

F21/S22

Advanced  
Synthesis  
Option  
Studios

₹0/-

■ Following the conclusions of last year's PEDAGOGIES discussions, there are changes gradually occurring to the structure of the B.Arch curriculum sequence. We are adding an early opportunity of studio options for the students in the Spring of their Second year, starting in S22. This will result in a new sequence for those students with three additional coordinated studios, entitled PRAXIS; in Fall and Spring of third year and the Fall of Fourth year. We will also be adding research based ASO studios to the offerings in F22 and S23.

■ Last year's ASOS semester themes (F20 PROPINQUITY, S21 PRIVACY) engendered great cross studio conversations. We are continuing this thematic connection for the ASO studios with F21 CARE and S22 WORLD BUILDING. We plan discussions within the studios and a colloquy after final reviews to gather positions/findings/oppositions. In addition these themes will be reflected in the Public Programs and other workshops/lectures and symposium will support the discourse.

■ The descriptions for F21 and S22 ASOS studios are listed in the catalogue below. ASOS selection process happens before each semester (in July for Fall and in November for Spring). At these points the expanded and updated catalogue is published for the following semester. We send an invitation email to each student from B.Arch 4th+5th yr and M.Arch 2nd yr, who then complete a preference form.

■ S22 Studio Rosters will be published on December 3rd 2021

**COVER IMAGE**

*March 24 2021 The roof of a structure is visible as floodwater covers large areas northwest of Sydney, Australia. Some 18,000 residents of Australia's most populous state have fled their homes since March 17. (ASSOCIATED PRESS 3.26.21)*

**Mary-Lou Arscott AADip RIBA**  
Studio Professor  
Associate Head of Design Fundamentals  
School of Architecture  
Carnegie Mellon University  
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# F21 Care\_

The overarching theme for the semester is that of \_CARE. Each studio will take a different attitude to the intersection of related issues to their studio agenda.

- |                                    |                         |
|------------------------------------|-------------------------|
| <i>City as Film</i>                | <b>Arscott+Torello</b>  |
| <i>Reforming Architecture</i>      | <b>Bill Bates</b>       |
| <i>Post Occupied</i>               | <b>Gerard Damiani</b>   |
| <i>Cultivated</i>                  | <b>Jeremy Ficca</b>     |
| <i>Commoning the City</i>          | <b>Stefan Gruber</b>    |
| <i>Terminal</i>                    | <b>Hal Hayes</b>        |
| <i>The Cut, the Beach + Beyond</i> | <b>Steve Lee</b>        |
| <i>HELIOStudio</i>                 | <b>Christine Mondor</b> |

## ARSCOTT/TORELLO

### City as Film

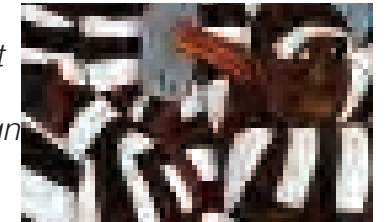
Architectural thought + imagination for futures in a non-modern world



## BILL BATES

### Reforming Architecture

Re-purposing harmful architecture of the past for a healthier future. An exploration in design for social justice.



## GERARD DAMIANI

### Post Occupied

Weathering and the Life Cycle of Building



## JEREMY FICCA

### Cultivated

From Farm to Building



## STEFAN GRUBER

### Commoning the City

Negotiating Top-Down and Bottom-Up Urbanism



## HAL HAYES

### Terminal

JFK Terminal 4 concourse expansion



## STEVE LEE

### The Cut, the Beach and Beyond

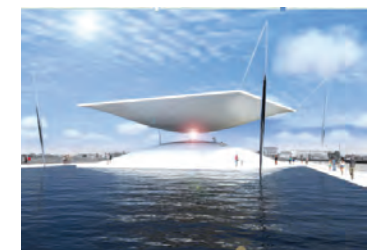
Design-Build Installations for CMU



## CHRISTINE MONDOR

### HELIOStudio

Designing urban solar transition



# S22 World Making\_

Monuments of Everyday Practice  
 Past Futures: The Ohio River Valley  
 Thick Skin  
 Bricolage at Community Forge  
 The Cut, the Beach and Beyond  
 Critical Making  
 Commoning the City  
 Independent Thesis\_Collective Studio

**Sarosh Anklesaria**  
**Heather Bizon**  
**Laura Garofalo**  
**Stefan Gruber**  
**Steve Lee**  
**Jackie McFarland**  
**Jonathan Kline**  
**Sarah Rafson**

## **SAROSH ANKLESARIA** **Monuments of Everyday Practice**

*Living Memorials to Gandhi*



## **HEATHER BIZON** **Past Futures: The Ohio River Valley**

*Architecture, Environment and Aesthetics through Speculative Fictions*



## **LAURA GAROFALO** **THICK SKIN**

*Emergent ecologies of the ornamental envelope*



## **STEFAN GRUBER** **Bricolage at Community Forge**

*Urban Collabatory Studio; Participatory design for an experimental performance space*



## **STEVE LEE** **The Cut, the Beach and Beyond**

*Campus Design-Build*



## **JACKIE McFARLAND** **Critical Making**

*Rendering Visible Systems of Control*



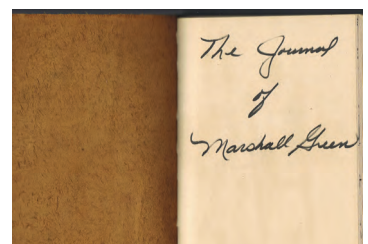
## **JONATHAN KLINE** **Commoning the City**

*Negotiating Top-Down and Bottom-Up Urbanism*



## **SARAH RAFSON** **Independent Thesis Collective Studio**

*Enquiries, Observations Provocations Architecture*



S°/-

# F22 theme tbd\_

xxxx **Christine Mondor**  
*Design Build* **Steve Lee**  
xxxx **Hal Hayes**  
*Commoning the City* **Stefan Gruber**  
xxxx **Jeremy Ficca**  
xxxx **Gerard Damiani**  
xxxx **Mary-Lou Arscott**  
xxxx **TBD**  
*Design Research Studio* **TBD**

# S23 theme tbd\_

xxxx **Sarosh Anklesaria**  
*M.Arch/ B.Arch thesis* **Heather Bizon**  
xxxx **Dana Cupkova**  
xxxx **Gerard Damiani**  
xxxx **Stefan Gruber**  
*Commoning Thesis* **Jonathan Kline**  
*Design Build* **Steve Lee**  
*Global Studio* **TBD**  
*Design Research Studio* **TBD**

S°/-

# CITY as FILM

Architectural thought and imagination for futures in a non-modern\* world.

Mary-Lou Arscott +  
Francesca Torello

**'Historical ontology, after all, is not only an account of how things came into existence but also of how possibilities of being arise in history.'** Zeynep Celik Alexander, *Neo-Naturalism, Log31 2014*



**\*In the midst of our serene new world of images, a descriptive revaluation of the conditions of imaging...is a prerequisite for architecture to pose the question...how can we learn to live differently? So differently that we might soon become nonmodern?**

*John May, Signal Image Architecture p28*

## Background

This studio will move from a critical reconsideration of Pittsburgh's versions of modernism to formulate novel responses by experimenting with non-linear narratives in moving image. The idealized image of the city's rebirth hides a complex history that includes land seizure, mineral extraction, labor exploitation and brute force. All are poised to continue but could be diverted with a new set of operative interventions to the current systems. This studio will propose organizational principles for a city set in a global context. Our design methodology will consider Pittsburgh's specific histories and ecologies in order to invent devious playbooks in response to the contemporary condition. The studio's speculations will collect and construct alternative sequences of interaction and insidious influence. The film narratives produced by the studio will evolve from a close reading of three phases of Pittsburgh's expansion; 1910's, 1960's and 2020's. Architecture has been a discipline attached to machines, modernism and orthography. This studio will experiment with potentialities of data, digital media and moving imagery to develop a design process to challenge authoritarian problem solving mindsets.

## Care

Ethical, political and ecological concerns will be central in the studio critique as we analyze the implications of various propositions. Care in response to precarity across cultures, codes and regions will form the prompt for the studio interventions. Consideration of scales of care will become evident in the developing scenarios. The final presentations will contain resulting insights.

## Context

Reference will be built around the location of Pittsburgh Point, with use of historic photographs, films and maps. Particular reference will be made to the research by Grimley, Kubo and el Samahy in the book *'Imagining the Modern'*. Monticello Press 2019.

Three polemical texts will act as a theoretical scaffold for our analysis; *Medium Design* by Keller Easterling, *Image Signal Architecture* by John J May, and *Class Matter* by bell hooks. We will study narrative film form in the innovative early C20th silent films by Vertov, Ruttmann, and Kinugasa, the 1970's experimental films by Maya Derin, Agnes Varda and Chris Marker, and the contemporary radical filmmakers John Akomfrah, Mati Diop, Im Heung Soon. The studio will acquire a broad vocabulary of strategies developed by artists working in the arena of expanded cinema.

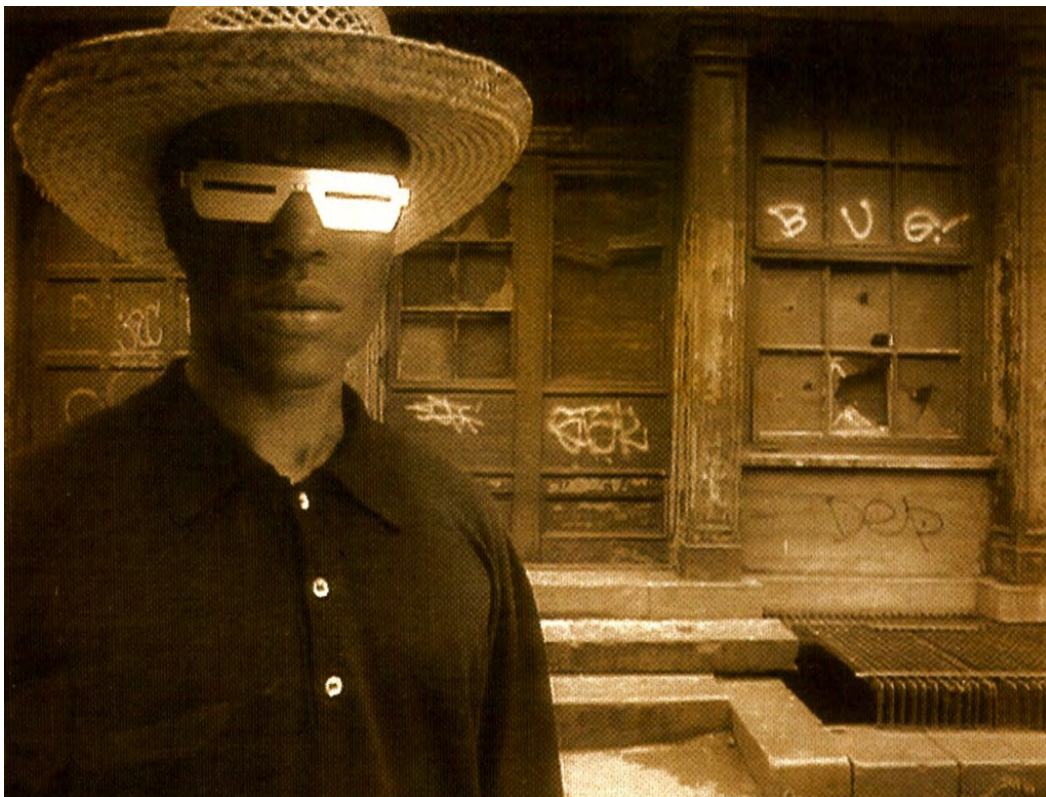
Memoir holds revelatory insights from all three eras and we will make reference to *Out of this Furnace* Thomas Bell 1941, *The Portraits of Duane Michaels* 1958-88, *Punch Me Up to the Gods* by Brian Broome 2021.



Above Dymaxion World Map Projection  
1959 Buckminster Fuller  
Left Ernie Gehr dir.  
*Serene Velocity* 1970

## Program

An historical and theoretical positioning will be presented by Arscott + Torello in weekly discussion format through the first half of semester. Site visits to the Point and to the relevant archives will be organized. Each person will take part in the preparation for presentation of different aspects of the material and the research will become a common resource. Separate lenses of analysis will be taken by each person and then together the themes will be developed as a set of cross currents. The element of time is embedded in the medium of film, you will become story tellers and use both still and moving images with words and sound to build an argument. The material is endlessly editable and you will become adept at the mnemonic, eidetic and prophetic mode of the medium. The sequence of assignments will lead you through skill acquisition, no previous familiarity with editing software will be necessary.



## Learning Outcomes

On successful completion of this studio you should be able;

1. to demonstrate a critical understanding of the relationships between ideology and forms of representation.
2. to construct visual-verbal moving image narratives to describe ethical argument and ideas for societal speculation.
3. to use ideas of system interventions to pose multiple outcomes for radical 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 your own design propositions.
6. to demonstrate a critical understanding of the history of Pittsburgh's versions of modernisms and its continued impact on our understanding of the city.

*Above Left: John Akomfrah dir. The Last Angel of History 1995*

*Above Right: Teinosuke Kinugasa dir. A Page of Madness 1926*

*Below Right: Agnes Varda dir. La Pointe Court 1955*

*Opposite: Clyde Hare photographer, Alcoa Building 1952*



## Studio environment.

The material that we're covering in this class can be difficult. 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. Critically examining and assessing our most basic assumptions and values is one of the tasks of the architect. 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.

## INCLUSIVITY

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

# REFORMING Architecture

Re-purposing harmful architecture of the past for a healthier future. An exploration in design for social justice.

Bill Bates



**“A building has no means of locomotion, it cannot hide itself, it cannot get away. There it is, and there it will stay - telling more truths about him who made it....”**

*Louis Sullivan 1856-1924*



*Above and below: Pennsylvania Correctional Institute, Ohio River Pittsburgh. Opposite: “All Me II” (2005) by Wilfred Rembert 1945-2021*



## Background

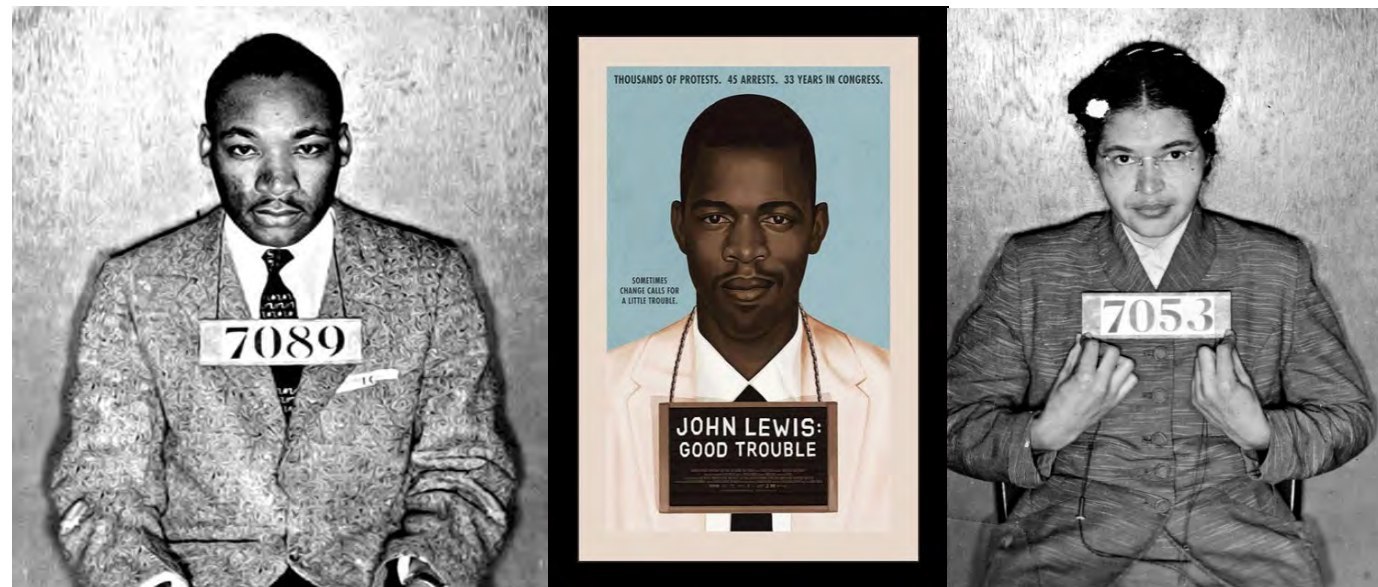
The events of 2020 have given our world a lot of time and reason to think about the value of architecture and the true meaning of its mission to serve society while doing no harm. The architect has been commissioned to design for the most critical needs of society from legislative chambers, courtrooms, prisons, hospitals to offices and homes. The challenges of that work have not always allowed us to weigh in on the policies and implications of each building's purpose. On rare occasions we are afforded the opportunity to rethink the purpose of past structures.

