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### Sharing as Armature

Core Studio III: Housing in Bronx

### "House" for Everyone

Advanced Studio VI: Rethink the Frick Collection & New Domesticity

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Core Studio II: Public School for Grade K-8

### Gaps within the Gap

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### Melrose Community Center

AT4 Integrated Systems

### City of Billboards

Generative Design

### Terra-cotta Facade Design

Facade Detailing

### Building for Deconstruction

Architectural Drawing & Representation I

## Sharing as Armature

### Housing in Bronx

New York, USA  
Advisor: Eric Bunge  
Teammate: Duo Xu  
Core Studio III  
Fall, 2020

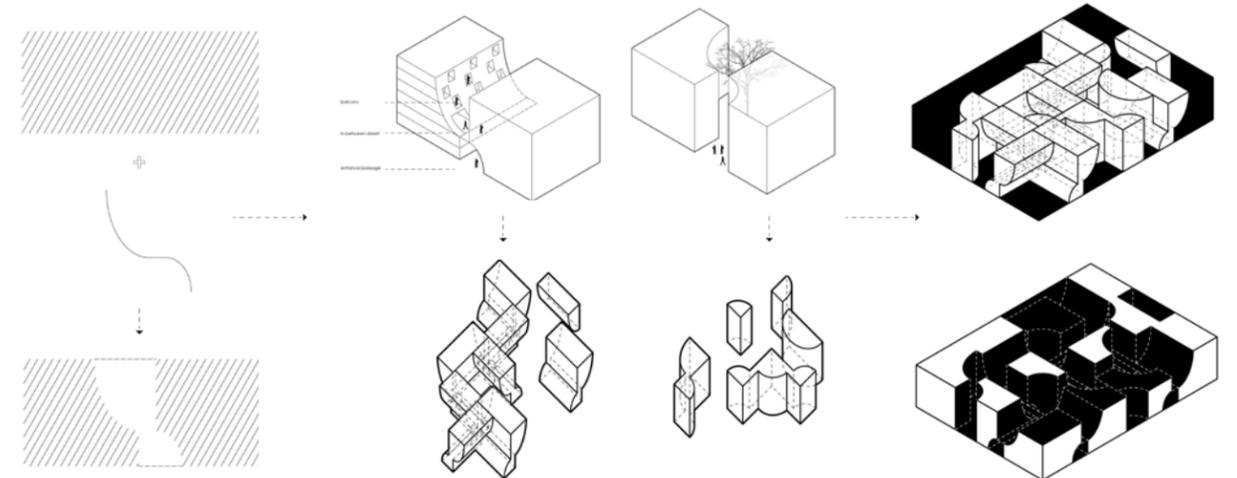
In this project, co-living housing units are designed to help with vulnerable groups of people that are suffering financial problems. According to the research, people are usually more willing to design and decorate their rooms by themselves but expect developers to fully design the sharing space. Private rooms are guaranteed for every household. Kitchens, working space, and gyms are shared.

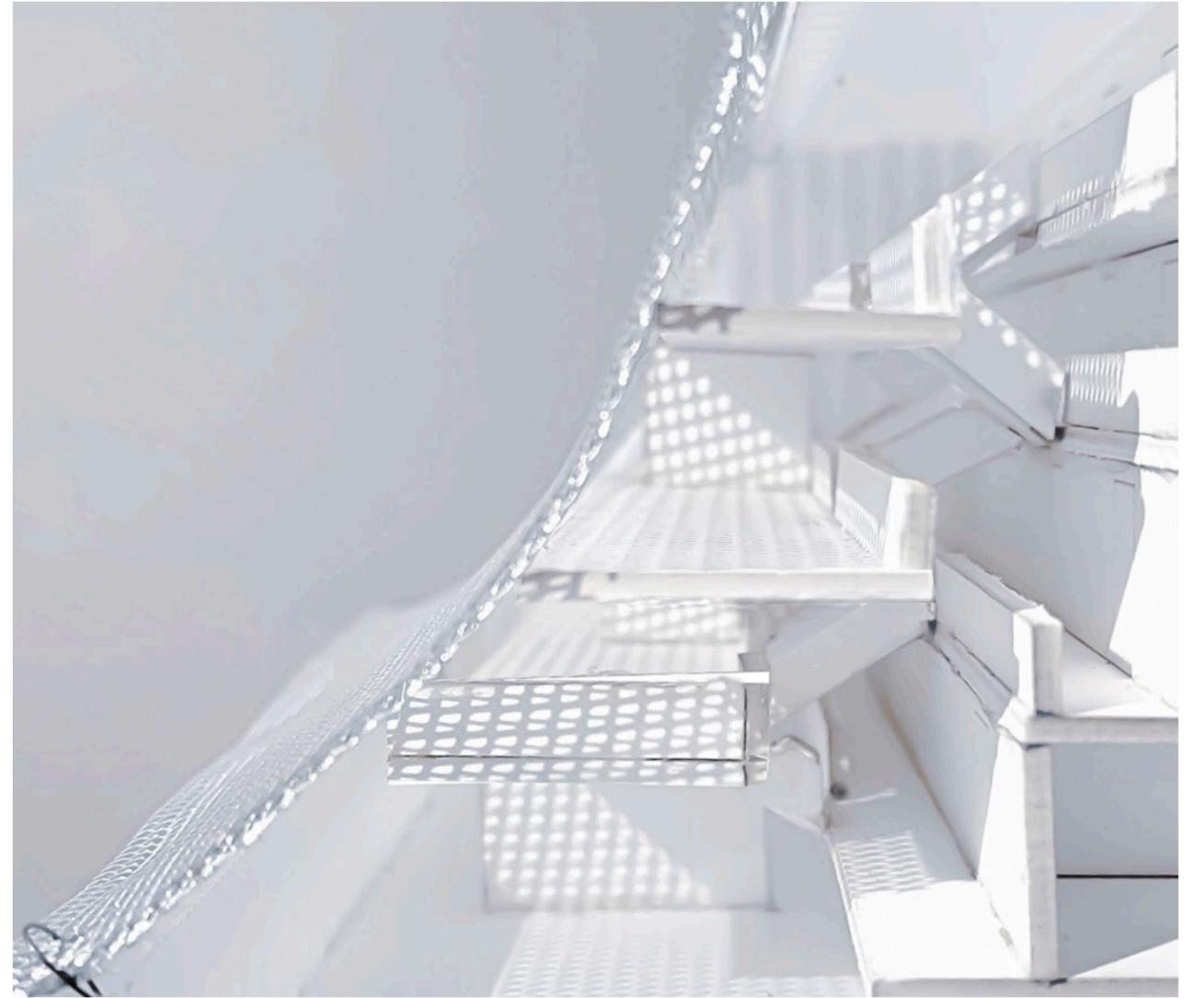
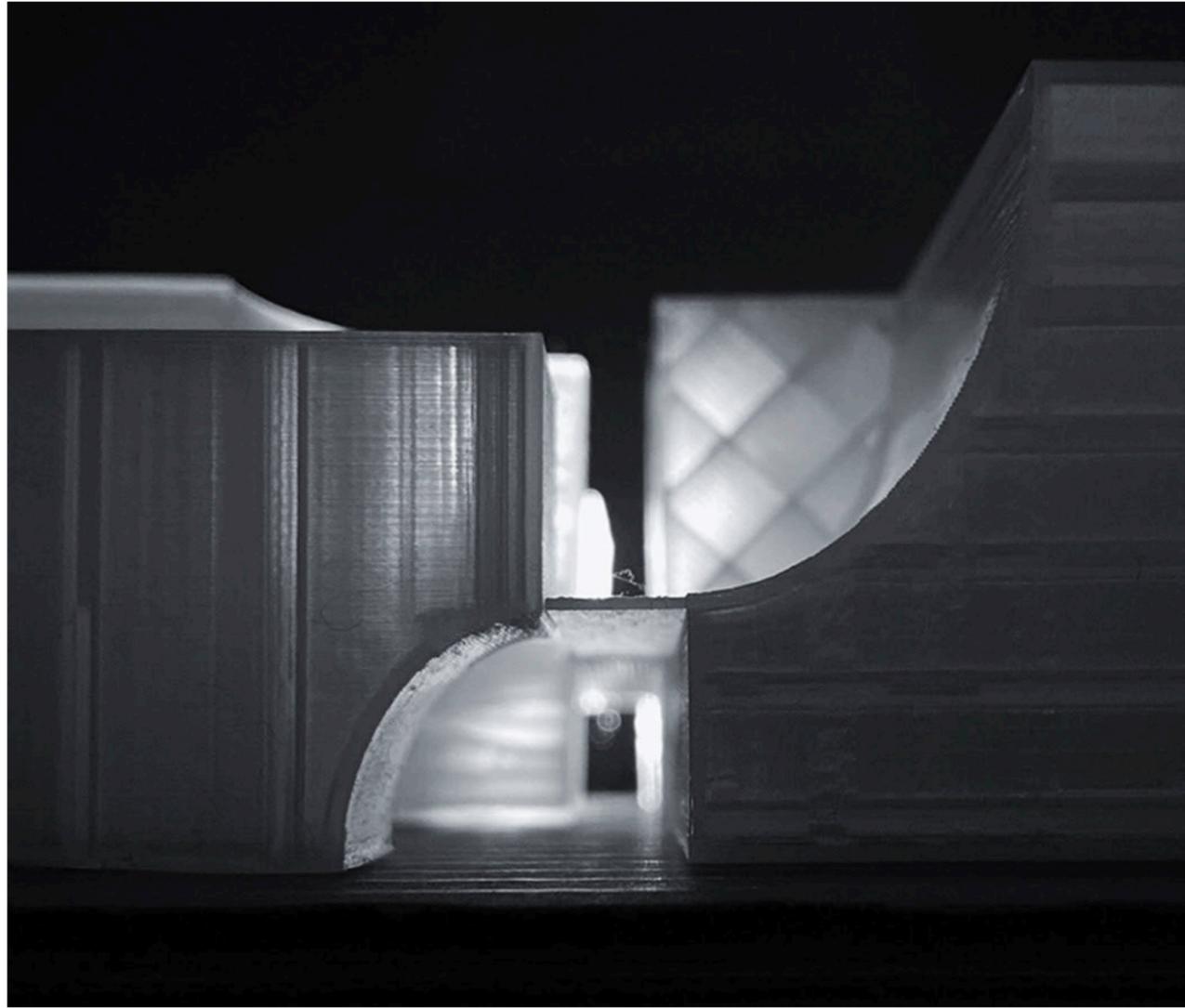
Using sharing activities as the armature, the project is intended to provide the residence a sense of security. To organize these sharing activities together, Curvy surfaces are used as basic geometries to provide subtle enclosure. Visual connections are created between people inside and outside the volume to give a sense of security. Also, the geometry guarantees enough distance between volumes, which helps to create a good lighting condition.

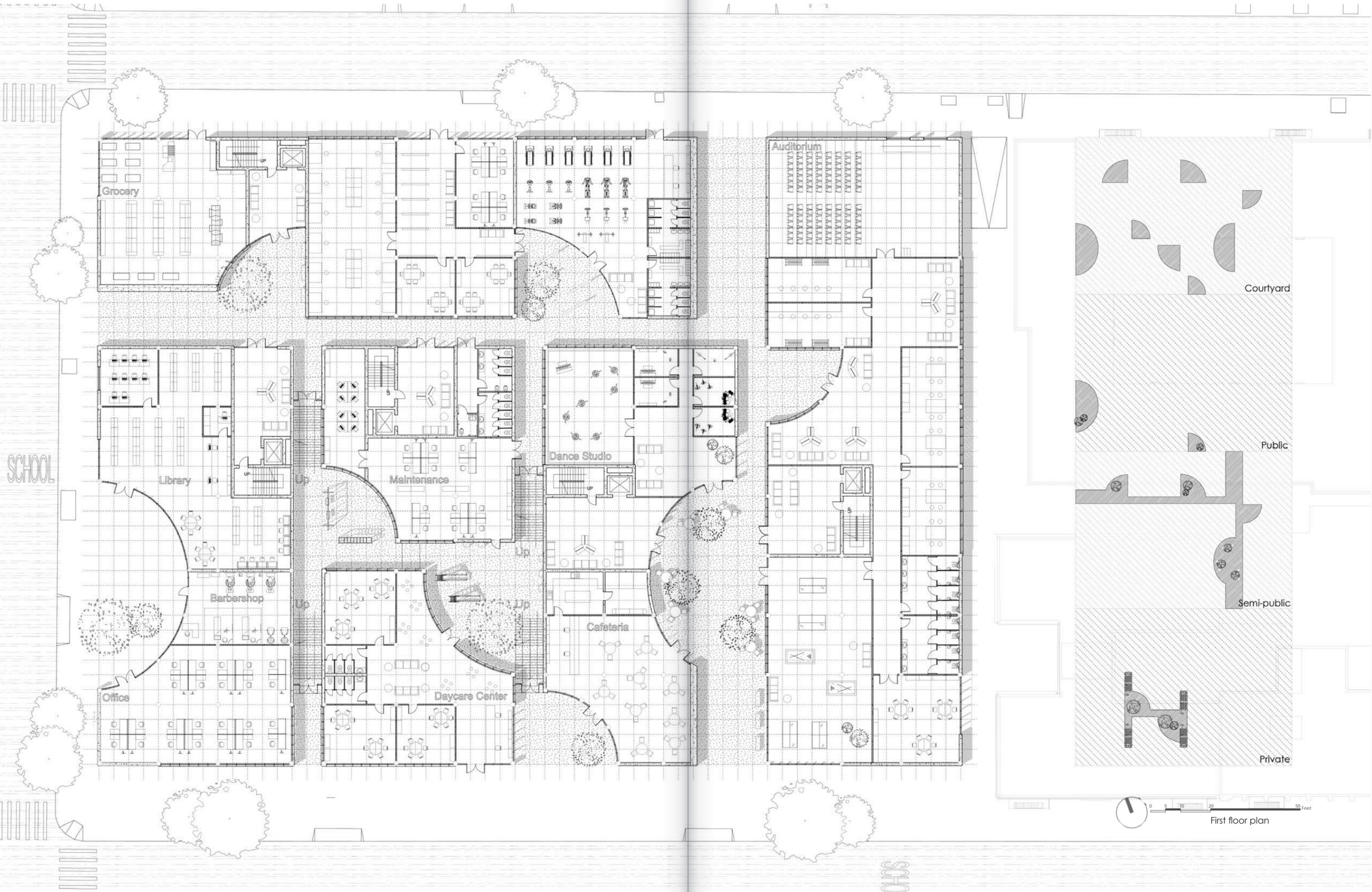
When it comes to sharing, it's not limited to interior spaces. Continuous voids are created for exterior spaces. By encountering each other through daily activities or communal events, bonds between residents will strengthen and a better community could be thus created.



### · Concept







Grocery

Auditorium

Library

Maintenance

Dance Studio

Barbershop

Cafeteria

Office

Daycare Center

Courtyard

Public

Semi-public

Private

First floor plan

SCHOOL

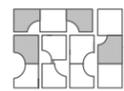
SCHOOL



Shared kitchen



Shared gym



Shared workspace I



Shared workspace II

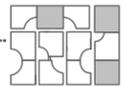


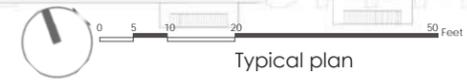
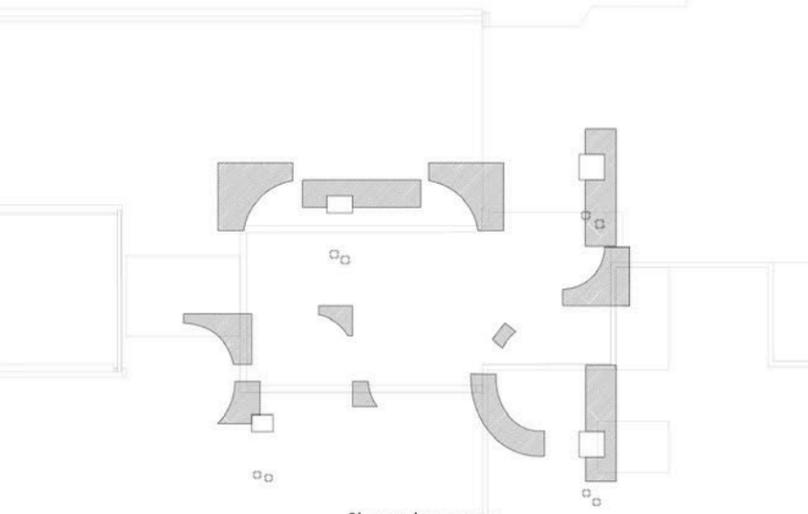
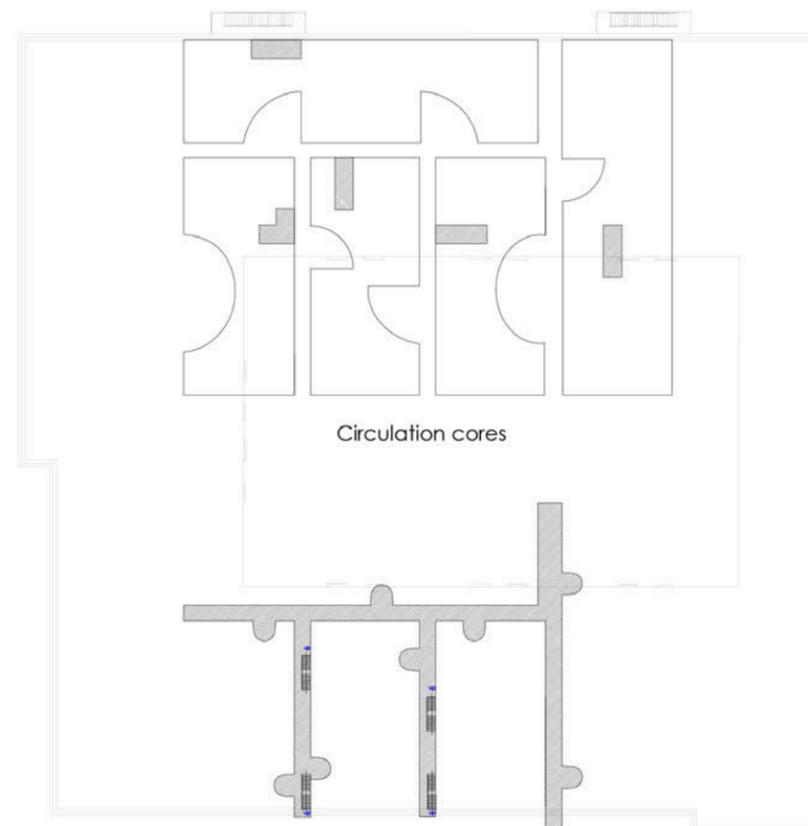
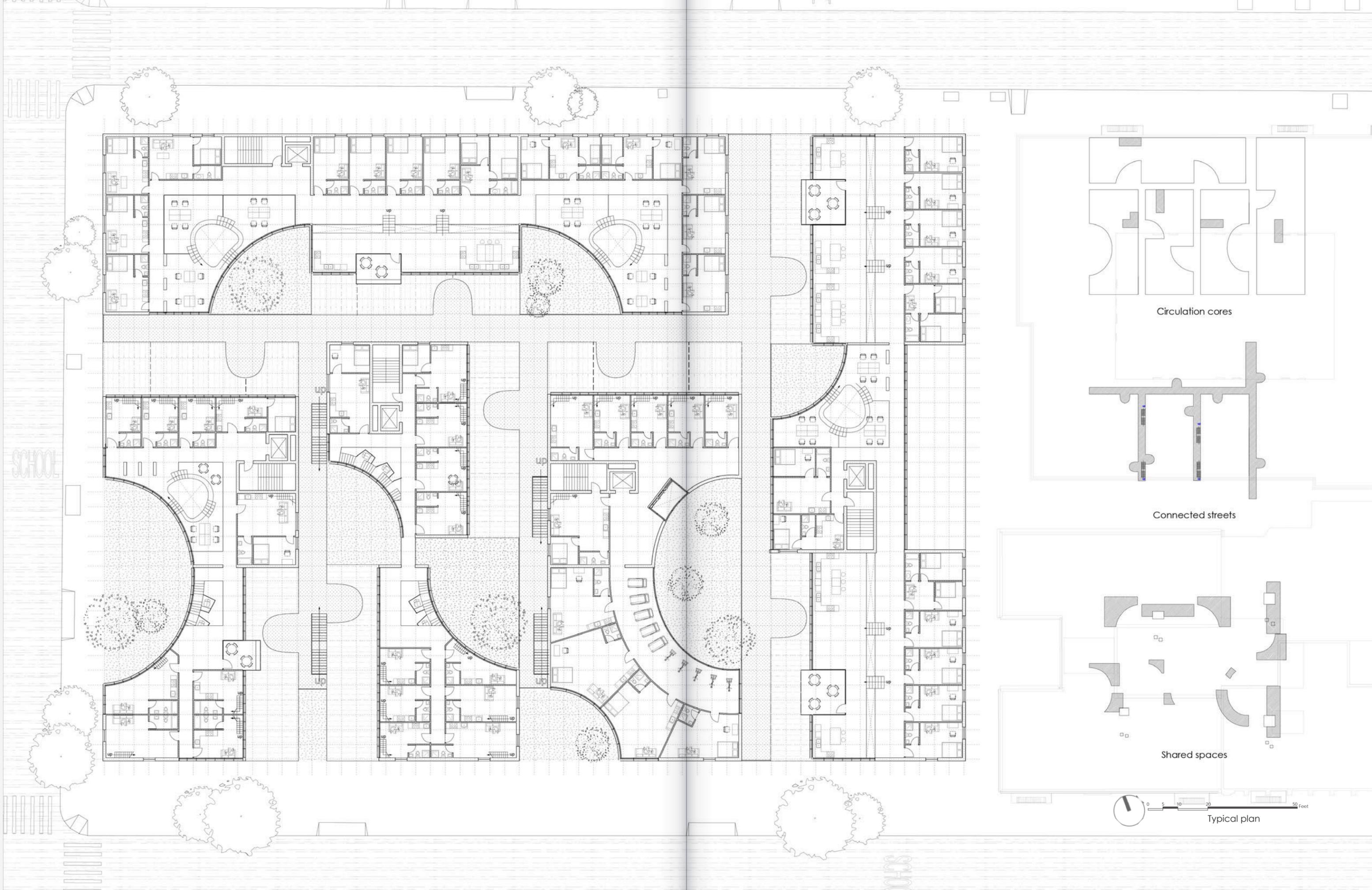


.....Shared kitchen - Exterior.....



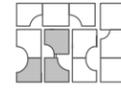
.....Shared kitchen - Interior.....







.....Shared workspace I - Interior.....



.....Shared workspace II - Interior.....





## "House" for Everyone

Rethink the Frick Collection & New Domesticity

New York, USA  
Advisor: Juan Herreros  
Teammates: U Kei Long, Xueyin Lu  
Advanced Studio VI  
Spring, 2022

Frick Collection is one of the preeminent museums in America that possesses a high valued collection of old paintings from Medieval Art to Impressionism in the 18th century. Manifested itself as the aesthetic vestige of 20th century American wealth, Frick Collection is prioritized for high value of European Art and an upper class committed board.

As a museum transformed from a luxurious 20th century residence, the exclusiveness of the Frick Collection has isolated itself from the public which it is supposed to serve. During the days when Henry Frick used it as a residence, the art collections were no more than a background of the family's daily life.

To reconnect the Frick Collection to the public, the project aims to highlight the domesticity of its original function as residence, making the Frick Collection a house for everyone.

With its art collection as the background of context to demonstrate the value of superimposition, through the rearrangement of Furniture, Partition walls, poché and Transitional installations. The gesture is to sustain the form of domestic activities with different groups of people, including visitors and locals, kids and artists related groups.



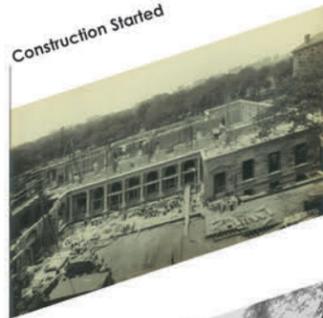
# HENRY CLAY FRICK'S RESIDENCE

# FRICK COLLECTION

With an endowment of nearly \$40-million and an annual income in excess of \$1- million  
Trustee members who each give a minimum of \$25,000 a year to the Frick Collection  
Hosting 270,000-300,000 visitors per year

← Residence  
**CLOSED**

→ Museum  
**OPEN**



Henry Clay Frick - an American industrialist, financier, and art patron, Founder of Frick Collection

Moved to NYC Before Pittsburgh

Frick bought the land and design

Frick's death due to sudden heart attack



Adelaide and Helen Frick lived until the death of Adelaide Frick. Helen Frick inherited most of wealth, became the trustee of Frick Collection

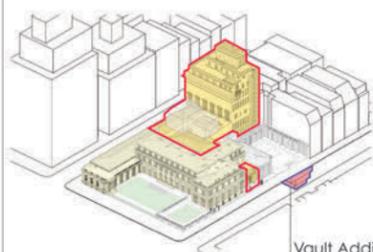


Construction Started

Construction finished and moved in

Helen Frick established Frick Art Library

1ST Expansion Started



Vault Addition at 1941

1ST Expansion Finished

Helen Frick moved most of the achive to Midwest in the worries of WWII

Helen Frick and Rockefeller Joined As the Chairman Board of Trustee

### ROCKEFELLER GIFT OF ART IS REFUSED

Trustees of Frick Collection File Suit Against Daughter of Steel Maker Over Ban  
7 LEGAL POINTS AT ISSUE  
Counsel for Defendant in Case Challenges Legality of Any Donations Besides Founder's

Helen Frick In Conflict with Rockefeller

### Harry Grier Is Appointed Frick Collection's Director

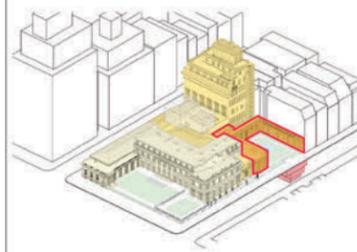
Harry D. M. Grier, assistant director of the Frick Collection, 1 East 70th Street, was appointed director yesterday by the board of trustees. He succeeds Franklin M. Biibel, who had held the post since 1951. Mr. Grier, who is chairman of the Museums Council of New York, had been assistant director of the Minneapolis Institute of Arts and assistant dean of education at the Metropolitan Museum of Art.

over 300,000 books and exhibition catalogues, extensive auction and provenance records, and 1.2 million images of art from the 4th to the 20th centuries From 1922 to 1947 Commissioned by Helen Frick

Helen Frick resigned after years in the gender politics matter and conflicts with Rockefeller in the Trustee

Henry D.M Grier appointed as the director of Trustee

2ND Expansion Started



Reception Hall & Garden Baylay Addition

ARCHIVES  
The Frick Changes Plan for Vacant Plot, Proposing 2d Wing  
MAY 17, 1974

Helen Frick served as Director of the Library from its inception until shortly before her death at 1984.

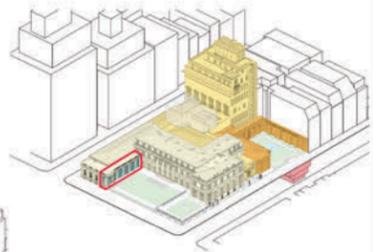
The Frick Collection had an operating budget of \$10 million and an endowment of \$170 million.

The Frick hired Rika Burnham as head of their education department. Burnham introduced several changes to the museum, including the introduction of monthly free entrance to the museum, called First Fridays.

