

# ARCHITECTURE PORTFOLIO

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*Qin Han*  
*Master of Architecture (GSAPP)*

Selected works: 2020-2024

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## Transgeneration Body Hub

*Motion, Movement, Body*

*Spring 2024/ADV VI*

*Instructor: Juan Herrero*

*Site: Madrid, Spain*

*Group work: Yichun Liu, Wenjing Hu*

The Parque Movil is sited in a very dense and vibrant community, which is full of movements. Sports facilities such as football field, tennis court, swimming pool, cultural or educational facilities such as the theater de canal, cathedral, dance school, drama school, performing theater, and commercial facilities. shopping street underneath the housing buildings.

Now, although it is in such a vibrant and diverse-generation community, it is very enclosed and invisible from the outside. The heavy bricks and concrete walls block people's views and circulations. Therefore, we want to return Parque Movil to the public, make it open & welcoming and provide extremely free and flexible movement space here.



**1935** State Mobile Park  
An Autonomous Organization as a Mobile Park of Civil Movements, Surveillance and Security.

**1942** Facilities Built  
Designed by Angeloni Arroyo Alvariz. Composed of a volume of offices in the West and the wing to the East, and another two larger developed southward and parking. In addition, under the entire complex and below the basement there is a shelter or bunker.

**1943** Extensions

**1946** Mural  
"The Radios of the Automobile"  
Painted by Germán Cabán, following the line marked by those painted during the 1930s and early 1950s, by Mexican muralists, especially Diego Rivera at the Ford and General Motors factories in Detroit.

**1967-1968** Renamed  
To include public participation, changed its organizational structure and received as Municipal Mobile Park (PMA).

**1987** Autonomous  
Recognized and certified as an autonomous body of a commercial nature.

**1999** Restructured  
Integrated in the government Delegations.

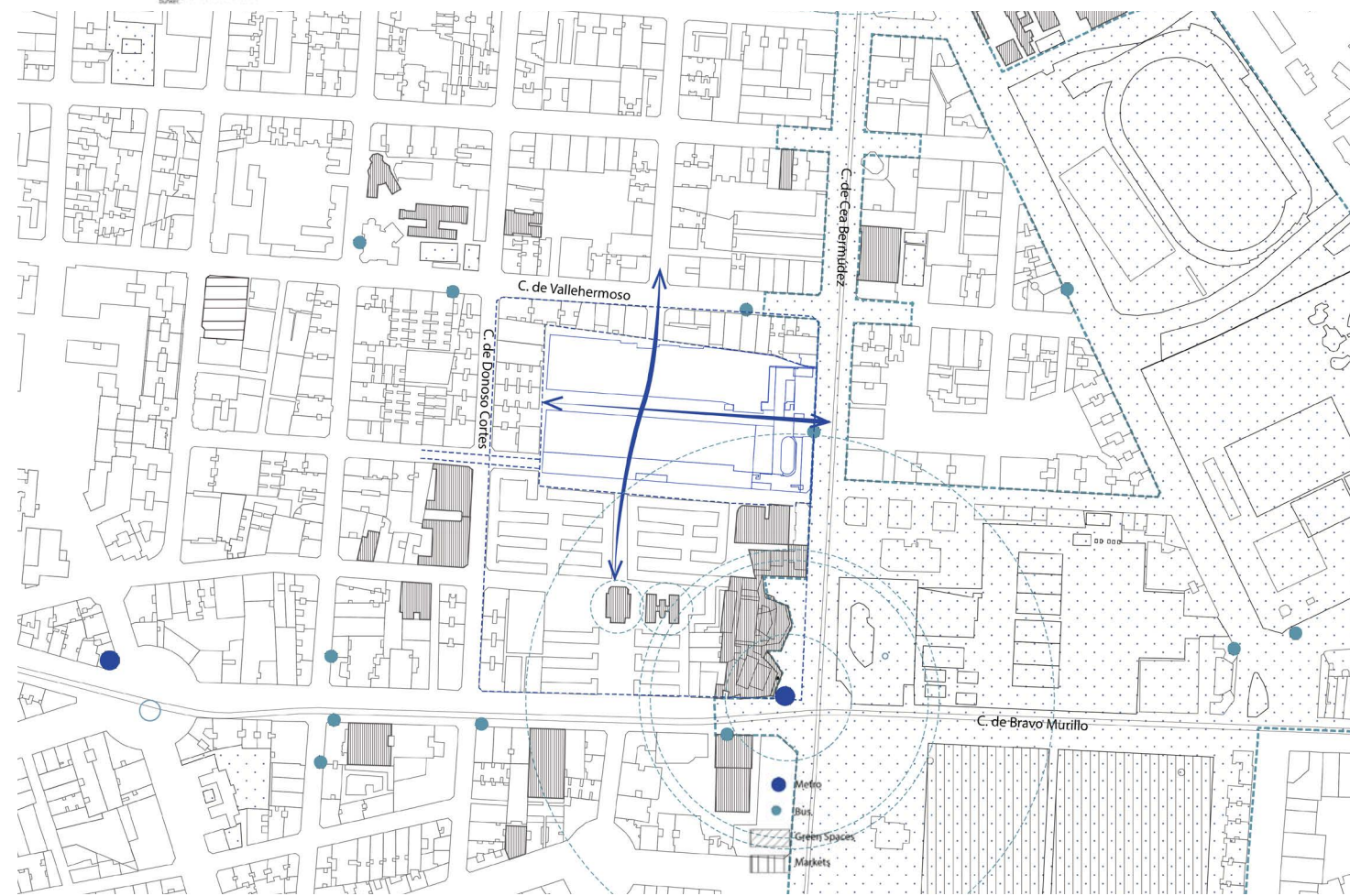
**2015** 80th Anniversary Exhibition  
Mobile Park Defense Association

**2017.5** Working Group Formed

**2018** BIC  
Reported to the Ministry of Culture as decoration of an asset of Cultural Interest (BIC).

**2020.1** Cultural Heritage Assets  
BICs aimed to increase its level of protection by including it in the catalog of Protected Buildings. The Hispanic Heritage Association included the PMA in its net list of endangered cultural heritage assets.

