F22/S23
Advanced Synthesis Option Studios
Carnegie Mellon University
School of Architecture
The descriptions for F22 and S23 Advanced Synthesis Option Studios (ASOS) are listed in this catalogue. The ASOS selection process happens before each semester (in July for Fall and in November for Spring). At these points an expanded and updated catalogue is published for the following two semesters. We send an invitation email to students from B.Arch, M.Arch and MAAD programs who complete a preference form.

In Fall semesters, 4th year B.Arch students will have a separate set of option studios focussed on Building Integration. This is the final coordinated Praxis studio. 4th yrs will have a BIOS preference process in F22 and then join the ASOS preference process in S23.

This year’s ASOS studios are following the theme of the Public Programs workshops/lectures; F22 Materiality+Aesthetics, S23 Materiality+Extractivism. We plan discussions within the studios and a colloquy after final reviews to gather positions/findings/oppositions.

F22 Studio Rosters will be published on August 15th 2022

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The overarching theme for the semester is that of Materiality and Aesthetics. Each studio will take a different attitude to the intersection of these issues to their studio agenda.
CONSTRUCTION_engendered*

*cause, induce, produce, incite, create, develop, breed, excite, generate, originate and procreate definition Merriam Webster

Mary-Lou Arscott

QUESTIONS
Concepts of gender are constructed and intertwined with injustices in racial, social and cultural space. How does construction labor become race/gender excluding and exclusive? Consider the building site and the race/gender stereotypes across contrasting economies and cultures. What is the connecting rationale in history of race and gender roles? How might a challenge to ideas of property/capital open up alternative economies, material use and design practices?

PROMPT
This studio will take conventional stereotypical construction scenarios and design a progressive series of upsets to it, using and creating disruptive contexts. Narratives will operate ‘to make one think harder, feel more, and be turned inside out’. (Laura Cumming) Reference will be made to artists including the mischievous, surprising and wildly ambiguous, imaginative work from;

Paula Rego
Jes Fan
Carrie Mae Weems
Louise Bourgeois
Doris Salcedo
Jonathan Lyndon Chase

CONTEXT
Studio readings and discussion will include;

Sylvia Wynter_Unsettling the Coloniality of Being, 2003
Judith Butler_The Force of NonViolence, 2020
Swaranbh Ghosh_Crique of Labor in Construction, 2021
Charlotte Malterre-Barthes_The Devil is in the Details, 2021
Assymetric Labs 2016, architecturelobby.org
Harun Farocki, In Comparison, film, 2009
dacollective_Design as Protest, blackwomenbuild.org

At the beginning of the semester we will together establish a community agreement for the studio. The material that we’re covering in this class can be challenging. While we expect there to be rigorous class discussion and even disagreement, you should engage with care and empathy for the other members in the studio. Have the courage to face the uncomfortable and we will work together to establish a classroom environment that is supportive of taking these intellectual and emotional risks.

The studio is committed to drawing at least 50% BIPOC and female writers, artists, architects and thinkers.

The theme of Materiality and Aesthetics will be the lens for questioning as the semester proceeds, where the SoA public programs will be key influences for the unfolding conversation.

The scope of the critical inquiry will be far ranging and challenging. The research will include dialogue with labor organizations and people who are currently engaged in activism in construction and trade training.

LEARNING OUTCOMES
On successful completion of this studio you should be able;

1. to generate design propositions based on a critical understanding of the relationships between ideology and forms of representation.
2. to construct visual-verbal narratives to describe ethical argument and ideas for societal speculation.
3. to use ideas of systems intervention to pose multiple outcomes for change.
4. to understand and apply theoretical positions from studio readings as keys to generate discussion and new insight.
5. to describe the counter positions embedded in their own design propositions.
6. to demonstrate a familiarity with systems of material extraction + supply and reproduction of labor in contemporary construction industry.

PROGRAM
The studio will overturn the contemporary principles of cheapest method, easiest path of exploitation and rewrite the script for a newly engendered construction sequence. It will be a ‘what if’ process of analysis. The studio will consider the impact of each part that could generate radical societal, spatial and material consequences for the built environment. Collectively the project will range across scales, from institutional (e.g. imagining a new trade school) to cellular (e.g. what is a world without contestation of racialized or gendered identities), considering timescales from epochal + generational to daily + momentary, and encompass spatial registers from global to intimate.

The outcome of the studio will be an installation of individual or paired projects and a collaborative public discussion as final review. The studio will speculate using processes of drawing, modeling and animating to project both the potentials and development of the evolving ideas.

Tuesday/Thursday 12-2PM

F22 Advanced Synthesis Option Studios

F22  Advanced Synthesis Option Studios Tuesday/Thursday 12.20-4.20pm       ASOS F22

F22  Advanced Synthesis Option Studios Tuesday/Thursday 12.20-4.20pm       ASOS F22
Materiality and Aesthetics in the Marginalized Community

What is Architecture’s role in bridging the divide between Design and Need?

Bill Bates

QUESTIONS
How do we address the deeper needs of neighborhoods that have been historically marginalized by redlining, systemic segregation, gentrification and overly aggressive urban renewal projects? Architecture is the key element that anchors our sense of place. However it has often been used as a wedge to further divide the “haves” from the “have nots.”

PROMPT
Absentee ownership of property weakens a neighborhood’s cohesiveness, sense of power and self-respect in a society that disproportionately values wealth. The Oxford Dictionary defines Materiality as “the quality of being material or composed of matter.” Obviously architecture has always been a key element of that definition. More interesting is the second definition offered in the dictionary which is the word’s legal meaning: “the quality of being relevant or significant.” This studio will examine the limited privileges and rights of marginalized communities to occupy and own shelter and the impacts on their quality of life as well as the broader societal implications. It will pose challenges to understand how different communities define their relevance and empowerment to shape their own definitions of materiality and aesthetics in spite of the systemic covert and overt biases of outside bureaucracies and design trends. The class will examine how the social equity and justice movement challenges our preconceptions of the designer’s role in dictating materiality and aesthetics. Students will be engaged in seeking evidence of effective design solutions that are not only aesthetically pleasing but address the foundational needs of the disenfranchised. The course will include reading that will prompt discussion about what key architectural elements of a neighborhood are socially foundational and whether or not they should be considered essential human rights.

CONTEXT
The research work of the students will be built upon the ideas embodied in the following books:
“How to Kill a City: Gentrification, Inequity and the Fight for the Neighborhood” by P.E. Moskowitz
“Root Shock: How Tearing up City Neighborhoods Hurt America, and What We Can Do About It” by Mindy Thompson Fullilove, MD

PROGRAM
Exploration of different facets of design beyond its physical aspects will be encouraged. The reading material is intended to help the student recognize political and financial systems and policies that underlie all decisions around the built environment. Students will be challenged to contemplate potential attitudinal shifts to change community perceptions of powerlessness. The studio product will seek to design sustainable change strategies that might serve as a catalyst for social good and justice and enable previously disenfranchised citizens to thoughtfully address materiality and aesthetic deficits within their neighborhood without surrendering to tax driven gentrification.

