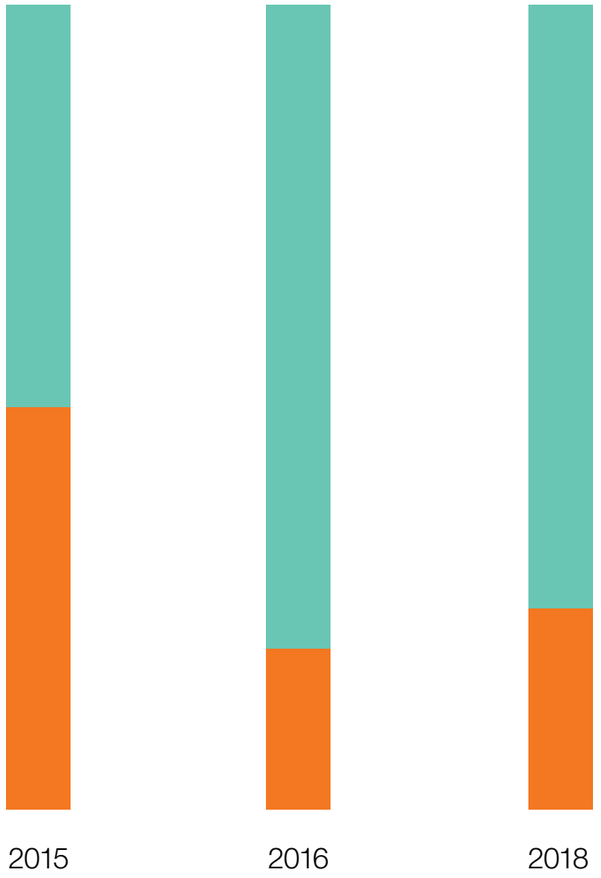
Travis, J. (2018). An Interior of Inclusion or the Illusion of Inclusion. Journal of Interior Design, 43(3), 3-7.

Figure 1



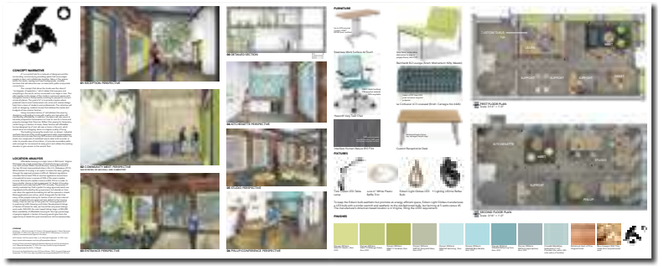
Using a simplified white/non-white percentage, the studio composition ranged from 62.5% white in 2015, to 47% in 2016, and 21% in 2018.

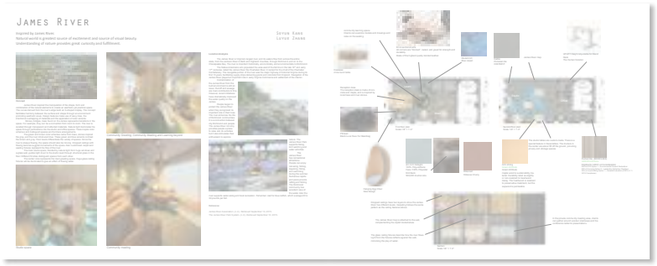
Figure 2

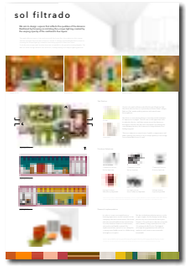


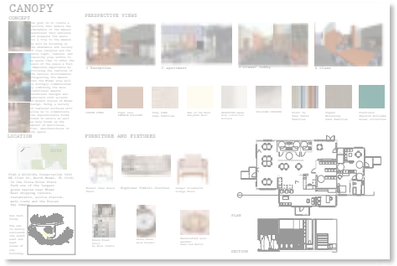
Examining the racial/ethnic composition of student groups showed that in 2015, 50% of the teams were exclusively white; 20% were in 2016, and 25% were in 2018 (Fig. 2).

Figure 3









Investigating diversity within groups revealed that, although white students were the largest demographic overall (44%), they joined designers from other races/ethnicities only three times. Overall, five of the fifteen groups were exclusively white.

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Making Education: Bauhaus 100

Marlo Ransdell, Florida State University
Yelena McLane, Florida State Univertsity

ABSTRACT

The Bauhaus School of Weimer, Dessau, and Berlin, Germany (1919-1933) sought to merge the education of fine art and expert technical craftsmanship. This approach engaged mass manufacturing techniques and innovative material selections of the day to produce high-quality and well-designed goods for society as a whole. Its core objective was to reimagine the material world which would reflect a union of art and design into a utopian craft guild. The pedagogical approach of the Bauhaus was radically different from its contemporaries. It was conceived as an integration of artisan craft and technological methods of manufacturing for mass production. This holistic view determined the Bauhaus's concept of design, which was the creation of functional articles for everyday use and the artistic aspect that reflected the complexity of post-World War I life as an integral part of the design process.

The instructional model of the Bauhaus placed "making" (bau) at the center of all activities within the educational experience (Winton, 2016). The structure gave students foundational skills that were tested and refined through making within various workshops and apprenticeships. According to the founder of the Bauhaus Walter Gropius (1883-1969), "the Bauhaus workshops were really laboratories for working out practical new designs for present-day articles and improving models for mass productions" (Shand, 1937, p.37). Foundations courses within the Bauhaus encouraged students to produce creative designs based on their own subjective perceptions instead of copying predetermined forms as was typical of the day. These courses focused on explorations of material properties, composition, and design theory that informed an applied hands-on design process in the workshop.

Following in the tradition of the Bauhaus School, (name withheld for review) seeks to merge foundational knowledge of design elements and principles with digitally fabricated making and crafting in a workshop/lab setting. In celebration of the 100 years of the Bauhaus founding, students enrolled in (course name withheld for review) during the Spring of 2019 engaged in two projects inspired by the Bauhaus pedagogy and the founding masters of the Bauhaus School. Students reflected the stylistic qualities of an assigned Bauhaus master's art through design and fabrication of a 2D "visual space divider" and a 3D "useable surface". By removing the archetypes of "screen" and "table", students investigated new ways of approaching visual dividers and useable surfaces through iterative modeling and testing.

Each student developed and fabricated two working models, and selected works were chosen for display in the Bauhaus 100 exhibition in a university art gallery. A variety of materials and digital fabrication techniques were explored to produce 2D and 3D iterations of each design solution. Students reflected on their design and making process through small group critiques and journaling exercises. Overall, the feedback from the project revealed the student's reluctance to approach the making process in general. Additionally, most were unfamiliar with the subtractive printing process, but quickly saw the potential it has for iteration and final design development. This presentation will highlight how the Bauhaus approach to making in the lab impacts students' understanding of construction and materials through sketches, models, final prototypes, and reflections on the design and fabrication process.

REFERENCES

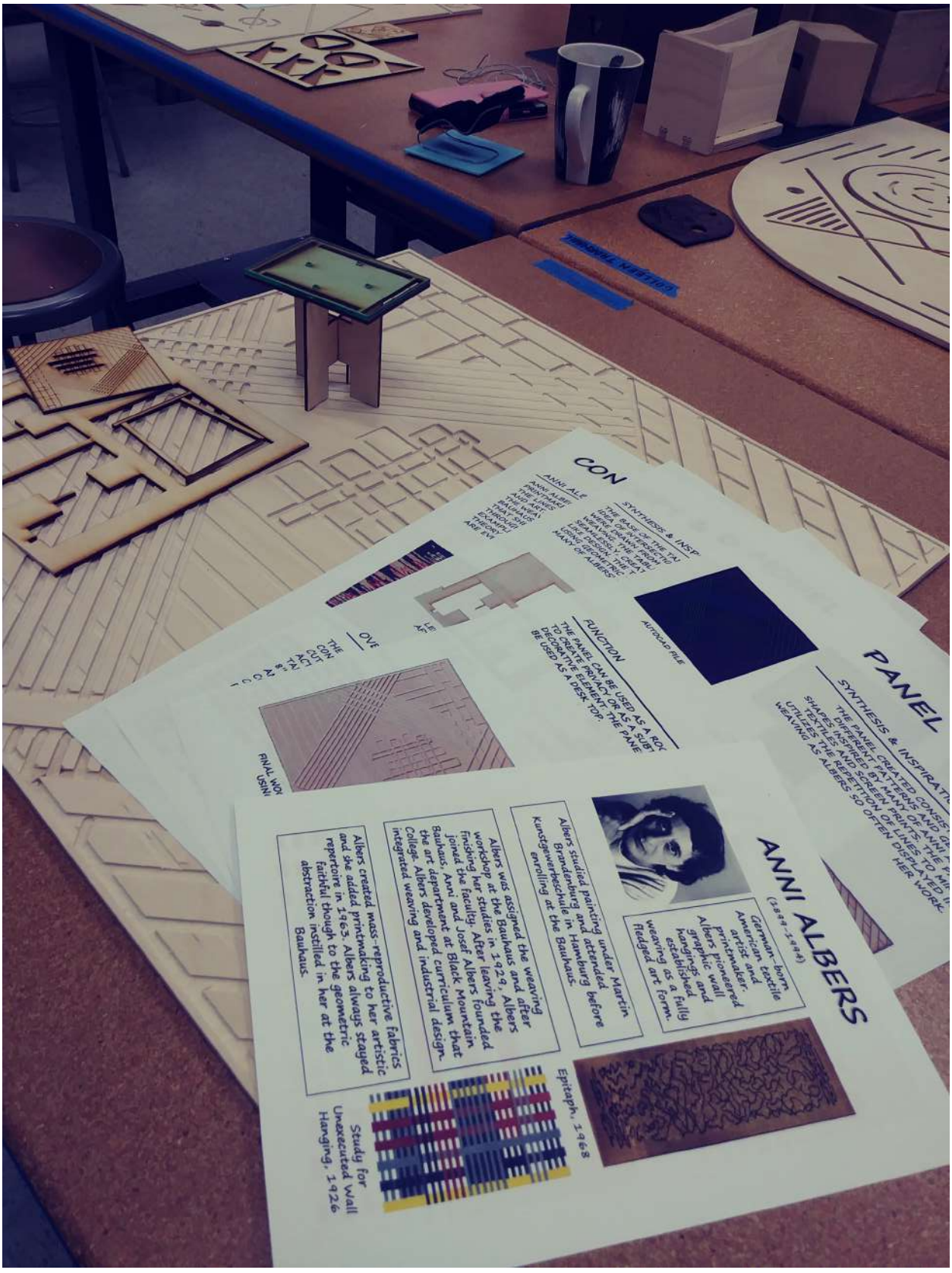
The New Architecture and the Bauhaus, trans. P. Morton Shand, New York, Museum of Modern Art, 1937.

Griffith Winton, Alexandra. “The Bauhaus, 1919–1933.” In Heilbrunn Timeline of Art History. New York: The Metropolitan Museum of Art, 2000–. http://www.metmuseum.org/toah/hd/bauh/hd_bauh.htm (August 2007; last revised October 2016

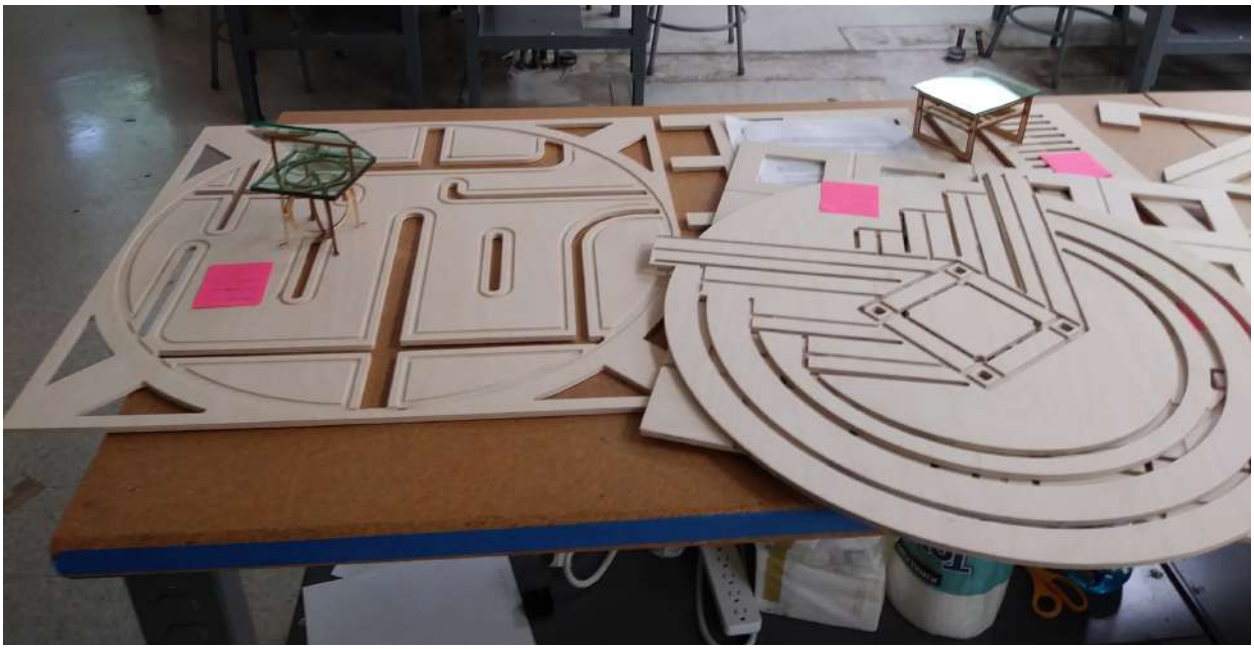
Appendix 1: Images of Student Works

Making Education: Bauhaus 100
SOTL / IDEC 2020

Making Education: Bauhaus 100
SOTL / IDEC 2020



Making Education: Bauhaus 100
SOTL / IDEC 2020



Making Education: Bauhaus 100
SOTL / IDEC 2020

Pedagogy | Scholarship of Teaching & Learning | Presentation

Once Is Not Enough: Reflections on Making

Jennifer Webb, University of Arkansas

ABSTRACT

Maker spaces are increasingly present and even mandatory in the design learning environment. Students are recruited by eye-catching equipment and labs while faculty showcase extravagant laser cut models. Beneath the glamor, however, should be specific educational outcomes. The National Inventors Hall of Fame (2019) links maker-based learning activities to STEM educational goals. Dousay (2014) connects making to aspects of educational pedagogy such as Constructivism and Constructionism (Figure 1). Purposeful making can inform and facilitate different learning objectives and the purpose of this presentation is to describe and assess a series of maker-based learning activities over a period of four years.

Year 1 and 2 assignments emphasized experiential learning intended to engage students with the semester's primary assignment. Students began by writing about personal experiences. Sketching, annotating, and study models were accompanied by desk reviews and small group discussion. Students purchased materials and worked independently, seeking feedback from faculty, wood shop and digital lab directors, and peers as needed. At the conclusion of the 3 weeks, a public review enabled guest critics to engage in the designed experiences and discuss the effectiveness of the outcomes.

Year 3 and 4 assignments focused on materiality, construction methods, and documentation. In Year 3, students identified a pair of shoes that could be imagined, deconstructed, and understood through its physical properties. Drawings, materials explorations, sketching, and study models were produced. One day of instruction in the wood shop and digital labs preceded prototyping and final construction. Concept models were produced and the 4-week process provided a visual

language for the ensuing design project. Year 4 students were given a letter from their client with a set of unique photographs. They wrote a story about the client, analyzed the images, and created drawings and models. Two days of instruction in the wood shop and digital labs preceded prototyping and final construction. The 5-week process produced a concept model that provided a visual and spatial language for the final semester project.

In Year 1 and 2, student success was seen in the immersion and commitment to work at full scale. In Year 1, memories were a strong driving force and students were creative in material choices, identifying products for affordances with little emphasis on construction. Year 2 students initiated full scale building as a class goal. The students were ambitious and active learners, seeking guidance from faculty and shop directors, helping one another, and pitching in during the hours before final review. In both years, ambition outweighed skill and experience was of the moment with little regard for longevity (Year 1) or safety. In Years 3 and 4, student success can be defined by materials selection, knowledge, and testing and by construction methods. The small scale facilitated affordability and constructability. The abstract nature of the assignments led to slower starts and questions about "doing it right." Additional shop training provided greater confidence and students eagerly shared achievements prior to final reviews. Year 3 students did minimal prototyping with actual materials before final construction. In Year 4, students, provided with a materials kit with time to test and practice, engaged in more prototyping before final construction.

Making assignments can fulfill many instructional objectives. Year 1 and 2 were grounded in experiential, constructivist principles while in Year 3 and 4 were grounded process-based constructionism. The assignments presented illustrate the need for a clear understanding of desired outcomes and allocation of time, adequate resources including access to maker spaces and test materials, and tolerance for ambiguity by both students and faculty.

REFERENCES

Dousay, T. A. (2017). Defining and Differentiating the Makerspace. Educational Technology, 57(2), 69-74. https://lidtfoundations.pressbooks.com/chapter/makerspaces-by-tonia-dousay/

Kurti, R. S., Kurti, D., & Fleming, L. (2014). The philosophy of educational makerspaces: Part 1 of making an educational makerspace. Teacher Librarian, 41(5), 8–11.

National Inventors Hall of Fame. (2019.) What are the Benefits of a Makerspace? https://www.invent.org/blog/trends-stem/benefits-makerspace

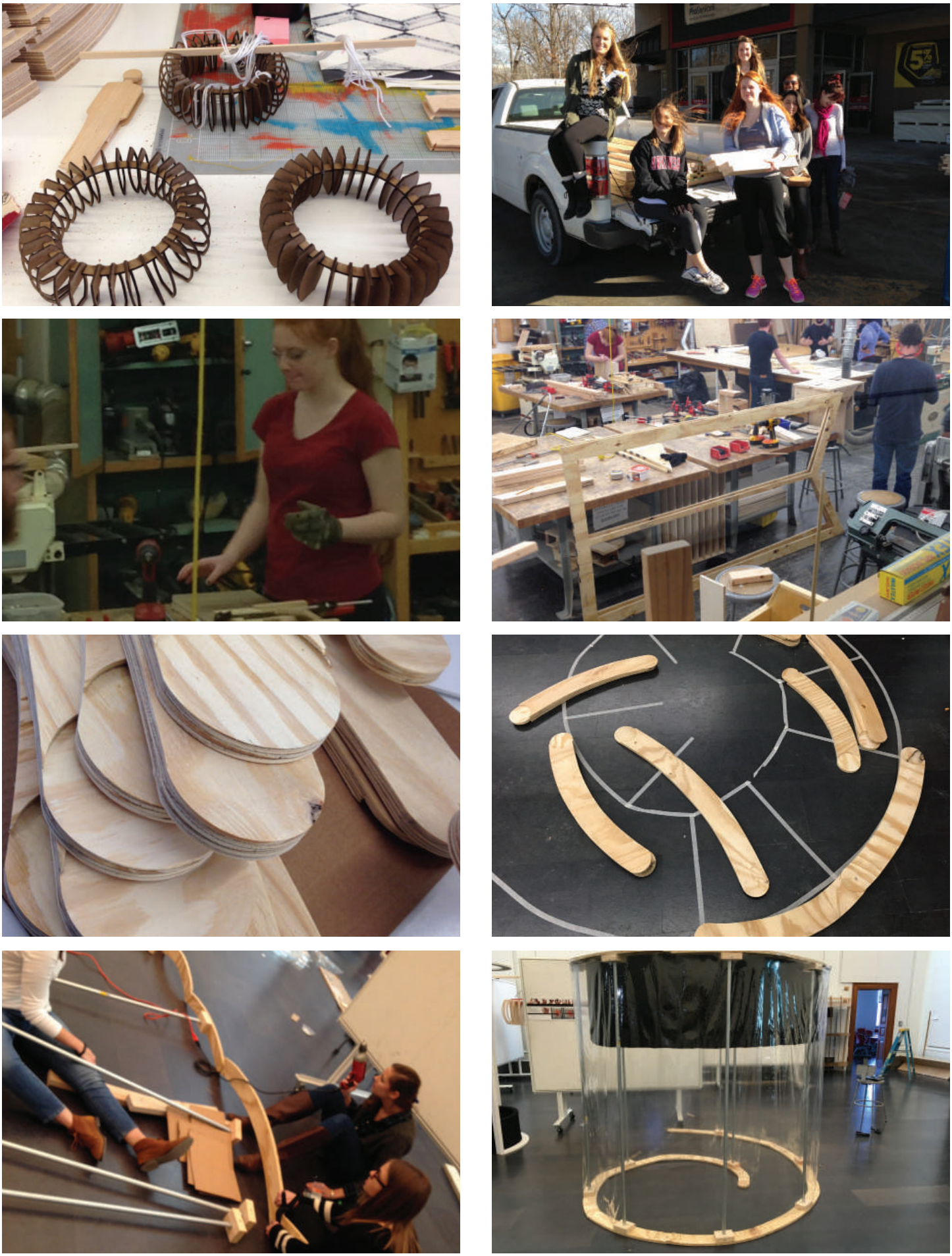
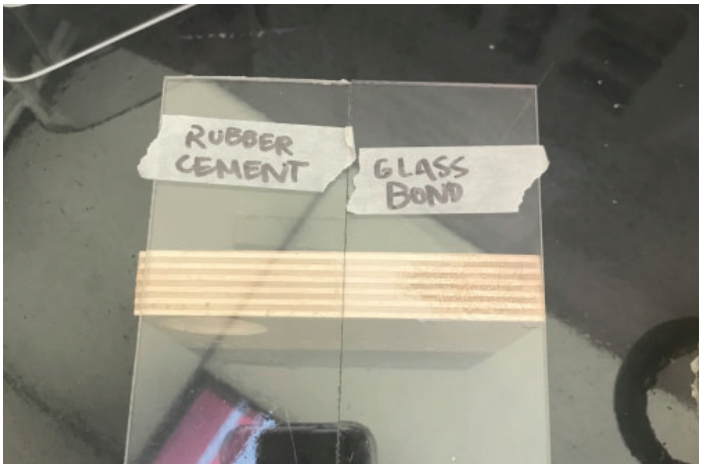
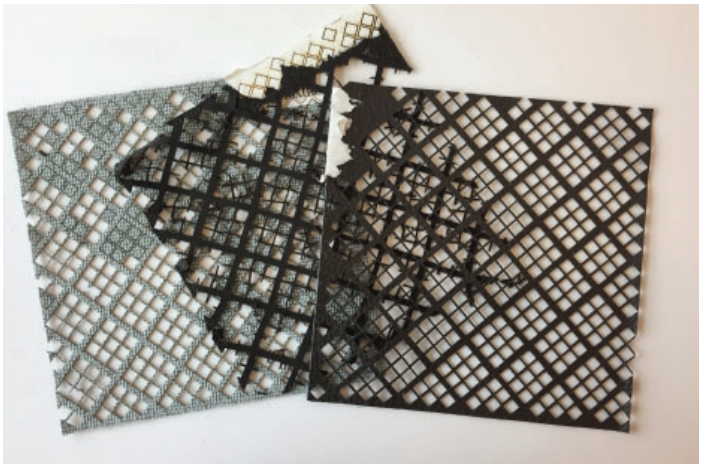
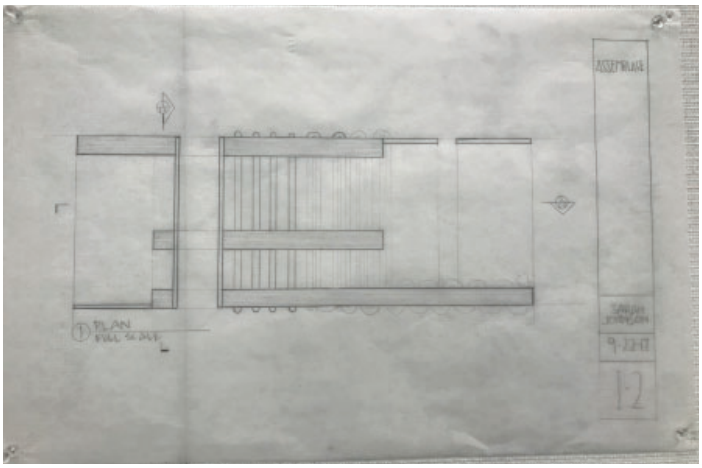


Figure 1. Year 2 illustrating process and the social and collaborative nature of making.







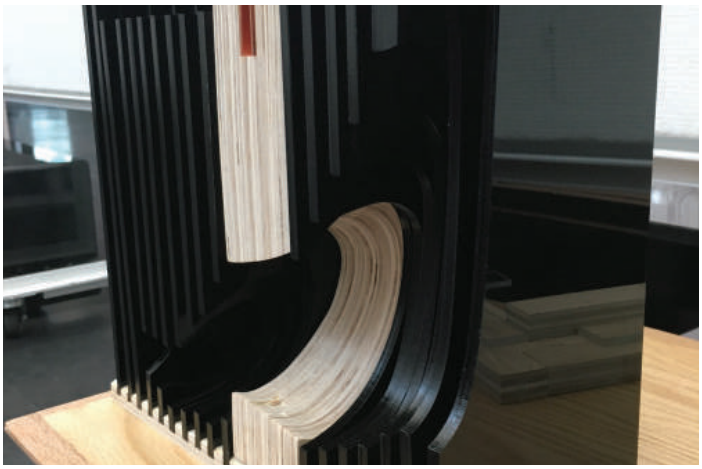


Figure 2. Year 3 images illustrating emphasis process and on construction and materials.

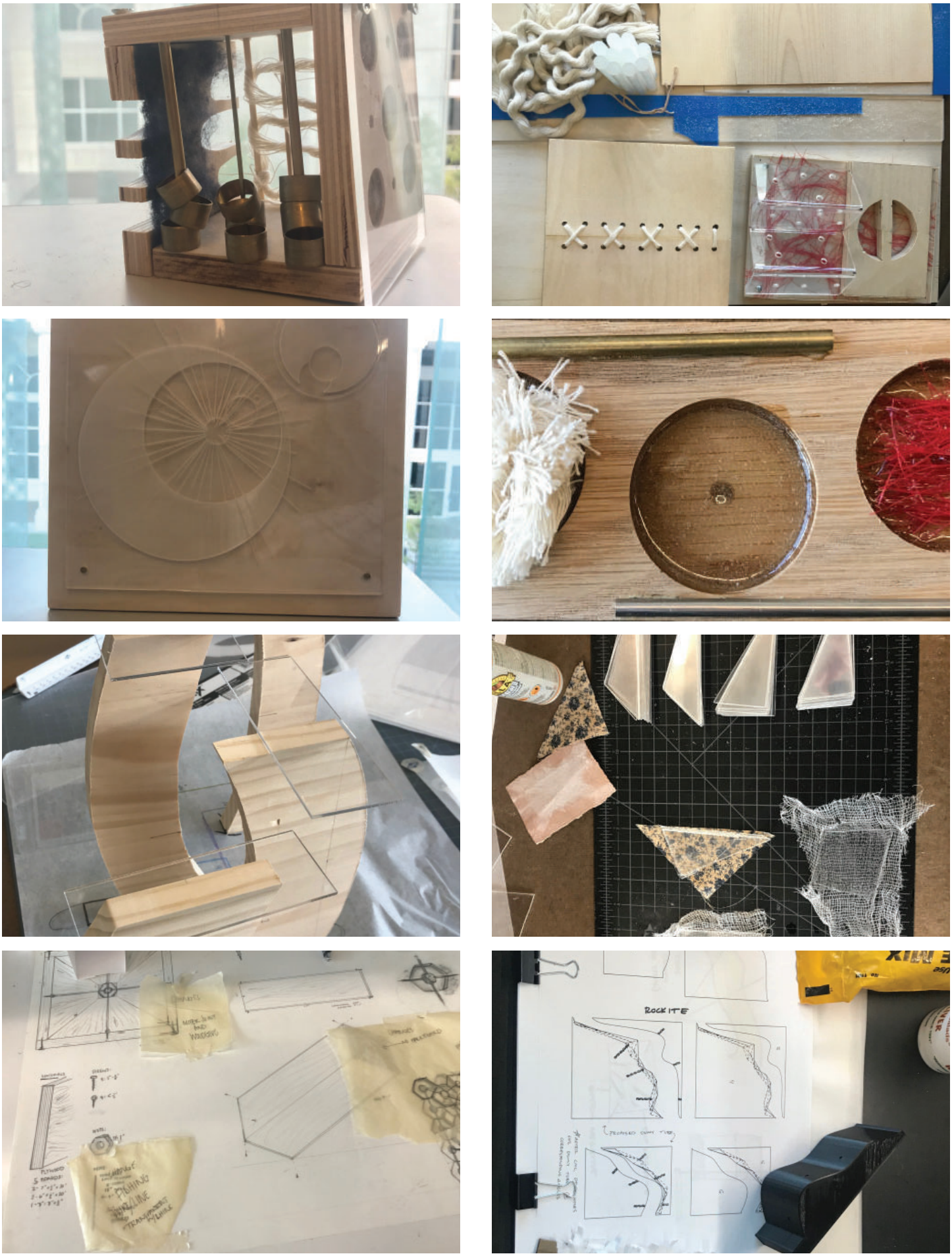


Figure 3. Year 4 illustrating process and testing.

Table 1. Description of relevant pedagogical theories.

Constructivism Vygotsky, 1978	Knowledge is Constructed from One's Own Experience
	Interaction with Others
	Learning from those More Experienced
	Learning at Your own Pace
	Informal Learning Environment
Constructionism Papert & Harel, 1991	Natural Process
	Focus on Making
	Learning through the Process
	Connect Ideas across Different Areas of Knowledge
	Instructor as Coach

Table 2. Summary of Project Parameters.

YEAR	SUMMARY	EMPHASIS	TRAINING	SCALE	INITIATION	PROJECT
1	Sensory experience inspired by personal memory.	Experience	None	Full scale. Required head and shoulders.	Faculty	Perfumery
2	Immersive experience exploring privacy.	Experience	None	Full scale	Student	Hotel
3	Develop intimate product knowledge leading to concept development.	Concept Materiality	Reintroduction to Wood Shop and Laser Lab (1 day)	Model	Faculty	Corporate Office
4	Analyze client-provided materials leading to concept development.	Concept Materiality Construction	Reintroduction to Wood Shop and Laser Lab (2 days)	Model	Faculty	Cycling Resource Center

Pedagogy | Scholarship of Teaching & Learning | Presentation

Restructuring an Interior Design Course to Encourage Empathy and Prepare for the Year 2070

Jeffrey Haase, The Ohio State University Department of Design
Emily Valentine, The Ohio State University Department of Design

ABSTRACT

In order to encourage empathy in young designers, a humans-factors course embeds a framework for into its curricular structure. The course, taught to 3rd year interior design students, focuses on the aging population and senior living environments. In addition to the new topic focus, the course deliverables move from a lecture only style course to a lecture/studio hybrid deliverable, with multiple learning and assignment modules. The professor assigned with adjusting the course, along with a graduate student, whose thesis topic includes lighting for senior living and an interdisciplinary specialization on aging, decides to engage students in an exploration of their own future, 50 years from now.

The new course structure includes four separate assignment outcomes:

Lectures – history of senior living, aging demographics, mental and physical health issues with the aging condition and universal design principles

Activities – field trips, immersive aging activities

Assignments – reports, case studies, personas

Projects – future senior living development and forecast planning

The outcomes align with "A Framework for Empathy in Design" described by M. Kouprie and F. S. Visser. The course structure follows the authors four phases of empathy framework. The

first is **discovery,** where a designer enters the user's world with curiosity and willingness to learn more. Our lectures introduce the students to senior living experiences and general information about designing for the aging population. The second phase is **immersion,** defined as wandering around in the user's world. Our activities outcome includes a series of field trips to regional senior living environments that includes interviews with staff and residents and a day where students participate in immersive aging activities. Some of the activities include wheel chair obstacle courses and wearing an apparatus on their hands and or over their eyes that emulated the aging condition. Students accomplish simple tasks with the impairments and make reports on the experiences. Phase 3 is **connection,** where the designer resonates with the user to find meaning. For this phase, the students create reports and reflections from field trips and activities, search national and international case studies that were addressing the issues they discovered during the immersion phase. They also create personas of themselves 50 years into the future, identifying fictional narratives based on the people they are in contact with, based on the issues to which they were exposed. (appendix 1) The persona assignment has two parts. One is the initial attempt, prior to the field trip visits and the second is a revision based on the conversations with the residents and staff from the field trips. (appendix 2) Many of the student's first attempts drastically change after visiting the senior living environments. The final phase is **detachment,** where a designer leaves the user's world and becomes a conscientious designer, identifying insights and ideation for the user. In the final class project, the students design a master plan for a senior living environment for themselves 50 years into the future. Students must synthesize all they learn and experience in the class and apply that to a comprehensive schematic design, which includes programming, universal design features, imagined interior environments and site-specific mobility issues.

In summary, this class has been a raving success. The students have enjoyed the diversity of deliverables. Many of the students have shared with the class about their family experiences regarding grandparents, which creates emotional connections to the subject matter. Reflections from the interviews with residents' changes their perception of what "old" is and the innovative ways they have thought about the future of senior living demonstrates an empathetic evaluation of the subject matter.

REFERENCES

Kouprie, M., & Visser, F. S. (2009). A framework for empathy in design: stepping into and out of the users life. Journal of Engineering Design, 20(5), 437–448. doi: 10.1080/09544820902875033

Appendix for

Restructuring an interior design course to encourage empathy and prepare for the year 2070

Delorise "Dee" Thurber

Bio:

Age: 85+

Gender: Female

Living Conditions: Lives alone

Health Status: Feels Great

Residency Plan: Permanently

Delorise owns a car and tends to drive herself to her regular hangout spots. She is most comfortable with driving to places she is familiar with, even at night. She spends most of her days going to places like the grocery store, library, and place of worship. There is a Giant Eagle next to her apartment building, but she prefers to drive to the Krogers on Chambers Street because there are more handicapped parking spots near the entrance. This also ensures she does not forget where her car is at in the parking lot. One of her main hobbies is orchestra practice. She feels that she has other opportunities to dine out, go to the park or go shopping, but she rarely chooses to do so. Some nearby options are within walking distance, but she does not like to walk because she has concerns of injury

Student Persona

Appendix 1

Students interviewing residents at Thurber Village

Appendix 2

Pedagogy | Scholarship of Teaching & Learning | Presentation

SKETCH NOW | WRITE LATER: The Benefits of Annotation as a Tool for Comprehension and Composition

Moira Denson, Marymount University

ABSTRACT

Learn first-hand how to apply **sketch now | write later-** an annotation tool adapted from low-stakes writing theories and English composition teaching methods used to help interior design, fashion design, psychology, and business students in a 400 level Writing Intensive Global Classroom Course overcome their fear of writing. Early in the 2019 Spring Semester students were introduced to the annotation tool, given demonstrations on the tool's application, and were quizzed on how to use the tool. Next they were guided in how to engage the tool throughout the course, including during overseas travels, and then asked to reflect on the tool's effectiveness during peer reviews, faculty/student conferences, and in a post semester assessment. Examples of student annotations from sketchbooks, writing compositions, and responses to an assessment survey will be presented. Attendees will be provided the basic tool and asked to explore how to further adapt it to their own courses, sketches, and potentially their own writing. Initial feedback proved applying this system in low-stakes writing exercises to be beneficial for comprehension and composition.

Premise for needing *a* tool: As a design educator I love to diagram concepts, use mind-maps to sort out complex systems, and doodle sketch my way through a long administrative meeting. But, up until this year, if you asked this self-professed urban sketcher to teach a Writing Intensive Course (part of an undergraduate Liberal Arts Core), you could be pretty certain my

response would have been, "No thanks- I draw my ideas and so I best teach through that method!"

I couldn't see how my training as a designer and my teaching, which focused primarily on studio instruction or advanced graduate theory/research courses, could benefit design and non-design undergraduate students trying to pump out 15-17 pages of revised writing for a core Writing Intensive Course. Well, throw in a really cool course subject, Historic Preservation, and a global classroom experience, and the appeal started to grow.

Why *this particular* tool?: It wasn't until an English Literature colleague and I had lunch (while I was doodling in my sketchbook) and she emphasized the importance of low-stakes writing exercises in helping students to understand textual ideas and to prepare them to create their own compositions that I felt fully ready to commit to teaching these methods in a course. I thought about all the beneficial marks that I have made in my own sketchbooks and the rolls of trace paper that sit in my basement which led to a published journal article, industry blog posts, an essay in an award winning book, and a textbook chapter. I couldn't deny the benefits of annotation as a tool for comprehension and composition. Afterall, I used it! Why not try testing an annotation system to help me teach my students to look for patterns in their writing and better sequence their ideas? Let's explore in this hands-on presentation other ways to potentially flex this useful tool.

REFERENCES

Ilyin, N. (2019) Writing for the Design Mind New York: Bloomsbury Visual Arts

Harris, R.A. (2005) Using Sources Effectively: Strengthening your writing and avoiding plagiarism (2nd ed.) California: Pyrczak

Bean, J.C. (2011) Engaging Ideas: The professors guide to integrating writing, critical thinking, and active learning in the classroom (2nd ed.) California: John Wiley & Sons Inc.

SKETCH NOW |WRITE LATER APPENDIX TOOL + QUIZ

SKETCH NOW | WRITE LATER - TOOL
Annotation Tool for Historic Preservation as a Writing Intensive Global Classroom Experience

Why Writing Intensive?
"Historic preservation is a conversation with our past about our future. It provides us with opportunities to ask, "What is important in our history?" and "What parts of our past can we preserve for the future?" Through historic preservation, we look at history in different ways, ask different questions of the past, and learn new things about our history and ourselves."
- *nps.gov*

Guide for annotations to help record observations, track reflections, make connections:

- **(P) Paraphrastic-** Observations in your own word (comprehension and retention)

"Lords deal with European legislation first then goes to commons. PINPONG- legislation goes back and forth" (instructor notes)

- **(A) Analytic-** Separating Components. Noting Mistakes: yours, the design, building. "4windows, not 5" (instructor notes)
- **(D) Dialogic-** Questions through dialogue "How did they get the AC in"? (instructor noted)
- **(E) Emotive-** arising from emotions (GUT REACTION) "holy crap, that is hideous" (instructor notes)

Quiz – Terminology – Using Annotation Language

Defining Terminology – 2 part Answers (2 points each answer = 20 points total)
You tell me which 10. I grade ONLY the first 10 you provide. I will not grade after 10.
Select **10 terms** that you would like to define from this list below. Answers for each term must be complete in 2 parts for full points:

1. First, briefly define each term (No more than 3 sentences each) using a *Paraphrastic* or *Analytic* type response.

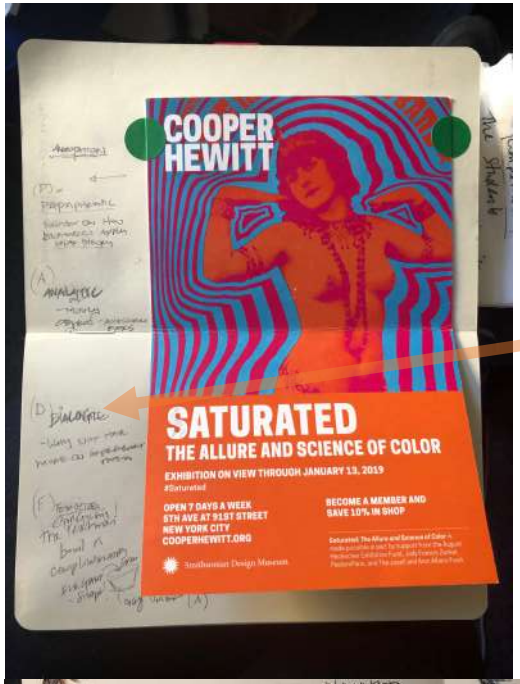
2. Second, write a *dialogic* (questions something through dialogue) or *emotive* (gut reaction) response about this term in relation to the course or historic preservation. If the same type dialogic response occurs more than 2 times for the entire list, it will not be graded.

Terms

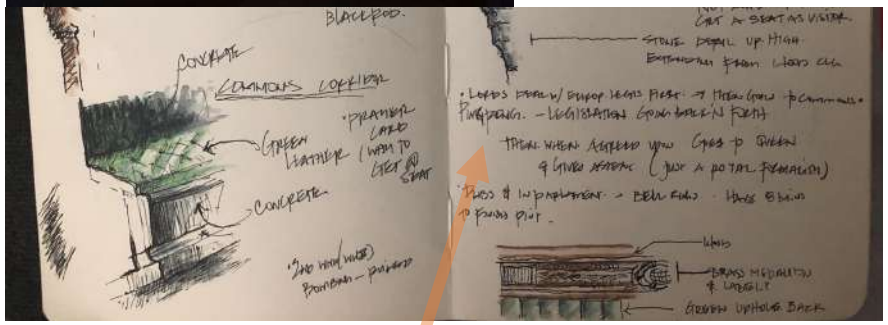
Period Setting
World Heritage List
Non -Conforming Rights
Easements
Facadism
Non- Conforming Intrusion
Historic District
Stewardship
Vandalism
Rehabilitation
Reconstruction
National Historic Landmarks
Criteria
National Register
Tax Reform Act of 1986
Special Ordinances
Rehabilitation
Adaptive Use
Sustainability
Preservation
Renovation

SKETCH NOW |WRITE LATER APPENDIX INSTRUCTOR DEMO FOR ONSITE VISITS

Instructor Demonstration Notes for how to use Analytic Annotations. “Self Correction”

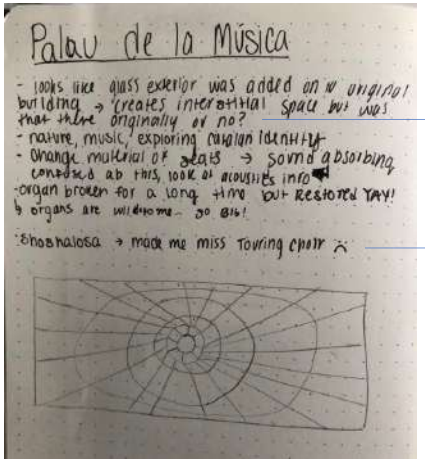


Instructor Example “Pre departure” Demonstration Notes for how to use annotations with collateral from site visits.
“D” Dialogic “Why not have



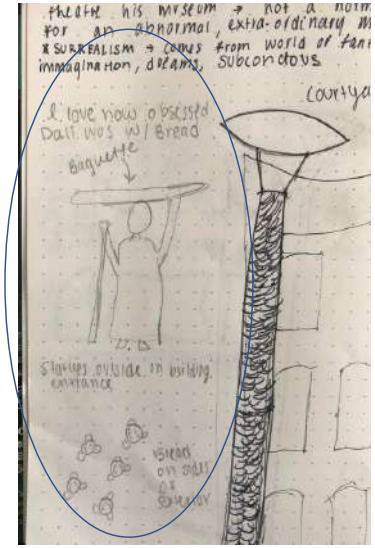
Instructor Demonstration Notes for how to use Paraphrastic Annotations. “Ping Pong” “in your own words”

SKETCH NOW |WRITE LATER APPENDIX STUDENT ANNOTATIONS

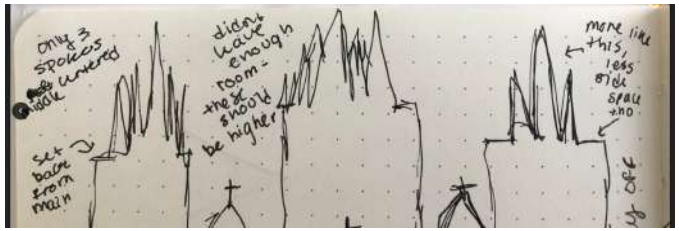


Dialogic

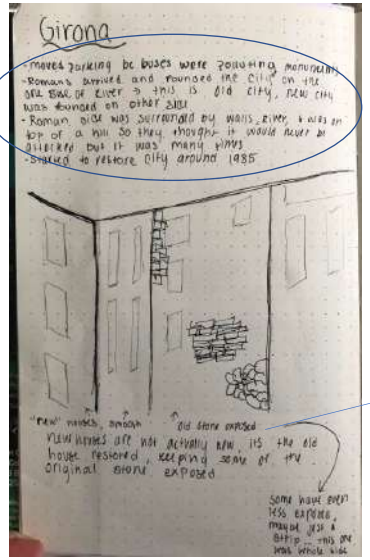
Emotive



Emotive



Analytic: pointing out mistakes in my sketches and how it is supposed to look



Paraphrastic

Analytic/Dialogic: explaining to myself what my sketches mean

SKETCH NOW |WRITE LATER APPENDIX STUDENT RESPONSE

Course Institutional Evaluation

8 - What 2-3 things did you like most about this course and find most useful or valuable for learning?

Response Rate	12/21 (57.14%)

- Amazing teachers! Fantastic time abroad with the class.
- -Being able to experience historical preservation in real life through field trips and study abroad opportunity in Spain -Writing scruture
- 1. Field experience trip to Barcelona 2. Extending the course material into the local area as well 3. One day we spend class time doing water color paintings of photos from our trip, I think this helped us connect with out experience in a new way.
- Going to Spain was awesome. I really loved being able to see building that related to Preservation but also building that are important in the history of architecture and interiors.
- I liked that you enjoy teaching this class because that improves students learning so much. I enjoyed that everything is broken down into parts so that we wouldn't have such a heavy work load.
- subject matter was very interesting and our professor was always engaged, which made it more interesting for us! I appreciated doing different activities such as watercolor. The global portion of the class also was an amazing experience that was really well related to the class.
- To talk about historic preservation and to be able to experience it by going to Spain was an unbelievable time. To be able to relate the material and content to the class by studying abroad really helped.
- I loved the trip to Barcelona the most, but also loved learning about the buildings
- It was an interesting course to take for my career.
- This course was very interesting and very fun to be apart of. It was super fun to be able to go to Barcelona for a class and learn about different buildings. The intructors were the best and made the whole class ten times better.
- The trip to Barcelona was truly great and I never could have imagined learning so much in one week. This was a class I will value having taken forever. [redacted] made the trip the best it could have been no matter the situation.
- Going to Barcelona Seeing the differences and similarities in architecture at home vs. overseas Learning the terminology Emotive writing

Example of Course Survey Responses- Note- More to be provided with the Presentation.

Did you use Analytic (breaking ideas down into manageable chunks) Annotations or Thinking to help your writing? And was it helpful? Why or Why not? Can you give an example?

Yes I used analytic annotations. Again, since there was so much information that it was necessary to break it up to help myself be able to understand it later. In my sketchbook when I was taking notes, I would bullet things off into different sections, as well as break things up with sketches. For example, I would write a little bit about one piece of it, and then draw a little sketch that represented something else. The writing was one "chunk" and the drawing was another. Or when I used a combination of writing and drawing, the differences between the two helped divide up the page. I would also use analytic annotations in the form of noting mistakes. Mostly they were my mistakes when drawing. I put little arrows that explained how it actually looked.

Did you use Emotive (gut reaction) Annotations or Thinking to help your writing? And was it helpful? Why or Why not? Can you give an example?

I used a lot of emotive annotations as this was probably my favorite type of response! I would always just jot down my thoughts, impressions, or emotions and it was great as a reminder of how I initially felt. It was really helpful to have an emotion or feeling that I wrote down in the moment, because I might not remember it or have a different feeling after I go back to write it down after having time to reflect. Having it all in my sketchbook helped me to capture and save those feelings.

Did you use Dialogic (a conversation in your writing) Annotations or Thinking to help your writing? And was it helpful? Why or Why not? Can you give an example?

Yes I also used dialogic annotations because similar to the emotive responses, these were helpful in knowing what I was thinking in the moment. I would be writing or sketching and all of a sudden a question or thought popped into my mind. Putting that down on paper reminded me to go back to it later and find out more. For example, If i had a question about why something was done the way it was, I could put that down in my sketchbook and search for more information later, and then add what I found out to my writing.

Did you use Paraphrastic (in your own words) Annotations or Thinking to help your writing? And was it helpful? Why or Why not? Can you give an example?

Yes paraphrastic annotations were helpful because I often would be jotting things down quickly as we were hearing it from someone. In my notes I paraphrased things as I was hearing them so it was helpful because I wouldnt have been able to write every singe word down and then I was able to go back and it jogged a memory of a point I wanted to further discuss/paraphrase in my writing. I could even do this with sketching by drawing a little picture that reminded me of something I saw which I would later translate into a paraphrastic response about whatever it was I learned about that thing. It was really helpful when we were on site tours that were full of tons of great information that I was interested in writing about.