## Context

This studio will explore such an opportunity to revisit an abandoned state prison structure, the Pennsylvania Correctional Institution of Pittsburgh, designed almost two centuries ago. The class will explore the social, ethical,

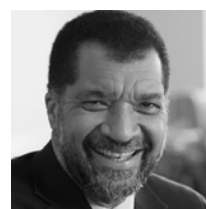


cultural and humanitarian issues of the building's past while examining the residual impact on the community that it has served and the broader communities that it was meant to protect. Using the psychological and architectural fossils of this structure this exploratory studio will be tasked to re-envision a new more humane and environmentally appropriate purpose for a healthier and more sustainable future that serves ALL demographics while undoing the harm caused by the building in its first incarnation. We will also discuss how jails and prisons have been used as a vehicle of protest and change for causes like civil rights.



As a research studio students will work collaboratively to understand the issues of architectural space as a tool of criminal reform as well as their residual effects on disenfranchised communities. We will also touch on the influences of trapped talents and caged creativity on the broader society's culture of art, music, language, fashion, etc.

The class will be encouraged to develop new uses that take advantage of the building's physical properties to help heal the surrounding communities and erase the stigma of its past. The embodied carbon of its massively resilient three foot thick walls and proximity to the Ohio River hint at opportunities for creative reinvention that might provide environmentally jobs and other types of support for the Pittsburgh region of tomorrow.



Above: Wilfred Rember, prison artist  
Right: artwork by Wilfred Rember

Left: Dr. Martin Luther King, Jr.: civil rights leader,  
Center: movie poster for 'John Lewis : Good Trouble' 2020 dir by Dawn Porter,  
Right: Rosa Parkes, civil rights activist.



This social justice studio will be based on several books including:  
**The New Jim Crow**, *Mass Incarceration in the Age of Colorblindness* by Michelle Alexander  
**The Color of Law**, *A Forgotten History of How our Government Segregated America* by Richard Rothstein

# Post Occupied

## Weathering and the lifecycle of building.

### GERARD DAMIANI, AIA

**‘As the costs of building continue to rise at an alarming rate and material resources become more and more scarce, how can what you build leave no trace or last indefinitely?’**



*Croft Lodge Studio*

*The ruin is protected from the elements within a new high performance outer envelope. This means that in most places there are two walls, two windows and two roofs, old and new. the work was undertaken to create a functioning studio with living accommodation that could be easily be changed in the future into a house with three bedrooms and two bathrooms.*

*Kate Darby Architect and David Connor Design*

### Background

In Sigfried Giedion's *Space, Time and Architecture*, he made a comparison between modern science and the concept of space-time replacing Newton's ideas of absolute time. However, what was missing was the subjective experience of time and its long-term effects on place, buildings and society. This ASO will go beyond how space and time affect the role of architectural sequence in real time to a question of how a building is understood throughout time. This studio is not a studio about the aesthetics of ruins, as ruins strip bare a building's meaning. Instead, we will speculate how can weathering engage the imagination?

In architecture, finishes and equipment are an end to a building's original construction, however, time and weathering affect and transform buildings leading to a double meaning. A building's original aspirations are literally and physically transformed through time. This ASO looks toward a work of architecture that is inextricably linked to its long-term physicality asking how it might play a more central role in architectural theory and environmental sustainability.



*Above  
Croft Lodge Studio (interior from exterior)*

### \_Care

It's the objective of this ASO to consider how societal change affects the role of care at various levels of architectural engagement. Each student will address this term through all aspects of the studio process including how each presentation will be positioned.



Above

*FRAC Dunkerque*

“We never see the existing as a problem. We look with positive eyes because there is an opportunity of doing more with what we already have,”

Anne Lacaton

“We went to places where buildings would have been demolished and we met people, families who were attached to their housing, even if the situation was not the best. They were most often opposed to the demolition because they wished to stay in their neighborhood. It's a question of kindness.”

Jean-Philippe Vassal

<https://www.lacatonvassal.com/>



## Context

This ASO will look at how time affects our natural, societal and built environments. This studio will study the affects of weathering through a series of case studies. These studies will look at the variety of effects of weathering and the role of change. Each student will look at this term via art, architecture, technology, society, and culture looking for new formations and how the role of the built environment is representative of time and weathering.

## Methodology

Project one: Weathering of four materials of your choice that will be documented throughout the semester.

Project two: Case studies: artistic, architectural, technological, societal, and cultural

Project three: Speculations on site, materials, systems, and programs

Project four: Application through architectural development

Required 1st reading: On Weathering: The Life of Buildings in Time by Mohsen Mostafavi and David Leatherbarrow (reading will be provided via Hunt Library)



Above

*FRAC Dunkerque (interior)*

## Learning Outcomes

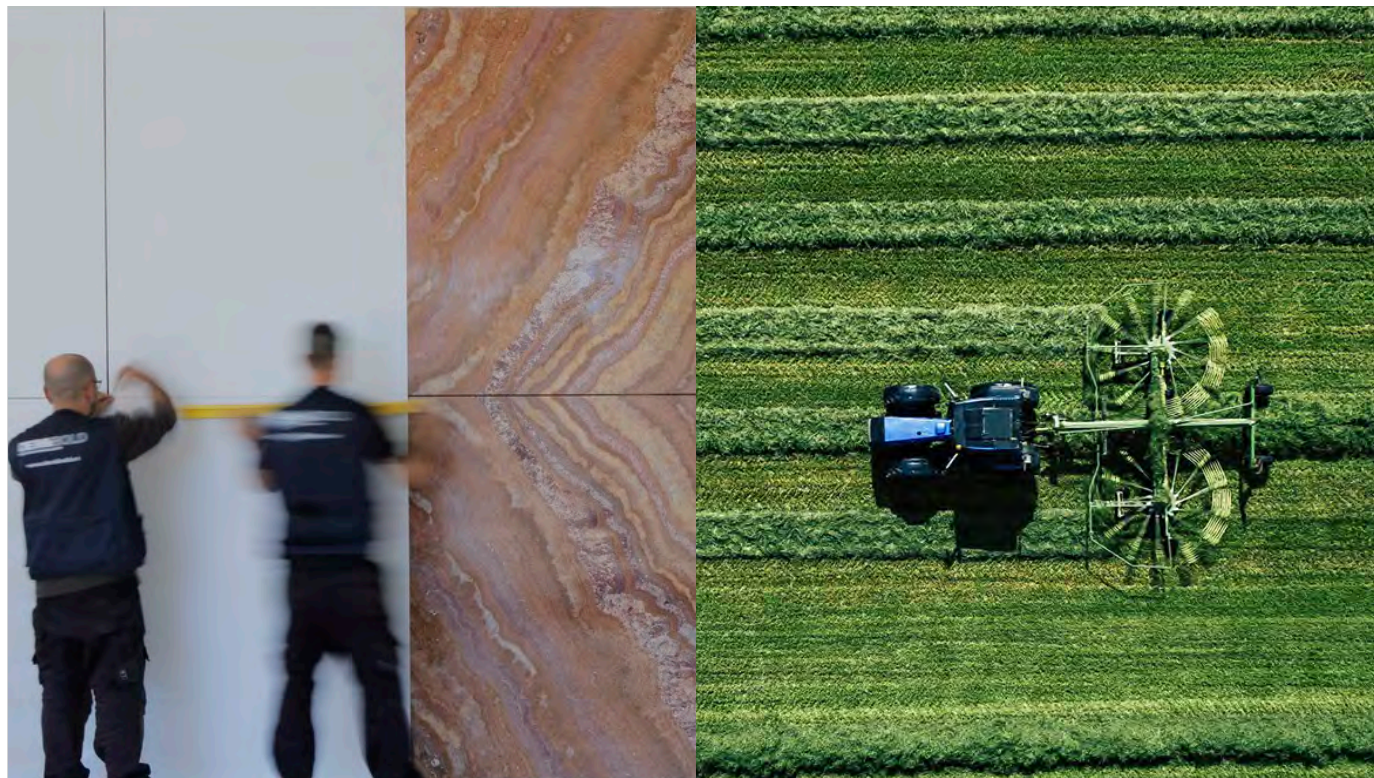
The design project will be a piece of architecture not as a static conclusion but as a product of physical and cultural weathering. The project will be represented not only as a finished project but also how it might address the long-term effect of cultural and physical weathering.

# CULTIVATED

## From farm to building

### JEREMY FICCA, RA

**“Unless architects begin to describe buildings as terrestrial events, processes, and artifacts, architects will – to professional and collective peril – continue to operate outside the key environmental and political dynamics of this century.”**



#### Background

In their elevation to pseudo art objects, the stone walls of Mies' Barcelona Pavilion stand as one of modernism's most iconic examples of material fetish. The surfaces of golden onyx, roman travertine and green alpine are objectified and polished to reveal the inner beauty of sliced earth. Fundamentally detached from their complicated origin story, the pavilion's materials, like many of its modernist brethren, are severed from human and environmental entanglements. Mies' masterpiece is perhaps the ultimate referent of an architecture of hidden side effects. Or to borrow a term from Joseph Grima, an architecture of extreme externality. For the pavilion, the production of affect is utterly reliant upon, yet renders fully opaque, extraction, labor, and environmental depletion. The fact that the building had such a consequential impact upon the discipline yet was known only through images for the 50 years between its demolition and reconstruction seems perfectly fitting for this treatise on abstraction. While it is unproductive to critique past work through the lens of our current climate crisis, this icon of modernism is an enticingly clear illustration of how abstraction tends to distance and obscure the external consequences of design decisions.



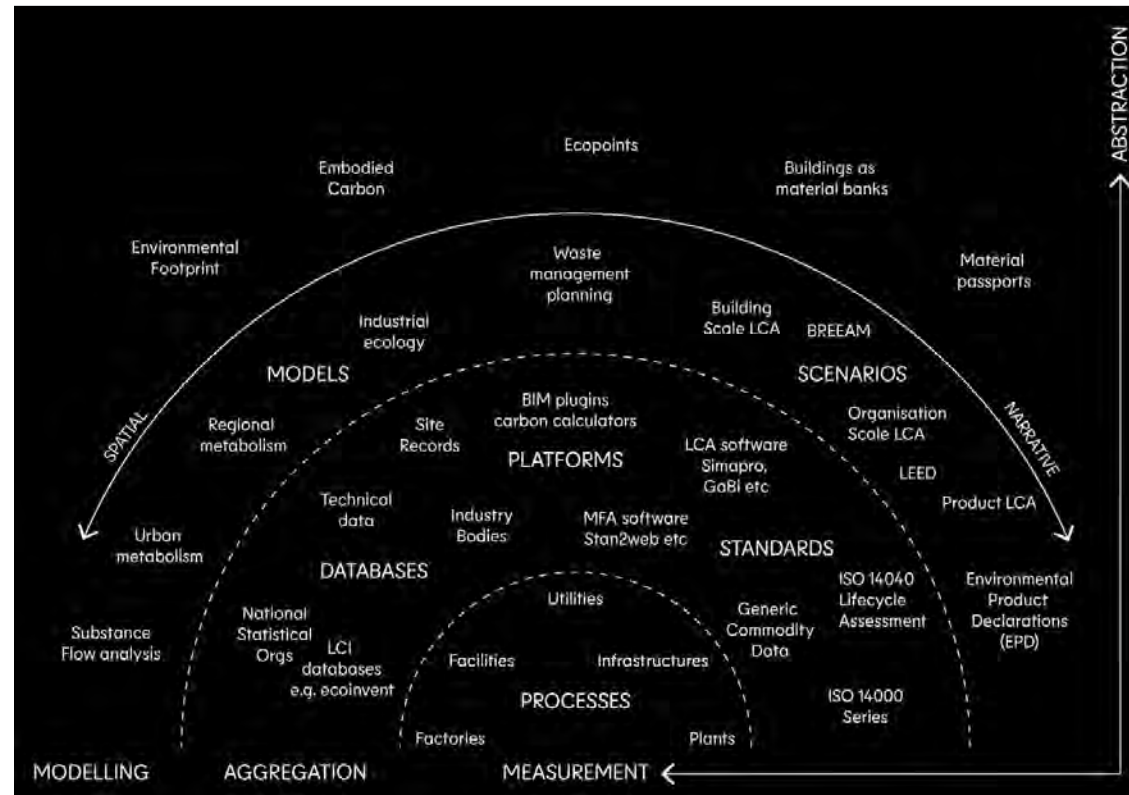
Architecture has long relied upon extraction and labor. Buildings are after all made of materials and components, sourced directly or indirectly from the earth. For the better part of the past century this has operated under a take-make-waste industrial model. For decades, globalism's long supply chains obscured the consequences of this model. Believing the ends justify the means is much easier when the means are invisible or largely unknown. As Michael Pollan's groundbreaking book *The Omnivore's Dilemma* directed attention to our most immediate form of consumption- eating, and in the process unraveled contemporary food supply chains, so must we confront questions related to how, what, and why we build. Our current ecological and political crises signal the limits and incompatibilities of a neoliberal consumption-based economy on a planet of finite resources.



Left 1: Mies Missing Materiality, Anna and Eugeni Bach  
 Left 2: Industrial hemp harvesting  
 Above 1: Timber Weaver's Studio with hempcrete infill, Practice Architecture  
 Above 2: Henry Ford demonstrating hemp

**“What if architecture were understood first and foremost as a form of stewardship of the built and natural environments?”**  
**– Joseph Grima, Non-Extractive Architecture**

This studio presumes that a viable transition to a circular economy necessitates a recalibration of how one builds and ultimately, how design can better address a broader understanding of its processes and artifacts. The studio will explore the potential of regenerative material flows and harvested building materials in the context of Pennsylvania agriculture. It will focus specifically upon the ecologies of industrial hemp to consider the prospects of farming, processing, and building with hemp in the post-industrial landscape of southwestern Pennsylvania.

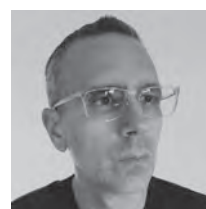


**Context**

Though only recently legalized for industrial cultivation in the United States, hemp has a long history in North America. With its origins of cultivation traced to central Asia, hemp has been used for a remarkably wide range of products from paper and rope to bio-resin automotive parts and hempcrete blocks. In addition to its numerous material properties, hemp is one of the fastest CO2 to biomass conversion tools available, far outperforming rates of carbon sequestration of forest land. Occasionally referred to as a mop crop, hemp is highly efficient at regenerating soil, requires limited maintenance and when compared to cotton, requires a fraction of the water. It is little wonder hemp was the world's most traded commodity until the 1830s.

body panel impact test, circa 1940

Above: Institution in the production and analysis of material flow from FLUXOPIA: ON LIFE IN THE METABOLIC CITY, Luke Johns



**Care**

Building upon Grima's repositioning of architecture as a form of stewardship, this studio asks students to develop an expanded set of cares, accounting for the side effects of one's decisions as much as the production of architectural affect.

