REPAIR

ACSA 113

ANNUAL MEETING

ABSTRACT BOOK

ACSA 113th Annual Meeting: Repair

March 20-22, 2025 | New Orleans, LA

ABSTRACT BOOK

Association of Collegiate Schools of Architecture
611 Pennsylvania Ave. SE #514
Washington, DC 20003
www.acsa-arch.org

CONTENTS

Society + Community: Community Repair and Participatory Design

Thursday, March 20, 2025
1:30pm-3:00pm

And All That I Knew Of Love: A Cenotaphic Surrogate For Identities Erased
A. Katherine Ambroziak, University of Tennessee-Knoxville

Poet and activist Nikki Giovanni closed her essay 400 Mulvaney Street with the lines, "And all that I knew of love; Would also be buried."[1] The story recalls a visit to her childhood home months before her grandfather's death and is reflective of her formative experiences. Describing the place and people of her identity and belonging, her tone is sorrowful and portrays the harshness of another reality, becoming intensely palpable through the use of the word “also.” Her loss grows beyond her family. The word is a premonition to the demolition of her home and neighborhood during the first phase of Knoxville’s urban renewal. Mulvaney Street is emblematic of an erasure of Knoxville's Black community, a modest street name edit, a territorial change. It is but one name on a list of streets, on a list of neighborhoods[2], in a list of cities, in the vast majority of states throughout the nation that were impacted, to the detriment of its minority citizens, by political ambition and economic progress. Through policies of eminent domain, communities experienced forced local migration where they were often consolidated into Black housing enclaves, limited by red-lining real estate practices and facilitating decades of political gerrymandering. The "also" refers to a loss of space, a loss of place, the tendency to forget a history without social contexts for engagement or tangible cues of community. Characteristic of our “broken world,” these inequities go far beyond the socio-economic devastation of physical neighborhoods and erode the very core of community identity. As a design prompt we may ask, how do we claim an artifact of forgetting, of neglecting, of the erasure of place, community, and identity itself? Or if we look to move forward, to reframe this question: What is the artifact of repairing, of reclaiming, of remembering? What is the territory for contemporary reconnection? A mile or so away from Giovanni's childhood home is Odd Fellows Cemetery, an historic cemetery that served as the prominent burial ground for Knoxville's African-American community from the 1880s until the time of urban renewal. It provides context both to exemplify individual erasure (only 500 of its original 6000 headstones remain to support material connection) and to serve as a venue for purposeful remembering. This proposal describes a community-based memorial project, a cenotaphic surrogate, that aims to curate a new history for Odd Fellows Cemetery and the African-American communities that surround it. Devoid of the baggage of well-worn prejudices, it demonstrates the ethics of repair in engagement through an active reclaiming of names that were once lost. Of the 5500 now unmarked burials, we have record of just over 800[3]. Though representative of only a fraction, these names form the basis of a memorial movement that gives us the opportunity to acknowledge the loss and reconnect with our edited past. The memorial cenotaph is a modest effort to reclaim identity set against the legacy of community erasure. It is but a first step to empower the community in place-based restorative justice.

The Next Generation of World Changers
Sandy Stannard, California Polytechnic State University

Architects are by nature and pursuit, leaders and teachers. If architecture is going to inspire community, or stimulate the status quo in making responsible environmental and social structural changes now and in the future, it will take what I call …. 'subversive leadership' ……. Samuel Mockbee, Rural Studio The UN Office for the Coordination of Humanitarian Affairs estimates that there are 128 million people world-wide in need of survival assistance.[1] As a subset of that challenge, many populations struggle to provide shelter of all kinds, from the most basic (roof over one's head) to the more auxiliary (educational, healthcare, spiritual spaces, to name a few). The junction of this global need for shelter with humanitarian-minded architecture students is the subject of this paper. Advanced undergraduate students at [name of institution] work on a year-long undergraduate thesis project on a topic of their choosing. Pairing these energetic, passionate students with tangible humanitarian projects has provided an enriched educational opportunity for these students as they have the opportunity to apply their idealism to real-world challenges. These projects have resulted from a partnership with a local non-profit humanitarian organization, Journeyman International, whose primary goal is connecting volunteer designers with grassroots humanitarian projects around the world. The bottom up nature of these ventures is apparent throughout the process, from the identification of need to design to execution. In addition, these primarily education and healthcare focused projects occur in that societal interstice where the need is great but the resources are scarce. Having overseen over 20 student humanitarian projects over ten years, the author has witnessed remarkable personal and professional growth in the student designers. Working within the structure of an educational institution and yet free from the constraints of other professional obligations, these students simultaneously have the freedom to explore while also necessarily having to respond to real issues of culture, place, situation, buildability, budget, and so on. The projects have ranged in location; while many have been located on the African continent, there have also been projects in India, Tibet, Haiti, as well as Central and South America.[2] Among the most challenging aspects of these projects has been responding sensitively and appropriately to the given cultural and social situations in a manner beyond that of a typical hypothetical thesis project. While it is clear that all architecture is physically contextual (whether consciously conceived or not), architecture is also always social, cultural and political (whether consciously calculated or not). Within the context of these bottom up humanitarian-focused thesis projects, the primary goal was to encourage students to make architectural proposals that were strategic rather than reactive, appropriate to the space and time of the given situation. In this way, through their engagement in these humanitarian projects, students begin their journey as tomorrow's world changers.

Parks in Action - Community Climate Action Hubs

Victor Perez-Amado, Toronto Metropolitan University
Fadi Masoud, University of Toronto

Parks in Action is a multidisciplinary design-research initiative spanning multiple years and institutions. The project emphasizes the importance of suburban parks, open spaces, and the public realm in Toronto's climate adaptation and mitigation efforts, focusing on air pollution, urban heat, and flooding. [1] A key objective is to assess and quantify the social and environmental value of public and private open spaces in Toronto's inner suburbs, ranging from "Tower in the Park" neighborhoods to park-based "Community Climate Action Hubs. Between 2021 and 2023, our academic institution partnered with community champions to create a "Parks in Action" strategy. It emphasized the role of parks, open spaces, and the public realm in fostering climate action in Toronto's inner suburbs. Urban green spaces ranged from expansive ravine networks to pocket gardens, street rights-of-way, schoolyards, and green roofs. Regardless of scale, these spaces are valuable tools for urban climate change mitigation and adaptation. The initiative included eleven Community Climate Action Hub installations aimed at: 1) reinventing outdoor spaces with green infrastructure, 2) providing environmental education, 3) increasing accessibility, and 4) creating artistic spaces for neighbors to rest and socialize. The project was designed as a collaborative experiment between neighbors, academics, City officials, and local partners. Utilizing participatory design-based research and placemaking theories, [2] the hubs implement interventions to address specific issues. [3] The process consists of 1) community participation, engagement, and consultation; 2) neighborhood research through observation and geospatial analysis; 3) design, fabrication, and installation of innovations; and 4) testing the installations through observation-based analysis. Our grassroots strategy involved leading public design workshops in City Neighbourhood Improvement Areas and during a summer-long exhibition. These interactive sessions encouraged idea exchanges, enabling participants to understand local challenges, identify needs and opportunities, and share innovative approaches to climate action. The project aimed to demonstrate how climate action in the public realm is generative of participatory design and social engagement—from the scale of small local installations "hubs" to "tower communities" along urban watersheds. It explored innovative design strategies, including adaptable furniture, multigenerational placemaking, playful recreational spaces, and the integration of green infrastructure and growing food security. Central to this work is the link between social equity and climate adaptation—ensuring that all communities, regardless of their socio-economic backgrounds, have equal access to green spaces and their benefits.

Aging Together – Exploring the Housing Challenges of 2SLGBTQI+ Older Adults
Victor Perez-Amado & Sam Casola, Toronto Metropolitan University

Toronto is experiencing a growing elderly population. Studies predict that areas zoned for single-detached homes, which make up 50% of the city's area, will soon be occupied predominantly by individuals aged 65 and older (City of Toronto, 2021). Much of this housing presents challenges for older adults in terms of mobility and access to vital services and social supports. Older adults who identify as 2SLGBTQI+ (Indigenous Two-Spirit, lesbian, gay, bisexual, transgender, queer or intersex) and who rely on the concept of 'queer kinship' or 'chosen family' face additional concerns about the potential for discrimination, homophobia, or transphobia from neighbours, staff, or fellow residents as they transition from independent to congregate living settings (Baynes, 2022). 2SLGBTQI+ groups have typically been concentrated in large urban centers and neighborhoods across the country. Once considered social sanctuaries, these inner "gaybourhoods" typically do not allow for aging-in-place due to a lack of housing and services for older adults (Bitterman & Hess, 2021). As the first generation of openly 2SLGBTQI+ individuals in Canada age (Bitterman & Hess, 2021), there is an increasing demand to develop affordable housing models and policies that meet their needs not only in typical "2SLGBTQI+ enclaves" but in cities at large (Gahagan, 2020). Some inclusive housing models have begun to emerge in the US and elsewhere that offer various levels of independent and communal elder housing, but there is limited research on inclusive housing feasibility and planning within the Canadian context (Baynes, 2022). This research paper focuses on the housing challenges specific to 2SLGBTQI+ older adults. It examines the City of Toronto's municipal processes with the goal of mapping housing availability, analyzing land use policies, identifying discrepancies, and advocating for inclusive housing retrofits and typologies to enable aging in community. Theoretically, this paper frames how heteronormative ideals of relationships, family roles, and co-habitation have influenced the development of housing opportunities for older adults, marginalizing those who do not conform to heteronormative societal standards (Savage & Barringer, 2021; Morris, 2022). The paper employs a mixed-methods approach. First, an assessment of current 2SLGBTQI+ geographies, dwellings, and living formations beyond the "2SLGBTQI+ Village" in Toronto was conducted using primary qualitative and spatial data. This data was then normalized and geocoded within ArcGIS to generate socio-spatial maps of 2SLGBTQI+ households and social configurations in the city. Secondly, the paper examines policies to understand the land-use regulations governing the built environment for 2SLGBTQI+ older adults. Finally, gaps are identified, and architectural and urban planning guidelines and housing typologies/retrofits are presented. This paper helps 1) advance the age-friendly and aging-in-place housing design discourse; 2) foreground inclusion, equity and diversity in housing for 2SLGBTQI+ as they age; and 3) provide not-for-profit organizations and municipalities with empirical data about existing housing while offering architecture, urban design and planning recommendations to engage in the development of housing guidelines that will enable 2SLGBTQI+ older adults to be safe, supported, and included.

Health: Healthy Infrastructure

Thursday, March 20, 2025
1:30pm-3:00pm

Movement, Mobility, Accessibility & Architecture in Established Urban Environments - An Architecture & Physical Therapy Design Studio Collaboration

Stephanie Muth, David Kratzer & Louis Hunter, Thomas Jefferson University

Goal 11 of the 2015 United Nations' Sustainable Development Goals, Sustainable Cities & Communities, focuses on "making cities inclusive, safe, resilient and sustainable."(1) Critical to implementation of this agenda are the issues presented by established urban environments relative to movement and the resulting effects on health and wellness. In Fall 2022, architecture and physical therapy students and faculty at (institution) initiated a collaborative interdisciplinary design thinking studio with the goal of exploring movement, mobility and health in established urban environments. The success of the initial studio has led to an international collaboration with (institution) to consider the differences inherent in American and European established urban environments. The initial studio collaboration focused on The (Name) Wellness Center which is located in an underserved community in South (City) populated by culturally and economically diverse families including long term middle-income residents and new-comers from various countries living at or below the poverty line (2). Teams proposed built interventions to improve the connection between the Center and the community using movement, mobility and accessibility as central themes. This paper will disseminate the explorations and findings of this course and describe an interdisciplinary studio approach that promotes mobility and accessibility as key determinants of health through design. This initial course was a pilot of a proposed co-curricular studio for the Architecture and Health programs of (Name) University. Sedentary lifestyles are detrimental to health and wellness. The American Heath Association recommend 150 minutes of moderate activity per week but that can be difficult to achieve without safe and accessible places to be active. Several systematic reviews focus on the positive association that the built environment can have on mobility and health across the lifespan.(4-7) For the Center's surrounding community, health challenges include difficulty in managing chronic health conditions, lack of healthy food options and access to safe spaces to engage in health and fitness activities.(8) The goals for this studio, developed by the students, focused on improving the Center's connection to the community, and promoting equitable opportunities for movement and activity. As expected, the interaction between disciplines began with comparisons of the practice boundaries of each profession. Movement is a central tenant of physical therapy practice with a focus on optimizing mobility across the lifespan. Architects tend to approach movement and mobility from the vantage points of design such as kinetics, formal expression and procession.(9) The need to bridge these positions in order to address health and wellness in this diverse established urban community became the collaborative scaffold upon which the students cross-empathized the project issues and opportunities. Of great benefit to the architecture students, the physical therapy students introduced evidence-based practice and clinical reasoning to begin the conceptual explorations and continually evaluate the design work. The paper will conclude with discussion of the interdisciplinary design proposals - which primarily focused on creating safe urban spaces for activity and resident engagement. A wide range of wellness design issues were explored including wayfinding, ergonomics, PT treatment, kinetics/ exercise, biophilia and the notion that design might incite movement.

Sick Architecture: The Influence of Disease on Yugoslav Modernist Health Infrastructure

Erona Bexheti, University of Cincinnati

The largest outbreak of smallpox in Europe following the Second World War, occurring in 1972 in Yugoslavia, the periodic Tuberculosis and Influenza epidemics, and the Polio outbursts of the 1950s and 1960s, mark chronicles of major public health concerns throughout the 20th century in the Yugoslav region. These stories coincide with significant developments in architecture and urban design in modern socialist Yugoslavia and attest to Beatriz Colomina's consideration of modern architecture shaped by the dominant health catastrophes of its time.1 In her seminal work Sick Architecture, Colomina argues that modern architecture was produced under emergency conditions and that all defining features of modern architecture: the white walls, terraces, big windows, and detachment from the ground, were presented as both prevention and cure.2 Utilizing her theoretical framework which situates architecture as inseparable from illnesses, this research explores the intersection of architecture and health in the design and development of health infrastructure in Yugoslavia during the mid to late 20th century. Through three case studies, the University Clinical Center of Kosovo in Prishtina (1958), the University Clinical Center of Ljubljana (1975), and the Clinical Hospital Dubrava in Zagreb (1988), it investigates how these health clinics were conceptualized and constructed in response to the medical understandings and epidemiological crises of the century. Yugoslavia's socialist period was marked by substantial investment in public health infrastructure, driven by a commitment to universal healthcare and influenced by global modernist architectural trends. This paper examines how these health facilities were designed to mitigate the transmission of diseases and safeguard communities' health and well-being by considering elements such as ventilation systems, spatial layouts, building materials, natural light incorporation, and communal spaces. By dissecting these architectural components, the research highlights the pragmatic and ideological motivations behind the design choices that aimed to enhance health outcomes and promote hygiene. The three cases of clinical hospitals in Croatia, Slovenia, and Kosovo each exemplify unique responses to the challenges posed by disease in their respective contexts. This study reveals how the architecture of these institutions not only addressed immediate health concerns but also reflected broader societal values, merging functionality with the aesthetic and utopian aspirations of modernism. Through an interdisciplinary approach that integrates architectural analysis, medical history, and socio-political context, by examining archival documents, government records, and architectural and urban plans, this paper elucidates how diseases shaped the architecture of health in the Yugoslav region. In light of the recent global COVID-19 pandemic, by exploring the relationships between concepts of illness, space, health institutions, territories, and philosophies, the study offers a wider, historical, and more complex discourse with which we may think about the present and the future of the discipline. Reflecting on the Yugoslav experience contributes to a deeper understanding of how architecture can serve as a dynamic agent in the promotion of health and hygiene, offering insights pertinent to contemporary discussions on the role of design in public health infrastructure.

Integrating Artificial Intelligence (Ai) And Feminist Urban Design. A Methodology Approach For Informal And Peripheral Neighborhoods In South American Cities

Diana Mosquera & Francisco Gallegos, Diversa
Ana Medina, Universite de Montreal

This article addresses the importance of public spaces in the rapidly urbanizing cities of the Global South, particularly in peripheral neighborhoods, for promoting safety, equity, and quality of life. Traditional urban design often neglects the diverse needs of residents, creating exclusionary and unsafe environments, especially for marginalized groups, while knowledge about these areas, especially in low-income and peripheral neighborhoods, remains limited and oversimplified. This study focuses on understanding socio-spatial conditions in three secondary South American cities: Cuenca (Ecuador), Medellín (Colombia), and Rosario (Argentina). The research integrates artificial intelligence (AI) technologies and feminist urban design principles to assess and enhance safety perceptions and align these spaces with healthy city criteria. It highlights the challenges of using AI methods in informal areas due to the lack of up-to-date open data. This research proposes a methodology for collecting and preparing data for future machine learning or spatial data science models, starting with street-level image collection, followed by deep learning techniques for image processing and qualitative analysis. Results reveal low safety perceptions due to decentralization and insufficient urban infrastructure, leading to exclusion and segregation. The findings emphasize the need for context-specific research in such urban areas and to provide urban planners and policymakers with valuable insights for developing healthy urban infrastructure in informal neighborhoods. Results indicate that the connectivity and structure of these spaces are centralized and nodal, representing exclusion and segregation. Our findings also highlight the need for high-quality, context specific research in those urban areas with the highest levels of urbanization, and the need to address specific challenges regarding mediating and moderating factors. This work provides insights on potential healthy spaces and information to urban planners and policymakers in decision-making for healthy urban infrastructure in Global South cities. Future studies should combine robust inclusive assessments with validated mental health screening tools.

Nueva Reforma - Healthcare Design in Rural Latin America
Madelene Dailey, University of Southern California

Rural agricultural communities in Latin America are first to experience the impacts of large-scale displacement, disproportionate resource distribution, and drastically changing climates. As these threats intensify, these populations face growing challenges in securing habitable conditions. This crisis is particularly evident in Latin America's Dry Corridor, where communities dependent on their environment struggle to survive. Guatemala, despite having the largest economy in Latin America, has one of the highest rural emigration rates. The World Bank Group identified that U.S.-Guatemalan migrants have nearly tripled in the last two decades largely due to emigration from rural areas due to livelihood security threats and poor health conditions (1). Half of the population lives in poverty, with the housing deficit exceeding 2.2 million homes (2). In rural areas, about 7.5 million people suffer from inadequate shelter, limited land rights, and lack of socio-economic opportunities,(3) perpetuating issues influencing housing insecurity and leaving them in a harmful cycle of repair. Homestead programs like Nueva Reforma in Chiquimula are leading grassroots efforts to combat these issues and help their community build climate-related resilience through citizen-organized planning. The program has allowed residents to tackle issues of land tenure rights, affordable housing, and larger socio-economic development to combat displacement threats. Despite this success, long-term resilience challenges remain, particularly in updating shelters and expanding capacity for social investment programs. USAID/BHA, Habitat for Humanity Guatemala, the Association for Education and Health in Central America (AEHCA), the Ipala municipality, and local village leaders contributed to a study conducted with residents of Nueva Reforma to investigate the relationship and subsequent gaps between architecture, humanitarian shelter assistance, and grassroots civic planning. Findings from Nueva Reforma offer insights into how shelter assistance can be more effective in addressing the needs of rural, climate-vulnerable populations in Guatemala and the broader Dry Corridor. Building resilience in these regions will help develop replicable key tools needed to address the root causes of displacement on a larger scale, ultimately aiding shelter assistance needs for groups most susceptible to displacement.

Building Science and Technology: Digital Technology and Modeling

Thursday, March 20, 2025
1:30pm-3:00pm

Mitigating Over-Exposure: Supporting Climate Justice in the Borderland through Radiation-Aware Design

Stephen Mueller, Texas Tech University

Exposure to elevated and increasing levels of ultraviolet radiation poses a hidden threat to large and growing urban populations in the U.S.–Mexico borderlands. Damaging UVB rays are scattered deep even within shaded areas, exposing occupants of public shade with high levels of harmful radiation. Inequitable distribution of public shade amenities in the borderland contribute to asymmetric health impacts and subject borderland populations to a form of “slow violence.” Undergraduate students at [redacted] participated in an experimental vertical design studio with graduate students at [redacted] in Spring 2024 to develop and visualize innovative and effective designs to mitigate these dangerous exposure conditions. Student design research projects aimed to provide positive health impacts to borderland communities through the design of computationally informed, radiation-aware public shade structures and cooling centers. The course aimed to advance the architectural discipline’s capacity to address unique conditions and hidden dangers within public shade in arid urban environments, equipping students with new capacities to leverage advanced design technologies to repair inequitable conditions of transboundary health, promoting environmental and spatial justice.

Impact of Climate-Responsive Shading System: Assessment of Energy Performance for the Future Adaptation of Houses in Louisiana

Soo Jeong Jo, Yilin Zheng , Angeline Asa & Victoria Lopez Serrano, Louisiana State University

The risk of extreme heat has been growing recently in Louisiana due to global warming, thus increasing the energy use for cooling that may add carbon emission. Consequently, it becomes a cycle that exacerbates global warming and extreme heat conditions raising a strong need to design resilient buildings and repair existing buildings to help mediate heat. Implementing a shading device is an effective building repair strategy to reduce the impact of solar heating and the building's energy demand for cooling. Specifically, kinetic shading systems are considered one of the solutions for future building retrofit due to their ability to respond to changing weather conditions. Moreover, kinetic façade systems added to an exterior façade of a building have great potential to be combined with photovoltaic (PV) systems in Louisiana, which receives intensive solar energy throughout the year. The present study, therefore, focuses on a solar-responsive facade with mechanical movement in response to the sun in Louisiana climate context for mitigating extreme heat conditions and generating energy to enhance existing buildings' energy performance. The proposed study aims to investigate the performance of a kinetic façade system and identify how the direction of the rotating axis impacts the energy performance of the shading device by utilizing computational building performance simulations. To conduct the study, the authors designed an adaptive solar façade composed of 8" x 8" rotating panels arranged in a diagrid pattern, which utilizes a solar tracker allowing the PV panel to locate the sun. The panels dynamically adjust their position to follow the sun's movement at various angles. The simulation scenario assumes that this shading system is attached to a west-facing glass façade of a 20' (W) x 20' (D) x 10' (H) building located in Louisiana. Under extreme heat conditions, around 2 PM in the days of June – August, the energy use intensity (EUI) of the building was simulated for three cases when vertical, horizontal, and mixed axes were employed for the rotation of panels. The building and shading systems were modeled in Rhinoceros, and the energy simulations were performed using Climate Studio. The results were compared to the baseline, in which no shading was added to the tested façade. The simulation result showed that the horizontal axis case had a 34% decrease from the baseline, a 15% decrease for the vertical axis, and a 26% decrease for the mixed axes. The result implies that the horizontal axis of rotation was the most effective in reducing the building's energy use if this climate-responsive shading system is used for the west-facing façade. Although vertical fins are generally known as a more effective shading strategy than horizontal overhangs for west-facing facades, this rule of thumb may differ for kinetic shading systems and if PV systems are integrated into the shading. The result of the study also underscores the importance of shading strategies in building retrofit to optimize energy efficiency and reduce environmental impact.

Timber-based Retrofitting of Unreinforced Masonry
Philip Tidwell, University of California, Berkeley

Unreinforced masonry (URM) buildings constitute a substantial percentage of existing structures across the Northeastern United States and Eastern Canada. With varying functions from residential, civic and industrial uses, many of these buildings were built before the application of contemporary building guidelines and design codes, and often have inadequate resistance to lateral loading from low-intensity earthquakes or settlement. With progressive material deterioration over decades and a frequent lack of maintenance, retrofitting of these structures is often necessary for continued occupancy and adaptation for new uses. Many retrofit systems use steel and concrete to supplant existing masonry walls and create auxiliary or substitute loadbearing systems to handle both vertical and lateral loads. In such cases, masonry elements are retained for historic or aesthetic value, but they are largely superseded by a new structural frame. This approach is invasive, materially intensive and costly, and it is seldom suitable for most URM buildings, particularly the workaday (non-listed) buildings that are frequently taken out of use. By taking an alternative approach, the research here aims to repurpose existing masonry buildings that are unlikely to be preserved for architectural value alone. These anonymous structures account for a large quantity of the material and energy embodied in current building stocks, and extending their service life has substantial benefits from carbon emissions and urban regeneration to heritage and housing supply. This paper covers the selection, design and experimental validation of a retrofit system applicable to cities in in the American Northeast and Canadian Southeast. The authors present a modular system of timber-based reinforcement which has been developed through large-format destructive testing and computational analysis. This multi-component research project focuses on low-cost strategies that enhance both structural and thermal performance of aging URM buildings in an effort to meet contemporary performance criteria for both lateral loading and thermal performance. The system is comprised of a structural layer of plywood panels with cross-braced frames that are anchored to existing URM walls, as well as an energy layer comprised of cellulose-based thermal insulation. The authors summarize preliminary results from full-scale structural and thermal experiments as well as numerical modelling simulations that have guided the proposed design.

This presentation has been moved to Saturday, March 22, 2025 in the session: Design: Material Practices: Wood

Pedagogy: Drawing as Pedagogy

Thursday, March 20, 2025
1:30pm-3:00pm

Argumentative Analytical Drawing: A Pedagogical Tool for Architectural Repair
Gonzalo Lopez Garrido, California Polytechnic State University

This paper will outline the origins, characteristics, technique, implementation, and assessment of a pedagogical tool defined by the author as 'Argumentative Analytical Drawing', a method of drawing that has been tested through several years in design studios in undergraduate coordinated curriculum, advanced level and thesis projects, graduate seminars on representation and history and theory, and electives on urban design. Influenced by radical and counter-mapping methods developed by Radical Geographers in the United States during the 1960s and 1970s, Argumentative Analytical Drawing teaches students how to use analyses to construct an argument that becomes the generator of design decisions. Through these drawings, students develop a strong position towards their site and their interests, showing how environmental harm, social and cultural oppression, the experience of native populations, colonial history, or militarization, to name a few, conform a site and start to grasp how architecture might engage with them through strategies of remembrance, reparation, celebration, or awareness to articulate present-day urgencies in the field of architecture. The ambitions for the drawing method are to investigate our current state of "Crisis Conglomeration" (Heglar, 2020), and its roots in colonialism, dispossession and oppression and address how notions of reparations, care and degrowth can constitute an attempt to dismantle power structures that carry the legacies of settler interests and imperialism. In the process, students are asked to consider comparative cultural, historical, ecological, and social histories, as well as specific local conditions within their site of interest. They approach the drawing by looking at different range of overlapping histories, with emphasis on a deep understanding of the past as a way to find alternative approaches to contemporary crises. Students examine the "crisis conglomeration" of places including environmental degradation, urban disinvestment, food, transportation, and healthcare deserts, racial injustice, and women's rights. After this, they use experimental methods of charting history and space to understand the complexities of their site in the present, and to begin to imagine the mapping of a different future. In doing so, they explore a number of current approaches, including reparations, degrowth, care and participation, and environmental remediation, producing a series of drawing outcomes that range depending on the class in which is taught. This project moves from large territorial and philosophical frameworks to the choice of a single site and the research and discovery of ways in which reparation or remediation is actionable at an architectural scale. The contemporary architecture student cares deeply about their impact in the world but often struggles to understand the limits and potential in their role as architects. This method of drawing aims to help them articulate some of those preoccupations and become a disciplinary technique using interdisciplinary tools. The paper will present an overview of the current state of the project through a series of examples to demonstrate the potential of this approach to drawing across multiple parts of the architecture curriculum.

Making Kin: De-centering and Re-centering Architectural Representation
Adam Marcus, Tulane University

As addressing the causes and impacts of climate change becomes increasingly central to both architectural education and architectural practice, we must develop not only new forms of architectural performance, but also new forms of architectural pedagogy that leverage techniques of representation to expand the discipline's engagement with ecological systems. This paper discusses experimental pedagogies of architectural representation that explore alternate modes of subjectivity by de-centering the human in order to re-center other species in the design process, thereby promoting greater ecological awareness. Thinking with writers such as Donna Haraway, Timothy Morton, Anna Lowenhaupt Tsing, and James Bridle, the paper draws on existing precedents from both practice and academia that employ perspectives and other representational techniques focused on more-than-human species of plants, animals, and fungi. It then discusses a recent set of drawing exercises developed in the context of an academic research studio as a way to unpack the intentionality, outcomes, and relevance of such techniques in promoting greater ecological awareness within architecture curricula.

Old Drawings New Pedagogies: Archival Drawings as Generative Design Tools
Francis Lyn, Florida Atlantic University

This being the case, writing history merely involves manipulating archives. Following tracks, putting back together scraps and debris, and reassembling remains, is to be implicated in a ritual which results in the resuscitation of life, in bringing the dead back to life by reintegrating them in the cycle of time, in such a way that they find, in a text, in an artefact or in a monument, a place to inhabit, from where they may continue to express themselves. Achille Mbembe, “The Power of the Archive and its Limits” This paper is the second in a series focusing on the engagement of archival drawings in architectural curricula. The first paper, titled Archival Drawings as Teaching Tools, was presented at the NCBDS39 conference (2024). This paper presented work that examined how the Duckham Archives (gifted in 2019), were used as pedagogical tools to provide opportunities for students to learn through the engagement of old drawings. In Spring 2024, a second iteration of this study was offered as the final design studio in our sequence. Students opting into this studio were asked to engage the archives as generative tools for normative and speculative design/research projects. This method, rare among archives and architecture programs, provided exciting modes of inquiry for both realms. Students were asked to engage archival artifacts as primary source material for the development of theses, design methods and representational strategies. Through this engagement, they developed project proposals that were relevant to their individual research interests. Utilizing documentation strategies learned in the first iteration of the study, students developed digital models of selected case study houses, that became the foundation of their semester’s work. Subsequently, students produced a diverse set of design solutions that presented a depth of exploration that was rich in content. Project topics included: ·(RE) OCCUPYING – Historic preservation interests led to the engagement of demolished/radically altered buildings and the development of models/animations simulating original and new experiences of the buildings. ·(RE) BUILDING – Students interested in normative practice selected existing houses that were used as generators for architectural design inquiries. These projects addressed social, cultural, material, formal or economic issues, derived from individual research. ·(RE) PROCESSING – Innovative design methods and contemporary art theory, conflated with rules observed in archival drawings, were used to articulate design responses informed by AI scripts learned in previous studios. ·(RE) CONSTRUCTING – Materiality and tectonics were engaged to develop a full-scale installation that focused on the interpretation/transformation of original details as a means of (RE) PRESENTING the work of Duckham. (see illustrations) Archival engagement (RE)Pairs a studio method. It provides the vehicle to engage individual interests while requiring responses to rules-based design methods that were derived from their study of original archival drawings. This method allowed for multiple realms of meaningful inquiry to occur across the range of studio projects. Future works under consideration include engagement of other archives both locally and nationally as a means to develop new and meaningful use of archives that are rarely encountered in the design studio.

Pedagogy: Decolonizing Design

Thursday, March 20, 2025
1:30pm-3:00pm

From Decolonizing to Re-indigenizing: Shifting the Lens on Contemporary Housing Practices and Pedagogy

Jonathan Hanna, Lawrence Technological University

This project, "Re-Indigenizing Housing," is a course designed to explore and incorporate indigenous housing methodologies into contemporary architectural practice. Building on the discourse of decolonizing architectural design training, this studio takes an alternative approach by centering indigenous knowledge. Students study historical and contemporary housing projects influenced by global indigenous building and planning methods, aiming to understand how these methodologies can drive design decisions. Course Objectives The primary objective is to introduce students to a range of indigenous housing practices from around the world, emphasizing their relevance and applicability in modern contexts. Students will research a curated list of 90 contemporary housing projects by 50 architects from seven distinct geographic areas. Using this knowledge, they design an addition to a single-family home in an American suburb, converting it into an extended family compound—a common housing type globally but rare in the United States. This exercise aims to highlight the connection between cultural idiosyncrasies, climate, financial models, politics, material systems, and architectural form all within the context of "Repair" by working on and in the existing condition of the Single Family Zone. Organization of Activities Introduction to U.S. Domesticity: Students begin by understanding the current state of U.S. housing, focusing on issues of suburbanization and housing inequities. Flows of Housing Knowledge: This section covers how housing ideas and practices have traveled and evolved globally, influenced by cultural exchanges and colonial histories. Modern U.S. Housing Economy: Students will analyze the economic forces shaping housing in the U.S., including real estate markets and government policies. Case Studies and New Norms: Through presentations and discussions, students will explore various case studies where indigenous methods have been integrated into modern designs. Modernism as a Colonial Project: The course examines how modernist architecture has often served colonial agendas and how indigenous practices offer alternatives. Exporting the American Model: This section critiques the global spread of American housing models and their impact on local practices. Anthropological Approaches: Students will study housing through an anthropological lens, considering how cultural practices shape living spaces. Health Policy and Housing Justice: The final section links housing design with health outcomes and social justice, emphasizing the role of architects in creating equitable environments. Implications for Architecture and Planning By understanding and integrating indigenous housing methodologies, architects and planners can challenge the dominant paradigms that often marginalize non-Western practices. This project emphasizes the importance of designing for extended family living, sustainability, and cultural sensitivity. It advocates for a shift in architectural education and practice towards more inclusive, equitable, and culturally resonant approaches. This proposal aligns with the "Design" and "Pedagogy" topics by exploring innovative design processes grounded in indigenous knowledge and emphasizing the importance of educational frameworks that foster such integration.

[This is] a Site: A Critical Pedagogy of Land and Repair
Jennifer Meakins, University of Kentucky

This paper presents a case study on implementing critical and decolonizing pedagogies in an undergraduate architecture design studio, centered on the question of designing on “stolen land.” By focusing on land, repair, and rejecting colonial notions of property and boundary, the studio emphasized site investigations throughout the semester. Student-led learning outcomes were fostered through research, collective discussions, and drawing. The initial assignment encouraged students to create a “language of possibility” that integrated decolonial, anti-racist, and critical theories. This approach enabled them to analyze everyday life and power structures, aiming to understand the conditions and strategies necessary for social transformation. Students explored concepts of “ground” through curated readings and discussions on themes such as indigeneity, white supremacy, capitalism, and inequity, supplemented by guest lectures. An interactive relationship map facilitated the development of a textual and graphic atlas, highlighting perspectives from “Ground as boundary” to “Ground as commodity.” Students self-selected groups and chose diverse sites based on their research interests, ranging from Central Park to the U.S./Mexico border. Each group produced collective drawings to explore layered plans, sections, and elevations across historical timelines, proposing projected futures. For their individual site analyses, students investigated stolen artifacts from the Metropolitan Museum of Art and the shifting borders along the Rio Grande. They cataloged narratives to propose new futures, reimagining programs and functions to design “sites of...”. Throughout the course, students reflected on both the content and structure of the class. Many appreciated a peer-led approach that fostered community and meaningful dialogue, challenging traditional notions of architecture education. The integration of critical pedagogical methods empowered students to “resurrect a language of resistance and possibility” and confront oppressive power dynamics.