LEARNING OUTCOMES
• The students will hone their listening skills to better understand clients’ needs.
• Emphasis will be placed on analysis of the political and social framework that dictates decision making in the built environment.
• The studio will encourage students to think about their design solutions in the context of fundamental community needs.
• Focus will be placed upon empathetic listening and problem solving.

“Without an architecture of our own we have no soul of our own….”
-Frank Lloyd Wright
Spaces of Queer Solidarity and Love

Theodossis Issaias (he/him)

**QUESTIONS**

Reflecting on the state of architecture, Paul Preciado writes that architects have been ignoring the epistemological transformations and the critical turn taking place in queer and transgender movements. And then, Preciado asks: What is the relationship between gender and sexual politics and architectural practices and discourses today? Can we think of our discipline as a practice of gender and sexual resistance within contemporary global capitalism? The indexical our and we connote both our positionalities as makers/architects and the contingent and fragile alliances we form to help us endure the grinding down of life’s possible genres and imagine a forward-dawning future.

**PROMPT**

Space is a formation that is co-constituted through sexualities and genders. While the discipline of architecture has disregarded this very fact, queer communities have been creating spaces to enact desire, to find joy and pleasure, to protect, support and uplift one another, and ultimately, to live life in its fullness. For this studio, we will turn to these queer practices that have carved possibility not where repression has inscribed it. We will explore stories, archives, and everyday rituals, that challenge the normative and normalizing habits of architecture. From the bedroom to the darkroom, from the bathhouse to the cruising spot, from the dance floor to the floor of the health clinic, we will revisit practices, locate spaces of solidarity, and reflect on the inner workings and contradictions of our queer coalitions.

**CONTEXT**

The physical context of the studio will be the city of Pittsburgh and its contemporary politics—our here and now. However, we take heed of what José Esteban Muñoz writes: “Queerness is that thing that let us feel that this world is not enough, something is missing.” To escape “the negative and toiling in the present,” Muñoz proposes to look at the realm queer aesthetics of the past because they contain blueprints and schemata of a possible future. Thus, queer aesthetics, from the quotidian to the spectacular, are also our context.

**LEARNING OUTCOMES**

In the lineage of queer agit-prop, the outcome will be a fanzine and an installation of individual or paired up students, presenting, pursuing, and capturing the research and design process. On successful completion of this studio you should be able to:

- to articulate spatial propositions based on a critical understanding of the relationship between the politics of genders, sexualities, and forms of representation
- to work collaboratively with members of grassroots and non-profit organizations and groups
- to navigate the complex field of queer and gender studies, including scholars such as Eve Kosofsky Sedgwick, Lee Edelman, Lucas Crawford, Jack Judith Halberstam, José Esteban Muñoz, Susan Sontag, among others.
- to appreciate the wealth ofarchitectural queer speculation and activism by familiarizing ourselves with the work of Joel Sanders and Susan Stryker, Adam Nathaniel Furman, Pol Esteve, Leah Wulfman Andrés Jaque, Hal Hayes, Paul Preciado, A.L.Hu, among others.
DEGREE ZERO

Unearthing Stone Materiality

Jeremy Ficca

QUESTION

How might a reconsideration of stone extraction, processing, and material performance yield a different form of architecture?

How might stone be elevated beyond a decorative role in architecture?

PROMPT

Formed over millennia or in mere moments, the earth’s geological features and the stones collected or extracted displaces our perception of time made visible through material. Stone is one of our most archaic materials, but for many cultures also one of the most revered. It is a material that intersects a remarkably rich history of building across cultures and time, where it has been used equally for its significance and utility.

This studio seeks to explore the contemporary potential of stone as a primary building material. It will research the evolution of the material’s use and the current circumstances of its global extraction and processing to understand how this plentiful natural resource may open new types of architectural expression while coming to terms with the environmental and human impact of its extraction. Guided by an ecological ethos and situated within the year’s focus upon materiality, aesthetics, and extraction, the studio aspires to produce work that addresses the timescales of architecture and its materials. Furthermore, the studio will develop design proposals that consider the aesthetics of architectural refinement, labor, and extraction. Working heavily through models and across scales, students will explore architectural conditions to ultimately develop an architectural project that demonstrates their interpretation and utilization of the material.

The studio will operate in a ‘mini-thesis’ model in which students, in dialogue with the instructor, will be expected to define the scope of their investigations within the subject of the studio.

CONTEXT/PREDICAMENTS

Note: the studio may travel to Madison, Wisconsin to visit Quarra Stone, one of North-America’s leading stone processors.

This studio is structured around a collection of predicaments that illustrate the contradictions, challenges, and opportunities of the subject. This is illustrated well through recent work related to the Parthenon statuary housed in the British Museum and often referred to as the Elgin Marbles.

This past June, robotic reproduction of an Athenian horse head commenced in Carrara, Italy to demonstrate the viability of reproducing the Parthenon’s Elgin Marbles. The 3D model used to generate the robotic toolpaths was generated by members of Oxford’s Institute of Digital Archaology with the use of Lidar equipped iPhones and iPads and scanned surreptitiously under the watchful eyes of British Museum docents. The robotic carving, conducted in the shadows of a quarry frequented by Michelangelo, reveals the confusing intersections of ancient and modern material practices and our material and immaterial worlds. While the original statuary was hand carved over many months by highly skilled stone masons, robotic carving occurs over days, largely absent the mason’s hand. Whereas stone carving historically relied upon stereotomic drawing to translate design intent to stone masons, digital workflows forge direct connections between the model and production equipment, circumventing drawing altogether.

Stone is a widely available natural building material and offers the potential to reduce distances between material sourcing and building. The strongest stones outperform concrete while offering unmatched durability and aesthetic potential. While contemporary use of stone in building is largely relegated to veneer might there be untapped potential for this material?

LEARNING OUTCOMES

Over the course of the semester students will have:

- researched the evolution of stone construction techniques as practiced globally
- understood and applied the affordances and constraints of architectural stone
- developed a robust knowledge of the cultural, ecological, and performative dimensions of an architectural material
- articulated, through a design proposal, a position toward contemporary application of a naturally sourced material
- explored how material informs spatial and structural conditions
- utilized physical models as instruments of design imagination

Note: the studio may travel to Madison, Wisconsin to visit Quarra Stone, one of North-America’s leading stone processors.