**Project**

As a research studio, students will work collaboratively over the course of the semester. Initial research will be dedicated to developing a graphic manual of industrial hemp, from seedling to product and building. This will be followed by an evaluation of prospective sites for farming within the post industrial river landscapes of Pittsburgh and the surrounding communities. The culminating project, conducted with a partner, operates at two distinct scales, that of an urban farm and hemp processing / education facility and at the scale of the dwelling. Teams will develop proposals for an itinerant hemp processing and education facility to support transitory farming along with a prototypical, low density housing collective that uses hemp as its primary material system. Given the studio's focus upon material flows, projects will be developed as open systems and methods that seek to illustrate a range of architectural permutations.

**Further Reading**

- <https://v-a-c.org/en/non-extractive-architecture>
- <https://www.ellenmacarthurfoundation.org/>
- <https://strelkamag.com/en/article/fluxopia-on-life-in-the-metabolic-city>

# COMMONING THE CITY

## Negotiating Top-Down and Bottom-Up Urbanism

STEFAN GRUBER \_F21

JONATHAN KLINE \_S22

**Who or what do you care for, care about and care with?**

**What kind of infrastructures and spaces are necessary to create communities that care?**



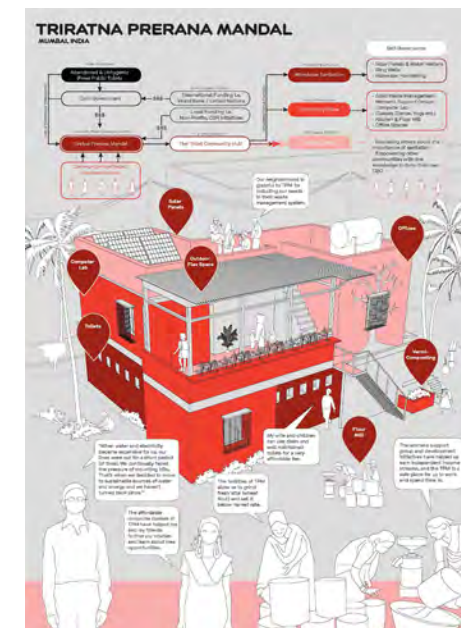
### Background

Commoning the City is a yearlong research-based-design studio focused on social justice and community-led urban transformations. Here, we explore design as an agent of change and how to support citizens in claiming their *Right to the City*. The first semester, taught by Stefan Gruber provides a theoretical framing and uses case study research as stepping stone for developing individual thesis proposals. Building on the studio's shared investigations and a commoning toolkit, students define a research question and begin testing their design hypothesis in an urban milieu of their choice. At the end of the semester each student has framed a design proposal and methodology that is theoretically grounded, geographically and culturally situated, and politically informed. Working empirically, throughout the semester students go back and forth between research and design. The second semester, taught by Jonathan Kline, then supports students in fully developing their individual projects culminating in an exhibition. This year-long studio is required for all second year Master of Urban Design students and open to 5th year BArch students and MArch students. For ASOS students the studio is an opportunity to pursue a yearlong thesis within a structured research context exploring urban commoning. Jonathan Kline's seminar Urban Design Methods and Theories is a co-requisite.



### Research

The commons are emerging as a key concept beyond the binaries of public and private space for tackling the challenges of the contemporary city: How to build community resilience in the face of systemic and growing inequity? How to design with finite resources in the face of accelerating environmental crisis? How to articulate common interests despite splintering social ties? And how to find agency as designers given the scope of these wicked problems? Here, commoning is understood as a set of social practices dealing with the production and self-governance of shared resources and spaces beyond contemporary forms of domination, such as class, gender or race. The studio's research continues to feed into the long term traveling exhibition and publication project "An Atlas of Commoning" in collaboration with ifa (the German Institute for Foreign Relations) and ARCH+. This year, the studio will contribute to the development of a web platform making the research available to a general audience. Throughout the semester the studio will also engage in a series of exchanges with students from the University of Buenos Aires who will be working on the next station of the exhibition "An Atlas of Commoning." Contingent on the Covid19 situation the studio will take a four day research trip to do field work and experience regional initiatives in person.



Above: Case study drawing on *Triratna Prerana Mandal* by Sharleen Devjani and discussion at Design for a Commons Transition Symposium

Right: View of *An Atlas of Commoning* at Miller ICA.

### Care

In line with the Fall's ASOS theme of care, we will investigate notions of stewardship, mutual support and solidarity in urban transformations and the social reproduction of shared

resources and common space. "What would happen if we were to put care at the very center of life?" asks the Care Collective in 'The Care Manifesto' while encouraging us to recognize and embrace our interdependencies across scales, from the interpersonal to the planetary. Addressing a world in which carelessness reigns, requires us to first and foremost analyze and understand the forces at play that shape systemic inequities. The thriving contemporary commons debate then offers an entry point for radical imaginings of other possible worlds beyond the binaries and confines of capitalist markets or the neoliberal state. Meanwhile, the case studies assembled in the Atlas of Commoning render visible that these alternatives are already in the making, they are all around us weaving a pluriverse of small, local but open and connected initiatives.

**Program**

Fall: Design-based Research

During the fall semester we will study selected spaces and practices of commoning through theoretical readings, interviews and field work, while drawing from the studio's repository of 50 previous case studies. The collective research will be intertwined with the development of an individual thesis proposal on how commoning might transform a neighborhood community and site of student's choosing. Throughout the semester the articulation of a thesis will evolve through research, verbal and visual modes of reflection and design structured around workshops on sociocracy, futuring and transition design amongst other methods.

Spring: Research-based Design

The spring studio will focus on developing the individual design proposals testing the spatial, material and governance implications of the student's respective hypothesis on urban commoning. For the project students will be expected to take a personal position and formulate a thesis, expressed and explored through design. The site, program and general parameters of the project will be determined during the fall, allowing students to gather data and base materials over the winter break. Thesis projects will culminate with an exhibition and review in the Miller ICA Platform and the creation of a final thesis book.

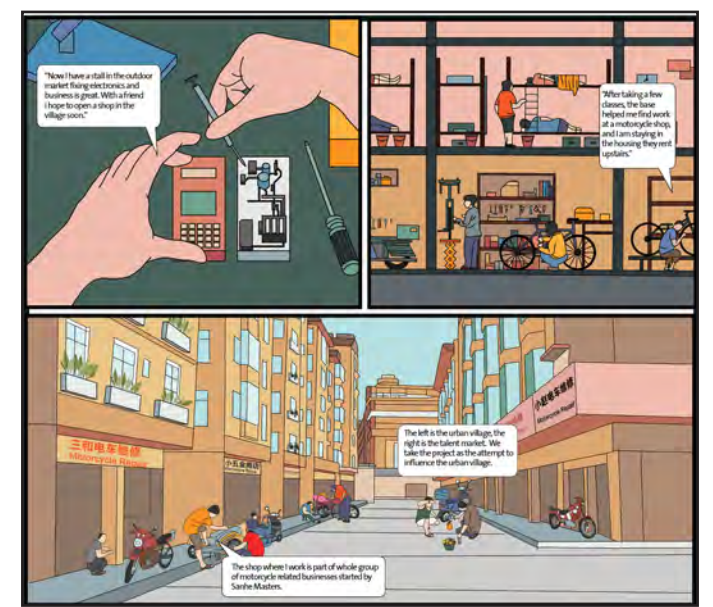
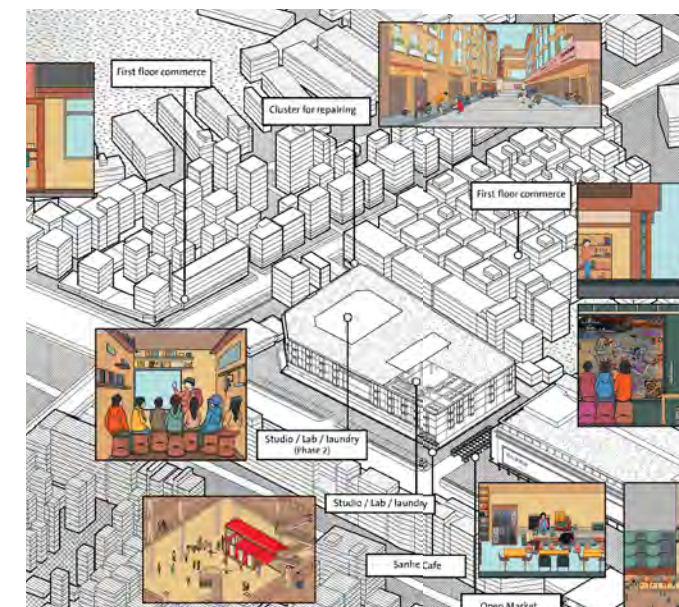
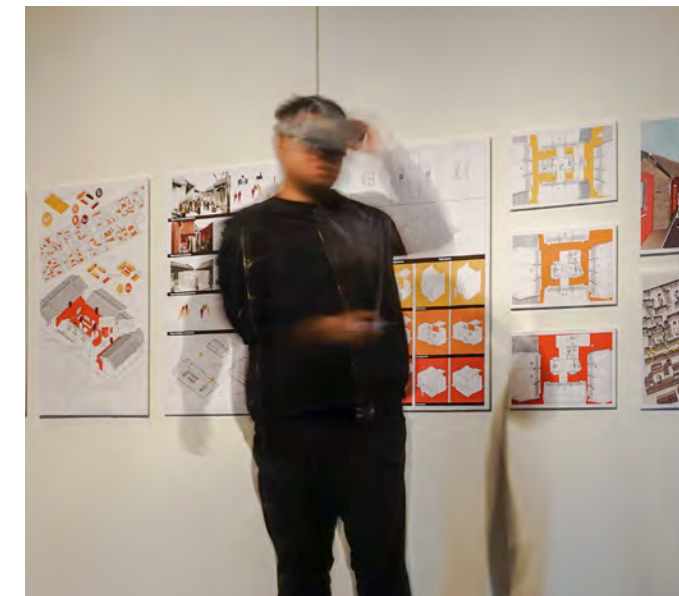
Left from top to bottom:  
Yashvasvi Tulchiya, MUD '21  
Sameedha Mahajan, MUD '21  
Sujan Das Shrestha, MUD '19  
Abhinav Singh, MUD '20

Right clockwise from top left:  
Chi Zhang, MUD '19  
Xioran Zhang, MUD '21  
He Su, MUD '21



**Learning Outcomes**

In this studio you will develop skills for documenting, analyzing and critically evaluating precedents that act as catalyst for the bottom-up transformation of cities. You will learn to contextualize these spatial practices, and ultimately your own design practice, within a broader social, political and economic discourse. As you begin to better understand the forces at play in shaping the built environment and in turn how buildings shape us, you will learn to both question and sharpen the agency of architecture and reflect on alternative more collaborative modes of design and radical imagination. You will further experience how what is often conceived as binary opposition between theory and practice, thinking and acting, can in fact be intricately linked and lead to invigorating synergies. The hypothesis here is that every reading of an urban milieu is also projective, every reflection on what is, entails a projection of what could be, in short a latent design project for an alternate possible future. Utopia is typically thought of as something that lies in the future. Meanwhile in our research on practices of commoning, we will see that everyday utopias are in fact all around us.



# TERMINAL

## JFK Terminal 4 concourse expansion

### Hal Hayes

I am arguing that, this matrix space brings to our art a new relevance, and even new aesthetic pleasures and political capacities. *Keller Easterling Metropolis, April 6, 2015*



### Background

This studio will help students develop a strong, comprehensive, holistic design process and learn to seek inspiration from the design components and socio-cultural issues involved in a large, complex building project. The key semester goal is for the student to create a unique individual design that is a civic gateway celebrating New York, is completely responsive to the needs of the users, elegantly balances the many interrelated and interdependent performative systems that are critical to the function, and is a compelling whole that is greater than the sum of its parts.

### Site

Terminal Four Concourse A, John F. Kennedy International Airport, NY

### Scope

The studio project requirements will closely parallel the real project currently being planned for the expansion of T4, a new structure of approximately 10 gates, 100ksf connected through the existing six-gate, 75ksf Concourse A to the main terminal.



Above, and opposite JFK Terminal Four, SOM, 2001

Below: JFK T4 Delta hub phase 2, 2013





**Learning Goals**

Students will test and expand their design and technical skills in all key areas, with particular focus in these three areas.

- Explore the rich and varied conceptual design opportunities arising from architectural, structural, infrastructural and mechanical systems at very large scale and with a high degree of complexity.
- Define and grasp the complete design challenge through research and analysis of the building typology; the exceptionally dynamic functional rhythms, complex programmatic spaces with distinct systems, and a widely diverse user group with varying needs and desires.
- Understand and embrace the duality of the design paradigm, as a principal anchor and integral component of a global transport and communication network, yet with a need to be responsive to local environment, materials & methods, and cultural traditions.

*Below: Terminal Four SOM, completed 2001*



*Top and Above: Jacob Douenias  
JFK T4 concourse A proposal S12*

**Studio Framing**

Students will engage as teams in a robust pre-design exercise;

- Analyze the existing building and site conditions
- Engage with the professional AE design team members working on the actual project
- Develop programmatic and performative goals and objectives.

Students will then individually pursue a concept design for the project based on these complex design parameters;

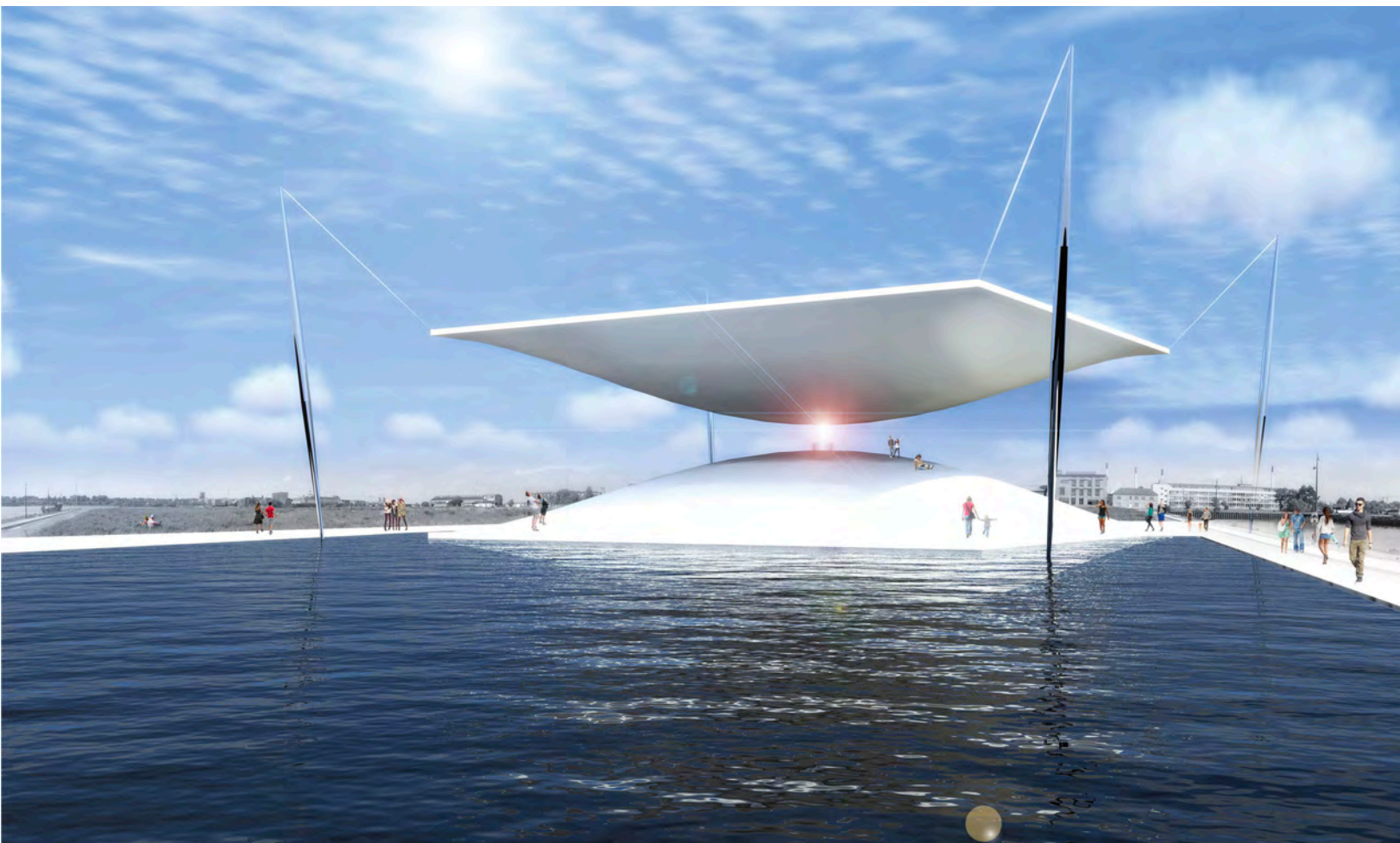
- Learn design and planning methodologies to effectively address complex projects
- Balance the needs of these parameters as an interdependent network of autonomous systems
- Emphasize the use of hand sketching, physical models and iteration of design, research and analytical work will at varying scales and degrees of resolution

# HELIOStudio

## designing urban solar transition

## Christine Mondor

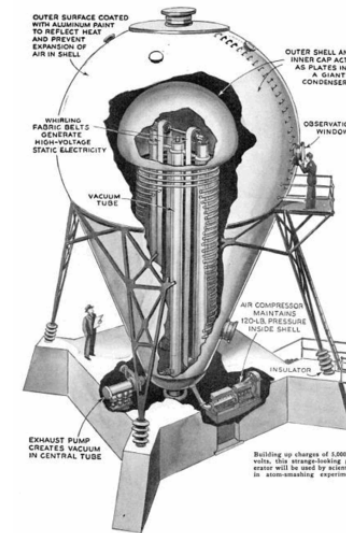
**‘Massive change is not about the world of design but the design of the world.’** *Bruce Mau*



### Background

After two centuries of dependence on fossil fuels and “solidified sunshine,” there is broad convergence that we are on the cusp of an energy transition to carbon-free fuels. Energy transition and the adoption of new technologies will require new spatial patterns and practices, all of which are design opportunities. Carbon-free transition needs to occur globally to shift the trajectory of climate change. It will start at the scale of the site and the city where technical challenges and cultural practices will create alternative landscapes of energy generation.