Dormant Stratum: Disentangling The Overlapping Layers Of Contamination And Waste That Shaped New Jersey's Landscape, And Their Potential For Change
Laura del Pino, Kean University

Can New Jersey become an example of ecological repair for other polluted regions in the world? Healing starts with learning about the damage and the hidden potential. What we have and what we can do. However, in New Jersey, the diverse landscape is still an unstudied territory for many students despite it being their home. Our second-year class started as a speculative seminar where we aimed to uncover the hidden years of pollution and contamination that have shaped the topography and the waterways of New Jersey and the future methods of repair.

Decoding Desert Cities: Teaching Computational Cartography to Reimagine Climate-Challenged Landscapes and Culturally-Contested Sites

Brendan Shea, University of Arizona

In design scholarship and practice, novel cartographic systems and digital design technologies tend to evolve independently and often without regard for one another. If we are seeking an architecture of repair, then it will be necessary to mend divisions in our predominant pedagogical paradigms in order forge new connections between local and global issues at multiple scales, to address past problems and enable more diverse, resilient design futures. This paper presents an alternative pedagogical approach in which geographic information systems (often allied with the fields of urban planning & development) and digital scripting platforms (which rapidly entered art & architecture studios starting in the 2000s) work in tandem to equip students with a novel set of computational tools for identifying, analyzing, and reimagining contested sites for architectural intervention within the extreme environmental and political contexts of expanding cities in the American Southwest. How can disruptive digital practices from the edge of the architectural discipline engage the intellectual and technical frameworks of urban networks and complexity in order to rethink central historical concepts, motivate fundamental shifts in the conventions of representational technique and inform expanded sets of possibilities for envisioning socially equitable and ecologically resilient solutions for the future of buildings and cities? This paper constructs an abridged disciplinary history of data-driven mapping and design practices in architecture and urbanism, then presents the teaching methods and student coursework of Desertification+Democracy: Complexity, Cartography, and Computation, an ongoing fourth-year Bachelor of Architecture studio that designs custom algorithmic tools to understand and speculatively transform a large collection of vacant sites within a borderland metropolitan area frequently affected by heat-hazards of climate change. In the course, which is held at the beginning of a two-year research & innovation sequence that culminates in a thematically-related thesis project, students first study the challenges of desert cities worldwide, analyze site-specific geospatial datasets, and then propose criteria to identify a network of critically important, but often overlooked, sites within a single city. In the final phase of the course, students create a series of generative algorithms as a set of rules for program, massing and primary structure applied across all sites, before developing an average and extreme condition, in particular resolving the building envelope as a responsive assembly. The pedagogy described in the paper critically engages virtual and on-site fieldwork in order to reveal a thick network of narratives tied to each site within the city; demonstrating that multimodal forms of spatial, social, and morphological investigation present resilient formats for urban analysis and, in turn, are increasingly pertinent for advancing notions of site-specificity in contemporary architectural practice. Specifically, the model proves relevant for uncovering narratives excluded from traditional architectural research, including a more diverse set of perspectives from marginalized identities, communities, and geographies. Based on a hybrid of analog and digital technologies, the outcomes of the research serve to challenge traditional representations and hegemonic narratives of urban conditions, raising awareness about overlooked perspectives as well as developing shared instruments and techniques to expand the vocabulary for studying and designing the city.

Society + Community: Spatial Practices and Cultures

Thursday, March 20, 2025
3:30pm-5:00pm

THIS SESSION IS ALL AWARD WINNERS.

Practice: Practice & Repair

Thursday, March 20, 2025
3:30pm-5:00pm

Visualizing Post-tenure Pathways: The Make Space for Mentoring Salon
Caryn Brause & Carey Clouse, University of Massachusetts Amherst

In the context of professional care and repair, mentorship stands out as an effective if undervalued tool. At any point on the academic ladder, focused guidance can make a positive difference in one's career and trajectory. If we are to repair the nearly 20% pay gap between women and men in the US, women are particularly good candidates for this kind of support and attention (Kochhar 2023). Understanding Promotion Processes Unlike the process for attaining tenure, the path from associate to full professor too often lacks clear and specific guidance. Among tenured faculty, there are significant differences concerning perception and understanding of promotion processes by gender. Women are much less likely to report that the process of promotion to Professor is clear and that criteria are applied consistently (Liu et al. 2023). Additionally, the pandemic has disrupted faculty careers in differential ways; the path forward will require more contextualization as well as a focus on equity and inclusion (Günel et al. 2020; Mickey et al. 2023). New Opportunities The post-tenure period provides faculty with an opportunity to reset professionally: they may pivot into new types of administrative or service roles, commit to deeper engagement with their communities, or take time to gain training in new methods or technologies. Some faculty make space for endeavors with longer timelines, pivot to pursue entirely new research and creative agendas, or build broader coalitions of collaborators. These new diverse pursuits can serve as indicators of career advancement; but without appropriate framing and mentorship, they can also obscure a clear path to promotion. Visualizing Post-tenure Pathways This presentation shares the results of a multi-pronged effort to make space for mentoring in the post-pandemic. This initiative highlighted the value of bringing a design-focused approach in order to elevate mentorship as an institutional priority. The "Make Space for Mentoring" Salon comprised an exhibit, a series of events, and an environment to support mentoring held over a two-week period in Spring 2024. At a time when faculty are at all-time low for institutional sense of belonging, the Salon leveraged a campus climate grant to support a series of events for different affinity groups, aiming to serve as a catalyst for care, repair, and professional growth.

“Illegal” Architecture in He Sapa (Black Hills)
Jessica Garcia-Fritz, University of Minnesota

The Architect, Contractor, Owner trifecta forms the current and historical contractual foundation of United States (U.S.) architectural practice. These contractual relationships, standardized by the American Institute of Architects (AIA), trace back to the 1888 Uniform Contract, which positioned the contractor as a builder on the owner’s property under the architect’s supervision. The contract emerged during rapid expansion of the U.S. nation-state in the nineteenth century, a period marked by industrialization and land seizures, such as the 1877 Black Hills Act, which appropriated seven million acres of Oceti Sakowin Oyate (Sioux Nation) lands. In 1980, the U.S. Supreme Court deemed this act a theft, but no lands were returned. Financial compensation was refused by the Oyate and currently accumulates interests in a Bureau of Indian Affairs account. Despite the suspended and unresolved legal status of the land, construction in He Sapa (Black Hills) continues under an ownership model. The AIA contracts continue to reflect this model, meaning the exceptional status of lands like He Sapa (Black HIlls) are not considered in the universal document formats. This paper analyzes AIA contract documents alongside the theft of He Sapa (Black Hills) and the Black Hills Sacred Landback Return Strategy to propose changes in the contract templates from transactional ownership toward indigenous sovereignty and stewardship models. The analysis primarily focuses on AIA Document A201-2017 General Conditions of the Contract for Construction, AIA Document A503-2017-2019 Guide for Supplemental Conditions, and AIA Document A295-2008 General Conditions for Integrated Project Delivery. All name a single entity as the owner of a project site. In contrast, the Oceti Sakowin Oyate (Sioux Nation), which includes Dakota, Lakota, and Nakota tiospayes (people) continues to challenge the notion of ownership in He Sapa (Black Hills) by collectively stewarding the lands. By aligning AIA contract documents with current Landback anomalies this paper strategizes new contract relations to support repair, sovereignty, and collective stewardship over transactional land ownership in He Sapa (Black Hills).

Efficient, Resilient, Affordable – New Modes of Practice in New Orleans
Emilie Taylor, Tulane University

Home ownership in the US is a way to build generational wealth, roots families in a place, and stabilizes their housing costs in a way that improves the quality of life[i]. Yet increasingly in cities the price of housing is at odds with Average Median Incomes[ii] pushing working class families further away from job centers and exacerbating income inequality[iii]. In effort to combat these forces and create scores of affordable homes in historic (City Withheld) neighborhoods, an architecture firm has been partnering with non profit developers, city agencies, and contractors to rethink the housing delivery model to ensure that families have access to well designed energy efficient affordable housing. The initiatives, (name redacted), borrow from the self-help housing models and combines that with early stage cooperation between builders and architects to design for climate, market, and neighborhood nuances of (city's name withheld) to produce affordable and high quality homes. With each housing model prototype and subsequent iteration, the design team and contractors work together to identify opportunities to streamline the material and detailing efficiencies, and work with past home owners to identify spatial and material opportunities to improve the quality of the designs. What has developed out of this body of research and collaboration is a design strategy which blends the local typologies, cultural and contextual approaches with a pragmatism in layout and detailing. This paper looks at this collaborative approach and the 40 homes (8 prototypes) that have been built through this endeavor and outlines how this collaborative model is a scaleable response to a widespread need.

Designing Design Business: Professional Practice as Studio Topic
Aaron Tobey, Rhode Island School of Design

Organizational operations and the design of the spaces in which they are set are intimately linked. This is true even as information communication technologies and trends towards remote work have put pressure on the design or relevance of traditional workplaces. Workspaces physically as well as symbolically embody an organization's values, its structure, and day-to-day practices through which work is accomplished. In the case of architectural design organizations, this embodiment is particularly significant because their workspaces are also examples of the kinds of built work the organization designs and the kinds of services it offers to clients. This paper gives account of a spring 2024 advanced studio at the Rhode Island School of Design that built from these observations and asked students take up the topic of designing a future architectural design practice in both organizational and spatial terms. In doing so it connects scholarship on the historical design and operation of architects' workspaces with contemporary discourse around the future of work articulate the entanglements of organizational management, technology design, and architecture that have come to shape the terms of workplace design and design labor around such practices as computer networking, hot-desking, strategic co-location, and expanded service provision. The four projects resulting from the studio – an expandable/contractable community design trust, a cooperative design/build/research operation, a residential apprenticeship program, and a distributed network of field-site micro workspaces – are analyzed for both the continuities and divergences they proposed from historical and contemporary design organization structures along with their spatialization as well as for the modes of design practice, material politics, and labor distributions that they proposed. Further, the paper details how the structure of the studio course in addition to the physical space of the studio were made into sites of organizational and spatial design exploration through the arrangement of historically focused investigations and forward-looking provocations that asked students to work in groups of various sizes to conduct research, reenactment, and redesign activities which were then reflectively studied. The paper thereby offers an overview of a design-centered approach to the teaching of topics related to professional practice in addition to new conceptual and representational terms for the consideration of these topics relevant to architects who are confronting issues of workplace design such as the rise of hybrid/remote work in their own workspaces and in the workspaces of their clients. It reflects on the status of architecture as a defining component of organizations and their operations, and it locates potential value propositions for architects as well as educators in the explicit treatment of design processes as well as professional practice generally as themselves sites of creativity and objects design activity. What the paper and the course ultimately offer then is a preliminary vocabulary for the reconsideration of design practice that leverages the tools and means with which architects are already familiar while also creating openings for the identification/integration of new tools and strategies that address immanent environmental and social issues plus the new ways of living/working that addressing these issues will require.

Building Science and Technology: Ecology and Sustainability

Thursday, March 20, 2025
3:30pm-5:00pm

Housing Futures
StevenBeites, Laurentian University

The dual crises of housing supply and climate change demand innovative solutions that transcend conventional policy approaches. This research, positioned at the intersection of sustainability and technology, addresses the critical issues of housing affordability, construction inefficiencies, and environmental impact. In response to escalating housing costs and a growing shortage of skilled labor, the Canadian government has set ambitious goals to double housing construction over the next decade. However, current efforts have fallen short of achieving these targets. Simultaneously, the built environment continues to be a major contributor to global carbon emissions. The presented research explores the integration of natural, renewable bio-based materials with advanced technologies and robotics to both decarbonize and enhance construction processes. The development of a semi-automated mobile platform combined with prefabricated bio-based materials, provides a sustainable solution for scaling housing production while mitigating greenhouse gas emissions. The work led to an exhibition with government officials and industry leaders in attendance, underscoring the potential for more rapid, efficient, and environmentally sustainable practices in the Architecture, Engineering, and Construction (AEC) sector.

Energiesprong Alabama: Net-Zero Energy Retrofit Strategies for Alabama's Public Housing

David Shanks, Auburn University

The elective seminar course Energiesprong Alabama engaged undergraduate architecture students with officials from public housing authorities to research opportunities for deep energy retrofit of Alabama housing projects that are threatened with demolition. While the prevailing approach in most US schools of architecture is to teach students to design for new construction, this course instead emphasized research, analysis, and design methodologies focused on retrofit of existing buildings. The retrofit approach introduced in the course is based on the Dutch Energiesprong paradigm, under which thousands of units of social housing have been renovated since 2010. Students analyzed case study retrofit projects from Europe and the US to extract principles which might be applied in their local context. Students then researched the scope of public housing authorities in Alabama and selected groups of buildings in need of retrofit to avoid demolition. In the final project of the seminar, students developed design proposals for deep energy retrofits of specific Alabama housing projects, using computational energy modeling and photovoltaic simulation software to demonstrate that their retrofits could approach net zero energy and achieve a payback that would justify the retrofit expense.

Small Footprints: Lessons From Three Years Of Low-carbon Adu Design-build Projects

Naomi Darling, Robert Williams, Carl Fiocchi, Kent Hicks & Benjamin Leinfelder, University of Massachusetts Amherst

Within recent years, there has been increasing focus on the role of embodied carbon within the overall carbon footprint of the built environment. Historically, green building certifications and best practices focused almost exclusively on operational energy and the associated operational carbon. Recent research has demonstrated that embodied carbon is a more significant factor than previously thought[1]. Moreover, as the energy efficiency of buildings and the availability of renewable energy resources has increased, the relative importance of embodied carbon has also increased (Figure 1).[2] Alongside this, there is an increasing array of tools – Tally, EC3, and BEAM among others - available to architects to assess the embodied carbon impacts of their design decisions. And while the basic tenants of low-carbon design are clear – prioritize bio-based construction materials over synthetic, petroleum-based materials – there is still an open question about how carbon accounting is best integrated into the design process. This paper presents the results of three iterations of a university-based design-build program dedicated to designing and building high-performance, low-carbon accessory dwelling units (ADUs) (Figure 2). Founded in 2020, this program aims to address the housing crisis through the construction of small affordable homes, while developing models for true low-carbon housing that balances the impacts of both operational and embodied carbon. Each house is designed to be net-zero ready but they feature different exterior envelope assemblies and foundation systems. The houses offer valuable lessons on the impacts of alternative materials and assemblies, and the relationship between embodied carbon and operational carbon in small houses. This paper starts by briefly describing the structure of the design-build program itself before moving on to discuss the three houses and critical assemblies. We then discuss the value of a continuing to work on similar size and scale projects over multiple years where lessons learned from earlier years can readily be integrated into the most current iteration. While the first year, the material carbon emissions (MCE) for the project were about 10% better than an average new home[3], the second year, we were able to reduce the MCE to 33% better than the average and this current iteration to 66% better than average (Figure 3). This dramatic reduction was achieved by a particular focus on targeting specific materials with high MCE as indicated through our BEAM analysis. Finally, in the third iteration, we tested a new straw bale wall assembly in a portion of the house. As part of this study, we also projected the MCE of using the straw bale assembly throughout the house and found that we could achieve a net-negative MCE. (Figure 4) These projects and paper offer valuable lessons for other design-build programs and practitioners interested in pursuing true low-carbon design. (Figure 5)

This presentation has been moved to Saturday, March 22, 2025 in the session: Ecology: Ecology and Building Science

Pedagogy: Sustainable Construction

Thursday, March 20, 2025
3:30pm-5:00pm

Afterlife: Repair and Reuse as Design Drivers in Construction Education
Matan Mayer, IE University

Material recovery practices are proven to reduce environmental impact in the built environment. Despite those benefits, the building industry is slow to adopt life-cycle oriented design strategies. Ones that consider not only the construction phase, but also prepare buildings for maintenance, repair, and end-of-life operations. Construction education for architecture students seems to adhere to that business-as-usual approach instead of doing more to push the industry towards achieving greater material recovery rates. Within that context, the paper describes an experimental pilot course for second year undergraduate students that centers on providing them with design for construction skills through implementation of material recovery strategies. The course comprises six sequential components: (1) Analysis: students are assigned with case studies in contemporary construction. Those are full buildings that have been completed within the last ten years. The students conduct a thorough analysis of the building, its various construction systems, and their construction logic; (2) Modelling: in this step, students produce precise physical models of one key construction system with their case study building and one representative construction detail within that system; (3) Drawing: the students are asked in this step to prepare detailed section drawings of the construction detail that they chose to work with; (4) Inventorying: students are introduced to a circular scenario where their case study building is being decommissioned and taken apart. They are tasked with compiling an inventory of the geometry and the physical properties of all the parts in their selected system; (5) Redeploying: in this step, students are asked to use the parts that they documented in the former step in order to design and construct a new system; and (6) Detailing: Lastly, students are required to develop a key connection detail that would be able to respond to the geometrical and material-related requirements of their proposed assembly. When designing this connection detail, students are advised to consider the direction of forces in the new arrangement, and the level of visibility or lack thereof of links between components. Findings show that in average, the environmental impact reduction achieved as a result of this process is a 59% diversion rate. Further analysis indicates that when the results are broken down by system, the average diversion rate for structures is 58%, for skin systems is 61% and for roofing is 61% as well. A distribution by material group shows that concrete systems achieve 60%, steel systems achieve 44% and timber systems are at a 58% average diversion rate. The findings generally indicate environmental benefits in a transition to construction pedagogy that implements a full life cycle approach in teaching.

Micro-interventions for Mainstreaming Rammed Earth Construction
Lisa Moffitt & Nadia Kriplani, Carleton University

While there is increasing architectural interest in advancing regenerative and natural material systems, earth-based construction has been challenging to mainstream. Public stigmas of earth as a 'messy' material, lack of industry knowledge, and regulatory challenges stymie progress. These obstacles have led to a lack of exposure to, knowledge of, and methods for designing with earth—a heterogenous, low-carbon, formally-expressive building material. For students eager to inaugurate change, these obstacles can feel overwhelming and disempowering. This paper, co-written by an architecture professor and their thesis student, presents a pedagogical approach of using micro-interventions to mainstream one natural material system—rammed earth—in Ontario, Canada. The term micro-intervention is used to describe small studies that utilise architectural skills to fill knowledge gaps identified in conversation with local stakeholders. Stakeholders include, among others, the founder of a construction company specialising in rammed earth construction in Ontario, a structural engineer with experience supporting alternative code requests for rammed earth construction in Ontario, and the co-founder of a Canadian company specialising in insulated rammed earth proprietary systems. All micro-interventions were identified as needs in conversation with stakeholders and were then 'gifted' back to that stakeholder upon completion. They included developing a code change request to the National Building Code of Canada, a digital rammed earth profile for BIM-modelling, and a digital student guide. Pedagogically, micro-interventions productively expand a student's sense of design agency, directing their architectural skills less towards the development of a comprehensive design strategy and more towards contributing small, cumulative, supportive interventions through careful listening and responsive recalibrations. The paper concludes with pedagogical reflections on what makes the micro-intervention approach potent, particularly in response to the urgencies of climate change.

Scaffold Thinking: Transformable Assemblages for a Housing Community in Flux
Radu Remus Macovei, ETH Zürich

At a moment when the world is responding to the climate crisis, architecture schools are radically rethinking their pedagogies. “Decarbonizing the curriculum” means rethinking building envelopes to reduce reliance on mechanical systems, integrating “carbon footprint as the primary measure of performance,” providing students with a carbon budget of zero, forbidding concrete as the main structural system, using carbon-sequestration materials, among many other approaches.1 These pioneering efforts anticipate a paradigm shift as profound “as when Bauhaus and Modernism replaced Beaux-Arts.”2 Most strategies can be categorized into two groups: carbon-neutral new-build or adaptive reuse. Yet the largest challenge to these aspirational approaches is the project delivery model which biases synchronic design thinking, instead of allowing responses to larger temporal scales buildings are embedded in. Programmatic needs and uses change over time and buildings which resist change become obsolete. This context prompts a series of questions for design educators: How do we integrate temporal thinking into the design studio? What representational tools allow students to register how buildings could transform over time? What implications do transformations have for how we design conventional architectural elements, e.g. envelope? To address these questions, the following presents a selection of work by students in a vertical elective studio in architecture at the University of X. “By definition, and particularly in the context of architecture, a scaffold is understood as either a temporary structure enabling construction or repair of a building, or literally as a support structure in instances where the structural integrity has come into question. (...) It is a supplement – an other – that is necessary only as long as the building requires it. But what if the building is never finished?”3 Taking cues from Zuzana Kovar’s reflections, the studio pedagogy locates scaffolding as a pedagogical tool to enable students to think about the temporal scale of their design schemes. Starting from a quick transformable installation that implicates scaffolding, panels and students’ bodies performing various activities, the studio first examines scaffolding as a conceptual and physical structure that enables spatial transformation over time. After understanding basic scaffolding joints, platforms and partitions, the studio imagines housing for an intentional community that changes in size across three temporal scales with growth, shrinkage and controlled dissolution enabled by scaffolding: 5 residents (year 1), 50 residents (year 10), dissolution (year 20). A series of design strategies for change emerge from this pedagogy: growth by accretion, maximizing enclosure with gradual subdivisions, gradually carved voids, nesting envelopes, among others. To facilitate explorations of scaffold-to-building relationships, the studio leverages the materiality of wood for both its structural and malleable qualities, oftentimes blurring the boundary between scaffolding, structure and skin. The paper first lays out the theoretical premise of the studio pedagogy by examining the relationship between scaffolding and buildings. Secondly, it introduces scaffolding as a physical and conceptual tool to allow buildings to transform over time in the context of design studio pedagogy. Finally, the paper will reflect on the challenges and opportunities of integrating temporal thinking in design pedagogies today.

Pedagogy: Rethinking Theory and History

Thursday, March 20, 2025
3:30pm-5:00pm

Alternate Teaching Structure and Concept for Architectural History/Theory Core Courses

Scott Bernhard & Iñaki Alday, Tulane University

Beginning in the Spring of 2021, the Blank School of Architecture's Graduate and Undergraduate History courses were reconfigured into a series of half-semester "mini-courses;" each of which begins with an accomplished, contemporary figure in architectural practice and proceeds in a reverse chronology to explore the precedents and linages of architectural thought that have been synthesized in the work of that contemporary practice. Each academic year, four such figures of contemporary practice chosen as key points of departure to examine a range of architectural origins and influences. These courses offer lessons in historical and precedent research methods and equip students to apply such procedures to their own work. This paper explores received traditions and the advantages of conventional History/Theory survey style courses in Architectural History, as well as the common concerns of the pedagogy associated with chronological history surveys. An assessment of the commonly western point of reference in traditional surveys, though punctuated by occasional non-western examples, is critiqued—finding that although this method presents some diversity of architectural activity through time, it tends to be presented from a western point of departure and is measured, implicitly, relative to western norms. Likewise, this the paper critiques the tendency for standard survey sequences to emphasize points of origin in the distant past (often ancient Egypt or pre-history) and move forward through two or three semesters to a roughly contemporary moment and an engagement of present-day practice after a full sequence (placing the most immediately applicable building/practice examples at the end of a long sequence often foregrounding subjects, technologies and societies long discontinued. Without intending an overt rejection of traditional architectural History Theory courses, this paper presents the ambitions and objectives of a newly introduced system and explores the outcome of this system over three years of development since initial implementation. If the great examples of architecture from the past could be compared to brightly colored fish, we seek a system of History/Theory education that teaches "fishing method" rather than merely presenting the fascinating fish themselves. In this way, we hope our students become accomplished researchers, able to connect a useful taxonomy of architectural examples to contemporary issues and ambitions. We want our students to see the cannon as a wide and open pool with unexpected richness and useful links to the present. Recognizing that any point of departure tends to influence the trajectory of a search, we increased the diversity of such points, each representing the research of a diverse pool of instructors. We have started with practitioners such as Charles Correa, Smiljan Radic, Peter Zumthor, Kazuyo Sejima, Rafael Moneo, and D.F. Kere. Each 7-week course begins with an examination of key works from the chosen contemporary practice and then follows a linage of influence and reference back through architectural history. This paper compares the new and traditional History/Theory pedagogies and offers preliminary conclusions about the new system.

Other No More: Navigating the Issue of Canon within the Architectural Theory Course
Alexander Webb, University of New Mexico

The question of how we integrate marginalized voices into architectural theory courses is a difficult one. Introducing marginalized voices as such might expose students to these authors and designers, but entrenches them as non-canon and reinforces the dichotomy of us versus the other. Many who teach these courses have attempted to introduce alternative theoretical frameworks, but it is easy for these frameworks to remain in the realm of the alternative rather than on equal footing as the more normative sources of thought. This paper describes an approach to teaching architectural theory that attempts to deconstruct the canon / non-canon dynamic by introducing theory as an extension of ontology. Though the discussion of ways of being is very much rooted in the western European tradition, this deconstruction of theoretical frameworks positions thinkers in both canon and non-canon on equal footing. Despite its paradoxical nature, introducing Plato's and Aristotle's descriptions of the role of perspective relative to ontology allows Donna Haraway, Shawn Wilson and Heather Harris to be presented as equals to Colin Rowe and Paul Virilio. The focus upon ontology goes beyond a tokenized offering of marginalized voices, and leads to a productive synthesis of the traditionally accepted and the marginalized. Lucy Suchman's analysis of Trukese navigation relative to European navigation and Brian Eno's description of Ghanaian music both support Mario Carpo's offering of the Alberti Paradigm; android Bina48's discussion of perspective eerily reflects René Descartes writings on intuition, and both support Bruno Latour's assessment of modern ontology. By returning to fundamental discussions of the nature of existence, students are positioned to be exposed to many thinkers as simply one voice, without the bias of their establishment within canon. Here, the focus on ontology allows students to identify their own areas of interest, productive overlaps between a wide range of thinkers.

Biospherics as a Pedagogical Approach to the Anthropocene
Meredith Sattler, California Polytechnic State University

This paper details how an undergraduate architecture history seminar on the emergent Science of Biospherics was leveraged as a pedagogical approach to expose students to the Anthropocene. The seminar was designed to link social-eco-technical considerations, and the design of constructed environments, to contemporary Anthropocene conversations while removing some of the angst many students experience when discussing climate change and other Anthropocene topics today. The first half of the paper describes the seminar's approach to exploring Biospherics utilizing a curriculum developed by one of the participants in the early 1990's Biosphere 2 enclosure experiment [1]. The second half details several seminar members final projects as reflective of the successes and failures of this approach. Biospherics is a multi-disciplinary pursuit of knowledge that overlaps with many disciplines including Earth Systems Science, Ecological Systems Theory, Ecological Engineering, and manned outer space research programmes such as the design and inhabitation of Cabin Ecologies [2]. Within its original Russian/Soviet context, it encompasses a much wider scope that includes Geology, Space Medicine, and some of the Transhumanist underpinnings within the Russian philosophical tradition of Cosmism. The founder of the discipline, Russian Geochemist Vladimir Vernadsky [3], defined it in 1926 as the study of the ways life acts as a geological force on Earth. He understood life forms to be catalyzing biogeochemical agents that transform molecules bound within the planetary environmental envelope of the Lithosphere/Biosphere, a distinct enclosure that envelopes the surface of the Earth from the bottom of the ocean to the top of the highest mountains, and exchanges little matter and energy with the remainder of the planet's mass. In 2003, Russian Biophysicist, Biologist, and Biospherics Medical researcher Josef Gitelson further defined it as spanning scales from the whole Earth to a single space capsule, and as being devoted to two things: 1. modeling closed ecosystems in order to discover the mechanism that enables sustainable existence of the Earth's closed ecosystem and 2. developing closed human life support systems capable of sustaining distant human space flights [4]. Further, in 1996, Peter Eckart presented Biospherics as a new discipline that also created ground-based life support systems that provide a high quality of life under extreme Earth-biosphere conditions such as at polar latitudes, deserts, mountains, and under water [5]. Biospherics is such a powerful way to introduce architecture students to the Anthropocene because it sees architectural and environmental envelopes as continuous, inseparable wholes, helping to dissolve our normative Western bias of understanding nature and culture as separate. The seminar members were given free rein to define the scope and format of their final projects which were required to contain both descriptive and analytical components. These projects included traditional research papers, letters to future generations, precedent studies, films, analysis of diagrams, and a curriculum for inhabitants of future space colonies, among others. The paper analyzes how effectively the projects not only addressed their Biospheric content, but also how it informed the students' approaches to applying this knowledge to the Anthropocene today, and in the future.

The Other Mies Archive: A Framework for Subversive Historiography
Leen Katrib, University of Kentucky

The vast range of scholarship, exhibitions, and archives dedicated to Mies van der Rohe's legacy on the American academic landscape rarely diverge from discussions about form and architectural ideology. Various historians have unpacked van der Rohe's master plan for—and tenure during—IIT's postwar campus expansion into Bronzeville to uncover orchestrated coalitions that enabled and justified the erasure of a primarily Black neighborhood during Chicago's larger urban renewal project. Yet, such accounts often frame the architect's averted gaze from racial and contextual realities as a detachment from the human condition, and in so doing reinforce the narrative of an apolitical architect and educator who was intent on creating an apolitical architecture and pedagogy. Such framing detracts from uncovering longer shadows of erasure across the American landscape that can be traced back to the architect's pedagogy and practice at IIT. This paper seeks to reopen this chapter of van der Rohe's legacy and offer a subversive framework and process for re-examining the historiography of Miesian modernism and the modern university as they intersect with racial geographies and the politics of disregard. Framed around a traveling archival apparatus that invites spectators to peek into a palimpsest of collected and produced material records that were necessarily suppressed to perpetuate the myth of a tabula rasa campus, the paper reflects on the research process, representational methodologies, and design strategies deployed to engage spectators with a counter-historiography on Miesian modernism. Taking cues from subversive forms of community resistance that were excluded from official narratives of the campus expansion—specifically independent household surveys that argued for preservation, and citizen's broadside posters and city council meetings that sought to deconstruct the language and spatial measures of exclusion—the paper will expand on the research process behind the traveling archival apparatus, which involves: digitizing and deconstructing archival documents—including executive meeting minutes, federal and state policies, community eviction letters, correspondences with the architect—to scrutinize linguistic and representational nuances undergirding the architecture of the campus; acquiring existing community oral histories and transcribing audio-recorded interviews with scholars; reconstructing 2D maps and 3D simulations that spatialize and metricize the gross square footages and material cubic volumes of demolitions in the making of the campus architecture; and uncovering documents that contextualize the lingering implications of van der Rohe's master plan and pedagogical exercises at IIT on the larger American academic and urban landscape by taking stock of former students and second-generation disciples who went on to actively reference Miesian principles as they led the design of Denver's Auraria Campus expansion that erased a Chicano neighborhood in the 1970s. Taking cues from the very spatial, ordering, and representational tools that govern the architect's master plan—as exemplified by a 1941 photomontage of a plinthed physical model of the campus and a seemingly neutral 24-square-foot organizational grid superimposed onto a 1938 aerial of Bronzeville—the paper will briefly expand on the subversive design of the archival apparatus's structure, detailing, and representational techniques deployed to insert hidden "easter eggs" that provoke spectators to have an active, prolonged engagement with this traveling archive.

Society + Community: Trust and Repair

Friday, March 21, 2025
9:00am-10:30am

Circle of Embrace: A Community Repairing Through Green Development
Angeliki Sioli, Aleksandar Staničić & Pierre Jennen, Delft University of Technology

Kring Brasa— the “Circle of Embrace” in Surinamese —is a non-profit community organization, formed by residents of Amsterdam’s Bijlmermeer neighborhood, in the Southeast side of the city. Their purpose is to repair—through a focus on green development and green education—the urban wound created in their neighborhood by Highway A9. A9 was part of the modernist urban plan for Bijlmermeer, designed to connect effortlessly the residents of the area to their offices in the center of the city. Despite the visionary intentions behind the masterplan implemented in the early 70s (Fig. 1), Bijlmermeer never attracted the middle-class residents it was intended for. The high cost of the apartments and the lack of public facilities led instead to big vacancies. The municipality ended up housing Surinamese immigrants in the neighborhood, ultimately creating a ghetto. To repair some of the social inequalities that ensued, Kring Brasa has been working towards the creation of the Brasa Park on top of the A9 Highway—part of which has now been moved underground (Fig 2). The Brasa Park is meant to connect Bijlmermeer with the adjacent neighborhoods, giving residents access to a shared green area which they can develop according to their cultural and social needs. Our recent master level course, “Designing with Others,” collaborated with the community towards this future. The students designed and built a light green structure in the Brasa Park, to serve as the meeting point for the community. The course was designed in close collaboration with the community, over multiple meetings, in which hopes, aspirations, and concerns were exchanged. Recent community-design scholarship (A. Becker, et all., 2020; B. Mackay-Lyons, 2014; J. Simonsen & T. Robertson, 2013) offered an overall theoretical framework. The community was actively involved in the weekly studio meetings, following the students who investigated the area and developed their personal designs (Fig. 3). The midterms took place at a local museum, where everyone from the neighborhood was invited to see the students’ proposals and express their preferences through voting (Fig. 4). Thereupon the students worked collectively to develop one common design from the scale of the site plan to that of 1:1 built elements. For the finals, the students along with the locals, built the light-structure on Brasa Park (Fig. 5). In the process they experienced first-hand how community leaders, inhabitants, builders, local actors and local authorities are responsible for co-creating the built environment—a premise on which the course is built. This paper will begin with a presentation of Bijlmermeer’s urban history (interconnected with its international, cultural, and sociopolitical aspects), will focus on the Brasa Park and its engaged community, and will showcase the process— with its successes and shortcomings—of designing and building the light structure. Grounding the conversation on community design discourse, the paper will draw conclusions on the capacity of architectural education to prepare socially responsible designers, capable of developing and implementing tactics of care and repair in their engagement with others, addressing harsh urban realities, like segregation, in our often, broken world.