Pedagogy | Scholarship of Teaching & Learning | Presentation

Space Habitat Design: The Next Frontier

Lisa Tucker, Virginia Tech

ABSTRACT

This presentation describes the results of an interdisciplinary collaboration of interior design students with habitat designers from NASA, Johnson Space using a Project-Based learning approach. PBL is a pedagogy that involves interdisciplinary teams to solve complex problems using a variety of content experts. As a unique design challenge, students were asked to design for various gravity conditions for Mars, the Moon and the orbiting Gateway Space Station. The first phase was to collect information to adequately understand the design problem through collaboration with experts. As seniors, the design students had mastery over the design process and typical interior space design but had little content area knowledge related to space life support systems, gravity conditions and materials used on space. The format for this year-long project included weekly meetings with aerospace engineers, materials scientists and other experts. Only a very small list of NASA mission-approved materials can be used in space travel conditions. The students participated in a visit to Houston to view a mock ups of the international space station, interviewed astronauts, and worked with the space habitat design team at NASA. The team formulated research questions and independent design solutions for a variety of space habitat environments centered on a common mission to colonize Mars in 2066. The research methods included case study analysis, interviews, analysis of popular films and TV shows about space travel and document analysis of NASA design guidelines. The unique contribution of the interior designers to this project was to address key environmental factors such as spatial orientation, privacy issues, and stimulation over time in an otherwise confined environment. The instruction model used was a Project-Based Learning approach. PBL is defined as sustained inquiry over time about a challenging question around an authentic problem where students are encouraged to present a public product and reflect on their learning, work, and their team

dynamics. Students worked in interdisciplinary teams to solve a complex real problem. The design parameters used for the international space station and space travel module design are based on design guidelines from the late1950s through 1985. Size is regulated by what can be safely and easily transported using a space rocket. Some of the key design concerns are: spatial disorientation, lack of privacy, combination of four main cultural groups living collaboratively (Russia, Japan, US and European), and multiple exposed wires which are often used for translocation through the vessel. Additional concerns relate to bathrooms, storage of trash and supplies and limited views (located only in the cupola in the current International Space Station). Interior design has much to contribute to this environment, traditionally designed from an engineering-centric perspective. Astronaut interviews provided information about what does not work in the existing designs. The goal of this project was to provide a solution that retains all functional requirements while improving the well-being and productivity experience for the astronauts. The project outcomes consisted of four space habitats—two for Mars, one for the Gateway project and one lunar surface module. Students learned how to work on a team with engineers, materials scientists, and other experts. They created a design solution that addressed strict materials, weight and size parameters for the NASA Space Habitat team. Project solutions were presented throughout the design process to solicit critical feedback.

REFERENCES

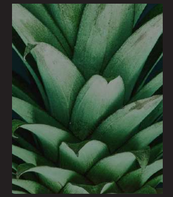
Howe, S. Kennedy, K, Gill, T. and NASA Deep Space Habitat subsystem leads (2013). NASA habitat demonstration unit (HDU) deep space habitat analog, AIAA Space Forum, 2013 SPACE 2013 Conference and Exposition. Retrieved 5/3/19 http://arc.aiaa.org | DOI: 10.

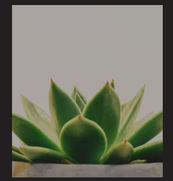
Kitmacher, G. (2002). “Design of the space station habitable modules,” The architecture of space: A Multidisciplined approach, Wednesday, October 16, 2002, 53rd International Astronautical Congress, Houston TX.

Larmer, J. Mergendoller, J. and Boss, S. (2015). Project-based learning: A proven approach to instruction. ASCD: Buck Institute.

Larson, W. and Pranke, L., eds. (2007). Human spaceflight: Mission analysis and design. New York: The McGraw Hill Companies, Inc.

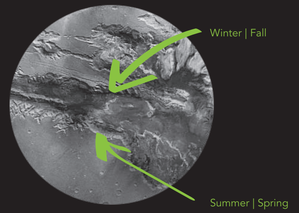
Mohanty, S., Jorgensen, J. and Nystrom, M. (2006). “Psychological factors associated with habitat design for planetary mission simulators,” Space 2006 AIAA 2006-7345. Retrieved 5/2/19 http://arc.aiaa.org | DOI: 10.2514/6.2006-7345.

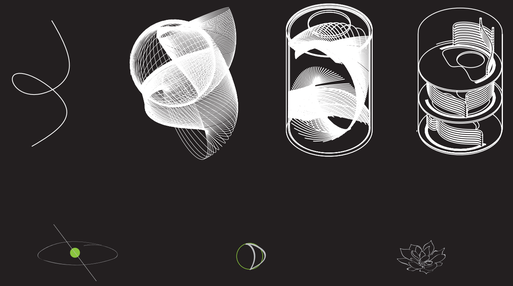


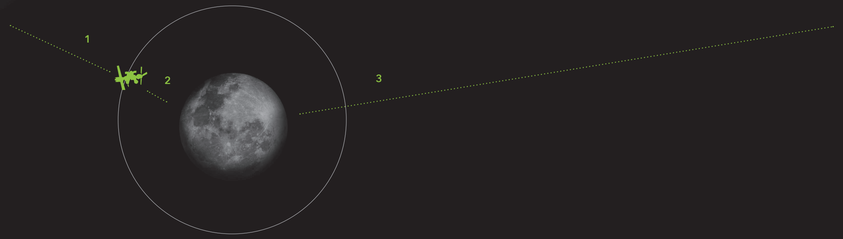


SITE ANALYSIS

Martian flood waters carved out this surface making the Valles Marineris much larger than the grand canyon and a great spot for reseach and growth.







INSPIRATION

CAM plants (or cacti) have evolved in a variety of extreme climates. However, each has developed in a radial or axial manner.

PROCESS

ORBIT AND AXIS

The orientation of the red planet impacts its climate. Mars has an eccentric orbit making the days longer than Earth's and the seasons vary in duration.

CYCLE

The length of time that the sun warms the surface of the planet causes large temperature fluctuations. Similar to a drought dominated region | desert on earth.

CONCEPT

ADAPTATION

CAM plants (many cacti) developed an adaptation to extreme temperature changes on Earth. These plants "breathe" at night to conserve water during the day.

+ efficient energy use
+ reduces water waste
+ improves respiration
+ improves food production

1 CIS-LUNAR
2026

Research in Human systems for future space travel. Serves as the refueling center for mission to Mars. Serves as the command center for descents to the lunar surface.

Duration of Mission: 1 month
Crew: 4
Habitat Module: 1

2 LUNAR SURFACE
2036

Research the moon's surface, provide infrastructure for future missions.

Duration of Mission: 30 days (rotation with cis-lunar)
Crew: 4
Habitat Module: 1

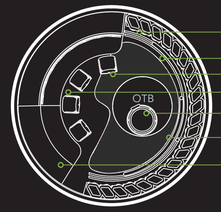
3 MARS SURFACE - AT LEAST 2 HABITATS
2056 - 2066

Robotics starts basics of settlement. First module begins research on plant growth. After more infrastructure is built, another habitat with plant growth (to also help feed the crew) will land.

First Habitat
- Duration: 3 months
- Crew: 4
- Habitat Module: 1

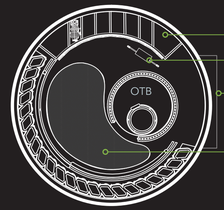
Habitat after further development
- Duration of Mission: 6 months
- Crew: 4
- Habitat Module: 1 added

FLOOR PLANS



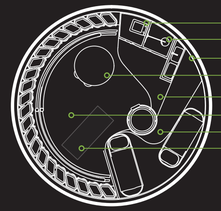
LAB

- General Storage
- Hydroponic Garden
- Stackable Chairs
- Lab and Foldable Workspace
- Ladder Pump and Water Filter
- Expanded Metal Floor
- Storage for Lab Equipment



FITNESS

- General Storage
- Exercise Equipment
- Hatch
- VR Space

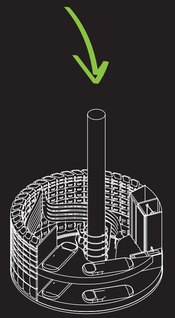


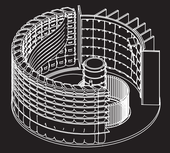
SLEEPING QUARTERS

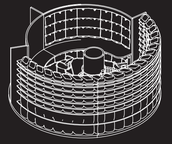
- Toilet
- Shower
- Kitchen
- Dining Room | Stools | Storage
- Water Filter and Waste Storage
- Flexible Open Space
- Sleeping Quarters | Personal Storage
- Floor Storage for Treadmill

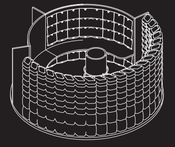
AXONS

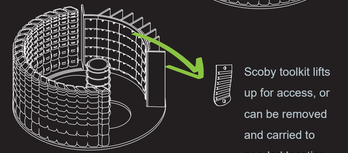
Ladder transfers people from one floor to the next, while core filters water (see next spread).

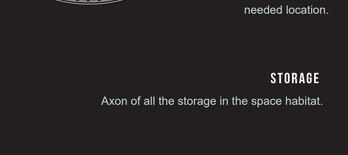










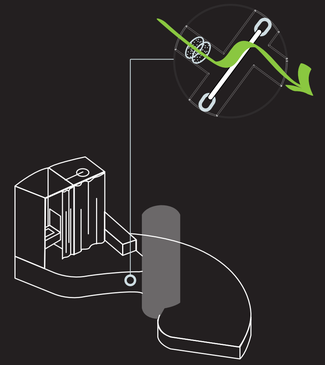


Scoby toolkit lifts up for access, or can be removed and carried to needed location.

STORAGE

Axon of all the storage in the space habitat.

FIRST FLOOR

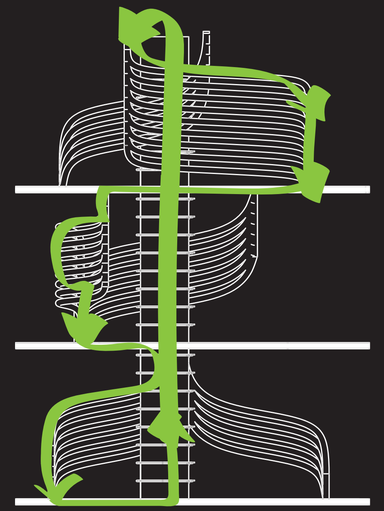


- Water
- Pipes
- UV Light
- Filters

Water is slowly transferred using sloped pipes. On its way down hydroponic plants remove nitrogen and phosphorus from water to purify waste water. That water then travels through the floor and up the “core”. The core is made up of a mechanical pump that is activated as users walk up and down the ladder. Energy that is already expended will be used more efficiently.

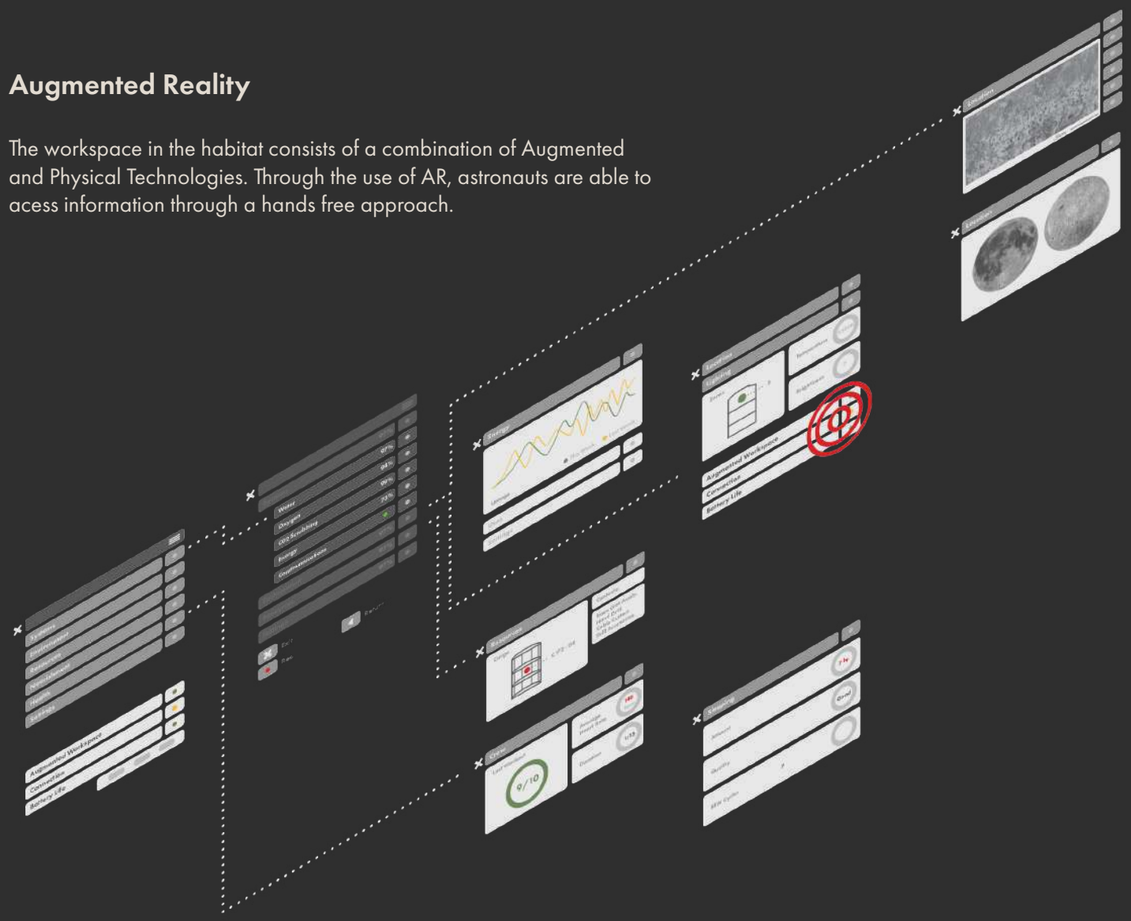
+ efficient energy use
+ reduces water waste
+ improves respiration
+ provides food

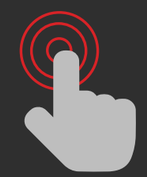
- Water



Augmented Reality

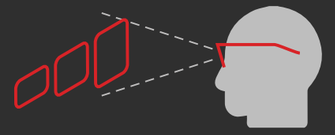
The workspace in the habitat consists of a combination of Augmented and Physical Technologies. Through the use of AR, astronauts are able to acess information through a hands free approach.





Touch Control

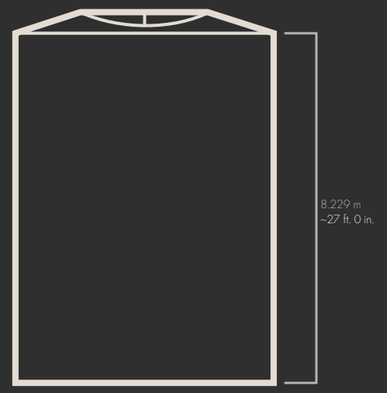
Aucitory Control

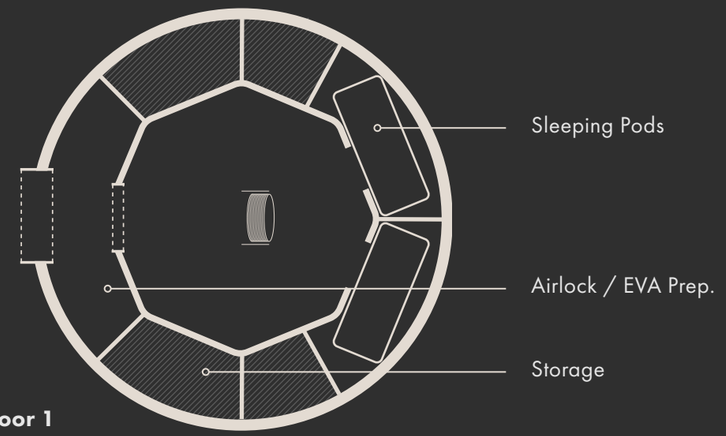


Visual Tracking

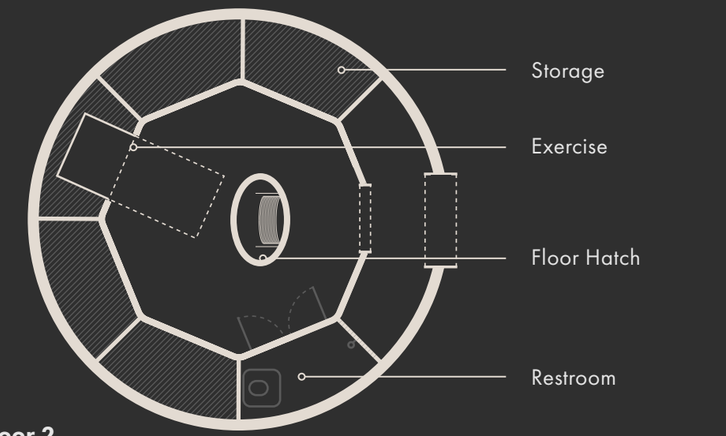
Section

Module Size

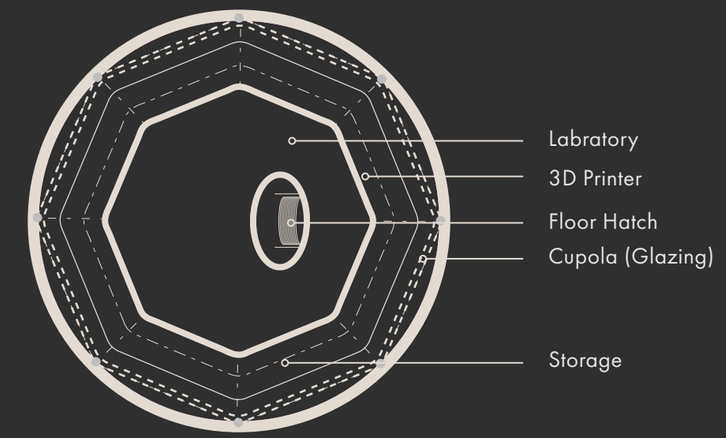




Floor 1



Floor 2



Floor 3

Pedagogy | Scholarship of Teaching & Learning | Presentation

STEMette Camp: Interior Design as a Vehicle to Empower Middle School Girls in Science, Technology, Engineering, and Math

James Hopfenblatt, University of Missouri
Mohammad Dastmalchi, University of Missouri
Bimal Balakrishnan, University of Missouri

ABSTRACT

STEMette Camp: Interior Design as a vehicle to empower middle school girls in science, technology, engineering, and math

We present the case study of a design visualization workshop as part of a week-long 'STEMette' summer camp in partnership with the College of Engineering and the local public school system. The week-long camp's goal was to introduce creativity and STEM (science, technology, engineering, and math) concepts to middle school girls. The camp activities were divided into a series of full-day or half-day workshops. Our work builds on prior efforts to introduce STEM subjects to girls (See: Giannakos, Jaccheri, & Proto, 2013; Webb & Rosson, 2011). We planned the visualization workshop as a full-day event, and over the course of the five-day workweek, we offered it to five different groups of girls ranging in age from ten to 14 years. We approached the workshop itself as an iterative design problem, and over the course of the week, we refined both the structure as well as delivery of the workshop. We are summarizing here the premise underlying our workshop, its structure, and implementation as well as key takeaways. The appendix provides additional detail about the workshop outline as well as examples of design outcomes.

Potential of design visualization and virtual reality technology

As part of our workshop, we prepared a virtual reality design environment for the girls to design a musical bench for visiting high school students who come annually on our campus. They were encouraged to think abstractly about form and reflect on function, explore their designs through different lenses – properties and tectonics of various materials, components of the bench and the connections between them as well as ergonomic considerations. As they worked through the design and engineering problem, the workshop leaders introduced various representational media, including virtual reality and the potential of each for design ideation and technical evaluation. We sought design and visualization as the emphasis or our workshop as it has shown to improve the quality of inquiry by its users (Orthel, 2015).

Our vision for the workshop was to give the girls a taste of the project-based nature of interior design discipline while utilizing cutting-edge digital tools that are transforming the profession. Our pedagogical goal for the workshop was to engage and make the girls reflect on their multiple intelligences including spatial, logical-mathematical, kinesthetic, inter and intrapersonal as well as verbal-linguistic competencies when they engage in a design task. The workshop also introduced the students to a variety of traditional as well as state-of-the-art digital tools that helped their ideas across a broad spectrum of materiality and scale. We adopted active learning strategies beyond those proven successful in general engineering problems as designers not only have to frame their problem in a manner that can be solved, but also visualize their ideas to evaluate and then translate them into reality.

Lessons learned:

Workshop attendees responded better to active-learning strategies that emphasized hands-on activities. So, we adapted our workshop structure and delivery to limit lecture time to create a progressive series of activities that did not immediately reveal the end goal to encourage exploration. Demonstrating examples of leading female designers who incorporate cutting edge technology (e.g. Zaha Hadid) captured the attention and imagination of students and were received better compared to male architects. While the students were comfortable with advanced digital tools such as virtual reality headsets, having a range of media with varying degrees of affordances for design representation provided students with multiple entry points to invite exploration.

REFERENCES

Giannakos, M., Jaccheri, M. L., & Proto, R. (2013). Teaching Computer Science to Young Children through Creativity: Lessons Learned from the Case of Norway.

Orthel, B. D. (2015). Implications of Design Thinking for Teaching, Learning, and Inquiry. Journal of Interior Design, 40(3), 1–20. https://doi.org/10.1111/joid.12046

Webb, H. C., & Rosson, M. B. (2011). Exploring careers while learning Alice 3D: a summer camp for middle school girls. 6.

STEMette Camp: Interior Design as a vehicle to empower middle school girls in science, technology, engineering and math

Appendix – A: One-day workshop outline

Workshop consisted of five different types of activities:

1. Introduction to our lab, architecture, interior design, people, etc.
2. Site visit/measurement activity
    a. Pick a location for the bench
3. Experimentation with different media:
    a. Traditional media – Paper and pencil
    b. Digital – Photoshop/Wacom tablet
    c. Virtual Reality – Medium VR, Quill VR, Google Earth, 360 movies and games, 3DS Max.
4. Lectures on:
    a. Design thinking, creativity, abstraction, projections (plans, elevations, and sections), designers, and technology.
5. Conceptual design:
    a. Exploration of abstracting musical concepts to a physical bench

Appendix – B: Images of student designs

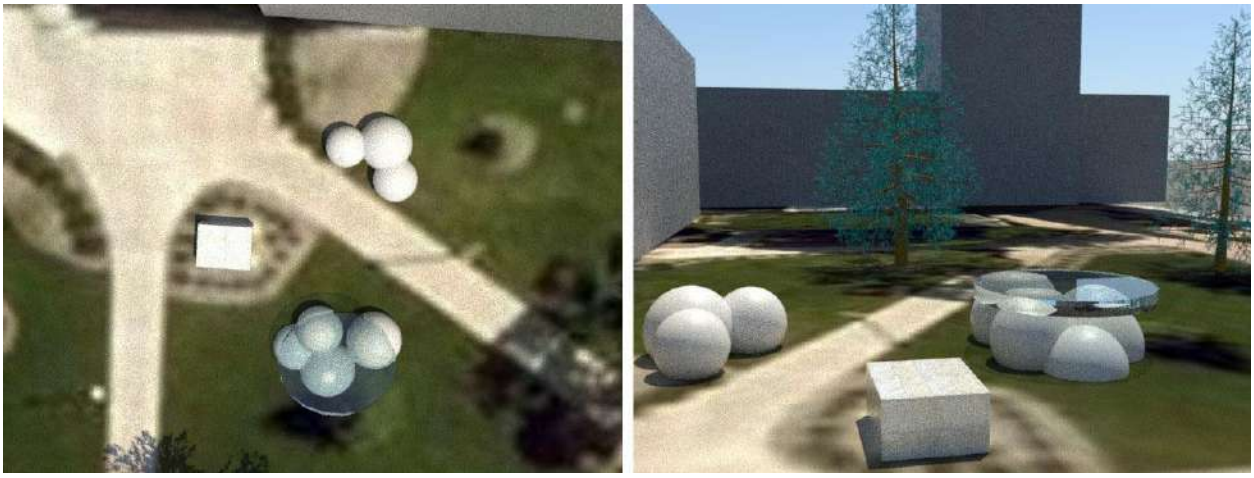


Figure 1. Design created by one of the students using 3DS Max

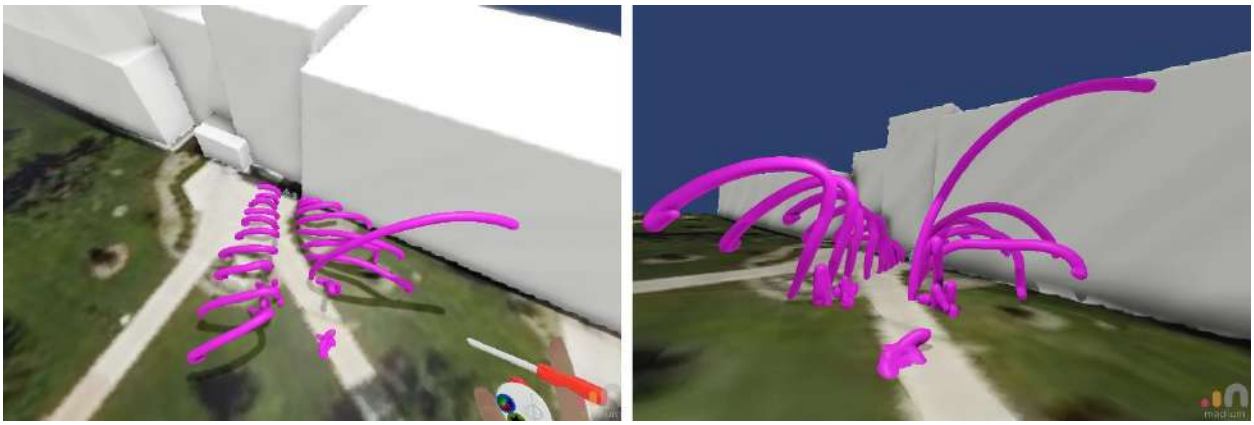


Figure 2. Design by student using Medium VR

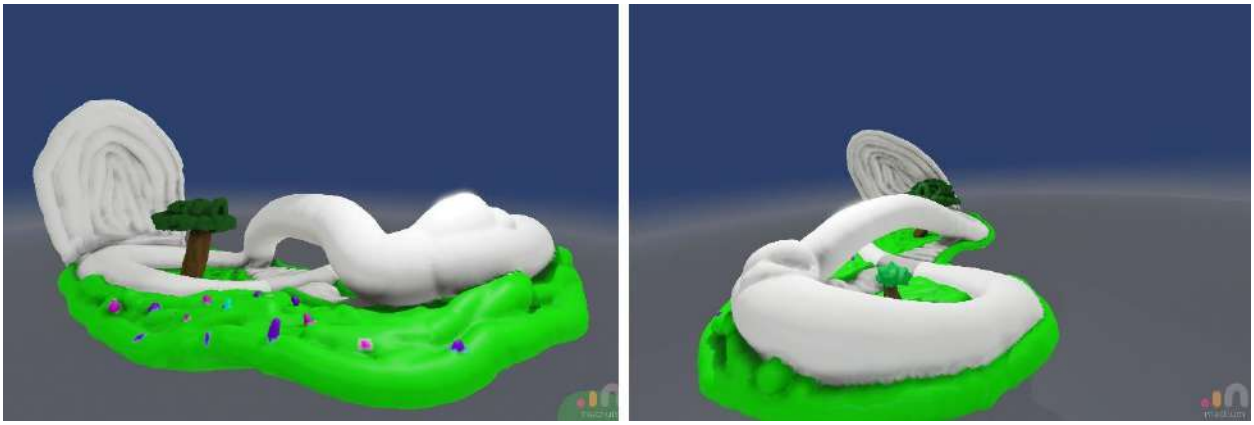


Figure 3. Design by student using Medium VR

Figure 4. Students experimenting with VR and digital drawing

Pedagogy | Scholarship of Teaching & Learning | Presentation

The Corporeality of Spatial Experience: A Kinesthetic Design Approach to Built Environments

Jain Kwon, Colorado State University

ABSTRACT

Occupant experience in built environments is bound to the body that is not a mere receptacle of the sensory stimuli but a holistic mechanism of spatial perception. Merleau-Ponty's phenomenology of perception (1945/2012) emphasizes the subjective sensory processes of the lived body, "being a self of movement" or "feeling of doing," tie the three aspects of lived body—felt, experienced, and sensed body—together. Based on his notions of lived body, body schema, and kinesthesia, this pedagogical study illustrates the integration of kinesthetic concepts into an exploratory design project that was developed to inform interior design students about the relationship between the sensorimotor schemes of the body and the architectonic context of built environments: body-space-time interaction, spatial volume and scale, and sensory phenomena.

Kinesthesia that relates human experiences to bodily movement and position has not much been discussed concerning creativity in the interior design education while the human body has long been the subject in human factors, and ergonomics, and anthropometrics. Farnell (2012) argued that there had been "longstanding bias against the body in Western thought" and lack of discussion on bodily movement as a sensory modality and the ground for the possibility of experience. Recent cognitive neuroscience studies have found the relationship between perception and (motor)action in aesthetic experience and creative productivity (Hurley, 1998; Torrents et al., 2013); the connection of users' embodied visuo-spatial experience with locomotive behavior (Hoogstad, 1990; Tversky, 2005). In line with such perspective, this study suggests that bodily self-consciousness affects and may amplify spatial experience; and kinesthetic exploration can enhance students' creative productivity.

The studio project rendered in this paper involved cross-disciplinary activities that were developed for team-design practice through which students explored human-space as well as human-human interactions in a spatial context. The interior design students worked with a university athlete with her backgrounds in gymnastics and dance. Throughout an exercise-type class activity with the athlete (Figure 1), the students were encouraged to focus on how their body could configure or define space, create a sense of territories or boundaries, and communicate with the surrounding. Following the activity, the interior design students "choreographed" the dialogue between body and space, using gestures, movements, positions, and postures that could represent several concepts (e.g., balance, stability, tension, fluidity, and containment,) often discussed in design disciplines (Figure 1). This experiment was followed by students' study—using joint figures—of posture, movement, and spatial definition in a confined space (Figure 2). Learning that perceived space in a built environment is affected by the felt scale of one's own body within the setting (Pasqualini, Llobera, and Balnke, 2013), students designed two structures of experiential space portraying their sensorimotor, somatosensory, and lived experience through the experiment. After completing the design, students built full-scale models of the designed structures in the main lobby of a university building (Figure 3). Finally, students observed and then interviewed passers-by, who reacted/responded to the installed structures.

The instructor examined the learning effectiveness of the framework, through an anonymous post-project survey in which 31 of the 38 students participated. Of the 31, three incomplete responses were omitted from the analysis. The findings included that students felt best learned about body-space interaction and sensory experience through the kinesthetic design exploration, and; were compared with the two previous years' that adopted the concepts of synesthetic phenomena. The three frameworks were found effective in teaching different aspects of spatial experience.

REFERENCES

Farnell, B. (2012). Dynamic embodiment for social theory. London; New York: Routledge.

Hoogstad, J. (1990). Space-time-motion. Netherlands: Gravenhage.

Hurley, S. L. (1998). Consciousness in action. Harvard University Press.

Merleau-Ponty, M., and Landes, D. A. (2012) Phenomenology of perception, D. A. Landes, trans. Abingdon, Oxon; New York: Routledge [Originally 1945].

Torrents, C., Castañer, M., Jofre, T., Morey, G., & Reverter, F. (2013). Kinematic parameters that influence the aesthetic perception of beauty in contemporary dance. Perception, 42(4), 447–458. https://doi.org/10.1068/p7117

Appendix

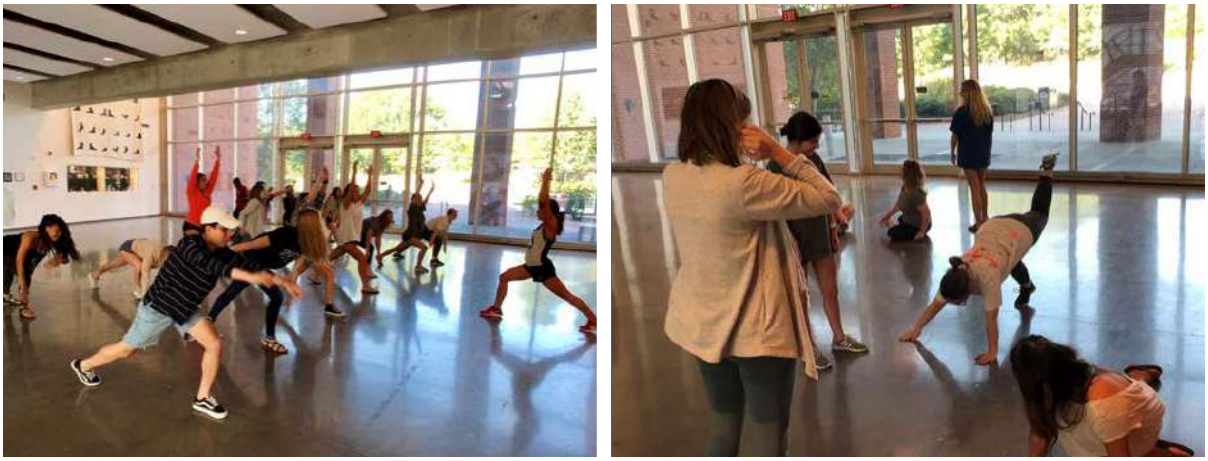


Figure 1. Kinetic and somatosensory exploration through bodily movement

Figure 2. Design process using joint figures and confined space/forms

Figure 3. Full-scale construction of experiential spaces

Pedagogy | Scholarship of Teaching & Learning | Presentation

The Outdoor Interior

Igor Siddiqui, The University of Texas at Austin

ABSTRACT

By the discipline's outsiders interior design is frequently presented in opposition to the outdoors, while in practice such a binary distinction is neither productive nor is it true. Interior designers bring the outdoors inside in numerous ways. Biophilia, for example, is an important consideration in interior design. Another example is the design of public space, an aspect of civic life wrongly attributed exclusively to areas outside of buildings; both historically and in the present such spaces are frequently situated indoors and are increasingly the work of interior designers. *The Outdoor Interior* is a second-year design studio offered in a CIDA-accredited four-year undergraduate interior design program that explored the synthesis between inside and outside within the contemporary interior as a critical aspect of the discipline.

Pedagogically, the studio brought together precedent-based research, readings in history and theory, as well as a range of creative techniques in order to intellectually and artistically examine what an outdoor interior may be. The course was organized in three main parts: (1) cross-disciplinary research, (2) construction of three-dimensional dioramas, and (3) the design of a retail environment. Each student built upon their work as they progressed from one part of the course to the next, and was tasked with maintaining continuity of ideas throughout. In the first research portion, students investigated a wide range of outdoor interiors, including interiors that simulate or contain climate-related phenomena, interiors that contain, present, or preserve animal wildlife, interiors that support and make use of plan life, agricultural interiors, interior streetscapes, and interiors that provide leisure activities typically associate with the outdoors. In the second portion of the course, students studied the history of dioramas as mechanisms for bringing the outside phenomena indoors and considered them in relation to the eighteenth-

century notion of the sublime as it is defined by Edmund Burke's 1757 *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful.* Such a reading was intentional in that it made an explicit link between the students' coursework in design history and their creative work in the studio. In the final portion of the studio, the project was to design a retail environment for an emerging brand that integrated the concepts and ideas from the previous work into a cohesive interior design proposal.

We collaborated with a number of experts outside of the field of interior design who served as consultants for the projects, including botanists, former NASA employees, and air quality experts. An explicit focus was placed on design techniques based on physical modeling, presenting the students with a challenge of exploring the nature of representational methods that exceeds the scope of traditional scaled interior elements such as partitions, finishes, and furnishings. Models also served as experimental and observational tools for phenomena such as lighting, media, and other less physical aspects of spatial design that indeed imbue interiors with a sense of the sublime.

REFERENCES

Burke, Edmund. A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful. The Ninth Edition, Etc. Basil, 1792.

Dohm, Katharina, Claire Garnier, Laurent Le Bon, and Florence Ostende. Dioramas. Paris: Palais de Tokyo, 2017.

Eckbo, Garrett. Home Landscape: the Art of Home Landscaping. New York: McGraw-Hill, 1978.

Weinthal, Lois. Toward a New Interior: an Anthology of Interior Design Theory. New York: Princeton Architectural Press, 2011.

Woolverton, B.C. "Indoor Landscape Plants for Air Pollution Abatement." NASA, 1989.

Pedagogy | Scholarship of Teaching & Learning | Presentation

What Does Senior Living Look Like in 2070?

Emily Valentine, The Ohio State University
Jeff Haase, The Ohio State University

ABSTRACT

How do we revolutionize the standard of senior housing? Ask older adults of the future to plan and design for their own retirement.

The future of senior living environments is a hot topic with the aging Baby Boom population, especially when considering that 40% of Boomers are still paying off credit card debt as they move into retirement (O'Shaughnessy 1). But what about the generations that follow? To tackle the complex needs of future aged generations, interior design juniors projected their needs and desires 50 years forward through a human factors lens to design senior living communities of the future.

Following the design process, students build empathy with current older adults through site visits, interviews, and immersive aging activities. An introduction to futuring, the process of looking at the possible futures that may come based on cultural, economic, and social context, initiates the student groups designing for themselves. Through research of current trends within their generation (such as a preference for fast casual meals as they don't have time to cook or dine out due to work, school, and extracurricular commitments), each student identifies core characteristics of themselves and their lifestyle to determine what may change and what could stay the same in the future.

Detailed personas provide a picture into what our current 20-somethings expect in their retirement years: some health problems have been minimized by technological and medical developments but arthritis and generally slower movement continue to persist, anxiety and

depression are significant issues, and coping with death, divorce, and moving families linger on their minds. Through these personas, case study research, and futuring notes, students determined a concept for their future senior living community. A focus on themes from their personas and research brought one group to improve mental health in retirement as they identified current generational struggles with these issues. Their senior living community focused on integrating art and making with counseling services centrally located in the facility (Appendix 1).

Central to project outcomes is a desire to be part of an active, thriving community that is closely networked with the surrounding city. Overall approaches to the future of senior living focus on building community, integrating a diverse network of people through services offered, inter-generational housing, and collaborative consulting/mentoring. One group established a business mentoring office where retirees could guide young community innovators and potentially provide funding. Similarly, another group established a community building with co-working spaces and flexible event spaces that hosts a rotating group of services and makers (Appendix 2). Across the class, students also focused on impacts of future technological growth spurring significant integrations into daily life as champion of maintaining health, activity, mobility, and supporting Universal Design principles (Appendix 3).

Senior Living in 2070 will be bold, technologically advanced, and social community centers. Students expressed a desire to establish centers of activity and experience where they just happen to also live. Retirement in the future isn't about hiding away with only those you know. Retirement will be filled with as much adventure as students seek to experience now, opportunities to give back and mentor youth, and thriving through mental and physical activities with others of all ages.

REFERENCES

O'Shaughnessy, Thomas. "Retirement Crisis in America: Baby Boomer Savings Come Up Short." Clever Real Estate, 3 Sept. 2019, listwithclever.com/real-estate-blog/baby-boomer-retirement-savings-by-generation/.

Appendix 1

A student group focused on mental health by integrating art and mental wellness support. They purposely located these services at the middle of the building to encourage access and participation.

STACK PLANS

PUBLIC V. PRIVATE

	ROOF	
PUBLIC RESIDENTAL	10	ASIAN BISTRO - PHYSICAL WELLNESS - ROOFTOP
	9	
	8	
PRIVATE RESIDENTAL	7	
PUBLIC RESIDENTAL	6	DIGITAL LAB - MENTAL WELLNESS - ART STUDIO
	5	
	4	
PRIVATE RESIDENTAL	3	
	2	
PUBLIC	1	RESIDENT GALLERY - CAFE' - RESTAURANT

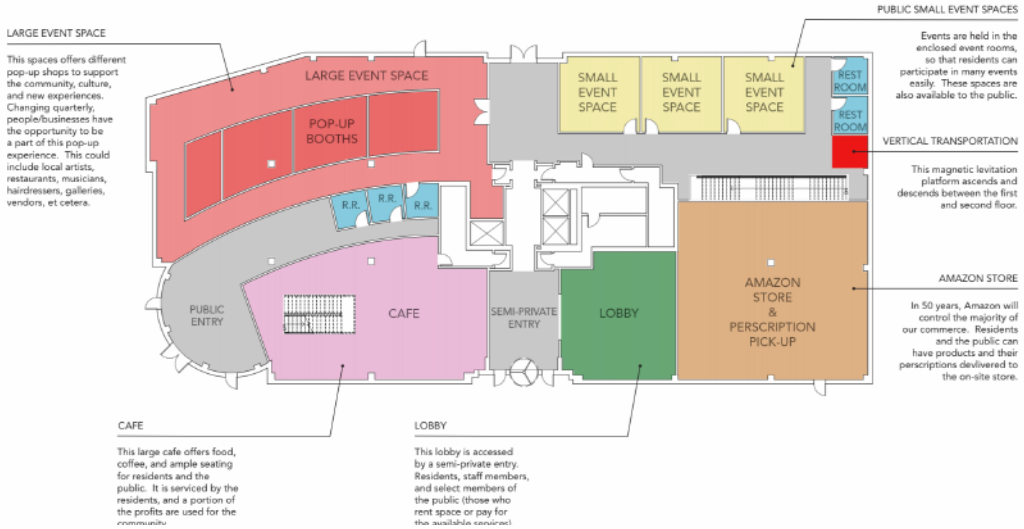
VISUAL POSITIONING

Appendix 2

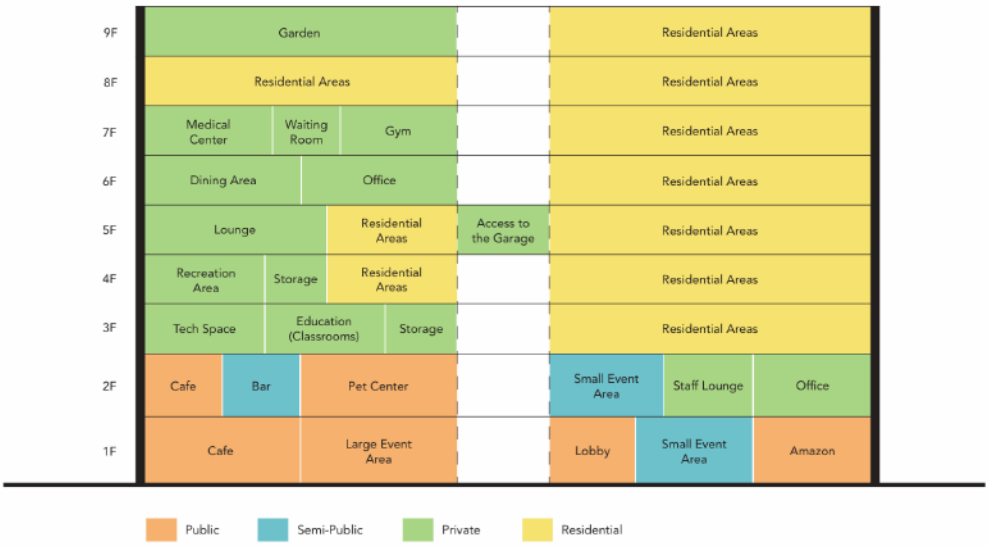
Wanting to bring many new minds and diversity into their community, this student group established the core of their public spaces around co-working areas and a large event space that hosts a rotating selection of pop-up shops and entertainment.

FIRST FLOOR PLAN: PUBLIC

The first floor has public access and allows non-residents to use its amenities.



VERTICAL PLAN

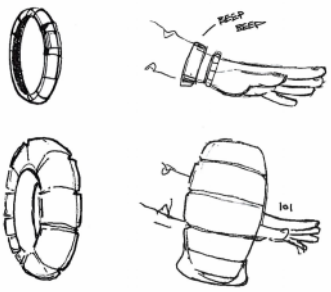


Appendix 3

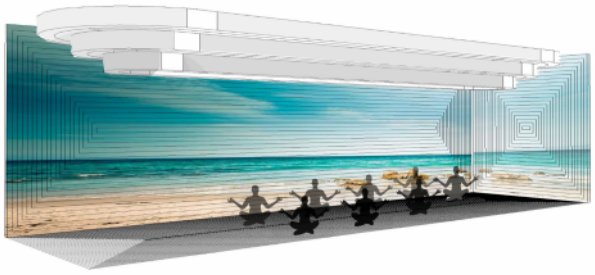
All student groups considered the impact of technology on their future lifestyle and considered ways to build experiences, encourage safety, and provide wider access to support.

Tolerance For Error

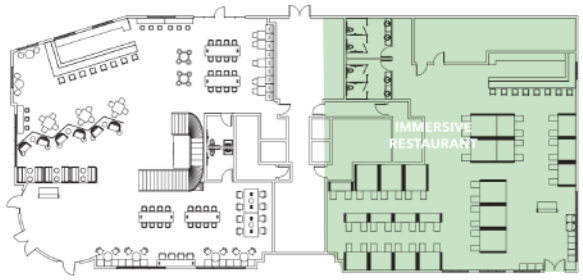
It is require that every tennant in the market wear this safety bracelet. Umonst working as a watch it also monitors your vitals. It also has a safety feature that detects when you fall and inflates to lessen injury.



Immersion Room



FLOOR 1
IMMERSIVE RESTAURANT



DINING DETAIL

Pedagogy | Scholarship of Teaching & Learning | Presentation

Winning at the Speed of Light: Strategically Integrating Lighting and Competitions into the Curriculum

Jeanne Mercer-Ballard, Appalachian State University

ABSTRACT

Lighting is imperative to the success of interior spaces yet, as a CIDA site visitor, in academia I have observed that its importance is often relegated to one lecture course in most programs and application and understanding varies greatly. The additional hudle is that student frequently "put up a wall" as their first thoughts are that lighting is very technical and it is hard to see and understand. This presentation shares the success of one program that, although only having one lecture course, developed a full teaching lighting lab and integrated application of lighting design in a concurrent studio. This integrative approach has resulted in many wins through competitions, jobs, compliments from lighting professionals, and CIDA strengths for our program.

During the third year in the program our students take a lighting course concurrently with a studio course. The "lighting" course is not exclusively lighting, but a large majority of the course's content is lighting. Therefore, the class periods have been strategized to maximize the most important content for interior designers. To help the students "see the light," the author solicited major manufacturer donations and installed a large, comprehensive, teaching lighting lab. Soon after the installation, course test scores improved. It was clear that the lab was augmenting their understanding of the lectures and texts.

While the students are learning the fundamentals of lighting through the lecture based course, they are applying that knowledge in their concurrent hospitality-focused studio course which provides a great design practicum for the various layers of lighting and the technical

requirements of documenting their design. The lighting design phase of their project has resulted in numerous competition wins over the last six years. These wins also began shortly after the installation of the lighting lab, again clearly demonstrating the importance of the lab as a teaching tool.

When the studio ends in the Fall, the students who are interested in submitting their projects for competition have the option to sign up for a critique with professionals. This helps the students hone their projects before submission, but often it just gives them confidence that they have created a worthy lighting design. The students then work individually with the author on a series of critiques and redlines to refine their submission. Students also have the option to chose to layer lighting on a project during their fourth year and are mentored through the process. The student submissions have resulted in our school winning over one-quarter of the awards for the last seven years including the top award for three of seven years from one competition.

The approach of integrating the curriculum to benefit lighting understanding for the students has proven effective. This has also been noted by CIDA as our last visiting team gave the program a strength for lighting related standards and indicators.

REFERENCES

Kesner, C. W. (1987). A Regional Survey of Lighting Education Resources Among Colleges and Universities. Journal of Interior Design, 13: 53-56.

Rey-Barreau, J. A. (1983). A Methodology for Teaching Interior Illumination: A Paper Presented at the Annual Conference of the Interior Design Educators Council, April 1982. Journal of Interior Design, 9: 43-45.

Sarawgi, T. (2006). Survey on the Use of Lighting Design Software in Architecture and Interior Design Undergraduate Education. International Journal of Architectural Computing, 4(4), 91–108.

Stumpe, R. (1985). Instruction in Lighting Design. Journal of Interior Design, 11: 18-22.

Winning at the Speed of Light: Strategically integrating lighting and competitions into the curriculum

Lighting Lab

[redacted]

Interior Design Lighting Lab

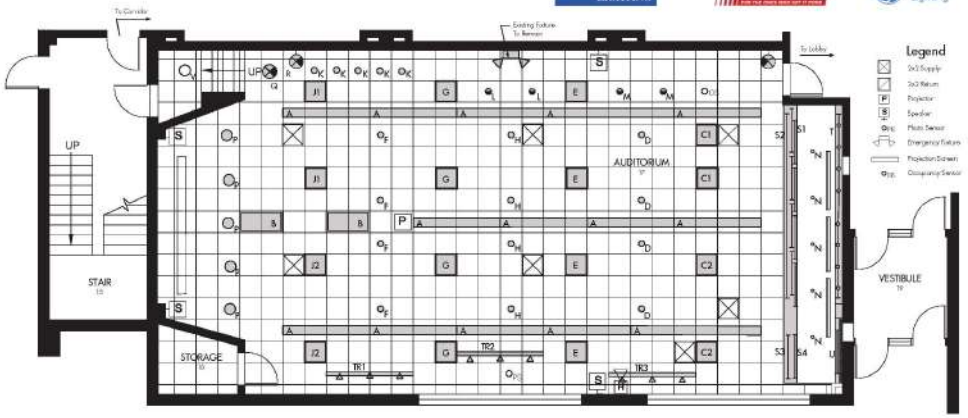
The Interior Design Lighting lab was created as a teaching demonstration lab primarily for [redacted]. The lab demonstrates many current strategies and technologies of lighting. The lab was made possible by donations by Hubbell Lighting Brands [Alera, Columbia, DualLite, Prescolite, Progress], Traxon, GE Lighting, Grainger and the College of [redacted]. A PAVE Helping Hands grant has funded the creation of the R.E.T.A.I.L. mobile light boxes which will be installed soon. If you would like a demonstration of the lab, please contact [redacted].

