

ADVANCED  
SYNTHESIS  
OPTION  
STUDIOS

So/-

F18-S20

## INTRODUCTION

This is the catalog of Advanced Synthesis Option Studios F18-S20. We are announcing the next four studios to give students in all of our studio programs the opportunity to plan ahead and chart your future. In these advanced and specialized studios, there are opportunities for BArch, BA, MAAD, MUD, MArch, and MsSD (S'20) students to work alongside each other

## STUDIO SELECTION PROCESS

The faculty will determine the studio allocations before the beginning of each semester, (in August for the Fall and in November for the Spring semesters).

Students are invited to consider the upcoming studios and express their preferences for the immediate semester in the light of their short, medium and longterm interests and ambitions.

## SUBMIT

We would like to receive a discursive response to the options available, with preferences expressed for at least three S'19 studios with a minimum 100 words for each, describing what you would contribute to and gain from working in that studio.

In addition, we ask that you set out the longer term trajectory that could be the outcome of taking any of these three preferred studios. Thus you will put the immediate set of objectives for S19 into a larger context.

Please could you return your response on the GOOGLE FORM linked to the email invitation by 9am on Wednesday 7th November 2018. Students who are studying abroad for the S19 semester need not submit their preferences.

There will be an invitation for another submission of preferences in July'19 for the F19 studio allocation process.

The S19 studio allocations will be announced on November 11th.

Mary-Lou Arscott AADip RIBA  
Studio Professor + Associate Head  
mlarscott@cmu.edu

*cover images*

*FRONT Forensic Architecture +SITU Research, 'Left-To-Die-Boat' 2011, the drift model.*

*BACK Forensic Architecture +SITU Research, Limeburner's drift model, 2011.*



# ASO studios listed

## F18

**DAMIANI** High\_Rise: 'Untitled 2018' New York (+MARFA pre-semester, NY midsemester)  
**FICCA/KING** SOLID: the rise of timber? (+Montreal)  
**FOLAN** Deconstructing Blight: UDBS Pittsburgh  
**GRUBER** Commoning the City: urban design thesis (+ Zurich travel mid-semester)  
**HAYES** Density + Complexity: megastructure for Hudson River Pier76. +NY September  
**LUCCHINO** Freespace: serving humanity (+Venice Biennale mid-semester)  
**QUICK** Re-purposing Architecture: SUCC Pittsburgh

## S19

**ARSCOTT** Thesis/IP  
**BARD** Low Relief: virtual+material cultures of architectural deceit (+visit London/Paris)  
**BIZON** Identity+Making: The American Mash-up (Ann Kalla Professor '18-'19)  
**FOLAN** Reconstructing Authenticity: UDBS Pittsburgh  
**GRUBER** Acupuncture Urbanism - Collab Studio Pittsburgh  
**HAYES** 4-D Architecture: New Experimental Theatre for NYC +NY site visit  
**KLINE** Commoning the City: urban design thesis  
**LOFTNESS /KLEE** Brain Hub: Harnessing Technology that helps the world explore brain and behavior.  
**RANTTILA** Birth Rights: Connecting the Built Environment to Maternal and Infant Care in Vulnerable Populations in Pittsburgh

## F19

**COLVARD** Worksapce: industrial architecture 4.0  
**DAMIANI/SHAPIRO** – Bouca Social Housing (+Lisbon in Summer)  
**FICCA** Subject to Change: Timber evolving  
**FOLAN** Home Re\_Considered: UDBS Pittsburgh  
**GRUBER** Commoning the City: urban design thesis  
**HAYES** Terminal Systems: JFK airport T4 expansion (+NY site visit)  
**MONDOR** Infrastructure Studio - TBD  
**REHMAN** thesis/IP

## S20

**ARSCOTT** Moving Image: phenomenal migration  
**BARD** Low Relief: concrete material exploration  
**CUPKOVA** Behavior Matters: mediated nature in material systems  
**FOLAN** Home Re\_Defined: UDBS Pittsburgh  
**GRUBER** Acupuncture Urbanism - Collab Studio Pittsburgh  
**HAYES** Humanizing Brutalism London' SB Centre (+London/Paris)  
**KALLA** visitor TBD  
**KLINE** Commoning the City: urban design thesis

# High\_Rise

## “Untitled” 2018”

*‘I pay a lot of attention to how things are done and the whole activity of building something is interesting.’*

**Donald Judd**

This studio will look at the role of the architectural promenade and how it can be adapted to the typology of the high-rise. The promenade architectural first described by Le Corbusier as a sequence of spaces and direction of movement in the Acropolis in Athens is a way of constructing views, vistas and experiences. The high-rise, an American typology, acknowledges maximizing building area but does not address the role of the architectural sequence.

This studio will investigate the high-rise typology through the hybridization of the typology with the architectural promenade.

This studio will focus on a urban high-rise structure located in SoHo in New York City directly across from the Judd Foundation.

<https://juddfoundation.org>

Travel:

As part of the studio, the studio will visit two of Judd's workspaces (one rural and one urban) to determine how these two locations influenced his work and acted as the context for his site specific art.

The studio consists of two field trips.

The first to Marfa, Texas (August 21st-24nd) and the second to NYC 101 Spring Street (September 14th-16th). Field Trips are required as part of the studio. Please note that Altenhof funding for travel is available for United States citizens and U.S. Permanent Residents with financial need. Please inquire by contacting David Koltas, Assistant Head, for eligibility.

- [dkoltas@andrew.cmu.edu](mailto:dkoltas@andrew.cmu.edu)



Donald Judd 1928-1994



Site Location  
Mercer Street, NYC

F18



48-400|500 Studio  
FALL 2018  
Damiani  
M,W,F 1.30-4.20

# High\_Rise

This studio will focus on the writings and artistic output of Donald Judd as the intellectual underpinning of the studio, which will inform the spatial and detailing agenda of the studio project. Often considered an artist of obdurate space, Judd's works are highly refined being conscious of their context (what he called fundamental realities), space, material, color and detail.

An inspiration to architects such as Steven Holl and Herzog & de Meuron, the works of minimalist artist Donald Judd (1928-1994) spanned both art and architecture through a search for autonomy and clarity for the objects and the spaces they occupy.

Program:

The studio program will be a high-rise construction (75 feet or higher) consisting of vertical galleries, a museum store (street level), studio workspaces (mid-level) for visiting artists and apartments (upper level).

*Donald Judd  
untitled works  
in concrete*



F18



48-400|500 Studio  
FALL 2018  
Damiani  
M,W,F 1.30-4.20

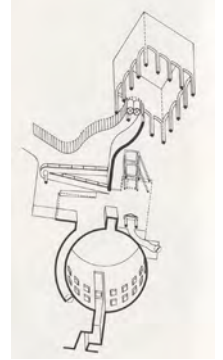


# High\_Rise

## Bi-Weekly Case Studies (Wednesdays):

Each of the following projects will be analyzed for how they address the promenade architecturale.

- Schinkel: Altes Museum
- Labrouste: Bibliothèque Nationale
- Hornsostel: New York Education Department Building
- Aalto: SÄynätsalo Town Hall
- Le Corbusier: Palace of Assembly
- Sterling: Dusseldorf Museum
- OMA: Très Grande Bibliothèque
- Alvaro Siza: Ibero Camargo Foundation
- Morphosis: Perot Museum of Nature & Science



James Sterling  
Dusseldorf  
Museum Proposal

## Bi-Weekly Case studies (Wednesdays):

Each of the following projects will be studied for context, program, code and occupancy, construction/ material, and detail:

- Ando: 152 Elizabeth
- Herzog & de Meuron: 56 Leonard Street
- Vinoly: 432 Park Avenue
- Sanaa: New Art Museum, 235 Bowery
- Diller, Scofidio + Renfro: The Roy and Diana Vagelos Education Center
- SOM: Lever House, 390 Park Avenue
- SOM: The New School's University Center
- Bernard Tschumi: Lerner Hall Student Center

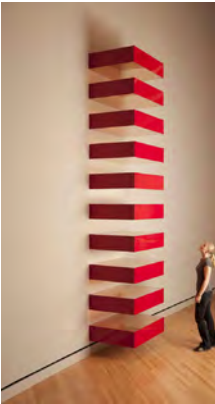
## Bi-Weekly Readings (Wednesdays):

The selected readings are to help position Judd's work in the larger arts discourse.

- Specific Objects, 1964
- On Architecture, 1984
- Marfa\_Texas, 1985
- 101 Spring Street, 1989
- It's Hard to Find a Good Lamp, 1993

## Additional Reading:

- Delirious New York, Rem Koolhaas, 1978



Donald Judd  
untitled (stack)

F18



48-400|500 Studio  
FALL 2018  
Damiani  
M,W,F 1.30-4.20

# COMMONING THE CITY

## Urban Design Thesis

### OVERVIEW

This two semester research-based-design studio is focused on the bottom-up transformation of cities and explores how designers and planners can tap into the self-organizing behavior of cities.

The first semester, taught by Stefan Gruber, will focus on collective case study research that leads to the development of an individual design thesis proposal.

The second semester, taught by Jonathan Kline, will support students in developing their individual thesis projects culminating in an exhibition at the Miller Gallery. This studio is required for all second year Master of Urban Design students. For MArch and ASOS students the studio is an opportunity to pursue a year long thesis within a structured research environment exploring urban commoning.

The commons are emerging as a key concept beyond the binaries of public and private space for tackling the challenges of the contemporary metropolis: How to build urban resilience in the face of dwindling resources? How to tackle growing inequity in the face of polarizing politics? And how to articulate common interests despite increasing social individualization? And how to find agency as architects given the scope of these challenges? Here commons are understood as a set of practices dealing with the production and self-management of collective resources and spaces beyond contemporary forms of domination (such as class, gender or race). Throughout the 2018/19 academic year the studio will continue a collaboration with [ARCH+](#) and [ifa](#), contributing to the travelling exhibition [An Atlas of Commoning](#). Our research will be featured in the international premiere of the exhibition in Pittsburgh in the S'19.

*"In Common space, in space produced and used as common, people do not simply use an area given by an authority (local state, state, public institution, etc.). People actually mold this kind of space according to their collective needs and aspirations (...). Whereas public space necessarily has the mark of an identity, common space tends to be constantly redefined: commons space HAPPENS and is shaped through collective action."*

- Stavros Stavrides  
*in Common Space: the City as Commons, 2016*

### FALL: RESEARCH-BASED DESIGN

The fall studio will develop the core Atlas, by researching and assembling both international and Pittsburgh region cases that critically explore practices of urban commoning, and embed them in a broader context of societal transitions. Learning from the collective research, students will then develop a hypothesis and begin testing the acquired know-how in an urban milieu of their choice.

### SPRING: DESIGN-BASED RESEARCH

The spring studio will focus on developing individual thesis and design proposals exploring the theme of urban commoning. For the project students will be expected to take a personal position and formulate a thesis, expressed and refined 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. The projects will be featured in the thesis exhibition at the Miller Gallery.

*Die Laube, Prinzessinnengarten Berlin, 2017 studio work*

**AN ATLAS  
OF COMM  
MONING**



F18/S19



48-400/500 Studio

Stefan Gruber (F18) Jonathan Kline (S19)

W/F +12:30-4:20

# SOLID

## The Rise of Timber?



*Man standing in  
the lumberyard of  
Seattle Cedar Lumber  
Manufacturing. 1939  
-Alfred Eisenstaedt*

### INTRODUCTION

Wood is arguably architecture's original additive material. Epitomized through Laugier's myth of the primitive hut in which trunk became column and branch became beam, the birth of architecture beyond the cave is inextricably tied to the tree. Despite the virtues of this abundant and replenishable material, modernism largely passed by wood in pursuit of the promise of steel and concrete to usher in a radical new global style of architecture. While the stylistic ambitions of modernism were undercut by an era of iconic building, modernism's primary materials of concrete and steel continue to serve as the basis for large-scale construction across the globe.

Although the spatial, aesthetic, and structural affordances of these materials are universally accepted and heralded, the ecological impact of their production are increasingly difficult to ignore. While it is naïve and problematic to assume a single material will serve as a panacea for architecture's carbon footprint, tree's natural carbon capturing abilities, relatively short replenishment rate, and abundance within responsibly managed forests make a compelling case for building with timber. A growing collection of large-scale timber buildings is upending misconceptions of building with wood, while demonstrating the efficacy of timber in the city. If the 17th – 20th centuries of western architecture embodied transitions from stone, brick, iron and concrete, might the 21st century be the time for timber?

In putting forth a material centric agenda, this studio seeks to explore what it might mean to build with wood at larger scale in the city and how this method of construction might establish novel architectural scenarios. This studio aims to challenge notions of permanence to consider architecture's presence through time.

*"Wood is the mother of matter ... she renews herself by giving, gives herself by renewing. Wood is the bride of life in death, of death in life. She is the cool and shade and peace of the forest. She is the spark and ear, ember and dream of hearth. In death her ashes sweeten our bodies and purify our earth."*

- Carl Andre

F18



48-400/500 Studio  
Ficca/King  
MF 12:30-4:20PM



# SOLID

*"The hotel industry is in denial about Airbnb, the same way they were about the online travel agencies. But you can't compete by playing politics. You can't stall progress.*

*The only way to compete with a strong idea like Airbnb is with another strong idea. You provide a social community space, because Airbnb can't do that.*

*A hotel traditionally provided a manifestation of the social fabric of that city. It's when the real estate guys got ahold of it that they stopped doing it."*

*- Ian Schrager in 2017  
NYTimes Interview*

The studio is interested in not only the spatial-structural affordances of timber but also the psychological potential of wood environments and perceived notions of "natural" materials. In foregrounding structural-material conditions, the studio aims to extend contemporary material discourse from architecture's skin to its bones.

## ORGANIZATION AND PROJECTS

The semester will begin by researching and classifying a range of tectonic approaches for building with timber to create a shared studio reference that outlines the current state of practice and research (2 week duration). This will be followed by the first design project in which individual students will develop a design for a small pavilion that explores the hybridization of two timber systems to achieve a horizontal span and vertical stack (3 week duration).

The second and culminating project will focus on the design of a food market hall and mid-rise hotel tower that utilizes timber material systems to consider the internalized social spaces of the city. (10 week duration)

The studio will make extensive use of wood analog models to shape our understanding of basic material properties while testing spatial conditions and structural configurations. These models, in the first project, will serve as proto-architectures to establish a collective body of knowledge for the entire studio. The second project will continue an emphasis of analog model production, while utilizing methods of digital fabrication to consider the affordances of computational material formation.



