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FOREWORD

Everything must be improved.

This position serves as the raison d’être for the 2014 Creating_Making Forum and for our Division of Architecture’s ongoing considerations about creating and making. It also captures what makes the practice of architecture so exciting, challenging and vital for us as teachers and architects and, more importantly, as citizens in our communities. The underscore in Creating_Making infers that our work here in central Oklahoma proceeds as a continual dialogue. Pairings, oppositions, and adjacencies define our existence on the wide-open prairie and foster a unique existence. The forum topics coalesced as dialectics of tools and intention; of service and empowerment; of us and them, old and new, together and alone, pencil and mouse, and idea and artifact. These topics reflect local concerns and have global implications. These were also themes that the architect Bruce Goff embraced, just as we continue to embrace the light of his creativity, and benefit from his legacy.

Without new ideas, we cannot build well. The opportunity for us as practitioners, teachers, and students to explore new ideas in a university setting is one we engage with criticality and with purpose. The Creating_Making Forum reflects this activity, is inherently sustainable, and suggests a performance-based architecture that will serve our communities well over time. Yes, we are pragmatic, but we approach this with unfettered inspiration. Our pragmatism guides our vision for an evolving and improved architecture.

The 2014 Creating_Making Forum is another step along this aspiring trail that we blaze for ourselves. Participants from across the continent have now infused our curricular framework with new perspectives, and have offered critique on our shared histories, intentions and aspirations. We here at the University of Oklahoma Division of Architecture will continue to ruminate on the beauty of the new ideas generated at this forum. Wonder unsettles us in the most positive way as we move forward in our mission to create and make better places for people. See you next time.

Hans E. Butzer, AIA, LEED AP BD+C
Director of Architecture and A. Blaine Imel, Jr. Professor
Mabrey Presidential Professor of Architecture and Urban Design
The University of Oklahoma
Principal, Butzer Architects and Urbanism
PREFACE

It has been my great pleasure to chair the 2014 Creating_Making Forum for the Division of Architecture, made possible by funding from an endowment set up in the name of the visionary architect Bruce Goff, who was chair of the Division of Architecture here from 1943 to 1955. Goff’s tenure was unfortunately short, but the legacy of his approach to architecture continues to inspire us. This legacy has been sustained in great part through the work of Jerri Hodges-Bonebrake, Goff’s secretary, who is recently deceased. Our students were always foremost in Jerri’s thoughts, and it was she who led the effort to establish the endowment that has allowed us to bring so many brilliant talents to work with our students in the College of Architecture over the past thirty years. In November 2010 Goff’s work was celebrated in a retrospective at the Fred Jones Jr. Museum of Art on the University of Oklahoma campus, and the first Creating_Making Forum was conceived. That 2010 Forum was a great success, an experience that the committee for this year’s Forum hoped to repeat.

We believe that we succeeded. Our keynote speakers were chosen for their award-winning creative work and engagement with user communities. Robert Fishman, professor of architecture and urban planning at Taubman College of Architecture and Urban Planning at the University of Michigan, has authored several books on the history of cities and urbanism. E.B. Min is a principal of Min I Day Architects and is especially interested in client interaction and design based on human behavior. Kristin Murray is a principal of Olson Kundig Architects and her work often engages with local communities in optimizing neglected urban space. Andrew Freear is the director of Rural Studio in Alabama, and his work serves as a model for design-build methodology within poor rural communities. Finally, our own Hans Butzer exemplifies the benefits of the public process in his work for communities in the state of Oklahoma.

We enhanced this year’s Forum by including a greater range of interdisciplinary work. This time, faculty from all the divisions in our college served as session chairs, so that the papers covered issues relevant to architecture, interior design, construction and building science, landscape design, and urban planning. In response to our call for papers, we received papers and posters from over thirty schools around the United States and several from abroad. We allowed student engagement in providing a service-learning workshop in which architecture students designed improvements for a local nonprofit arts organization. As before, we offered tours of local sites of interest, but for the first time we utilized social media to leverage publicity and to sponsor an Instagram contest. And for the first time we offered licensed architects continuing education credits for attending lectures and sessions. The Forum closed with a discussion panel moderated by myself and including four of the keynote speakers: architects Butzer, Freear, Min, Murray, and our dean, Charles Graham. Thus we concluded with a summation of what we had learned from the Forum and with inspiring words for the future.

The three days of the 2014 Creating_Making Forum events were the culmination of more than six months of preparation, and many people contributed to making the Forum a success. First to be thanked is Angela Person, presently a PhD candidate in geography at OU. She was the coordinator of the 2010 Forum, and happily for us agreed to fill this position again. Her excellent organizational abilities, untried efforts to ensure that events flowed smoothly, and creative ideas for play resulted in the constant happy “buzz” that emanated from our attendees. Next I thank the committee, which is composed of students, faculty, and practitioners— their names may be found on page 188. The students, especially Grant Bankston and Jenni Chung, donated great amounts of time to make sure the Forum ran smoothly during its three days.

I thank the dean of our College, Charles Graham, who provided his unqualified support, opened the Forum with a welcome speech, and introduced our director at our banquet. I thank our director, Hans Butzer, who graciously agreed to be the keynote speaker at our banquet and provided the audience with an inspiring speech that reminded us about the wonderful diversity of our Forum topics. I thank the keynote speakers, the widely admired authors and architects listed above who communicated their energy and enthusiasm for the built environment to our students. I especially thank E.B. Min and Kirsten Murray for leading the student service-learning workshop with nineteen students. I thank the client, Amber Clour of Dreamer Concepts, for joining in the process, and I thank the students who worked so hard to help generate interest in her nonprofit community arts project. I thank the administrative and support staff of the College of Architecture, who ensured that everything was in the right place at the right time. I thank all the OU support groups, especially facilities management and catering at the Oklahoma Memorial Union.

And finally, I thank all the participants who contributed the papers and posters you will read and view on the following pages, for without their participation, there would be no Proceedings. The Division of Architecture and the College of Architecture have been enriched by your participation in our Forum, and we encourage you to participate again in three years when we host the 2017 Creating_Making Forum.

Catherine Barrett, AIA
Chair of the Bruce Goff Chair of Creative Architecture
Assistant Professor of Architecture
College of Architecture
The University of Oklahoma

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**KEYNOTE SPEAKERS**

Hans Butzer, AIA, AK NW, LEED AP is passionate about legacy building, through both his practice-based creative research and university work with students and faculty. As director of the University of Oklahoma Division of Architecture, he seeks to empower faculty and students to continually redefine the potential of the program’s Creating_Making curriculum. His teaching focuses on ethics and sustainability, and community-engaging advanced architecture and urban design studios. An award-winning practice allows Butzer to offer ideas on architecture, landscape, sculpture and urban design that help shape the lives of Oklahoma families and communities. Building on his educational experiences at the University of Texas at Austin School of Architecture and Harvard University’s Graduate School of Design, and by life experiences in both the United States and Germany, Butzer is intent on creating exceptional educational environments and living for all of our students.

Dr. Robert Fishman, professor of architecture and urban planning, teaches in the urban design, architecture, and urban planning programs at Taubman College of Architecture and Urban Planning at the University of Michigan. He received his Ph.D. and A.M. in history from Harvard and his A.B. in history from Stanford University.

An internationally recognized expert in the areas of urban history and urban policy and planning, he has authored several books regarded as seminal texts on the history of cities and urbanism including: Bourgeois Utopias: The Rise and Fall of Suburbia (1987) and Urban Utopias in the Twentieth Century: Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier (1977). His honors include the 2009 Lawrence Gereckens Prize for lifetime achievement of the Society for City and Regional Planning History, Walker Ames Lectureship, University of Washington, Seattle, 2010; Emil Lorch Professorship at the Taubman College, 2006-2009; Public Policy Scholar, Wilson Center, Washington, D.C., 1999; Cass Gilbert Professorship, University of Minnesota, 1998; and visiting professorships at the University of Paris, Nanterre; University of Pennsylvania; and Columbia University. He is currently working on a history of sustainability.

Andrew Freear, from Yorkshire, England, is the Wiatt Professor at Auburn University Rural Studio. Educated in London, he has practiced in England, Italy and the United States, and taught at the University of Illinois at Chicago and the Architectural Association in London. After the untimely death of Samuel Mockbee, he became the director of the Rural Studio in Newbern, Alabama, in 2002. He is also project advisor to fifth-year undergraduate students there.

Rural Studio has been established in Hale County for twenty years and prides itself on being a good neighbor. It has established close relationships with local municipalities. It practices a hands-on architectural pedagogy that offers students the opportunity and responsibility to design and build charity homes and community projects to improve living conditions in west Alabama. Freear has designed Rural Studio exhibits in Chicago, Cincinnati, Vienna and Barcelona; and for the 2002 Whitney Biennial, 2005 Sao Paulo Biennial, 2008 Venice Biennale, and at the Victoria and Albert Museum in London and Museum of Modern Art in New York City in 2010. He has also lectured across the United States, Europe and Australia.

In 2006 Freear received The Ralph Erskine Nordic Foundation Award from Sweden, which recognizes urban planning and architecture that is functional, economical and beautiful, and which helps underprivileged and deprived groups in any society. He is the first American-based architect to win this prestigious award.

E.B. Min, AIA is the San Francisco-based principal of Min | Day. Established in 2003, Min | Day draws on the backgrounds of Min and principal Jeffrey L. Day in art, landscape, and architecture to provide informed flexible design for a wide range of clients, sites, and projects. The practice explores opportunities for innovation in program, materials, and fabrication through a diverse set of project types and scales of intervention, coaxing nuance and specificity from the unique opportunities of the site and project at hand.

A graduate of Brown University with dual concentrations in art history and studio art, Min received her master of architecture from the University of California, Berkeley. She has taught at Berkeley and is an adjunct professor at California College of the Arts in San Francisco. Min has served on the board of the AIAASF and currently serves on the board of the AIACC. Min | Day has received numerous awards, including AIAC’s 2007 Emerging Talent Award and Residential Architect’s 2010 Rising Star designation, as well as being featured in Architectural Record’s Design Vanguard (2010).

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Kirsten R. Murray, AIA is a principal and owner at Seattle-based Olson Kundig Architects. For over two decades, she has focused on a broad range of project types, including mixed-use, private residential, adaptive reuse, workplace and urban design. Her work has been published in such national and international media as The New York Times, Architectural Digest, Interior Design, and Architectural Record.

Murray’s work has garnered national recognition for such projects as Outpost, Tyre River Cabin, 1111 E. Pike and Art Stable, which received local, regional and national AIA Honor Awards. Her current projects include the Kirkland Museum of Fine & Decorative Art in Denver, a gallery addition to the Tacoma Art Museum, Paradise Road student housing at Smith College, and a master plan and expansion of Heritage University, as well as several urban mixed-use buildings in Seattle, Vancouver and Los Angeles.

In addition to her design work, Murray developed the firm’s international internship program. She also co-directed and curated the firm’s experimental work space, [storefront].
FORUM WORKSHOP

CREATING_MAKING STUDENT WORKSHOP:
PROPOSALS FOR DREAMER CONCEPTS, A NON PROFIT ARTS ORGANIZATION IN NORMAN, OKLAHOMA

Student Participants:
Willy Burhan
Haven Hardage
Josh Jeffers
Michael Koch
Davis McDaniel
Conor McMichael
Kamyar Movafagh
Casey Murray
Kory Myers
Nicholas Norworthy
Michelle Oliphant
Chris Perez
Charlotte Robert
Cathy Townsend
Mihn Tran
Tuan Tran
Victor Trautmann
Laney Vela
Victoria Waggoner

Workshop Leaders:
E.B. Min, AIA
Kirsten Murray, AIA

Nineteen College of Architecture students focused on designs for the gallery and work space of Dreamer Concepts at 428 East Main Street in Norman as part of a charrette/workshop led by two of the keynote speakers, E.B. Min and Kirsten Murray, during the Creating_Making Forum. This project was chosen as a service learning project, as the client operates a non-profit arts organization and was looking for help in making improvements to this historic 7,000-square-foot structure.

The project was launched Thursday morning, November 6 with a site visit, and concluded just 26 hours later with a slide presentation at noon on Friday, November 7. The students produced their designs in the Joe and Jayne Buskühl Gallery in Gould Hall, where Min and Murray offered them design critiques Thursday afternoon. The students then worked through the night to meet their presentation deadline of noon on Friday. Their presentation was made to a crowd of over 50 people, including the client, Amber Clour, in the Scholars Room of the Oklahoma Memorial Union Building, and was received with much enthusiasm.

The students addressed issues related to all parts of the gallery, workspace, and adjacent parking lot. They made proposals to enhance the street presence and entry sequence of the space; they designed a flexible panel system to facilitate display and retail sales; they proposed ways to open up the structure to allow for flexible partitioning, acoustic enhancement, and better circulation in the workshop space; and they proposed a modular system of furnishing and planting to improve the parking lot.

Subsequently, the students’ designs have been on display during public events at Dreamer Concepts, and have generated considerable interest among the general public.
FORUM WORKSHOP

PLANter LAYOUTS

THE STAGE AND THE PLANTERS ARE MODULAR BASED ON THE GEOMETRY ESTABLISHED FOR THE PROJECT. THE INTENTION IS TO ALLOW MAXIMUM FLEXIBILITY FOR THE NEEDS OF THE CLIENT. THE MODULARITY OF THE STAGE ALSO PROVIDES OPPORTUNITY TO DEFINE SPACES WITHIN THE SITE.

STAGE LAYOUTS

BAR OPTION

ADDED DOORS

ORIGINAL ELEVATION

DREAMER CONCEPTS _ THE LOT

DREAMER CONCEPTS _ STOREFRONT

INTERIOR WALL DETAIL

WORKSPACE INTERIOR AND EXTERIOR WALL DETAIL

Workspace View

Gallery View

8 9

2014 Creating_Making Forum
SESSION 1: Do the Tools Matter?

Session Chairs:
Dr. Suchismita Bhattacharjee, University of Oklahoma
College of Architecture Division of Interior Design
Tammy McCuen, LEED AP, University of Oklahoma
College of Architecture Division of Construction Science
Elizabeth Pober, IDEC, IIDA, University of Oklahoma
College of Architecture Division of Interior Design

With the goal to further explore the new technologies available for the building design team and the impact of technologies on building design and construction processes, this session invites papers and discussions focused on how technology can and will assist the future building design and construction industry.

An increase in demand for better buildings led to the emergence of new strategies and technologies aimed at improving the performance of buildings with respect to functionality, comfort, aesthetics, cost and environmental impact. The increased number of available options for a given design problem have made the creative and innovative decision making processes more difficult and challenging for designers. The design process for a high performance building is best accomplished through a holistic lifecycle approach by a collaborative team of design and construction professionals.

Advances in information technologies and the continuous improvements in computing power have led to the development of several computer-based tools that have significantly impacted the building design development and collaboration process. Today, the design process is dominated by the use of technology, from the programming and schematic design phases through design development, construction documents, and into building construction and operation phases. Since the adoption of computer-aided design in the 1980s, computer technologies have dramatically changed from simple drafting tools to complete building design decision-making, simulation and communication tools.

Integrated Digital Design Process: First Glory Church

Seung Ra, AIA
Assistant Professor
Oklahoma State University

Abstract

First Glory Church, a community-based religious facility in Seoul, Korea, was completed in 2014. The project added 150,000 square feet to the church’s existing building and satisfied the goal of incorporating more community space for the growing congregation and surrounding neighborhood. A challenge for the church was to integrate past, present and future; as a place of worship, it had an important history to maintain while assimilating new technologies.

Contemporary religious architecture in Korea is largely based on prescriptive imagery. This project provided a thought-provoking opportunity to see how cultural influence could be addressed differently in the face of globalism. In lieu of conventional design, this project took a more novel design approach to realize a provocative facility design for one of the most conservative church denominations in Korea. The client ultimately favored the more innovative design after passing over previous emblematic designs for the church, raising the possibility for influencing a move toward the less familiar in Korea.

Our main objective was to promote cultural sustainability while departing from the preconceived notion of church design and to create a work of architecture that would reflect the nature of the future client and cultural needs for a modern facility. We re-envisioned functional possibilities for interior spaces to create more adaptable community spaces for the life of the facility. Conceptually, we sought to provide an uplifting space, while delighting worshipers with a new experience. This inspired our design of a new image for the church in modern-day Korea.

The project utilized digital technology to aid in the complex task of integrating the constraints of the existing building and structural layout with the proposed new shell design. It also became a critical tool for client participation and visualization, as well as contractor coordination. This session will present the integration of digital technology into the design and construction processes for First Glory Church.

Full paper withheld at author’s request.
Customized Repetitive Manufacturing in Architecture: A Case Study

Dana K. Gulling
Assistant Professor
North Carolina State University

Abstract

In recent years, computer numeric controlled (CNC) machines have made it easier to customize the tools for repetitive manufacturing. CNC milling machines, electrical discharge machines (EDM), and hot-wire foam cutters are used to create tools (e.g., molds, patterns, and jigs) for repetitive manufacturing. With the use of CNC equipment, repetitive manufacturing can be cost effective for small-volume productions and thus makes customizing repetitive manufacturing a viable option for architectural applications. Today, architects and manufacturers are working together to customize repetitive manufacturing for unique building components.

Through my scholarship and teaching, I have compiled a list of case studies of customized repetitive manufacturing in architecture. There are a few historic examples, such as Frank Lloyd Wright’s cast concrete blocks for his series of textile blocks (c. 1923) and Harrison & Abramovitz’s stamped aluminum panels for the Alcoa Building (1953). However, most of the gathered case studies have been completed in the past 15 years. Those include REX’s slumped glass windows for the VAKKO Fashion Center in Istanbul (2010), Francisco Mangado’s extruded terracotta column covers for the Spanish Expo-Pavilion in Zaragoza, Spain (2008), and Tom Phifer’s contact-molded fiberglass ceiling coffers for the North Carolina Museum of Art in Raleigh (2010).

This paper uses Foster and Partners’ Walbrook Office Building in London (2010) as case study of customized repetitive manufacturing in architecture. The Walbrook’s exterior louvers are made from blistrer inflation molded (BIM) glassfibre reinforced plastic (GFRP). The louvers were designed and manufactured specifically for this project. The selection of using BIM GRP solved many problems that the project faced. This paper presents the specifics of the manufacturing process used and the particulars of the process for the case study and explores lessons learned by the architect.

Customized Repetitive Manufacturing, a Definiton

Manufacturing is to make similar products from raw materials, especially when done systematically. Repetitive manufacturing reuses its tools (e.g., molds, patterns, and jigs) to produce a run of similar products. Production runs for repetitive manufacturing can be varied, ranging from prototypes and small batch to production runs over one million units. In repetitive manufacturing, the tools are static – where a tool forms a shape. The tools may be adjusted or partitioned in such a way that different portions of the mold are used for forming differing shapes. Additional changes in the produce units can be done through manufacturing speeds, manufacturing conditions, or changes in media.

In repetitive manufacturing, the production run length is dependent on the process, the material, the labor, and most often the cost of the mold. For example, because of the low capital costs to make a pattern, sand casting can be used for small batches. Conversely, injection plastic molding, which typically uses a mold made from tool steel, has moving parts and embedded cooling lines, and is more appropriate for high-volume production. A product’s production run offsets the production costs, so that high production runs are necessary for processes that have high tooling costs. For example, if a mold costs $50,000 but produces 100,000 units, the added cost of a custom mold would be just 50 cents per unit.

Customized repetitive manufacturing combines the value of repetitive manufacturing with the flexibility for customization. For architectural application, this means that a repetitively manufactured building component is customized on a per-project basis. For each of the examples offered in the paper’s introduction, the manufactured component is specific to each project and is not available commercially (see Fig. 1). The case studies gathered include repetitive processes with a range of production runs. There are over 360 contact-molded ceiling coffers for the North Carolina Museum of Art and over 27,000 terracotta pieces for the Spanish-Expo Pavilion. Despite the broad range of production runs, most customized repetitive manufacturing processes in architecture are those manufacturing processes that can accommodate small and medium length production runs.

For architectural applications, customized repetitive manufacturing can be flexible in its execution to meet the needs of the designer (see Fig. 2). First, tools may be created out of inexpensive materials so that multiple tool shapes may be made to make multiple shapes of repeated units. For example, Leong Leong Architects’ 3.1 Phillip Lim Store in Seoul (2009) makes use of eight different fiberglass molds for the production of the precast concrete tile. Second, tools may also be subdivided to make different shapes using one tool. For example, SHoP’s Mulberry House (2013) uses only one shape of rubber mold and subdivided that mold to make all of the project’s different precast, composite concrete wall panels.

Walbrook Office Building, a Case Stud

This paper’s particular case study of customized repetitive manufacturing is the Walbrook Office Building by Foster and Partners (2010). The Walbrook was built for a London-based British developer and property company, Minerva plc. The building includes the headquarters for a major corporation and additional leasable office
spaces. The Walbrook is located in London's central, historic core. It is next to Christopher Wren's Church of St. Stephen and near St. Paul's Cathedral. Since the building is located in a historically sensitive site, it had to adhere to a number of protected view corridors and the design team needed to be particularly sensitive to site context. Foster designed the project's bays, setbacks, and height so that it fit with surrounding buildings.

The Walbrook is over 640,000 sq [60,000 m²] and is approximately 165 ft [51 m] tall. It includes retail and restaurant space on the ground floor and an enclosed, in-balcony court in the back. The building's interior. Their reflective coating also reflects changing light conditions, so that the building can appear to be glowing orange and pink in the evenings.

The durability of the mold materials is directly proportional to the mold's cost. For example, milling foam is the least expensive mold material, but it can only support a production run of 10 units or less. Composite tool steel is the most expensive, and can support a production run up to 1 million units. There are very few size limitations to this manufacturing process, but contact molding is still limited by the size of the shop and a worker's arm length; however, as there are now more robotic sprayers, there is almost no limit to the size of the BIM object is slightly restricted in size compared to contact molding, but BIM requires additional space to close the mold and to insert and remove the bladder. Larger bladders sizes would also require a larger compressor than smaller molds, but the low pressures associated with BIM often do not make this a problem.

The Walbrook's Louvers

The Walbrook's louvers were custom designed and manufactured for this project. The louvers are spaced over three feet (about one meter) apart, which allow for unobstructed horizontal views from the inside. The louvers are elliptical and hollow in cross section. They come in three different widths -approximately eight inches, fourteen inches, and twenty inches (200 millimeters, 350 millimeters, and 500 millimeters), respectively. In total, there are 7.78 miles (12,525 meters) of the GFRP louvers on the Walbrook. Individual lengths vary, with the longest louvers being approximately three feet.[7] The louvers' material strength was engineered so that they would be self-supporting. They were designed to carry the building's weight as well as loads from wind and snow. The resin was selected so that the louvers would be fire resistant in accordance with the British Standard System. The louvers are painted with a glossy, reflective, metallic grey paint. Because of their painted surface, the louvers block direct sunlight and reflect light into the building's interior. Their reflective coating also reflects changing light conditions, so that the building can appear to be glowing orange and pink in the evenings.

The molds for the Walbrook's louvers were manufactured with a two-step process. A five-axis computer numerical control (CNC) milling machine milled a plug from high-density milling foam. FRP molds were then made from the plug via contact molding. The milled plugs are durable enough to produce several FRP molds, and the FRP molds are durable enough to produce more than 100 units before needing repair. Two FRP molds were then clamped together to create the closed mold. The ends of the mold were left open to allow the internal blader. The blader is kept inflated until both sides of the mold. The hand-laminated process was chosen over spray-on because the design team required a particular material strength and surface quality, which spray-on could not match. Although a CNC milling machine was used to make the molds for the louvers, economics did not allow them to be wholly made from computer-aided manufacturing (CAM) technologies. Instead, the design team and manufacturer, Fibertech Group GmbH, designed the louvers so that they balanced the design team's intentions with the reduced costs associated with repetition. This allowed the manufacturer to amortize the cost of fabricating the molds over more louvers.

For the Walbrook's louvers, there are only three cross sections, all of which remain consistent along the louvers' length. However, each louver's length was customized as it was made. Fibertech adjusted the louver's length by applying different lengths of resin and fibers to the mold before closing it.

The horizontal runs of the Walbrook's louvers are made by BIM, while traditional contact molding was used to form the column casings, integrated brackets, and internal bracket connectors. The integrated brackets connect the louvers visually and structurally to the column casings by an organic, foreshaped, complexly curved unit. There are additional hidden metal brackets that align with every other glass curtain wall mullion. These hidden brackets are mechanically fastened to the internal bracket connector near the contact-molded GFRP. The connector inside the hollow louver is perpendicular to the louver's curve in plan, and is chemically adhered to the louver's inside face.

FRP was not the original material choice for Foster and Partners. According to Grant Brooker, senior executive partner for the project, the firm had originally envisioned clear anodized aluminum for the louvers. However, to make the desired shape for the louvers out of aluminum, it would have required a combination of aluminum manufacturing processes -casting, extruding, and bending. Extruding and bending would have been used for most of the louvers' length, while casting would have been used to connect the louver to the column casing. Using aluminum would have resulted in two problems. First, the weight of an unbalanced structure was considered to be too high. Second, the different aluminum manufacturing processes would have required different aluminum alloys and produced different surface finishes. The most notable would have been the difference in the finishes

The Walbrook's louver's material strength was engineered so that they would be self-supporting. They were designed to carry the building's weight as well as loads from wind and snow. The resin was selected so that the louvers would be fire resistant in accordance with the British Standard System. The louvers are painted with a glossy, reflective, metallic grey paint. Because of their painted surface, the louvers block direct sunlight and reflect light into the building's interior. Their reflective coating also reflects changing light conditions, so that the building can appear to be glowing orange and pink in the evenings.

Even though BIM uses a closed mold, at least one side of the mold object will be left unfinished or open. In the example given in Figure 4, the left side of the molded object is open to both inflate and remove the bladder. Because the bladders are inflated at relatively low pressures, the closed molds for BIM can be made from a variety of different materials, including high-density milling foams, fiberglass, or metals such as aluminum or tool steel.

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between cast and the extruded aluminum. To achieve a consistent finish in aluminum, the louvers and brackets would have to be painted, but the painted finish was rejected by the design team.

The change from aluminum to FRP was recommended by Josef Gartner GmbH, the project’s cladding contractor. The benefits of FRP included lightness and strength, thus requiring few supporting brackets for the louvers. Next, unlike aluminum, the FRP would be consistent in color and finish between the molded, complex-curved brackets at the columns and the simple curved runs of the remaining parts of the louver. This enabled the louvers to have the finish desired by the design team. Two design prototypes were made—one from aluminum and the other from FRP—for evaluation of design and performance. From those prototypes, FRP was selected as the final material.

The louvers are manufactured with a standard gel coating, which is typical to most contact-molded GFRP objects. The Gelcoat is a high-gloss resin with an integrated color. It is applied to the mold by a spray gun, and the wet layup is applied after the Gelcoat has cured. The louvers are then lacquered with three layers, with sanding between each layer. The final finish is a silver, high-gloss metallic. The coating was specially developed by Fibertech. The finish protects the GFRP from small impact loads that can damage the surface, ultraviolet light that can degrade the resin, and humidity that can cause warping.

According to Brooker, Foster and Partners learned lessons through this project that could be applicable for other architects. The first is that if the design intention is paramount, then the architect should consider building materials beyond the typical architecture palette. By making the change from the initial selection of aluminum to FRP, Foster and Partners was able to achieve the desired look and feel acceptable to the design team. Since the louvers were the primary element for the Walbrook’s exterior, the quality of the final building would have been diminished had they not used bladder inflation molding.

Conclusion
Production runs for repetitive manufacturing can be varied, ranging from prototypes and small-batch productions to production runs over one million units. The tools may be adjusted or partitioned in such a way that portions of the mold are used for forming differing shapes. Customized repetitive manufacturing combines the value of repetitive manufacturing with the flexibility for customization. For an architectural application, this means that a repetitively manufactured building component is customized on a per-project basis.

This paper uses Foster and Partners’ Wallbrook Office Building in London (2010) as case study of customized repetitive manufacturing in architecture. Foster and Partners specified glass-fiber reinforced plastic (GFRP) for the Wallbrook’s exterior louvers, and Fibertech Group GmbH manufactured them using hand layup in a combination with bladder inflation molding. The project’s economics required that certain parameters, such as the louvers’ cross-sectional dimensions, remained consistent, while the louvers’ lengths could be easily customized within the hand lay-up process.

Originally conceived as being made out of aluminum, the aluminum louvers’ quality was lower and the costs were higher than originally anticipated. By following the suggestions of the project’s cladding contractor, Foster and Partners investigated using a non-traditional building material and manufacturing process to make the louvers. This resulted in finishes, details, and costs that were acceptable to the design team. Since the louvers were the primary element for the Walbrook’s exterior, the quality of the final building would have been diminished had they not used bladder inflation molding.

1 A closed mold is a mold that comes in two or more parts and encloses the manufacturing medium.

2 Flashing is extra resin that often seeps out between the seams of the closed mold. If the mold is tight enough, the flashing can easily be knocked off by hand or cut by a knife. The formed object is then lightly sanded or sanded to remove any remnants.

Grant Brooker, phone interview by author, 22 August 2014.

Acoustic Formations
Stan Carroll, AIA
Director, Beyond Metal, and Professor, Oklahoma State University

Abstract
The project is best summarized as the formation of a practice manifesting a listening device that taps into the embedded properties of sound energy and fabrication processes to shape architectural space. The research development process used parallel methodologies and authentic bottom-up systems to achieve procedural connectivity between design and fabrication during the creation of an urban sound experience pavilion. Positions for listening, defined by and trained on contextual points of aural interests, are focused geometrically, and are reliant upon an acoustic reflectivity precisely positioned by physics and mathematics. Individually unique doubly curved architectural surfaces, adaptably and efficiently formed on site, are the intermediaries between the idea of focusing sound and its manifestation. Results of the work yielded novel contributions of spatial logic, form finding, mechanical locking, mold surface material advancements, panel aggregation strategies, and commercial viability.

Full paper withheld at author’s request.

Simulation of Developable Geometries: The Craft of Software Manipulation
Bob Pavlik
Assistant Professor
University of Oklahoma

Abstract
Embedding the geometrical logic of building materials and methods of assembly into the design process is a prerequisite for constructability. A direct relationship between representation and the act of making results in structures built as intended and assigns control of design. Historical drawing techniques could mimic the movements of physical tools that shape building materials and their aggregated conditions. Breakdown in this relationship represents a loss of design agency, as translation of design intent is relinquished to craftsmen. Whether drawing stone, brick, steel frame or concrete formwork, the act of design is an act of material simulation. The relationship between representation and making often appears to endure with digitally generated forms. Sophisticated digital modeling tools produce complex three-dimensional geometries, which are realized as physical artifacts. However, the ease of digitally generating doubly curved geometries does not always have a direct corollary in material reality, as construction is often executed in inextensible sheet materials that cannot stretch into compound curvature. This necessitates a rationalization process, to translate design geometry into constructible form. Discretization strategies may divide the surface into an aggregation of components that are planar or ruled surfaces of simple curvature. Developing flat patterns for these ruled surfaces results in further distortion of form. Surprisingly, current 3-D modeling techniques are incapable of generating curved ruled surfaces directly, thus rationalization results in adjustment to design intent. This paper describes a design process utilized for an architectural installation constructed exclusively of complexly curved surfaces. The design workflow sought to minimize rationalization by directly composing with digitally generated ruled surfaces that can be flattened without distortion. The resulting methodology recognizes software as a tool that exhibits characteristic behaviors, actions and outcomes. Software can thus be wielded with skill and intuitive manipulation that comes from deep knowledge of its underlying principles and protocols.

Full paper withheld at author’s request.
Session Chair:
Dr. Dawn Jourdan, Esq., University of Oklahoma
College of Architecture Division of Regional and City Planning

For the first time in history, more than half of the world’s population lives in urban areas. The global transformation from rural and agrarian life to urban living has happened rapidly. A dramatic and worldwide revolution in our relationship to the natural and manmade environment is unfolding in our midst. The vast majority of this urban population growth is occurring in developing countries: cities such as Dhaka, Kinshasa and Lagos are now 40 times larger than they were in 1950. Migrants to urban areas often find the only available housing in makeshift dwellings, slums and shantytown settlements on the peripheries of exploding megacities. Too often these settlements lack clean water, paved roads, sewage infrastructure and other basic necessities. In spite of these harsh conditions, these settlements remain productive environments in the global marketplace. We seek a range of papers that examine contemporary conditions in urbanizing areas as well as precedents in housing policies and practices in order to begin to develop a better understanding of the issues at stake and imagine a range of models for success.

Providing adequate housing for populations moving from rural to urban environments is a challenge that planners and designers must confront in the 21st century. Yet this challenge is not entirely new. What can we learn from earlier experiments in social and public housing that might inform how to begin to address the global housing crisis? Failures, successes and the range of solutions in between offer valuable lessons that might inform how to begin to address the global housing crisis. Failures, successes and the range of solutions in between offer valuable lessons that might inform how to begin to address the global housing crisis.

Architecture and Social Problems: Lessons from Pruitt-Igoe

From Wroclaw to Prague: Lessons from the Eastern-European Ferroconcrete Residential High-rise Experiments

Drawing on Context: Social Housing in Postwar Italy

Incremental Architecture at Quinta Monroy

Abstract

As populations around the world continue to move from rural to urban areas, architects and city planners must conceptualize architecture’s relationship to community development and social problems. Luckily, successes and failures of past urban planning efforts and public housing projects can inform architecture’s future role in battling social problems that often accompany rapid urbanization.

In his book Down Detour Road, Eric Cesal argues that in recent years architects have undertaken their own importance by focusing on formal design and acclaim from the architectural community rather than architecture’s role in daily life and the power buildings have to improve or detract from daily activities. For architects to regain their former prestige, explains Cesal, they must embrace the role of “citizen architect” and think about how to use architecture to solve problems affecting everyone rather than just those pertaining to architects and their clients. The high-profile failure of St. Louis’s Pruitt-Igoe public housing project in the 1950s and 1960s muted architects’ desire to use architecture for social change, but Cesal argues that the philosophical backlash against modernist optimism has gone too far. It is unrealistic to expect architecture to singlehandedly solve social problems, but it is equally problematic to ignore architecture’s relationship to its communities.

This paper examines the socioeconomic context of Pruitt-Igoe’s failure and explains how a better understanding of this context can shape future decisions about architecture’s role in addressing social and economic problems.

Introduction

In recent years architects have seen a decline in status, evident in public perception of the profession and in the way clients interact with architects. In his book Down Detour Road, Eric Cesal argues that architects have undermined their own importance by focusing on formal design and acclaim from the architectural community rather than architecture’s role in everyday life and the power buildings have to improve or detract from daily activities. For architects to regain their former prestige, explains Cesal, they must embrace the role of “citizen architect” and think about how to use architecture to solve problems affecting everyone rather than just those pertaining to architects and their clients.

Architecture’s Role in Addressing Social Problems

Cesal defines citizen architecture simply as an increased awareness of the implications of a project. Citizen architecture often evokes ideas of small-budget green projects out in the woods, but Cesal’s definition connotes none of that. He describes citizen architecture as a focus on community. In his argument, Cesal starts by noting that altruism has fallen out of favor among architects. In part because of the perceived failure of Pruitt-Igoe and the modernist utopian ideals associated with it, however, a lack of altruism is not in itself a problem, because it is easily conceivable that a project could be both beneficial to the community and profitable to the client. The problem is that, too often, architects and clients do not recognize how important a successful community is to the long-term vitality of a project, and so they do not place enough importance on making sure their projects support their communities. Architects and clients need to stop thinking of architecture-community relationships as altruistic – in reality they’re symbiotic. Cesal explains that in the past architecture was seen as a vehicle for social problem-solving, but contemporary architecture chooses to view such problem-solving as altruistic rather than as a core part of the profession. Pruitt-Igoe’s demolition, a symbol to many of the death of modernism, was a major factor in this unproductive shift in thinking.

The story of Pruitt-Igoe reveals much about belief in architecture’s power to solve social problems. When the project opened in 1954, it was touted as a solution to social disease. But when it was demolished in the mid-1970s after a troubled existence, it seemed obvious: Architecture was not the answer to social problems. Worse, architects largely ignored these problems altogether after Pruitt-Igoe’s failure, leaving issues of poverty and health to social workers and urban planners. This is problematic.
Just because architecture cannot solve cultural and societal problems in and of itself does not mean it has no role in them.

Postmodernism and Architects’ Insensitivity to Social Problems

Before coming Pruitt-Igoe’s history for clues about how architecture should address social problems, it helps to understand architects’ reaction to Pruitt-Igoe’s failure as a roadmap for how to address these problems. When Pruitt-Igoe was demolished and it appeared that modernists’ quest to alleviate social problems through architecture had failed, many architects decided to ignore social issues altogether. Postmodernist architect Michael Graves’ Portland Building, provide evidence that, despite the impracticality of modernist utopian ideals, architects should not ignore social problems.

Architect critic Ada Louise Huxtable noted in 1980 that it is easier to criticize specific failures than to respect modernism’s utopian vision of architecture as a vehicle for social problems. What role, then, should architecture play in social problems and community development? A closer look at the life and death of Pruitt-Igoe reveals some of the ways architecture can help alleviate social problems in urban America.

Lessons from Pruitt-Igoe

Optimism and idealism defined the early years of the Pruitt-Igoe housing project. It was seen as a “symbol of St. Louis’s rebirth,” and former residents remembered their initial experiences fondly.11 One resident said the project had an “electric, engaging life,”5 something any architect would love to hear about his or her work. But it is important to remember that the problems Pruitt-Igoe and public housing in general addressed were not basically architectural. The disadvantaged people who moved to Pruitt-Igoe did leave behind shockingly inadequate housing, but that was still a symptom of poverty, racism, and racial segregation. It was not surprising, then, that Pruitt-Igoe’s example and correctly address these issues, as Cesal argues citizen architecture should, it helps to look at some of their causes and forms in American cities.

Structural Segregation and Poverty in Urban America

In their influential book American Apartheid, Douglas Massey and Nancy Denton describe a ghetto as an area “exclusively inhabited by members of one group, within which virtually all members of that group live.”14 The word is used by white modernist architects to define African Americans or with pre-World War II Jews, but it still applies emphatically to urban America today. It certainly applied to St. Louis in 1940, when the city had a 92% in residential dissimilarity (a 0-to-100 measure of racial segregation),18 one of the highest in the nation.

There were many reasons for this high level of segregation, and three factors in particular: the desire to avoid living near blacks funneled southern blacks moving north into existing black neighborhoods.20 Whites subsequently used racial violence and discriminatory real estate practices to avoid neighbors of a certain race.22-edge residents who need more supportive learning environments or chemical plants that need to dispose of waste without harming nearby communities. If this sounds familiar, it is because sensitivity to social context and carefully chosen battles against social problems are important elements of the citizen architect Cesal describes.

Conclusion

Cesar worries that architects’ lack of engagement in social problems after modernism’s perceived failures to alleviate those problems contributes to the architecture profession’s disconnection that allows architects to turn their backs on inner cities obsessed with form and postmodern abstraction as valid reasons architects are losing influence. But the basic problems architects are trying to solve — like how to make an efficient hospital or a comfortable coffee shop — are still relevant to people outside architectural circles, which gives architecture lasting importance.38 If architects can continue to give architecture lasting importance, they must also continue to care about the problems they care about and continue to work on them.
generation does not bether to wonder what the excitement was all about. As the failure of Pruitt-Igoe demonstrates, utopian aspirations are unlikely to solve social problems, not because those aspirations are misplaced, but because of how broad and deeply rooted social problems are. Too often we remember modernist idealism the same way we regard a child’s wide-eyed notions of how the adult world should work: patronizingly, maybe nostalgically, but not respectfully. Architecture has the power to influence society, and this should not be forgotten simply because it cannot swiftly and dramatically correct all social ills. Architects cannot single-handedly solve social problems, and they cannot sit idly by while these problems permeate the communities using the buildings they design. As the story of Pruitt-Igoe shows, and as Cesal argues in his book, thoughtful awareness of architecture’s role in people’s daily lives and design decisions based on that awareness are the best ways to strike a balance between the arrogance of patronizingly, maybe nostalgically, but not respectfu.

References


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The future of socialist estates is being called into question because, recently, many of the high-rise buildings began approaching the fifty-year life span that was assumed during their design phase. Experts are divided on the issue of implementing the new social order. Priority was placed on: the speed of construction, the number of units built to accommodate the requirements of nationally adopted five-year plans, and the economy of scale that selectively served the ideals of social equity popularized by the reigning party. Consequently, the Polish “wielka płyta” and the Czech “panela” refer to mass-produced modular buildings that are rooted in the ideas popularized by Gropius, LeCorbusier, and Mies van der Rohe, but were designed and built under very specific socio-economic circumstances.