HUBBELL Lighting

ALERA · Columbia Lighting · DUAL LITE · prescolite

traxon · [redacted]

PROGRESS LIGHTING · GRAINGER · GE Lighting



Reflected Ceiling Plan

Scale: 1/4" = 1'-0"

Schedule

A Alera Lighting Plank Series SR-1S Cable Mount T8	F Prescolite Lighting LF6LED 6" Downlight Recessed LED	L Prescolite Lighting LF6LED 6" Downlight Recessed LED	S1 Columbia Lighting CS 8-PIN 2L 4' One Lamp T8 Strips	TR2 Prescolite Track Lighting with Track heads White finish
B Columbia Lighting E-POC 2'x4' Recessed T8	G Columbia Lighting SIE22-2 2'x2' Recessed Indirect T8	M Prescolite Lighting CF1632EB 6" Wall Wash Recessed CFL	S2 Columbia Lighting CS 8-PIN 2L 4' One Lamp T8 Strips (staggered)	TR3 Prescolite Track Lighting with Track heads Black Finish
C1 Columbia Lighting SER22 2'x2' Recessed T8	H Prescolite Lighting RHD601 6" Wall Wash Recessed Metal Halide	N Prescolite Lighting D2LED 2" Downlight Recessed LED	S3 Traxon Lighting 4' Color changing LED Strip	U Columbia Lighting CH 4" Narrow Channel Ceiling Mounted T8
C2 Columbia Lighting LSER22 2'x2' Recessed LED	J1 Columbia Lighting EPC22 2 2'x2' Recessed T8	P Prescolite Lighting D413EB 4" Recessed CFL	S4 Traxon Lighting 4' White LED Strip	V Prescolite Lighting CF1632EB 6" Wall Wash Recessed CFL
D Prescolite Lighting CF1632EB 6" Downlight Recessed CFL	J2 Columbia Lighting LEPC22 2'x2' Recessed LED	Q Dual Lite LE Series Exit Sign Recessed LED	T Alera Lighting MRA Flanged Recessed T8	
E Columbia Lighting TRA22 2'x2' Recessed T8	K Prescolite Lighting LF4LED 4" Downlight Recessed LED	R Dual Lite LZ Series Emergency Unit Wall Mounted Halogen MR16	TR1 Prescolite Track Lighting with Track heads Zat (silver) finish	

Winning at the Speed of Light: Strategically integrating lighting and competitions into the curriculum

Lighting Lab

Winning at the Speed of Light: Strategically integrating lighting and competitions into the curriculum

Lighting Lab—experimentation

Light reflection experiment

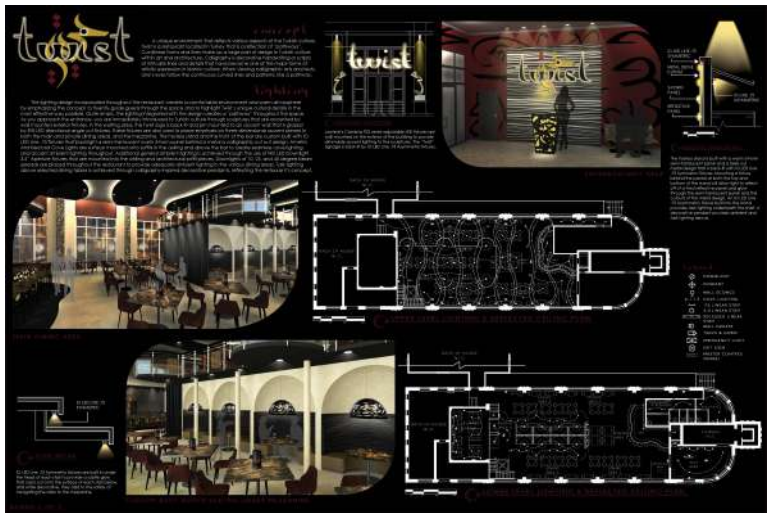
Light primaries experiment

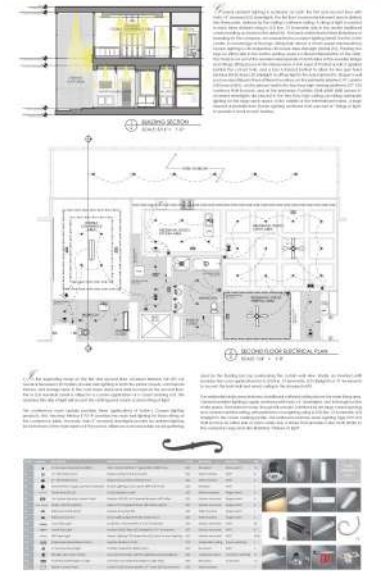
Other course projects to be shared:
Luminaires Scavenger Hunt,
Photometrics Exercise,
Analysis Project

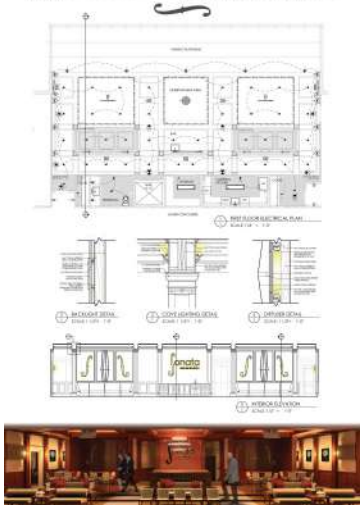
Competition Wins

Winning at the Speed of Light: Strategically integrating lighting and competitions into the curriculum

Wins—Competitions







Winning at the Speed of Light: Strategically integrating lighting and competitions into the curriculum

Wins—Internships and Careers

Lighting course alumni at FMS in NYC share their international lighting design career experience with junior interior design students on field study to NYC.

Practice | Scholarship of Design Research | Presentation

Exposed in the Community: Managing the Risks and Rewards of Community Engagement in Interior Design Education

Travis Hicks, University of North Carolina at Greensboro

ABSTRACT

Overview

The purpose of this presentation is to shed light on the risks and rewards while informing the expansion of community engagement in interior design education. Goals of the session are to 1) provide a brief overview of the principles and practices of community engagement; 2) expose educators and students to case studies in community engagement inside and outside the academy; 3) explore the risks and rewards of community-engaged design; and 4) equip attendees with strategies and tactics for managing community engagement programs on and off their campuses.

Background

Community design centers (CDCs) in the United States have existed since the 1960s, providing design services from within universities as well as outside of academia in independent centers and nonprofits. According to Finn and Brody (2014) "issues like inclusion, social equity, community engagement, and other foundational aspects of community design still appear to be central to most centers' missions." (194) These central issues are part of interior design education; however, interior design programs are not well-represented in the current inventory of community design centers around the country. Despite this lack of representation, the value that

individual design faculty and some programs, such as the University of Minnesota's interior design program, place on community-based design is clear. Zollinger et al (2009) studied the service-learning projects in UMN's upper-level design studios to arrive at a framework for service-learning in interior design pedagogy. Dickinson (2015) points out that while community service is codified in CIDA's standards, design schools should go beyond the minimum, referencing a study of student perceptions of poverty as an example of going beyond.

Methods

It is clear that interior design education, from standards to projects, is committed to community engagement, service-learning, and community service, labels that are occasionally used interchangeably. In light of this commitment--and with years of experience as a university center director--the presenter will share from a wealth of experience and wisdom from a series of CASE STUDIES with lessons learned. These case studies include tiny houses to address homelessness, residential design projects for adults with autism spectrum disorder, and community centers and gardens for several community partners. Utilizing diagrams, drawings, photographic evidence, and surveys of community partners and students, the author will present summaries and analyses of case studies. Looking beyond the evidence of design documents and illustrations, the presentation will reflect on experiences from the trenches of day-to-day management of these case study projects, with successes and failures, to the heights of strategic planning and visioning required to sustain a program of community engagement.

Learning Objectives

After completing this session, participants will be able to 1) INTEGRATE key community engagement principles and practices into interior design courses and other university-level courses; 2) DEVELOP strategies and tactics for beginning or continuing high impact community-based design practices in curricula and courses; and 3) ANALYZE and REFLECT on their own department, program, or community organization with the intent to address questions of best practices, risks, and rewards in community engagement.

REFERENCES

Dickinson, Joan I. (2014). Changing Student Beliefs About Poverty. The Journal of Interior Design 40(1), 19–40

Finn, D. & Broday, J. (2014) The State of Community Design: An Analysis of Community Design Center Services. Journal of Architectural and Planning Research, Vol. 31, No. 3 (Autumn, 2014), 81-200.

Zollinger, S. W., Guerin, D. A., Hadjiyanni, T., & Martin, C. S. (2009). Deconstructing service-learning: A framework for interior design. The Journal of Interior Design, 34(3), 31–45.

Practice | Scholarship of Design Research | Presentation

Pre-Design Thinking: Exploring Contemporary Problem Framing Tactics

Amy Huber, Florida State University

ABSTRACT

While interior designers have long acknowledged design's impact, non-designers are increasingly coming to learn of its potential for enhancing performative outcomes (Buley, 2019). Recent industry reports allude to growing expectations for practitioners, such that clients are increasingly requesting informed and empowered design solutions (Berens & Chung, 2019 (ASID); Whitemyer, 2019 (IIDA)). Given these dynamics, designers stand to capitalize on new opportunities--if they adeptly respond to the evolving responsibilities involved in framing a design problem. However, as design firms launch research initiatives, business consultancies such as Deloitte, McKinsey, and Ernst & Young have created in-house design departments, which could pose new competition to those leveraging (and creating) strategic insights when designing commercial environments.

Given the requisite role of communication within the meaning-making tasks of framing a design problem, parallels between predesign services and metatheories in strategic communication research may yield new insights into the efficacy of those tools used in commercial design practice.

Communications scholar Betteke van Ruler (2018) outlined three lenses to examine communication theories. The first, summarizes one-way, sender-centric processes of message transmission. Second, are two-way, interactive processes in which two or more individuals construct meaning. The third lens describes omnidirectional, diachronic processes where a message continually evolves by way of the social acts of those involved in meaning-making.

Methods

Since there is little empirical evidence identifying the tools and tactics currently employed by commercial interior designers during the initial phases of the design process, this study employed a national survey to identify those strategies. It aimed to contextualize these tactics by first identifying client priorities, then determining which predesign services are offered, and the perceived efficacy of those tactics.

Outcomes

Results from 165 professionals suggest that their clients consider a project's *budget*, *technological integration*, and the *wellness of building occupants* as critical project drivers (Fig. 1). Responses regarding predesign services point to several areas of emphasis. First, designers prioritized scrutiny of existing over aspirational spaces, and the opinions of decision-makers over building occupants. Moreover, participants were more inclined to seek precedent projects within their firms rather than beyond them (Fig. 2). Few statistical differences were revealed between the strategies employed among market sectors (Fig. 3).

As shown on Figure 4, the most frequent predesign services offered were *observations of existing spaces* and *facilitating focus groups with project decisions-makers* (72% conducting them always or often). Another 61% indicated they always or often conducted *charrettes* and *interdisciplinary visioning sessions*. Conversely, 31% noted the same for reviewing *academic literature*. Responses suggest that the designers were the catalyst for these services, wherein only 1-15% of predesign services were performed at the request of the client.

When asked which services offered the most insight, the most frequently cited were *visioning sessions* (30%), *charrettes* (13.6%), and *focus groups* (12.5%) (Fig. 5). Common amongst these services is the involvement of multiple parties, and, in turn, the diachronic (evolving) nature of knowledge. In other words, those services in which meaning is reinterpreted and reconstructed by multiple project stakeholders were perceived to be most valuable.

This research suggests that while a range of predesign services are offered, there is room for improvement. For one, diachronic strategies are thought to be most effective, though they are

not the most frequently employed. Moreover, the voices of building occupants may remain untapped when defining a commercial design project.

REFERENCES

Buley, L. (2019, April). 5 Ways to Get the Most Out of Your Design Team, Harvard Business Review. Retrieved from https://hbr.org/2019/04/5-ways-to-get-the-most-out-of-your-design-team

Berens, M.J., & Chung, S. (2019) 2019 Outlook and State of Interior Design: Trends, Disruptors & State of Interior Design Report. Report from the American Society of Interior Designers. Retrieved from https://www.Berens & Chung.org/resources/resources/view/resource-center/221

van Ruler, B. (2018). Communication Theory: An Underrated Pillar on Which Strategic Communication Rests. International Journal of Strategic Communication, 12(4), 367-381, doi: 10.1080/1553118X.2018.1452240

Whitemyer, D. (2019) Trending Research. Report from the Commercial Interior Design Association (IIDA). Retrieved from http://www.Whitemyer.org/resources/category/1/3/4/6/documents/Trending_Research.pdf

Table 1. Participant Characteristics

Category	Frequency	Percentage
Market Sector (N=165)		
Corporate Workplace	60	36.4
Healthcare/Wellness/Senior Living	50	30.3
Education (K-12, Higher Education)	25	15.2
Retail/Restaurant/Hospitality	13	7.9
Other	6	3.6
Government/Institutional	5	3.0
Sports/Entertainment Venues	4	2.4
Transportation Venues	2	1.2
*Other included: *Multifamily Housing and Tenant Development*		
Title (n=165)		
Designer or Interior Designer	49	29.7
Principal or Owner	42	25.5
Senior Designer	31	18.8
Design Director or Design Manager	17	10.3
Other, please describe	11	6.6
Project Manager	10	6.1
Jr. Designer	5	3.0
*Other included: *Dept. Director, Design Principal, Design Researcher, Director, Director of Workplace Strategy, Interior Design Planner, Principal Planner, Senior Clinical Planner, Sr. Project Architect, Sr. Interior Designer and Sr. Project Manager*		
Years of Experience (n=165)		
over 20 years	64	38.8
11-20 years	39	23.6
1-5 years	32	19.4
6-10 years	26	15.8
less than 1 year	4	2.4
Firm Size (n=165)		
over 100 designers	77	46.7
51-100 designers	29	17.6
6-20 designers	27	16.4
21-50 designers	25	15.2
less than 5 designers	6	3.6
Certifications & Professional Memberships (multiple selections permitted) (n=164)		
AAHID, *American Academy of Healthcare Interior Designers*	19	
AIA, *American Institute of Architects*	22	
ASID, *American Society of Interior Designers*	20	
CDT, *Construction Documents Technology*	4	
CSI, *Construction Specifications Institute*	2	
EDAC, Evidence-based Design Accreditation and Certification	18	
IDEC, *Interior Design Educators Council*	12	
IFI, *International Federation of Interior Architects/Designers*	1	
IIDA, *International Interior Design Association*	90	
LEED AP, *Leadership in Energy and Environmental Design, Accredited Professional*	59	
LEED GA, *Leadership in Energy and Environmental Design, Green Associate*	17	
LSSBB/LSSGB, *Lean Six Sigma Black/Green Belt*	2	
NCIDQ, *National Council of Interior Design Qualification*	92	
NEWH, *The Hospitality Industry Network*	5	
State Licensure or Registration (in the United States)	36	
WELL AP	8	
Others included: AAA, *Alberta Association of Architects;* ACHA, *American Association of Healthcare Architects;* ACHE, *American College of Healthcare Executives;* AIBC, *Architectural Institute of British Columbia;* AIGA, *The Professional Association for Design;* ALSD, *Association of Luxury Suite Directors;* CCIDC, *California for Interior Design;* EDRA, *Environmental Design Research Association;* IAKS, *International Association for Sports and Leisure Facilities;* ICSC, *International Council of Shopping Centers;* IDSA, *Industrial Designers Society of America;* IFMA, *International Facility Management Association;* ISPE, *International Society for Pharmaceutical Engineering; Japanese Architectural Licensure;* MCR CoreNet, *Master of Corporate Real estate;* NLAA, *The Newfoundland and Labrador Association of Architects;* RIBA, *Royal Institute of British Architects, Women in Healthcare Design*		

Figure 1. **Perceived Project Drivers from the Client's Perspective**

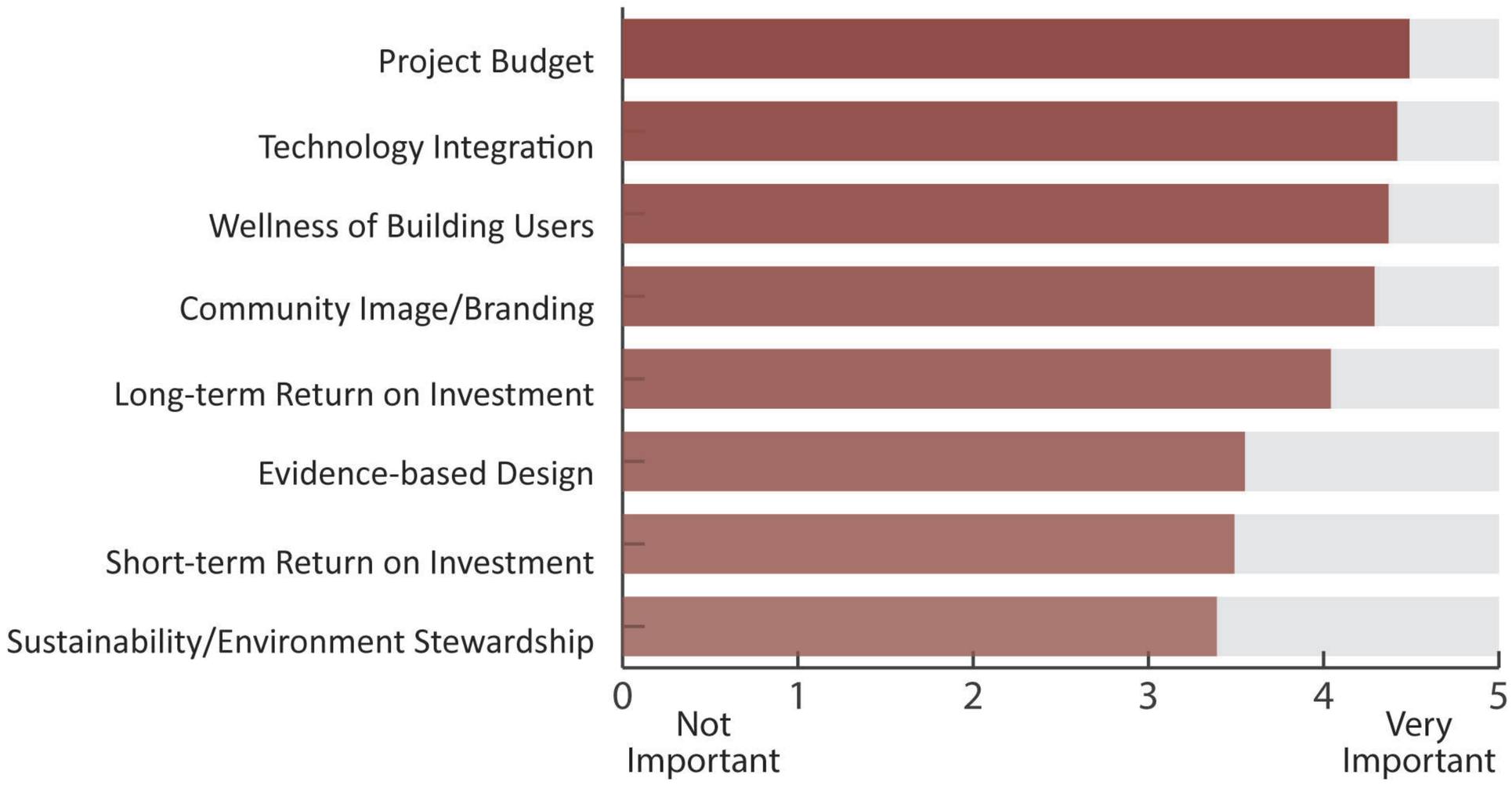
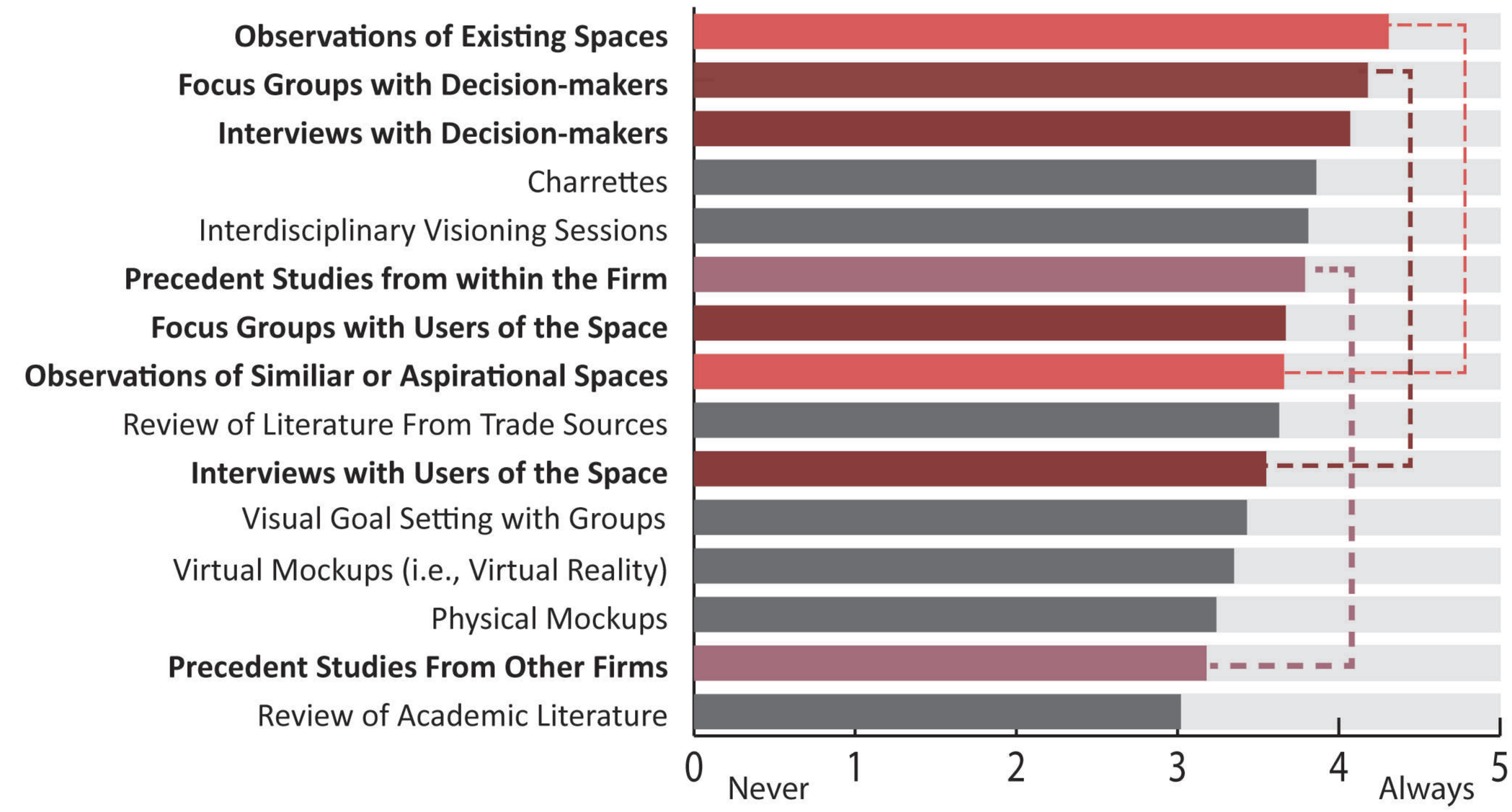


Figure 2. **Frequency of Predesign Services Offered**

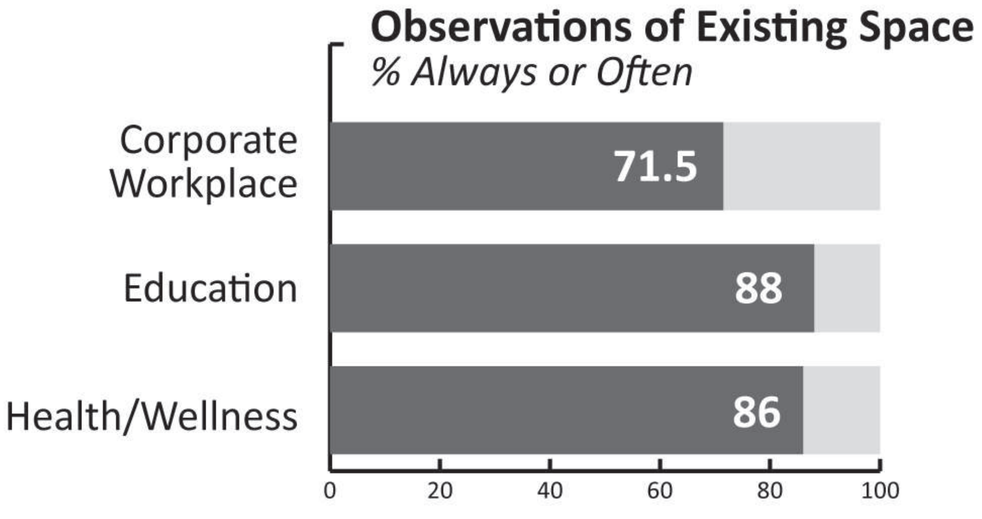


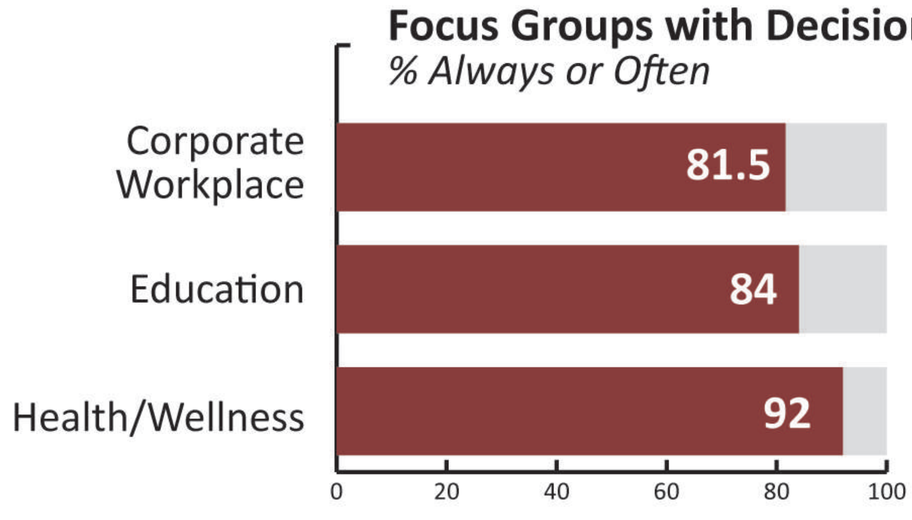
Comparisons Between Areas of Emphasis

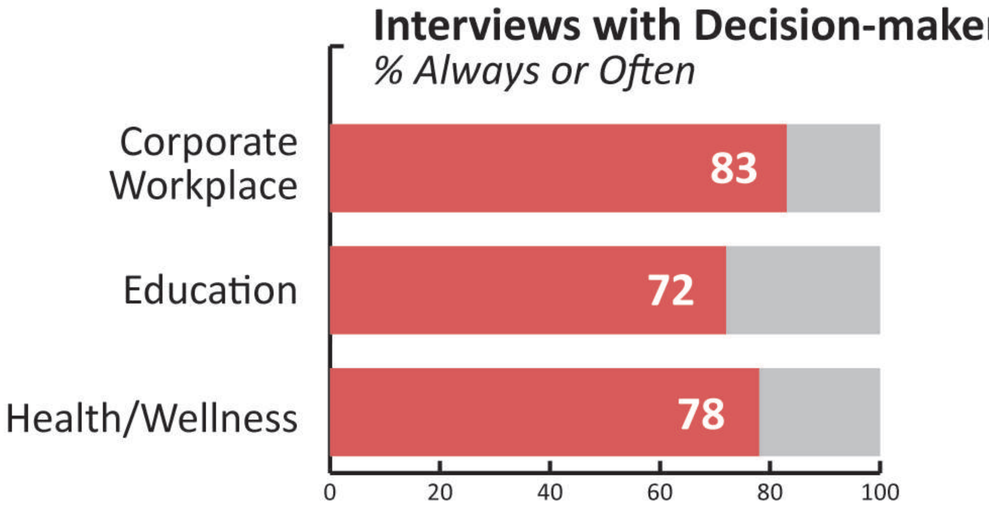
- Precedent Studies
- Environments for Observation
- Project Stakeholders

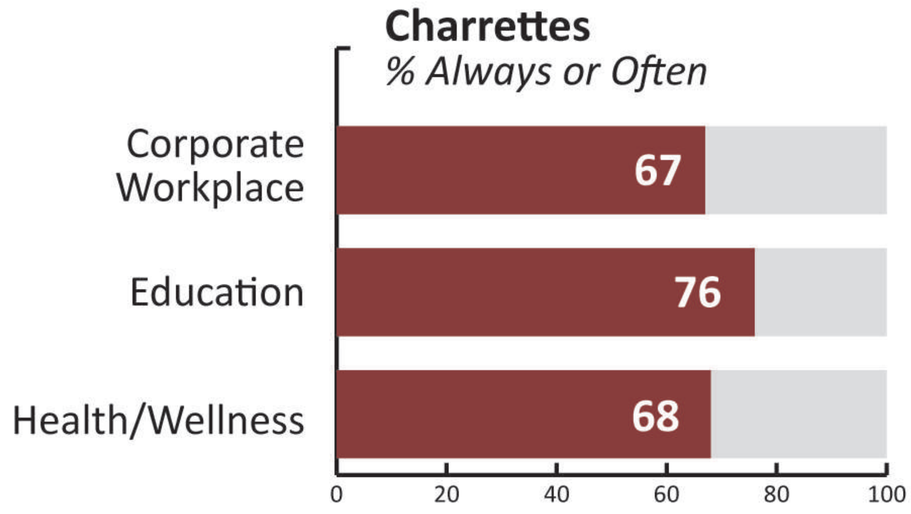
Other Included:
Current & future state mapping
Needs Assessments
Team chartering
Workshops
Surveys

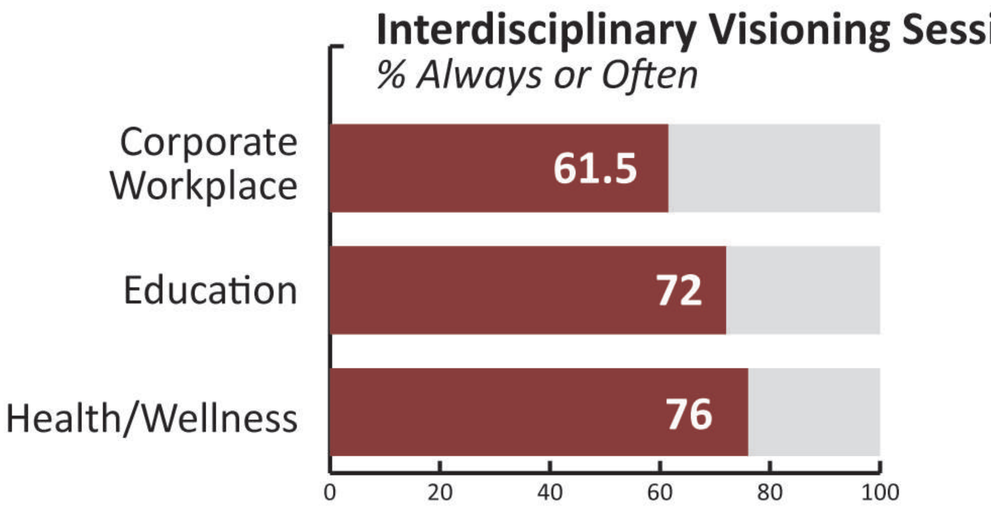
Figure 3. **Frequency of Predesign Service Offering**
Reported by Market Sector

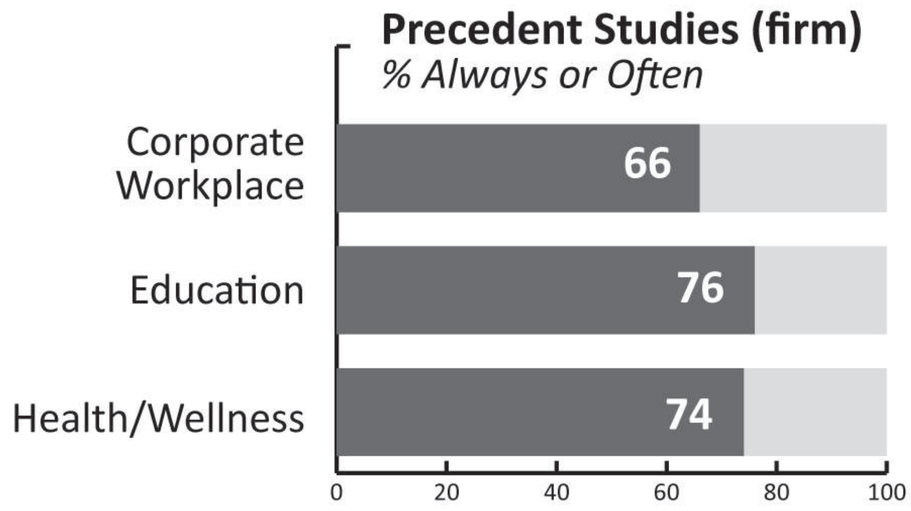


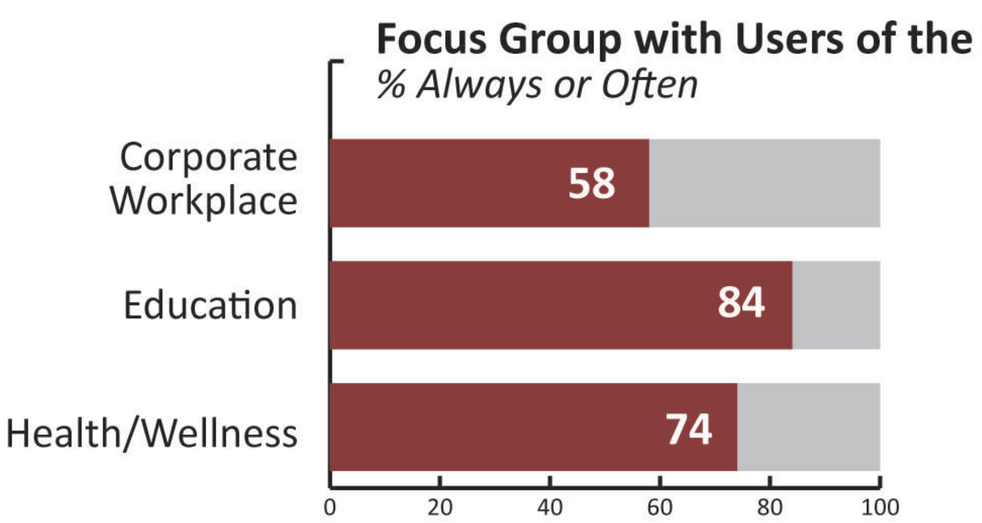












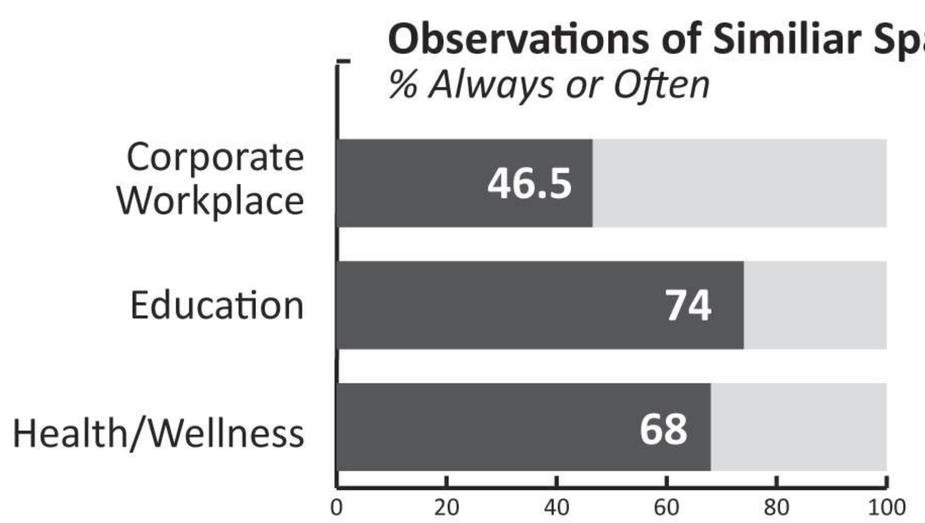


Figure 3. **Frequency of Predesign Service Offering, Con't.**
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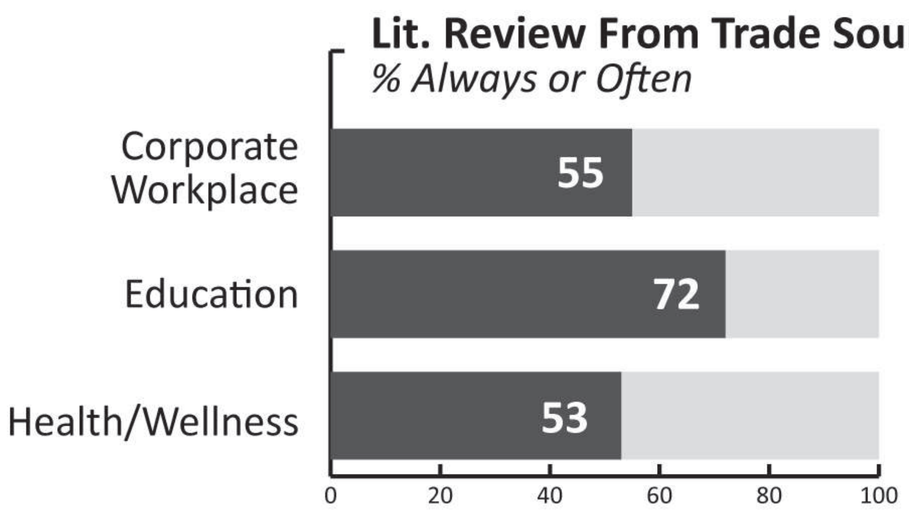
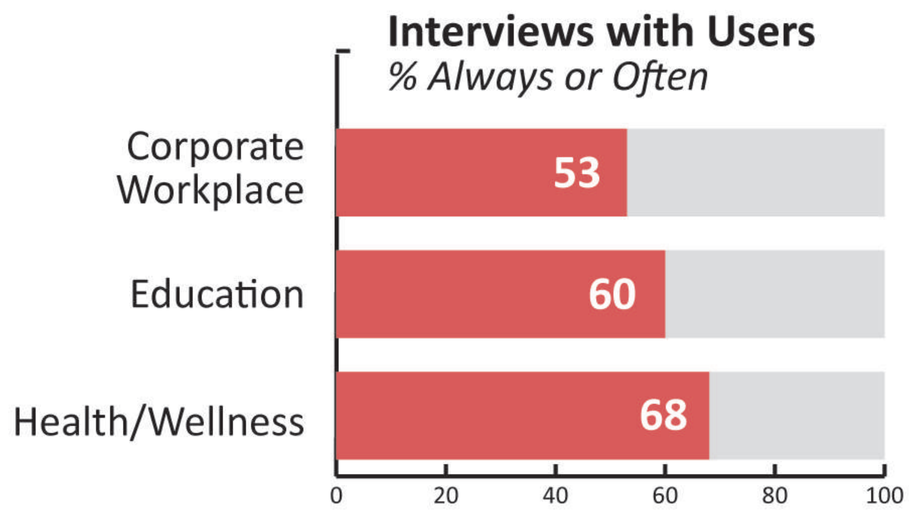
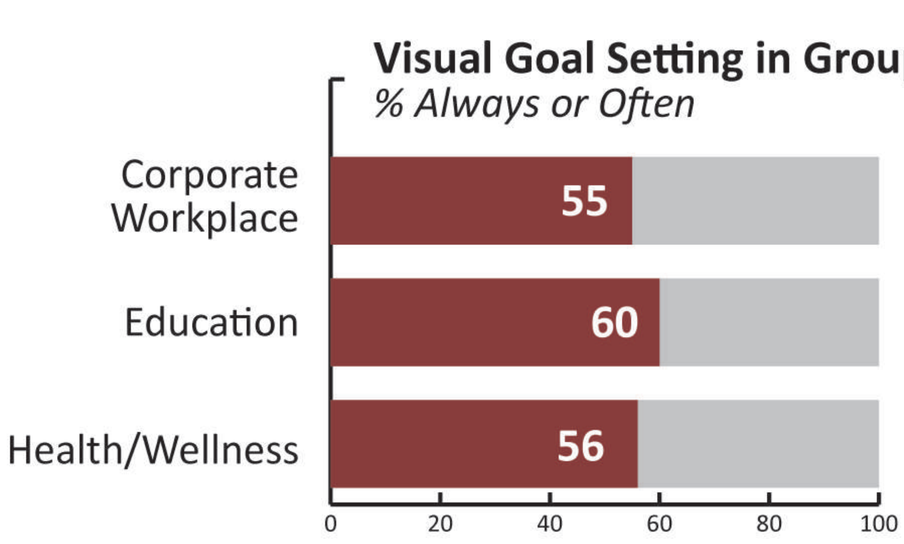
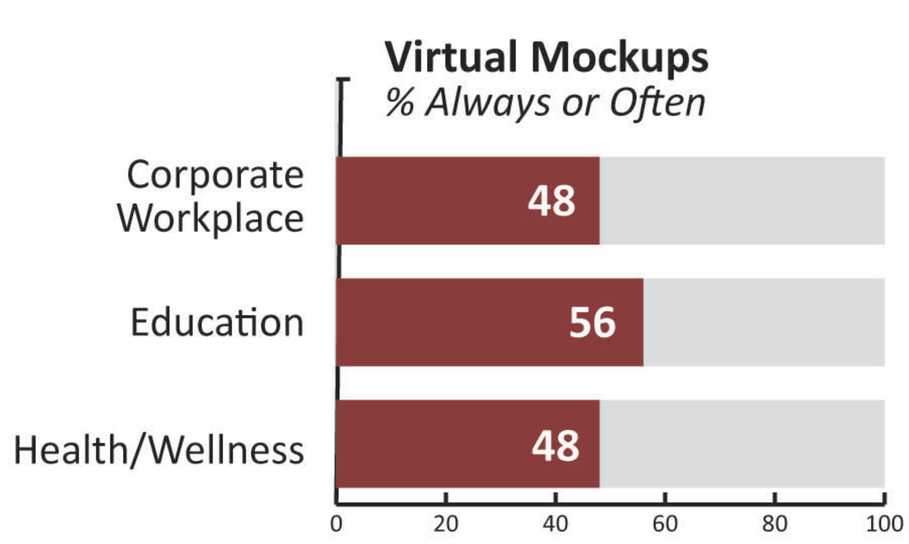
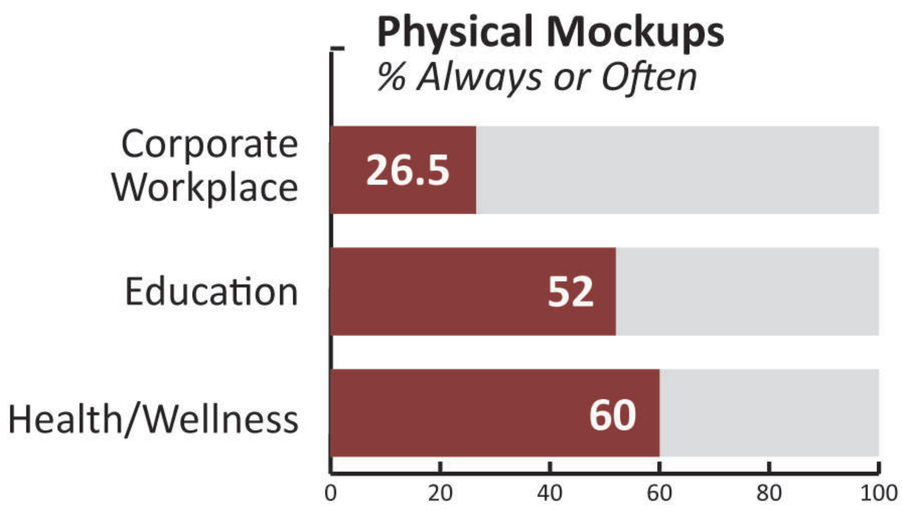
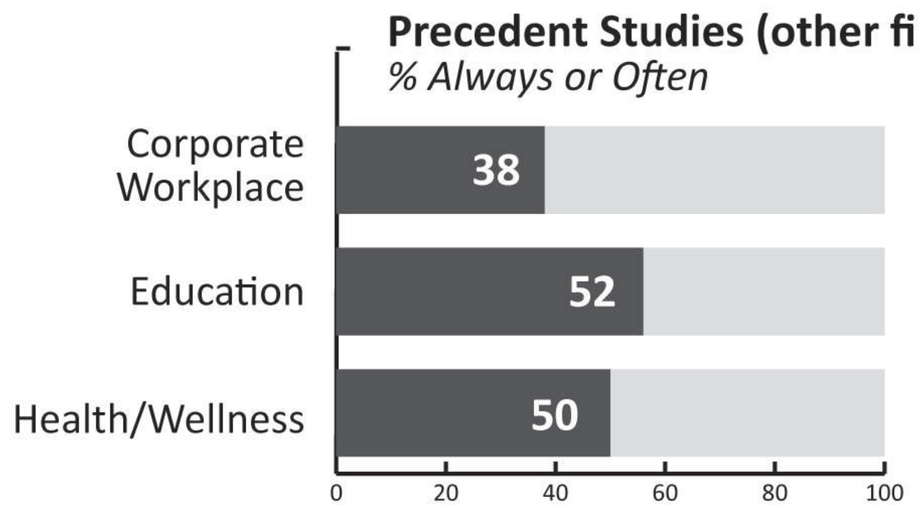


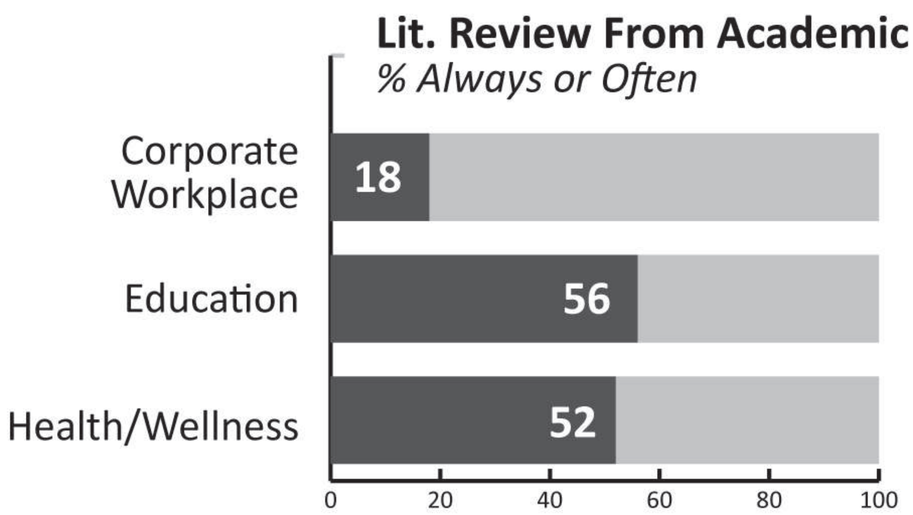












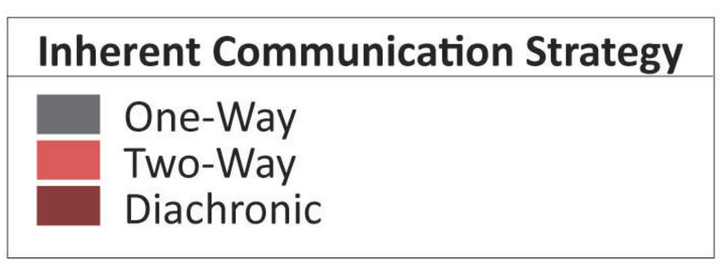


Figure 4. **Frequency of Predesign Services Offered**

Percent Indicating Always or Often Performing the Service for a Design Project

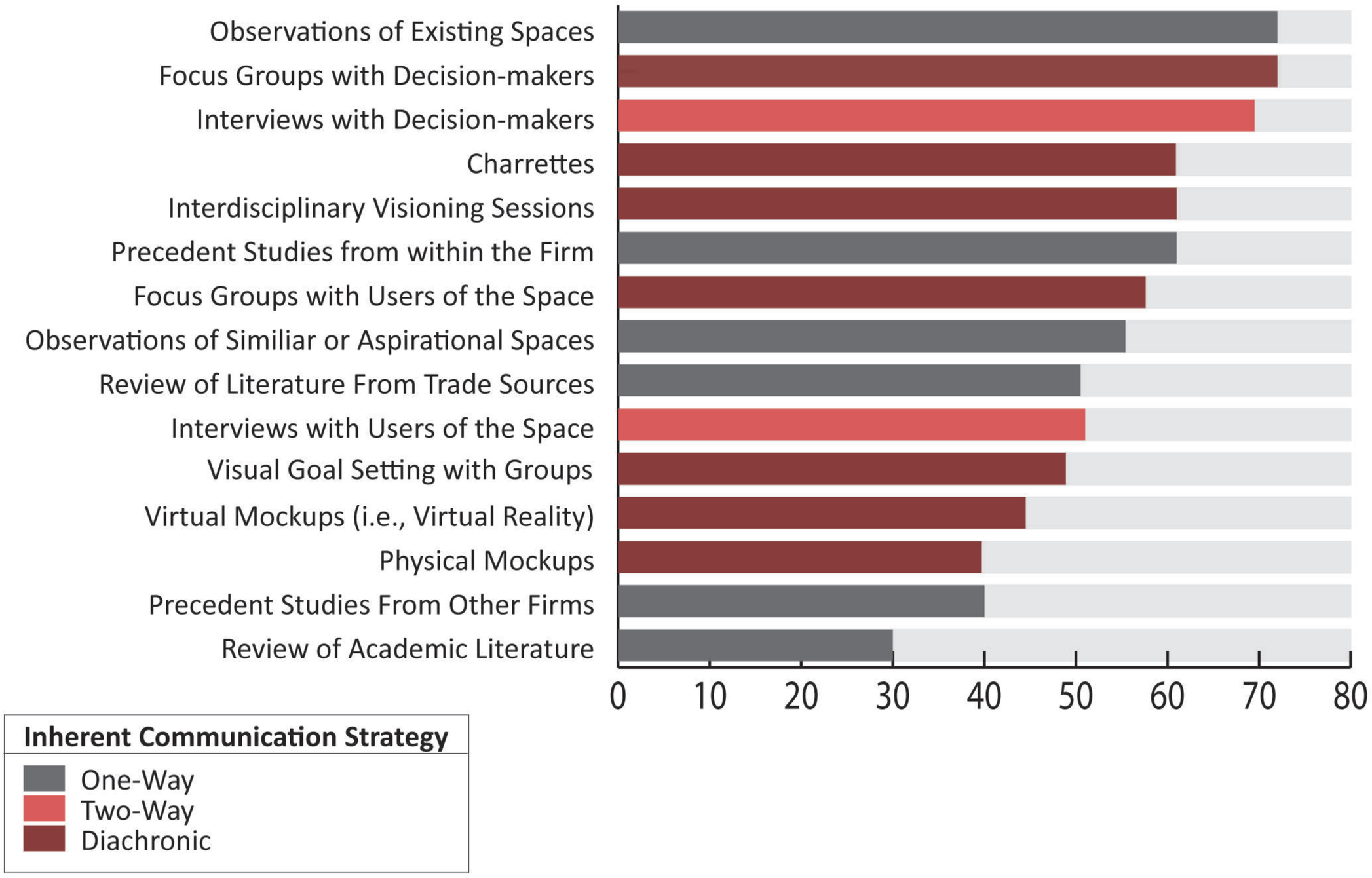
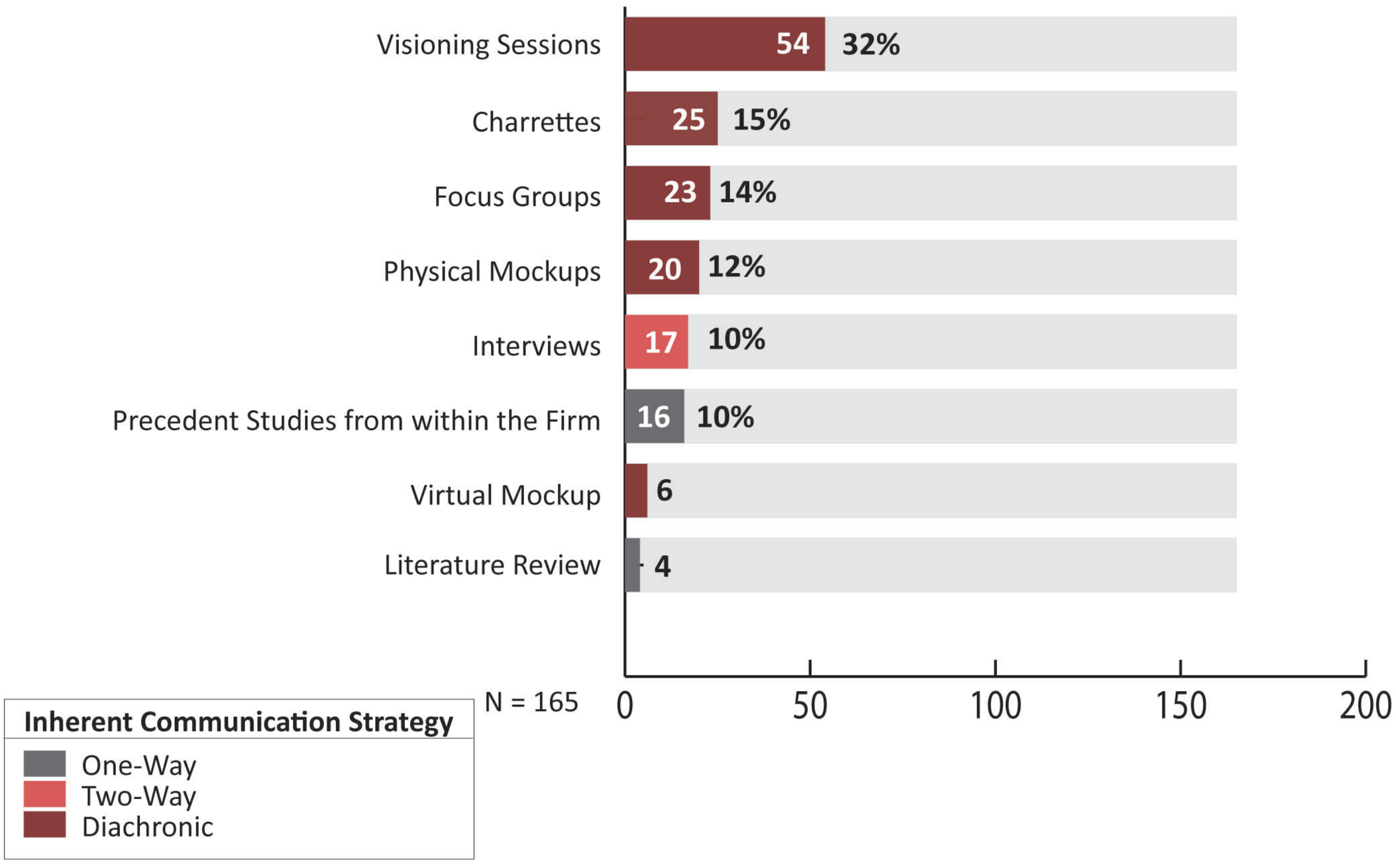


Figure 5. **Perceived Efficacy of Predesign Service Relative to Project Insight**



Practice | Scholarship of Design Research | Presentation

The Multi-Skilled Designer: A Cognitive Foundation for Inclusive Design Thinking

Newton D'souza, Florida International University, Miami

ABSTRACT

Because design contexts of today vary far too greatly in terms of their content, scale, and complexity, there is a dire need for skill diversity in design practice and pedagogy. This paper advocates the practice of multiple skills among designers in order to nurture diversity in design thought, empathize with variations in individual strengths, and implement diagnostic tools for design thinking. The multiple intelligence theory from cognitive psychology is introduced as an explanatory framework for skill diversity in design. The paper presents and analyses multiple approaches using archival evidence of cognitive processes among iconic and alternative design practitioners, and borrowing from a variety of subject areas such as psychometric research, neuroscience and design cognition. The theoretical contributions of the paper are: first, to provide a cognitive explanation for multiple approaches in design thinking; second, to describe attributes of specific design skills; third, to outline how these skills function in a design process; and, fourth, to outline its practical and pedagogical implications.