HELIOStudio will examine how the pivot between energy technologies will reshape our use space and will test how our landscape and urban form determine how we deploy technologies. HELIOStudio will examine the neighborhoods of Pittsburgh through the lens of solar power generation to find new spatial qualities, ways of using space, and ways we can use energy technologies to experience familiar spaces in new ways. The studio will explore the experiential and cultural connections to energy technologies to uncover the meanings behind what we make and how it shapes our understanding of the world.



Left. *Solar Hourglass*, 1st Place Winner LAGI 2014 Copenhagen  
Santiago Muros Cortés  
Energy Technologies: concentrated solar power (thermal beam-down tower with heliostats). Annual Capacity: 7,500 MWh

Above. *The Westinghouse Atom Smasher*, nuclear accelerator was instrumental in the development in practical applications of nuclear science for energy production and was developed only a few miles from CMU's campus.

### Context

Western Pennsylvania is a place of energy firsts. Some of the nation's earliest coal mines were found in Pittsburgh's hillsides and the black rock heated homes, powered steamships, and anchored early industries, enabling the city to grow. Western PA was also home to the first commercial oil wells, the nation's first nuclear power plant, and now the nation's newest methane cracker plant that will process natural gas from the Marcellus Shale gas fields. This studio will speculate how Pittsburgh might continue the energy innovation and acquire the mantle of the first equitably integrated solar city.

**Care** In the broadest sense, the transition to carbon-free energies is an act of planetary self-care that attempts to heal the tragedy of the commons. As a studio we will explore how designers can integrate new infrastructure and technologies into communities and the daily experience of individuals. We will explore direct benefits, such as energy performance, and we will identify issues of equity and how people may gain or lose in the transition to a new energy regime.

**Program**

Each successive energy technology has reshaped our culture and sense of place and has resonated with design opportunity. HELIOStudio will use design to explore the next transition through two reciprocal scales—a site scale design problem to introduce us to carbon-free technologies in an urban context and a city-wide examination of the potential for energy generation and exploration of public realm design. Our work will hybridize architecture and infrastructure through critical engagement of technology, culture, and urban systems, with a goal of identification of 30MW of generation.

Our studio will collaborate with Elizabeth Mononian (Art '00) and Robert Ferry (Arch '98), who founded the nonprofit **Land Art Generator Initiative** to create art installations that could inspire others to collective action on issues of climate change. Through a series of international competitions, LAGI has proposed “land art generators” that showcase renewable technologies. We will learn from them and add a new dimension by exploring how such projects can be implemented at a city-wide scale using Pittsburgh as a test case. We will explore energy performance and place while examining the cultural and economic systems that will enable or inhibit solarization. Our work will inform their next round of competitions that is aimed at actual implementation and we will develop on-the-ground strategies for working with neighborhoods.



Above. *Beyond the Wave*, a submission to LAGI 2014 Copenhagen, Jaesik Lim, Ahyoung Lee, Sunpil Choi, Dohyoung Kim, Hoeyoung Jung, Jaeyeol Kim, Hansaem Kim (Heerim Architects & Planners) *Energy Technologies: organic thin film. Annual Capacity: 4,229 MWh*

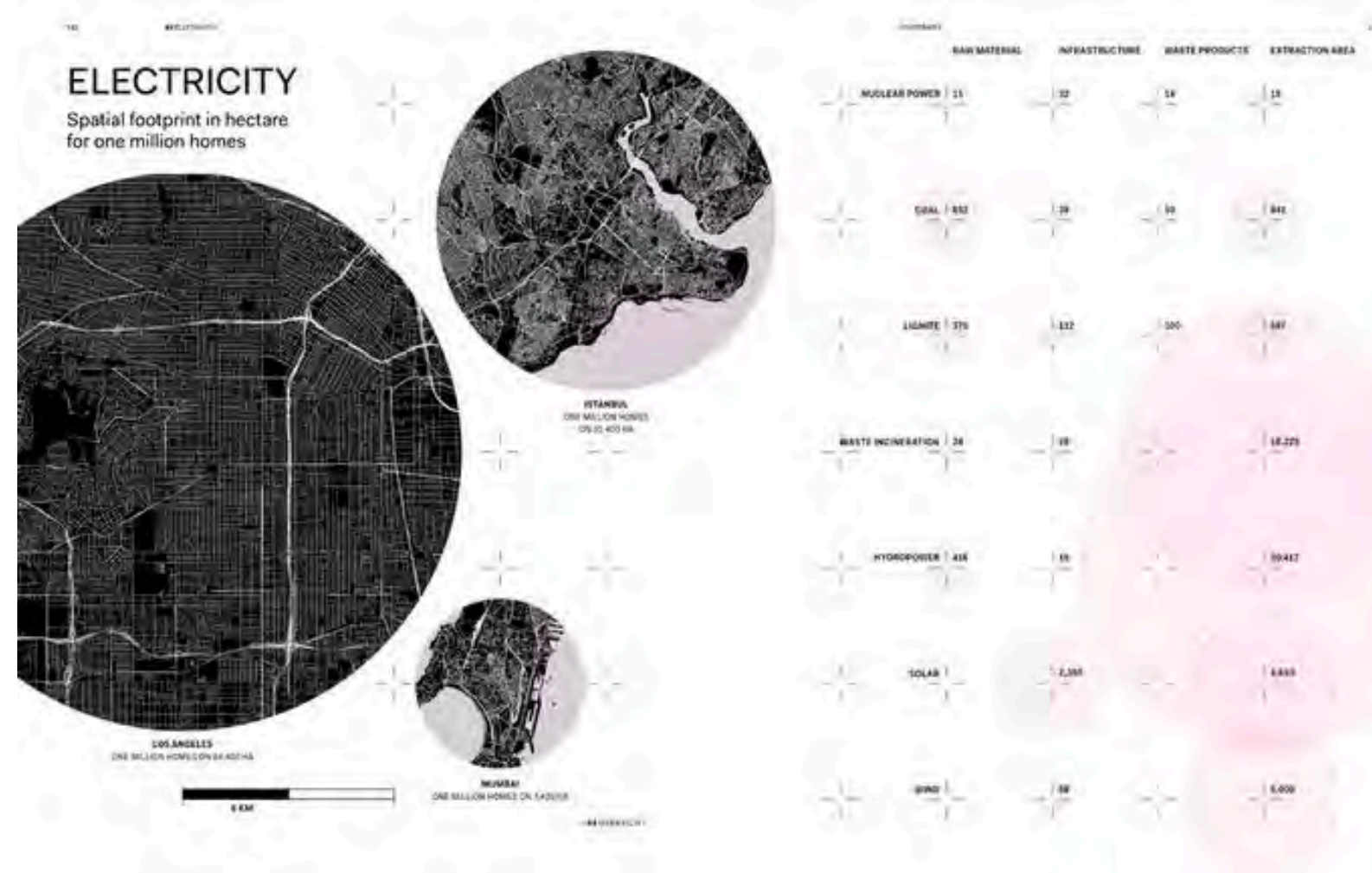
**Learning Outcomes**

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

- >create provocative designs that integrate energy infrastructure and urban places
- >identify and speculate on key drivers of urban energy design, including experience, materials, context, economy, and policy
- >analyze and represent qualitative and quantitative data related to urban patterns, cultural practices, and energy infrastructure
- >understand social models of change and how design and engagement can catalyze or contribute to cultural transitions



Opposite. *Spatializing electricity*, Sijmons.



Resources:

- Sijmons, Dirk. *Landscape and Energy: Designing Transition* (cameo)
- LAGI, *Regenerative Infrastructures: Fresh Kills Park, NYC* (cameo)
- LAGI, *A Field Guide to Renewable Energy Technologies* (online)
- Kim and Carver, *The Underdome Guide to Energy Reform*. (cameo)
- Mau, *Massive Change* (cameo)

Our studio will be structured as a semester-long query that results in documents that summarize our findings. We will explore through early individual projects and later group projects. Students will be expected to produce architectural and spatial designs, to write and create narrative arcs, and to illustrate key concepts and data.

We will have visiting experts in to contribute to our understanding of concepts such as:

- energy systems and technologies
- infrastructure and history of the city
- urban computational analysis
- community dynamics and engagement
- competitions and design as a change agents

I will be traveling to Rotterdam, NL the week of 26 September to present at the **EcoCities conference**. The Dutch have been leaders in designing energy transition and I would welcome any fellow travelers. Please contact me if you might be interested.

# Monuments of Everyday Practice

## *Living Memorials to Gandhi* SAROSH ANKLESARIA

*“He (Gandhi) has much to say about the issues that make our present moment so volatile: inequality, resentment, the rise of demagoguery, and the breakdown of democratic governance...”*

*- Pankaj Mishra, Gandhi For the Post-Truth Age.*



### **Why Gandhi Matters**

Gandhi remains one of the most prolific and important thinkers of our time. His life and work bear essential critiques for the model of social life that has come to define our age—variously described through capitalism, modernity, neoliberalism, anthropocentrism, egotism, and rationalism. His legacy lies not only in the context of the nonviolent struggle for Indian independence but in his inspiration to globally revered figures—Martin Luther King, Jr., Nelson Mandela, the Dalai Lama, and Albert Einstein among others. More so it remains prescient in the continuance of civil disobedience as a mode of empowerment for climate and social justice struggles across the world today. The Just Transition movements of our times are rooted in an essentially Gandhian ethos that insists upon both social and ecological justice.



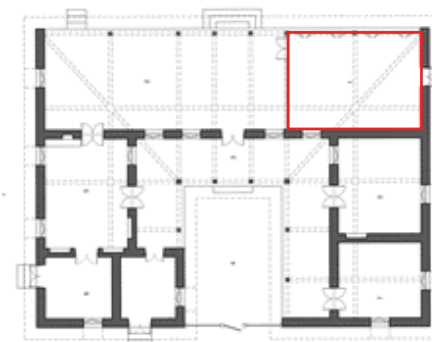
*Above: Gandhi's personal belongings at the time of his death are themselves a critique of the consumption of our present times -- Two wooden bowls; A wooden form and spoon; Two pairs of sandals; Statue of porcelain monkeys (see-hear and speak no evil); A Diary; A Prayer book; A watch; A spittoon; Letter Openers; and Glasses.*

### **Worldmaking**

The studio will ask how architecture might participate in “Worldmaking as praxis” through the making of living memorials at Gandhi Ashram. These will serve as an ecological critique of the present day material culture of extraction, consumption, and waste, as well as of a social critique of inequality and intolerance.

### **Context**

The Gandhi Ashram at Sabarmati in Ahmedabad was the home of M.K. Gandhi during a pivotal twelve years of the Indian Independence Movement. A complex of residences and a productive campus, it occupies a vastly important place for imagining an alternative to the mainstream neoliberal politics of our contemporary times. However, the ashram precinct is currently mired in nationalist politics through a highly controversial Sabarmati Redevelopment Plan, to turn the site into a “World class memorial”. The plan proposes an inordinately expensive expansion of the Ashram campus with no public process regarding the development plans. It also proposes the relocation of about 250 Dalit families that were brought to the Ashram by Gandhi. The plan has been heavily criticized as a “second assassination of Gandhi”, “a theme park to Gandhi”, “a takeover of Gandhian Institutions by the government” and the ashram’s commercialization into an “international tourism destination”



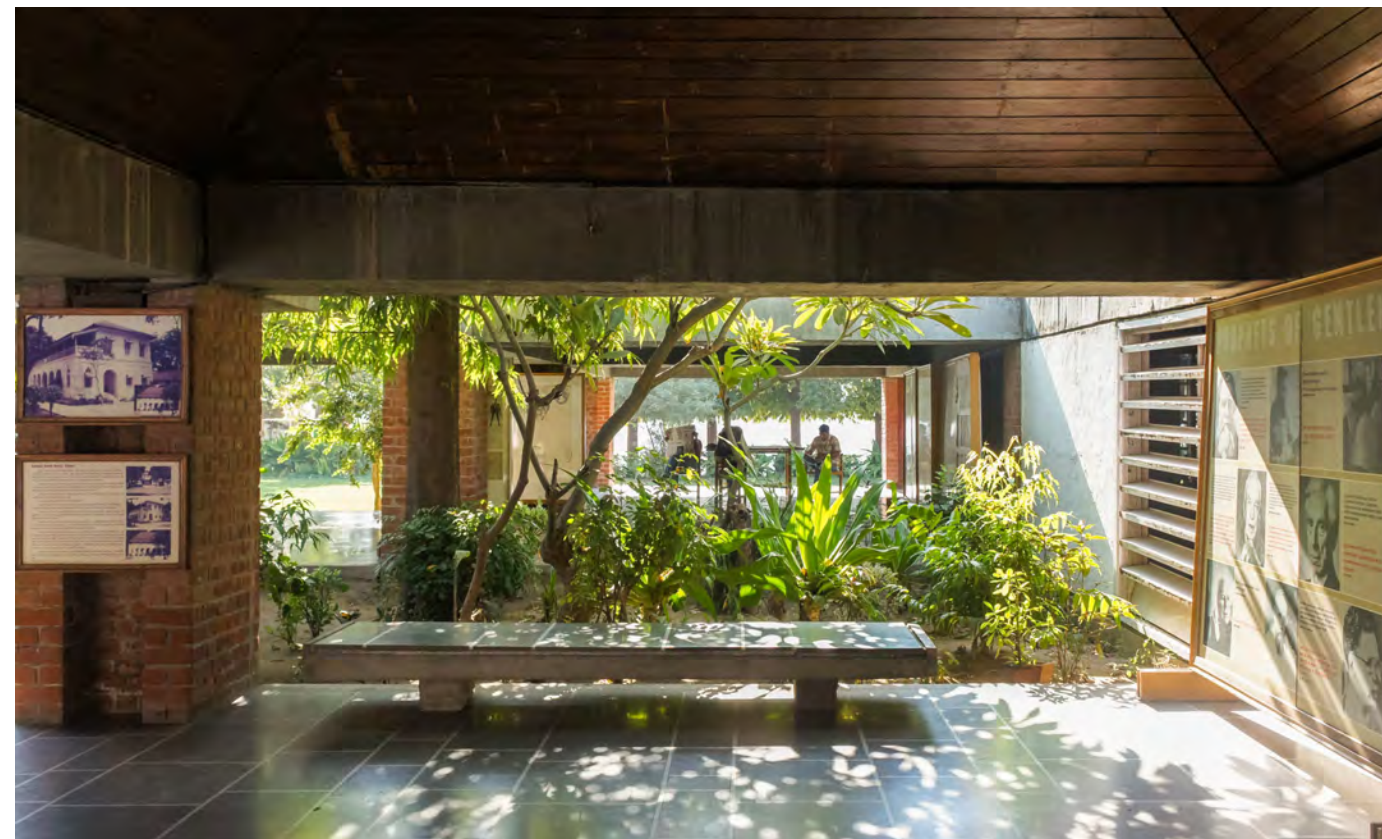
*Above: Plan of Hriday Kunj, Gandhi's residence in the Ashram. The box in red indicates his study.*

*Left: Gandhi's study in Hriday Kunj from where he waged Satyagraha against British Imperialism.*

Instead of proposing an alternative masterplan students will work on a series of discrete sites across the Ashram complex to propose various programs that will serve as monuments of everyday life. These will privilege the idea of everyday practice and renewal as memory. Projects might engage various conditions of the ashram such as: Blurring the “boundary wall” and discrete edge of the Ashram; Producing programs that work actively in everyday conflict resolution; or various programs that engage with and contribute to the ecology of the ashram - its various cycles of food, consumption and waste. These will be in keeping with a Gandhian interest both in labor as well as bodily rituals (such as bathing and toilets).

