

---

**FIONA KÄCH**  
CED M.Arch 23'

## TABLE OF CONTENTS

---

Concord Alley: Mass Timber Effect	1
Monument to Bygone Soils: M. Arch Thesis	5
The Hive: James R. Boyce Housing Studio	9
Serpentine Pool: Daylighting Analysis	13
Window Analysis: Pfafers Center for Geriatric Psychiatry	15
Tectonic Precedent: School in Orsonnes	16
Double Helix: Market Place	17
Voiding the Void: Residence	19
Dolmen X Dom-Ino: Neighborhood Meeting Space	21

## EDUCATION

---

### M.Arch at UC Berkeley College of Environmental Design:

Malcolm Reynolds Fellowship recipient

Ray Watson Prize recipient

### Claremont McKenna College:

B.A in Environmental Science

Senior Thesis: Unearthing The Past: Concretions Of The Jurassic Fernie Formation

May 2023

## EXPERIENCE and LEADERSHIP

---

### Fabricator for *TurkxTaylor Initiative*:

Jan 2024

-Set up digital files and produced physical models of the Tenderloin neighborhood for the *Transition Times: Re-Membering Anticarceral Resistance in the Tenderloin* exhibit at the Tenderloin Museum.

### Graduate Student Instructor for UC Berkeley CED:

July 2021 - May 2023

-Courses taught:

-[IN]Arch Summer [In]stitute program

-Introduction to Visual Representation and Drawing, Fundamentals of Architectural Design

-Created lessons on: Rhino, Photoshop, Illustrator, Vray and InDesign for students.

-Provided critical design feedback and led studio reviews.

### Editor and Graphics Editor at Room One Thousand:

Aug 2022 - May 2023

-UC Berkeley's fully student run architectural journal.

-Communicated with authors, edited their work, and produced articles for the publication.

-Created visuals and edited design layout for select articles and the journal as a whole.

### Graduate Student Researcher for UC Berkeley CED:

May 2022 - Aug 2023

-Member of the NAAB team in charge of putting together the department's 2023 NAAB Report.

-Compiled data, organized files and gathered content for report. Formatted report in InDesign.

### Program Coordinator for Diversity Platform of the Arcus Endowment at UC Berkeley:

Sept 2021 - May 2022

-Created posters, application, and other publishing material for the Diversity Platform grant.

-Coordinated and managed applications in preparation for the evaluation of applicants.

### Lab technician at Soil Ecology and Biology Lab at Michigan State University:

June 2018 - March 2019

-Laboratory procedures and field work for a soil incubation project.

-Analyzed data using R and created compelling visualizations.

### Marketing Intern at TEN Arquitectos:

July 2016 - Aug 2016

-Responsible for English-Spanish translations and updating website.

-Compiled files and research for upcoming publications and competitions.

## SKILLS

---

### CAD

Rhino3D  
Grasshopper  
Climate Studio

### Graphic

Illustrator  
Photoshop  
InDesign  
LightRoom

### Machinery

Laser cutter  
Zund cutter  
CNC router  
3D Printing  
Woodworking

### Languages

Spanish  
German

## PUBLICATIONS

Käch, F. *Garment Sans*. Arkisnak. Issue 1: Delay of the Maximum. 2024

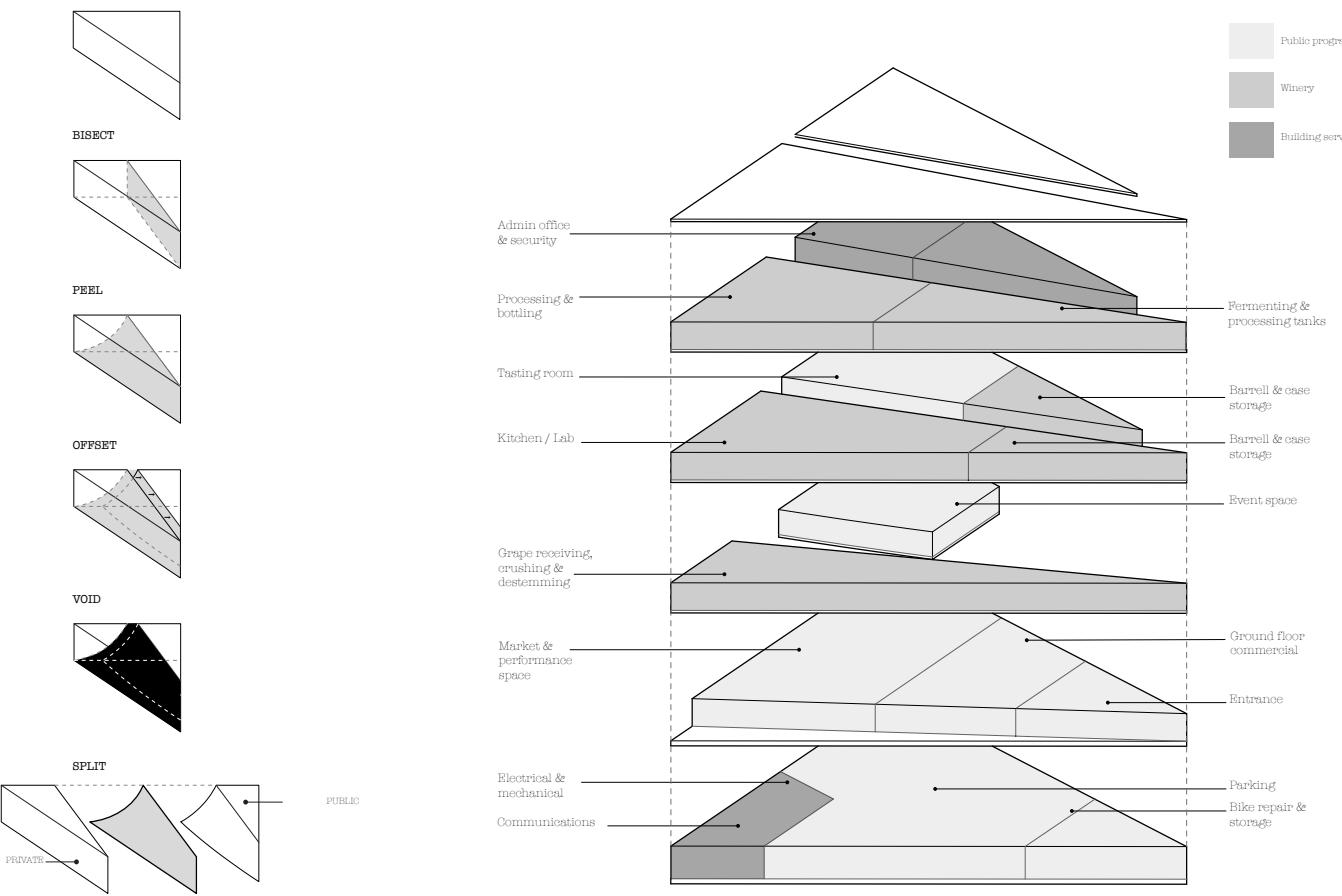
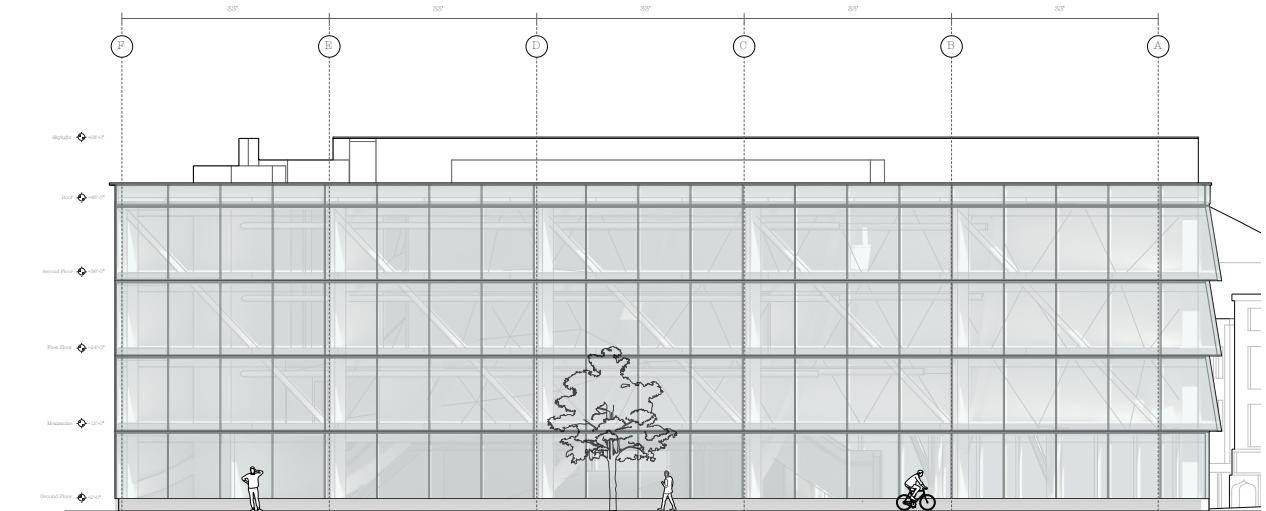
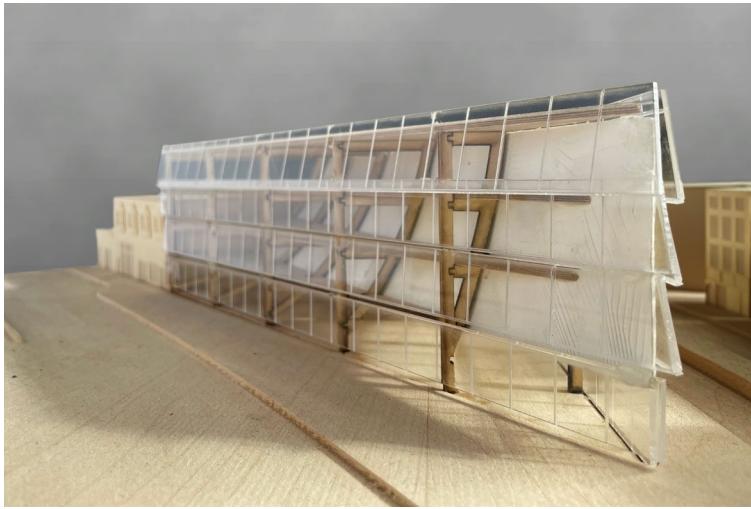
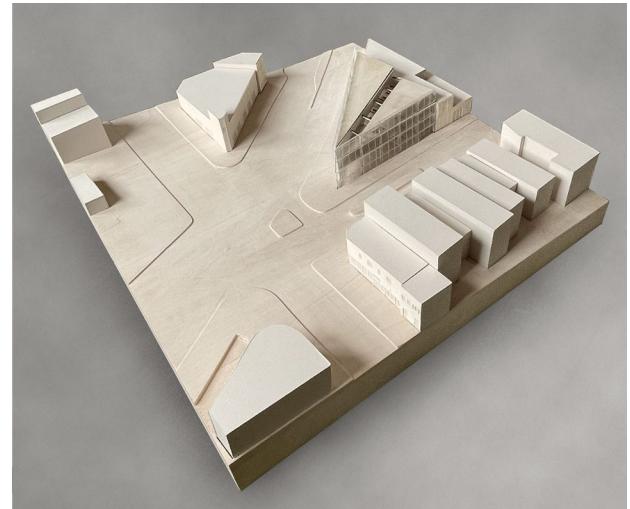
## CONCORD ALLEY: MASS TIMBER EFFECT