Based on ideas popularized by cognitive psychologist Howard Gardner the paper proposes eight forms of skills: verbal/linguistic, logical/mathematical, spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalistic. Using a cognitive-historical method of analysis, the paper maps designers to specific skills with original drawings, sketches, doodles, and writings by designers. This method is valuable because it allows one to make deductions of skill affiliation from a designer's corpus in which a consistent pattern can be elicited.

The seven design skills are outlined as follows.

- Intrapersonal skills involves personal emotions and is demonstrated using Daniel Libeskind's multivalent explorations and Peter Zumthor's atmospheric poetics.
- Interpersonal skills involves responding to emotions of others and is demonstrated using Alejandro Aravena's social persuasion and University-based Design Centers' community engagement.
- Suprapersonal skills involves transcendental emotions and is demonstrated using Louis Kahn's Treasury of Shadows and Zaha Hadid's Force Fields.
- Bodily-kinesthetic skills involves visualizing or experiencing the movement of body in relation to the external environment and is demonstrated using Steven Holl's parallax and Herman Hertzberger's social activation.
- Naturalistic skills involves visualizing and experiencing nature and natural phenomenon, and is demonstrated using Geoffrey Bawa's bio-climatic sensibilities and Chris Cornelius' landscape narratives.
- Spatial skills involves the ability to transform or modify conceptual thinking via mental imagery and is demonstrated using Frank Lloyd Wright's destruction of the box and Tadao Ando's spatial nothingness.
- Verbal/linguistic skills involves the ability to use language effectively or expressively to articulate design ideas, and is demonstrated using Bernard Tschumi's narrative deconstruction and Maya Lin's prose poetry.
- Logical-mathematical skills involves rational and systematic approaches to design, and is demonstrated using Le Corbusier's Cartesian order and Greg Lynn's non-linear dynamics.

The paper concludes by presenting a taxonomy of multiple approaches and their skill affiliations/epistemologies. The metaphor of ensemble is used to understand how multiple skills can be recombined in meaningful ways and allow for unique/creative design products.

REFERENCES

D'souza, N.:2020, The Multi-Skilled Designer: Cognitive Foundation for Inclusive Architectural Thinking, Book Publication, Research in Architecture Series, Routledge, UK. ISBN-13 9781138121133

D'souza, N.:2012, The Metaphor of an Ensemble: Architectural Design and Skill Convergence, Journal of Design Research, Inderscience, Vol 10, No. 3, pp 206-222

D'souza, N.:2009, Revisiting a Vitruvian Preface: The Value of Multiple Skills in Contemporary Architectural Pedagogy, Architectural Research Quarterly, Cambridge University Press, Vol. 13. pp 173-181

D’souza, N.: 2007, Design Intelligences: A Case for Multiple Intelligence in Architectural Design. International Journal of Architectural Research, Vol 1, No 2, Archnet-IJAR, July 2007, MIT Press, pp 15-34

D’souza, N. Yoon, So-Yeon, Islam, Z.:2011, Understanding Design Skills of the Net Generation of Designers: An Exploration through the VR-KIDS Project, Journal of Design Studies, Volume 32, Issue 2, Elsevier, pp 180-209.

Practice | Scholarship of Design Research | Presentation

Using Biodata to Investigate Senior Living Furniture Preference

Mitzi Perritt, Stephen F. Austin State University
Luis Aguerrevere, Stephen F. Austin State University
Joseph Strahl, Stephen F. Austin State University
Holly Cantu, Stephen F. Austin State University

ABSTRACT

Problem

Physical needs of older bodies require senior-friendly products (Nussbaumer, 2014) that promote safety, health, comfort, and performance (Dul & Weerdmeester, 2008). Since emotions influence decision-making and reasoning style (Blanchette & Richards, 2010), this project investigated seniors' seating preferences and the emotions related to choosing them.

Context

While furniture manufacturers and long-term care administrators value warranty, sustainability, resilience, durability, and cost, residents assess furniture differently by examining stability, convenience, support, comfort, and style. Elders recognize where they should not sit by noticing low or deep seats, soft seat cushions, no arms for pushing up, or no open kick-space for balance.

Manufacturers realize the impact of emotions on decision-making. "First impressions are everything. The right furniture for independent living communities can create a look that attracts new and retains existing residents …." (Kwalu, 2019).

Methods

Two methods investigated seating preference: a) 30-minute interviews with 62 seniors (ages 60-98) viewing seating images in a Qualtrics survey and b) the addition of iMotions biodata feedback for 47 of the subjects. Subjects reported demographics and areas of physical pain.

Interviews. The 140 seating images in neutral fabric were grouped as recliners, lounge chairs (tall back), lounge chairs (short back), resident room chairs, dining chairs, loveseats, and sofas. As respondents chose their most preferred selection from each group, that image was stored, creating a final survey item of seven preferred images. Respondents then chose their most preferred seating.

Biodata. The iMotions Facial Expression Analysis Module (Affectiva, 2019) determined emotions by analyzing frequency and duration of muscle contractions. A webcam recorded subjects' live synchronized facial emotions while they viewed furniture stimuli.

Results

Predominantly female (71%) and White (94%) subjects formed the volunteer sample of rural independent (45%) and assisted living (55%) communities. Participants wearing glasses (92%), reported average to poor mobility (61%) and indicated an average pain level of 4/10 on a 1 (no pain) to 10 (extreme pain) scale.

From personal interviews, three furniture groups emerged as most preferred: recliners, sofas, and tall-back lounge chairs (Fig. 1-3). In facial expression data, significant differences existed between overall seating preference and emotional reactivity while making the selection. Respondents selecting a recliner as their final option were statistically less likely to express joy and general positive emotions (Joy $F= 3.34$, $p= .029$; Positive Emotion $F= 2.93$, $p= .048$) than participants who selected a sofa, tall lounge chair, or other seating solution (Fig. 4-5). No group differences existed for variables of age, care level, gender, medical condition, or attention to/engagement with the task.

Additional analysis revealed a correlation between pain level and choice of recliner. Qualitative data indicated that sitting/standing are painful and challenging motions for seniors with arthritis in the knees/hips, reduced muscle strength, compromised joints and spines, and unstable balance.

Conclusions

Perhaps subjects preferred recliners, tall-backed lounge chairs, and sofas over other furniture images because they like padding, arm/back support, and space for adjusting postures. In terms of emotions, subjects selecting the recliner may have felt it provides relief from pain, which explains why they expressed less joy when making this decision. Consequently, researchers believe that discomfort may influence preferences for interior senior products. Future research will use eye-tracking technology to identify seating features that increase joy and other positive emotions.

Study findings advance the interior design body of knowledge and allow senior living professionals to focus on seating pieces that seniors prefer.

REFERENCES

Affectiva. 2019. How it works. Retrieved from https://www.affectiva.com/how/how-it-works/ .

Blanchette, I., & Richards, A. (2010). The influence of affect on higher level cognition: A review of research on interpretation, judgement, decision making and reasoning. Cognition & Emotion, 24(4), 561-595.

Dul, J., & Weerdmeester, B. (2008). Ergonomics for beginners: A quick reference guide, 3r ed. Boca Raton, FL: Taylor & Francis Group/CRC Press.

Kwalu. (2019). Independent Living Furniture. Retrieved from Kwalu at https://www.kwalu.com/senior-living-furniture/independent-living-furniture/

Nussbaumer, L. (2014). Human factors in the built environment. New York, NY: Fairchild Books.

APPENDICES

Figure 1. Most preferred seating selected by independent living residents

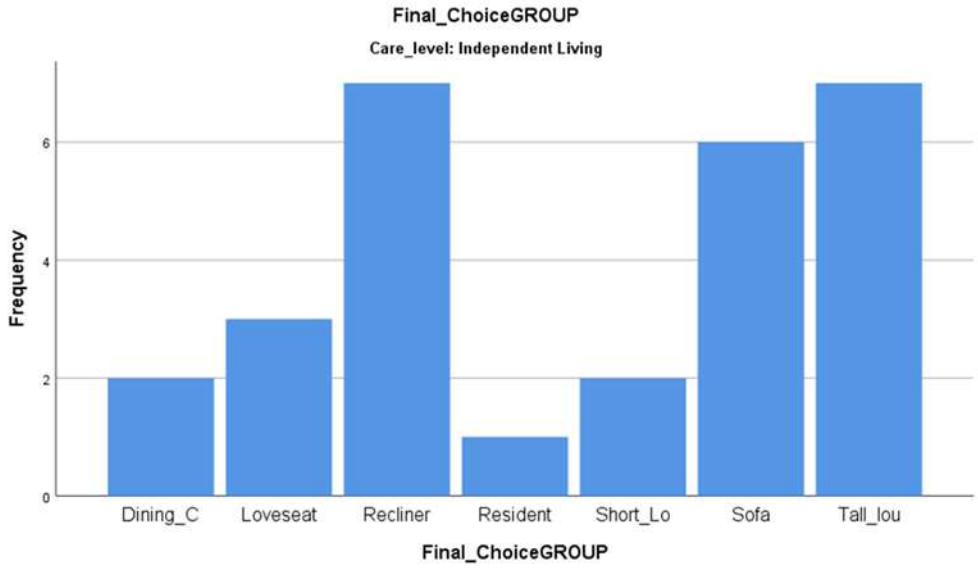


Figure 2. Most preferred seating selected by assisted living residents

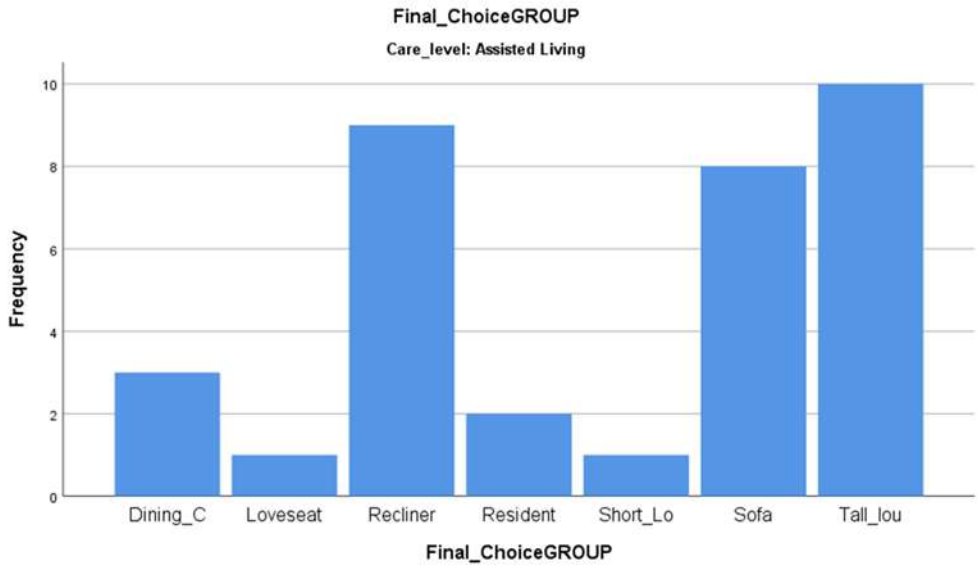


Figure 3. Images of most preferred seating choices for independent living and assisted living

Figure 4. Joy expressed by subjects while selecting seating images

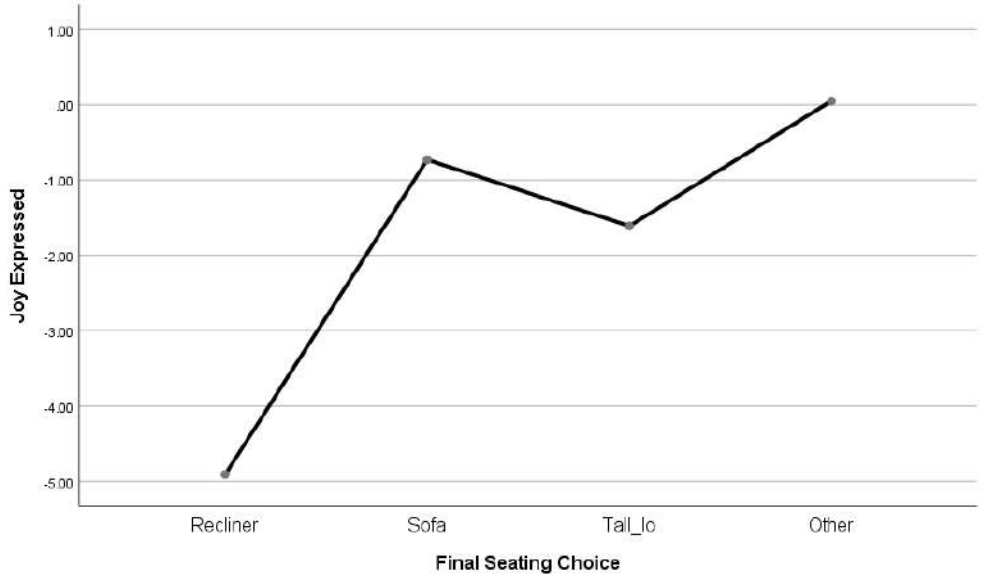
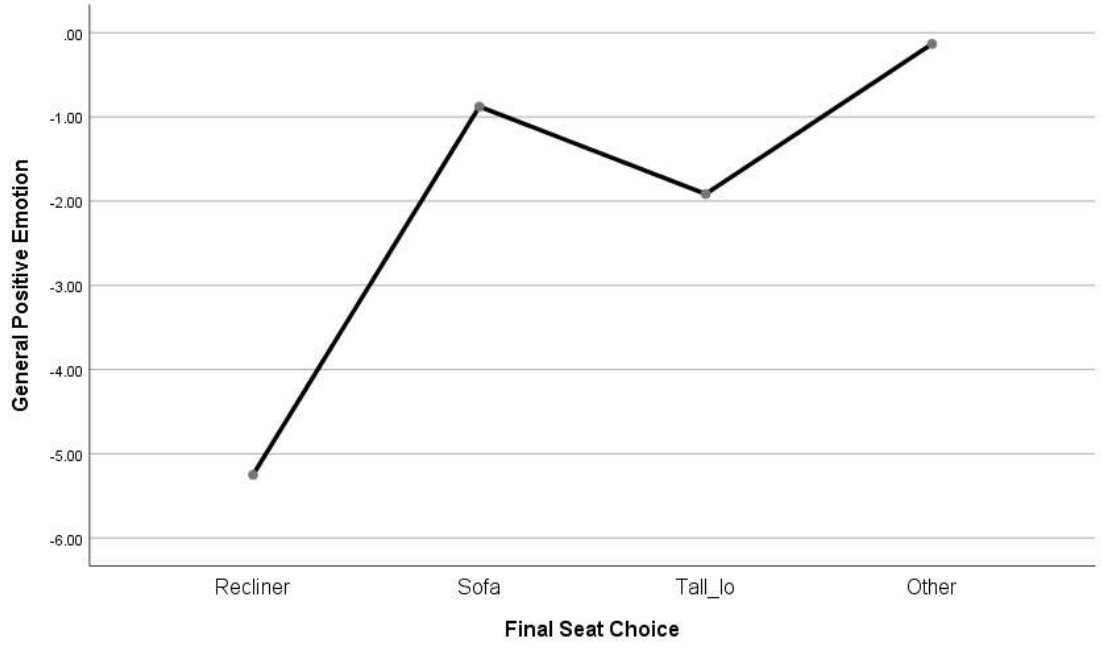


Figure 5. General positive emotion expressed by subjects while selecting seating images



Practice | Scholarship of Design Research | Presentation

Using Focus Groups to Uncover How K-12 Public School Classroom Interior Variables Influence Teachers

Alana Pulay, Washington State University

ABSTRACT

BACKGROUND

Studies dating back to the 1970's have demonstrated that human behavior is a function of the environment (Bronfenbrenner, 1977). While many studies acknowledge that K-12 United States public school student behavior and academic success is influenced by the physical classroom environment (Uline, Wolsey, Tschannen-Moran, & Lin, 2010) no studies have examined how the classroom influences teachers even though there is a correlation between teachers' performance, absenteeism, and student academic success (Schalock, 1987). Our research objective was to examine if the classroom interior impacts teachers' performance level and absenteeism. To research this, an online focus group was performed following an online survey.

Prior to this current study, a comprehensive online survey was administered to K-12 public school teachers within a South Central state. Findings from 519 participants suggest that there is a small positive correction between the classroom interior lighting and teacher performance levels ($r=.12$, $p = .007$). The variables of temperature, noise, space, wall paint color, flooring, access to electrical outlets, and furniture were entered into the regression equation and was not significantly related to teacher productivity levels ($F(9, 459)= 1.059$, $p>.05$) or number of absences ($F(1,473) = 1.352$, $p = .25$). However, open ended questions, analyzed with the constant comparative method (Newman, 2011), revealed that teachers want bigger classrooms with more storage and the ability to adjust interior temperature. For a better understanding of the

influence of these variables, an online focus group was administered using Zoom Online Conferencing.

METHOD

University IRB approval was obtained. Participants were recruited for the focus group as part of the online survey by providing their e-mail address. One-hundred and nine e-mail addresses were collected but only 12 individuals completed the anonymous Doodle poll to register for one of the scheduled focus group dates resulting in an 11% response rate.

A Zoom online video conference link was sent to each participant a week prior to the focus group meeting. The online focus groups were conducted on November 26, 29, and December 2nd. Each focus group lasted 1 hour after gaining participants verbal consent. Each focus group followed a dialogue of descriptive, structural, and contrast questions (Neuman, 2011) that was developed based upon the survey results from Part 1. All participant names were included in the chance to win 1 of 3 $100 Amazon gift cards.

Each focus group was recorded and the audio file transcribed via an online transcribing company, transcribeme.com. The transcribed discussions were analyzed using the constant comparative method (Neuman, 2011) to find trends and commonalities.

Participants. Two males and 10 female participated. They taught either math, English, music or science in a middle school which two participants taught elementary special education. Participants had been teaching either 1-3 years or over 10 years.

RESULTS

Participants missed anywhere from 1-15 days this past academic year for various reasons not related to their health. Two participants felt there was a relationship between the quality of their classroom and their performance or absences while most did not see a connection. Most issues about the classroom included the lack of storage, the overall size of the classroom, and inadequate student furniture. While survey results indicated temperature was an issue none of the focus group participants mentioned this variable. Only one teacher commented on their classroom interior lighting.

While these results cannot be generalized due to the small sample size, a strength of this study was gaining in depth knowledge of how public school teachers utilize their classroom space and the success and failures of the classroom design. Full results and discussion will be presented.

REFERENCES

Bronfenbrenner, U. (1977). Toward an ecology of human development. American Psychologist, 32, 513– 531.

Neuman, L. (2011). Social Research Methods: Qualitative and Quantitative Approaches, 7th Edition. Boston, MA: Pearson education, Inc.

Schalock, M. D. (1987). Teacher productivity: what is it? how might it be measured? can it be warranted? Journal of Teacher Education, 38(5), 59-62.

Uline, C., Wolsey, T., Tschannen-Moran, M., & Lin, C. (2010). Improving the physical and social environment of school: A question of equity. Journal of School Leadership, 20, 597-632

Practice | Scholarship of Teaching & Learning | Presentation

Designing a Successful Furniture Studio

Cory Olsen, University of Oregon

ABSTRACT

Furniture design studios are an exciting prospect for students and instructors alike in a design school. Rarely are we afforded the opportunity to operate at full scale and complete a studio with a final, tangible artifact. There are, however, a broad variety of topics that must be addressed to ensure that students gain competency through their efforts. The format that this presentation will introduce will have four primary focal areas: material comprehension, user & body, testing, and design conceptualization and detailing. A conceptual framework introducing the value of designed objects and their craftspeople was provided by reading Matthew Crawford's book Shop Class as Soulcraft as well as David Pye's seminal work The Nature and Art of Workmanship (see references).

For any furniture studio, having a clear and limited scope of material is crucial. Left to their own impetuses, students may want to work in wood, metal, plastic, textiles and more. Not only do these all require different tools but they also require more specialized support from knowledgeable faculty and staff. In my studios I have found that prioritizing one material with an option to add a second has been both appreciated by the students and informative in our research efforts. In particular I enjoy working with wood, both due to prior professional experience but also because wood is an anisotropic, highly variable material that demands sound design and assembly for successful outcomes. As part of the studio semester various demonstrations are given on tool usage (both manual hand tools as well as power tools) with students duplicating and applying the exercises to smaller scale outcomes. The innate, even subconscious, understanding of the material starts through hand manipulation. Part of the materials focus early on is modes of joinery and the application of those joints- students draw,

analyze, and fabricate multiple joinery styles to again better comprehend the material that they are designing around. Various readings supported the class material knowledge, particularly Bruce Hoadley's Understanding Wood (see references).

The particular studio examples that this presentation will share are the result of a seating studio that occurred in Fall 2018. Any furniture studio presents complexities though seating multiplies them through the variable of adding a human body to the inputs. To better predict acceptable outcomes, students measured themselves through a series of anthropometrics and were able to compare their individual measurements to those of others in the course, illustrating the principles of seating user percentiles. Additionally, students were challenged to design an adjustable fitting jig. Two designs were selected for fabrication and were used by all students to effectively test and refine their chair base geometries even before designing the appearance and aesthetics of their individual pieces. Our discussions around our bodies and ergonomics were supplemented by reading The Chair: Rethinking Culture, Body, and Design by Galen Cranz (see references).

After testing and measuring, the final component of the studio became the design process and fabrication sequence. Returning to the initial materials research the students were challenged to design their pieces with sensibility towards the material (wood, in this instance) strengths, limitations, and joinery/assembly methods. For many in the studio this required a rigorous process to resolve their aesthetic desires with their material application. Jeff Miller's book Chairmaking and Design provided valuable precedents and insight into structure and strategy (see references).

Ultimately, the studio format follows a logical and sequential process that enables students & instructors to tackle the challenges of a furniture studio that avoids the pitfalls that commonly occur by diving immediately into a final piece designed around form or aesthetic.

REFERENCES

Cranz, Galen. The Chair: Rethinking Culture, Body, and Design. New York: W.W. Norton and Company, Inc. 1998.

Crawford, Matthew B. Shopcraft as Soulcraft, An Inquiry into the Value of Work. New York: Penguin Group, 2009.

Hoadley, R. Bruce. Understanding Wood. Newtown: Taunton Press, 1980.

Miller, Jeff. Chairmaking & Design, 2nd edition. Fresno: Linden Publishing, 1997.

Pye, David. The Nature and Art of Workmanship. New York: Bloomsbury Academic, 2015.

Advanced Design_[redacted]_Fall 2018

[redacted]

Studio : Seated
Brief

This advanced studio will explore concepts of body, ergonomics, materials, joinery, and fabrication. Leveraging my past history as a cabinetmaker and furniture maker, emphasis will be given to working in wood (solid or composites/plywood) though the inclusion of basic welding and digital fabrication potentially expands the material palette, as appropriate. Particularly through a strategy of digital concept development and jig making I hope to seamlessly incorporate digital fabrication at [redacted] (CNC routing, CNC plasma, 3D printing, laser cutting, etc) in support of traditional craft methods and the final product(s).

Anticipated Projects

1A) Intensive precedent study to document iconic hard-surface chairs throughout history, spanning from handmade to mass produced. Ideally finding reliable measurements to build digital models for 1-to-1 comparison in scaled sections and elevations. Includes an analysis of major dimensions, angles, and perceptions of comfort (if physical examples can be found and experienced).

1B) An anthropometric study of our own bodies through measurement and photography to test some of the conditions from exercise 1A via simple jigs or bucks. These studies and outputs can then become useful means of understanding the body, individual variation, and comfort.

2) Concurrent with (1) and lasting approximately 1/3 to 1/2 the semester, a series of traditional wood joints executed in soft and hardwoods with both hand tools and power tools- half-laps, lap joints, dovetails, finger/box, mortise and tenon, Festool Domino, splines, etc. Physically making these joints will begin to develop innate material knowledge and foster a discussion of material behavior, tooling, tolerances, strength, and joint integrity. Tool familiarity will grow as will student comfort in fabrication environments, with a strong emphasis on methods, best practices, and safety.

3) A small-sized project that focuses on a particular joinery method to work from project ideation through to fabrication. Ideally incorporates a digital model to introduce concept of shop/working drawings in support of the made piece. This could take the form of a small box, light fixture, or even a small simple table or ottoman.

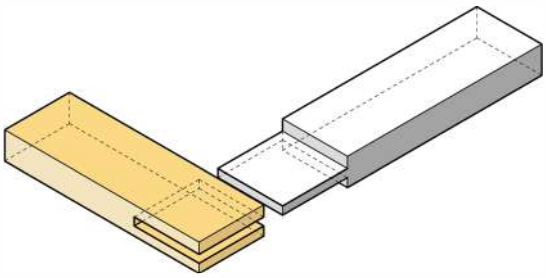
4) Final project of a full-scale chair to meet a particular program, TBD (lounge/reclining, or task-based such as reading/typing). Initial analog sketches develop into physical scaled models and well crafted digital models. Digital models are scrutinized for potential for component digital fabrication or digitally crafted jigs in support of final assembly. Physical chair as final product with supporting drawings, measurements, and analysis in poster form.

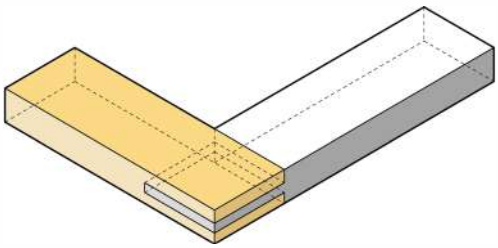
Student Considerations

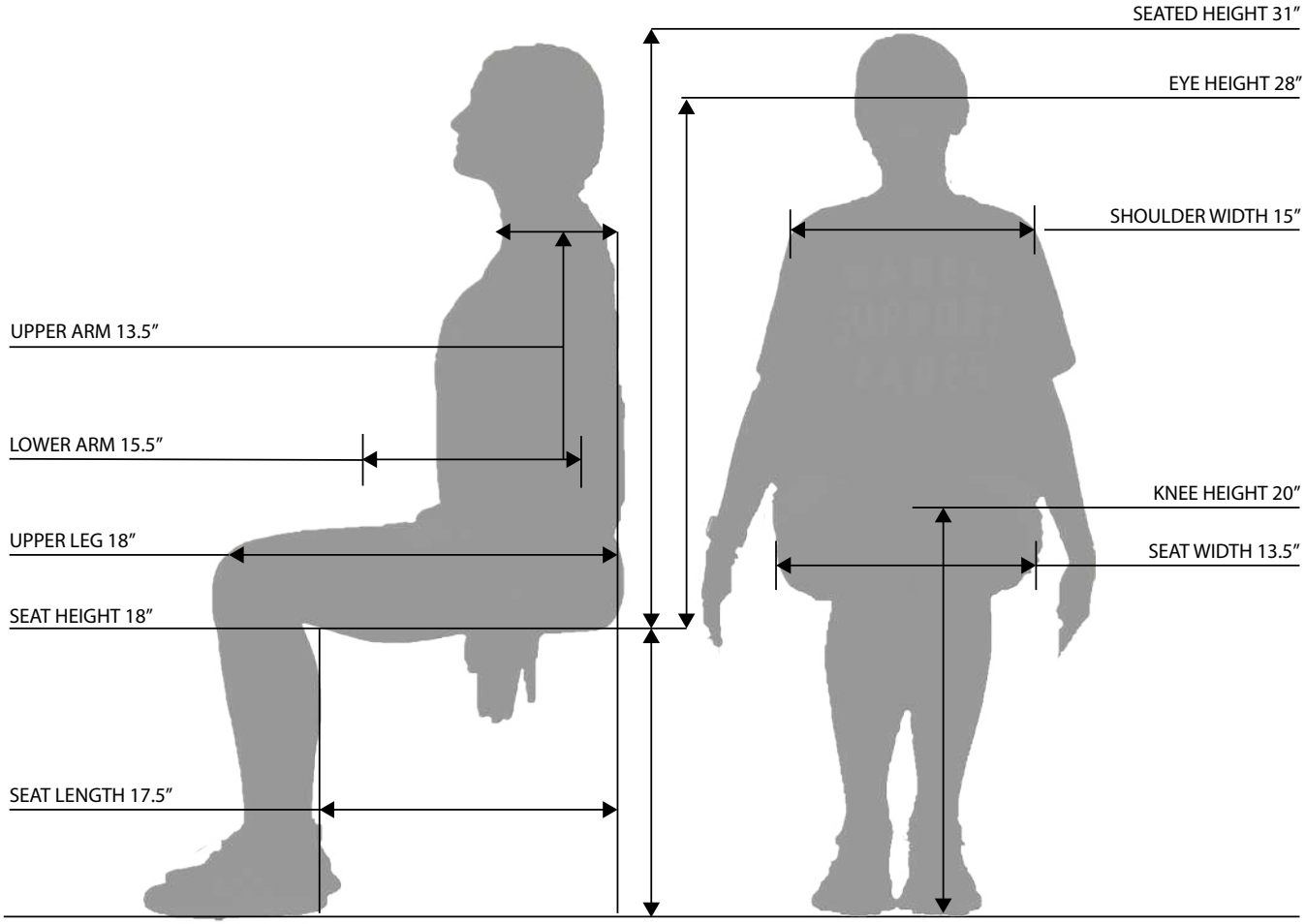
With an emphasis on fabrication, this studio does have an associated material cost, which can vary widely depending on specific designs and material/species choice. There will be no major travel component, so the typical expense of a studio field trip could be a wash with the materials overhead. No prior shop experience is necessary (beyond the required facility trainings) but I would not recommend this course to anyone that has an insurmountable fear of using powered tools such as the table saw, bandsaw, etc. But to reiterate, safety and procedure will be a key component of the instruction.

Bridle Joint

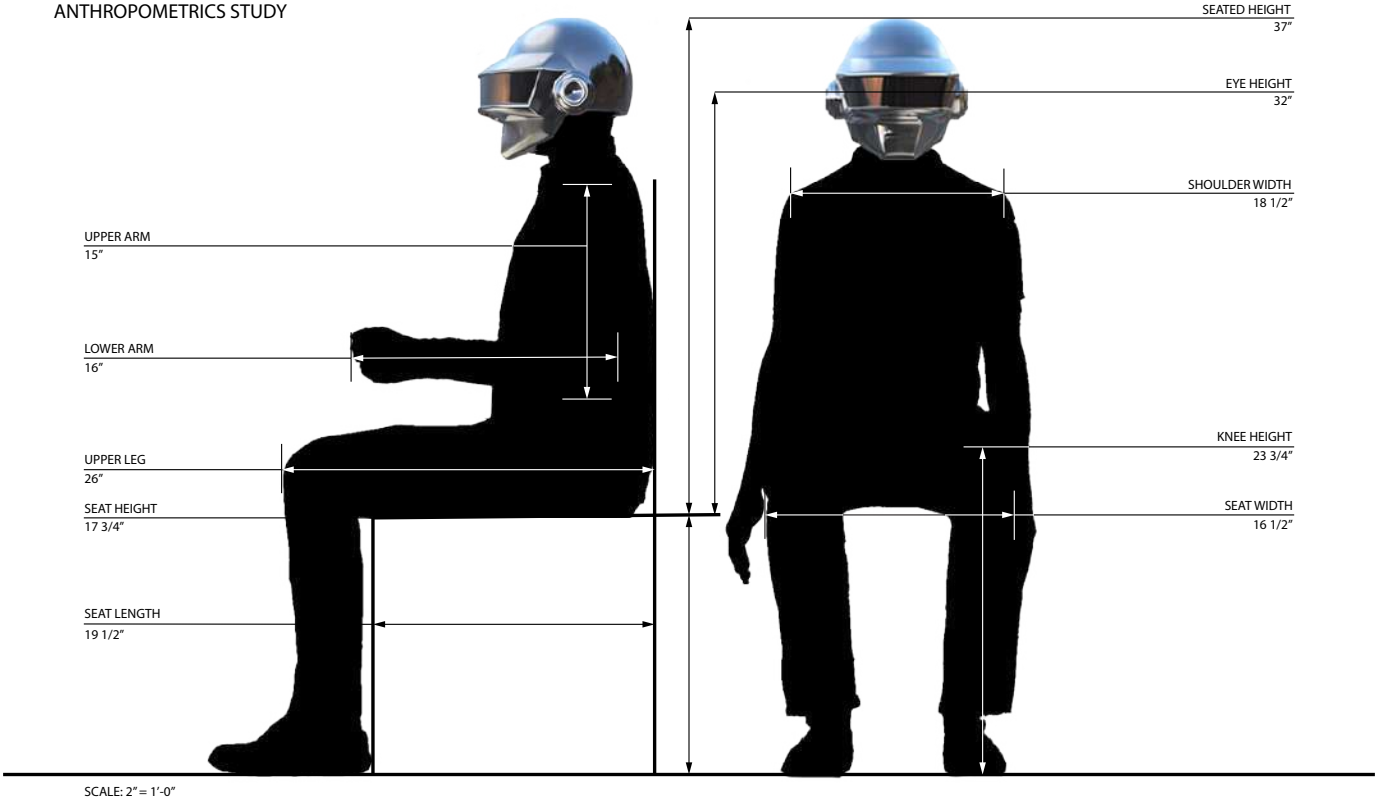
A **tenon** is cut on the end of one piece of wood and a **mortise** is cut into the other to accept it. The distinguishing feature is that the tenon and mortise are cut to the **full width** of the tenon member. This provides **strength** in **compression**.







ANTHROPOMETRICS STUDY



SCALE: 2″ = 1′-0″

Practice | Scholarship of Teaching & Learning | Presentation

Innovative Classroom Design: Exploring Evidence Based Design Practices Through Experiential Learning

Barbara Marini, Ringling College of Art and Design

ABSTRACT

The integration of evidence-based design is widely accepted in the interior design profession. Understanding and demonstrating the impact of interior design through evidence-based design is a critical component of practice. Increasing student awareness and competency in the application of evidence-based design principles provides them with a stronger foundation for the profession. The proposal presents a strategy for incorporating experiential learning in the instruction of evidence-based design.

Leading an undergraduate course in evidence-based design can be challenging, as design students often do not excel in reading or writing and have a tendency to avoid analytical assignments. In addition, an increasing number of students have ADHD and view this type of work as "boring" (Verheul, Block, Burmeister-Lamp, Teimeier, & Turturea, 2015). Engaging students in learning the research process requires creating a meaningful classroom experience to which they can relate.

Collaboration between junior level college interior design students and the local school district was set for the re-design of reading/language arts classrooms to improve comprehension and test scores. The environment in many high schools is outdated, not conducive to student centered learning today, and does not address the needs of students or teachers, which negatively influences outcomes (Lee & Hannafin, 2016). Active-learning models that promote student centered learning are viewed as critical components for engagement and the design of classrooms has emerged as a key variable to student success (Scott-Weber, Strickland, &

Kapitula, 2013; Rands, et al., 2017; Harris, 2019). Interior design students related to the high school students and a personal empathy developed that resulted in a desire to improve the classroom environment.

An experiential methodology was generated to propel class interaction, "group think," and discussion. Lecture materials and readings were provided in the model of a "flipped" classroom to maximize class time. Students received instruction on survey writing, interviewing, and research strategies. The project focused on experiential learning, team building, and research practices as it related to individual and group design solutions.

Students' ability to identify and solve design problems, conduct and analyze research, and apply theoretical frameworks to design solutions was increased. Students presented their concepts in a public forum and professionally communicated data and the impact of design through a variety of presentation techniques. There was increased awareness of the relationship between human beings and the built environment and in particular, learning outcomes. Importantly, (and incidental to the project!) students learned the concept of "value engineering" as budget cuts altered the design solutions within the context of each individual environment.

Students felt extremely well prepared and excited to embark on their own evidence-based design projects the second half of the semester. They were familiar with research processes, aware of key issues where design has impact, and ready to demonstrate their "Learning by Design." Student satisfaction was a bit mixed in terms of the classroom project. Some felt the district did not give them enough information or feedback. They felt it took time away from their own initiatives, but overall there was tremendous satisfaction with the value and project outcome.

"Flipping" the class worked well in that it allowed more meaningful discussions, time for questions, and significant collaborative time. Integrating a "real" project as an introduction to evidence-based design practices was a very effective strategy for students to quickly become engaged in the process and experience the impact of design first hand. It also gave them an opportunity to look at research and data to frame important discussions and demonstrate to the public that interior design is "not decorating."

REFERENCES

Harris, L. M. (2019). Designing educational facilities for social engagement. (Unpublished master's thesis). Brenau University, Gainesville, GA.

Lee, E. & Hannafin, M. J. (2016). A design framework for enhancing engagement in student-centered learning: Own it, learn it, and share it. Education Tech Research Development. 64: 707-734. doi: 10.1007/s1143-015-94422-5

Rands, M. L., & Gansemer-Topf, A. M. (2017). The room itself is active: How classroom design impacts student engagement. Journal of Learning Spaces. 6(1), 26-33.

Scott-Weber, L., Strickland, A., & Kapitula, L.R. (2013). Built environments impact behaviors: Results of an active learning post-occupancy evaluation. Planning for Higher Education. (42) 28-39.

Verheul, I., Block, J., Burmeiser-Lamp, K., Thurik, R., Teimeier, H. & Turture, R. (2015). ADHD-like behavior and entrepreneurial intentions. Small Business Economics, (1), 85-101.

INTERIOR DESIGN DEPARTMENT

IDXX 3XX Evidence Based Design Practices- Spring 2019
"Innovative Classroom Learning"

Description:

Students will be working on an Experiential Design project through the Collaboratory entitled "Innovative Classroom Learning." EBD (evidence-based design) will demonstrate understanding of the broad scope of research in design and the impact of design on learning environments. The intent of the project is to gain additional experience in discovering, gathering, and documenting data relevant in the design solutions of specific project needs. In addition, students will learn that evidence based design applies to many aspects of the built environment and overall user satisfaction of a given space.

Three local high schools are interested in improving learning environment for 9th and 10th grade students in "Intensive Language Arts" classes at XXX High School, XXX High School, and XXX High School. The goal is to create an inspiring, motivating, and effective learning environment that improves student academic progress and facilitates instruction.

Each of the high schools has two classrooms of focus, six classrooms in all. Interior Design students will be divided into two groups; each student will design three solutions, one for each high school. Different criteria may be required for each of the classrooms based on type of classroom, size, instructor input, existing conditions, demographics, etc. Because of this, individual research and information gathering is necessary for all six classrooms!

Scope of Work & Project Criteria:

1. Research Component
2. Documentation & Programming
3. Schematic Design
4. Materials & Finishes
5. Presentations
6. Specifications
7. Scope of Work
8. Project Booklet
9. Presentation to the District
10. Gallery Exhibition

HELLO HIGH SCHOOL STUDENTS!

We are junior interior design students and very excited to be part of your classroom redesign. In order for us to do that, we could use a little help from you. Would you be able to participate in a BRIEF survey so that we can come up with the best solutions for the classroom? The survey is voluntary and the only identification is the school that you attend. It would be really awesome to get your thoughts and ideas. It won't take you long and we will share the results with all of you!

Thank you!

The junior interior design students

1. What school do you attend?
2. What is your age?
3. With what gender do you identify?
4. What is your favorite color?
5. What hobbies do you have? (Check all that apply).
6. How well do you enjoy school?
7. How confident are you in your reading?
8. How important is reading to you?
9. Where do you like to read best in the classroom?
10. How challenging do you find school?
11. How much do you enjoy reading?
12. What hobbies do you have?
13. What is your comfort level when asking for help?
14. What classroom elements would you most like to see changed?
15. What motivates you THE MOST to learn?
16. How important is the classroom environment to your learning experience?
17. Where do you want to be in 5 years?

Please add any other comments that would help us re-design your class!

HELLO HIGH SCHOOL TEACHERS!

We are junior interior design students and very excited to be part of your classroom redesign. In order for us to do that, we could use a little help from you. Would you be able to participate in a BRIEF survey so that we can come up with the best solutions for the classroom? The survey is voluntary and the only identification is the school where you teach. It would be really awesome to get your thoughts and ideas. It won't take you long and we will share the results with all of you!

Thank you!

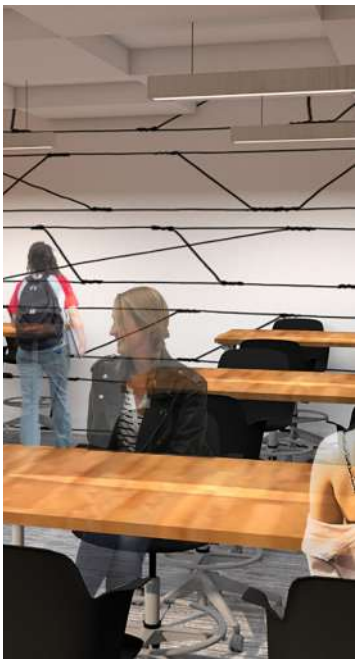
The junior interior design students

1. At what school do you teach?
2. How many years have you been an educator?
3. What types of activities are usually being done in the classroom? Select all that apply.
4. How much homework is usually assigned per night?
5. How is this classroom used? (Check all that apply).
6. How often are there behavioral problems in the classroom?
7. How flexible would you like your classroom to be?
8. What type of technology is used in your classroom?
9. What instructional tools do you use? Select all that apply.
10. Is there enough storage for your classroom needs?
11. Are the students allowed to have phones with them in class?
12. How comfortable is your desk space?
13. If you could change 1 thing about your classroom, what would it be?
14. How important is the classroom environment to your learning experience?

Please add any other comments that would help us re-design your class!

LEARNING INNOVATION THROUGH DESIGN


SUCCESS
EXIT




GET
INSPIRED
EXIT

Practice | Scholarship of Teaching & Learning | Presentation

Living Laboratory: Design Build Projects on Campus

Lisa Tucker, Virginia Tech

ABSTRACT

This presentation gives an overview of the Living Lab design/build process being used at a major research university. Student teams create design solutions for four spaces in a brand new dormitory building, one of which is a lounge space for a Living Learning Community and the subject of this presentation.

Living Learning Communities are common on college campuses in recent years. They are typically geared towards a particular area of interest—in this case centered on the applied arts (architecture, studio art, music, performing arts, etc.) In addition to typical dorm rooms, they contain other spaces in support of the mission of the community. Faculty members live among the students and work with them to create an agenda of programs that support the mission including informal discussions, outside speakers, and other activities. This lounge will support one of the living learning communities dedicated to architecture and design students.

Design/Build is found at several design school across the country. Recent publications have outlined the pros and cons of this type of student engagement in architecture and construction programs (Canizaro, 2012; Gjertson, 2011, and Jackson, 2005). Gjertson specifically describes the unrest among faculty that can take place in academic programs regarding this method of teaching and learning.

The effort described here combines these two type of initiatives—living learning communities and design/build teaching and learning--in to a research centered and student engaged design/build project. Not only are the students engaged in the design and construction of the space but they then also work with faculty on design research agendas using the space as a testing center. In this first iteration, ideas of biophilic design and circadian lighting will be tested.

Relevance and Teaching Issue

Although some interior design programs offer opportunities to build furniture and small-scale design products, few students have the opportunity to build one of their designs in its entirety while a student. This project offers students direct learning about translating design concepts into physical space. It also provides a hands-on learning environment for human-environment research.