In the mountains of Carrara, you see what you can no longer actually see: millions of tons of mined marble that have found a form and a location somewhere in the world, or have been wasted, reduced to rubble. You see the remains of mountains, their insides that would otherwise be invisible; you see incisions, streets, serpentines, and bridges, and when you get closer, you hear the noise of the saws, the excavators, and the trucks.

Presence and absence become equally important; aesthetics and overexploitation two sides to the monumentality of marble. Am I looking at mountains, or am I looking at the missing parts of mountains, at no longer existing mountains that no eye can possibly reconstruct.

- Angekika Stephen

Quarry Caves, Carrara, Italy, Edward Burtynsky

In the mountains of Badami, you see what you can no longer actually see: millions of tons of mined marble that have found a form and a location somewhere in the world, or have been wasted, reduced to rubble. You see the remains of mountains, their insides that would otherwise be invisible; you see incisions, streets, serpentines, and bridges, and when you get closer, you hear the noise of the saws, the excavators, and the trucks.

Presence and absence become equally important; aesthetics and overexploitation two sides to the monumentality of marble. Am I looking at mountains, or am I looking at the missing parts of mountains, at no longer existing mountains that no eye can possibly reconstruct.

- Angekika Stephen

Quarry Caves, Badami, India

Jeremy Ficca, AIA

Quarry Stone Scraps, Vals, Switzerland

Jeremy Ficca, AIA

Budam Temple Carves, Karnataka, India

Jeremy Ficca, AIA
The specific project for this studio is the design of a 50,000 sf farmer’s market on Block 48 (1.81 acres, 78,847 sf) at Hazelwood Green. We will consider the German concept of "Haus in Haus" by designing the "XL" market building as the outer "Haus" and the "M" services building and the "XS" pavilions as the inner "Häuser".

Program:
- **XL** - 30,000 sf enclosed farmers market with clear span structure ("Haus")
- **M** - 3,000 sf enclosed services building (toilets, mechanical, office, cold storage) ("Haus in Haus")
- **XS** - 300 sf open-air, pavilion-like prototypes for seating, eating, and conversation, etc ("Object in Haus")

Work Products:
- ArchiCAD BIM, multiple form finding models, environmental testing models and einz-zu-einz prototypes of important details.

**LEARNING OUTCOMES**

The following criteria will be used to evaluate student work in this studio:

- **Aesthetics**: The degree to which the proposed building responds to formal issues as articulated in this and prior design studios.
- **Experience**: The degree to which the design uses a thoughtful narrative and carefully articulated spaces to create meaningful experiences for the user.
- **Structure, Enclosure & Materials**: The degree to which the set of selected building materials, components and systems and their proposed implementation are appropriate to the intended occupancy, articulate the desired architectural order, and satisfy the physical design requirements.
- **Environment**: The degree to which the design integrates passive and active strategies to achieve triple bottom line performance.
- **Constructability**: The degree to which the proposed building is informed and developed in response to an understanding of the processes of construction.
- **Presentation**: The clarity, craft and completeness of the presentation(s).

Upon successful completion of this studio, you should be able to accomplish the following learning objectives:

- translate a program into a building design that responds to user requirements
- demonstrate the form making implications of structural systems
- demonstrate the energetic implications of materials selection, enclosure systems and building form
- integrate multiple systems to achieve elegance, efficiency and economy in design
- ability to determine the best way to test and measure performance of systems
- develop criteria for evaluating multiple design alternatives
- draw technical documentation for the project using the conventions of architectural representation

**TEAM STRUCTURE**

Assuming twelve students, we will divide into four three-person teams. The suggested team responsibilities are one person each as project manager for XL, M and XS and one person each as project manger for structure, enclosure and MEP. The project managers are ultimately responsible making team assignments and producing the deliverables.

**FIELD TRIPS**

- East Liberty Farmers Market, Pittsburgh, PA (Saturdays 6:00am-12:00pm)
- Main Street Farmers Market, Washington PA (Thursday’s 300-600pm)
- West Side Market (43,560 ft²), Cleveland, Ohio
- Lancaster Central Market (87,120 ft²), Lancaster, PA
- And maybe the: Reading Terminal Market (78,000 ft²), Philadelphia, PA

**CONTEXT**

The project site is a 178 acre former industrial site known as Hazelwood Green situated along the Monongahela River. In the early 2000’s, Almono LP assembled multiple abandoned industrial properties in the Greater Hazelwood neighborhood to have greater control in creating and implementing a comprehensive redevelopment strategy for the site. According to their website, “Hazelwood Green is envisioned as a model for the transformative redevelopment of an urban brown field into a center of innovation that fuels Pittsburgh’s new economy while remaining grounded in the principles of sustainability, equity, and inclusive economic opportunity.” To the greatest extent possible, we will follow the 30 August 2018 Hazelwood Green Preliminary Land Development Plan.

FRAMING MAXO
SPATIAL NARRATIVES OF SOCIAL JUSTICE

Christine Mondor

QUESTIONS
This studio will examine the legacy of social justice advocacy of artist Maxo Vanka through the design of a visitors’ center campus to complement the artist’s murals in Millvale, PA. Vanka’s murals, painted between 1937 and 1941, depict the social striving of an immigrant community dislocated by economic crisis and global warfare as modernization scribed a new social order. It was a time of great flux and inspired visual narratives that are relevant to today’s dialogues. Our design will pay deference to the mural artifacts and speculate on how design might embody and enable spatial narratives of social justice.

PROMPT
Through reading, writing, mapping, and designing, we will explore multiple themes, including politicized space of capital, global identity and citizenship, and the construction of social order in periods of great flux. Our exploration process will include a personal reflection on the intersection of geographic territory, power, and agency and the evolution of discursive practices. In our first exercise, MICROsettings, we will document spaces of social discourse to become familiar with their functioning. In MACROsettings, we will use mapping as an interpretive tool to understand alternative geographies connected by shared narratives. These exercises will inform the semester-long design of a 3-acre campus and structures that will enable the expanded program envisioned by our M3V client.

CONTEXT
The Society to Preserve the Millvale Murals of Maxo Vanka (referred to here as M3V) is actively preserving the murals and extending their themes to invite a broader, contemporary audience. Our studio will propose material and ideological spaces for M3V’s physical and virtual engagements as they foster dialogue on social justice issues and engage a global community to participate. We will engage the M3V organization, community members, interpretive design experts, artists, and CMU SoA alums to build our knowledge.

RESOURCES (links available upon request)
- Save Maxo Vanka, website: https://vankamurals.org/

PROGRAM
Architecturally, we will anchor ourselves in the field of interpretive design, most commonly used in the design of museum environments, and will examine how museums function as catalytic social settings.

In museum design, the visitor’s stay unfolds in time and space with spatial organization and artifacts to engage the body and orchestrate the experience. While we have much to learn from this approach, we will be conscious that the embeddedness of the campus in the community and the desire for serendipity and self-determination in the public realm will inspire moments of creative tension.