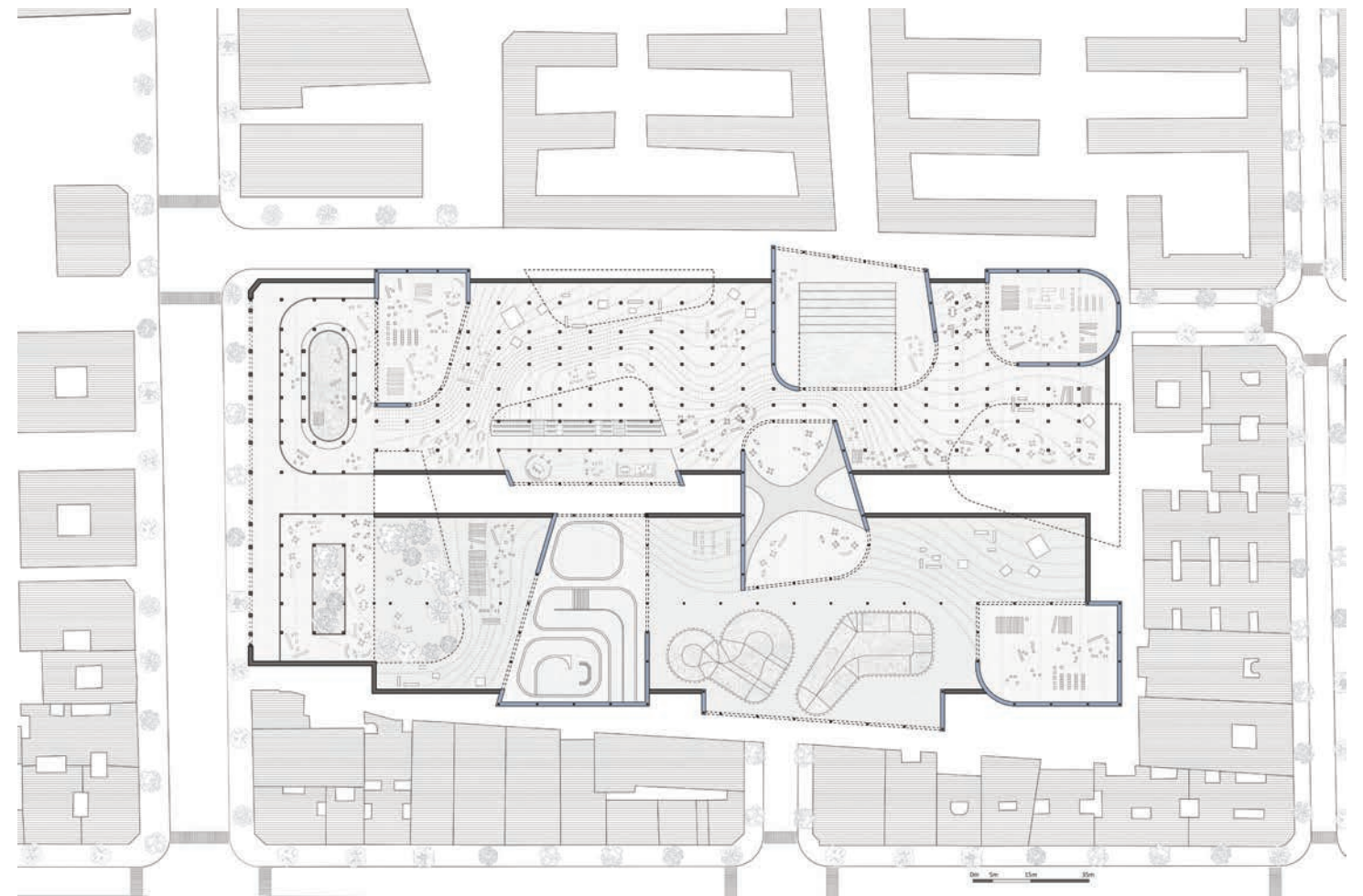
**2021.10** Completed



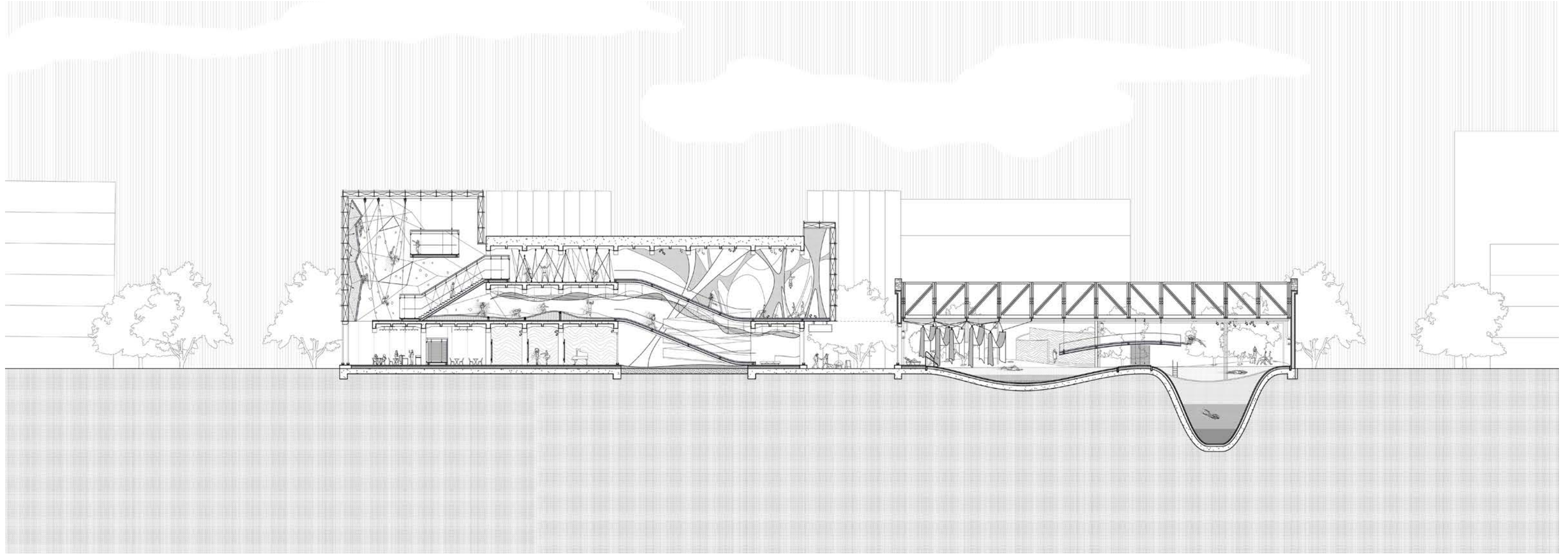
Our body hub aims to become a beacon of cultural dialogue and creativity, emphasizing flexibility and accessibility to ensure the dynamic space can adapt to evolving all kinds of body movements and community needs.