The instructional approach to this course was to integrate all levels of the undergraduate interior design program into a combination studio/lecture course with access to a research and demonstration construction facility. The class also included one architecture student doing a semester abroad from Germany as well as one graduate student in interior design. The core group of 11 design students coordinated with another group of 12 students designing the outdoor courtyard space adjacent to the lounge. Class met once weekly fro several hours and the students met regularly outside of class to work on the design and construction of the project.

Students received several learning outcomes from this course and project. First, they learned to work with a series of stakeholders (student affairs, the university architects office, a project manager for the living labs initiative, the faculty member who would work with the living learning community and the faculty member teaching the course). Each person had his/her own agenda and oftentimes, these did not agree. In addition, design work was completed by a team of 11 students with various levels of education and experience. The students constructed their own

structure of team roles based on what they knew and were good at already and their aspirational learning goals. None had previous experience with construction. In addition to having to come to consensus on the design approach, students also had to build multiple model prototypes and meet with the various stakeholders to get buy-in on the design, work within a budget and meet stringent guidelines for a university building as well as all codes and accessibility standards.

REFERENCES

Canizaro, V. (2012). Design-build in architectural education: Motivations, practices, challenges , successes and failures. International Journal of Architectural Research. Vol 6, No. 3: 20-36.

Gjerston, G. (2011). House divided: Challenges to design/build from within. ACSA Proceedings. Retrieved 9/18/19 http://www.acsa-arch.org/docs/emails/house-divided.pdf

Jackson, B. (2005). “Design-build education at associated schools of construction undergraduate programs,” International Journal of Construction Education and Research. Vol. 1: 75-88.

ITDS 2984: Special Topics – Living Lab – Community Lounge

Course Meeting: Fall 2019
Team Meeting Monday 10 am

3 credits

COURSE SYLLABUS

Catalogue Description

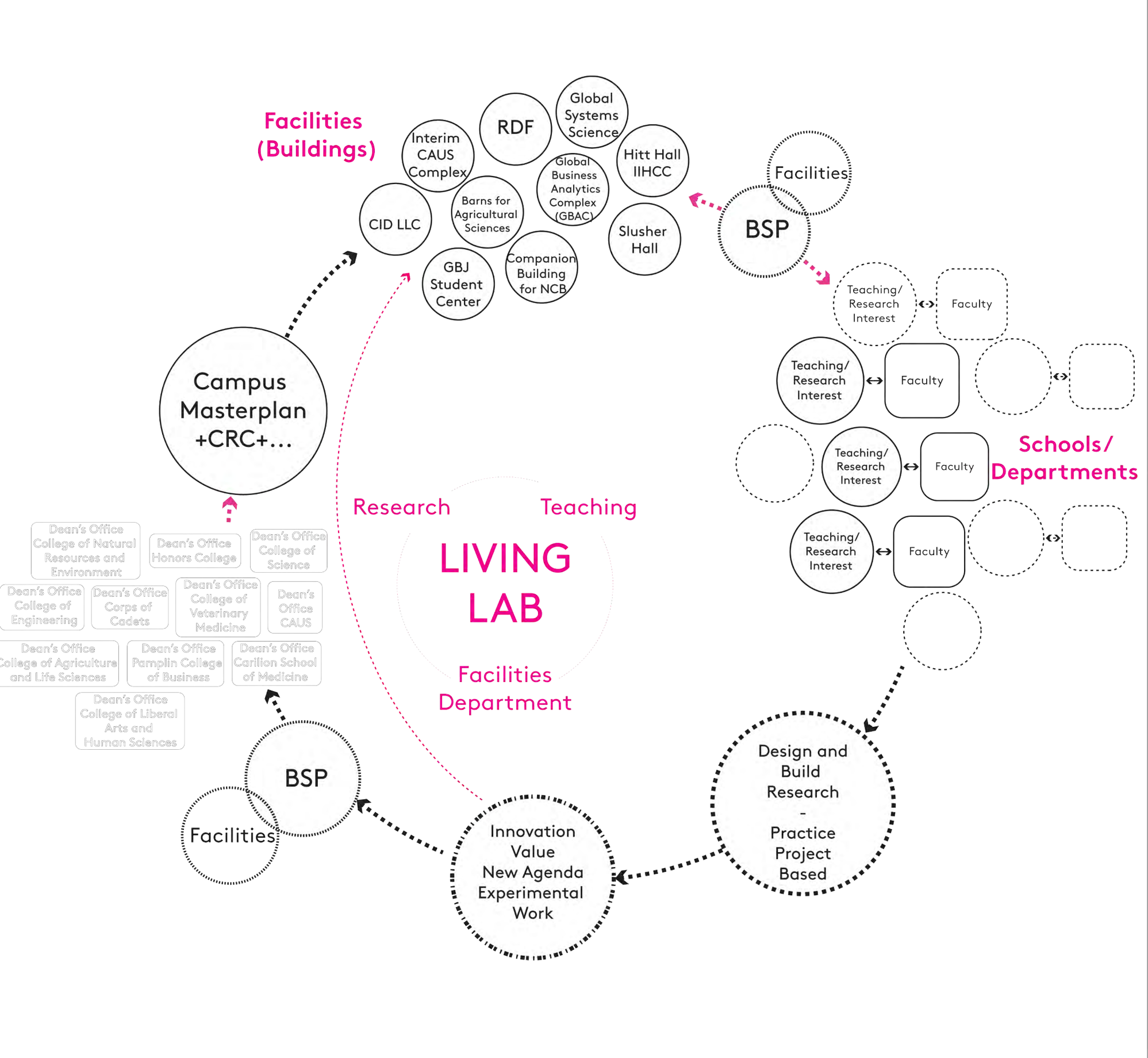
Undergraduate research topics course focused on design-build for a living lab on campus. Ideas to be tested could include: biophilic design, universal design, modular construction, materials testing

At the conclusion of this semester, you will be able to:

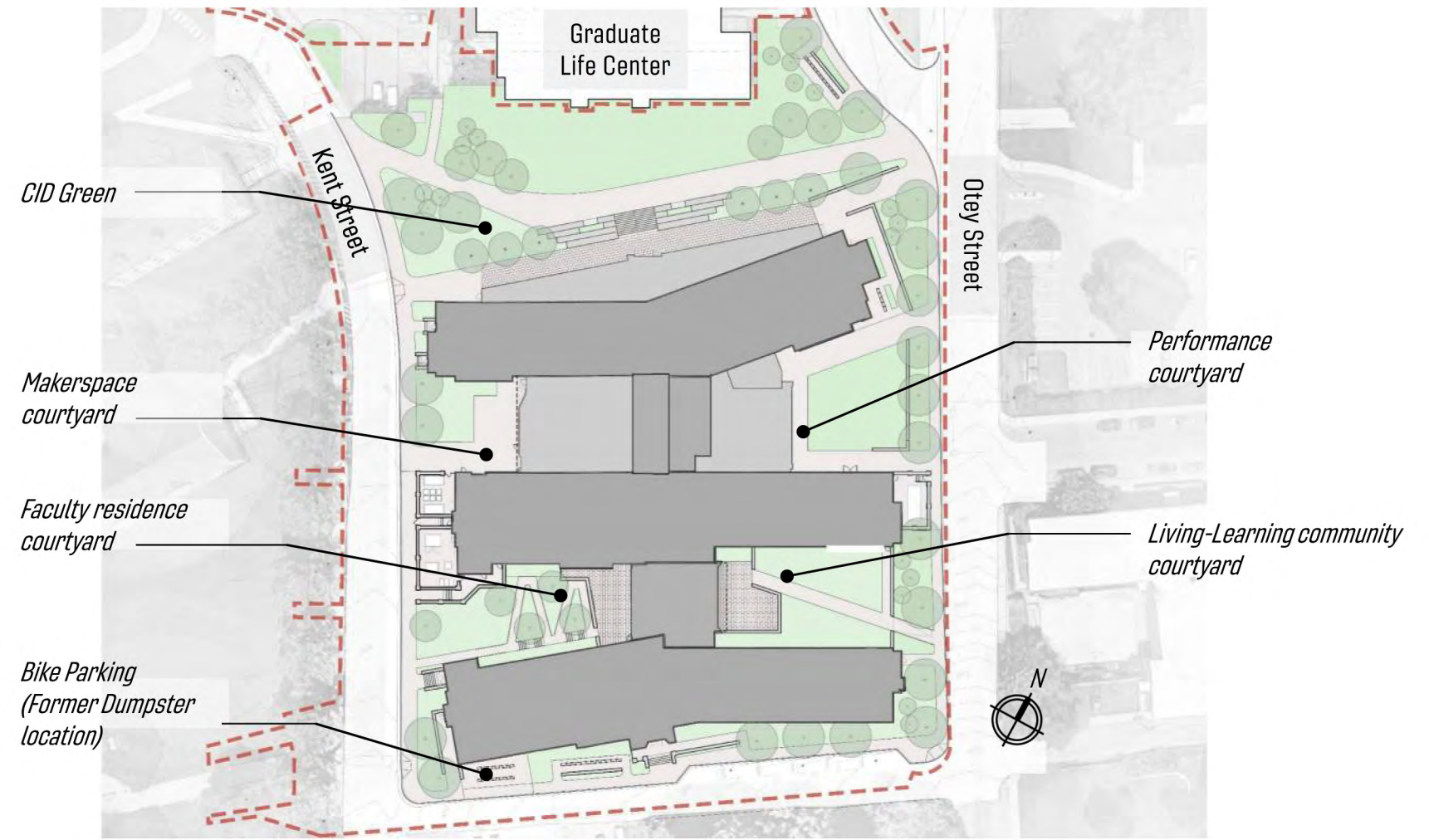
- Design using Universal Design principles
- Understand WELL and FitWell
- Integrate biophilic design principles
- Detail interior environments for construction
- Assist with the construction of the design
- Work in a team on a design/build project

Course Description

This course is a collaboration between interior design students and others in the college. For the first part of the session students will work in teams to design of the student lounge for a learning community on campus. For the second part of the session students will build a prototype design. Students will work using 3D modeling software (Sketchup/Revit, Rhino) using VR and models.


Facilities (Buildings)
Interim CAUS Complex
RDF
Global Systems Science
Hitt Hall IIHCC
Global Business Analytics Complex (GBAC)
CID LLC
Barns for Agricultural Sciences
Slusher Hall
GBJ Student Center
Companion Building for NCB
Facilities
BSP
Teaching/ Research Interest
Faculty
Schools/ Departments
Campus Masterplan +CRC+...
Research
Teaching
LIVING LAB
Facilities Department
Dean's Office College of Natural Resources and Environment
Dean's Office Honors College
Dean's Office College of Science
Dean's Office College of Engineering
Dean's Office Corps of Cadets
Dean's Office College of Veterinary Medicine
Dean's Office CAUS
Dean's Office College of Agriculture and Life Sciences
Dean's Office Pamplin College of Business
Dean's Office Carilion School of Medicine
Dean's Office College of Liberal Arts and Human Sciences
BSP
Facilities
Innovation Value New Agenda Experimental Work
Design and Build Research - Practice Project Based

LLC Courtyard: Previous Iteration


Graduate
Life Center
Kent Street
Otey Street
CID Green
Makerspace
courtyard
Faculty residence
courtyard
Bike Parking
(Former Dumpster
location)
Performance
courtyard
Living-Learning community
courtyard
N

ITDS 2984: Special Topics – Living Lab – Community Lounge

CALENDAR

Updated 9/12/19

DAY/DATE	PROJECT	NOTES/DUE
8.26 M (1)	Assign Project	Identify Strengths and areas for desired knowledge Discuss and assign team roles (get shop training if needed)—visitor Jenn Lawrence
9.2 M (2)		**LABOR DAY-no class** **(might need a scheduled makeup time to meet with client)**
9.9 M (3)	Program	Written program of what the design will do and provide to the client (Visitors—Enric Ruiz Geli, Luis Borunda, Dorothea Ottaviana, Jenn Lawrence)
9.16 M (4)	Schematic	Schematic Design—minimum two ideas Discussion of Program and ideas Invited Visitor—Frances Keene
9.23 M (5)	Schematic revisions	
9.30 M (6)		
10.7 M (7)		50% design submittal—including FF&E and materials selections
10.14 M (8)	Schematic prototyping	Begin building models etc. ¼" 3D printed/laser cam model
10.21 M (9)		
10.28 M (10)	Design Development—final selections Final plan	
11.4 M (11)	Budget	
11.11 M (12)	3D perspectives and rendered elevations with notes	
11.18 M (13)		
11.25 M		THANKSGIVING BREAK
12.2 M		
12.9		100% design submittal Plan ¼" Interior Elevations ¼" or ½" as needed Materials Specs and samples RCP with fixture schedule and selections Design Details for all custom built ins Furniture, Fixtures and Equipment plan Finishes plan Model (final) at ¼"

Practice | Scholarship of Teaching & Learning | Presentation

Raising Competent Students: A Sponsored Commercial Studio

Anna Ruth Gatlin, Auburn University
Lindsay Tan, Auburn University

ABSTRACT

Improving student competency and understanding within upper-level design studios is relevant to the discipline of interior design pedagogically and from a future employer's viewpoint (Chamorro-Koc, Scott, & Coombs, 2015; Gross & Do, 1997). Improving these facets of student learning in order to better prepare them for the "real world" is a challenge that many interior design educators face.

To combat this teaching problem, one of our faculty partnered with a regional commercial furniture dealer and an international commercial furniture manufacturer in the junior-level commercial design studio taught Spring 2019. They each provided monetary support, but their most important contributions were in class. Every week someone from the dealership or the manufacturer was in the classroom, engaging with the students, conducting workshops, or speaking about topics relevant to their project work and corporate design. Speaking and workshop topics included design empathy, activity-based planning, architectural wall systems, wellness in the workplace, and sustainable design practices. We integrated project management and real-life challenges into a class that ordinarily operated on a fictitious plane by having the dealership break out a portion of the project's square footage to run as a "real" project, working with the students to specify furniture and finishes, create installation drawings, and review proposals and purchase orders. The goal was projects created by students who were more competent, and who more fully understood the process of programming and designing a commercial project, than the cohort who took this class the previous year. The first question this

presentation asks is “were the students actually more competent in this class?” followed by the second question: “did they have a better understanding of commercial design than the previous cohort?”

A rubric was developed to analyze the project output from two years: 2018, which had no public-private partnership, and 2019, which did. The same faculty member taught both classes, and did not substantially change the requirements for the project or the course content, other than adding the material, workshops, and speakers from the partnership. The rubric addresses five facets of the project deliverables: understanding of space planning of a corporate environment; understanding appropriate use and specification of furniture;competency in building a comprehensive and cohesive final presentation; and quality of programming and design concept statements. Three independent raters used the rubric to score three top projects from each year (six projects total). The projects developed in the class with the partnership scored higher across all measures than the projects developed in the class that did not have this learning opportunity.

These results are preliminary and further study is planned. However, these findings are significant in that the partnership with the dealership and the manufacturer appears to have increased competency and understanding in the upper level interior design studio. The students also reported that they felt more confident in their ability to execute excellent work as prepare to apply for jobs and that, even though the studio partnership added more work for them, they felt the benefit greatly exceeded the effort. The dealership and manufacturer have committed to two more years of partnering with this studio, with the option to extend the partnership after that. Further data collection is planned.

REFERENCES

Chamorro-Koc, M., Scott, A., & Coombs, G. (2015). Bombs away: Visual thinking and students’ engagement in design studios contexts. Design and Technology Education, 20(1), 18-28.

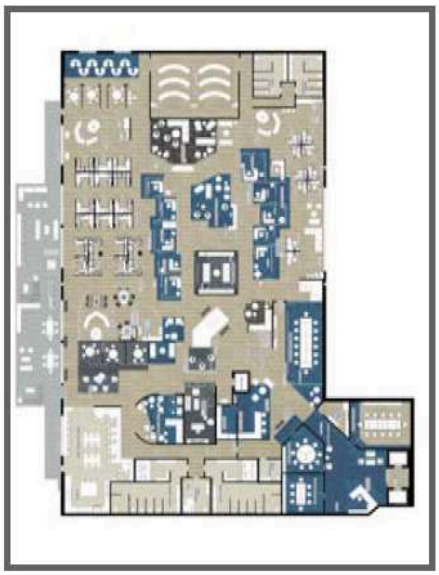
Gross, M., & Do, Y.L. (1997). The design studio approach: Learning design in architecture education in J. Kolodner & M. Guzdial (Eds.), Proceedings from Design Education Workshop

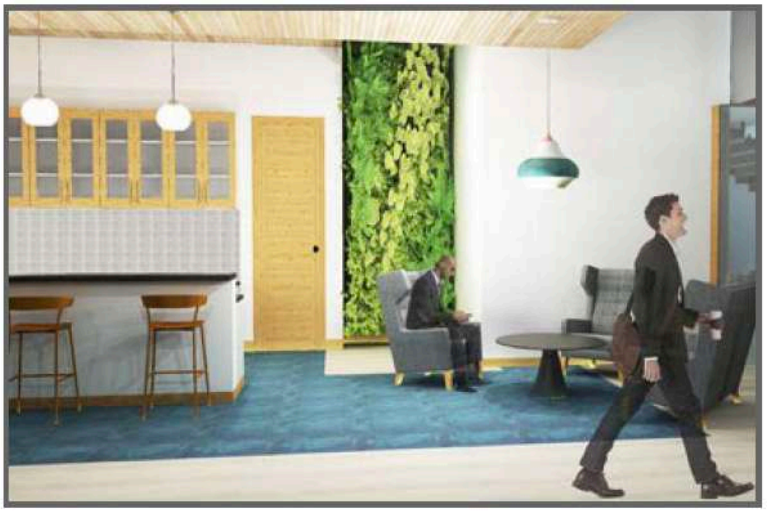
(pp. 17-26), Retrieved from http://depts.washington.edu/dmgftp/publications/pdfs/ed utech97-eyd.pdf

RAISING COMPETENT STUDENTS:

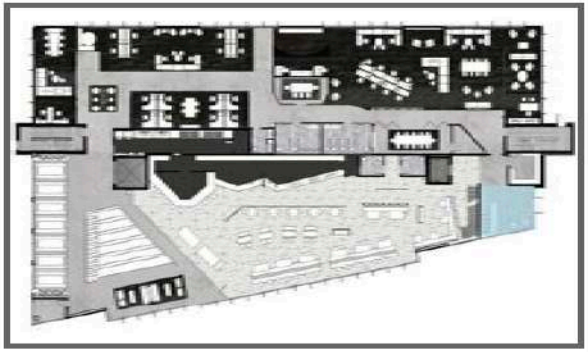
PROJECT WORK FROM BOTH STUDIOS

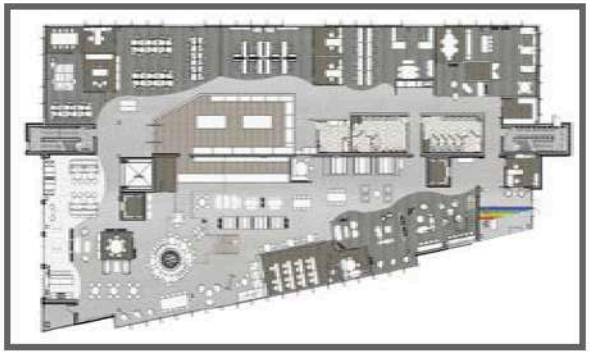
PROJECT WORK FROM 2018 (NO SPONSORSHIP)

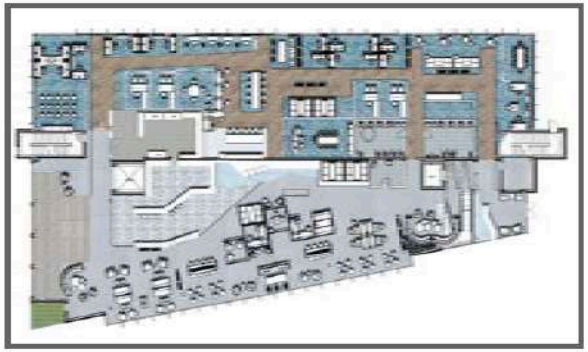


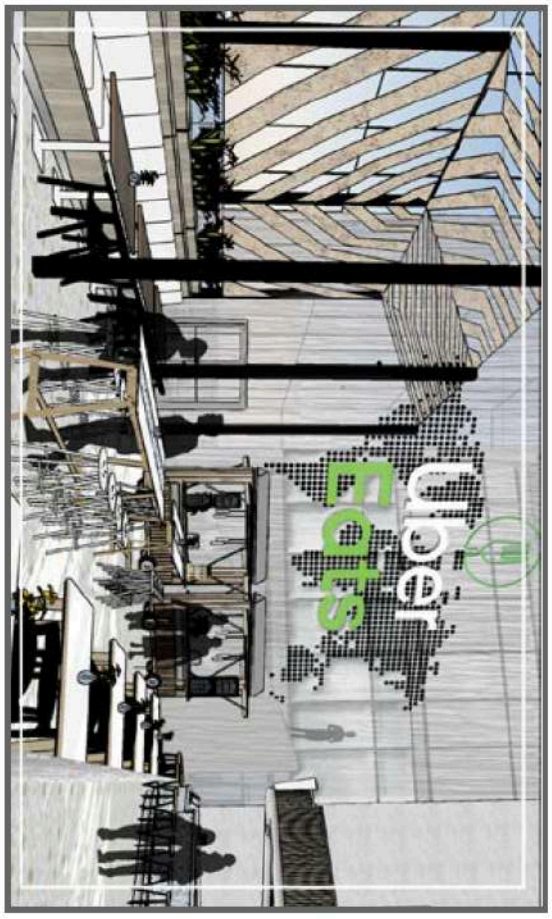


PROJECT WORK FROM 2019 (SPONSORED STUDIO)









PROGRAMMING & DESIGN CONCEPT STATEMENT EXAMPLES

Problem Statement

Instagram's new corporate headquarters will be located on the 14th and 15th floors of an existing historic building located in the commercial hub of Oakland, California. Surrounded by other historic buildings also established during the Transcontinental Railroad boom of the mid-1800s, the building's existing architectural details, tall arched windows, Romanesque columns, and art deco influences will be kept, preserving the historic integrity of the building.

Instagram, a photo and video-sharing social networking service launched in 2010 and now owned by Facebook, will mix it's 21st century technological influences with the existing historical precedent of the building, creating a new look for the company. Instagram is transitioning the main headquarters to the new Oakland office, though sister headquarters do exist in New York City and Denver. The 27,000 square foot office will need to be able to accommodate anywhere from 100-150 Instagram employees on a daily basis. Because Instagram prides itself on being a collaborative community where all levels from all departments participate in the branding and identity of the company, the space will create a united environment that inspires creativity, teamwork, flexibility, and collaboration, while simultaneously evoking a strong sense of the company's core values. The character, culture and integrity of Instagram will be incorporated into the space, which will be paired with the existing identity of Oakland and the historic building. The end result will be a cutting-edge and innovative headquarters for the quickly expanding internet-based company.

Concept Statement

Located in Oakland, California, the existing 27,000 square foot historic building will be the new home of Instagram's headquarters. The design of the space will need to be able to accommodate anywhere from 100-150 Instagram employees on a daily basis. The design will also need to create an environment that allows employees to collaborate, a large part of Instagram's identity, while simultaneously evoking a strong sense of brand. Instaagram's new Oakland office will be the main headquarters for the rapidly expanding company, with sister headquarters on the opposite coast in New York City, New York and in the Midwest in Denver, Colorado. The character, culture and historical precedent of the site, as well as the company, will be closely studied and applied to the design.

EXAMPLE OF FURNITURE SPECIFICATIONS

FURNITURE SPECIFICATIONS

TYPE:	PRODUCT LINE:	TAG:	PRODUCT TYPE/ DESCRIPTION:	MANUFACTURER:	LIST PRICE:	FINISH:	FLOOR:	ADDITIONAL NOTES:
TOUCHDOWN	REFLECT	T01	LOUNGE CHAIR	ALLSTEEL		LOUNGE UPHOLSTERY COLOR: KNOLL CATO HOT PINK	1	(W/ PRIVACY PANELS) STATION SIZE: ????
	TOWNHALL	T02	LOUNGE SEAT + SIDE TABLE	ALLSTEEL	$2,826	LOUNGE SEAT UPHOLSTERY COLOR: KNOLL CATO HOT PINK TABLE: WHITE SOLID SURFACE	1	1 SCOOCH + SIDE TABLE STATION SIZE: 3' x 8'
		T03	LOUNGE SEATING (3)+ TABLE (1)	ALLSTEEL	$7,744	LOUNGE SEAT UPHOLSTERY COLOR: KNOLL CATO HOT PINK TABLE: WHITE SOLID SURFACE	1	STATION SIZE: 7'-6" x 9'
		T04	ROCK LOUNGE CHAIRS (4) + TABLES (2)	ALLSTEEL	$9,952	ROCK CHAIR UPHOLSTERY: PEPPER BLEND BY BHF TABLES: WHITE	1	STATION SIZE: 8' x 8'
	RECHARGE	T05	LOUNGE SEATING + SIDE TABLE	ALLSTEEL	$6,810	CHAIR UPHOLSTERY: PEPPER BLEND BY BHF TABLES: WOOD GRAIN LAMINATE IN KINGSWOOD WALNUT	1	BACK TO BACK SEATING FOR PRIVACY STATION SIZE: 7' x 8'
		T06	LOUNGE SEATING + TABLE	ALLSTEEL	$6,999	CHAIR UPHOLSTERY: PEPPER BLEND BY BHF TABLES: WOOD GRAIN LAMINATE IN KINGSWOOD WALNUT	1	STATION SIZE: 12' x 12'
	PLATNER	T07	SIDE TABLE	KNOLL		TABLE SURFACE: 1/2" THICK GLASS BASE: VERTICAL STEEL RODS W/ NICKEL FINISH		
	BARCELONA	T08	LOUNGE CHAIR	KNOLL		SEAT UPHOLSTERY: 40 HAND TUFTED, BROWN LEATHER PANELS FRAME: POLISHED CHROME W/ MIRROR FINISH	2	
	GATHER	T09	LOUNGE SOFA (1) + SIDE TABLES (2) + CHAIRS (2)	ALLSTEEL	$11,449	SOFA + CHAIR SEAT: LEATHER / SUNDANCE DESERT BY C.R. LANE TABLE SURFACE: WOOD GRAIN LAMINATE IN KINGSWOOD WALNUT TABLE/SOFA LEGS: SOLID EDGE IN DESIGNER WHITE	1	STATION SIZE: 8'-6" x 11'
BREAK AREA	PARK	B1	CAFÉ TABLE (4)+ CHAIRS (8)	ALLSTEEL	$10,990	TABLE: WHITE SOLID SURFACE CHAIRS: BLACK POLYCARBONATE SHELL + CHROME FRAME	1	INCLUDES 2 PLANTERS STATION SIZE: 14' x 14'
	NORMANN COPENHAGEN	B2	CAFÉ TABLE (11) + CAFÉE CHAIRS (2) + BACK TO BACK BOOTHS 2	ALLSTEEL	$1,129	TABLES: WOOD GRAIN LAMINATE IN KINGSWOOD WALNUT W/ WHITE SOLID EDGE LEGS CHAIRS: BLACK POLYCARBONATE SHELL + CHROME FINISH FRAME BOOTHS: UPHOLSTERY IN KNOLL CATO HOT PINK	1	STATION SIZE: 24' x 30'
		B3	TABLE (1) + CHAIRS (4)	ALLSTEEL	$4,189	CHAIRS: BLACK POLYCARBONATE SHELL + CHROME FINISH FRAME TABLE: WOOD GRAIN LAMINATE IN KINGSWOOD WALNUT W/ WHITE SOLID EDGE LEGS	1	STATION SIZE: 8' x 8'
	GATHER	B4	TABLES (2) + CAFÉ CHAIRS? (4) + STOOLS (3)	ALLSTEEL	$3,549	CHAIRS: BLACK POLYCARBONATE SHELL + CHROME FINISH FRAME TABLE: WOOD GRAIN LAMINATE IN KINGSWOOD WALNUT W/ WHITE SOLID EDGE LEGS	1	STATION SIZE: 13' x 17'

RUBRIC USED TO ASSESS PROJECTS

	Highly Competent (4-5 points each)	Competent (2-3 points each)	Not Yet Competent (0-1 points each)	Score
Understood Corporate Space Planning	Fully integrated programmed requirements; allowed for ample circulation & appropriate furniture density; used flooring materials as wayfinding and zoning; appropriately labeled major areas.	Mostly integrated programmed requirements; circulation allowance and furniture density is not as refined; flooring materials are used, but without as much attention to wayfinding or zoning; some major areas labeled.	Barely integrated programmed requirements; circulation allowance and furniture density is not refined; flooring materials are used, but with no attention to wayfinding or zoning; no major areas labeled.	
Understood Appropriate Use & Specification of Furniture	Specified only commercially-appropriate furniture; specified commercially appropriate finishes for FF&E; formatted specs in an organized and logical manner.	Specified mostly commercially-appropriate furniture; specified commercially appropriate finishes for most of the FF&E; formatted specs in a mostly organized and logical manner.	Specified some commercially-appropriate furniture; specified some commercially appropriate finishes for the FF&E; specs are confusingly formatted	
Overall Competency in Visual Communication	Visual communication tools (e.g. rendered floorplan, renderings, tables, charts, etc.) are effective and convey the brand identity of the corporation; provide excellent insight into space shown; are easy to read and understand.	Visual communication tools (e.g. rendered floorplan, renderings, tables, charts, etc.) do an average job convey the brand identity of the corporation; provide average insight into space shown; are somewhat easy to read and understand.	Visual communication tools (e.g. rendered floorplan, renderings, tables, charts, etc.) needs improvement and do not convey the brand identity of the corporation; do not provide insight into space shown; are difficult to read and understand.	
Quality of Programming Concept Statements & Design Concept Statements	Programming/problem concept states the problems accurately and does not make prescriptive directions or solve the problem with physical solutions; design concept statement is connected to the programming concept statement and addresses the problem, while making non-prescriptive physical solutions to the problem.	Programming/problem concept states the problems somewhat, makes few make prescriptive directions, and doesn't solve the problem with physical solutions; design concept statement is somewhat connected to the programming concept statement and addresses the problem, while making some prescriptive physical solutions to the problem.	Programming/problem concept does not state the problems accurately, makes prescriptive directions, and attempts to solve the problem with physical solutions; design concept statement is not connected to the programming concept statement, does not clearly state intent or the problem, and makes prescriptive physical solutions to the problem.	

Social & Environmental | Scholarship of Design Research | Presentation

"Start with the toilets": Designing a School for Students with Autism Spectrum Disorder and Severe Disabilities

Julie E.N. Irish, Iowa State University

ABSTRACT

As interior designers, many of us subscribe to the mantra "design impacts lives." Often, however, we do not get the opportunity to see the effect of our designs. Through photographic and descriptive data, presented by the interior designer turned researcher, this intrinsic case study describes the design outcomes of a new school for 150 students with disabilities, seeking to remind us that what we do does impact lives. In an intrinsic case study, the holistic and complete design becomes the topic under investigation (Bloomberg & Volpe, 2012; Sommer & Sommer, 1997). Case studies can provide an opportunity to share knowledge with others and learn by successes and mistakes. For populations with ASD and severe disabilities, where there is little evidence-based design literature available, case studies can also provide useful knowledge for design practitioners.

Students at the school, located in the UK, were diagnosed with either low functioning Autism Spectrum Disorder (ASD) or profound physical and intellectual disabilities, aged 3-19. About 70% of students were in a wheelchair. Only a few communicated verbally. This study outlines the key design outcomes for these populations. (For a description of the design process for this project see *removed for peer review).*

Accommodation ranged from classrooms suitable for pre-schoolers with play equipment, and a splash pool, to areas for older teenagers preparing to transition out of fulltime education who

were learning independent living skills. Each classroom had to accommodate 6-8 children with up to one-on-one ratio of teaching staff.

One area of the school was dedicated to students with ASD. Evidence-based design data for this group was limited so much of the design decisions, including furniture layout, materials, and decoration, were based on the experiences of teachers or anecdotal. Sensory sensitivity was carefully considered, e.g., designing ceilings without a grid system so that students were not distracted. Safety and security were paramount, especially for students prone to abscond or harm themselves. This had to be balanced with the privacy and safety of staff, especially in the design of 'withdrawal rooms.'

In addition to classrooms, the study describes the design features of nursing and medical areas, as well as specialist treatment areas, including hydrotherapy, rebound therapy, sensory and touch therapy spaces, gymnasium, and indoor and outdoor sensory gardens. The dining room was challenging to design for the competing needs of students in wheelchairs, who needed space to move around, and students with ASD for whom large open spaces could be overwhelming. Surprisingly, the design of restrooms was a key factor in the design because most of the students were incontinent. Instead of having centralized restrooms, two classrooms had direct access to a shared restroom.

After occupation, the school district conducted a post-occupancy survey questionnaire to parents and staff measuring their satisfaction with the new school: 81.5% reported they were overall 'very satisfied.' In addition, over 80% of respondents agreed that the design of the school exceeded their expectations; would have a positive impact on the students and on staff motivation; and nearly 80% agreed that the layout of the school was well-designed.

Limitations of a single case study are that they are not generalizable. However, the findings can provide rich data that can be applied to similar sites by design practitioners (Bloomberg & Volpe, 2012). A limitation of this particular study is that, as the interior designer on the project, the researcher had to be aware of her own biases and take frequent bias checks to examine what she reported. Overall, the design of the school met expectations and positively impacted the lives of students, staff, and parents. Future research plans include a longitudinal post-occupancy evaluation to find out how the design has withstood prolonged use.

REFERENCES

Removed for peer review

Bloomberg, L. D., & Volpe, M. (2012). Completing your qualitative dissertation: A road map from beginning to end. Thousand Oaks, CA: Sage Publications.

Cardiff County Council, Cowlin, & Ty Gwyn School. (2010, December). Ty Gwyn Special School and Ty Storrie Respite Care Unit. Presented at the Constructing Excellence in Wales Final Peer Review, Wales, UK.

Sommer, B., & Sommer, R. (1997). A practical guide to behavioral research, 4th ed. New York, NY: Oxford University Press.

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A Sensory Approach to Inclusion: Six Design Principles

Kristi Gaines, Texas Tech University
Charles Klein, Texas Tech University
Malinda Colwell, Texas Tech University
Angela Bourne, Fanshaw College
Michelle Pearson, Texas Tech University
Huili Wang, Texas Tech University

ABSTRACT

Introduction

The purpose of this study was to address the importance of sensory input within the built environment as a child development strategy. Typically, people receive information about the surrounding environment through their senses collectively (sensory integration). However, sensory processing disorder may occur when sensory signals do not integrate to provide appropriate responses (Gaines, Bourne, Pearson, and Kleibrink, 2016). As a result, the environment may cause a child to feel confused or irritated. As with all sensory symptoms, severity may vary, and both hyper- and hypo-sensitivities may be present (Shabha, 2006).

Best practice design indicators for indoor (Gaines, Bergan, and Curry, 2014) and outdoor (Cosco, Moore, and Smith, 2014) learning environments were initially evaluated. The research addressed in this investigation builds upon these previous studies. For this project, interior designers, landscape architects and early childhood experts worked in partnership with government agencies to develop inclusive design principles to promote child development domains: socio-emotional, physical, and cognitive by addressing sensory input within the learning environment. The result is the development of inclusive evidence-based design recommendations for children of all abilities.

Methods

Sensory Integration (SI) theory provided the theoretical framework for this study. SI refers to the use of sensory information that helps an individual interact with the environment. A mixed methods approach was utilized to gather data including 1) focus group, 2) interviews, 3) observations and 4) surveys. A total of over 600 subjects participated. The target population was individuals with sensory integration disorder and their caregivers.

Findings

The findings show that individuals with sensory processing disorder view their environment differently than the general population. The data gathered was analyzed and coded to reflect six sensory categories: sight, touch, hearing, taste, smell, and motion (includes proprioception and vestibular senses). Each of these themes were further evaluated according to child developmental domains, best practice design indicators, and the elements and principles of design. The result was the development of "Six Inclusive Design Principles for Learning Environments." The research also showed that all children in the learning environment benefited from the integration of the inclusive design principles. This presentation will explain each recommendation and will provide practical examples for integration of the principles into indoor and outdoor learning spaces. This information is beneficial for design professionals, early childhood administrators, and parents.

REFERENCES

Cosco, N. G., Moore, R. C., & Smith, W. R. (2014). Childcare outdoor renovation as a built environment health promotion strategy: evaluating the preventing obesity by design intervention. American Journal of Health Promotion, 28(3 suppl), S27-S32.

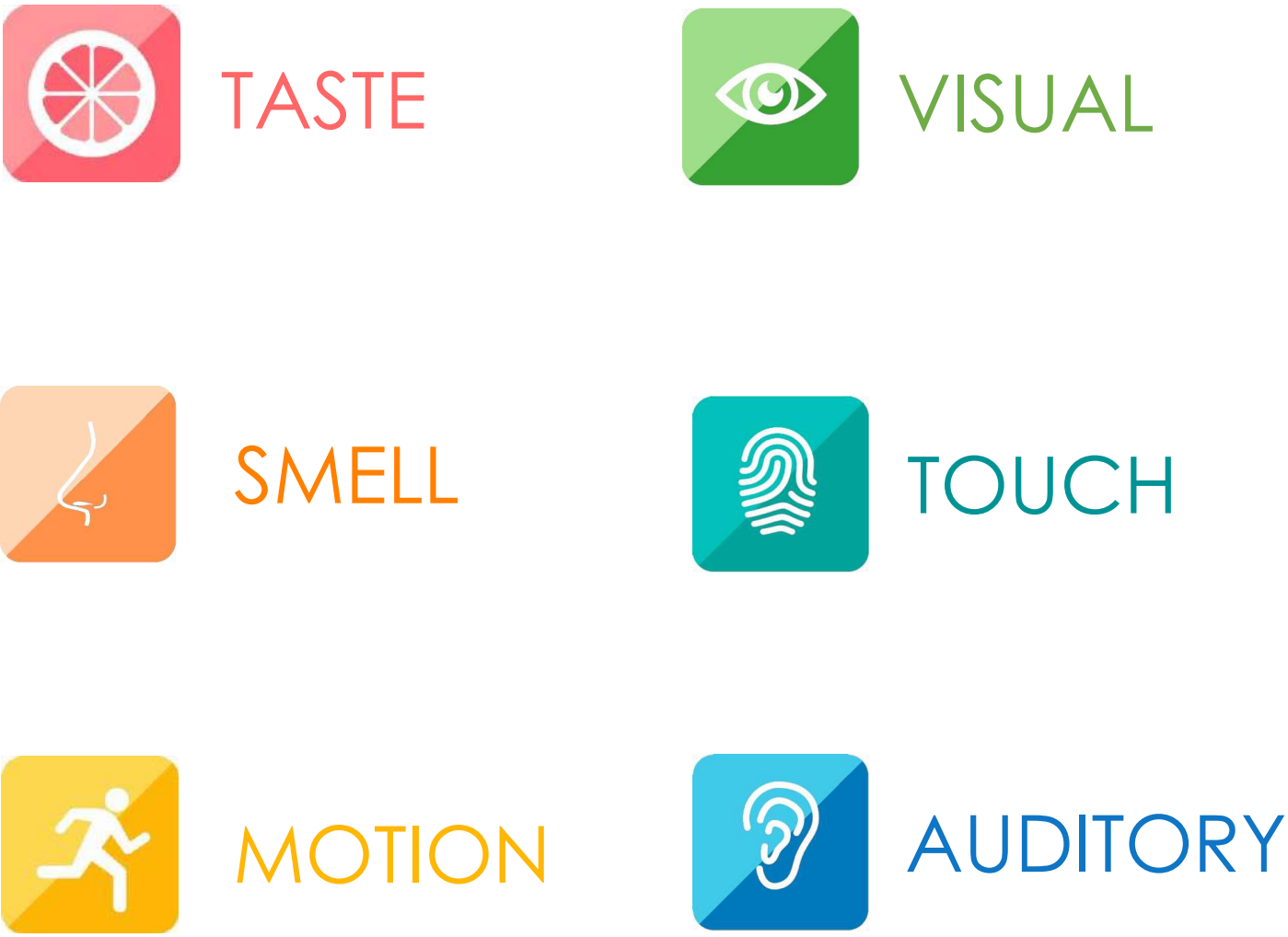
Gaines, K., Bergan, L., Curry, Z. (2014) Full spectrum classroom design. The International Journal of Learner Diversity and Identities (Volume 20) 15-28.

Gaines, K., Bourne, A., Pearson, M., & Kleibrink, M. (2016). Designing for autism spectrum disorders. Routledge.

Shabha, G. (2006) An assessment of the impact of the sensory environment on individuals' behaviour in special needs schools. Facilities, 24, ½, 31-42.

Appendix.

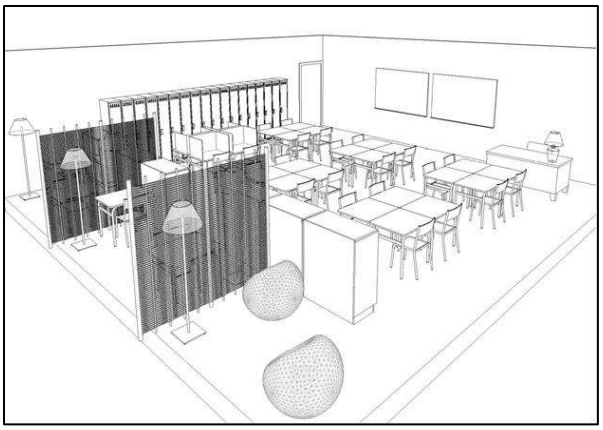
Six Inclusive Design Principles for Learning Environments

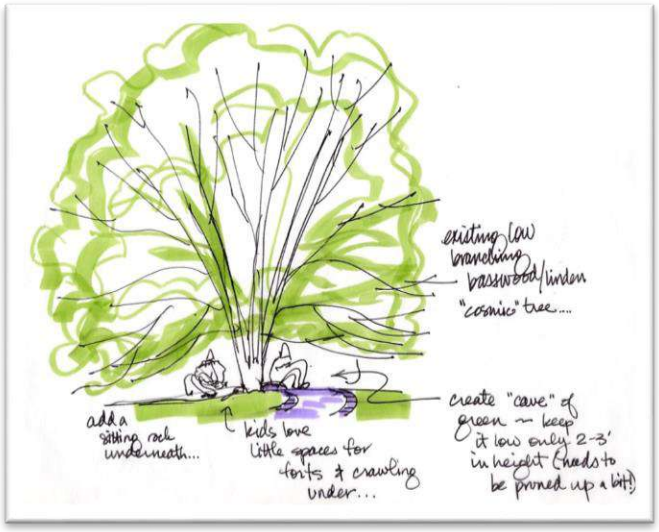


Excerpt from the principles included below:

VISION

One subcategory of “Vision” is the importance of secret spaces where a child has a sense of privacy yet can be seen.





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Designing a Multi-Sensory Environment for Children with Autism Spectrum Disorder

Nam-Kyu Park, University of Florida
Minkyoung Kim, Wonkwang University in South Korea

ABSTRACT

Worldwide, increasing numbers of children are being diagnosed with the developmental delay known as autism spectrum disorder (ASD), which is characterized by impaired social communications and restricted/repetitive behaviors (APA, 2013). Another core characteristic of children with ASD emphasized recently (Bogdashina, 2016), is sensory abnormalities such as unusual interest in sensory environments; fascination with spinning lights; adverse response to specific sounds, and excessive touching/smelling of objects (APA, 2013). One promising sensory enrichment for children with ASD is Multi-Sensory Environment (MSE) therapy (Fowler, 2008). An MSE is a specially designed, dedicated space using lighting, music, scents, and textures. The MSE offers a passive therapeutic intervention and could be meaningful as non-pharmaceutical therapy for children with ASD (Pagliano, 2016). However, there is a lack of research rigorously stating how MSE accommodates broad sensory spectrums of children with ASD. This study aims to explore how to design the MSE for autistic children with different sensory characteristics. More specifically, the research questions are: 1) what are the preferred and influential sensory items of children during MSE interventions? And 2) what suggestions do caregivers have for the MSE to be a better environment for their autistic children with different sensory characteristics?

In-depth interviews were conducted with the caregivers of children with ASD: the parents of three participating children for MSE treatments, and the occupational therapists assigned to each child. Each child with various sensory characteristics engaged in 18 assigned MSE interventions three times per week and each MSE session lasted for 30 minutes. The MSE room has various

multi-sensory equipment including visual, auditory, tactile, olfactory, and movement items. After evaluating the sensory characteristics of each participating child for the MSE interventions, 20 specific items of sensory equipment were integrated into the MSE room. The interviews with each parent and therapist occurred at the end of three MSE intervention phases: Visual-focused MSE, auditory-focused MSE, and integration of visual- and auditory-focused MSE. Thus, a total of 18 interviews were conducted (3 children × 2 participants × 3 phases). Each of these interviews took about 30 minutes.

The interview data were analyzed through the content analysis by utilizing NVivo 12. In response to the inquiry which sensory items were most influential and preferred to each child during the different MSE phases, Bubble Columns were the most influential sensory element to all three children during the visual-focused MSE. During the auditory-focused MSE, each child had different preferred items. During the visual- and auditory-focused MSE, their influential sensory elements were similar to the items during the visual-focused MSE. The suggestions for the better MSE for children with ASD were emerged into three: the needs of individually tailored MSE room for diverse sensory characteristics, belief and trust in MSE efficacy, and the affordability of MSE for all children with ASD. The study indicates that the MSE could be meaningful as a non-pharmaceutical ASD therapy that could influence the sensory processing and behavior of children with ASD. Interior designers need to grasp how ASD-friendly environment could support the quality of life for individuals with ASD beyond their sensory needs.

REFERENCES

American Psychiatric Association (APA, 2013). Diagnostic and statistical manual of mental disorders (5th edition, DSM-V). Arlington, VA: American Psychiatric Publishing.

Bogdashina, O. (2016). Sensory perceptual issues in autism and Asperger syndrome: Different sensory experiences-different perceptual worlds. 2nd edition. Jessica Kingsley Publishers.

Fowler, S. (2008). Multisensory rooms and environments: Controlled sensory experiences for people with profound and multiple disabilities. Jessica Kingsley Publishers.

Pagliano, P. J. (2016). Multisensory environments. London: David Fulton.

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Examining Drivers of Non-Territorial Workspace in Coporate Applications

Anne Farniok, University of Northern Iowa

ABSTRACT

The purpose of this exploratory study was to gain an understanding of the drivers of a radical shift happening within space planning of office interiors. We are at a pivotal point in the design of the office. The cubicle farms or Dilbertvilles of the past are no longer the accepted norm in workplace environments (Miller, 2014). Gone are the days of providing the standard 8' x 8' workstation with a behemoth personal computer where a worker was tethered to where and how they worked.

Designers of today are being asked to create interior environments that respond to a variety of requests that are beneficial to the company as well as the employee. The designer is challenged with creating an experience that attracts and retains knowledge- based workers while also fulfilling the company's needs to being cost effective and efficient (Miller, 2014). There are a multitude of drivers that play into the creation of the ultimate workspace. This thesis asks the question: *What are the drivers for companies to move to a non-territorial workspace strategy (NTWS)?*

NTWS gained strength during the global financial crisis (2008) as a way to save money by reducing space usage (Katrina, 2013). NTWS is a strategy that focuses on current workplace trends of mobility and flexibility. Statistically, occupancy rates of traditional workspace, range from 50-80% (Office, 2018). To minimize real estate and the associated costs that are encumbered with increased space usage, NTWS or free address strategy uses unassigned workspace (i.e., no longer dedicated to a specific person), but allows employees to choose or

reserve a workspace on their arrival. The NTWS uses data from occupancy surveys to show a building's space usage. These occupancy surveys show that on any given day (in a territorial workspace), approximately 70% of your workstations or offices would be filled (Office, 2018). Non-territorial workspace strategy has many different pseudonyms: free address, hoteling, agile work, mobile work, and activity-based work. NTWS is the practice of not assigning an office employee a permanent workstation or office.

The researcher used two forms of research. Initial informal exploratory subject-matter expert interviews followed by seven case studies of multinational fortune 500 companies in the Minneapolis-Saint Paul, Minnesota area that analyzed the drivers for companies, along with the differences and similarities in their approaches to NTWS.

The NTWS strategy is in conflict with established environmental psychology constructs and the theory of motivating factors that identifies place attachment and territoriality as a key component in people's comfort with their surroundings.

The research showed that each company selected NTWS as a means to solve needs to reduce costs and as a method to work differently in response to a changing work culture.

This paper will explore the concepts that are used in non-territorial workspaces and outcomes observed through the research

REFERENCES

Office space benchmarking: How companies use their space. (2018, October 17). Retrieved from https://www.us.jll.com/en/trends-and-insights/research/office-space-benchmarking

Katrina, A. (n.d.). Non-territorial offices: A growing trend in the workplace. Retrieved July 17, 2019, from https://www.henricksconsulting.com/2011/09/non-territorial-offices-a-growing-trend-in-the-workplace/

Miller, R., Casey, M., & Konchar, M. (2014). Change your space, change your culture: How engaging workspaces lead to transformation and growth. Hoboken, NJ: Wiley.

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Gen Z: A Comparative Analysis of Generations and Teaching Strategies for the Interior Design Studio

Michelle Pearson, Texas Tech University
Erin Hamilton, Texas Tech University

ABSTRACT

The Interior design studio environment of today often represents several generations, ranging from Baby Boomers to Generation Z. This amalgamation of generations in a single classroom can result in complex social and educational dynamics. While many professors are from the baby boomer generation, Generation Xers and millennials are joining the higher education work force. The student population, however, mostly consists of Generation Z (GenZ). This is especially true in the interior design field, with 79.8% of interior design students at CIDA accredited programs belonging to GenZ (CIDA, 2018). GenZ is unique in that they are the first generation to never experience life without the internet (Turner, 2015) and therefore tend to expect instant access to information and prompt feedback. This generation also has a desire and perceived need to multitask, which in turn can be interpreted by other generations (i.e. their professors) as a distraction (Ben-Hur & Ringwood, 2017). How can these seemingly challenging generational differences manifest themselves in the interior design studio? And what are some strategies to design curriculum to support the strengths of the multi-generational classroom?