The Texas Teacher Housing (TXTH) Research and Design Studio: Critical Reflections on Three Years of Engaged Pedagogy

Andrew Tripp, Texas A&M University

In 2021, efforts to create an interdisciplinary Educational Places Research and Design Studio in the Department of Architecture at _ University quickly identified the lack of accessible housing as an important material and spatial contributor to the crisis of public education. Over the next three years (2021-2024), undergraduate and graduate architectural design students and faculty, along with officials from regional school districts and other collaborators across the University, participated in a series of architectural design studios that envisioned housing for student teachers during and after their clinical residencies. The argument of the Texas Teacher Housing (TXTH) Research and Design Studio is that quality homes could attract and retain new professionals to otherwise overlooked communities, especially small cities in East Texas. Architecture and planning can help to integrate teachers into a community and provide a financial incentive not otherwise available through current compensation structures. To promote this idea, TXTH developed and distributed a pair of graphic reports (2022, 2024). This project presentation summarizes the motive, method, and key findings of the TXTH project after three years of architectural design studios and various collaborations. It summarizes the deep history of the teacherage in Texas, the conditions for its re-emergence Finally, it asks and speculates as to what it would take for Teacher Housing in Texas and elsewhere to successfully leverage infrastructural investment in educational facilities.

Repairing Trust in Community-Academy Partnerships

Julia Grinkrug, California College of the Arts
Zachary Lamb, University of California, Berkeley

In recent years, there has been a resurgence of interest in community-engaged scholarship among faculty and students at both institutional and individual levels. This interest stems from heightened social and political awareness and a sense of urgency to address ecological and societal crises domestically and worldwide. However, this resurgence has also led to considerable turbulence, creating unintended consequences. This paper discusses these paradoxes through a case study and the author's personal experience in building community-academy partnerships and advancing a curriculum focused on public interest design. The goal is to identify and examine gaps and flaws in the otherwise virtuous trend of engaging marginalized communities in academic processes. The paper's framing aligns with the conference topic of Repair. It begins by unpacking the legacy of extractive and exploitative academic research, which has led to deep-seated mistrust among impacted communities. The paper argues that successful community-academy partnerships require a prior investment in repairing relationships between academia and the public. This repair involves deep reckoning and self-reflection, unearthing implicit biases within the academic system, and re-examining the complicity of certain academic protocols and attitudes in perpetuating structural racism. Such repair requires re-evaluating both structural inequities created by-design and personal positionalities shaped by those structures, sometimes subconsciously or unknowingly. The paper's case-study describes a faculty-driven initiative originated in an academic program lacking an established framework for community-engaged scholarship. Despite the inadequate formal support, the school administration always welcomed and encouraged such work conceptually. Emerging during the final stages of the COVID-19 pandemic, in the wake of the BLM protests, the described initiative was inspired by mentors and colleagues who promoted equity and social justice through their teaching and practice. Initially a short-term collaboration within a semester-long studio, the initiative evolved into a long-standing friendship rooted in a reciprocal relationship. Tracing the evolution of this partnership, the paper describes the gradual transformation of power dynamics and the respective roles of the academic and community partners, leading to shared leadership and authority. Through structured reflection and analysis of a three-year process, the paper highlights the limitations of rigid curricular structures and the opportunities arising from synergies between academic, governmental, and community spheres. Key takeaways include pathways to overcome these limitations by transgressing boundaries set by budgets, projects, and deliverables such as learning outcomes, semester cycles, or grant metrics, which hinder relationship and consensus building. For community-academy partnerships to succeed and flourish, several criteria must be met: 1) Partnership conditions should be defined by the partners, based on trust and shared purpose, rather than by external funders; 2) Success criteria should be reciprocal and co-created, following principles of co-liberation where all members benefit; 3) All partners should operate as institutional equals, defying traditional categories like studio critics, clients, or corporate partners. Ultimately, the fundamental principle for success is "moving at the speed of trust," favoring process over product to yield creative solutions that redefine learning, agency, and expertise, leading to high profile and tangible outcomes that benefit both community and academy.

Architecture + Advocacy: Building Agency Within Communities Through Community-Led Design Builds

Abriannah Aiken, Columbia University
Madelene Dailey, University of Southern California

Systematically, architecture excludes those who are impacted most from the design process, denying communities the opportunity to collaborate on design solutions through participatory practices. The fight for spatial justice towards community empowerment calls for dismantling inequity that perpetuates these cycles of injustice. Architecture shows us that because spatial inequalities have been designed, they can also be un-designed. While the profession works to address the impacts architecture has inflicted on neglected communities, we must reimagine how the field can center these unheard voices moving forward. In an era of repair, it is critical to include and aid communities most affected in design decisions. When placed in the hands of grassroots change-makers, architecture can become a powerful tool for dismantling systems of oppression. Emerging organizations have begun to combat spatial injustices through community-led design and reparative engagement. Using small-scale, locally-empowered design builds, this justice-centered approach emphasizes: 1) early exposure for youth designers through community-led workshops and 2) equips underrepresented communities with tools to combat systemic injustice at a scale they can see and touch, and 3 create a proof of concept for community-driven design that can be scaled-up to the building and policy levels. By focusing on early exposure and neighborhood-level engagement efforts, architecture can epitomize the power of community-led collective change, ensuring a more equitable and just future for all involved. Taking cues from Sherry Arnstein's Ladder of Participation, we see repair as a form of "citizen power"–giving communities agency over their own neighborhood to design positive, collective change through collaborative engagement. Two design build projects were completed using the framework. Sustainable Futures, located in Brooklyn, New York, brought eight youth-artists from a local youth creative agency to design and construct a project responding to lack of community gathering space and food insecurity issues in their neighborhoods. The student's community-based research informed the design of their final installation: an interactive herb garden, food pantry, lending library, and movable seating space for the Flatbush Caribbean Marketplace outdoor plaza. Stories of Sugar Hill, based in Los Angeles, California, worked with over 100 youth-artists, families, and community residents connected to a performing-arts center for at-risk youth. Volunteers supported a 14-week long workshop for 1) the construction of a modular seating-storage system, and 2) a neighborhood advocacy campaign focused on celebrating African-American arts and culture within LA's historic West Adams neighborhood. The campaign conducted investigative research on the impacts of racial covenant laws, redlining, and freeway construction in order to develop a series of community engagement workshops. These projects highlight the need for reparative engagement to respect the relationship between context and place. Agency lies not only in the act of inclusion, but in determining how meaningful collaboration occurs within the engagement process. Participants were excited to be active members and eager to share their community needs. The final designs for the physical builds developed naturally in response to repeated feedback on what equity should look like, ultimately serving as catalysts, helping fuel future spatial justice-driven projects within their neighborhoods.

Society + Community: Housing and Community Engagement

Friday, March 21, 2025
9:00am-10:30am

The Architecture Of A Decent Home: Resident Owned Communities In A Time Of Climate Breakdown

Ryan Ludwig, Roger Williams University

Approximately 11 million extremely low-income Americans are affected by a crisis of unaffordable and unsustainable housing.1 Many members of this population are caught in a cycle of housing instability fueled by systemic injustices engrained in the built environment. Concurrently, many of these enclaves of concentrated poverty are disproportionately susceptible to the negative impacts of extreme weather caused by climate change.2,3 Communities of manufactured housing4 (formerly known as mobile homes) provide both a clear example of this intersection, and a potential mitigation strategy involving an alternative model of land tenure called Resident Owned Communities (ROCs). Today, manufactured housing is the largest segment of unsubsidized affordable housing in the country. Affordability is achieved through a factory-built process of production, reducing construction costs as compared to site-built homes,5 by uncoupling home-ownership from land-ownership, and by adopting a federal building code. Yet, manufactured housing residents also experience unique disadvantages. For example, they are often subjected to exclusionary zoning codes relegating them to more climate-vulnerable areas, they typically don't have access to traditional mortgages, and approximately half of these homes are situated on rented land, making them susceptible to arbitrary rent increases or evictions. Moreover, for-profit landowners have little incentive to invest in infrastructure maintenance or climate resiliency planning. Architects have also overlooked manufactured housing as a potential design solution in addressing the housing and climate crises because it exists outside conventional models of development and design. ROCs provide an opportunity to ensure long-term affordability and greater community autonomy through collective ownership of the land. In the face of increasing climate precarity, this means that residents–rather than private capital interests–are empowered to make decisions about community resiliency planning and responses. The greater involvement of architects could help foster regenerative design strategies to increase social capital and the quality of dwelling spaces for vulnerable populations. This paper aims to destigmatize manufactured housing, recasting it as a viable model for design that can improve housing access, stability, and resiliency for vulnerable communities, if paired with resident ownership. It will do so by (1) providing a brief history of manufactured housing and its role in providing homes for many low-income households, (2) describing the limitations of current land lease manufactured housing parks and the benefits of an alternative ROC model (3) profiling several ROCs to highlight the advancements they've made in their built and social environments, (4) sharing the work from a recent architecture design studio where students developed proposals for a new ROC community. In a future of dwindling access to long-term affordable housing and the need for greater community agency in making decisions about resiliency planning as the impact of climate breakdown intensifies, ROCs present a viable model that architects should support and explore.

Constructing Hope: Ukraine

Ashley Bigham, The Ohio State University
Sasha Topolnytska, The City College of New York

The unprovoked full-scale Russian invasion has forced Ukraine to face the sufferings of war: loss of life, humanitarian crisis, the annihilation of Ukrainian heritage and culture, and destruction of architectural history and urban space. Despite the uncertainties for the future, recovery efforts began during the first weeks of the invasion as many Ukrainian architects, designers, and activists convened to use design as a tool in rebuilding and envisioning the future of Ukraine. Although this research focuses on case studies in Ukraine, lessons in material circulation, sustainability, and post-trauma healing can be applied to other contexts. When evaluating and learning from architecture created during the ongoing war in Ukraine, we have found it more helpful to learn from the process than the product due to a landscape of uncertainties. The shift in understanding from objects to organizations (from form to actions) allows us to understand architects' new societal roles during a crisis. Architectural grassroots organizations are rarely created by architects alone; instead, they are unique collaborations between designers of various disciplinary backgrounds, volunteers from across the country and beyond, students and educators, non-governmental organizations, friend groups, local and international community members, etc. The organizational structure of each project is of equal importance to the final output and is often the key factor in the initiative's success. Each case study suggests a role for the architect and an expanded set of actors needed to complete the design process. In this way, architecture in the expanded field moves away from the legal responsibilities of contracts and construction documents and towards societal actors. Sometimes, the designers and architects of these projects work in conditions without time to dedicate to drawing through design ideas. Instead, designers are on-site making decisions at 1:1 scale as construction is happening. Thus, architects must forgo the traditional process and phasing of architectural products, which is lengthy, arduous, and requires stability. In a world constantly in conflict and uncertainty—climate catastrophes, global inequalities, rampant militarization (to name a few)—there is much to learn from Ukrainian architects and their immense expertise in adapting to uncertainty. The following case studies present ongoing grassroots, de-centralized initiatives by Ukrainian architects that directly tackle the challenges of wartime living. These case studies include a wide range of projects—from modular furniture designs and housing for internally displaced individuals to detailed documentation of destroyed buildings and spatial memories—illustrating how architecture can foster mutual aid and facilitate crucial support networks for entire communities.

Fixing Housing Property – Utopian Thinking For Repairing And Innovating Property Towards Non-speculative Housing

Sascha Delz, University of Southern California

While many current policy and design debates on affordable and adequate housing revolve around low-cost construction, increase of supply, financial support, subsidies, etc., they avoid addressing an elephant in the room: the capitalist notion of property as a speculative asset (UN-Habitat). As well-intended some of these debates might be, they are still dominated by the paradigm of capitalist property: whole welfare systems are built on property, public tax incomes depend on property, the entire sector of real estate fully relies on property, individual wealth creation is often directly linked to property, etc. (Stein). It is increasingly obvious that housing produced under the notion of speculative property has compromised the relations between housing and home, between housing and the common good. By doing so, it has exacerbated unequal distribution of, access to, and ownership of affordable housing (Rolnik). How can we repair these broken links? How can we think of alternatives that can fix housing property towards more inclusive and non-speculative models? If the goal is to provide affordable and adequate housing for all, the paper argues that we cannot sincerely think about solving these issues without questioning, rethinking, and eventually discarding the idea of capitalist property. But how to give it a fix when surrounded by the pervasive system of capitalist production, how to think the unthinkable? Looking for approaches how to develop such alternative perspectives, the paper proposes to use utopian thinking as a catalyst for out of the box ideas, imagining alternative systems and creating models for real change in housing production. In fact, alternatives to specific notions of property and ownership have been part of many well-known utopian proposals in the past. Furthermore, many utopian proposals feature a combination of new societal visions with spatial, often architectural, formations: From Thomas Mores' fictional island that is accompanied by plans and drawings, to industrialist visions like Robert Owen's meticulously designed New Harmony, to modernist designs such as Howard Ebenezer's Garden Cities of To-morrow based on Georgist and co-operative practices (More; LeCavalier; Hayden; Howard). Drawing from the author's research on alternative forms of ownership and related innovations in housing design, the paper will start with framing the notion of capitalist property. Second, it will discuss selected past utopian ideas that propose different notions of property and ownership. Third, the paper will focus on a more recent, relatively unknown utopia called 'bolo bolo' by author Hans 'P.M.' Widmer, which had a remarkable influence on contemporary, innovative, affordable and non-speculative housing co-operatives in Switzerland (Davidovici; Widmer). Fourth, it will expand such influence of utopian thinking with other exemplary models of applied non-speculative property and housing ideas (i.e. community land trusts and the 'tenements syndicate'). Finally, in reference to more recent calls for utopian thinking, the paper will advocate for developing more pragmatic utopian ideas that could give property a fix and repair housing production towards non-speculative systems that can innovate, plan and design adequate and affordable housing as a the common good (Bregman; Ghodsee; Zizek).

History, Theory, Criticism: Material Memory

Friday, March 21, 2025
9:00am-10:30am

Flattened American Landscapes. On the Loss of Material Memory and Landscape Identity

MiguelGuitart, University at Buffalo, SUNY

Materials embody the capacity to carry, preserve, and reveal the memory of places and users. When original materials are modified or eliminated, the identity of places is partially lost. This research examines the loss of material memory through processes of ground occupation and material modification and the resulting manipulation of identity.[1] The text focuses on the case of the American landscapes of the Colorado Plateau photographed by Robert Adams (b.1937), whose work illustrates the changing condition of the American West. Adams looked at these landscapes through a lens that claimed the endangered context of the land he was observing. Adams chose not to photograph the natural beauty of the American landscape but to record, without irony, its radical transformation by human activity by means of its aggressive occupation and modification. His photographic work portrays a time of conflicting change in the American landscape that announces today's environmental crisis and the loss of identity to the standardized urban sprawls that characterized most of the 1960s to 1980s in some of the western regions. Adams' work documented the progressive decline of the original landscape by means of processes of "material flattening," a progressive razing of the original material conditions of the natural environment.[2] As a result of the urban sprawl and political context that Adams photographed this "material flattening" takes place through successive actions of ground manipulation and implementation of new structures and materials over time that are foreign to the original landscape condition, including processed timber, corrugated metals, prefabricated plastic panels, glass panes, and asphalt tiles. In depicting this transformation, Adams was also revealing a less evident condition that reflects a contemporary problem: the loss of intrinsic identity of the American landscape. My study examines the implications arising from the loss of the ground's mnemo-material significance[3] and the consequences of the manipulation of territorial identity. Revisiting Robert Adams' landscape photography will allow us to better acknowledge the material significance and ultimate identity of the architectural ground and potential strategies for the preservation of its material memory.

“Inhuman Agency”: Tending to Asbestos

Irene Cheng, California College of the Arts

As pervasive as it is reviled, asbestos today conjures a plethora of ready associations– to withering disease, costly and dangerous remediation, a problem so omnipresent and ominous that the simplest response is often to leave it intact and mask it. We tend to think of asbestos as the folly of an earlier, more naive era that succumbed to this “miracle material” boasting too-good-to-be-true, fire resistant capacities, only to pay its toxic price later. Although associated with the human-made calamities of industrial modernity, asbestos paradoxically is a natural mineral, drawn from the earth. A family of fibrous substances found in the veins of rocks, asbestos has been employed since the Neolithic period, in ceramics and textiles. Pliny the Elder referred in his Natural Histories to a marvelously incombustible linen woven of asbestos. By the late nineteenth century, its benefits as a fireproofing material came to be recognized and it became a popular additive in paints and coatings for pipes and ceilings. By the turn of the 20th century the bulk of asbestos being used in North America came from the Jeffrey Mine, in Asbestos, Quebec (since renamed Val-des-Sources). It may seem incongruous to encounter this ambivalent material of modernity in an iconic building of the American Arts and Crafts movement–Bernard Maybeck’s First Church of Christ Scientist in Berkeley, completed in 1911. Initially intended to be clad in wood, the architect changed his mind and chose to cover the building in asbestos panels, an ostensibly surprising choice for a style of architecture most often celebrated for its closeness to nature, material honesty, virtue, and celebration of labor and craft. This paper draws a thread between the exterior cladding of the First Church of Christ Scientist and the Jeffrey Mine. In linking the building to the mine, the paper explores architecture’s mineralogical and ecological dimensions and calls into question the affiliation of the natural and the salubrious. Violently extracted from the ground, processed and added to cement to form a fireproof composite, asbestos contributed to a cladding that was something between wood and stone, organic and inorganic. Today, the asbestos panels at the church remain highly charged: too fragile to leave in place yet too dangerous to touch. In analyzing this treacherous and tantalizing earthly material and its human effects, this paper thus offers a vivid demonstration of what Jeffrey Jerome Cohen calls geology’s “inhuman agency” and the intimacy of the lithic and the human, offering an opportunity to reframe architecture’s relationship to ground.

Looking Over the Wall: A (Her)Story of the Sistan Borderland
Samira Sarabandikachyani, University of Cincinnati

This paper examines Edith Fraser Benn's 1909 memoir, The Overland Trek from India by Side-Saddle, Camel, and Rail, which offers an alternative narrative of the Sistan region during the late 19th century, a time when British imperialism, under the Qajar Dynasty, imposed a new border between Iran (Persia) and Afghanistan. British documents, shaped by an "Oriental gaze," portrayed the region as barren and in need of civilization. Benn, however, narrates a more nuanced and human-centered perspective, deviating from imperialist portrayals by presenting a richly textured account of Sistan's cultural complexity. This paper adopts an interpretive-historical approach to explore Benn's "spatial story" through three key themes. First, her narrative brings to life the materiality and spatiality of Sistan's landscape and domestic spaces, enhanced by poetic epigraphs from local literary works like the Rubaiyat of Omar Khayyam. She highlights culturally and architecturally significant terms specific to Sistan, such as andaruni (interior), kharKhaneh (camelthorn screens), and mihmankhana (guestroom), each deeply embedded in the region's vernacular. Second, Benn challenges colonial narratives by revealing neglected aspects of Sistani life, such as the nomadic communities along the Hirmand River and the artistry of Baluchi women's carpets—both largely ignored in other British accounts. Third, her photographs, especially those capturing the Ashura procession in Muharram, the most significant Shia religious event, offer a multifaceted view of Sistani society, emphasizing its vibrant rituals and collective identity. (Her)story constructs a hybrid form of "otherness" by presenting Sistani life through Benn's lived experiences, which blur the conventional boundaries between "self" and "other." This portrayal not only challenges colonial stereotypes but also suggests a potential reconciliation between dominant imperial identities and marginalized local experiences. Ultimately, Benn's personal and embodied perspective offers a richer, human-centered understanding of Sistan, contributing to a deeper and more complex dialogue about the region's historical and cultural significance.

The patio as a response. TPA Housing project in Maracaibo, Venezuela

Daniel Belandria, Universidad de Montevideo
Andrea Castro, Universidad ORT Uruguay

Town Planning Associates (TPA) was the architectural firm led by Josep Lluis Sert, Paul Lester Wiener, and Paul Schulz, primarily engaged in projects across Latin America from 1942 to 1959[1]. TPA not only executed projects but also formulated theories regarding city development, offering critiques of contemporary modern urban development theories[2]. Their particular emphasis lay in promoting the concept of an urban project that incorporated fundamental elements in the local culture, challenging the ideas presented by Le Corbusier and CIAM in the Athens Charter. Among TPA's most impactful works was the 1957 article "Can patios make cities?" published in the Architectural Forum[3]. This article underscored the significance of the patio as a communal space, a hub for exchanges, and a cornerstone for the emerging democratic society post-World War II. Patios played a pivotal role in TPA's projects across various scales – serving as familial gathering spaces in single-family homes, as meeting grounds and community hubs in community centers (building on Sert's prior contributions to CIAM), and on a metropolitan level, functioning as structures connecting the natural and constructed elements of the territory. In 1951, TPA collaborated with the Venezuelan office Planificación y Vivienda, featuring architects Moisés Benacerraf, Carlos Guinand Baldó, and engineer Francisco Carrillo Batalla, for a project in Maracaibo. This city was rapidly evolving into a hub for Venezuela's burgeoning oil industry. La Pomona Housing merged as the only neighborhood unit entirely conceived and constructed by TPA. The project encompassed single-family homes with central patios, multifamily dwellings, a school, health facilities, a shopping center, and sports fields. In this endeavor, the architects strategically utilized the patio as a unifying element, responding to the climatic nuances of the region and drawing inspiration from the organizational structure of traditional Venezuelan colonial residences. Despite meticulous consideration for climatic conditions and cultural context, the complex has undergone substantial transformations, retaining only fragments of its original architectural integrity. This analysis delves into the possible factors contributing to this evolution, centering around three fundamental questions: Did the project factor in Venezuela's demographic landscape circa 1950? Why was the patio-centric housing unit strategy deemed a response to the housing deficit? Furthermore, considering such projects as responses to post-war European city reconstruction, why was this model regarded as pertinent for consolidating new peripheral areas in Venezuela? [1] Rovira Josep Maria. Jose Luis Sert 1901-1983. Milan, Italy: Electa, 2000. [2] Ibidem. [3] Sert Josep Luis et al. “Can patios make cities?” Architectural Forum

Pedagogy: Foundations of Design

Friday, March 21, 2025
9:00am-10:30am

Concurrent Constructions: Analog and Digital Craft

Trace Gainey, Kennesaw State University

This paper reflects on a first-year architecture project in which the craft, composition, and narratives of Gee's Bend quilts were centered as a link between analog and digital making. The project begins with analysis of the quilts made by the women of Gee's Bend Alabama[i], and then explores architectural concepts through the making of stereotomic and tectonic constructed planes utilizing analog first, then introducing digital modeling and fabrication. The quilts are fundamentally analog artifacts and resist oversimplification, helping to preserve notions of thinking and making as the students are introduced to digital modeling and fabrication. Through concurrent explorations of analog and digital craft, the project employs a process that moves from 2D to 3D compositional thinking (Fig.1). Layered analysis of the quilts is drawn (Fig. 2) then, stereotomic explorations evolve from constructs built in the woodshop to 3D printed artifacts (Fig. 3) and tectonic explorations illustrate the shift between working with an Olfa blade to using the laser cutter. (Fig. 4) Finally a hybridized model, which includes stereotomic and tectonic elements, is constructed (Fig. 5). The project builds a culture of making through utilizing different levels of technology to construct the artifacts. Conceptually rooting the project within the culture of making in the American South, the quilts of Gee's Bend provide a foundation outside of the European lineage of composition and making. As Vanessa Kraemer Sohan wrote, the quilts "have been produced both outside and within the boundaries of tradition—a consideration that challenges where, how, and in what modes creativity and meaning-making can occur." [ii] As an institution in the Southeastern United States, studying the quilts shifts the conversation closer, geographically and culturally, to the students. The quilts have been featured in elementary art pedagogy[iii], studied in architecture studios from Mack Scogin's 2003 "My Way" studio[iv] to Curry Hacket's 2020 Howard studio [v]. As cultural artifacts, "wrapped up in personhood"[vi], the quilt's commodification is complicated, as evidenced from their feature in a limited-edition line of products at Target.[vii] Through engaging with the quilts, students are not only engaging their beauty as object, but confronted with the history of the South, the stories of their makers, and contemporary issues of commodification.

Inside-Out to Outside-In: Unifying Difference in Beginning Design Education
Radu Remus Macovei, ETH Zürich

When students enter beginning design studios, they intuitively apply ways of seeing, understanding and designing the built environment following dominant practices observed in their neighborhoods. This often results in projects presented as conventional architectural solutions, but which perpetuate common practices with both their good and bad features in uncritical ways. In this context, students need to unlearn preconceived notions of architecture so as to learn the full spectrum of possibilities design affords. To achieve this goal, beginning design studios need to unsettle students' preconceptions and guide them to develop new design processes that do not imply conformity with established ways of designing and inhabiting space. In this sense, the beginning design pedagogy Inside Out to Outside In aims to re-territorialize students' worldviews by unsettling their preconceptions of what a room, a house and a block are. By destabilizing and deforming preconceived images of buildings and employing a process-driven design method, the beginning design pedagogy results in other architectures generated from familiar forms, tapping into questions of adaptive reuse, densification and character. The following presents a selection of work by students in the first semester of a three year graduate program in architecture at the University of X. In this curriculum, the semester is structured on two projects - Inside Out and Outside In. While architects typically begin designing from existing exterior conditions, the Inside Out pedagogy begins from a spatial representation of an ordinary room. This procedural reversal allows beginning design students to start from a physical space they are intimately familiar with and to subsequently aggregate various rooms together to form a house. The second project of the semester - Outside In - gets students into the city where they work together on an existing block of single-family houses. Each student is assigned two adjacent lots, which they must assume will be assembled into a single lot, and is asked to imagine that a third family is moving in and needs to be accommodated in the space between the two houses. After observing and surveying the existing conditions, students design how the two houses get adjoined to accommodate the collective housing situation, deforming the existing single-family houses into a denser version of the urban block. Together, the two projects allow students to observe, discover and experiment with design approaches to get to the architectural image of a building without starting from preconceived notions of it. The studio's pedagogy is premised on the following questions: How do we introduce students to foundational concepts and skills, while honing their abilities to engage existing conditions? How do we unsettle preconceived notions of 'what a building is' which perpetuate carbon-intensive practices of sprawl and traditional forms of living? How can design thinking engage densification, adaptive reuse and neighborhood character creatively and relevantly? Titled XX, the curriculum addresses these questions in a beginning design studio premised on iterative thinking and making where students come from a variety of non-architectural backgrounds.

Building a Culture of Wellness and Empathy in First Year Studio: Approaches and Outcomes of a Mental Health-Informed Design Curriculum

Rosa McDonald, Sara Queen, Claire Craven & Allison Grubbs, North Carolina State University

Design students are struggling to balance the demands of design education with the uncertain and consistently-changing life stressors imposed by today's world. Post-pandemic, mental health challenges within undergraduate architecture programs have resulted in decreased performance, a less positive student experience, and, tragically, instances of self-harm. Despite evidence that college students majoring in design may be at risk of depression due to extensive sedentary behavior and the significant amount of time spent on school assignments1, our design culture has not proactively centered mental health and wellness to the extent necessary to support and protect our students. Collectively these issues strain student-faculty relationships, creating learning environments that make it more difficult for students to grow and develop. This paper unpacks changes made to a first-year fundamentals design curriculum over the past three years which intentionally shifted to address holistic student development. Outlining the integration of wellness and emotional literacy into freshmen core curriculum, successes and additional opportunities for continued development are identified. As part of a multi-year funded collaboration between architecture faculty, administrators, and licensed clinical social workers, these changes were implemented in reaction to post-pandemic shifts. The campus context, commonly seen since 2020, included an overtaxed counseling center, an understaffed Disabilities Resources Office, and generally limited resources for supporting our struggling students. Tactics we have tested for developing the students' coping strategies, distress tolerance, emotional literacy, and mental health resiliency skills are shared and framed as essential elements of personal and academic success. The new projects, assignments, and assessments developed by our interdisciplinary team include (1) co-authored community practice guidelines for building a strong and respectful studio culture, (2) collaborative studio projects examining interpersonal space and social relationships, (3) daily, weekly, and project-based journaling that includes design reflection and design action prompts, (4) a design manifesto and design values project, (5) lectures on mental health dimensions of creative practices, (6) daily grounding exercises to arrive and intentionally participate in studio, and (7) a pre- and post- semester survey to assess student well-being and the impact of the introduced wellness resources. These seven curricular changes aim to meet the shifting and diverse mental health needs of design undergraduate students through flexible, empathetic, and mental health-informed approaches to learning while maintaining the rigor and immersive environments fundamental to design pedagogy. By engaging all incoming studio-based freshmen with these curricular changes, this initiative provides a roadmap for a discipline-wide reparative culture shift that honors, respects, and fosters mental health in future design professionals.

Urbanism: Urban Design, Planning + Infrastructure

Friday, March 21, 2025
9:00am-10:30am

Too Small to Succeed: Assessing the Spatial Impacts of Zoning Ordinances on ADU Development in the Northeast

Robert Williams & Ray Mann, University of Massachusetts Amherst

Accessory dwelling units (ADUs) have emerged as a critical component of policy proposals to address to ongoing housing crisis in the United States. Particularly in urban and suburban neighborhoods that have traditionally been zoned for single-family residences, advocates argue that ADUs provide needed housing diversity and density without dramatically impacting neighborhood character. While California and Oregon have led the way on ADU policy, many municipalities in the Northeastern United States have recently revised local ordinances and state laws to allow, and sometimes even encourage, ADU development. Nonetheless, the actual construction of ADUs in this region has been quite slow. There has been significant research on the implications of zoning reform to support or hinder ADU development. However, there is a gap in this research with respect to the specific spatial implications of zoning regulations and their impact on opportunities for ADU development. Using a university town in the Northeast [name withheld for blind review] as an initial case study, this paper begins to outline a methodology for assessing the spatial impact of zoning ordinances and for making targeted revisions to support increased development of ADUs. This methodology comprises three phases. The first phase focuses on the municipal scale by employing GIS analysis to broadly assess the effect of zoning regulations on the pool of potential parcels where ADUs are permitted and possible. In the second phase, these findings are used to identify specific yet representative neighborhoods for further research where more detailed mapping clearly shows the impact of current ordinances while revealing common spatial conditions where relatively minor revisions to regulations could increase the potential for ADU development. In the final phase, digital models are used to visualize alternative futures for the neighborhoods under different regulatory conditions. The goal of this research is to provide tractable information for municipalities interested in supporting increased ADU development, particularly as the new state laws are incorporated into local ordinances. Moreover, while this study focuses on a specific city, the methodology is readily transferable to other municipalities and provides a critical tool for towns and cities in the Northeast to support alternative housing development.

Beneath the Rubble: Intrastate-Craft and the Spatial Politics of Housing Dispossession

Jonathan Hanna, Lawrence Technological University

The connections between housing security and health outcomes is an often overlooked aspect of the geopolitical landscape of the Occupied Palestinian Territories (OPT). This paper examines health disparities resulting from the strategic dispossession and demolition of Palestinian homes under Israeli occupation, focusing on the concept of “Intrastate-craft”—a term coined to describe the bureaucratic machinations employed to maintain control over Palestinian land and people. Through four detailed case studies, this research elucidates how these mechanisms perpetuate health inequities and social instability. The concept of "Intrastate-craft" is defined as the utilization of governance actions with cynical and targeted outcomes, masked by ostensibly altruistic motives. This strategy operates across various levels of governance, from local planning associations to federal judicial systems, effectively consolidating control and perpetuating the dispossession of Palestinian lands. Housing and Health Disparities Health outcomes in the OPT are starkly worse compared to those in Israel, with significant differences in life expectancy and mortality rates for various diseases. For instance, life expectancy in the OPT lags approximately eight years behind that in Israel. The mental health repercussions of housing instability are profound, as evidenced by higher rates of PTSD and depressive symptoms among those facing eviction or demolition. Case Studies Khan al-Ahmar: This Bedouin village is targeted for demolition to make way for an Israeli highway and settlement development, effectively bisecting the West Bank and isolating East Jerusalem from other Palestinian areas. The proposed relocation site for the village highlights the strategic importance of land control masked by infrastructural development. Sheikh Jarrah: This neighborhood in East Jerusalem faces systematic eviction efforts, facilitated by right-wing NGOs and discriminatory property laws favoring pre-1949 Jewish claims. The eviction of the Salhiya family, under the guise of building a school, exemplifies how intrastate-craft operates to displace Palestinians while stalling proposed developments under security pretexts. Silwan: Here, the municipality's plan to demolish homes for an archaeological park disregards the residents' needs, perpetuating overcrowding and inadequate living conditions. Proposed alternatives that marginalize Palestinian residents further illustrate the disconnect between planning and community needs. Walaja: This village suffers from extreme planning discrimination, with no legal avenues for construction due to the absence of an approved zoning plan. The surrounding separation barrier and national park designation further restrict Palestinian land use, exemplifying intrastate-craft's role in spatial segregation. Implications for Architecture and Planning Infrastructure projects in the oPT transform the West Bank into a series of isolated archipelagoes, reinforcing "apartheid-like" conditions. Architects and planners play a critical role in either perpetuating or challenging these conditions. Advocating for fairer planning processes, recognizing alternative forms of land ownership, and transferring building permit authority to local Palestinian bodies are crucial steps. The paper goes further into the architectural particularities of how sustainable, community-focused development can mitigate health disparities and promote equitable living conditions. This proposal aligns with the "Urbanism" and "Society + Community" topics by examining the intersection of infrastructure, architecture, and planning with health disparities and social inequities, highlighting the role of built environment professionals in advocating for justice and equity.