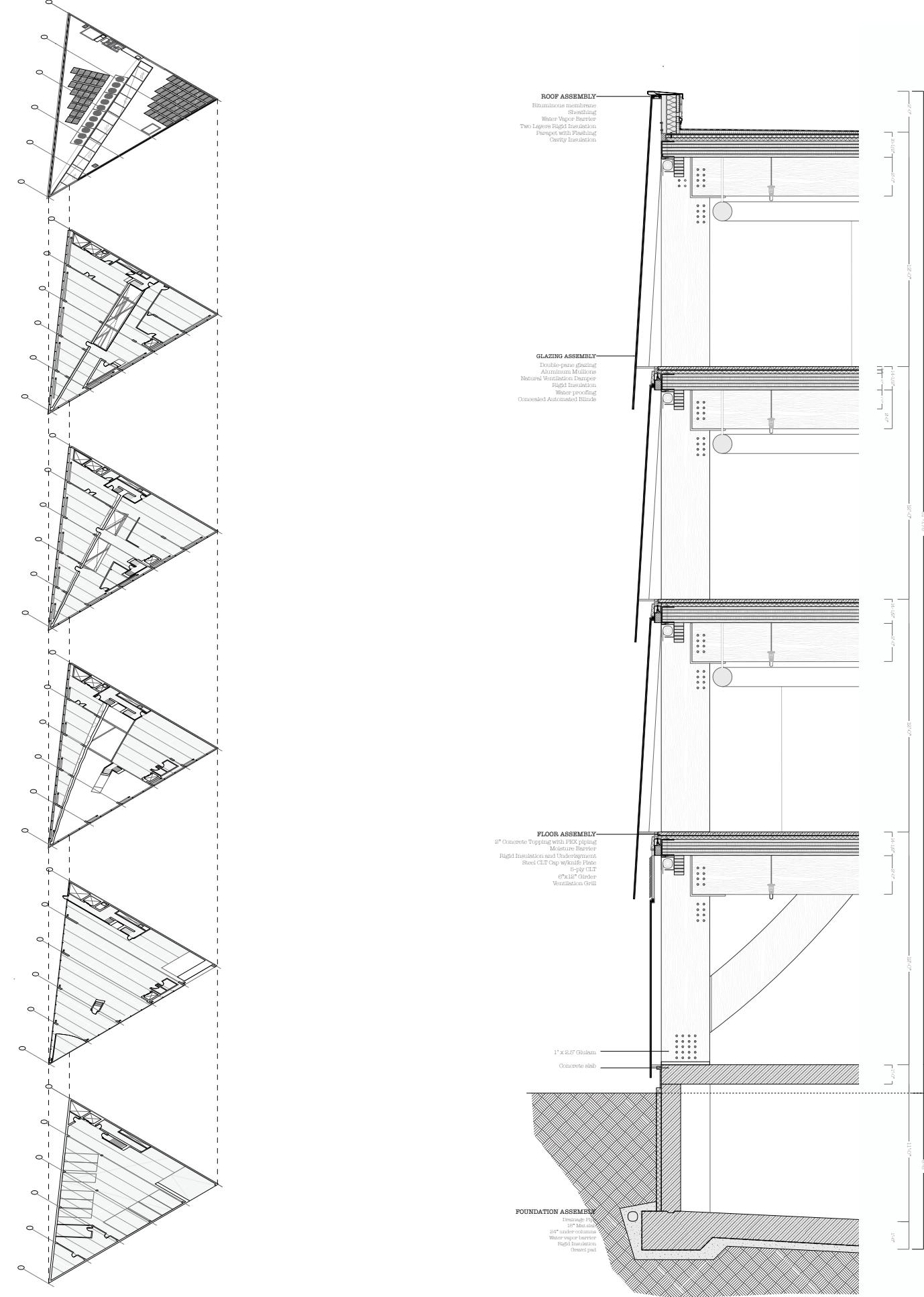
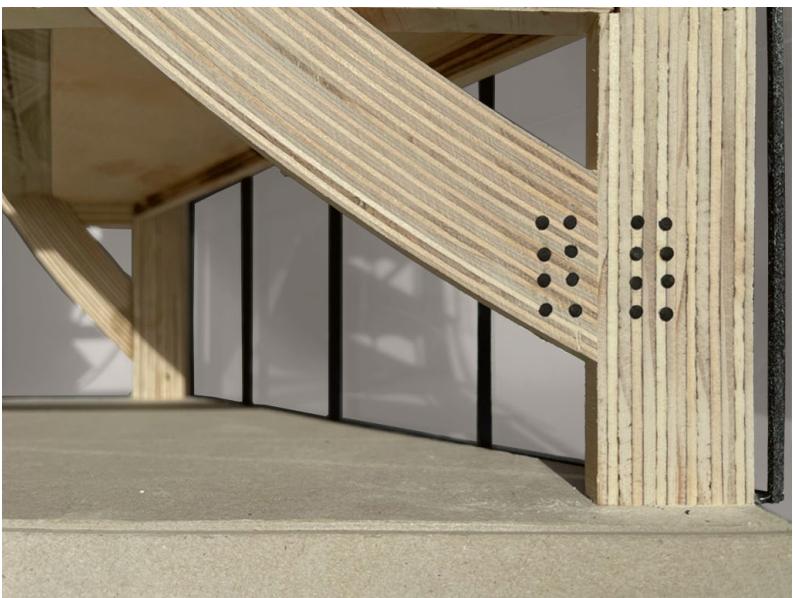
Collaborated with: Keaton Nemes

UC Berkeley *Integrated Design Studio*, Fall 2022

Instructor: David Jaehning

Serving the broader community of the Castro District in the heart of San Francisco, Concord Alley operates as an urban winery providing means of community engagement and wine production. The structural system of the building is entirely mass timber, utilizing a predominantly post and beam glulam construction method with CLT serving as core walls and fire barrier. The building was designed to reflect this transient space by bisecting the property with a lightwell that illuminates the open ground floor. The division of the light well further articulates program as private and public spaces are kept separate.



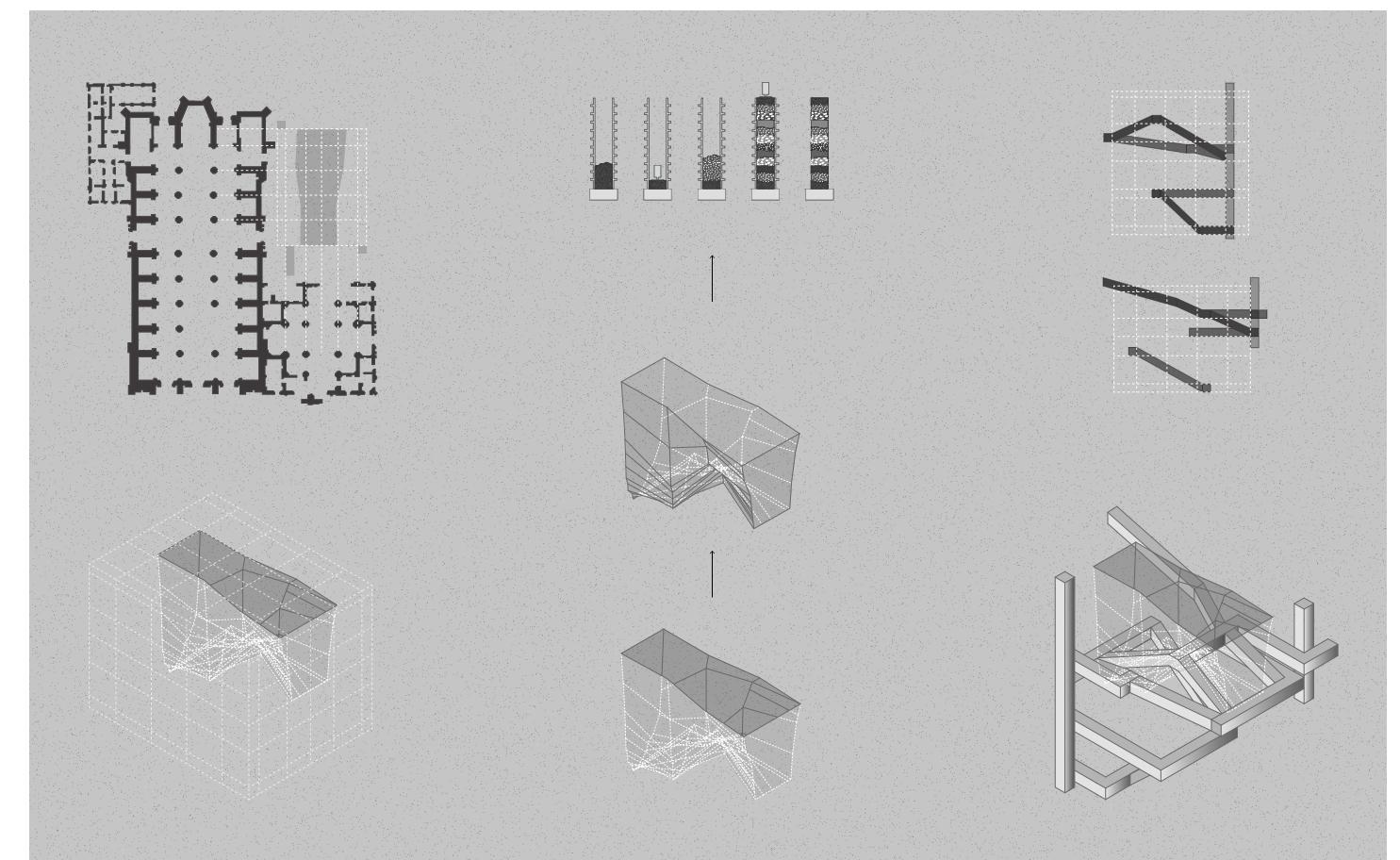
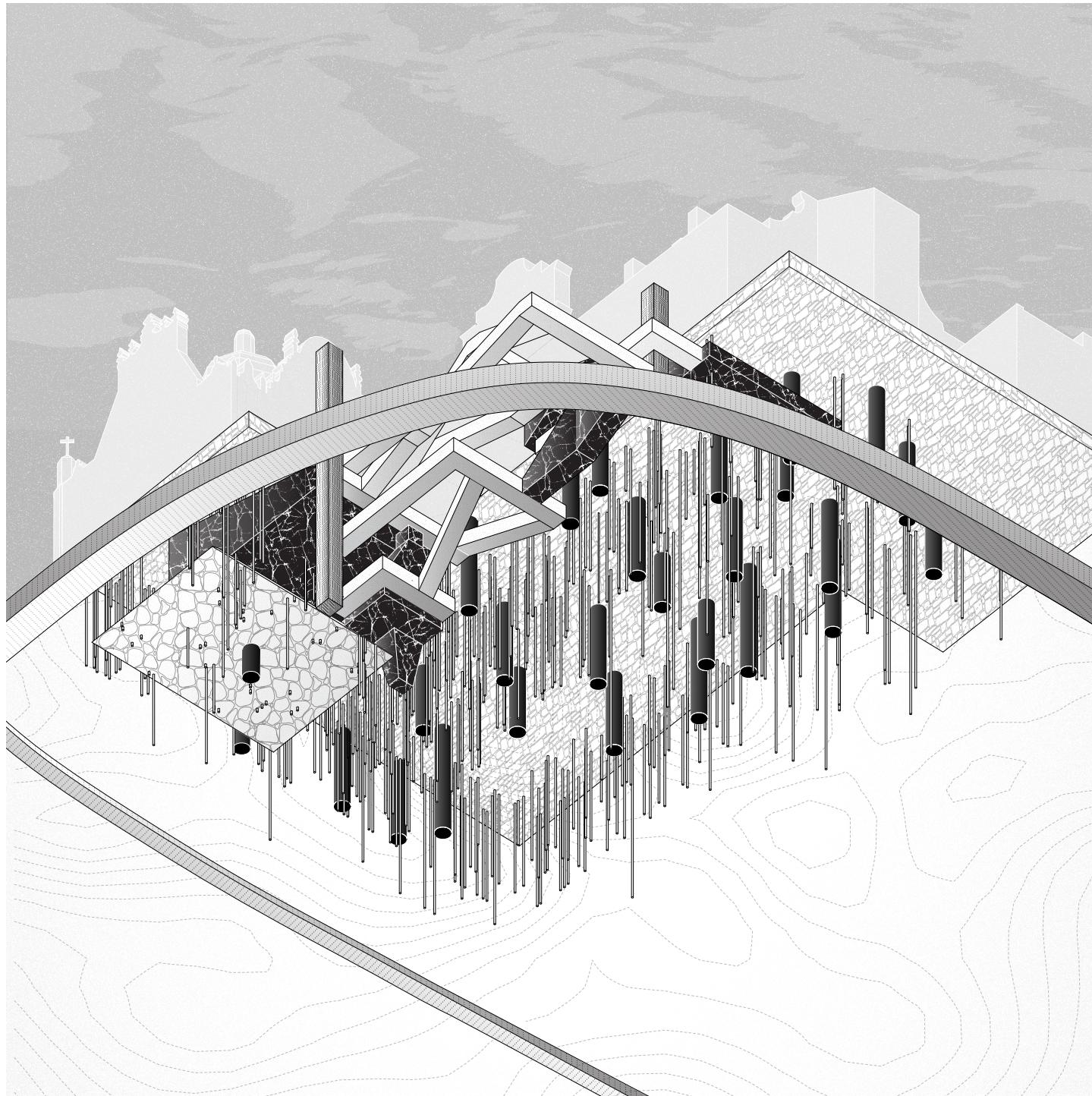