In addition to our design sprint preludes, we will design a campus of spaces that augment the visitor experience while seeing the murals. This may include the repurposing of existing structures on-site and the weaving of the experience into Millvale, as well as the connection to programs and sites well beyond the immediate vicinity. Functions will include gallery spaces, visitor art spaces, spaces to gather, spaces to learn, as well as the service spaces required for full functioning. Students will be encouraged to consider the materiality of the campus as a tool for structuring experience.

Note: This studio will require students to consider social, religious, and environmental justice material that some might find difficult or disturbing.

LEARNING OUTCOMES
During this studio, students will gain technical, procedural, spatial, and experiential design skills, and will be able to:

- articulate historical threads and develop a narrative around the evolution and continuity of social justice issues
- understand social models of change and how design, art, and engagement can catalyze or contribute to cultural transitions
- identify and speculate on key drivers of urban design, including experience, materials, context, cultural practices, political space, capital, and administration
- define and apply design theory describing behavior settings and micro-scale spatial practices
- define and apply design theory describing mapping spatial and geographic contexts that describe macro-scale spatial practices
- analyze museum and exhibit design and understand and apply the fundamentals of interpretive design principles

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Note: This studio will require students to consider social, religious, and environmental justice material that some might find difficult or disturbing.
The overarching ASOS and Public Programs theme for the semester is that of Materiality and Extractivism. Each studio will take a different attitude to the intersection of these issues to their studio agenda.
OBsolescence
Exploring Praxis, Material Cultures, and Labor in South Asia
Sarosh Anklesaria

Questions
Obsolescence is a world-wide phenomenon, woven into the very DNA of capitalist production. The vast amounts of resources consumed by buildings, including the extraction of material and labor, makes the systemic planned obsolescence and demolition of buildings particularly wasteful. Demolitions often represent not only the destruction of material edifices but also ideological ones, of histories being rewritten and memories erased. How can architecture offer tools of resistance against this planned obsolescence? What architectural tools can the designer be equipped with to make buildings that counter obsolescence, that consider questions of longevity and time? How can the relationship between form and function be upended to include the unprecedented rates of social and technological change that buildings cope with during an extended period of time?

Prompt
If the promise of modernism was to bring design to a vast multitude of people, it has been asserted across various disciplines, that European modernity was aided and abetted through extractivism in the colonies. Conversely, modernity—and modernism as its cultural articulation—was also embraced as a powerful tool in the process of decolonization by local architects working across the Global South, particularly in South Asia. This is manifest in the ways in which it embodied and expressed the collective social aspirations of the region’s newly independent nations. Acts of institution and expression of resistance against this planned obsolescence? What architectural tools can the designer be equipped with to make buildings that counter obsolescence, that consider questions of longevity and time? How can the relationship between form and function be upended to include the unprecedented rates of social and technological change that buildings cope with during an extended period of time?

Context
The term conservation implies a certain restoration of the formal registers of the building, a freezing in time and history. Acts of care, maintenance, adaptation, and repair can, on the contrary, generate new visual and material cultures and in doing so renew collective memory. The temporal architectures of the subcontinent will also serve as an inspiration for rituals of building, that while transient, engage with various publics and practices of the Indian city.

Program
The studio will consider aging modernisms of the Global South, particularly in the context of western India as a site for intervention and study. Projects will address questions of loose-fit program and the notion of everyday praxis and material cultures to consider additions, alternations and new construction. Concurrently the studio will relate to the ongoing CMU SoA Public Programs theme for the semester — Materiality and Extraction. We will also follow and partake in the ongoing collaborative project, “Conservation in a Shifting Landscape: The future of Modern Architecture in South Asia” at the Harvard Graduate School of Design.

Readings/References
Shannon Mattern, Maintenance and Care, 2018.

Learning Outcomes
On successful completion of this studio you should be able:
1. to apply design thinking that actively engages with questions of time, extraction and obsolescence of buildings
2. to understand the role of ideology in the shaping of architecture, its materiality and forms of representation.
3. to understand architecture as a non-extractive practice engaging, engaged in material cultures that consider labor as a form of social empowerment, and also consider, circular thinking and decarbonization.
4. to demonstrate familiarity with architectures and building practices of the Global South particularly the Indian subcontinent.
Empathy, Architecture, and the Anthropocene
Designing spaces that cultivate empathy between humans and the nonhuman other
Priyanka Bista

QUESTIONS
The history of architecture is deeply rooted in anthropocentrism and speciesism, resulting in an ongoing exclusion of nonhumans. The biodiversity crisis inherent in the Anthropocene also stems from this superiority complex that views humans as separate and superior to other species. So, how do we disrupt this anthropocentric narrative and bridge this disconnect by designing spaces that enable humans to learn, engage, and cultivate empathy towards the “nonhuman other?”

PROMPT
Although humans are only one species within an estimated 10-13 million species inhabiting this planet, we continue to occupy and design our landscapes with a predominantly anthropocentric frame of reference. The current dialogue on sustainability or sustainable design is also fundamentally anthropocentric and, therefore, doesn’t integrate species beyond humans. In the article, “Biodiversity: the new challenge for architecture,” Dr. Brian Edwards acknowledges this critical problem. The Green Building movement that started in the 1970s has evolved extensively with numerous certifications. Still, today, the criteria for biodiversity conservation have been marginally addressed. Within this context, it is essential to understand the role of architecture and design in assisting biodiversity conservation and rethinking a new form of architecture that considers all living beings equal stakeholders or users of the spaces.

CONTEXT
The studio will be situated within the context of a project initiated by the instructor, the “Vertical University,” based in the Eastern Region of Nepal. The project emerged from an interest in working with local communities and activating the learning potential inherent in biodiversity-rich landscapes found in the vertical gradient of Eastern Nepal. The project began from the lowland Terai region to the high Himalayas. The studio will focus on the lowest node in Koshi Tappu adjacent to the Koshi Tappu Wildlife Reserve (KTWR), the first RAMSAR wetland site of 173sq km of Nepal situated on the Sapt Koshi River floodplains. The Koshi region is also considered an Important Bird Area (IBA), providing a vital habitat for 526 bird species, 670 vascular plants, 32 mammal species, 45 herpetofauna species, 127 fish species, and 77 butterfly species. Currently, the region is undergoing many social and ecological problems with increasing urbanization pressures, the proliferation of invasive species, and human-wildlife conflicts, leading to the destruction of bird habitats. In collaboration with the local community organization, we’ve acquired a parcel of land to turn into a living biodiversity classroom for the community. The studio will focus on designing a series of biodiversity portals or interventions connecting the local communities to the multiple species within site, whether a bird, a bee, or an elephant. As a part of a live project, students will be able to contribute to an ongoing dialogue on how to support biodiversity conservation through architectural interventions.