Anne L. Poulet as former director retired

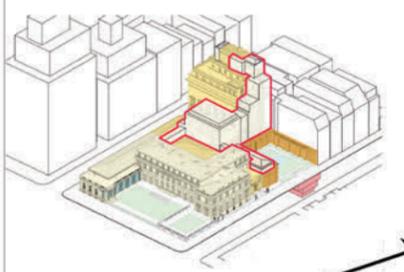
Current Director Ian Wardchopper on board

3RD Expansion Started



Portico Gallery Addition

4TH Expansion Started



Library, Conversation Reception

### Save the Frick Collection

The new expansion plan isn't right for the small museum in a mansion.  
By David Masello

ART & DESIGN

### Preservationists Protest New Frick Collection Expansion Plan

Critics say the plan would still destroy the mansion's gated garden as well as its music room, a chamber concert venue.  
By Robin Pogrebin

ART & DESIGN

### Frick Collection, With Fourth Expansion Plan, Crosses Its Fingers Again

The new design by Annabelle Selldorf highlights its controversial garden, and brings visitors up into former living quarters for an intimate experience with art.  
By Robin Pogrebin



Frick Madison - The temporary home of The Frick Collection while the start of 4TH expansion

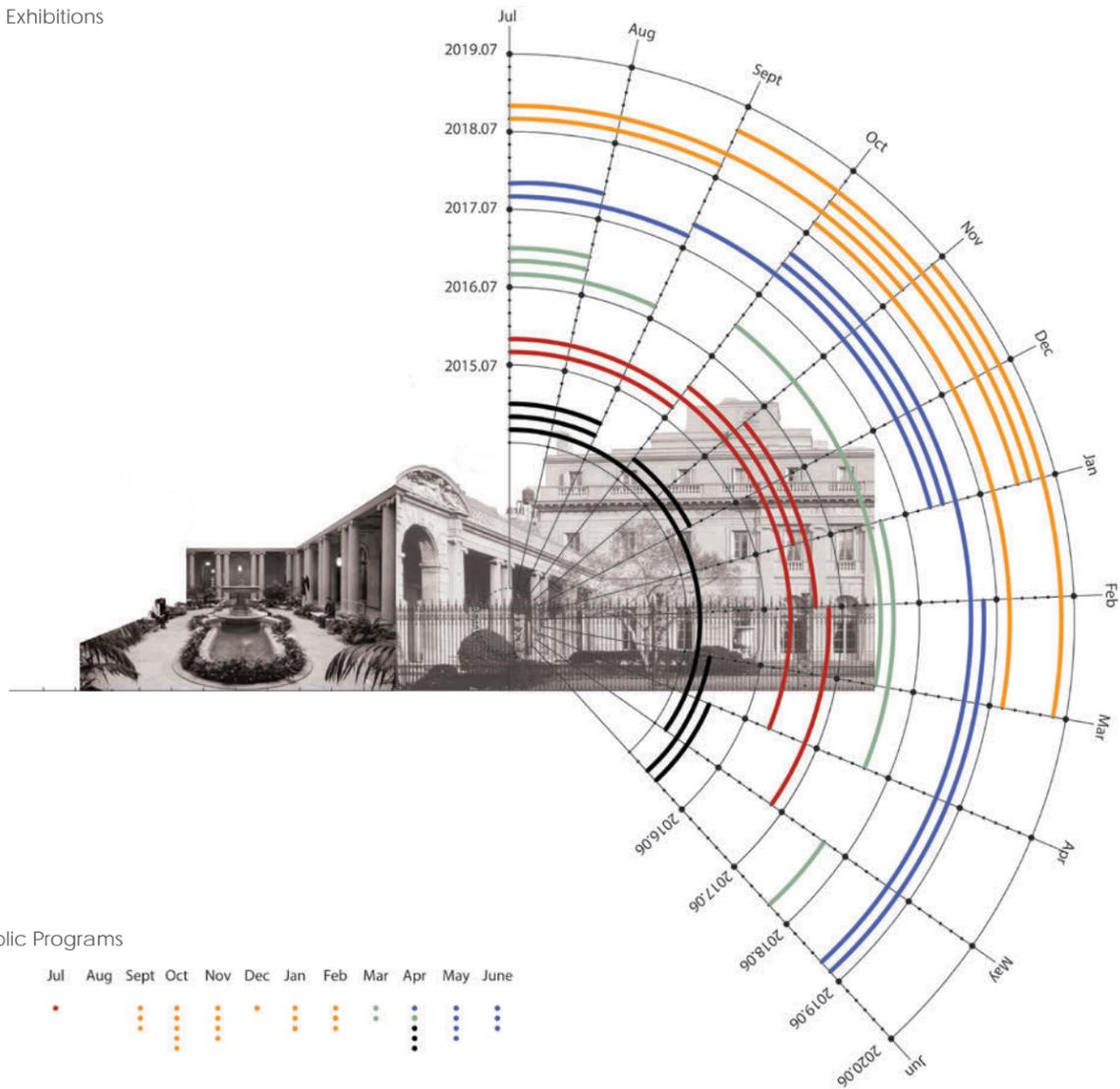
The Frick Collection & The Frick Madison



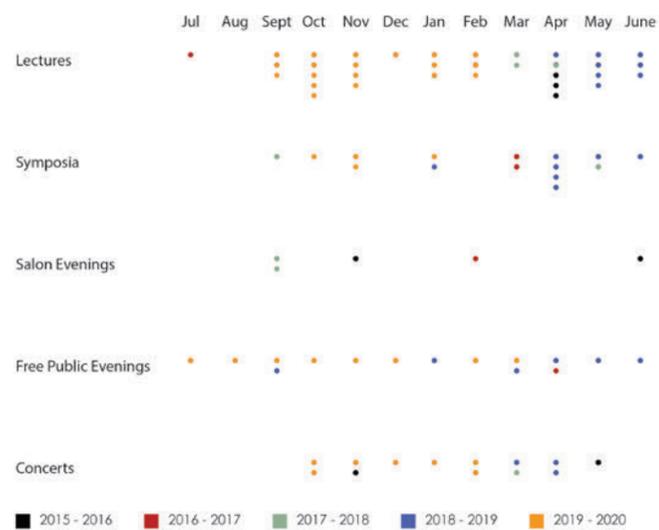
Context & Domesticity



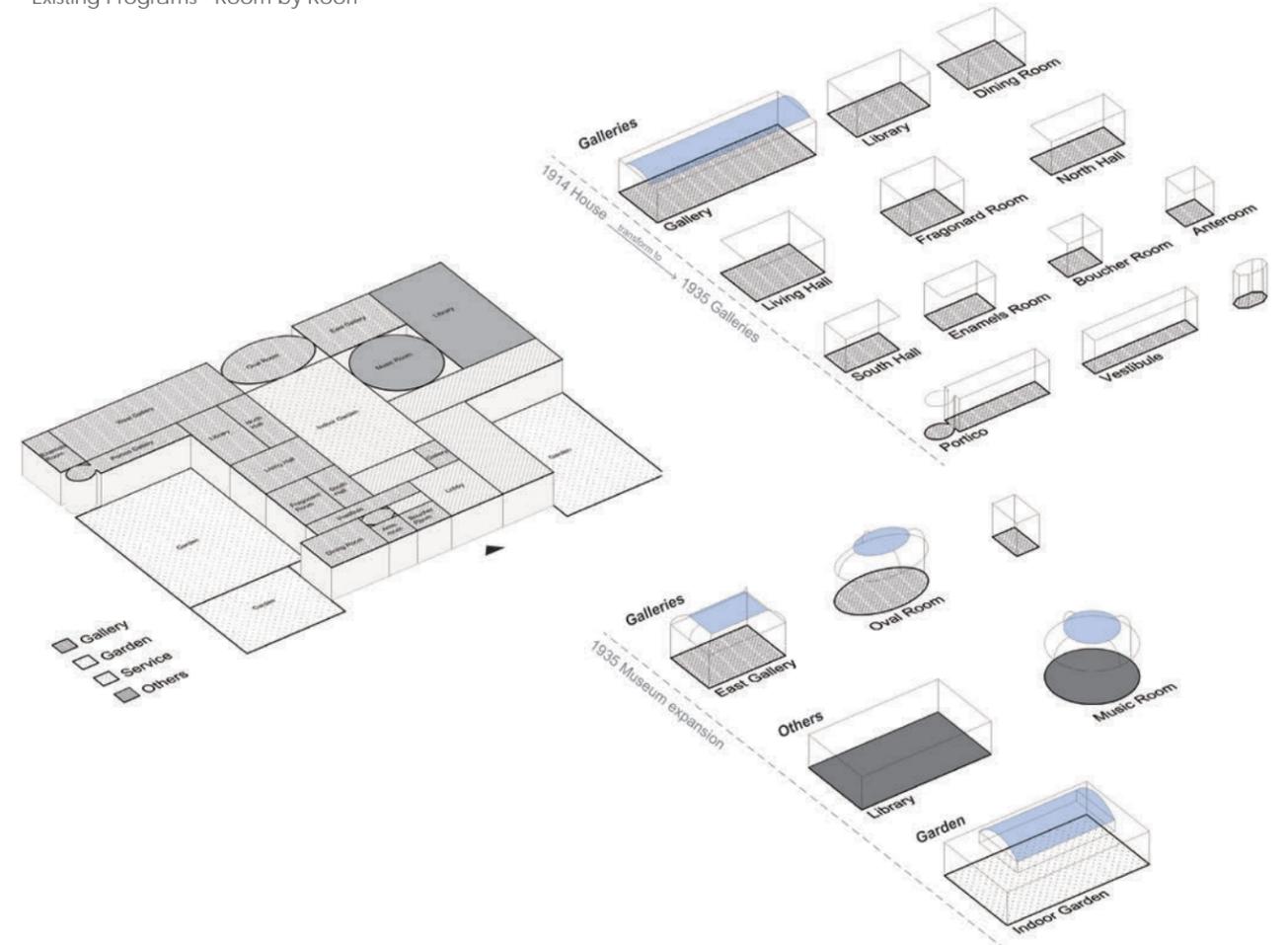
· 2015 - 2020 Exhibitions



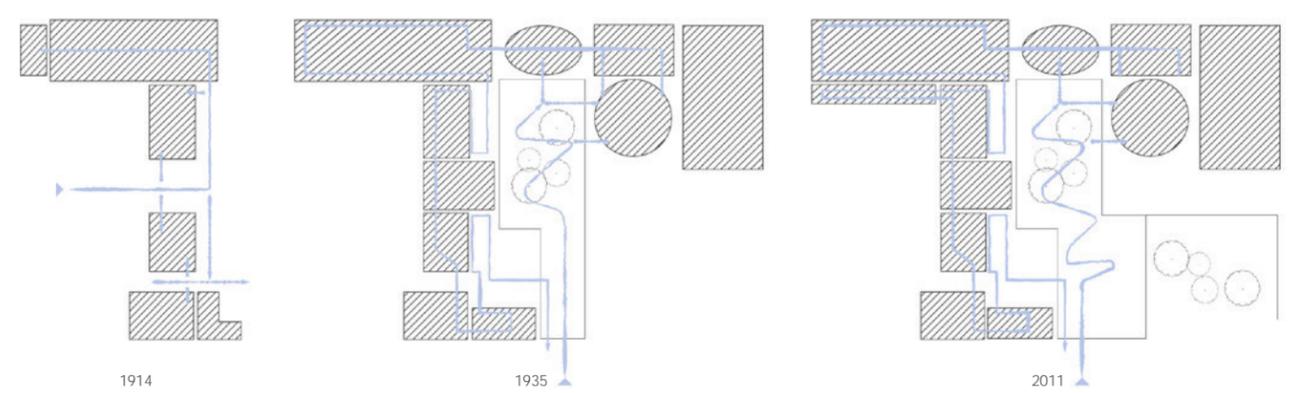
· Annual Public Programs



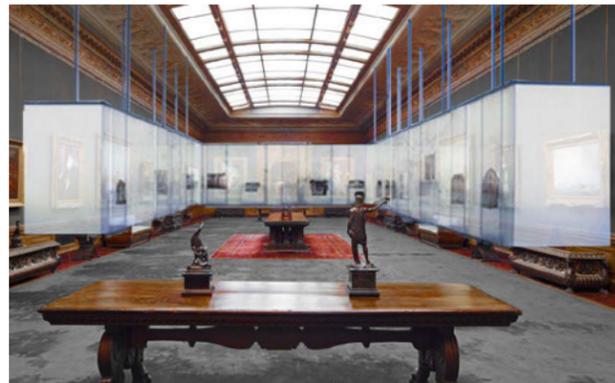
· Existing Programs - Room by Room



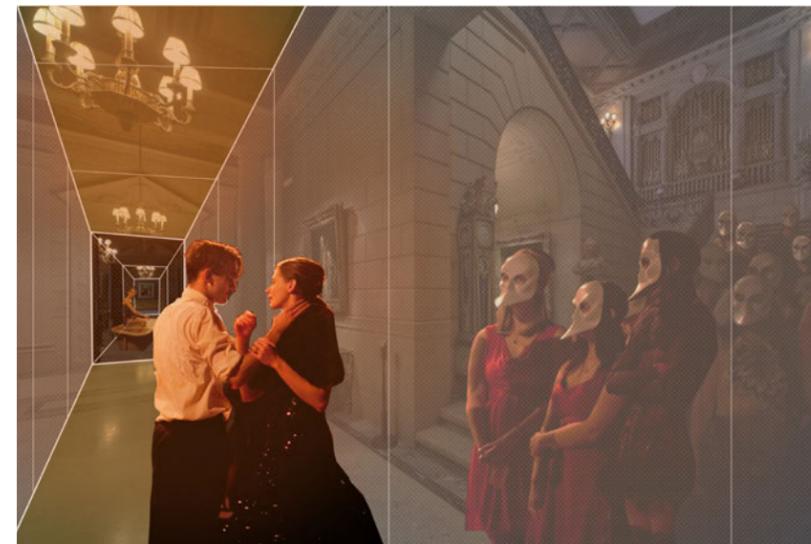
· Circulations After Expansions

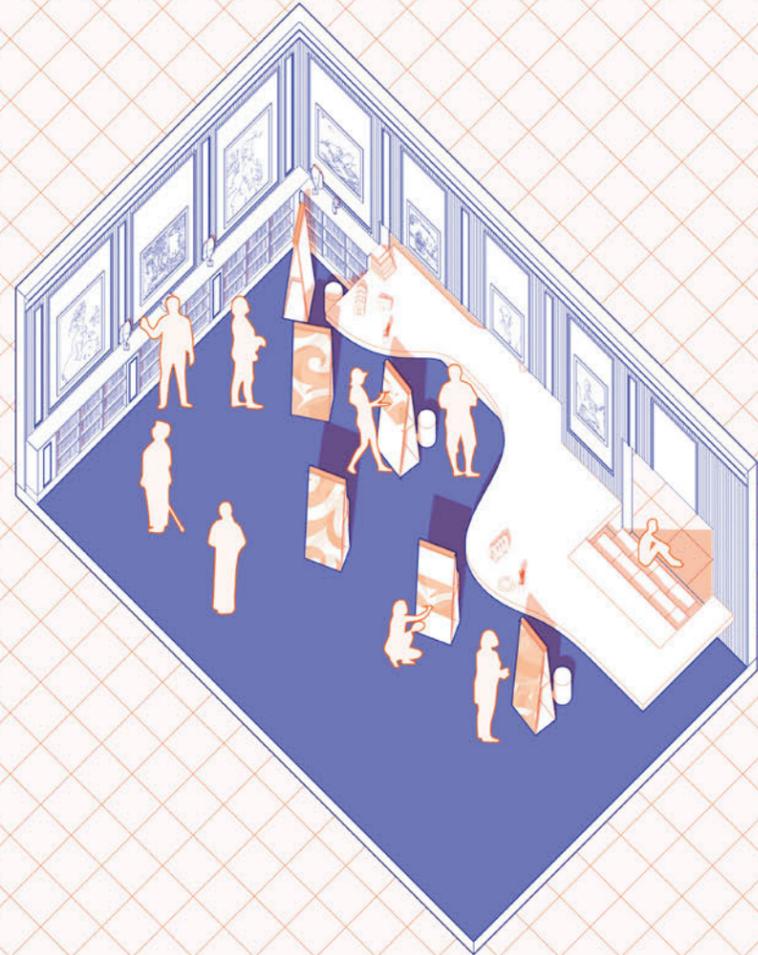


Conceptual Intervention - Superimposition

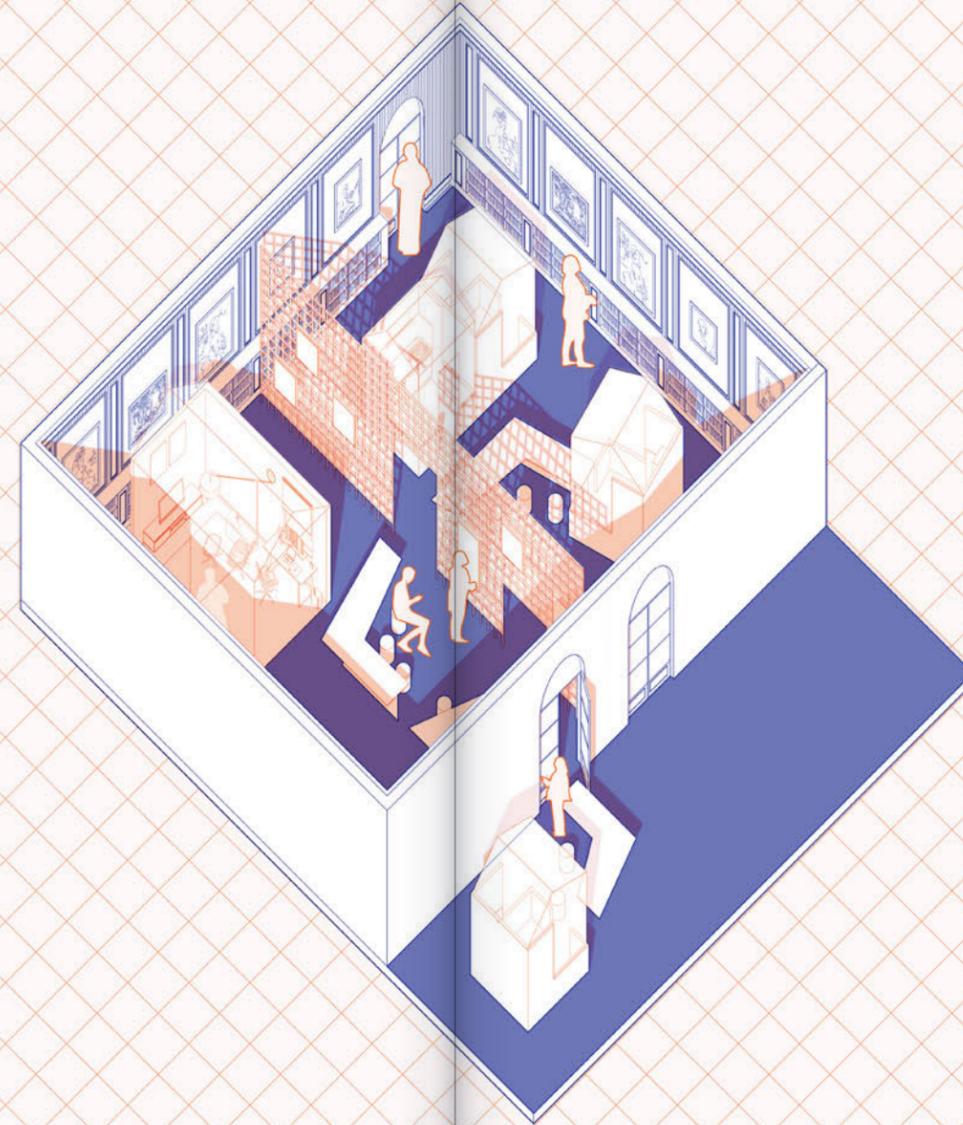


Conceptual Intervention - Parallel Activities

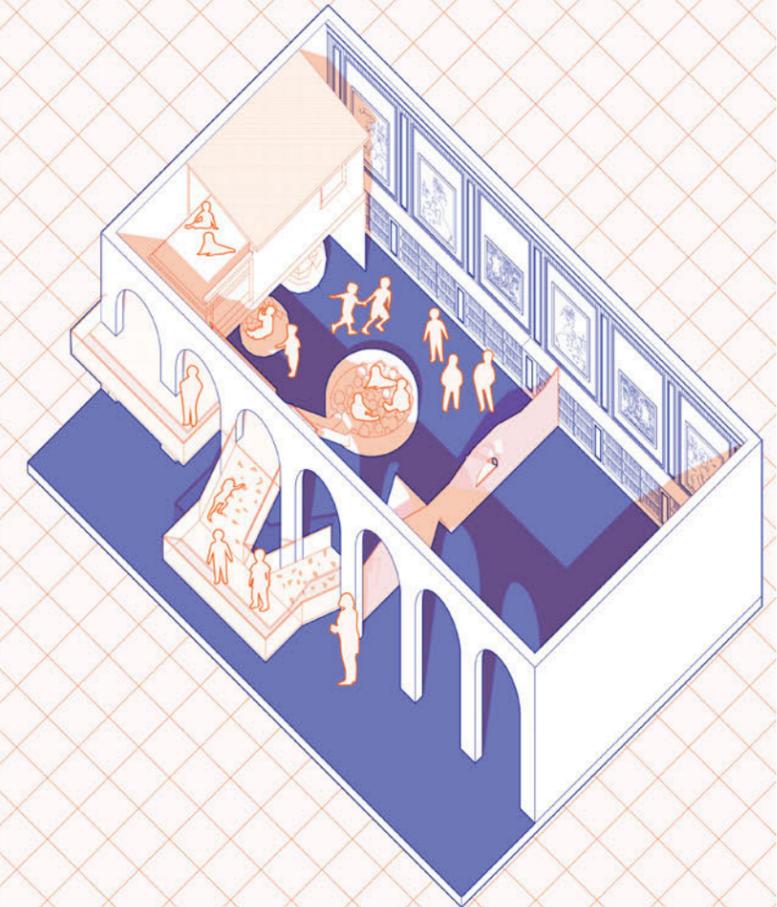




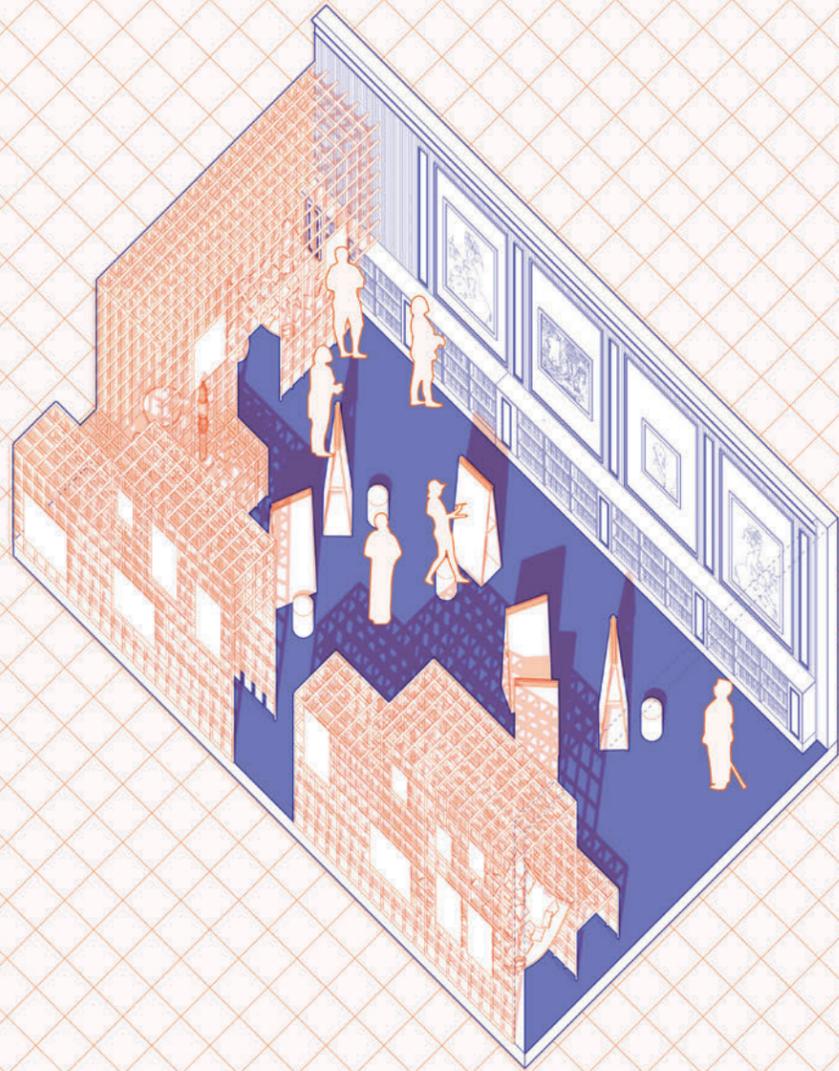
· Artists - Art Station



· Locals - Work from "Home"



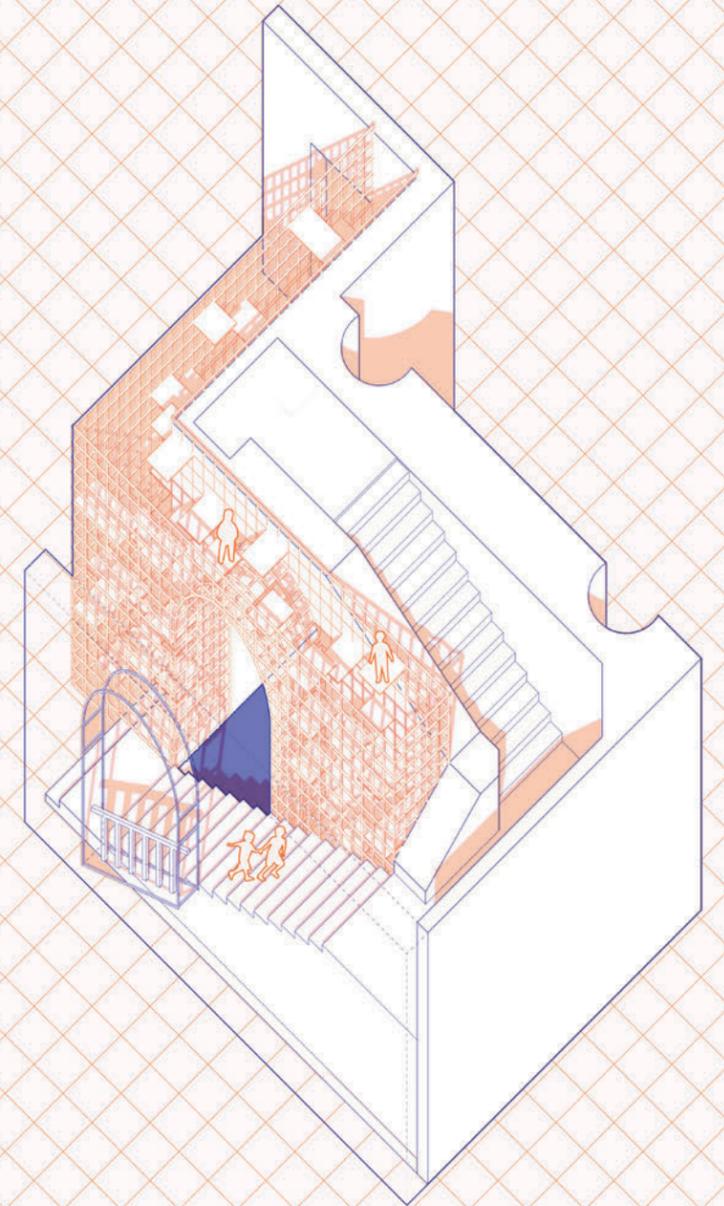
· Kids - Amusement House



· Artists - Creation Limb Bender

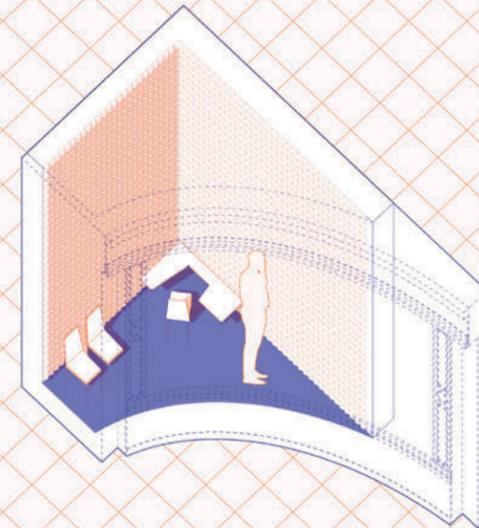
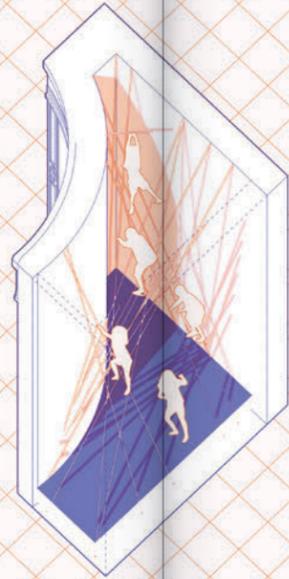
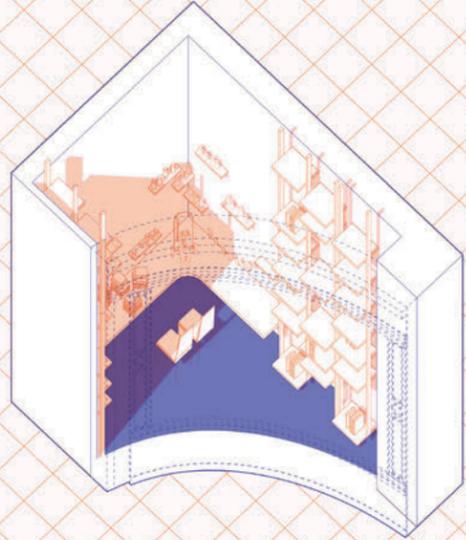


