

Undergraduate Research Symposium May 18, 2018 Mary Gates Hall

Online Proceedings

POSTER SESSION 2

Commons East, Easel 70

1:00 PM to 2:30 PM

Buildings as Material Witnesses: Expanding Preservation for the 21st Century

Isabella Mari Rose Boyd, Senior, Architecture

Mentor: Ann Marie Borys, Architecture

In the traditional sense, preservation of architecture has been around for centuries. With changes in warfare, increased human rights abuse, and impending climate change, many architects and theorists are being confronted with a need for new perspectives on preservation. This project aims to expand the idea of preservation within the field of architecture by examining three contemporary case studies, all prompted by violence or the threat of destruction. The first case study introduces the work of Andrew Herscher in the context of the Kosovo conflict. Herscher, a self-proclaimed preservationist, is an advocate for the protection of heritage sites. His work examines the evolving definition of “heritage,” particularly through cultural preservation. Another contemporary group, Forensic Architecture, a University of London architectural research agency, examines areas of conflict and reconstructs structures through computer modeling with the intent of legal prosecution of war crimes and increased public awareness. The theories of its founder, Eyal Weizman introduces and lays the groundwork for their 2016 examination of Saydnaya, a Syrian military prison. This case highlights the importance of witness testimony in reconstructing architectural models which preserve the memories of survivors and act on their behalf as material witnesses. The final example highlights the exhibition from the 2016 Venice Biennale, *A World of Fragile Parts*. This show examines the role of replication in preserving structures threatened by violence as well as climate change. Within this, the work of architect Sam Jacobs is integral, particularly his concrete caste reconstruction of a typical refugee shelter. The implications of this example on the field of preservation serves as the final point of study. A new sense of urgency, in the wake of violence as well as climate change, is challenging architects to question what moments in history should be preserved, honored or forgotten.

SESSION 2M

CITY STORIES: THE LIVED URBAN ENVIRONMENT

Session Moderator: Phillip Thurtle, Comparative History of Ideas

MGH 288

3:30 PM to 5:15 PM

* Note: Titles in order of presentation.

Millennial Urbanization and its Effects on Third-place Architecture

Laura Camille Mishkin, Senior, Architectural Design

UW Honors Program

Mentor: Ann Marie Borys, Architecture

Young adults are changing the architecture of “third places,” like coffee shops, bars, and restaurants. Millennials, as they are typically called, have steadily moved to cities as they have become increasingly disillusioned with suburban lifestyle that has been a cultural norm since the 1950s. This has created a new wave of urbanization and gentrification. Gentrification, first coined by Ruth Glass in 1964, is the phenomenon of affluent people, primarily white people, moving into and displacing long-term residents or urban neighborhoods. Sociologists, economists, and urban planners have studied gentrification since the inception of the term, but usually through the lens of housing conditions and real estate values. However, the current wave of gentrification is associated with wider trends of lifestyle than housing or location. These new trends of lifestyle gentrification permeate into aesthetics, designs, and architecture. This thesis will explore the architecture of “third places,” the extensions of the personal residence, as a vital part of the current lifestyle gentrification occurring in American cities. This thesis will look at the evolution of “third places,” the shifting values of food and drink culture, and the people that define them. Methods will include studying changes in food and drink culture through previous sociology work as well as looking to projects in Seattle as case studies for how design has changed.

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Communities after Catastrophe: Narrative in the Design of Post-Katrina New Orleans

*Addison Mitchell Peabody, Senior, Architectural Design
UW Honors Program*

Mentor: Ann Marie Borys, Architecture

Narrative architecture, imaginative design-thinking that incorporates the stories of the site and the local community into the final product, can empower displaced individuals by including their thoughts in the design process. As one of numerous design strategies within architecture, it has the potential to contribute to the highly multidisciplinary methodologies of humanitarian architecture. Across multiple successful case study projects constructed after Hurricane Katrina in New Orleans, the principles of narrative architecture design are present, but are not defined as such by the current body of research on the subject. This project argues for the significance of narrative-driven humanitarian design in New Orleans after Katrina. With this research, I articulate how narrative architectural methodologies can serve as an extension of humanitarian design techniques to better empower those affected by disasters, and explore the risks of not using narrative thinking in the design process. The project evaluates case studies from a variety of architecture firms, evaluates narrative methodologies used within the case studies, and proposes overlapping best practices from humanitarian and narrative design perspectives. By defining narrative design values within humanitarian architecture, this project clarifies underdefined aspects of relief efforts and offers architects an expanded toolset for responding to crises such as Katrina.

POSTER SESSION 3

Balcony, Easel 101

2:30 PM to 4:00 PM

Fabric Form Concrete + DUO System

*Ruisheng (Sean) Yang, Senior, Architectural Design
Morocco Mcclay Branting, Junior, Architectural Design
Mentor: Tyler Sprague, Architecture
Mentor: Mark West*

Our work is an attempt to revolutionize the building industry

by rethinking concrete formwork by eliminating dimensional timber formwork and replacing it with a combination of the existing PERI modular formwork system, fabric, and various constructed inserts. Not only would the customizable secondary systems we have studied be cheap to construct either on site or in a factory alongside PERI modular parts, but they would also be reusable, perhaps indefinitely. In the long run this system could minimize cost on a single job site as well as overall - as the formwork is reusable, highly mobile, flexible, and quick to install. Our system also introduces controlled organic forms, often avoided in concrete due to the difficulty of shaping rigid formwork. By using fabric, complex curvatures can be achieved that are created wholly by setting parameters (fabric excess, insert pieces, etc.) And letting the forces of hydrostatic pressure naturally dictate the ultimate form and aesthetic.

POSTER SESSION 3

Balcony, Easel 95

2:30 PM to 4:00 PM

The Soaring Potential of Timber Construction in the Pacific Northwest

Amandeep Kaur (Aman) Panach, Senior, Architectural Design

UW Honors Program

Mentor: Ann Marie Borys, Architecture

The timber industry gave birth to most of the cities in the Pacific Northwest including Seattle and it naturally supplied the building materials for homes and businesses. However with the development of steel and concrete construction, timber was quickly abandoned in exchange for the more fire resistant materials and their ability to reach greater heights. Now with the turn of the twenty first century, timber is back to claim its rightful position in the building industry. The development of engineered mass timber products like cross laminated timber (CLT) has made a profound impact on the building industries of Europe, Australia, Japan and Canada but the building code of the United States has not yet accommodated the use of this material. The current code allows six stories of wood frame construction over a one story concrete base level. Structural mass timber elements like CLT have similar limitations despite being capable of doing a lot more work. This project looks at the changes in the building code that are going to be implemented in the coming years regarding the use of CLT in highrise construction. These changes will enhance the construction industry in the Pacific Northwest due to its potential of increasing regional economic growth and reconnecting the construction industry to its cultural roots of timber milling. After analyzing the building code revisions that will be implemented in the year 2021 I created visual representations of construction assemblies and details to provide a cohesive understanding of how CLT could be applied to the design of

future structures. Having proven its potential in other parts of the world, it is time to employ mass timber in the United States.