LEARNING OUTCOMES
On successful completion of this studio, you should be able:

• to identify, and understand biodiversity crisis, utilize key terms related to the course topic—e.g., biodiversity, multispecies design, empathy, experiential design, nonhuman, umwelt.
• to understand and utilize multispecies design methodologies and tools to develop designs that integrate human and nonhuman species.
• to understand and explore the role of architecture in mitigating biodiversity crisis, drawing upon case studies.
• to identify target nonhuman species through a species selection method and to understand and map the spatial requirements of the selected species.
• to understand and design drawing on experiential architecture case studies and phenomenological theories.
Image Deep: /Imagine
Exploring Design Prompts in AI: Variations on Social Housing and Material Ecologies in the era of Climate Change

Dana Cupkova

QUESTIONS
Advances in Artificial Intelligence (AI) and Deep Learning (DL) provide new frameworks for the future of design discipline, while simultaneously questioning the form of authorship and the use of architectural precedent. Offering almost instant resolution of a seemingly complete architectural proposal - the architectural image / sketch can be generated without any design process, prompted solely through natural language in reference to the vast digital archives.

PROMPTs / Design sketches generated from natural language prompts:

Language of architecture typically considers spatial development of architectural forms based on architectural types, elements, programs and ideologies, while resourceing the historical knowledge of a precedent. However, here the use of architectural reference - especially in context of its ethical implication - might be obscured. This studio will ask how we can expand the design process using AI. What are the consequences of jumping from a narrative into the generation of an instant image, and how does this way of working change design intent, socio-ecological framework, ideological implications and a spatialization process of an architectural proposal?

PROGRAM
The ambition of this studio will be to examine architecture that inquires into embodied energy as a primary inspiration for formation of matter. The goal is to re-situate design within a hyper-local framework of material resources and life-cycle that positions architecture as a vehicle for ecological and communal restoration. Promoting a shift away from purely data driven rationales, the desire is to engage in the design framed by environmental ethics and sensory subjectivities as part of our collective aesthetic and ecological experience.

Environmental aesthetics and aesthetics of nature are branches of philosophy that study appreciation of the world at large as it is constituted not simply by particular objects but by environments themselves. Environmental empathy is rooted in the concepts of otherness and difference. Design grounded in environmental empathy leads to more diverse paradigms in the redistribution of resources, new forms of co-shared domesticity, as well as social equity within our collective urban space, while being closely entangled within its ecological functions. In this studio, visualizing and understanding larger set of multidimensional relationships within design process would enable a projective design imagination tightly linked to creation of bio-synthetic and natural, multi-species environments.

LEARNING OUTCOMES
On successful completion of this studio you should be able to:

- /Imagine: with Machine Learning bots
- Formulate deep learning instruction for design
- Research precedent based on its ideological and ethical framework
- Formulate ecological narratives based on aesthetic associations
- Design sketch with words and researched references
- Transform images into spatial models
- Use advanced modeling workflows and texture modeling to develop architectural models
- Translate digital models into physical prototypes
- Think for yourself and be excited about what’s next
TERRA : FORMING
molding life-support for resilient socio-ecology

Laura Garófalo

QUESTIONS
Through the ornamental architectural surface, which architectural historians and theoreticians tout as a key index of the prevalent ordering systems relevant to a given culture, this studio will question the role of material and form in aspiring to replace anthropogenic sustainability with making-with that is empathetic and responsive. We will question whether architectural design and process can not only communicate but catalyze alternative ways to live-in-the-world with care by recognizing that what we build redefines our ecology and sociality. As we often move toward producing order through geometric principles, we will also question the role of part to whole relations, patterning and structure of form and performance in creating architectures that promote active engagement and responsiveness to ecology and environment.

PROMPT
This studio addresses the indexical aesthetics of transformational processes in the design of architectural surfaces. The articulated architectural surface had a powerful presence in design practice for centuries being an expression of contemporaneous social values. Their implementation through the use of digital technologies in design and manufacturing expresses a set of cultural paradigms in flux between economies or efficiencies of production and under specified variation. Responding to the material focus of the term, this studio explores terra cotta, a material process which embeds the project within an ancient artistic tradition while critically engaging cutting-edge architectural fabrication techniques. Articulation and depth of surface is propelled by the ornamental exuberance facilitated by digital design and fabrication techniques. The process of making through advanced digital fabrication techniques, analog craft, and ecologically collaborative design thinking raise questions of time, labor, resource access, ecology, and responsiveness in the practice of architecture.

MATERIAL in CONTEXT
The three-dimensionality inherent in terracotta systems provides the potential for performative functions and resilience. Terra cotta has a long and rich history of availability and resilience which make it a preferred material when considering the environmental impacts of resource extraction, as it also demonstrates durability and longevity despite long term exposure.

LEARNING OUTCOMES
On successful completion of this studio you should be able;
• To work with the ecologically catalytic, bioclimatic, and biophilic potential of material assemblies with a focus on architectural ceramics.
• To understand architectural material processes, fabrication, manufacturing and assembly systems, use CNC and analog craft skills in prototyping and understanding the scheduling and structure required in experimentation, planning and production of prototypes.
• To develop morphological transformation and tectonics of architectural surfaces and address the role of performativity, expression, and tectonics of ornament in architecture.
• To understand architecture’s role as productive component of its biome through passive and active engagement with regional ecology by conceiving architecture in relation to climatic, ecological, and energy systems.

PROGRAM
The exploration of the ornamental surface will lead to the design of a Gathering Place using architectural terracotta. The Gathering Place’s programming will propose a means of bringing life to a denuded site. Its programmatic specificity, performative role, and expressive character will be developed by studying the relations between individual and environment and their potential to be “conceived as an inter-active collective of engagements between living and non living ‘beings’” (Ludwig, 2020). Its uses and users will be defined through initial studies of geological, biophilic, hydrological, climatic, and socio-cultural systems and the material futures of our post-crisis ecology, consequently the Gathering Place may exist at the scale of building, infrastructure or landscape.

In their design and fabrication these structures can present a vision of a culturally relevant building that expresses its responsiveness to climate crisis and material resilience. The aesthetics of transformational process will redefine the relationship between ornament, shelter, weather, sociality, and ecology. In merging communication with environmental performance terra cotta is instrumental in returning to the building skin the role it once had as a defining element of what forms Architecture rather than just makes a building; the expression of culture (Picon 2013).
What on Earth?
A transdisciplinary and transplanetary Urban Collaboratory Studio

Stefan Gruber

QUESTIONS
Institutions such as Universities and Museums are slowly waking up to the fact that they play an active role in reproducing systems of social and racial oppression. Per definition, institutions establish canons and consolidate power, often with the support and gravity of architecture. So can institutions escape this dilemma and ever be an emancipatory project? And if so, how would we design them to be more equitable and inclusive, speaking to the most pressing societal challenges as much as everyday concerns of a wider, more diverse demographic? What form or format might such institutions take?