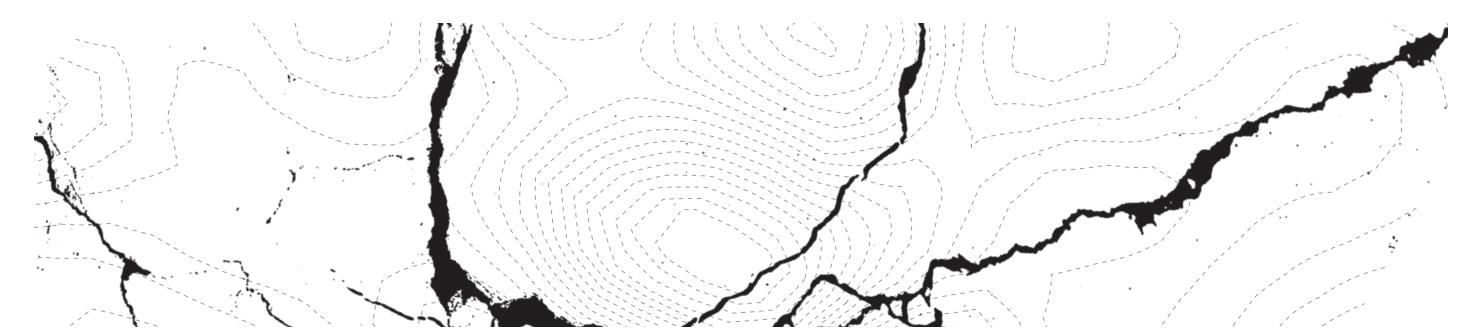
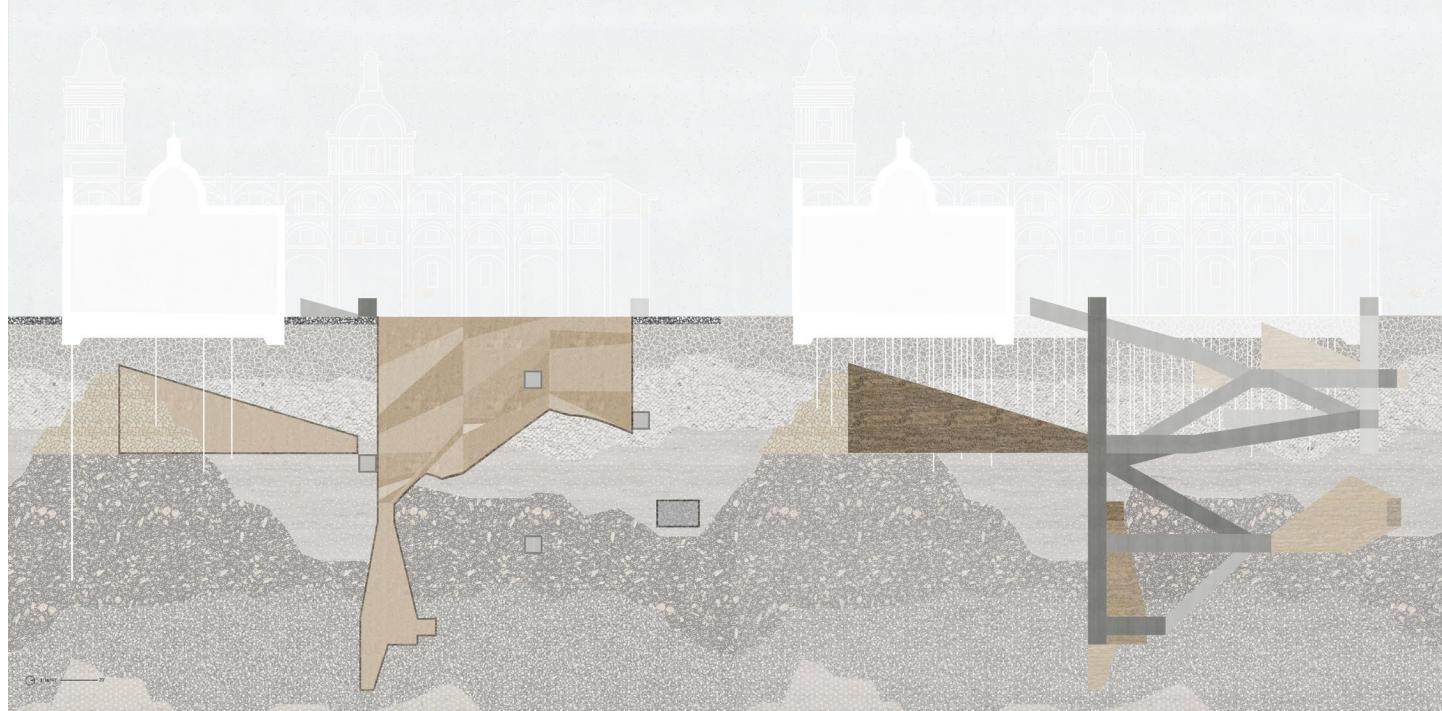
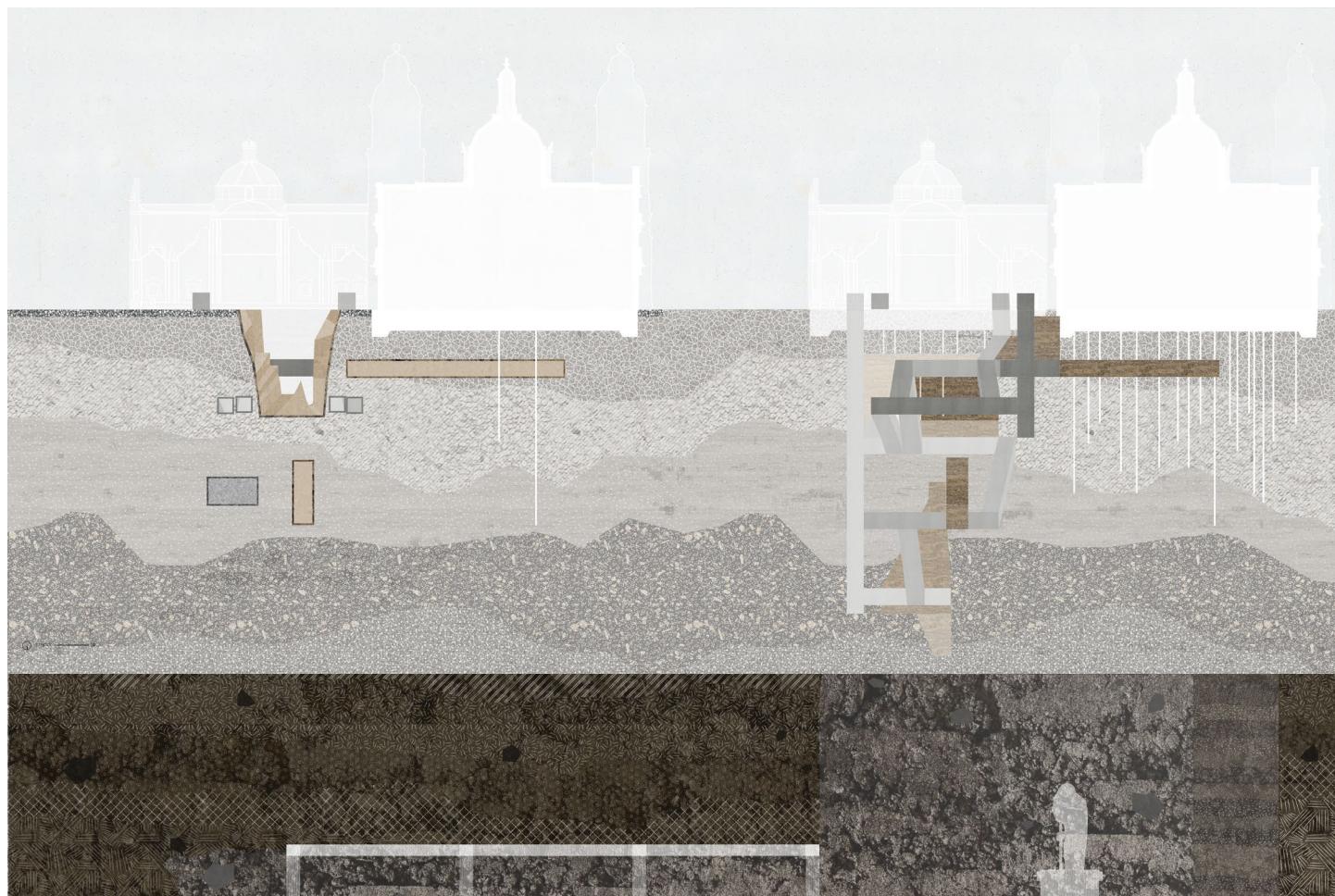
## MONUMENT TO BYGONE SOILS

UC Berkeley M.Arch Thesis, Spring 2023

Advisors: James Leng & Greig Crysler

Soil is a dynamic and complex medium that has the potential to act as a historical archive, recording information about past environments, human activities, and natural processes. The agency of soil — its ability to act upon and influence its surroundings — is often repressed in the construction of cities, as it is treated merely as a passive substrate for buildings and infrastructure. The Metropolitan Cathedral in Mexico City stands as a symbol of the country's rich cultural heritage and religious significance. However, its foundation rests over the historically charged strata buried beneath it. Mexico City's unique soil conditions have been shaped by geological processes and human activity. The city's highly compressible soil settles and shifts over time, causing sinking and cracking aboveground. By recognizing and acknowledging the agency of the soil, the Monument to Bygone Soils reveals the complex interplay among history, natural processes, and built systems.