· Locals - Private Room

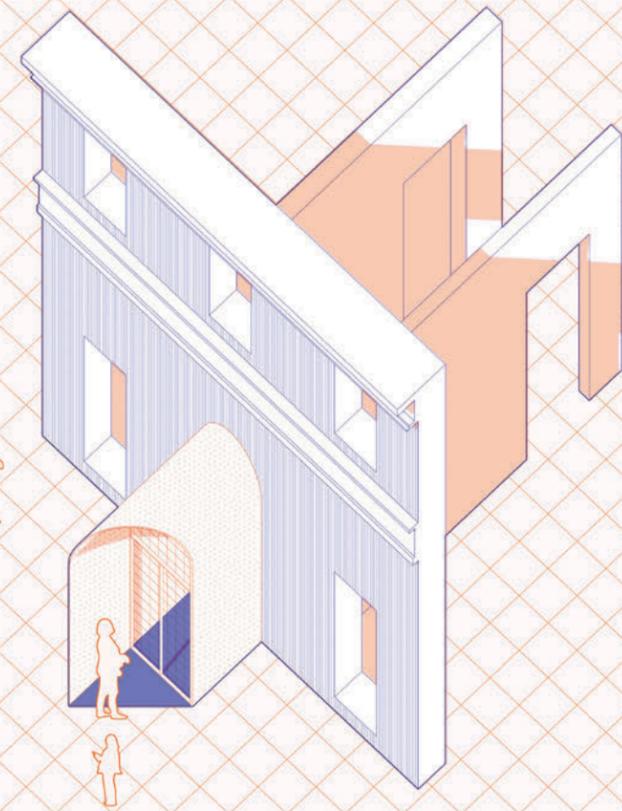
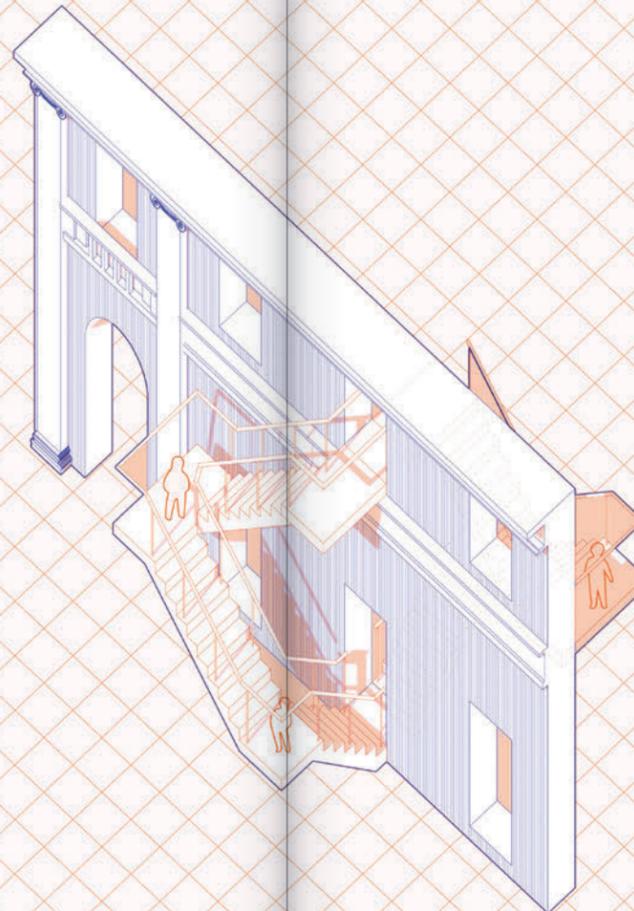
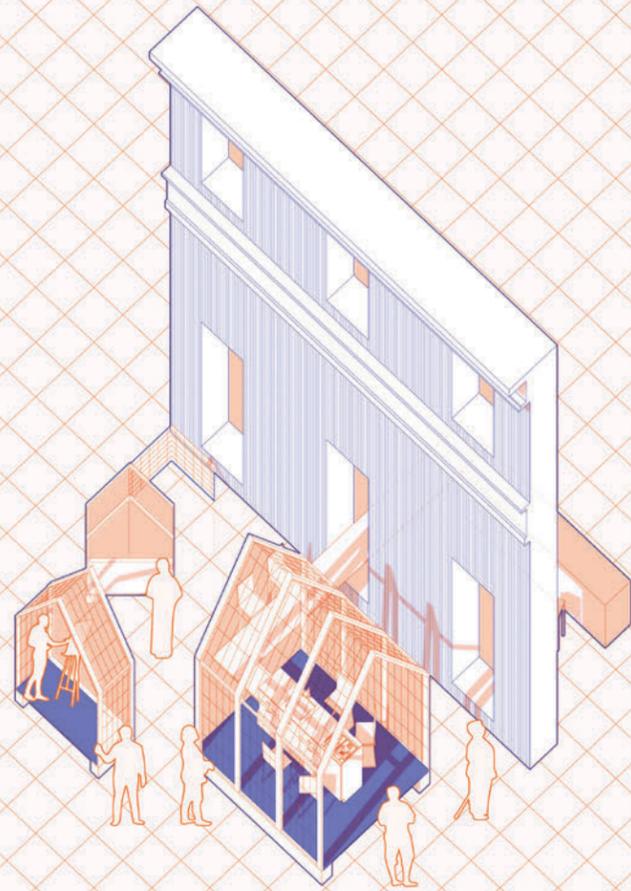


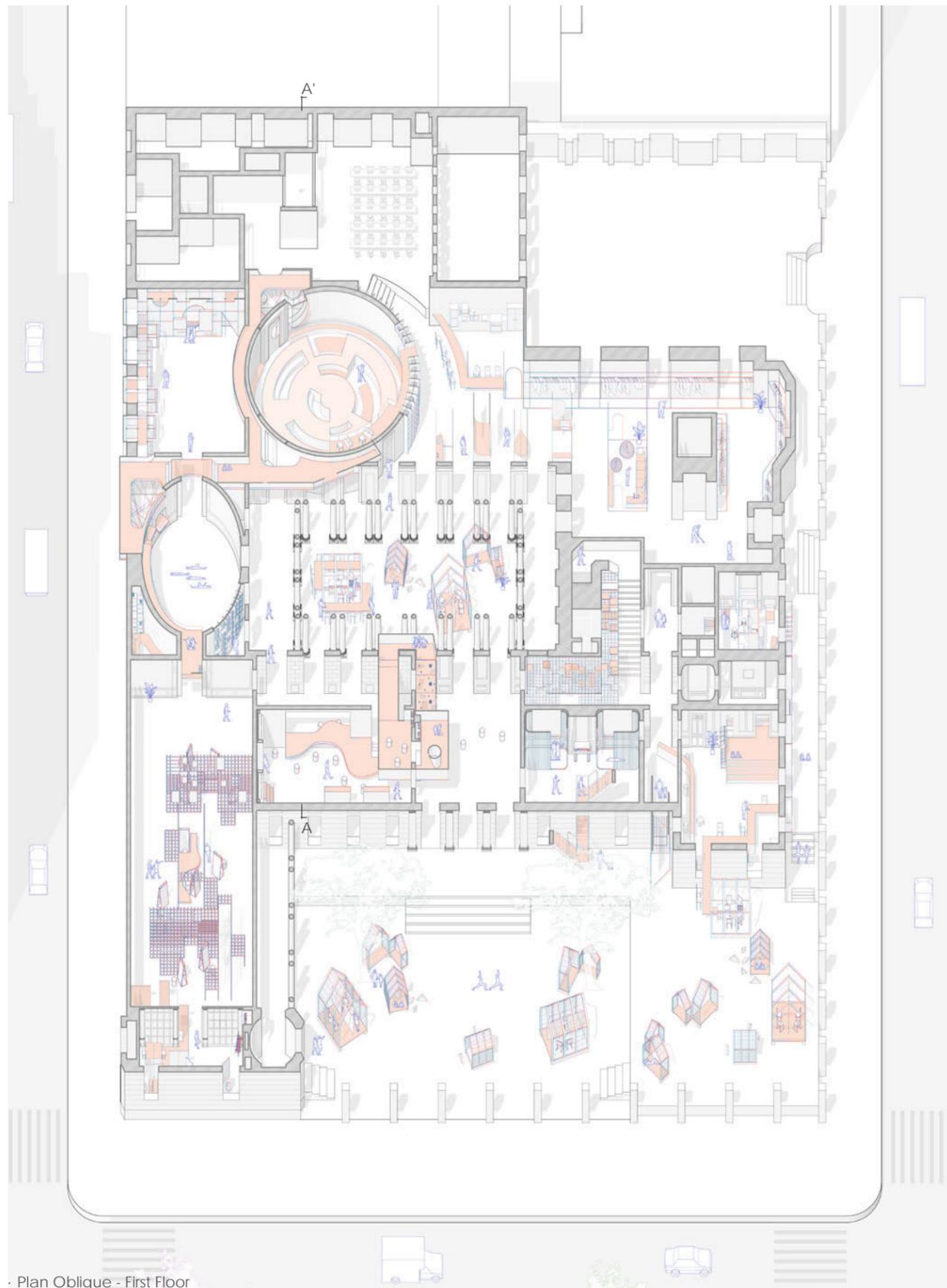
· Kids - Playing Valley

Poche



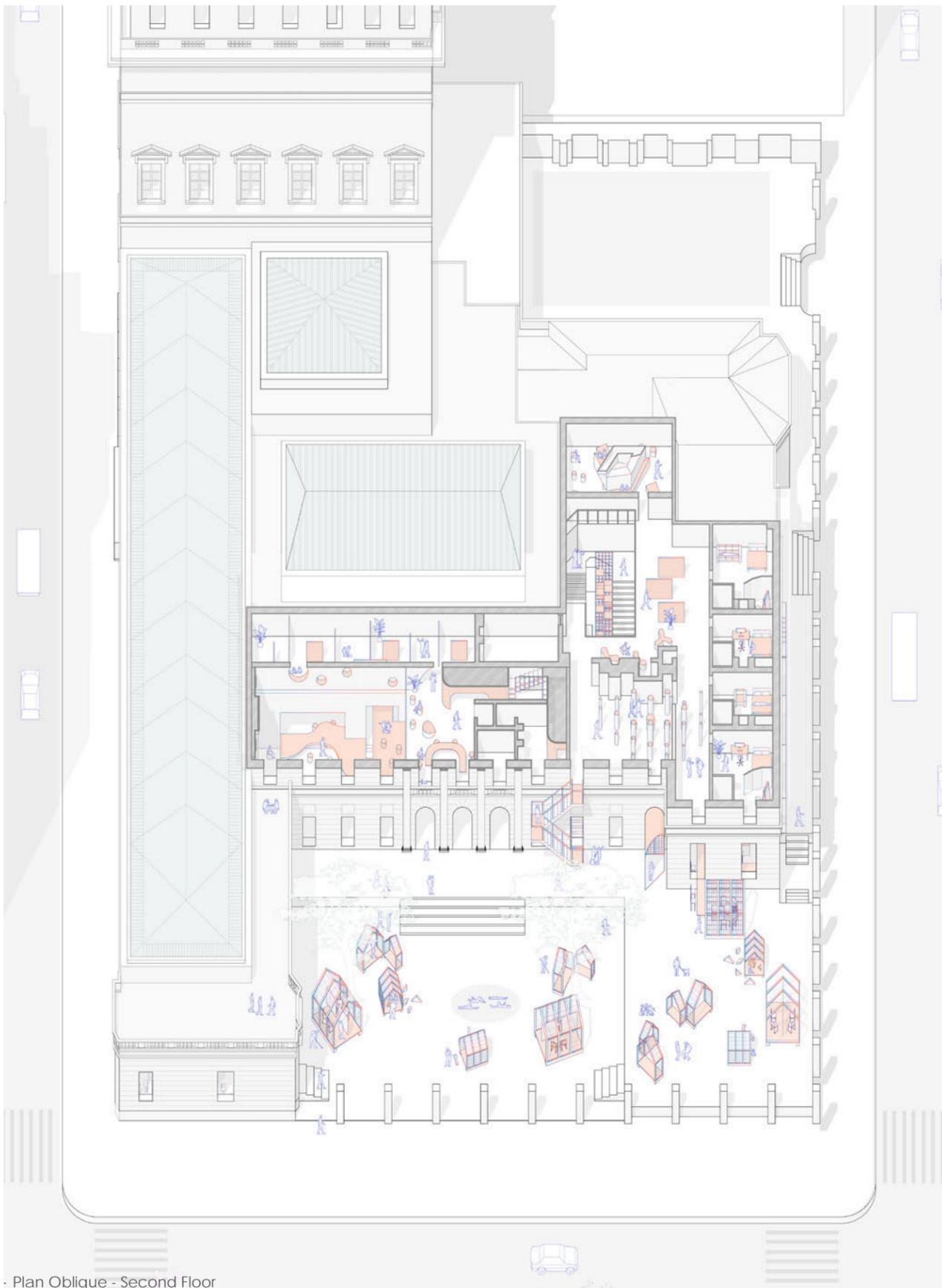
In & Out



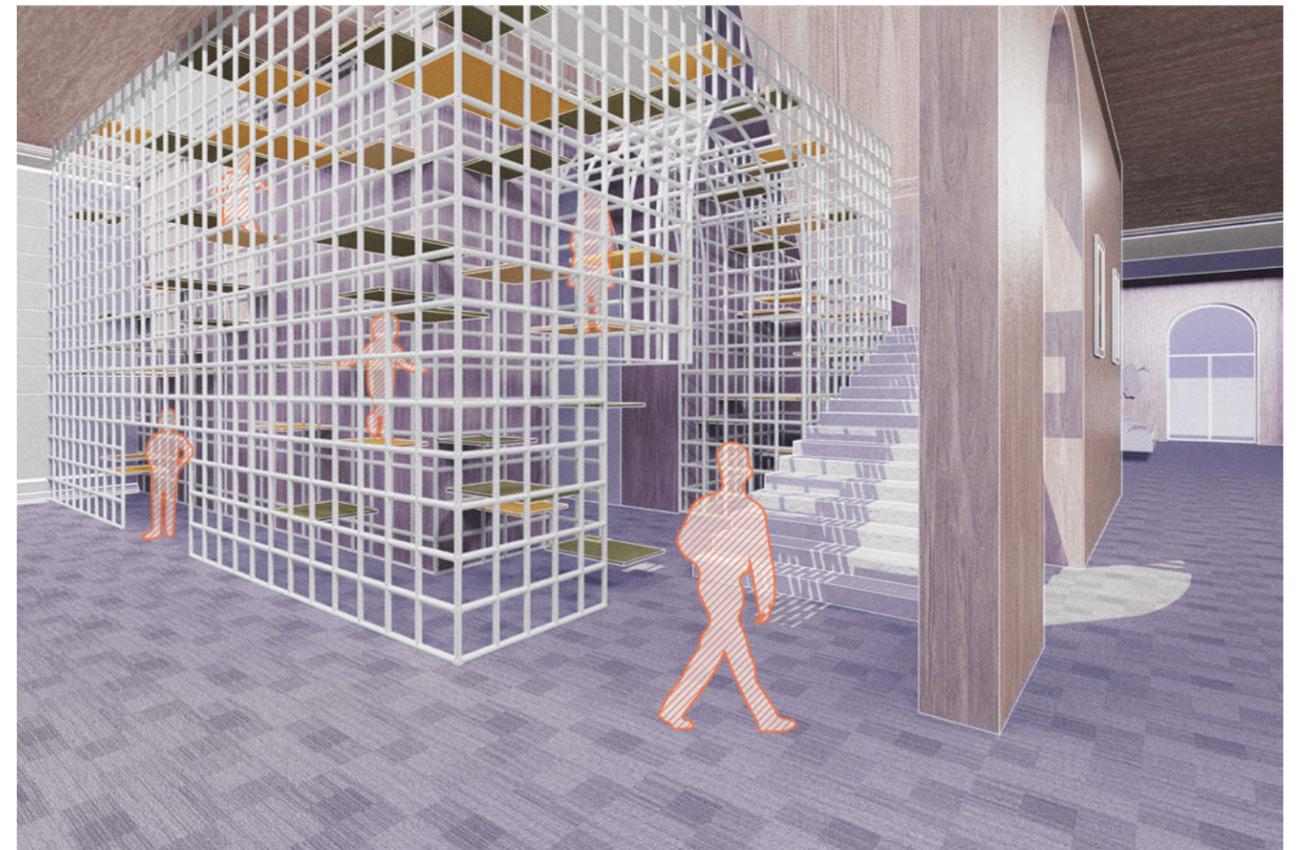
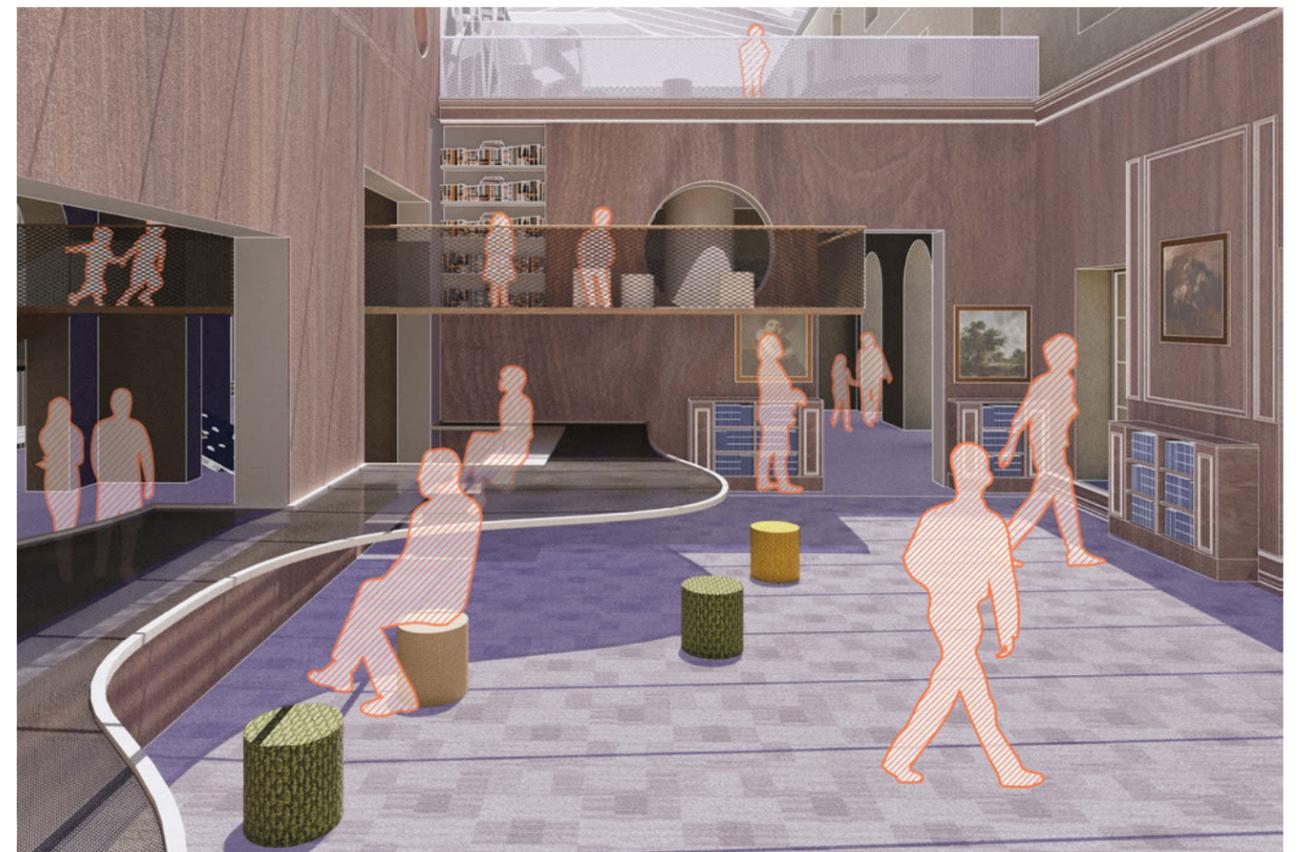


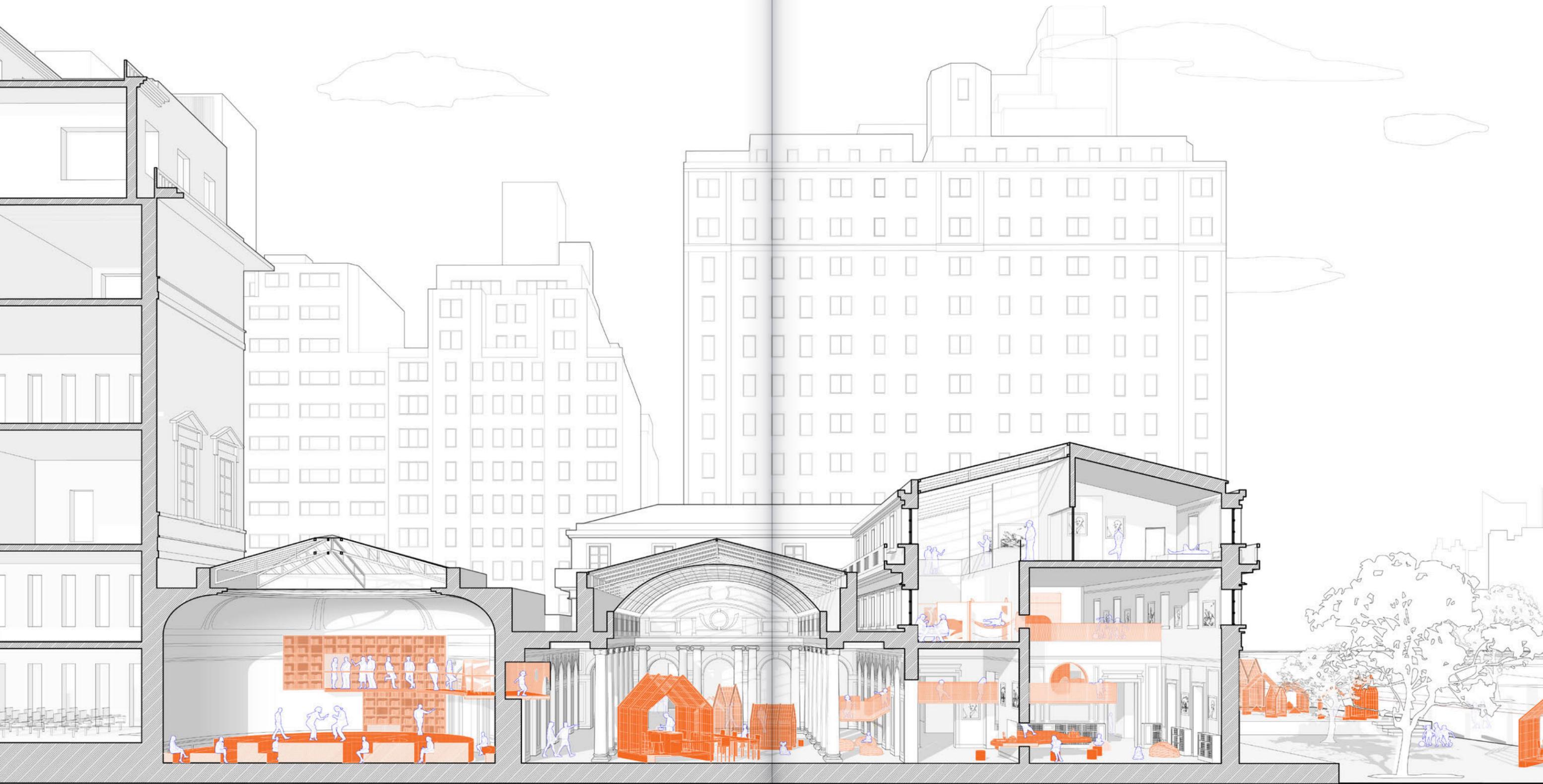
· Plan Oblique - First Floor





· Plan Oblique - Second Floor





· A-A' Section

## In "Voids"

### Public School for Grade K-8

New York, USA  
Advisor: José Aragüez  
Individual  
Core Studio II  
Spring, 2020

Schools are space for students to learn, to play, and to explore. In terms of this project, the intension is to design a school where students can act as active explorers rather than passive learners.

Buildings can be roughly divided into three parts -- envelope, functional space, and the void-in-between. By making use of the void, the interactions between people and people, people and the city can be activated, and hopefully, it will become a place where students can explore with interests.

To create the "Void", the project adopts a lattice structural system. Such a system provides a homogeneous framework where different volumes can kind of floating freely. Students can creatively use the spaces in between the lattices, making them places for small exhibitions, mini garden, and so on.

To make sure that people can easily enter each of these floating volumes, a central core is placed in the middle of the whole project to accommodate the circulation. Ramps and corridors are used to connect to both the interior of each volume and the roof-top areas. Interactions between ramps and corridors from different floors height multiply the indirect contact between people, which, can be a catalyst for various activities among students.

For the interior space, each volume has a relatively different spatial form. By providing these different spatial types, the diversity can stimulate students' interest to explore the building. By activating the whole space, the school can be a place where students automatically engage in different activities.