*Market Hall in Ghent  
Marie-José Van Hee +  
Robbrecht & Daem*

F18



48-400/500 Studio  
Ficca/King  
MF 12:30-4:20PM

# SOLID

## FIELD TRIP

The studio will travel to Montreal Canada over Fall Break (Oct. 18-21) to visit recently completed noteworthy timber projects by Canadian firms Saucier Perrotte, Atelier TAG, and Coarchitecture. While in Montreal, the studio will visit Nordic Structures, a leading timber engineer and fabricator.

Students should anticipate combined airfare and accommodation costs of \$500-\$650. Travel details will be outlined once the studio roster has been established.

Please note that Althenhof funding for travel is available for United States citizens and U.S. Permanent Residents with financial need. Please inquire by contacting David Koltas, Assistant Head, for eligibility.

## STUDIO CONSULTANTS

Engineers from Arup with an expertise of Timber structures will offer unique perspective on the emerging state of mass timber construction.

## STUDIO STRUCTURE AND SCHEDULE

This studio will be co-led by Professors Ficca and King, Monday and Friday of each week. Teaching Assistants will offer weekly digital fabrication and computational design workshops on Wednesdays. The studio will operate as a 'super-studio' comprised of students from the Master of Advanced Architectural

Design, Master of Architecture, and Bachelor of Architecture Programs with an anticipated size of 22-24 students. Commencing with the second project, students will work in teams of two for the duration of the semester.

## WORKSHOP

Teaching Assistants will offer weekly digital fabrication and computational design workshops on Wednesdays.



*timber detail of the Monte Rosa Hut by Gramazio Kohler*



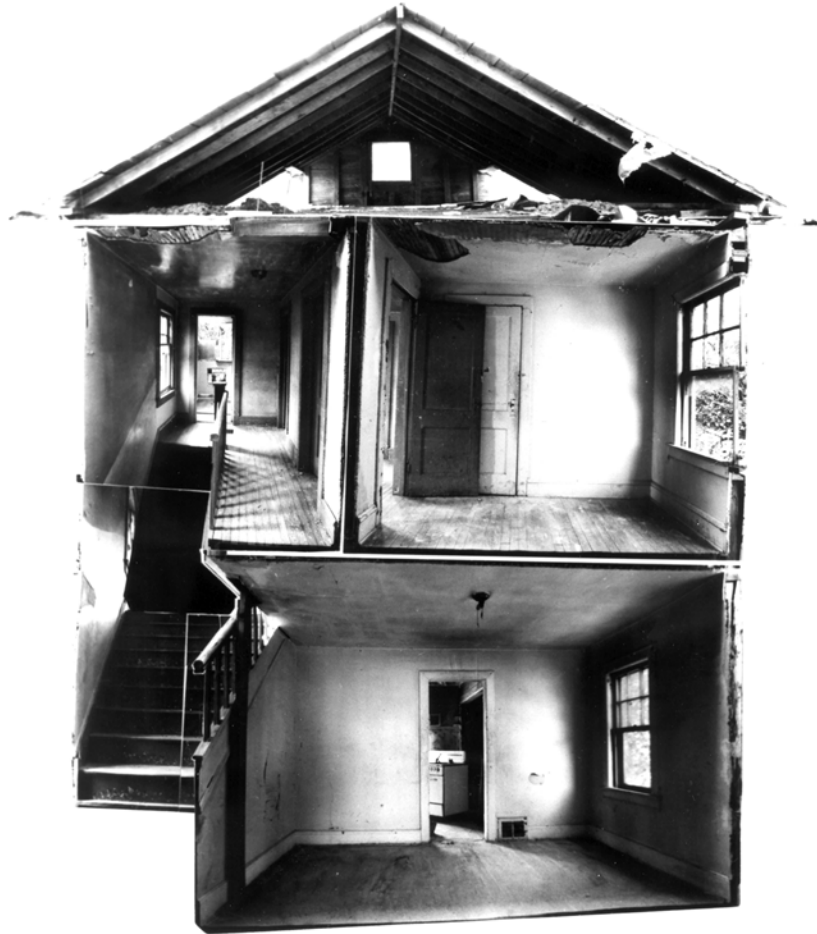
*Stade de Soccer de Montreal, Saucier + Perrotte Architects + Hughes, Condon, Marler Architects*

F18



48-400/500 Studio  
Ficca/King  
MF 12:30-4:20PM

# DECONSTRUCTING BLIGHT



*Demolished and  
Removed, Gordon  
Matta-Clark, 1974*

## **STUDIO DESCRIPTION**

The 2018/2019 Urban Design Build Studio (UDBS) will explore the relationship between building disassembly, material harvesting, and new housing construction oriented toward the elimination of concentrated poverty. Addressing dramatic shifts in regional housing needs that have precipitated over the past 70 years, this Public Interest Design (PID) studio will utilize participatory processes to collaborate with residents, neighborhood partners, and NGO's on developing viable urban housing strategies that can continue to evolve with regional population

dynamics. The central aspirations of DECONSTRUCTING BLIGHT are multi-dimensional; with the concept of deconstruction being probed both literally and figuratively. Literally, the studio will engage in building deconstruction as a physical operation to harvest construction material consistent with National Building Material Reuse Association (NBMRA) standards. Figuratively, the studio will operate as design activists to deconstruct pre-existing notions of blight and concentrated disinvestment. Closely associated with urban environments, the word blight and associated concepts

F18



48-400/500 Studio  
John Folan  
day + time TBD

# DECONSTRUCTING BLIGHT

*East Liberty residents protest the demolition of the Penn Plaza apartment complex. Photo: Pam Panchak, 2016*



*HUD deconstruction project, Detroit, MI*

have historically been pretext for drastic forms of construction that result in massive displacement of populations. This studio will seek to change thinking and policy related to disinvestment through demonstrable action that focuses on inclusion, population retention, and sets the table for the construction of housing as part of the Spring 2019 CONSTRUCTING AUTHENTICITY studio.

## **SCHEDULE OBJECTIVES/ ACTIONS/PARTNERS**

Utilizing multiple adjacent structures included on the city of Pittsburgh's register of condemned buildings, the studio will collaborate with PROJECT RE\_'s building deconstruction crew and a labor force in training on the complete disassembly of three blighted houses. Materials harvested from the deconstruction work will be utilized as a platform for the development of replicable design strategies that will be implemented through the RE\_CON 01 Housing Prototypes projected to begin construction in the spring of 2019. Students enrolled in the studio will become certified in building deconstruction by the NBMRA by extension of work executed on site during the first four weeks of the semester. Hands on/physical experience

gained through the deconstruction of buildings will establish tangible abilities in assessing broad tactical deconstruction strategies, material harvesting opportunities, and upcycled material processes that can sustain the creation of authentic, place based architecture.

The remainder of the semester will be utilized to advance the RE\_CON 01 Housing Prototypes with East Liberty Development Incorporated (ELDI), UDBS/PROJECT RE\_'s partner in the development of the project site at 318 N. St. Clair Street. The studio will collaboratively develop the conceptual design proposal for 318 N. St. Clair presented to, and approved by, ELDI's Community Planning Committee in May of 2018. Students will advance the project through Schematic Design (SD), Design Development (DD), and initiate



*Bingo, Gorbon  
Matta-Clark, 1974*

F18



48-400/500 Studio  
John Folan  
day + time TBD



# DECONSTRUCTING BLIGHT



Rendered view of the proposed RE\_CON 01 housing prototype and aggregated development approved by East Liberty Development, Inc. (ELDI).

Construction Documents (CD) during the fall of 2018. As a component of the work, students will work closely with ELDI, its planning committee, board, and community residents in advancing the housing proposal through Real Estate Committee Approval, Finance Committee Approval, and Executive Committee Approval.

The studio will expand use of REALITY COMPUTING (capture, compute, create) technologies explored in collaboration with the IDeATe program. The studio will utilize capture, augmented reality, and virtual reality technologies to advance design work, enhance efficacy of communication with residents and stakeholders, and increase transparency of process. The studio will collaborate with IDeATe students on a regular basis throughout the semester, with specific, self-identified liaisons bridging disparate fields of interrelated inquiry. Over the course of the semester, the UDBS will gain intimate knowledge of deconstruction processes, identify material inventories/supply chains, and

collaborate with industry partners/ stakeholders on the development of potential project strategies. To achieve these objectives, the studio will 1) work closely with the PROJECT RE\_ Deconstruction crew on the dissection/ dismantling of a condemned structure to gain nuanced understanding of processes through experience; 2) extend a research partnership with IDeATe utilizing Reality Computing applications to catalogue existing vacant



Conceptual rendering of the virtually reality and community engagement tool developed by the UDBS for RE\_CYCLE PARK.

F18



48-400/500 Studio  
John Folan  
day + time TBD



# DECONSTRUCTING BLIGHT

structures, identify viable material for deconstructive harvesting, inventory potential of material for up-cycle construction at mass scale, visualize transformed landscapes, and 3) design, develop, and prototype full-scale material assemblies for the integration into RE\_CON 01 housing prototypes. The DECONSTRUCTING BLIGHT studio is a component of a broader Public Interest Design continuum established by the UDBS and PROJECT RE\_. This studio provides a pre-text for work in the Spring 2019 UDBS ASOS, RECONSTRUCTING AUTHENTICITY, and anticipated opportunity for subsequent Summer 2019 UDBS Paid Internship. Skill sets and sensibilities developed in each UDBS ASOS and Co-requisite courses are intended to inform subsequent studios and the implementation of work through jurisdictional review processes. Taking a project from initial concept through the completion of construction requires commitment over the entire one year projected timeline. UDBS summer internships are reserved for students

who have completed a sequence of two (fall and spring) Urban Design Build Studios, and are offered based on demonstrated ability to accept responsibility. The internships are also subject to availability of external funding. The structure of the UDBS sequence is designed to afford students an opportunity to participate in a one year long sequence in the fulfillment of a Public Interest Design agenda. The focus of each UDBS sequence evolves with issues of regional and global significance. The studio is open to 4th and 5th year undergraduate students in the BArch program as well as all Masters of Architecture (MArch) students. Undergraduate 4th year BArch students enrolling in the UDBS, and interested in developing an expertise/focus in Public Interest Design may elect to continue to work with the UDBS in the 5th year of the program. MArch students enrolling during the first year of the program may enroll for two years as well.

The UDBS is a vertically integrated, interdisciplinary studio. The studio will be composed of students from the Masters of Architecture (MArch), Masters of Architecture Engineering and Construction Management (AECM), Bachelor of Architecture (BArch), Masters of Urban Design (MUD), and IDeATe Reality Computing Programs. The studio will meet Mondays, Wednesdays, and Fridays from 1:30PM to 4:20PM. Students enrolled in the Urban Design Build Studio (UDBS) DECONSTRUCTING BLIGHT Studio are required to enroll in 48\_493, REPRESENTING ACTIVISM (9CU). REPRESENTING ACTIVISM will meet on Mondays, Wednesdays, and Fridays

*Rendered perspective view generated by the UDBS as part of graphic series illustrating the assembly sequence and construction strategies for the proposed RE\_CON 01 housing prototype.*



F18



48-400/500 Studio  
John Folan  
day + time TBD

# DECONSTRUCTING BLIGHT

from 12:30PM to 1:20PM. Portions of each Monday and Wednesday studio session will be utilized for collaboration on Reality Computing strategies related to augmented and adaptive technologies with IDeATe in the Collaborative Making Center, Hunt Library.

This studio is generously funded by Allegheny Foundation, Autodesk, the Heinz Endowments, and the Urban Redevelopment Authority of Pittsburgh (URA). All construction work will be done in collaboration with PROJECT RE\_ partners. Students will work shoulder to shoulder with populations representing the communities where the UDDBS practices.

## CONTEXT STATEMENT

The UDDBS is a Public Interest Design (PID) entity. Each individual enrolling in this studio recognizes that work is executed in communities, with residents served by the Urban Design Build Studio (UDDBS). The UDDBS works across the spectrum of scales from urban to ergonomic. With the enormous privilege that this opportunity provides comes responsibility. Work is done for clients with unmet needs, working to budget and schedule demands required to meet their needs. Students are expected to be present for all client meetings and participatory design sessions. The ability to realize a project through construction/implementation is earned, and not an entitlement. While every effort will be made to schedule community/client meetings during class time, client need/schedules will determine times outside of scheduled class. By enrolling in the UDDBS, students understand and acknowledge that there

are risks in travelling to and from work sites, meeting locations, and other studio related destinations visited regularly throughout the course of the semester. PROJECT RE\_ is the primary construction/fabrication space utilized by the UDDBS. Students acknowledge understanding that PROJECT RE\_ is an off-campus facility and that students are responsible for their own transportation to and from the facility. UDDBS work includes physical labor and requires the utilization of construction tools/equipment that may cause bodily injury. Students acknowledge that they understand the risks associated with using the tools and do so of their own volition. The UDDBS collaborates with organizations include individuals with previous legal violations and/or incarceration. The Trade Institute of Pittsburgh (TIP), a partner in PROJECT RE\_, focuses its apprentice training on individuals re-entering society post incarceration. Students enrolling in this studio acknowledge that they understand the working conditions and have elected to participate in the studio of individual volition.

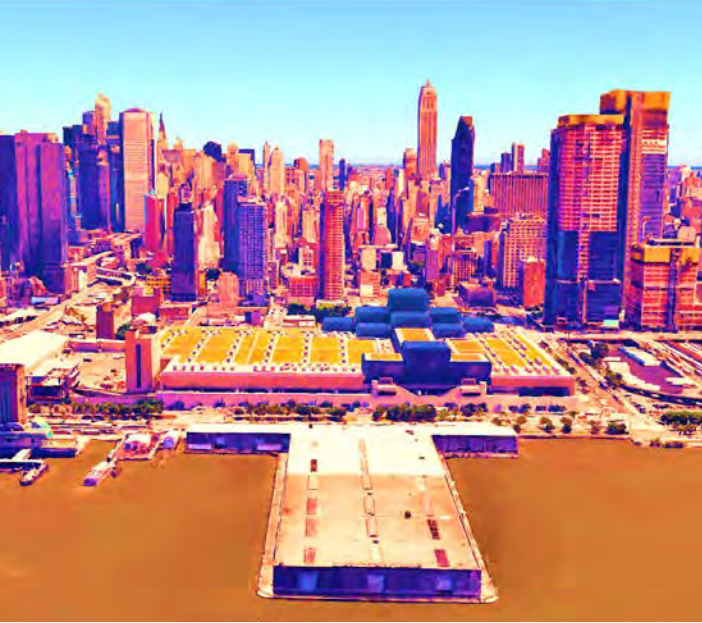
F18



48-400/500 Studio  
John Folan  
day + time TBD

# DENSITY+COMPLEXITY

## Sustainable Megastructure: Hudson River Pier 76 Redevelopment



Google Earth view of site area from above the Hudson River with Pier 76 (front center), Waterway Ferry Terminal and Lincoln Tunnel vent shaft (front left), Midtown Heliport (front right), Jacob Javits Convention Center (middle center), The High Line (middle right), Times Square area (rear right), Penn Station|Empire State Building area (rear center) Hudson Yards (rear right).