Ground Floor Plan

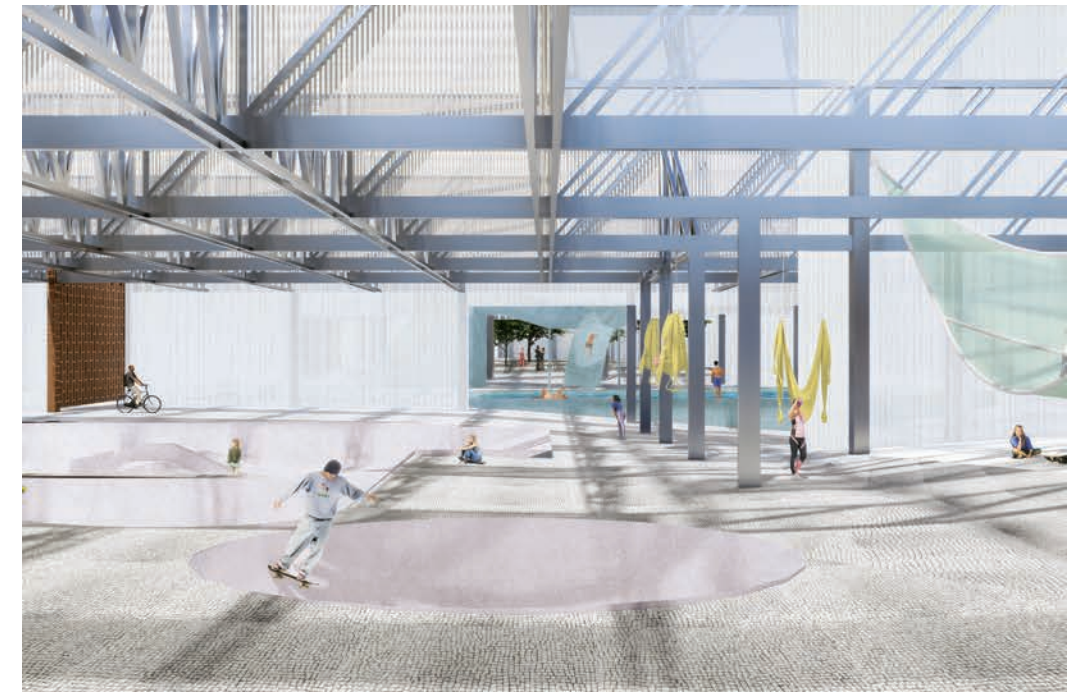
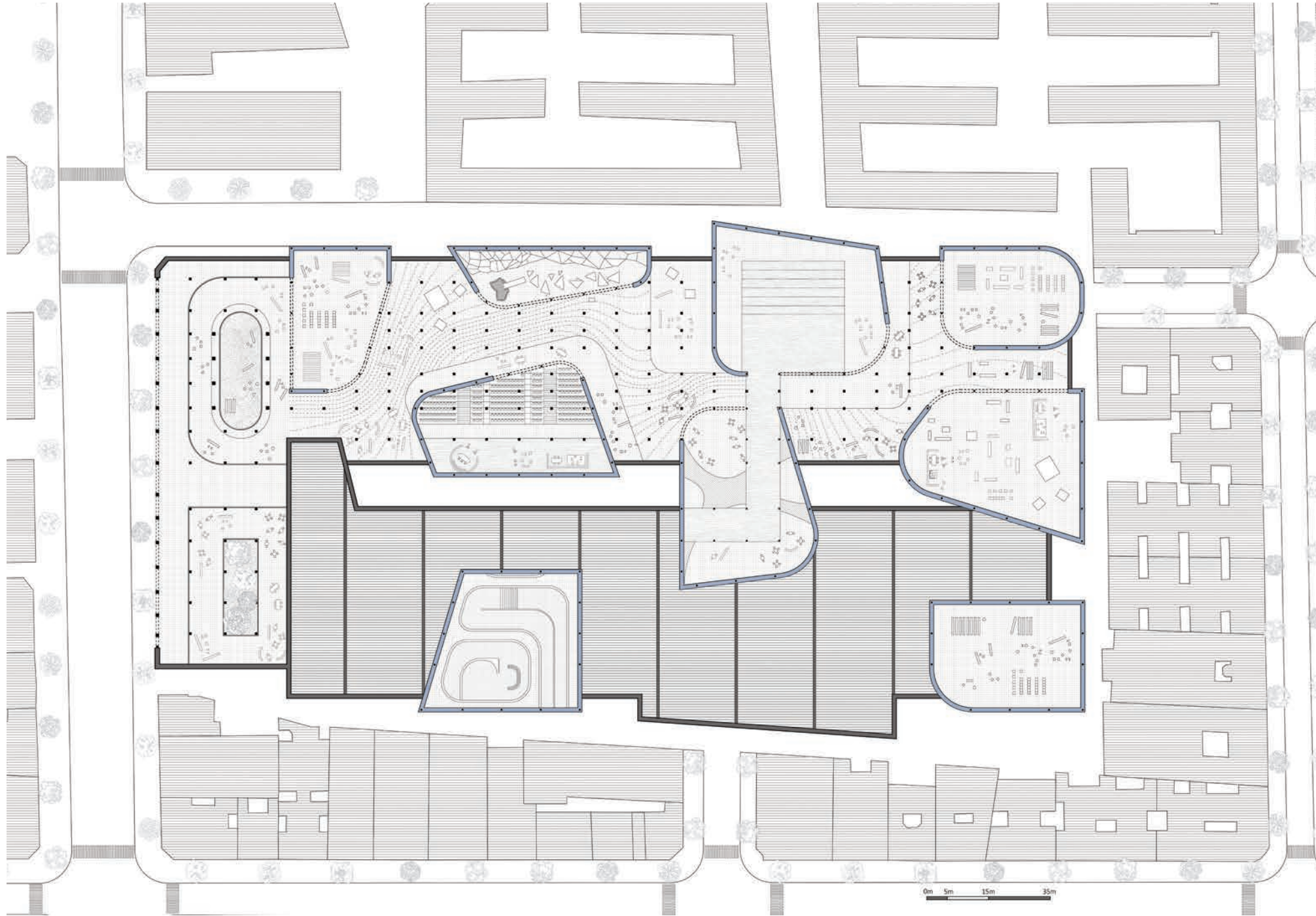








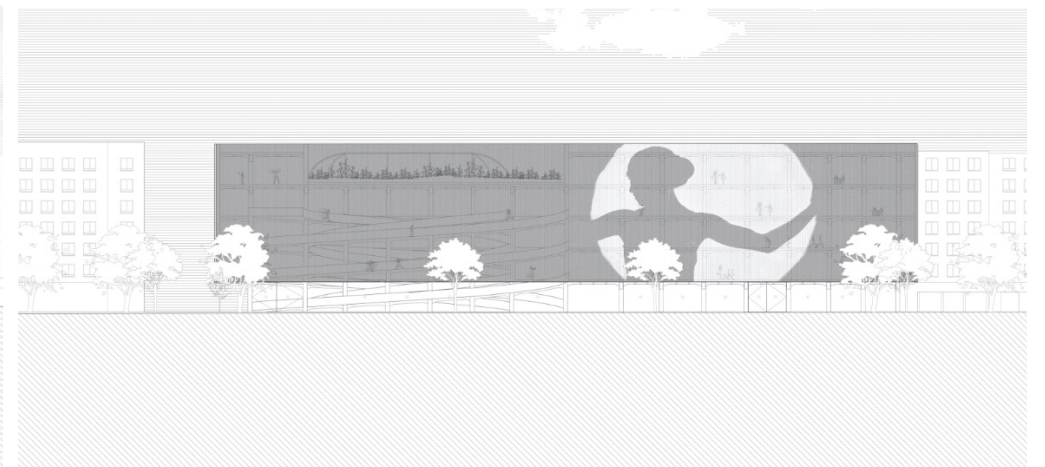
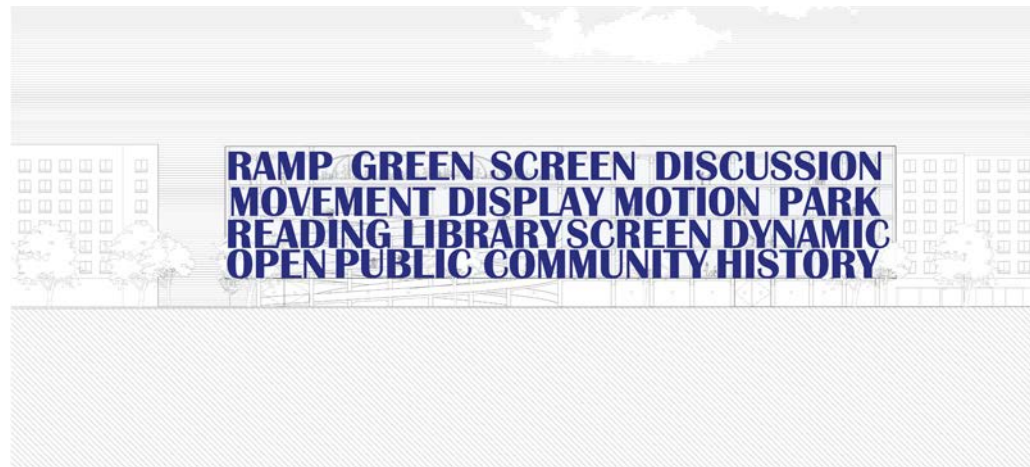
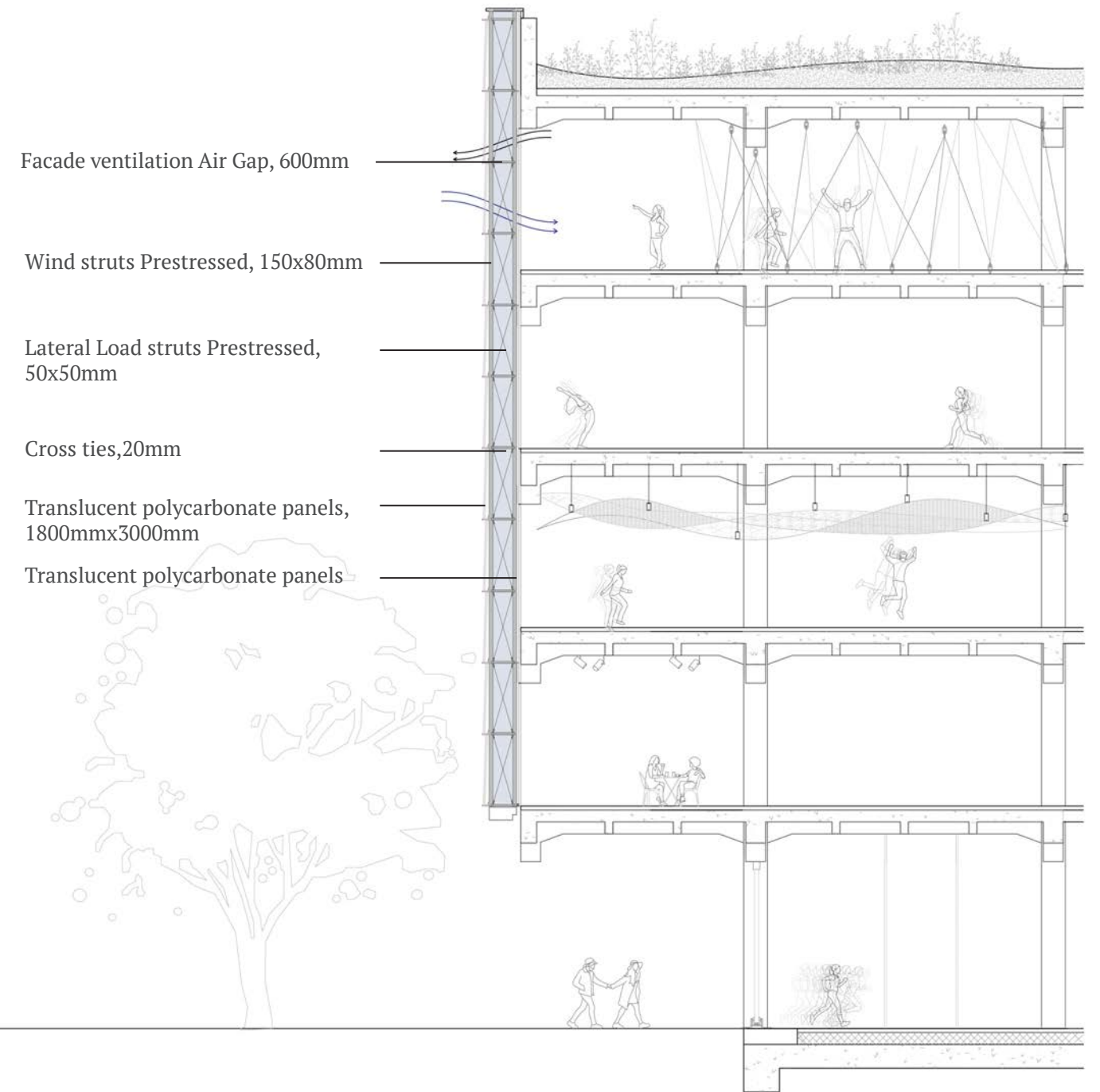
Free Movement