PROMPT
An interdisciplinary team at CMU is collaborating with the Carnegie Science Center to address these question and explore how to make STE(A)M education more accessible and relevant to families across Pittsburgh. This fall, the Science Center’s new exhibition about Mars entitled “Our Destiny in Space” will explore how a future on a different planet might reveal what’s needed to make a good life for all on Earth. While the imagination of settling on Mars is fraught with colonial rhetoric about new frontiers and techno-optimism by billionaires, debates about starting from scratch on another (much less hospitable) planet also provides the critical distance and a speculative playfulness to ask radical questions about our future on Earth, and how we live together, extract, distribute and govern resources. The Science Center has asked CMU to help develop an approach to community engagement and imagine a series of museum satellites located in disenfranchised Pittsburgh neighborhood

CONTEXT
Studio readings and discussions will include and draw inspiration from:
- “The Dispossed,” an anarchist utopic novel by Ursula LeGuin (1974), and other science-fiction
- “Seven Objections for Landing on Earth,” an essay by Bruno Latour and theories on cosmo-politics (2020)
- The Office for Political Innovation’s theater play “Superpowers of Ten” (2013) and their multimedia installation IKEA Disobedience for MoMA (2011).
- The radical cartography, activist pamphlets and advocacy work by CUP, the Center for Urban Pedagogies (since 1997)
- “Architecture Depends” a book by Jeremy Til (2009) and other key texs on participatory design and community engagement.

PROGRAM
In this studio, an interdisciplinary group of CMU students and faculty from architecture, design, human computer interaction, and other disciplines will engage with a community organization and the Carnegie Science Center in a collaborative design process. Because of its transdisciplinary and participatory nature, the process will be inductive and open ended. It could lead us to fabricating an installation in a neighborhood library or community pool, or producing an immersive community theater play. In any case, similar to previous Urban Collaboratory ASO studios, the goal is to experience community engagement and co-design and arrive at a design-build intervention for the real world within the span of 14 weeks.

LEARNING OUTCOMES
Upon successful completion of this studio, you should be able to:
- engage a community group and facilitate a process of participatory design by listening and communicating to a diverse audience, building trust and developing formats for sharing and collectively developing ideas, evaluating multiple scenarios and making informed and consensual decisions.
- take a design idea from conception to reality through the iterative process of proposing, prototyping, testing, analyzing with a hands-on approach and heightened sensitivity for real world constraints, such as time, labor and money, as well as hopes and concerns of actual people.
- you should have an understanding on how easy it could be for all Earthlings to have decent life compared to starting from scratch on Mars, and remain optimistic about the agency of design to change the world despite the fact that we’re currently messing up big time.
EPHEMERAL_enduring
Performance Architecture for a New Permanent and Seasonal Theater for the Festival d'Avignon

Hal Hayes

QUESTIONS
ASOS students will collaborate with Drama and Masters of Arts Management (MAM) students to study & design a new seasonal and permanent theater for the Festival d'Avignon. We will meet with festival directors, the professional design team working on the real project and work directly with famed French theater designer Jean-Guy Lecat.

During the first third of the semester inter-disciplinary teams of Architecture, Drama & MAM students will conceptualize & design the seasonal summer venue, further development of which will be done by professional architecture & engineering partners in France. During the remainder of the semester Architecture students will conceive individual designs for the permanent theater in collaboration with the Drama and MAM students.

PROMPT
Provence was one of the earliest provinces of the Roman Empire, and as such, was the site of extractive industries of the classical era. These sites, which we will visit, are now home to arts and cultural organizations that transcend their original purpose, to become enduringly meaningful in a post-industrial context. This studio will explore ways that this and other similar sites can transition from an industrial past to a sustainable future.

CONTENT
This is a developer-driven project to create a marina with a theatre that supports and catalyzes the performing arts festival. The site is at the end of an island in the Rhone River in Avignon. A temporary theatre will precede the permanent venue.

- Winter 2023: Develop a preliminary concept for the project to briefly explore the possibilities and market the project to potential investors.
- Spring 2023: Detailed project design concept.
- Summer 2023: Construction of the temporary theatre with the project architect.
- 2024: Detailed design of the permanent theater
- 2025: Construction of the permanent theater

The main issues for the students to solve are the type of structure, choice of the materials, acoustic treatments, thermal comfort and sustainability. Cost will also be a key factor.
DOMESTICATING BIGNESS
Speculating on a future for ecological social housing infrastructures
Zaid Kashef Alghata

“As a microcosm organized according to the same oppositions which govern all the universe, the house maintains a relation with the rest of the universe which is that of a homology; but from another point of view, the world of the house taken as a whole is in a relation with the rest of the world which is one of opposition, and the principles of which are none other than those which govern the organization of the internal space of the house as much as they do the rest of the world and, more generally, all the areas of existence.”

– Pierre Bourdieu, The Berber House or the World Reversed, 1970

ABSTRACT
Historically, the architectural discipline has struggled to formalize the relationship between nature and our inherently unnatural domestic environment. From bringing potted plants into the home for the first time to frescos depicting nature, the 19th-century estate owners used various methods of interiorizing nature, estranging it from its “natural” setting. However, mid-20th century speculative architects produce a new kind of home, a new domestic landscape, by taking domestic space outside. A phenomenon that can only occur with the precondition that work had already been done in considering nature as domesticated.

The 21st century has seen a comparable take on the relationship between artificialized nature and domestic space but at an infrastructural scale. Today, landforms rise out of the oceans entirely for housing, massive flood control infrastructures in coastal cities make dangerous land habitable, and enormous water supply systems bring water hundreds of miles to waterfront lawns in dry cities. Like the 19th-century estate owners, our society domesticates nature at an entirely different hyperobject scale, a term coined by Timothy Morton that refers to an object or event whose dimensions in space and time are massive in relation to human life, for example, a forest, or an oilfield.

Typically, the notion of a home is associated with settlement and reconciliation, where radical ideas become domesticated. Pittsburgh is one of the hundreds of cities nationwide facing aging water systems that can no longer provide reliable and safe service. How can new infrastructural prototypes for water and housing improve the severely impacted ecological systems of the Rust Belt? Today, domesticating the ecological rejuvenation of infrastructure might not be considered radical, but it can’t be overlooked as a potentially potent remedy for a growing crisis.

PROGRAM
The project program will include social housing, a wastewater treatment plant, amenities/facilities, and an accessible park irrigated with reclaimed water from the plant. The studio will research typically non-architecturally designed structures and social housing projects to design a multi-use infrastructural typology that produces an alternative understanding of domestic spaces, organizations, and scales and to speculate on new ecological living forms.