The Past: Economic System vs. Social Order

The convergence of political and economic systems that formed the foundations of socialism provide the most rudimentary and overarching perspective, influencing the development of housing estates behind the “Iron Curtain.”7

The following issues should be examined to estimate the future potential of existing socialist housing estates:

• Did socialist housing estates fulfill the initial purpose of providing favorable and equitable living conditions to a large number of residents?

• Did socialist housing estates adapt to changing political and economic conditions?

• Is there a potential for future adaptability?

It is also important to compare the outcomes of this review to the present trend of industrialization in architectural practice. Just like at the turn of the twentieth century, when the technological advancements steered design in new directions, the beginning of the twenty-first century promises significant innovations that will once again disrupt the architectural status quo.

The Future: Industrialization of Housing Systems

In that context it is important to compare at least one successful example of early modernist social housing that withstood the test of time, including socio-economic perturbations, to a typical flat plate socialist estate built in 1970s socialist Poland. The examination of the following projects reveals many similarities and several important distinctions:

• a three-story set of row houses erected in 1927 in the famous Weissenhofsiedlung in Stuttgart, Germany, designed by Ludwig Mies van der Rohe, and

• a five-story set of multiple row houses on Popowicka Street in Wroclaw, Poland, located in a large socialist housing estate called Popowice, designed by Witold Jerzy Molicki (see Fig. 2).

Despite the over forty-five-year time frame separating the construction of both buildings, the similar use of modernist design principles on their exterior elevations and the overall building form is striking. Flat roofs, long bands of flush mounted windows with sheet metal formed window sills, flat plate covered-entrance ways, daylit cells, flush mounted downspouts, and simple, shallow and barely functional balconies that improve daylight access and increase capacity for cross-ventilation.

However, these characteristics had significantly different roots. Mies’ design reflected his belief that in the building of rental units “the economic considerations … demand rationalization and standardization of production” and need to be combined with the “flexibility in the use” to “satisfy every reasonable [future] dwelling need.” His idea of flexibility that is damaging to the unity of intervention rooted in: the basic needs of individual residents, the speed of construction, the number of units built to accommodate the requirements of nationally adopted five-year plans, and the economy of scale that selectively served the ideals of social equity popularized by the ruling party. Conversely, the Polish “wielka płyta” and the Czech “panela” refer to mass-produced modular buildings that are rooted in the ideas popularized by Gropius, LeCorbusier, and Mies van der Rohe, but were designed and built under very specific socio-economic circumstances.

So, what is the difference between the two projects? The Popowice estate was built primarily out of the need to serve the social order of the century that has already been in the state of an attempted economic recovery for several decades. Families have been compartmentalized according to their initial size and unable to expand into larger flats because in view of the socialist doctrine – the future ceased to exist. Moreover, socialism subjugated the needs of an individual to the higher good of the entire society. Thus the old vertical layering of traditional inner city architecture, which favored the use of the ground floors for mercantile and business purposes, immediate upper floors for the owners of the properties, and the top floors for rental purposes and servants, was seen as an antithesis of modern urban design. Instead, the new form of mixed-use architecture preferred state-owned and operated stores at ground level and diverse social housing above (see Fig. 3).

The University of Oklahoma Division of Architecture / College of Architecture

The failure of socialism was that, instead of recognizing its transcendental nature for better, yet undescribed future, it saw itself as both: the means to an end and the end in itself. This ideology impacted the architecture of residential high-rise estates by subjugating the creative processes to the centrally controlled doctrine of social equity.

As a result, the five-story building on Popowicka Street suffers from a “multiple identities disorder” due to a variety of interventions rooted in: the basic needs of individual residents to differentiate their dwellings, changing energy efficiency requirements affecting the “skin” of the building, and aesthetic consideration that included the color palette and signage (see Fig. 4). The structure can easily be described as a wound that has worn its “parts” despite its relatively good overall condition. At the same time, Mies’ design still stands proud of its modernist origins: absent of modifications, well used among the estate, and not overrun by a sea of automobiles.
The Past: Architecture vs. Building

The next set of "converging lenses" responds to analysis of the distinction between the processes of architecture and building, practices that evolved from the tradition of a master builder who simultaneously served the functions of "an architect, an engineer, and a contractor." This examination offers a differing, but universal applications, certain conclusions depend on numerous issues and cannot be easily assessed without taking a closer look and surveying the occupants. In 2003, Iwona Borowik compared two large socialist estates constructed in Wroclaw a few years after the Popowice estate completion. Her study provides very comprehensive and detailed answers to the question of quality of these human habitats.24 The most interesting findings suggest that in 2003 "more than 1/3 of the residents of the [analyzed] estates expressed their happiness about the flats they occupy, more than half were used to the habitat they live in, and over 3/4 felt safe in their environments."25 These results extrapolate to the situation presently occurring at the Popowice estate and are largely supported by the type and tone of articles found in the community newsletter, "Nasze Popowice." Published beginning in December 2005, the circular discusses the usual issues of parking availability, trash removal, remodeling of apartments, energy efficiencies, the nature of the roofs, and maintenance.26 The last four topics mentioned above are significantly interconnected and directly related to the following outcomes of socialism:

- the positive – leveraging of resources and technologies for the good of the society, and
- the negative – short-term thinking about the quality of individual living quarters and narrowly understood ideology of social equity.

The Present: Simple and Uninteresting vs. Beautiful and Complex

Typical studies of large block socialist housing estates in Poland are longitudinal and examine a significant number of properties to generalize specific findings across a variety of urban patterns and locations.27 While many findings offer a differing, but universal applications, certain conclusions depend on numerous issues and cannot be easily assessed without taking a closer look and surveying the occupants. In 2003, Iwona Borowik compared two large socialist estates constructed in Wroclaw a few years after the Popowice estate completion. Her study provides very comprehensive and detailed answers to the question of quality of these human habitats.24 The most interesting findings suggest that in 2003 "more than 1/3 of the residents of the [analyzed] estates expressed their happiness about the flats they occupy, more than half were used to the habitat they live in, and over 3/4 felt safe in their environments."25 These results extrapolate to the situation presently occurring at the Popowice estate and are largely supported by the type and tone of articles found in the community newsletter, "Nasze Popowice." Published beginning in December 2005, the circular discusses the usual issues of parking availability, trash removal, remodeling of apartments, energy efficiencies, the nature of the roofs, and maintenance.26 The last four topics mentioned above are significantly interconnected and directly related to the following outcomes of socialism:

- the positive – leveraging of resources and technologies for the good of the society, and
- the negative – short-term thinking about the quality of individual living quarters and narrowly understood ideology of social equity.

The Present: LeCorbusier’s Dream Fulfilled?

In the socialist estates, natural cross-ventilation that actually worked proved a stark contrast to traditional urban courtyard designs. The inner city architecture did not allow for proper air circulation, often causing moisture management problems and fine particulate pollution from individual homeowners’ coal-burning furnaces. Additionally, the reliance on building orientation toward the street within the traditional urban grid, which was absent from the new large block housing estates, allowed for proper positioning throughout the year for winter sun exposure and summer sun shading.28 Despite the linearity of modern urban planning that looked somewhat uninteresting as compared to the natural “randomness” of the inner city, each occupant of the estate enjoyed access to these fundamental climatic elements and significant visual privacy from neighboring buildings. Initially, the space between buildings was quite empty with the exception of a few existing trees that survived the intense construction period. However, in time the vision of LeCorbusier, who dreamed of large building “vessels” sailing within a green sea of landscape, became closer to reality (see Fig. 1).

These upgrades and reconditioning have improved the general appearance and thermal comfort of the buildings while leaving the entire estate true to its original design intent. The terracotta modular design with its modest architectural expression have proven to be more flexible and responsive to the immediate needs of the changing economy than the traditional eighteenth and nineteenth century architecture, at least in the realm of thermal comfort and general maintenance. In that context, the beautiful and distinctive architecture of the inner city became less adaptive due to its complex form in elevation and large amount of Architectural detail.

The Next: Improving Existing Urban Infrastructure

The last phase consisted of the application of thermal insulation materials to the exterior elevations. South and north walls received the Extroisol Insulation Finish System (EIFS), which consisted of several inches of Styrofoam covered by a textured surface and painted in accordance with the original specifications (see Fig. 5). The end walls consisted of a Styrofoam layer covered with finished, corrugated metal sheets.

Fig. 4. Environmental signage applied to an end elevation of a five-sto row house building.

Fig. 5. The results of thermal insulation upgrades on adjacent elevations.
The Future: Uncertainty vs. Optimism

What saved some of the socialist estates from becoming a complete failure was the combination of the following factors: location, lack of social stratification, large expanses of green space between individual buildings, and the ability to transition from state ownership to communal possession. In the case of the Popowice estate, its short distance to the city’s center and availability of an extensive public transportation system, along with convenient access to municipal heat, water, and electrical power services, positioned the property for a potentially prosperous future. The social diversity of the residents provided an additional benefit that postponed gentrification and segregation, allowing numerous social improvements that affected many other large housing projects, including the Pruitt-Igoe project, which was demolished during the same time that construction of the Popowice project was finalized. Additionally, the availability of public space to accommodate the “skyrocking” usage of personal automobiles after the fall of the Berlin Wall contributed to an expansion of the originally planned, very limited parking capacities. However, perhaps the most important factor that allowed for the initial survival after the collapse of socialism, further operational continuity during the transition period, and creation of a vision for the future was the initiative of the newly democratically elected national government that did not privatize the estate but, instead, allowed for its continuous use.

Lessons and Speculations

The early modernist ideals, implemented to some extent in socialist estates, can be divided into two broad categories:

- Human ecology that borders on current sustainability movement and manifests itself through the emphasis on the overall human comfort and spatial attention to the quality of urban environment, and
- Social equity that lays foundations for the current social justice movement and manifests itself through controlled diversification of apartment sizes to minimize social stratification.

Unfortunately, these qualities relied heavily on the ideology of socio-economic progress and were tied to the old system but failed to recognize its own limitations. The Popowice estate functioned fairly well in the late 1970s and early 1980s because the material situation of the vast majority of the people in the Soviet Union was far better than the situation in the new democratic countries. In the early 1990s, shortly after the fall of the Berlin Wall, people were allowed to travel freely to the western countries and the period of massive cultural exchange ensued. For example, the amount of vehicles imported from Germany in the 1990s and early 2000s quickly filled the number of available parking spaces at the estate, and the residents found themselves encroaching slowly on the open green space designated for parks and recreation. Additionally, the flats became too small to accommodate the new consumers and facilitated the free market economy and rapid aging of the population.

Perhaps the most important lesson from the development of socialist estates is the level of influence of the political ideology on the case of the urban development. It manifested itself mostly in the design practice that was driven by a specific and predetermined outcome, rather than by philosophers and their philosophical development. Modernism created a philosophy of design and to a large degree successfully implemented it in Western Europe, socialism concerned itself with an attitude of value engineering towards the creation of human environments.

Despite the availability of modern technologies that allowed for the creation of significant economies of scale, a cadre of creative and experienced designers eager to implement modernist architectural ideas, and the ability to learn from Western experiences experimenting beforehand with modular concrete buildings, the socialist system continually impeded the actions of architects who were eager to innovate and think critically. The top-down political structure and the interpretation of the socialist ideology led not only to the creation of many estates suffering from a “multiple and disorder” but required important changes to be made in order to secure an appropriate continuity of their existence. On the other hand, the inner city dwellings have been significantly restored and modernized, revealing their historic aesthetics in full splendor. These structures survived numerous socio-economic perturbations and tremendous devastation during several armed conflicts engulfing the region over the last three centuries. They most likely will stand for generations to come, while even the most successful socialist estates are in danger of disintegration in the next few decades due to their structural conditions, developing social stratification, and significant aging of the society.

Lastly, the trend of industrialization of architectural design that currently bears similarities to early fascinations with the automobile and airplane industries at the turn of the nineteenth century has the potential to abandon the humanistic side of architectural aesthetics and function in favor of purely scientifically and sociologically driven solutions. This process gives a new meaning to the expression coined by LeCorbusier – “The house is a machine for living” – and might produce the new architecture of “living machines” subjugated to a specific and predetermined outcome, rather than by architects and their architectural aesthetics and function at a distant second to technological innovation, and just like in the case of socialist estates, might have to resort value engineering in the future in order to respond to the socio-economic conditions of the moment.

Images provided by author.
Incremental Architecture at Quinta Monroy

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Abstract

Three billion people currently live in cities, with nearly one billion living in slums. In fewer than twenty years, the number of people living in slums is expected to double. Application of basic math to this urban growth equation adds up to new housing needed for a million people every week for the next twenty years. One approach that could be used as a template toward solving this global housing crisis is incremental architecture. In this model, construction is not completed all in one phase; instead, it relies on its residents to complete the building of their own homes. A particularly innovative example of incremental architecture is Quinta Monroy, a social housing development located in Chile, built in 2004, and designed by the Chilean architecture firm Elemental. Since only part of the structure was designed by architects and constructed by professionals, the architects made very deliberate decisions regarding what was and what was not included in the structure they did provide. This paper examines the factors that impacted the form of Quinta Monroy, resulting in the inclusion of certain features and the exclusion of others.

The overarching factor driving the design decisions at Quinta Monroy was the finite budget mandated by a new housing policy that relied largely on a small government subsidy. For $8,500 per dwelling unit, Elemental provided structurally sound housing, with running water and a sewage system, without overcrowding. Through thoughtful design, it also provided a context in which the properties at Quinta Monroy rapidly appreciated in value. Elemental has since completed several additional projects using regionally appropriate variations on the incremental typology, its repeated successes in using incremental architecture, with well-planned designs, show promise as models for improving the living conditions of millions.

History of the Site

Quinta Monroy is named for Ernesto Monroy, an associate of a private corporation that took ownership of the site in Iquique, Chile, in the 1970s. Until that time the site had been used only for farming. Through the next two decades, with Monroy’s permission, temporary housing was erected on the site. But during this time it also deteriorated into a slum. There was no sewer or running water anywhere on the 1.4-acre site. Monroy died in 1995, and legal proceedings to sell the site had been used to pay for the land, the infrastructure, and the dwelling unit. The subsidy of $7,500 was increased to $8,500 shortly after the Quinta Monroy project was launched.

2000 the government intervened and compensated the estate owners. In purchasing the land, the goal was to provide a housing project for all of the occupants. At the time, a subsidy from the Chilean housing ministry worth US $7,500 could be granted to each family. This subsidy had to be used to pay for the land, the infrastructure, and the dwelling unit. The subsidy of $7,500 was increased to $8,500 shortly after the Quinta Monroy project was launched.

The Decision Not to Relocate

One decision Elemental made very early on that influenced all subsequent design decisions was not to relocate the occupants to chemically non-available outside the city limits, such as Alto Hospicio, the suburb where other social housing projects typically purchased more affordable land. This was done to allow the occupants to retain their social ties to the community. They were also able to keep their current jobs, as relocating to Alto Hospicio would have placed the undue burden of a forty-five minute commute. Elemental spent three times the amount that Chilean social housing budgets ordinarily allow for the purchase of land. It was able to do this because it was testing a new housing policy put forth by the housing ministry, la Vivienda Social Dinámica sin Dueda (VSD), which translates as dynamic, debt-free social housing. VSD allows a government subsidy designed to aid chronically poor people unable to borrow money to purchase a home. This initial decision not to relocate placed extreme financial constraints on the project. Because so much money was spent on the land, even less money than usual remained to go toward infrastructure and housing expenses.

Decisions Affecting Form

Financial limitations became the overarching factor affecting the unique form of Quinta Monroy. A certain level of density had to be achieved to offset having spent 20 percent of the entire budget on the purchase of land. For this reason, Elemental quickly rejected the detached house typology. One house per lot would result in an inefficient use of land. Elemental also knew that, due to budget constraints, it would be able to provide only very small dwelling units to each family. Elemental accepted the fact that, pressed for space, the occupants would expand their houses with self-built additions. Induced by the mass migration from country to city during the last century, Latin America has developed a culture of self-building settlements and home additions to accommodate extended families. The architects at Elemental responded to this in their design. In an attempt to achieve greater density, they considered using the two-story row house typology. This still did not provide enough density to keep all 100 families on the site. And, if the occupants built additions, they would compromise light and ventilation due to these being located along only one axis. The shared walls limit the direction in which the expansions can occur. Lastly, Elemental considered the mullitory block typology. Though it very
Barria Program) was that they work with the community receiving the housing.11 The community participants actually requested many smaller courtyards as opposed to one large area. And did they consider the one large, extended family. The location of the dwelling units on the site forms four courtyards with vehicle access. The intention was to create semi-private communal spaces. The architects provided an arrangement that discourages pedestrians from cutting through the site, allowing the courtyards to serve as safer play areas for children. The lots are square, which allowed the architects to turn the many corners and still maintain their design.12

Decisions Affecting Materials and Finishes

The materials used in the construction of Quinta Monroy were reinforced concrete, concrete masonry units (CMU), wood, and glass. Since the occupants were expected to build their additions in a timely manner, the wall on the side of the building that would accept their addition was built with wood, while the other sides were constructed with CMU. As visible in Figure 1. The concrete wall between neighbors is structural, acoustically insulating, and provides a fire barrier.13 For budgetary reasons there is a complete lack of architectural finishes in this project. The architects rightly assumed that the occupants could and would apply finishes over time as their budgets allowed. Interestingly, this approach provided a nice visual balance with the unadorned, repetitive, yet unifying nature of the architect-designed portion of the building. For the same reason, the interiors have no architectural finishes either. Fig. 2 is quite striking in this regard.

Fig. 2. View of interior before occupancy. Tadeo Jaloche (2004)

Decisions Affecting Interior Spaces and Amenities

The layout of the interior spaces is designed with the assumption that the users will expand their living quarters. Therefore, it had to be designed for immediate occupation but with various possible future modifications in mind. The “house” was located on the ground floor, with an “apartment” above. The house had an initial size of twenty feet by twenty feet, with a slab extending to a total of thirty feet by thirty feet. The voids that allowed for growth within the volume of the building defined the new concept. This typology allows for increased density, due to stacking the apartments atop the houses. But it also allows for direct access from the ground level to the ground floor, thus eliminating the shared circulation spaces that were problematic.

The site itself has an irregular shape. It has eight corners and is located in the middle of the block. The architects initially thought they might define a large central space by placing the buildings around the perimeter of the site. But one requirement from Programma Chile Barrio (Chile

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Ronald P. S. A., Elemental (Circa 2003)

Cristóbal Palma (circa 2006).

Fig. 3. Construction models. S.A., Elemental (Circa 2003)

Fig. 4. Quinta Monroy Post-Occupancy. Cristóbal Palma (circa 2006)

void to be the exact size of a standardized length of Chilean lumber, while the length of the void was equal to exactly two pieces of lumber.13

Alterations and Reception by Users

At first glance, the effect of the owners’ additions (Fig. 4) is startlingly incongruous with its previous incarnation. Quinta Monroy has become warm and friendly. The residents have added their own unique designs and constructions to the whole. The vivid colors provide a contrast to the gray, monolithic original structure. Yet the architect-designed portion provides a needed unifying element to a façade that would otherwise lack cohesion. Interestingly, the owners have less agency over their additions than is readily apparent. Elemental held workshops with the community to promote “harmonious growth and structural safety.” The reasoning behind the workshops was to raise awareness “regarding their responsibility in the value appreciation of the complex.”14 An example of a suggestion made at the workshop was to create a porch at the entry to the upstairs apartment. Iquique is located in a desert, and the architects knew that in implementing this technique the owners would be providing shade to the interior living space on the second floor. Looking again at Fig. 4, it is evident that early owners should be following these recommendations. Some of the topics covered in the workshops were not optional, but were required due to joint-ownership regulations. There have been three official cases of joint-ownership disputes in the city, and community members who had not attended the workshops were responsible for the transgressions. And all have been held accountable, resulting in severe legal penalties.

An interesting aspect of this project is that some alterations were expected. Throughout history buildings have been modified in ways that were not originally intended by the architect. Although the architects planned for alterations, the fact remains that after Elemental finished the project, the owners were able to insert their own design ideas as long as they complied with building codes. Even with legal regulations and professional design solutions suggested by the architects of Elemental, Quinta Monroy still exhibits the unique style of its owners. One example of this is the unit belonging to the Cuipí family, whose unit faces out from the courtyard toward the busy street of Pedro Prado. The Cuipí family decided more from the design recommendations by the architects and rather independently added a pink facade, yet they still complied with all code regulations.15

The owners’ personal style is readily apparent in the interior of the units, because they are less concerned with conformity. And the structure of the house or other legal issues such as noncompliance. Even more so than the exterior, the use of color indoors is fantastic. Fig. 5 shows a ground-floor unit that was painted pink post-occupancy. Arguably the best measure of success in this project is the occupants’ evaluation based on their personal experiences. Elemental conducted a satisfaction survey in 2006, after the residents had been living in their new homes for eighteen
months. There were three main categories that owners were asked to evaluate: the neighborhood, the courtyard, and the home. Different aspects of each category were rated on a scale of one to seven. The neighborhood was rated a 6.5, the courtyard a 5.8, and the house 5.8 out of seven. The fact that the neighborhood received the highest rating is very telling. It supports the architects’ original decision not to relocate the tenants. They like where they are.

At the same time, Elemental surveyed the residents about the cost of their additions. The average amount each family spent on expanding its home was $1,000. Interestingly, these homes are valued much higher than the $8,500 originally budgeted to build them. After only five years, each was worth at least $20,000. The thoughtful design considerations of the architects allowed for the low figure of $1,000 for additions. Otherwise, the residents would have had to invest more money in the expansion of their homes. And it is conceivable that, without the guidance offered in the workshops, self-built additions might have been so haphazard (and hazardous) as to curb any value appreciation in the market price of the properties.

Future Usefulness of this Information

Currently, three billion people live in cities, with one billion living in slums. In less than twenty years, the figure is expected to rise to five billion living in cities, with two billion people living in slums. It is now known that it would require about $10,000 per dwelling unit to provide structurally sound housing, with running water and sewage systems, but without overcrowding. As mentioned earlier, this works out to new housing being needed for a million people every week for the next twenty years. Considering this prognosis, maximizing resources to be able to serve more people becomes critical. The architects at Elemental go one step further to maximize “the use of public resources to create a value much greater than the sum of its parts.” In the case of Quinta Monroy, the rapid appreciation of the homes is actually helping to lift the owners out of poverty.

The architects of Quinta Monroy do not mention environmental sustainability as a design consideration. However, sustainable building practices were implemented. Though the primary motivation for using minimal resources was financial, the fact remains that Quinta Monroy used far less material than is typical for standard homes. Compounded with this is the fact that many of the owner-built expansions were completed with reused or recycled materials. The resulting structure is a testament to true environmental sustainability. With the current trend toward an increased awareness of and response to the environmental damage caused by humankind, the Quinta Monroy project should be hailed as successful in this regard.

Since Quinta Monroy, Elemental has completed several additional projects using regionally appropriate variations on the half-a-house typology. It has successfully repeated the process of using social housing coupled with well-planned design and incremental architecture to provide owners with a way out of poverty. While the primary motivating factor for many of the design decisions was the meager budget, many decisions were also the result of collaboration with prospective owners. Through a participatory design process, a model of client engagement was used that broadens the traditional role of the architect. This new dialogue between architect and client results in high levels of user satisfaction and utilizes social housing as a means to overcome poverty.

Images provided by author.

References

The Dash of Theory: Making Room for Studio Theory Practice

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Abstract

Central to the creating-making pedagogy is the connection between the creator's idea and the formally constructed expression. Thought and outcome bond in tension through the connection of theoretical evidence. Synthesized theory comes together within the studio environment. Studio education has also long held the educational process of learning by doing where instructors share information with students in a mentor-apprentice style. One problem that quickly becomes apparent in the mentorship-apprentice model is that students seek to reflect the individual instructor’s inclinations, resulting in wide variance of student-learning outcomes. Learning to please one other person instead of developing unique critical thinking processes translates rapidly into professional practice. Thrust into professional practice, the former student responds to issues of time and money as constant drivers of final design solutions. This reactive pattern is held in place by a lack of development of critical thinking skills involving theoretical knowledge that is reliant upon personal design skills, creativity, and preference. Incorporating theory into the design process ensures that students develop critical thinking skills that serve to enhance their creative process, resulting in both a unique and appropriate final solution. By expanding the apprentice-mentor studio model to include theoretical models from outside the studio throughout the entire studio experience, the design student has an opportunity to carry into the workplace tools that bridge the gap and become the dash between theory and professional practice.

Introduction

Design decisions needed to execute fully developed design solutions do not happen at defined points, as milestone philosophy would suggest. Milestone philosophy suggests that objectives are met at project-specific points. Anyone practicing design for any length of time would quickly admit that, while there are milestones in any project, all projects are different from one another. Decisions are continuous over the course of a project and, by this logic, arguably so should the integration of theory be over the project’s duration. Evidence-based behavioral practice commonly found in current medical practice is rapidly also being seen in architectural and design practice. Clients want to know that presented designs will have grounded and well-considered solutions. Design practitioners can no longer rest upon their best-guess approaches of the past and be successful. By expanding the pedagogical design to include a theoretical instruction framework that touches over the entire process ensures final design congruency. Repeated application and requirements of evidence-based research into the studio learning objectives will allow the opportunity to develop second-instinct abilities in the student. In the 1990s, the Americans with Disabilities Act (ADA) arose as a set of guidelines to improve constructed environments for those with special needs. As the design field worked rapidly at learning a new set of guidelines to integrate into final solutions, the end results were often superficially applied. As time progressed, solutions became second nature to most practitioners and students. In this same way, the design profession is seeking to better address theories that improve the built conditions. Light, color, design, and human behavior theory instruction have long been design course staples outside the studio, but these theories are often quickly set aside the moment a student receives his or her first studio design project in favor of ungrounded and subjectively based solutions. Like the practitioner who has limited timelines and ever-increasing accountability demands, the student seeks to solve the problem through his or her strongest skill sets. The use of research-based evidence is not second nature to most people practicing design, but, with repeated practice, students can develop life-long skills of considering the way people experience the designed environment. Holding to an integrated theory method within the studio environment can generate a perception for faculty and students alike of limiting the student’s creative development instead of the creative-enhancing component that theoretical evidence can provide.

Instructors and students may resist due to the contentious nature of paradigm shifts, but resistance is welcome when seeking positive change. As with the model of creating-making, final design solutions benefit from theoretical framework connections. Bridging the creative and constructed results with theory can be fertile ground instructionally and beneficial toward graduating well-grounded new practitioners. Through the connective platform of theory, an enhanced theoretical-innovative education benefits students, instructors, and ultimately, project clients. Congruent with the practice of evidence-based design, studio objectives can multi-platform and form the basis of the dash (see Fig. 1).

Theoretical Framework

Theory integrated pedagogy is a concept commonly held central in the creation of architecture and interior design studio instructional objectives. Many academics would assert that their students understand and integrate theory in their studio projects, particularly at beginning or programming project stages. However, time after time students migrate to the workplace and quickly eschew theory at the first hint of project deadlines and budgets.
The scientific nature of environment and behavior ideas are central on the one space parameter. Environment and organizational academics such as inductive learning environment to be "patterns of information."

Organizational Learning

Many within the field of architecture and design, either in practice or instruction, would argue that talking about the importance of research-integrated design is passé-old-school, and yesterday’s news. But that very statement could be said to have meaning when the dialogue provided by Donald Schön and Chris Argyris. Argyris and Schön provide the general definition for the theory of organizational learning as a conceptual paradigm, methods, and goals. The interjection of systematic analysis, along with theories of environment and behavior in organizational learning, focuses on the commonalities and differences between approaches in which designers deal with a broad spectrum of disciplines including psychology, management, sociology, and organizational behavior. Learning theories are relevant to the transfer of information from instructor to student, from student to practitioner, and within the academic learning environment as a whole. Learning, in terms of organization development, is the detection and correction of error. When an individual or a group within the organization experiences any type of error, that individual or group then makes inquiry into the nature of the error and learning occurs for the organization. Acknowledging that academics in the field are in a steady state position to prepare students for the world of practice, through their teaching theory, the group then makes inquiry into the nature of the error and learning occurs for the organization. Understanding the ground and why there are differences traits would lay the groundwork toward bridging the disciplines.

Environment and behavior theories provide guidance for architects and interior designers to shape the way environments improve people’s lives and fully embrace the theories of organizational studies and congruency, with the person-environment fit connected through a systems approach understanding. The theories of organizational culture and person-environment connect with systems theory through their contribution to environment and behavior research and associated constructs. As Rapoport states, "humans live in systems," and it is the single-link of these complex systems upon people that is the central challenge for today’s students and tomorrow’s practitioners. The perspective provided by systems research contributes significantly toward the education of architects and interior designers. These contributions embrace the physiological perspective provided by a built space and share people’s mental perception for the same space. Borrowing from environmental psychology, the work environment to be "patterns of information."
Knowing these two ways that design can be approached, through practice or research, can create the designer-researcher who is prepared to answer the call of the client with accountability. As it becomes increasingly evident from research community, when in reality the research can be adapted to a great range of behavioral models for students to practice within their design solutions.

Theory and its integration into design solutions have the opportunity to deliver a contextual solution integrating spatial, temporal, social-cultural, and contextual parameters. Commonly, theoretical coursework is instructive outside of the studio experience with the intent that students will interject components of lighting, color, design, and behavior-related theoretical courses at defined points. The interjection of a holistically applied theoretical framework throughout the entire design process, from conception to completion, will prepare students as they move from instruction into practice. Rethinking the process of how theoretical evidence can raise the level of the design practice as a whole, the dash – or connection – between creating and making.

Theor-to-practice application creates the opportunity for ordinary design solutions to move toward final results that can be understood, evaluated, discussed, modified, and finalized for the design team. Design theory benefits from field and academic contributions. In particular, environmental psychology is a crucial studio instruction model because it considers how people affect their environment. The dual-nature model would serve as a crucial studio instruction model because it considers multiple levels of behavior fit into an inclusive system and can be adapted to a great range of behavioral models for students to practice within their design solutions.

The current premise is that buildings should simply “plug in” to existing water infrastructure. The expectation is that new building connects to a municipal water main and clean water flows and wastewater is flushed away and disposed of throughout the building. This belief is growing institutional knowledge of holistic building design and urban development. Rather than becoming a point source load on water infrastructure, buildings are capable of becoming water resource generators. Precedent models for building-based rainwater harvesting, reuse, and treatment systems already exist, such as in the new San Francisco Public Utilities Commission building. This 277,500 square-foot office building houses more than 900 employees, utilizes rainwater harvesting, and has an onsite “Living Machine” that reclaims and treats all of the building’s wastewater to satisfy 100 percent of the water demand for the building’s low-flow toilets, urinals and irrigation. If we couple these advanced building systems with model water conservation ordinances such as Tucson’s rainwater harvesting and grey water stub outs, we will rethink how buildings can actually offset water infrastructure needs.

Introduction

Climate change and population growth are driving the Southwest toward the edge of water shortage. The US EPA states in its report on “Climate Impacts in the Southwest”:

The climate of the Southwest is changing. Over the last century, the average annual temperature has increased about 1.5°F. Average annual temperature is projected to rise an additional 2.5-8°F by the end of the century. Warming in the Southwest is projected to be greatest in the summer.

Warming has already contributed to decreases in spring snowpack and Colorado River flows, which are an important source of water for the region. Future warming is projected to produce more severe droughts in the region, with further reductions in water supplies. Future water scarcity will be compounded by the region’s rapid population growth, which is the highest in the nation.

It has already been noted that populations are increasingly urbanized. While in our rural and suburban areas and rural myths of supply still exist within the confines of our cities we must realize that the single largest usage of water usage growth is within our buildings.

Since 1985 to 2005, water use in the residential sector closely tracked population growth, while water use in the commercial sector grew almost twice as fast. In 2005, between 27 billion and 39 billion kWh were consumed to pump, treat, distribute, and clean the water used in the buildings sector, accounting for 0.7% to 1% of net electricity generation.

In 2005, an estimated 410 billion gallons per day (bgd) of all water was used in the United States. This total includes fresh and saline water from ground and surface sources. Domestic (residential) water use was the third largest water use category after thermoelectric power generation and irrigation, with an estimated 29.4 billion-gallons-per-day (bgd). Another 10.2 bgd were used in commercial buildings, for a total of 39.6 bgd in the buildings sector as a whole.

From 1985 to 2005, water use in the residential sector closely tracked population growth, while water use in the commercial sector grew almost twice as fast. All water uses taken together were unchanged. As a result, total water use over those two decades increased less than 3%, while water use in the buildings sector increased 27%. The buildings sector’s share of total water use increased from 7.8% to 9.7%.

With increasing urbanization, municipal water supply and treatment has struggled to keep pace but infrastructure needs and funding for expansion have fallen drastically behind. The last 10 years have seen regulatory changes that provided funding for corrections to outdated combined...
sanitary and storm water systems. These systems were “solved” by having sanitary systems take over existing infrastructure and stormwater being “daylighted” to surface flow. New sources of freshwater have been identified, but, as indicated earlier, drought conditions are limiting availability. Furthermore, wastewater treatment systems are becoming overloaded as more and more building sources are brought on line.

Every four years, the American Society of Civil Engineers releases a Report Card for America’s infrastructure that depicts the condition and performance of the nation’s infrastructure. In its 2013 report, ASCE gave the nation’s wastewater treatment system a D+, stating that:

Wastewater infrastructure in the United States is aging, and investment is not able to keep up with the need. State and local governments incur approximately 98 percent of the capital investments annually to maintain and improve the infrastructure. In 2008, state and local governments estimated their total expenditures at $93 billion annually for wastewater and drinking water infrastructure.

The Congressional Budget Office, EPA, and other groups have estimated that it could take more than $300 billion to address the nation’s sewage collection and treatment infrastructure needs over 20 years, totaling only $10.5 billion—an average of $2.1 billion annually or $42 billion over 20 years.3

The report further states that capital funding has not kept pace with the needs for water infrastructure and that state and local governments will continue to assume the bulk of the nation’s infrastructure. In its 2013 report, ASCE gave Infrastructure that depicts the condition and performance of the nation’s infrastructure. In its 2013 report, ASCE gave the nation’s wastewater treatment system a D+, stating that:

More than while half of California is under the most severe level of drought for the first time since the federal government began issuing regular drought reports in the late 1990s, the City of San Francisco has been developing plans to implement recycled water programs on multiple scales with centralized facilities, building scale incentives, and district scale opportunities. Seeking to set the example for water conservation and reuse, the San Francisco Public Utilities’ new headquarters facility was programmed to integrate building water systems from a building scale catchment and treatment perspective.

The 277,500-square-foot headquarters houses 950 employees and contains two non-potable water systems: a Living Machine and a rainwater harvesting system. According to the San Francisco Public Utilities Commission,

The Living Machine treats all of the building’s wastewater, up to 5,000 gallons per day, and then disposes of the treated water in the landscape. The system reduces the building’s potable water consumption by approximately 65% and provides an annual potable offset of approximately 1,500,000 gallons. The system utilizes a series of diverse ecologically engineered wetlands, located in the sidewalks surrounding the headquarters and in the building lobby, to treat the wastewater. This unique treatment process blends function and aesthetics – the wastewater is treated in San Francisco Department of Public Health reuse standards while providing a high-profile pilot project for on-site water reuse.

While the water conservation and reuse function is truly remarkable, what is striking from the designer’s perspective is the streetscape associated with and expressed by the Living Machine.

The planted strip that serves as a functional wetland serves as the pedestrian thoroughfare for 30 vehicle breakdowns like a textbook image. This natural environment not only serves as an aesthetic amenity and structural separation but also as a functional wastewater treatment system. The application is profound

The report further states that capital funding has not kept pace with the needs for water infrastructure and that state and local governments will continue to assume the bulk of the nation’s infrastructure. In its 2013 report, ASCE gave the nation’s wastewater treatment system a D+, stating that:

While the SFPU has definitively shown how integrative systems can function, it does beg the question, “How much did it cost?” The Living Machine, rainwater harvesting system, and their distribution piping cost approximately $1 million. The non-potable water systems increased the building’s total construction costs of $146.5 million by less than 1 percent.

A review of findings from the field of environmental psychology shows that humans are aesthetically attracted to natural contents and to particular landscape configurations. These features are also found to have positive effects on human functioning and can reduce stress. However, opportunities for contact with these elements are reduced in modern urban life. It is argued how this evolution can have subtle but non-trivial effects on well-being. These can be countered by integrating key features of natural contents and structural landscape features in the built environment. Several practical proposals are discussed, ranging from literal imitations of natural objects (such as plants) to the use of nature’s fractal geometry in an architectural context.

Cognitive psychology poses the case for the persistence of integrated natural environments. The studies indicate that they were conducted under varying conditions and measured stress using such measures as skin resistance and cortisol levels, which is typical in the medical community. Subjects were given stressful testing tasks or were in hospital environments experiencing stressful situations and then exposed to a natural environment, sometimes using just a picture. It is important to note that the pictures/scenes were of a savannah style, not of dark forests or wilderness areas. These savannah-like environments are much like the suggested designs of our walkable streets.

Evolutionary Assumptions in Restorative Environments

Architectural theorists spend a great deal of time talking about “prospect – refuge” theory. Hildebrand added further a great proponent of this attitude and uses it to establish a “sense of place” arguing that Hadrian was “drawn” to his Villa site in Tivoli. Searching for any sort of detailed scientific literature on the “prospect – refuge” component led me to an article titled “Methodological Characteristics of Research Testing Prospect–Refuge Theory: A Comparative Analysis.” This article describes prospect-refuge theory as follows:

Prospect-refuge theory proposes that environments which offer both outlook and enclosure provoke not only feelings of safety but also of spatially derived pleasure. This theory, which was adopted in environmental psychology, led Hildebrand to argue for its relevance to architecture and interior design. Hildebrand added further spatial qualities to this theory – including complexity and order – as key measures of the environmental aesthetics of space. Since that time, prospect-refuge theory has been associated with a growing number of works by renowned architects, but so far there is only limited empirical evidence to substantiate the theory. This paper analyses and reviews the 30+ academic literature attempts to examine the validity of prospect-refuge theory. Its purpose is not to review the findings of these studies, but to examine their methodological bases and biases and comment on their relevance for future research in this field.

This article also cites thirty separate quantitative attempts to examine the theory. One of those cited is “Love for Green in Our Genes: A Critical Analysis of Evolutionary Assumptions in Restorative Environments Research.” In this article, I believe I found I have found the necessary research to make the business case for integrating ecological systems.

Within the field of restorative environments research, it is commonly assumed that restorative responses are most important to natural elements and settings, are ultimately adaptive traits originating from our species’ long evolutionary history in natural environments. The aim of this article is to critically investigate the viability of this evolutionary view on restoration. In doing so, we specifically focus on Stress Recovery Theory (SRT), as this theoretical framework has most extensively elaborated on the supposed evolutionary origins of restoration.

Furthermore, the article “Architectural Lessons from Environmental Psychology: The Case of Biophilic Architecture” states:

A review of findings from the field of environmental psychology shows that humans are aesthetically attracted to natural contents and to particular landscape configurations. These features are also found to have positive effects on human functioning and can reduce stress. However, opportunities for contact with these elements are reduced in modern urban life. It is argued how this evolution can have subtle but non-trivial effects on well-being. These can be countered by integrating key features of natural contents and structural landscape features in the built environment. Several practical proposals are discussed, ranging from literal imitations of natural objects (such as plants) to the use of nature’s fractal geometry in an architectural context.

Cognitive psychology poses the case for the persistence of integrated natural environments. The studies indicate that they were conducted under varying conditions and measured stress using such measures as skin resistance and cortisol levels, which is typical in the medical community. Subjects were given stressful testing tasks or were in hospital environments experiencing stressful situations and then exposed to a natural environment, sometimes using just a picture. It is important to note that the pictures/scenes were of a savannah style, not of dark forests or wilderness areas. These savannah-like environments are much like the suggested designs of our walkable streets.

It is important to draw the connection and point out that the success of the business case for the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) standards rests on increased sales, increased test scores, and increased productivity. With increased productivity there are economic gains that support the
investment in a system and/or methodologies that produce them. This is the economic model that has been used to make the case for sustainability and LEED standards for the past twenty years.