Cultivated Imaginaries: Notes on the Idea of the Superblock

Liang Wang, University of Texas at Austin

“Superblock” is a term with which almost all architects are familiar. Since its first public appearance in the 1920s[i], the term “superblock” embodies an urban typology that serves as a latent propeller of 20th-century large-scale urban developments. Despite the ubiquity of superblock as an integral part of the modernist urban formations and its widespread use among designers, historians, and theorists, the concept of the term remains largely elusive, and its discursive knowledge seems to exist in a piecemeal manner[ii]. While acknowledging the defeat of superblock as a modernist project in spirit and some of its essences are indeed constitutional to the failure of modernism, this paper attempts to postulate that the subject of the superblock—its history, discourse, and reality, as an unfinished project—might still be relevant in reimagining new forms of the urban in contemporary contexts and their near future. To that end, this paper attempts to excavate the nuances and alternative readings of the ideas of the superblock through its correlation with urban form. In particular, it aspires to trace the origin of the superblock through Raymond Unwin’s “cul-de-sac” principle in his superblock theory from the early 1900s[iii], as well as its influence upon a broader lineage of modern cities and their formations—from Ernst May’s New Frankfurt Initiative to Walter Gropius and other CIAM architects’ Zeilenbau scheme, to the socialist city planning of Sotsgorod and the implementation of Mikrorayon throughout the USSR. In doing so, the superblock, through a spine-based structure that consists of a series of “cul-de-sacs”, became an apparatus to reorganize spaces in modern cities and produced a series of singular architectural and urban forms in such reorganizing processes. This paper argues that such singularity of the superblock has reduced the representational agency of architectural and urban artifacts to specific forms, isolated contexts, and oftentimes static master plans. Furthermore, the paper contemplates the notion of “multiplicity” as the counter-proposition to “singularity” by closely examining two modern superblock examples: first, the Red Vienna Superblock, which is derived from the courtyard typology of Hof in the historical city and encompasses multiple scales, publicness, and porosity in instrumentalizing socio-spatial transformations. Second, Ludwig Hilberseimer’s Marquette Park, which transformed a discretely framed park into a new continuous structure of urban space and illustrated how space could be built from the traditional urban form with incrementality and temporality. Overall, it seeks to demonstrate that it is the potentiality of “multiplicity” embedded in the scale, part-to-whole structure, and temporality of the idea of the superblock that offers possible paths in combating the singular mindset of modernism and therefore renders it constructive in contemporary urban discourses.

Toward a Meaningful National Commemoration: Philadelphia's Grassroots Plans for the Bicentennial, 1972–1976

May Khalife, Miami University

The city planning commission in Philadelphia started organizing the 1976 Bicentennial Commemoration of the United States in 1972. The commission was determined to choose Philadelphia as the national site, a significance notably associated with the adoption of the Declaration of Independence by the Founding Fathers in Independence Hall. In the 1970s, Philadelphia's neighborhoods struggled with high crime, turbulent riots, rising economic crisis, and high inflation. The appointed architects and planners was a group led by Louis Kahn including Denise Scott Brown, Robert Venturi, and John Rauch, who attended to the urgent needs of the communities. Scott Brown collaborated with Alice Lipscomb, an African American matriarch and South Philadelphia housing activist from Hawthorne. The planning of the Bicentennial revealed emerging social, political, and cultural issues underlying transportation problems, media representations, and preservation concerns. This paper provides a critical understanding of this national commemoration at a time when communities were pushing for social reforms and developing a sense of local political agency. Today, two years before The United States' 250th anniversary, the city is once again in the midst of planning for its Quarter-millennial or Semi-quincentennial celebration. The proposed study traces ideas circulating in Philadelphia in the 1960s. It resonates with ongoing efforts to rethink the nation's values and collective memory in the context of social movements. Challenges associated with urban renewal, gentrification, and police brutality explain the community-led resistance to large infrastructural projects. The examination of Philadelphia's urban history addresses the impact of top-down planning decisions on low-income communities, particularly African Americans and Puerto Ricans residing in neighborhoods affected by such projects. The objective of this study is to reinstate the importance of grassroots movements in the conservation of heritage and the preservation of the nation's diverse and dynamic neighborhoods and historic structures.

The New Orleans Public Space Project: An Ongoing Research Studio Projecting Urban Reform in New Orleans, LA

Sean Fowler & IñakiAlday, Tulane University

New Orleans is threatened by water: sea level rise, hurricanes, stormwater flooding, subsidence, a diminishing drinking water supply, saltwater intrusion, drought, and the escalation of all these challenges due to climate change. The New Orleans Public Space Project is a program of urban reform addressing these challenges. The project combines both a multi-year research studio and research undertaken by the project directors. Starting from prior research by one of the project co-directors, the program of the studio proposes that public spaces in New Orleans, like local streets, can be redesigned as multi-functional, performant and distributed infrastructures to address drainage through nature-based solutions.1 This involves capturing, storing and infiltrating stormwater, treating it as a resource to be preserved, rather than draining it to Lake Pontchartrain. These multi-functional and nature-based infrastructures can also address other challenges facing New Orleans, including equitable access to green spaces, urban heat islands, traffic, pollution, mobility, employment and housing. Therefore, this is not a project of stormwater management or “green infrastructures” but a comprehensive plan of urban reform, addressing long-standing and inequitable challenges facing the city, stemming from hundreds of years of history. This paper reviews current progress on this project after the first two years of a four-year cycle, through both the research studio model and the connection of the studio work to parallel research. This paper describes how this design research is a vital part of the project and of the proposed urban reform. The first two years of the research studio analyzed and mapped the current and future challenges facing New Orleans through focuses on water, history, demographics, ecology and mobility to identify the areas facing greatest threat or impact, and of current and historic disinvestment. This urban analysis (or “diagnosis”) has been refined through a second year of the studio, building on the work of the first and leading to a projected future urban plan proposing multi-functional and nature-based solutions which can address multiple threats or focuses in these areas of greatest impact. Finally, students have developed individual case studies of these proposed infrastructures to demonstrate how they could be implemented across the urban fabric and the impact this would have on the identified challenges. These current results of the New Orleans Public Space Project are discussed through the model of research studios and design research as an iterative and collaborative process within and between semesters, in tandem with interdisciplinary research supporting these core ideas.

Society + Community: Design Visions and Design Process

Friday, March 21, 2025
11:00am-12:30pm

Materials of Abolition, Structures of Repair
Emilie Taylor, Tulane University

The climate is changing with each week bringing new news of environmental calamity from fires to floods to landslides. This change in global weather patterns is a result of human induced rise in CO2 emissions tracing back to the industrial revolution[1]. The structures and underpinnings of this revolution that have allowed a greater quality and length of life are now endangering both humanity and ecosystems of the earth.[2] According to the World Green Building Council, buildings are currently responsible for 39% of global energy related carbon emissions: 28% from operational emissions, from energy needed to heat, cool and power them, and the remaining 11% from materials and construction[3]. In short, the standard way of designing and building structures is unsustainable and changing the way we build can be a powerful driver in reducing global emissions. Growing from a larger acknowledgement of the harm our profession causes, and in collaboration with a not-for-profit community organization working on abolishing systems of incarceration, this studio focused research on reimagining materials and processes to reduce harm to the environment and our social and ecological networks. Building on the bio-based materials work of firms such as Grimshaw[4], Material Cultures[5], and academic research projects such as the Parsons Healthy Materials Lab[6], the thread of investigation was how to repair the harm of our cycles of production and create sustainable social and economic and environmental ecosystems within projects - from rethinking materials, to reimagining the design process. Students explored hyper-local material and manufacturing, grounding investigations in the work of our partner organization (gardening and advocacy organization, name redacted). The studio developed new material composites using bio-based byproducts of local industry, concluding in the design and fabrication of two small scale structures and an exhibit which shared the outcomes of the research. The pressing environmental and social issues we face are complex, layered, and seem beyond an individual’s ability to change. The semester was a case study in small collective acts that have impact and interdisciplinary collaborations that raise awareness, build support, and advocate for change.

Educating Architects to Serve Forcibly Displaced People: Design of Process

Earl Mark, University of Virginia
Nancy Cheng, University of Oregon
Joseph Ashmore, Nuno Nunes & Daud Shad, International Organization for Migration

Over 117.3 million people are facing forced displacement and have their basic rights to adequate housing and services at risk. The practice of architecture is evolving within this pressing global context. During a crisis, settlements develop in fragmented, fast-changing environments with limited resources and tight deadlines. Architecture schools in the U.S. with public service and justice-oriented courses may still miss key topics for international humanitarian response. For example, disasters in the Global South can require navigating complex supply chains, shortages, and professional liabilities in high-risk displacement scenarios. As these settings proliferate, thinking beyond domestic architecture and urban design practice is essential to equitably address multifaceted challenges. Present-day curricula, licensing, internships, and National Council of Architectural Registration Boards (NCARB) standards equip students with knowledge of building systems, codes, user needs, and teamwork. However, education based on the assumption of full building resources fails to address the demands of fluid, risky, and distressed geographical locations, where resource-abundant methods can be wasteful since already limited supplies are stretched thin. This gap in education highlights the need for an expanded architectural approach that embraces adaptability, resourcefulness, and cross-disciplinary collaboration in crisis contexts. As past criticisms have shaped current curricula, this paper critiques the architect's evolving role in addressing current humanitarian shelter and settlements challenges.

Made Together/Apart

Leighton Beaman, Cornell University

There has been renewed interest in the role of architecture to be both catalyst for and an embodiment of social justice and inclusivity. The debate around the capacity of architecture to address these and other social and ethical dilemmas within society is ongoing. The majority of this discourse centers on buildings, those spatial artifacts derived from an architectural design process; rather than building, the act of making a spatial artifact. Collaborative making is a type of intergroup cooperation directed towards superordinate goals, and has been shown to be an effective approach to conflict resolution through community development and belonging. Furthermore, it was demonstrated to be transformational when applied to spatial problem solving in the 1960s (Sheriff, 1965). Subsequent experiments have largely been isolated to sociology and psychology experimentation. However, their value within a concept architecture as a holistic process of designing, making and maintaining spatial artifacts has yet to be fully examined. Collective acts of making engage a number of social technologies such as play, demonstration, negotiation, narration, and mediation, and can become mechanisms for sharing different world views, and extending empathy across a diverse collection of individuals (Brown & Hewstone, 2005). Made Together/Apart is a series of research-oriented projects investigating building as a way to facilitate inclusive participation through shared modes of making which utilize intuitive syntax strategies. This project leverages intuitive and computational design and making processes combining them with human-centered approaches to create and test strategies for shared modes of making, specifically for architectural scale structures and enclosures. Outlined here is the first iteration within a series of experiments, which was developed and tested with Architecture and Human Centered Design students from (University Name). Conducted as an interdisciplinary design studio, the project developed an assembly system based on intuitive human understandings of structure, connection, scale, space, composition, and pattern, which could then be used to facilitate participation from a broader community of individuals of different backgrounds, knowledge bases, and abilities, inclusively. The project's theoretical basis in environmental psychology and sociological methodologies, is discussed as well as the architectural languages, materials and scales engaged. The project used intermediary research mechanisms such as toys and participation scenarios to explore the crafting and testing of an intuitive syntax and later physical building kits. During the semester we conducted building sessions which yield two full-scale assemblies using open-ended building processes. These two building processes, iterative and adhoc, benefitted from being conducted simultaneously, comparing and contrasting two fundamentally different premises with the same set parts and assembly grammar. The project explored an understanding of several positions architects and others take in participatory projects including professional versus everyday designer roles (Manzini 2005), and how those positions allow architecture to act as both a building technology and a social technology (Cruz & Forman 2022).

"Post-Gay": Reclaiming Queer Spaces through Adaptive Reuse
Adam Thibodeaux, University at Buffalo, SUNY

Submission will highlight an ongoing research initiative entitled “Post-Gay”, which focuses on the reclamation of buildings in the North American Rust-Belt that once served as queer gathering spaces but have since been abandoned or assumed other functions. The project expands on the idea of “Queer(ing) Space,” developed during a previous symposium organized by the author in 2023. “Queer(ing) Space” works under the premise that queer spaces are not created, but rather that spaces are put to queer use. It understands and activates “queer” as a verb rather than an adjective, prioritizing appropriation, deconstruction, and activism as primary methods of intervention. This project is entering its third phase of research through a graduate research studio in Milwaukee, Wisconsin, which seeks to expand on the collection of forgotten queer buildings and methods of reclaiming them established during the first two phases of research in Buffalo, New York. The submission will highlight a series of architectural case studies in both cities that once served as queer gathering spaces but have since been abandoned or assumed other functions, which were the subjects of three different graduate research studios across two different universities. The submission will expand on different methods of queer existence in space (passing, flagging, de-construction, re-construction, etc.) which were adapted into methods of adaptive reuse in service of the populations whose histories of shelter and resilience within the buildings have been overlooked or forgotten. To date, the project has been supported by an existing research center at one of the aforementioned universities, as well as through an academic fellowship at the same institution. It has been conducted with a number of community partners in both Buffalo and Milwaukee, including local LGBTQ History Projects, The Madeline Davis LGBTQ Archive of Western New York, and the PRIDE Center of Western New York.

Restoring the Mission of Guild House: Combining Community Partnership and Technical Analysis to Design for Social Benefit

Fleet Hower, Rensselaer Polytechnic Institute

Cities across upstate New York are facing a crisis of deteriorating, under-resourced building stock and challenges in providing basic services for recently arrived immigrants. In Albany, New York, the demolition of buildings has increasingly been used as a method of reducing what the city deems to be unsafe properties, leading to the destruction of culturally and architecturally important structures and causing the irretrievable loss of embodied carbon expenditures. Albany is experiencing an influx of migrants, many of whom arrived via New York City, and is struggling to provide them necessary services. Students approached these challenges through a process of community partnership and technical analysis to develop proposals for the revitalization of Guild House, a property owned by the non-profit Cathedral of All Saints that has been abandoned for over 40 years. Guild House was built in 1903 and served as a settlement house for newly arriving populations as well as a community center and cathedral support space. The building was shuttered because of high energy costs and is at risk of demolition due to its deteriorating condition. Students held regular meetings throughout the project with cathedral leadership and local community stakeholders to develop design proposals for Guild House and the cathedral campus. This adaptive reuse project seeks to enable Guild House to resume its mission of service, focused specifically on serving immigrant communities, while operating in a responsible and sustainable manner from the perspective of both embodied and operational energy. Students worked with professionals in Albany that provide support services, job training, and education to immigrant populations. This engagement had a direct impact on design decisions related to program, space planning, and facility scheduling. Material choices and architectural products were influenced by these conversations, including the incorporation of moveable partitions and programmatically flexible spaces that could be reconfigured as needed. Reducing operational monetary and carbon costs was key to ensuring Guild House will have the means to operate into the future. Students conducted analyses to identify campus locations suitable for solar energy generation and determined production capacity. A passive house specialist and structural engineer were consulted to strategize methods of achieving high energy efficiency while maintaining Guild House's existing exterior envelope. Proposals included both conditioned and semi-condition spaces to reduce overall energy requirements. Using Life Cycle Assessment (LCA) software, students created a dataset of embodied carbon totals for each major proposed material, sampling a range of possibilities where design variation was possible. These datasets formed the basis for a Machine Learning (ML) model that allowed students to quickly and efficiently test the embodied carbon implications of their material proposals. The model was linked to a web-based, interactive dashboard that enabled collaborative exploration with all stakeholders. This project provides a potential blueprint for community partnership while engaging professional expertise and contemporary technology for social benefit in a design studio. Such a model could provide valuable educational benefits to students interested in public interest design.

Society + Community: Design and Human Health

Friday, March 21, 2025
11:00am-12:30pm

Recreational Redress: Reconciling Trauma, Safety, and Joy at the Public Pool
Jade Yang & Trace Gainey, Kennesaw State University

On May 14, 2024, the American Centers for Disease Control released an alarming set of statistics as part of their series “Morbidity and Mortality Weekly Report”: unintentional drowning death rates have been on the rise since 2019, reversing a decades-long trend of decline. As part of the strategy to address such concerning data, the US National Water Safety Action Plan has outlined a list of pointed recommendations for the near future, such as building and revitalizing public pools across the country, and implementing water safety education programs that are culturally and socially-attuned to the complex, racialized history of these contested spaces As documented by artist Hannah Palmer and journalist Ann Hill Bond in their 2023 multimedia installation Ghost Pools and Troubled Waters, the past and present state of the public pool in the city of East Point, Georgia typifies the racialized barriers and inequities associated with access to public pools. Using their artistic project as an ethos and foundation, our research centers the experiences of the East Point community, a community of 38,000 majority-black residents who have been without a public pool for decades. Our work argues that design processes, when embedded in community experience and storytelling, can be transformative acts of dialogue and repair.

Mapping the Path to Recovery: Analyzing Temporary Housing Projects for Lahaina Fire Survivors

Yasushi Ishida, University of Hawai‘i at Mānoa
Akhil Singh, Tulane University

The 2023 Lahaina fire caused unprecedented devastation, displacing thousands and creating an urgent need for temporary housing solutions. A s of May 2024, most fire survivors are in temporary housing arrangements, renting units from hotels or existing housing stock on and off Maui, with subsidies from organizations like FEMA and the State of Hawaii. In January 2024, government and non-profit organizations launched the 'Maui Interim Housing Plan,' committing $500 million to secure 3,000 housing units with 18-month commitments. This effort involves multiple organizations, including the State of Hawai‘i, County of Maui, Hawai‘i Community Foundation (HCF), Council for Native Hawaiian Advancement (CNHA), Federal Emergency Management Agency (FEMA), and the American Red Cross (ARC). There are already several new construction projects at different development phases, funded by these organizations. Our research aims to provide a comprehensive overview of these ongoing housing projects designed to transition survivors from temporary immediate housing to interim and long-term housing. By compiling a detailed list and a map of these projects, including information on project location, scope, development status, funding sources, construction systems, manufacturers, contractors, architects, budgets, and intended project lifespan, it aims to clearly illustrate the distribution and progress of all the housing efforts. Data collection relied on existing public data, reports, and documentation, supplemented by site visits and informal conversations. The value of our research lies in providing a clear picture of the current housing recovery efforts and offering insights into the future challenges and opportunities in Lahaina's recovery.

This presentation has been removed.

D.E.P.O.T.: A Staging-Ground for Broken World Design
Amelyn Ng, Columbia University

D.E.P.O.T. / Gross Domestic Practices is a meditation on broken-world thinking. Exhibited in the Fall of 2023 at [gallery redacted] with interdisciplinary collaborators [Names redacted], this body of material-led research contemplates the role of the depot as a critical preparatory space for revaluing, repairing, and reusing construction waste. The exhibition borrows Stephen J. Jackson's concept of broken-world thinking as a starting point for design, and is part of a broader current in recent architectural exhibitions focusing on architecture's material surplus and back-of-house. This paper argues for the depot as a key site for architectural attention, articulates the project's research process and exhibition display logics, and introduces the term gross domestic practices (gdp). D.E.P.O.T. offers a way of working with uncertainty — a process rather than a product — and rehearses collaborative metabolic processes in a time of climate and resource contingency.

History, Theory, Criticism: Neglected Narratives

Friday, March 21, 2025
11:00am-12:30pm

Voices to Inception: A Short Documentary Film Process

Jori Erdman, James Madison University
Becky Beamer, OsloMet University

In this presentation we will be sharing our documentary short film, “Voices to Inception.” The film tells the story of a people-first, collaborative process towards making a center for racial justice and equity in Mississippi including the architecture firm and other collaborators involved in the design. Our film project explores the relationship of clients, users, and architects, revealing the complexities and possibilities of collaborative processes at the intersection of architectural practice and the people and places we serve. As filmmakers, we employed two tactics when making this film: witness and bricolage. As we came together from our distinct disciplines (architecture, film making, ethnographic studies), we also engaged in a collaborative to develop a strategy and approach to documentary film making this is particular and unique. To be a witness, one must have observed an event or experience and be able to communicate that experience, and the importance of the experience, back to an audience through a medium. Although in some sense, witnessing involves the passive activity of observing, the action of witnessing requires the witness to make a leap between seeing and then conveying what was seen to an unknowing audience. As architects, if we determine to be responsive to environment and humanity, we feel called upon to observe sites, people, and culture. In turn, those observations are filtered through professional judgement to create plans and buildings that in some way respect those observations in both form and process. The documentary filmmaker, Trinh T. Minh-ha has reflected on her approach to the people and cultures she works with as “speaking nearby” rather than speaking for. We adapted Levi-Strauss’s notions of the bricoleur and “wild thinking” to the process of making the film throughout the process, leading to a final cut that is outside of the “normal” documentary expectations. For example, the final film, “Voices to Inception” uses the technique of overlapping voices to capture a more authentic reflection of the collaborative process in the design project. The voices heard in the film allow an audience to better understand the place and people involved. The crafting of the film through bricolage, brings together all of the various professional skills of the authors as well as creating a wholly new way of examining an architectural process of design. In our paper and presentation we will explain our process and methodology for filmmaking and research as well as the subject of the film, the initiating process for the design of a Center for Racial Justice and Equity in Mississippi.

Practice Houses: Architectures of Care Work and Quiet Liberation in Home Economics

Samantha Schuermann, University of Wisconsin-Milwaukee

In 1919, two years after the highly influential Smith-Hughes Act was passed, the term “practice cottage” was used for the first time in the Third Annual Report of the Federal Board for Vocational Education (FBVE). The building was described as “fitted up as an average home…in which the vocational students carry on all of their work.” 1 The vocational students in question were enrolled in college pursuing undergraduate degrees in Home Economics, often fully female cohorts under the direction of fully female faculty—a true anomaly on American college campuses. This typology exploded in popularity in the following years, with the FBVE’s annual reports citing 23 practice houses on college campuses in 1920, 34 in 1921, and 51 in 1922.2 While nearly lost to history—very few still exist—this uniquely North American typology was an incredibly influential part of Home Economics education and the collective spatialization of domestic labor; students in their junior or senior year would live, learn, and work in the house for a period of 4 to 12 weeks, practicing their care-work skills in a kind of 1:1 laboratory, even raising local orphans in some cases. To receive funding under the Vocational Education Act, Home Ec programs required a certain number of instruction hours be “practical work,” necessitating the construction of single-family homes on college campuses across the US as sites for applied skills in reproductive labor.3 From a 21st century perspective, these programs are often seen antiquated and patriarchal, but they were truly revolutionary and radically feminist for the time. Home Economics established itself as a field of study in the late 1800s to professionalize domestic labor, uplift the value of women’s work in society, and utilize scientific techniques to free women from the burden of care and repair work, valuing efficiency and establishing a level of expertise.4 These programs were also one of the few arenas available for women to both receive and administer higher education. Notably, the practice house provided space for women to live in community and equitably share the demands of care work without the watchful eyes of men. They served as sites for young women to exist freely in community under the guise (and safety) of cosplaying a single-family structure while receiving a college degree. There are even well documented cases of home economics educators in committed, life-long female domestic partnerships, furthering the evidence that these programs and this architectural typology existed as a true refuge from the heteronormative, sexist expectations of women from the late 1800s to mid 1900s.5 The proposed paper positions the history of this typology and the domestic labor of HE students in conversation with the building in which they lived as a spatial production of gender. By analyzing practice houses, this paper will discuss cycles of domestic care while investigating the formal and spatial conditions of the idealized 20th century American household. Looking towards this messy, liberating yet stifling, architectural past might provide insights on possible futures of collectivity, communal living, familial organizations, and architectures of constant care.

Autonomous Aesthetics: The Impact of Neo-Constructivism on Kosovar Architecture

Edmond Drenogllava, University of Cincinnati

The socialist Yugoslavia, all of it, in its uniqueness and pettiness, is an intense global microhistory. The narratives emerging from Kosovar cities, consequently, can be included among the neglected narratives; whereas the stories of artists originating from Kosovo are among the undiscussed and unacknowledged accounts—constituting the marginal of the marginal. To map out a more expansive international and "intranational"[1] constructivist network of individuals, ideas, and coalitions, this study, therefore, analyzes the neo-constructivist mural called "The Waiter" (1961) displayed on the south-eastern elevation of the 1960s building, Hotel "Luboteni" (Fig.1.). This overlooked example, reveals the tension between the abstract, idealized art and the often practical, utilitarian architecture that mirrored the broader struggle within Yugoslav society to balance ideological purity with real-life constraints. In the deliberately nonpoliticized scene of Yugoslavia, the Kosovar artist of the mural, Shukri Krasniqi, a graduate of Zagreb's School of Industrial Design, led the country's first collaborative project that cross-pollinates ideas between art and architecture. In Yugoslavia as elsewhere, with the economic depression and the rise of propagandistic governments, the painting entered the domain of architecture and flourished. Leger, Duty, and Delaunay in Paris, and Pollock, Gorky, and de Kooning in New York covered 'architecture' with their art.[2] In the case of Hotel "Luboteni," the mural is conceived as tectonic and allows architecture not just to include the figurative but to become the figurative, hence dematerializing architecture.While bringing to the frontline the story of a previously unknown art piece of Krasniqi and his venture into autonomous aesthetics, the paper raises two important questions: what happens when representation becomes architecture, and how permeable was the Yugoslav cultural space in receiving neo-avant-gardist tendencies. This points to understanding how the translation from drawing to building has a particular character in the Kosovar neo-avant-garde practice. The research, then, endeavors to illuminate and redefine, one among many histories of a micro-country, the histories of a micro-nation, and that of a micro-society aiming towards the end of history (in inverted Fukuyama terms)—all this microhistory is therefore not small, it is not "micro" at all and is worth knowing for. [1] Referring to activities, issues, or policies that occur within the boundaries of a single nation and its domestic context. Although Yugoslavia was a multi-state federation, many of its policies were implemented intranationally within each republic, allowing for distinct regional dynamics to emerge while still operating under a unified federal framework. [2] This was done in and on various pavilions at the 1937 Paris Exposition Internationale and at the 1939 New York World's Fair. On the latter, see Barbara Cohen, Trylon and Perisphere, New York: Abrams 1989.

Regional Identity: Cultural Practices of Philippine Architecture
Florencio IV Tameta, Toronto Metropolitan University

The discourse on regionalism within global architectural culture often presents the two as opposing forces. Globalization is conventionally associated with commodifying land, homogenizing identities, and exoticizing vernacular forms, while regionalism emphasizes resisting external influences and reclaiming local identities and traditions. In the context of Philippine regionalism, it is commonly embodied by the bahay kubo and bahay na bato for their climatic and aesthetic qualities; however, an underlying characteristic is its hybridity. Shaped by centuries of cross-cultural exchanges, the evolution of Philippine architecture reflects a negotiation between vernacular, colonial, and modern influences. Building on Allen's performative regionalism, this research reinterprets Philippine architecture through the cultural practices of heritage, symbolism, and hybridization. It argues that contemporary Philippine architecture can achieve reparation and responsiveness through hybridity; a concept that acknowledges the adaptation of global forces with local traditions to create new identities and forms. By redefining regionalism as a dynamic, rather than static, entity, Filipino cultures and identities are repositioned as central influences in shaping contemporary Philippine architecture.

Pedagogy: Innovations in Pedagogy

Friday, March 21, 2025
11:00am-12:30pm

Towards a New Robotics Training Model: Improving Access and Representation for Minority Architecture Students

Eric Peterson & Shahin Vassigh, Florida International University
Biayna Bogosian, Arizona State University

Technological advancements in robotics and automation are poised to disrupt the Architecture, Engineering, and Construction (AEC) industry sector but robotics training within these fields has historically faced issues of high cost, limited accessibility, and narrow demographic representation. Architecture students are typically at a disadvantage compared to their peers in engineering disciplines due to a historic and ongoing lack of access to robotic tools and established training opportunities tailored to their educational needs. Women and minority students often face even greater obstacles to access due to the scarcity of robotics training options in a male-dominated field that tends to lack diversity. This paper examines how emerging artificial intelligence (AI) and immersive technologies can help to transform robotics education to be more equitable, adaptive, and scalable. It begins by outlining current limitations in traditional training methods, which rely on in-person workshops with proprietary systems. Next, it explores the educational affordances and ethical risks of incorporating AI for personalized learning. The paper then discusses how virtual reality (VR) and augmented reality (AR) can be employed to create more accessible and engaging robotics curricula, underscoring that these same advanced technologies may also introduce potential biases if training data is not sufficiently diverse. The paper describes ongoing initiatives by an interdisciplinary research team led by architecture faculty at a coalition of public majority-minority research universities to help improve access to training and representation in the field of robotics. It describes three projects funded by the National Science Foundation that leverage VR, AR, and AI to create a more inclusive robotics training tailored for learners from multicultural and minoritized backgrounds. These projects collect learner data and real-time performance metrics to support the design of adaptive learning systems that can enhance learning outcomes for a diverse pool of learners. The paper addresses the pressing imperative to re-envision existing technical training models by leveraging AI and immersive technologies to foster enhanced representation and improve access to robotics education.

AI in the Architectural History Course

Aaron White, Mississippi State University

Recent developments in the field of artificial intelligence, and especially the development of large language models such as ChatGPT, have raised concerns over the traditional curriculum of writing-intensive courses such as the typical architectural history survey. With tools like ChatGPT so readily able to produce text of a passable (and even more than passable) quality, and with our traditional plagiarism-detection tools relatively ineffective against these new tools, many have questioned the value of traditional writing assignments. In addition, the ever-increasing size of architectural history classes has made the development and assessment of student writing increasingly burdensome, often to the point of impossibility. This paper examines the current literature in the field of AI integration in higher education, weighing arguments that AI provides enhanced accessibility, interactive learning, and increased engagement against those who argue AI decreases student agency by removing those challenges and skills that elicit student growth. The paper surveys this field of emerging research as a background against which to present the author's own recent experiments with the integration of AI tools in one recent undergraduate architectural history survey conducted in an accredited school of architecture. AI integration is examined in three regards: 1) new forms of interaction and engagement, 2) new forms of assessment and feedback, and 3) new assignments and writing formats. Perhaps most importantly, the course used AI tools such as ChatGPT, Parlay, and Humy to experiment with writing formats that leveraged AI's ability to impersonate historical figures and dynamically correspond with students in something approaching a classical dialogue. Rather than passively receive information, or report on information gathered elsewhere, this "dialogue" format involved students in a process of co-creation wherein they supplied the AI with certain essential background texts and information, before engaging the resulting "intelligence" in a series of open-ended debates and discussions. The open-ended nature of these interactions meant students were able to tailor the assignment to their own interests, guiding the discussions in ways that fostered engagement and critical assessment. In the end, the paper examines successes and failures of AI integration in an effort to provide case studies and strategies that open up new possibilities in the arena history teaching and writing.

Pattern Frequency | Bold Departure: An Analysis of 40 Years of Design Pedagogy

Megan Jackson, University of Houston
Liane Hancock, University of New Mexico
Sarah Young, University of Louisiana – Lafayette

Using a natural language processing (NLP) approach through ChatGPT, this paper reviews archival texts from the National Conference on the Beginning Design Student (NCBDS) conference proceedings. The purpose of this examination is to study conference themes as beginning design pedagogy changed over time, examining how the themes effectively incorporate historic events, social change, technological advance, and the transition between high school and college pedagogy. A primary outcome of this research evaluates ChatGPT's strengths and weaknesses in the analysis of these archival materials. Keywords: Architectural education, pedagogy, content analysis, data mining, thematic trends, natural language processing, AI, machine learning, prediction mapping.

Memes, Mash-ups And Ai, Oh My: How To Build Our Students' Criticality Through Pop Culture … And Why We Must

Scott Shall & Stephen Mallory, Lawrence Technological University

In Experience and Education, John Dewey asks "[h]ow shall the young become acquainted with the past in such a way that the acquaintance is a potent agent in appreciation of the living present?" (1938, 181). When the "living present" is fraught, this question becomes particularly vexing, demanding that educators simultaneously help students to understand and appreciate what has come before while also critically engaging these positions. Only then will they, and the discipline they will help to reframe, begin to repair the damage done and enable us all to move forward. To thread this needle requires trading the institutionalized processes and practices of education - approaches that often create what Dewey describes as "inert minds" - and embrace, without prejudice, the students' pre-college lives (1910, p.29). This shift is especially important when teaching university-level coursework to first year students, whose learning has been colored by standardized testing scores and college entry requirements. These tendencies, gained and focused through prior schooling, family, and cultural experiences, create in the minds of the student a bias toward Friere's "banking model" of education and the largely transactional, passive learning patterns such models privilege (2000, 105–117). To counter this, faculty must enlist students in the critical examination of their embodied experiences and biases and empower them to create new definitions of design practice that are culturally alive and interdisciplinary. Stated otherwise: faculty must help students draw meaning from media, memes, and mash-ups in order to formulate a more rigorous, inclusive, and dynamic perspective of themselves, the environments which shaped them, and the world they will help to create. Fortunately, first-year students bring to the classroom a remarkable creative effervescence, an eagerness to establish their distinct design voice, and an ardent desire for cultural engagement that is rooted in flexible personal expression. These students' technological imagination, "a mindset that enables people to think with technology" (Balsamo, 2011), are primed. Although this excitement for creation and design has been in tension with the regimented, banking model of educational practice they have previously experienced - and all too often experience within the university as well - it is perfectly attuned to the goals of design education. Thus, transitioning from the regimented pattern of the students' given experience to an active one, becomes a simple matter of faculty fearlessly engaging social media, memes, streaming, AI-based technologies and other creative expressions of their students' experience so that they might meaningfully address the past, critically examine the present, and help to set new directions. Pulling from the perspectives of thinkers like Dewey, Schon, and Freire, this paper will critically examine one such experiment to this end. Specifically, this paper will analyze how a new model of education, rooted in memes, mash-ups, AI and other markers of the students' pre-college lives helped to redefine a first-year, large-scale, active-learning lecture course. From this analysis, this paper will test these ideas in order to establish new, useful strategies through which all educators might thoughtfully engage their student's pre-college lives, and encourage their pupils to do likewise.