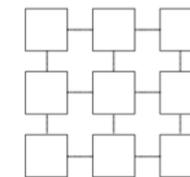
· Concept



Horizontal playground

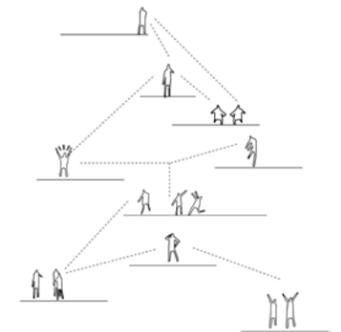


Divided by functions



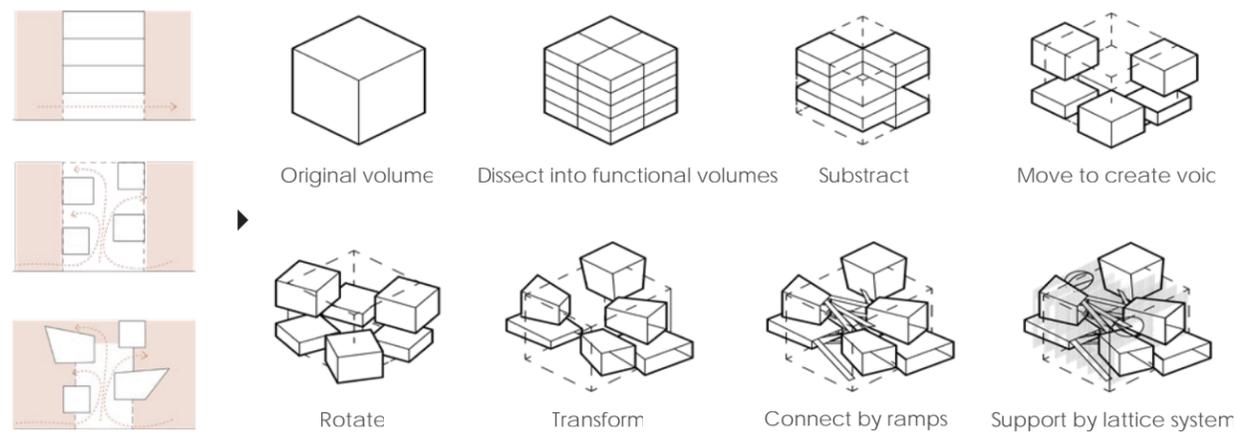
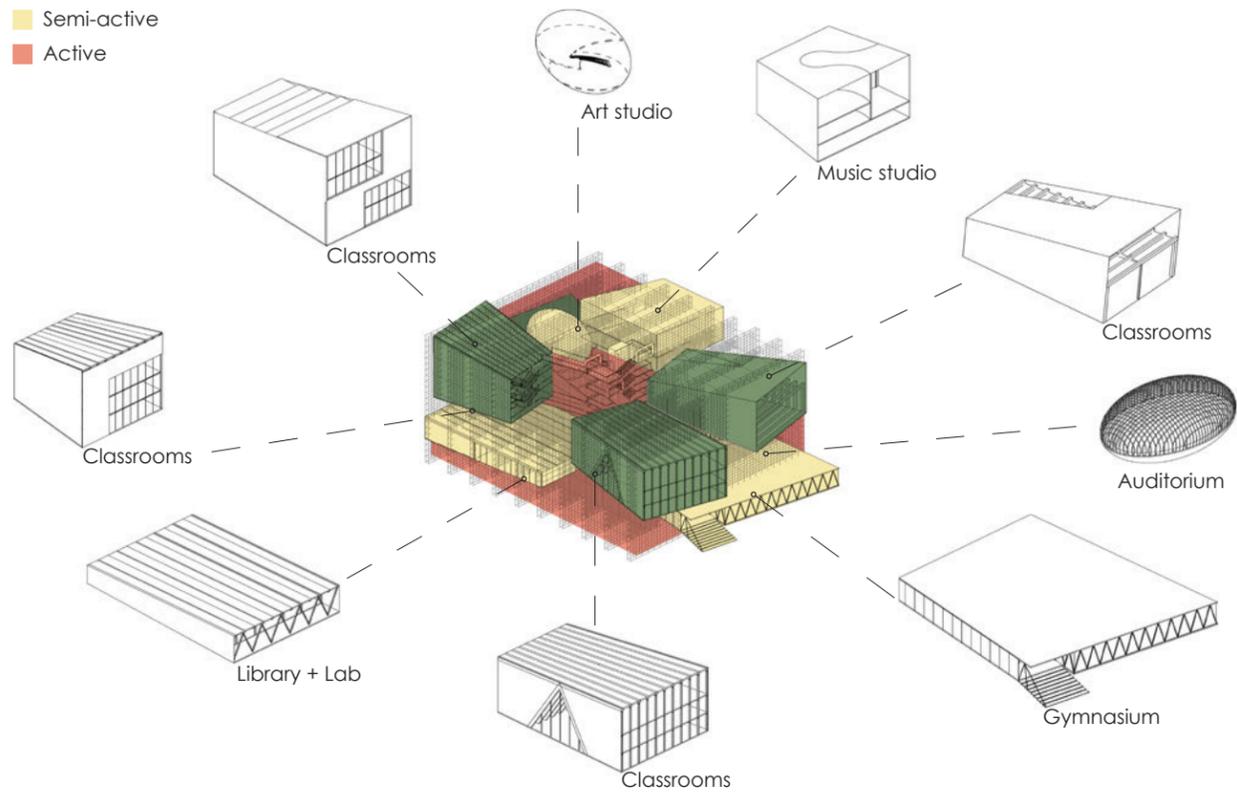
Monotonous connections

Stack



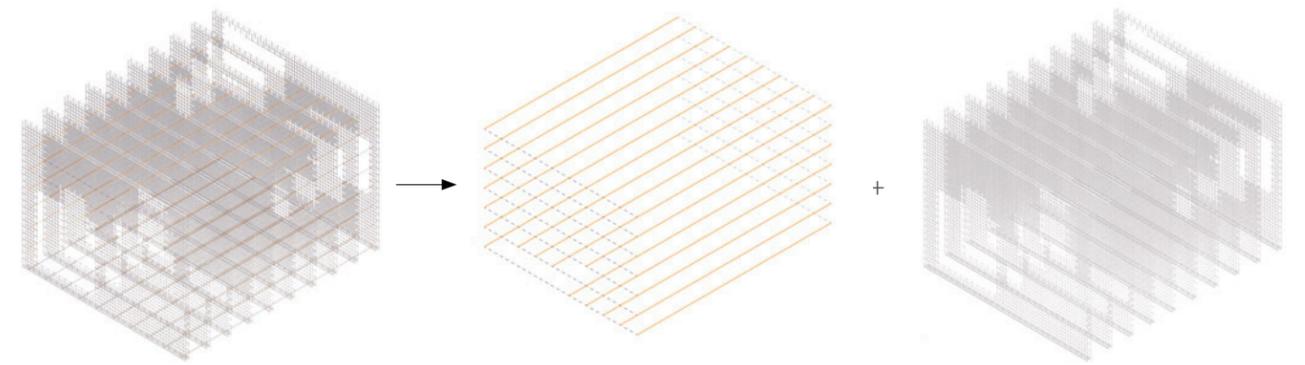
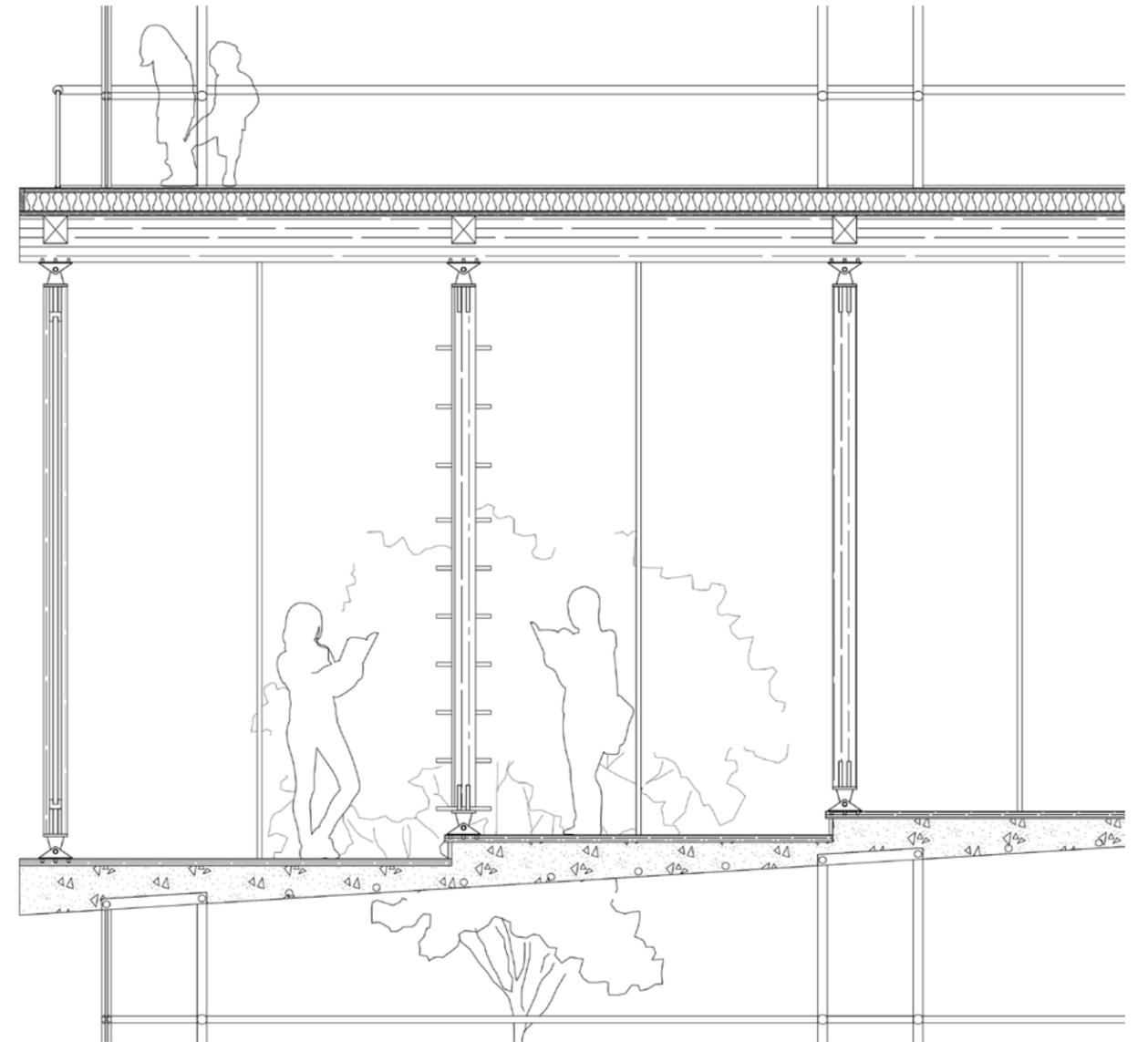
Multiply interactions

- Quiet
- Semi-active
- Active



· Circulation



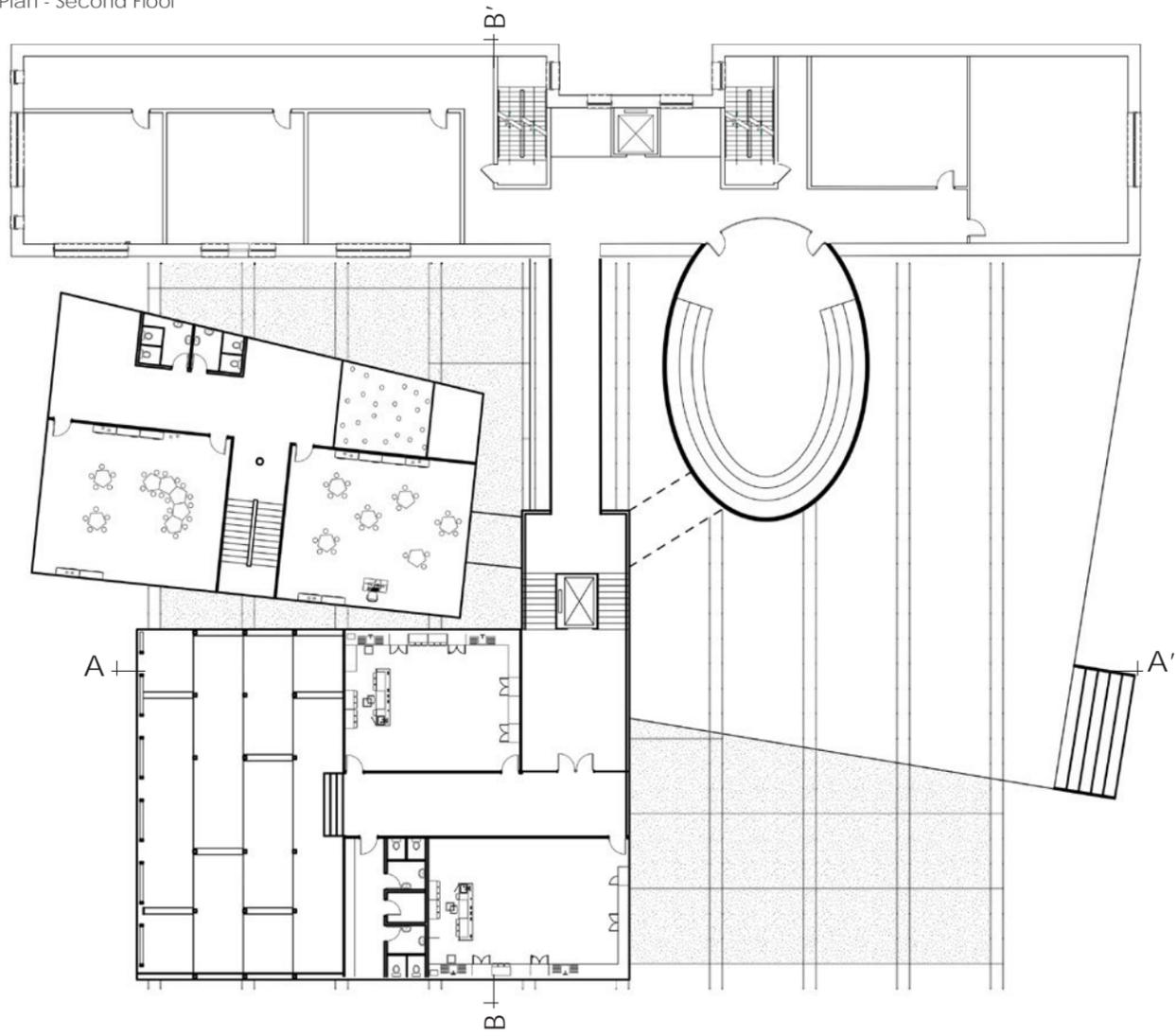


Lattice system

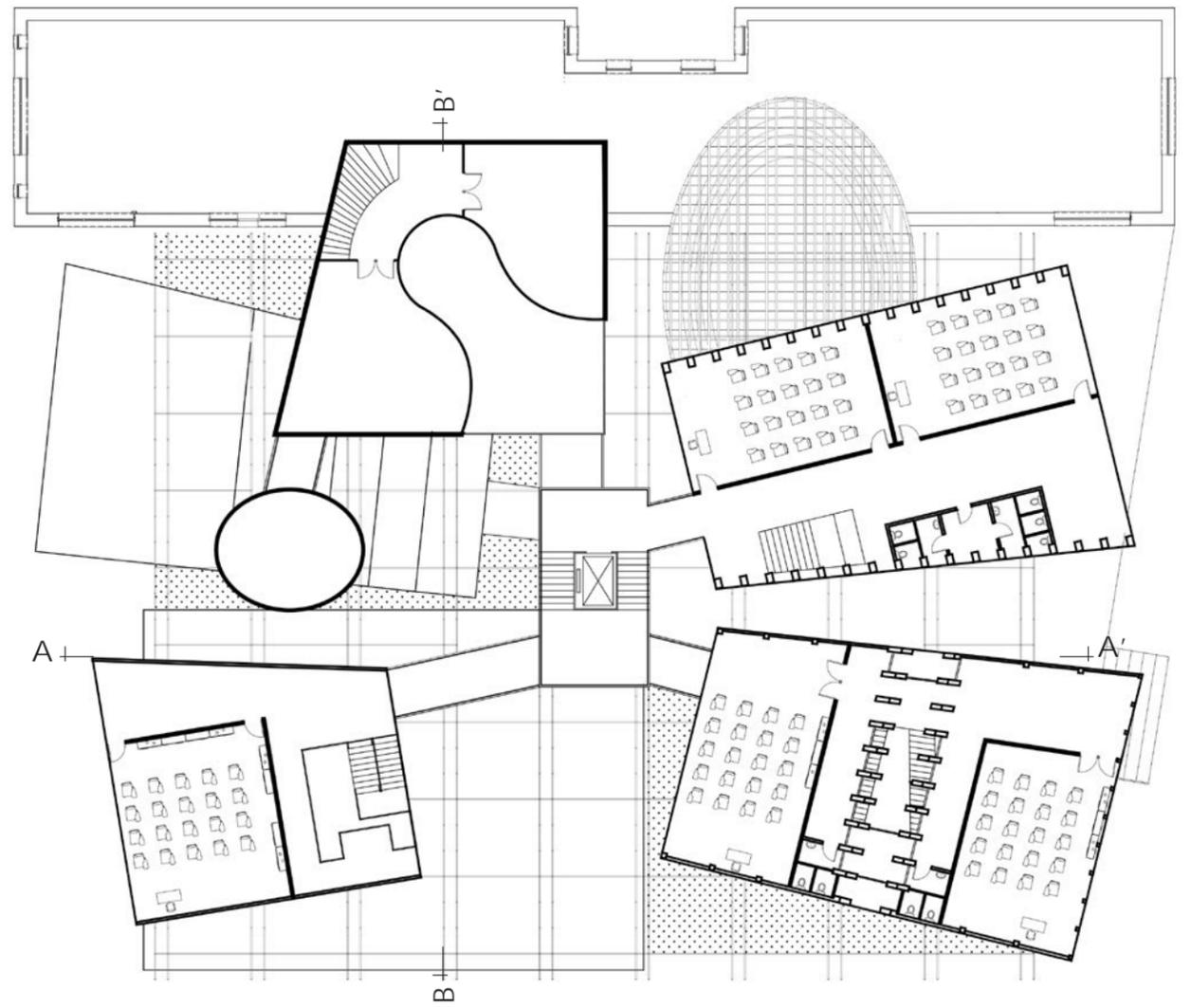
Lateral loads - Cables

Vertical Loads - Lattices

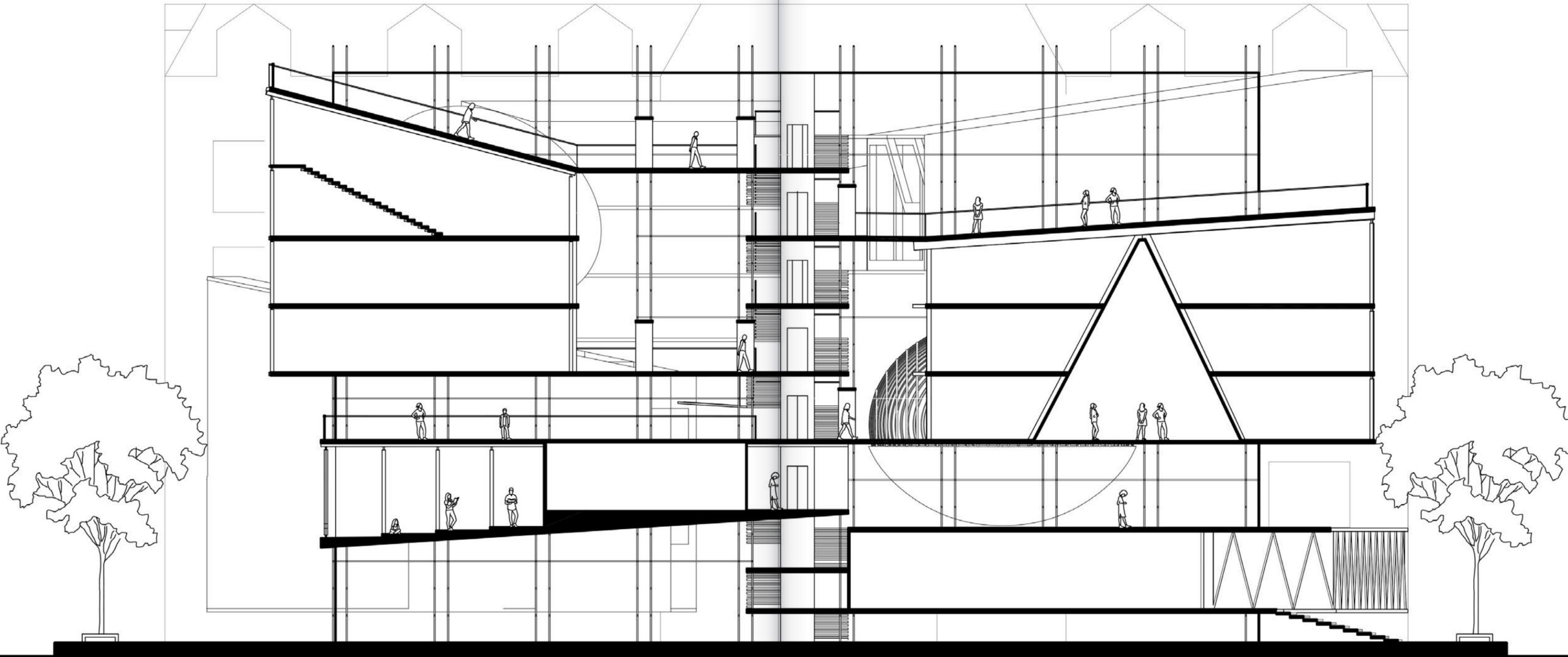
· Plan - Second Floor

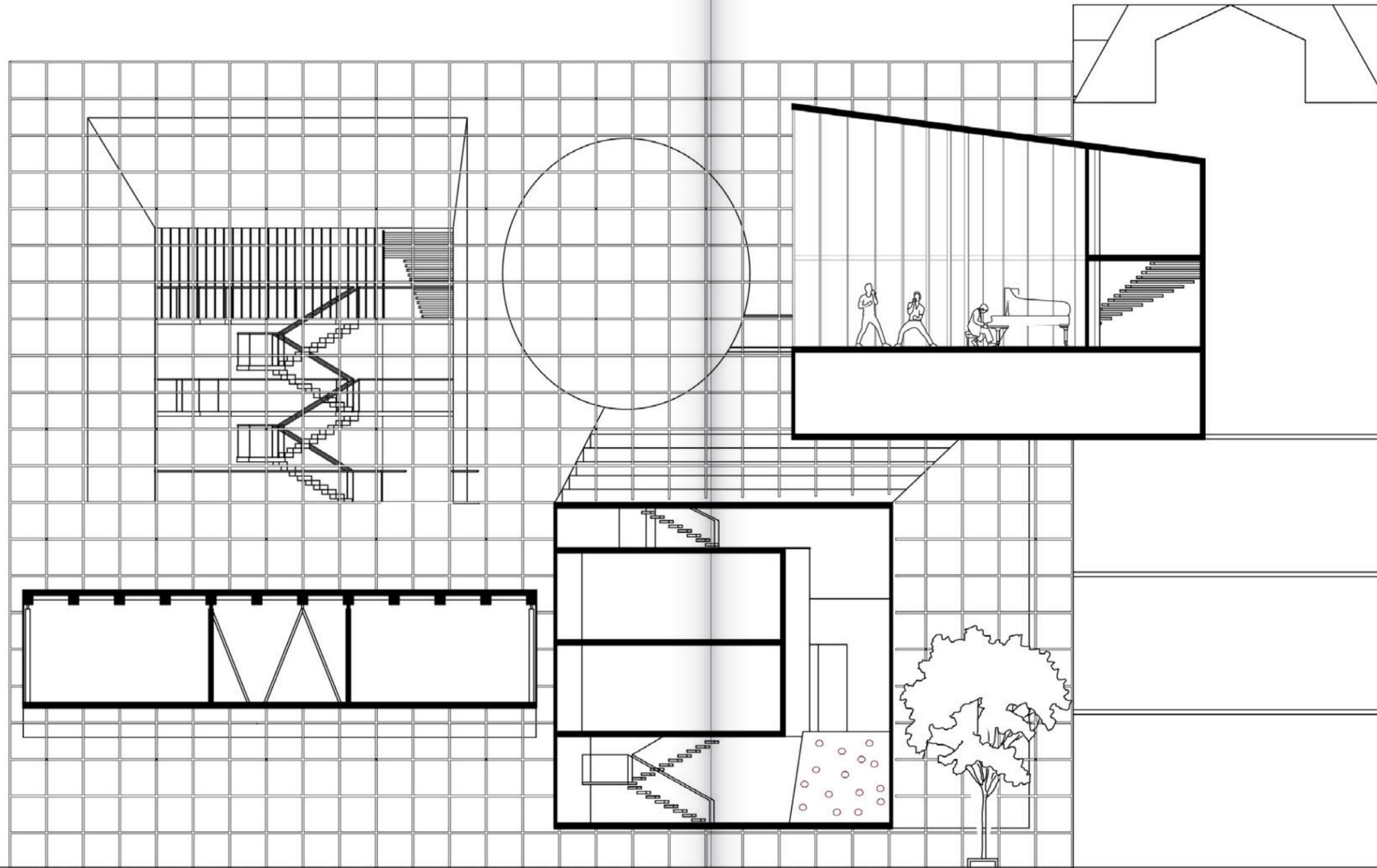


· Plan - Third Floor



· A-A' Section







## Gaps Within the Gap

Supportive Infrastructure for Healthcare Facilities

New York, USA  
Advisor: Phu Hoang  
Teammate: Duo Xu  
Advanced Studio V  
Fall, 2021

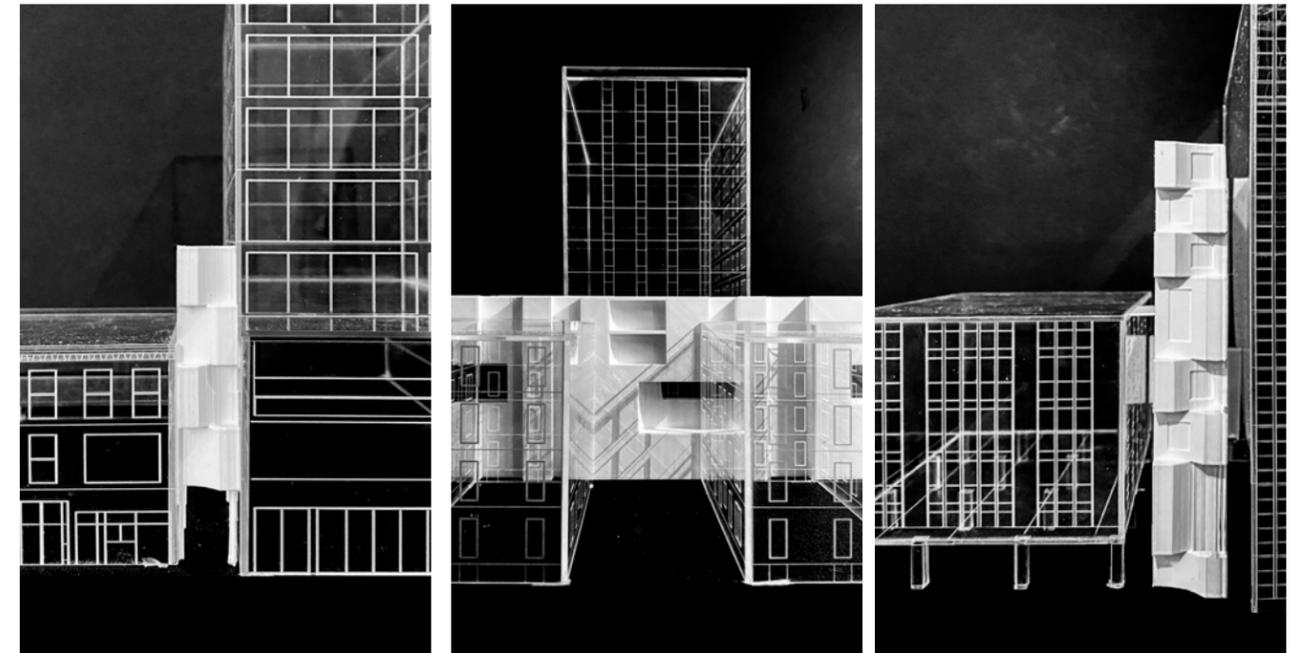
The project uses gaps between existing medical facilities to provide supplementary functions, introducing traditional Chinese medical treatments system and shared housings to improve the overall wellness of both healthcare workers and patients.

Walls are inserted as the main strategy. Linear ramps along the voids provide more accessible paths that connect to the nearby medical facilities, which help combine different services to form a whole system.

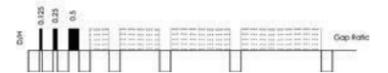
Moreover, circulations are combined with the semi-open space, creating a vertical rehabilitation system, an essential part of the traditional Chinese medical treatments system, which allows dynamic visual connections to the natural environment while keeping a relatively private space.

Housing is provided to accommodate the need for healthcare workers to stay overnight. Shared housing is provided in both 12 feet and 24 feet. In the 9 feet wide gap, the treatment room can be temporarily changed to housing. By including this program, the project aims to provide an ideal commute time of 30 minutes that covers the flushing.

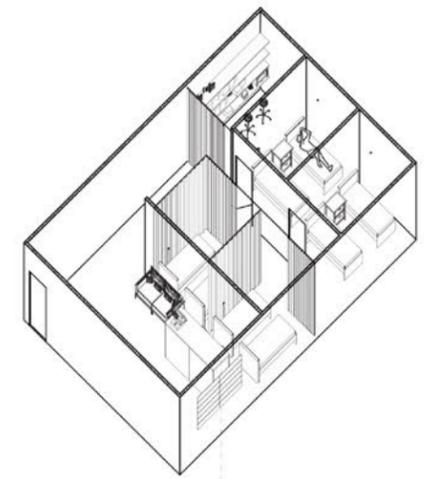
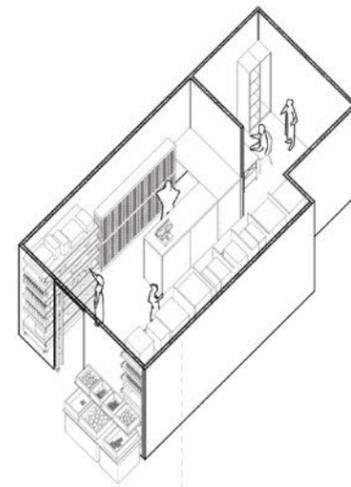
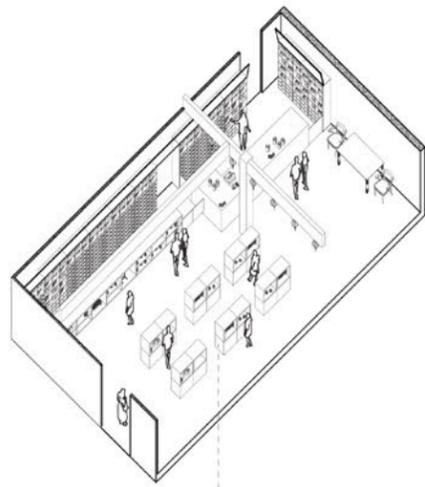
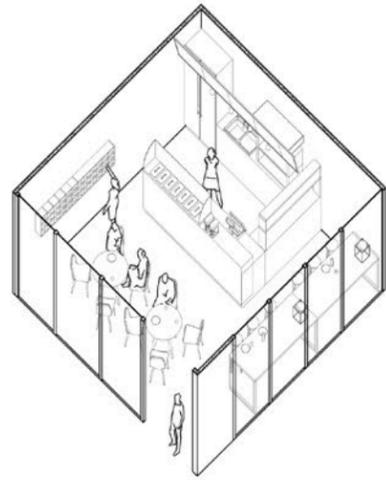
Roofs are connected to the system to provide Rooftop herbal gardening, which is to provide herbs for daily dietary use. Also, it provides green space for rest and exercise.