The American Psychology Association publishes “Psychologically Healthy Workplace Program Fact Sheet: By the Numbers” with the following data:

- Sixty-nine percent of employees report that work is a significant source of stress and 41% say they typically feel tense or stressed out during the workday.
- Fifty-one percent of employees said they were less productive at work as a result of stress.
- Fifty-two percent of employees report that they have considered or made a decision about their career such as looking for a new job, declining a promotion or leaving a job based on workplace stress.
- In 2001, the median number of days away from work as a result of anxiety, stress, and related disorders was 25 – substantially greater than the median of 6 for all nonfatal injury and illness cases.
- In a study of a large, multi-employer, multi-site employee population, healthcare expenditures for employees with high levels of stress were 46% higher than those for employees who did not have high levels of stress.
- Job stress is estimated to cost U.S. industry more than $300 billion a year in absenteeism, turnover, diminished productivity and medical, legal and insurance costs…

Obviously, the dollar value associated with even minor stress reduction would lead investors to support studies utilizing restorative environments that can be provided by integrated natural environments.

Conclusion

Climate change is inevitable. Responses to increasing population and urbanization are being made on a global scale. In the US, California is not the only state to respond to the water issue. According to the organization Green Cities California, Tucson, as a desert community, faces a drastic need for water conservation in order to prevent drought conditions, the City of Tucson has passed an ordinance that makes it easy for homeowners to reuse their gray water for landscaping. Gray water is recycled water from clothes washers, bathtubs, showers, and bathroom sinks. Beginning June 1, 2010, all new construction of single-family homes and duplexes in Tucson will be required to include provisions to distribute gray water for outdoor irrigation.

Rethinking how a building interacts with its environment and how its systems function with regard to water systems can expand the definition of how buildings can contribute to the urban experience. Instead of looking at landscape/streetscape as external to the building, we should be looking at the water equation and meld the systems as a holistic expression of symbiosis as a building seeks to contribute to its environment instead of just taking from or merely existing in its surroundings.

References

5 Ibid.
11 Ibid.


References


References
The Origins and Legacy of Oklahoma’s Most
Extraordinary Architect – Bruce Goff

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This paper is dedicated to Professor Eugene Ray, who pronounced the surname Goff as only a New Orleanian can, and to my husband, Michael Price, who has never met a greater architect than Bruce Goff.

Abstract

“In the 1950s, when Goff was head of the University of Oklahoma School of Architecture, Oklahoma emerged as the nation’s most daring, avant-garde training ground in the discipline.”

Acts of architectural individuality erupted in the mid-twentieth century hearthland in small cities and towns and on the rural, wind-swept prairie. The regional vernacular of what is now Oklahoma was as much landscape as small town buildings in a place built by nomadic peoples without the infrastructure of Western civilization before the Land Run.

With challenges as deep as establishing statehood, and life during the Great Depression and the Dustbowl, Oklahoma was still engaged in creating itself when these expressions of architecture blossomed on the prairie. Influenced by one of the great architects of the twentieth century, Frank Lloyd Wright, the work of a Midwestern prodigy, Bruce Goff, was unconventional and startling. His education intensified the probability that his work would be regional and iconic. He was self-taught.

The peculiar vision that shaped his individual creations was the product of an unassuming genius influenced by life on the prairie, music, the availability of materials, and his personality. His buildings were as much a part of the prairie and the landscape as sculpture to be lived in, as exemplified by the Eugene Bavinger House of 1950. Goff’s work was holistic, economical, indigenous, and site specific. His buildings were as much a part of nature and the landscape as sculpture to be lived in, as exemplified by the Eugene Bavinger House of 1950.

Bruce Goff’s Philosophy and Practices Which Serve as a Legacy in Teaching

Below is a list of 20 of the most important philosophies and practices of Bruce Goff that serve as an aid in teaching.1

1. Develop the Individuality of the Student
2. Foster Imagination
3. Use the Principles and Elements of Design
4. Promote an Adequate Foundation in Physics
5. Guide Rather Than Criticize
6. Provide an Inspirational Physical Environment
7. Encourage the Honest Use of Materials
8. Explain the Organic Tradition
9. Integrate Interior Design from the Beginning of Every Project
10. Welcome Technology
11. Exploit Prefabrication
12. Teach to Compose With Materials
13. Design in Three Dimensions
14. Employ Geometry and Pattern, Not Abstraction
15. Reference the Earthly Constants
16. Understand the Value of a Disciplined Team to be the Development of the Individual Vision
17. Good City Planning Recognizes More Than Three Dimensions
18. Take Responsibility for the Outcome
19. Good Faculty Should Be Paid Handsomely
20. Strive for “Pure Architecture”

Some Observations about Bruce Goff That May Not Contribute to a Legacy in Teaching

Below are five observations about Bruce Goff that may be interpreted as problematic to his teaching legacy, as viewed from the present:

1. He did not integrate himself well, socially or physically, in his community. It is also argued that he did not integrate his buildings well with their place.
2. “Pure Architecture” of “The Continuous Present” may not be economically feasible.
3. Perfect Fit is increasingly difficult to achieve as the present more quickly becomes the past.
4. The Client is usually more than one person.
5. It may be difficult to persuade commercial clients that utility is subservient to vision.

Origins

We Belong to the Land

The regional vernacular of what is now Oklahoma was as much landscape as small town buildings in a place inhabited by Indian tribes without the infrastructure of Western civilizations before the land runs and lotteries that began in 1889.16 Integral to this discussion of creating, making, and teaching is the idea of the American vernacular response to the environmental conditions should be made. Indigenous structures were built between the ninth and fifteenth centuries, when a prehistoric culture flourished, then disappeared from eastern Oklahoma.4 Domestic and other structures exploited local materials, primarily rearing on the flatlands to ten feet above the ground.5 Large earthen mounds were used to support a ridge beam (see Fig. 1). Each not resistant cedar post was placed in its own hole, a method suitable to the expansive prairie soils.8 The exterior of the cane-lathed posts was plastered with plentiful, fire-resistant clay. The roofing was likely made of thatch or mud. The roofing was likely made of thatch or mud. The roofing was likely made of thatch or mud.

Creating, Making at the College of Architecture in Oklahoma, an investigation into the earliest known vernacular response to the environmental conditions should be made. Indigenous structures were built between the ninth and fifteenth centuries, when a prehistoric culture flourished, then disappeared from eastern Oklahoma. Domestic and other structures exploited local materials, primarily relying on the flatlands to ten feet above the ground. Large earthen mounds were used to support a ridge beam (see Fig. 1). Each not resistant cedar post was placed in its own hole, a method suitable to the expansive prairie soils. The exterior of the cane-lathed posts was plastered with plentiful, fire-resistant clay. The roofing was likely made of thatch or mud. The roofing was likely made of thatch or mud. The roofing was likely made of thatch or mud.

Assigning land by coordinate systems and planning cities on a rectangular grid are ancient and pervasive practices. The grid pattern is the simplest form for equal assignment of land, taxation, design or irrigation — short, or in reducing — short, or in reducing.
always been more eclectic than provincial.”

Nathaniel Owings wrote, “Oklahoma is more than just another state … For in Oklahoma all the experiences that went into the making of the nation have been speeded up. Here all the American traditions have been intensified.”

What was the effect of this environment on Bruce Goff? Did he object to living in a box, inside a box, within a grid of boxes? Was his eventual claim to “Organic Architecture” by himself and others a reaction to building for an exploding population? Was their work organic, or was it just building?

An intriguing paper by Robert Koffa, a professor in the Department of Art at the University of Illinois, said of Bruce Goff, “His roots are firmly in the Oklahoma prairie. Its beautiful winding valleys.” And so the parceling of the land, slash, to level and deface a finely rounded field, and fill up the tiny tilled pockets for the farms of the 1930s. The railroad directors are no enthusiastic salesperson.

Fig. 3. “Fleeing a Dust Storm”, Cimarron County, Oklahoma. Arthur Rothstein, photographer, April, 1936. (Library of Congress)

In 1949 Angie Debo, Oklahoma’s respected historian, wrote, “Oklahoma is the nation’s great mixing bowl.”

Many of his students are still alive and speak of the wonderful experience he provided. Former student James Gresham said, “At Oklahoma in the fifties we learned the joy of building. We learned what a thoroughly satisfying experience it was to create architecture. We focused on the essentials of design … and, above all, the discovery of what made each design challenge unique and befitting our most creative response.”

Among the many important things Herb Greene has suggested about Goff that bear further investigation is, “The ideas of free association and planning … the unconscious experience were appealing to him and should definitely be considered in an evaluation of his method.”

In a recent opinion piece, Roger Cohen reminds us, “When you are not told what to do you begin to think what to do. You begin to see without distraction.”

In 1910, Bruce Goff began school in Skiatook, Oklahoma. In 1920, his father was a traveling salesman for a scale company, and his mother was a seamstress for a furniture store (see Fig. 4). According to statements given to the U.S. Census, both parents were educated to the eighth grade level. Is it possible that essential information about Bruce Goff has been overlooked due to previous bias about his grade level. Is it possible that essential information about his work and his teaching … from 1947 to 1956 … at the University of Oklahoma, he utilized them to develop the curriculum for his own unique school of architecture.

His Mother and His Father

“Because of its nature and location, Oklahoma has always been more eclectic than provincial.”

With the arrival of immigrants, international building traditions followed. “Oklahoma is the nation’s great mixing bowl.” Structures included a wide variety of styles and methods, from log cabin residences to brick, Greek revival boarding schools. The lure of “black gold” brought oil men and their families to “The Oil Capital of the World.”

The building styles – German, Czech, Mexican, Russian, Italian, African, Jewish and Greek – and others, were imported by newcomers via roads, canals, steamboats, and railroads. “More languages are spoken in Oklahoma today than on the entire European continent” it was said. Daniel Webster said, “The railroad directors are no enthusiastic lovers of landscape beauty. Their business is to cut and slash, to level and deface a finely rounded field, and fill up beautifully winding valleys.”

Conclusion

With challenges as deep as establishing statehood, life during the Great Depression, and the Dust Bowl, Oklahoma was engaged in creating itself when Bruce Goff’s expressions of architecture blossomed on the prairie. Influenced by one of the great architects of the twentieth century, Frank Lloyd Wright, the work of the Midwestern prodigy Bruce Goff was highly original and unconventional and startling. His education intensified the probability that his work would be regional and iconoclastic. He was self-taught.

Acts of architectural individuality erupted in the mid-twentieth century heartland in small cities and towns and the rural, wind-swept prairie in the work of Bruce Goff. The peculiar vision that shaped his individual creations was the product of an unsung genius influenced by his family, life on the prairie, the times in which he lived, and his personality.

Very little has been written about the impact of negative life experiences on Bruce Goff or negative reactions he may have influenced from others.

Goff’s work was holistic, economic, indigenous, and site specific. His buildings were of the time and the place. Bruce Goff worked in originality. In his essay “Originality and Architecture” can be found information about his process and very good advice for those teaching in his legacy.

Fig. 5. State of Texas Certificate of Death – Bruce Goff
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SESSION 4: Fabricating Political Capital

Session Chair:
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The ways in which political power is constituted in the environment has changed dramatically over time as political structures and their relationship to the landscape have evolved. Ancient emperors once built defensive structures, temples and villas as symbolic and physical representations of power. In the Early Modern era, noble families expressed wealth and taste through their patronage of religious structures as well as family palaces. After World War II, modern architecture emerged as a vehicle through which American corporations communicated their identities in a developing global market. During the Cold War, the landscape of state power became less visible and yet ubiquitous; battlefields were everywhere of battle.Urban spaces were often too close to home to be considered battlefields, but the memory of battle persists. War and political power has been used to define national identity; the influence of global tourism on architecture has been used to create community identity by defining a sense of “us and them.”

Potential topics could range from ancient sites and religious architecture to contemporary sites such as the Green Zone in Iraq, refugee camps or Cold War missile silos. This session considers how power has been constructed and reflected through material productions including architecture, design and urbanism. How, for example, has architecture served operationally as a vessel for the working class became representative of the power and wealth of a nation; political power was no longer expressed primarily through monumental and symbolic state building campaigns.

This session considers how power has been constructed and reflected through material productions including architecture, design and urbanism. How, for example, has architecture served operationally as a vessel for the working class became representative of the power and wealth of a nation; political power was no longer expressed primarily through monumental and symbolic state building campaigns.

Fort Maurepas: Five Manifestations of Power on the Mississippi Gulf Coast

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Abstract

In 1699, men led by the French explorer Pierre LeMoine, Sieur d’Iberville, built a fort on the Gulf Coast in what is today Ocean Springs, Mississippi. Seeking to secure the mouth of the Mississippi River for France but not able to find a suitable site in southern Louisiana, d’Iberville settled on a plot of relatively high land 67 miles to the east for a wooden stockade named Fort Maurepas – a physical manifestation of colonial power. Garrisoned by 86 men, Fort Maurepas proved to be an inhospitable place, far from fresh water and infested by alligators, insects, and snakes. The fort was abandoned in 1702 when the French moved further east to what is now Mobile, Alabama.

Gone but not forgotten – due to the power of memory – Fort Maurepas was the subject of excavations by amateur archeologists and the Mississippi Department of Archives and History. In the 1960s, local activists began calling for the construction of a Fort Maurepas replica, both to celebrate the Coast’s French history and to remind the city across the bay (Biloxi) that Ocean Springs is the older community – asserting the power of heritage. The replica fort was completed in 1981, but by 2005, Fort Maurepas had become a problem for the City of Ocean Springs. Underutilized and dilapidated, the fort was more eyesore than point of pride. The future of the fort was the topic of local debate, but those conversations were rendered moot on August 29 by Hurricane Katrina, which flattened the replica fort – evidence of the power of nature. Again, the fate of Fort Maurepas was debated, and the resulting design solution respects the past while accommodating the present and the future – a result achieved through the power of democracy.

This paper examines the history of Fort Maurepas via the aforementioned five manifestations of power.

A physical manifestation of colonial power

Fort Maurepas was part of the epic struggle for North America fought among England, France, and Spain. Built in 1699 and abandoned in 1702, the original Fort Maurepas existed only three years. However, during that three-year period, several key events occurred, including further explorations with the fort as a base and negotiations with Native Americans, often using the fort as the site of the negotiations. These and other activities eventually led to the successful settlement of Louisiana, which still identifies with its French heritage today.

In 2005, Hurricane Katrina devastated the Mississippi Gulf Coast.

France’s endeavors in the New World came to an end as starts, as responses to European court affairs, opportunities for individual glory, or quick get-rich schemes – looking for the next gold mine or, barring that, the best set of pelts. The first European known to see the Mississippi River is the Spaniard Hernando de Soto, who discovered the river on May 8, 1541, crossing from what is today the state of Mississippi into Arkansas. More than a century passed until the next substantive exploration of the region, this time by the French explorers Louis Jolliet and Father Jacques Marquette, who travelled from the Great Lakes as far south as the Arkansas River in 1682. In 1682, René-Robert Cavelier, Sieur de La Salle, discovered the mouth of the Mississippi River and claimed for France all lands drained by the river and its tributaries.

France’s late 17th century adventures in the northern Gulf fit its standard pattern of sporadic action and reaction – in this case reacting to moves by Spain. The Spanish king ordered the Viceroy of Mexico to build a fort on Pensacola Bay, the northern Gulf Coast’s best natural harbor. A Spanish force from Mexico arrived in Pensacola on November 17, 1698.

As the Spanish were securing Pensacola Bay, the French, under the leadership of the Minister of the Marine, Louis Phélypeaux, comte de Pontchartrain, made plans to secure the Mississippi River. Louis XIV selected the Canadian adventurer Pierre Le Moine, Sieur d’Iberville, to lead the expedition.

With two frigates and two supply ships, d’Iberville left France in October 1698 for the Gulf Coast. After a brief sojourn in Léogane, Haiti, d’Iberville arrived at Pensacola Bay on January 26, 1699, where he found the Spanish flag, fort, and frigates. Although d’Iberville appreciated the attributes of the bay, he decided to avoid a direct conflict with the Spanish forces there and sailed west, eventually arriving at a deep-water anchorage off Ship Island. Leaving the frigates at Ship Island, d’Iberville continued west in his smaller boats, passing Cat Island and Lake Borgue. Eventually, he sailed into the North Pass, which took him into the Mississippi River. He traveled north, encountering the Houmas and other Native Americans. Doubting whether he...
in the Mississippi River, d'Iberville continued north. He reached a large red pole (i.e., Baton Rouge) which marked the border between the Houmas and the Bayougoulas. From the New World, he returned to France, being hailed as a national hero from a member of La Salle’s 1682 Mississippi River expedition, confirming that indeed he had “discovered” the Mississippi River, fulfilling one part of his mandate.

With the mississippi, the question of where d'Iberville was securing France’s claim to the mouth of the Mississippi River. To modern eyes, d'Iberville’s choice of location, 67 miles east of the mouth of the river, looks ridiculous. If he was trying to claim the Mississippi River, why did he not locate his fort on the Mississippi River?

In 1699, the delta of the Mississippi River was much larger than it is now. Approaching it by water, explorers would have encountered low sandy beaches, salt water marshes, and large areas of fresh water swamps. Insects, snakes, and alligators were abundant. Subtract modern infrastructure and land reclamation projects, and the landscape of the river delta was uninflatable. Concerning the relatively high land bordering the Mississippi that would later become the French Quarter of New Orleans, d'Iberville himself wrote:

In descending, M. de Sauvole observed a place, thirty leagues from the coast as approximated. There was another, about twenty or twenty-five leagues distant, where the land extended back a league or more; but he had not time to explore it, for the borders of the river are covered with sugar cane, that much time is necessary to advance a league to the interior, nor can much be seen immediately around you.

As a boy, Schuyler Poitevent liked to explore the beaches of Biloxi Bay—present day Ocean Springs—has some of the highest sand dunes in the world. d'Iberville’s Fort Maurepas was abandoned in 1702 when the French moved further east to what is now Mobile, Alabama. Although the physical presence of Fort Maurepas was fleeting, it was the beginning of a century of French sovereignty in the region, which continued until the Louisiana Purchase in 1803. The power of memory

Fort Maurepas was abandoned in 1702 when the French moved further east to what is now Mobile, Alabama. Although the physical presence of Fort Maurepas was fleeting, it was the beginning of a century of French sovereignty in the region, which continued until the Louisiana Purchase in 1803.

Some question the authenticity of the colonization stone. While it might not qualify as history, the stone does qualify as heritage. If the unadulterated past is seldom sufficiently ancient or glorious, most histories need aging and augmenting.11 Emphasizing the importance of the collective sense of heritage, Lowenthal also argued that “[h]eritage need not be confused with history” but “[d]epartures from history only distress a handful of highbrows.”

Supporters of the reconstruction pointed to several cannons that were found in a sunken ship in Biloxi Bay, which were prominently displayed for years in front of the Santa Maria retirement home in Biloxi, across Highway 99 from the Small Craft Harbor. Ocean Springs’ losses from Hurricane Camille were so devastating, it was aggravating, but losing it to Biloxi was anathema. The 1699 stone and the cannons were lost to other communities, and the historical plaques were relatively flimsy markers of memory. The citizens of Ocean Springs desired a permanent, visible, and evocative structure to commemorate their French heritage.

The power of heritage

A replica fort was desired by Ocean Springs as a way of cementing the town’s claim as the oldest community on the Coast. Biloxi Sun Herald columnist Kat Bergeron neatly encapsulated the rivalry between Ocean Springs and Biloxi and the importance of Fort Maurepas to that rivalry:

Ocean Springs, as France’s first post, has much to crow about, though people haven’t always listened because of a quirk in its nomenclature. That quirk is its first site “Biloxi,” after a friendly tribe of Native Americans. Later, when “New Biloxi” was built across the bay in what is present-day Biloxi, the original Fort Maurepas site became “Old Biloxi.” That was eventually changed to “Ocean Springs” to reflect abundant spring waters. It’s easy to see how this name game set the stage for confusion.

To reaffirm its place in history, Ocean Springs built a replica of d’Iberville’s Fort Maurepas, but could not do so at the original site, which likely is underwater and in an exclusive neighborhood.21

The people of Ocean Springs understood that their claim to the site where the European settlement of the region would be confirmed and anchored by a physical monument with prestige and presence.

Ocean Springs’ reconstructed fort led to a 1973 report that reviewed the known documentation of the fort, examined potential sites, and provided cost estimates. Reflecting the contagious enthusiasm of the upcoming national bicentennial, the report said, “It should be stated that historical research will remain as a continuing function of the proposed national shrine in the fulfillment of its purpose—service through preservation of the American heritage, for the people, now, and in the future.”

The report made six recommendations, including the suggestion that the reconstructed fort be located as close to the 1699 site as possible. Most problematic to this proposition, the location of the 1699 site was never found. The suspected site, the old Poitevent property, is located in a hard-to-access, upscale neighborhood. Thus, a Front Beach that is about half mile east of the suspected 1699 site was chosen. When the “inauthentic” site was selected, the Mississippi Department of Archives and History withdrew its support for the project, forever damaging the reputation of the replica fort in the minds of the public and the legislature.22

One would suspect that an apostle of authenticity, such as Ruskin, would have approved of this change. As it is, its age,24 would be appalled by the proposal. Recognizing that the reconstructed fort would not have spent all its time in such an exclusive neighborhood.21

In their sympathetic treatment of reconstructed sites, Lowenthal also argued that “[d]epartures from history only distress a handful of highbrows.”

The wider public, however, unabashedly enjoys reconstructions. Few have the time or the training to appreciate the past simply from fragmentary remains. Heaps of fallen stones convey nothing to the ordinary spectator, however, because the reconstruction makes them coherent and evocative.26

Because they are tangible and visceral, reconstructions provide an imaginative framework that ruins or empty sites cannot provide. In their sympathetic treatment of reconstructed archaeological sites, Peter Stone and Philippe Planard

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On a typical day on the Mississippi Gulf Coast, one has trouble imagining the power of nature as manifested by Hurricane Katrina. A monster storm, covering much of the Gulf of Mexico, unleashed Category 3 winds and a tremendous storm surge, which was greater than thirty feet high at its highest point and approximately eighteen feet high at Fort Maurepas. Along the shore in the velocity zone, the water was topped, and rather than rebuilding the fort, Ocean Springs opted to create a park on the site. The new plan was presented as more “user friendly” and more accessible to the public. As a concession to the fort’s supporters, the footprint of the fort was marked by a lawn edged with stone walls.

The power of democracy

Today, Fort Maurepas Park is more used and appreciated than the replica fort ever was and is part of a living, dynamic city. Instead of a rarely visited tourist attraction, Fort Maurepas Park is an integral part of the town. Ocean Springs Board of Aldermen meeting minutes show some of the uses of the park, including a concert series. The minutes also show the democratic process in action, with the board discussing regulations for concert vendors and a policy for nonprofits that wish to rent the park.

The “foundation walls” outlining the park are the same size as the footprint of the replica fort. The material is stone, however, which was not present in the original fort or its faithful duplicate. Interestingly, the form is most clearly viewed from the air, as confirmed by the remarkably similar pre- and post-Katrina Google Earth images of the site. In addition to the lawn, which serves as seating during concerts, Fort Maurepas Park included a playground for young children, a splash park, seating facing the Gulf, access to a public pier across the street, and the fort would never be completed. Fort Maurepas was caught in a financial Catch-22. As an incomplete shell, it was not enough of an attraction to bring tourists, but without tourists, it would never be financially viable.

The power of nature

By 2005, Fort Maurepas had become a problem for the City of Ocean Springs. Underutilized and dilapidated, the fort was more eyesore than point of pride. The future of the site became a topic of local debate, but those conversations were rendered moot on August 29, 2005, by Hurricane Katrina, which flattened the replica fort. The destruction of the site was followed by the state declaring it a site of state significance. Federal and state funds were allocated to repair and reconstruct the fort.

The history of Fort Maurepas can be examined as the history of five manifestations of power: a physical manifestation of colonial power, the power of memory, the power of heritage, the power of nature, and the power of democracy.

Fort Maurepas proved to be more powerful as an idea than as a physical entity. The original fort was occupied only three years before being abandoned in 1702. But, thanks to Aliberville’s writings, Schuyler Poitevent’s amateur archaeological explorations, and the efforts of countless others, the memory of Fort Maurepas was kept alive over the centuries, culminating in the construction of a faithful replica fort in the early 1980s. These first two incarnations of Fort Maurepas stood for a total of 27 years out of the fort’s 315 years of history. After Hurricane Katrina destroyed the replica fort, the City of Ocean Springs—through the democratic process—made the wise decision not only to celebrate its past but also to address the present and future needs of the city with its new Fort Maurepas Park.

Fort Maurepas Park is an important part of Ocean Springs’ landscape and a reminder that a city’s heritage can also be part of a living, dynamic city.

Acknowledgements

This paper is based on papers I wrote under the direction of K. Michael Hays, Rahal Mehrotra, Susan Snyder, and George Thomas. Some parts of this paper appear in my master’s thesis. I would like to thank my advisor, Joshua Norman, “Ft. Maurepas site will be redesigned,” The Ocean Springs Herald, April 23 (2009): 13.

Acknowledgements

1 The name of the lake Ponchatrain. Although he is commonly referred to as “Lake Pontchartrain,” Louis Phelipyasse also held the title comte de Maurepas. Fort Maurepas is named in his honor.
2 That is, the river delta, or mouth, of the Mississippi River, not to be confused with the renamed “Delta” regions of southwest Mississippi and southeast Arkansas, which are actually flood plains.
3 Identified by the editor, B.F. French, as New Orleans.
8 Lowerthul, Past, 278.
12 Ibid.
14 Bellande, “Fort Maurepas.”
15 Ibid.
18 Circus 2009, Ocean Springs Ivanhoe Park, created by a crew of Captain Frederick A. Schriever that Schriever and/or his father- in-law, Robert Ropp, Sr., fabricated the colonization plaque.
19 Lowerthul, Past, 325.
21 The Santa Maria was damaged by Katrina and is scheduled for demolition.
24 Ibid.
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34 Robert Rupp, Sr., fabricated the colonization plaque.
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Bosnian Serbian entity during the war, prior to the war displacement and relocation almost two decades after the war. This analysis asks preservationists to reconsider where power lies in the archaeological reconstruction in the postwar setting. It is not just in the interactions and exchanges that make up a reconstruction project and contribute to the healing of the community. “This place built for believers,” ends the inscription on the entry portal of the Ferhadija Mosque. The reconstruction project of the mosque demonstrates the power of a community that believes in maintaining connections despite the distance.

The Ferhadija Mosque and the Reality of Return

After 74 years as a republic of Yugoslavia, Bosnia and Herzegovina (BiH) declared its independence on March 3, 1992. This act of independence, the subsequent recognition by the European Council, and the tension of ultra-nationalism in the region led to a four-year war involving BiH, Croatia, and Serbia.

The war also resulted in the extensive destruction of monuments, religious structures, and historic infrastructure and housing. Andras Riedlmayer, a scholar on cultural monuments, religious structures, and historic infrastructure by nationalist extremists.”4 Additionally, many Bosniak community members to flee, leaving behind only 4,000 of the pre-war population of 40,000 individuals. Since the end of the war, the Islamic Community and the recovering Bosniak population have unwaveringly pursued the reconstruction of the Ferhadija Mosque to reassert their presence through the built environment and summon displaced community members back to the city.

This paper will explore methods of the Islamic Community, a religious organization working in Banja Luka, to use the reconstruction of a beloved mosque to regain a place in the cultural and social landscape of the capital city of the Republika Srpska. It will consider the role of the reconstruction project as a “linking object,” which helps the community confront the loss of its pre-war identity and as a tool to connect with faith-fellow community members. While typically assigned to inanimate objects, this paper suggests that the whole reconstruction project, namely, material recovery, archaeological reconstruction, and communication of its progress, serves as a linking object, which aids in the collective mourning process after traumatic experiences. The project creates an opportunity for the community members in Banja Luka and abroad to participate in the remaking of the mosque and the recovery of the community. Historic preservation has increasingly become viewed as an essential part of the long-term recovery from war and conflict.1 Within the Bosnian context, scholarship on the topic has focused on the importance of historic preservation to facilitate the return of displaced community members and start the process of recovery.2 Important questions remain about how reconstructed historic structures function and take on new meanings in minority communities still significantly diminished in size due to displacement and relocation.

Abstract

From 1992 to 1995, the Bosnian War led to the destruction or damage of 70 percent of mosques in Bosnia and Herzegovina. In the northern city of Banja Luka, Bosnian Serb paramilitary forces razed sixteen mosques and threw the stones of one of the most historic structures, the Ferhadija Mosque, in the city landfill. Such acts of terror caused many Bosniak community members to flee, leaving behind only 4,000 of the pre-war population of 40,000 individuals. Since the end of the war, the Islamic Community and the recovering Bosniak population have unwaveringly pursued the reconstruction of the Ferhadija Mosque to reassert their presence through the built environment and summon displaced community members back to the city.

This paper will explore methods of the Islamic Community, a religious organization working in Banja Luka, to use the reconstruction of a beloved mosque to regain a place in the cultural and social landscape of the capital city of the Republika Srpska. It will consider the role of the reconstruction project as a “linking object,” which helps the community confront the loss of its pre-war identity and as a tool to connect with faith-fellow community members. While typically assigned to inanimate objects, this paper suggests that the whole reconstruction project, namely, material recovery, archaeological reconstruction, and communication of its progress, serves as a linking object, which aids in the collective mourning process after traumatic experiences. The project creates an opportunity for the community members in Banja Luka and abroad to participate in the remaking of the mosque and the recovery of the community. Historic preservation has increasingly become viewed as an essential part of the long-term recovery from war and conflict.1 Within the Bosnian context, scholarship on the topic has focused on the importance of historic preservation to facilitate the return of displaced community members and start the process of recovery.2 Important questions remain about how reconstructed historic structures function and take on new meanings in minority communities still significantly diminished in size due to displacement and relocation.

References


Bosnian Serbian entity during the war, prior to the war displacement and relocation almost two decades after the war. This analysis asks preservationists to reconsider where power lies in the archaeological reconstruction in the postwar setting. It is not just in the interactions and exchanges that make up a reconstruction project and contribute to the healing of the community. “This place built for believers,” ends the inscription on the entry portal of the Ferhadija Mosque. The reconstruction project of the mosque demonstrates the power of a community that believes in maintaining connections despite the distance.
The grand Ferhadija Mosque, completed in 1579, and its unique construction stemmed from a historically important moment. The newly appointed Ottoman provincial governor settled into his new role in Banja Luka and installed an extensive endowment of urban infrastructure that included the Ferhadija Mosque and its complex. Typical Bosnian stone mosques of the time had a large central dome, which covered the entire central prayer space, and then three smaller domes over the porch. Importantly, the design of the Ferhadija Mosque elaborated on this form and followed more closely architectural trends originating in Istanbul. In addition to a central domed prayer hall, the structure included two side annexes covered by half domes, which created a more elaborate form and profile (see Fig. 1).

The unique structural system and high-quality ornamentation made the mosque architecturally significant and the recipient of international recognition from the United Nations Educational, Scientific and Cultural Organization (UNESCO) prior to the war. While Banja Luka did not see conflict during the war due to the proximity of a major Bosnian Serb army installation, another kind of violence affected the city. Attacks by mobs and soldiers armed with explosives led to the destruction of the sixteen mosques, eleven Catholic churches, and other cultural heritage sites related to minorities. On the evening of May 6, 1993, nationalistic Bosnian Serb soldiers placed explosives and blew up the Ferhadija Mosque and surrounding structures. In the days after the bombing, city officials ordered the site razed, and workers removed the burned stones and broken ornament. The bombings in the spring of 1993 led to the largest wave of the Bosniak community members fleeing the region.

Many different factors contributed to the low number of Bosniak returnees to Banja Luka. Research conducted in 2005 found that Bosniaks returning to the city faced discrimination in the labor market and that the Bosniak community did not have strong enough social networks or enough capital to create new jobs and businesses. Additionally, returnees faced bureaucratic obstruction when attempting to reconstruct the destroyed mosques. Immediately after the war, the Islamic Community, the religious organization sponsoring the project, tried to acquire permits for construction work and faced intransigence from the municipal planning office. In 1999, it took a mandate from the Office of the High Representative to force the municipal government to cooperate with the project and to approve appropriate construction permits. Despite the request, the mayor at the time refused to grant permission. The mayor supported this decision by calling the mosque “not a national monument of any of the three nations of Bosnia, but a monument to its Turkish conquerors who treated the indigenous inhabitants of this region more cruelly than the fascists.”

In the midst of ongoing resistance, the Islamic Community finalized its reconstruction plans for the Ferhadija Mosque, and preparations for foreign dignitaries, former residents of the city, and leaders in the Bosniak community to join together for a high-profile cornerstone ceremony on May 7, 2001. Ultrasonarological Bosnian Serbs organized a demonstration of several thousand Serbs organized a demonstration of several thousand nationalist aggressors in the city. The project’s leaders, the Islamic Community and the Bosniak National Assembly, were faced with challenges of documenting, storing, and finding the original geological source to quarry new stones for the reconstruction. The enormous effort demonstrates the reverence for the physical trace of the beloved mosque and the understanding of the stones as witness to the thriving community did not have strong enough social networks or enough capital to create new jobs and businesses. Additionally, returnees faced bureaucratic obstruction when attempting to reconstruct the destroyed mosques. Immediately after the war, the Islamic Community, the religious organization sponsoring the project, tried to acquire permits for construction work and faced intransigence from the municipal planning office. In 1999, it took a mandate from the Office of the High Representative to force the municipal government to cooperate with the project and to approve appropriate construction permits. Despite the request, the mayor at the time refused to grant permission. The mayor supported this decision by calling the mosque “not a national monument of any of the three nations of Bosnia, but a monument to its Turkish conquerors who treated the indigenous inhabitants of this region more cruelly than the fascists.”

Members of the reconstruction project, the mechanisms used by the Islamic Community to share the progress of the reconstruction reveal the importance of the immaterial. Throughout the whole process, the project has maintained a website that includes academic reports, news updates, and an extensive photographic archive of the project. While it is unclear when the team began posting photographs, it is important to the project to photograph thoroughly every event and model developed. Updated written up about new developments onsite often include a sentence noting that “everything was documented, photographed,” and often sketched or described in a journal. The extent of the archive, maintenance of the images, and professed interest in documenting through photographs demonstrate that this record of the mosque and its reconstruction is an important part of the project’s online presence. The website also provides a particularly important tool for connecting with displaced community members, and the website of the reconstruction project in Banja Luka is a portal of the website. The Islamic Community also receives evidence of this attention. According to the president of the Islamic Community in Banja Luka, over the years, both celebratory expressions of support and malicious expressions of opposition have reached the project through the website’s contact feature.

Leaders of the reconstruction project view the mosque as a symbol of the health of the Bosniak community and the state of ethnic relations in the city. By sharing the progress of the reconstruction, they hope to summon far-flung community members back to Banja Luka. However, as research has shown, other economic and social factors contributed to the low number of actual returns. In light of the reality of return, with the majority of community members located somewhere else in the world, the world reconstruction project, the act of reconstructing not just the mosque, gains a new meaning and sources of power for the local community.
Linking Objects in the Postwar Context

In the tense postwar atmosphere of Banja Luka, the act of reconstruction became a central focus of the uncertainty of the world – an uncertainty that includes the transitional economic and social state of affairs in Banja Luka, as well as the unknowable fate and decisions of the Bosnian diaspora. The group of architects, online news digest, and expanding visual archive connect the mosque to a wider political and social context and demonstrate progress, stability, and continuity. During the reconstruction, the non-functioning building acts like a blank slate, which gives the community a place to project positive meanings onto the incomplete structure. It remains to be seen if the mosque will fasten the identity of the pre-war community, especially with the memory of that lost community still fresh.

It can be argued that this act of reconstruction performs the function of a collective “linking object” – a theoretical mourning device conceived by psychoanalyst Vamik Volkan. The reconstruction could allow the former Bosnian community to negotiate not only the loss of individuals, sacred religious buildings, and homes during the war, but also the loss of their pre-war community and identity. In the 1970s and early 1980s, Volkan developed the concept of “linking objects” which connect the mourning process facing issues related to a complicated mourning process. Additionally, the project provides various avenues to facilitate participation in the reconstruction. Individuals interact and participate with the project in conventional activities such as traveling to the cornerstone ceremony or visiting the reconstruction site. The project hosts visiting dignitaries and officials frequently, and the entrance to the construction site encourages curious passersby to watch the work. One can also participate virtually. The website empowers displaced community members to offer words of praise and support. Community members can also access its artifact section, which documents the progress of the reconstruction project. The website also documents visits of foreign dignitaries, community meetings, and academic conferences held in the mosque and progress made on local, community projects.

In the reconstruction project, the forms of participation create the impression of activities shared by the community – the whole community, both in place and displaced. With every stone, with every email of support, with every visitor, with every photograph documenting the progress, the act of reconstruction uses these two groups together and gives them a place among the survivors. The act of reconstruction creates an “external bridge between the representations of the mourner and that of the last person or thing.” Volkan came to recognize that linking objects could be part of the healing process.

Volkan also developed the concept of the linking object for the shared mourning experiences of collectives of people such as refugees or populations recovering from conflict or natural disaster. In his research on Turkish refugees in Cyprus, Volkan applied the concept of the linking object to scenarios of extreme change to the community and environment. Despite living as free men and women in a new village, he found the Turkish migrant community mourning the loss of its former village and the trauma that continued with it. He referred to this phenomenon as the community giving up its “attachment to ground.” In later work, he found that objects, especially elements of the built environment, could connect the lost loved ones as well as to each other. These objects create a space that washes away difference and reinforces the shared experiences by creating an external bridge between the representations of the mourner and that of the last person or thing.

For the project of the Ferhadija Mosque, the act of reconstruction provides a method to mourn the loss of the pre-war community members and also to negotiate the instability and unfamiliarity of the postwar city. The materiality of the rebuilt mosque connects the present-day community to the legacy of the structure, including the trauma of the destruction. The community also resums an image of both the pre-war and postwar community that the Islamic Community and its constituents can control. In a postwar Banja Luka in which its existence is questioned, the Bosnian community participates in an act that recreates the pre-war city, and one with which it hopes to attract the attention of the displaced and encourage return. With this act, the mosque gains an attachment to familiar ground, to use Volkan’s terminology. Its members gain a visual, tactile connection to a familiar time, place, and community, though it has unfamiliar and new objects.

For preservation professionals, the reconstruction project of the Ferhadija Mosque highlights the importance of looking beyond the materiality of the structure to the intangible aspects of a reconstruction. The project imparts a critical lesson for reconstruction projects in communities devastated by the loss of their members. It exposes the danger of relying on the return of displaced community members and concepts and incorporating an extended definition of community into reconstruction projects. It is important to check the definition of constituents and community members and consider designing a project that allows for engagement from all stakeholders – one that is truly built for all believers.

Architectural Reconstruction and Building Community Power

Despite the Islamic Community’s intent to stay out of the political arena, the project nonetheless reflects political changes occurring in the region. The project is a result of a Hobart conference, the European and Latin American Mediterranean Architecture and Urban Design Conference held in Athens, Greece, in 2006. The conference was organized by the European Mediterranean Initiative and the Mediterranean Architecture Network and was attended by architects, urban designers, and urban planners from the Mediterranean region. The conference aimed to promote dialogue and exchange of ideas among architects and urban planners from the Mediterranean region. The conference was organized by the European Mediterranean Initiative and the Mediterranean Architecture Network and was attended by architects, urban designers, and urban planners from the Mediterranean region. The conference aimed to promote dialogue and exchange of ideas among architects and urban planners from the Mediterranean region.

The Ferhadija Mosque is a symbolic representation of the Islamic Community’s desire to reconnect with its past and assert its cultural heritage. The project is a response to the destruction of the mosque during the Bosnian War and represents the Islamic Community’s commitment to preserving its cultural heritage and identity. The mosque is a physical manifestation of the Islamic Community’s resilience and determination to rebuild after the conflict.

The project is also a testament to the power of architectural reconstruction in shaping community identity and fostering a sense of belonging. By reconnecting with its cultural roots, the Islamic Community is able to claim its space and establish a new identity in the postwar landscape. The mosque serves as a physical reminder of the Islamic Community’s past and a symbol of its future. It is a place where the community can come together to remember its past, celebrate its identity, and build a new future.

The project is also significant for its role in promoting intercultural dialogue and reconciliation. By bringing together Muslims and non-Muslims, the mosque serves as a platform for understanding and respect. It is a space where people can come together to learn from each other and build bridges of understanding. The mosque is a symbol of the Islamic Community’s commitment to coexistence and peace in a region that has been marred by conflict.

The Ferhadija Mosque is a powerful example of how architecture can play a transformative role in shaping community identity and fostering a sense of belonging. It is a powerful reminder of the power of architecture to heal wounds and build bridges, and a testament to the resilience and determination of the Islamic Community to rebuild and renew its cultural heritage.
The Autonomy of Architectural Form in the Building Type: Casa del Fascio

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Abstract

This paper is concerned with the autonomy of architecture form in the building type of Casa del Fascio. Since the beginning of its existence, the modern fascist movement propagated the idea of a building type recognizable as Casa del Fascio. It had to be transparent, against the old and opaque buildings of the past. It had to be present in every center of the Italian Kingdom, for it directly linked the governing fascist party to the political body.