To answer this question, researchers conducted a thorough literature review using keywords relating to workplace design, learning styles, social interaction, and generational differences. After the review of literature, four main themes emerged, including 1) generational traits, 2) technology use, 3) learning style and 4) communication style. Based on the findings, a series of teaching strategies were developed to assist in effectively delivering interior design education to a GenZ student population. For example, GenZ tend to prefer environments that are

technologically rich, but they also desire to innovate and ideate in groups where they can receive input and validation from others (Citation). They thrive in classroom discussions and desire to be an active participant in the learning process. Knowing this, design educators can create projects and discussions that give students opportunities to problem solve first in peer-groups and then allowing time for self-reflection and independent research. This presentation will delve deeper into strategies that can be used to structure projects and discussion in a way that is supportive to the GenZ characteristics. The implications for this research are both practical and necessary, as these generational differences are a challenge that most disciplines are exploring. This research can serve as a resource for both educators and students alike to cultivate a more inclusive and accepting classroom environment.

REFERENCES

Council for Interior Design Accreditation . (2018). Student Summary Report. Student Summary Report. Retrieved from https://accredit-id.org/wp-content/uploads/2018/06/StudentSummary-2018.pdf

Turner, A. (2015). Generation Z: Technology and social interest. The Journal of Individual Psychology, 71(2), 103-113.

Ben-Hur, S., & Ringwood, D. (2017). Making generational differences work: What empirical research reveals about leading millennials. Perspectives for Managers, (194).

Shatto, B., & Erwin, K. (2016). Moving on from millennials: Preparing for generation Z. The Journal of Continuing Education in Nursing, 47(6), 253-254.

Törőcsik, M., Szűcs, K., & Kehl, D. (2014). How generations think: research on generation z. Acta universitatis Sapientiae, communicatio, 1(1), 23-45.

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Marginalization and the Interior Environment: A Case Study of Interior Adaptations in Storefront Churches

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ABSTRACT

Storefront churches tend to have a pervasive presence along streets in the central city neighborhoods of many regions in the US. However, their place in interior design and other spatially related disciplines has rarely been understood or even acknowledged. This study addresses this disconnect by studying the emergence of storefront churches and the ways in which their interior spaces are adapted and experienced by their congregants and clergy. The paper brings to light how disenfranchised groups became associated to the storefront churches and contested a history of marginalization to create unique spaces of religious, social and cultural importance for themselves. The study focused on African American storefront churches in Sherman Park, Milwaukee. Observations of the arrangement of interior space, the use of everyday objects to shape religious and social gatherings and in- depth interviews were conducted in seven storefront churches.

During the years of Great Migration, African Americans established dozens of churches in Milwaukee as they did in other major northern cities. The migration greatly augmented the black population in northern cities such as Milwaukee and this population grew very dense and compact as illegal, covert housing laws kept African Americans largely confined to a handful of tracts. At the same time, practices of arbitrarily denying financial services contributed significantly to the economic decline of these neighborhoods. This in turn discouraged new businesses from locating in these areas, and forced existing businesses to set-up shop elsewhere in more profitable neighborhoods. As a way to negotiate confinement, segregation and marginalization, churches began being formed in the spaces businesses were vacating. Migrants

began creating small, socially intimate churches in the dozens of freed up cheaply acquirable spaces, where forms of worship prevalent in the rural South were preserved and sustained, and mutual support to one another was facilitated.

Many elder congregants from this study's field work were first generation migrants from the rural South. Carrying on values such as themes of exile of 'being in the world but not of it' and 'safe spaces', southern ways of having church were enacted. While all churches adhered to southern sanctified forms of worship in general, they differentiate themselves from one another by offering particularistic religious and social opportunities to their congregants. As such, spatial adaptations also had degrees of consistency and variation between the churches. All churches evoked an effort to create a sacred context within a vacant, and at times, dilapidated storefront. All churches had made arrangements for congregant seating, an altar, and acoustical setups for ministry and music. However, within these arrangements, the overall spatial character between the churches ranged considerably and was contingent upon various factors, such as a spatial identity for the church as perceived by the pastor, spatial restrictions within the adopted store space, and budgets. This spatial range was evident from the conscious, orderly, symmetric and color coordinated storefront church; to the unselfconscious, adhoc, folksy and improvisational storefront church; to the juxtaposed sacred/dilapidated storefront church; and to the outreach themed storefront church. The study concluded that storefront churches have allowed for certain degrees of person-hood and self-hood, where a sense of social and individual identity and agency have been maintained through modes of expressivity. The findings of this study challenge design fields to regard storefront churches as a unique place-type among America's cultural built form and brings to light how marginalized groups take effort to create particularistic sacred and secular environments in an often, dilapidated space.

REFERENCES

Nardone, J. (2003). Juke Joints and the Cultural landscape of the Mississippi Delta. In Perspectives in Vernacular architecture, Vol 9: Constructing Image Identity and Place. Vernacular Architectural Forum

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Multidisciplinary Views Regarding Interior Design Features That Promote Student Wellbeing

Amanda Gale, University of North Carolina Greensboro
Anna Marshall-Baker, University of North Carolina Greensboro

ABSTRACT

INTRODUCTION

College students are struggling with mental and physical health issues in larger numbers than ever before. The Center for Collegiate Mental Health (2017) reports increasing numbers of students seeking counseling related to anxiety and depression, and because mental health issues are often associated with body weight, the fact that 35% of college students consider themselves to be overweight or obese (American College Health Association; 2018) contributes to concern. Thus, wellbeing has become a critical issue on campuses across the country. Importantly, wellbeing encompasses physical and psychological attributes as well as a sense of community and purpose, self-esteem and, potentially, academic performance (Al-Amari & Al-Khamees, 2015).

PURPOSE

A comprehensive search of literature from healthcare, nutritional science, occupational psychology, and design disciplines reveals variables that positively affect stress and physical health in office, healthcare, and educational settings. These include views of nature; opportunities for social interaction and physical activities; presence of plants; access to daylight, drinking water, and healthy foods; and use of color and natural materials (Al-Amari & Al-Khamees, 2015; Lipscomb & Rollings, 2017; Salonnen et al., 2013). Whether or how these variables apply to higher education settings is unknown. The goal of this exploratory study was

to compare the variables appearing in the literature as contributors to wellbeing with features of campus interior spaces believed by students, university mental health practitioners, and design decision-makers to affect wellbeing in higher education.

METHOD

Following a call for participation, 24 individuals joined the study: undergraduate students, administrators, mental health professionals, and facilities managers from five universities, and design practitioners from five firms throughout the state. The participants were asked to bring images of a space that embodied wellbeing, and these were used as prompts for discussion. Small groups, assembled by discipline, 1) discussed why the images were selected, 2) identified features within the images that embodied wellbeing, and 3) identified similarities before presenting their perspectives to the larger group. Audio recordings of the discussions were transcribed.

Variables from the literature regarding design effects related to wellbeing were sorted into 8 categories: aesthetics, basic needs, evolved human-nature relationships, human spatial relationships, indoor environmental quality, nature link, and psychological and social aspects of space. Content analysis of the audio transcriptions and participants' notes of the image prompts were organized using the same 8 categories

FINDINGS

Participants captured the complex and holistic nature of wellbeing during the discussion with topics ranging from inclusive messaging and flexibility of space to basic needs such as hydration, nourishment, and movement. The views of wellbeing varied by group. The students focused their discussion on aesthetics and human spatial relationships. The mental health professionals discussed basic needs more than the other groups, and the administrators' discussion did not focus on basic needs at all. A full report of the categories and group differences will be presented.

IMPLICATIONS

A primary value of this study is the differing perspectives of users of space and design decision-makers regarding features of interior space that promote wellbeing. Two groups, mental health

professionals and administrators, who are rarely consulted during the design process, introduced topics not previously found in the literature such as inclusive messaging. The implications for designers regarding not only what design features should be considered but also who should be in the conversation when student wellbeing on university campuses is being discussed.

REFERENCES

Al-Amari, H.G. and Al-Khamees, N. (2015). The perception of college students about a healthy lifestyle and its effect on their health. Journal of Nutrition and food Sciences, 5(6) 437-440. doi: 10.4172/2155-9600.1000437

American College Health Association. (2018). American College Health Association-National College Health Assessment II: Reference group executive summary fall 2017. Retrieved April 30, 2018, from http://www.acha-ncha.org/docs/NCHA-II_FALL_2017_REFERENCE_GROUP_EXECUTIVE_SUMMARY.pdf

Center for Collegiate Mental Health. (2017). Annual report. Retrieve January 5, 2018, from http://ccmh.psu.edu/publications/

Lipscomb, M., and Rollings, K. (2017). Influences of indoor plants on psychological well-being and memory task performance in a workplace setting. Perkins + Will Research Journal 9(2). 33-43. Retrieved August 03, 2018 from https://perkinswill.com/sites/de

Salonnen, H., Lahtinen, M., Lappalainen, S., Nevala, N., Knibbs, L., and Morawska, L. (2013). Physical characteristics of the indoor environment that affect health and wellbeing in healthcare facilities: A review. Intelligent Buildings International, 5(1), 3-25. https://doi.org/10.1080/17508975.2013.764838

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Not Our Mission: Challenges and Opportunities for Green Building Education in LEED-Certified Museums

Laura Cole, University of Missouri
Georgia Lindsay, University of Tasmania

ABSTRACT

Science museums – with missions to enhance science literacy for society – are increasingly engaging in green building practices (Brophy & Wylie 2013). Their choices to build certified green buildings presents a natural alignment between science education and green building education (GBE). These places have the potential to increase public green building literacy by making intellectual connections between buildings, human behavior, and ecology – where the majority of these opportunities exist in museum interiors as decisions are made about environmental graphics and exhibitions. This case study project examined eight science museums across the U.S. to explore how and if green museums are making these connections and what barriers to GBE might exist.

An emerging area of scholarship examines the possibility that green buildings themselves are educational for the public (Cole 2018). Early empirical work shows the potential complexities, benefits, and opportunities of using green buildings as educational tools for sustainability. Much of this research has focused on occupant outcomes. Less often, scholars have focused on the socio-cultural factors that bring "educating buildings" (Kuczia 2013) into existence. Several pioneering studies in school environments show, however, that institutional factors (e.g., governance, cultural practices, leadership, and role models) are essential factors that complement the built environment to deliver sustainability education through buildings (e.g., Barr 2011). The current study is among the first to explore these themes in the museum setting.

This qualitative study is a multiple-case design (Yin 2017) with data from eight museums across four U.S. time zones. “Green building” was defined by the U.S. Green Building Council’s “Leadership in Energy and Environmental Design” (LEED) rating system. Mixed-method data collection included: 1) Public relation materials about the green buildings, 2) Press about the green buildings, 3) Photographs and memos from site visits, and 4) Interviews with museum staff. Previous dissemination for this project centered on analyses of the press and photography data. This presentation will focus on the voice of the museum staff members who have been involved in GBE in their own green museums.

Executive directors, educational program directors, and facilities staff (n = 12) were the categories of museum staff members who participated in interviews. Interviews were analyzed by a research team of two, an interior design scholar and an architectural museum scholar. The first round of open coding allowed emergent themes to surface outside of a pre-determined framework. The second round of coding integrated the themes that emerged from researcher field notes, press analyses, and photography analyses. This second round triangulated data sources, allowing the research team to explore how hunches and discrete results from previous analyses point toward several central, coherent themes that were previously unidentified.

The findings indicate an overall weak expression of green building themes in green museum exhibitionary practices. Museum staff have not thought deeply about connecting green building design to educational programming and do not consider GBE as well-aligned with their institutional missions. This presentation will unpack the challenges and opportunities for GBE from the museum staff perspective with a focus on the design of museum interiors. Results are also discussed within the larger discourse surrounding the potential for museum design to be a communication tool. The work here reveals how science museum buildings may be functioning in a very distinct way compared the iconic nature of places such as art museums. By contrast, science museums tend to be practical structures that are thought to contain exhibitions rather than be exhibitions. This thinking, however, may limit prospects of teaching sustainability through the design of green museums

REFERENCES

Barr, S. K. (2011). “Green Schools That Teach: Identifying Attributes of Whole-School Sustainability.” Master of Science thesis, Colorado State University.

Brophy, S. S., & Wylie, E. (2013). The green museum: A primer on environmental practice. Altamira press.

Cole L.B. (2018). The Teaching Green Building: Five Theoretical Perspectives. In: Leal Filho W., Marans R., Callewaert J. (eds.), Handbook of Sustainability and Social Science Research (pp.107-125). World Sustainability Series. Springer, Cham.

Kuczia, P. (2013). “Educating buildings”– Learning sustainability through displayed design. Czasopismo Techniczne.

Yin, R. K. (2017). Case study research and applications: Design and methods. Sage publications.

Social & Environmental | Scholarship of Design Research | Presentation

Spatial Configuration and the User Experience in Homeless Shelters and Transitional Housing Environments

Yelena McLane, Florida State University

ABSTRACT

Little is known about the effects of interior spaces and their design on the well-being and recovery of persons experiencing homelessness. Homelessness is a social phenomenon manifested in a distinctly embodied experience of dislocation, trauma, and estrangement from community, home, self, and often even body (Robinson, 2011). This extreme form of spatial and material deprivation leads to social alienation and a profound sense of personal disempowerment. One task that social workers face in assisting persons exiting homelessness is assisting their clients in coping with traumatic experiences and empowering them to make positive life changes. There have recently emerged two related health- and social-care strategies – Trauma-Informed Care (TIC) (Center for Health Care Strategies, 2017) and Psychologically-Informed Environments (PIE) (Levy & Johnson, 2017) – each of which stem from individual clients' needs and focus on holistic methods for promoting physical and emotional well-being. Architects and designers can be instrumental in supporting the recovery treatments by addressing the needs of homeless populations.

The initial step in assisting a homeless person is getting them off the street or out of substandard housing into a shelter or supportive housing. This mixed methods study of two existing homeless shelters and two permanent supportive housing developments uses Space Syntax analysis tools, meta-analysis, and qualitative interviews with staff and formerly homeless residents to examine the implications of spatial configuration typologies and specific design elements related to visual and physical accessibility.

The researcher applies a TIC framework of homeless persons' needs to focus on individuals' psychological and emotional well-being and empowerment, which includes being treated respectfully, fostering independence, allowing for privacy and support conducive to the creation of interpersonal communities and networks. Analysis of syntactic measures combined with human-centered quantitative and qualitative methods allow the researcher to identify how institutional policies, services management, and interior architecture are aligned to support (or fall short of supporting) the help that residents need. This in-progress study will examine: (a) the degree to which social hierarchies are present and reinforced by facilities' spatial configurations; (b) how the need for security and institutional controls may take priority over the opening up of spaces thus sending mixed messages to residents; and (c) how spatial configurations sensitive to both stigma and visual availability supports greater accessibility to resident services. These and related findings will be verified and reported in the conference presentation.

Architecture's turn towards human centered approaches can and should place dignity and well-being at center stage. This study examines the advantages of combining social science based methods and Space Syntax to better understand existing shelter and supportive housing typologies, space use and social interaction, and improve interior spaces crucial to the recovery process.

REFERENCES

Center for Health Care Strategies, Inc. (2017). Understanding the effects of trauma on health. Retrieved from: https://www.chcs.org/resource/understanding-effects-trauma-health/.

Levy, J., & Johnson, R. (2017). Cross-cultural dialogues on homelessness. Ann Arbor, MI: Loving Healing Press.

Robinson, C. (2011). Beside one's self: Homelessness felt and lived. Syracuse, NY: Syracuse University Press.

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The Effect of Visual Stimulation on Empathy and Creativity in the Design Process

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Maral Esmaeili, Oklahoma State University
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ABSTRACT

Empathy and creativity are relevant within the interior design field because they increase the quality of the overall design and experience. Empathic design is defined as "the attempt of the designer to get closer to the lives and experiences of users, in order to increase likelihood that the product or service designed meets the user's needs" (Koskinen, 2003), and creativity is defined as the "synthesis of new ideas and concept through the radical restructuring and re-association of existing ones" (Heap, 1989). Empathic design pushes innovation beyond producing the same thing (Leonard & Rayport, 1997) and is considered an important element in Design Thinking and Human-Centred Design (Tschimmel, 2012). Research has shown that empathic research and design approach is very valuable in the early stages of design (Mattelmäki, Vaajakallio, & Koskinen, 2014). Studies have shown correlation between empathy and creativity (Takeuchi et al., 2014; Carlozzi, Bull, Eells, & Hurlburt, 1995;). Meiring presents the measurement of empathy through cognitive load levels, stating that if cognitive load is high, empathy levels have been observed to be lower (Meiring, 2014). Also, according to Roskes, through his research low levels of cognitive load have shown to correlate with high levels of creativity (Roskes, 2012).

This study focuses on the problem of the lack of empathy in the design and implementation of urban furniture design, specifically for the disabled population. This has been observed by Mogadam (2015), who has found strong evidence which suggests that urban furniture has not yet been able to accommodate the disabled population.

In this study a protocol analysis is conducted to compare how empathic and creative design is affected by visual stimulation of disabled individuals who struggle with the use of urban furniture. Six participants were randomly assigned to three groups: One group viewed a 360 video of a first-person view that described homelessness/disabled individuals through a Virtual Reality head mounted display, the second group viewed the same video but not in a first-person view, and the third group were not provided a video. All participants were then provided with a design brief to design a piece of urban furniture.

The design process of all participants was video, and audio recorded then coded and analyzed using think aloud protocol analysis. Additionally, they were required to wear a Functional Near Infrared Spectroscopy (fNIR) device while designing. The fNIR device assisted in the calculation of cognitive load which was corroborated through questionnaire data collected post hoc through the NASA TLX tool.

The results suggest that when participants are shown a visual representation of disabled individuals struggling to use urban furniture, their cognitive load levels will decrease, and their empathy and creativity will increase in their designs.

REFERENCES

Leonard, D., & Rayport, J. F. (1997). Spark innovation through empathic design. Harvard business review, 75, 102-115.

Mattelmäki, T., Vaajakallio, K., & Koskinen, I. (2014). What Happened to Empathic Design?. Design issues, 30(1), 67-77

Meiring, L., Subramoney, S., Thomas, K. G., Decety, J., & Fourie, M. M. (2014). Empathy and helping: effects of racial group membership and cognitive load. South African Journal of Psychology, 44(4), 426-438.

Mogadam, M. D. (2015). Urban Furniture for Disabled People in Designed Fabrics. Advances in Environmental Biology, 9(2), 1037-1041.

Roskes, M., De Dreu, C. K., & Nijstad, B. A. (2012). Necessity is the mother of invention: Avoidance motivation stimulates creativity through cognitive effort. Journal of personality and social psychology, 103(2), 242.

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Understanding The Meaning Individuals Attribute to Adverse IAQ, a Phenomenological Study of People and Their Workplace

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ABSTRACT

Indoor air quality (IAQ) describes how indoor air can affect a person's health, comfort, and performance (Environmental Protection Agency (EPA), 2018a). Adverse IAQ can be defined as the presence of toxic chemicals or compounds (including biological) in the air at levels that pose health risks ranging from minimal to very high. There is no nationwide monitoring network that routinely measures air quality inside a statistically valid sample of homes, schools, and office buildings (The United States Department of Labor, n.d.). This does not mean that nothing is known about the broad range of IAQ issues and associated health effects. Rather, information and data on these issues can be gathered from government publications, scientific literature, and is presented in a frequently updated report by the EPA, called the Report on the Environment (ROE). The ROE shows how the condition of the nation's environment and human health is changing over time (Environmental Protection Agency (EPA), 2018b).

The self-reported experiences of office workers regarding the phenomenon of suffering from adverse IAQ is missing from scholarly work. Research into indoor air pollution in the context of sick building syndrome (also called building-related illness (BRI)) has concentrated efforts to collect quantitative building data or physical health outcomes. Lost from this important research is understanding, recognizing the context, personal stories, and insight of employees who experience this phenomenon. Studying these personal and emotional reactions provided a deeper understanding about the impact of adverse IAQ on the quality of life of these building occupants.

A hermeneutic phenomenological approach was used to address the question. 'What is the meaning individuals ascribe to adverse Indoor Air Quality in their workplace?' Five interviews of university employees working in a university-owned and operated office building were undertaken in the Fall of 2018 which incorporated art prompts, interviews, and observations (A minimum of five participants is necessary for a phenomenological study to sufficiently describe the phenomenon of interest and address the research questions (Creswell & Poth, 2018)).

The participants' rich narrative contributed to the understanding what these five employees felt while experiencing adverse air quality conditions. Employees with allergies or immune deficiencies experienced feelings of being misunderstood, not taken seriously, and additionally faced a host of complicated social interactions with their employers, supervisors, co-workers, and family because of health ailments they attributed to their workplace. These associations simultaneously connected them with others living with the same diminished quality of life, yet created divides between their work relationships. A multitude of complex social, behavioral, and communication factors, including place detachment (Scannell & Gifford, 2010), use of medications, and seeking social support, were used to better their situation.

The central theme of their stories was their assessment of their workplace as being *sick* or *the problem* and a major contributor to their illness. To the participants, the building developed a stigma due to campus-wide legacy stories, observations, age of the building, and daily experiences. Other sub-themes became apparent such as: (i) support and validation versus ambivalence; (ii) mistrust of employer; (iii) diminished quality of life; (iv) well-developed coping mechanisms; and (v) control

Conceivably, the most surprising element of their stories was the importance of positive human relationships. While we live in a society where it seems people are increasingly engaging in virtual relationships, this exploratory study illustrates that face-to-face time at the water-cooler may strengthen the bond between colleagues to the point where people will value that relationship over their own health concerns.

REFERENCES

Creswell, J. W., & Poth, C. N. (2018). Qualitative inquiry & research design: Choosing among five approaches (4th ed.). Thousand Oaks, CA: Sage.

Environmental Protection Agency (EPA). (2018a). Fundamentals of indoor air quality in buildings. Retrieved from https://www.epa.gov/indoor-air-quality-iaq/fundamentals-indoor-air-quality-buildings.

Environmental Protection Agency (EPA). (2018b). Report on the environment, indoor air quality Indicators: What are the trends in indoor air quality and their effects on human health? Retrieved from https://www.epa.gov/report-environment/indoor-air-quality.

The United States Department of Labor, O. S. a. H. A. O., ,. (n.d.). Indoor Air Quality. Retrieved from https://www.osha.gov/SLTC/indoorairquality/.

Scannell, L., & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. Journal of Environmental Psychology, 30(1), 1-10. doi:10.1016/j.jenvp.2009.09.006.

Social & Environmental | Scholarship of Teaching & Learning | Presentation

Empathetic Design Studio: Projects + Strategies + Reflection

Tina Patel, Kent State University
Bridget Tipton, Kent State University

ABSTRACT

Introduction:

The term empathy is often conflated with similar terms, such as sympathy and compassion; however, they are not interchangeable. Sympathy is defined as sharing (or having the capacity to share) the feelings of another. Viewing the client with sympathy is a passive engagement, where the sympathizer's worldview is not changed by the encounter. Conversely, engaging the client empathetically is an active discourse, where the empathizer partially abandons the stability of their worldview to align viewpoints with that of the end users of the designed space. The destabilization of one's worldview breaks down the traditional notion of "self," and the once-distinct "other" is no longer a foreign construct but one with an identity and significance that emerge through interaction (Nelems & Theo, 2017)

Recognizing these distinctions—sympathy and empathy, the self and other— the interior design studio culture allowed students to change naturalized perspectives and positions. This presentation will discuss the two projects introduced in a senior ID studio with a pedagogical approach to be a participatory, self-reflective act where the students could learn to question their own assumptions when confronted with the unfamiliar experiences of another. This involved constant reflection, understanding and respect from all participating members, not just the account of one individual's imaginative projections.

Projects:

The first project focused on designing the Learning Resource Facility and Café to provide a path towards independence and employment for transitional adults with intellectual and developmental disabilities. The purpose is two-fold: take the socio-political approach to training persons with disabilities by providing an inclusive opportunity where one can experience a meaningful opportunity, while addressing society's assumptions about the nature and meaning of disability, thus changing the way people recognize, value, accept, respect and include other people (A Non-Profit Coffee Café, 2019)

The second project was a student competition, focused on a place of hygiene for people experiencing homelessness. Homelessness is a complex issue, embodying diverse cultural problems including poverty, discrimination, lack of affordable housing, crime, violence, migration and mental illness (Boumohl, 1996). To engage with this issue was to confront the tragic outcome of the sum of our cultures' social ills—and yet, built an environment that would hold great promise to operate as a tool for change and progress (Pable, 2007).

Process:

The students conducted qualitative, quantitative, primary and secondary research to understand all the familiar parameters and unfamiliar territories. The students constantly reflected on the information gathered to reframe the design challenge given to them with insightful deliberation through a series of exercises/strategies built into the design process. These strategies were derived after reading the work presented by various contemporary design researchers, like Kumar & Curedale. Once the students understood the dimensions of this design situation; acknowledged for and with whom they were designing, they started reframing the problem to identify the scope and provided design solutions reflecting empathy.

Projected Outcomes:

In terms of academic benefits, each stage of the project provided students with new skills and understanding of the problem and design process. These projects offered students both a real setting, as well as users and design criteria to work with. It also provided students an opportunity to define the problem and project goals based on observable environmental variables, user input, and research. Overall, the experience increased students' sensitivity and empathy to challenges and issues in the community through a design experience in an authentic real-life setting.

REFERENCES

Baumohl, J. (1996). Homelessness in America. Phoenix, AZ: Oryx Press.

Curedale, R. (2013). Design methods 1: 200 ways to apply design thinking. Topanga, CA: Design Community College.

Kumar, V. (2013). 101 Design methods: a structured approach for driving innovation in your organization. Hoboken, NJ: Wiley.

Nelems, R. J., & Theo, L. (2017). Introduction: Exploring Empathy. Exploring Empathy. doi: 10.1163/9789004360846_002

Pable, J. (2007). Interior Design Homeless shelter design: a psychologically recuperative approach. Journal of Interior Design, 32(3), 93–108. doi: 10.1111/j.1939-1668.2007.tb00543.x

PROJECT BRIEF

PROJECT 1: LEARNING RESOURCE FACILITY & CAFÉ

I. PROJECT INTRODUCTION:

Humans are full-bodysensors that are always working, influencing our mood, behavior, and well-being in any given space. What if any or multiple of these sensors fail to function properly? Typically, if someone is living with an impairment to any of their sensory elements and has become a permanent impairment they would automatically be known as disabled. According to the World Health Organization (WHO), disabilities is "an umbrella term covering impairments, activity limitations and participation restrictions. It involves the negative relations between an individual (with a health condition) and their contextual factors (environmental and personal factors)". Types of disability depend on how the person is affected, with the most significant being intellectual, physical and sensory.

American Association on Intellectual and Developmental Disablities define *Intellectual disability* as a disability characterized by significant limitations in both **intellectual functioning** and in **adaptive behavior**, which covers many everyday social and practical skills. This disability originates **before the age of 18**. *Intellectual functioning*—also called intelligence—refers to general mental capacity, such as learning, reasoning, problem solving, and so on. *Adaptive behavior* is the collection of conceptual, social, and practical skills that are learned and performed by people in their everyday lives.

The majority of adults with intellectual and developmental disabilities (I/DD) are either unemployed or underemployed, despite their ability, desire, and willingness to work in the community. The United States Bureau of Labor Statistics (BLS) regularly reports that the percentage of working-age people with disabilities in the labor force is about one-third that of persons with no disability. On average, workers with disabilities face significant gaps in pay and compensation, compared to workers with no disability. Additionally, about one in three employment discrimination charges filed with the United States Equal Employment Opportunity Commission allege discrimination on the basis of disability (often, in combination with charges of other types of discrimination).

Without improving the world's accessibility, we do a disservice to the disabled. The quality of life for those living with these struggles is reduced as we limit them from living up to their full potential.Keeping this in mind the purpose of this project is to provide a prototype for specialized café setting, where supported employment (SE) training is extended for any transitional adult with intellectual or developmental disability after graduating high school.

II. PROJECT OBJECTIVE:

Your client for this project is Whole Latte Love Café, founded by Beth Humbert. Scott & Beth Humbert are the proud parents of three daughters, with their youngest, being labeled as a person with a disability. "What a difference one soul can make! Psalm 139 tells us we have all been purposefully and wonderfully made and Caroline's purpose is to shine a light on how people view other people. Our lives have been forever blessed", reports mother & Founder / CEO, Beth Humbert. As an advocate for inclusion and change, Beth has dedicated her career to making a difference. After being inspired by her daughter's love for serving others, Whole Latte Love Café, Inc. was organized. You can learn more about this foundation by visiting the website: https://wholelattelovecafe.org/.

This project will be completed as a collaboration of student teams. Your team will design the prototype for this café and training center. The project will focus on research, ideation and final design presentation for the reuse of the existing building. Many individuals of all ages living with varying invisible disabilities require a specialized learning resource facility to help facilitate their basic learning styles, incorporate activities of daily living, as well as socially appropriate skills. Other aspects of life include identifying how to live independently, socializing, acceptable behaviors and competitively working. The Learning Resource Facilty assist individuals with learning more about their interests, skills & preferences, as well as connecting them to their communities either through participating in social activities, volunteering or competitive employment and living independently.

The main goal of this facility is to provide a path towards independence and employment for transitional adults with intellectual and developmental disablities. The purpose is two-fold: take the socio-political approach to training persons with disabilities by providing an inclusive opportunity where one can experience a meaningful opportunity, while addressing society's assumptions about the nature and meaning of disability, thus changing the way people recognize, value, accept, respect, include and congratulate other people.

Students shall develop an understanding of a focus on specialized populations; in this case Intellectal and Developmental Disablities and also the mission and vision of the client. Students will also gain an understanding of the significance of working in teams and that design is best served by a team of people rather than a single designer. Teams are required to research and explore current advancements and future innovations. Design with the understanding of future development and growth of the environments they design. Allowing for innovations to be easily implemented into what will become a future existing environment with limited disruption. Designers must also be aware and understand that human behaviors and expectations contribute to the adoption or rejection of innovation. Gaining the knowledge of these behaviors and expectations will guide designers in designing an environment that makes it easier for the adoption of future innovations – "Build for today design for tomorrow:"

General Project Program:

1. General Program:
    - Phase 1: Café: (maximum occupany 49)- This space is approximately 2000sqft.
        - Coffee and Food Prep Area
        - Coffee Bar, with display for baked goods and snacks
        - Kitchen Area and Storage (calculate the % requirement for café)
        - Seating for users (provide variety of seating for 40 people)
        - Manager's Office- 150 sqft.
        - Restroom
        - Employee's Sensory Friendly Break Room (Flex Space)- 250 sqft

    **Please note: The client's goal is to hire up to 12 trainees, operating 2 shifts (their waivers only support working 5 hours/day) - so 5 or 6 trainees + 4 support staff per shift.*

    - Phase 2: Training Facility (welcoming space for parents and youth)- separate entrance
        - Reception space (receptionist, file storage, please follow HIPPA regulations)
        - Counsel Rooms (total 3, 150 sqft)
        - Training Room (sensory friendly) for approximately 8 to 10 people.
        - Restroom

III. DESIGN STRATEGY AND PHASING:

Critical to the start of every project, research, investigation and a thorough understanding of the project, client and context are imperative to providing a successful, well thought out design. Context refers to everything from the physical space or in cases of new construction the site, adjacent site context i.e. buildings, streetscape, landscape, bus stops, sidewalks, etc., adjacent uses, neighborhood characteristics and regional characteristics. Beyond the physical it's also critical to understand the history and future goals and initiatives of the context. Learning how to compile contextual research and programmatic data, leads to the implementation of an appropriate solution meeting the physical, economic, social and psychological values and needs of the project.

This project consists of 3 phases: Pre-Design (Research and Programming), Concept and Schematic (pin-up), and Design Development (Digital Presentation and model).

IV. DIVISION OF WORK:

This project is being done in teams of 2. The benefits of team work experiences cannot be understated, and this opportunity will enable each student to take a complex project farther than they could take it on their own and is great training for work in the field, the vast majority of which is done collaboratively. To make sure that the logistics of the project are considered, and the optimal learning environment is achieved, the following guidelines must be followed.

Each team must use a project planning sheet and determine *in advance* how the work is to be accomplished. The document must identify:

1. Tasks* (concept statement, bubble diagrams, E-W section, etc.)
2. Person responsible for each identified task
3. Due date for each task
4. Date the deadline was met by the responsible person, and if not, on what date it was complete
5. Schedule of team meetings outside of class (to augment studio time). A minimum of two time per

week in addition to studio time must be identified. Meetings can be cancelled if not needed (decision must be unanimous), but all students must commit to meeting times; times must be decided collaboratively

Appedix A: Empathy Exercise: Focus -Developmental Disabilities

Autism is a developmental disability that usually appears during the first three years of life. The cause is unknown. It affects how a person's brain works, but not all people with autism are affected the same way. When a person has autism, they may have challenges: letting you know what they want; are thinking; understanding what other people say or want; ignoring sounds; ignoring things or people that are moving; ignoring lights; being touched; understanding social rules; showing affection; controlling their feelings; knowing how to play with other kids; and dealing with changes. Autism is a "spectrum disorder." That means that not everyone with autism has all the problems.

This activity is designed to show how people with autism are bothered by things most people do not notice. People with autism are often extra sensitive to noise, movement and even things like background noises most of us do not notice. Remember, not everyone with autism has faces these same challenges.

We will work on this exercise in team of 5.

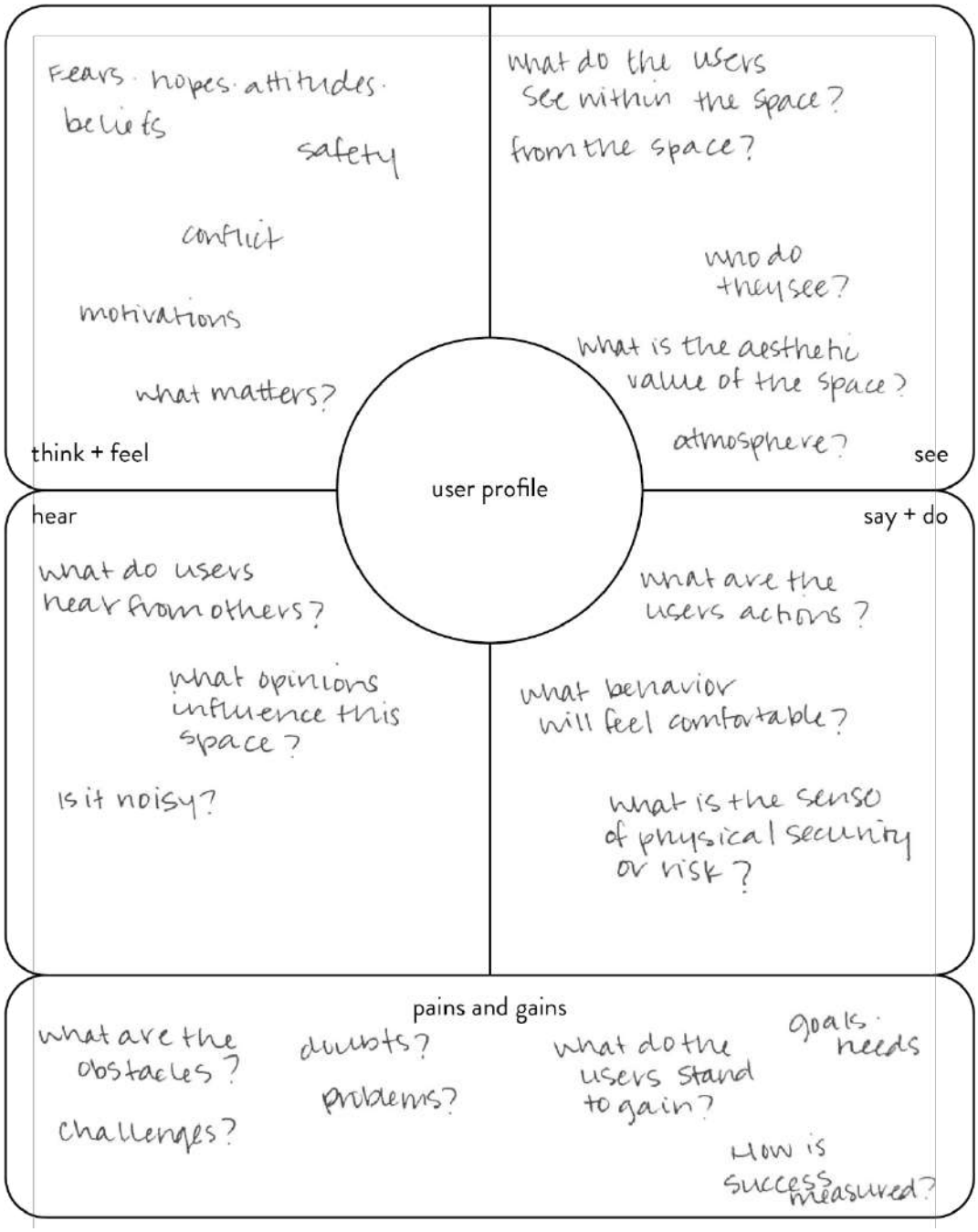
Person #1 - You will play the part of a person with autism. Your job is to try and listen to what Person #5 is reading to you so you can take a test on the material. Try to ignore everyone else.
Person #2 - Stand behind the student playing the part of someone with autism. Rub the edge of an index card (or piece of cardboard) against the back of their neck. You do not need to rub hard but keep doing it over and over.
Person #3 - Grab a book (any book will do), lean close to Person #1 and read in a loud voice the entire time.
Person #4 - Pat Person #1 on the head and shoulder the entire time.
Person #5 - Using a normal voice, read a paragraph to Person #1 then ask them questions about what you read. Do NOT try to drown out the other noises.

All students will take a turn being Person #1 before discussing the exercise. Reflect and Share:
How did it feel to be have so much commotion going on? Did it make you want to scream or get away?
Were you able to concentrate on the paragraph being read? What might have helped?

Appedix B: Empathy Map

An empathy map is a tool that helps the design team to empathize with the people for whom they are designing. It helps to map the users' thoughts, feelings, needs, motivations, attitudes, and beliefs, issues. Through primary and secondary research, you have attempted to understand people experiencing homelessness. Think about the client's persona. Give them a name, sketch their profile and fill in the four quadrants with their needs in mind.

Reflect on these and discuss- keep the good ones and discard rest.



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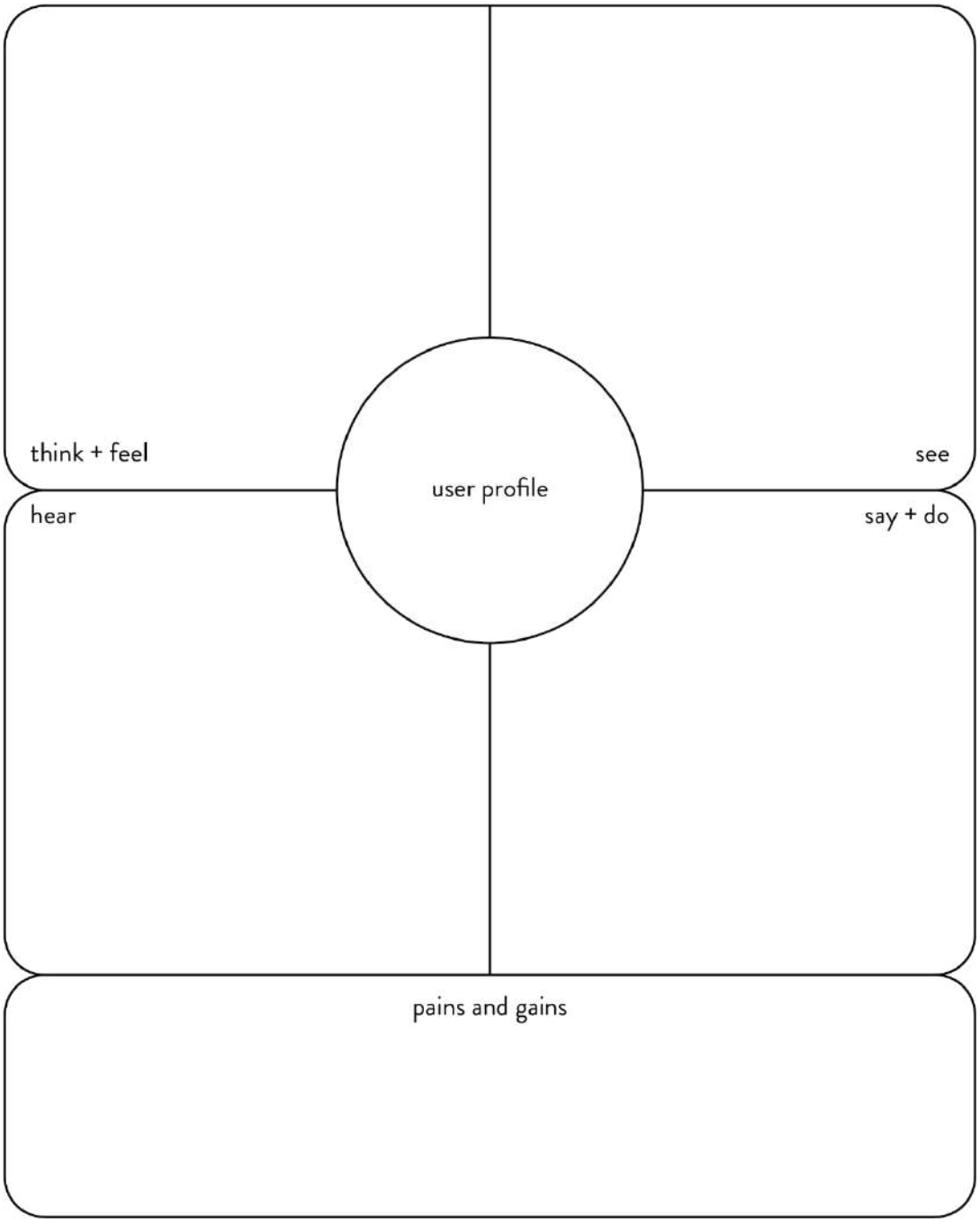


RESEARCH AND SCHOLARSHIP ROUNDTABLES

Open Track | Scholarship of Design Research | Roundtables

Ready for the Shake-Up? The Technology-Driven Future of Interior Design Education and Practice

Lyndsey Miller, Mississippi State University

ABSTRACT

What will the profession of interior design look like in five to ten years; and with that how will higher-education adapt? Furthermore, how can interior design education remain relevant in this rapidly changing, technology driven industry? Are we doing enough?

Recently, this researcher attended Digital Built Week North America, an event that brought together over 800 architects, designers, BIM managers, contractors, and engineers to discuss emerging technologies and the future of the Architecture, Engineering, and Construction (AEC) industry. Coupled with the event was Design Technology Summit, a full day round table experience which included only 40 selected attendees from the entire conference; this researcher being one of two educators in attendance. The session ignited discussions on the latest technology and how to manage the influx of new technologies while still being productive. Between topics of Assistive Intelligence, Culture, Product Management, Business Management, and Professional Development, it was made clear that the AEC industry is ripe for change in process, outcomes, methods, and means all as a result of advancements and implementations of technology. Whilst predicting an exacting future is impossible, there are some key shake-ups in the world of higher-education, technology, and interdisciplinary practice that, when analyzed, can help prepare us for this rapid evolution.

The current generation of traditional college students, categorized as Gen-Z, represent a new mindset on education. This generation prefers a student driven learning process with prioritization on skills, both hard and soft, over facts. They posit that technology is fundamental in the learning process and that it provides the much-needed immediate access to information,

given that the average Gen-Zer has an attention span of eight seconds. Contrasting past generations, this group would rather find a mission than a major, and would prefer a personally designed curriculum, rather than a prescribed track. These unique curricula also foster interdisciplinary learning. With the rising cost of education, it is imperative that steps be taken to justify value and align with this generation's preference for training.

Congruent to shifts in education are shifts in technology. Machine learning, artificial intelligence, assistive intelligence, automation, generative design, virtual reality, algorithmic design, cloud-computing, metadata and big-data are all buzz words inundating the AEC industry. Furthermore, words like Dynamo, Grasshopper, Rhino, PyRevit, Unity, Unreal, Wombat, Lumion, Ladybug, Honeybee, Butterfly, and Dragonfly are the newest tools making waves in the workflow; this is only the tip of the iceberg. Based on a survey of recent interior design graduates, which can be found in the appendix, the technology being applied in practice only covers a small fraction of the tools that are available. The disciplines of architecture, interior design, engineering, and construction could very soon require a completely new skill set for emerging professionals. Furthermore, the practice of these disciplines could become obsolete, paving the way for computers and programmers to assume the role of "designer".

With all these changes coming down the pipeline, this researcher is investigating the impact on interior design, an area not being examined in great degree; and furthermore, how changes will impact the role of interior design educators in higher education. The AEC and design industries are set for changes in process, driven by technology. How will the interior design profession remain relevant? This round-table will discuss technologies, workflows, and impending role shifts that will affect interior design and its interdisciplinary partners and how these changes will affect design education and the Generation Z student.

REFERENCES

Bernstein, F. A. (2019, February 4). Technologically Savvy Firms Expand the Definition of Practice. Retrieved from https://www.architecturalrecord.com/articles/13466-technologically-savvy-firms-expand-the-definition-of-practice

Mitchell, J., & Silver, M. (2019, April 15). How to Make College More Relevant for Gen Z. Retrieved from https://psmag.com/ideas/gen-z-how-to-make-college-more-relevant

Hubbard, B. (2019, April 29). Will Automation Destroy Architecture? What You Need To Know. Retrieved from https://www.thearchitectsguide.com/blog/will-automation-destroy-architecture-what-you-need-to-know

Winter, E., Gori, N., & Jasper, A. (2019, April 2). MOVE OVER, MILLENNIALS: GEN Z RULES THE DESIGN WORLD. Retrieved from https://www.newground.com/perspective/move-over-millennials-gen-z-rules-the-design-world

After surveying Interior Design Graduates between 2018 and 2019, the following shows current technologies being used in practice (Figures 2 and 3). The sample pool was 22 emerging professionals in 2019 and 21 emerging professionals in 2018; a total of 43 people. Those surveyed represent employees at small (0-25 employees), medium (25-75 employees), large (75-150 employees), and extra-large (>150 employees) firms across the country (Figure 1). The handouts for the roundtable will include a list of the vast array of current technologies and descriptions of each. Furthermore, the subsequent survey information will be distributed.