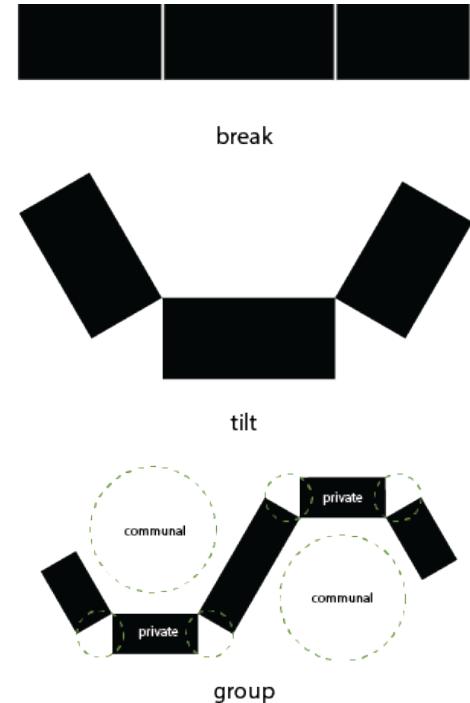
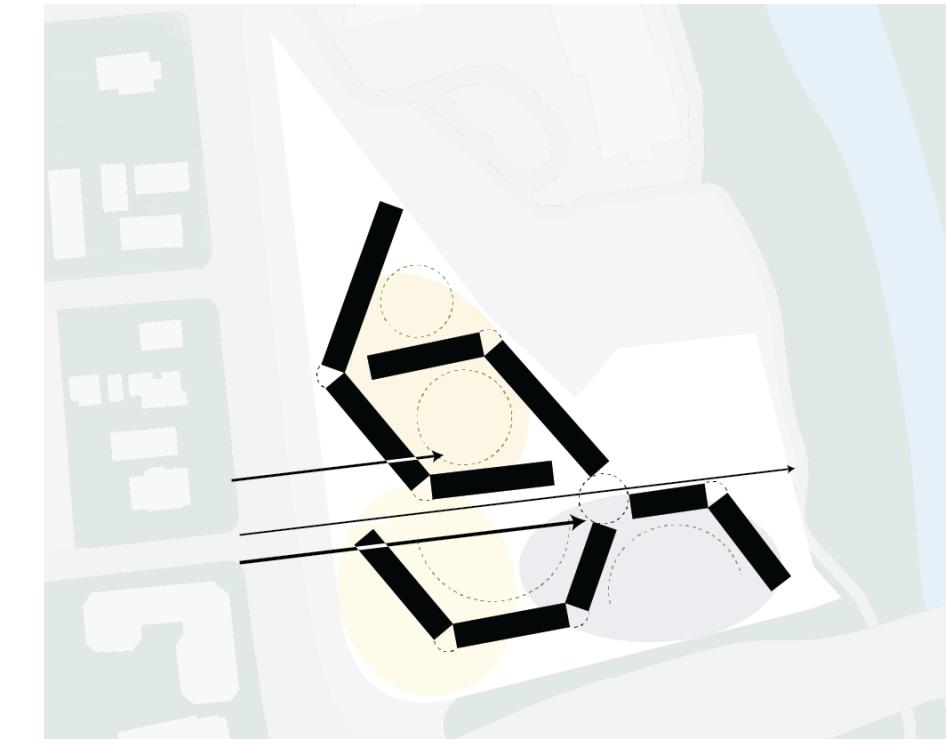
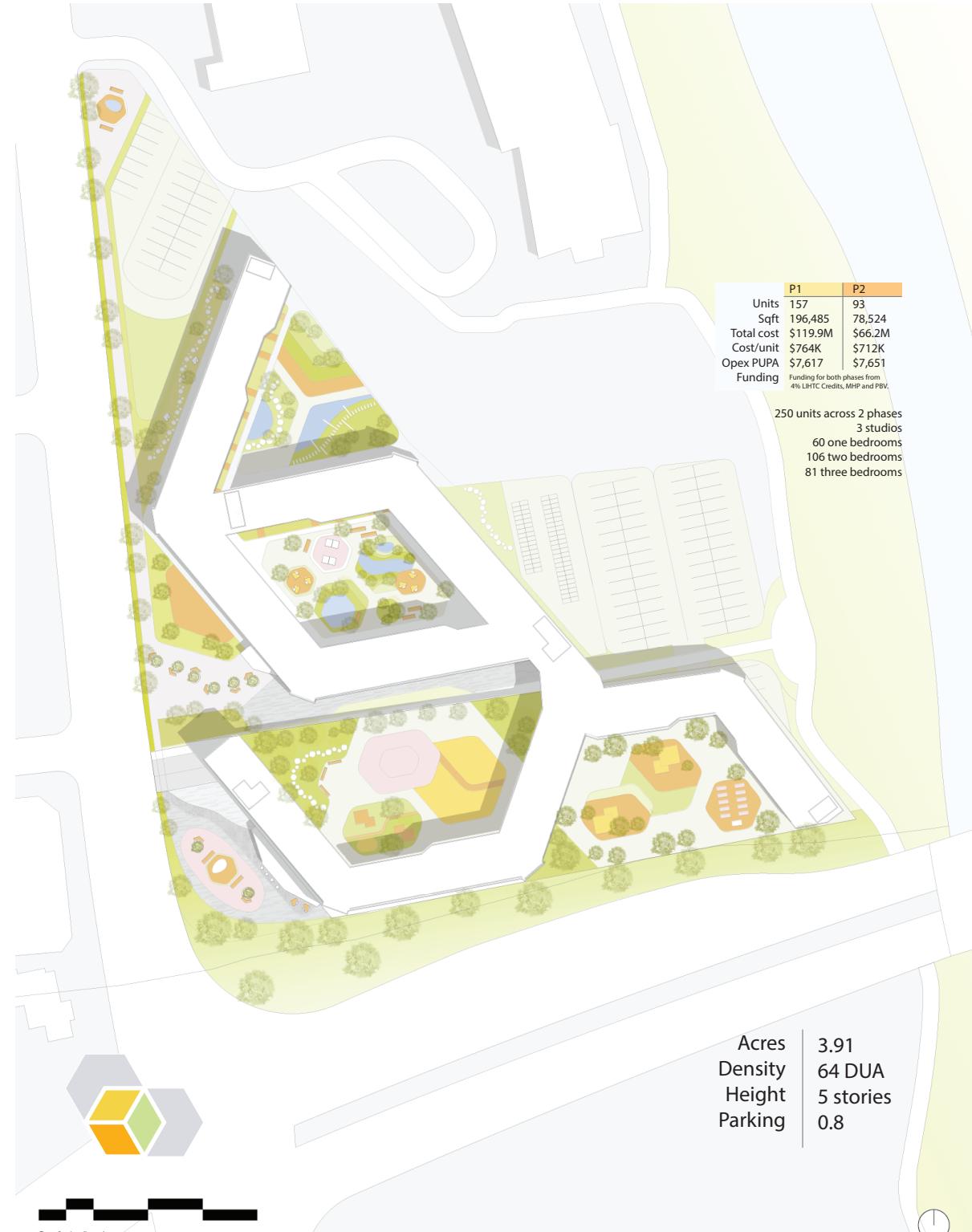
## THE HIVE: JAMES R. BOYCE HOUSING STUDIO

Collaborated with: Sam Miller & Lin Hu (M.Arch), Louisa Bukiet & Obina Uwakah (finance)

UC Berkeley Boyce Housing Studio, Spring 2022

Instructor: Daniel Simons & Cristina Rossi

The Hive is a 250 unit affordable housing complex developed in excess state lands in Santa Cruz, CA. The design responds to the site's unique shape, the adjoining floodplain and the community's unique needs.

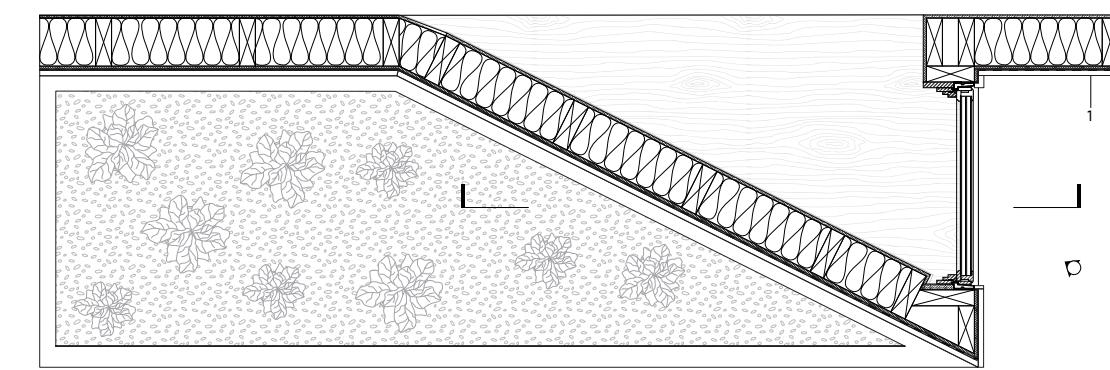
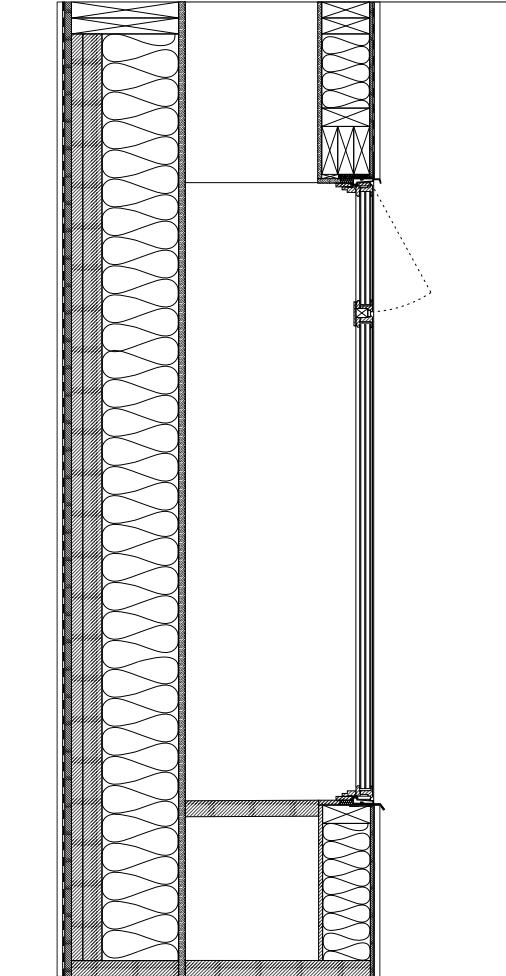