Mussolini rose to power with the promise of eliminating several buildings. Its configuration had to rely on volumetric government buildings, and it distinguished from other existing types of form in new urban conditions in Tirana. This is the stage on which the central dialectic argument between Casa del Fascio in Como, Italy, and Casa del Fascio in Tirana, Albania, takes place.

In a March 12, 1932 article, L’Assalto announced a competition inviting architecture students throughout the Italian Kingdom, to offer ideas for the Casa del Fascio. Meanwhile, Mussolini envisioned the new building type of the Casa del Fascio as being able to stand up against other types of church and local government buildings, and distinguished from other existing buildings. Its configuration had to rely on volumetric relationships (see Fig. 1) that would lead to a hierarchical building in appearance, both literally and figuratively. Programmatically, the Casa del Fascio had to include meeting spaces, a chapel, and offices.

Introduction

Architectural form presents itself autonomously in built form when in essence it is identified analogously with the political form. In this paper, I introduce the new building type of Casa del Fascio, discuss the political form that takes place on the urban form of Tirana and Como, and then address the question of autonomy of the architecture form in the Casa del Fascio in Como, Italy, in opposition to Casa del Fascio in Tirana, Albania.

The Casa del Fascio became an integral part of the urban form that acted as a necessary set for political form to take place. The confronting of such forms reveals the autonomy of architectural form in the Casa del Fascio in Como and, furthermore, sheds light on facts regarding lack of form in new urban conditions in Tirana.

Casa del Fascio – A New Building Type

Considering that Fascism started as an underground movement, the new building type of Casa del Fascio was the last step in the course of legitimacy of fascist government’s own existence. The fascist government used the periodical L’Assalto, among other means of information, to propagate the idea about the new building type of the Casa del Fascio. One article proclaimed:

All that takes place in the Casa del Fascio, needs to be observed from the outside, because Fascism has nothing to hide: so big spaces that give the idea of a glass house instead of a tomb, contrary to the masonic palaces and lodges, charged with decorative masks and symbols, punched with a small number of windows and many little service doors opening in alleys of the ghetto, heavy and unwelcome like tombs, true dwellings of men busy in mysterious dirty affairs.

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Fig. 1. Ideograms. Mangione, Flavio. La Casa del Fascio in Italia E Nelle Terre D’altrui. Pubblicazioni Degli Archivi Di Stato. Roma: Ministero per i Beni e le Attivita Culturali, Direzione generale per gli archivi, 2003. p 72.
Political, Urban, and Built Form

The modern fascist movement in Italy offered a highly nationalistic program that was anti-democratic, innovative, and anti-apolitical. It considered existing conditions of the Italian state as overtaken by apathy and promised to address bureaucratic, administrative, juridical, scholastic, and colonial needs by creating a leading class. The movement maintained that necessary changes would be achieved only through a revolutionary war. The fascist movement was Mazzinian in nature. It foresaw a possible overturning of the independence from the Austro-Hungarian Empire and the Kingdoms of the Balkans. In 1928, Di Fausto worked in Neo-Renaissance fashion, integrating the religious representations and the positioning of their respective predecessors.

Implementing Di Fausto’s regulatory plan concluded with the construction of the government buildings. From its beginning, the Albanian government had been very reliant on Italy’s fascist government. Annexation of Albania by Italy on April 7, 1939 completed the full cycle of its total dependency. A few days later, Vittorio Emanuele III, king of Italy, accepted the Albanian crown. Consequently, the conservatively governed republic, later the self-declared Kingdom of Albania, found strong economic support in Mussolini’s fascistic Italian state. As the newly selected capital of Albania, Tirana presented itself as a settlement lacking urban formality. The only equilibrum could be seen in the religious representations, and each of their respective structures. Tirana was situated in a valley surrounded by mountains on the north, east, and south. It opened up west towards the city of Durres. Lack of an urban past was countered by the importance of Mount of Kruja and the castrum town of Kruja on the northeast and the castrum of Petrelë on the south. The choice of the valley town of Tirana as the new capital city formed the modern notion of moving forward, through revolutionary means, toward a peaceful future. Clearly, the city didn’t belong to the idea of polis, or to that of urban. The initial regulatory plans considered superpositioning of the democratic temple to the local existing pattern. North-south (candia) and east-west (decumanus) axes crossed in Piazza Scanderbeg (see “1” in Fig. 2). Italian architects Armando Brion, Giuseppe Musitano, and Di Fausto were commissioned by the Albanian government to design comprehensive regulatory plans for Tirana. Brionna suggested a Baroque plan in which radiating streets sprang off the center, with the principal axis. Di Fausto’s plan was sensitive to a number of existing conditions in the form of building structures and streets, which were included in his proposal. The northern section of the center allowed access for the inward-directed roads from the northeast, northwest and west. The east-west axis did not assume major importance. Di Fausto’s plan forewore the government buildings erected around the southern portion of Piazza Scanderbeg (see “a” in Fig. 2). Differing from Brioni, Di Fausto worked in Neo-Renaissance fashion, integrating local symbols in the form of decorative elements throughout the government buildings.

Tirana, Albania

A country extracted from the Ottoman-ruled provinces of Ioannina, Monastir, Scutari, and Kosovo, Albania declared its independence on November 28, 1912. In the following years, political form was constituted internally, by diastically opposed liberal and conservative forces, which were acting under constant external pressure from the Austro-Hungarian Empire and the Kingdoms of Bulgaria, Serbia, Montenegro, Greece, and Italy, which foresaw a possible overturning of the independence and re-distribution of the Albanian territories. In 1920, Albania followed through the local government organized a competition with the proposal of an all-inclusive project for Tirana, that was not closed off, but rather open to the public. The footprint of the building was designed from the form of a piazza in front of the Casa del Fascio, whose borders were defined by the Casa del Fascio, the proposed Casa dei Sindacati, the proposed Palazzo del Governo, and the Teatro Sociale.

In 1932, Giuseppe Terragni was commissioned to design Casa del Fascio for the city of Como. Its site was located across the Duomo, at a slight angle on the side of the central terraces. Terragni’s proposed site plan suggested that the Casa dei Sindacati (see “S” in Fig. 3) mirrors Casa del Fascio on the opposite side of the axis (see “F” in Fig. 3). They both speak to the Teatro Sociale, the Duomo, and the proposed Palazzo del Governo located on the opposite side of the Piazza dell’Impero. They both speak to the Teatro Sociale, the Duomo, and the proposed Palazzo del Governo located on the opposite side of the Piazza dell’Impero.

Como, Italy

In tie early 1930s, Como, a city in continuous expansion, faced many urban problems that required immediate solutions. Historically, Como could be traced to an early settlement of Etruscans, who had built a castrum on a high elevation. The Romans took over permanently and founded the castrum form of the city. The Milanese armies had destroyed the Roman walls, together with the city, during the Ten Years War (1688-1687). The existing walls, built in medieval times, stand approximately twenty-five yards outside the Roman walls. Rapid development of the neighborhoods outside the old city walls allowed for a dissociation between the two parts of the city. In accordance with the central fascist government, the local government organized a competition with the objective of achieving a broad regulatory plan for the city. In 1934, the Italian rationalist architects known as Gruppo 7, acting under the name of C.M.8, entered the competition and were awarded first prize. The members of the group were Pietro Bottini, Luigi Dodi, Gabriele Giussani, Piero Lingheri, Mario Pucci, Giuseppe Terragni, and Renato Usigli. C.M.8’s plan proposed re-arrangement of north-south and east-west connections outside the castrum city of Como and preserved its urban characteristics. The goals were to improve the connection of the outside neighborhoods with the center and to organize the light railway network throughout the city. The plan offered to design new industrial quarters with housing for the inhabitants. The city was considered using the larger piazza (see “c” in Fig. 3), which did not connect to the proposed center at the edge of the Roman Como was to include the parts previously outside the city walls. The Casa del Fascio was intended to be situated in close proximity. The regulatory plan included reorganizing the public buildings in Como by relocating the Palazzo del Governo from Via Volta to Via Rodari toward Via Lecco (see “G” in Fig. 3) near the Duomo that was suggested construction of a new Palazzo dei Sindacati in Via Pessina, presumably behind the Casa del Fascio, and removal of train railway side guard railings in Via Lecco.

C.M.8 formally redefined the center of the city with the site plan where Casa del Fascio (see “a” in Fig. 3), Palazzo del Governo, and the Teatro Sociale are to be located on the opposite side of the Piazza dell’Impero. In agreement with the proposed site plan of the Piazza dell’Impero and the pattern of the original castrum Como, Casa del Fascio in its genre belonged to the Palazzo governing type – a city with its own covered piazza. Its geometry consisted a volume that measured in each equal side twice the height. The symmetry at the entrance followed inside, in the covered piazza. The symmetry of the Palazzo presented in its built form a balanced play of vertical and horizontal beams. It transformed in dynamic symmetry its four elevations. Terragni chose the form of a cube for the appearance of the building and structure. The geometry is given physical presence by virtue of concrete. Dematerialized in its synopsis, Casa del Fascio in Como sat weightless on its site, ready for the political play to be staged. The sets of steps that led to the front and rear entrances of the Casa del Fascio were detached from the main facade. The axis of the building was turned into an axial form of a piazza in front of the Casa del Fascio, which allowed for gatherings of supporters. For mass meetings, Terragni considered the rear façade as the “città luminosa” (see “C” in Fig. 3), whose borders were defined by the Casa del Fascio, the proposed Casa dei Sindacati, the proposed Palazzo del Governo, and the Teatro Sociale.

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In Bosio’s final scheme Casa del Fascio was placed on a plenum comprising two flanking lower structures and a dominating torre littoria in the middle (see Fig. 5). The structure was erected using cast-in-place concrete. Bosio applied classical Roman features in the symbolic use of facing stone and frontal arcade. He had worked with a number of design alternatives, all of which had the hierarchical volumetric relationships in common, in agreement with Mussolini’s and the fascist government’s requirements. The fascist movement in Tirana seemed to have been accepted very mechanically; therefore anything accompanying it was mechanical in nature.

Hierarchy was symbolic in its nature. Any other so-called architectural elements that emphasized it worked in favor of the image hierarchy needed to convey. Bosio concluded the cardo with a monumental image of imperial fascist Rome in the Casa del Fascio in Tirana. Its built form was far from autonomous.

**Conclusion**

Terragni worked out several schemes of the Casa del Fascio in Como. Each one included at least an element of hierarchy from what the fascist government sought to include. The built form of the Casa del Fascio in Como did not carry any of those elements. The fascist movement had genuinely requested renewal of the values that belonged to the future, away from the darkness of the past. Giuseppe Terragni embraced that call. Casa del Fascio di Como was autonomous. The autonomy of the building was to be reflected in the urban form of Piazza dell’Impero as well, where the Casa del Fascio in Como was to be counterbalanced by the Casa dei Sindacati.

Casa del Fascio di Tirana, on the other hand, depended on the composition form to show that it existed. Composition form worked along the lines of the bureaucratic fascist government. Lack of autonomy didn’t stop at the building scale. It grew to the proportions of urban scale of the city. Tirana was in dire need of a new beginning. Whether in terms of work commissioned by the Albanian government or under fascist occupation of Albania, the Italian architects worked along the lines of the fascist image.
Expressions of Power: The Legacy of Fascism in the Built Environment

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Abstract

Mussolini’s nearly two decades of rule ended when the Fascist Grand Council voted him out of office on July 25, 1943. Following Mussolini’s dismissal, the newly formed government headed by Marshal Pietro Badoglio initiated a legislative process intended to cleanse the Italian nation of the discredited regime. This included the liquidation of the National Fascist Party and the formation of a government agency charged with overseeing the transfer of party-owned property to the state. At the same time, private individuals and informal networks began to occupy the buildings and spaces associated with fascism for their own purposes. Taking Fascist Party headquarters, or case del fascio, as my primary example, I explore the processes – official and unofficial – through which the party’s holdings were adapted to serve new functions with the aim of clarifying fascism’s legacy in the built environment.

The endurance of a remarkable quantity of buildings constructed during fascist rule has attracted the attention of scholars, particularly those interested in tracing continuities between interwar and postwar Italian culture, memory and identity. However, within this literature, Fascist Party headquarters – the buildings most intimately identified with fascism – are rarely mentioned. This paper argues that their history during the final years of the regime and the tumultuous years between Mussolini’s dismissal and establishment of the Italian Republic in 1946, particularly in northern cities like Milan, reinforced their functions as centers of command and as symbols of political power. By the 1950s, the vast majority of these buildings were designated to serve as headquarters for local police forces or for various branches of the Italian military – functions they continue to maintain.

Among the questions this paper seeks to address are: How and to what extent does the history of case del fascio parallel the limited and symbolic purges of fascist collaborators and the marginal reworking of government institutions that occurred after the collapse of the regime and during the establishment of the Italian Republic? How and to what degree does the persistence of these buildings in the landscape, often with their fascist iconography intact, continue to shape notions of political power and civic identity?

Full paper withheld at author’s request.
SESSION 5: Working Within Others’ Walls

Session Chair:
Ronald. H. Frantz, Jr., AIA, University of Oklahoma
College of Architecture Division of Architecture

Bruce Goff practiced the principles of “green design,” “sustainable design,” “LEED” and “adaptive re-use” long before the terms were part of our architectural language. He used materials that were available locally. Sometimes these materials were cast-off objects: goose feathers, old oil field pipes and equipment, dime store ashtrays, tiddlywinks, turkey insemination tubes and the signature material: chunks of colorful glass slag. With these materials, he created amazing new structures, both commercial and residential.

In the United States, as of 2009, we had an existing stock of nonresidential buildings that measured 65 billion square feet of space. Some 83 percent of this building stock was built after World War II with 55 percent of the stock having been built from the 1950s to the 1980s. Between 2009 and 2030, more than 54 billion square feet of this nonresidential stock, or about 84 percent of the buildings, will undergo substantial rehabilitation.

In everyday terms, four of every five existing buildings will be rehabilitated. All facts are from Norman Tyler’s Historic Preservation book.

Green design, sustainable design, LEED and adaptive re-use will be terms associated with the rehabilitation of existing building stock. Most likely, the next generation of architects — our students — will work with existing buildings more than they will new buildings.

This session is a call for architects who are “Working within Others’ Walls.” These architects, like Mr. Goff, see the potential of common, existing materials and understand how to transform existing spaces into exquisite new architectural places.

Architectural Design for Adaptability and Deconstruction

The Border Arts Residency: A Study of the Urban Fabric, the Arts and How to Add on to a Historical Building

21c Hotel – Integrating Revitalization and Art

Abstract

The adaptive reuse of existing buildings for new purposes represents a highly sustainable approach to architectural design. By reusing existing building stock for new projects, the amount of energy used over a building’s life is greatly reduced. But while the preservation of embodied energy through the adaptive reuse of existing structures is widely discussed within sustainability discourse, and broadly supported by groups such as the United States Green Building Council (USGBC), the purposeful design of new buildings in a manner that facilitates future adaptive reuse is lacking. This paper proposes that a purposeful Design for Adaptability and Deconstruction (DFAD) approach to the design of new buildings, which incorporates principles of Design for Future Adaptive Reuse (DFAR) and Design for Disassembly and Deconstruction (DDfD), is equally important to the reuse of existing buildings in achieving built environment sustainability.

Design for Adaptability and Deconstruction is a forward-thinking design process that emphasizes the design of new buildings for future reuse and/or the recycling of building materials and components. Typically used by industrial designers, this approach may translate to the built environment to more easily free the renovation of existing buildings to serve new purposes. This paper will broadly consider the potential for DFAD as a means for embedding new buildings with future reuse potential.

Introduction – Sustainability and the Built Environment

The environmental impact of the built environment has been widely reported and discussed. According to the United Nations Environment Program, the built environment accounts for 30 percent of global greenhouse gas emissions and consumes 40 percent of all energy annually. Forty-five percent of global CO2 emissions can also be traced to building construction and operation. The built environment additionally consumes 40 percent of global resources and generates a disproportionate amount of waste. The U.S. Environmental Protection Agency reports that building construction, renovation, use, and demolition constitutes approximately two-thirds of all non-industrial solid waste generation in the United States. Of this waste, 92 percent results from renovations (44 percent) and demolitions (48 percent), while the remaining 8 percent is attributed to new construction.

Embodied Energy

The built environment has tremendous potential to reduce its environmental impact through the adaptation and reuse of existing buildings. It is often said that the greenest building is the building that is already built. This sentiment is widely accepted as true for the simple reason that greenhouse gas emissions and natural resource consumption associated with the construction of existing buildings has already taken place, i.e. their embodied energy is already accounted for.

This embodied energy, associated with a building’s construction and found in its materials and components, represents a significant portion of a building’s total energy consumption; therefore, buildings with greater levels of embodied energy, due to their higher levels of greenhouse gas emissions, energy consumption, and natural resource use, are generally seen as having a greater environmental impact than buildings with lower levels of embodied energy.
While the ability to measure the embodied energy inherent in the built environment is not an exact science, research has found that approximately 20 to 30 percent of a building’s embodied energy is required to support its structure, whereas a much larger portion, 50 to 70 percent, is found in buildings that are subject to periodic replacement and renovation. The portions of the building that have the shortest lifespans – the facade, services, and internal finishes (fin.) – are also those that hold the greatest levels of embodied energy. When a building is renovated or demolished at the end of its operational life, much of this embodied energy is lost.

One approach for reducing embodied energy loss associated with the construction and maintenance of the built environment is through increased rates of building material recycling, material and component reuse, and, most effectively, through the direct adaption and reuse of buildings that have reached end-of-life scenarios. By designing new buildings with the preservation of embodied energy in mind, rather than demolition, a major portion of the embodied energy inherent in the built environment can be maintained, reducing its environmental impact.

Building Reuse, Component Reuse, Material Reuse, and Material Recycling

In reviewing literature associated with reducing the built environment’s environmental impact through increased building reuse and material/component recycling, one finds a variety of designs used to describe key concepts. This diverse and often conflicting use of terms leads to confusion and difficulty in understanding fundamental strategies related to building reuse and material/component recycling. To promote clarity and facilitate a better understanding of these ideas, this paper proposes the following refined hierarchy of terms to describe strategies used in designing buildings to facilitate the future reuse of existing buildings, their components, and materials:

**Design for Adaptability and Deconstruction** (DFAD): represents an umbrella term that includes all things associated with the reuse of buildings, building components, and materials. As an umbrella term, it includes each approach below:

1. **Design for Future Adaptive Reuse (DFAR)** includes the direct reuse, adaptation, or relocation of an existing building or its structure. This constitutes the highest form of built environment adaptability, as it preserves the most embodied energy and has the greatest environmental impact.

2. **Design for Deconstruction and Disassembly (DDD)** represent more contemporary strategies that address topics related to the reuse and recycling of building materials and components but not buildings themselves. This includes the following DDD subcategories:

   - **Design for Deconstruction** includes the direct reuse or relocation of building components or assemblies within a new or existing building. **Design for Disassembly** involves the recycling of existing building materials into new materials or components. Recycled goods are used as raw material in many of new projects. This approach is the least environmentally friendly as it preserves the smallest amount of energy to produce new materials.

   This delineation is important as reuse and recycling are not net zero strategies used in designing buildings to facilitate their equally desirable from a sustainability standpoint. For example, Design for Deconstruction is generally preferred to Design for Disassembly because building component recycling requires less energy and resource consumption than material recycling. Furthermore, Design for Future Adaptive Reuse is considered the most desirable because it more significantly reduces waste, diminishes demand for virgin natural resources, and results in greater reductions of energy consumption. Because of this, when developing specific design strategies to guide architects in the DFAD process it is important to delineate these terms and their associated approaches. This need to clearly define and refine strategies within DFAD does not, however, suggest they should be considered in isolation. While each strategy independently, they should also be considered simultaneously when designing a building according to DFAD principles. This formalizes the embodied energy associated with existing buildings discussed above. In these figures we find a building’s structural frame accounts for 20 to 50 percent of its embodied energy, while its envelope, fins, finishes, and services account for the remaining 50 to 70 percent. This suggests the majority of a building’s embodied energy is found in the areas that have the shortest lifespan. If an architect plans for the future adaptive reuse of a building, it risks losing a significant portion of the building’s embodied energy through renovation. Likewise, if a designer only plans for the future recycling of renovated materials, and/or the reuse of building components, she runs the risk of failing to take advantage of the embodied energy inherent in the building’s core and structure. By thoughtfully considering all these strategic design approaches described above, future buildings are well prepared to significantly reduce their negative long-term environmental impact through the preservation of their embodied energy. In spite of the significant environmental benefits, building design and construction industries have been slow to adopt changes promoting widespread use of DFAD principles. This is partly due to the historically narrow experience and intuition alone have been available for guiding design decisions that embed a building with reuse potential; however, there is increasingly professional consensus regarding best practices associated with DFAD principles. With the goal of facilitating a deeper understanding and better industry integration of DFAD principles, these practices are summarized and integrated below into design strategies associated with their corresponding DFAD principle.

**Design for Future Adaptive Reuse (DFAR)**

Building adaptive reuse is typically seen as the reuse of an existing building in a manner that retains as much as possible of the original building while updating its performance to meet modern codes, standards, and new user requirements. Notwithstanding the clear environmental benefits associated with adaptive reuse, building longevity raises many technical problems associated with building construction and design. It is therefore important, through the consideration of DFAR principles, for adaptive reuse to be planned from the beginning of a new building project. While there is widespread discussions of DFAR principles in academic and professional literature, there are few recommendations for how to best embed adaptive reuse potential into specific building projects. One notable exception is work undertaken by researchers at the University in Australia. Research presented by Langston, Conejos, Smith, and others seeks to develop a set of useful criteria to aid in designing future buildings with ‘embodied adaptive reuse potential’ as a useful criterion for sustainability.23 Their work has led to the ongoing development of adaptSTAR, which is a weighted checklist, similar to the USGBC’s Leadership in Energy & Environmental Design (LEED) system, that promotes the successful future adaptive reuse of new buildings. In a review of literature conceptually associated with DFAR, adaptSTAR represents the most formal attempt at promoting and integrating DFAR into mainstream architecture and construction practices. While this paper does not specifically represent a review of adaptSTAR principles, adaptSTAR provides a useful method to establish a conceptual summary of DFAR design strategies. This summary, based on a broad review of DFAR associated literature, is compiled into the following DFAR design principles.

**Design for Future Building Adaptive Reuse Design Principles**

1. **Anticipate change – Anticipate change is the golden rule of designing for adaptive reuse. Design buildings to easily accommodate change. Even at the level of individual rooms, designs can anticipate and allow for future changes of use.**

2. **Climate and site – Building design is responsive to local climatic conditions and utilizes passive technologies where possible to facilitate unknown future building uses.**

3. **Foundation – Foundations are designed in a manner that allows for differential settlement over time. In addition, foundation designs allow for building scalability both vertically and horizontally.**

4. **Design awareness – Building design promotes future adaptability or reuse while reducing potential for functional and social obsolescence.**

5. **Building layout – Building design considers zones of similar functions. Service areas and connections between rooms are strategically positioned to allow and anticipate change.**

6. **Structural integrity and scalability – The design and selection of structural elements consider future building uses and scenarios. Structural systems are scalable, allowing a building to be enlarged either vertically or horizontally.**

7. **Workmanship – Design building, drawings, and specifications promote craftsmanship applied to structure and finishes, promoting extended life and future adaptability.**

8. **Material selection – Building materials are selected for their durability and potential to age in a manner that facilitates an extended building lifespan.**

9. **Maintainability – Building design and material selection reflect the need for regular maintenance and the conservation of operational resources to extend a building’s functional life.**

In addition to these principles, summarized from academic literature, two additional requirements are proposed by the author:

1. Building floor-to-floor heights – Buildings are designed with floor-to-floor heights sufficient to accommodate future uses. In the case of multi-family residential designs, this may require higher than typical floor-to-floor heights that allow for future commercial uses. In many adaptive reuse scenarios, inadequate ceiling height limits the ability of an existing building to accommodate a new, alternative use.

2. Building width/daylighting – Building design considers daylighting. Buildings with excessively wide or small widths severely limit their ability to accommodate future uses. By approximately designing for daylighting on all sides of a building, the likelihood of accommodating multiple future uses is increased.

**Design for Deconstruction and Disassembly (DDD)**

While the adaptive reuse of a complete building is the most effective way to preserve a building’s embodied energy, it is not always practical or cost effective. In situations where it is not feasible to adaptively reuse an existing building, or where whole building obsolescence is likely to occur because of unique program requirements or site constraints, or for buildings with a high likelihood of repeated or major renovations, Design for Deconstruction...
Design for Deconstruction and Disassembly Strategies

1. General Building Considerations
   a. Simplify building structure and form
   b. Use modular design
   c. Use prefabricated subassemblies and a system of mass production
   d. Use an open building system with interchangeable parts
   e. Use standard, simple, and “low-tech” construction technologies

   a. Select materials using the precautionary principle
   b. Minimize different types of materials
   c. Use materials worth recovering
   d. Use recycled and recyclable materials
   e. Use durable materials where appropriate
   f. Use lightweight materials where appropriate
   g. Avoid composite materials and make inseparable subassemblies from the same material
   h. Avoid secondary finishes to materials
   i. Minimize toxic and hazardous materials
   j. Design for differential weathering and wearing of surfaces
   k. Provide standard and permanent identification of material types and their chemistry

3. Building Components: Strategies for Component Reuse
   a. Minimize the number of different types of components
   b. Prioritize the use of modular building components/assembly
   c. Ensure all components can be readily accessed and removed for repair or replacement
   d. Use only durable components that can be reused
   e. Design chemical bonds with the parts being connected
   f. Use a minimum number of wearing parts
   g. Make components and materials of a size that suits the intended handling
   h. Provide a means of handling and locating components during the assembly and disassembly
   i. Provide permanent identification of component type

4. Connections
   a. Design connectors to enable components to be both independent and exchangeable
   b. Provide realistic tolerances to allow for maneuvering during disassembly
   c. Minimize number of fasteners and connectors (fewer, stronger fasteners)
   d. Design joints and connectors to withstand repeated disassembly and reuse
   e. Use mechanical fasteners (bolted, screwed and nailed connections) in lieu of sealants, adhesives, and chemical connections
   f. Simplify connections
   g. Make connections visible/accessible
   h. Design to the worker and labor of separation

5. Access and Building
   a. Allow for parallel disassembly rather than sequential disassembly
   b. Provide access to components/assemblies (windows, etc.)
   c. Separate building layers or systems
   d. Ensure that buildings are conceived as layered according to their anticipated lifespans
   e. Provide adequate tolerances to allow for disassembly to minimize the need for destructive methods that will impact adjacent components
   f. Separate the structure from the cladding, internal walls, and services
   g. Disentangle utilities from structure
   h. Separate mechanical, electrical, and plumbing (MEP) systems
   i. Carefully plan services and service routes so they can easily be identified, accessed and upgraded or maintained as necessary without disruption to surfaces and other parts of the building

6. Relaying of Information
   a. Maximize clarity and simplicity
   b. Permanently identify points of disassembly
   c. Provide spare parts and storage
   d. Retain all information on the building construction systems and assembly and disassembly procedures

7. Deconstruction, Disassembly and Recycling
   a. Include “deconstruction plan” in the specifications
   b. Maintain detailed documentation of materials and methods for deconstruction
   c. Maintain detailed drawings
   d. Provide labeling of connections and materials
   e. Include “deconstruction plan” in the specifications

It is important to note that within this summary of Design for Deconstruction and Disassembly strategies there will be occasions where conflicts exist among multiple principles. For example, depending on reusing or removing individual building materials will not always be aligned with the desire to reuse building components. Designing building components intending for their repeated reuse, in different buildings, may warrant the use of composite materials that are not easily separated for recycling purposes. In such cases, having less ability to deconstruct, reuse, or recycle individual building materials may be offset by the ability to reuse larger building components without having to disassemble, deconstruct or recycle them. There may also be instances that warrant the use of durable materials with higher levels of embodied energy, if they can be reused multiple times or have longer service life.

The potential conflicts among many of these principles highlights the need to refine discussions of DfD in a manner that differentiates between strategies for designing building component reuse and designing for building material reuse and recycling. This need is further highlighted by the fact that academic and professional literature typically discusses the two strategies interchangeably or combined under the common banner of Industry for Design and Disassembly. This paper’s separation (see above) of DfD strategies into the two principles, Design for Deconstruction and Design for Disassembly, is important for clarity and to elicit further discussion regarding their merits and potential.

8. Future Adaptive Reuse that helps achieve sustainability goals.

The potential conflicts among many of these principles highlights the need to refine discussions of DfD in a manner that differentiates between strategies for designing building component reuse and designing for building material reuse and recycling. This need is further highlighted by the fact that academic and professional literature typically discusses the two strategies interchangeably or combined under the common banner of Industry for Design and Disassembly. This paper’s separation (see above) of DfD strategies into the two principles, Design for Deconstruction and Design for Disassembly, is important for clarity and to elicit further discussion regarding their merits and potential.

Industry Adoption of Design for Adaptability and Disassembly (DFAD) Principles

While the advent of adaptive reuse of buildings and the recycling of building materials/components is commonly part of the sustainability discourse, the design of new buildings according to Design for Adaptability and Disassembly (DFAD), architectural design and construction industries have been slow to embrace the concept. 4 This is not due to the inventiveness of the strategies, as there are numerous historic examples of buildings designed and built with these concepts in mind. From nomadic tents to the Crystal Palace, or the work of designers such as Buckminster Fuller, Archigram, or the Metabolism Group, there are many examples of DFAD principles into building design and construction. Even with this rich historical knowledge, combined with contemporary work on the subject, buildings are still generally designed and built with the mindset that they are permanent, despite the fact that most buildings are built with no more than a 50-year lifespan in mind, while the materials from which they are constructed may have useful lives spanning centuries.

Two factors may contribute to this failure to implement DFAD concepts into mainstream built environment industries:

1. There are limited incentives for owners, architects, developers, and the construction industry to adopt these principles and take on the additional costs and time associated with designing and constructing buildings in a manner that integrates these concepts. Without financial incentives to do so, this complexity helps reinforce the status quo and limits widespread adoption of DFAD principles, and

2. There is a technical knowledge gap among architects who are best suited to integrate DFAD concepts into the design and construction of new buildings.

This knowledge gap is recognized by Brand, 59 who laments on the education system for ignoring the fact that “adaptive use is the destiny of most buildings, but is not taught in most architectural schools.” While much of architectural education focuses on novelty and innovation, there is very little emphasis on how buildings adapt to change and evolve over time. This results in a lack of knowledge and an inability to take these concepts forward into professional practice. 60

This gap in knowledge reduces architects’ ability to advocate for DFAD principles, limiting their voice within the discourse of highlights by the built environment. As the reuse and refurbishment of existing buildings becomes an increasingly important sustainability criterion, and as adaptability becomes increasingly important to clients, it will be important for architects to have a deep understanding of how buildings change over time and how they can be designed with embedded reuse potential.

Further Research: The Role of Sustainability Assessments in Adoption Design for Adaptability and Deconstruction (DFAD) Principles

While the advent of adaptive reuse of buildings and the recycling of building materials/components is commonly part of the sustainability discourse, the design of new buildings according to Design for Adaptability and Deconstruction (DFAD) principles is not. One suggestion for why these principles have not widely entered the sustainability discourse is that mainstream sustainability assessments (SAs), such as LEED, do not include incentives for designing new buildings with embedded reuse potential, i.e., according to DFAD principles. 61

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that a purposeful Design for Adaptability and Deconstruction embedded ability to adapt to change, this paper proposes additional research is needed to determine appropriate longer.49


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while designing new buildings according to these principles is an approach to building construction and design is equally in important to the reuse of existing buildings within the criteria of sustainability. Through a refined understanding of DFAD, conceptually defined as three principles that include Design for Future Adaptive Reuse, Design for Disassembly for material reuse, and Design for Disassembly for building component reuse, it is possible to develop specific design strategies that address the broad potential of DFAD. Through the thoughtful consideration of these strategies, future buildings will be better prepared to significantly reduce their negative, long-term environmental impact.

For the built environment to meaningfully address its global environmental impact and contributions to climate change, there needs to be a recognition of the role of existing and future buildings in reducing this impact. As most buildings are not designed to maximize their future reuse potential, architects, engineers, and contractors better understand how buildings change over time and to plan for that change accordingly. Doing so may require a rethinking of existing approaches to sustainability within the built environment. Rather than simply building less or more energy efficiently when we do build, we will need to be more strategic with how and where we build and what that makes the most of existing resources. Furthermore, we will need to find a way to build our components, which are not designed or predominantly disassembled, which does not fully address construction waste, or embodied energy problems, as it consumes a considerable amount of resources in the reprocessing and transportation of materials. Whereas the reuse of a building component has as energy efficient as re-using them, which is rarely the case. Recycling does not fully address construction waste, or embodied energy problems, as it consumes a considerable amount of resources in the reprocessing and transportation of materials. Whereas the reuse of a building component has

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The Border Arts Residency: A Study of the Urban Fabric, the Arts and How to Add on to a Historical Building

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Abstract

As a teenager in the early 1980s, I remember taking the bus to downtown El Paso, Texas, to roam the streets and to enter the world of science in what was once known as the Insights Science Museum. As I explored the streets, I felt the enormity of the beautiful structures I saw, and though I knew nothing of architecture, they created an experience that remains fresh in my mind of tall grey, red, and brown colored walls defining a sense of space. While working on my master’s degree from 1997 to 2001 at the Autonomous University of Mexico, I became more informed about the downtown fabric, thanks to my primary focus on the matter and, therefore, issuance of several analytical assignments regarding the effects of urban contexts and their vernacular.

In the last decade, the City Council and the City of El Paso have stopped talking about renewing and have begun making an actual effort to revitalize the downtown by both giving incentives to owners for preserving the historic buildings and helping owners receive restoration grants. In addition, in the spring of 2014 the introduction of a Triple-A baseball team and its new stadium led efforts of a redevelopment of the downtown’s residential neighborhood that is also within the area.

One of the particularly unique features of the downtown historic buildings in El Paso is the Chicago Style Design that was introduced in 1892 by architect Henry Trost of Chicago, a former wrought iron detailer who worked on important structures, including those of Adolphus H. Sullivan and was a member of the Chicago Architectural Sketch Club. Trost’s first structure in El Paso, which was also the location of the Insights Science Museum, was the Anson Mills and, later, he worked on the addition of the Centre (nicknamed the White House) Building, which was recently renovated by In Situ Architects.

Sadly, we have also seen the destruction of our valuable history through the demolition of Trost’s Union Bank and Trust Building, the burning down of a French-style retail and office building that once housed an infamous law officer, John Wesley Hardin, and the demolition of other valuable blocks of historic structures, though not in the registry. These changes have both negative and political effects on downtown’s fabric and the environment in general. The negative is the defacing of El Paso’s unique character and quality of its historical vernacular. When rebuilding, we run the danger of building a stereotypical Anywhereville, USA shopping structure or, worse, leaving the space blank for greening parking lots. On the positive side is the restoration and renovation.

This article investigates the downtown urban fabric and vernacular in which we will study the nodes, landmarks, memorable streets, and other components to raise awareness of the existence of knowing one’s city and the importance of preserving the past that created the walls within which we will be working. This article also serves as a study of existing structures within the area of focus to help not only preserve the past but also to reuse and repurpose historic structures, including additions, to meet new owners’ needs. Finally, this article will encompass the studies for a hypothetical repurposing of one of these historic structures and its additions, such as the Heart Tower in New York City or Frank Gehry’s Fred and Ginger in Prague.

Several cities are currently experiencing a similar type of behavior and this type of investigation is valuable, as many cities’ downtown areas should not end up sterile from generic building and dead after-business hours.

Getting to Know the Walls from Without the Walls: The Urban Fabric and the Vernacular

For this hypothetical project, students are given the task of becoming familiar with the walls they are going to be working within. Through this analysis, one will discover what El Paso Protectors’ Network has changed so much since its inception, from mid-1800s adobe haciendas to two-story apartment/retail brick structures from the 1900s, three-story French Quarter-style hotels and a few 1970s and 1980s structures. But the most prominent style of architecture is the Chicago Style mixed with a flavor of the Southwest designed by Trost, who worked in El Paso from 1892 to 1930. His style of architectural design ranged from the Chicago Style to Art Deco – the two dominant styles that shaped the vernacular along with the city’s superimposed Cartesian grid that has developed its fabric.

The first and primary street that runs north to south is El Paso Street, which lines up with Avenida Juarez on the Mexican side, and both meet at the international bridge. For this hypothetical project, students are given the task of becoming familiar with the walls they are going to be working within. Through this analysis, one will discover what El Paso Protectors’ Network has changed so much since its inception, from mid-1800s adobe haciendas to two-story apartment/retail brick structures from the 1900s, three-story French Quarter-style hotels and a few 1970s and 1980s structures. But the most prominent style of architecture is the Chicago Style mixed with a flavor of the Southwest designed by Trost, who worked in El Paso from 1892 to 1930. His style of architectural design ranged from the Chicago Style to Art Deco – the two dominant styles that shaped the vernacular along with the city’s superimposed Cartesian grid that has developed its fabric.

The first and primary street that runs north to south is El Paso Street, which lines up with Avenida Juarez on the Mexican side, and both meet at the international bridge. On both sides of El Paso Street are the 1930s two–story, double-wythe load bearing brick apartments; two-story French Quarter structures, also made of load-bearing brick with retail on the first floor and apartments above; a few theaters, one called the Alhambra Theater done in the Chicago Style of load-bearing concrete exterior walls, and, at the north end of the street, the Plaza Theater.
The focus of this case study is the Kress Department Store Building, whose floor plan is L-shape. The owner of the Kress Department Store loaned all construction drawings to the Kress Department Store Building and Within the Walls.

The analysis is now turned to the structures within the walls. As has been briefly described, the majority of the structures downtown were built between 1892 and 1930 and were anywhere between four and twelve stories tall, built of reinforced concrete columns and floor slabs and with the façades demonstrating the beginnings of a curtain wall. Although and adobe structures in the downtown area no longer exist, they have been burned down, weathered away, or demolished. Researching this allows one to have a proper understanding of these structures in order to make decisions about where one can cut into the floors to create a new street or double height volumes once believed impossible to do.

The focus of this case study is the Kress Department Store Building, whose floor plan is L-shape. The owner of the Kress Department Store loaned all construction drawings to the students. The dimensions of the façade that faces Mills Avenue is 60 feet, the length that stretches across Oregon Street is 140 feet. The length that wraps behind the Banner Building is 145 feet, which is the width of the block, and the façade that faces Mesa Street and is behind the Banner Building is 50 feet. This is a three-story structure whose exterior walls are sixteen-inch wide reinforced concrete, and it has load-bearing construction with twenty-four inch by forty-inch intermediate concrete columns at the intersection of the L and other areas that the structural engineer bought together. In theory, this structure is so well engineered that what the students are proposing to do would be feasible and would meet the program they were given.

The aesthetic of the building is quite remarkable; it is a three-story structure displaying Art Deco features with a tower at the corner of Mills Avenue and Oregon Street in the east façade only enjoys the morning sun. The rain

Across the street to the east and north of the plaza, is the Banner Building, with retail on the lower level and apartments above that were former offices. Also designed by Trost in the Chicago Style. Its floor plan is square at the retail area and U-shaped above; concrete load-bearing exterior walls hold the structure in place. If you are not careful you will miss two structures, a tiny one-story and a two-story structure that follows the Banner building with blank façades. The façades of the two structures together only measure 44 feet wide, the one-story building has retail business, while the two-story building is boarded up. The Kress Building follows and meets the corner of Mills Avenue and Oregon Street (see Fig. 2). The building is a beautifully designed Art Deco Moorish style structure with concrete exterior load-bearing walls whose floor plan is interesting, as it is an L-shape that goes behind the Banner Building because the Banners would not sell their property to the Kress Department Stores. Across the street and on the opposite corner is the first Hilton Hotel, also designed by Trost, a seven-story structure done in an Art Deco style complementing the Kress Building. This is the location of the penthouse where Elizabeth Taylor and Conrad Hilton once lived while filming the movie Giant in the town of Marfa three hours southeast of El Paso. There is a variety of other structures in the area but these are the prominent blocks and architectural styles one can find in El Paso’s downtown and will be the area of focus.

