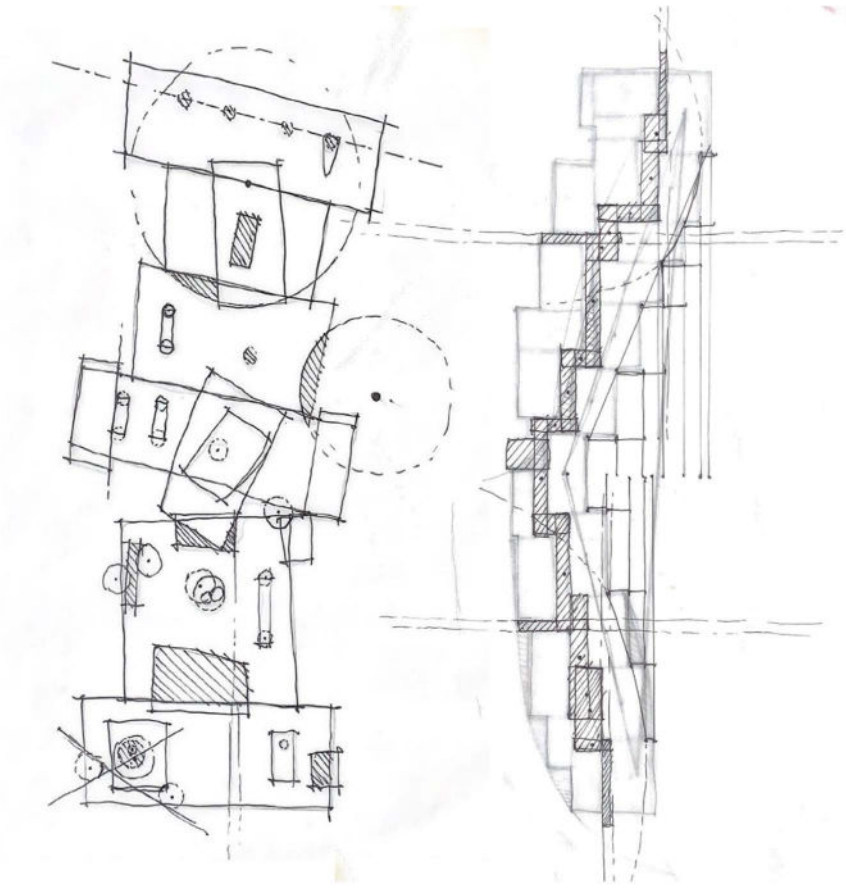


Repetition and Difference

Collective Living, Biophilia, and Mass Timber on the Campus of IIT in Chicago



Side-by-side analysis of a 'Poem' (c. 1965) by Saloua Raouda Choucair (1916-2017) and of the Crest Apartments by Michael Maltzan Architects (2016). Analysis by Angelica Conwell.

COORDINATORS: Ryan Roark and Michael Glynn

INSTRUCTORS: Michael Glynn, Anthony Hurtig, Matthew Messner, Brianda Mireles, Annabell Ren, Ryan Roark, Adam Rostek, Alex Shelly, Anna Szybowski

Repetition and Difference is a fourth-semester studio in the BArch curriculum at IIT. Because the largest project the students have done before this term is an 800-sqft house, one of the fundamental principles of this studio is to design units of a few different sizes and to **use repetition with strategic moments of difference and subtraction**.

The graduate student dormitory as a program is analogous in many ways to new forms of mixed-use co-housing that are starting to appear in denser city centers where housing crises loom. However, co-housing is still relatively rare in the US. This program gives second-year undergraduates the chance to experiment with potentially radical ideas about **sharing and collectivity**, within a context with which most of them are immediately familiar.

A housing project is a proposition about domestic life, including the **relationship between individual and society** and the **balance between privacy and collective engagement**. Through a series of precedents and in the final project, students are asked to consider what stories different formal approaches tell about private and public life. Students are also asked to consider sustainable and biophilic design principles, including the use of mass timber and other natural materials.

Our studio has three phases, plus an ongoing sketchbook assignment that ensures students are exposed to different scales and arrangements of units.

First, we investigate **part-to-part relationships** between units, through a precedent analysis and transformation, beginning with an existing multi-family project.

Second, we investigate **individual-to-collective relationships**, through a second precedent transformation project, in which students analyze the network of shared spaces in an existing dorm.

Third and finally, in the final project, students consider **relationships between "home" and site** (campus and neighborhood) as they propose a mass timber graduate student dormitory for IIT's campus.

Ultimately, students are asked to design a dormitory that will encourage young adults to enter the housing market with a level of comfort with **collectivity and density appropriate to the 21st-century city center**.

PHASE 01-A (1 week)

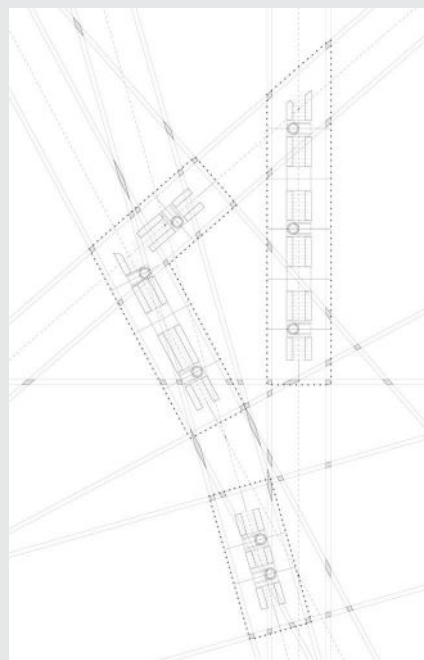
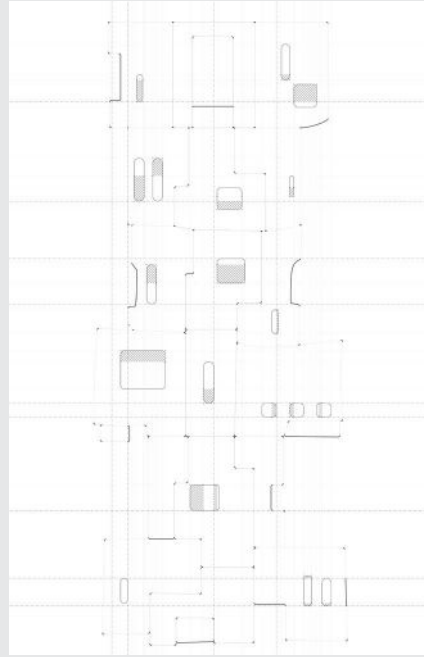
Part-to-Part: Precedent Study

We begin the studio with a formal analytical study of 20th-century **Lebanese artist Saloua Raouda Choucair's interform sculptures** (c. 1960s) in parallel with a similar study of a multi-unit housing project.

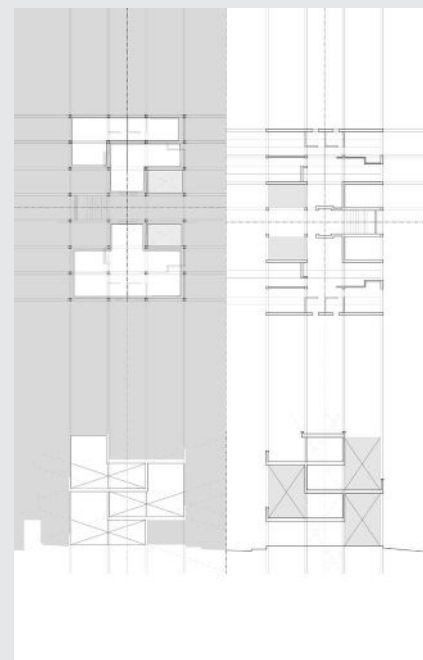
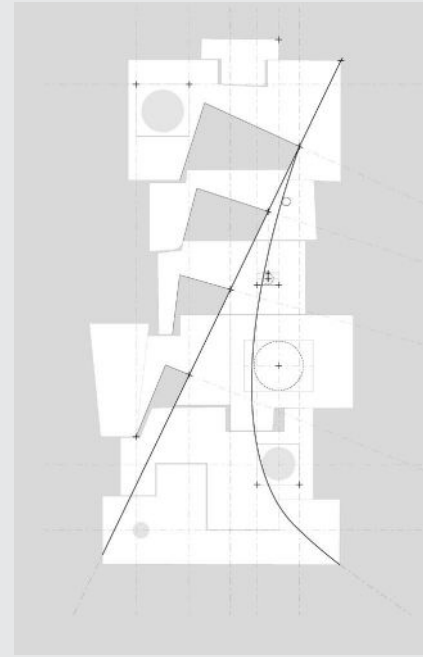
Although Choucair (1916-2017) was not religious, she chose to work in the tradition of Arabic art and used abstract geometries rather than naturalistic representations. Choucair's paintings and sculptures, including her modular "interforms" of the 1960s, use subtle geometric shifts to portray formal and scalar repetitions and differences. These works have been read as metaphors for society—and sometimes even for housing—due to subtle differences introduced into an overall similar archetype.

Students are asked to consider the degree to which **Choucair's work treads the line between a strategy based on aggregation and individual unit design** (cf. Moshe Safdie's Habitat 67) **or a strategy based on subdivision and design of the formal whole** (cf. SANAA's Apartments on Ave. Maréchal Fayolle). While Choucair's interformal sculptures are undeniably modular, there are often shared voids and larger forms created by the modules that obscure the "aggregative" reading.