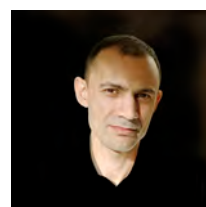
**Program**

The design studio will ask what a “living memorial” or a “living museum”, to Gandhi would look like; where architecture would participate in the renewal of practices of conflict resolution and the making of pluriversal publics, to borrow a term from Arturo Escobar. There is a long tradition of the Ashram serving as a place for refuge from conflict, and even a “safe haven” for activists during the riots of Ahmedabad. Also located in Ahmedabad, The Conflictorium for example is a good precedent for the kind of project we might be inspired by. Additionally, a second inquiry for the studio is inspired by the Gandhian interest in a “material practice”. We will interrogate this by asking the value of a “material practice” for our current milieu — the (post)anthropocene — considering for instance Circular logics of material flows, the ritualization of labor, repair, and maintenance, the critique of newness, the role of embodied material energy, and material proximities in practices of making in the context of the existing programs and life of the Ashram. This will be further examined through material investigations in rammed earth, adobe and loam.



**Learning Outcomes**

1. To critically examine architecture’s role in the making and re-enactment of public practice and public memory.
2. To understand the role of ideology in the shaping of architecture, its materiality and representations.
3. To understand architecture as a non-extractive practice engaging with materials like rammed earth and loam to produce circular, decarbonized material flows that problematize labor and worldmaking.
4. To gain familiarity with the scholarship on Gandhi, as well as contemporary conversations on Just Transitions and Pluriversal thinking. We will also examine various entrenched critiques of Gandhianism.

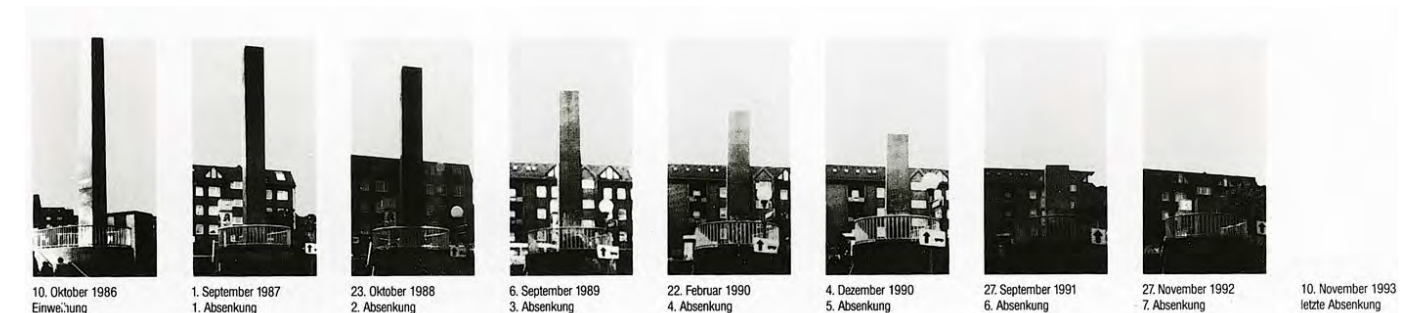


Right: Textiles drying on the Sabarmati River. Photo by Brian Brake. “India Series: Drying Textiles, Ahmadabad” Collection: Museum of New Zealand Te Papa Tongarewa

Top Right: Gandhi weaving the famous Charkha. For Gandhi the material practice of weaving was both symbolic of self empowerment as well as a practical effort to starve the British imports of foreign cloth. Khadi weaving thus became also a act of resistance practiced by millions.

Far Right: The METI Handmade School in Rudrapur, Bangladesh by Anna Herringer, is an example of a recent material practice that engages with Adobe Architecture.

Left: Sabarmati Ashram Gandhi Memorial, by Charles Correa Associates. 1963. Photo by Mi Chenxing.



Above: The Monument Against Fascism by Esther Schalev-Grez and Jochen Grez. 1986-1993. The artists produced a living participatory memorial, by way of a 12 meter high column that was designed to be gradually lowered into the ground, allowing visitors to etch into its entire surface as it sunk within reach and eventually disappeared.

**Format**

Considering the limitations imposed by the pandemic, the studio will not be travelling to Ahmedabad. Instead we will take advantage of the zoom format to bring in various critics and scholars from India who will give lectures on the subject and participate in studio crits. In order to facilitate this, it is important that students are available at select times in the evenings or mornings each week. The final schedule will be arrived upon with the consultation of students. A symposium and/or joint studio involving students from other schools in India is also likely.

The studio is committed to draw heavily from a majority of female, subaltern, and postcolonial practices, including projects, critical texts, and precedents from the Global South.

# Past Futures: The Ohio River Valley

## Architecture, Environment and Aesthetics through Speculative Fictions

“What is history? An echo of the past  
in the future; a reflex from the future on the past.”  
Victor Hugo



### Background

Projections into the future can often become mere fantasy escape. But an aesthetics of a speculative realism can produce scenarios that directly comment on our own moment in time through advancing a particular crisis into the near future. These scenarios are often great lenses for a critical engagement with contemporary problems. In many ways architecture is always a future speculation. This can be as simple as proposing a new lifestyle for a client's domestic environment, or as grand as imagining a new city with new social relations. This aspect of architecture places great pressure on the representations that create the plausibility of this new reality.

If the aesthetics of a future reality can be articulated to a point where the familiar becomes strangely other, these speculations can gain political influence; they can build new audiences, new constituencies. How architects have made aesthetic arguments through different mediations is of crucial importance for the discipline of architecture, both past and future.

What will be the role of architecture in relation to the different issues that exist today, and of the past, accelerated into tomorrow?



IMAGE LEFT:  
*The City in the Sea.* Liam Young  
“A speculative architect should know how to tell stories about cities and spaces to launch these narratives into the world with such force that they find traction.”-Liam Young

IMAGE ABOVE:  
*Ohio River, NASA Observatory*  
Away from the water, the land is a patchwork of croplands shaped by human design, and floodplains shaped by overflowing rivers.

### Context

The American Midwest presents a unique setting for the issues of accelerationism. Where East meets West, in the overlooked regions, and its neighboring geographies present uniquely American scenarios – testing beds for issues of politics, social conditions, infrastructure, and identity. The primary questions that the studio will ask for this situation are: How will the aesthetics of the background reality in the Midwest be altered in the next two decades? How will the variables in the past affect future conditions: social, political, ecological?

We will investigate the Past Futures of the Ohio River Valley. Beginning in the mid-18th century, the Ohio River was one of the great highways of North America. Tens of thousands of people used it to float westward down from the Appalachian Mountains into the interior of the continent. In recent generations, few places so darkly illustrated the erosion in American industrial vitality, and the heart-sore circumstances of its people, than the Ohio River Valley. The 981 miles of river from Pittsburgh to Cairo, Ill., strikingly beautiful as it flows past rounded hills, also drained a landscape of shuttered plants, broken towns and lives bent by lost jobs and frantic worry.

### Constructed Scenarios & Typology Hybrids

As building types, we will question the architecture of the people – programs of the past- combined with existing infrastructure and the associated stories. The goal is to hybridize existing infrastructure with new architectural elements, to present these ideas as decontextualized “objects.” We will be operating at a range of scales through developing constructed scenarios, intermixing past, present and future conditions, to investigate potential hybrids. The reconstruction of formal typologies – both dead and new – will be explored.

### Operations & Methodology

We will take up the tactic of the Mashup and expand upon the American “melting pot”. What does combining cultural and spatial traditions and typologies do to affect and transform our built reality?

The mashup methodology has seamlessly assumed a defining position with global cultural production. The complexity and variety of technique embedded in the mashup presents the architectural operation mixing, blending and reconfiguration of existing inputs (political, cultural, typological, social) to produce new outcomes - past, present & future. Rip, remix, recombination, postproduction, cut/copy, supercut, hack, culture jamming, slice, aggregator, sampling, appropriation, cut-up, collage etc...



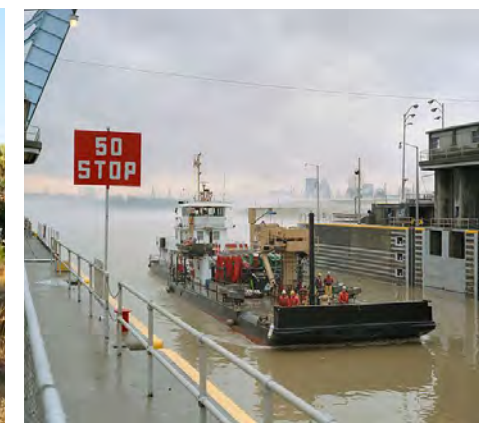
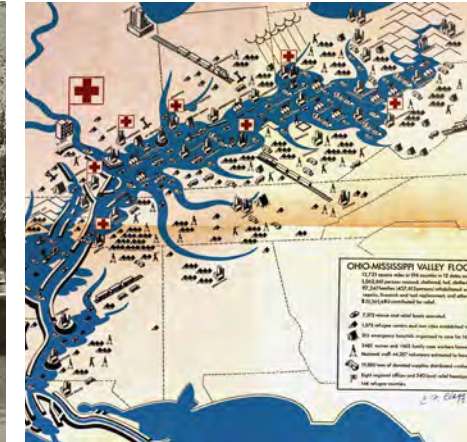
### Aesthetics & Worlding

It is necessary for a cultural practice such as architecture to deeply investigate questions of aesthetics. Architecture is a cultural project that contributes to a developing understanding of how tradition and identity affect our built reality: past, present and future. We will explore, and investigate through multiple mediums; both 2D and 3D.

To fully appreciate a representation, the viewer or listener must understand this ‘worlding’ aspect: an image does not simply present an object or a moment, but represents a world. Exchange is inherently essential when considering the mashup and defining the American melting pot. The building designs will be fully represented through sets of architectural representations, based out of the initial representational exercises from the start of the semester. All forms of media are available for these speculations. The two key questions pertain to: plausibility as established through representation, and the aesthetics of realism.

IMAGE ABOVE:  
“Duck Hunters on the Ohio River”  
William Louis Sonntag

SELECT REFERENCES:  
Groys, Boris, *In the Flow*;  
Ranciere, Jacques, *The Politics of Aesthetics*;  
Easterling, Keller, *Extrastatecraft*;  
Lambert-Beatty, Carrie, “Make-Believe: Parafiction and Plausibility”;  
Young, Michael, “Reality Modeled After Images: Architecture & Aesthetics after the Digital Image.”;  
Steyerl, Hito, “In Defense of the Poor Image”;  
Latour, Bruno, “Visualisation & Cognition: Drawing Things Together”



TOP ROW:  
Flatboat, 1924;  
Artistic rendition of map of the Ohio-Mississippi valley flood disaster of 1937, showing American Red Cross locations;  
Planet City, film still. Directed by Liam Young

MIDDLE ROW:  
“Bound Down the River,” Artist unknown  
A termite mound. Photo: David Davies/Wikimedia Commons;  
Coast Guard buoy tender “Obion”, 200-foot main lock at McAlpine Locks, Louisville, Kentucky

BOTTOM ROW:  
NN\_Tower 1 Elevation Study, Casey Rehm, 2019  
Alberto Kalach, Concrete structure, 2017  
Swamp City, Alice Bucknell, 2021

### Learning Outcomes

The course is designed for students to produce a semester long, studio based project. The course will hinge around the articulation of the architectural argument into a design proposition culminating in the exhibition of work.

- Leverage verbal, written, and visual forms of communication to describe complex ideas.
- Transition research based design to projective design processes.
- Understand how the choice of design media, method and representations affects the understanding of the built environment.
- Development and execution of design methodology.
- Production of final materials for exhibition and publication of work.

# THICK SKIN

## *Emergent Ecologies of the Ornamental Building Envelope*

'The ornamental dimension lies on the very border that separates enchantment and disillusion, magic and rationality. It makes architecture vibrate ...' *Antoine Picon*



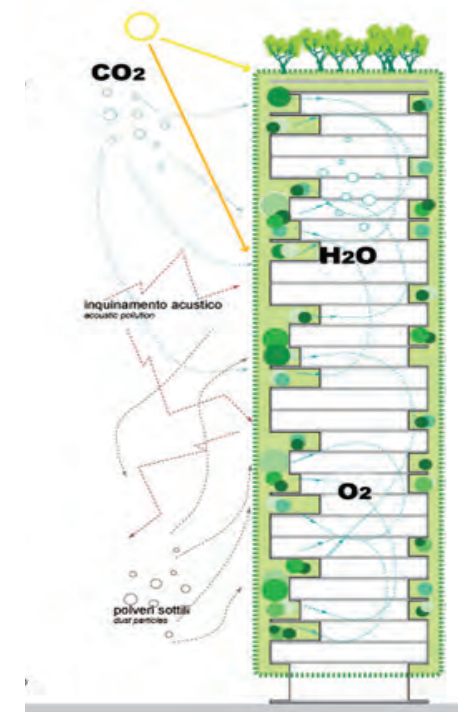
### **Background**

The studio will explore architectural terra cotta assemblies to raise questions of environmental regeneration, resilience, and adaptability and their overlay on contemporary building ecologies and a circular economy. We will develop experimental bioclimatic façade/screen systems for an existing building that reimagine the role of the architectural surface in the building's adaptation to its local ecology and its ability to provide ecosystem services. Focusing on the interactions between bodies, buildings and microclimates we will explore the role of the building skin in adapting to climate change. These performative surfaces by their very nature will be ornamental. The studio will attempt to understand ornament and its role in both socio-cultural and environmental "performance".

Understanding that the ubiquitous architectural envelope of the modernist glass building has been "resolved" in a manner that distances us from our environment, we will replace the bubble with enchanted terra cotta skins that potentially redraw the relationship between the interior and exterior and question the conventions of current construction systems. Design will draw from ecologically focused principles including but not limited to biomimicry and biophilia to generate modular systems that celebrate the complexity, variability, responsiveness, and uncertainty inherent to natural systems. These systems will be informed by direct interaction with and logistical support from renowned architectural terra cotta manufacturer, Boston Valley Terra Cotta and the façade engineers and ceramic artists that regularly contribute to the wealth of research collected at the yearly Advanced Architectural Ceramics Workshop.