## WINDOW DESIGN FOR THE HIVE

UC Berkeley Ulrich's Window, Spring 2022

Instructor: Mia Zinni

The Hive's single loaded corridor design allowed units to have windows on both ends, allowing for better daylighting and natural ventilation. This window design faces the exterior corridors and while preserving the privacy of the residents.



scale: 1.75"=1'

1. facade element:  
light wood frame 2x6 studs,  
thermal insulation,  
plywood sheathing,  
water vapor barrier  
vertical siding panels gypsum board

2. window with operable glazing:  
triple glazing in wood/metal frame  
3. window with fixed glazing:  
triple glazing in wood/metal frame  
4. solid wood bench with storage  
space beneath

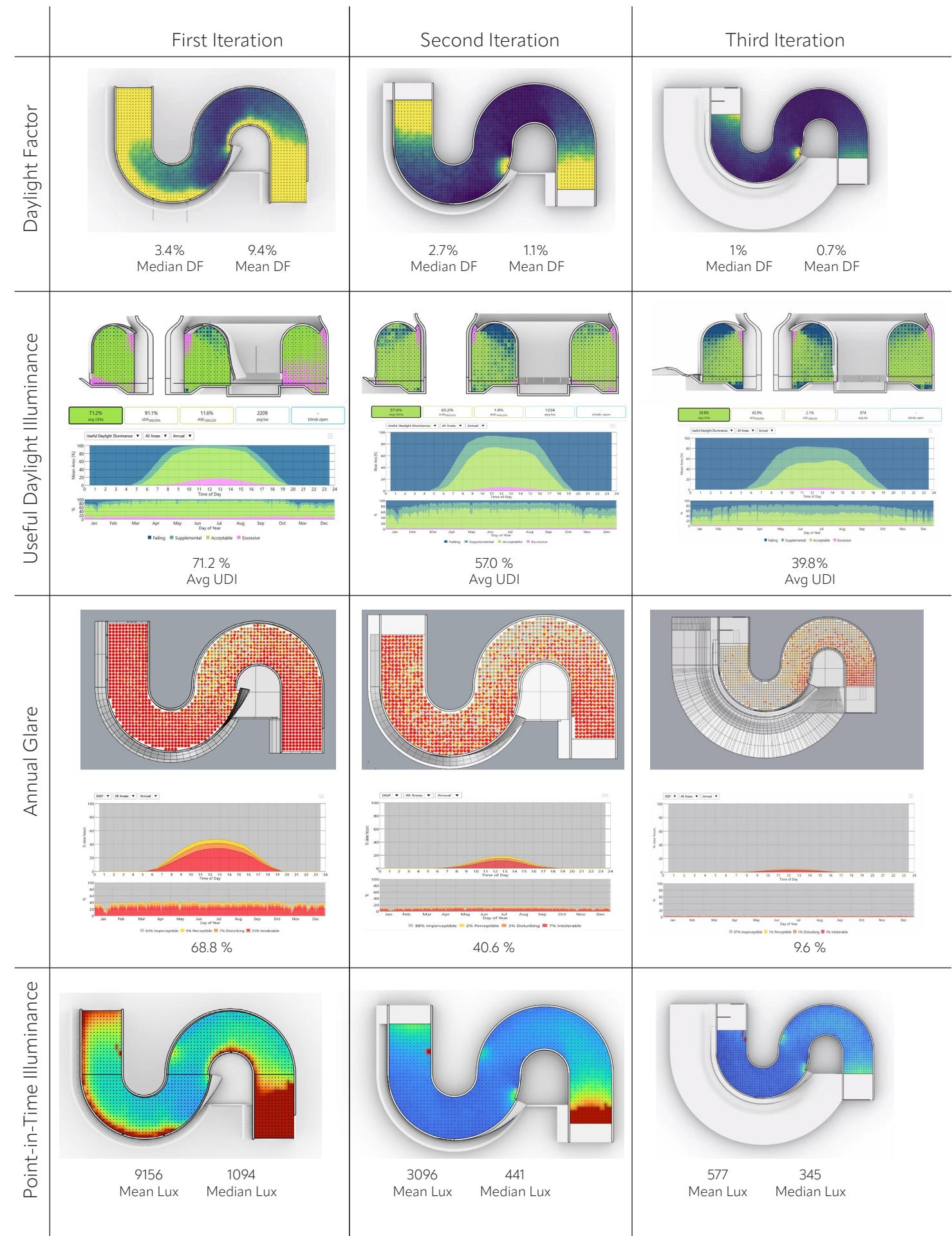
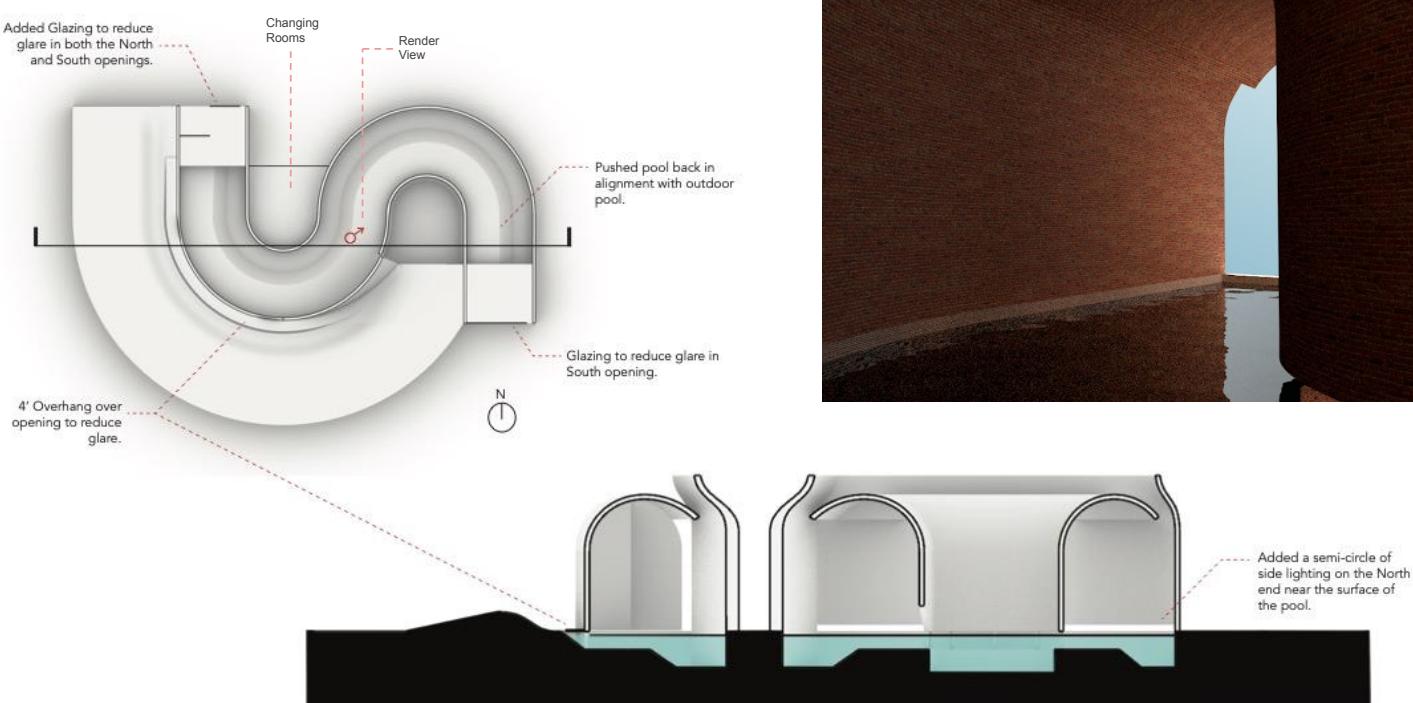
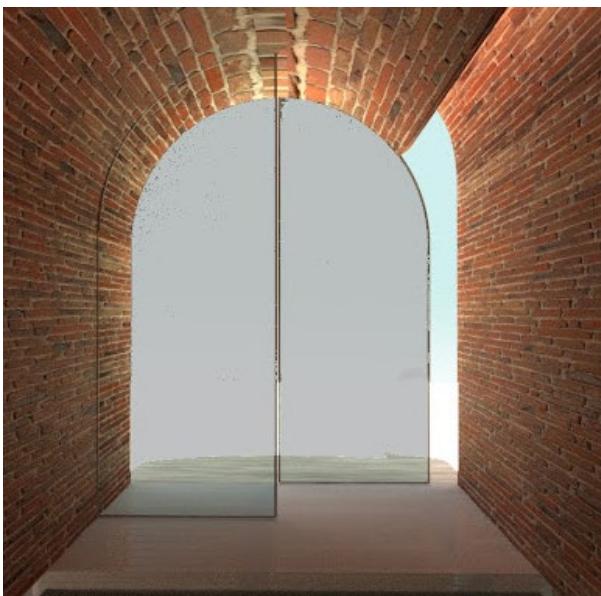
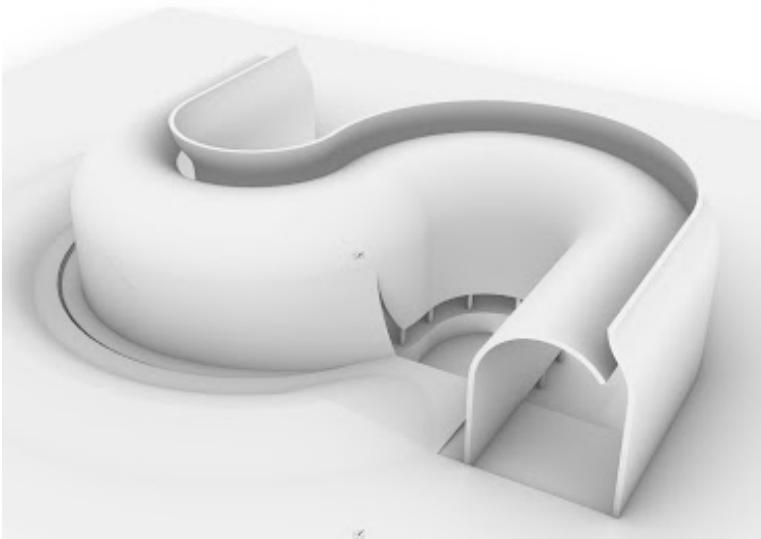
## SERPENTINE POOL: DAYLIGHT ANALYSIS