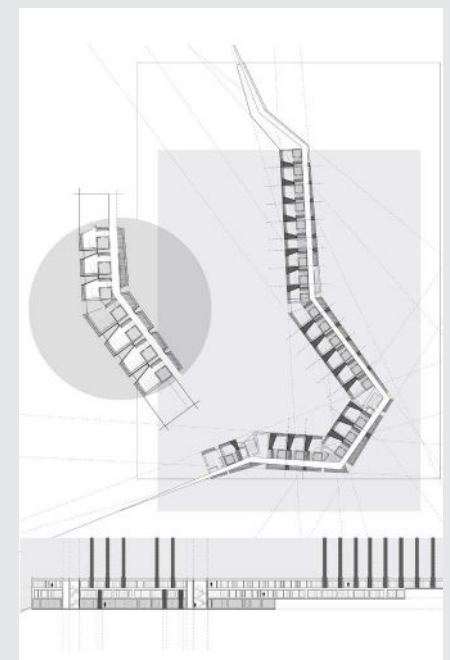
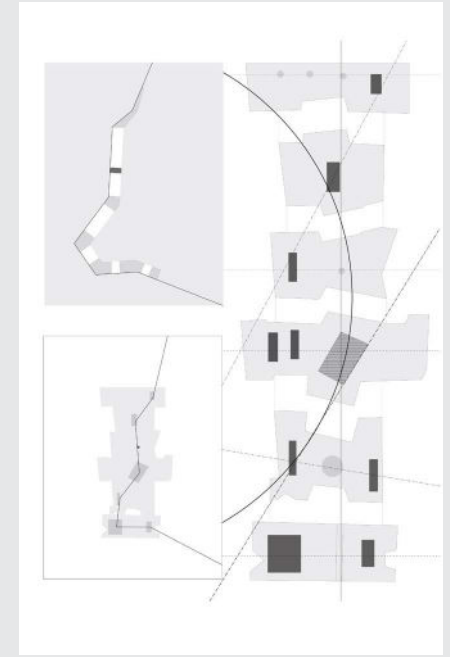
This exercise requires the students to **develop an abstract language** they can use to discuss both sculpture and building precedent in tandem in terms of "repetition with difference".



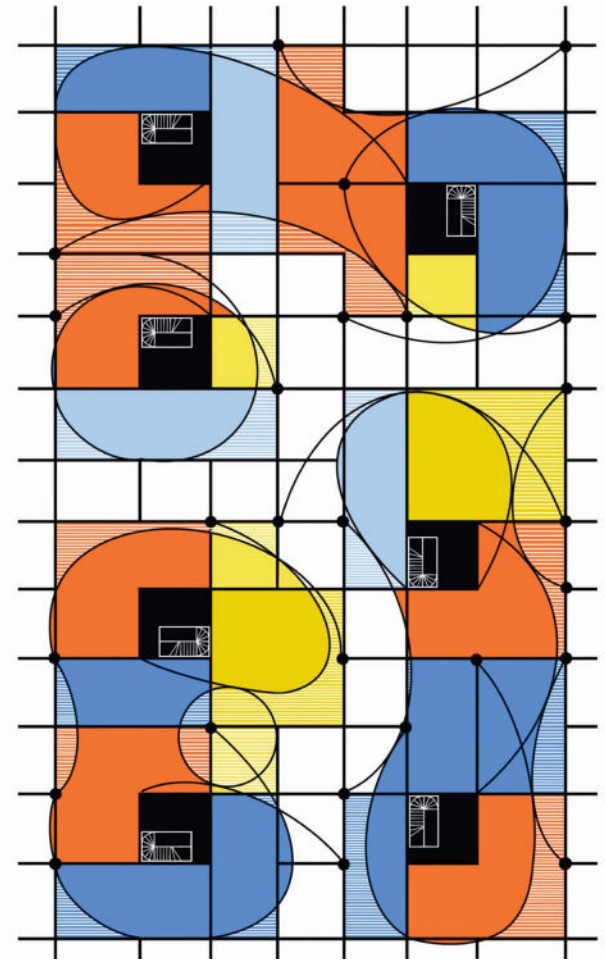
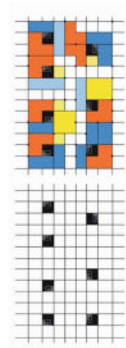
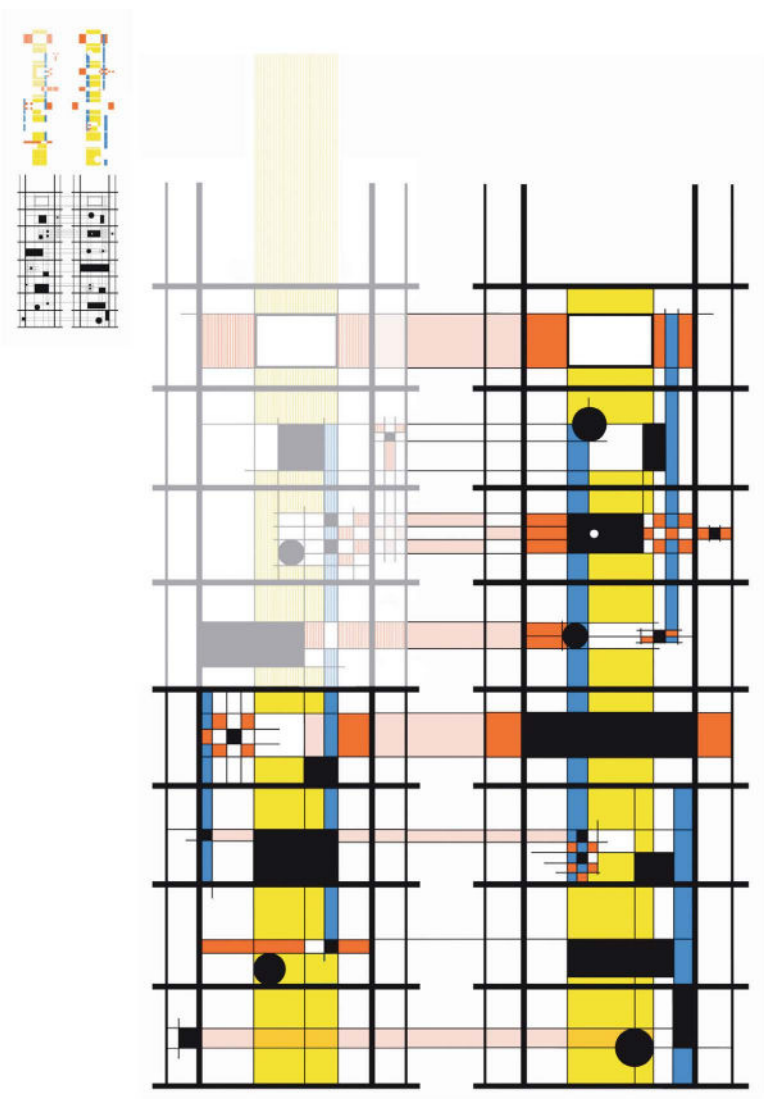
Analysis of *Poem*, c. 1960s (top), and Social Housing 1737 by Harquitectes, 2022 (bottom), by Jilliana Pilutti



Analysis of *Poem*, 1963-65 (top), and San Telmo Apartments by ERDC Arquitectos, 2017 (bottom), by Diego Barcenas



Analysis of *Poem*, c. 1965 (top), and Houses for Elderly People by Aires Mateus, 2010 (bottom), by Casey Kowalsky



Analysis of *Infinite Structure*, 1963-65, and Apartments on Ave. Maréchal Fayolle by SANAA, 2018, by Natalie Kuri Sayeg

PHASE 01-B (2 weeks)

Part-to-Part: Transformation

Along with 01-A, this “transformation” project asks the students to study closely the relationships between units.

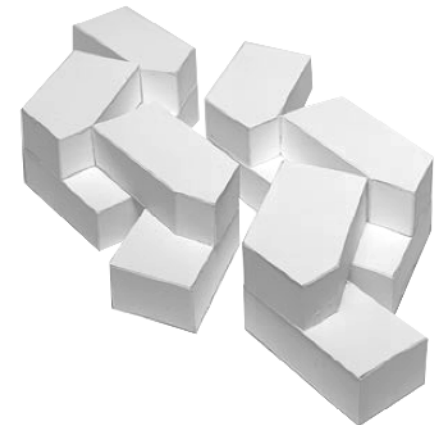
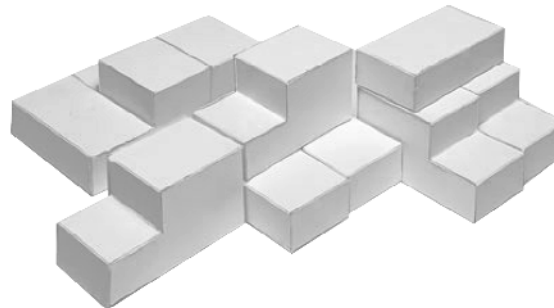
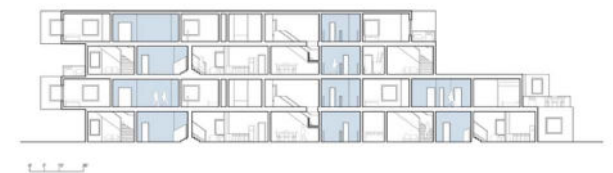
Simultaneous with their analyses from 01-A, the students develop a collection of abstracted modules or units based on those within their multi-unit housing precedents.