### **World Making**

Coupling architectural terra cotta, a medium with cradle-to-cradle potential, and the restoration of existing building stock, students will have the opportunity to delve deeply into the more responsive and responsible building strategies that a livable future world demands. Proposals will have the opportunity to consider the potential of upcycling and demountable construction systems that can make and remake our cities while reducing the extractive practices of current construction practices. Renovation is defined as the act of reinvigorating or reviving, the act of bringing life into an existing structure. The studio will take on this act as making a new world where the local ecology, with all its sensory stimuli, comes into the old bones of the building through its new skin. The porous skin is not a barrier, it calls for a world where co-existence and stewardship of our air, land, and water matter because they impact our somatic boundary. Following on this haptic level of worldmaking, we will also explore the world that literally opens for each individual when they go down the rabbit hole of dedication to a craft, an assembly, a material



*Bosco Verticale in Milan Will Be the World's First Vertical Forest, by Boeri Studio, by Boeri Studio, Built 2012.*

*Biphilic terracotta screen prototype built at the 2020 Architectural Ceramic Assemblies Workshop, Workshop, Cook Fox Architects*

### **Context**

Our site will be the University Campus and the glass office building, in particular the Administration building at CMU, Warner Hall, which sits prominently at the edge of the city and the campus green. Our investigation will focus on reimagining,



rebuilding and reprogramming the environmental envelope of this existing modernist building which exhibits an attitude of distancing from the local biome and climate, defining occupants as remote viewers rather than inhabitants of the local ecology. Proposals will redefine the grey site of the existing modernist campus building as a living performative landscape. While maintaining its structure, and considering how to dismantle its skin for reuse, we will also consider how its environmental service systems can be rethought in conjunction with a cladding that is more than skin deep. By focusing on the augmented building skin and its performative assembly systems, the studio aims to address building envelope's role in both social and ecological engagement. Seen as an expansion of the landscape, the building envelope can provide alternative strategies at the macro and micro levels that bring multiple strains of new life into the building and quad. The active skins will aim to provide keystone elements in the local ecology as well as the life of the campus.

### **Program**

Recognizing we are inseparable from and dependent on natural systems, we will design and program thick, porous and passively responsive envelopes that integrate ecosystem services into architectural terracotta systems. We will in effect be programming the interface between the building occupants and the world, how they engage climate, how they steward the local ecology, how they push beyond the environmental barrier and bring the inside out connecting their workspace with the campus environment, and maybe encountering a bit of programmed wilderness at the threshold to the University's may office. These thick skins will aim to celebrate the complexity, variability, responsiveness, and uncertainty inherent to natural systems.

Limiting the design focus to the boundary layer will allow projects to be developed in three scales: infrastructural, building, and detail. At the macro scale we will address the role of the building skin in engaging a variety of ecological and ambient system components, both man-made and natural. We will look into the regenerative potential of engaging both human and non-human agents like flora and fauna, hydrology, weather, etc. At the micro scale the building enclosure as site infrastructure will reimagine the potentials for ceramic envelope systems. Coupling architectural terra cotta, a medium with cradle-to-cradle potential, and the restoration of existing building stock, students will have the opportunity to delve deeply into the more responsive and responsible building strategies that a livable future demands.

### **Learning Objectives**

- To build an understanding of architecture's role as productive component of its biome through passive and active engagement with the environment, climate, ecology, energy and living systems.
- To develop an understanding of ecologically responsible material use (terra cotta and reuse of existing building stock).
- To experience the process of working with a manufacturer in the design process.
- To develop morphological transformation of surface assemblies and design through the understanding of the systemic nature of such assemblies.
- To develop and understanding of terra cotta green wall and green roof assemblies and their thermal properties.



# Bricolage at Community Forge

## *Urban Collaboratory Studio: Participatory design for an experimental performance space*

***“Worldmaking as we know it always starts from  
worlds already on hand; the making is a remaking.”***

— Nelson Goodman



### ***Background and Project***

In the spring'21 the Urban Collaboratory Studio will work with Community Forge and Bricolage Theater on the participatory design of a black box performance space. Community Forge is a grassroots initiative transforming Wilkinsburg's former vacant Johnston Elementary school into a community center. It is committed to youth empowerment, community collaboration, organizational incubation and neighborhood wellbeing. Pre-Covid, the studio already partnered with Community Forge on developing a vision for its former school yard and realizing a first phase—the project was recognized by an ULI Placemaking Award and a ACSA Collaborative Practice Award. Now, Bricolage Theater is relocating from its downtown location to Community Forge. The company's mission is to immerse artists and audiences in adventurous theatrical experiences that foster connections and alter perceptions. The name Bricolage refers to the environmental philosophy of Claude Levi Strauss of making innovative use of “whatever is at hand” to create something new. Colin Rowe famously drew on Strauss' concept, advocating for an architectural practice that would balance the role of the engineer and the bricoleur. Today, faced with the daunting task of imagining other possible worlds built of a broken planet, the notion of the architect-bricoleur seems more pertinent than ever. In the same spirit the studio will develop design tactics for adapting and reusing the school's former library and gym into an experimental performance space.



### ***Urban Acupuncture and Participatory Action Research (PAR)***

In a participatory design process the studio will support Community Forge with developing ideas for a multifunctional performance space and translate these into a coherent design. We will then identify a strategic design-build component that promises to act as catalyst in the incremental transformation of the space. Within only 14 weeks, the studio offers an opportunity to see a small project through from conception to prototyping and combine conceptual thinking with very concrete and hands-on action--or urban acupuncture. Methodologically, the studio draws inspiration from Participatory Action Research (PAR), in which reflection and action feed on one another, aiming at understanding the world in order to change it. PAR grounds the production of knowledge in real community needs and learning. Thus, the studio is just as much about designing a community engagement process, as it is about designing and realizing a full scale intervention

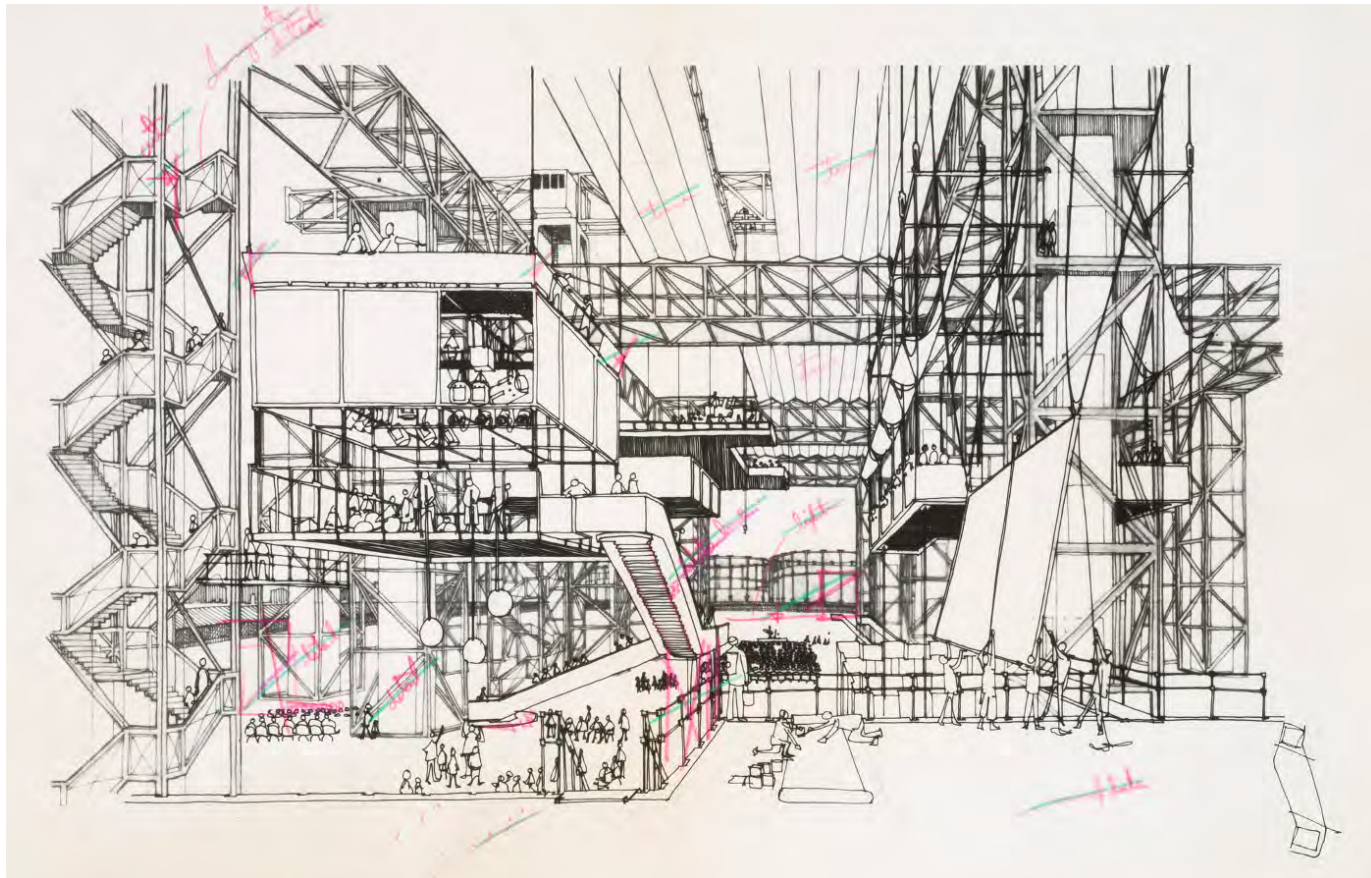


*Photos of community engagement sessions and co-design workshops for the playscape at Community Forge, Wilkinsburg, 2019.*

### ***Learning Objectives***

Engaging in a genuinely open-ended and inductive process, in this studio you will learn to work with uncertainties and understand the definition of program, site, desires and needs of future users as an essential part of the design process. Working with real clients, as well as real hopes and concerns comes with responsibilities and constraints that can be challenging. Students will collaborate with diverse community members and stakeholders as co-designers, as well as in changing team constellations within the studio. In this regard the studio will shift the notion of singular authorship. Accordingly, the studio

requires flexibility and the ability to take on different roles and responsibilities, the willingness to communicate and listen to a diverse audience, as well as engage in material fabrication and physical construction work. The studio will regularly meet at Community Forge in Wilkinsburg, as well as use CMU's woodshop and DFabLab. This studio will expand your notion of spatial production beyond the mere design of buildings to the design of situations and events, embracing temporality and performativity as essential dimensions in architecture.



Perspective drawing of Cedric Price's "Fun Palace"  
Source: University of Brighton. 2014.

### World Making and Immersive Theater

Across time and cultures, theater has been a powerful medium for imagining other possible worlds. Immersive theater, as practiced by Bricolage Theater, challenges the traditional audience-performance relationship by breaking the fourth wall and blurring the boundaries between looking and doing, script and improvisation, the roles of specialist and amateur, student and teacher. Instead of sitting in a seat watching a story unfold on a stage, the audience is moving through an interactive environment, engaging in the story as an agent of change. If theater is able to blur these boundaries, can the same tactics be deployed for transforming the real world? Drawing inspiration from what Jacques Ranciere described as the emancipated spectator, we will question role distributions, power relations and authorship in participatory design? Building on the vision of the Fun Palace by architect Cedric Price and theater director Joan Littlewood, we will explore what role immersive theater can play in the radical imagining of other possible worlds, and how architecture can encourage the transgression of the real and the fictional, probable, possible and preferable.



Top to bottom left:  
Experimental performance spaces:  
Kitchen Monument, Raumlabor, Duisburg, 2006.  
Play House, Power House Productions, Detroit, 2014.  
The Cineroleum, Assemble, London, 2010.

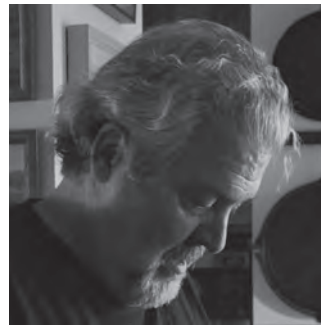
Top to bottom right:  
Immersive theater performance by Bricolage  
Production Company  
STRATA, 2012.  
OJO-The Next Generation of Travel, 2013.  
Project Amella - Take Control, 2019.



# The Cut, The Beach & Beyond

## Campus Design-Build

S.Lee



“What is unique to the designerly way of learning is that it involves making, crafting in conversation with the world in order to understand and shape it.”

*Andrea Mignolo, “Learning Through Worldmaking: The Design Way”*



### Background

The C,B & B is a year-long, interdisciplinary, design-build project to improve the quality of life through design intervention(s) on campus. We will continue to work with Campus Design & Facility Development, the Department of Civil and Environmental Engineering and campus constituents. The project is fully funded and the expectation is that the objects will be turned over to the campus by the last day of classes in the spring semester.

**Design:** during the fall, the students identified sites and opportunities for design interventions, developed a catalog of design proposals, reviewed and selected proposals with clients and developed design development drawing packages and prototypes.

**Build:** in the spring we will on-board Jon Holmes (SoA Shop Director), Brian Belowich (CEE Shop Director), Sarah Christian (CEE Professor), and CEE students to complete construction documents, develop project management plans, build full scale prototypes, procure materials and construct/ install the object(s) on their site(s). A select group of 2nd year “options” studio students will be joining this spring ASO.



### World Making

“Worldmaking refers to the ways we collectively make the spaces we inhabit through symbolic practices. The human drive towards meaning-making leads us to unconsciously build our world from social conditioning, scientific rationality, artistic traditions, and our own struggle for survival. In this context, worldmaking is an acknowledgment of the interpretive frames and practices that we create our worlds through rather than an assessment of the fundamental nature of physical reality.” - Andrea Mignolo, “Learning Through Worldmaking: The Design Way”



“What is unique to design is the capacity to think and act fluidly, not just as a repetition of sequences of thinking, acting, and prototyping but as a complex web of interaction between cognitive activity as both reasoning and imagination, and acts of making/doing to create meaningful things and context that have agency in and on a white water world.” - Pendleton-Julian, Ann and John Seely Brown, “Design Unbound: Designing for Emergence in a White Water World”



“The way design ideas are brought into the world, as crafted material, is a critical part of the design process. Producing good designs requires building successful interrelationships and interconnections with the material of the real world. As the world speaks back, joining the designer in a dialogue, we move out of a polarity between objectivity and the subjectivity into a holistic interrelationship. That which is being innovated is part of the material process itself. When a design is brought into the world, there is no longer a distinction between that-which-is and the not-yet-existing.” - Nelson, Herold and Erik Stolterman, “The Design Way”

*Wilksburg Community Forge Porch Prototypes, F19*

*Top: Red Ribbon by J.Moskowitz + A.Mayorga (B.Arch'20) & Y.Reddy (M.Arch '20)*

*Middle: Woodhenge by T.Latimer+T.Davis (B.Arch '20) & K.Bancroft (M.Arch '20)*

*Bottom: Gullwing by E.Fischer+O.Haft (B.Arch '20) & R.Smerker (M.Arch '20)*

**Context**

“Worldmaking as we know it always starts from worlds already on hand; the making is a remaking.” — Nelson Goodman

“Design makes worldmaking visible, transforming it into a conscious act through intentionality, awareness, and an interest in the ways in which the world could be. In the process of articulating these worlds, the things that we make—the nouns—are expressions and references to the underlying logic of the world in creation. Worldmaking in some ways could be considered the essence of design experimentation.” - Damian Cox

Carnegie Mellon is a diverse community that is learning to deal with the exigencies of university education in a world complicated by the CoVid-19 pandemic, rising social inequality and alarming levels of polarization. The premise of this studio is that the quality of life on campus would be improved by creating a “third space” – a place between home and classroom to relax, socialize and be human again.