Ecology: Ecology, Repair and Resilience

Friday, March 21, 2025
11:00am-12:30pm

Aberrant Ecologies: Approaching Urban Inequalities Between Nature and Architecture

MiguelGuitart, University at Buffalo, SUNY

Nature has always been present in urban environments. There have always been attempts to consolidate some presence of nature within the built landscape of cities' infrastructures in the form of gardens, parks, street trees, and planters. However, the coexistence between nature and architecture is never evident or easy in the contemporary city. The urban context leaves few opportunities for nature to grow and evolve in its own terms, due to lack of vision, investment, and sensibility. As a result, the growth of cities continues to alienate citizens from nature, producing structural inequalities in the environment. In today's cities architecture and nature grow estranged from one another. Conversely, natural growth pushes back against the artificial city. Nature emerges through cracks and crevices, offering alternative forms of growth that contribute to its presence in ways that we could contemplate as aberrant ecologies. Nowhere is this as visible as in gray infrastructures: parking lots, utility corridors, strip centers, and asphalt patches. These spontaneous growths pose true opportunities for nature to reaffirm its presence in cities' hard environments beyond curation. The environmental value of unwanted growths conditions the ecological narratives of coexistence between the natural and the artificial dimensions of the city. Considering the alternative value posed by such 'aberrant' ecologies, designers need to ask how do we approach the design of our environments such that the value of unwanted ecologies becomes apparent and desirable? The fringe condition of such natural presences in the city can be reexamined as opportunities for nature to participate actively within the city at unconventional scales and non-traditional formats to offer subsequent environmental benefits. Guided by research questions on post-urban fertility and the potential negotiations between technical and living systems in today's environmentally at-risk world, this study addresses the exchanging ecologies between 'the natural' and 'the artificial' in ways that interrogate non-canonical operations that aim to rebalance their ecological relationship. Under the intellectual framework of Bruno Latour, Patrick Geddes, William Cronon, Arturo Escobar, and Donna Haraway's studies, the study speculates about nature's fringe opportunities emerging in alternative formats that contribute to the roles of natural environments in ways that are uncurated, uncontrolled, or unexpected. The work reacts to urban inequalities between nature and architecture and proposes the revision of the city's discriminatory displacements of nature and attempt to enhance the coexistence of the two rather than the imposition of one over the other. This attempt to move away from coercitive scenarios into inclusive environments recognizes the relationships between the 'built' and the 'natural' as a complex web of interacting parts with constantly exchanging environmental resources. Through speculative observations and representation exercises aligned with the work of Laura Pappalardo and Seth Denizen, the study interprets alternative growths that contribute to new processes of sensibilization. The resulting discussion promotes inclusive attitudes and strategies of visibility and acceptance in unconventional formats. The study advances that the reconsideration of uncurated forms of nature in cities could parallel forms of social integration, possibly resulting in more inclusive social environments under a paradoxical natural-social equation.

Intertidal Objects: Interrogating The Object In Its Territories

Marcus Carter, Rensselaer Polytechnic Institute

This project investigates how we can repair and fortify shorelines against erosion and storm surge while creating environments hospitable to flora and fauna. Much of our urban coastline exists as vertical sea walls or “riprap,” large stones used to armor the coast against erosion and wave action. “Intertidal Objects” aim to promote living shorelines with ecological installations that cultivate native species while providing erosion protection of the shoreline. Starting as independent research within my practice, this extended into a unique design prompt for my architecture students working to develop and fabricate ecological prototypes for the shoreline in New York City. From a pedagogical standpoint, this study weaves together form-making, material science, fabrication technology, urban waterfronts, and ecology. Students studied what happens within the ecosystem of intertidal waters, using New York Harbor as a site for intervention. Looking at intertidal zones, shoreline area exposed at low tide and submerged at high tide, we established as key design criteria: ballast, porosity, surface texture, and an ability to interlock with existing rocks or other fabricated units. Understanding what used to grow there and what could grow there, we designed, fabricated, and installed three-dimensional concrete objects to fit into existing shoreline riprap, meeting the performance criteria of ecological coastal armoring units. When placed in intertidal waters, these units can create micro-environments for aquatic creatures and algae. The geometric shapes yield miniature tidal pools and promote plant growth through voids and surface articulations. The objects had to perform yet have visual interest as they would be visible along the shoreline. The aims of this study involved a.) creating prototype ecological interventions along urban shorelines that imagined aggregation with a larger ecological impact; b.) executing a material study of concrete that utilized rapid prototyping for design and fabrication of complex forms, moving from digital to material realms; c.) cultivating a design-build pedagogy enabling students to take a hands-on approach that encouraged accountability, embracing constraints, and understanding scale; and d.) testing efficacy of formal intelligence across scales and contexts. In the first iteration, students designed armoring units, for which they fabricated forms using traditional shop equipment coupled with CNC milling. The objects were cast on campus adjacent to the architecture building with concrete delivered by truck. In the second studio, students designed armoring units and articulated sea wall panels. We collaborated with a precast concrete industry partner that fabricated the forms for the armoring units while the students made the sea wall panel forms in the architecture shop. With a precast partner, we witnessed higher quality control of the concrete. Alongside fabrication, students tested the efficacy of their forms at different scales and settings. Could the object operate as sculpture, enlarged and of different materiality? Could it dislocate further at the scale of a building within an urban environment? During the reviews, some projects operated well at all scales and settings while others worked better in one or the other. The critics did not see the latter as evidence of failure but as lessons in formal exploration.

Riprap Ram Jam
Jonathan Scelsa & Kyriaki Goti, Pratt Institute

A significant question posed for our urban shorelines is how we might repair the biodiversity and lost ecologies in our edge conditions while simultaneously seeding resilient edges capable of holding back the forces of rising water in urban developments. As an urban case study our research studio examined The Gowanus Canal, a post-industrial canal in Brooklyn, NY which experienced dramatic ecological alterations during the Anthropocene. Throughout the 19th century, the agricultural creek of the Gowanus Bat once laden with bi-valves and other brackish wildlife, was dredged, channelized, and lined with industrial buildings for shuttling goods and services between the growing urban municipality and greater port system. Contemporary cleanup efforts for this shoreline edge are predicated on the introduction of vertical steel piles which unlike riprap or other masonry-based shoreline reconfigurations, further neuter the possibility of biodiversity and life of the economic condition through their flattened removal of joinery and rustication. This research studio, Riprap Ram Jam, investigated the use of robotically formed, concrete stabilized rammed earth masonry towards a semi porous reconstruction of the urban edge conditions. The studio took the fundamental position, by its choice of rammed earth blocks, that the 'uniform static sustainable edge' is a problematic aspiration of the late Anthropocene that privileges sustainability of the urban edge and monetary waterfront investments over larger bio-diversity. By contrast, the digital stereotomic process investigated within the studio repositioned masonry as a constructed edge ideology that has the benefits of endemic rusticated edges and porosity for the space of wildlife while one that inherently decays and changes over time bringing ecological succession into the construction and formation of our urban edges. Each research team was assigned a specific fauna native to the 19th century watershed, inclusive of waterfowl bivalves, malacostracans, and amphibians. This first project of the semester was structured devoid of specific geometric or situational context and without a human oriented program, to first embed the architects in the contextual matter of the non-human perspective and laminate that to tectonics and construction. At this juncture students were also encouraged to experiment with different types and quantities of binders as well as additives for color and other biomatters that could allow the aggregate to decay at varying lengths of time. In the second part of the semester, students were asked to develop their stereotomic based system towards the design of a field station for observational research of their specified animal life with public spaces for education of the canal's ecology. Researchers were asked to consider show the material systems of the buildings may selectively deteriorate over time suggesting that the maintenance and weathering of the materials may be part of their ecological tectonic narrative. These projects develop construction techniques not for human oriented programs and aesthetics but for temporal processes embedded in a place-based ecology. They suggest that a new form of critical architectural aesthetic can be born simply regional based environment concerns but rather based on a specific momentary based temporal ecological process.

Y3K: On Distant Keys

Sandy Litchfield, University of Massachusetts Amherst

As governments around the world begin to consider the “Rights of Nature,”2 the next generation of architects and designers yearn for narratives—both new and old—that animate nature and highlight our relationality. This paper outlines a multi-year transdisciplinary research project, called On Distant Keys (ODK). For over three years, this growing collective of architects, designers, artists, writers, scientists, and activists has collaborated to generate two highly interactive exhibitions that boldly speculate about futures where places are recognized as sentient beings. This paper will survey the richly populated events and curatorial designs that went into the ODK exhibitions and present the poetic stories it revealed. The first exhibit was called The Futuring Lab. Thematically grounded in notions of time, it hosted an array of events that raised consciousness about indigenous futurism, Afro-retrofuturism, carbon literacy, climate grief, and environmental humanities. It also featured a large interactive timeline-mural where visitors posted personal and political events, historic and speculative, known and unknown. Pushing against the sequential and linear flow of past-present-future, it un-mapped the dominant capitalist and colonial narratives of time, asking participants to go beyond end-of-world narratives to consider alternative economies, ecologies, and cultures of collective emancipation. The second exhibition, titled Y3K: On Distant Keys, explored the spatial possibilities for place-based consciousness in the year 3000. How does one define and recognize the sentience of place? 3 What forms of communication are possible between human and non-human makers?4 And how can one extend the notion of civility, to include the wildly feral and earthly bodies of our terrestrial world.5 With a lively new materialist perspective,6 this curated selection of art, artifacts, maps, music, videos, and text, offered interpretations of eight distinct landforms– harbor, river, forest, mountain, trail, orchard, academy, and field. Objects and artifacts were arranged to emphasize the inseparability of human and non-human making. The lexical groupings cultivated a language of things; one that communicates a deeper and broader understanding of sentience, representation, and responsibility.

Society + Community: Design for Spatial Justice: Process

Saturday, March 22, 2025
9:00am-10:30am

Architecture and the Underground Railroad: Untangling Ingenuity from Infrastructure

Karen Lewis, The Ohio State University

Five small signs commemorating the Underground Railroad trace the Neil Run swale through the University's campus. Intending to document the imagined route that guided Black men and women seeking freedom from slavery, the signage begins at the River, one of the state's central waterways. The first sign's placement indicates that those seeking liberation moved north along the River until arriving at the now-culverted Neil Run. The second sign, located between two towering Sycamore trees, suggests that the trees acted as a gateway, verifying the route towards safety. As the third and fourth signs narrate, the stream leads freedom seekers across the boggy lowlands of the Neil Family Farm, passing by structures, orchards, and fields until arriving at a house sited above the Iuka Ravine. And it was there, at the house, enshrouded in thick vegetation and sitting above the branching stream, the Neil Family Homestead welcomed those traveling the "Freedom Train." The house absorbed freedom seekers, concealing their presence in hidden walls and secret passages until successfully delivering them to the shores of Lake Erie and onto freedom in Canada. It's a nice story. Unfortunately, however, it is also a story that is entirely false. The Neil House stands today at the corner of two streets, occupied by the Kappa Sigma Fraternity. Initially constructed in 1856, the "Home on the Hill" is cloaked in many different identities, styles, and architectural renovations. "The house's history is muddled, but speculations have been made…. it was said to be used as an Underground Railroad station by use of hidden tunnels in the house." The house's reputation as an underground railroad station is given further credence by a pallet of mysterious poché throughout the house: "secret panels," "non-architectural walls," "tunnels," "hidden rooms," and "secret passages" are described across decades of sources. One of the strangest and most confident speculations asserting the house was a station is the claim that a tunnel extends from the River to the Neil House. Yet, despite the allegations and legends, no one has found material evidence that a tunnel leads to the River. This paper will present the forensic and archival research of the house architecture, campus infrastructure, and public imagination of the Underground Railroad. Together with partners from history, library archives, university facilities, and technology services, the paper presents how the team collaborated across tools, technologies, and time to develop a visual investigation of the house and campus. Through digital and physical models, animated maps, and drone imagery, the house's history, campus, and its relationship to the Underground Railroad illuminate the complex narratives we build around abolitionism and enslavement and position architecture as a critical witness to the misunderstandings embedded within the public imagination.

Endangered African American Burial Grounds of the Lower Mississippi: Acts of Reparation and Preservation

Annicia Streete & Brendan Harmon, Louisiana State University
Nicholas Serrano, University of Florida

African American cemeteries and burial grounds are an invaluable part of the historical geography of the Louisiana River Parishes. Originally built peripheral to plantations along the Mississippi River, today these sites occupy remnant parcels of isolated land surrounded by hazardous petrochemical production facilities famous for limiting public access. Climate change, industrial development, precarious land-tenure records, and a dwindling population of descendants continually threaten these cultural landscapes. Working with local communities, this project prototypes a process for digitally scanning and creating enriched point cloud models of these sites through an immersive virtual platform. African American burial grounds are material traces of history between black populations and the landscape that reflect an oppositional geography which, as Katherine McKittrick described, “make visible social lives which are often displaced, rendered ungeographic.” They exemplify what Édouard Glissant described as a “poetics of landscape” whereby narrative acts of the individual, community, and land create history. It is a history that is currently threatened in the Louisiana River Parishes, and allowing these sites to succumb to time and land development would perpetuate the centuries-long process of social concealment and dehumanization of black subjectivity in America. These cultural landscapes defy traditional documentation methods in preservation practice. Their rich history and spatial spirituality juxtaposed against their current state of disrepair seemingly counters “geography’s discursive attachment to stasis and physicality.” We propose that immersive point clouds enriched with oral histories, archival documents, and ambisonic soundscapes have the potential to combine the physicality and narrative memory of landscape into what Neil Smith and Cindi Katz described as an “imbrication of material and metaphorical space.” This paper will present our efforts working with descendant communities to create immersive virtual platforms as both a documentary and an expressive act, a process of self-assertion and humanization, and to partially preserve traces of their history.

Sensorial Making as a Bridge for Mutual Learning Between Computational Designers and Disability Communities

Yi-Chin Lee & Sean Ahlquist, University of Michigan

This paper argues that computational design must develop new methodologies in order to actively involve individuals typically excluded from the design process, in particular where forms of architecture are biased against different bodies and minds. In collaboration with communities defining themselves as disabled and neurodivergent, we explore how new modes of material exploration and communication can support these individuals in navigating and interacting with the built environment on their own terms. We apply machine knitting to produce material studies in this research. We investigate how computational designers can leverage the flexibility and cultural relevance of machine knitting, a highly technical form of textile manufacturing, to design tactile experiences in everyday life. Our research methods applied art-making workshops that included plaster body casting, mixed material collage, and creative mind mapping to examine participants' preferences of tactility and help reveal their different perspectives. In a community-engaged research process, we gathered qualitative data highlighting how the participants' insights can inform design outcomes and critical reflection. Key findings reveal that passive stimulation from knitted materials can create a new personal space that helps to filter out problematic external distractions. Furthermore, understanding disability—whether through medical or social lenses—varies significantly by individual and is dependent on the context. Thus, computational design should also not fixate on looking for generalized problems to solve when engaging with disability communities, rather seek to access the creativity and individuality inherent in divergent perspectives and voices. Finally, building familiarity and a shared language among participants, often referred to as capacity-building, emerged as essential for fostering mutual understanding throughout the research process. Through the lenses of Community-Based Participatory Research from the field of Social Work and Disability Studies, an interdisciplinary field that emerged to response to traditional, medical-focused approaches to disability, this paper presents a socially oriented perspective on accessibility design, highlighting the urgency of including disability communities to expand the definition and design possibilities of the built environment. This paper demonstrates the critical need to integrate disability communities in the design process, pushing the boundaries of current architectural practice to support unique sensory needs in the built environment.

Just Circular Communities: Mapping Circular City Networks to Foster Their Impact and Implementation

Gundula Proksch, Christoph Strouse & Catherine De Almeida, University of Washington

Circular economy and circular city organizations and frameworks have gotten much attention and created awareness about transforming our economy and cities from linear extractive to circular and regenerative. Declarations and pledges at the metropolitan city scale, targeting policies and supported by prominent backers, still need to generate tangible pathways to adaptation to these critical transformations. The Just Circular Communities Collaborative (JC3) takes the opposite approach and attempts a neighborhood-scale, bottom-up implementation of circular strategies. The project aims to co-develop community-envisioned and managed infrastructure systems as circular economy cooperatives that reuse resources, regenerate ecosystems, prevent systemic displacement and economic stagnation, and build resilience in frontline neighborhoods. The transdisciplinary team, comprised of community partners, faculty, and students, received seed funding from two competitive university grants for framework co-development and capacity building to solidify existing partnerships and build a broad coalition of community and municipal stakeholders. JC3 aims to create a network of partners supporting a regenerative economy while developing an innovative architecture and built environment pedagogy to involve students directly in community-engaged projects, prioritizing frontline communities as part of a Just Transition. This paper introduces JC3's approach and activities related to an interdisciplinary built environment studio, community engagement, and co-creating a framework for community project development. The strong culture of community activism and support in the two Seattle neighborhoods, Georgetown and South Park, at the core of this project, well-attended community workshops, and the positive reception of the work produced by students indicate significant interest in a community-driven circular and regenerative economy. The university-affiliated partners are excited to support and co-create this innovative transformation with community partners and potentially witness an effective implementation strategy for circular city principles.

Design: Material Practices: Reuse

Saturday, March 22, 2025
9:00am-10:30am

Neonomads At Sea: Designing And Building A Mobile Studio To Understand The Impact Of Shipping On The Environment

Patrick Rhodes & Tania Ursomarzo, American University of Sharjah

This paper presents a multi-phase project to convert a used shipping container into a mobile design studio to investigate a broken global shipping industry and to breathe life into a waning design build program. Although it can be argued that modern shipping has improved the quality of everyday life for the average person, the cumulative number of ways that the ships alone adversely affect the environment is staggering and has devastating long term consequences. From grey, bilge, and ballast water and other kinds of liquid pollutants like industrial cleaning solutions and sewage, to solid waste, refrigerants, antifouling paints often containing chemical compounds like chromium, to the global mesh of destructive noise and the ocean-wide conveyer belt for stowaway invasive species, a single ship can do a tremendous amount of damage to marine ecosystems, wildlife, and the fishing industry in an average thirty-year lifecycle. Shipping industry infrastructure including ports, canals, and building and scrap yards are even more destructive and, in many cases, for much longer periods of time. Although estimates range, there are currently upwards of eleven million shipping containers unused and sitting stagnant worldwide. In the spring of 2023, students acquired a used shipping container and began implementing the first stages of their designs to convert the container into an off-the-grid mobile design studio classroom. The first two phases focused on drying in the envelope with window and door systems and fabricating a demountable framework to house exterior expanded cork insulation and a solar array. The final phase, slated for the spring of 2025, will focus on electrical systems and the interior. During the courses, students will establish research agendas focusing on links between the shipping industry and climate change, cultural globalization, and the economy while concentrating on the transformative effects it has on coastal communities and the environment. The project is the latest in a decade-long series for a once highly successful design-build program that has seen recent decline in interest and activity. Phased over several semesters to slow down, to achieve more depth in each aspect of the design and fabrication process, and to take advantage of multiple funding cycles, the project was designed to engage more students who pass the work down from one cohort to the next, increasing buy-in from students and the administration over time. Although overlapping somewhat, construction phases are distinct enough so that each batch can both design and build. The interconnected process encourages altruism as students, who may not see the project entirely from beginning to end, are dedicated to ensuring its ultimate success. The paper includes a historical and contemporary analysis of the core issues, an assessment of the first two stages conducted in spring and fall of 2023 and makes a case for the value of design-build and architectural design research to examine the most critical issues currently facing society and the environment.

Remaking Granger: Leveraging Adaptive Re-Use for All in Garland, Texas
Amy Leveno, University of Oklahoma

The physical act of repairing and reconstructing is the most challenging phase of an adaptive reuse project. While a beautiful set of renderings and a comprehensive set of drawings are critical for getting clients and stakeholders to support a project, they are no match for the idiosyncrasies of older construction. An existing building's secrets truly emerge only when you start the deconstruction process, and they can quickly undermine a proposed design. An architect must be open to rethinking designs on the fly and comfortable with construction anomalies. The adaptive reuse of the Granger Annex highlights both the necessity and complexity of renovating older buildings for modern functionality. The 4,500 square foot Granger Annex is operated by the City of Garland, Texas, and is intended to be used by any member of the community. Garland has a population of 240,000 and is located directly east of Dallas. As of the 2020 census, the community comprises approximately 50% minorities, and the median household income level is $65,000, with about 13% of the community below the poverty line. Garland residents have access to private sector venues, but many in the community are unable to afford these event spaces. To fill this gap, the City proposed adapting its existing Granger Annex as an inexpensive, rentable, and multi-use space to allow anyone in the community to host an indoor gathering. The Annex is located within a public park, next to a recreation center, and directly adjacent to a single-family neighborhood providing accessibility via walking, biking, public transit, and driving. This re-use project supports a variety of activities, including summer camps, group fitness classes, educational and vocational training sessions, as well as voting. It can also be used for more formal events, such as family reunions and weddings. The adaptive re-use design is durable and straightforward, fresh and contemporary. It focuses on maintaining the building's 1940s post-war character, while carefully removing what was damaged or dated to reveal the hidden qualities of its robust structure. As a result, the steel bow trusses, concealed for decades above a drop ceiling in the main space, are now exposed to create a vaulted interior. The support spaces have been reconfigured and existing punched openings are reglazed with operable windows. A new patio extends around the sides and back, covered by a wood and steel shade structure. The exterior zone creates a dynamic connection to the adjacent bike path and greenery in order to encourage effortless flow into the park. Along with strategically placed planters and trees, the patio provides seating and cover from Texas's elements. This submission explores the project from three points of view. First, it explains the project goals, existing building assessment, and design process undertaken to determine the preferred approach. Second, it reveals challenges of the demolition and construction phases, including making nimble design changes and lessons learned in the field. It concludes with an example of how the project has been used as a teaching tool in upper-level design studios at the University of Oklahoma.

Expressing Energy Transitions: Transforming Existing Buildings and Perceptions
Ralph Nelson, Lawrence Technological University

This design project is based on a premise that the majority of existing buildings in the United States will transition to electrified operational energy by 2050, a significant number will produce their own energy utilizing integrated photovoltaic systems, and the systems will have significant architectural implications and design opportunities. The premise is grounded in conclusions of two recent and widely respected energy research studies. The first, conducted at Stanford University, defines a roadmap for 100% renewable energy in the United States by 2050, including 25.5% of energy provided by on-site photovoltaics.1 The second, produced by the National Renewable Energy Laboratory, defines the technical potential of rooftop solar photovoltaics in 128 cities representing 23% of existing buildings in the United States2, translating to more than 2.1 million medium and large non-residential buildings. This project presents examples of six building and site-integrated photovoltaic arrays designed for existing buildings, each of which meets specific criteria for technical and experiential performance. The selected buildings include a grocery store, a gas station convenience store, a high school, a regional museum, a mosque, and a historic public library. The selection includes use-types common to most mid-sized US cities with historic high annual energy use intensity, based on data from the US Department of Energy3. The six examples represent design strategies and performance outcomes that could be malleable and transferrable to several million existing buildings throughout the United States, adjusted for each climate and context. The technical performance criteria include integrated photovoltaic array design to exceed the annual energy use of each building by 130% in the first year of service, and 100% in the thirtieth year, to maximize system life-span. Each array utilizes high-efficacy photovoltaic modules manufactured in the United States, configured and optimized for energy production in the context of existing site and building configurations, tilt angle, and azimuth orientation verified through analysis.4 The designed photovoltaic arrays are very large, with significant experiential impact. The experiential performance criteria include a design for each system to create new transitional exterior space and form, create dynamic shadow effects, transform interior light effects, and complement the existing character of building architecture and sites. This is primarily accomplished by utilizing a range of structural support morphologies with elegant proportion and configuration, strategically integrated with the existing building structural systems and form, to support the large photovoltaic arrays. The broad goal of the design project is to seek new energy expression in architecture with current photovoltaic technology, the harvesting of solar energy, and the advent of mass-electrification of buildings. This can be considered analogous to the period in the United States from 1776 to 1876 when most buildings burned wood for energy5, and buildings expressed energy architecturally through prominent and integrated fireplaces and chimneys. The project frames some simple questions. Will architects once again embrace the architectural expression of energy in building design? Would society be more aware of energy use and production, and embrace a full transition to renewable energy, if buildings expressed energy architecturally?

San Diego, Texas: Radical acts of Architecture in the Hinterland
Kyriakos Kyriakou, University of Texas at Austin

Positioned at the edge of the Eagle-Ford Shale, an oil extraction field that peaked in the mid-2010s, San Diego, TX, a predominantly Hispanic town of 3,700, exemplifies what Neil Brenner calls "capitalist urbanization," the exploitation, colonization, and organization of the countryside to serve large urban centers. Recent literature has attempted to shift the outlook from the metropolis toward the hinterland, aiming to highlight environmental damage. However, even with this change in perspective, the metropolis remains central, with the countryside as its avatar. What about the smaller urban fragments scattered within the countryside and their communities, which both support and are supported by large-scale extractive projects? What can we learn from these towns that were created with ambitions to grow but never fully realized them? When natural resources are exhausted, the town is left in shock. San Diego is currently in a crisis of identity, as a local resident noted, lacking a narrative that unites its population. Indeed, wandering through its streets, one does not find a comprehensive motto or nickname, as is common for towns of its scale. However, San Diego maintains an impressive architectural heritage. The town showcases three distinct eras of growth: the monolithic mid-19th-century stone buildings (casas de sillar) scattered in and around town, the iconic early 20th-century commercial buildings downtown, and the contemporary commercial vernacular along the main traffic arteries. In response to the conference's theme on repair, and specifically the notion of “appreciation for the value inherent in what exists,” this paper discusses the state of life within a declining built environment. Many of San Diego’s historic buildings, despite suffering from a significant lack of maintenance, continue to function, existing in that middle ground between ruin and active use. The Hoffman Block and Levy Building, both designed to host banks in the 1900s, have undergone bold transformations, finding new, less ambitious lives through the decades and continuing to function. I present a comprehensive analysis of these buildings and other sites, unveiling instinctive yet radical acts of architecture produced through modest attempts at survival in precarious times. The paper presents San Diego as a case study for the effects of the commercialization of life in the countryside, which leaves towns in a state of uncertainty and confusion. It explores how the phenomena of sprawl are taking over the city and changing its DNA even at this miniature scale, affecting the ties within the local community. At the same time, it highlights the power of architecture, seeing in San Diego’s surviving architectural marvels an archipelago of hope and potential, and an unpretentious architectural creativity responding to pure necessity. Lastly, it attempts to slow down and carefully observe reality as it is, suspending judgment, reflecting on the conditions that led us here before attempting to think of the future.

History, Theory, Criticism: Shifting Paradigms

Saturday, March 22, 2025
9:00am-10:30am

This presentation has been removed.

Where Water, Land and Air Meet: Elemental Edges and the New Chinese City
Victoria Nguyen, Amherst College

This paper investigates the lived and imagined effects of urbanization without limits at precisely the moment when amplifying visions of ecological precarity are dominating debates in the earth sciences. In the context of China's unprecedented mass urbanization program, it interrogates the logics of the country's recent Sponge City initiative, a new urban water management program that mobilizes permeable pavement to transform environmental calamity and linear processes of waste into closed loops of sustainable regeneration. Yet, as extended ethnographic fieldwork evidences, the project also exceeds the imagined territories of groundwater management as it disarticulates the boundaries between air, water, land, and life in the city. Taking permeability as both the subject and object of analysis, the paper explores how Chinese architects and urban planners today have increasingly come to view city building as a total environment encompassing the aerial, terrestrial and subterranean. Drawing on anthropology, STS, and environmental philosophy, I suggest that, as sponge cities both urbanize nature and naturalize urbanization, they are also challenging traditional notions of the discrete elements of matter. Ultimately, tracing the vital entanglements between water, earth and atmosphere in Chinese urban design, I ask what it might mean to view these forces as collaborators rather than distinct agencies.

From Ivrea to Massa: The Rise and Fall of Olivetti Company Towns
Shirley Dongwei Chen, Texas A&M University

Olivetti is a major force in 20th-century social reform, design culture, and urban planning with long lasting impacts. Incorporating manufacturing plants, social services, and housing into comprehensive campuses, the Olivetti company towns hold important pedagogical value for today's design education.This paper examines Olivetti's attempts to achieve social, cultural, and spatial reform through the design and planning of its company towns, Ivrea and Massa. These towns were part of Adriano Olivetti's Comunità vision, which sought to integrate manufacturing facilities with social services, housing, and recreational spaces to promote worker well-being. While the Olivetti model succeeded in providing employees with access to healthcare, education, and leisure—often remembered fondly by former workers—its ambitious social reforms were constrained by the capitalist structures it operated within. Critics like Reyner Banham and Umberto Eco highlight the contradictions within Olivetti's approach. Mechanization and the parcelization of work, designed to optimize productivity, ultimately led to increased worker alienation—an issue prevalent across post-war Italy's industrial landscape. By analyzing the successes and failures of Ivrea and Massa, the paper explores how Olivetti's social and architectural legacies inform current discussions around labor, urban planning, and social welfare. In doing so, the study contributes to contemporary conversations and future studies on Architectures as sites of social reform.

Women in Southern European Architecture Syllabi: Contributions Toward Fostering Gender Inclusion

Leonor Silva & Ana Vaz Milheiro, University Institute of Lisbon

The history of architecture has shown that architectural education mirrors trends within the profession. Today, while the presence of women in teaching and science is widely studied, their representation in the syllabi of major graduate architecture courses has received little attention. This paper seeks to address the prevalence of women´s references in the architecture schools of five Southern European countries Recently, the first author highlighted a significant discrepancy in Portugal between the attention given to the biographies of women architects—through exhibitions, publications, and colloquia on their lives—and the recognition of their intellectual contributions, such as their inclusion as key authors and thinkers in architectural course syllabi. This study starts by striving to find women historians and critics in Greece, Italy, Portugal, Serbia, and Spain. These countries, characterised by their warmer climates, have architecture schools that the authors have visited, where male architects and their work often overshadow those of women. The long-term objective is to identify which women overcame this imbalance to become leading figures in the history and theory of architecture, fields that are predominantly shaped by bibliographical references, and to draw attention to notable absences. This communication will explore the distinction between women's practical achievements (e.g., their buildings, exhibitions, and professional accomplishments) and their scholarship (e.g., writings, theories, and critiques). It will display analytical tables to show the representation of women in architecture syllabi across Southern Europe. The findings, discussed and summarised, may contribute to a potential revision of the curricula in the schools examined, and others alike.

Hector Guimard's Visions of Eternal Peace
Etien Santiago, New Jersey Institute of Technology

World War I forced many European architects to temporarily shutter their practices and take up alternate activities. One such architect was Hector Guimard, a French leader of Art Nouveau. In the absence of commissions, he spent the war years vigorously advocating for a world government, which he called the "Peace-State," to prevent armed conflicts between member countries. Guimard thus contributed to the groundswell of transatlantic conversations that paved the way for the 1920 inauguration of the League of Nations, antecedent to the United Nations. Publications about Guimard have consistently mentioned this activism only in passing (Vigne 2003, 345-46; Hanks 2021, 5). This is because, at first glance, it does not appear to be directly relevant to his career as a creative. Yet I will argue that Guimard's wartime work on international politics was highly pertinent to his subsequent design work. Unfolding the ideal geopolitical order that he defended can help us better understand his evolving approach to architectural design. This paper traces how the standardized housing systems that Guimard devised from 1920 to 1921 translated his ideas for a Peace-State into architecture. In their writings, Georges Vigne, Philippe Thiébaut, and Barry Bergdoll have already studied these systems for mass-produced houses (Vigne 2003, 348; Thiébaut 1992, 88-90; Bergdoll 2021, 164-75). The paper complements their insights with new observations about Guimard's system to tease out underlying resonances between it and his vision for a world government. Both hinged on the premise that a productive peacetime could only emerge from embracing—rather than rejecting—the disruptive byproducts of the 1914 Great War. Beyond advancing a new interpretation of this late stage in Guimard's career, this paper will also make a broader contribution. It will build on recent scholarship, notably by Eeva-Liisa Pelkonen and Esra Akcan, to demonstrate the opportunities of reading architectural designs in relation to contemporaneous geopolitical discussions (Peklonen 2009; Akcan 2012).

Pedagogy: Representation and Memory

Saturday, March 22, 2025
9:00am-10:30am

Representing Renovation/ Reuse/ Time

Ryan Roark, Illinois Institute of Technology

While renovations and interventions into existing buildings represent a large percentage of work within the architecture profession, pedagogy has until recently shied away from intervention projects, both because of the perception of “preservation” as something that is set opposite design—and because the task of representing a building that already exists at full scale and full resolution is a complicated problem in itself, before even starting on the new design. Today more and more schools offer studios addressing adaptive reuse, but the problem of representation remains. There are industry standards or defaults for showing renovations—for example, drawing “existing” in black and additions in red—yet while these conventions offer clarity, they often glaze over the multiplicity of the existing and traces of history remaining or revealed by renovation. This paper explores a seminar course called “Representing Renovation/ Reuse/ Time” in which students develop new ways of showing the relationship between past and present. Representing a building which explicitly has multiple phases and multiple histories is fundamentally an exercise in representing time—a challenge relevant to any type of project. After all, no site is truly empty or without history. In the course, students work in small groups and focus on a specific 21st-century adaptive reuse project which includes significant amounts of new design. The students analyze the approach taken by the most recent architects and develop a representational strategy consistent with the architects’ philosophy of intervention. Theoretical references, including Svetlana Boym's “The Future of Nostalgia,” John Ruskin's “The Seven Lamps of Architecture,” Jorge Otero-Pailos's “The Ethics of Dust” and “Experimental Preservation,” and William Mann’s writings on Astley Castle, inform the seminar’s theoretical framework and provide context for the students’ explorations. This paper will showcase different techniques students have developed over four iterations of the course at two different universities. For instance, a group exploring the theater Sala Beckett by Flores i Prats Architects created a dynamic model resembling a stage set, allowing users to mix and match different pre-existing pieces of architecture in a manner similar to the architects’. Another group focused on changes to Covent Garden including two recent projects by Kohn Pedersen Fox, employing red-blue color filtering to differentiate between old and new elements. The overlapping of colors before implementing a red or blue filter resulted in an evocative temporal layering or blurring. A study of FRAC Dunkerque by Lacaton + Vassal used cyanotype drawings developed to varying degrees of exposure and fading, representing layers of history and the effects of time. An investigation of Amanda Levete's courtyard addition to the Victoria and Albert Museum used collaged drawings and models to highlight how the new architectural forms frame the older architecture. By discussing the various innovations imagined by students over the years, this paper highlights the pedagogical value of studying adaptive reuse projects and using new approaches to 2D and 3D media to foster critical thinking about the complex relationships between architectural history, design intent, and contemporary interventions.

Architectural Custodians: Retroactive Urban Photography in Berlin, Seville & Santurce

Armando Rigau, Universidad De Puerto Rico

Over recent decades, the global surge in civic activism compels a closer look at architecture's complicity in perpetuating or challenging the status quo. A reflection on the state of the built environment through the posthumanist thought of Stephen J. Jackson and Peter Sloterdijk fuels a design pedagogy centered on renewal, urging the adoption of alternative methods to engage with today's decaying urban fabrics. How can we teach students to embrace repair as a foundational principle? Which design tools best enable students to distill the complex relationships between buildings and their contexts? These questions were explored in design studios held in Berlin, Germany; Seville, Spain; and Santurce, Puerto Rico. In each location, students encountered seemingly intractable urban problems that heightened their understanding of the discipline as an agent to repair and restore the obsolete and disenfranchised. Through diverse representational media, particularly photography, students synthesized personal encounters with critical analysis to weave compelling architectural narratives advocating for social change. Ultimately, the coursework enabled students to act on the built environment as custodians: preserving, repairing, and adapting existing structures to foster societal resilience.