### INTRODUCTION

This studio is about architecture concept and design methodology.

A semester-long theoretical project for an extremely high density development on the Hudson River in Midtown Manhattan will be the vehicle for our study.

Growing populations and economies increasingly stress natural resources and ecosystems. Architects and developers can help to minimize and reverse this stress by making this growth sustainable by understanding and deploying smart growth strategies that increase development density within established urban environments. Sites formerly considered too burdensome, such as railyards and brownfields, have now become among the most desirable development sites in the planet's most vibrant megacities.

### METHODOLOGY

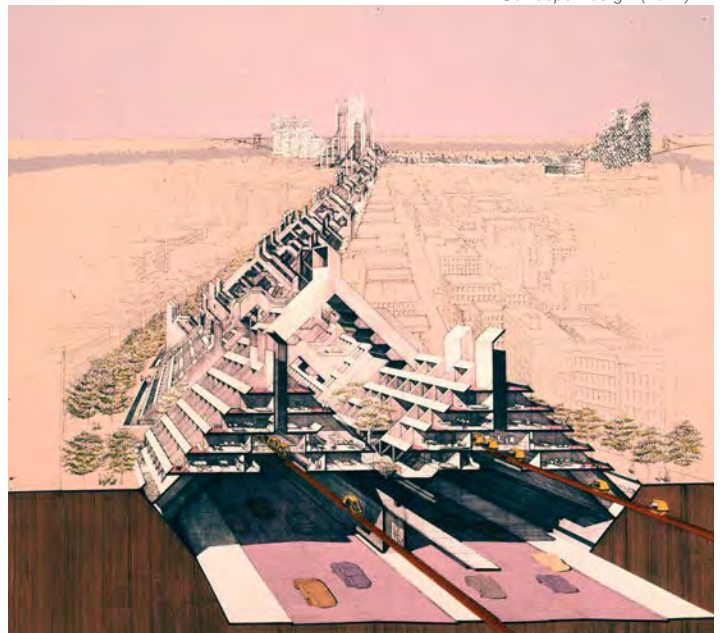
This studio will emphasize the use of hand sketching, physical models and iteration of design, research and analysis at varying scales and degrees of resolution.

Students must also expand their mastery of digital and parametric tools for both analysis and conceptual/ morphological design development.

### CHALLENGE

This studio will challenge the student to address the full range of complex, interrelated design issues of a new major intermodal transportation terminal combined with large, dense mixed-use program. Students will explore structure, infrastructure systems and building morphology on a grand scale, with major new program integrating with already vast existing buildings and systems.

*Paul Rudolph, Lower Manhattan Expressway Concept Design (1971)*



F18



48-400/500 Studio  
Hal Hayes  
MWF 1.30-4.20



# DENSITY+COMPLEXITY

## DISCUSSION

Studio discussion and design will primarily address massive density & complexity; design and context of megastructures, supertalls, groundscrapers, symbiotes and parasites etc., and sustainable systems integration; transportation, water conservation/ recycling, power generation, district thermal and other systems. Students will test and expand their conceptual and technical design skills in all key areas, with particular focus on exploring issues arising from architectural, structural, infrastructural and mechanical systems at very large scale and extreme complexity.

## STRUCTURE

The first three weeks will be devoted to pre-design, site and market/program research in teams, from which students

will confirm the base program for the studio, establish two to more common conceptual frameworks, and identify optional program expansions. Students will then as individuals or in ad hoc teams propose individual project definition statements for concept development for the remainder of the semester.

## FOUNDATION

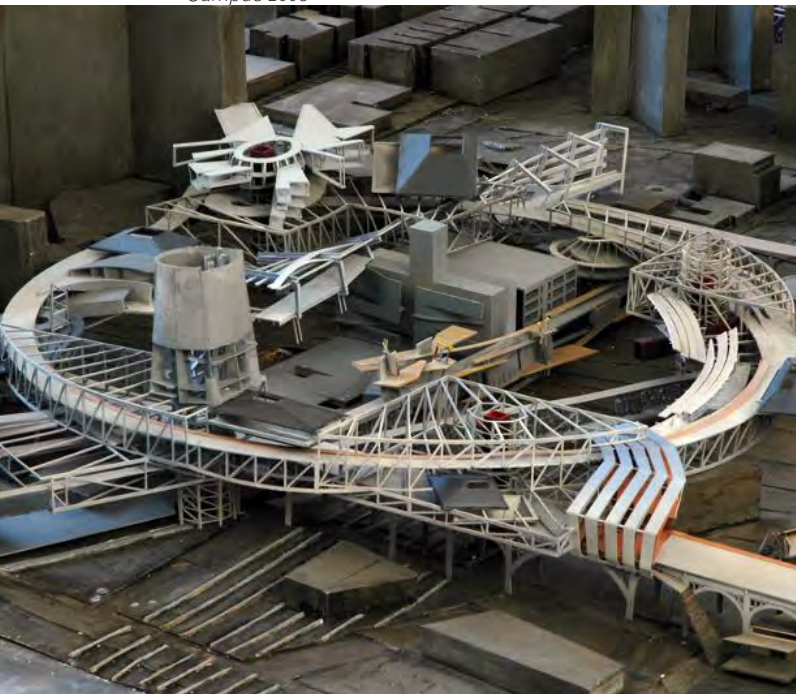
Students will explore concept & design methodology through a lens of 20th century & contemporary conceptual theory and development strategies. Student teams will build a foundation of research into design speculations. Research will analyse successful and unsuccessful historic precedents from the futuristic visions of Antonio Sant'Elia through the unbuilt megastructures of Paul Rudolph and the contemporary theories of Lebbeus Woods. and Rem Koolhaas.

## PROGRAM

The base program will be 500ksf of recreation, cultural, intermodal transit, and convention, with an equal amount of open space. Additional program is to be determined by the students in groups during the first three weeks of the semester.

These program frameworks will be the basis of individual semester projects. Each student will expand and develop the program to create a unique individual project which may, or may not, be related to other student projects.

*Lebbeus Woods,  
The Proto-Urban  
Campus 2008*



F18



48-400/500 Studio  
Hal Hayes  
MWF 1.30-4.20

# DENSITY+COMPLEXITY

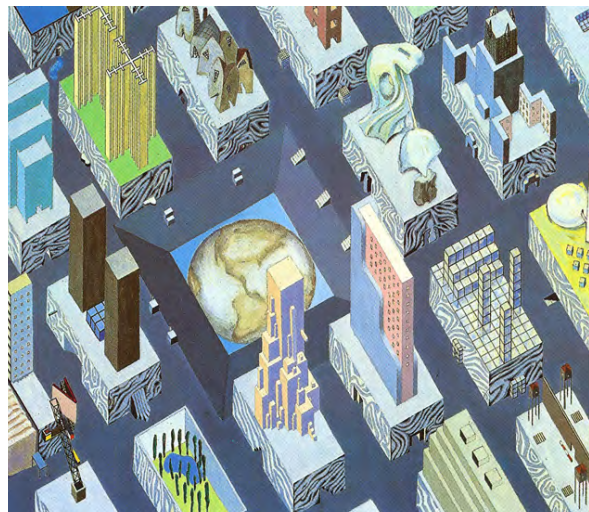
## SITE

The site is centered on Hudson River Pier 76, a NYC Marine & Aviation Department facility that is currently used as the city's tow pound. It is currently planned to become 50% park as part of the Hudson River Park corridor and 50% mixed use development. Students will expand the site as needed for their individual project definitions, possibly including the Javits Center, Waterway Ferry Terminal, Midtown Heliport, the northern terminus of the High Line, several blocks of the Hudson River Park, and connection to the Hudson Yards subway station.



## LECTURES

Studio lectures will address relevant architecture and urbanism theory from 1920s Futurism and Post-War Modernist Urban Design to Rebuild By Design and current planning & development trends, as well as iconic designs of New York and local precedents including the Time Warner Center, Riverside South Master Plan, the seminal 1969 Plan for New York City, Central Park, and the Gridiron Plan



## NYC FIELDTRIP

New York Harbor, the Economic Engine of a Continent. The studio will make a two-day site visit and field trip on Sunday and Monday, September 16th-17th or 22nd-23rd. We will study and tour the Hudson Yards, World Trade Center, Time Warner Center, Grand Central, Midtown Manhattan, Hudson and East River Piers, Central Park, an SOM office visit, and go to a Broadway show.



*Top; Rem Koolhaas, Delirious New York, Cover Image of European Editions (1978)*

*Middle; Rem Koolhaas, Delirious New York, "The City of the Captive Globe" (1978)*

*Bottom; BIG, Rebuild By Design, "The Big U" (2014)*

F18



48-400/500 Studio  
Hal Hayes  
MWF 1.30-4.20



# RE-PURPOSING ARCHITECTURE

## Standard Underground Cable Co.

### INTRODUCTION

Creating new architecture on greenfield sites is relatively easy compared to the challenges facing the architect who brings new life to aging buildings that have lost their original purpose. If you like puzzles and appreciate the mysteries of forensics, are curious about context and wonder about how to design “within the box,” all while practicing sustainable and regenerative architecture ... this will be a studio experience that will change the way you think.

The studio will visit repurposed and adapted buildings throughout the city, talk with architects who practice adaptive reuse on a daily basis, meet with city officials who are responsible for the zoning and building codes that affect design, and meet with real estate people who market architecture.



*Something old,  
something new,  
something borrowed,  
something blue, ...  
these are the things ...  
that create healthy,  
engaged, and forward-  
looking architecture.*

**Re-Purposing Architecture** will explore how the adaptive and creative reuse of buildings can become community resources, community assets, and agents of market change. We will learn how context contributes to a sense of place and influences program, the difference between historical preservation and adaptive reuse, and how to alter an existing structural system to achieve a new architectural expression. We will explore how architects have achieved technological breakthroughs within a confined framework and how building systems can lead to high-performance results without having to tear down and start over.

*SUCC's Hamilton  
site (1911) architects  
Prack and Perrine.*

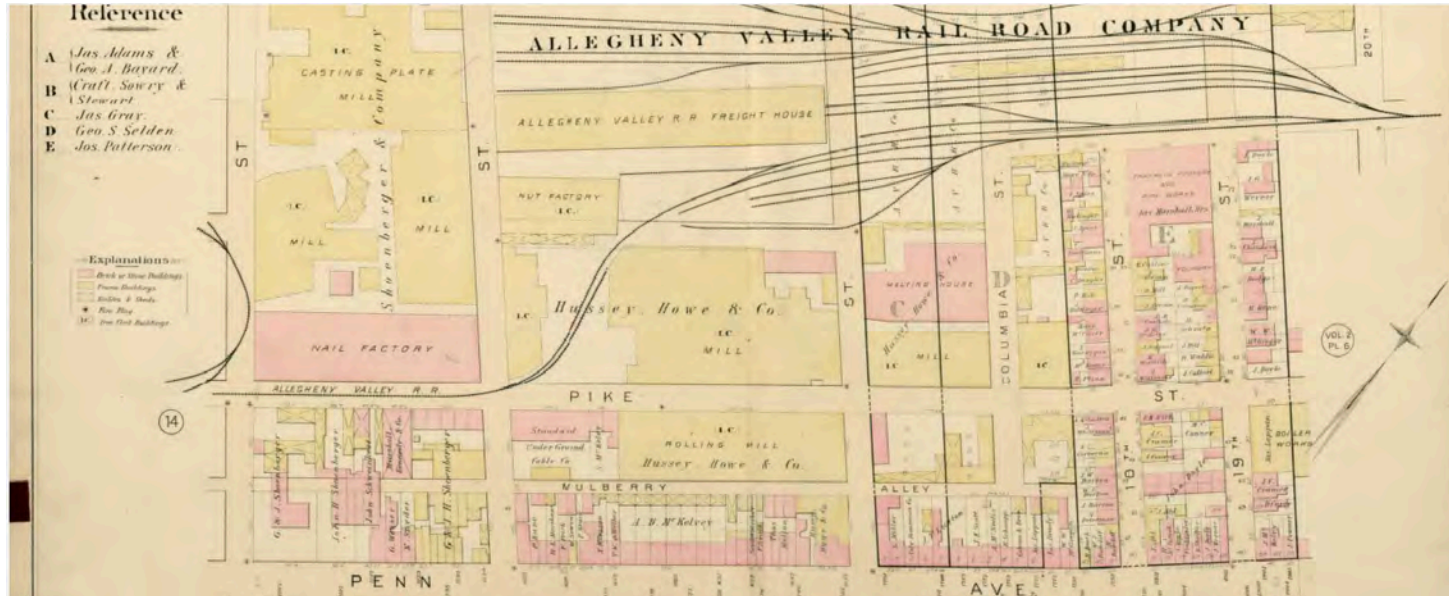
*source; Workers Arts  
and Heritage Centre  
(WAHC) in Hamilton, ON*

F18



48-400/500 Studio  
Stephen Quick  
day + time TBD

# RE-PURPOSING ARCHITECTURE



In the studio and as the architect, you will simultaneously assume the roles of building developer and long-term owner of The Standard Underground Cable Company building in the center of the Strip District's revitalization. As the developer, you will be responsible for determining the building's market and program, and as the building's long-term owner, you will be responsible for achieving and maintaining tenant and market flexibility while operating the building as a profit-making investment. As the architect, you will be responsible for achieving your clients' objectives and meeting your professional responsibility for environmentally sound architecture while creating a noteworthy example of regenerative and best-practices architecture. At the end of the semester, you will have a well-documented case study of your design and representational capabilities.

Above: 1889 Hopkins  
Maps Vol sheet 15.  
source; Historic  
Pittsburgh Maps  
Below: Incline on 17th St  
Photograph source  
Heinz History Center



F18



48-400/500 Studio  
Stephen Quick  
day + time TBD

# F R E E S P A C E

## S e r v i n g   H u m a n i t y

### INTRODUCTION

MANIFESTO BY  
YVONNE FARRELL  
AND  
SHELLEY MCNAMARA  
FREESPACE

*FREESPACE describes a generosity of spirit and a sense of humanity at the core of architecture's agenda, focusing on the quality of space itself.*

*FREESPACE focuses on architecture's ability to provide free and additional spatial gifts to those who use it and on its ability to address the unspoken wishes of strangers.*

*FREESPACE celebrates architecture's capacity to find additional and unexpected generosity in each project - even within the most private, defensive, exclusive or commercially restricted conditions.*

*FREESPACE provides the opportunity to emphasize nature's free gifts of light - sunlight and moonlight, air, gravity, materials - natural and man-made resources.*

*FREESPACE encourages reviewing ways of thinking, new ways of seeing the world, of inventing solutions where architecture provides for the well being and dignity of each citizen of this fragile planet.*

The process of building has a significant impact that encompasses much more than the immediate needs of the client and extends well beyond the timeline of its completion. This process consumes extraordinary amounts of time, money, resources, materials, effort and energy. Serving humanity, approaching architecture with a generosity of spirit and ultimately adding value to this process is one quality that distinguishes architecture from building.