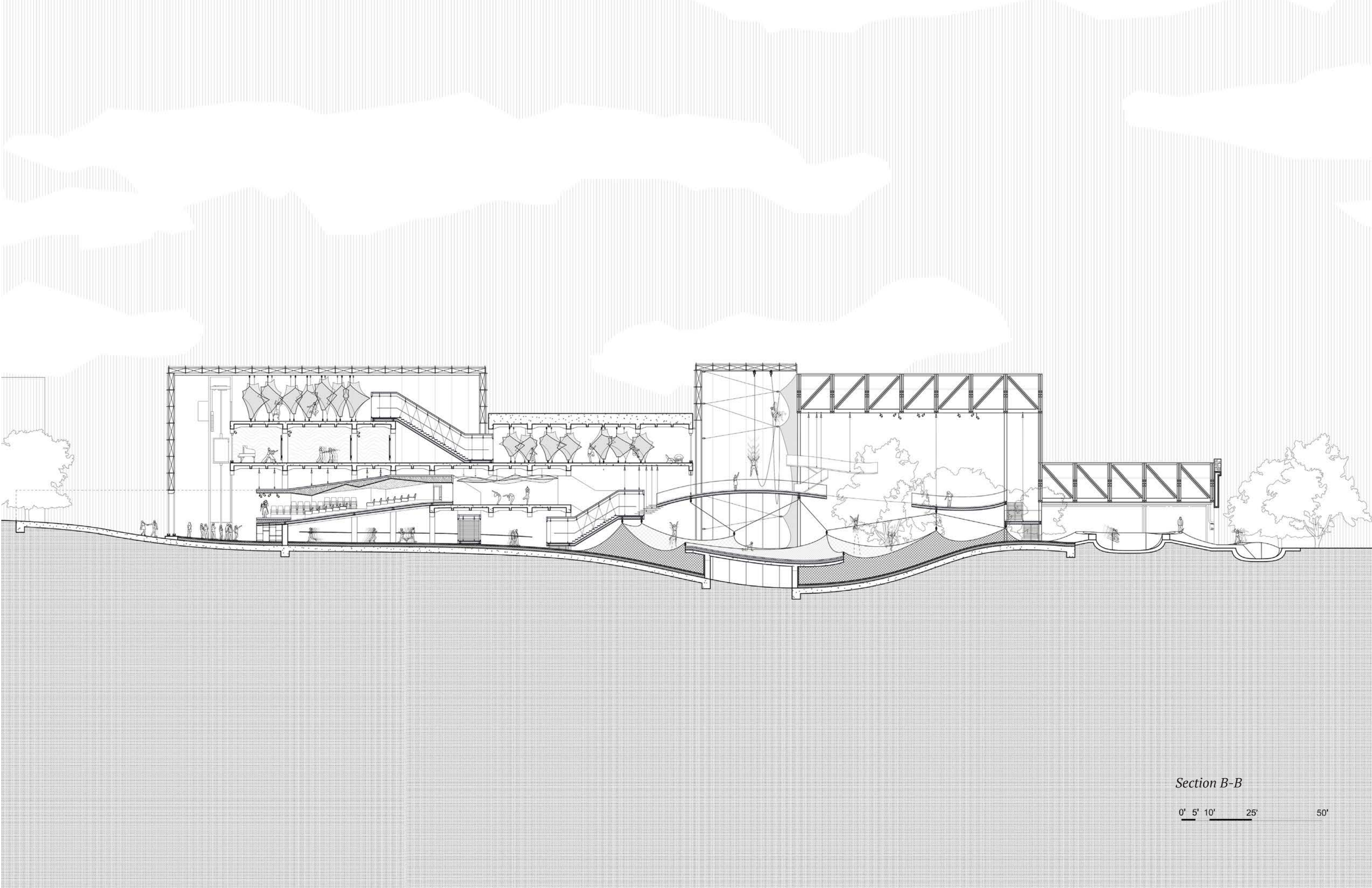




Community Screen







Section B-B

0' 5' 10' 25' 50'