In 2021, President Biden signed a trillion-dollar bipartisan infrastructure bill into law. The legislation will support the creation of infrastructure that “will reduce climate change, increase equity, and redress infrastructure gaps in disadvantaged communities,” however, social housing, an essential remedy for inequities, is not included in the bill. Social housing is any rental that may be owned and managed by the state, non-profit organizations, or a combination of the two, Adrienne Walnoha, CEO of Community Human Services, states, “the income you need to afford a moderately priced two-bedroom apartment is $15.90 per hour. The minimum wage, on the other hand, is $7.25 an hour.”

The studio asks that you imagine a novel infrastructure that coexists between its services and those to whom it provides services in hopes of producing a new ecological development model. Some questions that will drive internal conversations will be: What does it mean to have a multi-use infrastructure? What are its aesthetic and spatial qualities? How does the overlap create new types of land use? How does it tackle environmental injustice? While looking closely at the overall studio criteria: What is in/outside? What is/isn’t accessible? What is natural/synthetic? Who or what gets prioritized? How do you resolve modular repetition with an overall system?
SITE

Located on the Allegheny River, the I-shaped site is approximately 55-acres. The studio will combine the north strip, the Aspinwall Riverfront Park, the south strip, located in Pittsburgh’s East End, and the Brilliant Branch Railroad Bridge, which links the two riverfronts.

The North Strip

In 2011, the Aspinwall Marina was slated for commercial development; however, the local community dreamt up the idea of a public park and came together to raise the $2.3 million required to buy the property. Work will soon begin on a plan to create a space to enhance the community’s quality of life with a commitment to riverfront revitalization and inclusive community engagement through recreational, educational, cultural, and social activities.

Adjacent to the site, the Pittsburgh Water and Sewer Authority are currently developing a $300 million blueprint for a reliable water infrastructure to strengthen and add redundancy to its water system. The studio will absorb plans for the existing Water Treatment Plant, assuming the conversion of the current site into a public green space.

The Bridge

Opened in 1904, the Brilliant Branch Railroad Bridge is a 1,100-foot-long truss bridge that carries Allegheny Valley Railroad’s Brilliant Branch across the Allegheny River. Allegheny Valley Railroad has agreed to sell the railroad with plans to convert it into a trail for bicyclists and pedestrians. The corridor would be the largest bike/pedestrian-only access across the Allegheny River and help 300,000 people who live within a 10-minute drive of the Brilliant Line to reduce their carbon footprint by biking to jobs, shopping, and more.

The South Strip

The smaller 12-acre strip currently houses a site owned by the Public Works Departments, a PWSA admin building, and the Bruecken Pump Station, built in the 1930s it will soon be decommissioned and replaced with a new facility on the premises. The new proposal, part of the Water Reliability Plan, will have to meet the Art Commission requirements, which works to improve the aesthetic quality of the City’s public spaces.

PROCEDURE

The semester will be split into four exercises towards developing a new infrastructural model of ecological-based social housing.

Exercise 1: Research

Select and study two structures, a social housing project, and a wastewater treatment plant that will be drafted into the local community. The initial research will require the collection of literature and visuals, including, but not limited to, advertisements, images, drawings, diagrams, and articles. You will use the gathered materials to present your findings, and the studio will collectively brainstorm.

Exercise 2: Prototype

Rather than designing a project from scratch, you will leverage existing structures to generate a kit of parts which you will then deploy at the project scale. By interrogating and mutating the precedent’s qualities, you will produce a housing module that questions what it means to domesticate nature at the scale of a unit. Your proposal must present evidence of improved living conditions that co-exists and engages with community needs.

Exercise 3: Site Strategy

Imagine new forms of ecological social housing infrastructure hybrids through machine-learning techniques. Rather than focusing on the historical context surrounding the chosen precedents, you are encouraged to creatively misinterpret the source materials and speculate on new forms of understanding. In tandem, select a plug-in program to benefit and support the inhabitants in and around the site.

Exercise 4: Production

Finally, the semester will culminate in individual projects to persuade local authorities and developers of the urgency of new forms of infrastructure that tackle Pittsburgh’s need for ecological social housing. Knowledge, expertise, and skills developed in the previous three exercises must be evident and incorporated into the presentation.
The course will be organized around desk critiques and weekly pinups with the instructor. Internal lectures and workshops will be held throughout the semester to bolster assignments and introduce required skills. You will be developing individual projects, however, collective discussions and brainstorming will play a pivotal role in our studio culture. You may be asked to attend lectures at different departments if a topic overlaps with the studio’s interests. Additionally, attending all programs organized by the SoA is strongly encouraged and essential to building an overall discourse around this year’s theme of “Materiality.”

The studio aims to develop and integrate research skills, technical expertise, and design strategies into a cohesive project. On successful completion of this studio, you should be able to; Identify key social and environmental issues that benefit from architectural intervention. Examine references in and out of the discipline to assemble individual project criteria. Survey the site and devise methods of constructing artificial nature. Critique traditional limits of the discourse and propose equitable alternatives. Demonstrate advanced digital skills in computation, modeling, and fabrication. Develop a comprehensive project that directly responds to the studio brief.

**COURSE OBJECTIVES**

**READINGS/REFERENCES**

Reyner Banham, “A Home is Not a House,” 1965
Alison Smithson, “Mat-Building,” 1974
Stan Allen, “Field Conditions” in Points + Lines,” 1985
Anthony Vidler, “Architecture’s Expanded Field,” 2004
Elizabeth Diller, “Agri-itecture,” 2014
Charles Rosensblum, “Deconstructing the Housing Dilemma,” 2017
Mabel O. Wilson, “Mine Not Yours,” 2018
Sylvia Lavin, “Plant Architecture,” 2019
Holly Jean Buck, “After Geoengineering,” 2019
Marco Vanucci, “Paolo Portoghesi: The Field Theory,” 2020
Jane Hutton, “Reciprocal Landscapes,” 2021

**ORGANIZATION**

The course will be organized around desk critiques and weekly pinups with the instructor. Internal lectures and workshops will be held throughout the semester to bolster assignments and introduce required skills. You will be developing individual projects, however, collective discussions and brainstorming will play a pivotal role in our studio culture. You may be asked to attend lectures at different departments if a topic overlaps with the studio’s interests. Additionally, attending all programs organized by the SoA is strongly encouraged and essential to building an overall discourse around this year’s theme of “Materiality.”