The studio will investigate a few of the critical issues raised by the Venice Biennale 16th International Architecture Exhibition, *FREESPACE*. This year's curators, Yvonne Farrell and Shelley McNamara, conceived an exhibition that presents "examples, proposals, elements - built or unbuilt - of work that exemplifies essential qualities of architecture ... revealing [its] embodied power and beauty". Together, we will consider the following questions raised by this edition:

*What is the "embodied power" of architecture? What responsibility do we as architects have as stewards of the built environment and towards our fellow humans? How does the architects' skill in the making of space create the conditions for an enduring exchange between user and building? How can we add value to projects in ways that allow them to exceed expectations? Is it enough to satisfy the needs of the client?*

We will bring these questions to bear on our local context of Pittsburgh while also exploring through readings and discussion the role of the Biennale as an institution, an exhibition and a provocation in the making of contemporary architecture culture. Readings and discussion will be organized in collaboration with Dr. Francesca Torello, Architectural Historian. The course will include a trip to Venice to visit the Biennale Architecture Exhibition over mid-semester break.



*Svizzera 240 - House Tour, The Swiss Pavilion, Giardini, Golden Lion Best National Pavilion*

F18



48-400/500 Studio  
Jennifer Lucchino  
M/F 12:30 - 4:20



# F R E E S P A C E

*FREESPACE can be a space for opportunity, a democratic space, un-programmed and free for uses not yet conceived. There is an exchange between people and buildings that happens, even if not intended or designed, so buildings themselves find ways of sharing and engaging with people over time, long after the architect has left the scene. Architecture has an active as well as a passive life.*

*FREESPACE encompasses freedom to imagine, the free space of time and memory, binding past, present and future together, building on inherited cultural layers, weaving the archaic with the contemporary.*

## STUDIO THEMES

We will consider the following themes inspired by the Manifesto *FREESPACE* by Yvonne Farrell and Shelley McNamara:

### Sense of Humanity

Providing for the well being and dignity of all citizens of the planet by finding additional gifts and unexpected generosity in each project while promoting an exchange between people and building;

### Spatial Gifts

Celebrating space for opportunity, unprogrammed space and social space by providing quality space for users and strangers alike;

### Nature's Free Gifts

Emphasizing sunlight, moonlight, air, gravity, natural and man-made resources, materials and orientation;

### Ways of Thinking

Challenging existing ways of seeing the world and encouraging or inventing new ones, including the freedom to imagine and the weaving of time, memory and culture.

## COURSE STRUCTURE

The studio will promote critical design inquiry through three main projects supported by research, lectures and readings throughout the semester. The projects are intended to reinforce each other by investigating the studio themes in various

contexts and scales. We will explore the potential to enhance the essential qualities and experience of architecture in our own local setting, treating Pittsburgh as a lab in which to explore and apply the ideas debated at the Biennale.

## STUDIO ASSIGNMENTS

### Research / Analysis

Research of the *FREESPACE* exhibition will familiarize students with the content of the exhibition and help students to identify specific areas of interest and investigation.

(Weeks 1 & 2; 9 & 10)

### Project 1 Interior Condition

Investigations will identify and focus on an active, collective space, of generous spatial volume. Students will propose a design intervention that contributes to the quality and experience of the space.

(Weeks 2 to 5)

*"The desire to create FREESPACE can become the specific individual characteristic of each project. But space, free space, public space can also reveal the presence or absence of architecture, if we understand architecture to be; thinking applied to the space where we live, that we in habit."*  
- Paolo Baratta, Chair, La Biennale di Venezia



Recasting  
Alison Brooks, Arsenale

F18



48-400/500 Studio  
Jennifer Lucchino  
M/F 12:30 - 4:20

# F R E E S P A C E

Scheduled Programming  
at the Biennale

Saturday, October  
20th at 2:30 pm

Meetings on Architecture

THE PRACTICE OF  
TEACHING, Te-  
atro alle Tese

The panel will discuss  
the mutually beneficial  
and reciprocal relation-  
ship between teach-  
ing and practice and  
include architects who  
teach in schools of ar-  
chitecture as part of  
their creative process.

Special feature-length  
film screening

Unfinished Spac-  
es: Cuba's Architec-  
ture of Revolution  
A documentary about  
Las Escuelas Nacion-  
ales de Arte in Cuba. The  
film tells the incredi-  
ble story of the cycle of  
life of the buildings from  
their founding by Fidel  
Castro and Che Guevara  
to their eventual aban-  
donment and recent ef-  
forts to restore them.

The Japan Pavilion,  
Architectural  
Ethnography,  
Giardini

## Project 2 Building Condition

Investigations will identify and focus on an existing building located in a high traffic area with a rich historical context. Students will develop design proposals that reimagine the use and role of the building.

(Weeks 5 to 10)

## Project 3 Urban Condition

Investigations will identify and focus on a gap space, barrier or border within the city. Students will speculate in ways that re-conceptualize these conditions.

(Weeks 10 to 12)

Deliverables will include drawings and models that explore a range of formats, techniques and scales in an effort to capture the vitality of the design proposals.



## Readings

Students are required to prepare readings and actively participate in discussions. Topics to be addressed will include the lead up and aftermath to the first Architecture Biennale in 1980, its influence on the way we understand architecture today, the commonalities between the current exhibition and the 1980 exhibition and the postmodern relationship between architecture and urbanism.

## FIELD TRIP\*

Visit to the 16th International Architecture Exhibition, Venice, Italy

\* Participation preferred but not required

## Tentative Dates

Thurs., Oct. 18 to Tues., Oct. 23, 2018

## Tentative Itinerary

- Day 1 Arrive Venice / Sightseeing
- Day 2 Visit Architecture Exhibition/ Arsenale
- Day 3 Visit Architecture Exhibition/ Giardini
- Day 4 Visit Architecture Exhibition/ Collateral Events in City
- Day 5 Depart Venice

## Tentative Budget (per person)

Flight	\$1250
Hostel	\$ 250
Subtotal	\$1500 *
Fees & Local Transport	\$ 75
Meals & Incidentals	\$ 250 - 350
Total	\$1825 - 1925

\* RT airfare from PIT to VCE and lodging for students will be purchased through the SoA. Deposit for airfare and hostel due August 15th

Local Sightseeing may include:  
Punta della Dogana  
Museum (Tadao Ando),  
Il Fondaco dei  
Tedeschi (OMA),  
Foundation Querini  
Stampalia (Carlo Scarpa),  
Palazzo Grassi,  
The Peggy Guggen-  
heim Collection.

Requirements:  
Up to date passport  
Visas (for international  
students)  
Health Insurance  
Mandatory CMU Study  
Abroad Information  
Session

Funding Sources:  
Altenhoff Scholarship for  
student travel (for eligible  
SoA students).

F18



48-400/500 Studio  
Jennifer Lucchino  
M/F 12:30 - 4:20



# THESIS

## and independent projects

*All Thesis/IP Students will be required to take Thesis Prep in the preceding Spring Semester*

*The studio comprises a number of disparate and demanding projects that have all required sustained independent work in preparation and will continue through the Fall and Spring semesters. There will be an exhibition of the work in the Miller Gallery in April 2019*

The definition of 'thesis' within the context of a professional program in architecture depends a lot on who you talk to in a diverse and often-contentious field of views that spans institutions, individuals, generations, and schools of thought and practice. Tied to the question of 'what is a thesis' are of course varying opinions on what constitutes research in architecture—and whether we do research to frame a project, its argument, and methods, or if in conducting a design investigation we are in fact doing research.

In either case, if we agree that research is being done, then we can also say that in crafting a thesis project, you are entering a wider conversation and exploring problems that have puzzled and inspired others. By proposing your own set of critical questions and methods of inquiry, you recognize your responsibility to engage seriously and rigorously with prior work, and to extend its intellectual scope through your own contribution. This studio adopts this view.

The aim of this studio is to guide you to through the process of clearly defining and structuring a thesis project. The Spring semester will follow the successful completion of the thesis development in the Fall semester. The studio is a venue for constructive discussion and mutual critique. In addition to the core thesis students a limited number of independent project proposals for a semester long studio project can be considered.

While a project is not expected to be a 'building,' it should rigorously address spatial concerns including how space informs and intersects with other processes (social, ecological, historic, etc.). The scale of consideration can range from bodies to territories.

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.

*Mona Hatoum  
Hot Spot III 2009  
Photo: Agostino Osio*



S19/F19



48-519 Thesis/IP  
Mary-Lou Arscott/Nida Rehman  
MWF 1.30-4.20pm

# Low - Relief

## The Virtual and Material Cultures of Architectural Deceit



### INTRODUCTION

Modern Architecture championed 'Truthfulness' as a laudable virtue in the built environment. Many iconic modern architects preached and (mostly) practiced legibility of material, structure, and intent in building design. The repetition, flatness, anonymity of many contemporary cities represents the physical inheritance of this sensibility. Despite Modern Architecture's insistence on truthfulness of material, architects before and since have deployed an array of techniques to trick the senses, including the use of faux materials, forced perspective, and applied media to walls and ceilings (e.g. fresco).

Low Relief will study the material cultures of deceit in architectural design and construction. The studio will explore architectural illusion not just as a visual technique, but as a precise shaping of physical material and the blending of hybrid media forms in three dimensions. The motivating frame of Low Relief coincides with a proliferation of virtual reality in contemporary media, and seeks

to position the built environment as a proto-virtual-interface.

If a latent virtuality exists in architecture's past can historical precedent frame the use of emerging digital technologies – like robotics, projection mapping, and reality capture –to explore new expressions of architectural duplicity? In order to address this question, Low Relief will use historical research, hands-on material play, and full-scale prototyping of architectural elements.

### COURSE STRUCTURE

Low Relief will promote critical design inquiry through three main projects supported by workshops throughout the semester. The projects are intended to reinforce each other with a deep dive into robotic fabrication of soft materials like plaster and a broad survey of historical construction techniques used to produce architectural illusions. The studio will split time and resources between the SoA robotics lab and MMH Studios, blending the cultures of lab based research and studio based inquiry.

*1474: Oculus at the Ducal Palace, Mantua, Andrea Mantegna*

S19



48-400/500 Studio  
Bard + Torello  
M/W/F 1:30 - 4:20

# Low - Relief

An illustration of  
'the Sepulchral  
Chamber' at Sir John  
Soane's house, 1825



## GLOBAL STUDIOTRAVEL

Low relief will travel to London and Paris as part of the ASO global studio program. During the trip we will visit museums with the world's largest plaster cast collections and visit regional plastering shops that have been furthering plaster craft for centuries.

Destinations will include:

- Sir John Soane's Museum
- Victoria and Albert Museum
- Cité de l'Architecture et du Patrimoine

Note: The trip will occur before the start of spring term classes.

( 01.03 - 01.10)

## STUDIO ASSIGNMENTS

### P1\_Atlas of Architectural Deceit

A visual compendium of research exploring the material culture of deceit in architectural design.

(01.14 – 02.01)

London + Paris Trip ( 01.03 - 01.10)

### P2\_ Magic Box

A modeling exercise exploring physical and virtual techniques of architectural illusion. Students will design and fabricate a model-scale artifact.

(02.04 – 03.01)

Workshop 1 ( 02.06)

### P3\_ Fun House

A fabrication exercise at full-scale exploring architecture as virtual reality interface.

(03.04 – 05.03)

Workshop 2 ( 03.06)

## STUDIOTHEMES

In order to explore architecture's material duplicity, Low Relief will focus on:

- Material play: exploring the affordances of plaster, a material that can be cast, cut, and carved in a variety of physical states from liquid to solid.
- Robotic Fabrication: creating new robotic workflows to explore plaster.
- Reality Computing: using 3D scanning and projection mapping to create hybrid virtual / physical artifacts.
- Historical Precedent: learning from techniques like trompe l'oeil, scagliola, and anamorphic projection.

S19



48-400/500 Studio  
Bard + Torello  
M/W/F 1:30 - 4:20

# Low - Relief

## SUPPORTING COURSES

#48-368

Rediscovering Antiquity

Dr. Francesca Torello will be teaching, a seminar supporting the studio during the Fall 2018 Semester. Although encouraged, the course is not required for participation in the studio.

#48-455

Introduction to Architectural Robotics

This seminar will be offered in the Fall of 2018 and Spring of 2019. It is required as a pre-requisite or co-requisite for all studio participants.

## OBJECTIVES

- You can test ideas at full scale using material affordance to inform your design process.
- You can program, simulate, and execute basic robot paths.
- You can design and implement custom end of arm tools for fabrication.
- In addition to compelling representation, you can leverage digital tools to construct physical artifacts.
- You can leverage parametric workflows to efficiently manage complex fabrication tasks
- You can use detailed understanding of historical precedent to inspire

*Architectural cast collection, Cité de l'Architecture et du Patrimoine, Paris*



S19



48-400/500 Studio  
Bard + Torello  
M/W/F 1:30 - 4:20



# IDENTITY & MAKING

## The American Mashup

### INTRODUCTION

*To act, in its most general sense, means to take an initiative, to begin."*

Hannah Arendt  
*The Human Condition, 1958*

*Heather Bizon is appointed as the '18/'19 Ann Kalla Professor in SoA. Heather Bizon is an artist and architect working in New Haven, CT. Ms. Bizon's works explore the individual's perceptual of space and public/private domains through new media and technology, sculpture, architecture, and film. She has worked with MOS architects collaborating on projects of a range of scales from film to landscape to exhibitions to public works, including PS1 Pavilion 2009, Ordos 100 House in Mongolia Lot 006, and Marfa Drive In and Park. Heather received her B.Arch from Cornell University and M.Arch II from Yale University.*

Living within today's global infrastructure, where movement and displacement is commonplace; what does it mean to identify yourself? The counter to globalism, the prevalence of nationalism, has spread exponentially. Where seeming infrastructural space is expanding, why is the sense of a homeland or historic identity so compelling?

In this way, one's identity and in particular the identifiers we use as descriptors, suffer from an inherent spatial conflict of the relationship of the interior to the exterior.

This studio will take the notion of aesthetics and play relative to

architecture and culture. Play makes room for much that is not possible in reality: to slip into roles outside oneself, to take risks without consequences, and to challenge the codes and customs of his society. Can activism through play and pageantry create public discourse? It is through the interaction, experience, and discourse we create our identities. As designers and makers, it is in the process of making proposals and making reactions where collaboration and dialogue coupled with making as thinking test and create new futures. Focusing on design at a multitude of scales, how do the people of the site become a place itself?