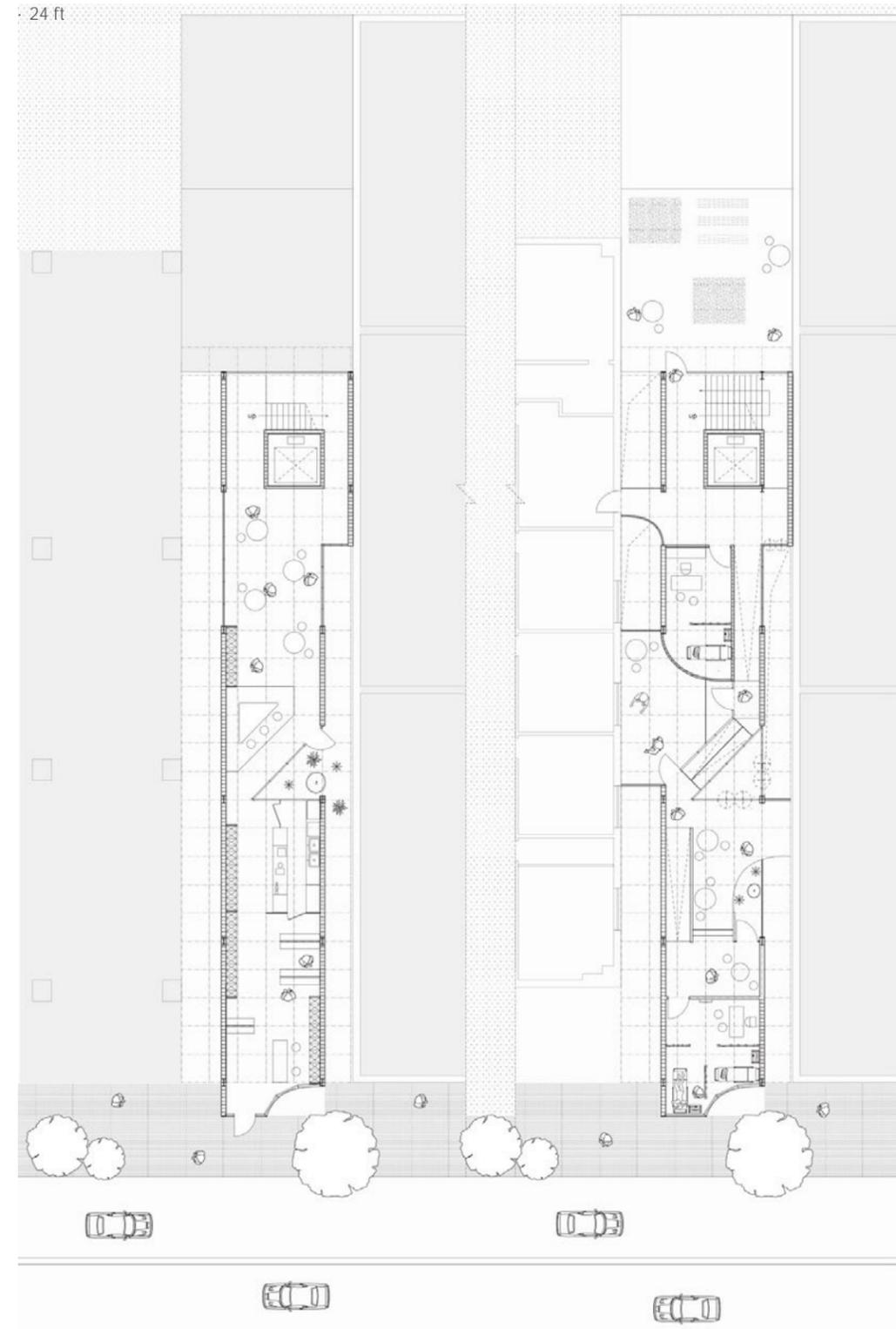
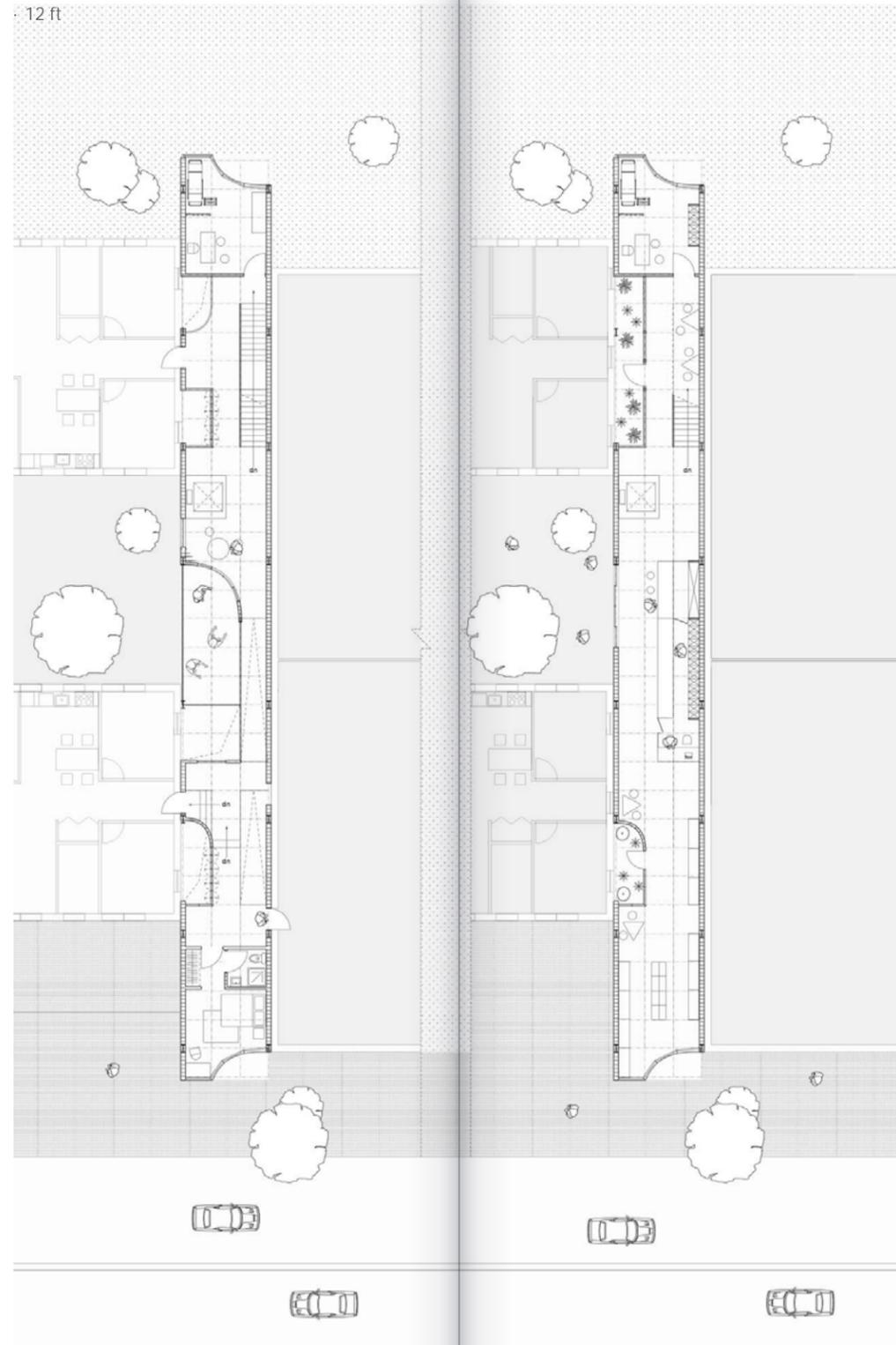
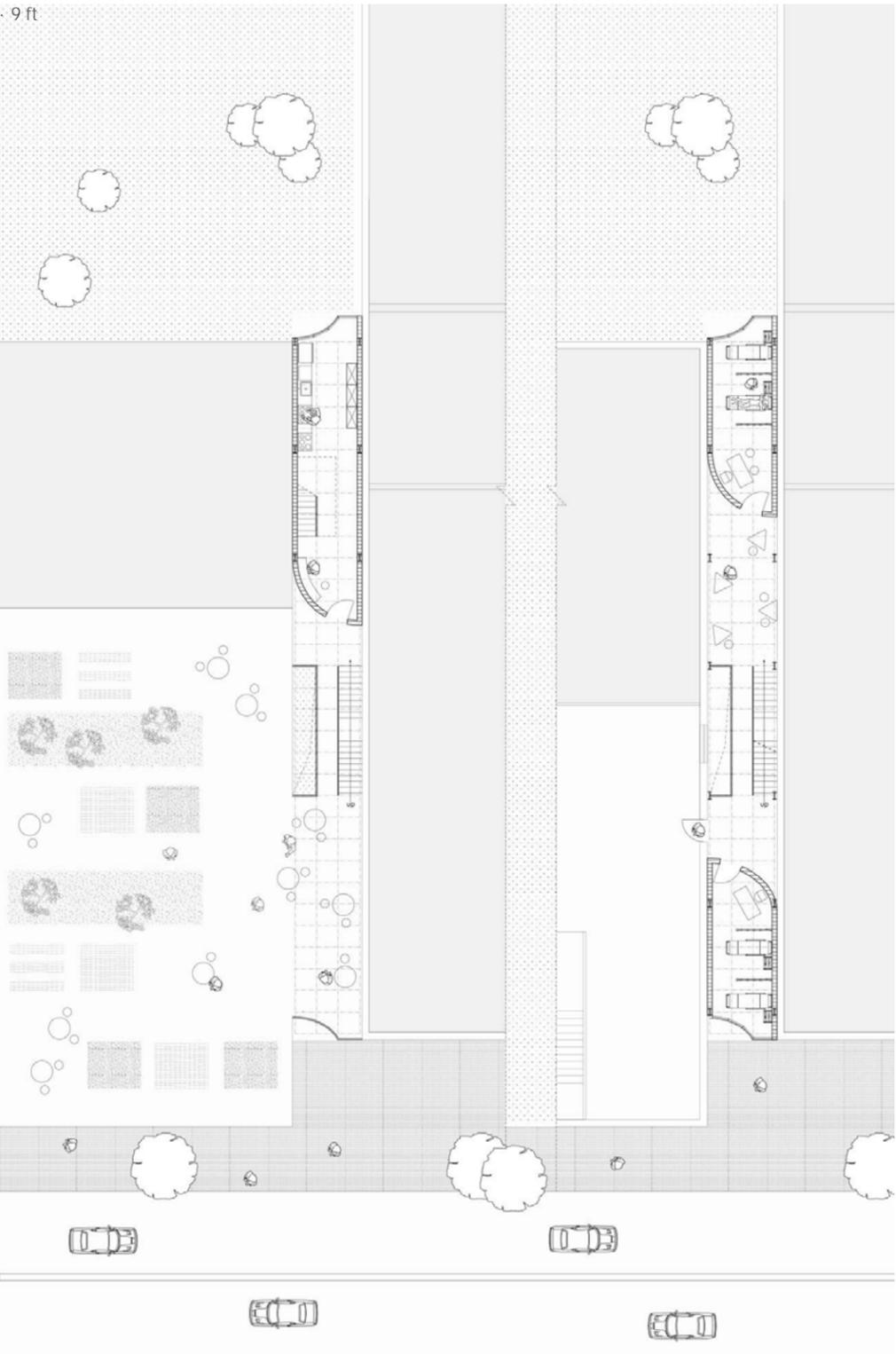


· Spatial Prototype















## Ground & Seasonality

### Communal Infrastructure for Islamberg

New York, USA  
Advisor: Ziad Jamaledine  
Teammate: Alexa Greene  
Advanced Studio IV  
Spring, 2021

Located in Upstate New York, Islamberg is a small intentional Muslim town. The changing lunar calendar, which is around 15 days less of the solar calendar, celebrates religious holidays in different seasons. By adjusting the topo, the project aims to create an event space that functions in different seasons.

In winter, a bearing wall cut with triangular forms functions as a highly sturdy boundary between the building and the underground, creating space to shield people from foul weather.

A secondary furniture system is proposed as part of the bearing wall system. Triangular table units are designed to fit into the niche created by the bearing wall, which can be easily assembled and disassembled to create almost any seating arrangement.

In summer, the lowest level becomes the most used. It is shaded when it is too hot to be directly in the sun and is integrated into the landscape, allowing for tables to spill out under the tree canopies.

As the weather improves in Spring and Fall, space becomes more indoor outdoor with the easily movable table system spreading out onto the large flat patio. Individuals can also walk down the attached sloping overhang, where we have small gardens and areas for kids to play.

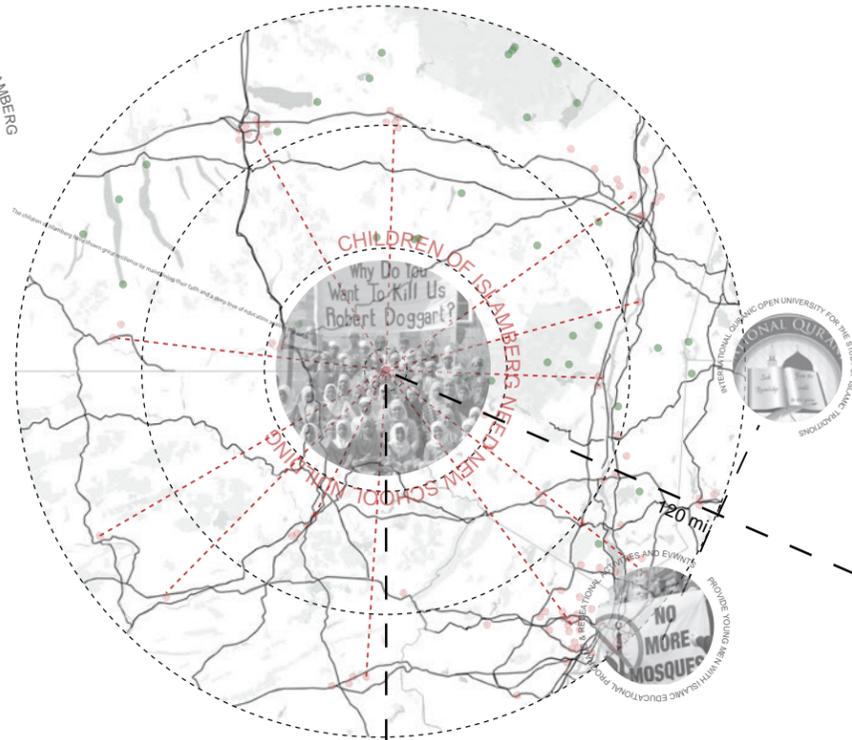


· Rolling of religious holidays

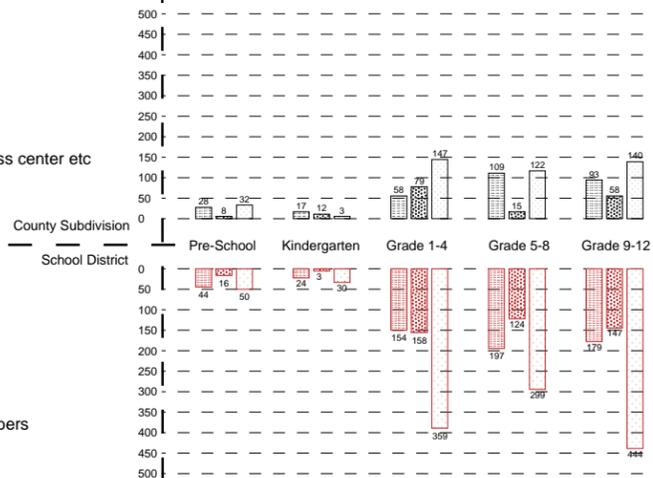




- Mosque & Muslim community
- Camping Site
- Deposit School District
- Hancock School District
- Walton School District
- Deposit Town
- Tompkins Town
- Hancock Town



- + Where does Islamberg celebrate holidays?
- + Enough indoor spaces for the whole town on holidays?
- + Where do they welcome visitors?
- + School as a reception hall / multicultural center / wellness center etc



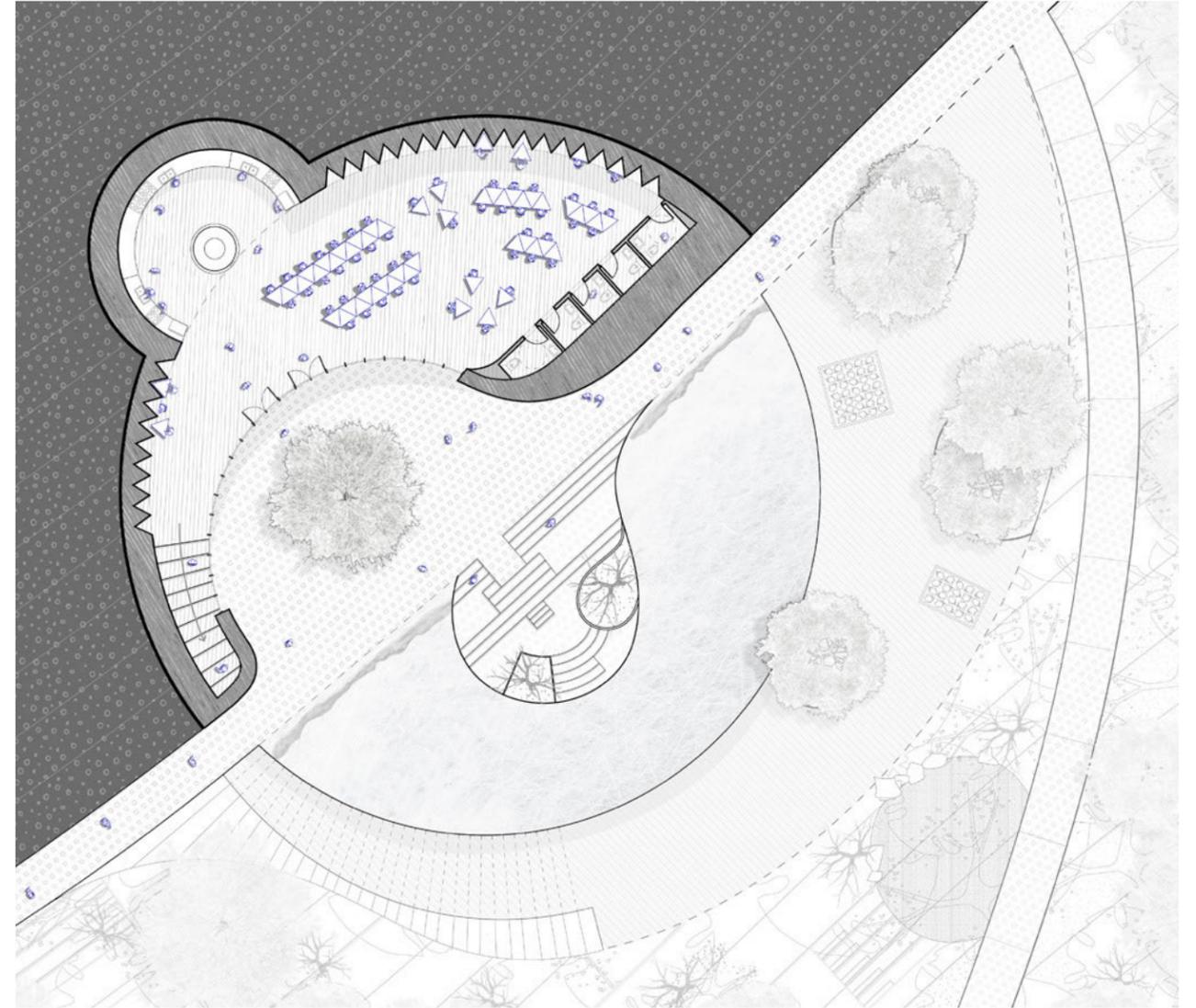
### Problems Rural Schools are Facing

- + Experiencing declining enrollment
- + Often deal with the high costs of transporting small numbers of students across longer distances to smaller schools
- + Fewer resources regarding technology and funding
- + Vocational programs are less available than in urban schools
- + Limited choices for art courses
- + Limited choices for foreign languages