The students’ analysis also includes pedestrian traffic, vehicular traffic, green areas and the like which also make up the urban fabric. The analysis found that all of the streets are two-way streets, each corner has a four-way traffic light and pedestrian crosswalk. Vehicular traffic is blocked at the corner of Mills Avenue and El Paso so there is no longer traffic on the west of Oregon Street. There is a high volume of pedestrian traffic and the biggest attraction is the El Paso streetcar, which travels down the street under the big shade trees. The sidewalks offer a few trees that give a small amount of shade. Along the sidewalks, the pedestrian lights along El Paso Street carry over to four streets that make up the plaza.

The Building and Within the Walls

Going back west on Mills, and facing the plaza, is the Banner Building, with retail on the lower level and apartments above that were former offices. Also designed by Trost in the Chicago Style. Its floor plan is square at the retail area and U-shaped above; concrete load-bearing exterior walls hold the structure in place. If you are not careful you will miss two structures, a tiny one-story and a two-story structure that follows the Banner building with blank façades. The façades of the two structures together only measure 44 feet wide, the one-story building has retail business, while the two-story building is boarded up. The Kress Building follows and meets the corner of Mills Avenue and Oregon Street (see Fig. 2). The building is a beautifully designed Art Deco Moorish style structure with concrete exterior load-bearing walls whose floor plan is interesting, as it is an L-shape that goes behind the Banner Building because the Banners would not sell their property to the Kress Department Stores. Across the street and on the opposite corner is the first Hilton Hotel, also designed by Trost, a seven-story structure done in an Art Deco style complementing the Kress Building. This is the location of the penthouse where Elizabeth Taylor and Conrad Hilton once lived while filming the movie Giant in the town of Marfa three hours southeast of El Paso. There is a variety of other structures in the area but these are the prominent blocks and architectural styles one can find in El Paso’s downtown and will be the area of focus.

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As students began to work within the walls, the assignment included the inclusion of the existing residency that was started by a local artist and former professor of art at the University of Texas at El Paso, Willie Ray Parish, and his wife, Becky Hendricks, also a professor of art at UTEP. Their vision was to provide an environment where an artist is able to concentrate on just his or her work and produce the work without worrying about having to pay the bills. In 1992, after remodeling an existing barn where he created a workspace for himself in the first level and built a second workspace for himself in the first level and built a second working in are much more integrated with each other than working in are much more integrated with each other than they first appear to be. This is the reason for such a long courtship with the urban area rather than just assigning the project from the beginning. If we were to go straight into design, there would be a loss of value and logic related to the purpose of the walls we are to be made. Understanding the vernacular and the fabric, one can then move on to study the actual building and become more intimately acquainted with the structure that is about to be reinvented or repurposed and built upon. When one understands the structural integrity and the aesthetic makeup of the structure, the realization of the unrealized is possible in a much more sophisticated manner. If one were to just jump into the project, respect would not be given, as we have seen in recent history. Blocks, buildings, and history are demolished to make way for sterile “Anywheresville, USA” structures or empty heat islands.

Finally, understanding the client is important and, along with understanding the first two points—the vernacular and urban fabric, one can produce a better quality overall design of which one can be very proud. As this project is completed, one gains awareness of his or her surroundings and respect for what it is and what it can become.

As an instructor, my main goal at this level is to make the students aware of means of egress, handicapped accessibility, and elementary structural concerns to create an adaptive and workable design.

A Historical Accomplishment

The most incredible thing happens at the end of this project in all cases and for all teams: an appreciation for the city and for historic value. Knowledge of how to analyze the urban fabric also helps students with creating an intimacy with the surrounding features of the urban vernacular and the fabric of which they become aware. This helps in understanding that the walls we are to be working in are much more integrated with each other than they first appear to be. This is the reason for such a long courtship with the urban area rather than just assigning the project from the beginning. If we were to go straight into design, there would be a loss of value and logic related to the purpose of the walls we are working within.
References


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21c Hotel – Integrating Revitalization and Art

David Hornbeek, AIA
Executive Architect
Hornbeek Blatt Architects

Abstract

The existing Fred Jones Building is located at the intersection of Main Street and Classen Boulevard in Oklahoma City. The building will be renovated as a multi-use complex with the majority occupant being the 21c Museum Hotel. A future tenant will occupy a minor ground floor space at the west side of the structure. The existing building comprises a four-story building, c.1915, with a two-story addition, c.1924. This building, which was once used to manufacture Model Ts and As, will be rehabilitated into a 130-room boutique hotel and contemporary art museum.

The building is proposed to have both new and renovated elements, all of which will be located and detailed in coordination with the State Historic Preservation Office and the National Park Service. Preserved and/or renovated will be: the existing concrete frame, masonry veneer and entrance canopies, including the train shed structure. Existing exterior windows are steel-framed units and will be replaced with a new custom divided-lite system that relates to the configuration and profile of the original window systems. Special care will be taken to preserve the character of historical elements, such as the water tower and original signage.

Adaptive re-use is not new to this client, 21c, which has sought to reverse the trend of suburban sprawl by revitalizing existing building stock while also seeking to integrate art into people’s daily lives.

A project of this type will truly transform an underutilized historic building into an exquisite new architectural place of which Oklahoma City can be proud.

Full paper withheld at author’s request.

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SESSION 6: Defining the Dash

Session Chairs:
Daniel Butko, AIA, NCARB, LEED AP, ASA University of Oklahoma
College of Architecture Division of Architecture

Anthony Cicchio, RA, University of Oklahoma
College of Architecture Division of Architecture

Current design-build projects often stir opinions and subsequently shake the trees of traditional teaching and academic policies, but one fundamental question is perhaps the most critical element: are design-build projects always a linear process: a beginning to an end? Subsequent to the perceived process, how do educators define the dash between the two worlds? Where does a process fit within the pedagogy of designing and building as both entities influence and navigate the other? Can the project type allow for real-time sketching and designing to occur while physically building a full-scale prototype? Design-build learning environments offer a means to engage today’s design students outside typical small-scale representations into development of full-scale inhabitable space(s). Varied in scale and disposition, opportunities focus upon deliberate and expressive inhabitable deliverables where design concepts address materials, function and scale. The reliance between design and construction phases establishes the foundation of what defines the architectural terminology, “creating.”

The union of creating and making begins when students possess a passion to bridge the roles of designer and constructor, thus recognizing that the two aspects of creating are intrinsically linked. Opportunities defined traditionally as design-build projects may be more aptly labeled build-design projects, where the activity of building is the learning component.

In the spirit of creating and making, how are architecture curricula exploring and defining integration across thinking, developing, crafting and physical building, thereby submerging students in the realm of thought and deeds? This session will explore the pedagogy of varied design-build engagements and how both faculty and students are advancing the comprehensive design process.

Building on Pop [Up] Culture – Exploring the Value of Temporary Design-Build

William J. Doran, IV, Assoc. AIA
Professional in Residence
Louisiana State University School of Architecture

Abstract
Temporary, student-built interventions can serve as compelling site analyses, examples of community engagement, and powerful challenges to public (and student) perceptions of marginalized parts of communities. Without enormous up-front risk for newcomers to design-build pedagogy or the communities they serve, this type of work can transform perceptions of these vital parts of the city to provoke conversation and spark action on behalf of communities that may not otherwise have a voice.

In contemporary architectural practice, there is a pervasive privileging of the image. Academia and the profession alike often candidly participate in the obsessive production of images. While built works must satisfy very real client needs, they also perform the function of self-promotion. Now, more than ever, it is critical to shift focus from the flimsy permanence of built product to the temporary learning experience of design-build.

Many design-build studios hinge their success on a final, build event – in some cases to the detriment of the learning experience and the community. A temporary intervention can mitigate the product’s ability to eclipse the value of the processes of learning and making. Removing the distracting weight of an aesthetically pleasing, image-ready product, in fact, re-emphasizes the multitude of other equally valuable, less tangible learning experiences inherent to design-build.

In a series of community-based, service learning studios, faculty at the Louisiana State University School of Architecture have begun to explore the value of the temporary. The projects represented use simple materials and lighting to create temporary public spaces. Through experimentation with materials and sites at full scale, as well as firsthand collaboration with community members, students get a broad and deep understanding of making and place while giving a new vision for public places back to the city.

The City as a Site

For architecture students, education is project-based. It happens in the context of the design studio. We work, we test, and we make things. Students are given parameters from environmental conditions to social issues and challenged to propose solutions through the representation of architecture. Community-based work, however, allows the design studio to move beyond representation and the walls of the classroom. It gives students an opportunity to envision new ideas with people in their communities that address real issues. At the same time, students engage their design skills to illustrate and test these ideas.

The creative nature of an education in architecture requires students to constantly confront new ways of seeing the world – especially the places we traverse and occupy each day. We often take for granted the way cities are made and designed (or not designed). The production of urban environments goes largely unchallenged. In a prelude to Architect magazine’s August 2012 issue titled “Spontaneous Interventions,” architect Michael Sorkin challenges this notion. He asserts that the project of the city is an ongoing one – one in which we, not only as designers, but also as inhabitants, can participate. His description renders the city not as a static space into which one may place architecture, but rather a dynamic, shifting constellation of forces that can be tested, manipulated, and engaged. Mid-twentieth century movement to outlying suburbs in most American cities has left behind incredible opportunities to challenge students to carefully consider the city as a laboratory through the practice of intervening – testing our relationship with place. Temporary interventions in the city – in the context of the service-learning studio – bring this phenomenon to the center of the educational experience as well as create a complex for change in older, neglected parts of our communities.

Over the last half-century, the draw of relatively inexpensive suburban land and the convenience of the highway and the automobile encouraged many cities to surge outward. Following the Federal Aid Highway Act of 1956, interstate highways began to meander through and around most American cities to accommodate significant, expansive development and meet the needs of growing, newly industrialized cities. 3 Merely two decades after World War II, the United States’ gross national product grew from $500 billion to $500 trillion.4 Baton Rouge – Louisiana State University’s home town – is no exception. The work presented herein focuses on Mid City – an essential part of the urban core of Baton Rouge immediately east of downtown.

Interstate highway expansion in the 1950s and ’60s and a growing population drew resources and economic strength from the core of the city while simultaneously physically severing Mid City from downtown. While this area is currently confronted with issues of poverty, crime and abandoned properties, it is a diverse, centrally located, economically valuable part of Baton Rouge and home to a fervent variety of new developments and active neighborhoods. Mid City serves as fertile ground for addressing the issues we face as a modern society. It can be characterized by scenes of empty buildings, litter and falling sidewalks, but also is home to successful new bars, public art and local businesses.

Service-Learning: The Value of Community and Hands-On Experience

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It is equally crucial to challenge the traditional, paper studio by engaging students in the act of making things outside the classroom. While students are challenged to propose solutions through representation in contemporary architectural education, they are rarely charged to construct or understand the full-scale implications of their ideas. While necessary to visualize and test ideas, representation also offers a false sense of varied conditions and circumstances of the world. In the same way that modern culture has been seduced by the camera phone’s ability to instantly make and share images, so have architects been seduced by the illusion of control granted us each time we step back behind the pencil, paper, or computer screen to “make things.” Academia and the profession, all too often, candidly participate in the obsessive production of images – often privileging their production over taking action.

Resisting the dominance of representation in favor of the educational experience of making is crucial to the ability of future architects to solve problems. Students are forced to deal with materials in the context of weather conditions, gravity, and other people. Even the schedule of the academic studio is challenged by the daily grind of the modern, working world. In his critically acclaimed book Shop Class as Soul Craft, Matthew Crawford posts “If thinking [and thus learning] is bound up with action, how do we make sense of the modern, working world. In the same way that modern culture has been seduced by the camera phone’s ability to instantaneously replay reality from moments ago, we intuitively develop a new set of circumstances that are difficult to effectively confront at a drafting table or computer. These things, in fact, begin to inform student work and reveal to them their own capacity to create something bigger than a physical or digital model. As a result, student projects became less extravagant and more practical, but also begin to engage and transform constraints into generators of ingenuity and creativity.

Process

In the context of an academic semester, built interventions seem to work best as an appendage to the project site. Simple materials are used with a focus on the event of architecture – something that is participatory, engaged, and process-oriented. The temporary nature of the works burdens of all organizations and eliminates pressure on the students to attempt to know everything before making something. One of the first lessons learned is that mistakes are not only acceptable but also necessary stepping stones to success. Students learn quickly that what they might consider a mistake or a failure can lead to fortuitous, valuable outcomes. Students also learn how to translate their ideas into real constructions, to work collaboratively in group settings, and, most importantly, to confidently poke into the eye of the world and see what comes back. What does the act of making something reveal about the world? What does it reveal about how we are as humans? As Coleman Coker writes, “When we build […] we are at the center of these built things and structures. Whether they are buildings or bubble guns, conventionally set ourselves as the focal point of all made things … to transform the world from one that is indifferent to us to one that acknowledges how we are.”

After processing the information gathered and discussing new insights from their intervention, students begin design work and later present that work to the project client and other community stakeholders for further action.

Projects

The goal of the projects presented herein is to offer a fundamentally unequalled learning experience that can prepare students to address the complexities confronted by the modern world in a very grounded way.

Laurel Street Firehouse

The Laurel Street Firehouse served as an active fire station for 85 years in Mid City until it was decommissioned in 2011 when a new station was constructed nearby. It was one of three stations built in 1926 in early years of firefighting in Baton Rouge. The fire department wished to repurpose the building into a museum for near-century-old fire trucks, firefighting equipment and a September 11 memorial. The facility would also serve as a venue for fire prevention education, charitable fundraising and community activities. The fire department wished to bring old photographs of Mid City or the firehouse to be scanned and projected onto the side of the building. Many firefighters shared stories about their time at the station and revealed its significance to fire department. City officials and members of the fire department participated, along with the Mid City Redevelopment Alliance, local business owners, and residents. The event revealed the site’s potential as a valuable public venue and stirred enough interest from the Mid City Redevelopment Alliance to prompt a proposal to take on the building and implement some of the ideas explored. As the studio moved forward, students investigated what the site could be, refined their design proposals, adding such elements as photo-archiving labs and spaces to share stories, while exterior public space replaced the existing parking lot.

Rekindle Mid City

For this project, the studio partnered with the Society of St. Vincent de Paul to expand the organization’s existing shelters and counseling services to include workforce development and a food pantry for the area’s homeless population. The proposed program would offer on-the-job training in the food service and retail grocery industries and also provide a more comprehensive support network to participating St. Vincent de Paul clients. At the same time, it would provide a fresh, healthy option for dining and grocery shopping to local residents who may not have easy access to them. (And to the greater, the studio designed and constructed a series of interactive, pop-up kiosks to be strategically placed throughout the neighborhood surrounding the proposed project site. The kiosks solicited feedback from area residents and visitors about where they buy their groceries, posing questions like, “What do you like about your neighborhood?”, and “Where do you buy your groceries?”

Mid-semester, the studio designed and constructed a mobile outreach center to give a voice to the residents and invite public participation in the project. The collected feedback was shared with residents, church members, and other community stakeholders, affording community members an opportunity to share their thoughts and concerns about where they live. At the same time, the pop-up kiosks along with a donated tent, transformed the empty lot into a shared, public space. The truly valuable knowledge, however, came from careful observation of how community members and children engaged with the existing site and temporary constructions. Concrete slabs became blank canvases for chalk art while a low, flooded area of pavement was transformed into a miniature lake front by sailboats. A cell phone user’s making announcements became an impromptu stage for local children to sing gospel songs and the tent became a space for local church members to gather after mass. In addition, the smoky provision of chalk and a blank canvas revealed a significant need for an outlet of creative expression. These unexpected elements – places for kids to play, water features, and existing spaces – became integral to the proposed market and cafe designs created by the students. The construction and movement of the kiosks also proved eventful and educational. The frame was initially designed to hold a hanging panel – which,
upon construction, showed little resistance to lateral forces. Students shifted the panels to the inside of the frame to serve as shear walls and lateral support (see Fig. 3). Uplift from the wind also required the eventual addition of anchoring devices at the base of the structure. The free movement of the kiosks allowed students to test the structures’ full-scale capability to define spaces on the site.

Fig. 4. A reactivated Darensbourg. The first annual public pinup served as a means to re-envision public space.

Public Pinups, Partnerships and Forward Action
Since 2012, the concept of a public pinup and participation in a local art hop in Mid City has become an annual occurrence in the studio. At the end of each semester, students host a public pinup of their design work during Mid City Merchants’ White Light Night—a biannual art hop along Government Street, one of the area’s major commercial corridors. The public pinup has become another opportunity to activate vacant space and experiment with public perception of the City. The first iteration took place in front of the Darensbourg Building on Government Street. Students presented proposals for the Laurel Street Fire Station and the William Corker House façade. The project served as the fall 2014 project for the Mid City Studio and marked the first semi-permanently built work of the studio. The studio is partnering with a local art collaborative, The Walls Project, to promote the exhibit and oversee its continued use by the community. The project is intended as a modular system with removable panels that will serve as a contextual, rotating community exhibit and will allow the company to become a steward and voice for the surrounding community. The project and its first exhibit launched November 21, 2014, at White Light Night.

A Call to Action
Architects have a responsibility to carefully consider the places they work. Good architecture should be driven by a fervent relationship with its place—its culture, history, and people—followed by a belief in the ability of humans to better their communities without a blockbuster budget or unbridled new development. The Mid City Studio hopes to continue pushing students to act as socially responsible professionals by testing and engaging the places in which they live. It is crucial for students to understand the real-world implications of their future role as architects. We must not only consider buildings’ impact on the environment, but also on the communities in which they are built.

Images provided by author.

8 Ibid. and Boone, “Government Street Revamp.”

References
Design Making: The Iterative Design Process of a Small-Scaled Object

Dana K. Gulling
Assistant Professor
North Carolina State University

Abstract

This is the craftsman’s proper conscious domain; all his or her efforts to do good-quality work depend on curiosity about the material at hand. — Richard Sennett, The Craftsman (2008)

The Bauhaus reformed art and design education to include hands-on workshops alongside classes on theory, representation, and art. At the same time, Gropius believed that artists operated on a level above the craftsmen, and the coursework was taught separately. Conversely, in The Craftsman, Richard Sennett describes the intrinsic value of working with one's hands. Haptic learning, which happens in working directly with materials, is as valuable as the artist's conceptual work. It is this link between design and making that Sennett is bringing to postmodern architectural education.

Traditionally, in architecture education, design build has meant students have the opportunity to design and build alongside the proliferation of computer numeric controlled (CNC) equipment in architecture schools (e.g., routers, millers, robots, etc.), it appears that students have additional opportunities, beyond traditional design-build studios, to link design and making through large or full-scale, smaller-sized projects. Although some of the learning objectives between design build and design making may be different, there are still many overlaps. Similarities include the value of working directly with the material and the opportunity to work with the material directly, not only through representation. Because of these similarities, I have expanded the design-build concept of design-build to include all aspects of design making.

This paper presents the value of a small-sized, design-making exercise within the architecture studio as a means to understand how materials may affect their designs. This was an introductory studio design-making exercise that served as a microcosm of the larger, more complex project the studio was to address the following semester. For the introductory exercise, students were to design and make a small desktop organizer from a custom-created mold. Knowing little about molds, mold materials, molded media, and working at full-scale, students were encouraged to work iteratively. They were asked to do tests and mockups to re-inform their design decisions. Through this project, students learned about materials, working at full-scale, the tension between the academic and professional worlds, and their experiences of making to affect their designs. This was an exercise for my advanced architecture design studio.

Design Making

In architecture education, design build is the opportunity for architecture students to simultaneously be involved in both the design and making of buildings. These design-build projects may be a required course within the accredited architecture degree, such as the Yale University Building Project, which is required during the second semester of the first year of graduate school, or it may be an optional studio, such as North Carolina State University's summer Design-Build Studio. Design build also includes educational opportunities outside of accredited architecture education institutions, such as Yestermorrow Design Build School or the Ghost Architectural Laboratory. There are additional opportunities for students to design and make small-scale projects. These opportunities may include building furniture, constructing installations, working with new fabrication processes and materials, or exploring CNC equipment. Simply using the design tools that are available to Harvard, we had our Graduate School of Design's installation, “On the Brin’ck,” where students investigated using robots to make walls, expandable buildings, super-plastic forming aluminum by students of Heather Roberge, assistant professor at the University of California Los Angeles; and student seminar work investigating the iterative loop between digital design and fabrication through the David Hill, associate professor at North Carolina State University (see Fig. 1).

There are benefits and drawbacks to both the traditional design build and this expanded notion of design making. For traditional design-build projects, students have completed an entire building and may have participated in the permitting process, collaborated with building trades, worked with various stakeholders, used a variety of different materials and assemblies, and worked in large teams. In the example of the Yale Building Project, all of these take place through the design-build studio. At the same time, because of the size of design-build projects, students must resolve the building design through iterative design decisions, but often cannot directly incorporate feedback from manufacturers; however, the students needed to be sympathetic to the idea that how something is made is as important as how it is designed. Toward this end, they were challenged to design and make a desktop storage system, which was to make repeated use of materials (e.g., molds, pattern or jig) for the production of the unit.

Students were able to get the support they needed to meet this challenge. The NCSU College of Design fabrication shop has a variety of equipment and knowledgeable support staff. For this exercise, the fabrication shop’s most applicable processes would include plaster and concrete casting, molding plywood, and thermoplastic molding. Additional resources at the College include the Craft Center. Here, for a small fee, any NCSU student can have access to clay molding, glass forming, and lamping.

The design of the storage system was a project, which used drawing and models to represent the design, the success of the storage unit was evaluated on the actual materials, details, and craft. The project was not to make a product that represents a completed idea, it was to make the storage unit. The project description listed three characteristics that should be considered when undertaking design-build projects: the project may not be complete, and the design may be subject to change; the project may have no public engagement component; and the project may not be improved upon. On the other hand, the project description also lists three benefits that this exercise has: it encourages students to work iteratively, it promotes the making of different manufacturing components, and it encourages students to make well.
Exercise Outcomes and Assessments

Like most studio projects, the outcomes of this assignment were varied. Unlike most design-build studios, which result in the construction of one building, this studio resulted in several, smaller-scaled objects. The units were designed and made by either one or two students. This allowed for direct connections between the object that was made and the person or persons participating in the making.

Students were given three weeks to complete the assignment. In the first class, we discussed the initial sketches and models. Subsequent classes were devoted to full-scale iterations. Students were encouraged to explore the manufacturability during the design process. Students experimented at full scale with different materials, tooling media, size, and methods of manufacturing. Most of the students completed four to five iterations of design and making, with all of the students completing more than three iterations. Making and design were completed simultaneously so that students could evaluate and link the object's design to its making.

Prior to this studio, these students had not had any experience with full-scale making. Students had to learn both how to make and how to properly evaluate what they made. That evaluation was needed so that they could learn and make again.

Concrete, Closed Mold

Hengchen Liu designed a small desktop storage unit to hold thumb tacks, rubber bands, and pencil leads (see Fig. 1). The unit is made from concrete and was cast vertically in a closed mold. Between the two mold halves was a wandering parting line. The wandering parting line follows the contours of the molded object and reduces undercuts. The unit was designed using Rhino and all of the tooling was made on a CNC machine. Liu completed multiple iterations of this project. He investigated different sizes, finishes, and media for the unit. In the end, he tested three different sizes. His different finishes were created by changing the tooling from foam to pine to bass wood. He investigated using concrete, Quicrete, and Rockite, and varying the amounts of water added to each. His goal was to get the surface of the unit as smooth as possible. The bass wood gave the smoothest surface. The three mold media tests. Liu also studied different processes, such as vibrating the mold while pouring concrete. Liu then had to be removed. Liu knocked them off by hand and used a rock to file the surface. In the end, Liu struggled with the unit's surface quality and final size.

Concrete Open Mold

Victor Galloway designed and manufactured a small desktop storage unit to hold his sketchbook, pencils, pencil sharpener, and eraser (see Fig. 4). The unit was to be finished on only one face, therefore allowing open-mold casting. The concrete was poured finished side down with the unfinished side left to self-level. Pouring so that the finish side down minimizes the number of air bubbles on the finished surface. Through iterative testing, Galloway discovered that the open mold needed to be tapped a few times to release air bubbles from the mold's surface. Galloway wanted a shiny, smooth surface for his concrete. He did this by using plastic for the concrete mold. The plastic's surface gives a smooth, slightly shiny surface to the concrete without any additional post-production processes. Galloway fabricated the plastic mold by first having a CNC mill fabricate a pattern from medium density fiberboard (MDF). Then, he used the shop's plastic thermoformer to form a plastic sheet against the MDF pattern. Once the mold cooled, he removed the plastic from the pattern and then cast his concrete within the plastic mold (see Fig. 5).

Incorporating the thermoformed plastic within his process meant that Galloway needed to work within both the parameters of casting concrete and thermoforming plastic. His design's parameters, such as draw angles, draft depths, and size limitations, needed to be considered for both processes. His MDF pattern needed to be made so that the plastic would form to the correct shape and could be removed without breaking. The plastic also needed to be formed so that the concrete could be removed without breaking the plastic and the concrete. Galloway broke down his iterations to understand the thermoforming process, material properties of both plastic and concrete, techniques of casting in plastic, and design (see Fig. 6).

For this process there was the added challenge of tracking the finished side of the object. There are two options for thermoforming plastic. The plastic can be formed over a male mold (i.e. a positive mold) or it can be formed into a female mold (i.e. a negative mold). For both of these molds, the plastic surface that is in direct contact with the mold takes on the dimensions and surface qualities of the mold. At the same time, any mold imperfections will transfer to the surface of the plastic. If using a female mold, air holes will be necessary for the vacuuming process and will be transferred onto the plastic's surface. For Galloway's production, he used a female mold for his thermoforming process and then cast his concrete within the plastic mold on the unfinished side. By doing so, the concrete casting did not pick up the vent holes; conversely, it also meant that his casting lost much of the design's original details.

Molding Plywood

Brittany Spangler and Mallie Matthews worked together to make a storage unit out of molded plywood. The unit was to be formed from offset, curved plywood shelves to form round storage holes. The holes could be used to store rolls of paper, pencils, or similar items (see Fig. 7). The unit was designed so that a single mold could be used to form all five of the shelves. The base of the unit would be formed by using the full mold, and the remaining four shelves were formed using only a partial mold. The molded plywood shelves were connected by hidden dowels.
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The open mold used the vacuum bag's surface to press the molded plywood and then letting it dry for four hours before laminating was addressed if more time was allowed or a jury midreview provided. It also proved difficult to get the students to critically evaluate what they made. These students did not develop any experience making full-sized objects. After having done so for the first time, they took an understandable pride in their work. This pride made it difficult for them to evaluate their success. This, too, could have been addressed with a required midreview, giving the students the distance and feedback necessary to evaluate their own work. Although all the students did multiple iterations, their iterations did not have much impact on the development of their designs. The students appeared very tentative in changing their designs. For Galloway's project, I suggested redesigning the unit's proportions, and the spacing and depths of the pencil and book holders. To address this suggestion, he only eliminated two of the pencil slots. Additionally, Spangler and Matthews struggled trying to mold the tight curves of their design. After multiple iterative struggles by changing the mold type and soaking times, they chose not to alter their design to lessen the radius. Instead, they decided to soak the plywood longer. The extra liquid thinned the glue, thus reducing its effectiveness in adhesion. In the end, this caused delamination between the layers.

Cost was an unpredicted challenge. Although some of the processes, such as casting concrete, were relatively inexpensive, molding plywood was quite costly. For this studio, students got reimbursed for the materials used in the final unit. The cost for the plywood unit was over $400 and the cost for the concrete casting in the wood mold was approximately $45. Students were not reimbursed for their iterative process studies. The cost of iterative study may have altered how many iterations students tried before making the final object. One can also infer that if the final costs were not reimbursed, that it would affect the manufacturing processes and materials selected.

The final challenge for this project was the studio size itself. Originally planned for a studio of ten to fourteen students, due to an administrative decision, the studio was reduced to four students. Having a small number of students allowed for deep and meaningful interactions between me and the students; however, it also reduced the interactions between the students themselves. I believe that if there had been more students, the projects would have been more successful.

Despite these challenges, there were a number of positive outcomes that resulted from this project. Students were able to apply lessons learned from this assignment to their final projects. Liu designed custom aluminum extrusions for disaster-relief housing. As part of his design, he fully investigated the manufacturing processes of aluminum extrusion and made a number of full-scale mockups of his joints. For Matthew's final project, she made a mock-up of her final design for wood-molded, blown glass spheres, using the COD shop's plastic thermoformer. I believe that without their design and making storage unit experiences would have made them less willing to take on these challenges for their final project reviews.

Overall Project Assessment

Despite the time in the project's schedule dedicated to exploring materials and processes, students still struggled with learning from their making to re-evaluate their designs. Students would make assumptions about their tests and would not retract those assumptions before making the final unit. For example, when Spangler and Matthews did their bending plywood tests, they assumed that bending plywood into three consecutive curves would be as easy as bending plywood into six consecutive curves. This assumption did not work for them when they started final production. When the final review happened, it was as if the jury was reviewing a prototype rather than the final unit. This may have been addressed if more time was allowed or a jury midreview provided.

References


1 Richard Sennett, The Craftsman (New Haven: Yale University Press, 2008), 120.

2 For more information on the Weilbach Office Building and other examples of customized repetitive manufacturing, refer to “Customized Repetitive Manufacturing in Architecture, a Case Study” in this publication.
The Making of a Vertical Garden: Lessons in Collaboration, Consciousness and Craft

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Abstract

The home garden was once the backbone of American food security. However, a cultural shift away from gardening has resulted in residential properties abdicating secure garden space. Many have stressed food security as being vital to the health and welfare of the people within the United States, in particular those of low-income or located within urban food deserts. To this end, a multi-disciplinary team of architecture, landscape architecture, water resources, and food science experts and educators was assembled to engage issues of food security through the development of the Garden Education Teaching and Training Site (GETTS). This project will act as a replicable model for home food production. One of the objectives of GETTS is to develop proposals for three scales of the family vegetable garden, of which the primary focus of this paper is the small vertical garden. A design/build methodology and pedagogy was utilized in an architecture materials course, allowing students the opportunity to collaboratively construct and document innovative and affordable solutions to vertical gardening. Students worked closely with architecture and landscape architecture faculty and were tasked with developing site-sensitive designs, selecting and procuring sustainable building materials, and fabricating and constructing (on site) their proposals. Documentation sets, in the form of section and construction assembly instructions, were created by the student groups for dissemination at Mississippi State University Extension Centers throughout the state.

This paper will discuss the students’ increased consciousness toward societal and cultural issues surrounding food security; their development of tacit understandings of building materials, assemblies, and craft; their ability to collaborate and foster interdisciplinary working relationships; their development of project budgets, timelines, and material acquisition protocols; and their appreciation for the complexities of project management, coordination, and implementation.

Introduction

"In a world of plenty, no one, not a single person, should go hungry. But almost 1 billion still do not have enough to eat. I want to see an end to hunger everywhere within my lifetime." Ban Ki-moon, United Nations secretary-general

"Imagine all the food mankind has produced over the past 8,000 years. Now consider that we need to produce an amount that is equal to the amount we produced in the past 40 years if we are to feed our growing and hungry world." Paul Polman, CEO of Unilever

The quest for food security can be the common thread that links the different challenges we face and helps build a sustainable future.1 Jose Graziano da Silva, United Nations Food and Agriculture Organization (FAO) director-general

Hunger and access to healthy food is a world problem – not just a third-world or foreign issue, but one that confronts us here in the United States, in our rural landscapes and urban centers. The Food and Agriculture Organization (FAO) of the United Nations estimates that around 870 million people worldwide are chronically undernourished because of the lack of access to enough food required for their daily nutritional needs.2 According to the 2012 United States Census Bureau, nearly a quarter of the population in the state of Mississippi lives below the poverty level.3 In areas located within the Mississippi Delta poverty levels rise to nearly 50 percent. In addition, since the middle of the twentieth century there has been a steady decline in home food production which has led to stronger dependence on processed and “fast” foods. According to the Centers for Disease Control and Prevention (CDC), Mississippi is recorded as having the highest per capita rates of diabetes (11.7 percent)6 and obesity (35.1 percent)7 in the nation.

To this end, a multi-disciplinary team of architecture, landscape architecture, water resources, and food science experts and educators from Mississippi State University (MSU) has come together to engage issues of food security, resulting in the planning, design, and development of the Garden Education Teaching and Training Site (GETTS). Located on the campus of MSU, this project will act as a replicable model for home food production and sustainable food practices. In the fall of 2013, the first phase of the GETTS project began with the design and construction of 10 vertical prototypes for small, modular vertical gardening. Thirty-six architecture students were placed into teams and tasked with developing, fabricating, and documenting innovative and sustainable vertical garden structures. Over the span of a month, the students worked closely with Professor Jacob Gines (architecture), Professor Elizabeth Payne-Tolle (landscape architecture), and Professor Brian Templeton (landscape architecture) through an iterative and hands-on design process. At the completion of the Vertical Garden Project, each team was asked to reflect on the project – its processes, procedures, and objectives – and respond to a series of questions in a survey” administered by Gines. The format of this paper is a topical narrative by the author (often responding directly to comments from students), including a list of the survey question posed to the students and a list of selected student responses.

Social and Cultural Consciousness

Marilyn Schlitz, Institute of Noetic Sciences senior fellow and president emeritus, posits that there are five nested levels of social consciousness: Engaged Consciousness: This stage of development, people report feeling engaged with the work they do. They are committed to, improving their own eating habits and exercising that consciousness through critical dialogue with professors and among the larger body of students. As an unforeseen consequence outside of the listed objectives of the vertical garden project, many students commented on and committed to, improving their own eating habits and seeking healthier solutions to their daily dietary needs.

How has this project helped you become more aware of societal and cultural problems/issues?

"It has brought the issue of food security to the forefront. Food security is an important issue that is commonly overlooked due to the society of America.”

We have realized the importance of gardens in modern society, an age where we are separated from our surrounding. By creating something that allows for you to easily work and grow vegetation outside, people might want to go outside.”

"Cities are becoming larger and green space is becoming sparse.

"We were not aware of the number of individuals who do not have access to fresh, healthy foods.”

By putting ourselves in the mindset of a person who may not have access to a private outdoor space, save a small balcony, it has made the group more conscientious of other people’s living conditions.”

Collaborative Consciousness: Here we begin to shape the social environment through collaborative actions. Within education, for example, we find an increasing focus on participatory learning, service learning, and project-based learning – each was developed to enhance the nature of collaborative social consciousness through discourse and conversation.

Resonant Consciousness: At this stage of development, people report feeling a sense of interrelatedness with others. They describe a “field” of shared experience and emergence that is felt and expressed in social groups.

The range of responses from students demonstrates varying degrees of social consciousness on the topics of food security and home garden practices – not to mention vertical garden and product design. The majority of the time spent on this project was in developing engaged and collaborative consciousness among the students, and exercising that consciousness through critical dialogue with professors and among the larger body of students. As an unforeseen consequence outside of the listed objectives of the vertical garden project, many students commented on and committed to, improving their own eating habits and seeking healthier solutions to their daily dietary needs.

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Tacit Understandings

Moving students out of the classroom and into a studio/lab environment allows for an “exercise” of demonstrable skills and abilities. The fabrication “fitness” of developing designers is often weak, perhaps fragile, and must be strengthened. The relocating of the student/craftsman to an active and perhaps unfamiliar setting provides a condition wherein he or she can become more intimately familiar with the object of creation. With every movement and deliberate gesture information is received, processed, and stored, then actively altered as a conscious evolution of ongoing knowledge acquisition – knowledge that cannot be taught in a lecture setting. Knowledge is taught, internalized, and then practiced, resulting in the development of new skills, enhanced design language, and amplified critical thinking. Juhani Pallasmaa could very well be speaking to a design/construct pedagogy and ourselves as expressive, experiencing beings when he states:

My assumptions of the role of the body as the locus of perception, thought and consciousness, and of the significance of the senses in articulating, storing and processing sensory responses and thoughts, have been strengthened and confirmed … The primacy of the tactile sense has become increasingly evident.9

Students learn to interpret tacit knowledge and turn it into deliberate and reactionary responses to ongoing and unforeseen challenges in the construction process, embracing imperfections and re-realizing their original intentions. Groups also develop specific process-oriented tasks that lead to an increase in personal responsibility and accountability, which many expressed as valuable to their future professional selves.

What do you think are the benefits of design/build in design education?

“By actually building our designs, we are able to fundamentally understand how things go together. While this usually alters our design, usually they change for the better. We are able to use the techniques we learned while building in our future designs.”

“When we, as students, get to spend our time actualizing a design, it helps create a more pragmatic mindset for the next time we design. We can then apply design with the intentions of it becoming a real object that has thickness and creates and takes space. This will help us in our careers to think about the realities of builders and contractors.”

“Design build projects help teach the process of construction and completion. You start and finish an entire project, instead of handing it off to others to complete.”

“We use design/build to test our knowledge of structure. Trial and error help us learn what not to do the next time around when faced with a similar problem.”

Materials Matter

“(The) sensual and personal relationship with stuff has fascinating consequences. We love some materials despite their flaws, and loathe others even if they are more practical.”

Mark Miodownik, professor of materials and society, University of London

There is no doubt that material selection strongly informs, if not directly dictates, the design decision process and produced outcomes/solutions. In addition, material selection is heavily influenced by both internal and external forces, resulting in the establishment of a set of hierarchical priorities – cost, availability, design intent, ease of construction/ manipulation, aesthetics, environmental impact, performance (i. e. structural, thermal), dimensionality, and so on. The establishment of this hierarchical structure can become very complex. To assist the groups in organizing their priorities they were assigned one of three categories – low cost, medium cost, and high cost, leaving a multitude of considerations to be determined and organized.

Students were also asked to be innovative with their material selection and/or the way in which that material (or combination of materials) was to be assembled or crafted:

Fig. 2. Off-site fabrication of Vertical Garden prototype.

Students: Aaron Ellzey, Jared Robinson, and Samuel Vick

Fig. 3. Vertical Garden prototype. 24ga. Galvalume and steel rivets. Students: Aaron Ellzey, Jared Robinson, and Samuel Vick

How has the evolution of material choice, or material compromises, influenced the realization of the project?

“Choosing containers in which to grow the plants, we knew that they would dictate the dimensions and spacing of the horizontal members that protrude from the slanted surface of the garden. Also, the length of the shoe bags that we used for planting determined the spacing of the cross bracing on the vertical side of the garden. Therefore, the evolution of material choice directly affected the evolution of dimensional alterations made (and added) to the design’s cohesiveness and responsiveness.”

“Improved the design by creating efficiency of material (and an aesthetically pleasing outcome).”

“Wood and its structural integrity greatly influenced our design. In conjunction with the steel bolts, we could achieve a strong yet flexible bond between our moving members of our structure (and the box holding the plants).”

The Role of Craft

It has previously been mentioned that each of the students were encouraged to think and act as a “craftsman” – emphasizing the importance of finish quality and design detailing. But there is another level of personal development that occurs when one is dedicated to craftsmanship. In his book Shop Class as Soulcraft: An Inquiry into the Value of Work, Matthew Crawford examines the importance of making and fixing things, and what is at stake for a society wherein a working/making culture (with its accompanying experiences) recedes from our common lives. “The disappearance of tools (and craftsmanship) from our common education is the first step toward a wider ignorance of the world of artifacts we inhabit.”

The feedback from students reinforced known insecurities in our contemporary society of craftsmanship – not only the recognition of craftsmanship, but also the societal or economic value assigned to such an endeavor. This is highly disturbing. There needs to be heightened consciousness of craft. As James Clear states in his essay “The Benefits of Mastering Your Craft”:

“It is only by channeling our energies into a creative task that we often discover what we are truly thinking and feeling. However, it’s only when we pursue mastery of our craft that we dedicate the necessary time and energy to discover ourselves. Fulfillment does not come from perfecting your craft, but from attempting to perfect it.”

What role does craft play in the generation of this project?

“It was key to create a quality version of our vertical garden to ensure stability.”

“Craft is hard to achieve due to lack of experience shaping materials into forms that we first imagined. There is so much unknown since we are not personal users of vertical gardens, but craft helps in the end, especially since people will be in direct contact with these inventions.”

Fig. 4. Vertical Garden prototype. Wooden hangers, landscaping membrane, wire mesh, zip-ties, and thread. Students: Zach Busman, Nixy Morel, Cecelia Lemus, and John Mark Shumpa

Fig. 5. Vertical Garden prototype. 24ga. Galvalume and steel rivets. Students: Aaron Ellzey, Jared Robinson, and Samuel Vick
"Craft is something that we always (pay) attention to in architecture school. While we did run into some little mistakes, we tried our hardest to create a clean and efficient garden tower."

"Craft is not a big concern with our design. The materials are cheap so if someone messes up it is not a big deal to go get more materials."