*The 11 separate nation-states, where dominant cultures explain our voting behaviors and attitudes toward everything from social issues to the role of government.*

*"Our continent's famed mobility has been reinforcing, not dissolving, regional differences, as people increasingly sort themselves into like-minded communities."*  
- American Nations: A History of the Eleven Rival Regional Cultures in North America, Colin Woodard, 2013

S19



48-400/500 Studio  
Heather Bizon (18/19 Ann Kalla Professor)  
day + time: TBD



# IDENTITY & MAKING

## MASHUPS

The history of mashup culture in general can be dated back to the beginnings of dada and conceptual art. Artists such as Marcel Duchamp were the first to introduce already existing objects, which they rearranged and combined in collages, to the world of higher art. These artists believed that even though certain artifacts were ascribed a certain meaning, this meaning could be altered through rearranging them and putting them into a new context.

Mashups were part of a tactic of political and media pranksterism. Turn-of-the-millennium 'DJ mashups' originate in disc jockeys' musical combinations and medleys of songs produced by others. 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.

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?

## SITE

As Architects, we analyze the site: its conditions - physical, ecological, temporal, historical. How does the people of the site become a place itself? The traditions and histories of the people and the spaces they occupy in the City create a subculture that exists as a temporal and unfixed site. What do we have in common and what connects us? And how do we articulate our identity?

Pittsburgh is a city of neighborhoods; each with its own rites and rituals. Neighborhoods are separated by both physical boundaries (bridges, rivers, elevation changes etc) as well as socio political and economic differences. As such, Pittsburgh presents unique opportunities as sites of identity, community, and social exchange. We will explore the different neighborhoods of Pittsburgh relative to their cultural traditions and temporal events. Who will live in the Pittsburgh of the future, what will happen to those who have called the City their home for generations, and what does the future neighborhood look like?

*Left  
S.L.A.B.S  
While they might resemble the low-riders you see cruising through many American cities, slabs form a cross-section of Houston music, culture and community, making them more than mere souped-up rides. It is an art form and social practice that builds and maintains community across generational lines and expression of creating their own definition of the "American Dream".  
2016*

*Middle  
Jahnkoy's designer, Maria Kazakova, a Russian-born designer of Siberian descent fashion artist, creating/designing hand-stitched Pumas.  
2017*

*Right  
Chinese - American - Hispanic Festival Float*



S19



48-400/500 Studio  
Heather Bizon (18/19 Ann Kalla Professor)  
day + time: TBD

# IDENTITY & MAKING

## COURSEWORK

*Social constructs can be defined as formless or the informe, as coined by George Bataille (L'Informe, 1929); an operational existence.*

*"Nothing in and of itself, the formless has only an operational existence: it is a performative, like obscene words, the violence of which derives less from semantics than from the very act of their delivery. The formless is an operation."*

*-Yve Alain Bois & Rosalind Krauss, "Formless: A User's Guide", 1999*

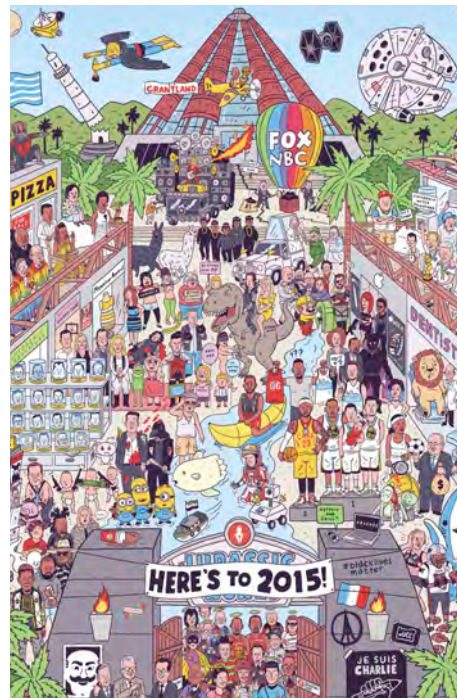
Students will pair a Pittsburgh neighborhood authenticity / culture to a sister city (connection based upon people to people network.) From this pairing, students will investigate the relationship of the socio political, and fundamentally architectural associations from origin to American City.

The semester will begin with a series of representational experiments looking at the conventions of contemporary architectural mediation. The goal is to challenge these conventions in order to explore aesthetic and communicative potentials.

In the second half of the semester the students will apply their understanding of the issues to their own designs on specific sites in the neighborhoods. With 4 to 5 groups, we will propose scenarios regarding the documentation of our Pittsburgh / Sister City neighborhoods. The Midterm review will be a review of our neighborhood scenarios/mashups.

Following the midterm, each group will work on the design and documentation of a building intervention into these scenarios / mashups. These projects will last the second half of the semester up to the Final Review.

We will explore, and investigate through multiple mediums, both 2D and 3D. 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.



Top  
Normal Rockwell  
Remix, 2012  
An American  
Thanksgiving

Bottom  
Can you spot every 2015  
pop culture reference in  
this giant illustration?  
Beutler Ink, 2015

S19



48-400/500 Studio  
Heather Bizon (18/19 Ann Kalla Professor)  
day + time: TBD

# RECONSTRUCTING AUTHENTICITY



*Mrs. N's Place,  
Louise Nevelson*

## STUDIO DESCRIPTION

The Spring 2019 Urban Design Build Studio (UDBS) will develop work and expand research on the relationship between built infrastructure, policy, and alternative construction practices initiated during the fall of 2018. During the spring, emphasis will shift in bias from analytical toward physical in the development and demonstration of construction process that exploits potential of Design for Deconstruction (DFD) in single family housing oriented toward the deconcentration of poverty. Understood as an emerging concept, DFD borrows from the fields of design for disassembly, reuse, manufacturing, and recycling in consumer product industries –all upcycle design and

fabrication processes. Considering the regional social, economic and environmental factors influencing the built landscape in Pittsburgh, UDBS design work will leverage the merits of upcycle DFD practice and compliment practices with downcycle DFD principles in an effort to create an authentic, place specific, housing prototype (RE\_CON 01) for the East Liberty neighborhood of Pittsburgh; RECONSTRUCTING AUTHENTICITY from material that previously contributed to blight.

RE\_CON 01 will incorporate re-purposed/ harvested material elements extracted from the deconstruction of housing and building stock investigated during the fall semester of 2018. Harvested

S19



48-405/505 Studio  
John Folam  
day + time TBD



# RECONSTRUCTING AUTHENTICITY



*Facade detail, Gugulun House, Peter Zumthor*

materials will be sympathetically matched with modular pre-fabricated building elements and systems as a mechanism for exploring potential of replication of housing at scale. With the articulated mission of producing appropriate, replicable solutions, the UDBS will aspire to produce work that is inclusive, durable, and of cultural relevance to future generations of the community. Over the course of the semester, the UDBS will focus on the development of permit, and construction documents that will facilitate construction beginning in late spring, and continuing through summer of 2019. The process will involve iterative, full-scale physical prototyping and testing of developmental DFD strategies that support Public Interest Design (PID) aspirations embedded in program and associated realms of social justice.

The studio will expand use of REALITY COMPUTING (capture, compute, create) technologies explored in collaboration with the IDeATe program. Capture, augmented reality, and virtual reality

technologies will be used to advance design work, enhance efficacy of communication with residents and stakeholders, and increase transparency of process. The studio will collaborate with IDeATe students on a regular basis throughout the semester, with specific, self-identified liaisons bridging disparate fields of interrelated inquiry. Translation of drawing to building will be central to processes with digital workflows involving Data Capture and BIM explored through the IDeATe Reality Computing collaboration.

As work associated with the RECONSTRUCTING AUTHENTICITY studio is predicated on a body of knowledge and research gained in the fall 2018 UDBS, participation in the DECONSTRUCTING BLIGHT studio is a pre-requisite for participation in the Spring 2019 studio. Students enrolling in the studio should also be anticipating participation in the summer construction opportunities supported through paid UDBS internship. Skill sets and sensibilities developed in each

S19



48-405/505 Studio  
John Folam  
day + time TBD



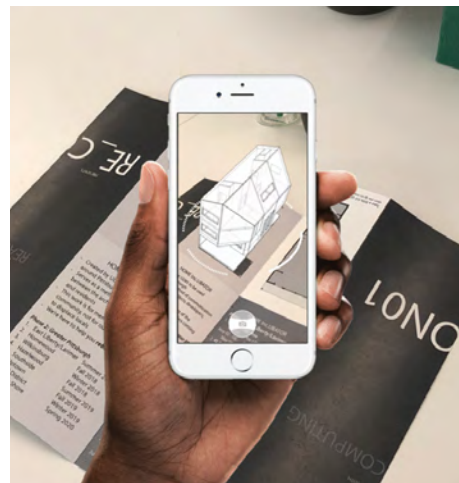
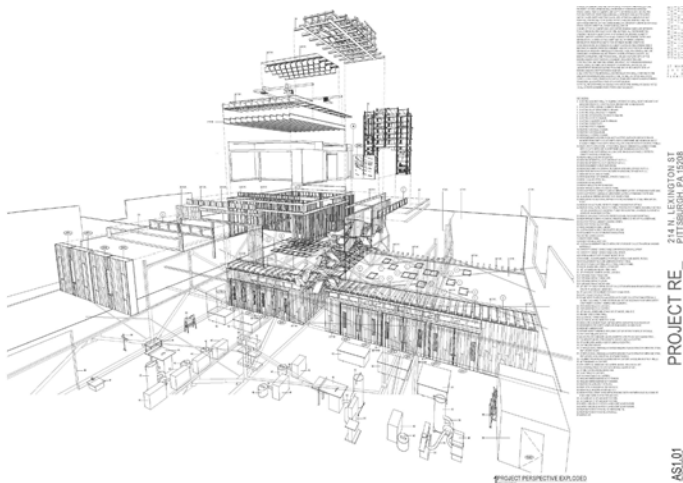
# RECONSTRUCTING AUTHENTICITY

UDBS ASOS and Co-requisite courses are intended to inform subsequent studios. The structure is designed to enable students to progress through a sequence of Public Interest Studios as a focus, or participate in individual studios electively. UDBS summer internships are reserved for students who have completed Urban Design Build Studios, and are offered based on demonstrated ability to accept responsibility. The UDBS is a vertically integrated, interdisciplinary studio. The studio will be composed of students from the Masters of Architecture (MArch), Masters of Architecture Engineering and Construction Management (AECM), Bachelor of Architecture (BArch), Masters of Urban Design (MUD), and IDeATe Reality Computing Programs. The studio will meet Mondays, Wednesdays, and Fridays from 1:30PM

to 4:20PM. Students enrolled in the Urban Design Build Studio (UDBS) RECONSTRUCTING AUTHENTICITY Studio are required to enroll in 48\_494, BEYOND PATRONAGE (9CU). BEYOND PATRONAGE will meet on Mondays, Wednesdays, and Fridays from 12:30PM to 1:20PM. Mondays and Wednesdays will be utilized for collaboration with IDeATe in the Collaborative Making Center, Hunt Library.

This studio is generously funded by Allegheny Foundation, Autodesk, the Heinz Endowments, and the Urban Redevelopment Authority of Pittsburgh (URA). All construction work will be done in collaboration with PROJECT RE\_ partners. Students will work shoulder to shoulder with populations representing the communities where the UDBS practices.

Exploded assembly drawing of PROJECT RE\_ developed by previous UDBS students representing replicable strategies for re-integrating deconstructed building material into viable new construction.



Augmented reality tool being developed in collaboration with IDeATe to engage community residents in the design process of housing prototypes.

S19



48-405/505 Studio  
John Folam  
day + time TBD

# RECONSTRUCTING AUTHENTICITY

## CONTEXT:

The UDBS is a Public Interest Design (PID) entity. Each individual enrolling in this studio recognizes that work is executed in communities, with residents served by the Urban Design Build Studio (UDBS). The UDBS works across the spectrum of scales from urban to ergonomic. With the enormous privilege that this opportunity provides comes responsibility. Work is done for clients with unmet needs, working to budget and schedule demands required to meet their needs. Students are expected to be present for all client meetings and participatory design sessions. The ability to realize a project through construction/implementation is earned, and not an entitlement. While every effort will be made to schedule community/client meetings during class time, client need/schedules will determine times outside of scheduled class. By enrolling in the UDBS, students understand and acknowledge that there are risks in travelling to and from work sites, meeting locations, and other studio related destinations visited

regularly throughout the course of the semester. PROJECT RE\_ is the primary construction/fabrication space utilized by the UDBS. Students acknowledge understanding that PROJECT RE\_ is an off-campus facility and that students are responsible for their own transportation to and from the facility. UDBS work includes physical labor and requires the utilization of construction tools/equipment that may cause bodily injury. Students acknowledge that they understand the risks associated with using the tools and do so of their own volition. The UDBS collaborates with organizations include individuals with previous legal violations and/or incarceration. The Trade Institute of Pittsburgh (TIP), a partner in PROJECT RE\_, focuses its apprentice training on individuals re-entering society post incarceration. Students enrolling in this studio acknowledge that they understand the working conditions and have elected to participate in the studio of individual volition.

S19



48-405/505 Studio  
John Folam  
day + time TBD

# ACUPUNCTURE URBANISM

## Urban Collaboratory Studio

This Urbanism Studio will explore temporary use and tactical interventions as alternative instruments for tackling contemporary urban challenges. This studio is just as much about designing a community engagement process, as it is about designing and realizing a full scale temporary intervention in form of a micro-public space. In a collaborative studio setting we will go from exploring and analyzing an urban milieu, to facilitating participatory design workshops with a community, to developing and implementing a strategic design intervention that promises to act as an urban catalyst for the neighborhood, or urban acupuncture.

In the Spring 2019 we will work with "[Community Forge](#)" a citizen-led initiative that is transforming Wilkinsburg's former vacant school into a community and youth center, a co-working space and much more. Community Forge is committed to youth empowerment, community collaboration, organizational incubation and neighborhood wellbeing. Together with community members, both young and old, we will redesign the center's outdoor spaces and transform the former school yard into a shared resource for the wider neighborhood. In a participatory design process we will support the community in developing ideas and translate them into a coherent design strategy. Thus the studio is also about learning to work with uncertainties and understanding the definition of a program, a site, needs and desires of future users as an essential part of the design process. The studio offers an opportunity to see a very small project through from conception to realization within 15 weeks only and combine abstract systems

thinking with very concrete and hands-on action, in short, to think global and act local.

Accordingly, the studio will encourage you to be bold and radical in terms of the changes you aspire to, yet humble and pragmatic in how these are implemented. It will require your willingness to take on responsibilities and engage with real-world problems, learn to communicate and listen to a diverse audience and do physical construction work.