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Jane Hutton, “Reciprocal Landscapes,” 2021
**XL - M - XS**

A Farmer’s Market Building at Hazelwood Green

Semester 1 of a Yearlong Design/Build Studio

S.Lee

**QUESTIONS**

According to the USDA National Farmers Market Directory, “the number of markets in the U.S. has grown dramatically between 1994 and 2019, from roughly 1,755 to over 8,700 markets, an astounding 397 percent increase.” Farmer’s markets have the potential to positively re-configure national, local and regional food eco-systems, to mitigate the effects of food deserts and to improve social and economic justice. A well-integrated facility can create community identity and become a much-needed social gathering place for a neighborhood.

How would a new farmer’s market facility impact the proposed development at Hazelwood Green (HG) and the Greater Hazelwood neighborhood?

Can a well integrated building advance the sustainability, resilience and innovation goals of HG?

**PROMPT**

Farmer’s Market buildings have a long tradition around the world and today present a unique challenge for architects. Their design spans the domains of urban design, public space making, neighborhood revitalization, social planning and the food eco-system, in addition to the critical issues of sustainability and resilience. The fall semester of the 4th year in the B.Arch program is focused on issues of building integration. This studio will consider the broader community and urban questions but be laser focused on the issues of building integration. The current generation of market buildings tend to provide greater spatial flexibility than in previous eras to not only support the basic marketing functions but also to support the community - from to performance to gardening. Minimizing internal vertical supports is a good strategy for spatial flexibility, so our form finding concepts will be developed as vector-active or form-active structural concepts to support the community - from performance to gardening.

The “XS” pavilion will form the basis of the campus Design/Build Studio in Spring 2023.

**CONTEXT**

The project site is a 178-acre former industrial site known as Hazelwood Green situated along the Monongahela River. In the early 2000’s, Almonro assembled industrial properties in the Greater Hazelwood neighborhood to have greater control in creating and implementing a comprehensive redevelopment strategy for the site. According to their website, “Hazelwood Green is envisioned as a model for the transformative redevelopment of an urban brown field into a center of innovation that fuels Pittsburgh’s new economy while remaining grounded in the principles of sustainability, equity, and inclusive economic opportunity.” To the greatest extent possible, we will follow the 30 August 2018 Hazelwood Green Preliminary Land Development Plan.


**PROGRAM**

The specific project for this studio is the design of a 50,000 sf farmer’s market on Block 48 (1.81 acres, 78,847 sf) at Hazelwood Green. We will consider the German concept of “Haus in Haus” by designing the “XL” market building as the outer “Haus” and the “M” services building and the “XS” pavilions as the inner “Häuser”.

Program:

- **XL**: 30,000 sf enclosed farmers market with clear span structure (“Haus”)
- **M**: 3,000 sf enclosed services building (toilets, mechanical, office, cold storage) (“Haus in Haus”)
- **XS**: 300 sf open-air pavilion-like prototypes for seating, eating, conversation, etc. (“Object in Haus”)

Work Products:

- ArchiCAD BIM, multiple form finding models, environmental testing models and einz-zu-einz prototypes of important details.

**LEARNING OUTCOMES**

The following criteria will be used to evaluate student work in this studio:

- Aesthetics: The degree to which the proposed building responds to formal issues as articulated in this and prior design studios.
- Experience: The degree to which the design uses a thoughtful narrative and carefully articulated spaces to create meaningful experiences for the user.
- Structure, Enclosure & Materials: The degree to which the set of selected building materials, components and systems and their proposed implementation are appropriate to the intended occupancy, articulate the desired architectural order, and satisfy the physical design requirements.
- Environment: The degree to which the design integrates passive and active strategies to achieve triple bottom line performance.
- Constructability: The degree to which the proposed building is informed and developed in response to an understanding of the processes of construction.
- Presentation: The clarity, craft and completeness of the presentation(s).

Upon successful completion of this studio, you should be able to accomplish the following learning objectives:

- Translate a program into a building design that responds to user requirements
- Demonstrate the form making implications of structural systems
- Demonstrate the energetic implications of materials selection, enclosure systems and building form
- Integrate multiple systems to achieve elegance, efficiency and economy in design
- Ability to determine the best way to test and measure performance of systems
- Develop criteria for evaluating multiple design alternatives
- Draw technical documentation for the project using the conventions of architectural representation.
INDEPENDENT THESIS / COLLECTIVE STUDIO

Inquiries, Observations, and Provocations through Architecture

Sarah Rafson

An architectural thesis is a proposition that results from a critique and reexamination of the role of architecture as a critical participant in the conditioning of (public) space. Marking the transition between academic and professional practices, the thesis project is an exciting opportunity for students to define their unique positionality and modes of practice relative to the discipline of architecture. Thesis topics reflect the diversity of student experiences and interests, ranging from building construction, design research, emerging technologies and materiality, social issues, landscape, urbanism, spatial perception and methods of conceptual thinking. Together, the studio will create a public exhibition and symposium to discuss the ideas and projects students propose.

PROMPT

In relation to this semester’s theme—Materiality: Extractivism—students will be challenged to find tangible, material ways to convey the abstract and conceptual underpinnings of their projects. The focus on extractivism in the spring will also require students to confront the political and planetary implications of the projects they propose.

CONTEXT

A thesis project is thrilling to develop; students are defining a space for themselves ideologically and artistically in the landscape of architecture practice. As a studio, students push each other to test ways of working, thereby making an impact in the discipline and reflecting critically on their own creative processes. To that end, students will be working under the guidance of carefully selected, trusted advisors, but the project is ultimately their own. Throughout the process of designing a thesis, students exercise strategies for writing, research, time management, organization, and communication that will be invaluable throughout their careers. At the end of the year, they will have completed a personally, intellectually, and creatively satisfying project that will reap dividends after graduation.

PROGRAM

This studio will be devoted to:
- Group discussions to review project milestones, requirements, and ideas
- Desk critiques to track the development of independent work
- Conceptualizing and developing a thesis exhibition and publication
- Reviews with advisors and invited critics to refine design projects and exhibition strategies
- Independent design, research, and writing

In addition to group discussions, desk critiques, and independent work sessions, a series of “thesis talks” throughout the semester offer students an opportunity to engage with faculty, scholars, and practitioners working in related topics. These regular presentations help foster critical thinking and reflection on the projects’ relevance beyond the academy.

LEARNING OUTCOMES

On successful completion of this studio, you should be able to:
- Conduct independent, original research related to architecture & design
- Express a critical outlook and perspective on architecture practice
- Work with an advisory team to develop a unique research-based project
- Provide critical feedback, support, and encouragement to your peers as they navigate their independent work.
- Design and install an exhibition that reflects the ethos of your cohort
- Write, edit, and design a thesis book that compiles the outcomes of your research and design process
- Sustain and manage a long-term independent project
- Practice polishing verbal and visual presentation of your creative work

Sarah Rafson

Inquiries, Observations, and Provocations through Architecture