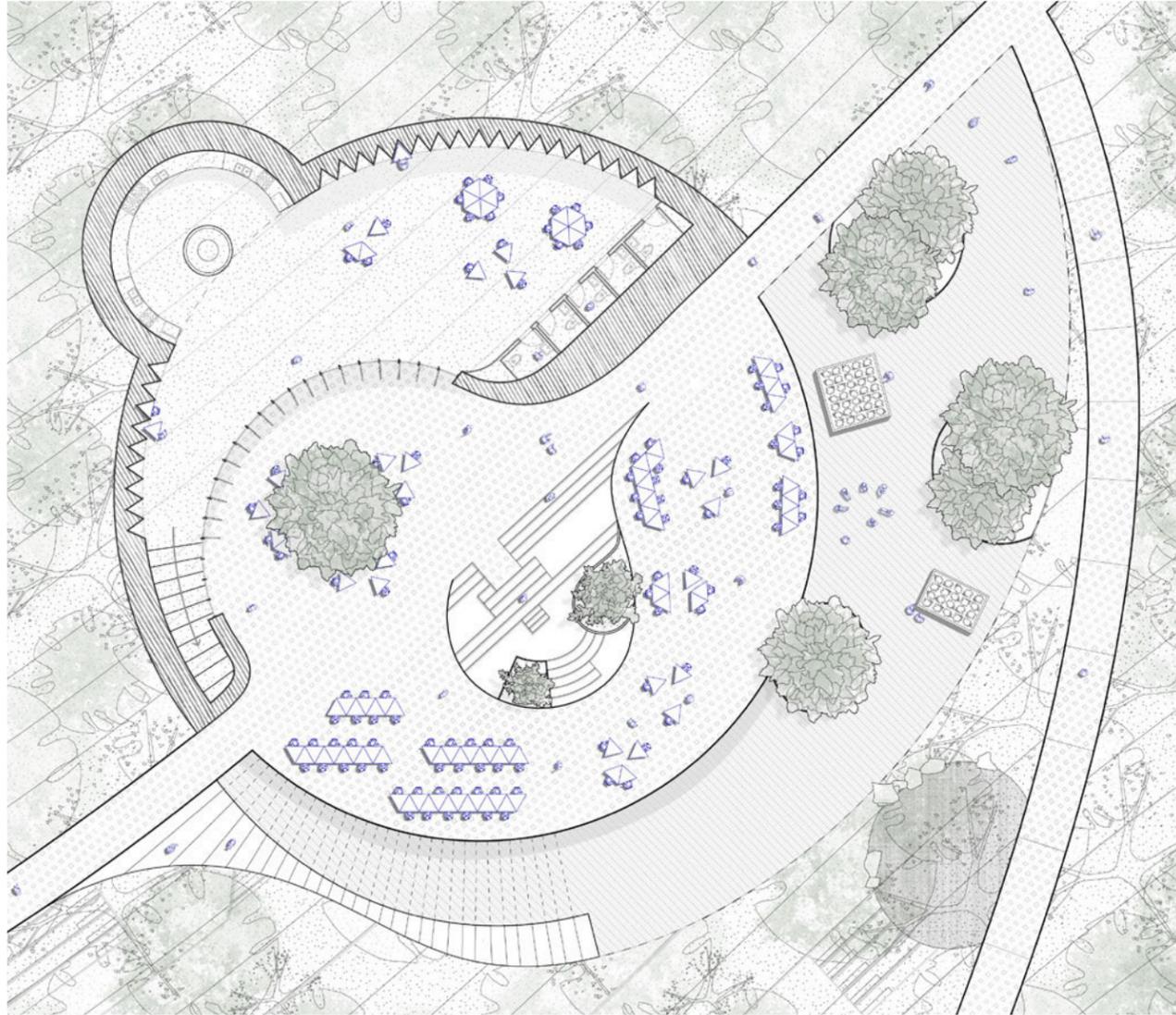




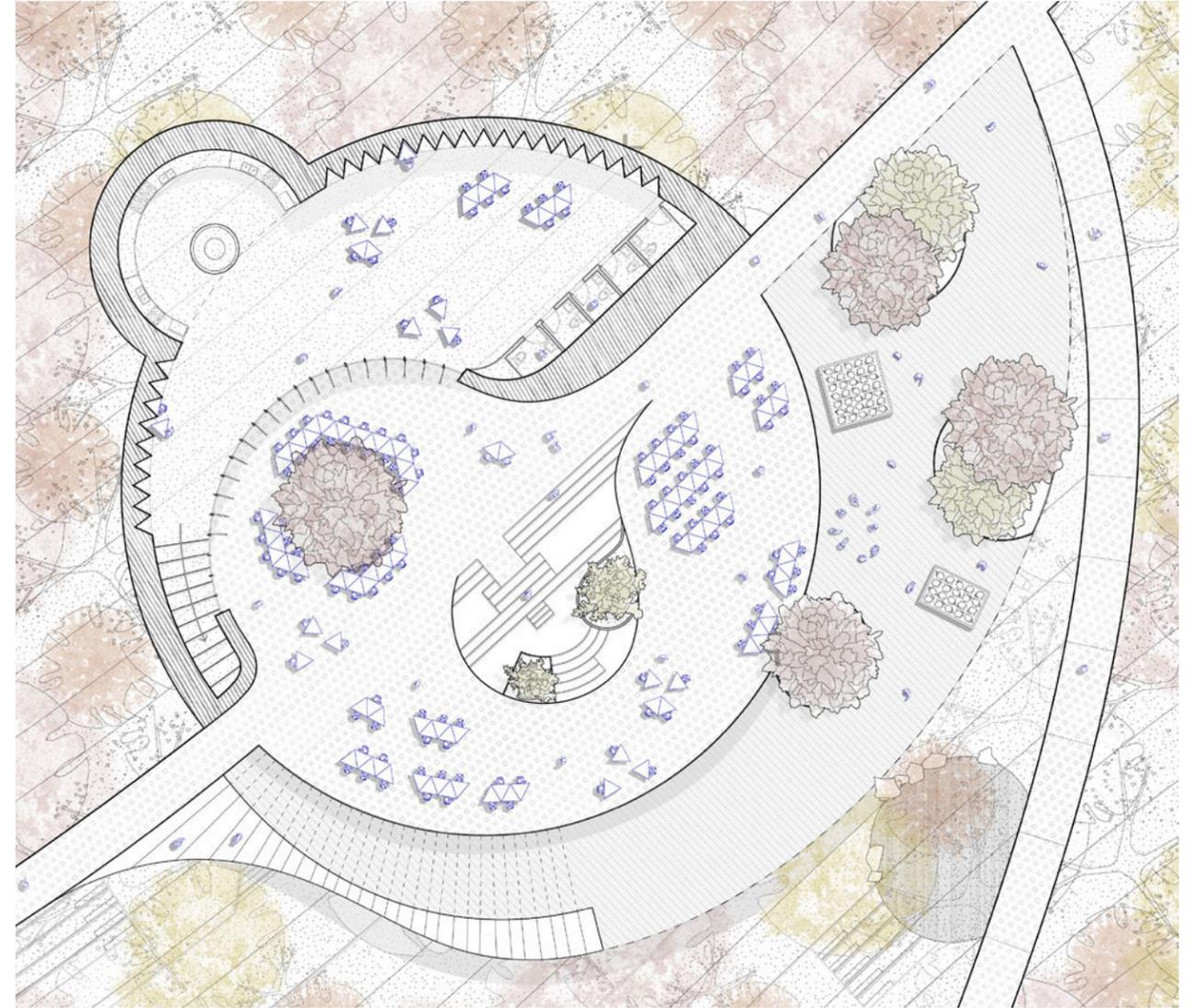
· Level -1



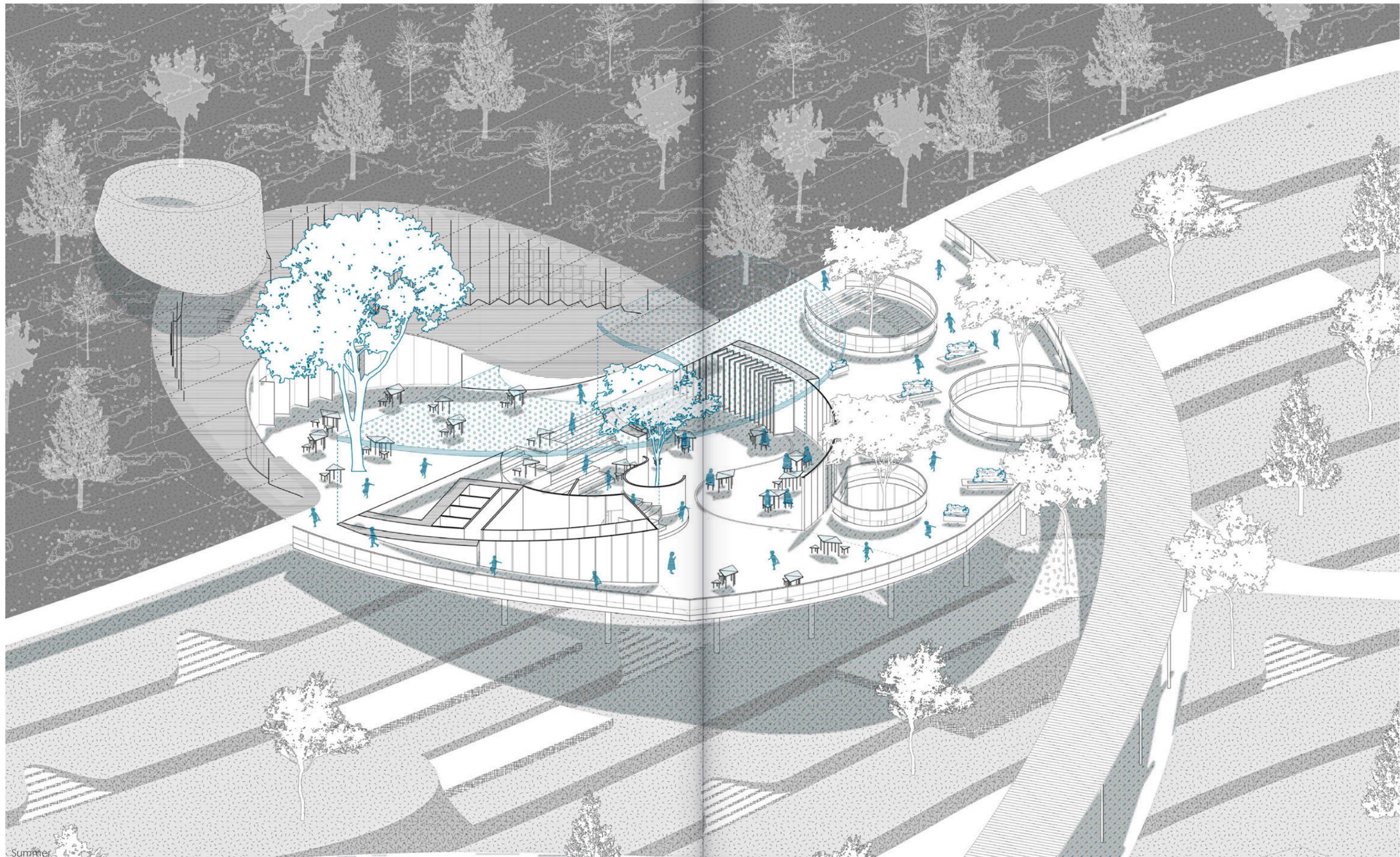
· Level 1 Winter

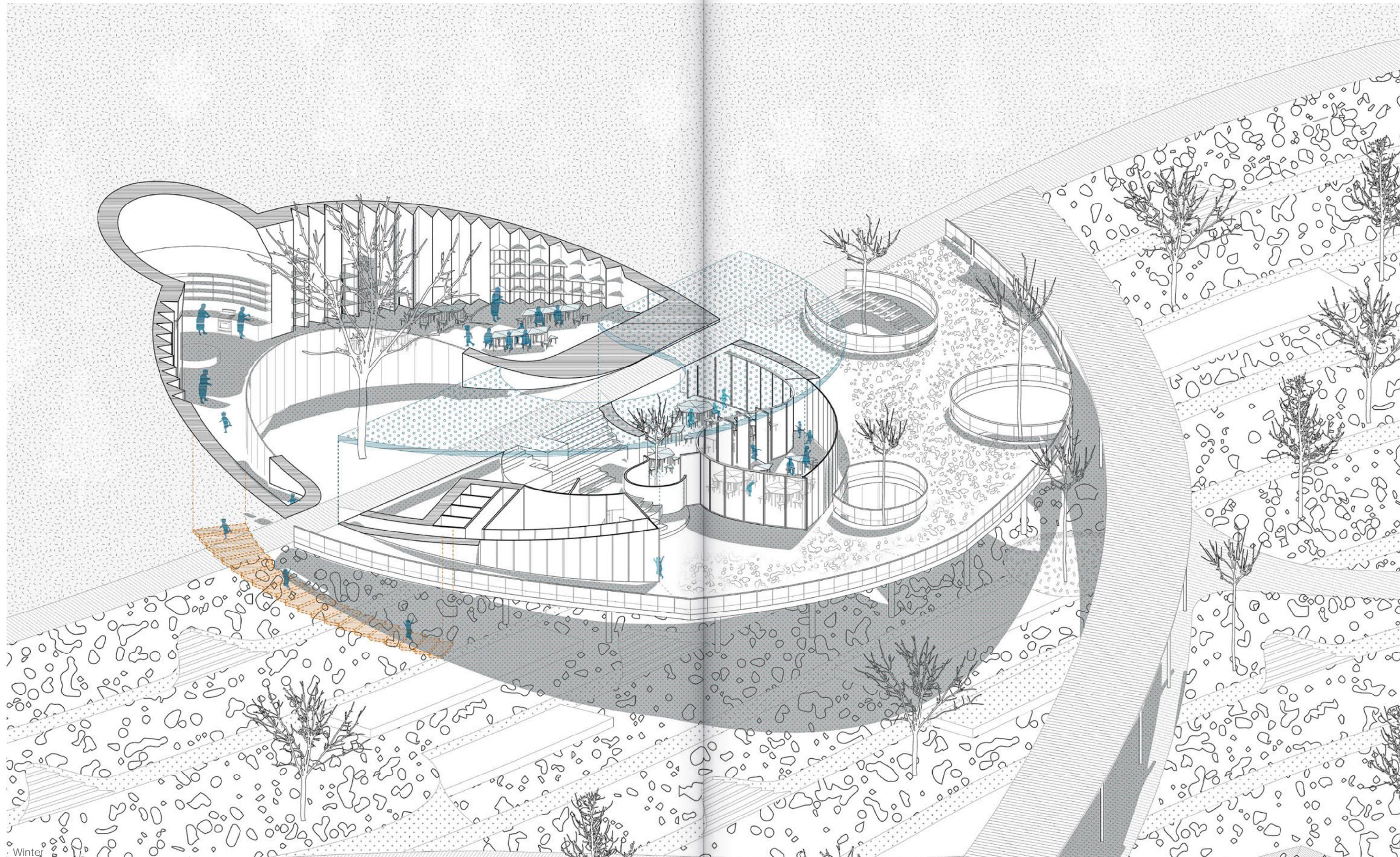


· Level 1 Spring & Fall

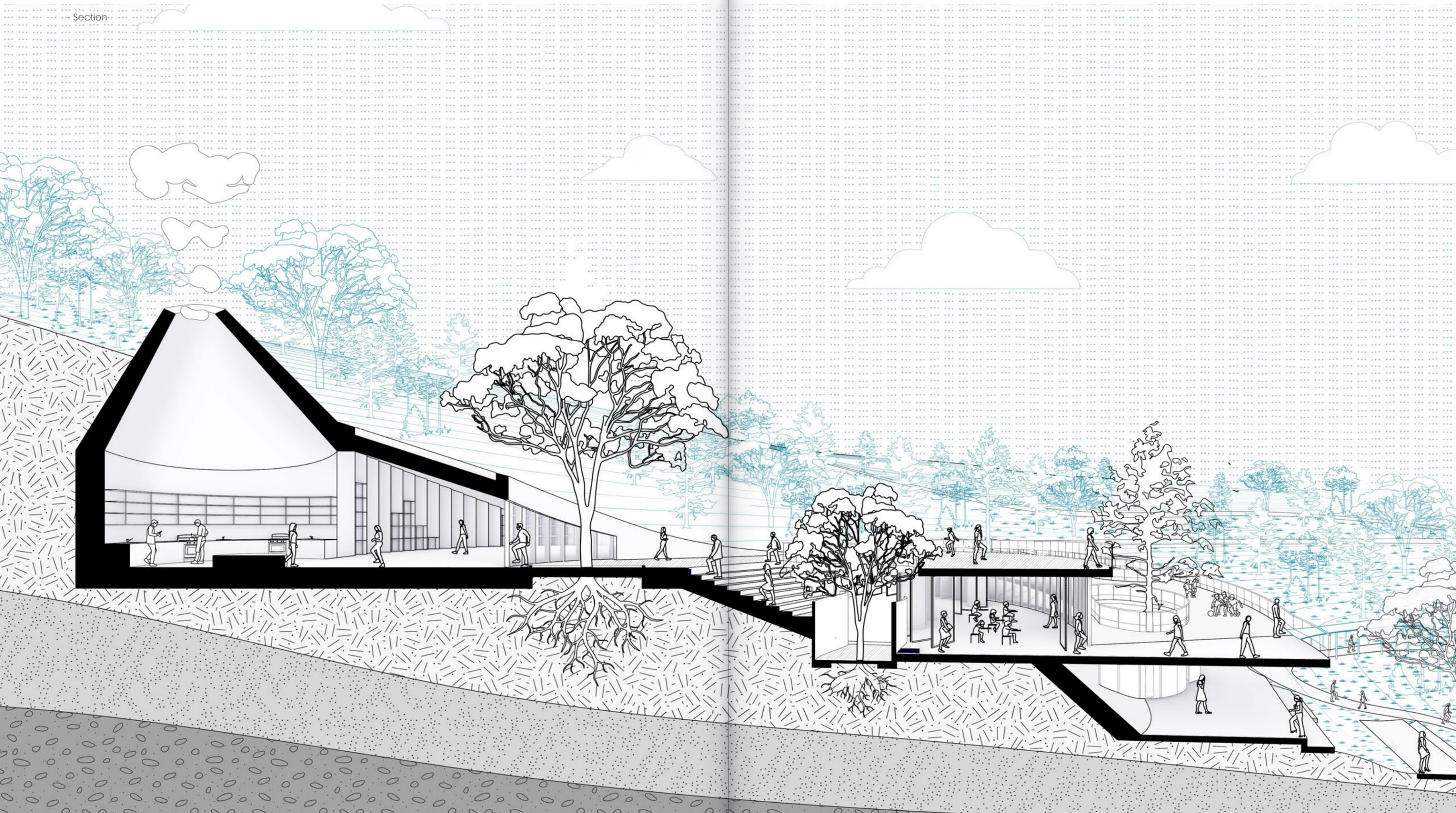


· Level 2





Section



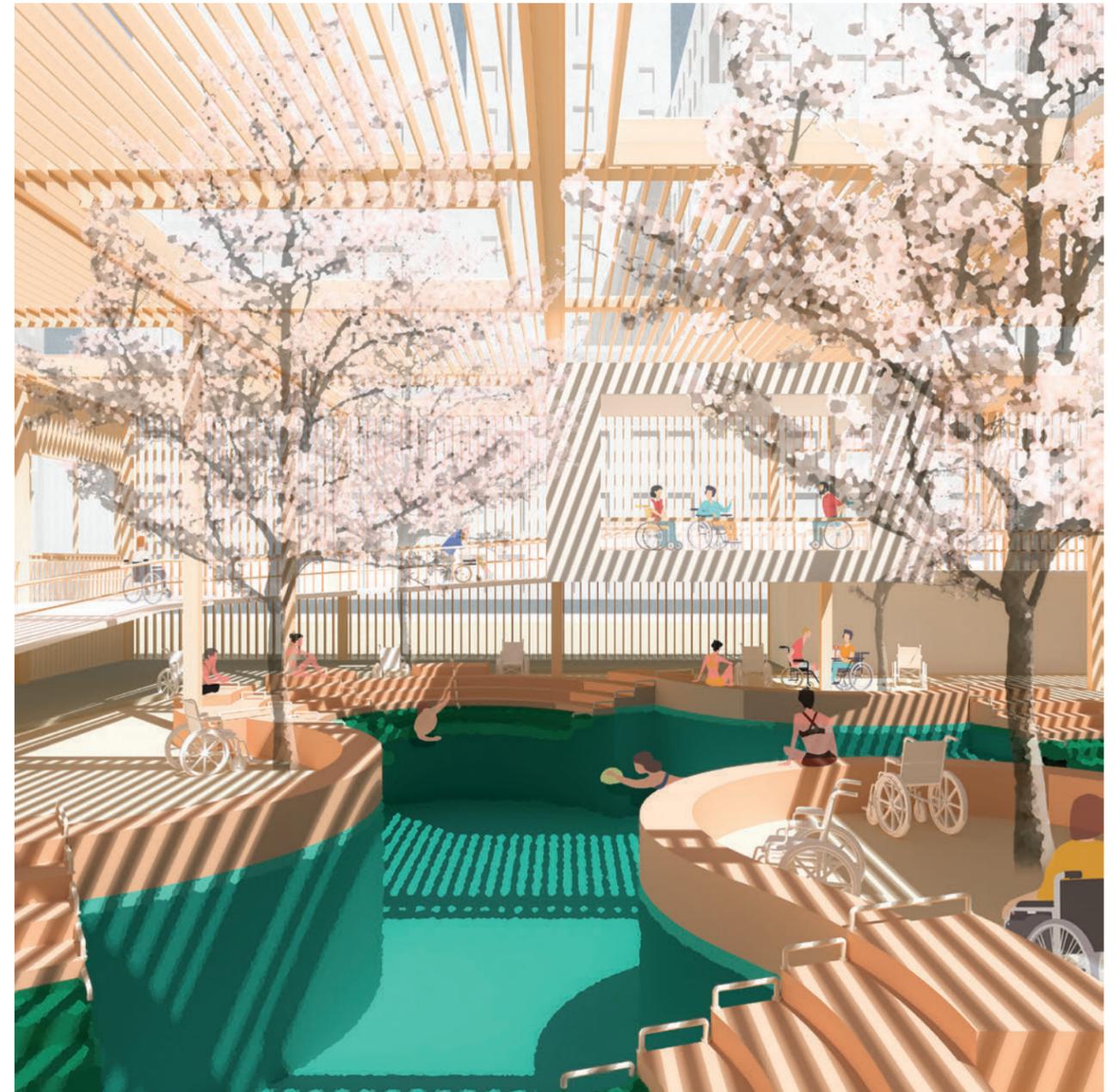
## Enabled Pool

### Therapeutic Pool for People on Wheelchairs

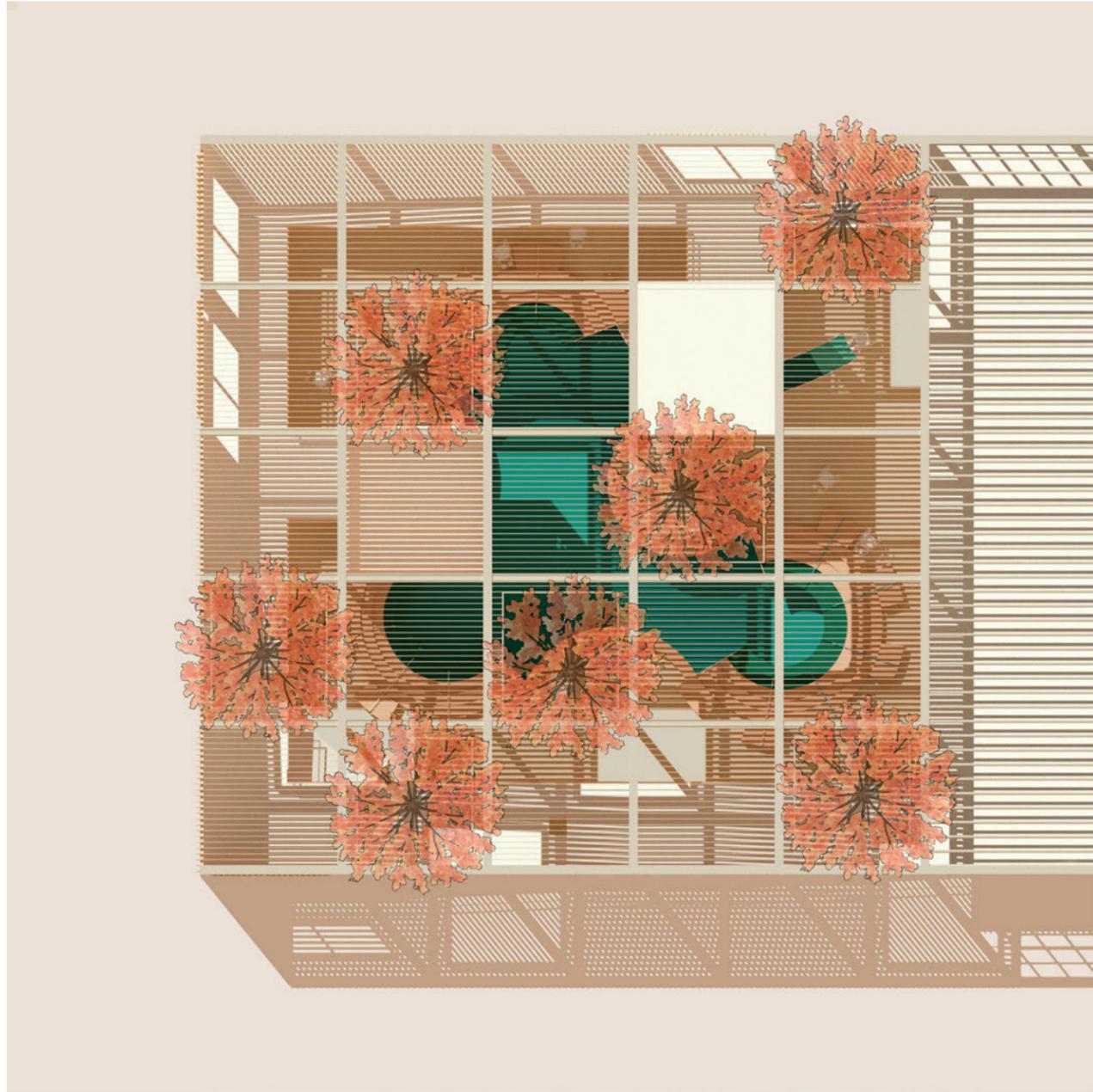
New York, USA  
Advisor: Lindsey Wikstrom  
Individual  
Core Studio I  
Fall, 2019

The enabled pool is a public pool for people in wheelchairs. Rather than tools that are designed to help, wheelchairs become signs of disabilities. It is mentally harmful to feel outside the 'norm'. In water, the alternative abled don't have to rely on any supportive device to assist them, they can be free of their wheelchairs. Rather than a hidden gathering space, the enabled pool is placed at an open space. In this case, everyone will get to know that what is considered 'normal' is simply a variation of life.

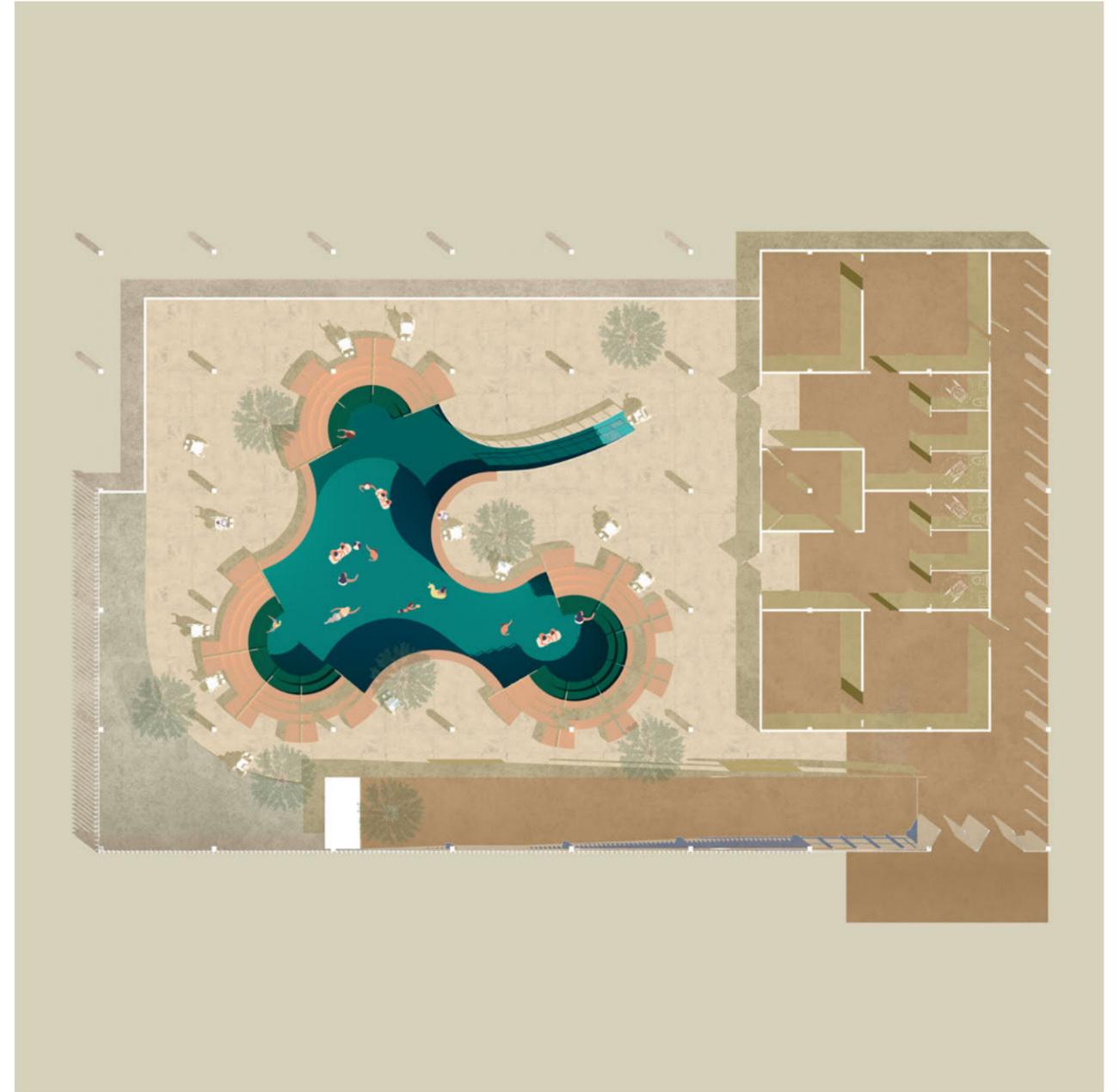
The architecture wraps the spaces in layers of screening materials, filtering sunlight while mitigating the view from the outside in. Circulation ramps spiral up and around the edge of the pool, small gathering pods are arranged near the ramps, multiplying the interactions vertically, so that people can see each other and cultivate a more nuanced dimension of public.



· Interior perspective



· Site Plan



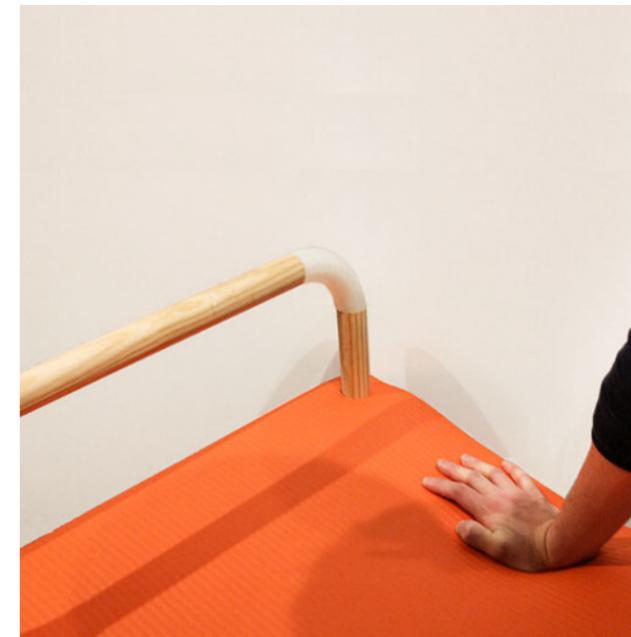
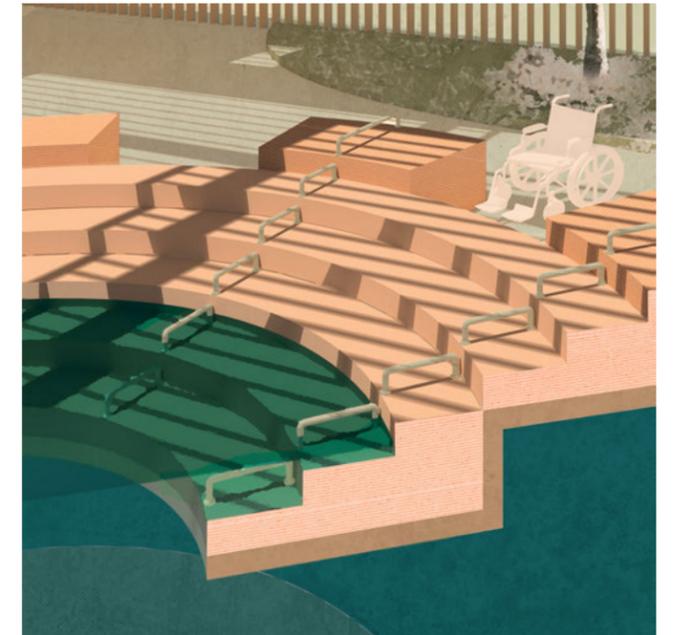
· Plan



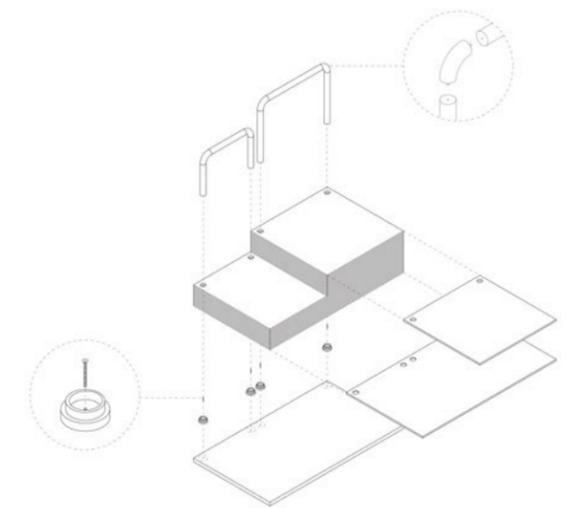
· Sectional perspective

## 1:1 Construction

For people on the wheelchairs, it is hard for them to get into the water. In this project, steps are designed to help. These steps are made of yoga mats, as shown as the 1:1 mockup. A sheet of yoga mats is soft and when lots of them pile up, they become steps that are strong enough to hold people's weight. Since textures exist on this material, they can be held together by friction. Rather than a hard surface, these steps can provide resilient surfaces which do good to people joints.



· 1:1 Mockup photo



· 1:1 Mockup construction detail

# Melrose Community Center

AT4 Integrated Systems

New York, USA  
Teammates: Yi Liang, Duo Xu, Muyu Wu  
Fall, 2020

This project aims to design and integrate the building systems for a large, versatile community center in the Bronx.

The Melrose Community Center will provide community programs for children and young adults aged 5-21, including health and nutrition; education; youth development and the arts. The programs aim to strengthen the social and academic outcomes of a generation of young people in Melrose.

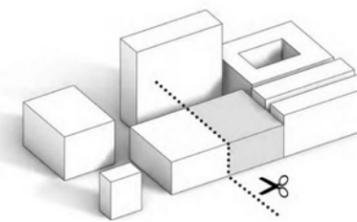
Physically and performatively, the building is to be innovative and state-of-the-art, with a campus-like flow that weaves outdoor and indoor spaces.

Within community centers, barriers are broken down. Children actively exchange attention, energy and openly start conversations. Space and material layer the experience, creating dynamic spaces that connect people to each other and their environment.

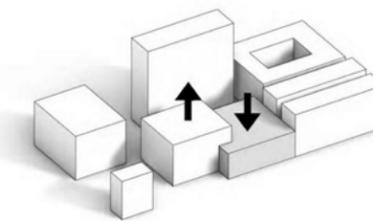
Revit provides a tool for learning the relationship between architectural design intentions and material and building construction decisions in this project. It allows changes to the building model in response to changes in wall types, material choices, window and door types and dimensions, structural systems and materials, etc.