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. In a post-growth mindset, we will focus on teasing out latent potentials in the already-existing, using techniques of re-assembling, retrofitting and recycling. Moreover the studio will work collaboratively, challenging the notion of singular authorship by including neighbors and other stakeholders as co-designers.

„There is no architecture without action or without program (...) architecture's importance resides in its ability to accelerate society's transformation through a careful agencing of space and events.“

Bernhard Tschumi in the introduction to Event Cities



Roaming Porches  
Manchester, Pittsburgh  
S18 ASO studio

F18/S19

48-400/500 Studio  
Instructor: Stefan Gruber (S19)  
M/W/F +1:30-4:20

# 4-D ARCHITECTURE

## Narrative, Hierarchy, Procession and Rhythm in Design

### New Experimental Theater for New York City

While architectural space is largely three-dimensional and static, human occupancy is inherently four-dimensional and dynamic. This semester we will study and design hyper-flexible performance spaces which respond dynamically to an artist's creative vision and the audience's evolving desires.

The World Trade Center Performing Arts Center (PAC) is the most anticipated, and controversial, addition in a generation to Manhattan's rich performing arts ecosystem. This 1200-seat three-theater complex is a real project currently in design and planning. Site, program and all constraints will be the same as those with which the professional design team is working, requiring students to develop mastery of the technical realities of performance productions, construction methodologies, structural & mechanical systems and community/stakeholder activism. Students will meet with the real client, potential users, public officials and the professional design team involved in the project, learning to analyze and understand the needs of these distinct occupant groups and use those needs as the fundamental basis of concept ideation. Design is also informed and shaped by the cultural significance and structural constraints of this uniquely meaningful and complex site.

ASOS students will collaborate in study & design with Drama and Masters of Arts Management (MAM) students. During the first third of the semester inter-disciplinary teams of Architecture, Drama & MAM students will analyze the site, study precedents and define planning and programming criteria. During the remainder of the semester Architecture students will conceive individual designs for the theater complex in collaboration with the Drama and MAM students.



S19



48-405/505  
Hal Hayes  
Time/day TBD



# 4-D ARCHITECTURE

## Narrative, Hierarchy, Procession and Rhythm in Design

### New Experimental Theater for New York City

This studio is part of the Theater Architecture concentration.

Co-Requisites; Theater Architecture I & II 62:408 - Mini 3, (6) & 62:418 - Mini 4 (3), (co-taught with Dick Block, Drama Associate Head & Scenic Design Professor)

Selective; 48:587 (9) Architectural Lighting (Cindy Limauro, Architecture & Drama Professor of Lighting)

Field Trip & Site Visit; Broadway & Beyond, Manhattan's Rich Performing Arts Ecosystem. date TBD

Additional Faculty: Kathryn Heidemann (Heinz College Associate Head & Arts Management Program Director)

**Occupancy** is the act of inhabiting space. Inhabitation can be either static or active. While space is three-dimensional and largely static, occupancy is inherently four-dimensional and active.

Activity results from both the movement of occupants through space and/or the occupants' experience of changes occurring in the spaces they inhabit. Through studying, understanding and interpreting those changes, student architects will learn to conceive and shape spaces to meaningfully and effectively serve, support and transform the occupants' experience.



**Program.** The World Trade Center Performing Arts Center is the most anticipated addition to Manhattan's rich performing arts landscape in a generation. This 1200-seat flexible theater complex is a real project in the planning and design stages. Site, program and all constraints will be the same as the professional design team is working with. Students will also develop mastery of the technical requirements of performance art through this class and co-requisites 42:408 & 418, Theater Architecture I & II.

S19



48-405/505  
Hal Hayes  
Time/day TBD

# 4-D ARCHITECTURE

Narrative, Hierarchy, Procession and Rhythm in Design

New Experimental Theater for New York City

## USERS

Students will meet and interact with the real client, potential users and public officials involved in the project during a site field trip and at interim reviews. Student architects will learn to analyze and understand the needs of these distinct occupant groups and then use that understanding as the fundamental basis of design concept. Drama student colleagues from 48:408 will also be an in-house resource and review group throughout the duration of the studio.

## SITE

World Trade Center Performing Art Center (PAC), New York City. Immediately adjacent to the 9/11 Memorial and One World Trade Center megastructure, the 35ksf parallelogram site is one of the most visible of the new World Trade Center master plan. Design is also informed and shaped by the cultural significance and structural constraints of this uniquely important site.



*This studio will emphasize the use of hand sketching, physical models and iteration of design, research and analysis at varying scales and degrees of resolution. Students must also expand their mastery of digital and parametric tools for both analysis and conceptual morphological design development.*

S19



48-405/505  
Hal Hayes  
Time/day TBD

# BRAIN HUB

Harnessing the technology that helps the world explore brain and behavior.

Brain science lies at the intersection of biology, neuroscience, psychology, computer science, statistics, the arts and engineering. Carnegie Mellon University is a leader in the frontiers of brain and behavioral science research - Neuroscience, Cognition, Learning, Data Overload, CTE, Alzheimer's, Parkinson's, Rejuvenation – and is planning a new 30,000 square foot laboratory on campus.



*Top: Geochemistry Building at Columbia University 2009, Payette Associates*

The question is: Will the architecture be form-fitted to the traditions of scientific and technological research and education, or will the architecture be designed to transform the research process and product? The diverse expertise in health and cognition that CMU researchers bring to this innovative Hub demands programmatic innovation – adjacencies, transparencies and flexibilities that conventional lab buildings undervalue. The very focus of the research on the brain's cognitive, neurologic, skeletal, visual, aural and other integrated systems, challenge the architect to focus on advanced building systems – enclosure, structure, conditioning, spatial systems, as well as systems integration - as a generative, creative force in design. The future of cognition and neurological health stresses the importance of designing to the most visionary standards of WELL, Living Building, and regenerative design for a sustainable future.

*Left: Neuroscience and Synthetic Biology, Boston University, Payette Associates*



*Above: University of Pittsburgh Neuroscience research image*

S19



48-400/500 Studio  
Loftness/Klee  
day + time TBD



# BRAIN HUB

The BrainHub offers an amazing design challenge for architecture students to imagine the Next Generation Campus Lab. Students will work collaboratively to vision an appropriate program for a stand-alone BrainHub for cognitive science, technology, engineering, and artistic research and education, gathering technologies and systems that could create a building that is an irreplaceable for brain research.



*Interior atrium, Intersdisciplinary Science Building, Northeastern University, Payette Associates*

Working with a site on the emerging Tepper Quad at Carnegie Mellon University, students will then focus individually or in teams of two on a new prototype 30,000 square foot research and teaching facility. The BrainHub will leapfrog traditional learning by disciplines, offering hands-on learning and discovery, with the building as a laboratory for both understanding and invention to address global needs (see CMU website <https://www.cmu.edu/research/brain>). A series of exercises will support the integration of dynamic learning tools and sustainable building systems as a generator of architectural placemaking and detailing - critical to the ultimate success of a project. These exercises will explore structure and enclosure modularity and innovations for dynamic laboratory and education spaces; interior space design innovations for collaboration and concentration; vertical transportation, egress and core design for sustainability; HVAC and lighting innovations; and innovative "brain functions" for building vitality as well as resource management.

Finally, sustainability demands more than the aesthetic integration of renewable energy, and should inspire new formal and organizational designs, with daily and seasonal dynamics in architectural expression, and the visionary integration of site and community.

*Exterior Intersdisciplinary Science Building, Northeastern University, Payette Associates*



*Integrated Life Sciences Building, Boston University, Payette Associates*

*This studio will be a collaboration between;*

**Vivian Loftness,**

*FAIA – a leader in sustainable design and systems integration for performance,*

**Charles Klee,**

*AIA – a principal at Payette Associates in Boston who has led the design of cutting edge laboratories at MIT, Columbia, Harvard, The University of Chicago, and Boston University*

S19



48-400/500 Studio  
Loftness/Klee  
day + time TBD



# BIRTH RIGHTS

## Connecting the Built Environment to Maternal and Infant Care in Vulnerable Populations in Pittsburgh

### INTRODUCTION

The maternal mortality rate in the United States is increasing; the U.S. is one of only 13 countries to have more maternal deaths today than 25 years ago. Black women are three to four times more likely to die in childbirth or in the first year after than their white counterparts. Black infants are twice as likely to die as white infants (CDC, 2016). How can we envision a more holistic approach to mother and infant care that accounts for racial, socioeconomic, access, and age disparities in communities around Pittsburgh?

Working with partner organizations,

this studio will seek to understand the challenges and opportunities that arise from exploring systems in place at a variety of scales within the realm of women's health, and how innovative built environments could rethink or restructure those systems to achieve better outcomes for vulnerable populations. How can architecture become part of the narrative that helps women and their babies survive into motherhood? How can architecture support vulnerable populations through prenatal, birth, and postpartum stages of parenthood? How can architecture empower women to be advocates for themselves and their babies?

*Centers for Disease Control (2016).  
Public Health Problem  
Pregnancy-  
Related Deaths  
Maternal Health  
Advancing the Health  
of Mothers in the  
21st Century.*

*Centers for Disease  
Control (2106)  
Infant Mortality.*



S19



48-400/500 Studio  
Annie Ranttila  
MWF 1.30-4.20

# WORKSPACE

## Industrial Architecture 4.0

The factory has a special hold on the public imagination, particularly in Pittsburgh – a symbol of strength, a symbol of hazard, a symbol of loss. Often concealing vast expanses of dynamism and productivity within simple compositions and cool facades, the factory has been a catalyst for urbanization, a wellspring of both prosperity and civil disorder, and a source of dire environmental consequences. As Elsie Driggs wrote of the Jones & Laughlin Mills, the subject of “Pittsburgh” (1928), her first major work – “This shouldn’t be beautiful. But it is.”

While fewer Americans work in factories today than at any point since the 1940s, manufacturing remains at the forefront of political conversation, with 20th-century industrial relics serving as stage sets for protectionist posturing and urban renewal crusading alike. Frequently overlooked amid this spectacle is the steady march of the factory typology itself, finding new expression today in dense urban settings and hybrid configurations.

Following an arc from Ledoux’s 18th-century royal saltworks at Arc-et-Senans through Dean Clough’s Halifax mills of the 1840s-60s, Behrens’s AEG turbine factory at the turn of 20th century and Albert Kahn’s River Rouge Complex designed for Ford less than two decades later, numerous architects have made



TOP  
Elsie Driggs,  
Pittsburgh 1927  
painting

LEFT  
Industrial Facades  
photographers  
Bernd+Hilla Becher  
1966-1999

BELOW  
Chemical Factory, Poland  
architect Hans Poelzig  
1910

compelling work from the seemingly constrained programmatic requirements of industry. Even among the more anonymous works documented by Driggs, Ralston Crawford, and Charles Sheeler, and later by Bernd and Hilla Becher, industrial architecture has offered rich opportunities for artistic and tectonic expression.

The scale, structure, and spatial logic of the factory have continued to evolve at pace with changing technologies and economic conditions throughout this history. Now, amid shifting workforce demographics and accelerating environmental change, and as the spread of a new generation of advanced manufacturing techniques – of Industry 4.0 – gains pace, how might this tradition



# WORKSPACE



*LEFT*  
Ed Burtynsky  
Manufactured  
Landscapes  
2005

*RIGHT*  
ABB Collaborative  
Robotics, "YuMi"  
IRB 14000

In this studio we will explore the future of work and the implications of technological change in manufacturing on built form and placemaking. We will begin by immersing ourselves in the language of industrial architecture through close study of industrial precedents and modes of graphic representation associated with this architectural tradition. In addition to taking advantage of resources and expertise unique to Carnegie Mellon, we will tour industrial facilities throughout the region to observe new industrial technologies in use. We will investigate the human and spatial consequences of new industrial techniques such as additive manufacturing, continuous manufacturing, and advanced robotics on the production of goods ranging in complexity from clay tiles to jet engines.

Through a series of workshops and interviews with industry and academic collaborators, we will weave together these threads of research to define a building program and evaluate sites, then move forward to develop proposals for new advanced manufacturing facilities with this foundation in place. Final proposals will reflect student research

and design, reinterpreting the factory typology in response to new industrial technologies, ecological imperatives, and the expectations of a changing workforce.

Research will be conducted collaboratively; proposals will be developed in pairs.

## STUDIO THEMES

*Typology:* What is the spatial and tectonic vocabulary of industrial architecture? What forces have reshaped its grammar over time?

*Performance:* What are the current frontiers of manufacturing technology? What are the social and spatial consequences of technological change? What are the drivers of environmental performance in future manufacturing workplaces?

*Scale:* What is the future of manufacturing within dense urban environments? What are the implications of scale on urban placemaking?

*Representation:* What is the cultural and political significance of industrial architecture? What role does artistic representation play in shaping perception of the future past?

F19



48-400/500 Studio  
Instructor: Daniel Colvard  
W/F 1.00-4.50pm



# WORKSPACE

## Industrial Architecture 4.0

TOP  
AEG Factory  
architect Peter Behrens  
Berlin, 1909

BOTTOM  
Ford Motor Plant  
River Rouge,  
Detroit, 1927  
photographer  
Charles Sheeler

### LEARNING OBJECTIVES

Develop and articulate a critical understanding of the relationship of program, form, and structure within a typological history.

Expand communication and investigative skills through interaction with academic, industry, and community leaders.

Apply research in the definition of a building program.

Synthesize complex technical, social, and disciplinary conditions in solving a design problem.

Derive novel modes of representing the performance, scale, and unique character of industrial architecture.