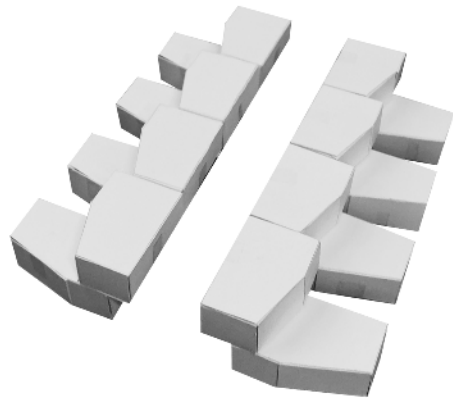
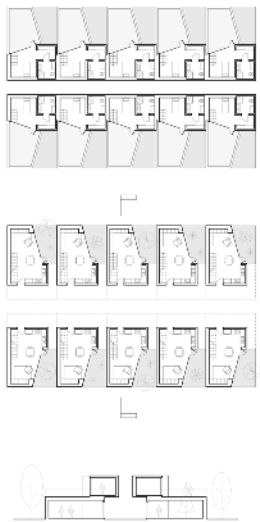
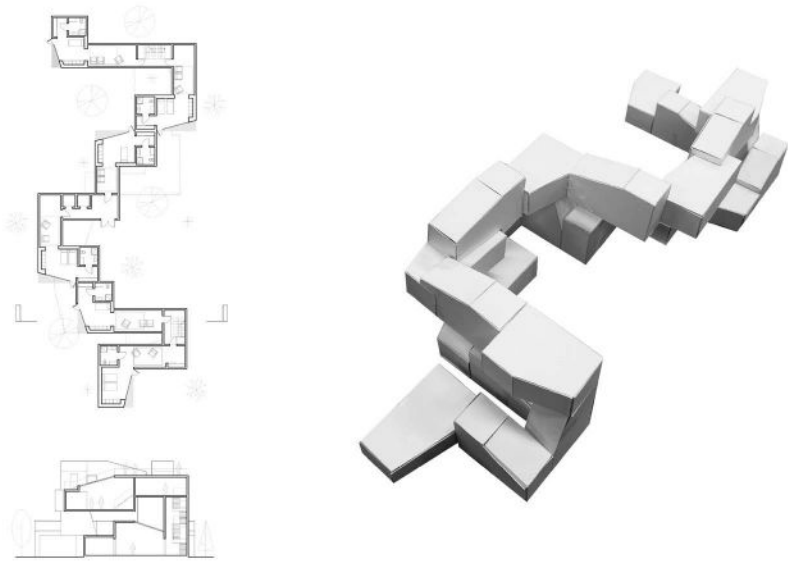
Students use these modules to create **a series of “siblings”**, beginning with an abstracted version of the precedent, that arrange their modules differently with respect to each other to create **new part-to-part relationships**, with both formal and social consequences.

Students are asked to pay special attention to **what can and cannot be shared**, including balconies, walls, views, circulation, light sources, amenities, and so on. By analogy with the sculptures, they also begin to propose methods of **introducing local differences** while still using repetition to their advantage.

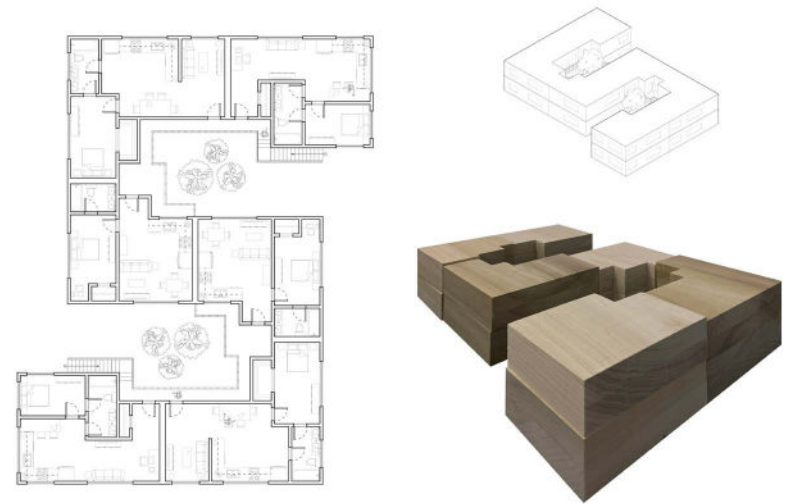
These aggregations are not to be considered as whole buildings, but as chunks of buildings focusing on the relationships of parts.

Right: Two “siblings” based on Michael Maltzan Architecture’s Crest Apartments in Los Angeles (2016) by Angelica Conwell.





Siblings based on Aires Mateus's Housing for Elderly People (2010)
by Casey Kowalsky



Siblings based on Talhouk + Arquitectos's Echeñique Housing (2018)
by Allison Murray

PHASE 02 (3 weeks)
Part-to-Collective

In Phase 02, students study the relationship between units and collective spaces, including corridors, lounges, pocket lounges, mixed use, and all other shared programming.

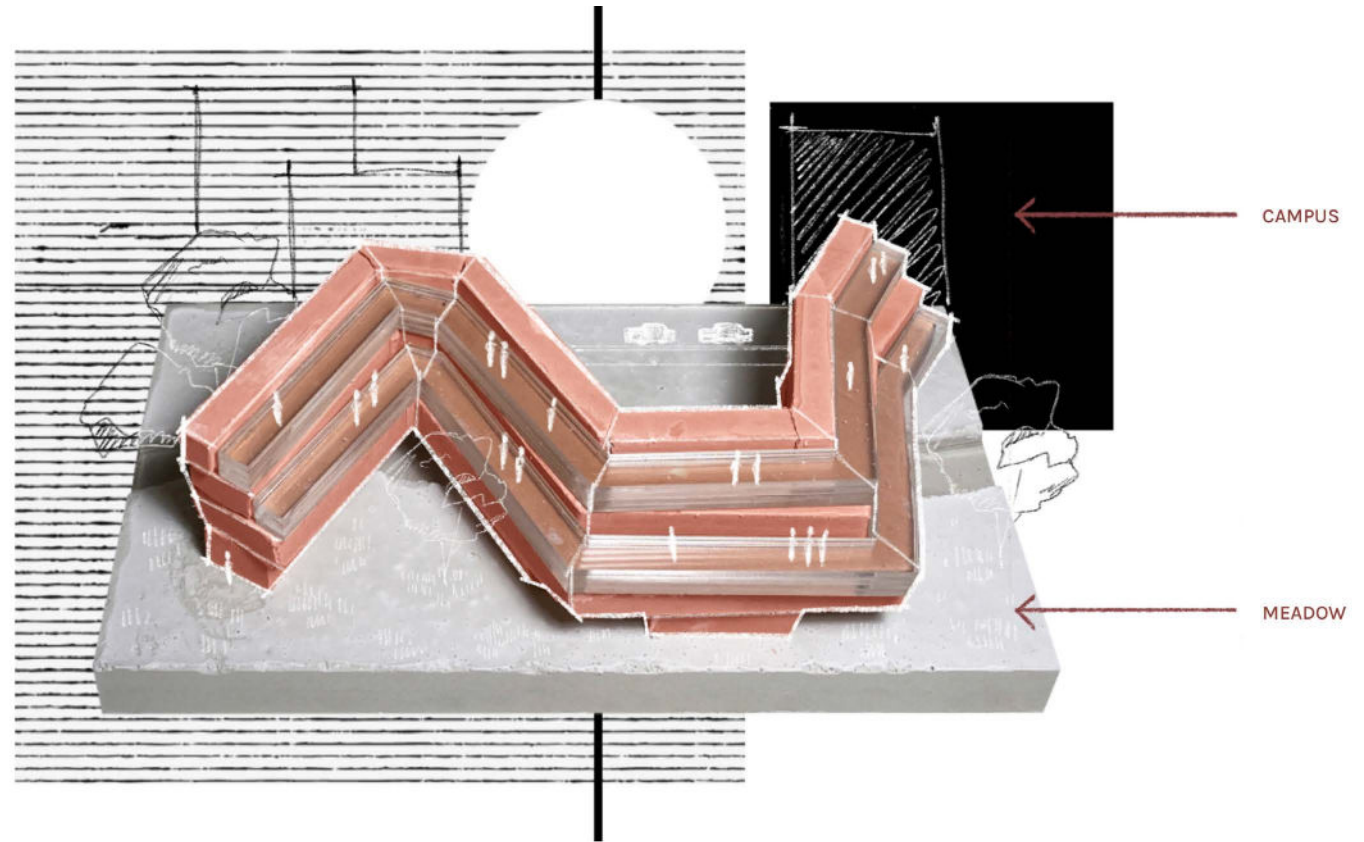
Each student studies a precedent dormitory to understand its **network of shared spaces** and how they are connected to each other and to the larger campus and city context.

Students abstract an overall massing of the precedent and make a series of diagrams exploring the limits of the ratio of “private” (dorm rooms) to “public” space; i.e., making the ratio lower or higher. This may mean shrinking or expanding all of the common spaces proportionally, eliminating/ adding local public spaces like pocket lounges, and/or consolidating public spaces, among other possible strategies.

Students pick one transformed arrangement to build into a **physical model which should highlight the network of spaces that support and connect the dwelling units**, rather than foregrounding the units.

At the end of Phase 02, the students should be able to visualize the whole system of connected shared spaces within the dormitory.

Right: Analysis via transformation of James Stirling’s Florey Building at Oxford (1971) by Casey Kowalsky.



ORIGINAL MASSING

ELONGATED MASSING

CURVED MASSING

CURVED MASSING

CURVED MASSING

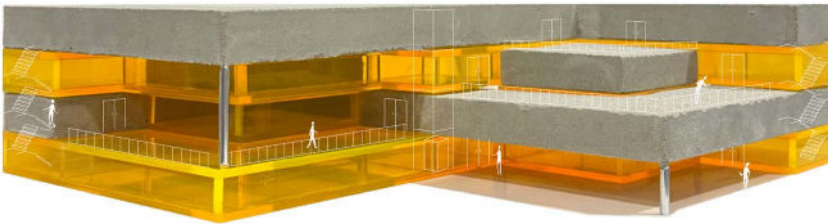
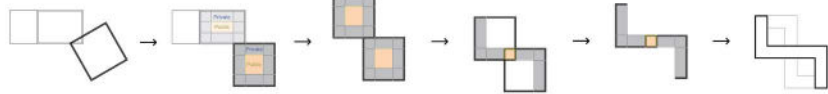
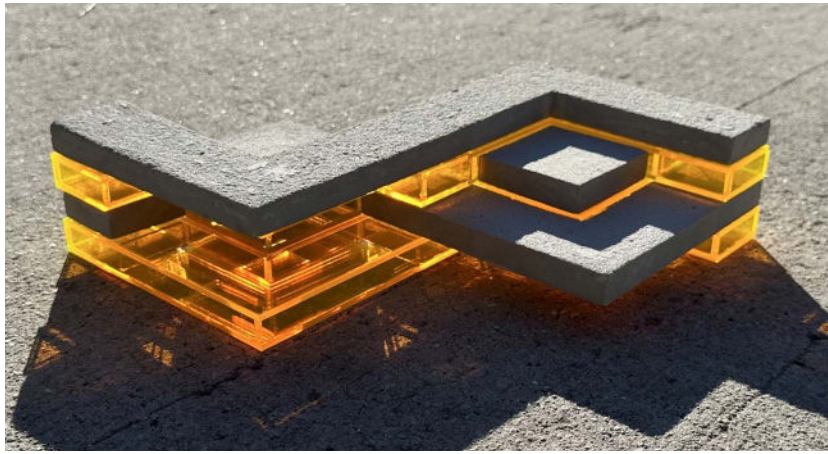
ISOLATED TO CAMPUS BOUNDARY