Budgets, Acquisition, and Timelines

Funding for this project came from a $50,000 Mississippi State University Extension Service (MSUES) Seed Grant, awarded to faculty for the establishment of the Garden Education Teaching and Training Site (GETTS). From this grant each group was allotted $150 (maximum) for the purchasing of materials. Material and budget requests were submitted via a shared online, cloud-based portal and were reviewed by faculty who organized requests to minimize redundancy and account for economized shipping and delivery.

For most, this was the first time in their lives that they had been exposed to the realities of calculating (and being responsible for) the actual costs of materials, sourcing available materials, managing the project timeline, and coordinating material delivery logistics. Most teams underestimated the time needed to perform and coordinate these tasks.

What have you learned about project budgets, material acquisition, and/or project timelines?

"It takes much more time than expected, and the original intentions of the project may change due to material, design, or time limitations."

"Since we had a low budget we had to be more resourceful with materials. We had to use materials in ways that are not normally used."

"These three things have to work together with flexibility to make the project come together." We learned that it is easy to overlook very essential, yet small, items that can make the overall cost rise more than expected. It is important to think about painier, finishes, and tools in order to have a more accurate cost estimate." Questioning Cost

It was clear early on that (at least in the minds of the students) budget ruled. Groups were very conscious of the "high" cost, found it difficult to define what high cost was and challenge the budget parameters placed upon them by the faculty.

While many teams acquired new materials, there were others who sought to use reclaimed or salvaged materials to drive cost down and free up more money for a specialty material or hardware, as in the case of the team that salvaged a gluton beam that had previously been used by the Sustainable Bioproducts laboratory at LSU for structural testing and was set to be thrown out.

How is cost influencing the design?

"Our group approached this project with the mindset of a consumer, thinking practically about what we would be willing to pay to build our own garage."

"Naturally, we as a group tended to lean more towards non-expensive items if possible. We wanted our design to be simple enough in materials so anyone could go out and afford to build this garden."

"Cost was a big factor for our design. Initially we planned on using the donated material (plastic coated aluminum sheets), but we changed to a landscape fabric because it was more suitable and practical. We wanted to use household items that could be lying around the house so we chose coat hangers to hang the garden from the fence."

Coordination and Implementation

The general consensus from students was that early coordination between group members and external contributors/collaborators/vendors allows for smarter and faster decision-making, provides quicker turnaround during product fabrication, and establishes a process that embraces and supports evolutionary changes to the overall design and delivery of the project. Coordination, collaboration, integrated project delivery, or what you will, the reality is that, as Ashley Wells writes in her essay "We Can Work It Out: Architecture + Collaboration":

"It takes a village to create... Just think of all the programming, concept sketches, models, renderings, etc. involved in the building process – and that’s just in the design office. Of course, you also have to include engineers, builders, politicians, clients, and everyone else that all leave their mark on the final product. With so many professionals involved in the making of architecture it is any wonder that groups have been able to place even greater emphasis on industry collaboration\[7\]."

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How is cost influencing the design?

"Our group approached this project with the mindset of a consumer, thinking practically about what we would be willing to pay to build our own garage."

"Naturally, we as a group tended to lean more towards non-expensive items if possible. We wanted our design to be simple enough in materials so anyone could go out and afford to build this garden."

"Cost was a big factor for our design. Initially we planned on using the donated material (plastic coated aluminum sheets), but we changed to a landscape fabric because it was more suitable and practical. We wanted to use household items that could be lying around the house so we chose coat hangers to hang the garden from the fence."
The University of Oklahoma Division of Architecture / College of Architecture

2014 Creating_Making Forum

References


Ki-moon, Ban. Ceremonial opening. 2nd Plenary Meeting.


Dr. Shundana Yusuf & Jose Galarza
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School of Architecture, University of Utah

Abstract

The School of Architecture at the University of Utah has hosted a design build program in Bluff, Utah, for ten years. The emergence of the program at the same time as the consolidation of digital technologies in architectural schools is no coincidence. Favoring the conceptual rather than the practical, modeling software and digital fabrication have introduced notions of space, materiality, and locality that take little notice of the capacity of the building industry to realize them. They have drawn a wedge between the high and low design opportunities available in the marketplace, and have created graduates alienated from the dominant conditions of the material production of the built environment.

Design Build Bluff, in contrast, is conceptualized around the desire to immerse students into the realities and exigencies of the construction industry. It encourages a more lateral relationship between the ideas on paper and “nuts and bolts” on site. Every spring a number of graduate students move more than 300 miles away from the school of architecture and form a tightknit commune to build a small single-family home for a beneficiary from the Navajo Nation near Bluff.

This paper will access the successes and failures of the pedagogy of learning-by-doing as practiced at Bluff by taking a closer look at the three most interesting houses built by the students of Utah in the past ten years. It will think through Rosie Joe (2004), which put the program on the map, Sweet Caroline (2006), a playful exploration of the geometry of a hogan, and Rabbit Ear (2013), the last completed expression of its teaching philosophy. Taking the pulse of the school’s decade-long involvement with the reservation, the paper will argue that moving into its second decade, the critically acclaimed program needs to transcend object-centric architectural education, for it leads to an impossibly narrow, technocratic, and, ironically, market-driven pedagogy and understanding of the role of the future architect.

The Design Build Program at Bluff is the most prized child of the School of Architecture at the University of Utah. It is the brainchild of the generous Utah architect Hank Louis. Until very recently, Louis both directed and ensured the financing of the program. He has promised to continue the future architect.

Participants agree that Bluff is an absolutely transformative experience for everyone who participates. It has turned idealistic students into professionals not just invested in public interest rhetoric but with an ability to execute it. It has injected the workforce with architects who know how to activate the power of humble projects over glittering spectacles. Bluff has serviced the profession with

Taking the Pulse of Design Build Pedagogy at Bluff, Utah


Fig. 1. Bluff students posing inside a wood frame construction at a DesignBuildBLUFF project.
Professionals capable of taking advantage of the room made by small-scale commissions for delicate gestures and sensitive details, the occasion they create with intimate knowledge of the functional needs of the client; and the opportunity to see it as a labor made possible by the generosity of Councils of our towns and affluent suburbs. Most valuably, it helped students envision their labor on these projects in a most charitable light. For most, the oblivion to their projects' status of episteme (knowing). Each of them helps put and keep in motion the most fundamental pedagogic ambition of Bluff: to raise technē (making) to the status of episteme (knowing). Each of the projects keeps in check the academic preference that has grown throughout the twentieth century for the conceptual over the practical. Collectively, the annually delivered homes construct a powerful critique of the notions of space, materiality, and locality in the academy that takes little notice of the capacity of the building industry to realize them. 

Beginning with the historic avant-garde (at the turn of the twentieth century), extending to the paper architects and critical theorists (in the 1970s and 1980s), and arriving all the way to the most recent modeling software and digital fabrication fever (at the turn of the twenty-first century), our educational system has fixed its attention on imagined as opposed to real space. These much-esteemed interventions in the discipline of architecture have had several adverse effects. They have drawn a wedge between the high and low design opportunities available in the marketplace. They have created graduates alienated from the demands of the material production of the built environment. The curious animosity between technē and episteme or making and knowing has daunted western architecture since the days of Aristotle and Plato. It created a huge headache for Diderot in classifying architecture in his Encyclopédie during a period that Europeans insist ought to be called Enlightenment. Of course, today it is a key “decider” in the fateful ratings of architectural schools. By restating what Freud would diagnose as the “reality principle,” in the training of the architect, DesignBuildBLUFF has brought into question the social hierarchy within the building industry between an architect and a builder, a plumber and an electrician and so on.

Now: failures

Much more can be said in praise of design build pedagogy and the fine institution that is Bluff. But if one goes on, one runs the risk of celebrating the asymmetries of power that underpin the successes of Bluff. This case study situates us at a prodigious vantage point. Here we see a struggle between the Navajo’s cosmocentric and our anthropocentric definition of architecture and the architect. The balance is clearly tilted in our favor. After all, it is an interface between one of the poorest, most exploited and discredited communities in the United States and the powerful critique of the notions of space, materiality, and locality in the academy that takes little notice of the capacity of the building industry to realize them. 

Collectively, the annually delivered homes demonstrated the ability to convert passive energy systems into poetic forms (see Fig. 3). They have delivered a design response for a community with reasonable resources of coal, oil, gas, uranium, and copper, but without any reasonable resources left to them to mine these. In this, and every project since it, DesignBuildBLUFF has proved itself as capable of translating this historical injustice into a call for sustainable energy solutions. They have oriented every house with a symbolically faced entrance to the rising sun as is customary among Navajo. At Rosie Joe, they converted the needs of the occupants into a three-bed, one-bath bungalow with living, kitchen, and storage room, all pushed to the north. The south face is fully glazed and has a long single-loaded circulation corridor that doubles as a thermal mass sink (see Fig. 4). Thick rammed earth walls on the interior support the passive thermal functions. The team hand-tamped sand and clay from the site into formwork for erecting these walls, producing a red face with dynamic figure and striations in various tones that mimic the surrounding landscape.

Nearly all of the single-family homes built by Bluff students on the Navajo Nation do well to enhance the photogenic ease of the desert panorama (see Fig. 5). They appeal to contemporary devices of architectural representation. These single-family homes may have nothing of the neo-classical or neo-gothic styles. But they carry every bit of their anthropocentric attitude to the domus. All of them are well-made machines for living. They are functional, efficient, comfortable, poetic, economical, and environmentally responsible (see Fig. 6 and Fig. 7). Each of them helps put and keep in motion the most fundamental pedagogic ambition of Bluff: to raise technē (making) to the status of episteme (knowing). Each of the projects keeps in check the academic preference that has grown throughout the twentieth century for the conceptual over the practical. Collectively, the annually delivered homes construct a powerful critique of the notions of space, materiality, and locality in the academy that takes little notice of the capacity of the building industry to realize them.

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graduates for architectural practice in offices like his. It was the simple observation that entry-level architects did not know how to build their designs that led to his establishment of asymmetries of power. It makes the world go round.

We need to educate our students that this community is not disadvantaged because it does not have architects. Until the middle of the twentieth century, building was an essential life skill, like cooking, stitching, weaving, storytelling, and throwing pots. Men and women built their houses together (see Fig. 8). Instead, the Navajo are a disadvantaged community because the dominant culture, of which we in the academy are all the beneficiaries and publicists, has robbed them of all their institutions, means of sustenance, and land. They are disadvantaged people because we have subjugated their spiritual (cosmocentric) attitude to space and time to our modern (anthropocentric) attitude. If this were a problem unique to the Bluff Program, the School of Architecture, and the state of Utah, it would not have taken us a decade to see the glaring colonial and exploitative nature of this most cherished public interest component of our architectural program. Our blindness to this prejudice is the legacy of the scientific cultural heritage with an old genealogy in the Judeo-Christian-Islamic tradition. It’s not just us. The seductions of modernity, combined with the shameful attitude of the dominant culture towards non-modern, spiritually oriented architectural practices, have resulted in their abandonment by many indigenous people, too.

Scientific revolution has replaced native reverence for landscape and earth with modern instrumentality, indigenous gratitude to matter and materials with a component of our architectural program. Our blindness to this prejudice is the legacy of the scientific cultural heritage with an old genealogy in the Judeo-Christian-Islamic tradition. It’s not just us. The seductions of modernity, combined with the shameful attitude of the dominant culture towards non-modern, spiritually oriented architectural practices, have resulted in their abandonment by many indigenous people, too.

For us, the house is a rational and phenomenal space. It is a piece of property made of inert materials. It is made pleasing to the eye and the mind by the taste of its occupants and the talent of its architect. We develop sentimental attachment to it because of the memories we make there. It is the primal site for the production of self, privacy, and normativity.

For the Navajo, the house is not a commodity. It is devoid of windows not for the sake of privacy, but because it is conceived as a return to the womb of Mother earth. It is both a womb and a grave (see Fig. 9).

Regardless of the specifics of design, the plan of the Hogan does not serve to capture surrounding views. It is a model of a cosmos. Building a house is not embedded in the logic of comfort and efficiency, economy and self (though these are not entirely forgotten). It is grounded in ceremonial meaning. Modern education teaches that the Juniper or Pine poles that support the roof of the Hogan are just that, structurally rational supports, not the Mountain or the Water World’s Legs (see Fig. 10). They are, therefore, disposable. Practical thinking suggests that it is nothing but mere superstition to call the north pole the Corn World’s Legs, nothing but mere false consciousness to treat the plan as sacred. Devoid of modern infrastructure, it is easy to give the houses east-facing entrances, and all our Bluff houses do. It is also easy to make concessions for the colors of poles: white in the east, turquoise in the south, abalone in the west, and red in the northeast. Alas, some common ground! But it is difficult to have poles in every house. It goes against the sacred principle of innovation. And who cares if they erect east pole first, then the south, west, and north poles in accordance with the guidance of the sun (see Fig. 11)? Learning by doing should not mean that we have to learn how to build from east to south, to west to north. The east entrance should suffice. It is the beauty of economic wood frame construction that ought to be introduced to the Nation, because that is what we need to learn. Gypsum boards are far more durable and low maintenance compared to the sod, bark, and grass that fill the gaps of the Hogan. This must count as an improvement. And what are we to do with the silly tradition of sealing and abandoning the Hogan upon the death of its occupant so it, like the owner, returns to dust?

It would be shortsighted to dismiss our call for attention to native principles of design and construction — like the following of the sun and stars and the return of organic material to earth — as romanticism. Far from being a simple disposal process it is today, the “return” of the Hogan provides a link between man and soil, and animate and inanimate existence. It partakes in the cyclicity of life, death, and rebirth. It is an intentional attempt to maintain these links, active and alive, in the collective consciousness. The native ethos has nothing in common with our salvaging of materials from demolished structures or recycling milk cartons. The Navajo’s abandonment of the Hogan is an act of respect. It is a reciprocal exchange and participation in a regenerative cycle that is the opposite of the extractive actions of our capitalist economy (see Fig. 12). If we consider organic materials as “natural resources,” the natives revere them as gifts of a benevolent, revered, and animate Great Spirit. A comparison of such “environmentally conscious,” “sustainable” architecture steeped in “regenerative” rituals of reciprocity with what today is called Green Economics and Green Architecture, should be instructive. Our “environmentally conscious,” “sustainable” Green Architecture translates all exchanges among us, water, air, and fire, into visible externalities that can be quantified, calculated in monetary value and economic-parlance. If our fall from grace after the near destruction of the planet should teach us anything, it should teach us to revisit epistemologies discarded and abandoned.

Again, much more can be said about the missed opportunities, the closures and blinkers of DesignBuildBLUFF. But doing so runs the risk of dismantling an institution built over years. The question we ought to ask is: How can the next generation of educators at Bluff turn learning-by-doing into creative making? What ought to count as creative making? What can we learn from the construction techniques of the Navajo? (See Fig. 13.) We also have more fundamental questions to ask: How should we engage a people whose way of life is on the verge of extinction? Currently our interventions, even when welcome, are a form of development and service and an extension of modernity that offsets historic injustices by destroying the historic role of architecture among Navajos? But it is difficult to have poles in every house. Is it like the owner, returns to dust?

This paper, it must be clear, is not arguing for disengagement. It is not recommending leaving indigenous communities to their own devices after we have destroyed almost everything that makes them who...
they are. Nor it is an argument for reviving dead systems or preserving existing ones (see Fig. 14). These are not communities frozen in time. Linguistically and architecturally connected to tribes in Alaska. Navajo have changed and evolved, adapting to droughts and climate change. They have migrated and traded, developed astronomy, geology, and geography. They have moved from pit houses to conical and hemispherical Hogans without dugouts. They have borrowed the tipi from the Plains Indians (see Fig. 15). But we cannot throw all caution to the wind, either. We can’t reproduce them in our image or their homes in the image of modern homes, or turn them into inert images of their past glory. We need to rethink how architects should be trained to intervene in informal economies. What roles can they perform in communities that build for themselves? How do we build with the Navajo rather than for them? These questions are an occasion for the opening up of modernity to alternative modalities of being that will mutate themselves and transform the dominant culture. It is time to think dialectically rather than in terms of us versus them or us crushing them into becoming us. While history provides wonderful examples, in Japan, China, India, and Scandinavia, of traditions enriching the industrialized mentality, we have little to show for healthy transformations of cultures that have been suppressed as much as the Navajo. This is the challenge history has left for the next generation of BLUFFERS – a history that could not have been envisioned without DesignBuildBLUFF.

Images provided by author.
Late Modernism on the Prairie: Minoru Yamasaki and the Oklahoma Projects

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Abstract

Japanese-American architect Minoru Yamasaki was one of the foremost American architects of the twentieth century, during what we might define as the Late Modern period, from the 1950s through the early 1980s. Within the wide variety of building types designed and built by his firm from the 1950s through the 1980s, Yamasaki and Associates’ achievements included the twin towers of the World Trade Center in New York City, the St. Louis Air Terminal, and the infamous Pruitt-Igoe public housing project in St. Louis, Missouri. Over the course of three decades, Yamasaki and Associates built over 300 projects in countries on nearly every continent. Yet until recently, the majority of his oeuvre remains under-examined by the scholarly public, and his designs are largely missing from the canon of historical works frequently referenced by the design community. During his career, however, Yamasaki was well known and admired, in such demand that his firm refused more commissions than it accepted. Signaling the widespread recognition of his worldwide success, Yamasaki appeared on the cover of Time magazine in January 1963.

Although many of his major works were constructed in coastal cities of the United States, Yamasaki was a self-proclaimed “architect of the Midwest” and his firm remained based in the Detroit metropolitan area throughout its existence. In addition to commissions in New York, Seattle, Los Angeles, and Honolulu, Yamasaki-designed buildings can be found in many major Midwestern cities – Detroit, Minneapolis, and Tulsa among them. By pairing well-known projects with those that remain largely unconsidered, this paper seeks to explore the design and reception of two of the firm’s Midwestern projects, focusing on the Bank of Oklahoma and the Tulsa Performing Arts Center. In so doing, it will attempt to navigate a familiar architectural landscape in new terms, asking questions such as: What did it mean to bring a form of modernism more closely associated with the coasts to the plains region? What aspirations did the Bank of Oklahoma and the City of Tulsa seek to communicate with their choice of architect? By way of conclusion, I will also consider the broader picture of Yamasaki’s critical reception, notably by Charles Jencks and The New York Times’ architecture critic, Ada Louis Huxtable, as a means to bridge the perceived architectural divide between the coastal regions and the plains.

Late Modernism on the Prairie:
Minoru Yamasaki and the Oklahoma Projects

Mid-Michigan Modern: Frank Lloyd Wright and Hugh Stubbins Jr.

Toward a ‘Prairie Style’: Emergence of a Design Sensibility in the Southern Great Plains

Session Chair:
Scott Byron Williams, IDEC, Assoc. AIA, LEED AP, University of Oklahoma College of Architecture Division of Landscape Architecture

In American’s postwar optimism of the 1940s and 1950s, an exuberant vision of the future began to be expressed through imaginative architecture and design. With a readiness to leave behind the trauma of the Depression and both world wars, access to an exciting palette of prefabricated materials and experimental assembly techniques, and rising economic prosperity, this period proved to be an incubator of innovation. Throughout history, cumulative cultural attitudes have provided fertile ground for intellectual and artistic creativity; these manifestations can parallel and also contradict society’s collective norms.

In Oklahoma, as much of Middle America, the lack of historic constraints has allowed designers, architects and planners to see this landscape relatively unencumbered by a vernacular design. And, although America’s interior has been perceived as the conventional cultural bedrock that, as an anchor, balances the eccentric extremes of the East and West coasts, isn’t there also the perception of the rugged individualist who, born far from any metropolis on the farm or on the frontier, distrusts outside notions to survive of their own ingenuity?

At mid-century, with a people eager to embrace the promise of progress, architects replied with unique and, at times, radical concepts that could both challenge and venerate the landscape. The architectural photographer Julius Schulman documented, among others, iconic works such as Bruce Goff’s Bavinger House (1953), Herb Greene’s “Prairie Chicken” House (1960) and Robert Roloff’s State Capitol Bank building (1962).

From whence sprang this originality? Was the isolated Oklahoma landscape itself the provocateur? How could the conservative cultural mindset associated with Oklahoma nurture concepts without precedent?

Once proudly held aloft, much of the publicly heralded architecture of that period has been forgotten, condemned to insensitive remodeling or demolition. More than a half century after these innovators brought international renown to the region, this session seeks to explore the virtues and the failings of that work and its temporal context.

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architecture can be dated to the precise moment when the Pruitt-Igoe housing towers were demolished barely twenty years after they were completed, due to the social ills expected to accompany the subsequent failure of modernist utopian ideals.

Although Pruitt-Igoe might be best considered an orthodoxy modernist tower-in-the-park that failed to deliver on the grandiose promises of the 1950s, the many years that followed took quite a different turn, aiming to find “serenity and delight” in modern forms and seeking to enhance the built environment, a hotel, seven stories high. This desire led his firm to gradually move away from the hard lines of modernism to embrace an aesthetic that often employed historical motifs abstracted in service of proto-postmodern design language. This was a means to better understand the Oklahoma projects, we might consider his 1956 speech titled “The Morality of Modern Architecture,” in which Yamasaki asserted, “We should bring more warmth and richness to modern architecture, but the addition of these qualities must never compromise the beliefs of our technical age.”2 This sentiment, I believe, rings true both in the World Trade Center towers, as well as in his lesser known, but significant projects in Tulsa, Oklahoma.

The Williams Center Redevelopment

The oil boom of the 1920s and 1930s brought rapid development and prosperity to the plains region, and during this time, the downtown of Tulsa was designated to be the same to be the “Oil Capital of the World.” By the 1960s, however, this industry had moved farther south, leaving Tulsa’s once-vibrant downtown area to fall into neglect. The city was severely affected by many other American cities. Reinvesting in its established urban core, Tulsa managed a different outcome. In a 1975 article titled “Tulsa: Realizing the Quixotic Dream,” editor Phil Schreiner suggested that it was perhaps “ingenious ignorance or plain stubbornness” that kept Tulsa “from realizing the Quixotic Dream.”7

In a 1975 article titled “Tulsa: Realizing the Quixotic Dream,” editor Phil Schreiner suggested that it was perhaps “ingenious ignorance or plain stubbornness” that kept Tulsa from realizing the Quixotic Dream. Miles Young, the editor of The Tulsa Daily World, wrote about the need for a downtown city center, which he called “The Far Western City.”8 This statement was echoed by Len Eaton, president of the Bank of Oklahoma, who stated, “It is the extent to which we understand the Oklahoma projects, we might consider his 1956 speech titled “The Morality of Modern Architecture,” in which Yamasaki asserted, “We should bring more warmth and richness to modern architecture, but the addition of these qualities must never compromise the beliefs of our technical age.”2 This sentiment, I believe, rings true both in the World Trade Center towers, as well as in his lesser known, but significant projects in Tulsa, Oklahoma.

The Williams Center Redevelopment

The Williams Company, a major player in the firm in the mid-1960s. During the design development phase, the architect produced a number of design schemes, including a variety of proposals that involved the construction of a new headquarters for its namesake and commissioned by the Williams Company in 1972.

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An architecture to implement our way of life and reflect it must recognize those human characteristics we cherish most: love, gentility, joy, serenity, beauty, and hope, might the dignity and individuality of man. This idea in its essence is the philosophy of humanism in architecture.\textsuperscript{23}

Leaving no criticism unspoken, Jencks adds his own thoughts:

"Gothic fretwork, crown of thorns, the eternal blue flame of the consolidated gas, good High Camp. Here is an attempt to transform urban realities into a nostalgic dream of a classical past; the forms are univalent, simple, and applied. This is "failed seriousness" at its best, most horrible.\textsuperscript{24}

Jencks here criticizes Yamasaki for a serious embrace of classical motifs that perhaps accidentally produced a form of "architectural" camp, which one might argue is often central to high postmodernism. The silent partner in this discussion might be Susan Sontag's 1964 essay, "Notes on Camp," in which she discusses camp as a style embracing "serenity and delight," rather than "shock and awe." In other words, the design did not express the truth, but rather tart it up. The Port Authority Building, as with Yamasaki's many other projects, coupled with the larger Williams Center complex, remains a core focal point in Tulsa's vibrant city center.\textsuperscript{25}

In Charles Jencks' 1973 Modern Movements in Architecture, a photograph of Yamasaki's 1964 Consolidated Gas Building in Detroit, a building that shares some visual effects with the World Trade Center and even more so with the Bank of Oklahoma tower, was captioned with a quote from Yamasaki himself:

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4. Len Eaton, as quoted in, ibid, 33.
5. Schreiner, "Tulsa: Realizing the Quixotic Dream," 33.
7. Ibid.
8. Ibid.
10. Ibid., 34.
11. Ibid.
13. Ibid., 159.
15. Ibid.
18. Ibid.
19. Ibid.
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Mid-Michigan Modern: Frank Lloyd Wright and Hugh Stubbins, Jr.

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Abstract

The Mid-Michigan area, home to the state capital and Michigan State University (MSC) centered on agriculture and applied science or MSC, is noted for its agricultural and home economics beginnings in 1855 and the college's origins in the areas of hearth. The bedroom wing, with a bathroom between them, provided a focal point in the “studio” space, which closes up again to the enclosed lanai and makes the rooms feel expansive. The open brick hearth provides a place for the family to gather around the fire. The ceiling at the entrance is low and the space appears intimate. A jet-oil Paraffin lamp from Eastl In celebration of their 75th anniversary, the museum published a catalog titled “Frank Lloyd Wright: Massachusetts Work.” The catalog contains a comprehensive chronology of Wright’s work in Massachusetts, along with an extensive bibliography. The catalog also includes a detailed index of Wright’s projects in Massachusetts, which is an invaluable resource for students and scholars interested in the architect’s work in the region. The catalog’s contributors include several well-known authors, such as Robert Fender and Brian Rasmussen. The catalog is available online at the museum’s website, and it is also available for purchase from the museum store. For more information about the museum’s collections and exhibitions, visit the museum’s website at http://www.franklloydwright.org/
the two small bedrooms, on the other side of the living area. Wright used a four-by-four-foot module to organize all of the components. It is repeated in the ceiling floor and in the plywood on the ceilings and guides the placement and proportions of windows and doors. Although the house is compact, the public spaces have an expansiveness that belies its 1,340 square feet. Although the house was designed, it could not be built because it brought the fabric of our physical environment. Architecture is the man-made world in its totality. As such, he viewed architecture as ‘an approach to life, . . . [as] a social art.’”

In a period when numerous other mid-century modern communities were being constructed and discussed, it was clear that Stubbins was the appropriate architect to become engaged with Home-Sites. He was well aware of cooperative housing developments recently completed or undertaken in Massachusetts by TAC (The Architects Collaborative), the firm founded in 1945 by Walter Gropius and seven other architects. Among these, their International-style Six Moon Hill development (1947–1951) and the speculative Five Fields (1951–59) in Lexington were based on the modern method of construction to build low-cost ($15,000+) affordable houses with small bedrooms on lots of equal size. These were probably among the cooperative projects that Boylan lectured about in 1950.22

Stubbins also designed low-cost military housing during the war and participated in the design of two houses for Ingersoll Village in Kalamazoo in 1947.23 The latter was a project of architect J. Fletcher Lankton and the Ingersoll Steel and Disc Division of the Borg-Warner Corporation. Central to their goal of speeding up construction and saving money was the development of a unit that measured two-and-a-half feet wide, seven-and-a-half feet long and six-feet high that contained all of the last plumbing, electrical, and ventilation connections needed in a house, and could be inserted into the structure as it was being built. Stubbins, along with Alden S. Dow, Keck & Keck, and Edward Durrell Stone, was among the early nationally known architects who were asked in 1945 to design a house using the unit. Their designs varied from Cape Cods and two-story Colonials to more stripped down modernism. Stubbins designed both a one-bedroom and a two-bedroom house and a compact, three-bedroom with a sloping gable roof.

For Home-Sites, Stubbins was asked to provide three plans.24 But only three clients selected “Plan A.” Although the basic features were set, as Grimes wrote, “individualization of the design was possible. Plan A had a brick foundation, rectangular plan with the entry placed just off center, and a small study off the entrance (Fig. 5). Two or three bedrooms were at one end, with a small bump out from the straight line of the rectangle to enlarge the space of one bedroom and the bathroom. A free-standing fireplace was placed in the large living room that had large expanses of glazing on the backyard side. Rather than a wall, the U-shaped kitchen had a counter to open it up to the dining and living areas. A utility room was provided near the kitchen for the oil furnace and other utilities. Options included an activity room and an open or enclosed carport. Plan B had a small basement and was suited to sites on a hill, two of these were erected. Plan C differed slightly from both A and B in the placement of dining area and kitchen near the entrance, one was constructed.

Many features and construction methods were modern, including the slab foundations, interior partitions rather than load-bearing walls, forced air systems with clay supply tubes under the floors, flat roofs on the separate garages, and large areas of glazing. In addition, the way each low-gabled house was sited on the lot followed ideas of organic architecture. When the FHA office in Grand Rapids refused to approve Stubbins’ plans because they were not traditional, the entire project was almost derailed. Stubbins, however, appealed to the Washington office, which overturned the Michigan decision.25 At this same stage in the Usonia 2 project fifteen years earlier, the FHA, as the lender of last resort, had refused to fund Frank Lloyd Wright’s designs and that project had come to a screeching halt.

To cut costs, Home-Sites members did a lot of the labor themselves and acted as subcontractors. They bought appliances in bulk, large parts of the houses, including trusses and sides, were fabricated in Grand Rapids and trucked to the site. This method sped the construction process and many of the houses that were started in spring 1951 were ready for occupancy by fall. A Lansing State Journal article, Sunday, July 15, 1951, “Homes Built for Faculty, Co-operative Development Near East Lansing
Show Progress," opined that it is doubtful if the Lansing area has had any other subdivision that has shown such a rapid spontaneous growth as has Lantern Hills … [the] common choice of the same model by most of the families, … along with the fact that all of the Stubbins-designed houses there have natural finished wood siding, account for a notable similarity of the houses at the present stage of construction. However, residents expect to achieve individuality in the finished homes through variations in the landscaping in plans and placement of screen fencing.

The Home-Sites Articles of Incorporation were specific about architectural restrictions for future additions and structures that succeeded in keeping the original aesthetics of the project.23 As starter homes for young families, the Stubbins’ designs were modest, but in the decades following their construction most of the houses have been enlarged and the interiors rearranged. Original redwood siding has been painted, cork or linoleum flooring has been replaced, rooms have been combined, and the landscape has matured. Indeed, each has been individualized as anticipated so that now it is fairly hard to find traces of those modest beginnings. What remains unchanged, however, is the sense of community that developed early on as a result of the necessity of working together physically and financially. Most of the original group were the same age and raised their children together. They were of like minds politically as well. Current residents recall that at times Lantern Hill owners were referred to as “commies,” confirming the liberal leanings of the close-knit structures that related to the land in unassuming ways similar ones throughout the country, shared similar goals: both projects took a somewhat Utopian approach, and like similar ones throughout the country, shared similar goals: the development of affordable homes for the middle class through the design of livable spaces in aesthetically aware structures that related to the land in unassuming ways and that provided a sense of community for like-minded people. Lantern Hill members, however, with their bylaws, covenants, and formal incorporation, learned from some of the missteps of Usonia 2 and produced one of the most pleasant and coherent mid-century neighborhoods in mid-Michigan.

2 Ibid. 7.
4 Bandes, 64-65, pl. 2, 3, 4.
6 Ibid., 13.
7 Ibid., 12.
9 Senkovitch, 12, pl. 4.
10 Alexs Parakh to FLW, Aug. 3, 1939, five-page letter canceling order for the house plans, FLW Archives.
11 Lucie Panshin to FLW, Aug. 12, 1939, FLW Archives.
12 Alexs Parakh to FLW, Aug. 22, 1939, FLW Archives.
13 A two-page “advisory note” dated Oct. 25, 1938, was written primarily by Winckler to outline their requirements and hopes. In the short “ps” Goetsch wrote that she is only 5’2”, worried about living in the country, and asks Wright to make her feel secure. Affordable Dreams, xxv-xxx.
14 Ibid., pl. 28.
15 Ibid., pl. 29 (front elevation) and 30 (site plan), and 71-72.
17 Ibid., 39-43.
20 Dianne M. Ludman, Hugh Stubbins and His Associates: The First Fifty Years (Cambridge: Stubbins Associates, 1986). His papers are in Special Collections, Harvard University Graduate School of Design. Lantern Hill is not included here nor in other literature on Stubbins.
24 Copies of blueprints available at the MSU Archives and Special Collections, among other resources.
25 Iyes, 10.
26 Home Sites, Inc. Articles of Incorporation and Protective Covenants (12/27/30). Expired in 1976, copies in the MSU Archives.
27 Recognized by several current owners.

References


Toward a “Prairie Style”:
Emergence of a Design Sensibility in the Southern Great Plains

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Abstract

The historic “prairie style” of architecture as initiated by Frank Lloyd Wright was replicated in the estates and parks by Jens Jensen. Yet the distinct prairie style was abandoned as early Modernist architecture became ubiquitously generic in application. A 1992 issue of Landscape Architecture Magazine featured the Midwest as a distinct landscape architectural market, but interviews with firms from Chicago and the upper Midwest featured prominently with no mention of any work south of Illinois except to note the pioneering planning work of H.W.S. Cleveland and Hare and Hare in Kansas City. Since 1992, few projects in the Midwest outside of Chicago, Denver and Kansas City have received professional recognition in the national design awards. This drought of two decades changed with the emergence of several firms whose practice focused on restoring prairie ecology as part of the larger land development approach for subdivisions. As these firms won national recognition, a new “prairie style” could be said to have emerged. But this style is not well illustrated at the site scale, rather at a land development scale where the emphasis is on the restoration of natural systems.

Acceptance of “natural landscapes” has been slow to take root in the American imagination. This paper will present a timeline of publication outreach in the southern Great Plains, an ecosystem that is historically understood to be the “Great American Desert.” The landscape is subtle with minor variations in color by season, in texture by plant species, and in enclosure by native species.

The most typical design experience of the southern Great Plains has always been at speed; the prairie has historically been “passed through.” However, walking or cycling through the prairie provides a completely different set of cognitive clues for how to design in a potential southern Great Plains style.

This paper will articulate the qualities of spatial texture, seasonal change and variation that may help understand the appropriate scale for assigning a prairie style to the remnants of Modern architectural artifacts.

Full paper withheld at author's request.
The Idea of Anonymity in Postwar Architectural Practice

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Abstract

The vectors of architectural influence are often understood to travel in one direction only: from master to disciple, elder to younger, “genius” to emulator. Such models, based on conventional notions of singular authorship, are at odds with the wave of collective and corporate architectural practices founded in the years immediately after World War II. This paper explores the origins of one such practice, The Architects Collaborative (TAC), the largest dedicated architecture firm in the United States by 1970s – with some 380 employees at its peak – TAC is often described solely as the office of Walter Gropius, the canonical modernist master and European émigré associated with the Bauhaus and later with Harvard University. Conventional accounts of the firm’s origins – that Gropius established the office with “his” students – distort the true story of TAC’s founding by seven younger architects who came together through a dense network of personal and professional connections in a shared climate of collective, utopian ideals at the start of the postwar building boom. A reassessment of this context against the accepted historiography of TAC reveals a history of speculation around questions of authorship, influence, and collaborative practice in the years during and after the Second World War.

In the immediate aftermath of World War II, Henry Russell Hitchcock predicted that the dominant criteria for evaluating postwar modernism would be organized not on the basis of style, but according to economies of production. In “The Architecture of Bureaucracy and the Architecture of Genius,” published in the Architectural Review in 1947, Hitchcock outlined new categories of practice in the context of an emerging postwar industrial society, at once productive and discursive, that would require terms of description and analysis different from those that had applied to the work of the prewar avantgarde. Previous debates over the language in which to build had been structured around the avant-garde terms of advance or regression. On the other side of World War II, both the exigencies of wartime construction and the immediate needs of the postwar building boom had produced what Hitchcock termed a “clarification of the architectural picture,” within which “it came about that there was at last only one contemporary way of building”. Like the Allies, modernism had definitively won its own battle at mid-century.

Hitchcock, clearly satisfied with this outcome, ventured that in this wake of the victory the older revolutionary terms of debate would be replaced by newer questions. “It is not too optimistic,” he declared, “to say that the particular situation which justified a primary critical approach to new buildings in terms of their degree of modernity came to an end with the present decade.”

The new social, political, and economic context of the postwar period, then, would place new demands on the architectural profession, to be resolved within the dominant language of modernism. While industrial development and larger, more complex design problems would require new methods of practice for the postwar architect, they would also require different tools on the part of the architectural critic, faced with entirely new questions in evaluating the built results of these practices. Declaring that with the increasing scale and scope of the new design tasks “the major problem of architecture in the middle of the twentieth century is presumably going to be a problem not of up-to-dateness but of quality,” Hitchcock predicted that a new type of professional entity would emerge, equipped with the competence required to provide the required quality of execution: the bureaucratic design office. “Bureaucratic architecture,” he wrote, would include “all building that is the product of large-scale architectural organizations, from which personal expression is absent.”

In contrast to the emphasis on speed and competence required for the large-scale projects to which this type of bureaucratic architecture would ideally be suited – the article identified town planning, hospitals, and schools as examples – Hitchcock countered an “entirely different world” of design practice for those monumental or special cultural commissions requiring artistic or creative synthesis, “the world of the architecture of genius.” The genius would be the anti-bureaucrat, “the sort of architect who functions as a creative individual rather than as an anonymous member of a team”; his method would be “a particular psychological approach and way of working at architecture which may or may not produce masterpieces.”

These two types of practice and their resulting languages of expression – the competent “prose” of the bureaucratic
and the imaginative “poetry” of the genius – would
be subjected to the same type of analysis and
criticism,” Hitchcock warned. Henceforth, it
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only complex individual structures of generalized
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work of the firm, Gropius reiterated
the importance of collaborative efforts in the
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promoting through the institution of collaborative workshops at
TAC.

Significantly, Gropius understood that the team
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If Jenkins provides the most blatant case of obliviousness to [or repression of] the reality of bureaucratic practice in the 1970s, we might look to those critics who were explicitly concerned with the ideological content of postwar architectural practices back to their means of production. In the second volume of their Modern Architecture (1976), Manfredo Tafuri and Francesco Dal Co begin to restate the conditions of practice in the terms laid out by Hitchcock in 1947. In the postwar period, they write:

A true and proper “architecture of bureaucracy” settled in everywhere, in Europe and America as well as in Asia. But this was no deliberate emphasis on elements attended to by a tragic self-awareness. The field came to be dominated not by individual architects intent on communicating their opinions of the world but by large studios in which the tasks were parcelled out with virtual assemblyline standards ... equipped to work at an intense speed of production and to fulfill demands for high technological levels in buildings as anonymous as the architectural concerns that build them.1

While acknowledging these systems of production, Tafuri and Dal Co prove unwilling to take up the new terms of criticism called for by Hitchcock in relation to its practices. This recognition is followed not by a deeper investigation of such systems and what they might mean for architectural practice (or for the critical evaluation of such work), but by declaring the work in the best possible light for an account of postwar practice. Instead, Tafuri and Dal Co settle for the formal reading of architectural projects in terms of their ideological content or what is for them much the same thing as more or less successful reflections of their authors’ intentions. Singular authorship remains the necessary requirement for an architectural work to be judged worthy of evaluation – a prejudice that marks Tafuri and Dal Co’s approach as conventional in methodological terms, even if critical and Marxist in approach.

In maintaining such a critical refusal, any description of an office like TAC could only be a harsh one. Similar to Jenkins and others, Tafuri and Dal Co begin their account of architectural production after the 1930s with the need to “see” and thus begin to historicize, the work of corporate offices? A look at the elisions of this work from architectural production, including Gropius, TAC’s Teamwork,2 “has been largely incompatible with that of built or published works, has been largely incompatible with practices that are organized around principles of collaboration, anonymity, team decision-making, and large-scale operations. Senior and production – precisely the goals upon which TAC was founded in 1945 – despite the fact that such practices were ubiquitous by the 1970s and, indeed, constitute much of the standard business models by which architecture is practiced today.