**Program**

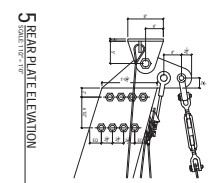
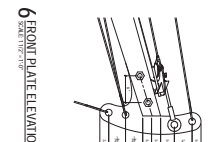
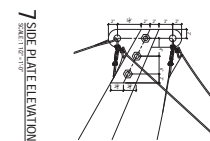
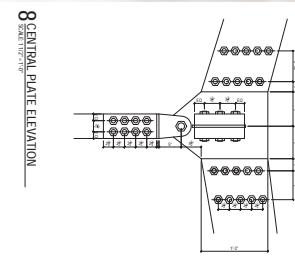
The two fall mini’s produced three awesome design proposals that have been reviewed by students, faculty, alumni and Campus Design & Facility Development. We will start the semester by reviewing the design proposals and through a collaborative process determine what we can build in terms of budget and workforce. The tasks include but are not limited to:

- Completing construction documents
- Developing project management plans
- Building full scale prototypes
- Revising construction documents based on evaluation of prototype(s)
- Specifying and procuring materials
- Constructing/ installing the object(s) on their site(s)

**Learning Outcomes**

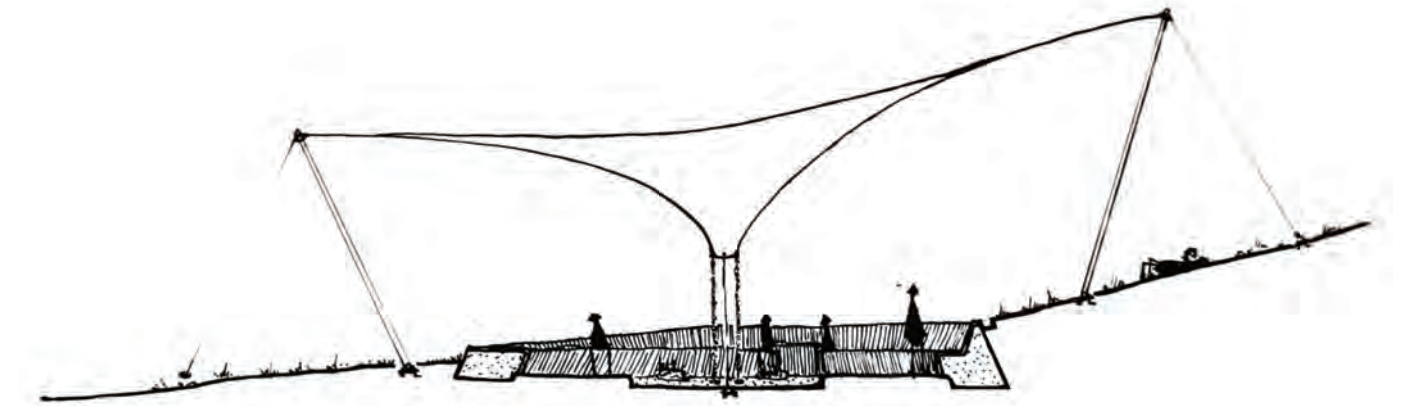
As a result of this course, a student should be able to:

- Collaborate with others - both inside and outside the discipline of architecture
- Integrate systems - structural, material, enclosure and formal
- Develop criteria and evaluate multiple design alternatives
- Draw technical documentation using the conventions of architectural representation
- Translate design proposals into built form



Top+Middle: Gullwing Porch at Community Forge: Eddie Fischer+Owen Haft (B.Arch '21), Ryan Smerker (M.Arch '21)

Bottom: Solar Decathlon House in Donner Ditch: D.Chia, S.Wax, X. Huay (B.Arch '07)

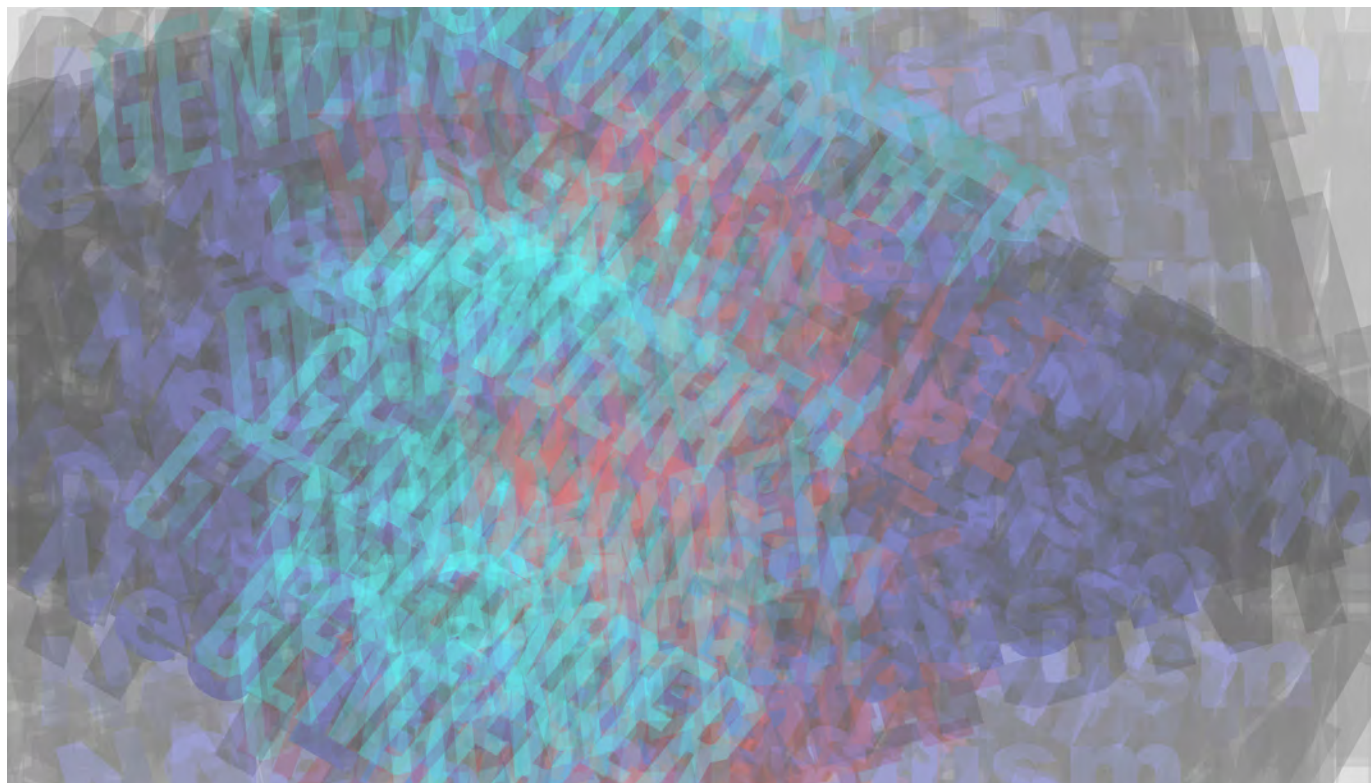


Images from the A1 Mini Course, F21:  
Top: Frames - Kimberlyn Cho (B.Arch '22),  
Middle: The Lotus - Steve Wang (B.Arch '22)  
Bottom: Passive Workspace - Brendan Bogolin (M.Arch '22)

# Critical Making

## *Rendering visible systems of control.*

'Be not the slave of your own past. Plunge into the sublime seas, dive deep and swim far, so you shall come back with self-respect, with new power, with an advanced experience -that shall explain and overlook the old' *Ralph Waldo Emerson*



### **Background**

This studio will allow students to dive deeper into structures of oppression. Unpacking capitalism, racism, and gender. Often the institutions of architecture position themselves as word makers, but over the past couple of years institutions have been put on notice as to their role as a tool for power. Called out as a discipline that holds up ideas of white supremacy, elitism, and misogyny that allows little space for "otherness." This studio is intended to allow space to go deeper into these systems of control to better understand for who they serve and why the built environment has failed so many. Using critical making as way to demonstrate how these systems operate.



Detail from *Everything End in Chaos*, 211.  
Ilona Gaynor

*The project attempts to design, then reverse engineer a single, spectacular Black Swan event. Gaynor's research topic spans economics, finance, global markets, risk management, insurance and mathematics.*

*"I aim to explore the paradoxical nature of policy by examining and speculating on the 'invisible' negotiations and momentary instances that affect, compromise and twist policy for means of financial and/or political gain as well as its implications.*

### **World Making\_**

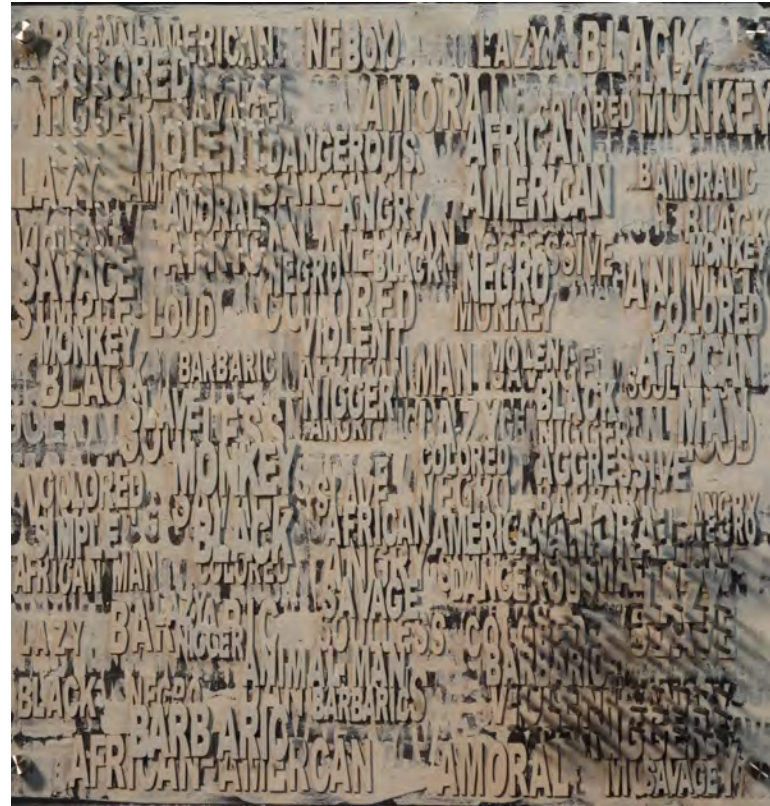
World making is a violent and dangerous undertaking, just ask the indigenous people of the Americas, Africa, or India. To build you must destroy. Pulling raw material from the earth, cutting down trees, or clearing the land. And we cannot forget cheap labor. So before we go and become world makers shouldn't we have an understanding of how systems that have built the constructs we must navigate?

### **Context**

A global pandemic, racial justice movement, global warming, me too movement, transgender rights, immigration, and an attempted insurrection of the United States government has many of use questioning the constructs we are living in. The global pandemic has shown a deep mistrust in government and who our government services. We have seen billionaire become wealthier and the working class poorer. This studio aims to be a space of deep research that starts to unearth these systems and find its relationship with labor and power. This studio is not interested in finding solutions, but rather to gain knowledge and understanding of the constructs we live in. This studio is intended to help build critical thinking skills and offers students the space to begin the process of initial research for their thesis or overall interest.

### Program

During the first half of the semester the class will map out three systems that have influenced the United States' belief system and identity: Capitalism, Gender, and Race. Each student will add their research on to a timeline. By layer these systems we are able to start observing and discovering possible connections on how these systems influences people's worth is determined (who has access, social currency, and influence in American society.) Student will then identify a specific observation to further investigate for the second half of the course, which will lead to a final artifact that is a critical response to the student's investigations.



### Learning Outcome

- Use critical thinking skills to question and explore systems that have become naturalized as being true, but serve as a way of control.
- Discover relationships between different systems for future potential research or exploration.
- Introduce students to important writings that will help to situate capitalism outside of the utopian narrative.
- Introduce students to cross discipline research that situates lived experience as a vital and valid mode of academic discipline.

*Negro Typologies Board #3, 2017, Jackie Joseph Paul McFarland, 18"x18", wood, paint, plexi*

*An exploration of the words used to describe and categorize African-American throughout the United States history. Demonstrating how over time the language changes, but the original intent of dehumanizing African people is still practiced. Over the typography is a layer of plexi with dowels inserted to create a diagram of segregation and redlining. Highlighting the practice of first dehumanizing a group of people to justify the practice of oppression.*



# COMMONING THE CITY

## Negotiating Top-Down and Bottom-Up Urbanism

STEFAN GRUBER \_F21

JONATHAN KLINE \_S22

**Who or what do you care for, care about and care with?**

**What kind of infrastructures and spaces are necessary to create communities that care?**



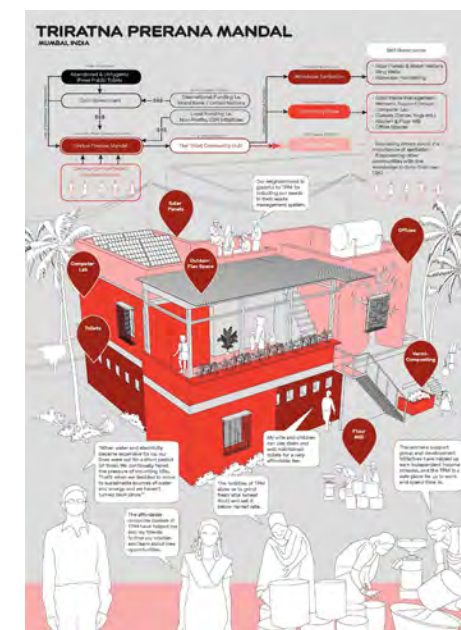
### Background

Commoning the City is a yearlong research-based-design studio focused on social justice and community-led urban transformations. Here, we explore design as an agent of change and how to support citizens in claiming their *Right to the City*. The first semester, taught by Stefan Gruber provides a theoretical framing and uses case study research as stepping stone for developing individual thesis proposals. Building on the studio's shared investigations and a commoning toolkit, students define a research question and begin testing their design hypothesis in an urban milieu of their choice. At the end of the semester each student has framed a design proposal and methodology that is theoretically grounded, geographically and culturally situated, and politically informed. Working empirically, throughout the semester students go back and forth between research and design. The second semester, taught by Jonathan Kline, then supports students in fully developing their individual projects culminating in an exhibition. This year-long studio is required for all second year Master of Urban Design students and open to 5th year BArch students and MArch students. For ASOS students the studio is an opportunity to pursue a yearlong thesis within a structured research context exploring urban commoning. Jonathan Kline's seminar Urban Design Methods and Theories is a co-requisite.



### Research

The commons are emerging as a key concept beyond the binaries of public and private space for tackling the challenges of the contemporary city: How to build community resilience in the face of systemic and growing inequity? How to design with finite resources in the face of accelerating environmental crisis? How to articulate common interests despite splintering social ties? And how to find agency as designers given the scope of these wicked problems? Here, commoning is understood as a set of social practices dealing with the production and self-governance of shared resources and spaces beyond contemporary forms of domination, such as class, gender or race. The studio's research continues to feed into the long term traveling exhibition and publication project "An Atlas of Commoning" in collaboration with ifa (the German Institute for Foreign Relations) and ARCH+. This year, the studio will contribute to the development of a web platform making the research available to a general audience. Throughout the semester the studio will also engage in a series of exchanges with students from the University of Buenos Aires who will be working on the next station of the exhibition "An Atlas of Commoning." Contingent on the Covid19 situation the studio will take a four day research trip to do field work and experience regional initiatives in person.



Above: Case study drawing on *Triratna Prerana Mandal* by Sharleen Devjani and discussion at Design for a Commons Transition Symposium

Right: View of *An Atlas of Commoning* at Miller ICA.

### Care

In line with the Fall's ASOS theme of care, we will investigate notions of stewardship, mutual support and solidarity in urban transformations and the social reproduction of shared



resources and common space. “What would happen if we were to put care at the very center of life?” asks the Care Collective in *‘The Care Manifesto’* while encouraging us to recognize and embrace our interdependencies across scales, from the interpersonal to the planetary. Addressing a world in which carelessness reigns, requires us to first and foremost analyze and understand the forces at play that shape systemic inequities. The thriving contemporary commons debate then offers an entry point for radical imaginings of other possible worlds beyond the binaries and confines of capitalist markets or the neoliberal state. Meanwhile, the case studies assembled in the Atlas of Commoning render visible that these alternatives are already in the making, they are all around us weaving a pluriverse of small, local but open and connected initiatives.