Collaborated with: Keaton Nemes, Cypress Erbez-Benson and Tagui Martirosyan

UC Berkeley Advanced Study of Energy and Environment, Spring 2022

Instructor: Luisa Caldas

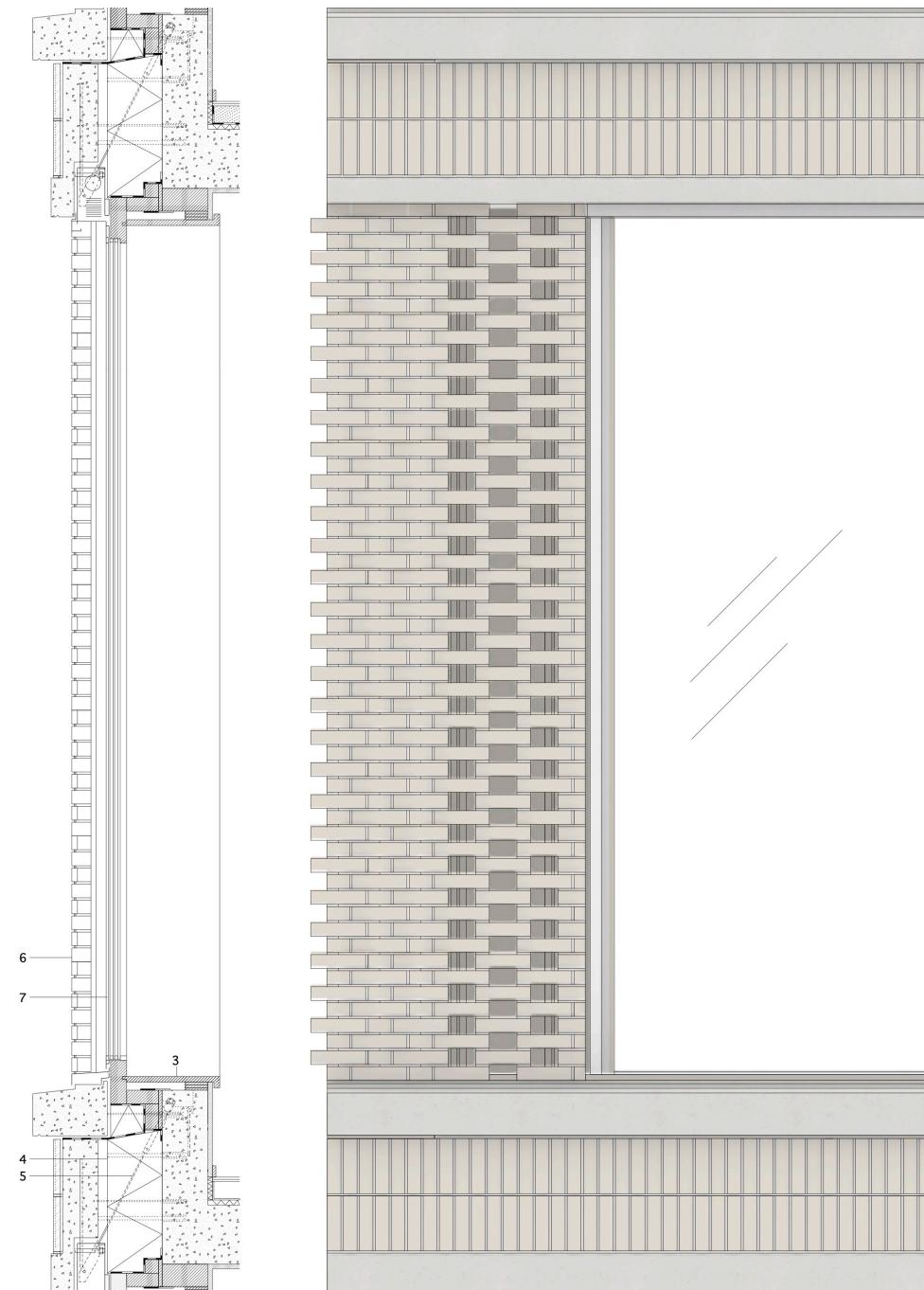
The Serpentine Pool is designed with the intention of emulating the atmospheric condition similar to a cave or grotto. Light is used as a method to guide an individual through the space. While not significantly reflective, the brick walls capture the sunlight and act as a thermal mass. Underwater, the pool is clad with white tiles, amplifying the reflectivity of the pool. The daylighting strategy is to use top lighting that follows the curve of the form, with an opposing edge curving up that will catch and reflect southern light down into the indoor pool below. This reduces the amount of direct light that enters the space in order to create a more ambient lighting experience. As the sun moves across the sky, slivers of light travel across the interior wall of the building. Cliamate Studio was used to analyze DF, UDI, glare, point in time illuminance and DGP, resulting in iterations that optimized the design.



## WINDOW ANALYSIS: PFAFERS CENTRE FOR GERIATRIC PSYCHIATRY by huggenbergerfries architekten

UC Berkeley *Ulrich's Window*, Spring 2022

Instructor: Mia Zinni

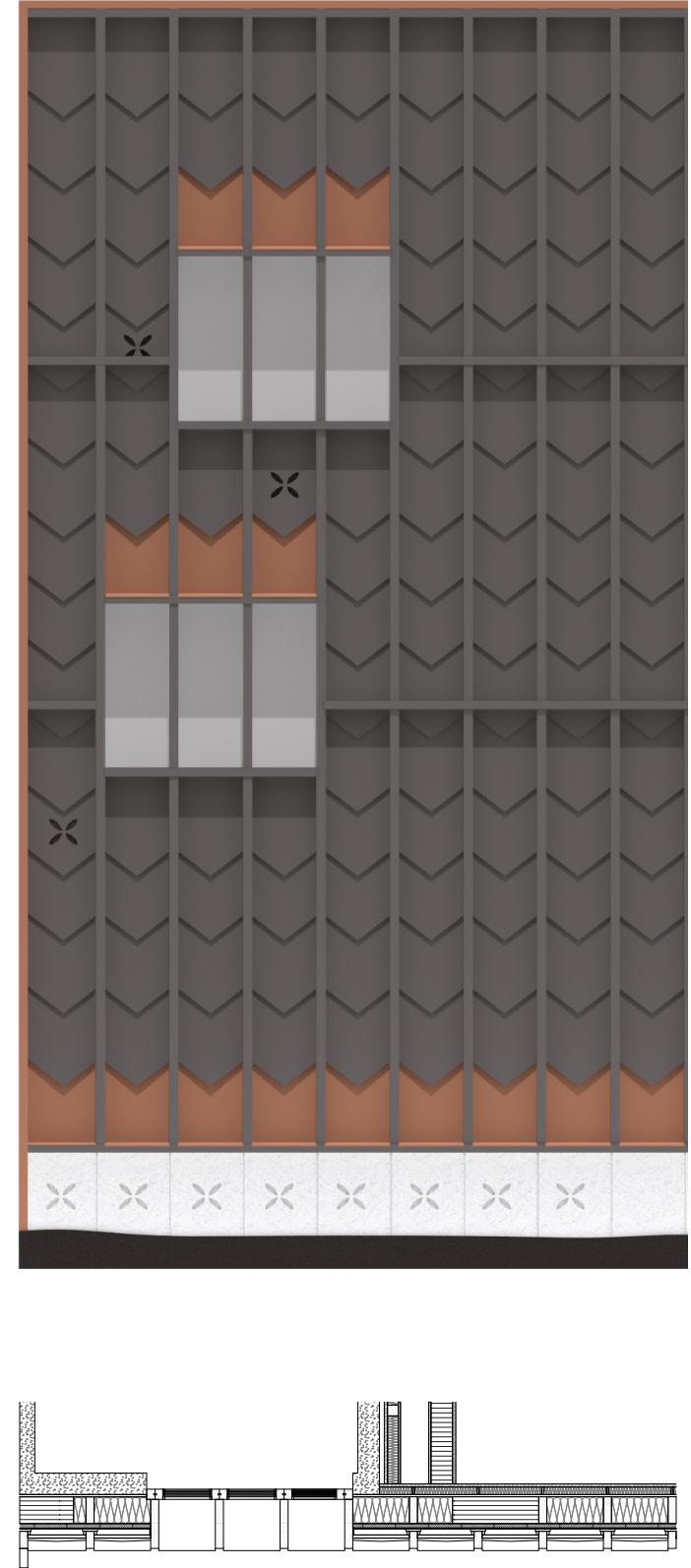
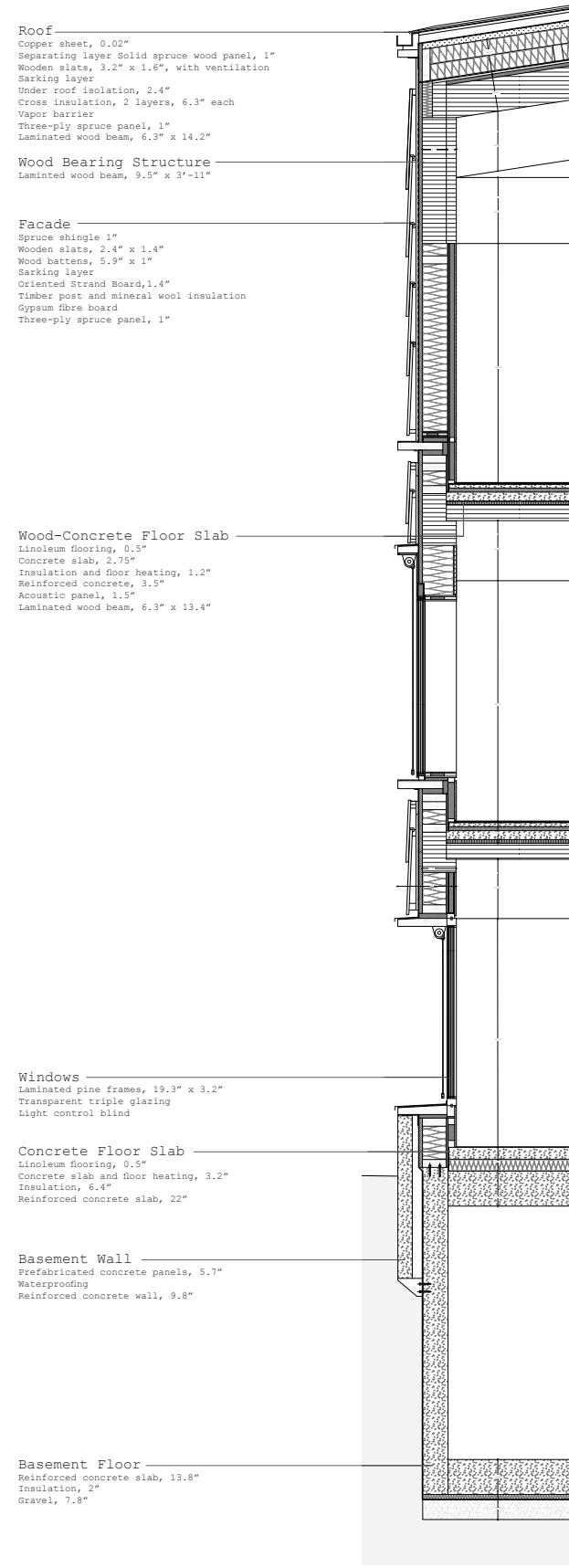