Landscape Pedagogy into Architecture: Un-Build and Go Public
Dragana Zoric & Jason Lee, Pratt Institute

The climate crisis has scarcely entered the architecture design curriculum. Implemented in the effort to infiltrate architecture with an astute and aggressive climate change consciousness, this paper outlines a re-imagining of the pedagogy of an architecture design studio with that of landscape[1]. Intentionally envisioned as architecture's reckoning with its own image as the "master discipline" and "savior", the studio[2] looked to an expanded field of spatial disciplines, especially landscape architecture, in order to step back and re-formulate a conventional understanding of the discipline and its reach. Breaking with Archizoom's No Stop City[3], a proposal of endless interiority, the pedagogy outlined here posits the "unbuilding" of such space and its radical re-invention. Currently, Manhattan's abandoned office spaces function as a new type of wasteland[4], territories consumed and exhausted through a now-defunct use, the product of a once voracious (office) culture, now its antithesis. Rife for a productive process of architectural "discharge" and re-programming through an aeration of the skin and façade system, unused high-rise buildings and their massive floor plates become new urban territories to be re-taken and re-utilized. Unbuilding is an act of design, a release from a climate-controlled interiority. Keller Easterling's writings on Subtraction[5] have pointed the way: "Often treated as failure or loss, subtraction—when accepted as part of an exchange—can be growth. Whereas that work considered wholesale removal of buildings and was a reaction to horizontal sprawl and over-development, this project operates in the unbuilding of vertical spatial "chunks". Using an interdisciplinary and critical thinking framework, the studio viewed architecture arrested in a disused urban condition as an entry point to implementing living landscapes and enacting ecological processes[6]. As an alternative approach to future world-building in cities, the process involved environmental studies of soils and plant materials in relation to carbon, ecological concepts of patch dynamics and mosaicism, and a wholesale re-envisioning of architecture as a literal working and living landscape. Because landscape is the venue and discipline skilled in registering material activity and dynamic processes, landscape architecture is the conflation of the ecological and cultural. Thus, void of their current envelopes, exposed to the open air, able to be re-connected to each other and to urban links of all varieties, these spaces become a novel three-dimensional territory of, and for the city, an urban parkland like no other[7]. Their access and morphology re-defined, these living spaces ooze out of facades, bulge at street level, bloat over and through structural frames, dangle to street level, float, cling, climb, cantilever, protrude and infiltrate. Their nature and the nature of "nature" are both re-considered[8]. Ultimately, the pedagogy was an opportunity to re-consider urban public space, and for architecture to acquire the term "fieldwork" within its own seemingly broad, but actually limiting - confines. Amplifying the recursive relationship between architecture and landscape, and subverting the notion of landscape "site" to be within - alive and growing, a more critical view of (commonly object-oriented) architecture can emerge where it is designed and conceived as adjustable and adaptable from the onset.

Mining Memory: Remembering the River
Amanda Aman, University of Texas at Arlington

Much unlike some of the most productive and operative rivers in the US (the Mississippi, the Hudson, etc.), the Trinity River exists more as a ghosted relic that reveals only remote traces of a past life. It has only slightly emerged from a shallow grave in recent years, but severely lacks an authentic reading of who it has truly served and belonged to. Its watershed traverses a landscape that was once a complex network of Indigenous civilizations that cultivated and cared for the land; its productivity was a function of an ecological and anthropogenic symbiosis. It cradled cultivated fields from the fallow alongside Freedman settlements, tethered to rail lines emerging from an industrial spirit. It sacrificed much if its adjacency to the strip mining of gravel for the building of Dallas and Fort Worth, leaving a novel ecology of ruin in its wake. Histories and ecologies were altered and forgotten, leaving the Trinity without a real understanding of its own story. This design research studio sought to map stories of the river, particularly those of Freedman settlements collected along its banks, and reimagine it through the lens of memory. Storytelling on behalf of this collective relied heavily on a narrative mapping process. Agents of space and time mapped together created a textured reality from the interlacing of physical places and temporal relationships, as well as through memory and oral histories. Mining for and mapping memory resulted in a translucency that mimicked the passing of time, allowing for moments of both clarity and turbidity. This operation helped to reveal how events from long ago, though not as easily remembered, still live in the subconscious of the life of the river, and ultimately lay the groundwork for its identity. This narrative mapping process required a balance between the interpretation and editing of archival maps and documents, various scales and types of datasets, and the recording of oral histories interlaced within those geographies. This process, investigated through iterations of mixed-media drawings and hybrid models, enabled students to become intimately familiar with the relationships between the layers of data within their mapping and what those relationships ultimately communicated about the communities and river identities being mapped. One of the greatest student learning outcomes revolved around students being able to confidently advocate for these communities in really knowledgeable and nu-anced ways, a skillset that is critically necessary in the current climate of inequity. One of the strongest student projects studied the relocation of families in a Freedman settlement as a result of seasonal river flooding and followed the demolition of their homes through Sanborn maps and tracked land survey data. The lots of these family histories, currently vacant, became the focus for a speculative architectural intervention that framed the voids as spaces of memory and reflection, where the introduction of varying depths of water, remembering the river, would reflect the surrounding ephemerality of the changing landscape throughout the course of each season, while holding in its fixed place a memory of permanence.

This presentation had been moved to Thursday, March 20, 2025 in the session: Society + Community: Spatial Practices and Cultures

Ecology: Ecology and Building Science

Saturday, March 22, 2025
9:00am-10:30am

Control Horizon: Ruins, Disaster Prevention Museums, and Datum Mapping in the Littoral Hazard Zones of Japan

Elijah Huge, Wesleyan University

“Ruins can be seen as fragments within the complex of absolute and imaginative time forming definite proof of past facts; facts broken and destroyed. We se them as once having formed part of complete, finished structures. Chance has conveyed them to us through the ravages of time. Such thoughts are generated by extending imaginative time into the past.” (1) In the years after the Second World War, Japan’s central government initiated the mapping of zones considered to be under threat from natural disasters, including mudslides, typhoons, volcanic eruptions, earthquakes, and tsunamis. The cartographic documents produced, referred to generally as “hazard maps”, attempt to delineate the relative safety and stability of the Japanese archipelago. City by city, prefecture by prefecture, through the thousands of islands that make up the country, these maps have been iteratively and assiduously redrawn as new disaster events redraw what were once considered stable conditions and new evidence of past geological events - dating back to the edge of the Holocene - have come to be better understood through archeological and scientific research. This ongoing exercise is an effort to align the future possibilities for Japan’s dense urban development with a deep history of meteorological instability, measured in geological time. It also encompasses a practice of marking the outlines of past disasters. The latter boasts a similarly long history in Japan, from the thousands of tsunami stones, dating back centuries, that indicate where it is and is not safe to build, to the story of “Inamura no Hi” (The fire of rice sheaves), based on the events of the 1854 Nankai Earthquake and Tsunami. Collectively, the maps at once trace historical events and begin to create outlines of a future Japan, demarcating areas under persistent threat where building has been prohibited and human activity is limited: the hazard zones. In these zones, a new type of architectural landscape has emerged, at once thoroughly planned and devoid of human habitation. They occur throughout the country, in proximity to active volcanoes, to rivers, and most extensively along the country’s 34,000km of coastline. The coastal hazard zones, deemed under persistent threat by tsunami, have come to host an unexpected variety of built conditions, including carefully planted “barrier forests;” “millennium hope hills” built from the rubble of villages destroyed by the 2011 tsunami; solar farms; disaster prevention museums; and massive concrete seawalls that delineate long stretches of the country’s coastline. While the monumentality of concrete sea walls may be the dominant image of coastal protection in Japan, the coastal hazard zones offer a broad-ranging and more subtle collection of designed conditions worth closer examination. This paper will draw on three examples of architectural projects that have emerged in this deep littoral zone: the ruin (Shinsai Iko), the mapping of inundation datum lines, and the emergence of built conditions that attempt to align the timescales of quotidian life with 1000-year event projections.

Bio-Intelligent Stabilization: Exploring Mycelium-Based Soil Systems for Sustainable Construction

Ipsita Datta & Ehsan Baharlou, University of Virginia

In the Anthropocene era, characterized by unprecedented urbanization and escalating environmental challenges, the construction industry faces a critical need to reassess and reinvent traditional practices that have long relied on materials contributing substantially to environmental degradation (Elhacham et al. 2020) . This paper explores the innovative use of mycelium—a naturally occurring fungal network—as a bio-stabilizer for acidic soils, particularly focusing on the overall feasibility and qualitative analysis of this approach. Mycelium, the vegetative part of fungi, forms dense and intricate networks capable of binding substrates like soil, making it an ideal candidate for biological soil stabilization (Abdullah, Shahin, and Walske 2020). Utilizing readily available organic waste materials, such as wheat bran and sawdust, this study investigates how substrates infused with mycelium can enhance soil cohesion and improve the structural integrity necessary for load-bearing foundations. Such an approach not only addresses the environmental impact of using conventional stabilizers such as cement, lime, and bitumen but also aligns with sustainable practices by repurposing agricultural by-products(Ikeagwuani and Nwonu 2019). Furthermore, the research discusses the broader implications of adopting mycelium-based technologies in construction. By reducing reliance on environmentally harmful materials and promoting the use of biological processes, mycelium-based stabilization supports the principles of a circular economy (Felix Heisel and Hebel 2022)—minimizing waste and maximizing resource efficiency. This approach not only offers a sustainable alternative to traditional methods but also fosters regenerative land management practices that enhance ecological balance and contribute to the restoration of degraded landscapes (Claudia Colmo and Ayres 2020). The objective of this study is to evaluate the compatibility and effectiveness of a specific mycelium strain (Pleurotus ostreatus) with acidic soil to enhance structural integrity and sustainability in earth-stabilized footings. Through experimental evaluations, including the observation of growth rates, colonization depth, and soil bonding, the study explores the potential of mycelium-infused substrates to improve soil cohesion and load-bearing capacity. While this study focuses on a single soil type, it establishes a framework for testing across diverse environmental conditions and soil types. The findings emphasize the ecological benefits of this approach, particularly its alignment with sustainable development goals and waste repurposing principles. By integrating mycelium into soil stabilization processes specifically for vernacular footing systems, this study advocates for a paradigm shift in construction practices, encouraging the industry to move towards more environmentally responsible solutions. Through this research, the construction industry is invited to reconsider its materials and methods, aligning more closely with sustainable development goals and the urgent need for environmental conservation.

Continuous Architectural Mycelium Textiles: Bonding Strategies For Scaling Bio-leather For Interior Applications

Assia Crawford, Sarah Ruthanna Miller, William Leary & Matthew Johnson, University of Colorado Denver
Dimitar Stefanov, Middlesex University

This study explores methods for laminating and myco-welding pure mycelium leather sheets, providing a comprehensive approach to fabricating large-scale mycelium-based textiles. Techniques such as multi-layer lamination with pure mycelium pellicles and combinations of natural and synthetic fibers are investigated to enhance material strength. The method overcomes associated contamination risks of mycelium leather growth and demonstrates a three-week growing period using various types of waste, indicating a significant decrease in the production time compared to animal-derived leather. These methods aim to solve challenges in the open-source decentralized large-scale production of continuous mycelium leather sheets by creating biological patchworks via grafting of smaller units. The study demonstrates ways to join pure mycelium leather units to generate extensive nonwoven mycelium textiles suitable for the construction industry. The work addresses issues related to continuous sheet production on a large scale and the repair of damaged landscapes via the bio-remediation potentials of these emerging textile alternatives. The paper also showcases the creation of three-dimensional leather upholstery and the use of this product for interior architecture applications and proposes a counter approach to widely accepted planned obsolescence strategies. The fabrication potential of the work is demonstrated through a prototype titled “Second Skin” which acts as a sustainable alternative to traditional interior textiles that meets specific material property behaviors and offers aesthetic flexibility, the chair being the first of a series of interior studies. The study highlights the scalability of mycelium leather production and the potential for these materials to reimagine interior aesthetics and design applications.

Embodied Carbon and Adaptive Reuse: Towards a Union of Design and Analysis in **Architectural Pedagogy**

Fleet Hower & Josh Draper, Rensselaer Polytechnic Institute

The integration of embodied carbon analysis as a design driver is imperative if students are to understand architecture's role in climate change, yet it is an underdeveloped area of inquiry in the design studio. A clear understanding of the sunk cost of embodied carbon is particularly relevant in adaptive reuse projects, where irretrievable carbon and monetary costs make material reuse critical. Students often receive a cursory, rule-of-thumb understanding of the impact of embodied carbon or execute isolated calculation exercises. More in-depth work usually occurs in a seminar dissociated from studio design work. Here, students engaged embodied carbon in an integrated way between a studio and two technical seminars, with research, design and analysis shared between courses. To coordinate efforts, each course used the same Life Cycle Assessment (LCA) software. The impacts of their analyses often played a determinative role in design decisions. Guild House, an adaptive reuse project in Albany, New York, was constructed in 1903 and served the Cathedral of All Saints before being shuttered in the 1970's due to high energy costs. Our academic engagement was part of an effort among cathedral leadership and local professionals to revitalize Guild House with the goal of providing supportive services to recently arrived immigrants. The question of embodied carbon in this project presented the challenge of analyzing materials of both the existing building and proposed interventions. An extensive timeline was created to track the development, evolution, and carbon implications of each material, allowing students to understand each historical material from pre-history to the end of the 21st century, where predictions on material-related emissions may have their most acute effects. The timeline elucidated the monetary, energy, and embodied carbon value of the existing structure as well as proposed design interventions. Return on investment (ROI) calculations were integrated to forecast the long-term economic value of sustainable construction. This research revealed uncertainties in the quantity, origin, fabrication and transportation method of each original material. To address these unknowns, students coded a web-based, interactive tool that allows users to explore the calculated range of uncertainties and produce an embodied carbon calculation of the existing building. For design intervention proposals, students researched a broad range of acceptable materials and discussed their considerations with an architect and structural engineer. Detailed digital models were created to estimate volumetric requirements of each material. Students developed a dataset of potential embodied carbon quantities for each major material in their design proposal. These datasets were used to create a Machine Learning (ML) model that was linked to an online dashboard. The dashboard enabled students to quickly and accurately see the embodied carbon implications of their design proposals and offered communication with remote stakeholders, collaboratively exploring alternative scenarios. The ability to quickly ascertain the implication of design proposals and react accordingly generated a feedback loop where embodied carbon became a primary driver of design decisions. This may be impactful on the discipline where students enter the field trained to make sustainable decisions upstream in the design process.

Society + Community: Repairing Ecologies

Saturday, March 22, 2025
11:00am-12:30pm

Three Local Repair Ecologies: The Case For Place-based Repair Infrastructures
Cynthia Deng Instituto Tecnológico y de Estudios Superiores de Monterrey
Elif Erez, Studio Gang Architects

If every region and neighborhood has a distinctive ‘repair ecology’ (as coined by scholar Steven Jackson) or local system of repair, improvisation, and material recirculation, we posit that these repair ecologies are crucial forms of infrastructure for a non-extractive future. Repair is multiscalar: it includes the repair of physical objects and structural repair, but also goes beyond the physical to include reparations, abolition, rematriation of land, repair of relationships and historical narratives, disciplinary and ecological repair. ‘Repair’ does not seek to restore past conditions, but adapts to future worlds — it is a transformative act of care in the orientation of repairing forward. ‘Repair ecologies’ include place-based circularity and solidarity practices involving material exchange or revaluation. These practices comprise a neighborhood’s self-organized network of physical and social acts of mending. This paper compares the local repair ecologies of three case studies in diverse cultural contexts: Hamden in northeastern US, Querétaro in central Mexico, and the California Bay Area of the US. For each, we will show the results of fieldwork that highlight the particularity and the potentials of each locale’s repair ecology. Complex bottom-up people-based infrastructures (of care and repair) are unique to their place and context. In the case of Querétaro, existing everyday practices are sites of distributed creativity and include metal collector trucks, swap groups, material banks, street markets, mutual aid networks, repair clubs, and archipelagos of urban gardens. The Bay Area includes the ReUse People, the largest reuse organization and network of warehouse infrastructures in the US. Hamden is home to smaller networks of material exchange connected to educational institutions. The paper draws comparisons between shared issues and challenges as well as disparate relationships to local material flows and to local political institutions and legal ecosystems. From the comparison emerges speculations on ways in which local repair ecology infrastructure might be recognized, supported, and resourced through mechanisms and frameworks with a level of granular specificity rather than through universal best practices. Recent legislation opens potentials for considering local repair ecologies as infrastructure. The 2021 US Infrastructure Investment and Jobs Act authorized $1.2 trillion for various infrastructure projects. While most funding went to physical infrastructure, movements fought to include care workers as part of the definition of infrastructure, broadening the understanding of crucial societal systems and services and highlighting the importance of less tangible infrastructures. We argue that local repair ecologies are a form of care infrastructure that can upend extractive relationships with the earth and local communities. Mexico's 2021 General Law of Circular Economy and corresponding state laws focus on corporate-led waste management. However, they do not allocate resources towards local material circulation and solidarity work. Similarly, California's Green Building Standards Code mandates reducing embodied carbon emissions but overlooks supporting human infrastructures crucial for these practices. We argue that local repair ecologies, emphasizing social justice and broader wellbeing, should be integrated into legislative definitions of circular economy. This paper calls for recognizing and resourcing local repair ecologies as essential infrastructures for non-extractive and reparative futures.

Mapping Entropy: An Alternative Demolition Model
Tieru Huang, Wenzhou-Kean University

This paper investigates the participatory demolition process of Xiachuan Village, a suburban village in Wenzhou, China. Through uncovering the controversies between the land requisition legislation, sociological framework, as well as the discrepancies surrounding ecological and economic systems, this study seeks to understand the driving force behind the destruction process and the factors that intensified the opposition. This research challenges the conventional notion of preservation, reconceptualizes the role of architectural discipline in the process of demolition, and proposes an alternative demolition model to address current conditions and issues. Over the past decades, Chinese urban history has been characterized by large-scale demolition and construction. This restructuring process has been generating a series of socioeconomic crises, especially on the fringes of expanding urban areas. However, government agenda, building industry, and commodity markets predominantly determine the inevitability of destruction. Besides the question of preservation, defusing conflicts and reclaiming value are of major concern. In the demolition and redevelopment process, architectural discipline shall contribute through understanding before proposing, engaging with the social mechanism as opposed to resisting, and destructing sensitively instead of constructing relentlessly. This paper analyzes demolition mechanisms as systems of contradiction, thereby informing alternative demolition methodologies. Since the establishment of the Demolition and Relocation of Urban Houses in 1991, the Chinese State Council has been developing a legislative framework for demolition-related items. In this process, the local governments have reinterpreted the central initiative, and dedicated to requisitioning farmland, leasing land, and managing urban expansion to make up for revenue shortfalls. This out-sync between central coordination and local execution has resulted in a series of issues such as illegal land-taking and farmer displacement. This study carried out a series of interviews with farmers, housing asset owners, relocated farmers, etc., attempting to comprehend different perspectives on these escalating issues. The legislative framework has been evolving, with the introduction of the Strict Restriction of Large-scale Demolition policy, today, increasing involvement of residents, a method of participatory destruction has emerged. This study recognized a self-initiated demolition industry as an opportunity, where the destruction is dependent on the resident's willingness to a certain extent, and the preservation works in the process of destruction. Together with the demolition team sent out by the government, the villagers and migrants have been taking apart houses based on the value they recognized. Besides the material value, they have identified the value of historical gates, window frames, etc, meanwhile setting up special units of measurement and methods of evaluation. In correlation with this bottom-up destruction, a network of the demolition material recycling industry, and second-hand trading venues have been established. This paper traces the trajectory of the actors and objects involved, repositions architects as mediators between local governments, material providers, investors, and the public, giving instruction for sensitive demolition, demolition material recycling, etc.

Tidal Territories
Jess Vanecek, University of Virginia

Tidal Territories situates itself in the ever-fluctuating threshold between land and water, investigating historic, current, and future patterns of human occupation on low-lying islands in the Chesapeake Bay. These islands serve as a case study in the necessity for adaptation and reconciliation of the built environment in coastal territories in the face of climate change. The work negotiates data and policy with place-specific narratives, seeking to synthesize various information through architectural drawing, modeling, and exhibition. Inherently contradictory by nature, islands are at once static and dynamic, isolated yet interconnected. Ecologically speaking, the collective patches of marshland that comprise Smith Island, Maryland and Tangier Island, Virginia – two of the last inhabited islands within the Chesapeake Bay – form an interconnected archipelago. These morsels of land once comprised a ridgeline that formed the edge of the ancestral Susquehanna River, tethered to the mainland prior to the formation of the Bay. While this connection remains below the surface, the area occupied today by humans is only accessible by boat or small aircraft, severing physical connections to the mainland and between settled towns. Complicating things further, from a jurisdictional standpoint, the islands are divided by a geographically arbitrary and invisible line, splitting them between two states, multiple federal agencies, and various regulatory entities. This division not only fragments the connections each island has to each other, but to mainland society as well. Yet, while physically and culturally remote, Smith and Tangier are gaining widespread attention as places at the forefront of the climate crisis. With settlement areas just two to four feet above sea level, estimates project the islands will be uninhabitable to humans by 2051. In these places, the realities of sea level rise, erosion, and subsidence are no longer hard-to-grasp concepts, but rather visceral displays of flooded streets, yards, and structures. Current courses of action to address such issues are anthropocentric and static, relying on hard infrastructure in futile attempts to keep water out and away. Coastal edges are fortified by seawalls and jetties, and homes are raised on stacked CMU foundations to elevate above the flood zone. While seemingly effective at their intended purpose, these interventions are at odds with the fluidity, dynamism, and connection to the elements that is necessary for resilience in ever-shifting coastal conditions. As an antithetical proposition to the static and futile processes of fortification and overbuilding, Tidal Territories speculates on phased futures of continued occupation within the land-water threshold through three key scenarios: Out with the Oil!, Architectural Archipelago, and From Land Rights to Water Rights. Each respectively raises questions of ecological stewardship, architectural adaptation, and future prosperity for the communities that call these places home. The scenarios aim to prompt contemplation about a complex future of acceptance and retreat, while upholding deep-rooted connections to place.

Here for the Foreseeable Future: Toward a Scalar System of Resilience on the Southeastern US Gulf Coast

Christian Ayala, Rusty Smith, Elizabeth Garcia, Rob Holmes & Daniel Meyer, Auburn University

The Gulf Coast's ecological diversity, economic productivity, and cultural heritage compel us to ensure its resilience for the next generation. Each successive storm, coupled with rising sea levels and accelerated coastal erosion, necessitates a substantial investment of capital and resources to repair damaged infrastructure and homes. This effort occurs within an intentional system of environmental and social inequity amplified by disinvestment. Steven Jackson positioned "repair" in a layered world that bridges past inadequacies with aspirations for a desirable future1. Through two university research initiatives, we are actively undoing, adapting, and replacing these existing flawed systems. We are operating not only with objects but within interdependent systems that stretch from an expansive Gulf Coast estuary to individual homes in a rural "working coast" fishing community. In Perdido Bay, on the Alabama-Florida border, our study for the US Army Corps of Engineers' Engineering With Nature program showed how natural infrastructure might be deployed to reduce coastal storm risks and reestablish an ecological economy centered on the bay's biological productivity. On Barataria Bayou in coastal Louisiana, our partnership with a community housing organization developed a housing replacement pilot program focused on resilient, affordable, high-performing homes. This paper unpacks these two applied research initiatives and places them in conversation to understand how working across scales can better address complex challenges on the rural working coast. By considering them together, we 1) contextualize the issues arising from climate change relative to environmental injustice, economic impact, and cultural significance; 2) highlight the approach and methods of collaboration and synthesize on-the-ground field research and community engagement with academic student-led research; 3) detail performance-driven resilient and adaptive strategies through two case studies; and 4) illuminate the invisible barriers, differences, and shared lessons of implementation in hard-to-serve coastal areas.

Design: Material Practices: Wood

Saturday, March 22, 2025
11:00am-12:30pm

Recreation, Preservation, and Repair: Architecture of the U.S. National Forest System

Andrea Alberto Dutto, University of Idaho

An inventory of U.S. Department of Agriculture Forest Service architecture, conducted in the late 1990s, reveals a diverse array of predominantly wooden structures designed to serve and monitor areas designated as National Forests. The defining characteristic of these structures, particularly those located in the most remote regions of the forest system, such as lookout towers for fire spotting, lies in their dialectical relationship between standardization and customization. While originally conceived according to strict functional criteria, these buildings became the focus of ongoing repair and maintenance efforts carried out by the on-site staff, often with limited resources and in challenging conditions exacerbated by rugged terrain and wildlife presence. These structures began to decline in the 1960s, when the introduction of automated surveillance systems led to a policy of reducing personnel and abandoning many sites. The concern that this architectural heritage might disappear has prompted various volunteer groups to dedicate themselves to its preservation and to promoting a culture of maintenance. This paper presents the results of a collaborative project between students and volunteers, conducted within the framework of a design studio focused on several National Forests in Idaho and Montana. The students analyzed and cataloged some of the most representative examples of USDA Forest Service architecture, aided by volunteers who provided access to firsthand accounts and archival materials. Following a four-phase methodology—inventory, investigation, improvement, and innovation—the students developed an in-depth understanding of these structures. This understanding informed their proposals for repair and enhancement, as well as new designs aimed at preserving the legacy of USDA Forest Service architecture.

Mass Haptic

Christopher Meyer, University of Miami

The forested lands in the southeastern United States account for about 40% of the nation's 521 million acres of timberlands (208.4 million acres in U.S. forestry region eight)1. These timber stands are primarily used for softwoods and are typically categorized for wood pellets, pulp, chip-in-saw, and sawtimber. The US leads in the production of industrial roundwood for pellet, pulp, and paper, and is also the largest consumer of roundwood for pulp and paper production2. Current analysis indicates that the national forests are growing more fiber than is being harvested, which means that the growth of timberlands is surpassing the demand for wood fiber products3. The long-term effects of timber management strategies could potentially restrict the forest's contribution to meeting lumber demands in construction markets4. Additionally, smaller-diameter timber and timber affected by pine needle rust, fusiform rust, crooks, and structural deformations are typically allocated for lower-grade products such as pellets and pulp markets. Identifying low-grade timber unsuitable for the production of dimensional lumber in roundwood form can be used in structural conditions typically reserved for high-grade timber. Demonstration projects have long been used to showcase the potential of new processes, innovative materials, or creative ideas to address contemporary issues. MASS Haptic is a call to action for Florida to make use of local timber resources and manufacturing capabilities to build sustainable buildings from renewable materials in response to concerns about climate change, energy, and carbon. This narrative is set in the Southern Yellow Pine (SYP) forest that covers the Southeastern U.S. The SYP forest consists of species that grow rapidly, producing straight timber suitable for lumber, as well as bent, twisted, and thin poles used for paper, cardboard, and fuel. The design of the pavilion is based on the working forest planting regime, identifying death and decay rates, and planned thinning guiding spatial organization. The aim of connecting locally sourced materials through forest processes is to educate students, faculty, and the greater Gainesville, Florida community about the potential of the forest. MASS Haptic brings to life the concept of building from the forest, emphasizing the connection between construction and its impact on the environment. MASS Haptic utilizes two types of wood products: SYP Cross Laminated Timber (CLT) panels and undersized Slash Pine that do not meet the structural grade for traditional mills. The roof canopy is constructed from SYP-CLT panels with timber sourced from Florida and Alabama. The panels were fabricated in Dothan, Alabama, 250 miles from the project site using traditional digital fabrication CNC processes. In a departure from traditional processes, the structural columns are roundwood sourced from a local forest 13 miles from the project site. The timber sourced for the columns was identified as pellet, paper, or fuel grades through a three-dimensional scanning process. The repurposing of low-grade timber offers economic, environmental, and energy benefits while rethinking the potential for long-term carbon storage. MASS Haptic explores a tree’s contribution through structural ranges, an innovative repurposing of low-grade material for high-grade products.

Digital Technology: Additive Manufacturing

Saturday, March 22, 2025
11:00am-12:30pm

Eco-resilient Tectonics: Living Building Materials In Multi-species Earthen Construction

Ehsan Baharlou, University of Virginia

Additive manufacturing (AM) is expanding widely in the construction sector. In particular, the aim for sustainable construction has led to a shift from cementitious materials to earthen materials with additive manufacturing. Adapting traditional earth construction with digital fabrication tools opens an opportunity to experiment with new methods and materials. Experimentation should focus on the development of a new recipe for the earth mixture to provide printability and maintain the mechanical properties of the mixture. The recipe for the earth mixture utilizes a multi-species approach by considering ecology in such a way that provides conditions for the growth of organisms, which eventually integrate living materials into the building system. The purpose of this research is to examine the feasibility of developing living building material (LBMs) with the use of a 3D printing process with an earth mixture. Pleurotus Ostreatus (Blue Oyster mushroom) was used as a mycelium composite and Raphanus sativus (Radish) as greenery; both were embedded into a 3D printed wall system. The final wall prototype successfully exhibited the growth of mycelium and greenery. It also demonstrated the resilience of the mycelium composite as an insulation material in adverse conditions, showcasing self-healing and self-regenerative capacities.

Innovative 3D-Printed Ceramic Evaporative Cooling Systems for Sustainable Architecture: Pedagogy, Design, and Outcomes

Erin Hunt, Texas Tech University

This research paper examines the potential of 3D-printed ceramic systems to provide sustainable cooling solutions for buildings and exterior spaces within semi-arid and arid climates. The paper analyzes three student projects — “Woven Tile,” “Octahive,” and “Ceramic Bloom” — from a graduate research-based studio, showcasing diverse design approaches and research findings related to using 3D-printed ceramics for evaporative cooling. The studio course provided students with a comprehensive understanding of sustainable architectural principles, computational design tools, and digital fabrication techniques, specifically focusing on clay 3D printing for evaporative cooling. Students explored historical and contemporary strategies in sustainable architecture, participating in hands-on clay 3D printing and developing research-based final projects. A key objective was to equip students with the skills to analyze material properties, evaluate their effectiveness in sustainable building practices, and apply computational design and digital fabrication techniques to develop sustainable architectural solutions. Each project utilized a custom-designed wind chamber to test the evaporative cooling properties of the student-designed ceramic blocks. The wind chamber had two chambers, one housing a fan and the ceramic block and the other with holes for air to exit. Humidity and temperature were monitored in both chambers using DHT11 Arduino sensors. Woven Tile focused on developing sustainable facade tiles using clay 3D printing. Drawing inspiration from the Red Fort in India, the student integrated capillary action to draw water from a pond into the tiles. Wires were embedded during printing to allow the tiles to hang and move like leaves. Testing in the wind chamber yielded promising results, demonstrating a 5.22-degree Fahrenheit temperature decrease over the first 15 minutes when the tile was completely saturated. Octahive aimed to develop a multi-functional modular design focused on evaporative cooling and the cultivation and preservation of the local ecosystem through integrating planters and habits for birds. The project used modular clay blocks to create a living wall system integrating passive cooling, irrigation, flora, and fauna. Wind chamber testing showed significant temperature and humidity differences between the chambers. The second chamber temperature decreased by 5.22 degrees Fahrenheit, while the first chamber temperature increased by 2.9 degrees Fahrenheit. Ceramic Bloomsought to develop an evaporative cooling system that enhanced biodiversity by creating multi-orientational, hexagonal clay 3D-printed blocks capable of supporting plant growth and insect habitation. Wind chamber testing showed an increase in relative humidity from 24% to 34.6% and a temperature decrease of 5.76 degrees Fahrenheit over 250 minutes. The projects highlighted the course’s success in fostering a deep understanding of sustainable design, computational tools, and digital fabrication. Students highlighted the effectiveness of hands-on, iterative learning and the potential of emerging technologies like 3D printed ceramics to address pressing environmental concerns. Future directions for the course may include exploring advanced 3D printing technologies, experimenting with various sustainable materials, and examining the use of 3D-printed ceramic cooling systems in practical architectural projects.

Earth Based Materials for Robotic Fabrication

Zoe Wall & Erin Hunt, Texas Tech University

Earth-based materials have long been used in vernacular architecture and are recognized for their sustainability. These materials can be sourced locally or on-site, repurposing displaced soil from construction projects or using native soil, which reduces the need for transporting and processing materials. While traditional earth construction methods are labor-intensive and time-consuming, recent advancements in digital fabrication, particularly 3D printing, offer new possibilities for using soil in construction. Large-scale prototypes demonstrate that many soils can be repurposed as printing mediums for various scales of construction. This paper focuses on soil from an arid, warm climate, detailing its preparation into a printable medium. Several soil mixtures are tested and printed using a Potterbot 10 Pro, with evaluations based on print quality, fidelity to digital models, and the final performance of the dried objects. The goal is to develop a replicable workflow for converting local, affordable materials into a printable medium suitable for 3D printing. By enabling rapid prototyping and iterative design with earth-based materials, this approach can accelerate innovation in sustainable construction. These methods have the potential to address key challenges in architecture, including structural performance, thermal efficiency, and minimizing climate impact. By democratizing the testing process and making it more accessible across different budgets and equipment types, this research democratizes the workflows used for sustainable earth-based materials in digital fabrication.

Developing Resource-Informed Lightweight Lattice Systems: Hybrid of 3D Printable Lattice and 3D Scanned Non-Standard Wood

Edgar Montejano Hernandez & Sina Mostafavi, Texas Tech University

This research presents a resource-informed building system that integrates 3D-printed lattice structures with reclaimed, non-standard wood elements. These include irregular logs and a tabletop made out of reclaimed wood. Both elements are 3D-scanned to generate high-resolution digital models, including point clouds, workable meshes, and texture maps. The digital data informs the design of lightweight, adaptable, and printable lattice structures, which are 3D-printed and later assembled onto logs and a tabletop, forming a hybrid system at the meso scale. Through integrated computational design using topology optimization, the research explores various lattice configurations aimed at producing support-free, infill-free structures that minimize material usage while maximizing structural performance. Two distinct design strategies are tested: one involves assembling the 3D-printed lattices directly onto the wood logs, while the other positions a table top made out of reclaimed wood on a pre-printed lattice structure. Robotic milling, and a few manual crafting methods are employed to shape the logs and to assemble reclaimed wood pieces together, ensuring smooth integration with the lattice structures. This project emphasizes resource-informed design by utilizing reclaimed wood in conjunction with digital fabrication technologies, offering an approach to circular design and construction. The research demon-strates how combining natural, irregular materials with digitally fabricated components can produce lightweight, structurally optimized solutions, showcasing new possibili-ties for integrating reclaimed, non-standard materials into modern architectural workflows. The findings highlight the potential for hybrid systems in advancing both sustainable practices and flexible, efficient material use for resource- and data-driven design.