FIGURE 1. Size of firms from those surveyed

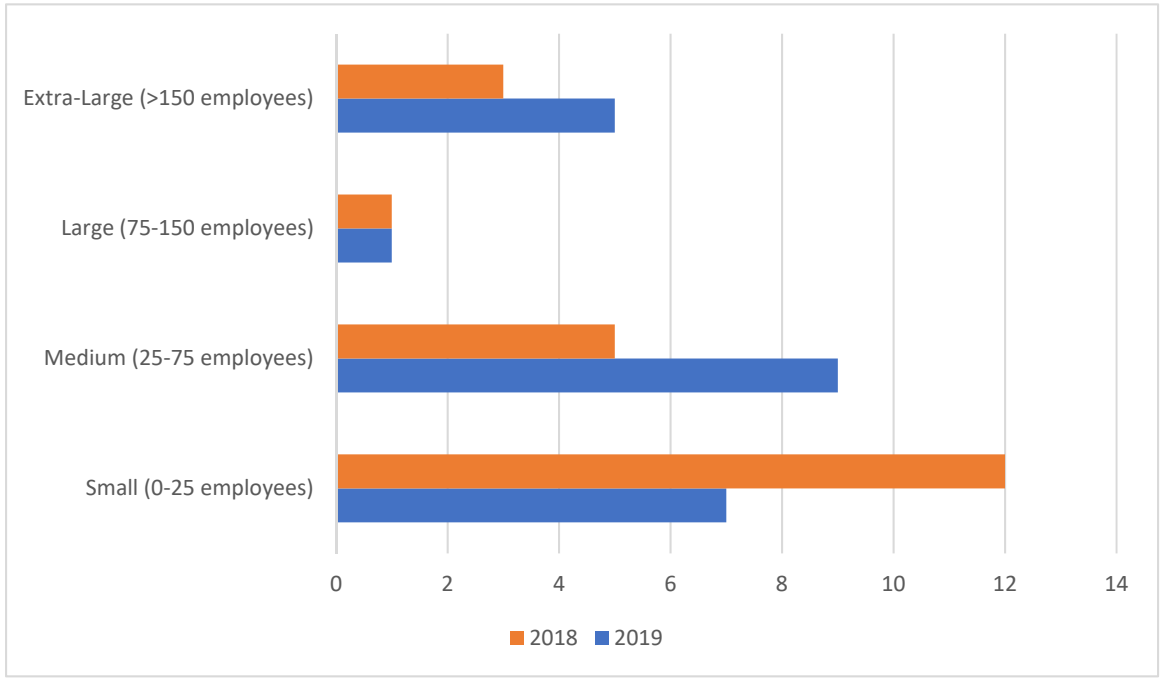


FIGURE 3. Technologies being used in Practice – Part I

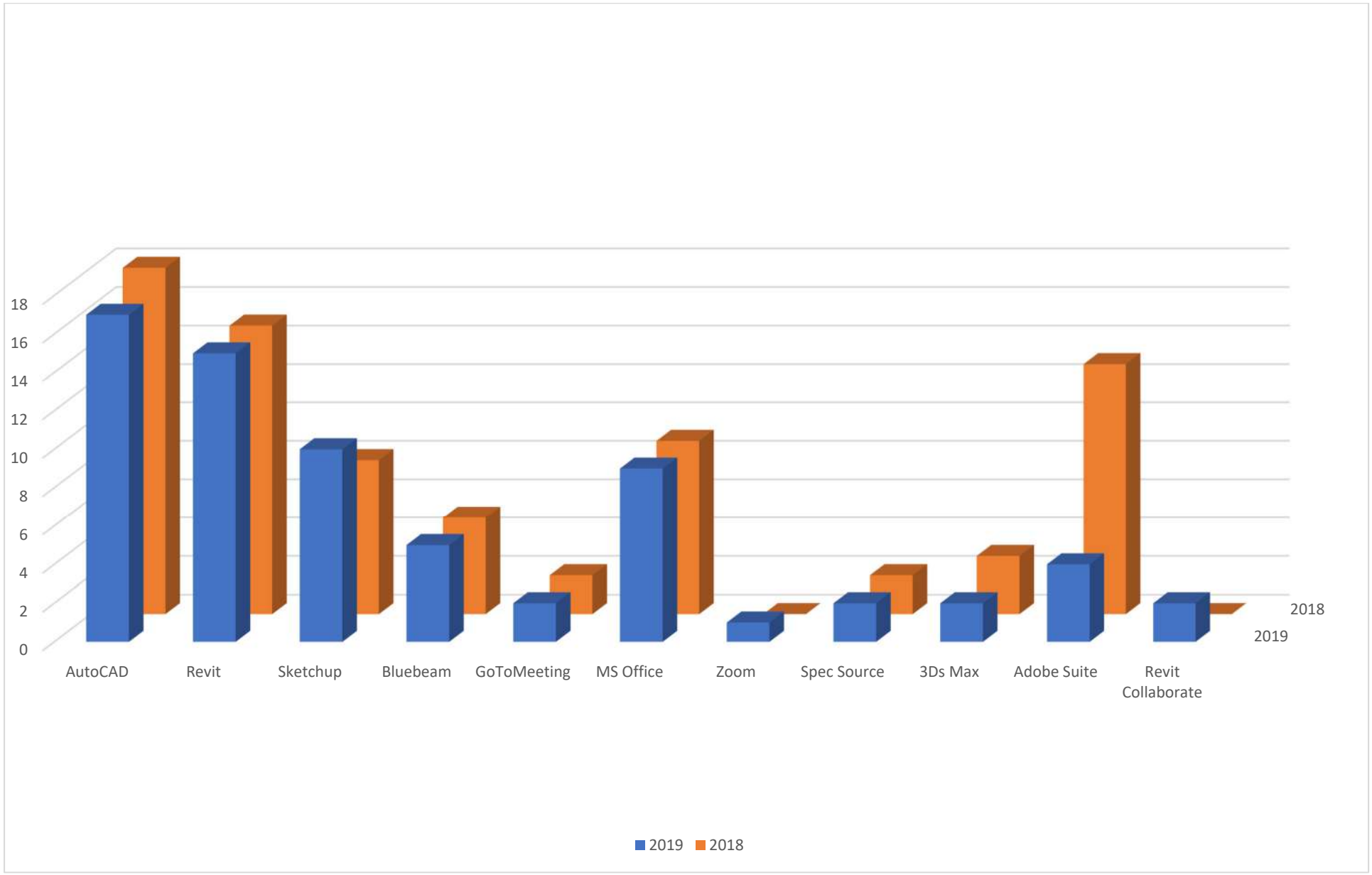
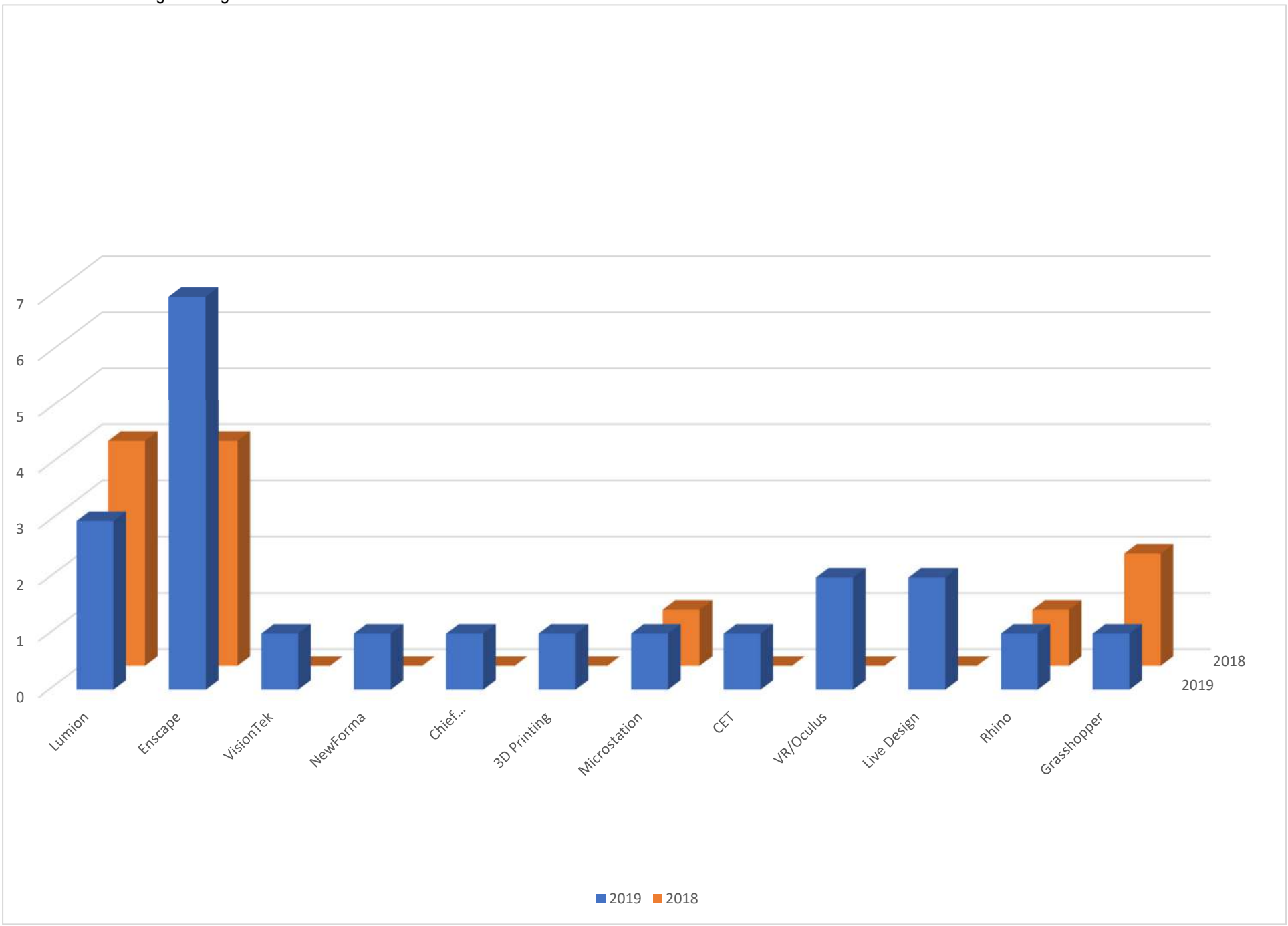


FIGURE 4. Technologies being used in Practice – Part II



Open Track | Scholarship of Teaching & Learning| Roundtables

Speculative Futures: Bodies, Infrastructures, and Interiors of Healthcare Design

Liz Teston, University of Tennessee

ABSTRACT

This presentation describes the methods and outcomes for a recent studio – comprising of 4th-year interior architecture and 3rd-year architecture students. This studio was funded by a professional organization, with the caveat that it focus on healthcare design. Many current offerings in healthcare design (courses, textbooks, curricula) are technically oriented. While this approach prepares students for the regulations of professional practice, it removes a humanist approach from design. Since well-designed sensory experiences help us heal, these studio investigations are at the scale of the BODY, INFRASTRUCTURE, and the INTERIOR. We focused on speculative futures and the relationship between psychology and technology in healthcare design. A Economist article speculates that the biggest driver in healthcare futures will be the integration of data and preventative medicine.1 Following this, students researched bodies and healing in speculative works by Lucy McRae 2 and Benjamin Bratton.3 It is the year 2035, and The Economists' predictions are the norm. Healthcare is focused on resilience, rather than illness. People in 2035 integrate monitoring systems into their bodies, brain-tech interfaces like digestible nanotechnology capsules, or slowing aging by using lab-grown, 3D-printed organs. These speculations are not far from reality. In 2019, researchers have developed nanotech wound-care capsules. Scientists use cryogenic-3D printing to create lung-like spongy structures. Liver-like objects are 3D-printed in labs, using human tissues. Students began by critiquing contemporary healthcare at the body scale. Perhaps a digestible capsule that enhances our experience. Or a 3D printed liver. Understanding interiority primarily as the spatial zone immediately surrounding our bodies, how can we shape robust interiorities that are technology-

mediated, resilience-focused, and operate at the scale of the body? Interdisciplinary collaboration in design practice promotes better design integration. This studio provides the opportunity for architecture and interior architecture students to collaboratively develop speculative futures. They developed a thesis on the social and cultural contexts of these interventions and at INFRASTRUCTURAL scales, including a regionally-scaled map that demonstrates the spatial relationships between the infrastructures, thesis, and potential sites. The layered, hybrid maps complement the representation of the earlier BODIES investigation for a cohesive final presentation at the end of the semester. Students-teams then developed the architectural INTERIORS, synthesizing narratives, bodies, and infrastructures through a multi-site interiors project. For example, the Osaka team studied the relationship of feelings of isolation to Japanese urbanism. Particular to Osaka, mental health is being addressed through different avenues such as cuddle cafes and love hotels. Human connection is enhanced by artificial means. Students created a journey that addresses mental health and encourages emotional acceptance through sensorial stimulation. The journey traverses the locations of cultural significance in Osaka. Participants sign-up for a group journey through the city. This journey is supported by a wearable device that amplifies the sensorial experience of the city, interactions between the architecture and the individual, and between group members. These effects include the feeling of a hug, a hand squeeze, a belly laugh, a kiss on the cheek, or the feeling of knowing an inside joke. As the night progresses, the group will go to the second location, Nakanoshima. Here, the kinetic, high energy pop-up syncs with the feels the group is having. The group will make their way to the Osaka Castle pop-up, a contemplative space that allows the user to find sensory fulfillment and acceptance amongst the group and oneself. This journey from synthetic to natural establishes self-awareness in the user and group connectivity. 4

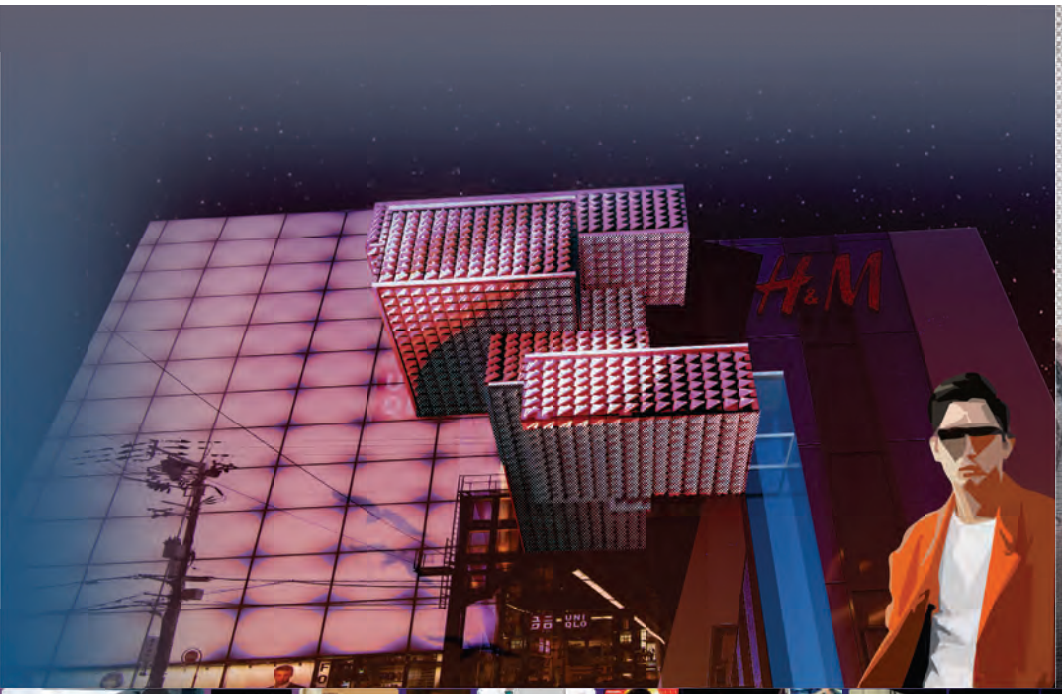
REFERENCES

https://thefutureishere.economist.com/healthcare/

https://www.lucymcrae.net/

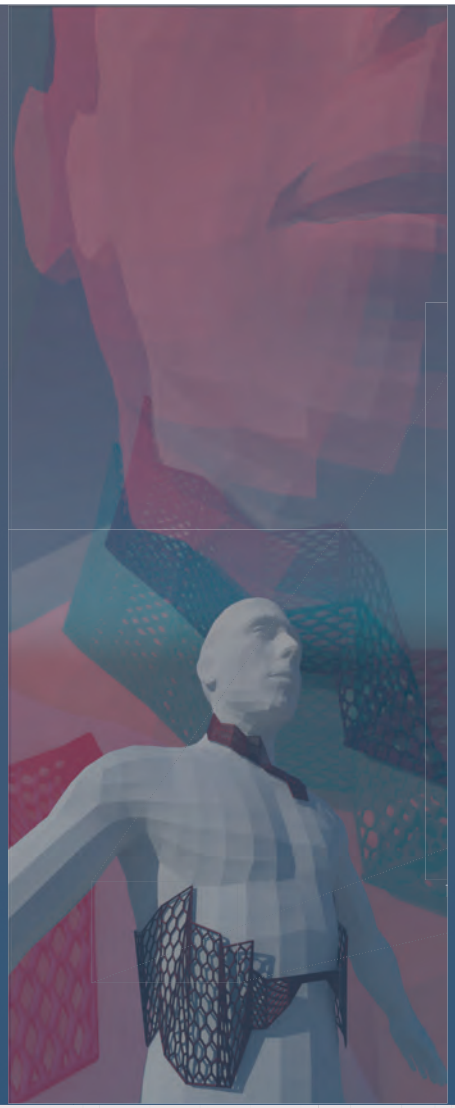
http://supercommunity.e-flux.com/authors/benjamin-bratton/

Student project narrative

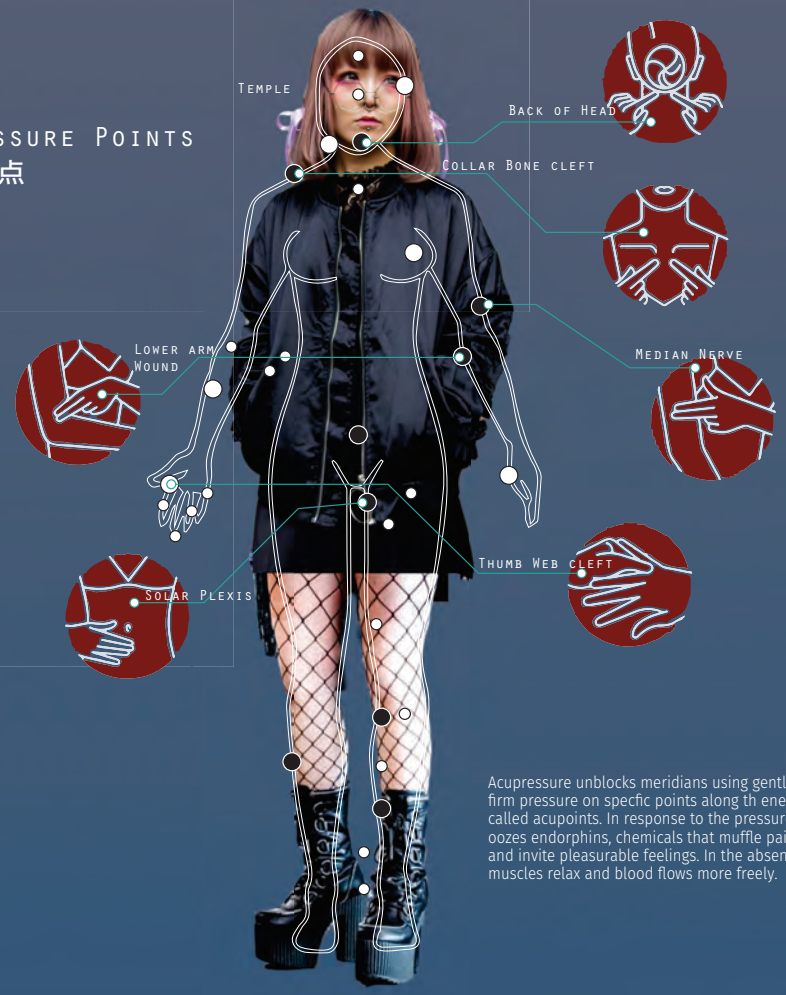

H&M


Hikikomori is a psychological condition which makes people shut themselves off from society, often staying in their houses for months on end
There is a large population in Osaka, but many people either don't interact or interact very little with each other.
DOTONBORI
At the Dotonbori location you will get to heighten your senses in the simulation rooms.
On the journey to the next site there will be many places to enjoy the great food of Osaka.


From the out-side of the Nakanoshima site you will be able to see the lights and people enjoying themselves.
Inside the Nakanoshima site is a place for fun and excitement
After exhausting yourself at Nakanoshima you will then move on to the Osaka Castle
Osaka Castle is full of history and there are many historical sites within the park.
The Osaka Castle site is a place to rest and for spiritual renewal.
The Sakura trees surround the Castle which creates a beautiful site every year.
After this journey one will feel more connected to themselves and the people around them.



Pressure Points
圧力点



Acupressure unblocks meridians using gentle yet firm pressure on specfic points along th energy lines, called acupoints. In response to the pressure, the brain oozes endorphins, chemicals that muffle pain signals and invite pleasurable feelings. In the absence of pain, muscles relax and blood flows more freely.


[ISOLATION]
[PERSONAL SPACE]
01 DOTONBORI
[INTERIORITY]
[PUBLIC SPACE]
[EXPLORATION]
[DISCOVERY]
02 NAKANOSHIMA
[CONNECTION]
[ADVENTURE]
[SENSORY STIMULUS]
[NEUROTRANSMITTERS]
02 NAKANOSHIMA
03 OSAKA CASTLE
[SENSORY FULFILLMENT]

TEACHING & LEARNING IN THE ROUND

Teaching & Learning in the Round

Game Based Peer Critique; Let's Make Critique Fun and Playful "Spin the Wheel"

Noorh Albadi, University of Minnesota
Meghan Hendrickson, University of Minnesota

ABSTRACT

In design education, critique is the most common presentation genre, and the most important aspect of the critique is the feedback. Blythman et al. (2007) described peer critiques "They are run by the student group with the instructor acting as a facilitator, and they are highly informal. Peers can give feedback to each other in many ways—verbally or as anonymous written comments given to the individual." This roundtable discussion will introduce a peer critique game that was designed by the author and used in a studio class for the last two years. Students who took part in the critique game said that it framed a productive critiquing session that helped to shape the way they think of what critiquing should be. They also said that it was fun, playful, and helpful.

This critique method promotes students' participation because of the game-like setting, while at the same time, the presenter is given the opportunity to reflect-in-action when receiving feedback for improvement based on the peer critique. Spinning the Wheel Critique is an activity that mimics a family board game. It gives design students the opportunity to focus on one element at a time and gives the presenter direct feedback; it also fuels a true and open discussion as students critique each other. Further, it provides the presenter with precise feedback on different elements of the design. The randomizing of the prompt tells the students which elements to give feedback about, which takes the pressure off a formal critique session. With the action plan sheet, the presenter will have a tangible document of feedback that will help him/her improve their work based on the critique.

According to Brown (2014), it is not easy for students to participate in critiques for a number of reasons: Some students, especially at lower levels, are new to design language, so they feel they do not have enough knowledge to contribute to the critique. Further, they do not want to express negative feedback that would hurt their classmates' feelings. Students are also afraid that when it comes to their own work, students will give them negative feedback, so they chose not to say anything. Other students simply do not care to share their opinions.

Students were asked about their critique experience before using the wheel and said "when we didn't have the game prompting us, I remember our feedback before that it was just kind of like "Oh yeah, your project is good, maybe you could try this." like we didn't have much to say…. And I think the game helped guide us".

Also, another student said "I think we're so used to critiquing kind of being like we have to do it in class and you don't wanna hurt anyone's feelings and you kind of like toll around that and it feels like a task than I think the game. It still feels like you're helping your fellow students and it still feels like a task but it feels a little bit more comfortable. It's a little bit more fun having the action of spinning the wheel. And like everyone was giggling about it so just felt a little bit more fun and playful but still felt like you're helping out your fellow classmates."

Furthermore, students, when asked about the game after two years of using it, said "I think we now consider giving more constructive feedback and we value it now. We look for constructive feedback rather than just getting complimented that our designs are good. We want people to tell us narrower specific things."

As shown above, the game tackled many of the issues that Brown (2014) raised about peer critique. The authors designed the Spinning the Wheel Critique as the balance between entertainment and learning. Therefore, the purpose of this roundtable discussion is to introduce a new game based peer critique idea, discuss the importance of peer critiques and how using game-based critiques can create enthusiasm for meaningful participation. The authors present this as a new peer critique that can be used in different design studio classes.

REFERENCES

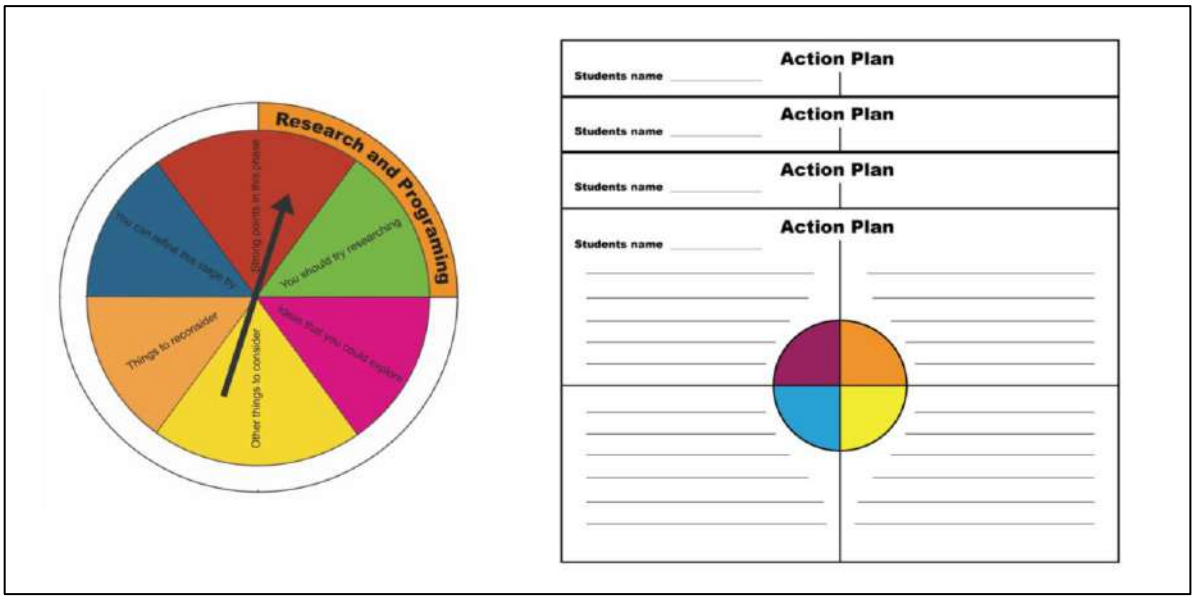
Blythman, M., Orr, S., & Blair, B. (2007). Critiquing the crit. Brighton: Art, Design and Media Subject Centre.

Brown, J. (2014). Peer critique: Two strategies for getting students to give feedback. Faculty Focus. Higher Ed Teaching Strategies from Magna Publications. Retrieved on 7 December 2016 from http:// facultyfocus.com/articles/effective-teaching-strategies/peer-critique-two-strategies-getting-students-give-feedback/

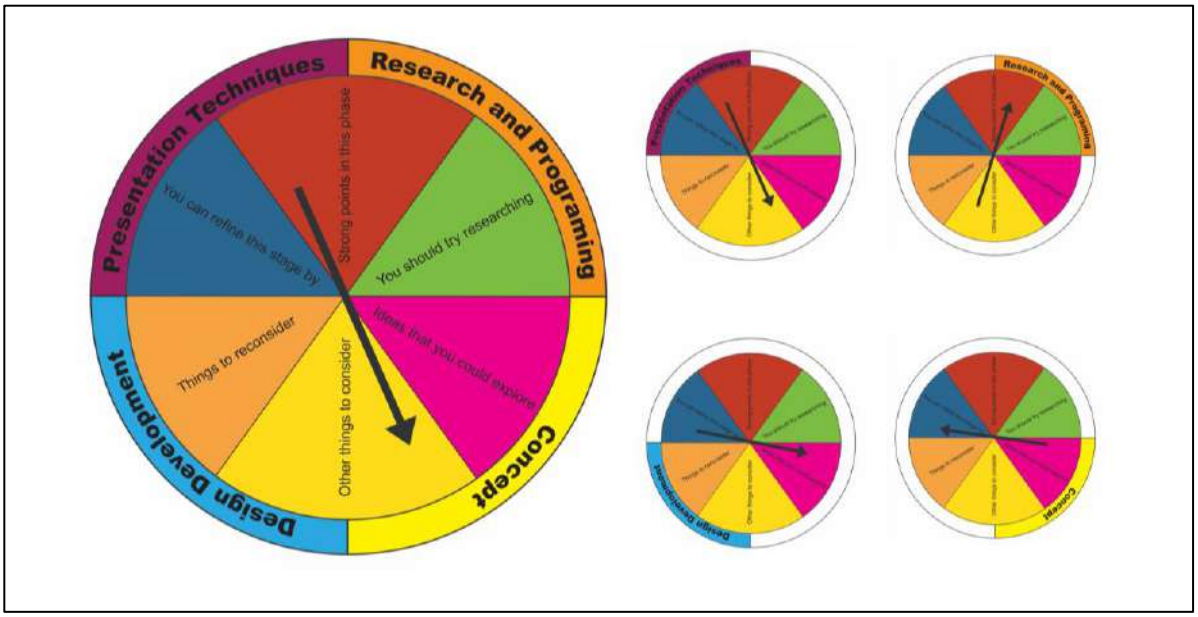
Kim, B., Park, H., & Baek, Y. (2009). Not just fun, but serious strategies: Using meta-cognitive strategies in game-based learning. Computers & Education, 52(4), 800–810. https://doi.org/10.1016/j.compedu.2008.12.004

Game based peer critique; let's make critique fun and playful "Spin the wheel"

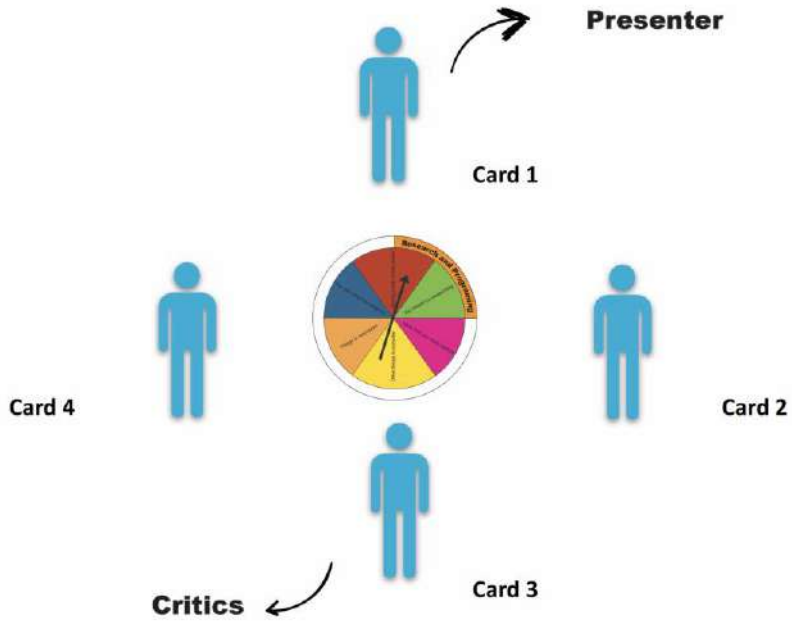
The Kit



The Wheel

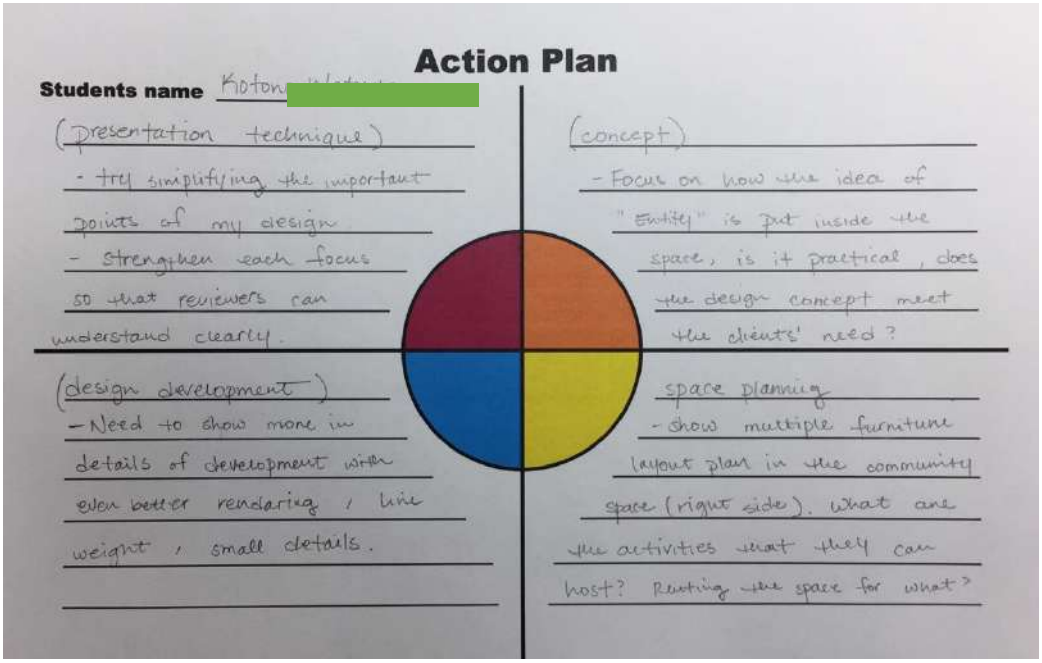


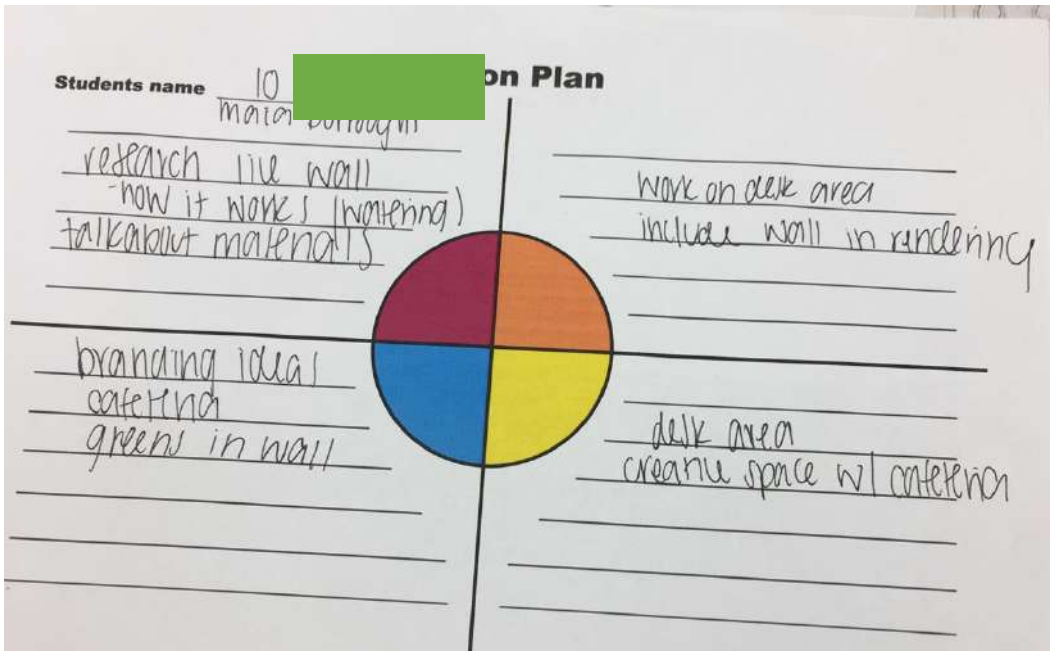
The Peer Critique Logistics for the" Spinning Wheel Critique"



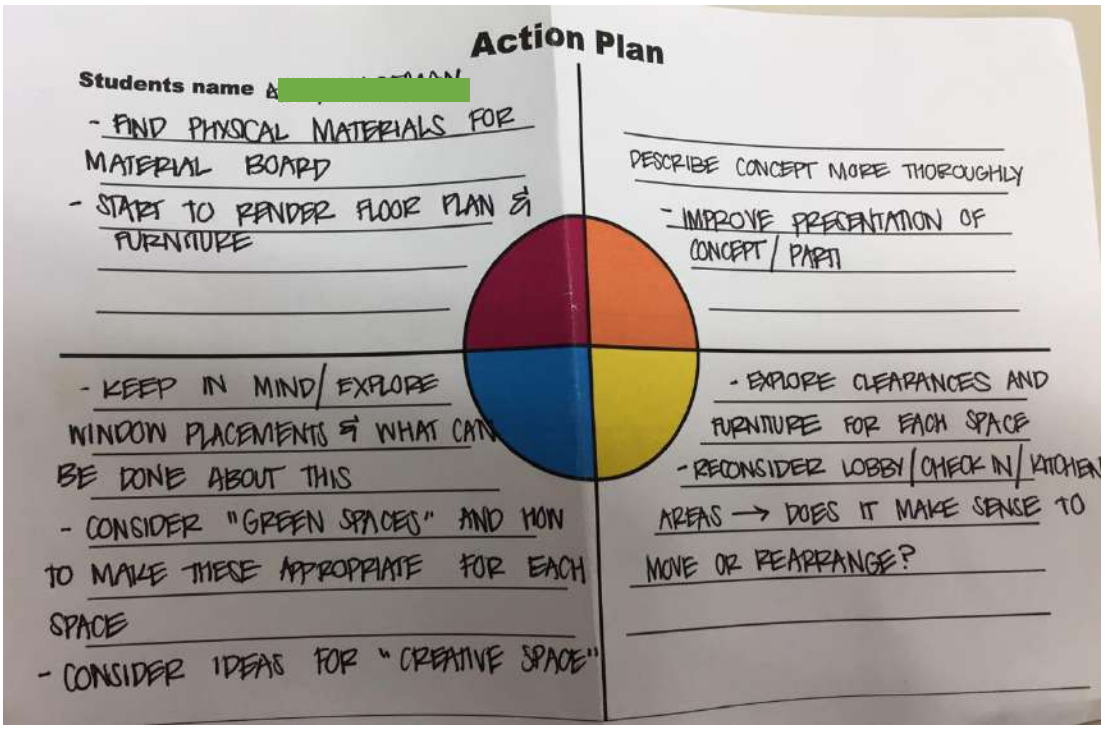
The physical wheel

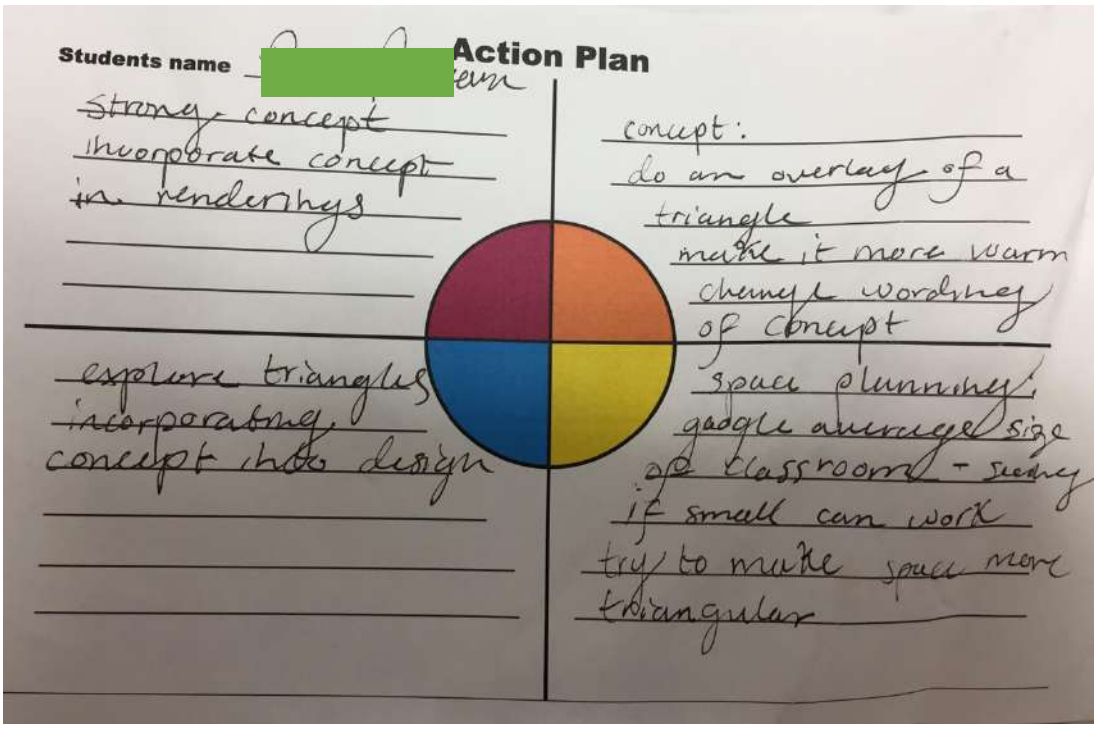
Students work





Game based peer critique; let's make critique fun and playful "Spin the wheel"





Teaching & Learning in the Round

Global Parti: From 2-D Evaluation to 3-D Exploration and Sustainable Application in Global Project Design

Jane Hughes, Western Carolina University

ABSTRACT

The purpose of this assignment is multi-faceted and was created in response for my need to incorporate global design awareness with a sustainability component, detailed construction drawings of a custom piece/element, and to elevate our students' creativity in project solutions.

The assignment explores the use of creating a Design Parti, through the identification of various elements and principles of design, incorporating those identified elements and principles into a working 2-D and then 3-D parti, and reinterpreting them into interior spaces or other interior products. Students then must create construction drawings of their piece, and identify the materials of which it will be constructed. Of these materials 75% must be native to the region and found within 500 miles for sustainability consideration.

This project begins with students selecting a Global location for their Senior Studio I, high-end luxury condo project from a list of international cities supplied by the faculty. The students then research the city and country of their choice and select an image for exploration related to the city/country that represents an emotion they would like to incorporate into their design solutions. The students begin by attributing an emotion to the image, such as vibrant, joyful, soothing, energetic, somber . . .

They then identify the various elements and principles identified within the image; line, shape, color, balance, repetition, scale etc. Then they create a 2-D parti providing a visual description of the image.

The students will then advance their interpretation of these same elements and principles into a 3-D model; allowing them to further recognize that this technique can be used to impart emotion into the physical shape and design of a structure.

This 3-D design is then used as inspiration for a custom piece or interior space that reflects the essence of the image without being a copy of it. The students are required to complete construction documents for their custom piece incorporating a minimum of 75% of locally sourced materials, which they identify and explain during their research phase.

Project Learning Outcomes:

- creative and functional applications of art and design theory complemented by products and processes and used to develop their interior solutions
- Exposure to global locales and global building materials
- manual methods of graphic visualization competently used to portray their solutions
- verbal explanations of their interiors

Outcomes Demonstrated through:

- 2-D hand renderings
- A competent level of presentation layouts through physical presentation boards
- A comprehensive analysis of an image regarding the elements and principles of design
- The creation of an appropriate 2-D parti based on the image analysis
- The creation of a well-crafted 3-D model incorporating the same elements and principles
- The creation of construction documents for the resulting design/product.

Project includes the following CIDA Standards:

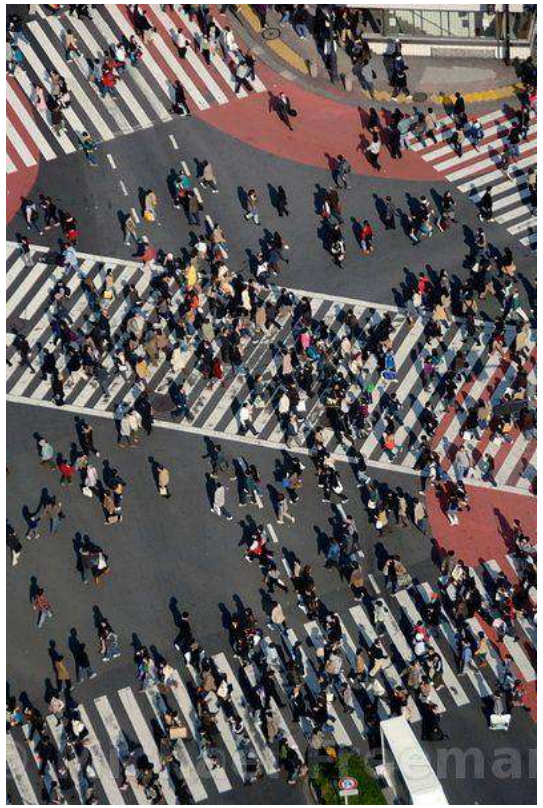
- 4a, 4f
- 6b
- 8d, 8e, 8f, 8g, 8j, 8k
- 11b
- 13c, 13d, 13f
- 15a, 15d

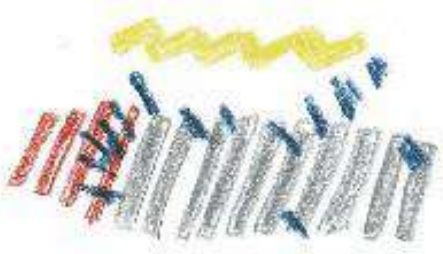
The presenter will provide a simple digital presentation demonstrating the process from start to finish of the project with student examples. The presenter will then lead the attendees through the process of creating their own 2-D parti based on supplied images of historic artworks attendees may choose from. Presenter will provide all materials needed to create the 2-D parti image such

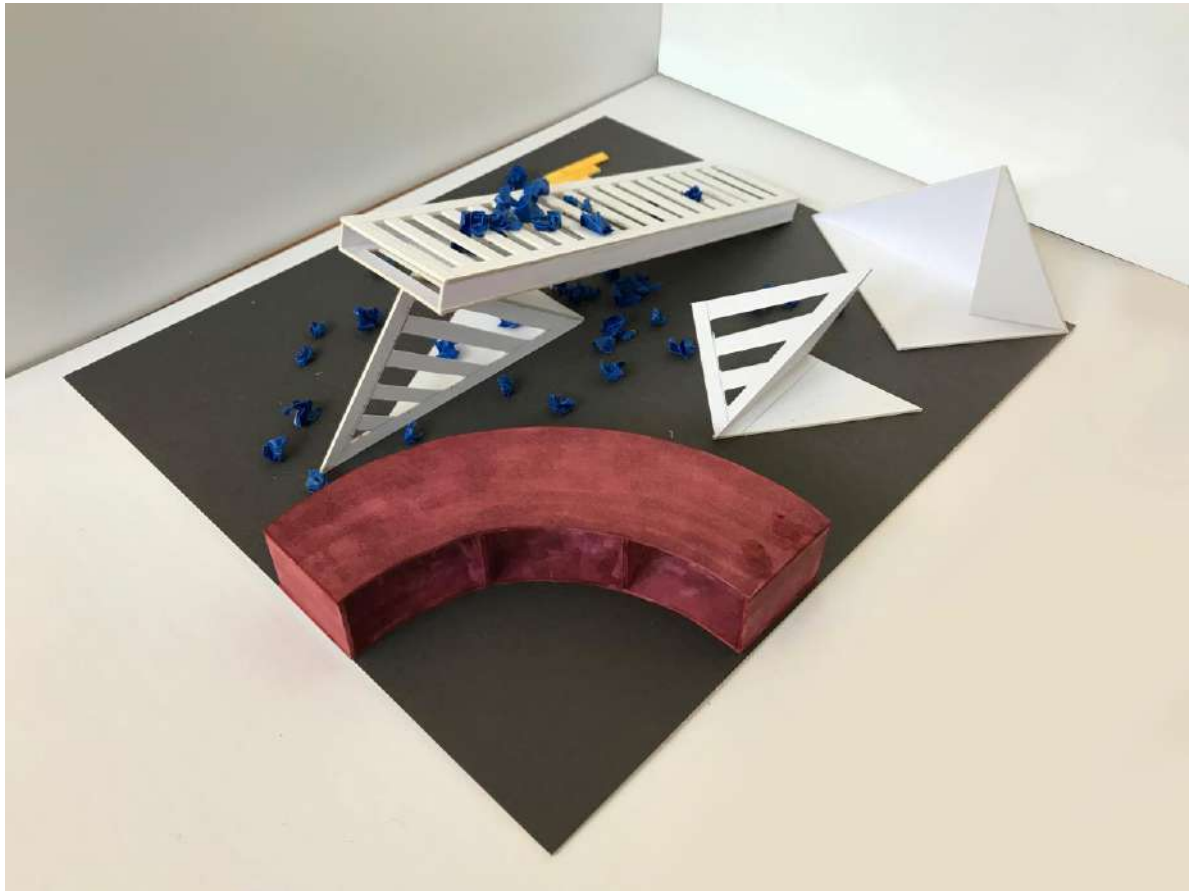
as colored pencils, paper and color images of original artwork for evaluation. Copies of written assignment and rubric will also be provided.

REFERENCES

Frank, P., and Preble, D. Artforms: An Introduction to the Visual Arts, 11th Edition. Pearson, 2014.