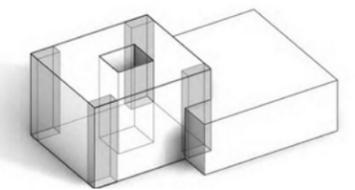
· Concept



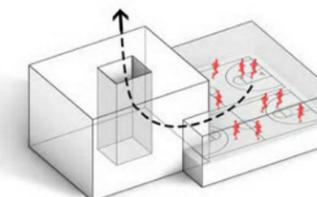
Split



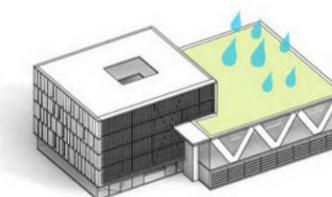
Push & Pull



Circulation



Thermal natural ventilation

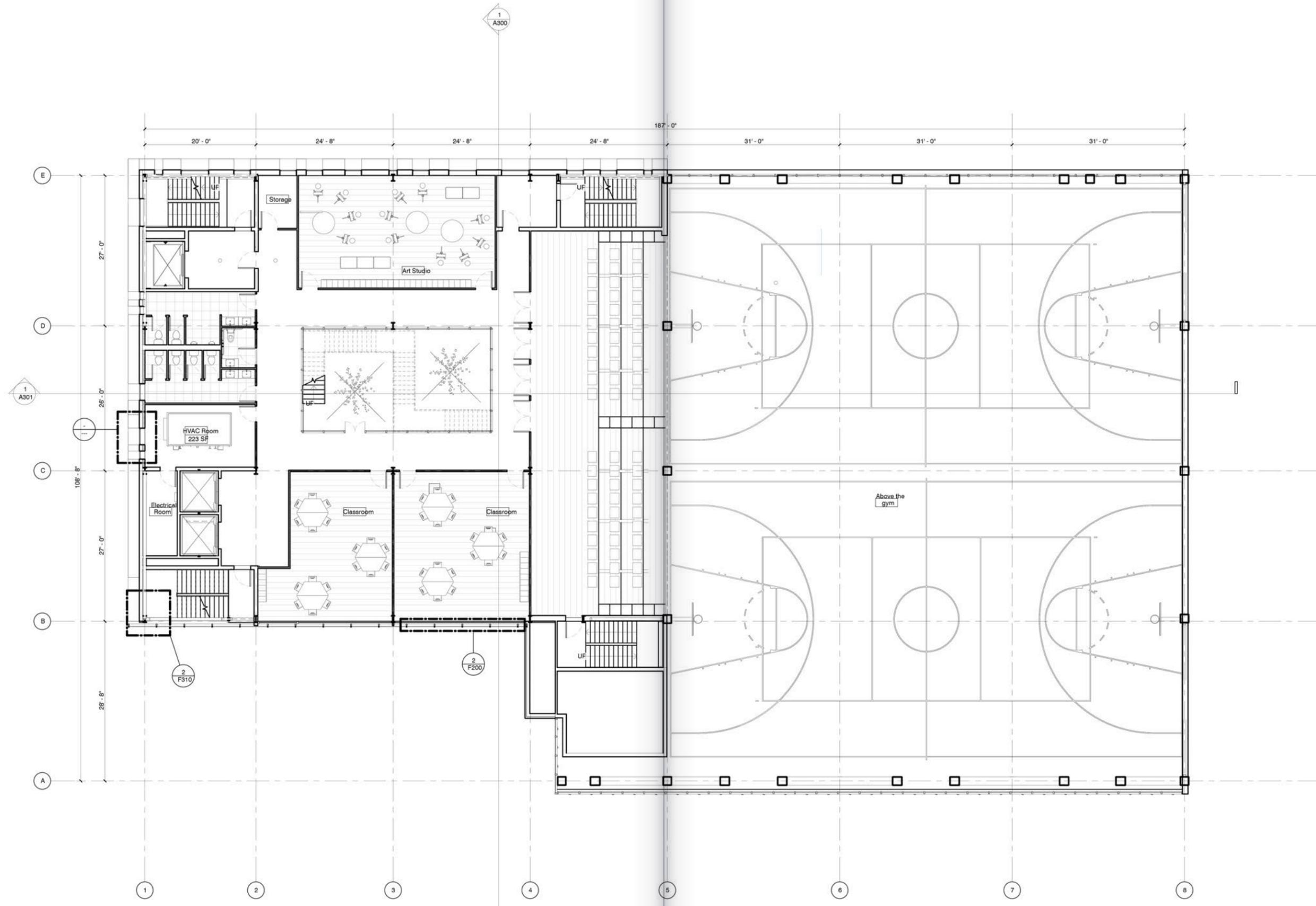


Rooftop rainwater collection

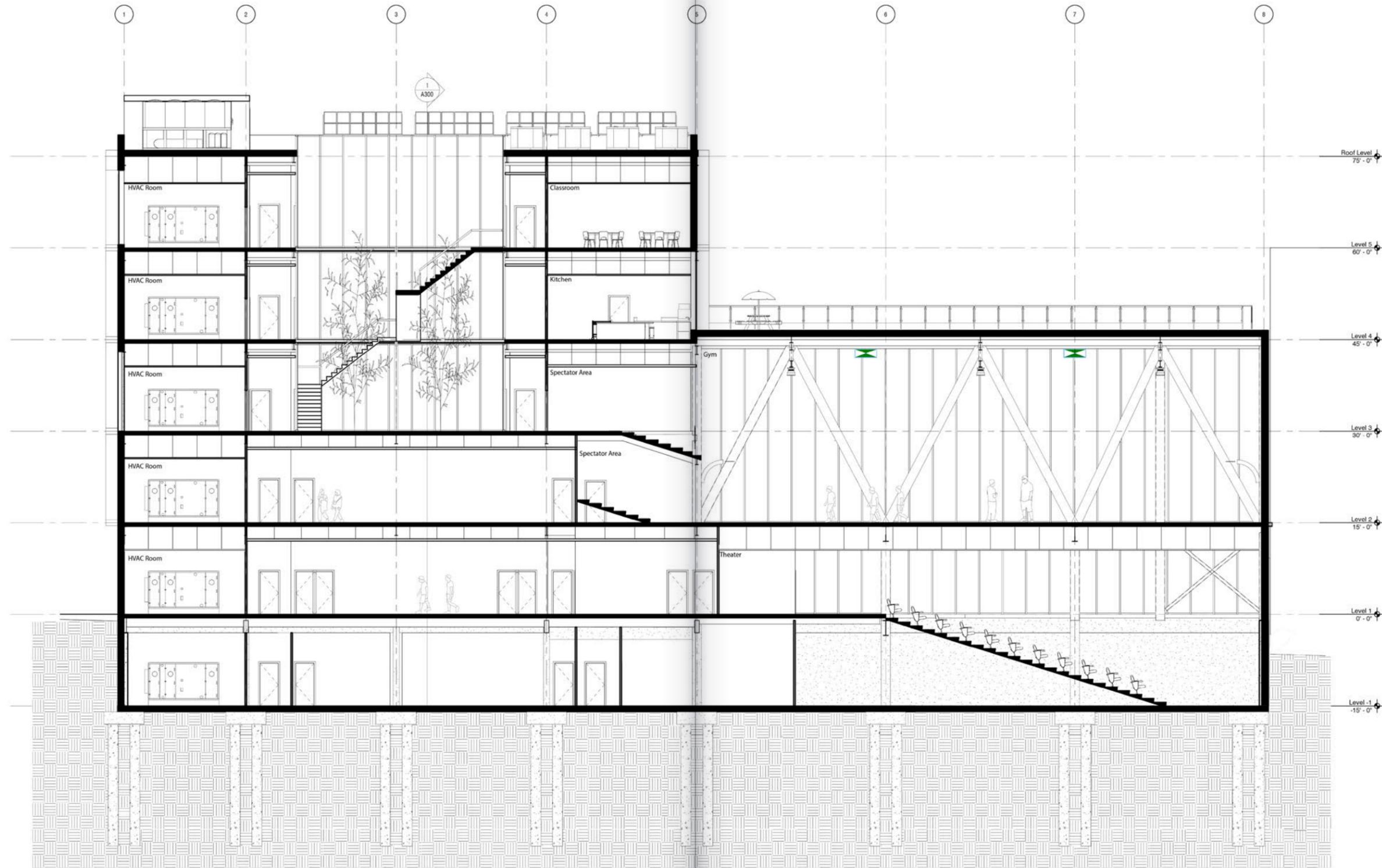


Program

# Melrose Community Center

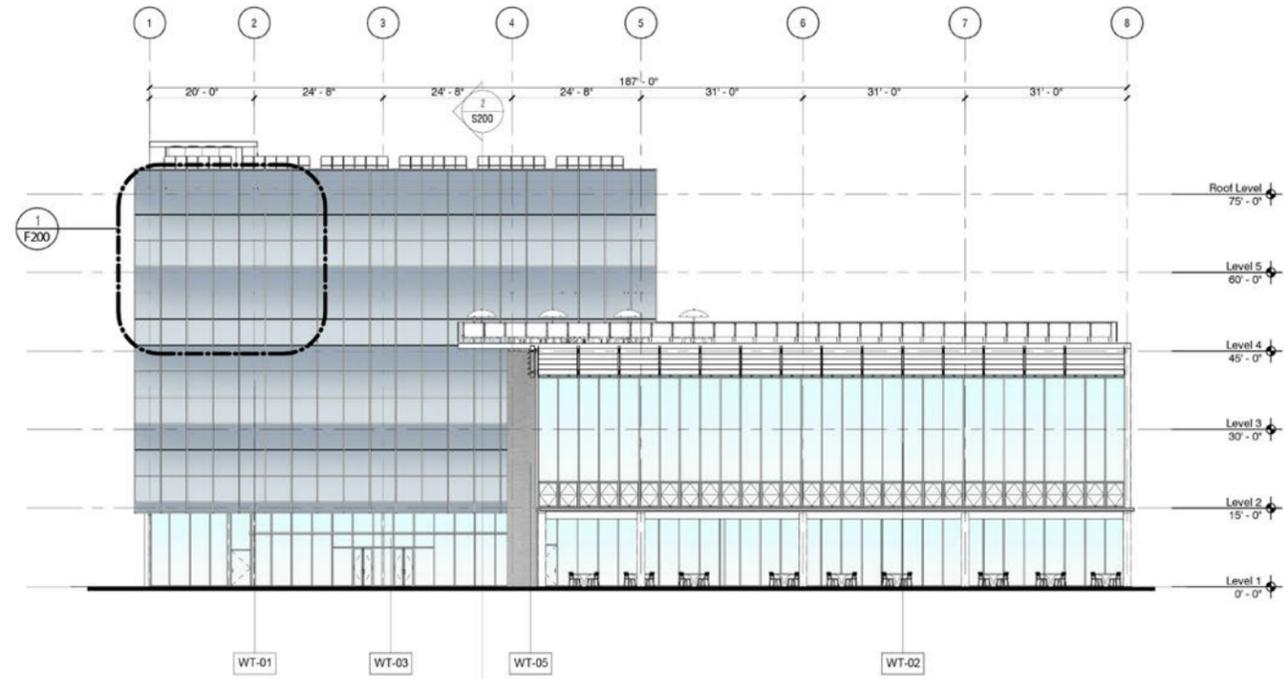


# Melrose Community Center



1 E-W Section  
1/8" = 1'-0"

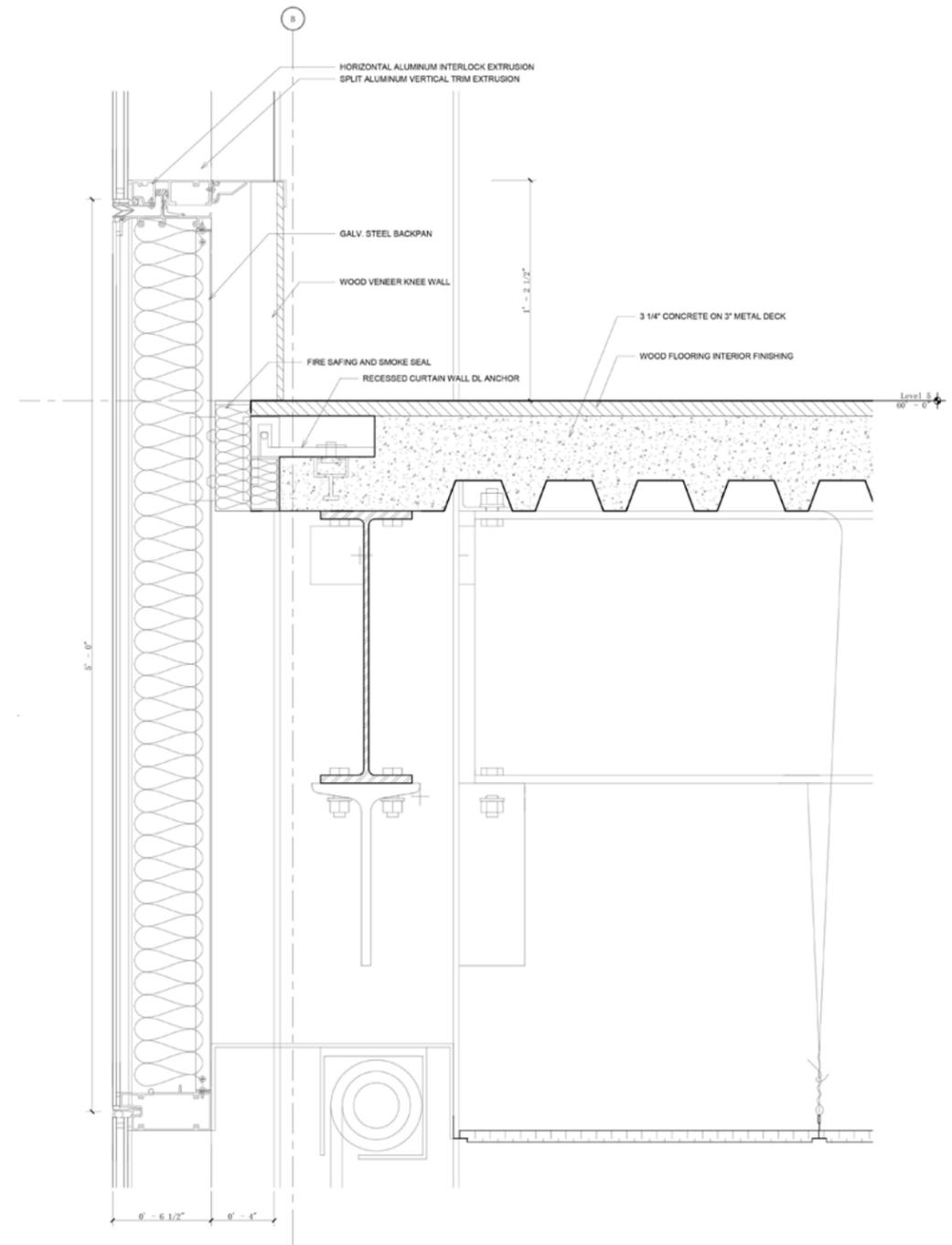
# Melrose Community Center



1 South  
1/16" = 1'-0"



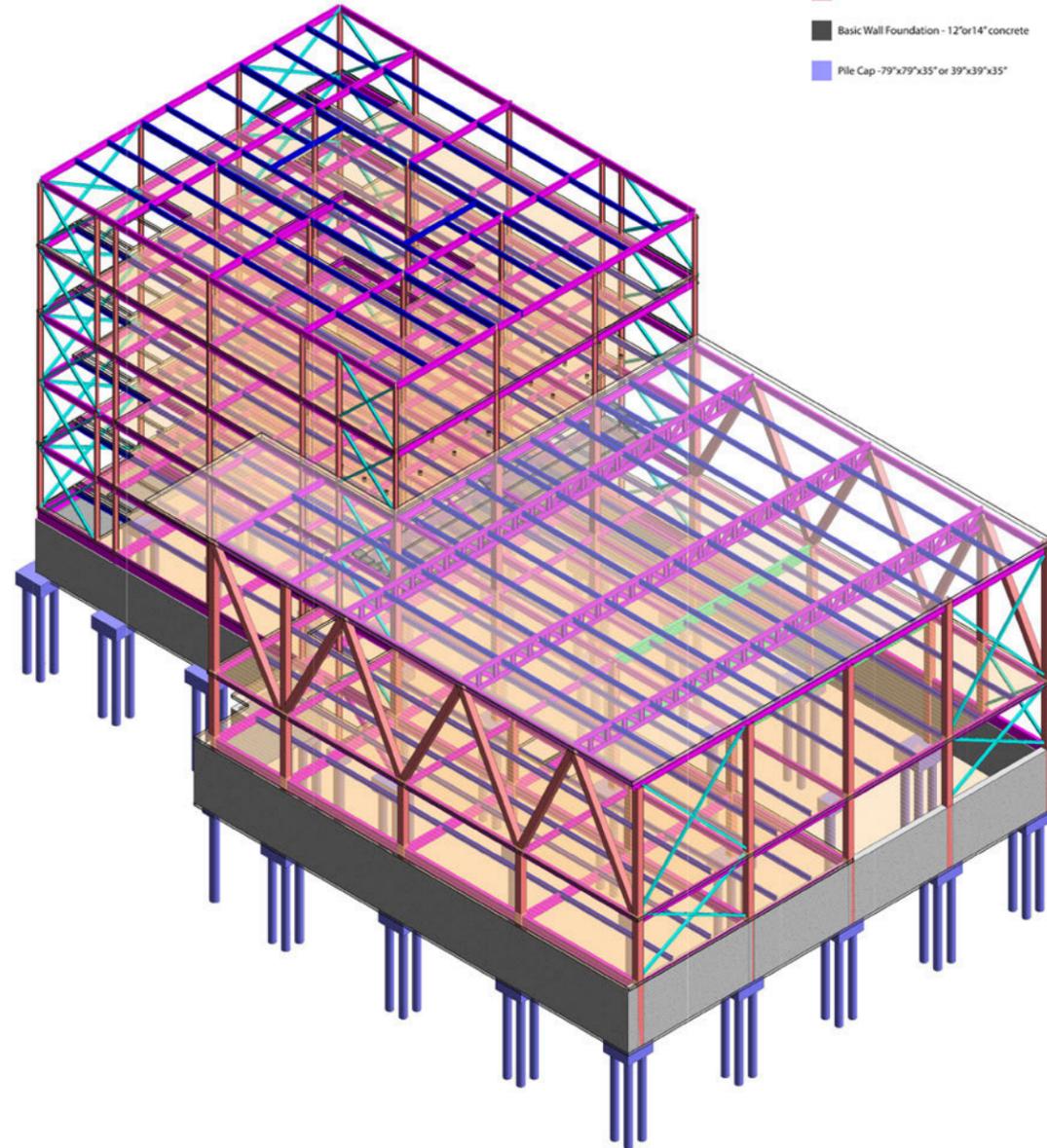
2 North  
1/16" = 1'-0"



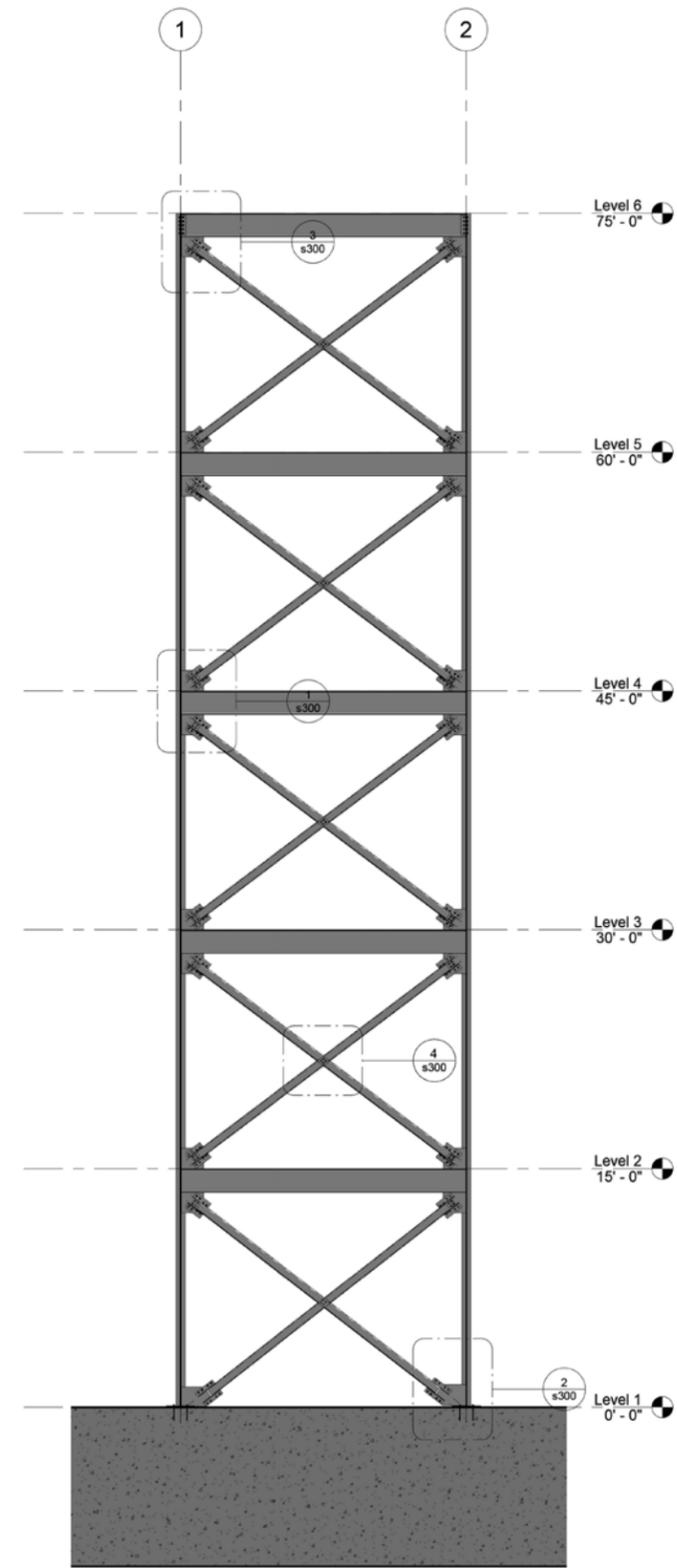
1 WT-01 section detail  
3" = 1'-0"

# Melrose Community Center

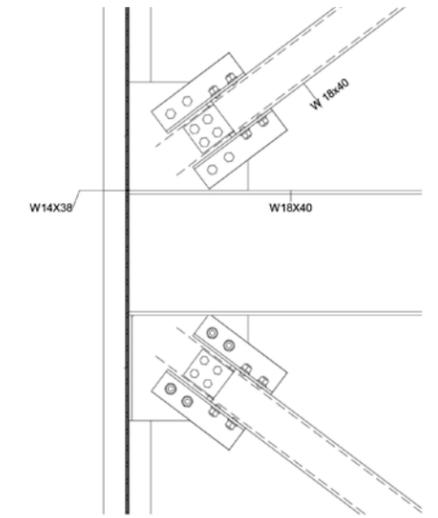
- HSS - Hollow Structural Section 18X18X.375 2
- HSS - Hollow Structural Section 6X6X1/2
- Beams W 18X40
- Beams W 30X90
- Column W 12X26
- Basic Wall Foundation - 12"or14" concrete
- Pile Cap -79"x79"x35" or 39"x39"x35"



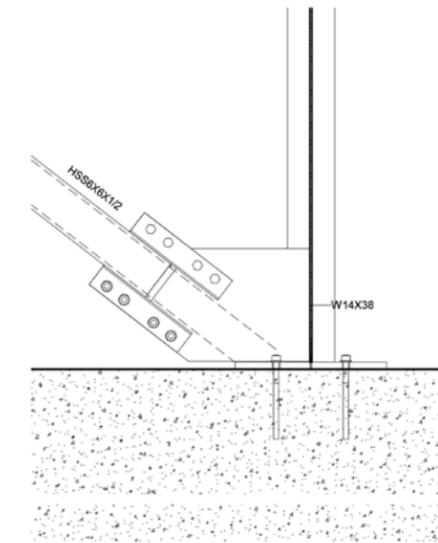
1 structural axo



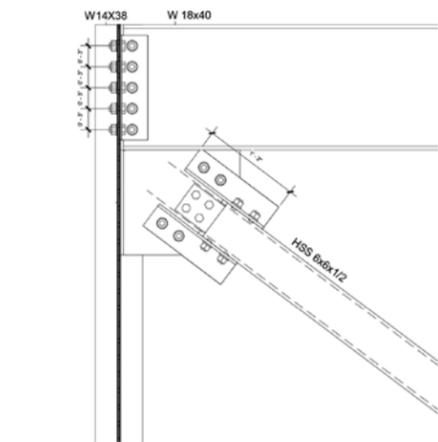
0 Section  
3/16" = 1'-0"



1 Connection 1  
1" = 1'-0"



2 Connection 2  
1" = 1'-0"



3 Connection 3  
1" = 1'-0"

## City of Billboards

Generative Design

New York, USA  
Teammates: Duo Xu, Xuanyi Chen,  
Xiucong Han, Hao Zheng  
Advisor: Danil Nagy  
Fall, 2021

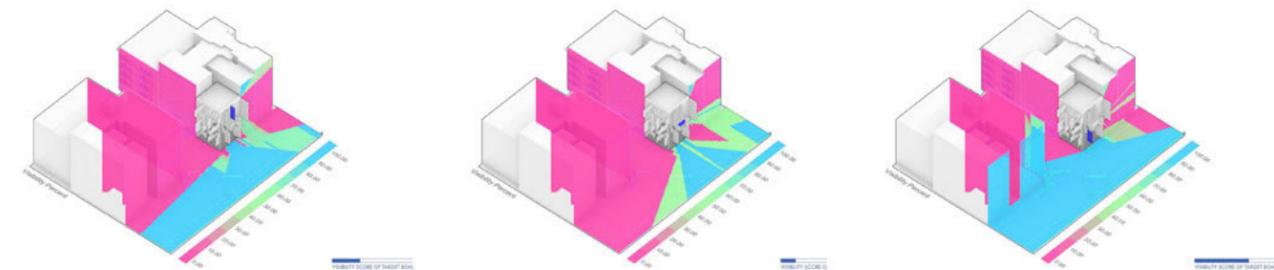
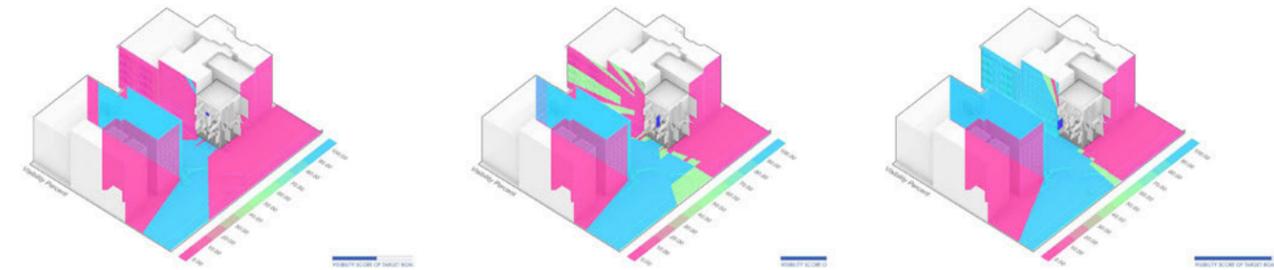
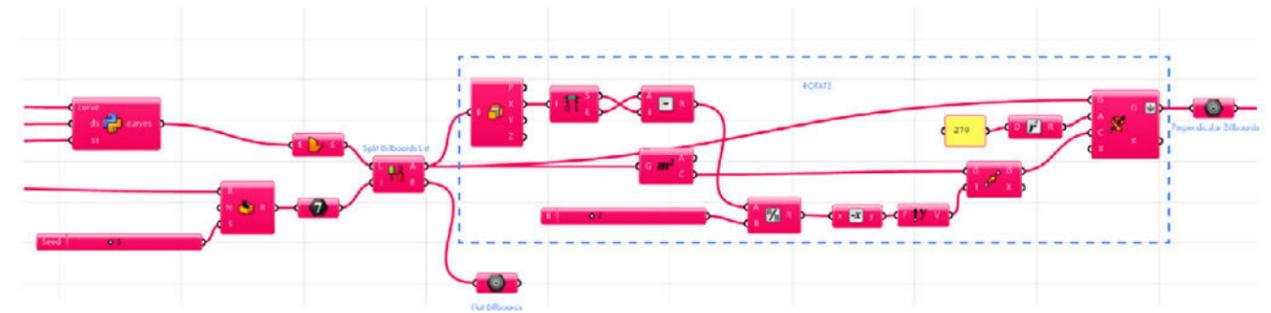
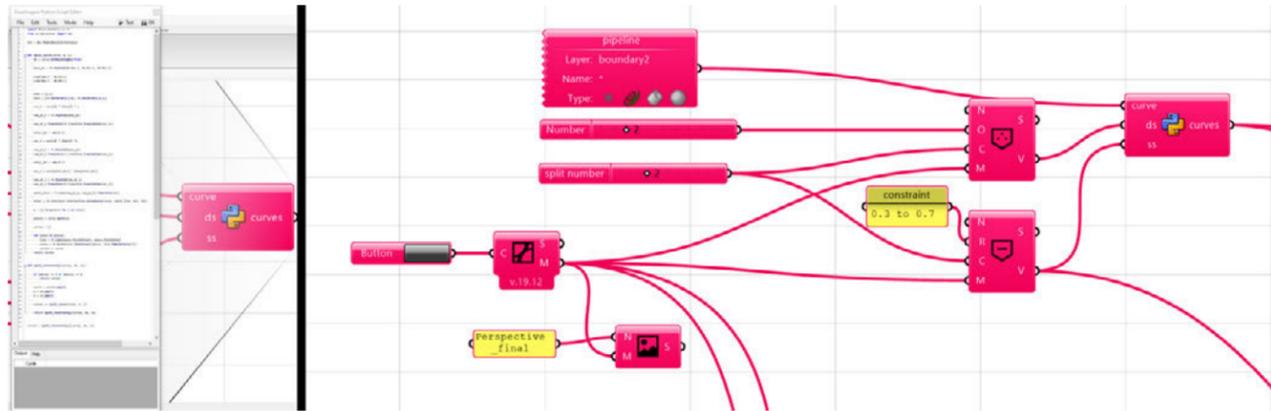
In the era of information explosion, people perceive information nonstop. In the cityscape, billboards as the second layer of facade influence people's mood, mind, and action.