ISOLATED TO CAMPUS BOUNDARY

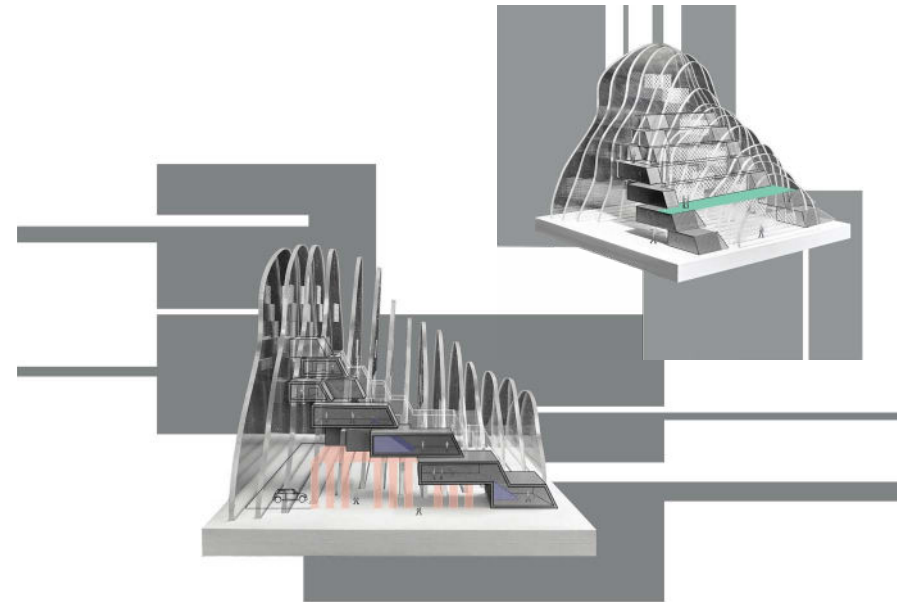
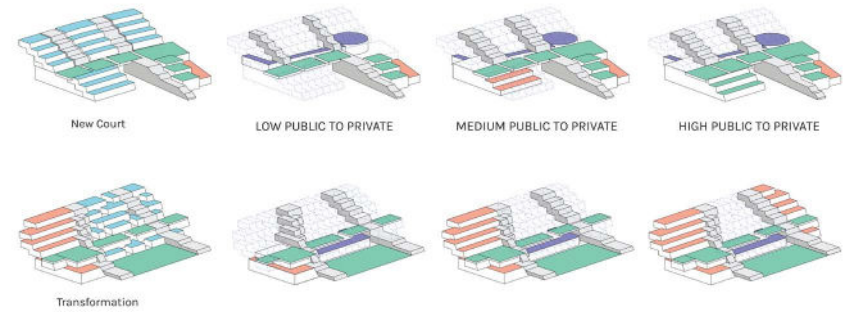
BRIDGE CAMPUS AND MEADOW

ISOLATED TO CAMPUS BOUNDARY

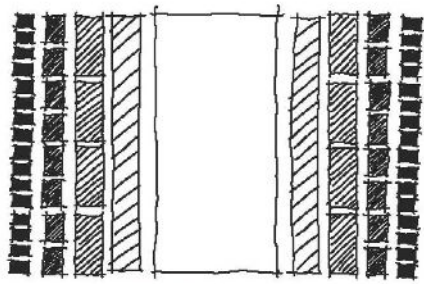
BRIDGE CAMPUS AND MEADOW



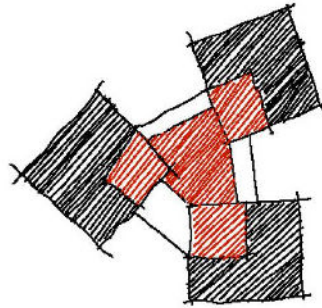
Analysis by Transformation of Barkow Leibinger's Sid Richardson Residential College at Rice University (2021) by Amy Lee



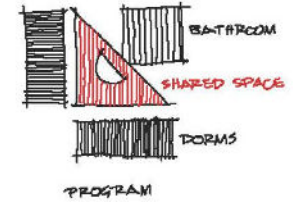
Analysis by Transformation of Denys Lasdun's New Court at Christ's College, Cambridge (1966) by Miranda Santamaria



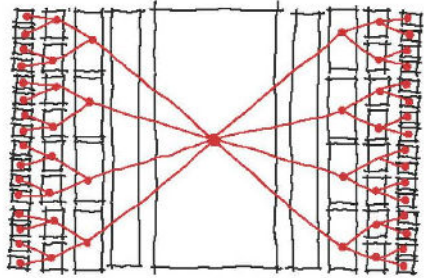
PRIVACY LEVELS



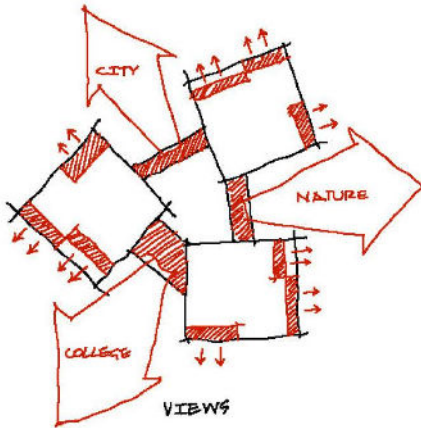
ORIENTATION



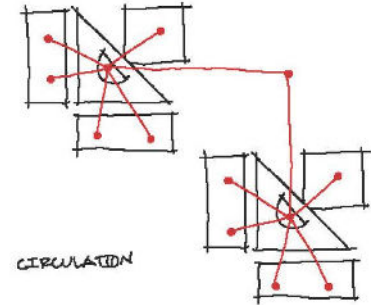
PROGRAM



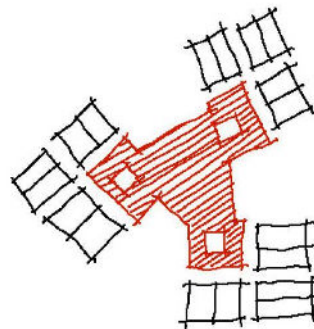
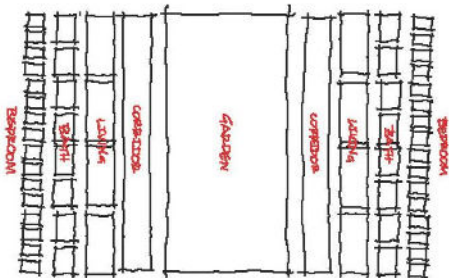
CIRCULATION



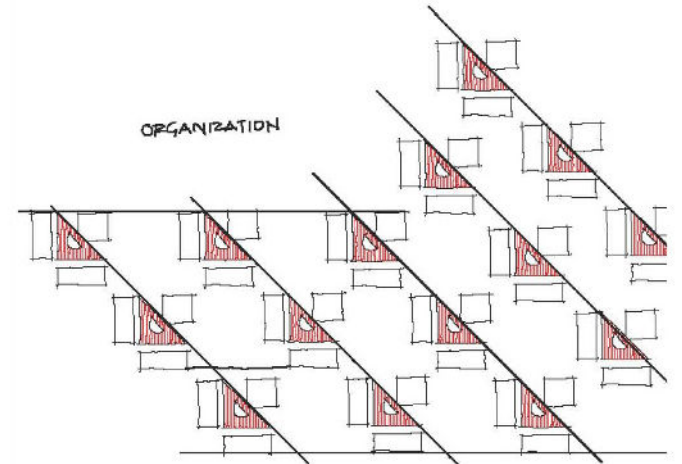
VIEWS



CIRCULATION



ORGANIZATION



Interactive Reviews for Phases 01 and 02 require students to study and diagram several of their classmates' precedents and work with those precedents, to be considered as **collective research** for their final projects. Diagrams by Natalie Kuri Sayeg.