## Wander City

*Armory, Environment, Rural, City*

*Fall 2023/ADV V*

*Instructor: Wonne Ickx*

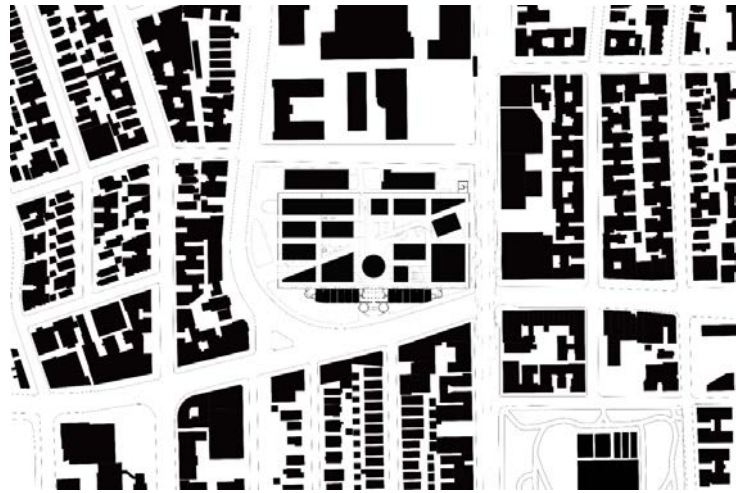
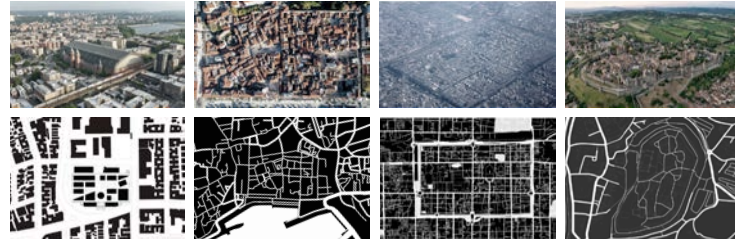
*Site: Bronx, New York*

*Group work: Yichun Liu*

What if the Kingsbridge Armory itself became a city? What kind of city could it be? How could this city integrate into existing infrastructure and help support the wellbeing of its community members?

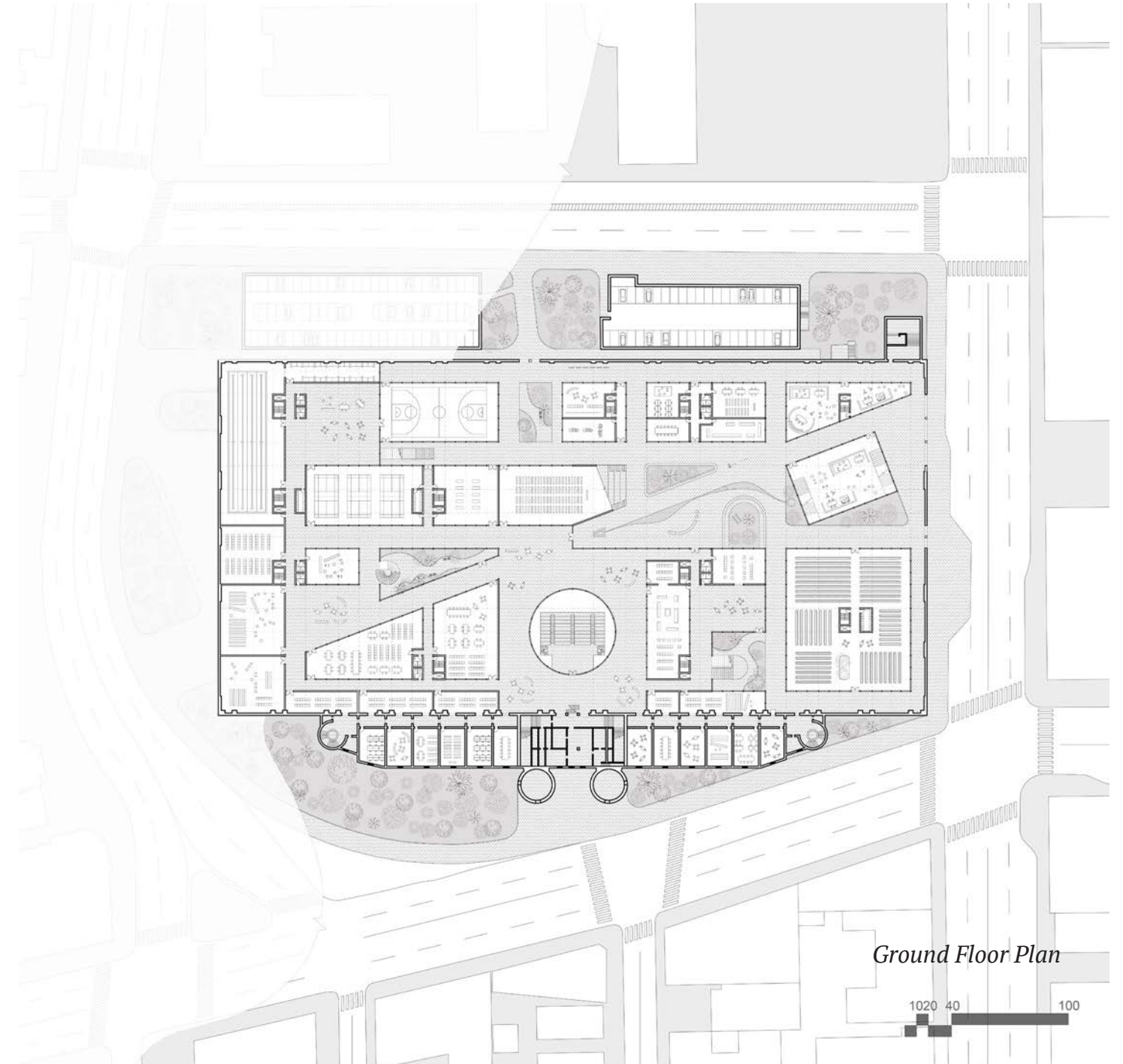
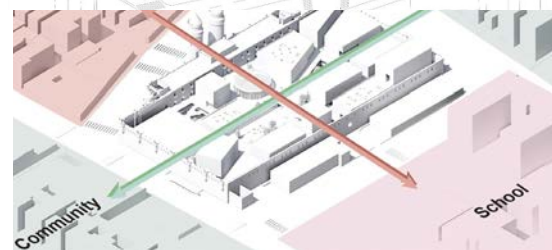
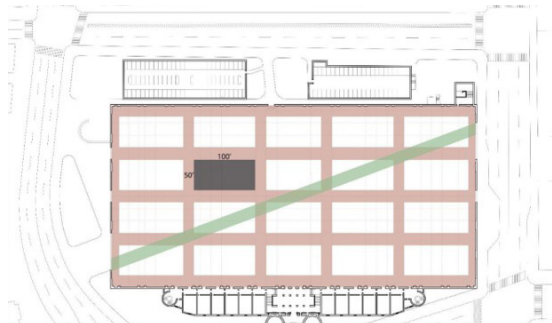
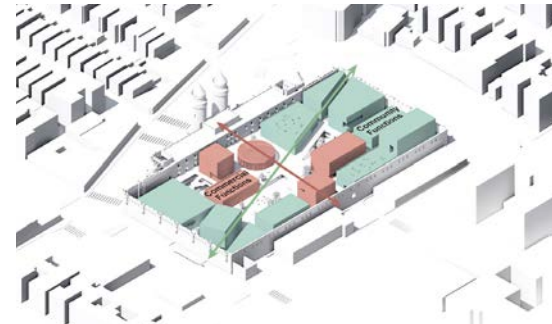
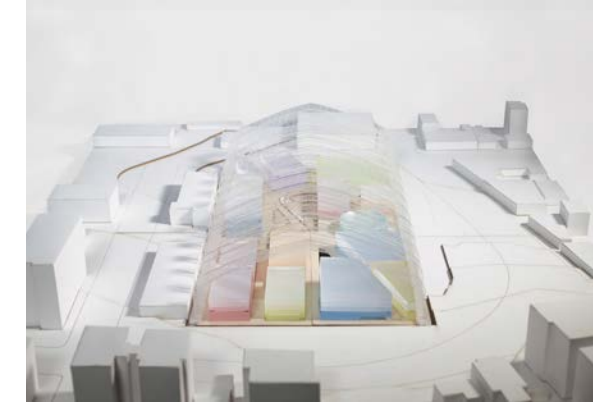
Our proposal creates a city within the Kingsbridge Armory that can provide inspiration, enlightenment and education for community residents and subtly affect their lifestyle. They can get some thinking about education and health, and gain totally new cultural and entertainment experience here.