Pedagogy: Building Community

Saturday, March 22, 2025
11:00am-12:30pm

Community Practice: A Skills-based And Applied Learning Pedagogy Teaching Students To Design With/in Their Communities

Ashley Tannebaum, Zachery LeMel & Shaunta Butler, Boston Architectural College
Rashmimala Ramaswamy, Boston Building Resources

While traditional architect-client relationships prioritize needs of the owner over broader community impacts, a growing movement in design education recognizes and addresses the members of our communities who disproportionately cannot advocate for their own well-being. Many programs have made noteworthy attempts to repair this gap through design education, connecting students with communities through studio courses late in their studies, once they have honed a range of design skills. This paper details restructuring this pedagogical approach by introducing students to community engagement within their first year of design school, thus bringing community to the forefront of the learning experience. The Community Practice course aims to repair the link between architects and their communities by giving students opportunities to communicate, collaborate, and engage directly with their neighborhood as emerging design professionals. Building early literacy in community engagement skills empowers students to deepen their knowledge throughout their later coursework and work-based learning. This paper examines two iterations of the course completed in the Fall 2023 and Spring 2024 semesters with one community partner. From these projects, students learned how multiple stakeholders may experience a single built project in different ways, how different peoples' lived experience directly impacts the efficacy of a project, and how design professionals can work collaboratively within the communities they serve. We believe embedding this framework of testing then applying discrete skills related to community engagement early in a students' design education to be replicable in a range of design education settings.

Chinatown Repaired, Reimagined, and Rehearsed

Leyuan Li, University of Colorado Denver

Historically, Chinatown in [Redacted City] flourished as a vibrant district, once acclaimed as the largest in the Interior West. However, persistent acts of spatial injustice resulted in substantial demolitions within the district, ultimately displacing its entire communities. Due to inadequate preservation efforts, Chinatown has gradually faded from public consciousness. As the city and its diverse constituency continue to expand, so does the urgency to beg the questions: given the limited documentation, how can we reconstruct a spatial narrative that foregrounds the silenced stories of the displaced neighborhood? Amidst gentrification emergencies and political crises, how can we cultivate a shared repository of knowledge and expertise to repair cultural identity and reshape the collective milieu for these communities? In response to these inquiries, this paper presents a collaborative pedagogy for an advanced design studio, accumulating a body of mixed-media, interactive design outcomes that immerse a wide range of community stakeholders in reflecting upon [Redacted City]'s Chinatown. It intends to provoke new forms of reimagination and stimulation through three pedagogical exercises: Repair, Reimagine, and Rehearse. Repair engages the speculative tools of storytelling to unearth the obscured history impaired by archival silence. It involves combing through historical documents, juxtaposing layers of scavenged archives, constructing speculative narratives, and ultimately guiding students to identify areas of remediation that lead to the development of their theses. Reimagine emphasizes the power of human-scale objects as resistance to established structures, revolving around the agency of furniture as a form of advocacy for collective actions and memories. Drawing upon the hypothesis of Tactical Urbanism (Lydon and Garcia 2015) and canonical precedents, such as the Misura by Superstudio (1972), students propose a series of adaptable urban furniture that evolves into a collective system for repurposing the existing buildings in the old Chinatown district. By materializing these spatial tactics in multiple media, such as films and large-scale models, the second project stimulates the imagination of a future Chinatown by surrounding the public audience in an exhibition of shared visions and collective actions. The last exercise, Rehearse, presents an interactive framework for design studios to investigate novel forms of critique and communication. Students collaborate on an adaptable "spatial archive" to rehearse research findings and design outcomes through its multifaceted configurations. Using the installation as the locus for discourse and dialogue, each rehearsal becomes an immersive play that engages all participants as actors. For instance, the installation could be configured as a dining table, encouraging a food-sharing environment for students and community stakeholders to play multiple roles in critiquing the design of a food hall. By embracing a participatory approach to spatial production and conversation, the project cultivates an engaged learning culture for students and a positive experience for the public, enabling the work to be further "rehearsed" within a broader context, such as a forthcoming exhibition at [Redacted Museum]. By enhancing the collective dimensions of the design outcomes and introducing new models of communication, the project aspires to inspire future pedagogical endeavors that focus on the revitalization of Chinatowns and other marginalized neighborhoods.

Building Community Through Education: The Pedagogy of Kocher, Linn, and Mockbee

Patricia Fraile Garrido, Escuela Técnica Superior de Arquitectura de Madrid
Inés Martín-Robles & Luis Pancorbo, University of Virginia

This research explores the complex dynamics between power structures and the production of space, knowledge, and ideas in society, focusing on the role of educational institutions. Advocating architecture as a powerful social and political force for change, we emphasize the critical role of academia as a starting point for this transformation. The text highlights the increasing integration of architecture schools in the United States with community service initiatives, especially in marginalized areas, aimed at addressing pressing social, political, and environmental issues. In the realm of educational methodology, we examine the adoption of modern pedagogical approaches, particularly project-based learning (PBL), within architecture and design schools. Drawing inspiration from John Dewey's philosophy of experiential education and delving into specific pedagogical practices within U.S. architectural education, the article considers service-learning through university community design centers and learning by doing through design-build education. We trace the historical roots of these methodologies and underscore the contributions of influential figures such as Karl Linn, Lawrence Kocher, and Samuel Mockbee who have reshaped an architectural education and practice in need of repair.

Pedagogy: Repairing Pedagogy

Saturday, March 22, 2025
11:00am-12:30pm

Restoring the Rupture: Decolonizing Narratives of Architectural Education
Farhat Afzal, University of Cincinnati

In architectural education of South Asia, Eurocentric narratives had long been perpetuated through architectural history surveys written by western scholars, many of which emerged during the colonial expansion of the British Empire in India. One such narrative is Banister Fletcher's A History of Architecture. However, since the 1980s, scholars have criticized these Eurocentric approaches, with much of it being done through the lenses of Orientalism and postcolonial theory, as popularized by Edward Said and others. While Said's Orientalism establishes the starting point for critically looking at Eurocentric approaches adopted by Western historians like Fletcher, it does not delve deeply into the metaphysical dimension of art and architecture, particularly as found in South Asian art and architecture. The point that Fletcher fails to acknowledge is that, in order to grasp the intricacies of non-western architecture, it is necessary to have knowledge about that particular culture. This is the gap which can be filled by investigating art and aesthetics of a specific culture, which this research does by analyzing the philosophy of Indian art and architecture, through the perspectives of Ananda Coomaraswamy. Through his writings, Coomaraswamy explores the cultural and philosophical differences between Western and Indian worldviews (although it must be noted that both the West and the East possess several different worldviews, thereby resisting a simple binary). He criticizes Eurocentric perspectives, which results in the misrepresentations of non-Western art, philosophies, and civilizations. Coomaraswamy's perspectives challenge the rupture caused by the Eurocentrism of Fletcher and his contemporary followers. Moreover, they overcome the limitations of Said's postcolonial theory while seeking to understand global architecture history. In all, this research aims to repair the rupture in architectural education, so that future accounts of global architectural history consider the intrinsic worth of non- Western traditions.

Expired Studio Culture Policies

Federico Garcia Lammers, Nathan Eckstein, Daniel Dorr, Heather Willy & Isabelle Marty, University of Minnesota

Studio Culture Policies are scattered in the about sections of Schools of Architecture websites, synthesized in recruitment brochures, outlined in accreditation reports, and in some cases have become magnets for digital dust as downloadable PDFs. As procedural documents they seem to reinforce the hegemony of studio over other aspects of architectural education while becoming a sanitized representation of culture. Of course, studio culture and architecture education do not live in PDFs or any other digital or analog storage formats. Less obvious are the organizational efforts that shape the cultural impacts of architecture education, and the power that manifests from the production of ubiquitous documents, such as Studio Culture Policies. With this in mind, this paper positions these types of documents as critical forms of media. Co-written by faculty, students, and administrative leadership, this paper presents the fluid structure of a student-led process used to develop a living Learning and Teaching Culture project, including the drafting of a new Studio Culture Policy. Centered on repairing the predominantly exploitative conditions that underpin studio education, this ongoing project is grappling with the cultural effects that magnify networks of solidarity across teaching and learning environments. In Fall 2022, Master of Architecture student representatives, elected by their classmates, began reviewing the School of Architecture's studio policy. To advance this preliminary work, a four-student Studio Learning and Teaching Culture working group was assembled in July 2023. Through paid summer work, students advanced the studio representative's initial work, proposing a live studio policy that was reviewed among students during studio orientation, presented at faculty meetings, and discussed at adjunct faculty forums. The project presented in this paper is structured around designing institutional practices for students' to exercise agency over the development of their own education, echoing the organizational efforts of The Architecture Lobby's, Architecture Beyond Capitalism School and Dark Matter University's anti-racist educational network. Student-centered organizations like the American Institute of Architecture Students (AIAS) have been studying studio culture since 2000, with the formation of the first Studio Culture Task Force. While the AIAS' most recent Learning and Teaching Culture Policy Project in 2020 provides an open framework to challenge the dominance of studio culture, it understandably shies away from institutional accountability. 1 Rather than updating the status of this ongoing process, this paper is organized around the messy development of this collaborative project, highlighting the shared forums, milestones and reviews, documentation strategies, and other workflows used to turn student-led conversations into action. Avoiding the idea of simply "updating" policies, this paper foregrounds the importance of fostering transparent intersections among administrative processes and teaching and learning cultures. While organizational labor often lacks the visual glamour of studio production or the intellectual allure of academic discourse, it is important to center conversations of repair around practices and strategies that decentralize institutional power.

Sound, Body, Space: A Collaborative, Kinesthetic, Situated Approach to Pedagogy

Rachel Dickey & Jessica Lindsey, University of North Carolina Charlotte

This paper outlines the collaborative pedagogy for Sound, Body, and Space, a co-taught seminar between faculty in architecture and music. The course, open to all College of Arts and Architecture students, explores how experience-oriented design and performance are enlivened, materialized, and situated in the world through the body. This paper provides an overview of the background, approaches, and outcomes generated from kinesthetic educational systems, auditory study techniques, and interaction with the built world to advance experience-oriented design and artistic performance. The students draw upon the power of observation and the creative use of imagination to explore how diverse bodies perceive sound in various spaces. Such exploration considers experience not as an individual scenario, but rather as a spectrum. This approach seeks to mobilize categories of identity by facilitating ways to understand human experience beyond the individual and considers the experiences of people with various abilities and backgrounds. The results include alternative forms of knowledge studied and produced through participatory engagement, building upon the potential for art and design to create meaningful experiences for multiple and diverse audiences.

Questioning the Privilege of Service: Repairing Community Engagement Practices in Architectural Service-Learning Pedagogies

Nathan Jones, The University of Colorado Boulder

Context In a 2014 issue of the ACSA conference report, Shundana Yusaf and Jose Galarza considered the imagined positionality of architecture students engaged in design-build service-learning projects in the Navajo Nation. From their “privileged institutional position,” students and their instructors might envision their labor directed at disadvantaged communities as a purely charitable exercise, while oblivious to the historical processes (most notably European colonialism and capitalism) that have placed such communities in need of their service in the first place. With Yusaf and Galarza’s consideration in mind, does the state of community engagement approaches happening in higher education architectural service-learning require repair? Are there standard models for community engagement available for instances of architectural service-learning education that appropriately prepare and inform students for the experience? If repair is required, what might represent standardizable methods for preparing students for informed community engagement? Project I am a cultural anthropologist working and teaching in a higher education design school. This paper proposal illustrates the second stage of a scaffolded research project on the pedagogies and practices implicit in educational design-build studios directed at underserved communities (with particular attention to Native American reservations). The current stage investigates the teaching of community engagement methods embedded in the curricula of service-learning studios. This paper showcases a grant funded ethnographic investigation of three design-build studios intended to provide housing and other built infrastructures for three underserved communities and the community engagement pedagogies informing student understandings and practices. In Spring, 2024, I participated (as an observer) in the mobile home park studio in Boulder (and will continue to work with the project in the coming months). In late June, I will visit an “education abroad” design-build program in Medellin, Columbia for several weeks, and in the early Fall, I will work in Bluff, Utah amidst a design-build program operating there. Methods I observe (and will observe) in these three research sites how design-build instructors prepare their students to socially engage as well as design and build for underserved communities as part of the course curriculum. I undertake these efforts through participation with the students and instructors (some of whom are institutional colleagues) in course instruction, in community meetings, and observing the design process following these events. I also identify particular students, instructors, and community members for informal interviews to accumulate a diversity of perspective about the engagement experience and how curricular instruction informs the experience. Contribution A great deal of the literature on service-learning practices in educational design studios reflects an emphasis on reciprocity between the communities and those from the university rendering service (Gregory and Heiselt, 2014). Are we likewise considering how to best prepare our students (and ourselves) to engage underserved communities with cultural sensitivity and historical awareness? The conclusions I draw from my efforts may lead to the design of stronger practices for preparing students to enter foreign communities better informed about why their service is necessary in the first place while considering the implications of their own privilege.

Façade City: The Courthouse Town as Pedagogical Device
David Turturo, Texas Tech University

The courthouse town is a distinct urban morphology that appears across the United States, derived from a variety of European sources and Colonial conditions. Despite its associations with Empire, the urban model produced thriving enclaves in some contexts and abandonment in others, reflecting the predicament of the contemporary small city. This paper re-considers the courthouse town as an engaged pedagogical device for teaching urban analysis and contextual design, questioning the potential of the façade and the quotidian in architectural education today.

Society + Community: Memory, Knowledge, Action

Saturday, March 22, 2025
2:30pm-4:00pm

Ms. Goody: Respectability and Memory in the Liminal Spaces of Jamaican Mothers

Stacy Scott, University of Virginia

The core of Jamaican domesticity highlights the front room as a testament to the intricate interplay between societal norms and personal identity. This space is often the most visually accessible to guests and outsiders and acts as a place where respectability and memory intertwine, setting the stage for an exploration of culture and familial narrative to unfold. It is a critical space where respectability and memory bleed into each other, thus opening a world of culture and family narrative for deep interrogation. It's duty to the curators is to serve as a thoughtful arrangement of ornaments and furnishings of value, pride, and iconographies of the desire for upward class mobility. Existing between the physical and the symbolic, such spaces become actual settings of intangible narratives of culture and aspiration. The act of decorating and maintaining the front room in alignment with societal expectations within the American context reflects not only an aspirational class attainment but also performs the very aspirations and cultural identity. The role of the Jamaican mother as the custodian of tradition and familial dignity highlights the complex interplay between the private and public self, establishing a liminal threshold where personal life and societal gaze intersect. This study employs qualitative research methodologies, using as in-depth interviews and participant observation with several diasporic Jamaican mothers residing in the United States. In that respect, the paper discusses their use of the front room in negotiating identities and respectability. By describing how these spaces are full of layers of personal and collective memory and aspirations, these women reveal how they create spaces imbued with meaning. Based on Goffman's Theory of Frontstage and Backstage as well as Symbolic Interactionism, the research demonstrates how the front room becomes a prime space for the creation as well as the articulation of diasporic Jamaican identity. This is about how front rooms operate not only in terms of physical space but also as protagonists within the cultural text in which they occur, and as such, become critical sites through which social identities are enacted and renegotiated. The final paper will provide insight into the dynamics of cultural retention and transformation in the Jamaican diaspora while underscoring the front room's role as not merely a physical space but as an equally profound symbol of cultural persistence and transformation within this community. This research hopes to challenge and expands traditional architectural perspectives by asserting the importance of domestic interiors in the discourse on public and private realm and their sociocultural influence. Through the Jamaican culture and the lens of the building already incorporated into motherhood, the analysis of this research aims to provide a framework towards understanding how diasporic identity inform and transform space and explore avenues for culturally sensitive and inclusive design strategies.

Black Repair as Architectural Practice: Relations, Refusal, Refuge in Alabama's Black Belt

Morgan Newman, Carnegie Mellon University

The Black Belt region of Alabama is a site of colonial inhabitation, ecological degradation, and organized abandonment. It is a space where one can still see the carceral legacies of the slave plantation, where many parts have been left primarily untouched by the century and a half since the end of slavery, and where one can see the impact of those legacies on generations of Black communities. Yet, generations of Black-placemaking exist despite, and against, the legacies of slavery, racial terror, Jim Crow, segregation, environmental racism, and systemic abandonment. The direct line linking the social, economic, spatial, and environmental afterlives of slavery to present conditions makes the Black Belt an ideal site for exploring radical forms of repair. The term repair can take on numerous forms and definitions in fields related to the built environment. Geographer Jovan Scott Lewis proposes the project of relational repair by mending the rupture of blackness with kin, land, and place.[1] Scholars like Lewis and Katherine McKittrick envision repair as a multi-scalar process considering Black life beyond injury. This scholarship shows how theories of Black repair, then, transcend the often uncritical concept of continual resistance in the face of colonialism, white supremacy, racial capitalism, and extraction. In refusing to engage with systems and institutions of oppression, black repair must be —and is— inherently radical. Indeed, looking only at ways communities might continue to resist the powers of racial capitalism or environmental racism still works from the liberal framework that those powers should exist. This paper examines architecture's role in repairing broken worlds by incorporating theories of Black repair. I bring traditional perspectives on reparations for African Americans in conversation with more recent frameworks on repair in Black geographies and Black ecologies scholarship to examine how these may inform and enrich repair thinking in architecture. I then provide a case study, examining the establishment of the Calhoun Colored School, in Alabama's Black Belt region, as a model of how Black repair is rooted in creating Black liberatory futures. [1] Jovan Scott Lewis, "Black Life beyond Injury: Relational Repair and the Reparative Conjuncture," Political Geography 108 (January 1, 2024): 102963, https://doi.org/10.1016/j.polgeo.2023.102963.

Design: Representing Repair

Saturday, March 22, 2025
2:30pm-4:00pm

Bias in the Machine: Standardized Tools and Irregular Materials
Kyle Schumann, University of Virginia

Architectural production is reliant on physical tools, whether analog or digital, to transform physical matter. These tools have been developed iteratively by numerous authors and inventors, sometimes over centuries or millennia. They are designed to work with specific materials, and as materials used in construction have become increasingly standardized, so too have fabrication technologies. This produces an inherent machine bias, in which certain tools are conducive to certain types or forms of materials. As architects look to alternative materials to confront the carbon impact of construction and increasingly move toward the use and expression of natural materials (live-edge boards, whole logs, hemp, bioplastics, etc.), the challenge in transforming irregular materials with standardized tools that assume a standard material input is accentuated. This paper examines the bias of standard fabrication tools relative to the materials with which they have been designed to work, with a focus on roundwood as a case study that may suggest techniques for authoring or transforming other natural materials. It argues for and presents strategies for adaptation in the use of these tools through the design of jigs or other equipment to hold and process irregular natural materials safely and precisely. Workholding is explored as it relates to tables, fences, and beds, as well as expanded methods including digital twinning and techniques for registering and tracking physical and digital locations and geometries of irregular material. It argues for the benefit of such atypical applications on several fronts: the ability to increase the efficiency and expression of irregular natural materials in architecture, the improved access to affordable fabrication methods through the adaptation of existing equipment, and the pedagogical benefits of leading students through such exercises. The paper discusses examples of the parallel standardization of tools and materials together with samples of academic research and student work in which the design and use of specialized jigs and other workflows have successfully enabled the processing of irregular materials on standard tools.

Just Throw It!!! : A Preliminary Study Of Non-Contact Construction Based On Block Interlocking

Jin Young Song, University at Buffalo, SUNY

The current sustainability paradigm relies on conventional market-driven practices, which is a slow transformation as buildings are the sum of products in the conventional construction processes. The project proposes to rethink the performance of the 'parts' and their aggregation mechanism into the 'whole' to explore an alternative construction paradigm. An example of carbon-neutral stacking can be found in nature by animal agents (ants, bees, beavers, etc.). They re-purpose available materials (twigs, mud, pebbles) while humans build new products for construction. They build around the surroundings best optimized for function (lighting, ventilation, water), while human structures dictate nature and customize the environment to suit the construction. The actions by animals are radically simple (stack, drop, jam, or rarely weave) to make a randomly packed system [1], while human construction is heterogeneous using complex human-to-machine collaboration to manage products. Because of these distinctions, while the agents in nature are much less capable individually than humans, their collective ability is highly intelligent, sustainable, and energy-efficient. Learning from the constructions within nature as well as emerging data-based robotic constructive methods, the prototype explores the performance of ‘stacking’. The physical process of novel stacking and jamming could open up a new perspective on architectural sustainability by achieving structural stability through unique interlocking methods without using permanent bonding agents. Recent research interest in ‘stacking and jamming’ by design is focused on the intentional disorder of particles in a controlled and confined space to transform a liquid state to a load-bearing state [2]. Since the aggregation of particles is without permanent bonding agents, it argues for novel recyclability and reversibility of the structure [3,4]. Robot-activated construction automation can control this simple process of construction by pouring or dropping in which researchers are also investigating the algorithmic sequence of automated stacking by machines[5]. Blurring digital, physical, and biological principles, the simplified action of stacking and data-based robotic construction introduces a time factor into the sustainability matrix. By changing our construction process, swarm robot actions can build structures in a short timescale. Temporary shelters can be quickly constructed in remote or disaster sites where conventional machines cannot access. Blocks (parts) can be reused for other applications. In the play of time, a novel design intelligence of stacking offers reconfigurability and recyclability as modes of sustainability and tools for resiliency. A proof of concept, a shading pavilion structure (20’x20’x12’), was built. The aggregation process was tested for three weeks as an exhibition open to the public. About 500-600 people including 50 elementary school children threw blocks to build the pavilion together.

Public Utilies

Erik Herrmann & Ashley Bigham, The Ohio State University

Public Utilities is part of an ongoing investigation into the civic potential of notation. The project employs site-specific, building-size drawings at a 1:1 scale. Each installation is water-soluble, non-toxic, and temporary, eschewing waste often associated with temporary architecture. Can we make architecture through drawing—not as instructions for building, but as space itself? This installation is a colorful temporary landscape in Logroño, Spain, inspired by modest utility markings on construction job sites. Often applied in bright, fluorescent colors, these preparatory markings indicate boundaries and coordinate the actions of workers across fields and disciplines. As instructions, these striking markings are usually indecipherable to passersby, but to the trained eye, they denote construction limits, survey markings, and utilities like power lines, gas, and communications. Public Utilities is a static installation and a dynamic transformation of multiple public spaces. It activates Plaza Primero de Mayo and two area schools, CEIP Duquesa de la Victoria and IES Batalla de Clavijo, with inscriptions that suggest new programs and patterns of use. These public instructions propose novel organizations and pathways at multiple scales (the body, the plaza, and the city), inviting civic interpretation. Visitors and residents become part of the drawing process, observing and inhabiting the enormous graphic pattern in a significant public performance, all choreographed by a small drawing robot. The bright and colorful inscriptions of Public Utilities suggest an architecture not of embodied objects but of the dynamic performance of spatial instructions. This presentation will delve into the collaborative design and installation process of Public Utilities. A key focus will be on the methods of public engagement, which include workshops for local students and the development of new manuals for robotic drawing.

The Fowl Housing Project: A Satirical Campaign for Advocating for Deeply Affordable Housing

Emmanuel Osorno, Northeastern University

The term affordable housing is often presented as the solution to the housing crisis we are currently facing. Yet, the discourse around affordability seldom includes options for low-income Americans, who are the most rent burdened sector of the population.1 Truly affordable housing, often in the form of federally sponsored public housing, is on the decline. Since the passing of the Faircloth Amendment in 1999, which effectively banned the construction of new public housing units beyond that year's levels, the United States has lost an estimated 25% of its public housing stock, over 300,000 units.2 And as the number of units declines, the crisis deepens: for every deeply affordable housing unit, there are twenty qualified households waiting to be placed in one of them.3 The housing crisis is further hindered by the paradox of NIMBYism. While the average American believes that housing should be a human right, this moral stance is subdued when confronted with the socioeconomic realities of our built environment. When faced with the perceptual threat of building more housing in their community, even the most progressive homeowners would tend to oppose it.4 This project emerges as a reaction to the state of socio-political lethargy entrenched by these two conditions. On one hand, the high demand for affordable housing necessitates a herculean effort from multiple sectors to enact policies capable of making meaningful contributions to the issue. On the other hand, the perception that more housing poses a threat to existing communities represents a significant hurdle for any new development. Realizing that architecture alone does not have enough cultural cache to resolve these conditions, this project proposes to step outside of the conventions of architectural representation and to aim instead at exerting influence on those who are in the position to enact change. To achieve this, this project resorts to satire as both an outlet for social commentary and as a strategy for coping with the seemingly impossible task of providing housing for all.5 For this, the project takes the form of a satirical campaign to provide a platform to subliminally talk about the issues that we find too difficult or uncomfortable to have with one another. This campaign, the Fowl Housing Project, harnesses the environmental consciousness of homeowners and invites them to open their front yard to wild turkeys roaming the city. Participation is mean to be both simple and trendy: homeowners who wish to partake would receive a turkey coop assembly kit, which they would put together and install using simple tools. Once installed, the turkey coops become "projection devices" that allow pedestrians on the sidewalk to "see" the turkey coops as small multi-family buildings in the street. In doing so, the turkey coops aim to subliminally soften NIMBY ideologies in favor of Yes-In-My-Front-Yard (YIMFY) sensibilities.

Evolutive Housing: Common Property and Addressing the Middle Scale in Houston

Omar Ali, Syracuse University
Nimet Anwar, Tulane University

Housing availability in Houston is not unlike the typical offerings of a suburb: single-family homes and multi-family apartment complexes of various sizes and scales. Houston is increasingly looking to "missing middle" housing types as its housing demands rise. As the housing needs of Houstonians evolve beyond the generic, the introduction of variability and flexibility within housing addresses the disconnect between the specified needs of its residents and the current production of static housing. The lack of zoning by-laws makes Houston a prime location for incorporating a mixed-type approach in various neighborhoods to address not only housing availability but also affordability and accessibility. Presently, there are two primary models that address the need for new housing strategies in Houston. The first model is developer-led and takes existing lots (vacant and otherwise) and incorporates density by building at the middle scale; for instance, townhomes, row houses, duplexes, and more. Although this brings much-needed density to the neighborhood, it typically only works for those with more financial means and is a vehicle for displacement and gentrification. The second model is the community land trust (CLT), which utilizes a cooperative form of land acquisition and stewardship, but typically allocates single-family residences with a lack of diversification of type, and thus a lack of density that will not be sustainable in the long-term. This model addresses affordability, but not inclusivity due to the finite amount of land available to the CLT and available in Houston writ large. Cities across the country deal with housing availability issues due to restrictive zoning laws that hinder the application of multifamily housing at the middle scale. Houston is at the forefront of progressive strategies for filling this absence through its relaxed approach to zoning as well as the excess of spec middle-scale housing projects led by developers. This approach has shown to be useful but is still keeping housing ownership out of reach to a large percentage of Houstonians. Houston serves as a critical case study that can be applied to cities throughout the country that are in the midst of addressing a scarcity of affordable housing. Architects can lead this conversation by partnering with CLTs and producing new strategies for socially-minded housing for not only some but for all. This research project culminated in an exhibition at the Albert and Tina Small Center for Collaborative Design in New Orleans in 2023, as well as an exhibition booklet that collects our fieldwork in various cities across Houston. The initial research is held in collaboration with Houston Community Land Trust (HCLT), an independent non-profit.

Digital Technology: The Algorithm

Saturday, March 22, 2025
2:30pm-4:00pm

The Work of Art in the Age of Algorithmic (Re)production
Mark Stanley, University of Tennessee-Knoxville

This essay revisits Walter Benjamin's 1935 essay, The Work of Art in the Age of Mechanical Reproduction, to frame the contemporary proliferation of images in the age of social media and artificial intelligence—an age of algorithmic reproduction. It examines how Benjamin's ideas about aura, authenticity, and authorship are relevant to generative AI and platforms like Instagram, and extends his arguments into contemporary techno-cultural contexts. The essay draws on writing of McKenzie Wark, Benjamin Bratton, and Helen Hester, as well as older media theory such as Marshall McLuhan and Roland Barthes, to reflect on shifting boundaries between authors and audiences, the planetary scale of media infrastructure, and the convergence of human and machine creative intelligence. Finally, the essay makes a case for architects and designers, as image-makers, to navigate this new visual landscape, leveraging their role in shaping emerging forms of synthetic intelligence and visual culture.

Architect as Developer: Custom Tools for Architect-Developer Collaboration

Nate Imai, Texas Tech University
Matt Conway, University of California, Los Angeles

Architecture is transdisciplinary. This project looks at integrating a pair of roles that are of growing importance to architecture: software developer and real-estate developer. Architect as real-estate developer and software developer leverages bespoke, in-house computational tools throughout the entire project process, encompassing site selection, programming, cost estimation, and pro forma generation. This approach enables designers to engage in interdisciplinary co-design, increase their agency, facilitate quicker feedback between design and financial parties, and help repair the current housing crisis through innovative solutions.1 The pilot project for these tools is a building currently in the Construction Document phase: a live-work-gallery fourplex situated on the periphery of a burgeoning urban arts district. SITE ANALYSIS The first tool developed for the project is a customizable computational cartographer named Bow-Wow Bot.2 Bow-Wow Bot ingests GIS data to generate a parcel map based on specific criteria: small, vacant, urban, and irregularly shaped parcels. Bow-Wow Bot effectively isolates and highlights parcels ideal for infill housing. The resulting interactive map was used to compile a list of potential parcels, and ultimately a trapezoidal site on the periphery of the arts district was selected and purchased by the architectural team for development. PROGRAM REVENUE The building massing process was refined using custom C# program and revenue tools. These tools employ closed solids to represent the physical blocks architects use when creating massing models. This system provides immediate feedback on the massing's form, along with its revenue potential based on the assigned program. By closing the iteration loop, designers gain more freedom and efficiency, as the process remains within the originating software without the need for error-prone data exchange between software. CONSTRUCTION COST ESTIMATE While various massing configurations produced similar revenue streams, their forms and program compositions varied significantly. To address this variability, we developed a tool and modeling process to automatically generate cost estimates. Eschewing LOD standards, we adopted a surface-based modeling technique to facilitate quick iterations for cost estimation. By using surfaces along with assembly area and unit cost figures, we can generate comprehensive cost estimates in tandem with other design decisions. PRO FORMA GENERATION After determining program revenue and cost estimates, a suite of generative pro forma tools aids in financing project decisions. The basic pro forma component facilitates quick comparisons between financing options, identifying a break-even point. If favorable conditions are not met, this information can be fed back into the program revenue or cost estimation stages.3 The profession has long recognized the power of architectural models. With the integration of accessible computational tools, financial model iterations can now occur as frequently as plan iterations. By maintaining agency through these tools, small practices can offer non-traditional architectural solutions within current real estate and construction frameworks. This pilot project underscores the evolving multihyphenate nature of the architect as a real estate developer and software developer within contemporary architectural practice.4

Reframing Authorship: The Evolving Role of Architects in the Age of Generative AI

Karla Saldana Ochoa, University of Florida
Lee Su Huang, Lawrence Technological University

In recent months, the architectural field has witnessed a significant shift towards the mass production of images via generative AI diffusion models (DM). To effectively utilize a diffusion model in a design context and dispel the notion of DMs as a black box, it's essential to have a comprehensive understanding of the input-output relationship. We can examine the qualitative effects of the two primary inputs: the prompt and the control image, evaluating different combinations of Level of Detail (LOD) for both image and prompt allows for an easy comparison across both dimensions. As each axis increases towards a higher LOD, the DM's ability to infer context and detail is also enhanced. For example, higher prompt specificity brings out contextual shading, while a high-detail input sketch yields more accurate renderings of intricate features like fenestration. Further exploring image inputs with varying line weights—from light to heavy—using the same text prompt reveals a clear relationship between stroke weight and LOD. The algorithm interprets heavier line weights as volume indicators, introducing shadows and giving the image a sense of depth and perspective. This exploration underscores the importance of the detail level and line weight used in control images, highlighting their influence on the perceived LOD in the final output. The prior investigation helps architects understand underlying principles as well as relationships between text prompt LOD, image LOD, number of diffusion steps and denoising strength. The next step is to understand how one might start to use DM generatively as a natural part of the design process. To answer this question, we return to the beginnings of architecture education in the Ecole des Beaux Arts, and more specifically the ‘analytique’. These composite drawings are cross-scalar and combined different forms of representation of a project through plans, sections, detail, ornament, and perspectives, allowing for simultaneous interrogation of part-to-whole relationships, proportion, composition, tectonics, geometry, texture, and shadow. As an early-stage schematic design exercise, these “AI analytique” image grids bring together conceptual parti sketches, 3D massing, site axonometric views, elevations, and perspectives with a combination of line drawings and DM reinterpretations. We leverage a combination of algorithms and AI models, notably depth-map and edge detection with ControlNet models to constrain the DM to the given image inputs and control how closely to follow the design intent. This yields a range of cross-scalar images that span from conceptual/diagrammatic to detail street perspectives, and aids in understanding what the potential of a massing scheme might be with only very simple massing model inputs, and is thus a particularly potent tool for students and practitioners alike as an early-phase schematic design tool. It echoes the analytique as a combinatorial document working across multiple scales, design options, viewpoints, and captures the fluid nature of design exploration not only as a singular representation but as a multitude of possibilities to be evaluated and curated. As we move forward, it is crucial for the architectural community to actively engage with these tools, ensuring that they enhance their design process.