PHASE 03 (8 weeks)
Home-to-Campus

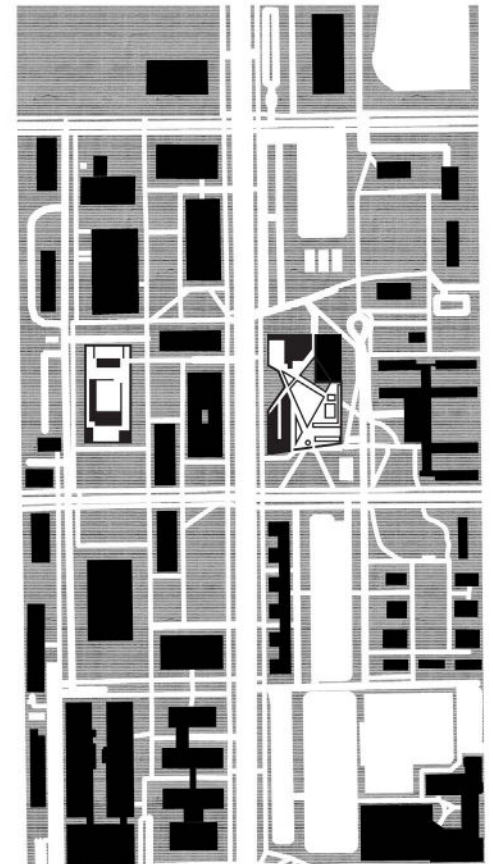
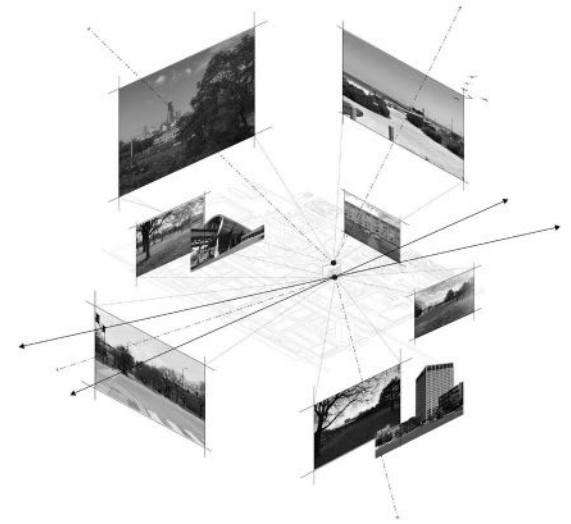
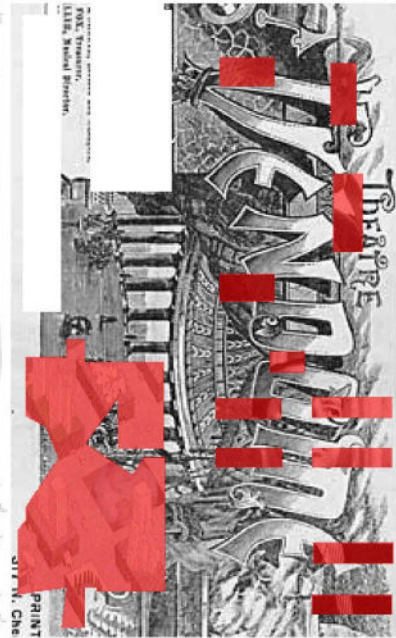
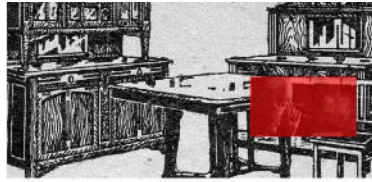
Students begin their proposals by considering potential relationships between a new dormitory building with a campus-facing “hub” and the existing historic IIT campus in Chicago, as well as its neighborhood, Bronzeville.

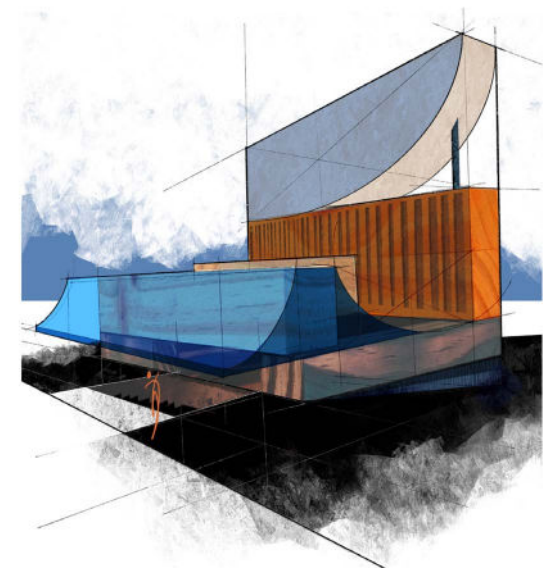
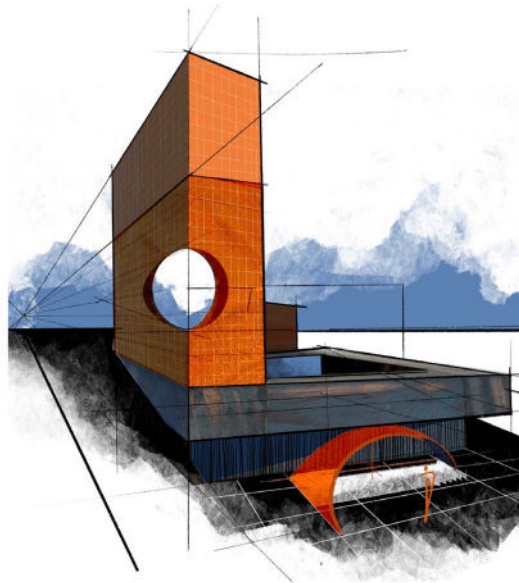
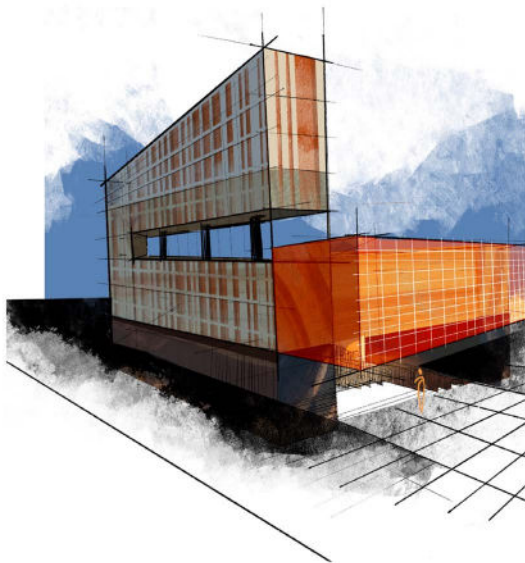
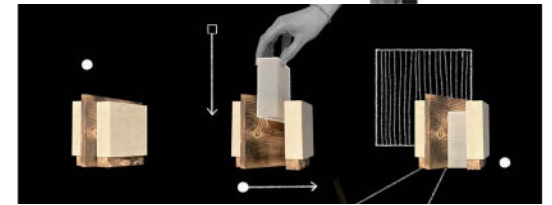
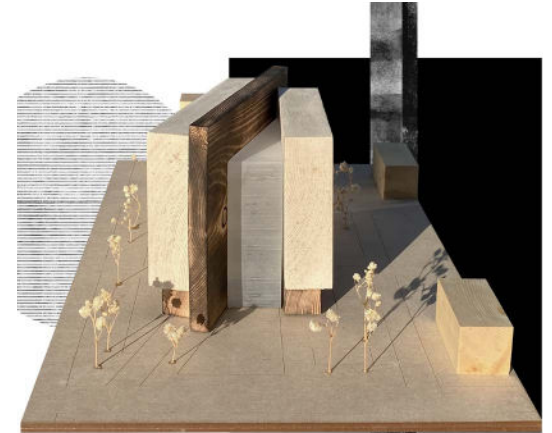
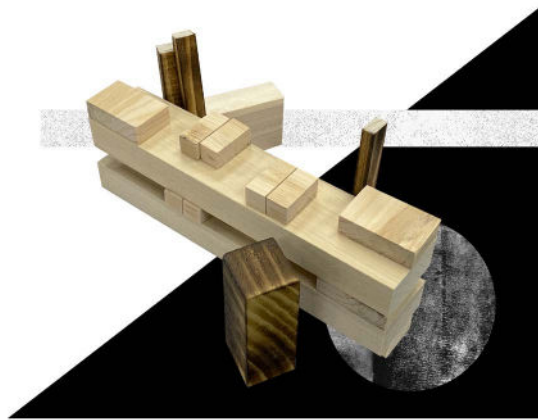
Students map the existing network of pathways and public spaces on campus to make an argument for the new hub’s program and how it ties into the residential program of the dorm.

This phase includes a structures design and detailing **workshop on mass timber**, a number of **facade studies** to develop ideas about material, a **field trip to the International Masonry Institute** to learn about masonry both traditional and contemporary, a **sustainability workshop**, a charrette leading to midterm review, and all of the work through to the final proposal.

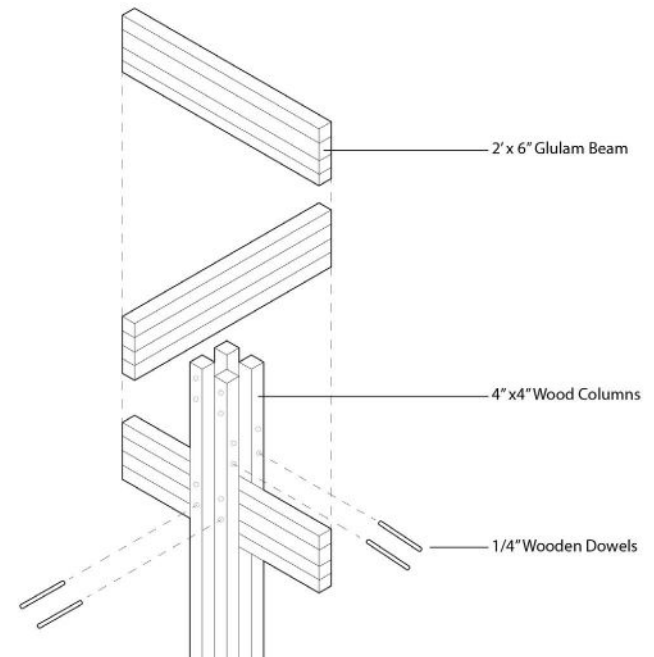
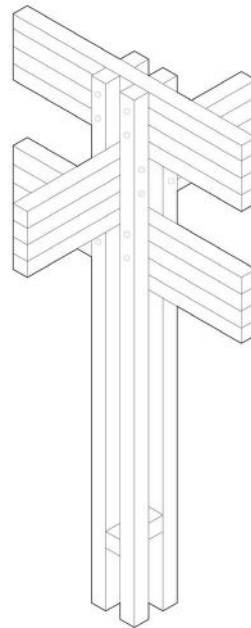
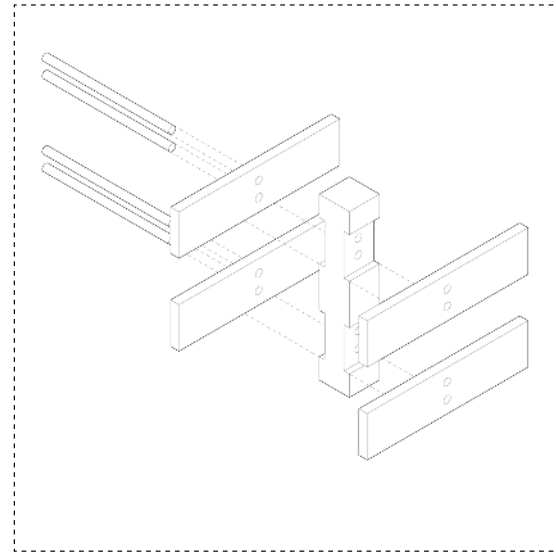
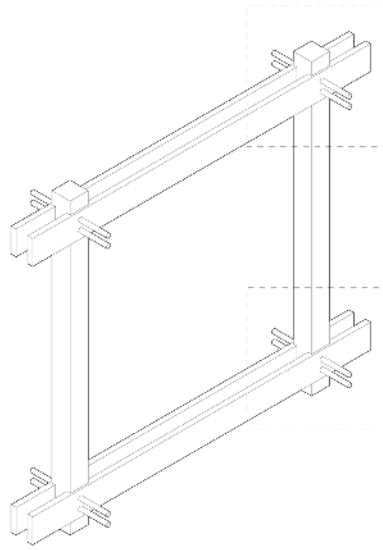
Near Right: Campus map by Ronan Schneider showing the “Black Mecca” culture of Bronzeville that pre-dated Mies van der Rohe’s campus plan.