**Program**

Fall: Design-based Research

During the fall semester we will study selected spaces and practices of commoning through theoretical readings, interviews and field work, while drawing from the studio’s repository of 50 previous case studies. The collective research will be intertwined with the development of an individual thesis proposal on how commoning might transform a neighborhood community and site of student’s choosing. Throughout the semester the articulation of a thesis will evolve through research, verbal and visual modes of reflection and design structured around workshops on sociocracy, futuring and transition design amongst other methods.

Spring: Research-based Design

The spring studio will focus on developing the individual design proposals testing the spatial, material and governance implications of the student’s respective hypothesis on urban commoning. For the project students will be expected to take a personal position and formulate a thesis, expressed and explored through design. The site, program and general parameters of the project will be determined during the fall, allowing students to gather data and base materials over the winter break. Thesis projects will culminate with an exhibition and review in the Miller ICA Platform and the creation of a final thesis book.

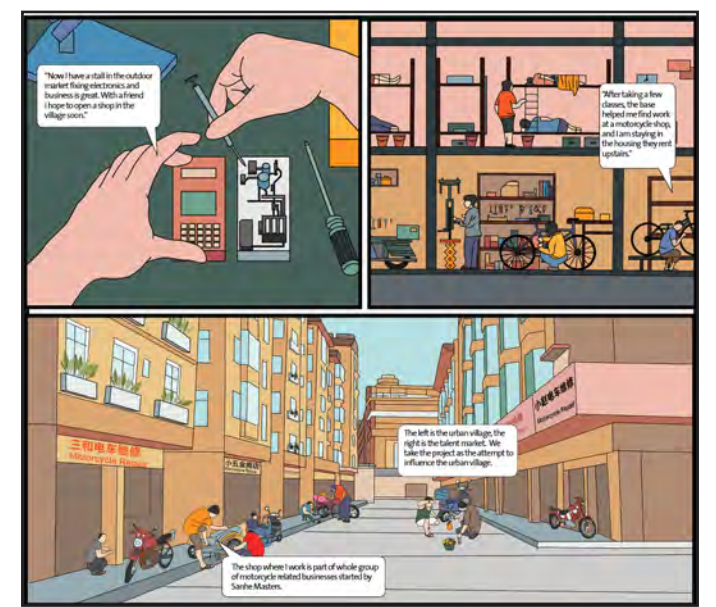
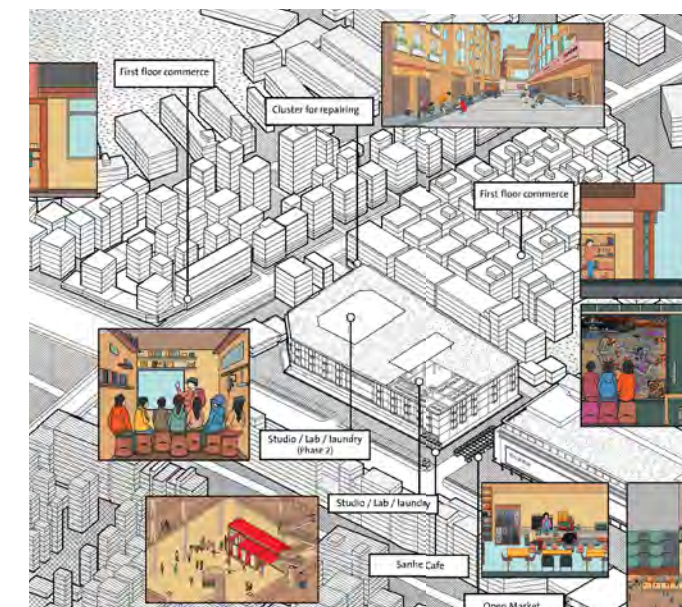
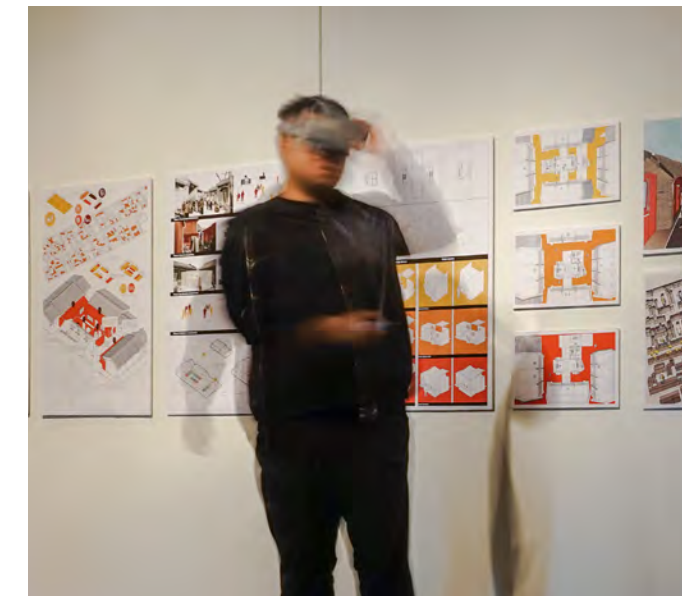
Left from top to bottom:  
Yashasvi Tulchiya, MUD '21  
Sameedha Mahajan, MUD '21  
Sujan Das Shrestha, MUD '19  
Abhinav Singh, MUD '20

Right clockwise from top left:  
Chi Zhang, MUD '19  
Xioran Zhang, MUD '21  
He Su, MUD '21



**Learning Outcomes**

In this studio you will develop skills for documenting, analyzing and critically evaluating precedents that act as catalyst for the bottom-up transformation of cities. You will learn to contextualize these spatial practices, and ultimately your own design practice, within a broader social, political and economic discourse. As you begin to better understand the forces at play in shaping the built environment and in turn how buildings shape us, you will learn to both question and sharpen the agency of architecture and reflect on alternative more collaborative modes of design and radical imagination. You will further experience how what is often conceived as binary opposition between theory and practice, thinking and acting, can in fact be intricately linked and lead to invigorating synergies. The hypothesis here is that every reading of an urban milieu is also projective, every reflection on what is, entails a projection of what could be, in short a latent design project for an alternate possible future. Utopia is typically thought of as something that lies in the future. Meanwhile in our research on practices of commoning, we will see that everyday utopias are in fact all around us.



# INDEPENDENT THESIS / COLLECTIVE STUDIO

## *Inquiries, Observations, and Provocations through Architecture*

“Choose carefully the site of rebellion.”  
— Terence van Elslander



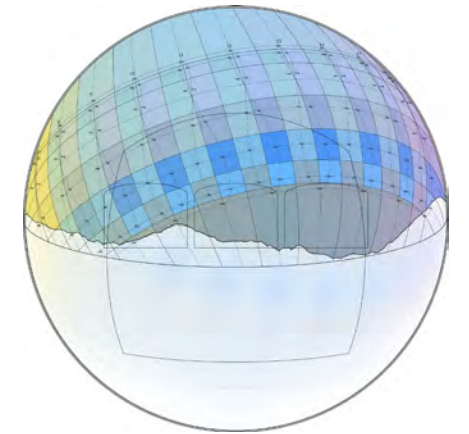
### **Background**

An architectural thesis is a proposition. A proposition that results from a critique and reexamination of the role of architecture as a critical participant in the conditioning of (public) space. A thesis demands that the student take a position and have something to say, something to contribute to the ongoing discourse in the widening sphere of architecture.

Marking the transition between academic and professional practices, the thesis project is an opportunity to define an individual position 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. The studio will present their work together in a public exhibition and symposium.

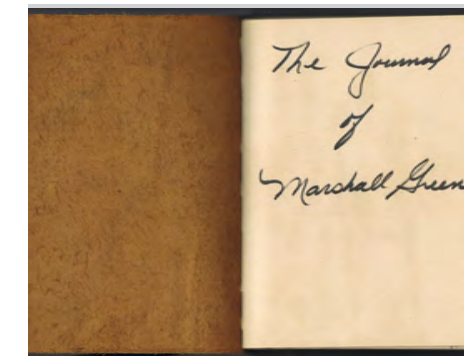
### **World Making\_**

Worldmaking is an optimistic act; it is based on the understanding that other worlds are possible than the one we are handed. Our diverse worldviews inform how we create those worlds, and how we understand the creative process. The word “worldmaking” is a gerund; it is active, describing the ways the worlds we make unfold. Similarly, the thesis studio is reflective on the act of producing a thesis, the journey of its making is as valuable as the final product exhibited at the end.



### **Context**

In defining your thesis project, you are also defining a space for yourself ideologically and artistically in the landscape of architecture practice. You are testing ways of working, making an impact in the discipline, and reflecting critically on your own work. To that end, you will be working under the guidance of carefully selected, trusted advisors, but the project is ultimately your own. You must trust yourself to envision the outcome and make it happen. Throughout the process of designing a thesis, you will exercise strategies for writing, research, time management, organization, and communication that will be invaluable throughout your career. At the end of the year, you will have completed a personally, intellectually, and aesthetically satisfying project that will reap dividends after graduation.



Left: Christoph Eckrich, *Through the Singularity: Narrative Conjectures Beyond the Zero Hour*, 2021.  
Above, left: Emmanuel Nwandu, “*The Journal of Marshall Green*,” from *Manifesting Identities: Memory, Myth and Legacy in African America*, 2021.  
Above, right: Louis Suarez, *Mapping the Zaubergberg*, 2021.

**Program**

Class time will be devoted to:

- Developing a thesis exhibition and publication
- Desk critiques to ensure the timely development of independent work
- Group discussions to review project milestones, requirements, and ideas
- Reviews with advisors and outside critics to refine design projects and exhibition strategies
- Independent design, research, and writing

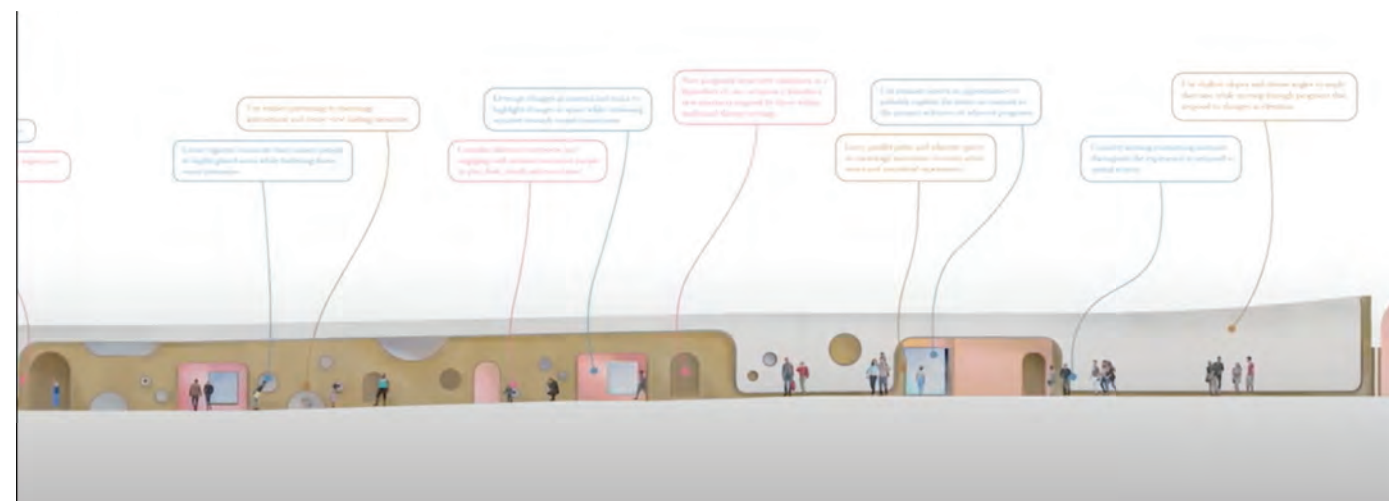
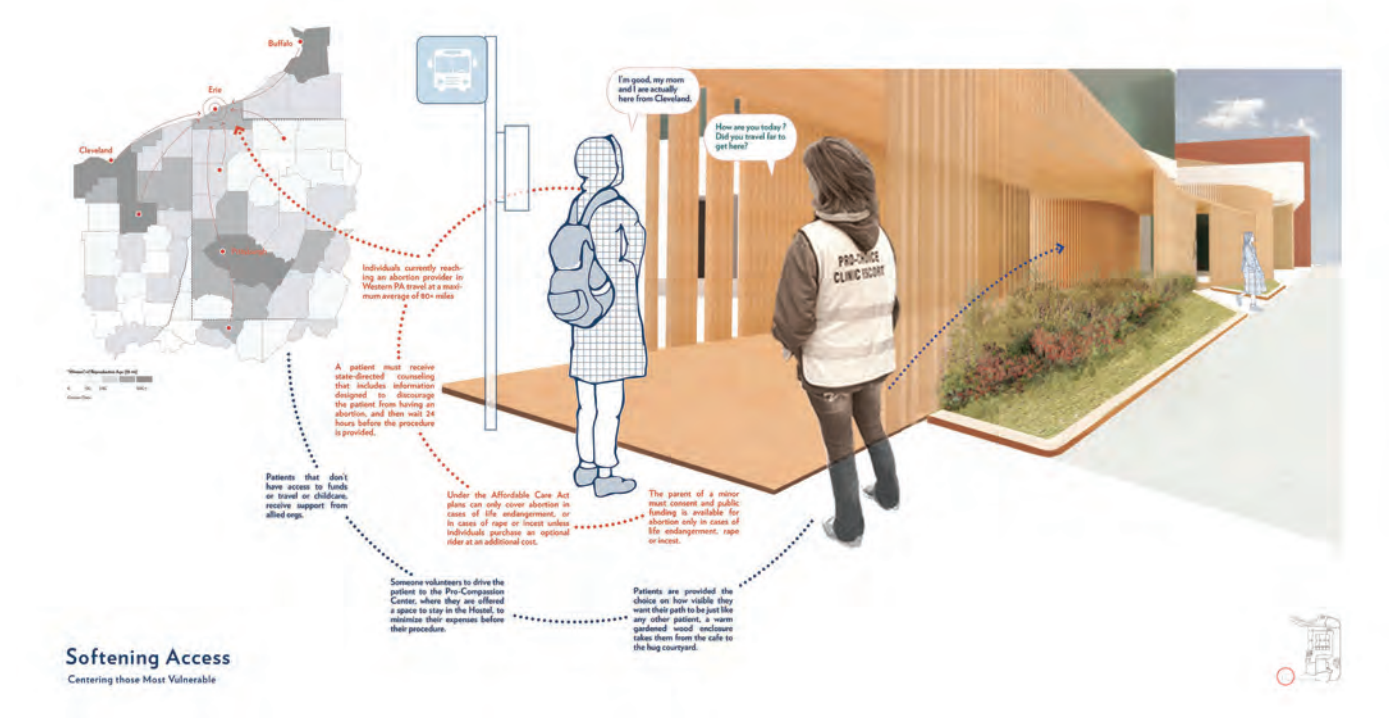
A series of “thesis talks” throughout the semester offer students an opportunity to engage with faculty, scholars, and practitioners working in related topics. These regular presentations help foster critical thinking and reflection on the projects’ relevance outside the classroom.



**Learning Outcomes**

In this studio, students are expected to engage and develop a wide range of interrelated capacities, including critical thinking, analytical writing and reflective design production.

- Refining research skills in architecture and design
- Developing and expressing a critical outlook and perspective on architecture practice
- Designing and installing an exhibition of work
- Writing, editing, and designing a thesis book that compiles the outcomes of the research and design process
- Sustaining and managing a long-term independent project
- Polishing verbal and visual presentation skills



Left: Brandon Smith and Gil Jang at the pop-up exhibition of their thesis, Tectonic Topographies, May 2021. Above, top: Alina Kramkova, Designing Procompassion: Conceptualizing Destigmatized Spaces for Independent Abortion Providers, 2020. Above, below: Still from video in Michael Powell, too little TOO MUCH: Looking at existing sensory therapy practices to inform spatial experience through an expanded definition of access, 2020.