From the precedent of how urban space shapes people's behavior and mode of thinking, we can see that in Diocletian's Palace, once a fortification system, various walkable spaces were formed due to the retained city walls, gates, and streets.

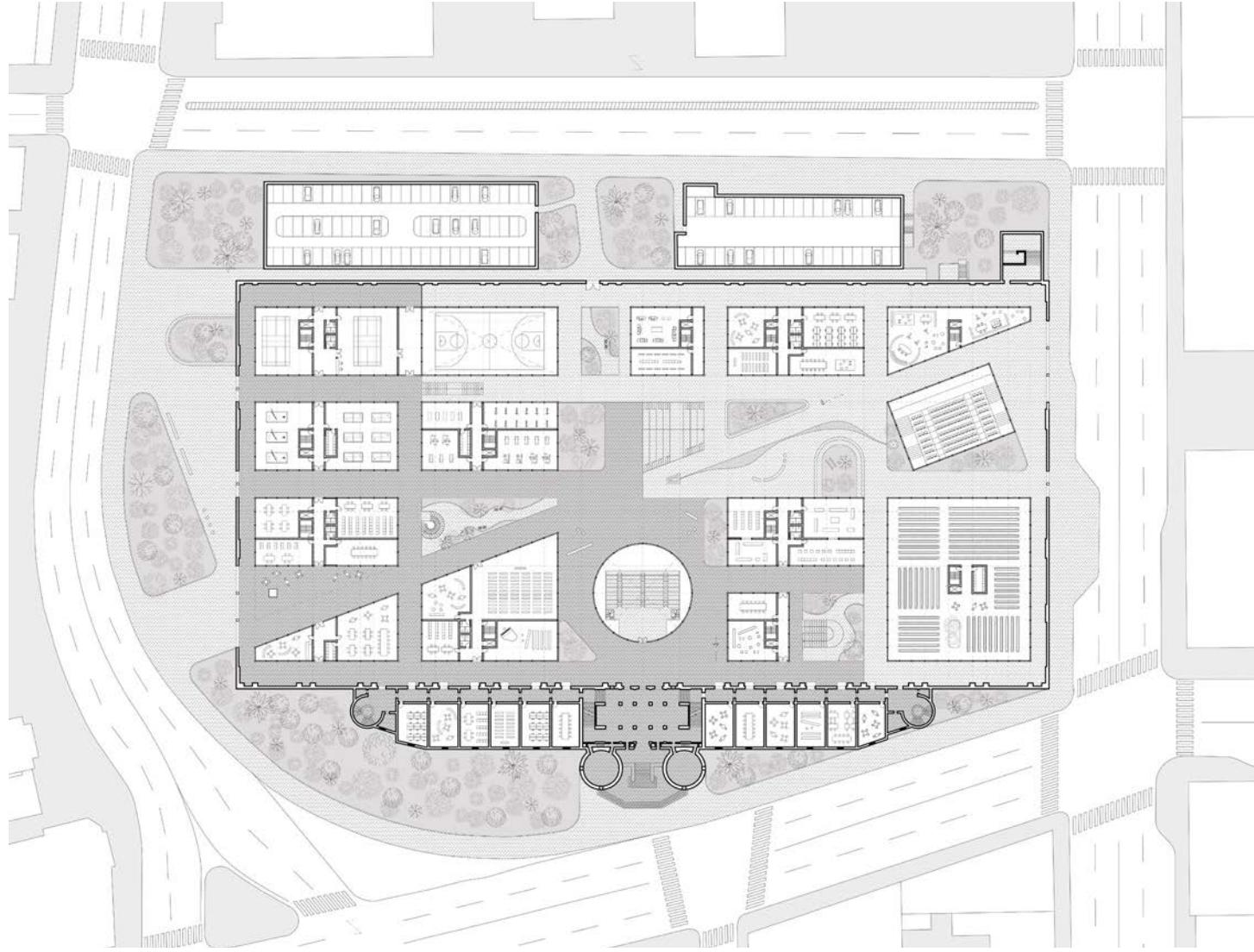
People can wander aimlessly to gain leisure, entertainment and even inspiration. Therefore, we realize that the void spaces of the city really belong to the public and provide the possibility for various events to occur, which is an important part of stimulating urban vitality.