Far Right: Expanded view study and Nolli Plan-style campus plan, showing network of publicly accessible spaces on campus, by Casey Kowalsky.





Midterm Charrette (2 weeks). Based on Phases 01-02 and initial site studies, students prepared three massing schemes to discuss at midterm. Models (above) by Casey Kowalsky. Sketches (below) by Natalie Kuri Sayeg.



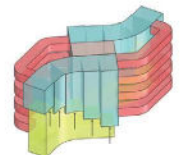
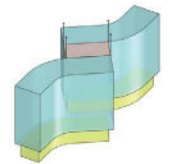
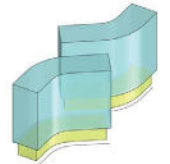
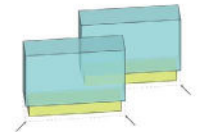
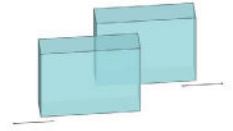
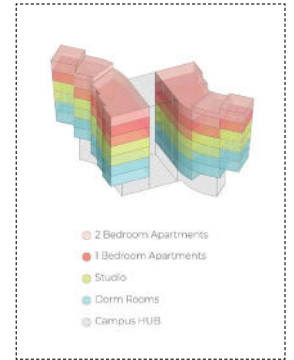
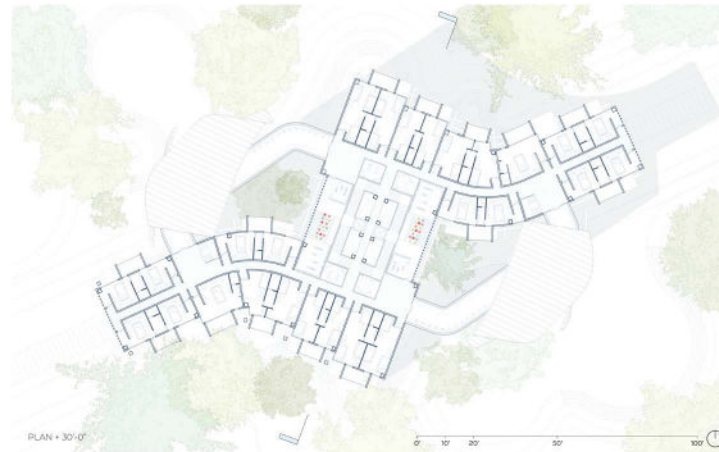
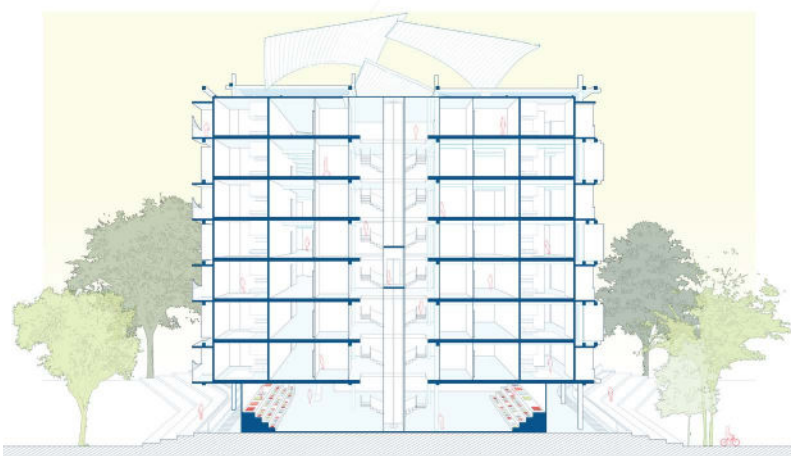
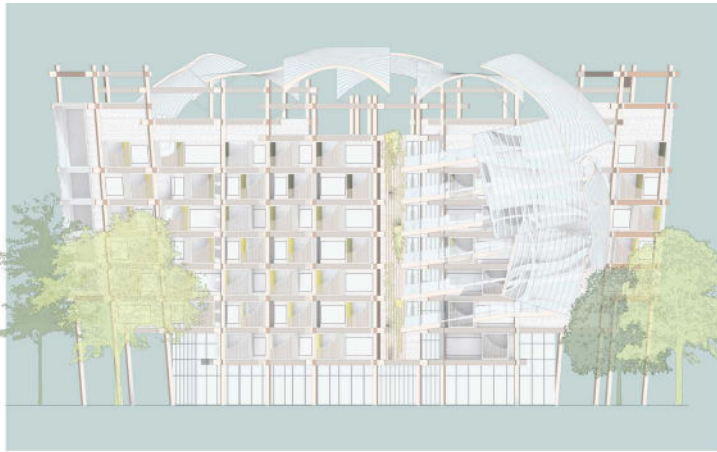
Mass Timber Workshop (1 week). 3"=1' scale details were made using only wood with no metal hardware. Models and drawings by (top) Jasmine Chung, Casey Kowalsky, and Paul Lim and (bottom) Kacper Drag and Allison Murray.

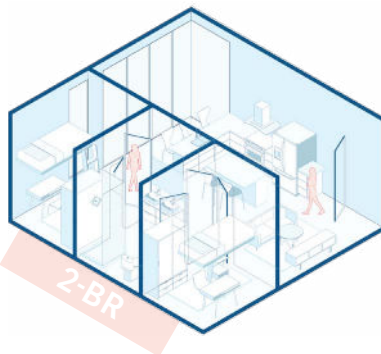
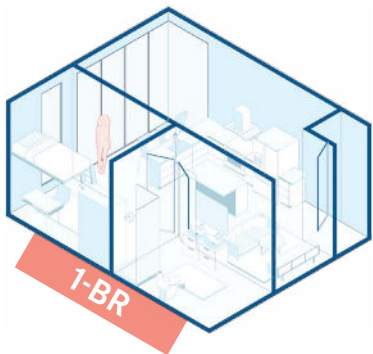
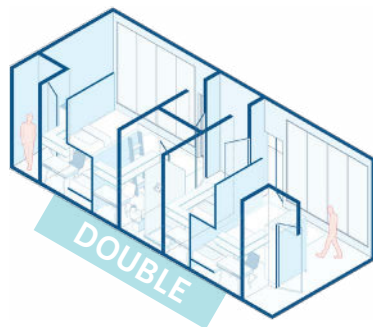
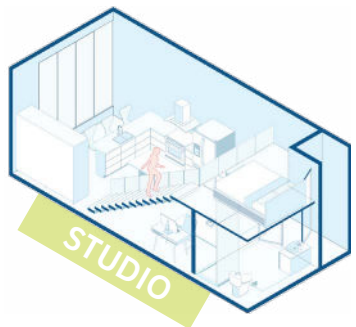
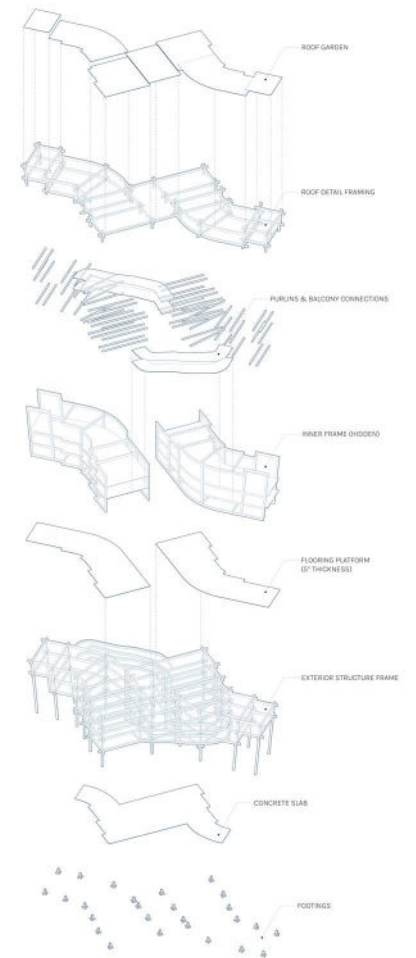
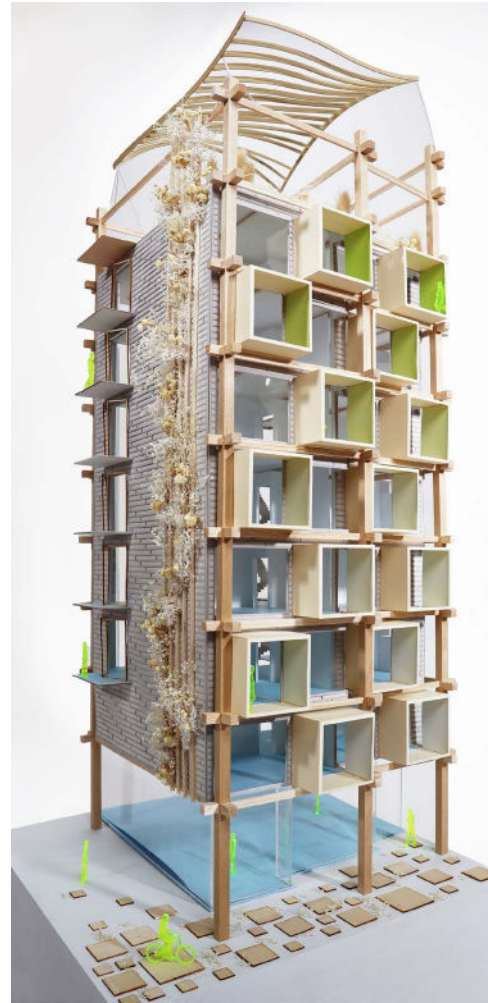
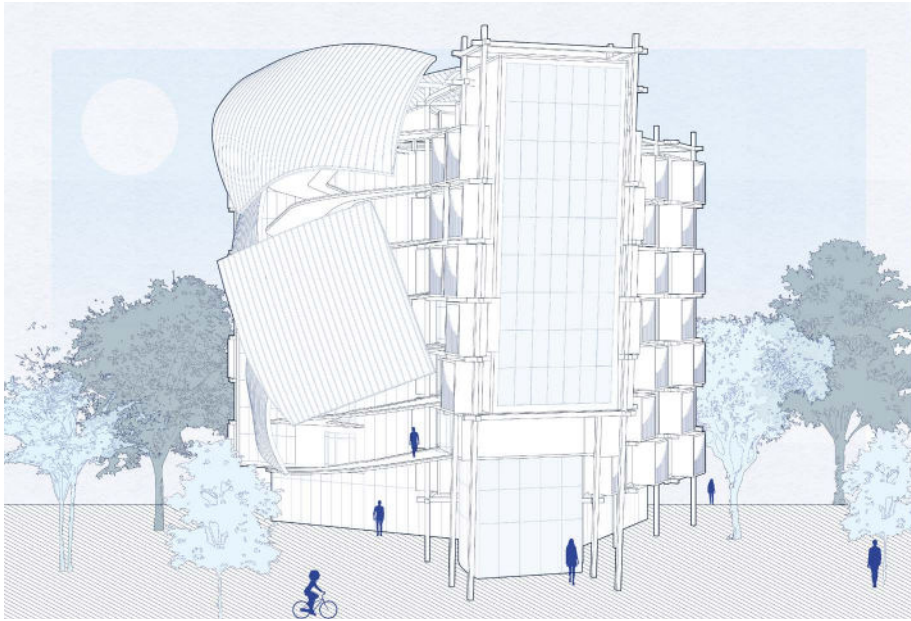