F19



48-400/500 Studio  
Instructor: Daniel Colvard  
W/F 1.00-4.50pm



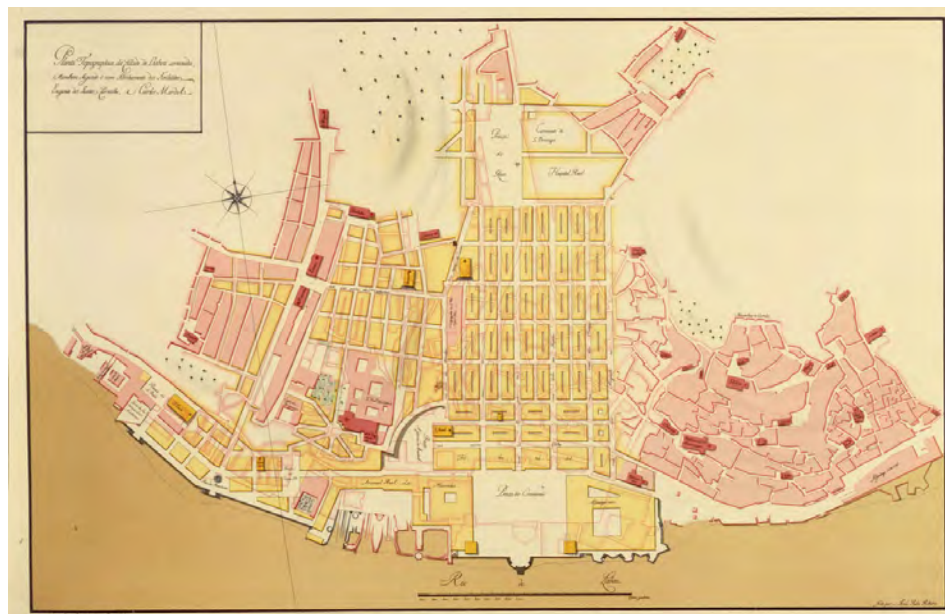
# Bouça Social-Housing

## Making the city, Fabric versus Monument

At a time when much of the discussion in architecture seems to center around the generation of highly eccentric sculptural forms employing advanced parametric modeling software and advanced fabrication techniques, it might be well to remember that the most effective sustainable strategies may involve the creation of coherent, dense urban areas. We may also posit that successful urban districts and cities are made up of both normative fabric and exceptional buildings and spaces that create hierarchy and order.

With this in mind the architecture and urbanism of Portugal, exemplified by the so-called Porto School, may be a salutary case study worthy of examination. This studio is for an advanced architectural design studio with a site located in Porto, Portugal.

The studio requires a ten-day study trip to Portugal in the summer (August) of 2019 to visit the site and study examples of relevant precedents by Álvaro Siza with a particular focus on the social housing at Bouça in Porto and well as the Quinta da Malagueira housing estate in Évora. Álvaro Siza's Bouça Social-Housing, Porto, Portugal



The urban fabric of the 18th century Baixa, the central area of Lisbon, reconstructed after the 1755 earthquake and planned by the Marquês de Pombal

F19



48-400/500 Studio  
Damiani/ Shapiro  
M,W,F 1.30-4.20

# Bouça Social-Housing

Álvaro Siza's Bouça Social-Housing,  
Porto, Portugal

Designed in the 1970s, the Bouça Social Housing complex in Porto, Portugal was developed by Álvaro Siza with Serviço de Apoio Ambulatório (SAAL) to address the housing crisis facing the country during a turbulent period that saw a military coup in 1974 and a right-wing coup in 1975.

Located on an triangular site on the urban edge of Porto along side of a rail line, Siza proposed a new type of social housing. Duplex homes with spacious internal dimensions were provided as two story stacked homes with the uppermost homes set back to provide outdoor space. The arrangement of these

homes defined long, planted courtyards providing community spaces for the occupants.

Due to the volatile political situation, materials and funding were in short supply and only two of the four blocks were realized. A high wall to buffer the rail noise was not completed nor were the community facilities. However, in 2007 the rail buffer, limited community functions and the remaining housing blocks were realized nearly to Siza's original plans.

The studio will focus on extending the community on the western edge of the site on a small triangular parcel. The program will be the addition of a few housing units, a community meeting hall, an arts center and public service offices.



Bouça housing  
by Alvaro Siza

F19



48-400/500 Studio  
Damiani/ Shapiro  
M,W,F 1.30-4.20

# Bouça Social-Housing



Bouça housing  
by Alvaro Siza  
(with site area)

Preliminary Itinerary:

Arrive Lisbon: Introduction

## Lisbon (2 days)

The urban fabric of the 18th century Baixa, the central area of Lisbon, reconstructed after the 1755 earthquake and planned by the Marquês de Pombal

The reconstruction of the Chiado and the Chiado Metro Station by Alvaro Siza

Terraços de Bragança urban infill by Alvaro Siza

Portuguese Pavilion Parque de Nasções by Alvaro Siza

Visit other Lisbon buildings and sites



## Cascais (1 day)

Visit works by Souta de Moura, Gonçalo Byrne and Aires Mateus

## Évora (2 days)

Quinta da Malagueira housing estate by Alvaro Siza

## Porto (3 days)

São Victor housing by Alvaro Siza

Bouça housing by Alvaro Siza

Various other works by Siza, Souta de Moura and Fernando Tavora and others including the Porto Architecture School, the Serralves Museum, the Tea House Boa Nova and tidal baths in Leça da Palmeira.

**Return to Lisbon:** Wrap up session.

Please note that Altenhof funding for travel is available for United States citizens and U.S. Permanent Residents with financial need. Please inquire by contacting David Koltas, Assistant Head, for eligibility.

[dkoltas@andrew.cmu.edu](mailto:dkoltas@andrew.cmu.edu)



F19



48-400/500 Studio  
Damiani/ Shapiro  
M,W,F 1.30-4.20



# SUBJECT TO CHANGE

## Timber Evolving

*"deformation is  
not devaluation,  
permanence involves  
perpetual perishing,  
and duration depends  
on alteration"*  
David Leatherbarrow

This studio explores potential trajectories of a piece of architecture to challenge our conventional preoccupation with a building's idealized initial state of completion. It seeks to position multiple, future narratives that consider the evolving life and ultimate death of architecture. This studio extends the investigation of urban timber construction from the fall 2018 ASO studio to consider how architecture is recalibrated and reinterpreted through time.



*Michael Warren  
De-Creation 1996  
Kentuck Knob*

F19



48-405/505 +MAAD Studio  
Jeremy Ficca  
day + time TBD



# HOME RE\_CONSIDERED



*Photograph of displaced Penn Plaza resident and her belongings.*

## **STUDIO DESCRIPTION**

The 2019/2020 Urban Design Build Studio (UDBS) will focus on housing oriented toward the deconcentration of poverty and the development of experiential tools for enhanced resident engagement through Public Interest Design (PID) processes. The aspiration of the year-long studio sequence will be the implementation/ construction of a housing prototype that promotes inclusivity and diversity. The design and production of the housing prototype will be influenced by three considerations; 1) necessity/ need, 2) social justice, 3) opportunity for

proactive, systemic change. At present, availability of affordable housing is failing to meet demand in Pittsburgh, Pennsylvania. Expansive change to the urban landscape perpetuated by recent development activity has displaced many under-represented populations and exacerbated socio-economically biased trust issues within communities; reinforcing a regional culture marred by segregation and exclusion. Contrary to public perception, displacement is not by design. Policy, funding, and financially unsustainable construction practices influence the behavior of the development community and undermine

F19



48-400/500 Studio  
John Folan  
day + time TBD

# HOME RE\_CONSIDERED

potential for change. Production models in allied manufacturing disciplines suggest an opportunity to exploit traditional and advanced technologies as a mechanism for impacting positive social change by increasing the universal affordability of all construction; not just a small sector of the industry tied to financial subsidy.

HOME RE\_CONSIDERED will utilize this constellation of considerations and opportunities as a platform to initiate a year long design-build sequence in the implementation/realization of an affordable housing prototype, RE\_CON 02, and demonstrative/experiential design tool, the HOME Inc.UBATOR. Extending a collaboration with the IDeATe Reality Computing program, the studio will explore the potential for augmented and adaptive reality computing applications to enhance analysis, pre-fabrication practices, and social/public engagement methodologies. Divided into a sequence of four modules, the UDBS will utilize 1) Data Capture via Lidar Scanning to enhance understanding of physical place, 2) Data Sets to enhance understanding of demographic/socio-economic condition, 3) Virtual Reality applications to enhance understanding of spatial potential, and 4) Physical

prototyping to advance work on RE\_CON 02. As proposals for housing prototypes are developed and systems explored they will be tested at full scale utilizing construction facilities at PROJECT RE\_. This work will be informed by use of form the HOME INCUBATOR/ RE\_TOLD public engagement tools. Equipped with reality computing and advanced virtual reality visualization technology that aspires to enhance the efficacy of community engagement in the development of inclusive housing for all. With a compliment of physical and virtual components/experiences, the incubator will help residents experience and understand housing proposals developed in collaboration with the non-profit entity, East Liberty Development (ELDI). Interactive VR Goggle and tablet based interfaces will enable residents to manipulate representations of the interior environments and exterior shell of proposed designs in real time. Feedback collected will develop community ownership of, and foster trust in, an appropriate housing prototype to be produced through PROJECT RE\_.

The HOME RE\_CONSIDERED studio is a component of a broader Public Interest Design continuum established by the UDBS and PROJECT RE\_. This studio provides a pre-text for

*Villa Verde Housing,  
ELEMENTAL,  
under construction*



*Point cloud image of the  
site and surrounding  
context for RE\_  
CON 01 collected  
using terrestrial  
LiDAR scanning.*

F19

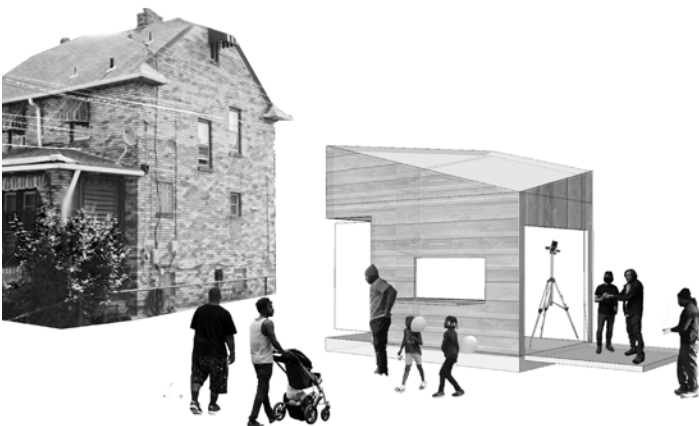


48-400/500 Studio  
John Folan  
day + time TBD

# HOME RE\_CONSIDERED

work in the Spring 2020 UDDBS ASOS, HOME RE\_DEFINED and anticipated opportunity for subsequent Summer 2020 UDDBS Paid Internship. Enrollment in HOME RE\_CONSIDERED, Fall 2019, will require a one year commitment from students to fulfill construction/implementation responsibilities. Skill sets and sensibilities developed in each UDDBS ASOS and Co-requisite courses are intended to inform subsequent studios and the implementation of work through jurisdictional review processes. Taking a project from initial concept through the completion of construction requires commitment over the entire one year projected timeline. UDDBS summer internships are reserved for students who have completed a sequence of two (fall and spring) Urban Design Build Studios, and are offered based on demonstrated ability to accept responsibility. The internships are also subject to availability of external funding. The structure of the UDDBS sequence is designed to afford students an opportunity to participate in a one year long sequence in the fulfillment of a Public Interest Design agenda. The focus of each UDDBS sequence evolves

*HOME Inc. UBATOR  
conceptual rendering*



with issues of regional and global significance. The studio is open to 4th and 5th year undergraduate students in the BArch program as well as all Masters of Architecture (MArch) students. Undergraduate 4th year BArch students enrolling in the UDDBS, and interested in developing an expertise/focus in Public Interest Design may elect to continue to work with the UDDBS in the 5th year of the program. MArch students enrolling during the first year of the program may enroll for two years as well.

The UDDBS is a vertically integrated, interdisciplinary studio. The studio will be composed of students from the Masters of Architecture (MArch), Masters of Architecture Engineering and Construction Management (AECM), Bachelor of Architecture (BArch), Masters of Urban Design (MUD), and IDeATe Reality Computing Programs. The studio will meet Mondays, Wednesdays, and Fridays from 1:30PM to 4:20PM. Students enrolled in the Urban Design Build Studio (UDDBS) HOME RE-CONSIDERED Studio are required to enroll in 48\_495, SCALING CHANGE (9CU). SCALING CHANGE will meet on Mondays, Wednesdays, and Fridays from 12:30PM to 1:20PM. Portions of each Monday and Wednesday studio session will be utilized for collaboration on Reality Computing strategies related to augmented and adaptive technologies with IDeATe in the Collaborative Making Center, Hunt Library.

This studio is generously funded by Allegheny Foundation, Ford Motor Company, Autodesk, the Heinz Endowments, and the Urban Redevelopment Authority of Pittsburgh

F19



48-400/500 Studio  
John Folan  
day + time TBD

# HOME RE\_CONSIDERED

(URA). Development work is being done in collaboration with East Liberty Development Corporation (ELDI). All construction work will be done in collaboration with PROJECT RE\_ partners. Students will work shoulder to shoulder with populations representing the communities where the UDBS practices.

## **CONTEXT:**

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F19



48-400/500 Studio  
John Folan  
day + time TBD



# TERMINAL SYSTEMS

## JFK Terminal Four Concourse A Expansion

### INTRODUCTION

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, New York

### 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.



### 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.

*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*

Top: JFK Terminal 4 SOM  
Below: Plane arriving T4



F19



48-400/500 Studio  
Hal Hayes  
MWF 1.30-4.20

# MOVING IMAGE

## Phenomenal migration

### Introduction

The studio will explore experimental film with related theoretical texts and use these findings to speculate on a new architecture. The resulting designs will be represented in the medium of film but modeling, drawing and material construction will be used in the preparatory stages.

The course will consider new potentialities for an architecture composed through an understanding of time in space. A contemporary response will be developed with reference to the films of Teinosuke Kinugasa, Chris Marker and Hito Steyerl.