By its nature, and subject as it was to the laws of the American market, TAC very soon became a many-branched, impersonal concern equipped to deal with the massproduction of ventures and open to any sort of request from public or private clients ... Gropius proved willing to legitimize with his signature ostentatious urban paradigms like the Pan American Building of 1958 in New York. ... More and more the approach of TAC tended towards a formalism whose low point as regards quality was reached in the John F. Kennedy Building of 1961-66 in Boston.3

To legitimize with his signature": The language of authorship here is made explicit, as is the narrative (already prepared by architects) of the architect-as-master submerged into the corrupting formalisms of bureaucratic practice. Undoubtedly capturing their own position in relation to such narratives, Tafuri and Dal Co summarize the historical position of TAC in this in the 1950s by the following terms: “the refusal of Gropius to remain a ‘master’ and his disappearance into the reality of American professional life were paid for with a harsh price that necessarily affects any discussion of his career.”4

The anxieties over how to envision the work of TAC and other “anonymous” bureaucratic practices, evident in these work of TAC’s Teamwork,4-5 is that it has been largely incompatible with practices that are organized around principles of collaboration, anonymity, team decision-making, and large-scale operations. Senior and production – precisely the goals upon which TAC was founded in 1945 – despite the fact that such practices were ubiquitous by the 1970s and, indeed, constitute much of the standard business models by which architecture is practiced today.

4 Jonathan King and Langdon, Peter, eds., The CRS Team and the Business of Architecture (College Station: Texas A&M University Press, 2002). On the origins of programming in relation to school design, I am indebted to Hashim Sarkis for providing manuscript chapters from his forthcoming book, A Second Functionalism.

1946 [sic] he created The Architects Collaborative (TAC), alone with these interests, Tafuri and Dal Co claim that “In 1946 [sic] he created The Architects Collaborative (TAC), gathering around himself some of his former students and, as was his wont, reserving to himself the role of methodologist within the group.”5 Symptomatically, the story of agency is told backwards, through the singular intentions of Gropius and his presumed influence on “his” students. In fact, it was the younger practitioners who

References

Fun and Games: The Suppression of Authoriality and the Rise of the Reader

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Abstract

Authorship, in contemporary parlance, is an attribution of creative origin, suggesting that the responsibility for an object lies with a single individual. While the reality of artworks, designed objects, and architecture is indeed much more complex than the lone genius ‘authorship’ would imply, the use of the term ‘author’ with respect to non-textual endeavors raises an important question: if architecture can be said to be authored, to what extent are those who come into contact with architecture readers?

This paper explores a phenomena wherein the caricature of architect as genius-author was embattled on two fronts—the adoption of gaming and simulation by architects, urban planners and, most importantly, design educators in the late 1960s and 1970s throughout universities in the Midwest. First, collaborative games were used to demonstrate the multiple constituencies involved in design and the complexity of their interactions. Second, design games taught students how to describe and interpret architecture—how to read it—emphasizing the role of reception in the creation of architectural meaning, minimizing the agency of the architect’s intentions. Drawing on new works in the philosophy of aesthetics and reader-response theory from the period, this paper argues for the necessity of tempering the contemporary celebration of the architect’s authority with a reminder about the importance of the reader.

Full paper withheld at author’s request.

Semi-Formal: A Hybrid Housing Model for Brazilian Cities

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Common Works Architects

Abstract

This year, over 70 million people will be added to the world’s urban population. At least 20 million of them will take up residence within informal communities – entirely free from the influence of architects and planners. Of the remaining 50 million, nearly 90 percent will arrive in cities of developing countries like China (United Nations Human Settlements Programme 2013), which supports one architect for every 40,000 citizens (Quirk 2014). At the current rate of urbanization, designers will have alarmingly little impact on the ultimate shape of the global urban fabric. This proliferation of undesigned and under-designed communities will result in cities with built-in socio-economic stratification and preventable ecological externalities. Yet, in light of the failures of twentieth-century subsidized housing blocks, it seems that designed alternatives may be no better at alleviating the crushing centrifugal forces of urbanization.

To describe and advance the dialectic between formal architecture and informal building, this essay investigates three South American communities as archetypes for urban development patterns. First, the informal favelas of Rio de Janeiro exemplify the challenges faced by most global squatter cities, including insecurity of tenure, hazardous environmental conditions, and inadequate infrastructure. On the other hand, the planned city of Brasilia, originally touted as the antithesis to Rio’s slums, now stands as an oft-cited example of the failure of modern architecture and planning. Lastly, an unfinished high-rise in downtown Caracas represents an elusive third type: a semi-formal development, partly authored and partly anonymous. This synthesized model overcomes many of the problems apparent within the dichotomy between the formal and informal city.

Full paper withheld at author’s request.
The Tale of Two Initiatives: Reflective Practice for Collegial Discourse in Design Education and The Global Studio Model

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Abstract

This paper describes two scholarly initiatives related through causality. One initiative involves a reflective exercise addressing the relationships between a design educator’s personal practice and his scholarship, teaching, and service. The other initiative is the research project that was instigated as a result of the reflection. The reflective exercise is guided by three questions put forth by faculty colleagues, composed to stimulate debate. The resulting reflection includes an analysis of interactivity in the area of graphic design, and discusses concepts related to a designer’s creative process and social context. Ideas are synthesized from this analysis to define the structure and scope of a new project. This second project is aimed at establishing a global community of students, designers, instructors, and institutions, and promoting their communication and collaboration. A key aspect of the project is a proposed new model for the educational design studio involving inter-institutional partnerships between student-faculty teams. Both initiatives address the development of a deeper understanding of one’s personal design practice, and the ways this knowledge can be made available to students.

Introduction

Cause. And Effect. This paper describes two scholarly initiatives that are linked by causality. The first initiative is a practitioner reflection exercise I underwent to cultivate a critical discourse between academic graphic design colleagues. The second initiative is the research project that was inspired by my involvement in the reflection exercise. The two projects are also both efforts toward promoting a deeper understanding of one’s personal design practice, and exploring unconventional ways this knowledge can be made available to benefit students’ learning experiences. The remainder of this paper proceeds by first explaining the details of each initiative, and then connecting ideas between the two projects to emphasize the importance of deliberate reflection and robust collegial discourse.

Reflective Practice for Collegial Discourse

As a faculty member of a graphic design program who teaches courses addressing interactivity, I was presented with a challenge. This challenge, issued in good faith by my colleagues, required that I reflect on my personal design practice and its relationship to my scholarship, teaching, and service. The challenge was comprised of three questions, composed to stimulate discussion:

1. Within the context of graphic design, what does it mean to be interactive?
2. What does interactive design mean to you?
3. How are your scholarship, teaching, and service informed by your interpretation of interactive design?

In kind, I intended to compose my responses to these questions to stimulate discussion. Rather than the technologically oriented or media-dependent interpretation of these questions that I thought my colleagues expected, I decided to approach the questions conceptually. By exploring the conceptual underpinnings of these questions, I sought to achieve a novel perspective on the emerging discipline of interactive design and perhaps elucidate new ways of interpreting one’s place in this increasingly influential context. What follows below is an account of how I derived my responses, beginning with a conceptual analysis of interactivity within the overlapping areas of graphic design practice and education.

Question One: Within the context of graphic design, what does it mean to be interactive?

Initially, my interpretation of this first question was limited to what I consider to be the “creative dimension” of graphic design. My analysis of interactivity in this dimension identified a set of ideas, among which I believe a designer establishes reciprocal connections during the creative process. These ideas include: conceptual understanding, technical skills, aesthetic sensibilities, client content, and user traits (see Fig. 1).

Fig. 1. Ideas of the Creative Dimension

The remainder of this paper proceeds by first explaining the details of each initiative, and then connecting ideas between the two projects to emphasize the importance of deliberate reflection and robust collegial discourse.

The Tale of Two Initiatives: Reflective Practice for Collegial Discourse in Design Education and The Global Studio Model

Working Toward a New Studio Pedagogy: The Ferris State University Small Town Studio

Toward a New Design Studio Practice: Mapping, Making and Writing

The Architecture Studio... Because Nobody Warned Me
By reciprocal, I mean that a designer does not merely juxtapose these ideas in parallel, with each contributing toward the solution separately. For example, a designer does not simply employ his or her existing technical skill to broadcast a client’s content without consideration of the aesthetic result. To the contrary, a designer attempts to form complementary relationships between these ideas, creating a reciprocity that allows the components to develop together, as required by the problem. For example, a designer’s aesthetic sensibilities may necessitate the acquisition of new technical skills, which in turn may provide opportunities for new types of client content. From this perspective, interactivity is not a concept to be defined by particular media or technology, but perhaps instead by a designer’s ability to see in disparate ideas to synthesize a meaningful experience, often in response to a problem.

However, this explanation of what it means to be interactive in the context of graphic design felt too reductive, especially given its emphasis on experience. After further consideration of the first question, an additional dimension of graphic design emerged, one that accommodates the fact the creative process does not happen in isolation. I consider this second dimension to be the “social dimension.” My analysis of interactivity in this dimension highlighted the various roles with whom a designer may communicate during the creative process. These roles include: colleagues, clients, users, competition, critics, teachers, and students (see Fig. 2).

In anticipation of the third question, I further broke down this definition of interactive design into three constituent parts: a creative activity, a context for instruction, and an avenue for improvement. I identified these partial definitions to help explain how my scholarship, teaching, and service inform my interpretation of interactive design.

Question Three: How are your scholarship, teaching, and service informed by your interpretation of interactive design?

My initial response to this third question was comprised of three lists of unrelated activities. I recounted for my colleagues what I considered to be highlights from my commercial design practice, student outcomes, and academic and community involvement. In doing so, I was forced to acknowledge an almost complete absence of connections among the activities on the three lists. Given my emphasis until this point on an approach that prioritized what may generally be described as “coordinated integration,” I realized my initial response to this question was insufficient.

Here, I understood the real potential of the reflective exercise. To merely ascertain insight on the current state of a situation and go no further would be to undervalue the effort invested to obtain the insight. It became clear: a new challenge: to apply the understanding I had developed toward a project that bridged my scholarship, teaching, and service, the scope and structure of which would demonstrate how these activities could be informed by my interpretation of interactive design. In this section, I describe my project and discuss its early progress, current focus, and future goals.

The Global Studio

The global studio project is an effort to connect my scholarship, teaching, and service as a faculty member in higher education. The project was deliberately conceived to integrate my creative activity and instructional capacity to coordinate social improvement. The focal area of the project is interactive design curricula in higher education.

The goal of this project is to establish a global community of students, designers, instructors, and institutions, and provide the infrastructure and collaboration. The project builds on previous research involving inter-institutional curricular collaboration and explores how working across institutional boundaries can expand curricular offerings and enhance students’ learning experiences. Below, I discuss the recently completed first phase of the project, the activities involved in the current second phase, and the goals of the upcoming third phase.

Phase One: Student Web Awards

This first phase of the project involved creating and facilitating the 2014 Student Web Awards (www.studentwebawards.net). This event is an online exhibition and competition intended to showcase the best in student Web design. While aspects of this phase of the project touch on all three components of my responsibilities as a faculty member, the focus of this phase is predominately that of my creative activity. This undertaking began with designing and developing the contest Web site, identifying jurors, and then marketing the event via email and social media. The jurors for this event included myself, Yana Sakellion, assistant professor of graphic design at American University, and David Molanphy, creative director at Perspective Lab. The primary purpose of this phase was to generate content and participation in an extracurricular interactive design-oriented activity.

The contest attracted forty-two submissions from six institutions. This participation provided two important benefits to the broader global studio project. First, the interaction among students, as they commented on one another’s work via email and social media, constitutes the beginnings of an inter-institutional community (see Fig. 4). Second, these submissions from students helped identify academic programs that are producing high-quality student outcomes, and thus potential partners for the second phase of the project.
The purpose of this phase will be to provide collaboration to include access to partners with different aspects of the project.

Central to the value of this activity is allowing students to participate in the creative process on a potentially global scale. This global studio model was inspired by the structure and operation of multinational design agencies. The organization of these firms is often geographically distributed based on specialized skills, with remote geographies contributing asynchronously to project deliverables. The end result of this third phase of the project is a Web-based learning resource that would share characteristics of both the traditional educational design studio and a virtual learning community. The intended outcome for students experiencing this type of educational context is better preparation for the responsibilities of professional design practice.

Conclusion

The potential influence of the emerging discipline of interactive design is almost incalculable. Over a decade ago, Lyman and Varian described the Internet as "the fastest growing new medium of all time." Since that time, the pervasion of interactivity has included all sectors of the design industry, and its manifestations go well beyond mouse-based point-and-click style interactions. Voice-user interfaces are a differentiated reality, and wearable computing is redefining how people interact with technology. The rate of change in this area of design practice, and the complexity of the information involved, requires reconsideration almost perpetually. To that end, the main points of this paper are not the proposal of a new model, nor the specific results of a singular reflective exercise. Rather, the key ideas to be drawn from this paper are the value of deliberate reflection as a means for coordinating new ideas, and the imperative that faculty colleagues engage in a discourse around these ideas to best understand how to integrate them to enhance students' learning experiences.

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References


Working Toward a New Studio Pedagogy: The Ferris State University Small Town Studio

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Abstract
Seeking to embody a multi-scalar and holistic approach to sustainability and architectural design education, the Small Town Studio in the Ferris State University Architecture and Sustainability Program has been established to educate architecture and design professionals with a broad understanding of sustainability.

Recognizing the significance of smaller urban areas within the sustainability discourse, the Small Town Studio seeks to serve as a clearinghouse for smaller urban areas found across Michigan (20 percent of Michigan’s population) through which a wide range of sustainable design and planning problems can be addressed. This focus on small urban areas (2,500 – 50,000 people) is in part a response to anecdotal evidence that suggests a limited number of architectural schools have looked beyond the context of either highly urban or peri-urban settings for inspiration. Within the Small Town Studio, these smaller urban areas are viewed both as a significant force for sustainable development and a significant source of the world’s urban population.

This paper introduces the Small Town Studio and its approach to an architectural studio pedagogy grounded in design research, problem-solving, and communication. It also proposes that if urban future and the associated built environment is to be sustainable, it will be necessary to educate a new class of architects well versed in the language of holistic sustainability.

Introduction

With recent increases in global urban growth, discussions about sustainability and sustainable development are increasingly focused on cities and the built environment. The combination of increased urbanization with high rates of resource use in urban areas raises fundamental questions regarding the ability of current ways of life to be maintained. In discussing global urbanization and its relationship to sustainable development, discourse is often confined to large urban centers or megacities, which may leave out a large percentages of the world’s urban population. A deeper understanding of the term “urban” suggests, within the United States, particularly in states such as Michigan, a larger percentage of the population lives in smaller urban settings than are typically considered in discussions of urban sustainability. While these smaller “towns” are considered urban, they are often ignored by built environment professionals, the architectural education system, and the architecture profession. Recognizing their significance within sustainability discourse, the Small Town Studio in the Ferris State University Architecture and Sustainability Program has been established to pursue sustainable urban solutions for smaller, underserved urban areas of Michigan.

Urban Demographic Trends

It is well documented that the planet is becoming increasingly urbanized. According to the World Health Organization, in 1990 less than 40 percent of the global population was urban, by 2010 it had grown to more than half, and by 2050 it is estimated that 80 to 85 percent will live in urban areas. This demographic shift has resulted in a significant strain on the planet’s resources. It is estimated that the built environment, associated with cities and urban areas, accounts for a majority of global natural resource use. According to the United Nations Environment Program, urban areas currently account for slightly more than half the world’s population but emit up to 80 percent of global greenhouse gas emissions and consume 75 percent of global natural resources. In addition, in many of the world’s cities, water use exceeds supply, agricultural systems are unsustainable, congestion is worsening, and economic inequality, family breakdown, and social disruption are increasing. In addition, as cities and urban areas contribute globally to many social and environmental problems, they are seen as potential solutions to these same problems. In part, while urban areas use a majority of the world’s resources, they have the potential to use resources more efficiently than rural or peri-urban areas. As our global society faces the threat of climate change, natural resource depletion, and a potentially unsustainable future, it is in cities and urban areas where solutions to these problems will be found. This view is reiterated by the United Nations, which states, “The decisions and actions needed to move our society towards more sustainable patterns of consumption and production will have to be decided and implemented, to a large extent, by [urban areas].”

Urbanity Redefine

The potential for a city or urban area to contribute to sustainable development and specifically tied to its urban form, i.e., the form of the built environment, at both macro and micro scales. However, as keys to a sustainable future appear tied to urban growth, urban form, and the urban environment, what this urban future looks like, and what the term urban means, is unclear and at times contradictory. Anecdotally, a future where 85 percent of the world’s population lives in urban areas may bring to mind images of one of the world’s mega cities, such as Tokyo, Mexico City, or New York City. However, these visions may be deceptive, as the planet’s 3.6 billion urban dwellers are currently distributed among settlements of various sizes. A refined understanding of the term “urban” provides a clearer picture of what our current and future urban age may look like. The UN defines urban as “the percentage of the national population living in areas termed ‘urban’ by the national government.” In the United States, urban areas are defined as those that “comprehend at least 2,500 people.” Such broad definitions allow for the possibility that a significant percentage of the world’s current and future urban population, particularly in the United States, may be living in settings much less like the mega cities of the world and more like the traditional suburban, small town, and rural settings found across the United States and broader world. For example, in the United States, where 80 percent of the population is considered urban, 12.5 percent of the total population lives in urban areas with populations of 2,500 to 50,000. When considering a future with 80 percent of the population living in urban areas, this deeper understanding of the term “urban” may alter our understanding of how cities and urban areas will contribute to a sustainable future through their urban form and the form of the built environment.

Urban Demographics, Sustainability, and the Local Scale

An analysis of current census data helps clarify how changing urban demographics may be taken advantage of to promote a more sustainable urban form and future. For example, focused on census data from the Greater Michigan was analyzed to better understand how increased urbanization is currently manifested within the state and how it may change in the future.

The 2010 U.S. Census identifies approximately 80 percent of Michigan’s population as living in urban areas, with approximately 10 percent of the population living in micropolitan areas of 10,000 to 50,000. This implies approximately 65 to 70 percent of the population lives in large urban areas over 50,000; however, further analysis of the census data suggests otherwise. Of Michigan’s 7,369,957 living in urban areas, approximately 50 percent of those live in towns and cities. This indicates a full 30 percent live in unincorporated townships or villages, while approximately 20 percent live in jurisdictions with a population between 2,500 and 50,000. Rather than the large urban centers, such as Detroit, traditionally associated with the discussions of urban populations, this Michigan urban demographics provides insight into its current urban form and built environment in a way that simply stating 80 percent of Michigan’s population is urban does not. A full 10 percent of the population lives in micropolitan areas of 10,000 to 50,000, while an additional 10 percent lives in cities of 10,000 to 50,000, but which are associated with a larger urban area. Thirty-three percent of the population lives in urban jurisdictions with less than 100,000 people, while over half do not live in cities or towns at all, but still live in areas considered urban (such as urban, unincorporated townships).

This view is reiterated by the United Nations, which states, “... the decisions and actions needed to move our society towards more sustainable patterns of consumption and production will have to be decided and implemented, to a large extent, by [urban areas].” This further analysis of Michigan’s urban demographics suggests that it is important to rethink the term “urban” in relation to urban form and widespread urbanization, in addition to the common emphasis placed on megacities and large, classic urban areas, it will be important for the local, neighborhood, and micropolitan scales to be considered.

Role of Architects and Architectural Education in Sustainability Discourse

In recognizing the importance of the built environment within the global discourse of sustainability, the architectural professions are being called upon to provide leadership by proactively addressing environmental issues. Architects find themselves uniquely situated to address issues of sustainability related to our urban future. For this paper, it is proposed that if an urban future and the associated built environment is to be sustainable, it will be necessary to educate a new class of architects well versed in the language of holistic sustainability. Architectural education related to urban and environmental issues are often seen as potential solutions to these same problems. In part, while urban areas use a majority of the world’s resources, they have the potential to use resources more efficiently than rural or peri-urban areas. As our global society faces the threat of climate change, natural resource depletion, and a potentially unsustainable future, it is in cities and urban areas where solutions to these problems will be found. This view is reiterated by the United Nations, which states, “The decisions and actions needed to move our society towards more sustainable patterns of consumption and production will have to be decided and implemented, to a large extent, by [urban areas].”

This view is supported by Jason Walker who finds, “It is evident that architects are not only directly involved in shaping the built environment but also in addressing the inherently complex and interrelated nature of sustainability issues.” Walker further argues, “If the design professionals are to remain relevant, design education must effectively integrate sustainability into curricula’s pedagogy to address the
current and emerging issues facing our society to ensure an education that espouses responsible design solutions.14

Such an approach to design education, according to Walker, requires a holistic vision of sustainability addressed at multiple scales. Within the built environment, and particularly within urban areas, there are multiple scales of sustainability “that range from the site scale to the neighborhood scale to the city, county, region, and planet.” While it is true no one single designer, or single project, will save the planet on its own, according to Walker, design education must address all three scales sequentially and local scale influences the other. The slogan “think globally, act locally” is an appropriate analogy for teaching sustainability in design education that includes the macro- and micro-scales.

Small Town Studio Overview

In seeking to embody Walker’s multi-scale and holistic approach to sustainability and design education, the Small Town Studio (STS) in the Ferris State University Architecture and Sustainability Program has been established to educate architecture and design professionals on a broader understanding of urban sustainability. Furthermore, with the previously discussed understanding of urban demographics that recognizes the importance of smaller urban areas within sustainable discourse, the Small Town Studio seeks to serve as a clearinghouse for such areas found across Michigan in which a wide range of sustainable design and planning problems can be addressed.

Run yearly as a required senior design studio, the Small Town Studio can be seen in the language of place making and sustainability; that recognizes that few of its students will go on to become licensed architects; however, all of our students are citizens of the world. Students may become mayors, school board members, and business owners within the small towns of Michigan. With this mind, the Small Town Studio hopes to train both future architects and future citizens to be more aware and mindful of the interactions between the built environment and larger societies in which we live. Furthermore, students develop a broad understanding of sustainability that recognizes the importance of social, environmental, and economic matters.

Facilitating Ideation

In many cases, it is within economic and social considerations that students’ work is the most enlightening. An example of this can be seen in work students undertook in 2012 to write a bicycle and pedestrian plan for the City of Big Rapids.16 Students approached this project with a broad understanding of sustainability that recognizes that few of its students will go on to become licensed architects; however, all of our students are citizens of the world. Students may become mayors, school board members, and business owners within the small towns of Michigan. With this mind, the Small Town Studio hopes to train both future architects and future citizens to be more aware and mindful of the interactions between the built environment and larger societies in which we live. Furthermore, students develop a broad understanding of sustainability that recognizes the importance of social, environmental, and economic matters.

Promoting Citizenship

Within its research-based approach to studio education, the STS recognizes its students are not design professionals, nor does it strive for them to act in that capacity. Small Town Studio students do not seek to replace the necessary work of licensed design professionals within the communities it helps. Rather, when appropriate, students act as intermediaries between a community and needed resources available to pay for this work. Students do not seek to replace the professional A/E team. Students do not seek to replace the professional team, but rather act as an intermediary between the city and the professional A/E team. Students do not seek to replace the professional team, but rather act as an intermediary between the city and the professional A/E team. Students do not seek to replace the professional team, but rather act as an intermediary between the city and the professional A/E team. Students do not seek to replace the professional team, but rather act as an intermediary between the city and the professional A/E team.
and liability standpoint; however, they are able to work with the city and design professional team to facilitate the necessary work. By providing a service to the community, students are able to reduce the A/E fees, making the project achievable for the community. In this way, the STS is both working for and with the Howmet Playhouse and the professional A/E team.

In this role, students undertake a limited initial building assessment, produce measured drawings, participate in meetings with the community and professional teams to set goals and objectives, and be active members in a community design charrette. In this capacity, students provide their technical knowledge and idea generation skills in a formal manner to the city, while not replacing the work of the A/E team. They facilitate, rather than replace, the work of the professional team. Without this key component of the work, it would be difficult for this project to proceed.

Conclusion

The Howmet Playhouse project represents a concise example of student fulfillment of Small Town Studio program goals. Students are helping the community envision and develop actionable solutions for an architecture and planning problem that will lead to increased economic, social, and environmental sustainability within the community, without directly replacing design professionals.

Communities such as Whitehall, Big Rapids, and Mecosta Village exist across Michigan and the greater United States. While these towns are by definition urban, and well situated to address many urban issues in a sustainable fashion, in many cases they lack the will, knowledge, resources, vision, or expertise to do so. In such instances, the Small Town Studio seeks to provide a resource that helps facilitate sustainable development and growth for smaller urban areas of Michigan. In this fashion, the Small Town Studio acts as a resource for small towns that, while urban, are typically ignored or overlooked in discourse on urban sustainability. Furthermore, such communities are often ignored by the architectural education system and broader profession.

The Small Town Studio considers these small towns important within the discourse of urban sustainability, as they represent a significant portion of the world’s current and future urban population. It is within these urban settings that sustainable solutions addressing the world’s urban growth will be found. Even as cities and urban areas use a majority of the planet’s natural resources, these same urban areas provide opportunities for efficient, just, and sustainable resource use and future growth.

References


15 In developing the community plan, students also developed an ongoing service relationship with the Mecosta Youth and Family Center. Each fall semester STS engage in a number of service projects associated with the youth from the Center.

16 One well known exception is the Rural Studio, established in the 1990s by architect Samuel Mockbee in affiliation with Auburn University in Alabama. The Rural Studio has worked extensively with the problems of the rural poor, and provided opportunities for students to engage with real-world issues through real architectural solutions.

17 Architectural students are able to pursue a Community Studies minor if they are interested.

18 This plan was subsequently voted on by the City Commission and passed for adoption by the city.

19 Based on analysis of USCB (2010) and MDTMB (2010).


This local focus on sustainability is reinforced by the United Nations’ Agenda 21 report which considers local aspects of sustainability in addition to more common global impacts: “Because as many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives. Local authorities, construct, operate, and maintain economic, social and environmental infrastructure, oversee planning processes, establish local environmental policies and regulations, and assist in implementing national and subnational environmental policies. As the level of governance closest to the people, they play a vital role in educating, mobilizing and responding to the public to promote sustainable development. See, United Nations Conference on Environmental Development (UNCED). Agenda 21: program action for sustainable development (New York: United Nations, 1992).”

Ibid.


Ibid.

12 “One well known exception is the Rural Studio, established in the 1990s by architect Samuel Mockbee in affiliation with Auburn University in Alabama. The Rural Studio has worked extensively with the problems of the rural poor, and provided opportunities for students to engage with real-world issues through real architectural solutions.”

Ibid.
the graphic designer worked under a commission structure was exclusive to the making of artifacts. During that time, designer’s work, as it refers to an age when his or her role crackle, while the letters for “d-e-s-i-g-n” remain illuminated letters for “g-r-a-p-h-i-c” are flickering in a hot malfunctioning neon sign composing the word “graphic design.” The nomenclature looks something like this: Imagine an electric became the exploratory means of problem solving my own school experience that reshaped my own paradigm of making, and new channels for distribution – those and the global scale, and conversations transpire simultaneously. Although that remains an important contribution, they will be a manifestation of a solution that may involve many different forms, including intangibles such as strategy and better might learning support nimble, innovative, and different from production, which occurs after the making ends and before fabrication begins. The topic of making is tertiary in other AIGA 2015 competencies that speak to enabling technologies and interdisciplinary team structures. From the fifth competency one can postulate that while the graphic designer builds his or her acumen for new methods of making, it increases the capacity for what can be made. In turn, these abilities provide added value to clients and projects. Greater complexity demands greater responsibility for a graphic designer to be an articulate communicator who interfaces across disciplines to get his or her work done. Moreover, the graphic designer will contribute to the making of systems that are intangible solutions, suggesting a shift in the profession toward a new paradigm.

As suggested by the 2015 initiative and the expanded roles that practicing graphic designers assume through authorship, the evolution of the graphic design profession challenges how future practitioners are educated. The technology that enables new capabilities in the profession holds promise for contributions to design pedagogy and, equally, ramifications for it. Rosanne Somerson, provost and chief academic officer at RISD, takes note of this in her introduction to the book, The Art of Critical Making: As educational systems propel us further and further away from physical, tangible experience, how better might learning support nimble, innovative, and imaginative thinking than through models that emphasize the making of things? Contemporary times call for contemporary thinkers and makers.

Several of these issues were encapsulated within an advanced level assignment that I led for undergraduate graphic design students. The learning objectives for the assignment drew from my own six-point teaching philosophy of transferrable skills for students to carry into their careers as graphic designers. Titled the “Community Three-Dimensional Object,” it set up an experience for my graphic design students to engage with a complex design challenge involving research of a topic, analysis of their findings, and identification of a problem statement for a hyper-local, hyper-vertical community at large that generated more than 1,500 responses. Disseminated from these findings were thirteen competencies projected for the designers of 2015, who would be faced with the demands of the profession’s future. Supplementing them were six major trends identified for the challenges they posed to the entire design profession. Between the two lists, a reader will encounter the description of making as a process-driven act of creating things by altering materials and controllers of medium, and the results of this intersection are vast, often novel, and, at times even radical. The 1891 edition of The Story of the Glittering Plain stands as a seminal example that McCarthy uses to frame the holistic character of design-authorship projects. Glittering Plain, a fantasy novel by William Morris (1834-96) was produced at his Kelmscott Press, an entrepreneurial venture set about publishing well-crafted bound books in the tradition of early printing from fifteenth century Europe. Morris wrote the text, designed the content, printed, bound, and published the book only after he mastered the techniques of printing. Incidentally, his activism for well-crafted objects ran counter to the low quality of mass produced goods and truly contributed to the Arts and Crafts movement in England. As Morris’ experience, enabling these pursuits is the available technology, the democratization of tools for making, and new channels for distribution – those and the broadening of who can make and the expanding of who can make and the expanding of what can be made or even redveloped based upon the evaluation feedback. To express the relationship of thinking and making, John Dunnigan, professor and department head of graphic design at RISD, authored the term “thinking.” It describes a process-driven act of creating things by altering materials and giving form to ideas, while simultaneously evaluating information and challenging assumptions. Thinking is a process that leads to discovery and new possibilities. It is critical making, distinguished from making in the general sense, and different from production, which occurs after the making ends and before fabrication begins. The topic of making is tertiary in other AIGA 2015 competencies that speak to enabling technologies and interdisciplinary team structures. From the fifth competency one can postulate that while the graphic designer builds his or her acumen for new methods of making, it increases the capacity for what can be made. In turn, these abilities provide added value to clients and projects. Greater complexity demands greater responsibility for a graphic designer to be an articulate communicator who interfaces across disciplines to get his or her work done. Moreover, the graphic designer will contribute to the making of systems that are intangible solutions, suggesting a shift in the profession toward a new paradigm. 

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interactive survey administered by active users for a local event. Her work effectively heightened awareness to passive viewers about the greater instances of similarity between millennial and preceding generations. Jessica’s community wanted to shape public opinion about expansion of the wind turbine industry in central Michigan, which ranks fourteenth in the United States for wind harvesting potential. Her work succeeds in delivering a memorable knowledge experience to passive-viewers through a crafting activity and exhibits notable attention to materials that are entirely reusable or recyclable (see Fig. 2).

Fig. 2. Jessica’s wind turbine and Meghan’s millennial objects.

Critical making procedures were implemented over the course of developing my master of fine arts thesis exhibition. To frame this reference, exhibiting graphic design in museums or galleries is vexing, as it removes the objects visitors to read, explore, contemplate, and physically move around. The multi-faceted surfaces on the forms engage viewers to walk around, see through, and experience space in the museum. Visually strong, clarity, and an expansive font palette was assembled to engage this characteristic. Each color has a corresponding dark and light value that was assigned to represent a particular style of letterform. Blues represent circle forms. Greens represent square-rounded. Oranges represent square-circles. Reds represent angular forms. The difference in the color’s value provides the means to highlight anatomy on the letters while creating spatial playfulness where letters overlap. I find the tension between two and three dimensions creating visual implication of depth is a common attribute in my work.

The forms were assembled by hand with Photo-Tex brand repositionable printer fabric, half-inch honeycomb boards, two-by-four-inch lumber, and plastic-hinged edging at the seams. These materials contributed advantages in production. Honeycomb boards may be prepared with a simple box cutter and is receptive to folds. It is also incredibly strong despite being lightweight (two pounds per 48-inch x 41-inch sheet). Photo-Tex is a printable, adhesive-backed fabric for large plotters that will not stretch or tear in production. In thinking about the lifecycle of my work beyond this particular MFA exhibition, I wanted the design to reflect a consideration of one-time use. Post-exhibition, the specific materials would be: 1) recycled – honeycomb board corrugated panels on the exterior and plastic-hinged edging, and 2) reused – wall stud grade lumber for the substructure. It is the responsibility of a designer to develop clear visual communications for the end user, while simultaneously practicing as a good steward to the environment. My description for this is “design citizenry,” working with a consciousness to the potential impact materials and artifacts have on society and the planet.

To provide a context for the reader that recounts my thought process and making procedure, I will share journal-style entries (had I made them at the time) for accounting my activity.

October 2013. Objective #1: Make dimensional letterforms. Objective #2: Put them in the most interesting space. These two objectives highlight that making involves arrangements of letters, studies of their formal possibilities, and prototyping their placement in a museum. It didn’t take me too long to realize that content (a message) had to be incorporated along with form. That notion eventually turned toward creating a knowledge experience for public visitors of the museum. No matter. That’s a problem for another day. “Making is not about the end – it is about the process,” says RISD associate professor of, foundation studies, Leslie Hirst 13 So I press on. Scouting locations in the Broad Museum revealed opportunities. Because I knew the physical space, I could ideate with human scale in mind. Working with museum preparators was invaluable, as these are the content and form relationships were incorporated, load restrictions, and logistics of these spaces. Most helpful was they offered me insights about the museum’s virginial terrain. These particular spaces throughout the museum are empty and until placed works, but some exhibiting artist could. It helps that the museum opened in 2012, leaving immense potential to help “break in” the space, and that the staff was cognizant of the museum’s identity as a contemporary showplace. Furthermore, they opened their "wouldn’t it be cool if..." possibilities to me. I would make. I would position. I would study. I would repeat.

January 2014. Objective #1: 1. Create a dimensional, unique knowledge experience about letterform styles. Objective #2: 1. Place them in the museum with the other MFA work that includes visibility from above. Space is a premium commodity anyway, and the Broad was filling up with work in every gallery making for a hectic spring calendar. My formal studies considered situating a floor-seated piece that was visible to users from five sides. They can walk around, see through, and experience the piece from above. At this point the specter of an eye-level wall of lettering approximately eight feet tall has been explored deeply. Note to self: I need to flesh out practical concerns SOON. At this phase, co-dependency of content and form relationships was incorporated, and that was each study. Museum visitors would learn about the styles of letterform (round, straight-sided, etc.) in a visual array of letters and punctuation marks. Format and content forming connected the pieces for visitors to see through to the other side. Croping letterforms brought abstraction to the letters and treated them as framed modular units, while construction of the forms could be of flat panels, or even six-sided boxes. As boxes, more surfaces could welcome more content. Explorations of a gridded box arrangement included staggering units, stacking ... Modularity also...
Nothing that I wrote about could have happened had I not received undergraduate and graduate degrees in graphic design from the fine art departments of public universities rather than design schools. Within their academic framework, the fine art discipline’s choice for disseminated forms remain publication and exhibition, which are the venues best suited for peer review and public witness to the work at hand. Facing this at the beginning of my studies, I formed an unspoken thesis statement for myself: “What does a designer do with a gallery space?” During the journey I was able to develop a thesis that explored disciplines beyond my own, and those included education theory, pedagogy studies, architecture, environmental design, and museology the science or practice of organizing, arranging, and managing museums. Encounters with sources such as those from Steven McCarthy, AIGA, and RISD occurred in part, after my thesis was completed. I had been actively informed by AIGA’s proceedings for much of my career as a practicing graphic designer prior to attending graduate school, but from the perspective of a master of fine art program they took on greater meaning in my work as a design educator. By happenstance, my faculty mentor at Michigan State University, Kelly Salchow MacArthur, associate professor of graphic design, is an RISD graduate, and I can only assume that her experiences at RISD haunted me, including the studio, in which he and his family would create fine jewelry and how it helped develop his eye for detail and function. With his combination of knowledge, Brunelleschi was also able to come up with modern technology that helped him in the construction of the dome.

We can continue our studies by reading about the École des Beaux-Arts in Paris, where Jacques Gabriel, the architect of the Louvre, sent his students to Rome to study, and then built to scale great wonders in the courtyards of the school so that the incoming students may gaze upon these works, learn from them, and then apply this knowledge in their quest to be architects. In this sense, their studio beginning was crucial to the development of Brunelleschi’s architectural career: one studio being Rome and its great buildings, and the other the construction site at Sta. Maria Del Fiore. One must also consider his upbringing, including the studio, in which he and his family would create fine jewelry and how it helped develop his eye for detail and function. With his combination of knowledge, Brunelleschi was also able to come up with modern technology that helped him in the construction of the dome. In all cases, there has been the spirit of learning, collaboration and use of modern technology in a space, whether open to the skies or defined by walls and roof. In each case, the technology reflected its time. Brunelleschi used a chain to tie the base of the dome, Frank Lloyd Wright used a translucent canvas roof and Frank Gehry used the computer to be able to construct the museum at Bilbao. Finally, I will demonstrate how the romanticism of the studio is still very much alive today and will continue to be despite the change or inclusion of digital technologies by showing modern-day examples of the studios; one in an existing warehouse and another a new structure. I will conclude with a description of how I apply my experience to influence, inspire, and encourage students to include all they learn in studio in their projects as they advance in their careers.

The Architecture Studio …
Because Nobody Warned Me

Emmanuel R. Moreno
Associate Professor
El Paso Community College

Abstract

The romanticism of the studio environment is one that entices us to the profession of architecture. We see in it the movies and read about it in The Fountainhead, but it is still alive and well! And will it continue that way? Our study of the studio begins in the Renaissance and continues through time to include the École des Beaux Arts, Wright’s Ocatillo, the Charles and Ray Eames Studios, and the present-day school environment.

The studio is a much-necessitated space of learning. Teaching styles may vary and technologies have also definitely changed, but the energy created in the studio of a working environment will continue to be a source of creative stimulation in the present, as it has in the past and will be in the future. One can only imagine Brunelleschi directing the men building the Santa Maria del Fiore dome, or any wise man directing construction taking suggestions from the mason who knew how to work the material. One can imagine François Blondel directing his students in Rome, surveying the great columns, and then rebuilding them to scale life-size at the École des Beaux Arts in Paris, or Frank Lloyd Wright directing his students as they designed the resort in Arizona and called Ocatillo. Charles and Ray Eames created furniture from architecture and film, and Frank Gehry designs his irregularly-shaped structures in his studio and then transfers the information to modern digital technologies for which he was a pioneer. In all cases, there has been the spirit of learning, collaboration and use of modern technology in a space, whether open to the skies or defined by walls and roof. In each case, the technology reflected its time. Brunelleschi used a chain to tie the base of the dome, Frank Lloyd Wright used a translucent canvas roof and Frank Gehry used the computer to be able to construct the museum at Bilbao. Finally, I will demonstrate how the romanticism of the studio is still very much alive today and will continue to be despite the change or inclusion of digital technologies by showing modern-day examples of the studios; one in an existing warehouse and another a new structure. I will conclude with a description of how I apply my experience to influence, inspire, and encourage students to include all they learn in studio in their projects as they advance in their careers.

The Architecture Studio

To describe what the studio is, we can begin by searching on Merriam-Webster’s online dictionary, which states that a studio is a place where people go to learn, practice or study an art. The definition of the studio is best described by events and places that have led to the creation of tremendous architecture. Such was the case with Brunelleschi when, described by Antonio Di Tuccio Manetti, after losing the competition for the Baptistery doors, Brunelleschi and Donatello go to Rome where...

The Studio

The Architecture Studio

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Wright and his apprentices worked in a camp they created that they took to calling "Occitello," an ephemeral camp whose terrain inspired them. Wright describes, "The little camp is finished. We love it. The canvas windows and the doors of Occitello are like ships' oars. I discovered self-sufficiency, to be used during the heat of the day, closed at night. The lines of the landscape stretching themselves wide open toward the sun in order to aid a little in warming the interiors in winter."

He continues to describe the camp and how they worked to design San Marcos in the Desert. "We worked on it until the middle of the following June. Often we worked at night by gasoline light until we put in a Kohler plant and had all the electric light we wanted. We worked out of the 'recess' this is just one account of many spherical studio spaces he worked in. In his autobiography, he describes the seven years he spent in Japan, where he learned Japanese customs and how they worked and studied and about the soil where he was to build the Imperial Hotel. There, he came up with a floating foundation construction that later proved to be successful. Prior to arriving in Rice college, his upbringings at the Lloyd Jones' farm at age eleven and playing with Froebel blocks among many other studio experiences he had. In the film documentary on Charles and Ray Eames, narrator James Franco describes the studio he had at his house that was inspired by a short information film presented on Sesame Street, which is now available on YouTube. In the den of our house where I played with Legos and other toys, I watched this short film of a man manor, Jan van Eyck, a voorster, it was the Watts Towers in Los Angeles, California, and that it was dreamt up and constructed by a man named Simone Rodia. The den is not very different than the school that Wright attended where he learned to play with blocks, except for the Legos and the television, which was a new technology of the time and a visual stimulator for me. I also had to look to the time when my father added on to the house. Those were my teenage years when I used to spend hours staring at the floor plans and elevations that the draftsman my dad hired had drawn up to help build my dad's dream. Perhaps it was not established cathedral but it was my cathedral.