Ground Floor Plan







Short Section



Entrance View

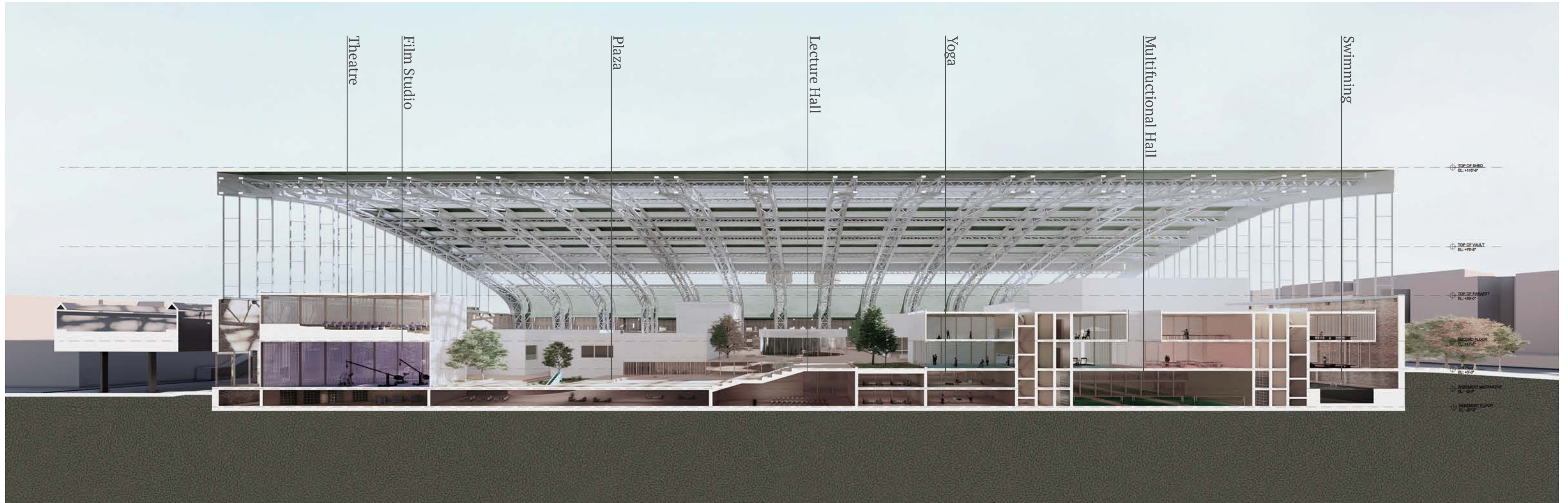




Courtyard View



Long Section



View to the Hall







## New Corridor

*Pipeline, Environment, Rural, City*

*Spring 2023/ADV IV*

*Instructor: Nahyun Hwang*

*Site: Hudson Vallage*

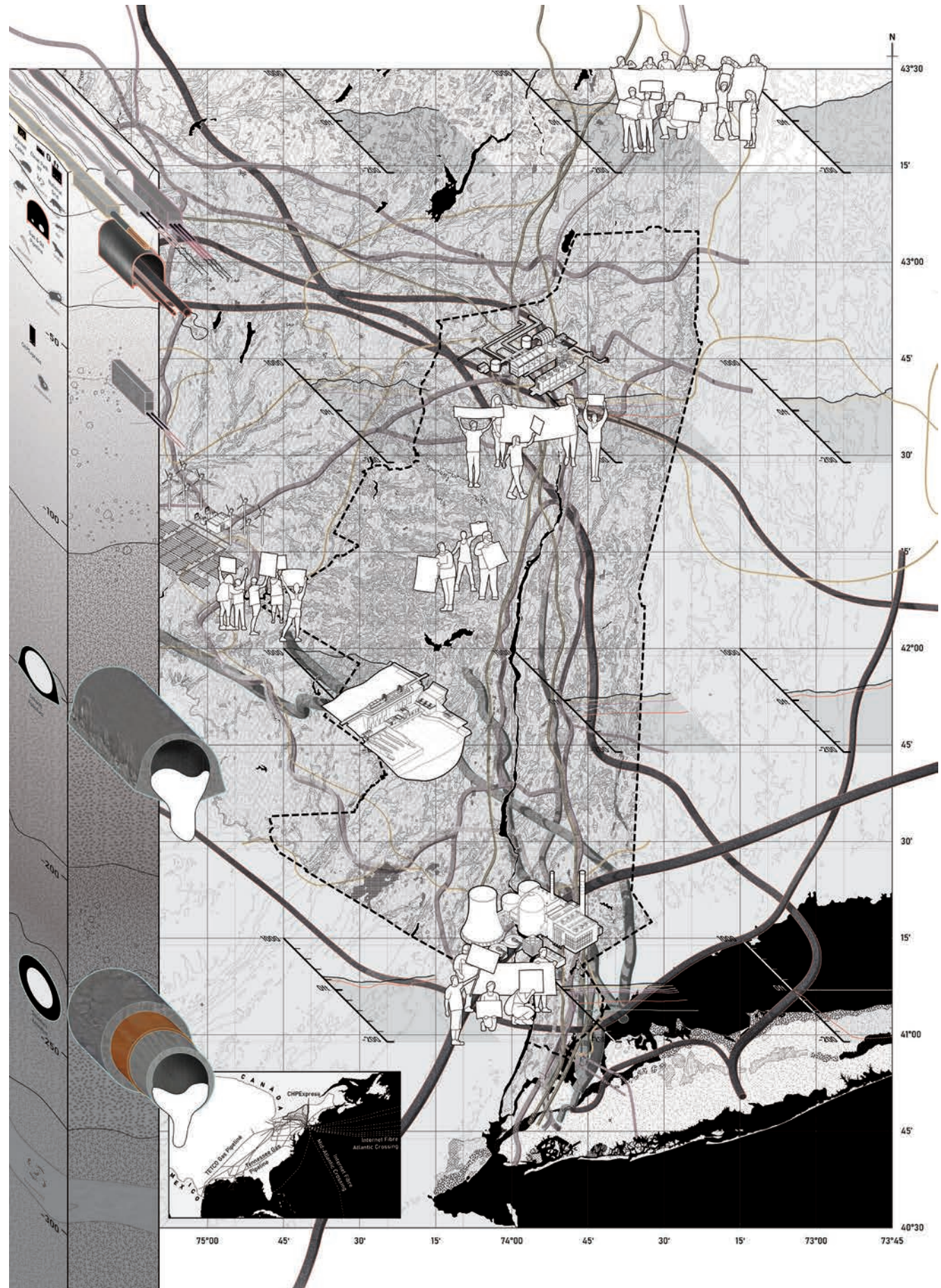
*Group work: Steven Gan*

To meet the city's growing needs, water aqueducts, natural gas and oil pipelines, electricity grids, and internetwork fiber have been constructed in the valley leading to Manhattan.