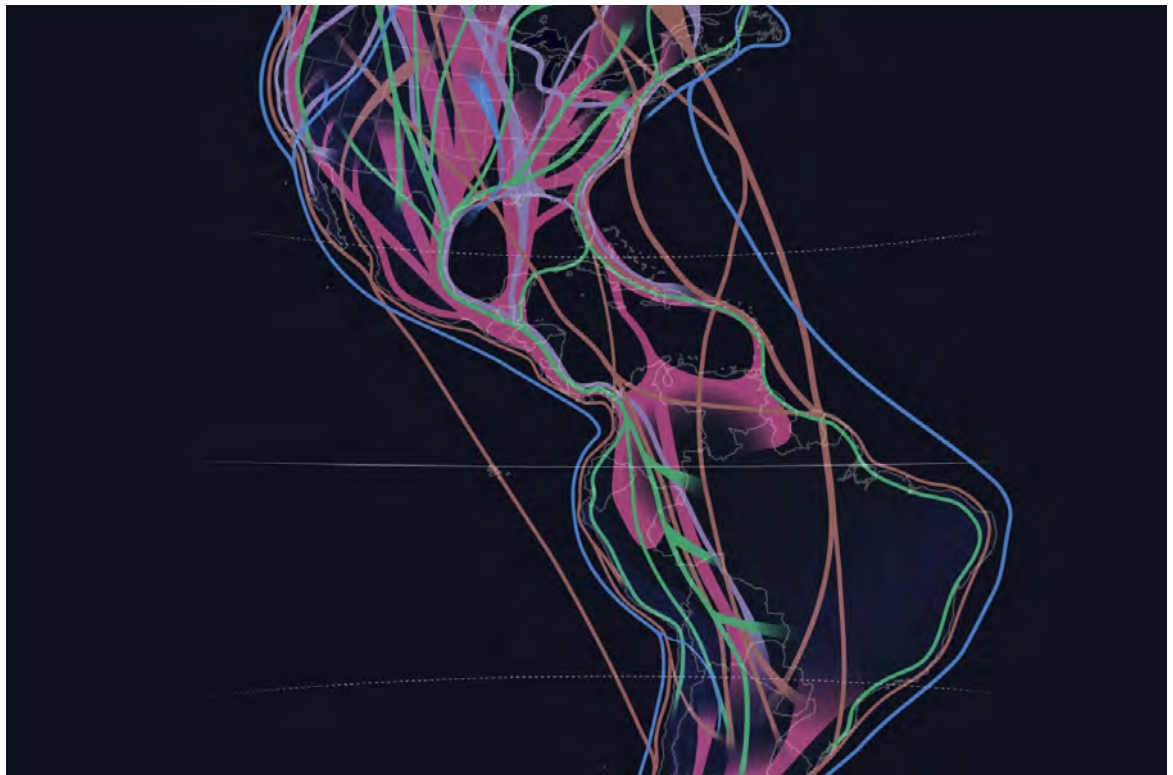
### Ambition for the studio

1. to engage in abstract thought, analyse genre, narrative, technique and affect in expanded cinema
2. to integrate complex levels of engagement in architecture - psychological, embodied, mnemonic, eidetic, social, economic, political and cultural.
3. to develop an architectural proposition which uses cinematographic space in an architectural way, that is speculative and innovative.

*.....the perspective of free fall teaches us to consider a social and political dreamscape of radicalized class war from above, one that throws jaw dropping social inequalities into sharp focus.*

*Hito Steyerl,  
The Wretched of the Screen,  
2012 p28*

*Mapping Bird migration in the Americas,  
National Geographic.*



S 20



48-405/505 Studio  
Mary-Lou Arscott  
W1-4.20 F1-6.30

# MOVING IMAGE

## Phenomenal migration



### BODIES IN MOVEMENT

The design prompt for this studio is to reconsider the idea of migration. Shelter and basic bodily functions are individualized as part of a cultural imperative and ignored for any person who has been marginalized and is in movement. It is from Foucault that we understand that the body is a battleground, where definitions are insisted upon to reinforce a power position, to satisfy convention and to protect from a constructed set of fears. The studio will design to consider lack of stasis and population movement with creative, positive and clear thinking. The title Moving Image-Phenomenal Migration is used to denote the joining of the potential of physical principals (eg of rain, rinsing and rotting) to be connected with a rich narrative of memory, dream

state, fantasy and the surreal. These emotive and volatile factors are the realm of culture, find expression in cinema and the expanded cinema.

**The challenge in this studio's design process will be to explore the language of film and integrate a manifesto capturing your understanding of bodies in movement into an architectural composition. The final medium for presentation will be in the form of a film.**

*images by Sebastiao Salgado*





# BEHAVIOUR MATTERS

## Mediated Nature in Material Systems

*"Since a thing can't be known directly or totally, one can only attune to it, with greater or lesser degrees of intimacy. Nor is this attunement a "merely" aesthetic approach to a basically blank extensional substance. Since appearance can't be peeled decisively from the reality of a thing, attunement is a living, dynamic relation with another being."*

**Timothy Morton**  
*(Ecology without Nature, 2014)*

Architecture and nature have longstanding relationship mediated by series of historical ideologies that engage varied concepts of place, space, form and behavior. From Vitruvian primitive hut, through gothic architecture, to art nouveau and contemporary spatial-ecological metaphors embedded in biology, there is a continuing ambivalence about the role of architecture and its effects on organic and inorganic systems that constitute our built environment. In the current era, that some refer to as Anthropocene, the ideal of Nature no longer provides an untamed plane of reference for human action; there is no return to a world where all forces naturally re-circulate in a balanced and harmonious way. The acceptance of this fact forefronts the need for critical questioning of what should we define as new "ecological ideology" that defines need for new architectural materiality. Such efforts are currently evident in multitude of architectural attempts to hybridize buildings with the organic substance of landscape components. From green roofs to vertical gardens, these appliqué technologies seek to



*Above: Tactile Flows\_*  
*Team: Khemka,*  
*Krishnan, Vinjam*

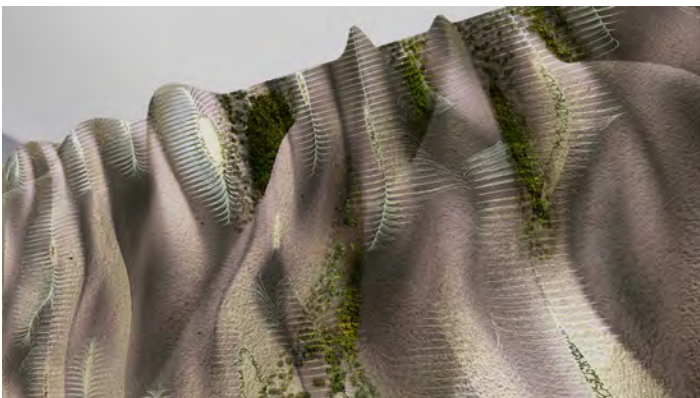
ameliorate architecture with the healing power of nature.

This studio will be focused on developing material experiments that merge synthetic and organic processes into a formative strategies for design and materialization of new architectural envelopes. The studio will be organized as a collaborative research platform that engages the issues of ecology and material processes cross-referenced with thermodynamic behavior. The students will be asked to development a semester long independent project that investigates specific material production into a series of constructions. The position of the studio is that a building ceases to exist as an individual object within its context, but it is understood as a morphology that is manifested by the forces of its environment and becomes a habitat for multitude of organisms.

*Below: Tangible*  
*Matter\_Team:*  
*Darreff, Wang, Gao*



*Moss Regimes:*  
*Thermoregulation in*  
*Porous Ceramics\_*  
*Dana Cupkova*



S20



48-405/505 Studio  
Dana Cupkova  
day + time TBD



# HOME RE\_DEFINED



*Casa Familiar, Tedy Cruz*

## **STUDIO DESCRIPTION**

The Spring 2020 Urban Design Build Studio (UDBS) will develop work and expand research on the RE\_CON 02 House Prototype incorporating the HOME INCUBATOR/RE\_TOLD design/engagement tool utilized during the fall of 2019. During the spring, emphasis will shift in bias from analytical/theoretical toward productive/physical in the development of modular pre-fabrication strategies that aspire to universal affordability objectives identified through the HOME RE\_CONSIDERED studio. Production of the HOME Inc.UBATOR will provide a

real time, full-scale platform for design decision making as work on permit drawings and construction documents for RE\_CON 02 advances. Collaboration with students in the IDEATe Reality Computing program will employ the use of advanced visualization practices to enhance the efficacy of interactive virtual reality components included in the HOME INCUBATOR/RE\_TOLD. Late spring deployment of INCUBATOR in the Homewood, Larimer, and East Liberty neighborhoods will provide an opportunity for the public to directly influence and understand late stage design decisions in development

S20



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day + time TBD

# HOME RE\_DEFINED

*Perspective drawing of foundation and framing for the RE\_CON 01 housing prototype.*



of the RE\_CON 02 Prototype. Work throughout the semester aspires to inform the creation of work that can be characterized as inclusive, durable, and of cultural relevance to future generations of the city

As work associated with the HOME RE\_DEFINED studio is predicated on a body of knowledge and research gained in the fall 2019 UDBS, participation in the HOME RE\_CONSIDERED studio is a pre-requisite for participation in the Spring 2020 studio. Students enrolling in the studio should also be anticipating participation in the summer construction opportunities supported through paid UDBS internship. Skill sets and sensibilities developed in each UDBS ASOS and Co-requisite courses are intended to inform subsequent studios. The structure is designed to enable students to progress through a sequence of Public Interest Studios as a focus, or participate in individual studios electively. UDBS summer internships are reserved for students who have completed Urban Design Build Studios, and are offered based on demonstrated ability to accept responsibility.



*Virtual Reality concept developed in collaboration with IDeATe*

This studio is generously funded by Ford Motor Company, Autodesk, the Heinz Endowments, and the Urban Redevelopment Authority of Pittsburgh (URA). All construction work will be done in collaboration with the Trade Institute of Pittsburgh (TIP) and Construction Junction (CJ). Students will work shoulder to shoulder with populations representing the communities where the UDBS practices.

The UDBS is a vertically integrated, interdisciplinary studio. The studio will be composed of students from the Masters of Architecture (MArch), Masters of Architecture Engineering and Construction Management (AECM), Bachelor of Architecture (BArch), Masters of Urban Design (MUD), and IDeATe Reality Computing Programs. The studio will meet Mondays, Wednesdays, and Fridays from 1:30PM to 4:20PM. Students enrolled in the Urban Design Build Studio (UDBS) HOME RE\_DEFINED Studio are required to enroll in 48\_496, PRACTICE RECONSIDERED (9CU). PRACTICE RECONSIDERED will meet on Mondays, Wednesdays, and Fridays from 12:30PM to 1:20PM. Mondays and Wednesdays will be utilized for collaboration with IDeATe in the Collaborative Making Center, Hunt Library.

S20



48-405/505 Studio  
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day + time TBD

# HOME RE\_DEFINED

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S20



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day + time TBD



# HUMANIZING BRUTALISM

## London's SouthBank Center in C21st

*"A thrilling hodgepodge of sprouting mushroom columns, jumbled geometries, cantilevered cubes, and precipitous terraces."*  
DR OTTO SAUMAREZ  
SMITH

Two of London's defining characteristics are its physical legacy of post-war brutalist architecture and its tradition of English drama. This studio will explore the seminal integration of these two art forms at London's landmark South Bank Centre and study how they may be adapted to serve the needs and capitalise on the technological opportunities in the 21st century. A semester-long individual project, the design of a flexible 500-seat chamber has the goal of symbiotically integrating

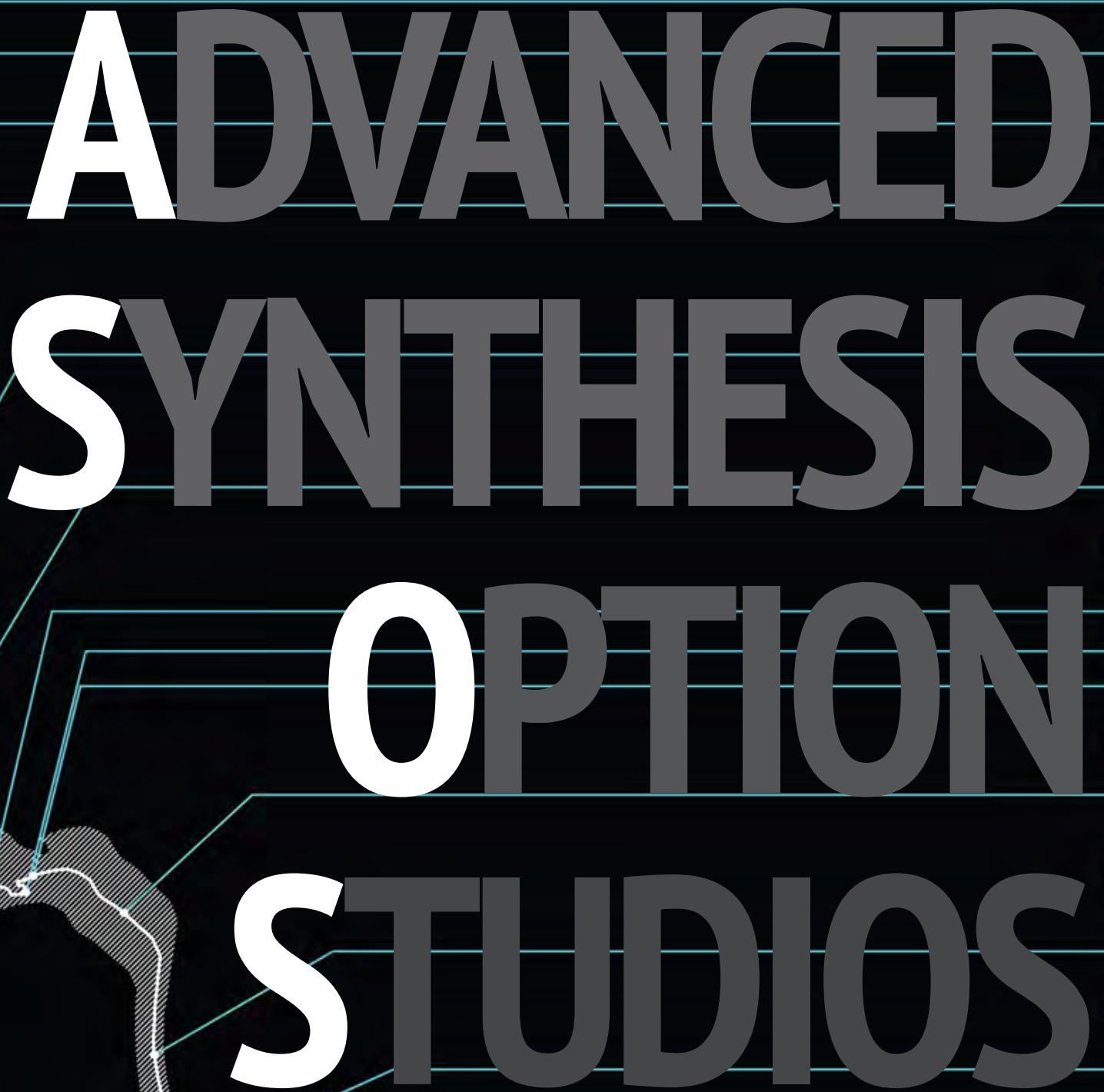
the existing venues, transforming the centre's identity. Students will address master planning the centre's expansion, building design and crafting of form and surface holistically. Interdisciplinary collaboration with drama and arts management students in the co-requisite theatre architecture seminars will be the basis for team research, programming and planning for the new chamber.



S20




48-405/505 Studio  
Hal Hayes  
day + time TBD

An aerial photograph of a coastal region is overlaid with a network of light blue lines. A prominent path, filled with a grey hatched pattern, winds through the terrain. On the right side of the map, a vertical list of numerical values is displayed, each followed by a 'k' (likely representing thousands).

# ADVANCED SYNTHESIS OPTION STUDIOS

13.7 k  
18.3 k  
21.6 k  
39.5 k  
35.0 k  
32.8 k  
11.4 k  
9.2 k  
28.7 k  
41.4 k  
31.2 k  
31.5 k  
32.5 k  
29.0 k

# F18-S20

Kilometers   
Statistical Miles