Facade Studies. As students work through their chosen massing scheme, they work in parallel through facade studies to develop a material language. Left: Casey Kowalsky. Center: Abigail Hossler. Right: Jair Delgado.

FINAL PROJECT 1 by Jilliana Pilutti

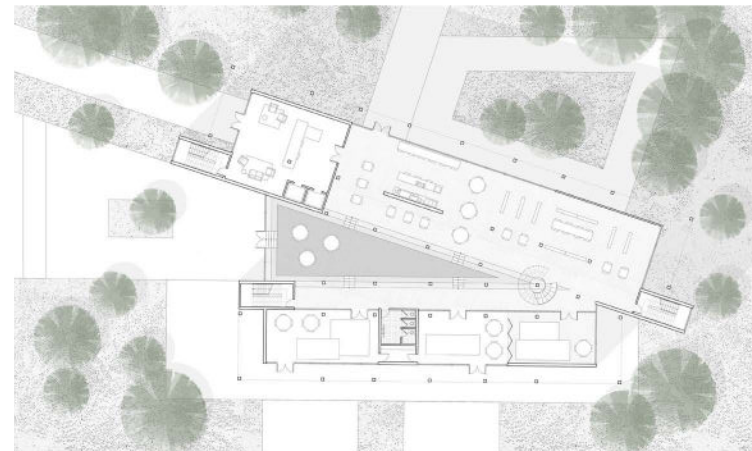
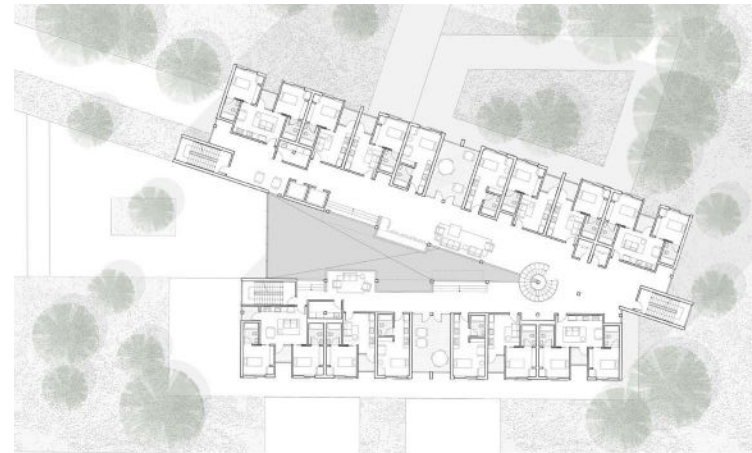
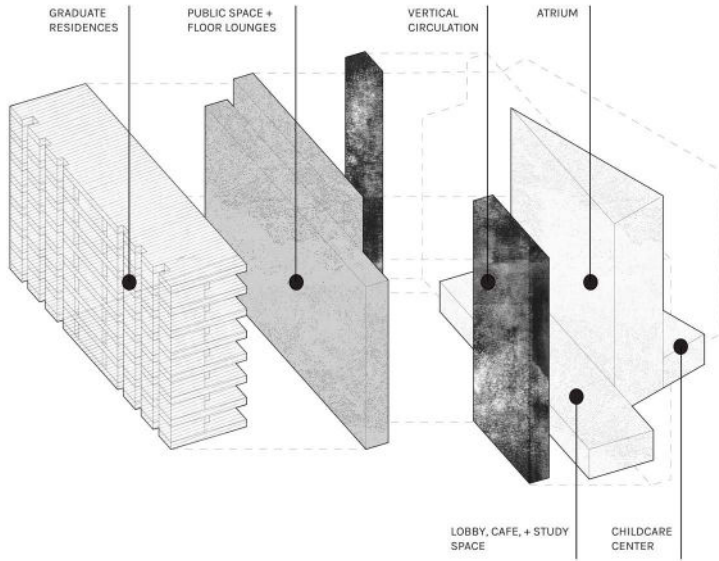
Botanica Hall ...a mass timber grad student dormitory that maximizes residents' interaction with nature, with an unconditioned central atrium connecting all floors of the building and a network of public balconies.





FINAL PROJECT 2 by Casey Kowalsky

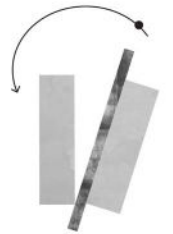
Converging Halls ...a mass timber grad student dormitory that encourages connection on a small and large scale, with an atrium design reminiscent of demolished Bronzeville housing Mecca Flats.



IDENTIFY HISTORICAL PRECEDENT AND COMMUNAL ORGANIZATION



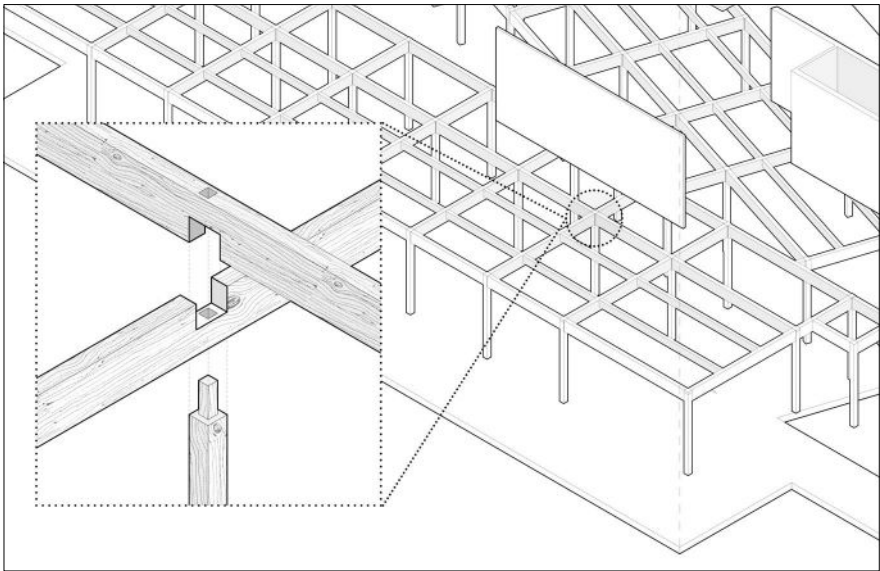
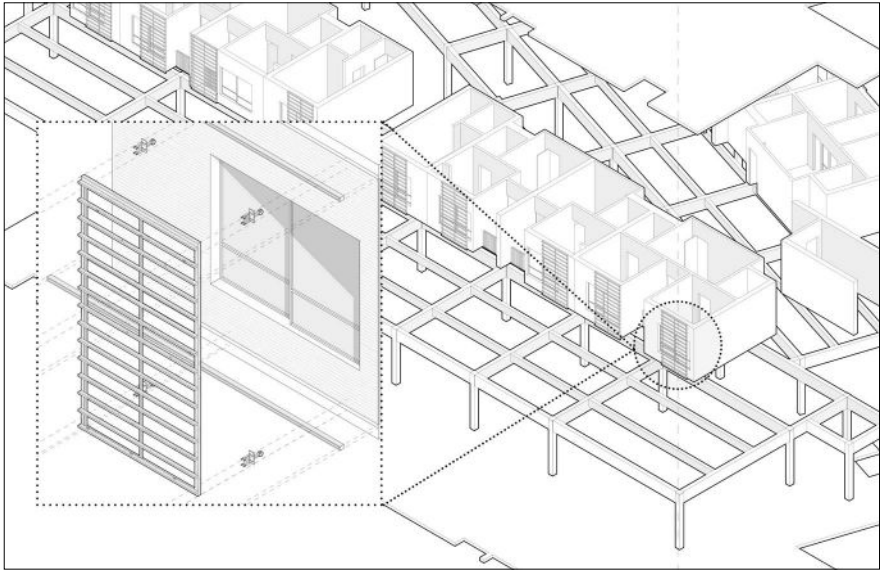
ACCENTUATE CENTERLINE AND PRIMARY AXIS IN RESPECT TO CAMPUS GRID