## TECTONIC PRECEDENT: SCHOOL IN ORSONNES by TEd'A arquitectos

Collaborated with: Elaine Forbush

UC Berkeley *Introduction to Construction*, Fall 2021

Instructor: David Jaehning

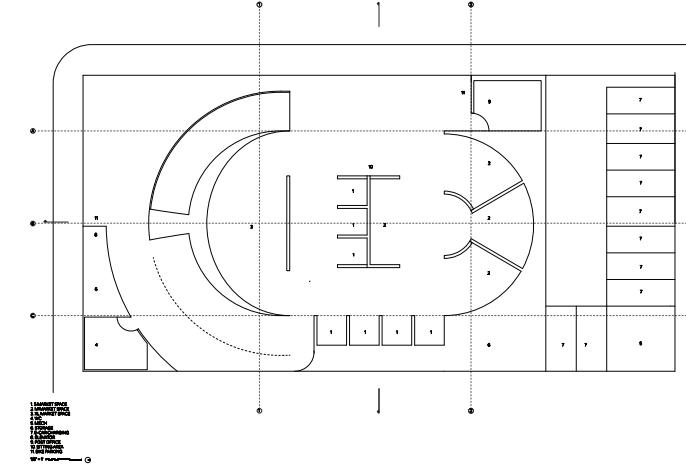
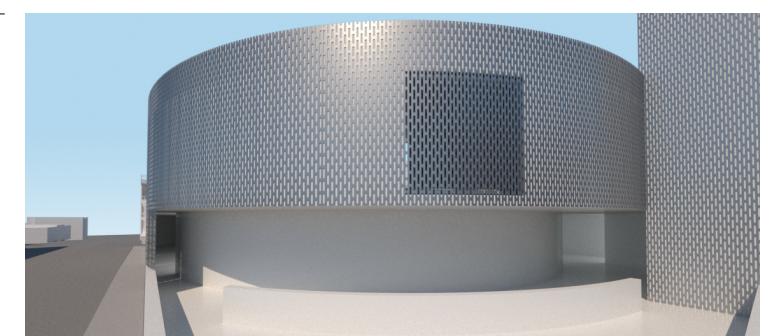
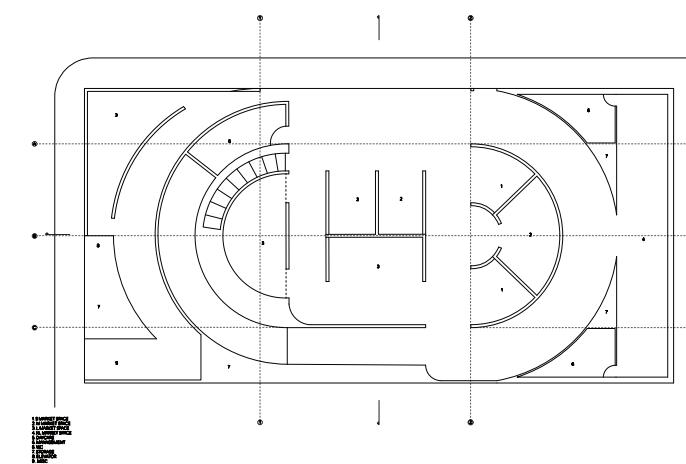
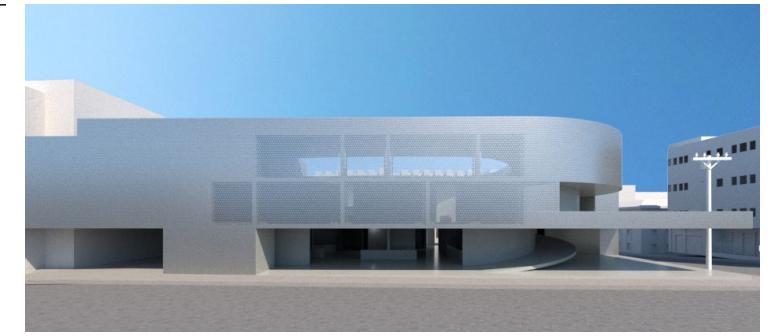
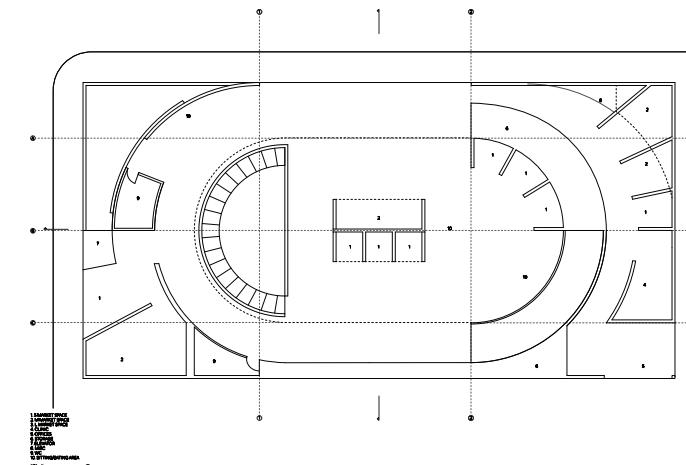
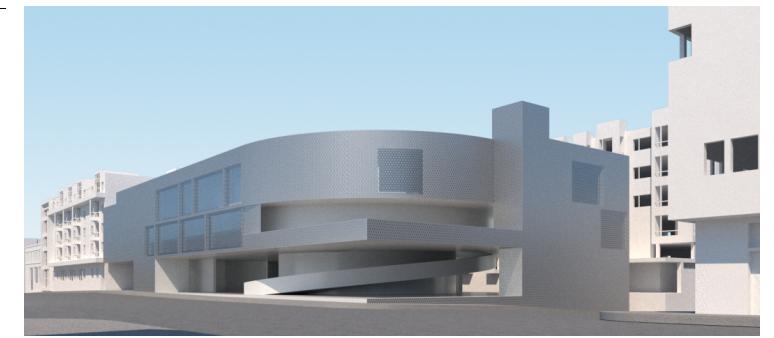
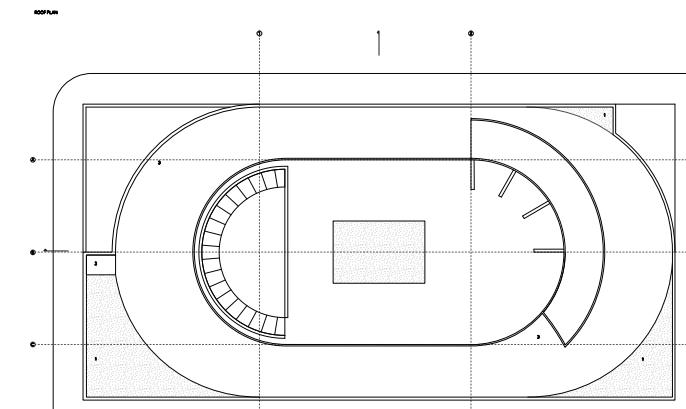
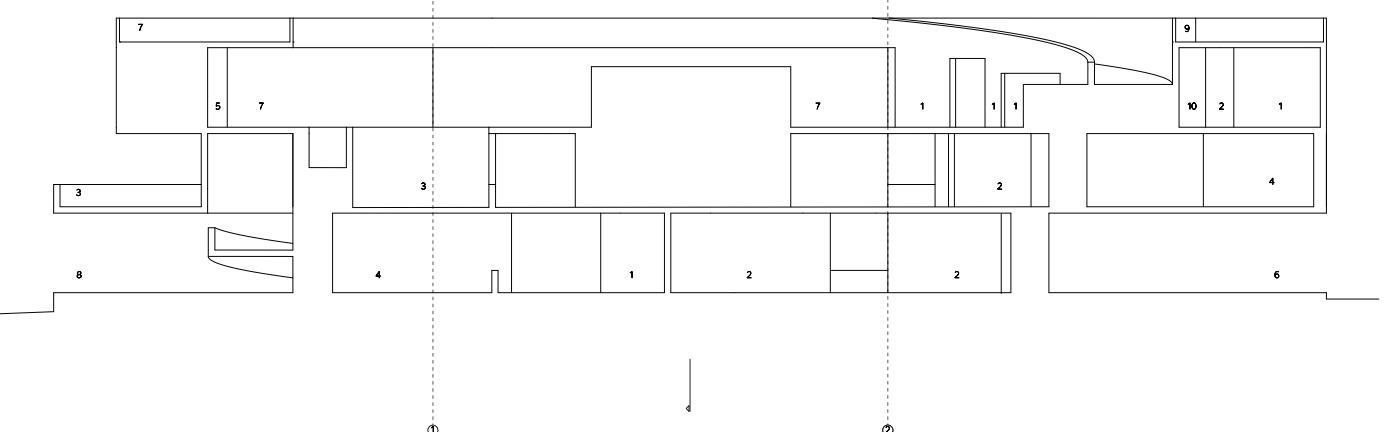
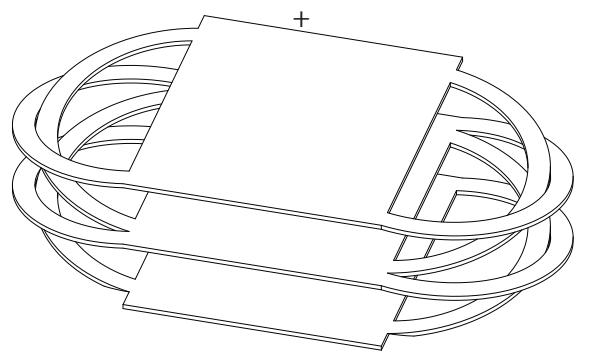
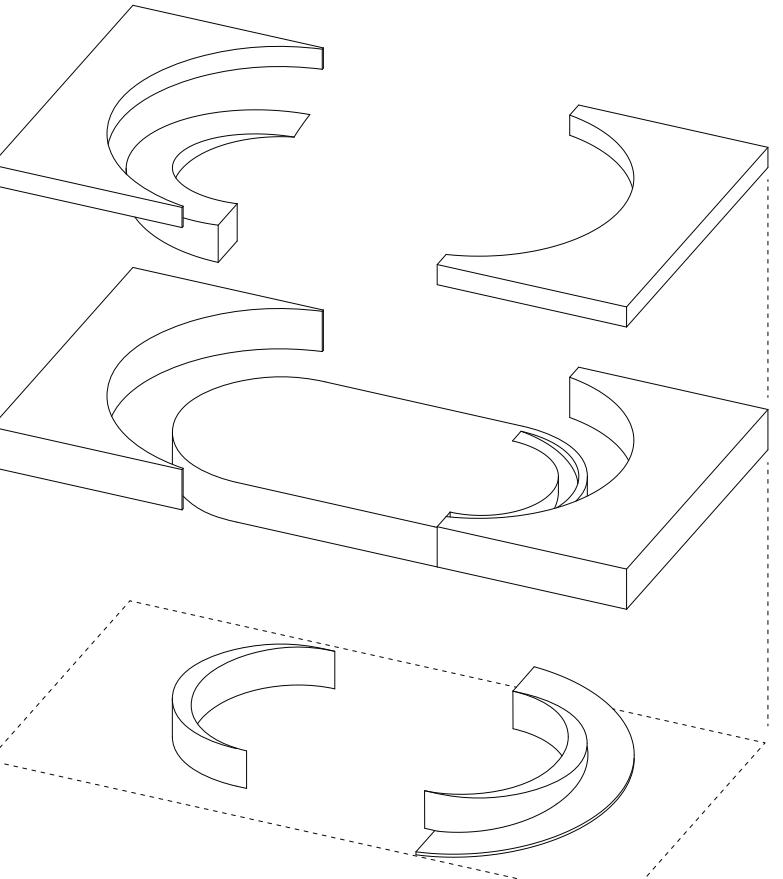
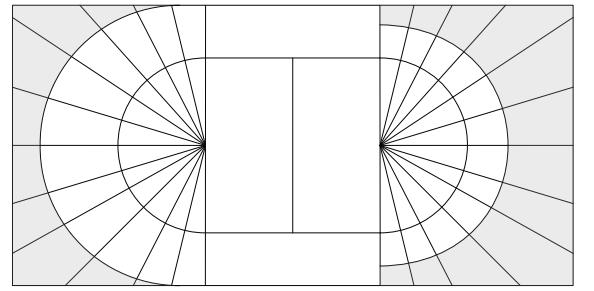