When attending college, another accidental influence in my education was the architecture of the University of Texas at Arlington. My office researched and designed with it was the University Nat Autónoma de Mexico, best known as UNAM, or The National Autonomous University of Mexico, in collaboration with the University in Juárez, known as the Autonomous University of the City of Juárez, from 1998 to 2001. Here, our studios changed considerably. Not only was the learning a new way of getting to know the whole building - logidistance learning and now online education - now we were using computers to write our reports, scan our sketches, create CAD drawings, download pictures from our new digital cameras, and ultimately produce our thesis. And since studios were not supplied, our teams would take turns going to each other's houses, sharing our ad hoc studios to produce the work asked of us. This was for the time somewhat different, though, I am reminded of visiting a friend who was attending Columbia University in 1995 who was already creating drawings on the computer.

In addition, I am also reminded that my current house has been my laboratory or studio, much like Wright's but without the apprentices to help me tear down, cut down, and build to alter an existing 1960s home. Help of course I've had, but paid help or help from my father. In my studio I have cut the grade of the slope, added concrete block walls, stucco walls, put in pavers and painted the house exterior, among other experiments. In the interior, I have demolished walls, put up new beams and piers, new wood flooring, new sheetrock, and textured and painted, among other experiments. It is a marvelous studio where I have been free to build, learn, and improve that craftsmanship I once lacked.

The Studio Space of the Future

The studio space, what it is and what it will be, can be paired off with what Louis I. Kahn told students out on the campus of the University of California in Houston when he was asked where architecture would be in fifty years. His first response to that question was "You cannot anticipate…" and was followed by a story of how, while working with General Electric, he was in a design of what a space would look like and, in response, he said to the engineers, "It will not look like that… and they moved their chairs closer to the table and they said, ‘how do you know?’ I said it was simple… if you know what a thing will look like five years from now, you can do it now. But you don’t know, because the way that a thing will be fifty years from now is what it will be.""9

The Others and Ours

Within the past five years, in the search for ideas about what the most current idea on how a studio should be, I visited two schools of architecture that have organized their studio spaces differently. And although one is a reclamed structure and the other is a new structure, both setups are relatively similar. Latorrent says that my studio is an open studio with the bohemian treatment of sketches and cardboard and other modeling materials all over, and burned underneath all these traditional experimental devices is the laptop. The spirit of the studio lives well in both spaces.
In the studio today, and in the manner that my design studio at the El Paso Community College is conducted, this spirit of learning, experimenting, and using modern technologies is very much in the spirit of the past, present, and dare I say, future. One must keep up with the technologies of the day, but as I tell my students, one must learn to crawl before we can learn to fly. So we begin the studio by describing what it is that, at least for the moment, the student realizes has been an influence in his or her decision to pursue a career in architecture. At that time we also introduce a project that incorporates the creation of the designed and natural environments, and includes an exploration of the site as our outdoor studio, a place to explore the outdoors and go on a hike and investigate our environment – the rocks, plants, and wildlife.

For the starting student, particularly in the foundations studio, I hope to help them channel that inner childhood creativity by breaking away from the everyday use of computer games, social media, and sometimes misleading Internet searches by introducing visual and hands-on projects at the beginning of the semester. Then they learn to transfer that information to a digital end product, and to transfer that information to a digital end product, and then go on to explore and investigate the proportional system used to create the structure along with the forms and volumes this system creates through a series of drawings and a skeletal model depicting what was researched.

In keeping with the spirit of the studio environment, the first two projects help to preserve the past and instill it in the students, and then we continue with the present through the following projects. In the beginning of the project, the information researched is also understood through hand drawings and then built with cheap cardboard that can easily be cut and altered as needed and then transferred to the computer, thus introducing modern-day technology. Finally, students complete a basswood model to demonstrate craftsmanship. The students are encouraged to discuss what they learned from previous and current projects, to include personal experiences, and to articulate what it is about those personal experiences that influenced them to become interested in architecture. They then tie together the two experiences to emphasize what they learned. Through this investigation, students should be able to discuss proportions found in the modernist structures and how they can use them in the design of structures. We then describe the perceptions of space and the creation of it and of forms, and we introduce a project that incorporates the creation of space and the use of proportions to do so. No real-life practical purpose is set on the creation of this project; the

assignment consists of the students creating volumes with the assistance of a cubist painting; and students implement the proportional system they previously learned by using it to create volumes and forms that are visually pleasing (Fig. 3). In this stage of the studio, the students are using the computer not only to create their projects, but as the students have become familiar with each other, it is a space for collaboration, exchange of ideas, self-teaching, and helping one another improve their craftsmanship, and they give each other ideas on how to go about building the physical models and to make the computer drawings to create their presentations.

The final project combines all that they have learned, and they are encouraged to explore the possible future. Students are then presented with the task of designing a bridge to a meditation sanctuary in a canyon located in the Franklin Mountains of El Paso, Texas (Fig. 4). The process begins with a personal exploration of the site and then continues when they are asked to find a native plant and study the building blocks of this plant, very much in the same spirit as studying the Froebel blocks that Wright used as a child. From there, the student then creates the structure and meditation sanctuary. In all cases, we see the exploration of the site as our outdoor studio, a place to absorb we see and learn from it. Then the students apply what we learn in the studio environment to produce their projects.

What I Have Come to Understand

Cameron said suddenly: “Howard, when you open your office, take snapshots of it and show them to me.” Three days later he came back... Roark handed him an envelope, without a word. Cameron looked at the snapshots, at the one of the broad, bare office, at the wide window, of the entrance door. He dropped the others, and held the one of the entrance door for a long time...” Howard,” he said...” Look at it.” He held it between them. “It doesn’t say much. Only ‘Howard Roark, Architect.’ But it’s like those mottoes men carved over the entrance of a castle and died for...

In conclusion, I have explored those influences and events of the past, of the present, and of a suggested future. In this exploration, I described how the architects of the past have studied and learned how to create spaces and forms, and how modern-day architects, such as Wright, Eames, and others, and explored and used modern technology. Observing successful current schools of architecture and how they use their studio spaces solidifies that the students at the El Paso Community College are using their studios in much the same way and confirms that the spirit of the studio is still very much needed for the experimentation and collaboration, and this use space can guide the students in the right direction for a positive learning experience. The spirit and romanticism of the studio is well and present today and will apply to the future. These are the circumstances and the goals we aim for that help lead us to our eventual life-long education and influence how we conduct our offices to create better architecture.

References


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8 Pollack.
Abstract
The Valley View Center Mall located in Dallas, Texas was built in 1973 and was the pinnacle of shopping centers in the Dallas metropolitan area. As time progressed other shopping centers were built, leaving the Valley View Center behind. With the rise of shopping centers, drive-in movie theaters began to shut down and indoor movie theaters were placed in shopping centers, where it was convenient for suburban families to visit. Although there was a decline in retail stores, there was one anchor that was able to withstand the downfall AMC Valley View 16. Valley View Center has undergone the process of turning the mall into more of an entertainment center to attract customers. Empty retail spaces have been given a new purpose and transformed into artist studios and galleries. This in effect is bringing in a new niche of people to the northern Dallas metropolitan area in an attempt to revive and bring new forms of entertainment to the mall.
Architecture in the Dark

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Abstract
Believing the world needs constant scripts to renew its own meaning, architecture in the dark draws out at 24fps cinematic reverse architecture within the listing body of the Costa Concordia. The script of seven cuts navigates several questions: Do architects always meddle in areas they cannot control? Or can we turn this on itself? Are architects always usefully behind the philosophical, social and cultural curve? Is speculation – fiction and non-fiction – less and less trusted while new science and bigger and bigger data makes information networks from laundry lists and corporate failure? Films can be re-shot to become virtual architecture. Our incredible advances in technology, management and risk might be neutralizing our cities as we speak. Are we facing the drastic condition of The Indifferent? architecture: the dark side!

bleunoir

Stephanie Garcia
Estefania Mendivil
Gregory Marinic
Arquipelago

Abstract
This project focuses on an immersive interior architectural environment housed within a landmarked building in Soho. Time, memory, and materiality form a provocative narrative merging past and present. Here, a new French restaurant is intermingled with both a wine institute and retail space. Film and filmmaking were explored as conceptual generators with particular reference to issues of time, space, atmosphere, and remembrance. Focusing on methods of joining form, materials, and space, research explored the overlapping realms of film noir and architecture in interior environments, at the building scale, and within the larger urban context of lower Manhattan. Like the cuisine it backdrops, the design of Bleunoir and Vinothèque speaks simultaneously to traditional and contemporary conditions. Nineteenth-century interior architectural details are preserved, restored, and revealed as subtle counterpoints to an inserted contemporary spatial and material language. The challenge of this space was to create a light-filled underground space that would gently invite patrons to venture further below street level. A three-story wine tower marries four levels of space with two discrete programmatic environments.
Consumer Culture

Joseph Echavarria, Student
Ariane Gonzato, Student
Gregory Marinic, Faculty Advisor
Ziad Qureshi, Faculty Advisor
University of Houston

Abstract

Consumer culture in North America has significantly evolved from the early twentieth century. In the mid-1950s, consumption in suburbia led to the establishment of the enclosed shopping mall. These product-centered structures were built as a reflection of emerging consumptive habits and perceptions. The shopping mall allowed suburban families to meet all of their needs in one location. As the years progressed, new technology gave the consumer access to a greater variety of products, de-emphasizing the need to travel to the mall. The relative abandonment of the mall was replaced by the use of the Internet and social media. Currently, through websites such as Amazon or eBay, the customer may access the newest products anytime from anywhere. The significance of these forces has led to the need to repurpose malls and determine alternative futures.

Distorted Geometries

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Jessica Fleming,
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Alex Pickard, Graduate Student
Gregory Marinic, Faculty Advisor
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Abstract

Anamorphosis is a distorted projection or perspective requiring the viewer to use a specific vantage point to reconstitute the image. An artistic technique that dates back to the early Renaissance, descriptive geometry is a branch of geometry and a fundamental design tool that uses planar geometric projections of three-dimensional objects and space. This project – Graphical Projections – examines parallel (orthographic) and central (perspective) projection in the creation of an anamorphic projection. It engaged foundation-level students in the graduate architecture program with various drawing conventions, contextual constraints, material manipulations, and fabrication techniques. Orthographic projection is a form of parallel projection where the projection lines are parallel in relation to each other, while being orthogonal to the projection plane. This produces a measurable or scalable representation, used in architecture as plans, elevations, and section drawings. Perspective projection is a non-metrical form of projection where distance is not measurable due to the effect of foreshortening.
Dynamic Transformations: Architecture and Politics of Highland Mall in Austin
Ana Sotelo, Student
Gregory Marinic, Faculty Advisor
University of Houston

Abstract
The decade of the 1970s is often depicted as one of pivotal change. Socially progressive values were becoming increasingly more prominent while political and economic liberties of women were also rising. These values were noticed in urban environments, including Austin. Austin, in the 1970s, was seen as a cultural Mecca, a creative atmosphere, and a dynamic setting. It was home base for those who were intellectual, freethinkers, and musicians. In the time that followed, the city was known for being a place of cultural clash. The Highland Mall came to be in the 1970s, emerging with Austin’s new vibe. Through the 1980s and ’90s, this mall was the primary shopping venue. As the notions of the time changed and the demographics of different parts of the city shifted, the mall lost much of its clientele. Today, the mall consists of few open stores, many vacant leasable spaces, and deserted parking lots. The mall is now used by those few Austinites who use its empty space for their own leisure activities.

Express [sub] Urbanization: Rise and Decline at an Oklahoma Crossroads
Francesca Sosa, Student
Gregory Marinic, Faculty Advisor
Ziad Qureshi, Faculty Advisor
University of Houston

Abstract
What once was one of the main reasons for moving to the suburbs in the 1970s sits at the crossing point of I-35 and I-240 in Oklahoma City, Crossroads Mall. Its location was chosen precisely for the major intersection of the interstates and by the time of the grand opening in 1976 it was among the 10 largest shopping malls in the United States. However, what used to be the reason for moving to the suburbs is now just a memory. Its four anchor stores – John A. Brown, Dillard’s, Montgomery Ward, and JC Penney – had all left by 2008 due to bankruptcy or the decline in the number of shoppers. Other factors that have contributed to the decline of the mall include the increasing crime and safety issues in the area, the increase in retail south of Oklahoma City, the lack of substantial expansion and/or renovations to the building. As foreseen, after the anchor stores fell vacant several tenants followed, leaving the building almost completely unoccupied. Efforts are being made to revive this piece of retail history with the idea that it will now cater to the growing Hispanic population of Oklahoma City.
Faces of Tourism

Emily Keller, Student
Gregory Marinic, Faculty Advisor
Ziad Qureshi, Faculty Advisor
University of Houston

Abstract

Faces of Tourism is an exploration of the types of tourist attractions in Arlington, Texas and the density trends of the tourists who visit them. Arlington lies along the path between Fort Worth and Dallas, creating an in-between destination spot that is easily accessible from both cities. There are four major tourist attraction categories located within a three-mile radius of each other: an art museum, a major sports arena, a shopping center, and a theme park. These attractions bring many people to the Arlington area year round, but not even two miles away is a dying mall, Six Flags Mall, that sees none of this tourist activity. Why does this mall remain almost empty while there is thriving activity across the street? Understanding and analyzing the types of tourists and when they visit the city will help reach a conclusion about why the Six Flags Mall is failing.

Each face symbolizes the type of attraction in the city. Each image is layered with a green wheel that represents the calendar year and the number of monthly visitors to each attraction. The image on the top left represents the Arlington Museum of Fine Art. The image on the top right represents the Dallas Cowboys AT&T Stadium. The image on the bottom left represents the Lincoln Shopping Center. The image on the bottom right represents Six Flags Over Texas, Arlington’s own theme park.

Habiter Corbusier

Victor Trautman, Student
University of Oklahoma

Abstract

This project took place during the first semester of second-year architecture studio. The project as a whole comprised several phases. The first phase involved the diagrammatic study of Le Corbusier’s Villa Cook, as well as studies of its plans, sections, and elevations. The second phase involved using one plan, one section and one elevation to create a collage reflective of the architectural philosophies of the architect. The collage was used as the site for the final phase of the project. The collage created by the plan, section, and elevation of the building were to be considered sacred ruins on the site, which were to be respected and left as untouched as possible. The final phase of the project was to design a procession through the ruins, as well as a pavilion for the site. Project parameters required that Hadrian’s Wall run completely through the site from east to west and that the site be designed utilizing the architectural philosophies of Le Corbusier.
Lotus Wrap
Bernard Adeshina, Grad Student
Zachary Haines, Grad Student
Clark Harrington, Grad Student
Gregory Marinic, Faculty Advisor
Jason Logan, Faculty Advisor
Graduate Architecture Program
University of Houston

Abstract

Historically dating back to Leonardo’s Eye (c. 1485), anamorphic projection has been used as a technique to construct images that may only be perceived from a single vantage point. This particular type of anamorphic projection, called oblique, has been used to create artificial depth in flat surfaces, or to conceal images in plain sight. In a more recent history of the technique, anamorphic projection uses the foreshortening of perspective depth to distort a two-dimensional graphic image into three-dimensional space, such that at a particular location within a space the viewer perceives the effect as a flattened image.

Working in groups, students used the latter version of this projective technique to design a graphic installation within the college of architecture building. Each student selected a graphic diagram from a generative pattern-finding exercise for consideration. Then, each group selected a space within the architecture building to study an anamorphic projection of the selected graphic diagrams. Each group selected one of the anamorphic projection studies to execute as a graphic installation, similar to the work of artist Felice Varini. To properly construct anamorphic projections, a solid understanding of descriptive geometry is required. Conceptually, oblique anamorphic projection creates a spatially dynamic relationship between the viewer and environment, isolating a single moment where graphic legibility is attained.

Mall Mania: An Exploration of American Shopping Malls
Roni Kop, Student
Emily Keller, Student
Gregory Marinic, Faculty Advisor
Ziad Qureshi, Faculty Advisor
University of Houston

Abstract

During the 1970s and 1980s, America was in a full-throttle shopping mall building boom, with new retail square footage peaking in 1985. However, between 1989 and 1993, shopping center construction starts dropped by seventy percent. By the late 1990s, the notorious “dead mall” syndrome had begun to emerge.

Our premise is to showcase visually what we believe is the primary reason for many of the dead, dying, or redeveloped malls, which is simply that there were too many built in the United States during the 1970s and 1980s. This shopping mall malaise, a hangover from the nation’s overbuilding binge, has been repeated in over-“malled” cities and towns from coast to coast over the past two decades. Along with overdevelopment, there had been a precipitous drop in American buying power since the 1990s. The end result was that the typical American did not have as much disposable income as they had during the early years of the nation’s suburbanization and shopping mall development. With less discretionary income, the typical family could no longer afford to shop at the mall as often, where prices for merchandise were higher due to “common area fees” levied on all tenants. These surcharges paid for mall maintenance, heating, and cooling. In the 1950s, 1960s and early 1970s, electric power was plentiful and cheap, but in the mid-1970s, power bills began to escalate with the oil crisis. This inevitably caused the prices for mall-bought merchandise to rise, while at the same time the purchasing power of the general public was shrinking. In essence, the underpinnings of the dead mall syndrome were being established by the late 1980s, although they would not manifest themselves entirely for several years.
Material Behaviors: An Architecture at the Scale of the Interior

Minelya De Leon, Student
Joseph Echavarria, Student
Jessica Garrett, Student
Joshua Hallie, Student
Emily Keller, Student
Roni Kop, Student
Jonathan Lampson, Student
Cecilia Mejia, Student
Madalaine Parker, Student
Francesca Sosa, Student
Ana Sotelo, Student
Gregory Marinic, Faculty Advisor
University of Houston

Abstract

The Material Behaviors/Human Factors project is a new curriculum for a second-year, design-build studio collaboration focusing on interior architecture that explores the potential for performative space-making derived from the constraints of a restricted material system. Examining an under-potentialized space through an alternative lens, this project leveraged the social, spatial, functional, and phenomenological opportunities offered by a material – laminate – and an existing building interior. Projects were charged with attaining the goal of zero-waste design and construction strategies paired with locally manufactured materials.

The studio offered an opportunity to partner with a laminate manufacturer to explore and extend the conventional applications of laminate in building interiors. Students worked in collaborative teams to conceive and design five unique, full-scale design-build projects.

This studio offered a critical, real-world design-build opportunity at the scale of the human body. Through their first full-scale building experience using intensive architectural detailing and craft, students envisioned new, performance-based spatial and material opportunities for interior building topographies through the lens of sustainable practices.

Material Technocracy: Eladio Dieste & Reinforced Brickwork

Federico Garcia Lammers, Assistant Professor
Brian Skrovig, Graduate Student
South Dakota State University

Abstract

The work of Uruguayan engineer Eladio Dieste has been studied and admired for its material audacity, structural innovation, and role in broadening the definition of material practices in Uruguay and South America. The research shown as a part of Material Technocracy is focused on the intersection between Dieste’s reinforced brickwork and the socio-political conditions under which this work was constructed. Is Dieste’s architecture modern? Is it political? Is it experimental? Is it finished?

Exploring the relationship between building technology and politics is a fundamental way of articulating the impact of history on contemporary architecture. To study the importance of this impact, Federico Garcia Lammers and the Department of Architecture at South Dakota State University have organized a study abroad program based in Montevideo, Uruguay. A portion of this program focuses on the politicization of material practices through the examination of Dieste’s work. Material Technocracy seeks to examine the ways in which Dieste’s work can contribute to methods of making that are compatible with contemporary building processes and current socio-political conditions in small communities.
**Mid-Continental Retail Typologies: Mapping the I-35 / I-45 NAFTA Corridor**

Ana Sotelo, Student  
Francisco Salas, Student  
Gregory Marinic, Faculty Advisor  
Ziad Qureshi, Faculty Advisor  
University of Houston

**Abstract**

Shopping malls in mid-continental North America gave suburbs a sense of community. Over time, however, many retail environments lost the patronage of the communities they once served. The intent of our research is to examine current and past conditions in historical retail typologies, with particular emphasis on enclosed infrastructures. By utilizing mapping techniques to visualize our compiled data, we aggregated and created a holistic understanding of “place.” Using analytical visual mapping of urban boundaries and retail typologies, this visualization demarcates the radial distance of adjacencies to enclosed retail nodes. Many postwar indoor retail environments in mid-continental North America were developed with the sole purpose of consumption – conveying items to consumers while enriching major national retailers. Additionally, malls created a placeholder for urbanity where people could mingle, play, and congregate. Overtime, the DNA of many communities has evolved from its origin. Thus, to better serve their communities, the present purpose of malls must be re-informed within a changing context. Fundamentally, by mobilizing our synthesized analysis, we plan to reactivate, readapt, and reintroduce new opportunities to extend the lives of these indoor communal spaces with particular emphasis on their respective places.

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**placepavilion 01_the view finder**

**Experiencing an Inhabitable Map**

Joshua Nason, Assistant Professor  
University of Texas at Arlington

**Abstract**

The Place Pavilions are individually scaled constructions built as maps and mapping devices, simultaneously. Affording inhabitants the opportunity to experience their environment freshly by framing the sensory perception of surroundings, the pavilions reveal through regulation, stimulate through stipulation. By restricting the customarily pervasive experience of a place, the pavilions allow one to focus on specific elements around him or her to notice that which is usually ignored. Thus, allowing the map to be experiential and the reader to be informed. Such pavilions translate map readers into viewers into inhabitants interacting with that which they see. These designed and built experiential devices tectonically mediate between the reader and the read in a haptic and individualized, participatory manner. The goal is to introduce viewers to atypical readings of their surroundings by presenting to them detailed, specific, loaded and yet personalized views of what they otherwise take for granted.
POD: Fifth Ward
Renaissance: From History, a Future

Arianne Gonzato, Student
Joshua Hollie, Student
Emily Keller, Student
Francesca Sosa, Student
Jason Logan, Faculty Advisor
University of Houston

Abstract

“One of the differences between this neighborhood and one like River Oaks is that they have lots of support and all kinds of resources available. Here, in the Fifth Ward, it’s the exact opposite — these people have no resources at all. There’s one clinic, one library, no YMCA, very few activities, and the community is very fragmented. It’s not the kind of environment that helps a child excel.”

Ernest McMillan - Community activist and contributor to the Fifth Ward Enrichment Program

This project engages design research toward rebuilding an historic African-American community in Houston’s Fifth Ward. It partners with the Fifth Ward CDC and the Olivet Missionary Baptist Church to build an e-Reading Room that enhances literacy and learning in the neighborhood. Furthermore, this project seeks to mobilize history in the rebuilding of a modest and threatened structure in the neighborhood.

Using the archives of various African-American churches in the Fifth Ward, this proposal will result in the development of an exhibition that chronicles in its most extensive form to date the historical rise, fall, and projected rebirth of the Fifth Ward. The proposed e-Reading Room will be housed in a building of historical significance to the African-American community in the neighborhood. A diminutive and poetically crumbling shotgun storehouse will offer an opportunity for students of the newly formed Interior Architecture program at the University of Houston to serve as community advocates, designers, and rebuilders of the Fifth Ward.

Proposed Dairy Facilities for the NCSU College of Veterinary Medicine

Dana Gulling, Assistant Professor
North Carolina State University

Abstract

At North Carolina State University, our third-undergraduate architecture studio (ARC 301) was redesigned to introduce students to building tectonics with an emphasis on physical model making. Fall 2013 was the first time the redesigned ARC 301 was taught. Design projects were to address building materials, structural systems, and passive strategies (e.g., passive heating, cooling, and lighting).

In fall 2013, we worked with the NCSU College of Veterinary Medicine (CVM) to propose a new dairy barn and milking parlor for the college. For background: In spring 2012, a master plan was developed through a collaboration between the NCSU Department of Landscape Architecture and the CVM students. The master plan proposed to move the CVM dairy herd from the current historic and outdated barns in the south pasture to a new dairy facility in the north pasture. The new facility would terminate a new campus axis.

This project used physical study models as the primary design tools. Students made multiple iterations to investigate building placement, massing, and topography. Study models were particularly helpful in giving students feedback on how materials helped to define space, how the model could resist structural loads, and quality of light and air movement through the building.
Pulp Verite

J.P. Maruszczak
Associate Professor
University of Texas at Arlington

Roger Connah
Associate Professor
Carleton University

Abstract

Pulp Verite is an audio-visual remix of three architectural projects: (1) Interface, Animall, & Brautigan (Big Town Mall, Mesquite, Texas), (2) The Bystander in Calgary (twelve reverse architecture scripts) and (3) Pulping Detroit: On the road 2013 (Irreversible architecture). The poster maps three distinct video cartographies as cinematic counter-proposals to rescript the dynamics of the dispersed city. Rethinking the fluidity and contingency of these stretched entropic landscapes, the project explores three navigations, moving from (1) project scripting to (2) video cartography and finally to (3) a mini architecture screener. Using ideograms, scores, scripts, indexes, photo-cartographies, and clips/mini-films, a new architecture verite (direct cinema) will be proposed. P.U.L.P. is an altered architecture working model contained within the acronym: Pedagogics – Urgency – Liminal – Portal.

Representations of Domestic Life in 1950s America

Dr. Filiz Sonmez, Assistant Professor
Erciyes University

Abstract

The intention of this study is to “social approach” a modern house of the 1950s to reveal the domestic experiences of the families by utilizing texts and visual images in media. This will be possible by using postwar residential architectural examples, intended to contribute to a larger corpus of data documenting the lived, subjective, social, cultural, and dialectical experiences of domestic life. Rather than the way it is usually discussed – as a question of design form or style that is usually highlighted in the architectural magazines of the 1950s – this study will focus on the domestic space that is posited here as a social and cultural landscape.

The overall aim of this study is to examine how families inhabited rooms and used their furnishings and appliances in the 1950s and to determine the relationship between the space and their domestic desires. This will enable us to comprehend the actual family life lived within that space. Therefore, by considering some images in the media, we will attempt to analyze the domestic space.

For the purpose of this poster, we concentrate on domestic advertising from newspapers, and design magazines such as House Beautiful, Better Homes and Gardens and House and Home. The 1950s was a time of transition and film beginning to form of domestic space, because after the older people were interested in creating new lifestyles and searching for a new hybrid space that was useful, comfortable, and beautiful as well as equipped with all the latest modern appliances in this house. The study analyzes mid-twentieth-century domestic design, with special attention to the magazines, House Beautiful, Better Homes and Gardens and House and Home, thematically for a significant form of visual and textual documentation when the modern home and life within it.

ASSIST.PROF. FILIZ SONMEZ
ERCIES UNIVERSITY, FACULTY OF ARCHITECTURE
KAYSERI-TURKEY
Revitalization
Arianne Gonzato, Student
Gregory Marinic, Faculty Advisor
Ziad Qureshi, Faculty Advisor
University of Houston

Abstract
The River Center Mall was constructed in 1988 after the extensive redevelopment and expansion of the iconic River Walk in San Antonio, Texas. Prior to its definite construction, the mall housed a variety of stores that went from its beginnings as a Lord & Taylor owned by May Department Stores and Joske’s to its current structure housing a Macy’s and Marriott hotel. Currently, the mall has become more underutilized by residents and visitors due to the lack of historic linkage to the city, absence of guarantee in quality and status, little upgrading and activation of the spaces, and lack of community involvement. These four elements can be identified as the River Walk’s reason for success. By repurposing the current structure, I will utilize the elements that created the successful River Walk and apply them to the hypothetical renovation of the River Center Mall into a fully developed community center.

Spatial Transformations: Arcades to Shopping Malls
Minelya De Leon, Student
Francesca Sosa, Student
Gregory Marinic, Faculty Advisor
Ziad Qureshi, Faculty Advisor
University of Houston

Abstract
The concept of indoor retail spaces was brought to America to serve the upper classes and the rising middle classes in the late 1800s. The arcade was the first large-scale, indoor retail typology in the United States and located in downtown retail districts. By the mid-twentieth century, cities were no longer where people aspired to live but, rather, places they wanted to leave. This feeling increased migration from the city to the periphery to escape a “decaying environment”. The development of the interstate highway system facilitated the emergence of post-war suburbia, as well as the birth of shopping centers. These retail spaces catered directly to the needs of suburbanites and a homogenous consumer culture. Retail has been closely linked to the products that were manufactured. As new technologies emerged, new materials were developed, which fueled mass consumerism. Retail spaces transformed alongside the rise of the new products, satisfying consumer demands. Every year, more and more products were sent into the marketplace, requiring malls and shopping centers to adapt to continuously changing demands.
Stereographic Reflections: Conditions of Sir John Soane’s Museum

Danielle Willkens, Ph.D. Candidate, AIA, FRSA
Visiting Assistant Professor
Auburn University

Abstract

This work was undertaken as part of research toward a Ph.D. in architectural history and theory at the Bartlett School of Architecture, University College London. This poster explores the use of digital photography and stereographic projection as a means of graphic evidence within architectural research. The panoramic images and resultant stereographic experiments seen here capture the extant conditions of Sir John Soane’s Museum, a visually chaotic and compact urban jewel created between 1797 and 1836. As a complex arrangement in both plan and section, the rich natural light and intertwined spaces are difficult to capture within the boundaries of a single photograph, therefore this visual experiment, using both 3D scanning (not pictured) and automated, panoramic DSLR photography records the existing conditions of the museum while simultaneously distorting spaces, much like the convex mirrors placed throughout the house-museum. These evocative images make it possible to use the built environment as evidence that configurations at Soane’s Museum were directly influenced by the perspective and reflection studies of his close friend and fellow Royal Academician J M W Turner. This proposal is related to a broader research investigation titled “Thomas Jefferson, Sir John Soane and Maria Cosway: the Transatlantic Design Network, 1768-1838” that examines the enduring connections of figures, architectural sites, and theories for interpreting the built environment while integrating practice-based investigations.

Sukkanoe

Nicholas Herrera, Student
Gregory Marinic,
Assistant Professor
University of Houston
Michelangelo Sabatino
Illinois Institute of Technology

Abstract

The sukkah is a temporary structure and symbolic place of gathering that is deeply rooted in the history and tradition of the Jewish people. Bringing together family and friends, this temporal structure is assembled to provide space for communities to connect with each other and the natural environment. This proposal for Sukkaville envisions the sukkah as a site-specific and site-relevant construct responding to a Canadian context in Toronto. It assumes that the sukkah can act as an “agent” that brings diverse people together for a communal act, and thus, establishes a hybrid identity for itself. Sukkanoe blends the ancient tradition of the sukkah with a building tradition specific to Canada. Builders of the sukkah participate in a journey that reflects upon the experiences of the Jewish, First Nations, and Canadian people.

Hybridizing First Nations, Jewish, and Canadian traditions, this proposal, Sukkanoe (sukkah + canoe), provides a shelter-vessel designed for Mel Lastman Square in North York, Ontario, Canada. It offers a “hybrid” sukkah design that draws from and combines Jewish, First Nations, and Canadian traditions, both past and present. Sukkanoe transforms the iconic birch-bark canoe. The shape and materials used for this concept are meant to recall the innovation and self-reliance of First Nations peoples, the challenges of European voyageur explorations, and the transience of the Sukkot holiday and Jewish migration to Canada.
Transcontinental Consumerism

Mathew Caballero, Student
Joshua Hollie, Student
Gregory Marinic, Faculty Advisor
Ziad Qureshi, Faculty Advisor
University of Houston

Abstract

The changing landscape of a fashion runway creates a constant renewal of architectural retail spaces. To experience this movement one has to speed up time, as decay is not always as fast as birth. Bridging the connection of these retail spaces to the runway, the indoor shopping mall is an optimal catalyst for such depiction. At the scale of a shopping mall, one can visualize the process of development, growth and decay of consumer culture across the United States. This visualization is expressed through various peripherals to gain a wide image of the current status of this culture. Viewing this culture through time, one is able to discern specific areas that have prospered and developed between 1940 and 2010 by means of population growth.

Transient Illusion

Zoe Gao, Grad Student
Keung Young Park, Grad Student
Javier Vesga, Grad Student
Gregory Marinic, Faculty Advisor
Jason Logan, Faculty Advisor
Graduate Architecture Program
University of Houston

Abstract

This project started with the exploration of an organizational system. The object of study was the atrium at the Xi’an Westin Hotel in Shaanxi, China. Through a series of transformational permutations, the object was gradually detached from its grid and axial rigidity into a more dynamic form. Scale, mass and color manipulation were engaged in the transformative process, without losing either the object’s identity or its sense of appropriateness. The result from this evolution is an expanded understanding of the original form, represented in two elements, that blended together to visualize the inherent potential of its organizational system. One element, the grid, is intended to be dense, emerging from its functional basis and transforming into a sequence of rotating squares that represent the deepness of the skylight aperture. The second element, the light path, is intended to be unlimited. Emerging and exploding from its origins, it represents the relation of the artificial and sunlight sources around their master vector. Geometrically related radial arrays are arranged in sequence creating a gradient effect and a three-dimensional illusion.
Dr. Suchismita Bhattacharjee is an assistant professor of interior design at the University of Oklahoma, with research interests that specialize in understanding how sustainability practices, policies, and human behaviors relate to energy efficiency. She has accumulated industry experience as an assistant project manager working for J T Builders in Los Angeles, California, and as a trainee architect working for Agrawal and Agrawal in Kolkata, India. Butcher spent a year in Berlin, Germany, and one year at Virginia Tech, where she earned her Ph.D. in environmental design and planning and a master of science in building construction. She also earned a master of science in construction management from Michigan State University and bachelor of architecture degree from Jadavpur University in India.

Dave Boeck, AIA, NCARB, LEED AP is an associate professor of Architecture in the Division of Architecture at the University of Oklahoma. He received a bachelor’s of environmental design degree and bachelor’s and master’s of architecture degrees from OU. Boeck’s studio teaching has focused on sustainable design and interdisciplinary project development. His research in the area of aging in place has used participatory action research methodologies that included photo voice, focus groups and user-focused design charrettes. Boeck has been in private practice since 1981. His current practice focuses on addressing the issues of aging in place both in the residential level and in the design of the community around these age-friendly homes.

Daniel Butko, AIA, NCARB, LEED AP, ASA is an assistant professor of architecture at the University of Oklahoma. His research focuses on materials, sustainability, and acoustics, and he has been awarded numerous private and government grants. Butko’s publications and paper presentations include collaborative efforts within national and international conferences and journals. He is also currently composing a 300-page book with a nationally known publisher focused on sustainable construction. Butko’s professional background spans over 23 years in all phases of design, client management, consultant collaboration, and construction administration in both B.Arch and nationally known architecture and construction firms. Notable awards include the 2012 EPA P3 Award (sustainability in design and construction), 2005 Robert Bradford Newman Medal (architectural acoustics), and 1993沃土思建筑学会Woolworth Awards Recognition and constancy.

Hans Butzer, AIA, AK NW, LEED AP is passionate about legacy building, through both his practice-based creative research and university work with students and faculty. As director of the Division of Architecture in the College of Architecture at the University of Oklahoma, Butzer seeks to empower faculty and students to continually redefine the potentials of the program’s Creating.Making curriculum. His teaching focuses on ethics and sustainability, and community-engaging advanced architecture and urban design studios. An award-winning practice allows Butzer to offer ideas on architecture, landscape, sculpture and urban design that help shape the lives of Oklahoma families and communities. Building an educational experience at the University of Texas at Austin School of Architecture and Harvard University’s Graduate School of Design, Butzer is intent on creating exceptional educational environments and living for all of our students.

Anthony Cicchico, RA is associate professor at the College of Architecture, University of Oklahoma. Cicchico holds a B.S. in architecture (1993) and a MArch (1995) from the University of Texas at Arlington. He has practiced in the Dallas-Fort Worth area with Corgan Associates and taught at the University of Texas at Arlington. He also held an assistant professorship position at Oklahoma State University.

Cicchico has been recognized with several significant prizes, including the Beck Professional Award for the 2005 Ken Ramos Memorial Design Competition and 2012 ASAI Award of Excellence, as well as recognition as a finalist in the 2003 Braun Prize Competition and honorable mention in the 2001 USA Water and Architecture Competition. During his teaching career, he has also mentored many students who have placed in student design competitions.

Sam Day, Assoc. AIA graduated from the University of Oklahoma in 2013 with a bachelor’s degree in architecture. As an undergraduate, he worked as an urban designer at OU’s Institute for Quality Communities. He presented a paper at the 2012 Oklahoma Film and Video Society Conference in Stillwater, Oklahoma, and a poster at the 2013 OU Undergraduate Research Day. Since graduating, he has worked as an architectural intern at Butzer Gardner Architects in Oklahoma City and is now at Common Works Architects. He currently serves on the AIA Oklahoma Graphics Committee and the OU Golf Lecture Series Committee, and is helping to organize the new Architecture Film Festival, Architecture Film Festival, and education center in Oklahoma City.

Ron Franz, AIA is a licensed architect who specializes in historic preservation, Main Street revitalization, neighborhood revitalization, and all types of community-based, grassroots type of design programs. With two degrees from The Tulane University of Louisiana, he has work experience that includes being founding partner of two architecture firms, serving on the staff of a nonprofit organization, working in private sector firms and a state agency, and being staff and faculty at a private college. Currently, he is an associate professor in the Division of Architecture at the University of Oklahoma and architect of Great Plains Studios, a part of OU’s Institute for Quality Communities.

Dr. Dawn Jourdan, Esq. is an associate professor and director of the Division of Regional and City Planning in the College of Architecture at the University of Oklahoma. Previously, she held a joint appointment in the Colleges of Design, Construction, and Planning and the Levin College of Law at the University of Florida. While at UF, Jourdan also served as director of the Center for Building Better Communities. She began her academic career as an assistant professor of planning at Texas A&M University in College Station, Texas. Before returning to academia, Jourdan worked for the State and Local Government Division of Halland & Knight LLP’s Chicago offices.

She earned a Ph.D. in urban and regional planning from Florida State University in 2004, a joint degree in law and urban planning from the University of Kansas in 2000, and a B.S. in Urban Affairs and Theatre Arts from Bradley University in 1996. She is a member of the American Institute of Certified Planners. Her teaching and research interests converge on the ways federal, state, and local regulatory schemes influence the development of cities and those living in them, with a special interest in housing, historic preservation, and disenfranchised populations.

Tammy McCuen, LEED AP is the Harold W. Conner Professor in the Haskell & Irene Lemon Construction Science Division at the University of Oklahoma College of Architecture. Her research interests specialize in understanding BIM as a tool for collaboration and lifecycle costing. McCuen also looks at spatial thinking, mental models, and spatial reasoning, as well as augmented reality for design and construction. She has accumulated industry experience as vice president of Bridgport Development, chief estimator for Heartland Homes, and project manager and chief estimator for Bell Industries in the Oklahoma City metropolitan area.

McCuen’s recent research has been presented at the National Institute of Building Sciences Building Innovation Conference, ASHRAE design Academy, National AIA Conference, the Association for the Advancement of Cost Engineering International Conference, and the Association for the Advancement of Cost Engineering International Conference, among others. She earned an MBA, a master of science in construction science degree and a bachelor of interior design from OU.

Dr. Stephanie Zeizer Pilat, FAAR is a designer and scholar whose work examines points of intersection among aesthetics, politics, and architecture. Pilat holds a Ph.D. and master of sciences from the University of Michigan, as well as a professional degree in architecture from the University of Cincinnati. As an assistant professor of architecture at the University of Oklahoma, she teaches both history and design courses. Pilat is the author of Reconstructing Italy: The Ina-Casa Neighborhoods of the Postwar Era (Farnham: Ashgate 2014). Her research has been supported by the American Academy in Rome, the Fulbright Program in Italy, the American Association of University Women, and the Wolfsonian-FLU. Pilat is currently developing a new line of research exploring the relationship among national identity, health, and architecture under fascism titled Shaping the Body Politic.

Elizabeth Pober, IDEC, IIDA, NCIDQ is an associate professor of interior design in the College of Architecture at the University of Oklahoma. She holds a master’s degree in construction administration and bachelor’s degree in architecture. She is a member of both the Interior Design Educators Council and International Interior Design Association and is NCIDQ certified.

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