ROTATE MASS FACING 33RD ST. T.O. ATTRACT BRONZEVILLE COMMUNITY

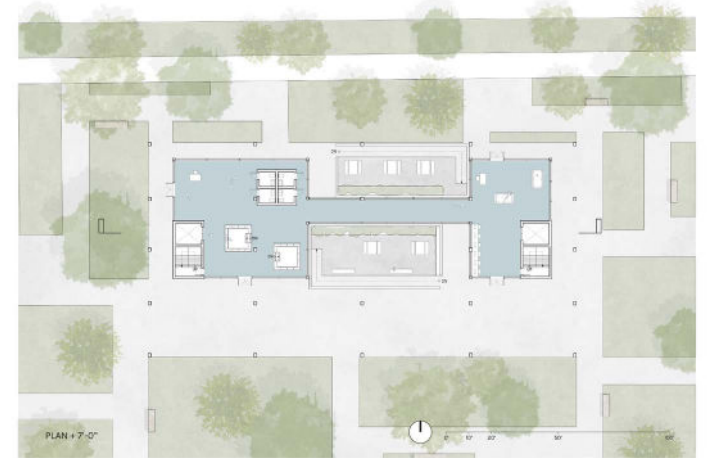
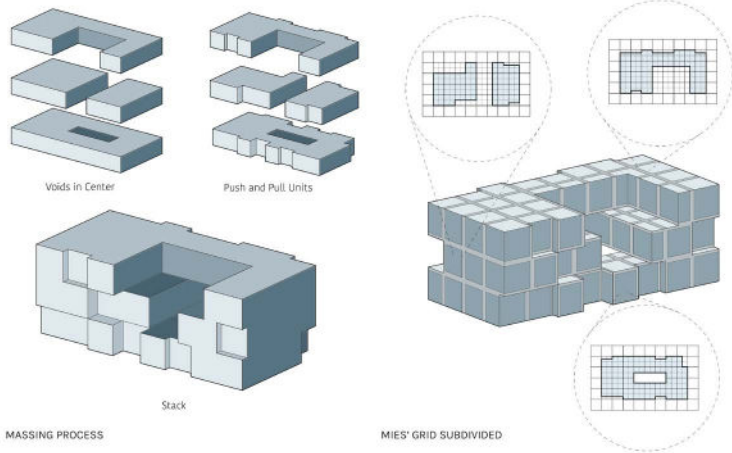


SCALE MASSES TO CREATE "HUB" SPACE ON GROUND AND RESIDENTIAL FLOORS



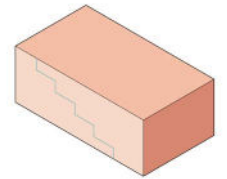
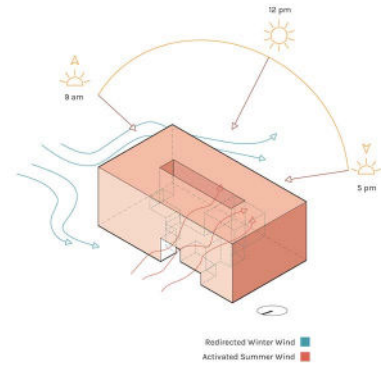
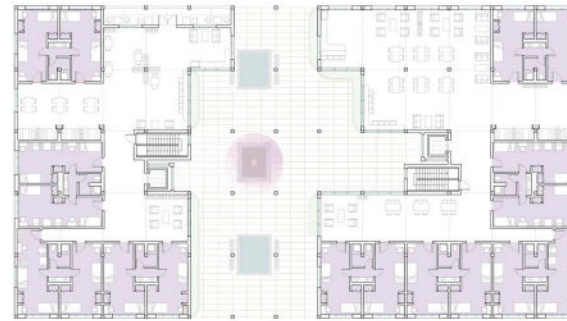
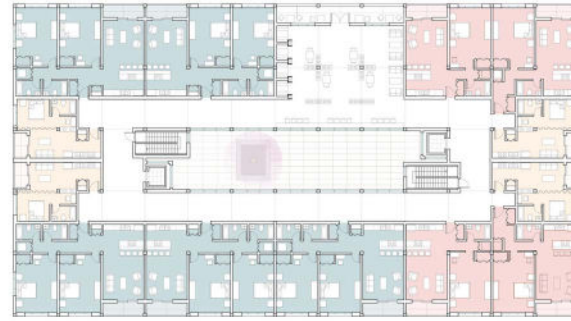
FINAL PROJECT 3 by Lauren Jimenez

Congregate Village ...a mass timber grad student dormitory that brings the natural world inside and turns all hallways into social spaces in the interest of greater social interaction.

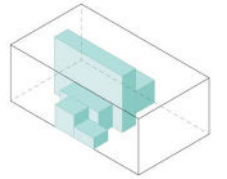


FINAL PROJECT 4 by Miranda Santamaria

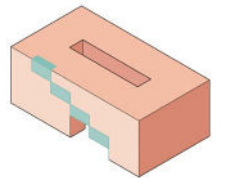
Hábitat D'Impronta ...a mass timber grad student dormitory with a fracture in its rectangular mass that invites and connects passerby and residents alike to engage with its core.



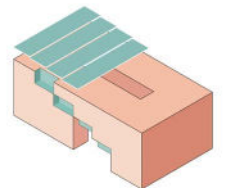
Establish Fracture



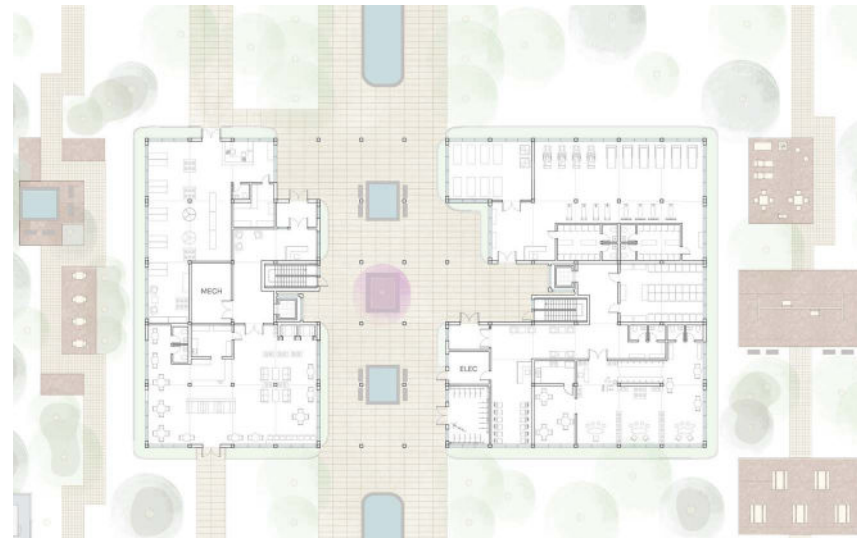
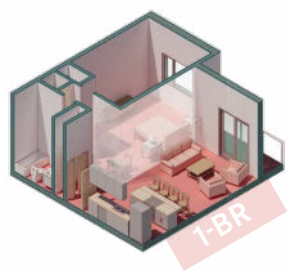
Subtract Inner Void



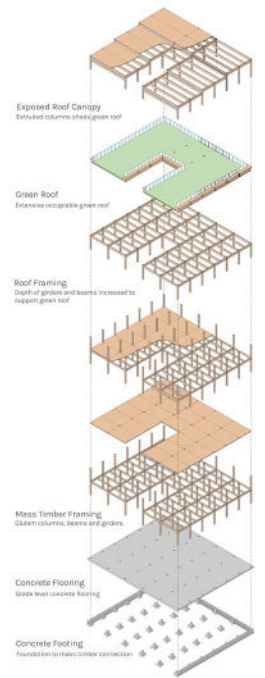
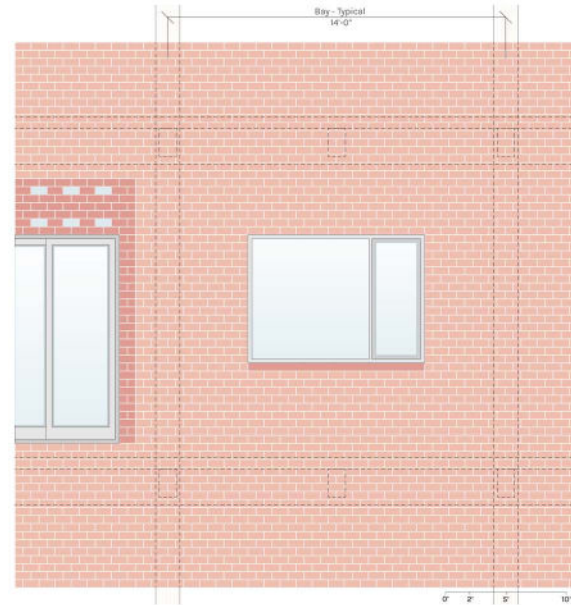
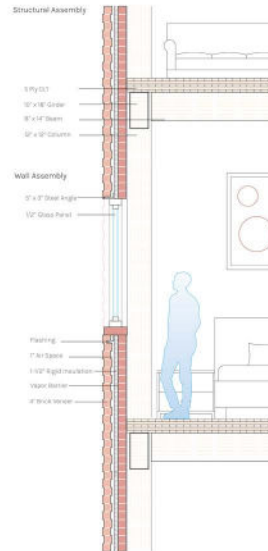
Define Hub Spaces



Push and Pull



0' 10' 20' 50' 100'



FINAL PROJECT 5 by Natalie Kuri Sayeg

Baukunst Hall ...a mass timber grad student dormitory with natural materials and human-scaled nooks that contrast with existing modernist context and foster a feeling of retreat within the residence.