The increasing need for marketing and advertising for products has spurred the need for billboards. In cities already cramped in high density, it is unreasonable to construct new structures for advertising.

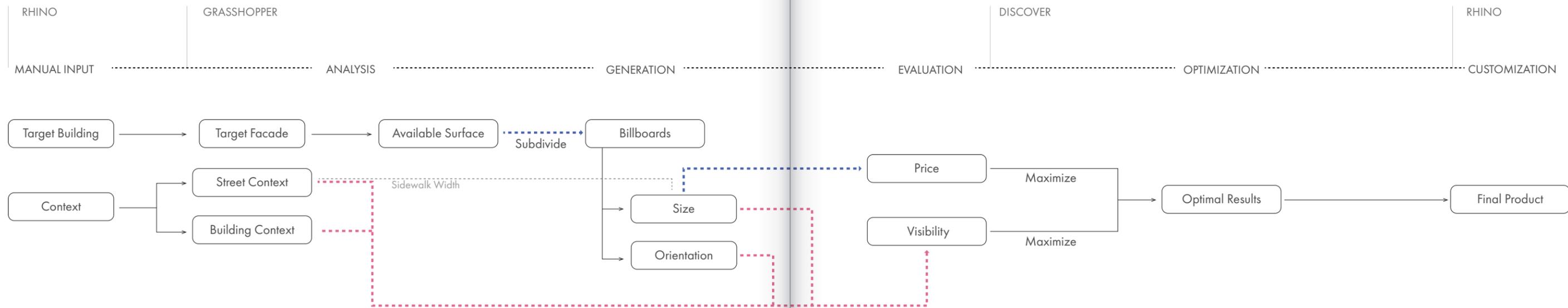
The project aims to use generative design as a method, combined with the application 'Discover' to generate designs that maximize the use of the existing structures in cities while improving the advertising quality. At the same time, customization is considered, allowing users to choose the layout that fits their needs most.

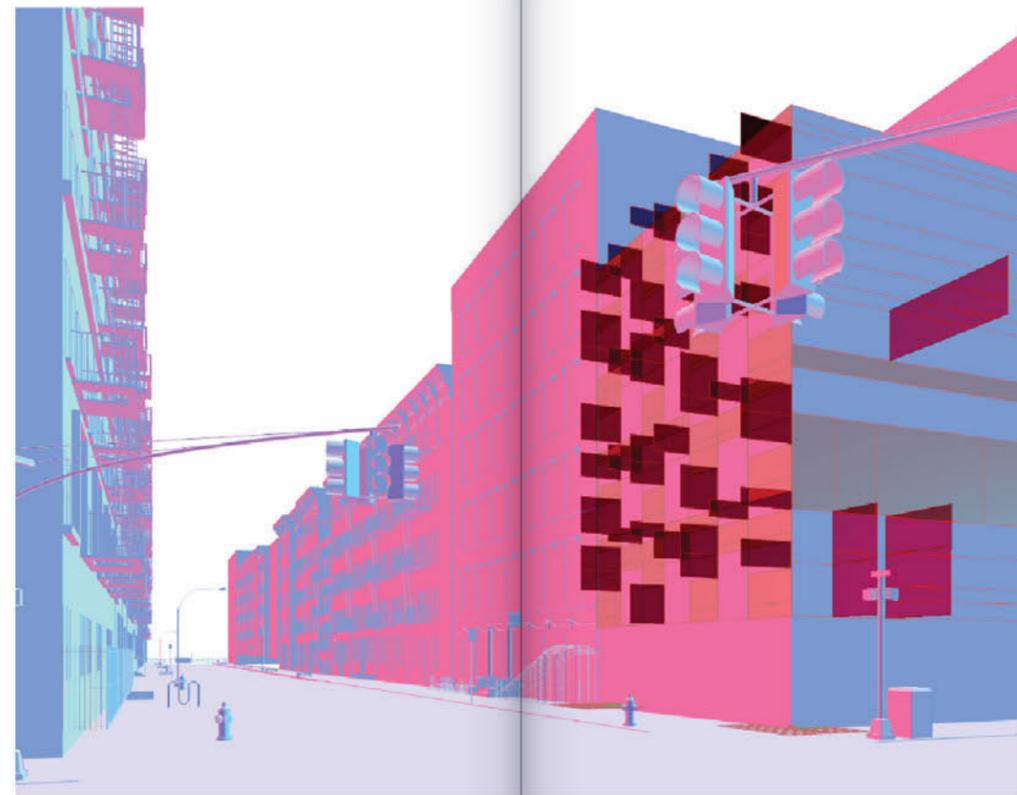
The project uses existing façades in the city as a starting point. The design goal is to maximize street-view visibility without blocking the view from the current interior, as well as to make the most profit from installing the billboards for the building owners.





· Roadmap







西九龍  
新城市廣場

**SHELL**  
MOTOR SPIRIT MOTOR OIL

**SOBER-UP**  
IT'S A LIFE SAVER

**Delicious**  
COFFEE  
Have a Cup!

**CHANEL**

**NOODLES**

**Touji**  
WINTER

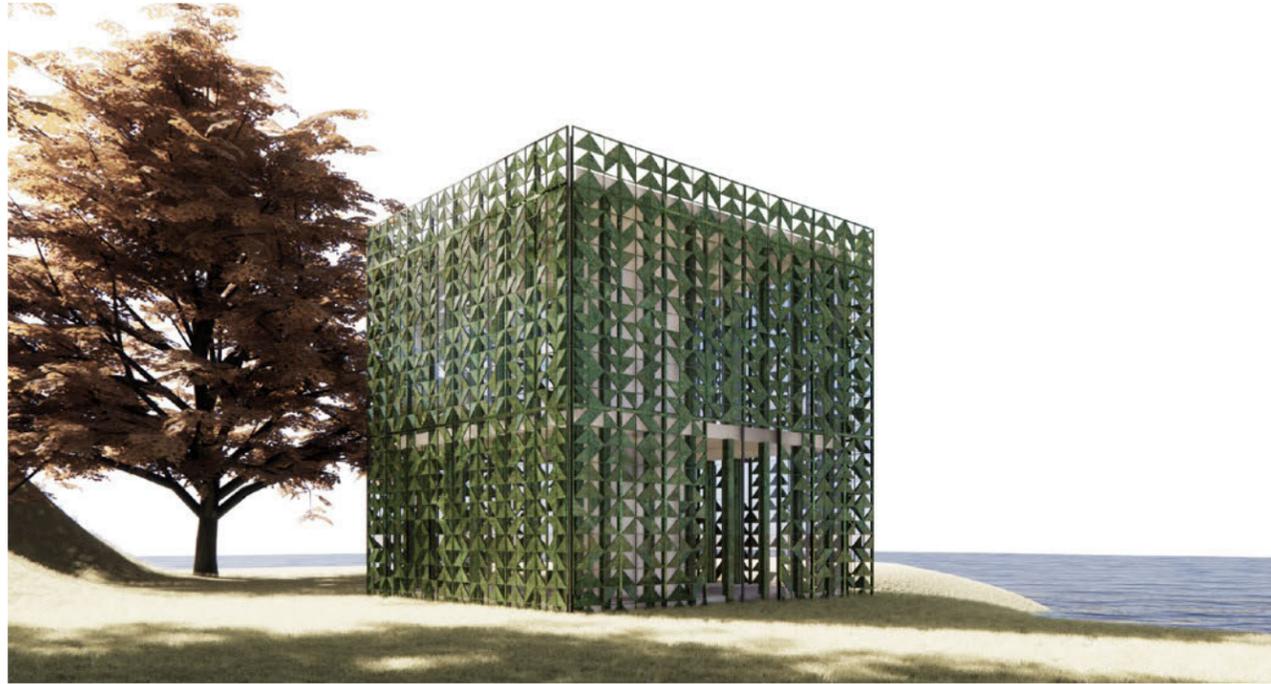
**ホテル**

**WINTER**

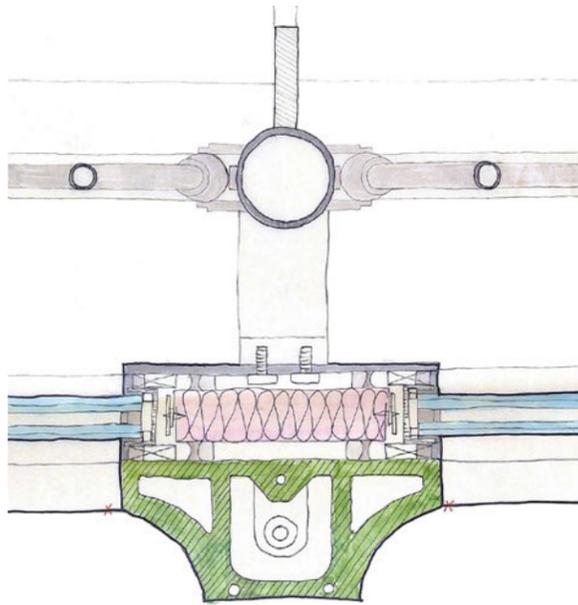
**WINTER**

Terra-cotta Facade Design -- Spring, 2022

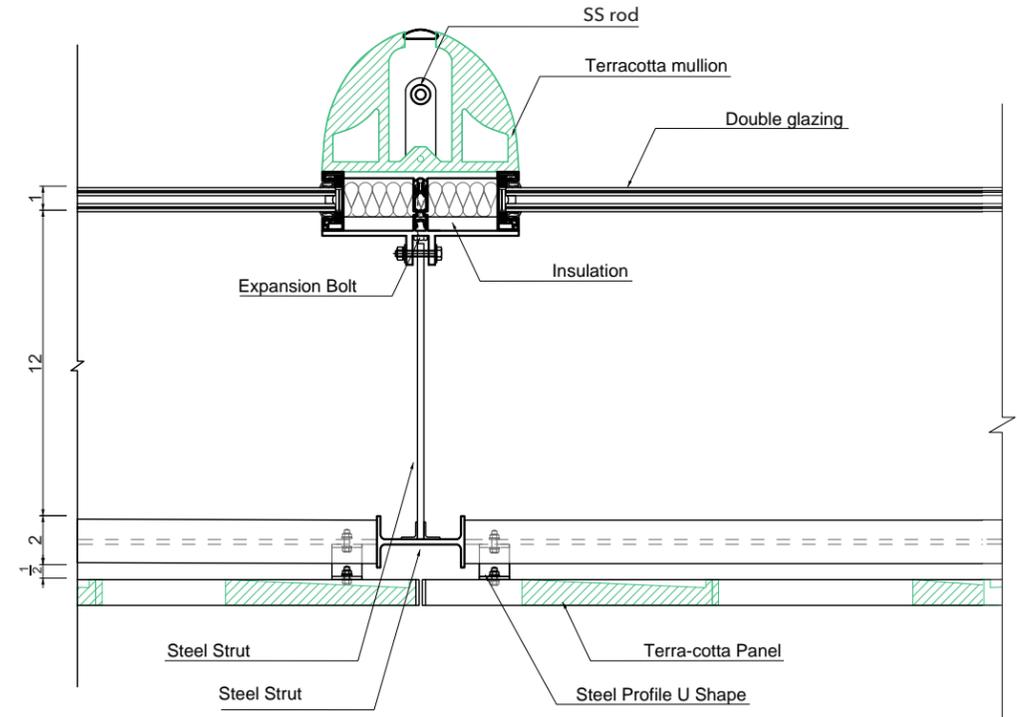
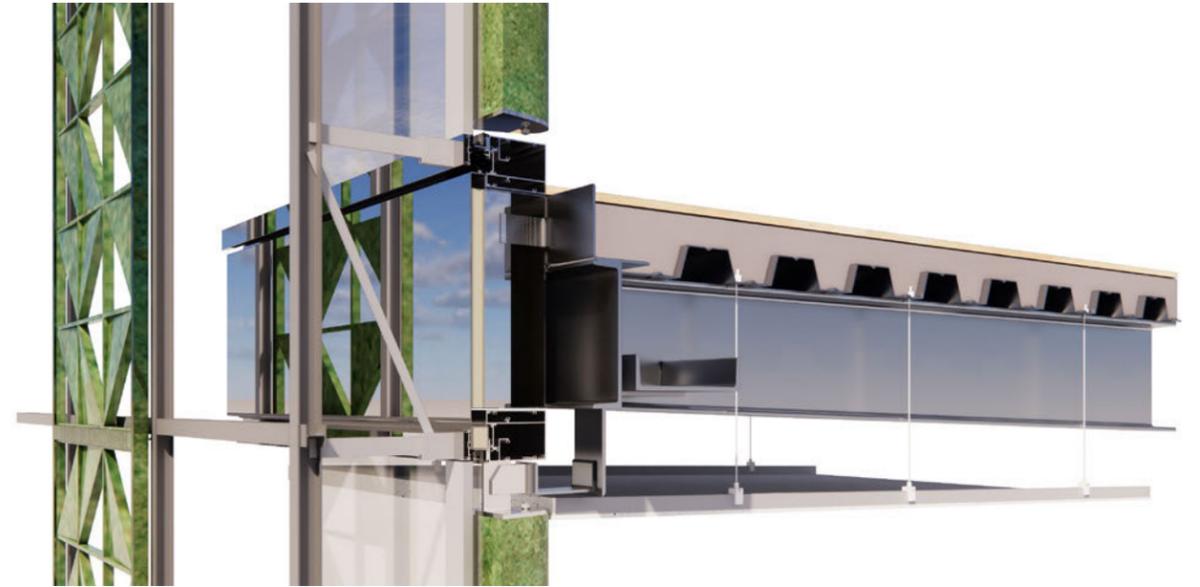
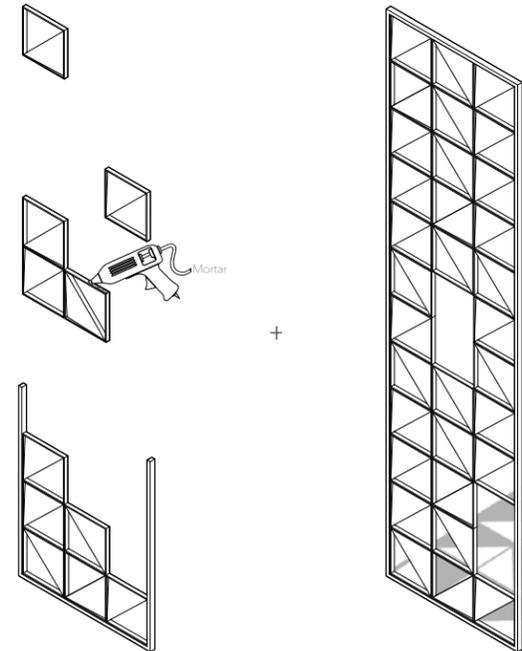
Course: Facade Detailing  
Advisor: Kevin Schorn  
Teammates: Haotong Xia, Yingying Zhou



· Draft



· Terra-cotta Panel Design & Installation



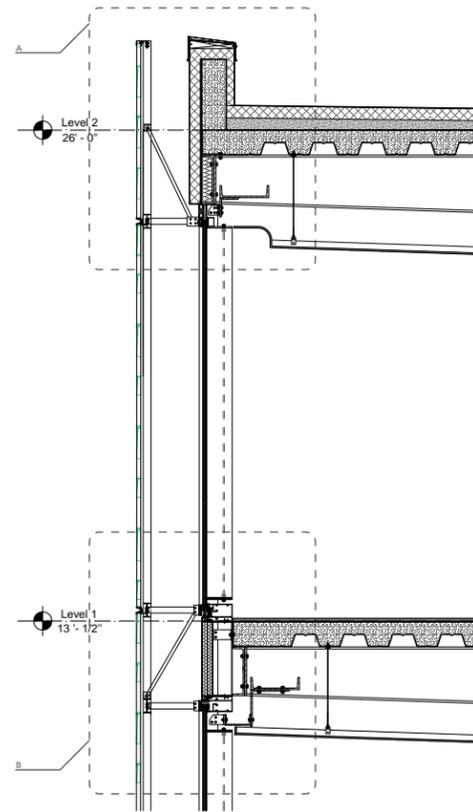
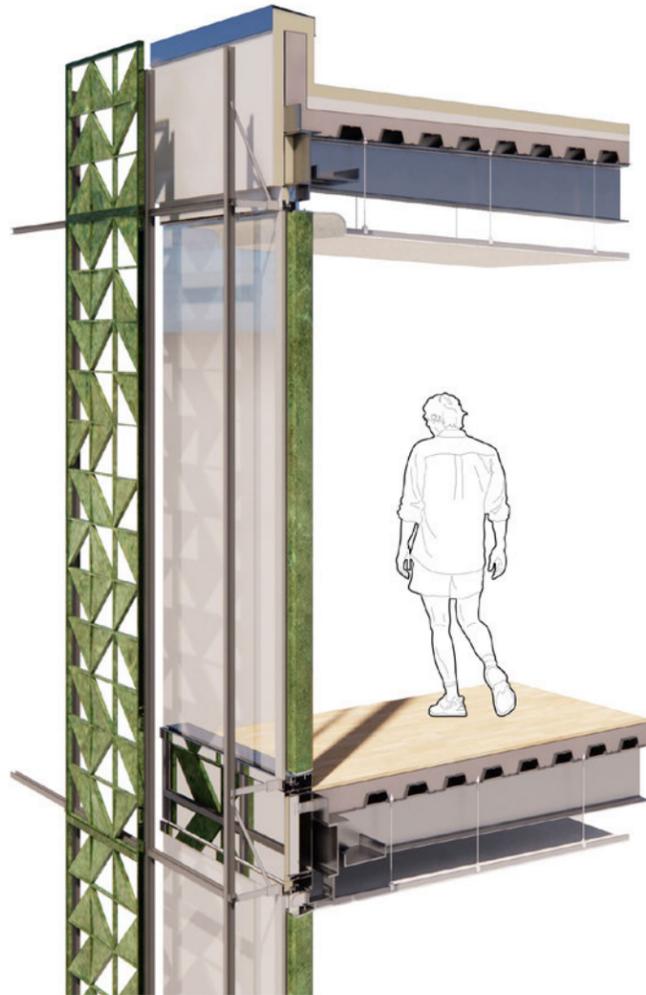
· Mullion Plan Detail

Terra-cotta Facade Design -- Spring, 2022

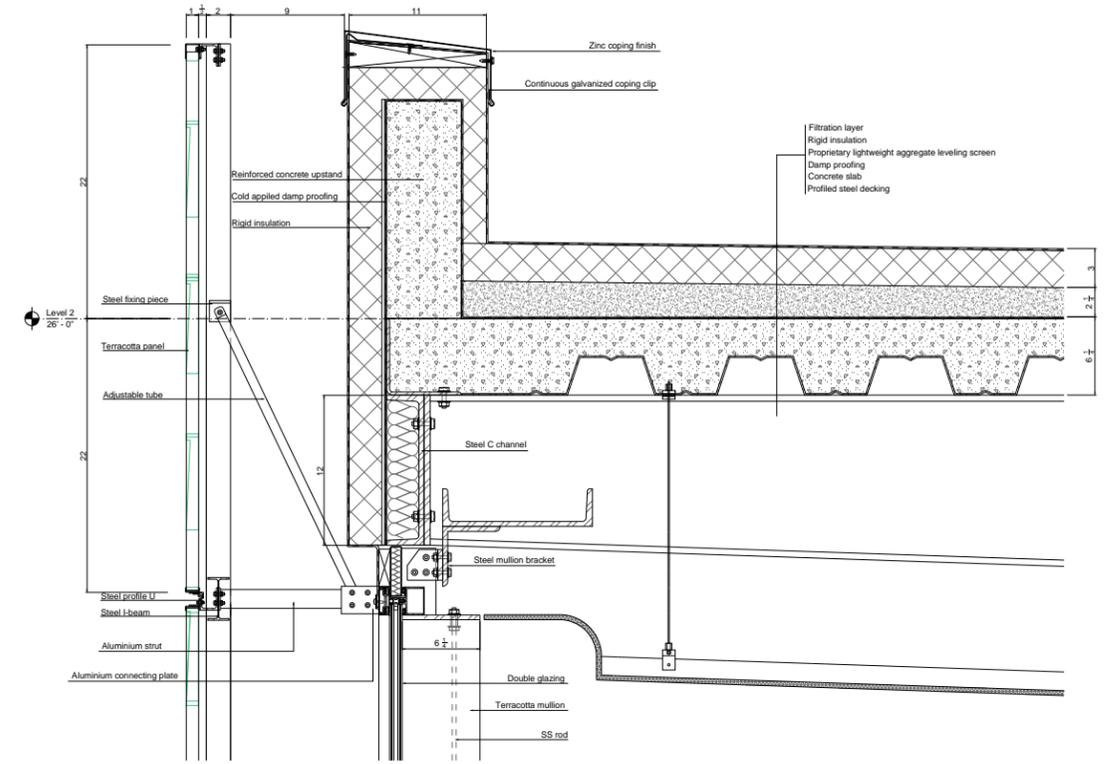
Course: Facade Detailing

Advisor: Kevin Schorn

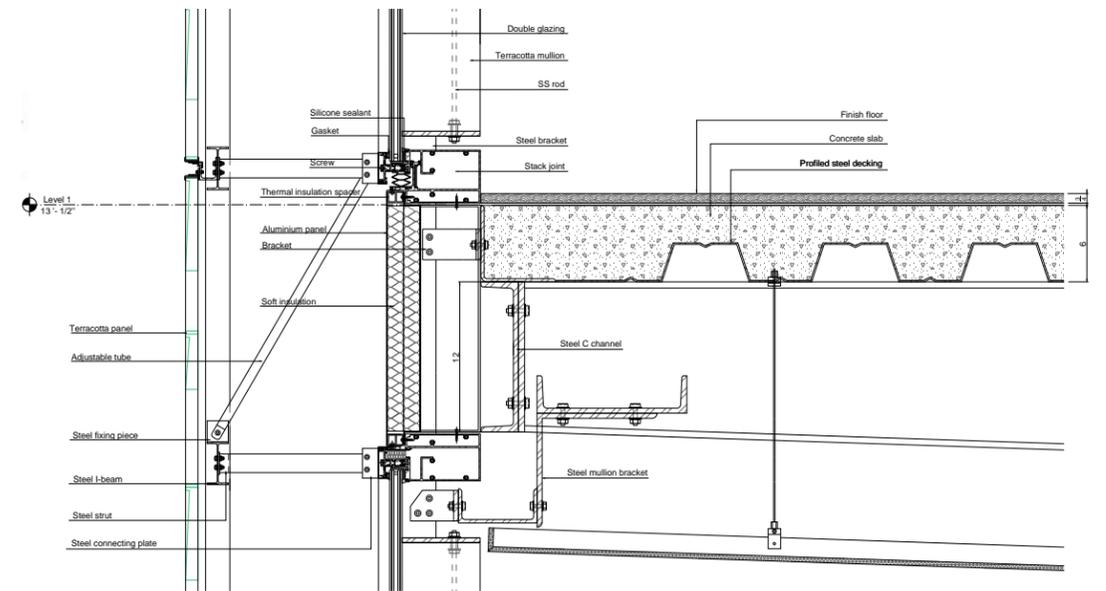
Teammates: Haotong Xia, Yingying Zhou



Section



Section Detail A



Section Detail B

**Building for Deconstruction** -- Fall, 2019

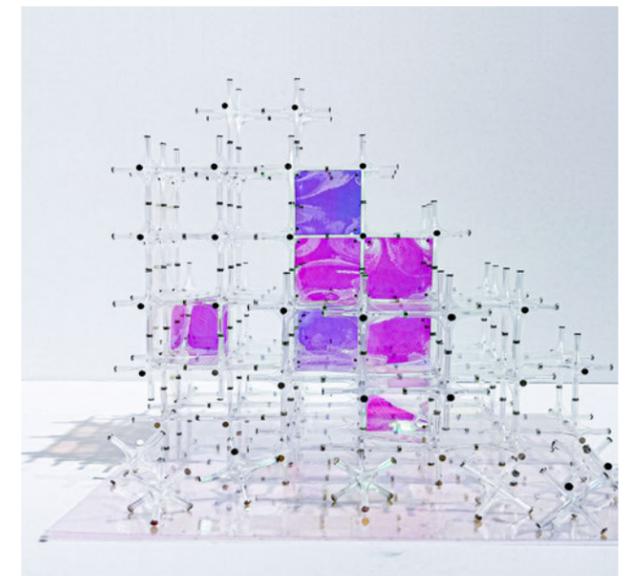
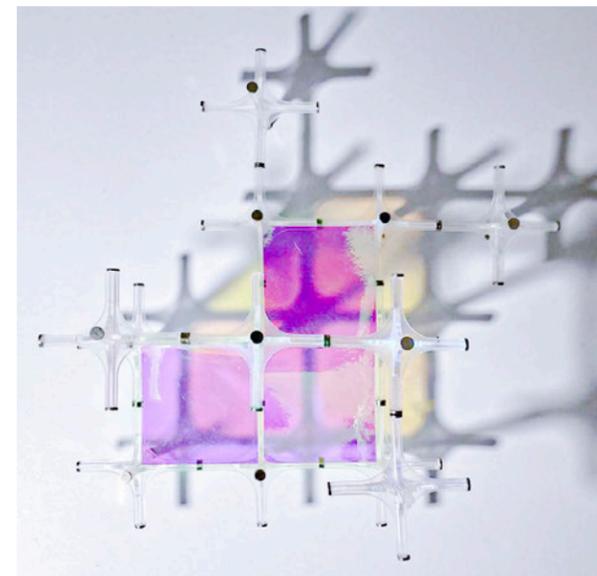
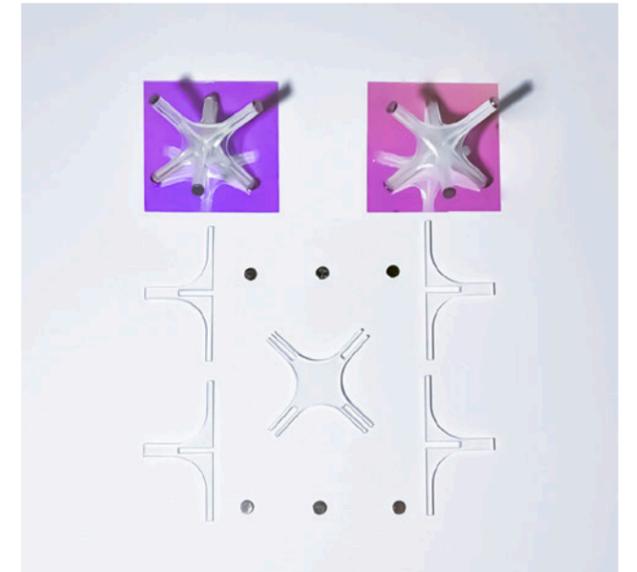
Course: Architectural Drawing & Representation I  
Advisor: Zachary White



The Project is inspired by Takara Beuillion, the temporary pavilion designed by Kisho Kurokawa for the Expo 70 in Osaka.

The model is created by acrylic boards, magnets, and reflective iridescent films. For the small modules, niches are created by laser cutting for assembling. Small magnets are glued at each end to form connections between modules.

The flexible units allow exploration of various spatial sequence. The translucency of the materials helps to create different light effects.



Building for Deconstruction -- Fall, 2019

Course: Architectural Drawing & Representation I  
Advisor: Zachary White