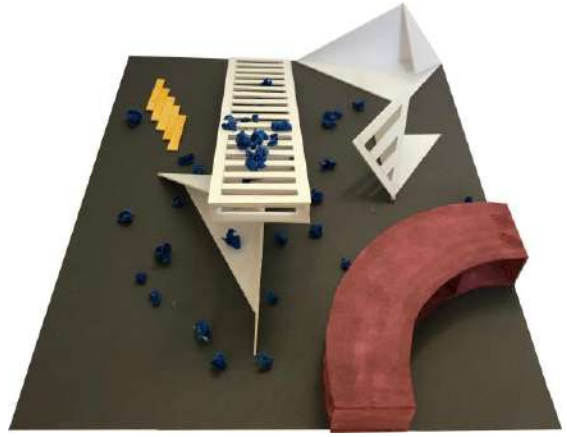


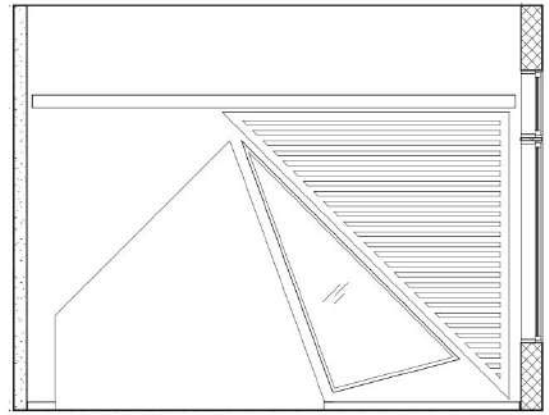
LINE: DIAGONAL, CURVILINEAR
SHAPE: GEOMETRIC
MOVEMENT: STATIC
COLOR: PRIMARY
BALANCE: APPROXIMATE SYMMETRY
RHYTHM: LINEAR, REPETITION

LIVELY

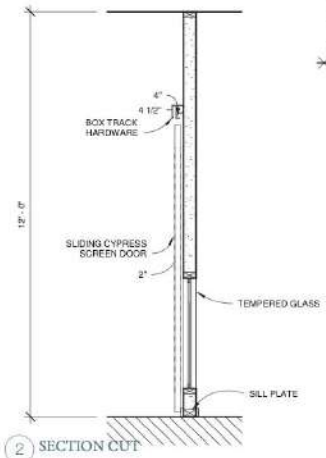
HECTIC

STRUCTURE

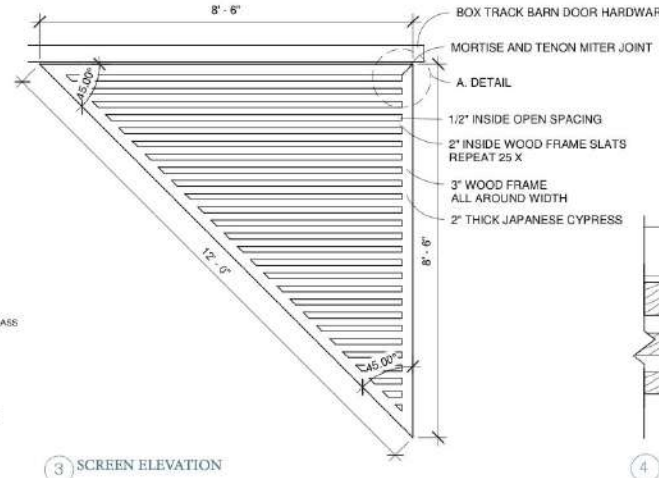




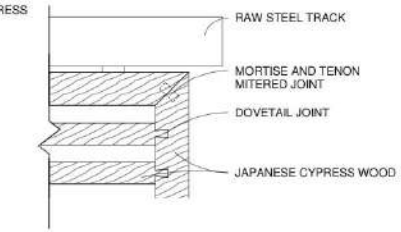
1 EAST LOUNGE SECTION CUT



2 SECTION CUT

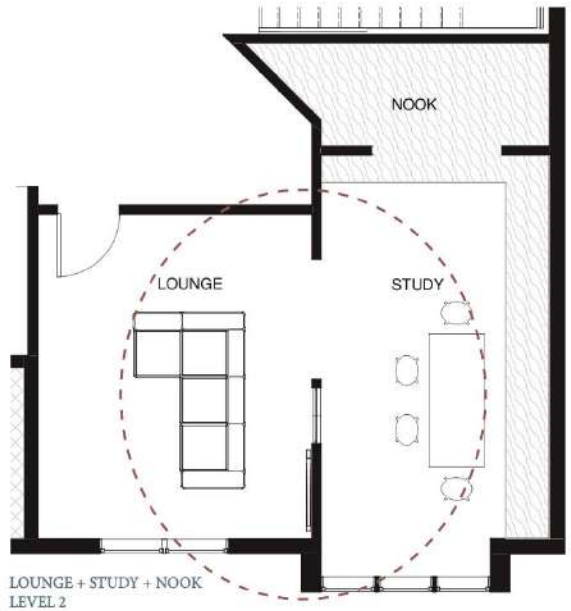


3 SCREEN ELEVATION

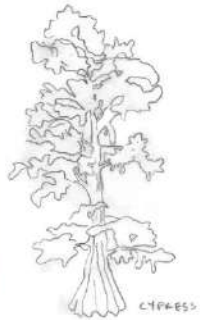


4 DETAIL DRAWING

RENDER EAST LOUNGE + SCREEN ELEVATION



LOUNGE + STUDY + NOOK
LEVEL 2



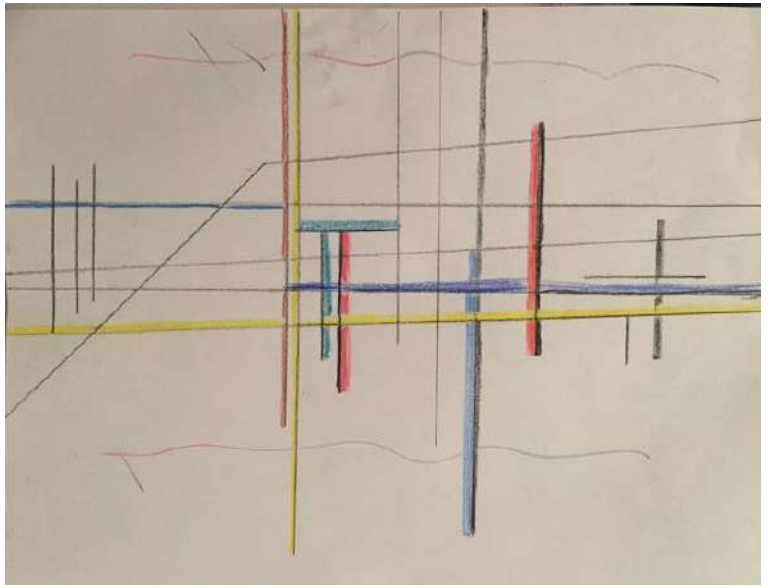
CYPRESS WOOD

Pinkish Honey Tone. High durability and sun resistant even if unpainted. Fine grain and uniform appearance. Smooth touch, pleasant smell and beautiful fine wood texture.

VIBRANT

EXCITING

ENERGETIC



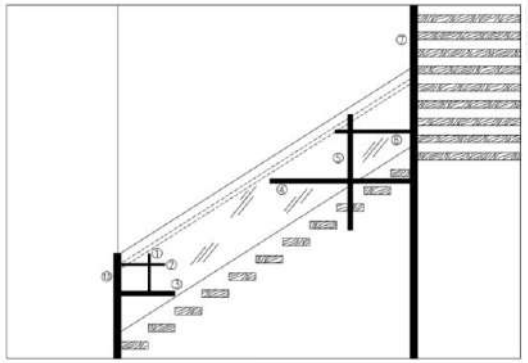
- **Alison & Pilar Arko-Montoya**

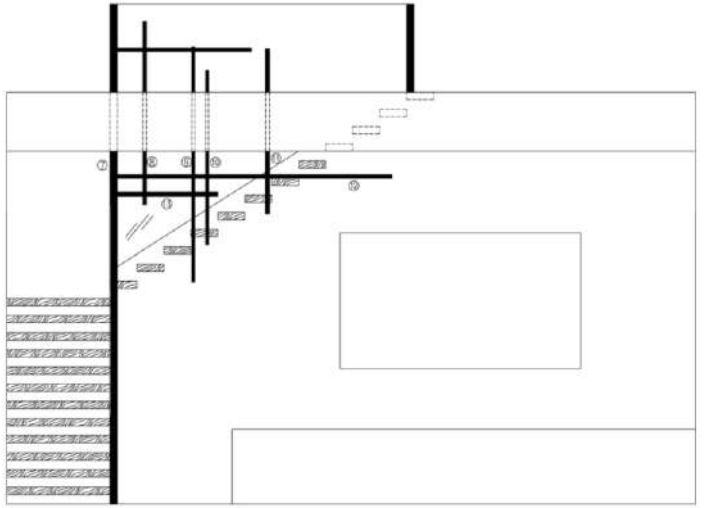
Luxury High-Rise Condominium Design
Buenos Aires, Argentina

PANTONE®
533 C

PANTONE®
7604 C

PANTONE®
7499 C





Alison & Pilar Arko-Montoya
Custom Designed Stairs & Railing

Sustainable Materials Used

Pine: Argentinian forests are up to 50% Pine trees. Pine trees grow relatively quickly compared to other species of trees, meaning that sustainable forestry is possible. Pine can be manipulated in a variety of ways and although not typically valued for its beauty, it is available, durable, recyclable, and biodegradable.

Glass: Argentina is a major exporter of olive oil and wine, and because of that industry, there is also glass-production and recycling facilities in the country. Glass is also completely recyclable, meaning that the material could have an infinite life cycle. Materials to make glass are common and available.

Steel: Making steel requires iron ore, limestone, and a coal residue called coke. In Argentina, limestone and iron ore are mined, and steel is produced. Making steel is reasonably energy efficient, and the product is strong, durable, and recyclable.

Teaching & Learning in the Round

Space Analysis and Ground-Up Programming as a Tool for Student Design Success

Amy Crumpton, Mississippi State University

ABSTRACT

The programming process is arguably one of the most important parts of any professional interior design project. Students are often asked to investigate and apply the process on small scale projects where the program is primarily pre-determined and is edited by the faculty member to make sure the requirements will 'fit' in the space. In these situations, building a comprehensive ground-up space program is not always necessary. However, providing this type of program document can lead students to the mistaken notion that client-provided requirements will always fit in the space available.

In practice, designers are tasked with determining the total amount of area that a client might need on a potential project, requiring professionals to build a ground-up program. Providing students a way to practice this process in a semi-controlled environment can be an important tool in developing large scale projects. It also further develops critical thinking skills and requires students to go outside their comfort zone into using industry standard tools such as excel to build formulas, charts and linked spreadsheets as design tools.

A successful space programming effort should always begin with a precedent floor plan space analysis. Precedent space plan analysis enables students to build a critical understanding of the organization and layout of existing similar spaces and determine the amount of circulation, typical room sizes, and furniture layout in a similar projects. This analysis is perhaps the most critical factor in developing a ground-up program because the circulation factor must be

converted to a multiplier and then applied to the client provided list of spaces. Students can also determine what works and what doesn't in the existing plans to inform their design process.

This Teaching and Learning In-The-Round presentation will provide faculty attendees tools and processes to enable them to implement the ground-up programming method, including existing space analysis into their classes immediately. The process will be presented with worksheets for Faculty members to practice each step in the process. They will also be offered digital tools that will help them to develop a deeper understanding of the merits of having their students spend time understanding this critical analysis technique. Medium (~10,000sf) and large scale (~36,000 sf) student work using this process will be displayed and displayed.

REFERENCES

Bakker, M. L. (2016). Space planning for commercial office interiors. New York: Bloomsbury, Fairchild Books, an imprint of Bloomsbury Publishing Inc.

Malkin, J. (2002). Medical and dental space planning: a comprehensive guide to design, equipment, and clinical procedures. New York: Wiley.

Karlen, M., & Fleming, R. (2016). Space Planning Basics, 4th Edition. John Wiley & Sons.

Rayfield, J. K. (1997). The Office Interior Design Guide: An Introduction for Facility and Design P. John Wiley & Sons.

Space Analysis Exercise

Goal:
The goal of this exercise is to take existing floor plans for similar pediatric offices and analyze the plans for sizes, arrangements, circulation spaces to inform your Medical Project

Assignment: (Total 20 pts)

ASSIGNMENT: Take two existing space plans for pediatric offices and analyze the plans for sizes, arrangements, circulation spaces, and complete written documentation of how it will inform your project. Submit the two plans, annotated with SF for each room, circulation areas, and notes about the plan strengths and weaknesses. This will be completed and submitted in the same groups as the medical project.

EXERCISE FILE: Plan Analysis Exercise.pdf

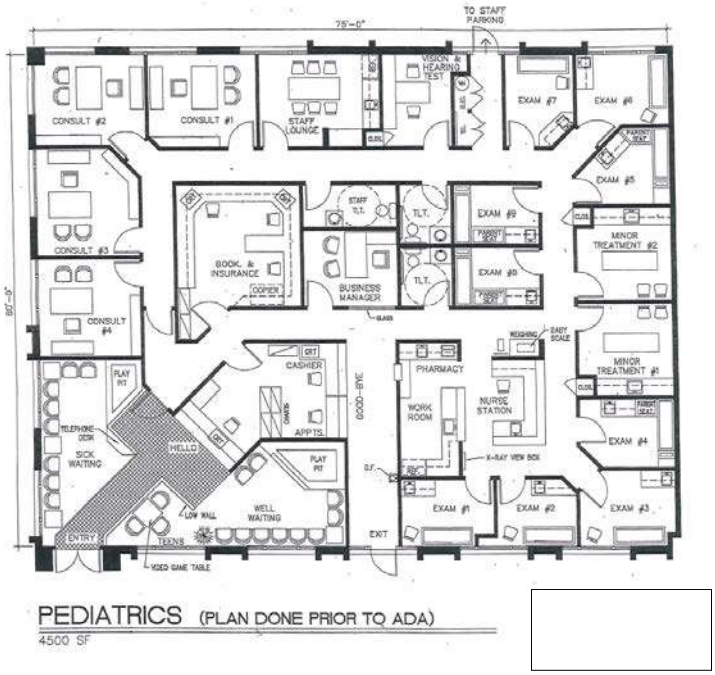
SUBMISSION: Submission on 2-4 11x17 sheets as a pdf, and print a copy for me to mark up. Edited version will be part of the research submission for the medical project (1 PDF needed for each group).

Program Usable Square Footage Requirements

Project: Designer:

	Space	Quantity	Assignable SF	SUBTotal ASF (= quantity x asf)	Public Access	Daylight and/or View	Privacy	Plumbing	Special Equip	Special Considerations
1	EMPLOYEE SPACE									
2										
3										
4										
5										
6										
7										
8										
9	SUPPORT SPACE									
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
A	Total Assignable SF			-	= Sum of SUBTotal ASF					
B	Circulation % __25___ Multiplier ___33___			-	= Line A x Circulation Multiplier					
C	Total Usable SF Req.			-	= A + B					
D	Available				Space Availale in theprosepctive project space					
E	Over/Under			0	= D - C (positive means extra space, negative means needs more					

Reqired ● Important O Detrimental X



Plans can be found in the following book:

Malkin, J. (2002). Medical and dental space planning: a comprehensive guide to design, equipment, and clinical procedures. New York: Wiley.

SPACE PLAN ANALYSIS – SMALL PEDIATRIC

Plan Notes:

This doctor's office has two entrances into the buildings; one for sick, one for well. This keeps them completely separated. There are 6 exam rooms, 1 minor surgery room, and 2 consultation rooms with the access of one hallway.

Program Usable Square Footage Requirements

Project: Plan 1

	Space	Quantity	Assignable SF	SUBTotal ASF (= quantity x asf)	Public Access	Daylight and/or View	Privacy	Plumbing	Special Equip	Special Considerations
1	NON-PATIENT SPACE									
2	Consult Office	2	130	260	X	●	●			
3	Reception	1	221	221	●		X			2 different desks for each waiting room
4	Nurse	1	117	117				●		
5	Storage	1	50	50		X				
6	Staff Lounge	1	100	100	X		o	●	●	Fridgerator and sink required
7	Shared Restroom	1	60	60			●	●	●	
8										
9	PATIENT SPACE									
10	Well Baby Waiting	1	260	260	●					Includes a play pit
11	Small Exam Rooms	4	65	260		o	o			
12	Minor Surgery	1	90	90		o	●	●		Requires a sink
13	Large Exam Room	1	80	80			o			
14	Siblings Exam	1	130	130			●			2 tables for patients
15	Sick Baby Waiting	1	144	144	●	X				
16	Patient Restroom	1	60	60			●	●	●	
17										
18										
19										
20										
21										
A	Total Assignable SF			1,832	= Sum of SUBTotal ASF					
B	Circulation % __24__ Multiplier __.32__		24%	568	= Line A x Circulation Multiplier					
C	Total Usable SF Req.			2,400	= A + B					
D	Available			2,400	Space Available in the prospective project space					
E	Over/Under				= D - C (positive means extra space, negative means needs more space					

Reqired ● Important o Detrimental X

Space Analysis Matrix

Overall Sq. ft. – 2,400
Circulation % - 24%

Annotations:

1. Office spaces are each 10x13 (130 SF)
2. Single exam rooms range from 7x9-8x10 (63-80 SF)
3. Sibling exam room is 10x13 (130 SF)
4. Minor surgery is 9x10 (90 SF)
5. Waiting ranges from 12x12-10x26 (144-260 SF)
6. Storage is 5x10 (50 SF)
7. Restrooms range from 8x7-6x10 (56-60 SF)

Legend:

- Employee Area
- Circulation
- Restrooms
- Waiting Area
- Exam Rooms

Small Pediatric
NOT TO SCALE

FIORI PEDIATRICS

SPACE PLAN ANALYSIS – LARGE PEDIATRIC

Plan Notes:

This pediatric office has one entry with a large waiting area divided into sick and well areas and two exits. There are 9 exam rooms, 4 consult rooms, 3 treatment rooms for various testing/treatments, and 2 offices. The receptionist area has access to the main entrance and the patient exit as well as the pharmacy.

Program Usable Square Footage Requirements

Project: Plan 2

	Space	Quantity	Assignable SF	SUBTotal ASF (= quantity x asf)	Public Access	Daylight and/or View	Privacy	Plumbing	Special Equip	Special Considerations
1	Non-Patient Space									
2	Consult Room	4	156	624		o	●			Guest seating for patients
3	Reception	1	200	200	●	o				Receptionist desk
4	Nurse	1	78	78				●	●	Weighing stations/equipment
5	Storage	3	4	12	X					
6	Staff Lounge	1	180	180		o		●		
7	Business Manager	1	100	100		o	o			Guest seating
8	Book/Insurance	1	225	225	X		o		●	Linear files/copy machine
9	Staff Restroom	1	72	72			●	●		
10	Work Room/Pharm.	1	104	104				●		Counter for medication distribution
11										
12	Patient Space									
13	Well-Baby Waiting	1	221	221	●	●				Seating for 10
14	Exam Room	9	100	900			●	●		
15	Minor Treatment	2	132	264			●	●	●	
16	Vision/Hearing	1	100	100			●		●	
17	Sick-Baby Waiting	1	160	160	●	●				Seating for 10
18	Patient Restroom	2	42	84	●		●	●		
19										
20										
21										
22										
A	Total Assignable SF			3,324	= Sum of SUBTotal ASF					
B	Circulation % __26__ Multiplier __.35__		26%	1,176	= Line A x Circulation Multiplier					
C	Total Usable SF Req.			4,500	= A + B					
D	Available			4,500	Space Available in the prospective project space					
E	Over/Under			0	= D - C (positive means extra space, negative means needs more					

Reqired ● Important o Detrimental X

Space Analysis Matrix

Overall Sq. ft. – 4,500
Circulation % - 26%

Annotations:

1. Office range from 9x11-12x13 (99-156 SF)
2. Exam rooms range from 8x8-12x9 (64-108 SF)
3. Minor treatment rooms are 12x11 (132 SF)
4. Restrooms range from 6x7-6x12 (42-72 SF)

Legend:

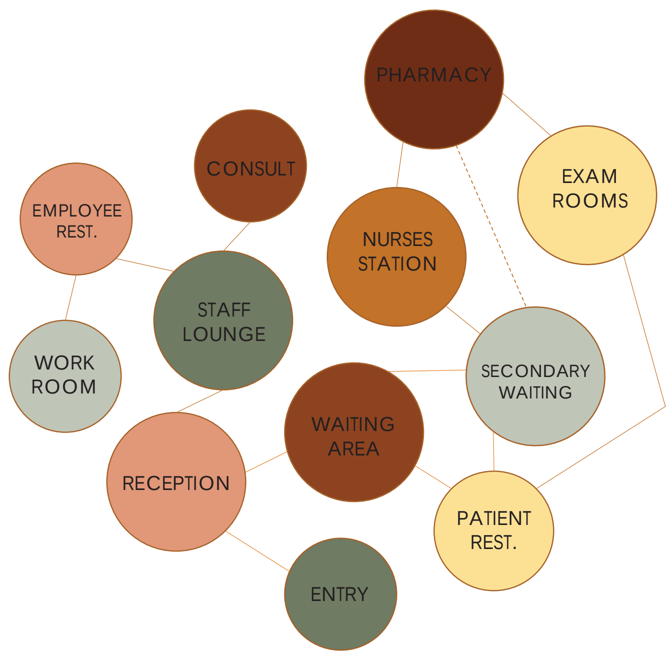
- Employee Area
- Circulation
- Restrooms
- Waiting Area
- Exam Rooms

Large Pediatric
NOT TO SCALE

FIORI PEDIATRICS

Project Programming (Post Space Analysis)

SPACE REQUIREMENTS & ADJACENCY



KEY:

low adjacency

high adjacency

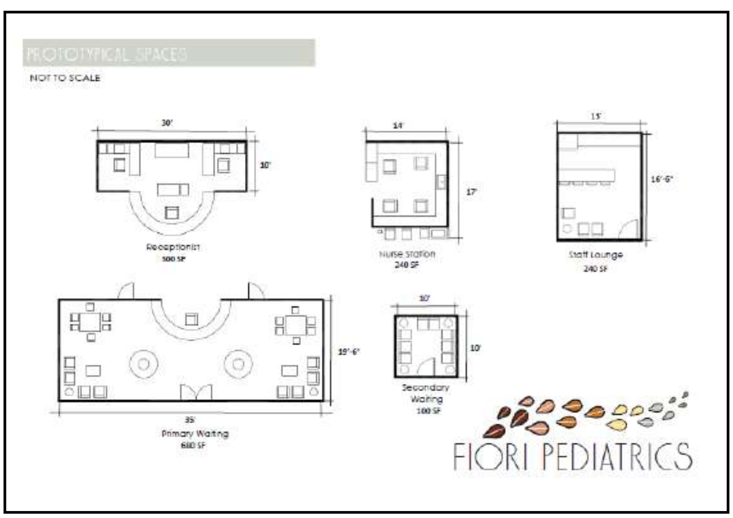
Program Usable Square Footage Requirements

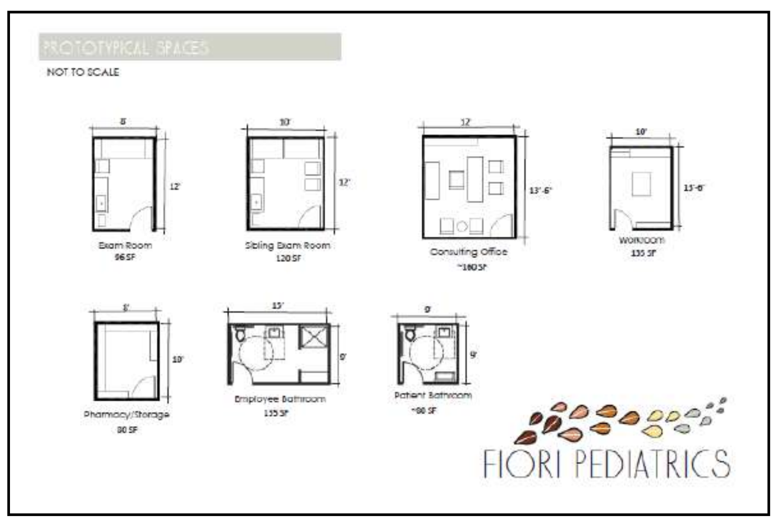
Project: Fiori Pediatrics

	Space	Quantity	Assignable SF	SUBTotal ASF (= quantity x asf)	Public Access	Daylight and/or View	Privacy	Plumbing	Special Equip	Special Considerations
1	NON-PATIENT AREAS									
2	Reception/Business Office	1	300	300	●	●	○	X	●	Open reception area with access to main entry. Privacy for business office. Very little barriers b/w patient and receptionist.
3	Workroom	1	200	200	X	●	●	X	X	18 lin. ft. of 18" deep shelves. Coat closet w/3 lin. ft. clothing rod. Worktable 10-12 sq. ft.
4	Nurses Station	1	300	300	●	X	○	●	●	Weight and blood pressure station w/2 chairs. Working space for 4 nurses. Laboratory sink.
5	Consulting Offices	3	180	540	○	●	●	X	X	Desk w/12-15 sq. ft. plus cradenza/return w/8-10 sq. ft. 1-2 guest chairs. 36 lin. ft. of shelving 12" deep
6	Employee Restroom	1	150	150	X	X	●	●	X	Lavatory, toilet, separate shower room.
7	Pharmacy/Storage Area	1	80	80	X	X	●	X	X	Should not be directly accessible to patients.
8	Staff Lounge	1	150	150	X	●	●	●	X	At least 6 employees and kitchen with fridge, sink, dishwasher, ice machine, and microwave. Oven/stove not required.
9	PATIENT AREAS									
10	Waiting Area	1	500	500	●	●	X	X	X	Seating for 15 adults and 10 children. 100-200 sq. ft. of play area. Separate sick and well areas required.
11	Exam Rooms	9	90	810	●	○	●	●	●	85-100 sq.ft. Two should be bigger to accommodate mult. children or procedures. Not restricted by conventional distance requirements to plumbing waste lines.
12	Patient Restrooms	2	80	160	●	X	●	●	X	Lavatory and toilet. One located near waiting and one near exam rooms.
13	Secondary Waiting	1	100	100	●	●	X	X	X	Located close to main waiting. Seats 4 children and 4 adults.
14				-						
15				-						
16				-						
17				-						
18				-						
19										
20										
21										
A	Total Assignable SF			3,290	= Sum of SUBTotal ASF					
	Circulation % __26____ Multiplier ___.35___			1,152	= Line A x Circulation Multiplier					
C	Total Usable SF Req.			4,442	= A + B					
D	Available			4,400	Space Availale in the prospective project space					
E	Over/Under			-42	= D - C (positive means extra space, negative means needs more space than available)					

Required ● Important ○ Detrimental X

FIORI PEDIATRICS



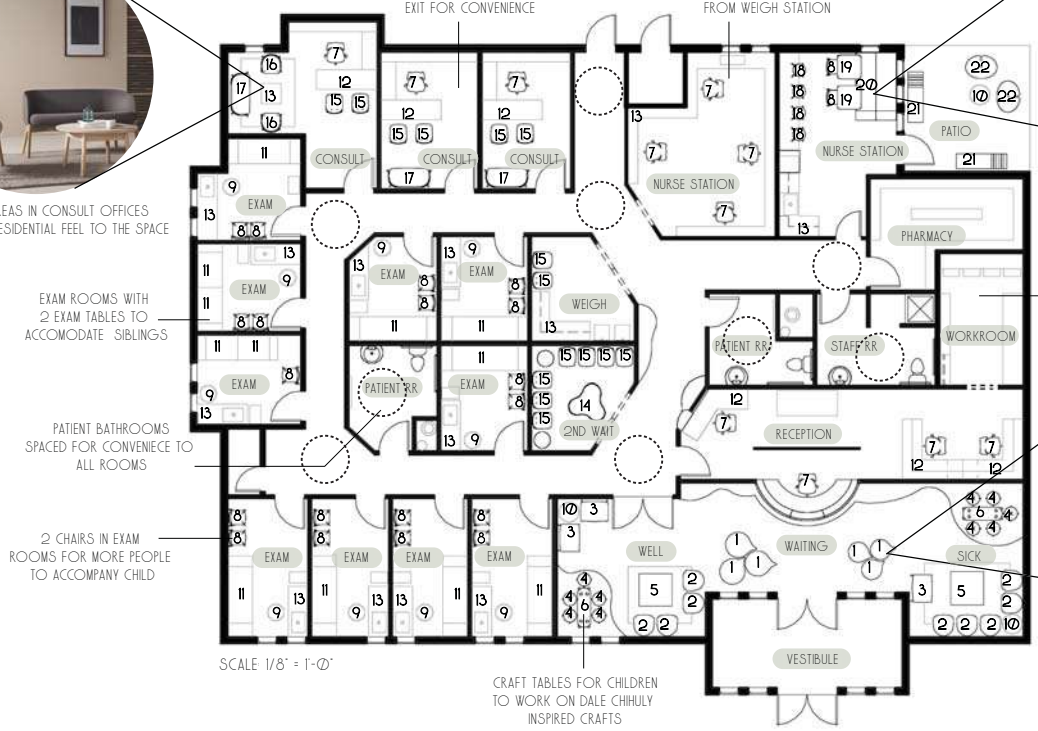


ANNOTATED FURNITURE PLAN

SITTING AREAS IN CONSULT OFFICES TO GIVE A RESIDENTIAL FEEL TO THE SPACE

BENCH IN STAFF LOUNGE TO UTILIZE NATURAL LIGHT

POUFS IN SITTING AREA THAT DISPLAYS WHIMSICAL SHAPE



SCALE 1/8" = 1'-0"

CRAFT TABLES FOR CHILDREN TO WORK ON DALE CHIHULY INSPIRED CRAFTS

FIORI PEDIATRICS

POST OCCUPANCY SPACE ANALYSIS

The floorplan of Fiori Pediatrics has a path of travel which allows patients and visitors to navigate through the space with ease. Along with a clear path of circulation, color coded door frames provide as a means of wayfinding to direct patients to the correct location. The nurse's station is centrally located in order for the nurses to access the waiting room and exam rooms. Patient areas are separate from the staff areas to ensure the safety of patients. Staff areas are located near a secondary exit at the rear of the building to allow them to come and go without adding congestion to the waiting areas.

Program Usable Square Footage Requirements

Project: Fiori Pediatrics — Kennedy M., Allie K., Emily P., Kyra F.

	Space	Quantity	Assignable SF	SUBTotal ASF (= quantity x ast)	Actual Sq. F.	Special Considerations
1	NON-PATIENT AREAS					
2	Reception/Business Office	1	300	300	326	Open reception area with access to main entry. Privacy for business office. Very little barriers b/w patient and receptionist.
3	Workroom	1	200	200	108	18 lin. ft. of 18" deep shelves. Coat closet w/3 lin. ft. clothing rod. Worktable 10-12 sq. ft.
4	Nurses Station	1	300	300	225	Weight and blood pressure station w/2 chairs. Working space for 4 nurses. Laboratory sink.
5	Consulting Offices	3	180	540	436	Desk w/12-15 sq. ft. plus cradenza/return w/8-10 sq. ft. 1-2 guest chairs. 36 lin. ft. of shelving 12" deep
6	Employee Restroom	1	150	150	104	Lavatory, toilet, separate shower room.
7	Pharmacy/Storage Area	1	80	80	134	Should not be directly accessible to patients.
8	Staff Lounge	1	150	150	196	At least 6 employees and kitchen with fridge, sink, dishwasher, ice machine, and microwave. Oven/stove not required.
9	PATIENT AREAS					
10	Waiting Area	1	500	500	568	Seating for 15 adults and 10 children. 100-200 sq. ft. of play area. Separate sick and well areas required.
11	Exam Rooms	9	90	810	888	85-100 sq.ft. Two should be bigger to accommodate mult. children or procedures. Not restricted by conventional distance requirements to plumbing waste lines.
12	Patient Restrooms	2	80	160	166	Lavatory and toilet. One located near waiting and one near exam rooms.
13	Secondary Waiting	1	100	100	92	Located close to main waiting. Seats 4 children and 4 adults.
A	Total Assignable SF			3,290	3,243	
	Circulation % 26 Multiplier .35			1,152	1,157	26% circulation was predicted in early stages, and used in the end.
C	Total Usable SF Req.			4,442	4,400	
D	Available			4,400	4,400	
E	Over/Under			-42		

Required ● Important X

FIORI PEDIATRICS

Teaching is Overrated: The Transformative Power of Learning by Doing

Stephanie Sickler, Florida State University

ABSTRACT

Materials courses in many design programs are commonly delivered as lecture-based courses. Yet, faculty are expected to convey a host of material properties in one singular lecture course. With an already packed curriculum limiting expansion beyond approved credit hours, adding an additional course dedicated to this topic in unrealistic. To combat this challenge, a pedagogical re-imagining of this course is necessary. Constructivist, active, and experiential learning theories, among others, have for years enlightened educators as to the benefits on non-traditional pedagogical approaches to teaching and learning (Kolb, 1984). Many of these frameworks for learning fit naturally within a design curriculum. Demirbas and Demirkan (2007) suggest that design students should utilize experiential learning theory to produce design solutions by experiencing, reflecting, thinking, and doing. It is within this "doing" that design students can reap the most benefit by closing the loop of learning through first hand experiences. This presentation highlights a course that empowers students to learn by doing in a materials course.

The learning cycle from Honey and Mumford (1982) asserts that to achieve deeper learning, students should (1) do, then (2) reflect, then (3) form principles, then (4) plan, and then cycle back around to more doing and so on. When analyzed on the coordinating learning styles indicator by Honey and Mumford, a majority of students in this course presented as Reflectors and Pragmatists, with Reflectors and Theorists close behind. In other words, the majority of students in this course learn best from first hand events and experiences as well as from the experiences of others. Additionally, Reflectors have been shown to excel when they are able to analyze and report on the activities they have experienced first-hand. These learning traits are

evidenced in the work products of this pilot course, supporting the notion that experiential learning, or learning by doing, is a valid and necessary part of the design curriculum. Ultimately this presentation suggests that by expanding this process to the materials course, a greater understanding of this vast topic can be achieved within the limitations of one semester.

This course has adopted a lab-based format common to studio courses. Students are expected to preview lecture content before their lab and spend lab time constructing new knowledge through experiential learning. Course activities include installing materials such as carpet tile, wallcoverings, and coatings, creating original pattern blocks and applying them to a textile; even creating their own piece of Terrazzo. These finishes along with others are then put to the test through performance evaluation activities. Students follow performance specifications of each material and simulate wear that may occur in daily use to evaluate the actual performance of each material. Performance evaluations also include steps to clean and care for each material per the manufacturers' cleaning codes. Additionally, students experiment with cleaning processes that a client may discover from internet research to simulate cleaning that may take place in the field. To assist with these processes, manufacturers' representatives often join us for class and assist students in the discovery process.

Outcomes from this re-imagining of our materials course have been immense. Not only are students able to interact with trained professionals, but they are also learning first-hand the capabilities and limitations of each product. Some evaluations reveal excellent performance characteristics while others reveal significant drawbacks to products with an otherwise excellent class rating. These outcomes are the scaffolding of a designer's most valuable tool set. This session will present information regarding the course structure and assignments and will provide handouts with student work examples to help facilitate the roundtable discussion.

REFERENCES

Demirbas, O., & Demirkan, H., (2007). Learning styles of design students and the relationship of academic performance and gender in design education. Journal of Community Engagement and Scholarship, 17(3), 345–359.

Honey, P., & Mumford, A. (1982). A manual of learning styles. Maidenhead: Honey Press.

Kolb, D. (1984). Experiential learning: Experience as the source of learning and development. Journal of Business Ethics, 15(1), 45-57.

MOTL
materials + objects testing lab

MATERIAL PERFORMANCE REPORT

MATERIAL INFORMATION

MATERIAL TYPE	MATERIAL RATING	MANUFACTURER + DESCRIPTION
Wink Clear Dry-Erase Coating	Class A Fire Safety, 10,000 scrub cycles	Wolf Gordon

EVALUATION SUMMARY

Wink is a multi-layered, dry-erase wall coating. The complicated chemicals that allow it to have dry-erase properties means it has a complicated installation process, meaning the samples that were provided were applied by the manufacturer. The goal of this experiment is to see how various substances would affect the material and to test what methods would most easily clean them up in a realistic time frame. It is hypothesized that the dry-erase qualities of the product will boost its cleaning properties.

MATERIAL PERFORMANCE RECORD

EVALUATION TYPE	MATERIALS USED	DURATION OF TEST	NOTES
Cleanability	Duck Sauce	1 minute	Unsuccessful attempt with dry paper towel, successful paper towel w/ water – removed with slight film, film successfully removed with all-purpose cleaner
Cleanability	Nail Polish	1 minute	Partially successful attempt with paper towel with water – left shiny film from polish, slightly successful attempt with acetone – barely visible film left
Cleanability	Clay Face Mask	1 minute	Wiped off with dry paper towel, paper towel with water, and all-purpose cleaner – completely removed
Cleanability	Ketchup	1 minute	Wiped off with dry paper towel, paper towel with water, and all-purpose cleaner – completely removed
Cleanability	Honey	1 minute	Wiped off with dry paper towel, paper towel with water, and all-purpose cleaner – completely removed
Cleanability	Kool Aid	1 minute	Wiped off with dry paper towel and paper towel with water

PERFORMANCE EVALUATION METHOD AND DESCRIPTION

All materials used to test the surface were similar to substances easily attainable at home. With spills, they are usually cleaned up once they occur. The Wink wall covering and its dry-erase properties did, as hypothesized, create a surface that made it difficult for the liquids and substances to stain. None of the substances distorted or stained the wall covering, but the nail polish did leave a barely visible thin film on the surface. The experiment was completed in one day, though further testing of the surface would be encouraged to test its absolute limits.

FINDINGS AND RECOMMENDATIONS

The Wink wall coating successfully does its job as a dry-erase surface, but also for being easily cleanable in general. This makes it ideal for academic spaces or healthcare spaces. The application of this wall covering would mean it can be used and clean actively and repeatedly. The true extent of its usability should be tested – like for when it should e replaced in these spaces. Though it is easily cleanable, it wouldn't be practical to have it in bathroom spaces because it would be an expensive material put to waste. It would be interesting to see the installation process of this material in a space or perhaps how the material it is applied to affects its longevity.

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MATERIAL PERFORMANCE REPORT

MATERIAL INFORMATION

MATERIAL TYPE	MATERIAL RATING	MANUFACTURER + DESCRIPTION
Fabric	NA	Denim Fabric

EVALUATION SUMMARY

We are testing how Denim fabric wallcovering will stand against a variety of different materials in which would cause messes. In order to test this each material will be put on the denim fabric in a different location in which hasn't been tested on yet. Then allow the material to sit on the denim for about a min before attempting to clean it off with a wipe. If it does not respond to a wipe, then water and spray will be used. I don't think based on my own knowledge of denim that the denim will be easy to clean what so ever and will not be something you would want in a space prone to messes.

MATERIAL PERFORMANCE RECORD

EVALUATION TYPE	MATERIALS USED	DURATION OF TEST	NOTES
Clean	Duck Sauce	1 min	Able to remove for the most part but there was a slight residue left over
Clean	Nail Polish	1 min	Able to wipe most off along with some water and soap
Clean	Honey	1 min	Able to remove with water slight stain/spot left
Clean	Ketchup	1 min	Able to wipe up majority but still left mark and residue
Clean	Facemask	1 min	Good amount removed with water and soap but smeared and left lots of residue
Clean	Kool-Aid	1 min	Able to remove well with water

PERFORMANCE EVALUATION METHOD AND DESCRIPTION

The purpose of these test where to see how well the material denim works against messes and how well it can be cleaned.
The test where all done using a dime sized amount allowing them to sit on the Denim for roughly a minute before attempting any further testing. After a min a wipe test was done in order to see how clean the denim could get. After a wipe water was used and if water wasn't effective then cleaning spray.

FINDINGS AND RECOMMENDATIONS

After running denim through 6 tests against Nail Polish, Duck Sauce, Honey, Ketchup, Face Mask, and Kool-Aid I have a pretty good grasp on denim and its ability to withstand messes. While this wall covering would look cool it is not easy to clean so wherever its being placed need to be in an area that does not get messy. As using this in a kitchen or kids space or anywhere else where messes are

predominant would be a mistake as this material to truly be cleaned needs to be washed and how do you was your wallpaper in the washing machine if its on the wall.

Materials and Methods
Performance Evaluation
Material: Vinyl Wallcovering
Name: [redacted]

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MATERIAL PERFORMANCE REPORT

MATERIAL INFORMATION

MATERIAL TYPE	MATERIAL RATING	MANUFACTURER + DESCRIPTION
Vinyl Wallcovering	Commercial- Class A	

EVALUATION SUMMARY

Our team evaluated the stain resistance of four wallcovering samples.

MATERIAL PERFORMANCE RECORD

EVALUATION TYPE	MATERIALS USED	DURATION OF TEST	NOTES
Stain Resistance	Duck Sauce	2 minutes	Duck Sauce comes off vinyl perfectly without any stain. Cleans off with paper towel and water
Stain Resistance	Nail Polish	5 Minutes	Made a little stain wiping off with a paper towel. Used acetone and it took the nail polish off, along with a little bit of the wallcovering color
Stain Resistance	Face Mask	5 Minutes	Mostly comes off with paper towel and water. All-purpose spray removes the rest of the residue
Stain Resistance	Ketchup	3 Minutes	Comes off without a problem, all-purpose spray helps remove ketchup smell
Stain Resistance	Honey	5 Minutes	Comes off with all-purpose spray
Stain Resistance	Kool-Aid	5 Minutes	A little residue left in the cracks, but it mostly came out with all-purpose cleaner. I think it is important that the Kool-Aid doesn't stay too long on the surface

PERFORMANCE EVALUATION METHOD AND DESCRIPTION/ FINDINGS AND RECOMMONDATIONS

The selected wallcovering stood up well to different staining materials. Everything was able to be cleaned off the surface using a paper towel and all-purpose spray. My one recommendation for this material, after testing it against other materials, would to make sure to clean the surface quickly after the was gets spilled on. The Kool-Aid came off okay, but It would have left discoloration to the wall covering if it had been left on there longer.

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MATERIAL PERFORMANCE REPORT

MATERIAL INFORMATION

MATERIAL TYPE	MATERIAL RATING	MANUFACTURER + DESCRIPTION
Wallpaper	Treated with Teflon protector (Can be converted to Type I or Type II grade vinyl wallcovering for commercial use)	Thibaut

EVALUATION SUMMARY

By treating the wallpaper with Teflon it will protect the wallpaper beneath but not to the standards of commercial ratings. It will potentially repel water, liquids and soil. It is recommended to use a sponge with warm mild soap solution to remove dirt or smudges. Stronger detergents are recommended for tougher stains. It is also recommended to not use steel wool or powdered abrasive cleaners or plastic scrubbers. Based on these findings it will be more difficult to remove tougher stains and there will potentially be a mark left behind from tougher messes.

MATERIAL PERFORMANCE RECORD

EVALUATION TYPE	MATERIALS USED	DURATION OF TEST	NOTES
Clean Ability	Duck Sauce	1 Minute	Rubs off easily with paper towel
Clean Ability	Essie Nail Polish	1 Minute	Wiped with paper towel first; Sticky; colors of wallpaper comes off; acetone used to clean and more color from the wallpaper is removed
Clean Ability	Avocado Face Mask	1 Minute	Fry paper towel used first; Leaves green stain; cleaned with all-purpose cleaner; faint color is removed from material
Clean Ability	Ketchup	2 Minutes	Wiped off with paper towel first; Removed with all-purpose cleaner; only slight color is removed from the material
Clean Ability	Honey	4 Minutes	Sprayed first with all-purpose cleaner; sticks less and comes off of material more easily
Clean Ability	Kool-Aid	1 Minute	Dark material shows red stain less easily; wiped with dry paper towel and then cleaned with all-purpose cleaner

PERFORMANCE EVALUATION METHOD AND DESCRIPTION

The cleaning technique was kept at a more consistent rate. After letting the mess sit for only the amount of time it would take for someone to find a paper towel and begin to clean the mess it would be wiped with a dry paper towel. The only material that was cleaned differently from the beginning was the honey which may have caused fibers from the towel to stick to the wall more, so it was sprayed with the all-purpose cleaner first. Based on the material ratings it cleaned off many messes that were not believed to clean off so easily.

FINDINGS AND RECOMMENDATIONS

The material held up well under more severe conditions than the manufacturer may have believed was best. It cleaned off many stick and grimy messes, yet it did lose color each time it was cleaned. The nail polish was cleaned with acetone which removed the most color. The best cleaning material seemed to be the all-purpose clean and a paper towel. It was hard to tell whether the material left a large stain because the wallpaper was black. This material would not meet commercial performance expectations, but it is said that the grade can be increased with a different finish. This product would be used best in a home office or a study. It could potentially be used in a kitchen nook but not around areas that catch most of the splatter from cooking or baking. If the mess is cleaned immediately it is best for the material because it does not seep in as easily and affect the wallpaper as much.

Teaching & Learning in the Round

Using a Social Identity Wheel to Teach Inclusive Design

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ABSTRACT

It can be a challenge for design students to step outside their own perspective when applying human factors in interior design. This challenge is especially relevant when applying inclusive design, which seeks to create designs for all individuals by removing economic, technical, social, and physical barriers. One of the principles of inclusive design employs to do this is acknowledging diversity and difference (Nussbaumer, 2012). In this session we will engage in an abbreviated version of a social identity wheel exploration and a discussion of how identities impact design perspectives and outcomes.

Social identity wheels are often used in diversity and inclusivity training to help individuals define their social identities and explore how identities impact social interactions. These social identities constitute essential aspects of diversity including race, gender, language, culture, sexual orientation, socioeconomic status, ability/disability, and more. This exercise uses a social identity wheel (see appendix A) to help students reflect on their social identities, the role that identities play in perceptions, and why these might be important in the design. This activity helps students identify that while a specific identity may not impact them, it might impact other people who will be experiencing their design. Additionally, it demonstrates to students that their perceptions and interactions do not come without bias.

To start, students are made aware of what chosen personal identities are, such as professions and hobbies, and how these differ from social identities which often are not a choice. Once students have filled in the social identity wheel, then the activity facilitator asks a series of questions (see appendix B) meant to help participants reflect on how that identity shapes perspective. Examples include: *What part of your identity are you the proudest of, what part of your identity do you feel you receive the most privilege for,* and *which part of your identity do you feel oppressed by most often?* Participants can reflect individually, or signs can be posted around the room and participants can be asked to move underneath the sign they feel best reflects their answer. Afterwards, discussions in small groups covers topics such as which identities are visible vs. invisible, how identities can impact design needs, and how we might include diversity in our design approach. The intent of adapting this diversity exercise to an inclusive design training exercise is to help students go beyond acknowledging diversity to considering how it might impact biases and user needs within design.

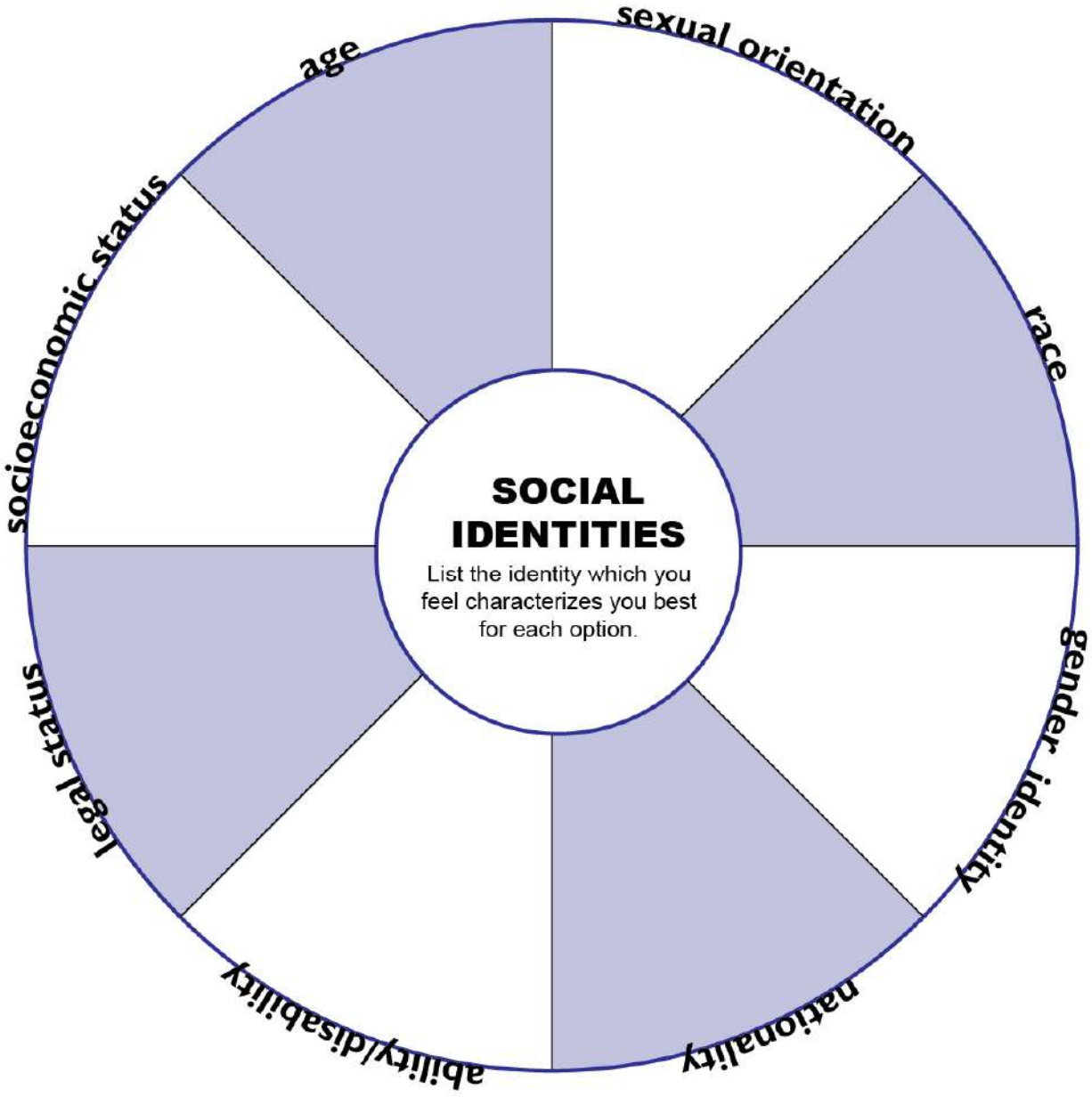
In practice, students who completed this activity shifted viewpoints from thinking identity was about "personality", to thinking "identity isn't just who you are but who everyone is." This activity is intended to be taught as part of a human factors or inclusive design curriculum but is also useful as preparation for engaging with users, clients, and in design research processes involving human based research.

REFERENCES

Nussbaumer, L. L. (2018). Human Factors in the Built Environment, Bloomsbury Publishing Inc.

Using a Social Identity Wheel to Teach Inclusive Design
Appendix A. Social Identities Wheel

Adapted from the American Association of University Women Diversity and Inclusion Toolkit.



Using a Social Identity Wheel to Teach Inclusive Design
Appendix B. Identity Statements & Discussion Topics

Identity Statements

Read the following questions/statements out loud and allow participants time to move underneath signs they feel represent themselves for each of the following:

- I think people notice this part of my identity first.
- I'm most comfortable sharing this part of my identity with others.
- I'm least comfortable sharing this part of my identity with others.
- I'm proudest of this part of my identity.
- I struggled with this part my identity the most growing up.
- This part of my identity is the most important to me.
- This part of my identity is the least important to me.
- I notice this part of other people's identities first.
- I think this part of my identity causes me oppression most often.
- I think this part of my identity results in privilege for me most often.
- I'd like to learn more about this part of my identity.
- I think this part of my identity impacts my interactions with others most.
- I think about this part of my identity most often when designing for others.
- I think about this part of others identity most often when designing for them.

Small Group Discussion

Ask participants to explore how identities can either be visible vs. invisible, and how they can be socially valued vs. socially marginalized. Discuss in small groups how this visibility and social value impact design from both a designers' and a users' perspective.

Large Group Discussion

Remind participants that part of inclusive design is acknowledging diversity. Today we've explored how diversity impacts perceptions of ourselves and our interactions with others. Ask:

- How might these identities impact our approach to design?
- How might our design approach change if we were members of dominant versus a marginalized group?
- What can we do to acknowledge and respect diverse identities when exploring design problems and solutions?