## DOUBLE HELIX : MARKET PLACE

UC Berkeley *Introduction to Architecture Studio*, Spring 2021

Instructor: Andrew Atwood

This project is an exploration of the ways rectilinear spaces respond to the integration of circles and curves. It arose from a merging of the Amsterdam exchange and the helical ramp circulation system.

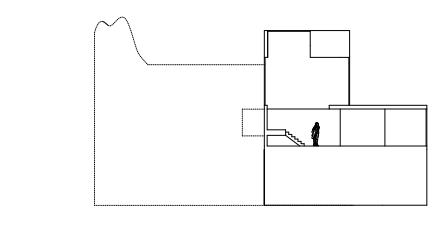
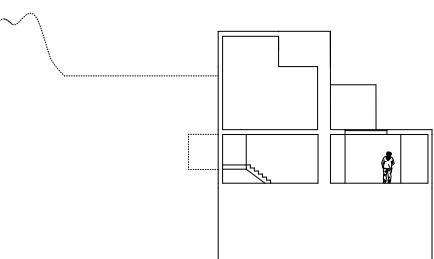
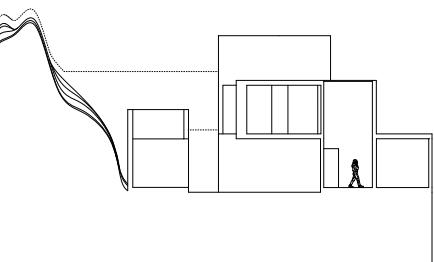
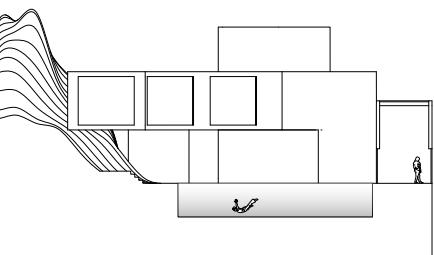
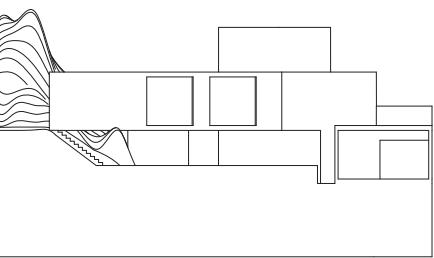
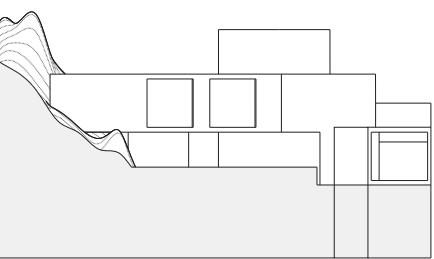
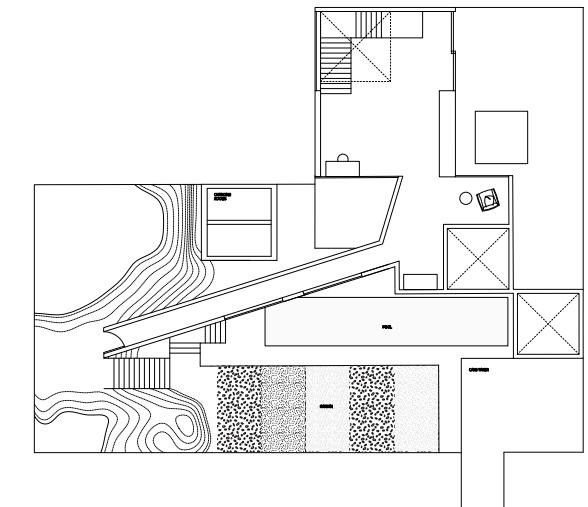
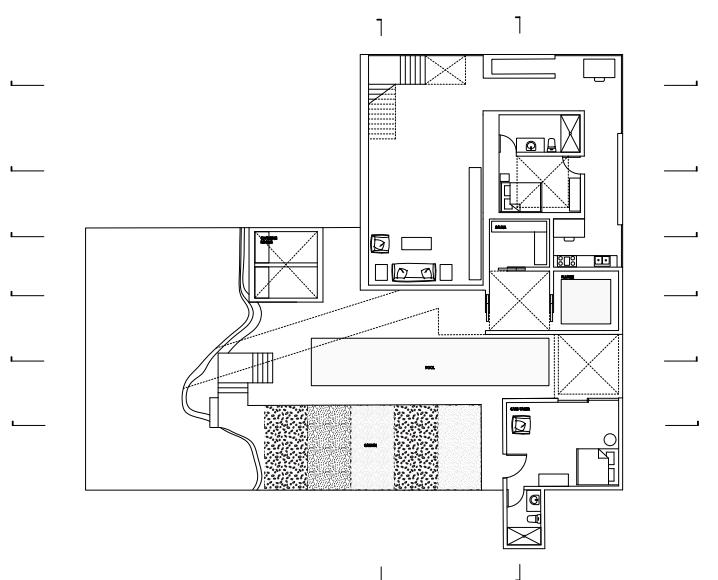
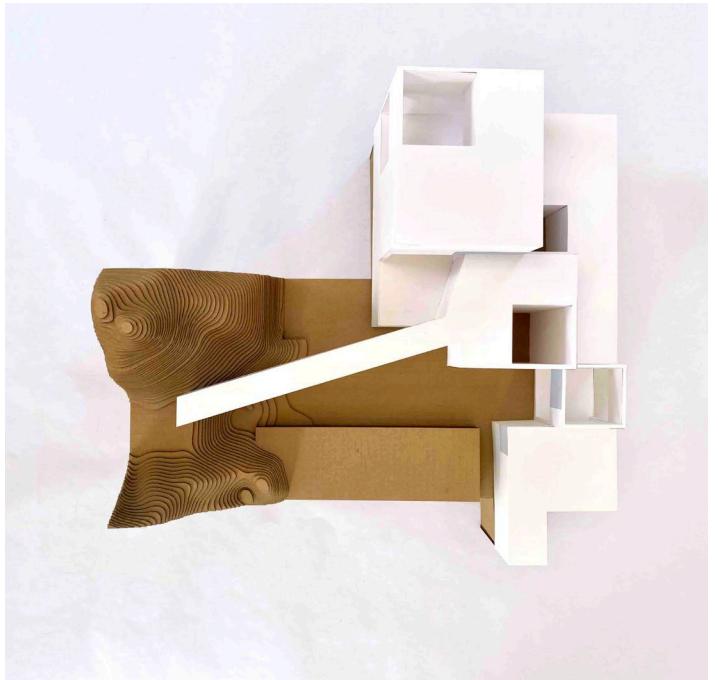
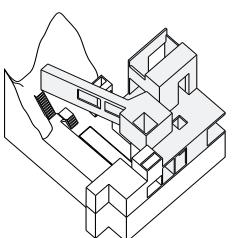
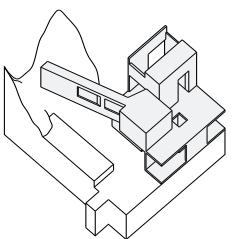
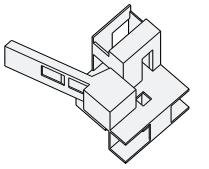
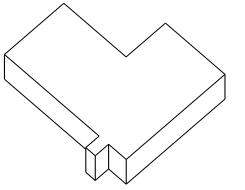
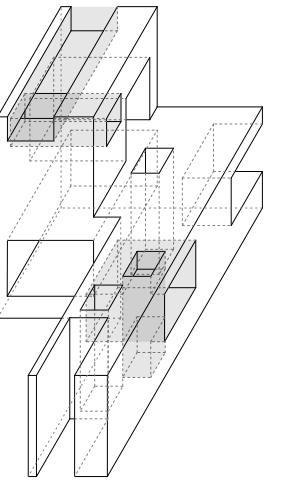
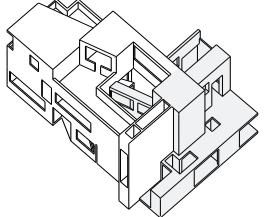


## VOIDING THE VOID: RESIDENCE

UC Berkeley *Introduction to Design Studio*, Fall 2020

Instructor: Raveevarn Choksombatchai

Voiding the Void is an exploration the formal logic derived from David Adjaye's Elektra House. The interlocking voids forming double negative spaces in the precedent study are carried forth and applied to the dwelling, the site and the pool house program.



## DOLMEN X DOM-INO: NEIGHBORHOOD MEETING SPACE

Collaborated with: Sam Miller

UC Berkeley *Introduction to Architecture Studio*, Spring 2021

Instructor: Andrew Atwood

This project explores the different methods employed in the creation of the digital models of the precedent studies: the Crucuno dolmen (carving through Boolean operations) and Le Corbusier's Dom-Ino (extrusions). It aimed to create diverse dynamic spaces from a repetitive and gridded formal arrangement.