Ecology: Ecology, Urban, Society and History

Saturday, March 22, 2025
2:30pm-4:00pm

Blurred Ecologies and Infrastructural Repair
Jordan Kanter, University of Massachusetts Amherst

The desert landscape of central Arizona has a deep history of infrastructure entanglement. For centuries, the possibilities of life have been mediated by the capacity of these systems to collect, store, divert, and channel water. The Akimel O'otham and Hohokam people, for example, have managed the flow of water through a dense network of channels for centuries, expanding riparian ecologies to produce a rich surplus of crops, grazing lands, and water (Dejong 2016). These water systems were, in turn, co-opted and circumvented by settler colonial populations, who reoriented the use of water from a practice of stewardship to a logic of extraction and exploitation. Continued development, particularly around the metropolitan areas of Phoenix and Tucson, has driven an ongoing intensification of water infrastructure, extending the footprint of extraction out to the Colorado River, drawing in an increasing network of reservoirs, pumping stations, power plants, coal mines, communities and ecologies (Curley 2023, Needham 2016). These networks, transecting the desert landscapes, hardened against seepage, reinforce a Cartesian ontology that sever "politics from nature, the technical from the political, and the human from the nonhuman" (Anand 2016). It was only with the recent water crisis on the Colorado River that this paradigm of water extraction and limitless anthropocentric development was, albeit briefly, questioned. Drawing on Donna Haraway's call to "make kin" through an assembling of human and non-human relations (Haraway 2016), as well as Jussi Parikka's concept of "medianatures" at the entanglement of natural and technological ecologies as an extension of media culture (Parikka 2015), this research explores tactics for infrastructural repair aiming at bringing existing water infrastructure into a more productive and intimate contact with its social and ecological context. Drawings on a historical survey of indigenous and settler infrastructure, as well as emerging approaches to augment existing infrastructure systems, this research explores opportunities to catalyze more open-ended engagement between the infrastructure and its desert ecology. Studying case studies at the three primary territories transected by the infrastructure – desert wilderness, agriculture, and suburban development – this research outlines interventions that are aimed at reducing the carbon footprint and improving efficiency of these systems while creating more "sticky" relationships between the canals and their context and reimaging infrastructure as a space for making kin across diverse human and non-human constituencies. Cultivating blur edges along an otherwise rigid line of channelized waterways, the goal of this work is to create a territory of exchange with the potential to support a renewed ethic of repair in our (broken) infrastructural landscapes.

Challenges in Combating Climate Change: Lessons from Latin American and Caribbean Case Studies

Fabio Capra-Ribeiro, Louisiana State University

Climate change presents a complex global threat, particularly in Latin America and the Caribbean, where the impacts are severe, yet the region also showcases innovative approaches to face these issues. This study systematically analyzes the challenges faced by urban sustainability projects in the region, drawing insights from 35 case studies in the Urban Sustainability Exchange (USE) database. The primary objective is to identify shared challenges in implementing climate action initiatives, offering valuable lessons for future projects. Challenges were categorized into 14 themes, with issues related to collaboration and communication emerging as the most frequent. Other significant challenges included infrastructure limitations, funding constraints, and social resistance. While environmental degradation is a central concern, more immediate challenges often involve operational, logistical, and social conditions, such as resistance from communities and bureaucratic hurdles. Addressing these challenges is critical to ensuring the success of climate initiatives. By identifying these obstacles, architects, planners, and policymakers can strengthen proposals, allocate resources effectively, and enhance stakeholder engagement. This research underscores the importance of a multidimensional, collaborative approach to overcoming urban sustainability challenges in the region.

Appalachian Climate Futures: Understanding the Contemporary Mountain Vernacular

Brent Sturlaugson, Morgan State University
Jeff Fugate, University of Kentucky

In the coming decades, the United States is projected to see a vast migration fueled by climate change.[1] As rising seas threaten coastal cities, drought overtakes the Midwest, wildfires impact the Mountain West, and heat overwhelms the Sunbelt, those with resources will seek out areas of refuge.[2] One such area is Central Appalachia, presenting both opportunity and peril for existing communities. Situated deep within the mountains, our research documents a contemporary landscape of adaptive uses, settlement patterns, and resilience strategies intertwined with economic transition and societal change. Seeking “more timely, materialized, and hopeful ways of thinking, making and fixing the worlds around us,” our research articulates a contemporary understanding of mountain vernacular and gentrification risks while identifying opportunities for future climate adaptation.[3] Today, as Central Appalachia grapples with the legacy of deindustrialization and amplifying climate challenges, documentation of “what is” must replace “what was.” Once defined by a resourcefulness that drew on available timber resources tied to white settler colonialism, the regional vernacular morphed into a repeatable formula of compact housing units capable of supporting an economy fueled by the extraction of coal. Images of President Lyndon B. Johnson on the front porch of a humble cabin in 1964 solidified a popular image of a mountain vernacular that persists sixty years later, despite a more complex reality. As mining declined, the regional housing stock shifted in turn. In recent decades, manufactured housing units have proliferated along valley floors and steep hollows alike, responsive both to site conditions and regional economic pressures. These units, often doubled or tripled up on individual parcels of land, are frequently acquired outside of typical mortgage finance systems. Meanwhile up the mountainside, land that has been previously logged and strip-mined is being pressed into use for real estate development with the associated expenses of new infrastructure and limited labor. As the impacts of climate change intensify—most notably through inland flooding—housing security grows increasingly tenuous for those most at risk.[4] However, absent a concerted effort to adapt existing settlement patterns and housing stocks, further economic displacement in Central Appalachia is all but assured in the coming decades.[5] Presently, federal policies promote widespread community displacement along waterways in favor of new cul-de-sac developments on the artificial plateaus where mountains once stood, tacitly disregarding the abundance of manufactured housing that might be rehabilitated for ongoing affordable and sustainable shelter. Just as the historical vernacular that preceded it, the contemporary mountain vernacular has emerged from a multilayered physical and cultural context. Rather than reinventing urban and architectural solutions, our research embraces repair by “doing more with less, of responding imaginatively to new contingencies, of exploring and cultivating ‘new forms of desire’ on a post-carbon planet.”[6] As part of this research, we offer a multimedia index of tangible vernacular elements as a way of promoting broader accessibility to the underlying intangible forces while encouraging further design thinking at urban and architectural scales in response to the emerging climate future.

Society + Community: Urban Design and Participatory Process

Saturday, March 22, 2025
4:30pm-6:00pm

Reconnect South Park: Community Repair through Youth Engaged Design Education

Richard Mohler & Julie Parrett, University of Washington

Seattle's South Park neighborhood is bounded by State Route 509 to the west, the Duwamish River (an EPA Superfund Site) to the east and north, and industrial uses to the south. It is bisected by State Route 99, lies beneath the flight path to and from SeaTac airport, and is subject to climate induced sea level rise and liquefaction in a seismic event. (Figure 1) The life expectancy of South Park residents is thirteen years less than those living in neighborhoods nine miles to the north.[1] Yet, South Park remains a tightly knit and well-organized community of color determined to control its own destiny despite the historic and on-going environmental injustice and public health disparities it has long endured. The South Park community, in collaboration with the City of Seattle and Washington State Department of Transportation, has a once in a generation opportunity to partially address these inequities through the mitigation or removal of the segment of SR-99 that bisects the neighborhood.[2] The city-sponsored Reconnect South Park Project re-imagines the highway's 40-acre swath as a site for restorative development for South Seattle.[3] However, through green gentrification, the project risks enabling the very forces it is intended to disrupt.[4] In response, an interdisciplinary design studio at (redacted) engaged community stakeholders in the exploration of designs and policies at multiple scales that South Park and the surrounding neighborhoods can implement prior to, during, and following the thirty-year highway removal project to reduce the threat of gentrification. (Figure 2) The goal is to build capacity for community wealth generation and stabilization, address climate change impacts, and improve health outcomes. The strategies explored include mitigating climate induced sea level rise, bolstering connections within the neighborhood and between neighborhoods, increasing access to nature and open space, re-purposing the public right-of-way, and addressing residential and commercial displacement through community land trusts, limited equity cooperatives, and the protection of existing affordable housing and commercial space. (Figures 3&4) While specifically focused on South Seattle, the issues explored within the studio are relevant to marginalized communities harmed by transportation and industrial infrastructure across the country.[5] The studio worked closely with community stakeholders including Reconnect South Park, the Duwamish Valley Affordable Housing Coalition, and the Duwamish Valley Youth Corps as well as the Seattle Office of Planning and Community Development, Office of Sustainability and the Environment, and Equitable Development Initiative. (Figure 5) The engagement of youth within the community was a high priority as they will be the most impacted by the project in the coming decades. Following a research and engagement phase, design work was completed by six interdisciplinary teams consisting of graduate and undergraduate architecture and landscape architecture students. Each team was tasked with developing a project narrative in response to community concerns and proposing a suite of strategies and a plan for their phased implementation. The studio exposed many students to direct community engagement for the first time and highlighted both the opportunities and challenges this entails especially when working within the constraints of a ten-week quarter.

Engaging Histories of Repair: Ruggles Station and Boston's Southwest Corridor
Mary Hale, Amanda Lawrence, Lucy Maulsby & Sara Carr, Northeastern University

Ruggles Station, situated at the intersection between the demographically and economically diverse Boston neighborhoods of Back Bay, Roxbury and Mission Hill, is a key but often overlooked site in the larger story of architectural and urban transformation in the 1970s and '80s. In particular, the project offers a critical opportunity to consider the legacy of "redlining," highway planning, urban renewal, anti-highway activism, and participatory design practices. Designed by the Black-led architecture firm Stull Associates (later Stull and Lee, Inc.), Ruggles is one of eight stations constructed as part of the Southwest Corridor Project, an initiative that included not only mass transit but also a 4.7 mile linear park in place of a proposed multi-lane highway that was stopped through community activism. The station and surrounding park gesture towards a more connected, more equitable urban future for Boston: the hope of its designers. Yet, few of its many daily users understand this significance. With its vaulted concourse, monumental arches and strong diagonal axis, Ruggles Station is a distinctive structure that houses an intermodal urban transit hub and the School of Architecture at Northeastern University. This presentation discusses how we have utilized Ruggles Station as a locus of architectural investigation and pedagogy, as a way to discuss urban renewal, postmodern civic architecture, community activism, the legacy of Black architects in Boston, and perhaps most importantly, interrogate the university's own relationship to its urban context and neighbors. We will discuss the results of our research to date, which has been aided by 500 cubic feet of original drawings, papers and project materials from the Stull and Lee archive held at Northeastern University Archives and Special Collections. These include: an exhibition that placed the station in dialogue with its surrounding communities and within the broader architectural and urban debates that shaped American cities in the postwar period; a symposium featuring the architects, planners, and activists involved in planning the Southwest Corridor Project; teaching modules; and a forthcoming book project. Through this work, we have attempted not only to offer a powerful counter-narrative emphasizing the difficult work of repair in the wake of urban renewal rather than its ruin, but also show how through the lens of just one building, architecture students can be become engaged in a history that begs significant questions about how historical, political, and community-driven forces shape architecture and the built environment.

Sankofa Community Research: Towards Repair in Detroit's Black Bottom and Paradise Valley

Marcia Black, Black Bottom Archives
Emily Kutil, University of Michigan

Overview This session will discuss Sankofa Community Research, a community-led collaboration between a Detroit-based nonprofit organization and a Lecturer in Architecture at a local university. This project studies the multi-generational impact of displacement on Detroit's Black Bottom and Paradise Valley communities, focusing on the perspectives of displacement survivors and Black Detroiters. Bringing together oral histories, historic maps and images, archival video, census records, legal records, newspaper articles and other sources, we examine how displacement impacted people, businesses, cultural centers, public space, environment and infrastructure. We are currently developing a web-based interactive spatial interface and community report that present evidence of impact and propose reparative actions. Throughout the project we have facilitated community dialogue with Black Detroiters to discuss impact and develop collective proposals for reparations. We aim to support ongoing reparations organizing in Detroit by providing evidence of the many ways that displacement impacted Black Detroiters, and by presenting pathways toward repair that are grounded in the lived experience of survivors. We aim to further illuminate the history of Black Bottom and Paradise Valley using spatial analysis and mixed media, intervene in present-day political organizing in order to collectively shape the more equitable future that Black Detroiters deserve, and provide a model for collaborative community-led public scholarship that works to transform the material conditions of the community being engaged. Significance & Background Like many other US cities, Detroit has been shaped by racist displacement, community erasure and gentrification. Paradise Valley–a major Black business district–and the adjacent Black Bottom Neighborhood–considered one of the poorest sections of the city in the 1940s– was once home to tens of thousands of thriving Black businesses, cultural institutions, and homes. Between the 1940s and 1970s, these neighborhoods were displaced by large-scale demolition during the construction of I-375 and a series of "urban renewal" developments. Homes, businesses, institutions and sacred spaces spanning more than a square mile were demolished, as the City of Detroit chose profit over people. In the first phase of urban renewal alone, the City projected an increase of 950% in assessed land and building value1. By 1962, the City of Detroit had the fourth largest municipal revenue system in the US.2 Today there are plans to redevelop I-375–the major highway that tore through Black Bottom Paradise Valley–into a boulevard with a large amount of "excess property" slated for redevelopment3. This redevelopment presents an opportunity for leaders and government officials to adequately acknowledge historic harms in destroying Black Bottom and Paradise Valley and create a plan for renewal and repair for Black Detroiters. While some historians have written about the significance of Black Bottom and Paradise Valley and the impact of Urban Renewal on Detroit, significant gaps in information remain regarding this history, including a full understanding of the scope of what was lost, and perspectives from Black Bottom survivors and their descendants regarding what reparations should look like today. We believe this information is necessary to make a grounded assessment of the community investment that must occur to repair this historic harm.

Everyday Forms of Care: Learning from the Incremental Industrial Architecture in South China

Vincent Peu Duvallon, Linnéa Moore, Ziyi Zhou & Tieru Huang, Kean University

Located in the South of Zhejiang Province, China, Wenzhou was known during the early reform and opening up for its economic model based on small-scale private industries. This “Wenzhou Model” led to an endogenous form of rural development and ad-hoc architectural transformation, typical of what Jamie Gillen describes as ‘ruralization’. Contrasting the concurrent ‘Large Scale Demolition and Construction’ seen in first-tier cities, this organic evolution preserved most of the pre-industrial urban fabric of the rural settlements while transforming the unused space into household industries. During the last forty years, these grassroots industrial clusters have evolved following the needs of the changing economy. However, the top-down planning wave of ‘Large Scale Demolition and Construction’ has begun to transform the Wenzhou urban area and its surroundings deeply, despite the major slow-down due to the property sector crisis. Our project delves into the vernacular forms of architectural transformation and preservation operated in the Wenzhou region during the last forty years in order to develop alternative models, based on productive landscape preservation, lightweight construction, and local know-how to achieve economic and social sustainability. The first part of our research is documenting the incremental transformation of rural housing into cottage industries, small industrial structures, and industrial clusters, to understand their social, economic, and construction logic. The second, more speculative part, is developing alternative urban and architectural models based on the lessons learned from the completed fieldwork, challenging the developer-driven capital-centric urbanism of ‘Large Scale Demolition and Construction’. These alternatives embrace the everyday forms of care present in the local industrial clusters, proposing a critical interpretation focused on the care of the built environment and ad-hoc repair, care of the man-made ecological system, care of the economic local production.

Design: Global Practices: Collective Memories, Heritages, and Placemaking

Saturday, March 22, 2025
4:30pm-6:00pm

A Critical Study Of The Aguda (Afro-brazilians) Architectural Style In Benin And Its Influence In The Urban Morphology Of Porto-novo

Hlanganiso Mokwete, Northeastern University

It is frequently impossible to draw a direct connection between the horrifying 18th-century transatlantic slave trade, in which millions of Africans were forcefully transported and sold into slavery in Latin America, and architecture or place-making, particularly when considering African contexts. However, the contribution to the socioeconomic development and creation of a new building style known as Aguda, or Afro Brazilian architecture, in Benin, where many of the formerly enslaved peoples who relocated back and settled after the abolition of slavery in Brazil, presents an interesting example of architectural heritage with rich meaning and value. This essay will critically examine Benin's Aguda architecture design processes via the lenses of history, socioeconomics, the environment, with a focus on comprehending the characteristics of architectural buildings at the urban scale and their influence on Porto-Novo, the country's capital. The typology of this architectural style, its relationship to collective memories, and the tangible components that enshrine social value and significance will be scrutinized via examination of both its African and Brazilian influences. Some of its unique aesthetic decorative motifs and their relation to mythical African meanings that can be found in African masks, the buildings unique references to both the African Yoruba place making typologies and that of the Bahia’s architectural references in Brazil will be analyzed. Aguda architecture also offers fascinating insights into how architecture can be a tool for both placemaking and the creation of new meaning through the use of practical tools, means and methods, consideration of the environmental conditions of the tropical climate, and negotiation of the sociopolitical realities that shape our building practices. The fast urbanization of Porto-Novo, material degradation of these buildings, lack of investment, effects of climate change induced weather events and other effects are putting these historic buildings in danger of disappearing. This essay is a part of an ongoing digital documentation and archiving of these architectural heritage structures as a preservation effort. The digitization of the buildings makes it possible to examine the tectonic features of the structures up close and to record the narrative histories of the buildings through the collation of archives and oral history recordings. This process also will inform a collation of material documentation necessary for local building custodians and municipal heritage organizations in Benin to lodge applications with UNESCO for World Heritage protection. The material tectonic study and analysis will enable development of possible building material remediation strategies that can be leveraged by partners towards preservation work and building rehabilitation. These predominately earth architecture buildings are a critical part of both history and heritage of Porto-Novo with a rich history of those who returned to Africa and how their influences shaped both the design process, building and making or urban environments.

(counter)cosmogonies: rituals for the (un)dead
Stephanie Choi, Rhode Island School of Design

Rituals are performed in our day-to-day lives. They are both sacred and profane, loaded with ecumenical meaning, and/or devoid of theological origin. Rituals can be both ordinary and extraordinary, quotidian and divine. They come in different forms, and accordingly, rituals determine different forms and forms of life. This research critically reads how mythologies are embedded in our daily life. Ceremonies and rituals serve as the chassis to plumb how we hold myths and stories in our imaginaries and our bodies. Rituals are spatial, temporal, and material practices. They are embodied performances and they span myriad genres and registers. Rituals function as states of exception, but in doing so, can both reify the existing status quo or rupture world orders. They can embody liberatory potential. Rituals are explored as a world-making endeavor, a series of performances co-created and co-authored that reenact mythologies. The sonic and spatial registers of ritual procession are often recorded and archived via scores and notations. Drawing on this research, the project, Twilight Requiem, is an exploration of the regenerative and adaptive role of ritual and ceremonial objects used in quotidian life. It draws upon Korean folk art forms, aesthetics, and histories to imagine new rituals, objects, and spaces. The project is a meditation on the twilight of life on earth as we humans know it. It draws from the Latin form of requiem mass to envisage cycles of rest and repose, restlessness and wandering. The repetitive space of ritual corresponds to the cyclical time of this reinterpretation of the requiem. Twilight Requiem takes hybrid forms. The medium of animation electrifies ritual objects, places them on altars in sacred landscapes toxified. Multi-channel projection emphasizes the polyphony of both the requiem and Korean shaman ritual music. The animatory space of the video emulates, virtually, the space of passage between the living and the dead. In Greco-Roman mythology called the River Styx, this liminal space between realms is physically embodied in the hourglass echo chamber of the janggu, the Korean traditional double-headed drum. The environment of the animation is itself another realm beyond, virtual, not actual, pulsed ecstatic energy. The project delves into Korean shaman ritual music and proposes new rhythmic cycles based upon the cosmogonic structure of the janggu. One head represents the gate to this world, and the other, the gate to the nether world. The space between membranes is the resonating chamber, itself, activated by human hands. In attending to the sonic quality of Korean ritual objects, I propose an Asia futurist vision in which new rituals are created in response to climate catastrophe. The project ruminates on death, the afterlife, and the reverberation between realms. Through this confluence, I intend to create a world, at once familiar but uncanny, a landscape for mourning and contemplation.

Architecture as Immersive Teaching Aid: Reimagining the Pieces of the Government-General Building of Korea, Seoul

Seungbin Yoo, Waterfront Toronto

The demolition of the Government-General Building (GGB), a hegemonic symbol of Japanese imperial-colonial expansion in Seoul, coincided with Korea's 50th liberation anniversary from 1994 to 1996. This demolition was celebrated as a step toward erasing colonial legacies, but it underestimated the potential of colonial architecture to serve as an educational tool for engaging with complex postcolonial narratives. This project reimagines the Japanese Empire's annexation of Korea by focusing on the Government-General Building (1910–1996), a symbol of Japanese hegemonic control over Korea. Instead of pursuing demolition, the project proposes a speculative architectural competition to transform the building into an immersive teaching tool. The competition method explores reinterpretations through void, inversion, and extension-preservation techniques, offering alternatives to demolition and creating spaces for critical public engagement with colonial history. The speculative competition challenges the conventional dialectic of demolition versus preservation. Techniques such as void and inversion, inspired by Aschrott Fountain and Seung H. Sang's concept of "emptiness," allow for sensitive interventions that acknowledge colonial trauma while preserving historical significance. This format promotes iterative processes that view colonial structures as dynamic media for public education and decolonization. Beyond architectural interventions, this project is crucial in addressing the absence of colonial narratives in Korean education. By designing immersive exhibition spaces within the reimagined ruins of the GGB and other colonial structures in the future, the project offers new educational experiences that the postcolonial Korean education system has failed. Finally, this project proposes a postcolonial educational model that integrates the GGB's history into immersive exhibitions, fostering a comprehensive understanding of Korea's colonial legacy. It critiques current approaches to colonial architecture and suggests more dynamic and various alternative approaches. It views the speculative competition format as a local and global model for repurposing colonial structures into educational spaces. It emphasizes architecture's role in repairing collective memory and facilitating public discourse on postcolonial recovery, addressing gaps in Korean secondary education and subsequent shared knowledge within the general Korean public.

Code Repair: Enabled Rituals/Disabled Canon, an ADA Compliant Ablution Basin
Mohamad Ziad Jamaleddine, Columbia University

The Americans with Disabilities Act (ADA) provides valuable design guidelines to assure access for physically disabled bodies to every Class of building. While ADA Standards are enforced in “Religious Facilities,” the secular framework in which they were conceived blinds them to some religious rituals and metrics. For example, the ADA Standards provide no guidelines for ablution basins, stations where Muslims ritually wash before entering a mosque. The project presented in this Design paper addresses that gap by presenting a design for an ADA compliant ablution basin. By focusing on a specific Islamic ritual tradition, the paper illuminates a significant flaw in the theoretical foundations of the current ADA Standards, one that requires urgent repair. Simultaneously, the paper contributes to disciplinary conversations on Islamic architecture, religious practices, disability, and building codes. Keywords: ADA standards, Islamic architecture, multi-faith project, adaptive-reuse, water basin.

Narratives of Repair: Re-Imagining Stone Town / Ng'ambo
Aziza Chaouni & Bomani Khemet, University of Toronto

Zanzibar City represents over 800 years of development, expansion, and transformation, beginning as a fishing village in the early eleventh century AD. The city consists of two main urban cores. The old colonial town, a UNESCO World Heritage site since 2000, features stunning buildings that blend Portuguese, British, Omani, and Indian influences, mostly constructed over the past 200 years. This area is known as Stone Town, or Mji Mkongwe in Swahili. Directly to the east of Stone Town lies the newer urban center, Ng'ambo, meaning "the other side." Ng'ambo is characterized by Swahili dwellings and post-independence modernist social housing and public facilities. The two parts of Zanzibar City were originally separated by a natural creek, which was later filled in and converted into parks and a major road, reinforcing a physical division between Ng'ambo and Stone Town. The designation of Stone Town as the sole UNESCO World Heritage site on the island has exacerbated this division, marginalizing other forms of intangible and tangible pre-colonial and post-colonial heritage. This paper proposes a new approach to Zanzibar City's heritage narrative, one that embraces its pre-colonial, colonial, and post-colonial built heritage. It will examine the urban evolution of Stone Town and Ng'ambo, critique UNESCO's problematic heritage narrative, and discuss the methodology, goals, preliminary outcomes, and prospects of the first phase of the joint research project Upande Mmoja na wa Pekee ("The One and Only Side" in Swahili). This project seeks to reimagine public spaces and repurpose unused public buildings to express a more inclusive heritage narrative.

Digital Technology: Digital Doppelgangers

Saturday, March 22, 2025
4:30pm-6:00pm

Mapping Human Agency in the AR-Enabled Co-Production of an Urban Community Podium

Sina Mostafavi, Bahar Bagheri, Edgar Montejano Hernandez, Asma Mehan, Caleb Scott & Cole Howell, Texas Tech University

The application of Augmented Reality (AR) in construction is transforming how non-expert users engage with complex assembly processes, with its potential to foster broader community involvement in urban space production remaining underexplored. This paper presents an integrated framework that incorporates AR-enabled phygital instructions with timber dowel structures, facilitating the active participation of non-experts in the design-to-production process of an urban community food podium. By leveraging AR and computational design, the system bridges the gap between expert and non-expert users, enabling wider participation in the construction process while maintaining precision through robotic fabrication and step-by-step digital guidance. Tested within a graduate-level course and showcased at a public event, the project aims to empower community members to engage in production and assembly, offering insights into participatory urban design and co-production. The results demonstrate the capacity of augmented fabrication to enhance human agency, making complex construction tasks accessible and collaborative, and paving the way for resource-driven, community-enabling urban developments.

Navigating Collaboration: Enhancing Open Office Environments with Autonomous Robotic Partitions

Marta Nowak, The Ohio State University

The prevalence of open office layouts, touted for fostering collaboration and social interaction, has brought about unforeseen challenges. While these layouts have promoted interaction, they have also led to workspace distractions and privacy concerns, hindering individual and team productivity. Additionally, the spontaneous nature of collaboration in open offices often lacks suitable spaces for privacy and focused work, leading to disruptions for neighboring colleagues. Recognizing these limitations, there arises a critical need for flexible and adaptive solutions within office environments. To address these challenges, the project introduces Parti!Wall, a robotic partition-wall system designed specifically for open office layouts. Parti!Wall aims to provide on-demand collaborative spaces while preserving individual and team privacy. The system is equipped with autonomous navigation capabilities, enabling it to map its environment and navigate seamlessly, avoiding collisions with people or objects. Upon reaching its destination, Parti!Wall creates an inflatable enclosure, offering visual and acoustic privacy for working teams. The methodology employed in developing Parti!Wall involves a multifaceted approach. Initially, a deep understanding of human circulation patterns within open office spaces is obtained through crowd simulation software such as Anylogic. This data serves as a foundation for determining where and how the robotic wall can be effectively deployed. Prototyping plays a crucial role, with various design iterations tested to evaluate mobility, stability, and architectural performance. The final design is informed by these experiments, ensuring optimal functionality and usability within diverse office environments. In summary, the problem of workspace distractions and privacy concerns in open office layouts necessitates innovative solutions like Parti!Wall. Through autonomous navigation and inflatable enclosure capabilities, Parti!Wall offers a dynamic approach to creating collaborative spaces on demand, addressing the evolving needs of modern office environments.

Lightweight Construction/Reconstruction/Deconstruction

Stephanie Sang Delgado, Kean University
Galo Cañizares, University of Kentucky

Lightweight Construction/Reconstruction/Deconstruction is a project in three-parts, questioning the relationship between virtual and physical materials while finding new kinships between them. It acts as a critical response to ongoing dialogues of digital models and their perceptions in design disciplines. Today it is common to hear the virtual world described as a mirror world and digital buildings referred to as “digital twins.” While these may be apt ways to familiarize oneself with these mediums, they still skirt the core contradictions at play in virtual/digital space. These contradictions are not hindrances but opportunities for richer forms of engagement. Lightweight Construction embraces them and tests their limits though 3 distinct material explorations. The project is split into 3 parts: Lightweight Construction is an installation and set of representations about our conceptions of digital materials and tectonics. Designed as both a physics-simulated set of impossible materials and an exhibition at the Wedge Gallery, the project revolves around a set of uncanny high-fidelity simulations of traditional architectural materials misbehaving. Walls made of brick slump, OSB panels flutter in the wind, and 2x4 studs wiggle as if made of rubber. The media that constitute this project exists as a collection of 3D data, 2D images, and videos that call attention to the new elements of architecture, which are rooted in informatics and the processing of data. The polygon, the UV map, the graphics shader, and the raster image are all core (yet completely intangible) components of contemporary architectural production. Lightweight Reconstruction focuses on the impossible detail, allowing for the manipulation of materials digitally, blending and transforming in ways unseen. Through generative code, the project takes on a new meaning of the word assembly. Materials are not combined through mechanical fastening systems but by lines of codes and rules that guide them. Models are not made as geometric solids, but instead as mathematical signed distance functions, parametric equations that render geometry through abstract formulas. This form of representation, unique to virtual environments, was revolutionary in computer graphics as it allowed for extreme lightweight representations of complex geometry on memory-limited computers. Lightweight Deconstruction builds upon the Lightweight Reconstruction and Construction but differs in one key element: volume. While typical digital rendering techniques represent materials as surface images applied to geometry through a UV map, Lightweight Deconstruction asks: what would a volumetric approach look like? What if digital materials were defined and represented as volumes rather than surfaces? Here traditional raytracing algorithms (such as V-Ray) are substituted with a custom-built volumetric raytracing engine that traces light through the objects without stopping at the surface. The result is a set of geometric construction assemblies represented as uncanny, vaporous volumes that are both hyperreal yet impossible to realize physically. If materials always tell stories, we’re interested in the new kinds of stories that virtual/digital materials can tell, beyond appliqués or textures. Together, these projects form a conceptual triptych that forces us to think deeper about pixels, voxels, and their narrative potentials.

How Will The 3d Concrete Printing Technology Affect The Future Of Architectural Design?

Soo Jeong Jo & Meredith Gaglio, Louisiana State University

The emergence of new building materials and technology has been one of the significant factors that brought an important paradigm shift in architectural design, such as Le Corbusier's The Five Points of a New Architecture triggered by the development of concrete structure, steel, and glass for building construction, or the emergence of flying buttress technology that brought the advent of Gothic architecture. Recently, among the ongoing developments of new building technology, the advancement of Construction 3D Printing (C3DP) technology that uses additive manufacturing (AM) has attracted architectural researchers and practitioners. C3DP may be a promising solution for post-disaster conditions that can quickly repair the community with its potential for faster construction time and reduced labor cost. Despite the expectation that this new technology will innovate architectural design and building construction, most studies on C3DP focus on construction or structural issues. Also, there has been a lack of literature that engages the history of architecture and discusses the impact of technology on architectural expression. In response to this literature gap, the present study seeks to identify the influence of C3DP technology on architectural material use and to discuss how this could reshape the future of architectural design. To achieve this, a systematic literature review was conducted to identify the mechanism and characteristics of the technology and the history of architectural material with selected projects were reviewed. The study result indicated that the emergence of the C3DP technology brought a new set of architectural expressions and the reinterpretation of traditional materials encompassing the past, present, and future.

Pedagogy: Innovations in Housing

Saturday, March 22, 2025
4:30pm-6:00pm

Take Care: Collective Elder Care Housing for Los Angeles's Chinatown
Jeffrey Liu, California Polytechnic State University

Elder care exists in a state of perpetual precarity. Elder care facilities in the United States are consistently underfunded and understaffed, leading to neglect and elder abuse. In lieu of proper professional facilities, there is a growing shift towards residential elder care in which elders receive informal in-home care in private residential settings, placing unfair burden on family members to perform uncompensated care labor. As residential care becomes the dominant paradigm for elder care, new models of affordable elder housing must be developed to include elder care spaces within residential living. To combat the economic precarity and social isolation produced by privatized residential elder care, various models of communal care have been proposed in which elders and other community members gather together in common spaces, pooling resources and labor to help care for one another. Take Care was a second-year undergraduate studio at Cal Poly San Luis Obispo that invited students to design collective elder care housing for Los Angeles's Chinatown. Though Chinatown's aging population is underserved by a limited stock of affordable elder care housing, practices of co-living and spaces for mutual aid are deeply embedded into the history of the neighborhood. Thus, the studio prompted students to envision new paradigms of housing that integrate collective care within domestic space. As an introductory design studio, Take Care utilized the framework of unit-to-whole to instruct students in the design of housing as a composition of smaller spatial units. Through this theme of unit-to-whole, students reconceived the home in a collective form with private individual rooms and shared spaces where care takes place, investigating the proper relationship between individual and collective in their proposed communities of care. Ultimately, students envisioned models for elder care such as collective housing with common domestic spaces, multigenerational housing, and collective care as a reciprocal practice of mutual aid.

Models as Systems, Models at Scale: New Spatial Matrices for Housing
Adam Dayem, Rensselaer Polytechnic Institute

Architecture's positivist tendencies lead it toward incorporating the latest design tools and theories into its working methods at a fast pace.[1] The potential benefits of embracing the newest tools and modes of thought are clear, the world desperately needs novel designs to cope with accelerating cultural and environmental change. However, at certain moments it is productive to pause, and consider how traditional or historical ways of working and thinking are still relevant and can remain so by recasting their roles in the discipline. Taking the conference theme 'Repair' as a prompt to value and reconsider things existing, this project looks at how a traditional way of working – physical modeling – and a historical way of thinking – structuralist theory – were combined in the pedagogy of an architectural design studio. In this studio, students were asked to engage these older, or even seemingly outdated ways of working and thinking to develop novel spatial matrices (Figure 1) for housing. These spatial matrices were intended to resist the normative tendencies of housing blocks to become highly repetitive floors connected by vertical structure, while still providing students a framework in which to resolve program and spatial networks as support for social relationships within and adjacent to the project. The spatial matrices were developed in a process combining physical and digital modeling in a precise and intentional pedagogical sequence. Physical modeling is still prevalent in architectural education today, but its role can be seen increasingly as an afterthought to digital modeling – as merely a physical manifestation of a series of decisions previously settled in a digital design space, rather than its own independent way of conceiving and perceiving space. The computer as design tool enforces digital thinking that has pervaded architectural thought, and in so doing has placed great emphasis on quantification and the causal linking of concepts and spatial ideas.[2] If one accepts that a degree of indeterminacy or ambiguity in architectural thought is important, both in terms of the process of design and how buildings work in the world, can this indeterminacy be allowed back into a way of working with architectural models? Here is where a return to structuralist thinking seems useful. Roland Barthes describes structuralism as an activity of human intellect that decomposes the real or rational objects that make up the world and fabricates new ones that render the primary ones intelligible.[3] This structuralist activity implies gap between the model and the world that allows the model to function as a device for extending the intellect to produce knowledge in the space between scales.[4] This is opposed to a more digital activity where a model acts as an explanation or demonstration of a set of settled decisions. Considering the models from these perspectives – structuralist and digital – was a key part of helping the students to effectively resolve the complexities of the spatial matrices they produced into innovative proposals for a housing building.