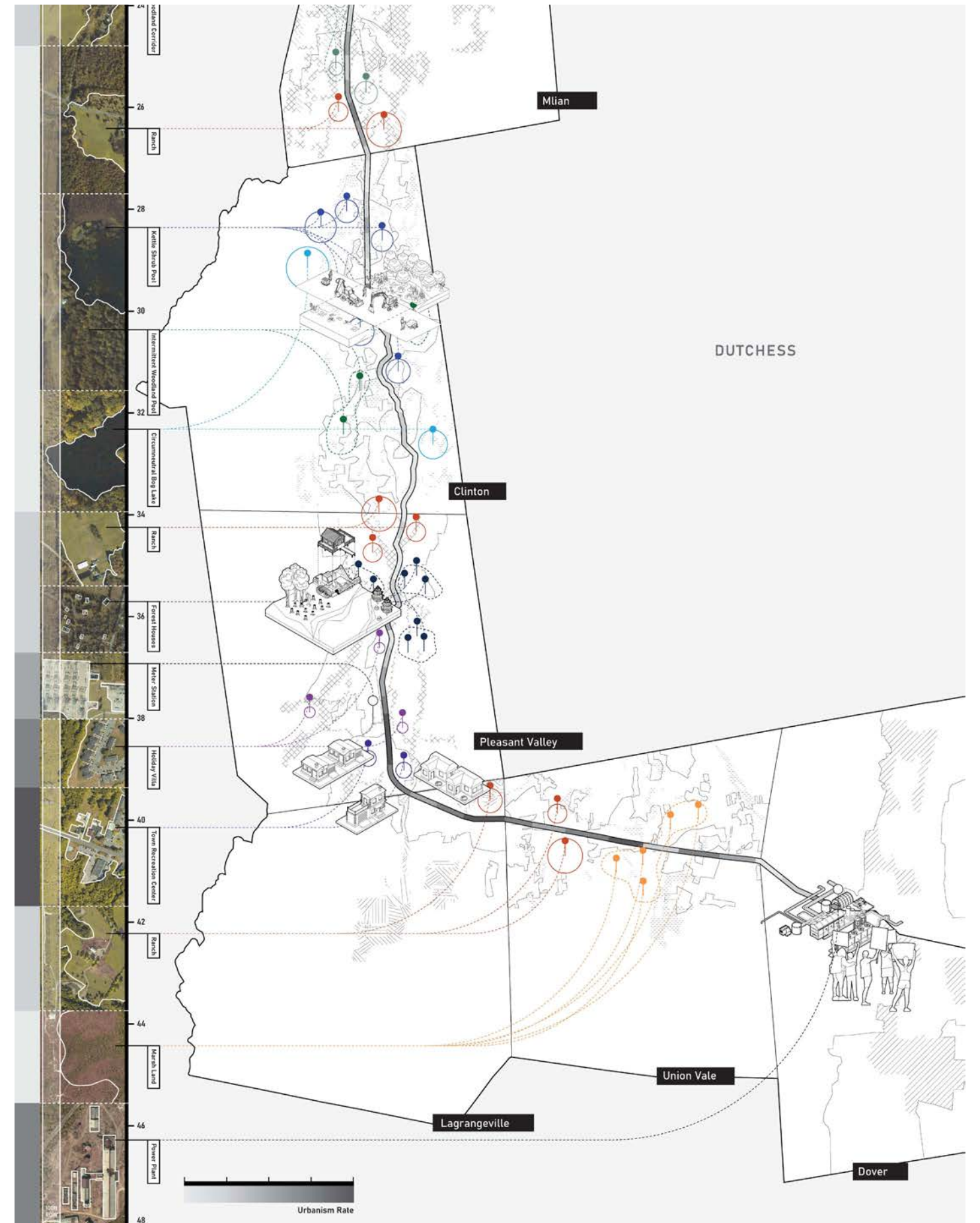
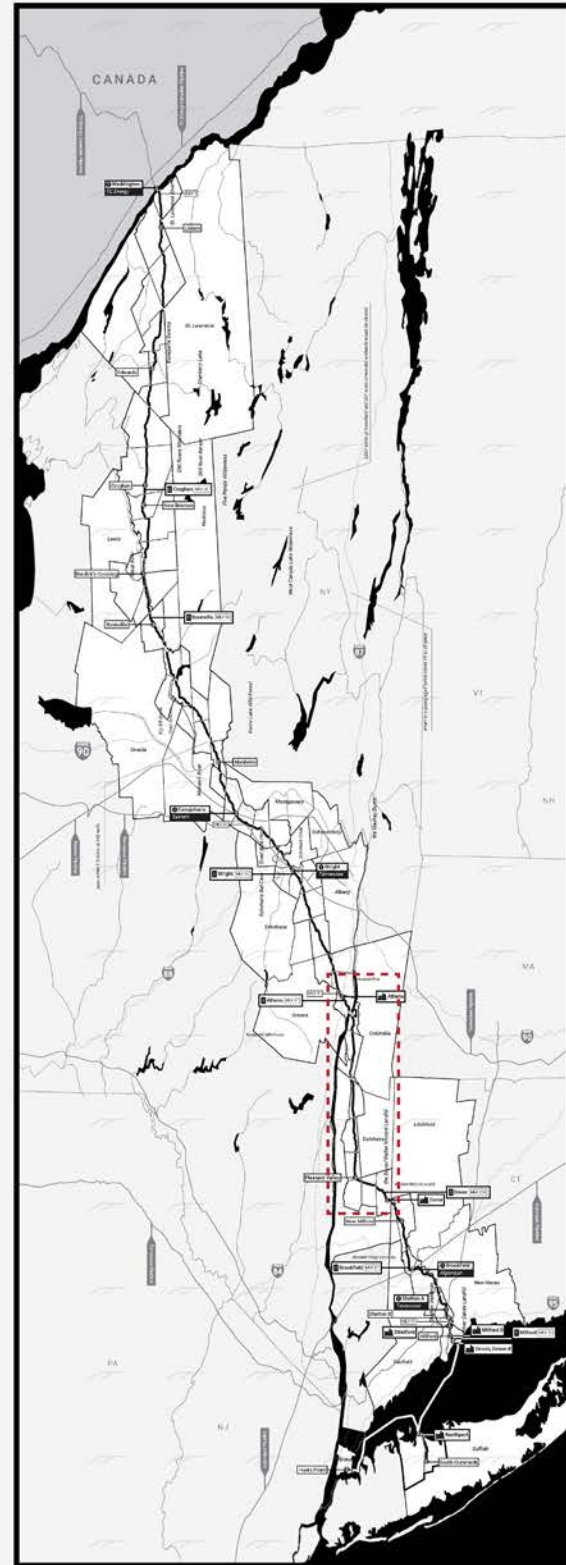
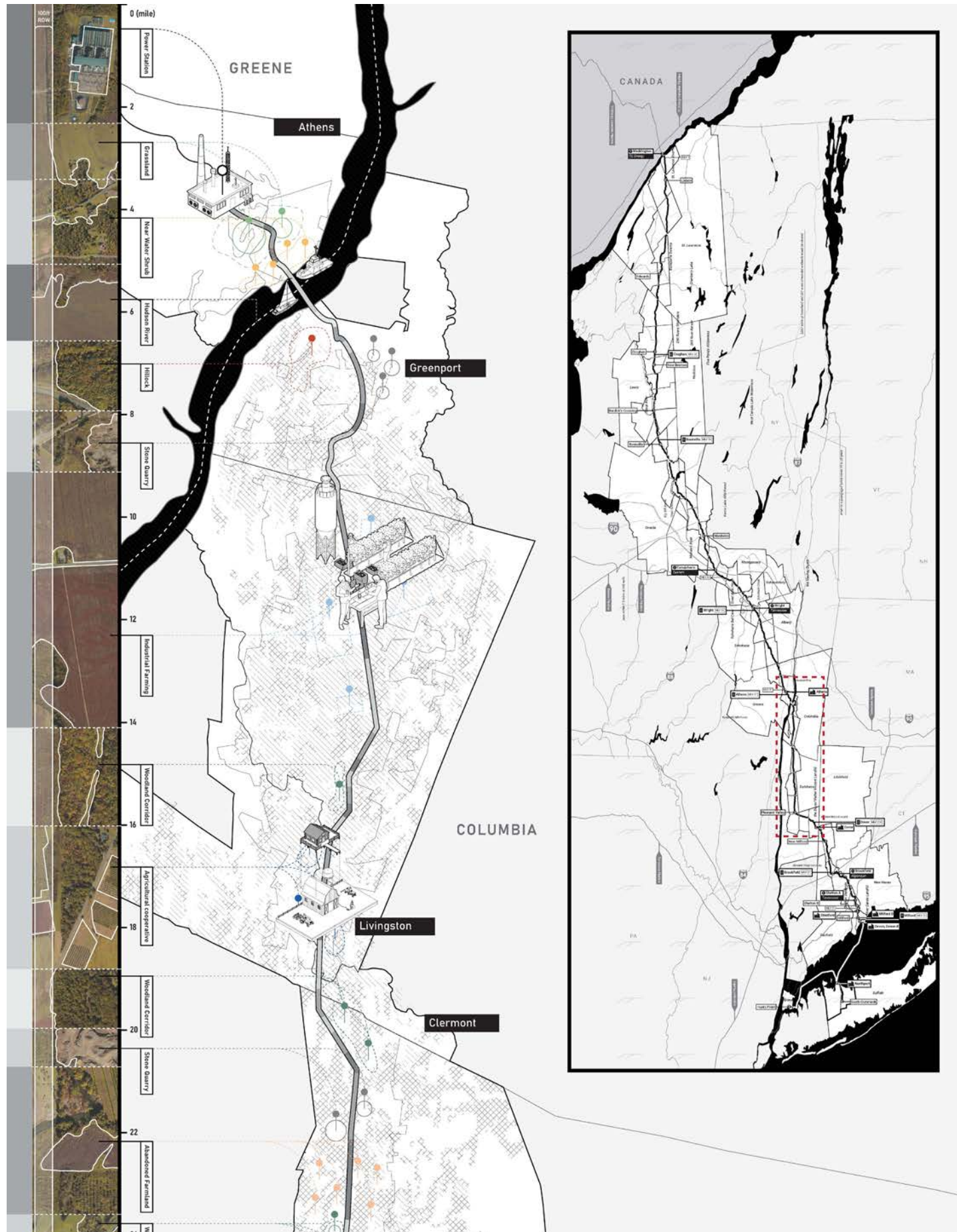
The pipeline construction process can have a significant impact on the environment. Moreover, pipeline construction has a tremendous impact on the environment not only during the building process but also after construction. After the pipeline is in place, a 100ft zone must be maintained, with vegetation limited to shrub height. This maintenance destroys the natural habitat and ecosystem of the area, leaving it barren and unable to support the local wildlife.

In this project, we are proposing that the public rights will be regained after the decommission of the pipelines, thus we want to build an ecological promenade to promote the local environment and community development.

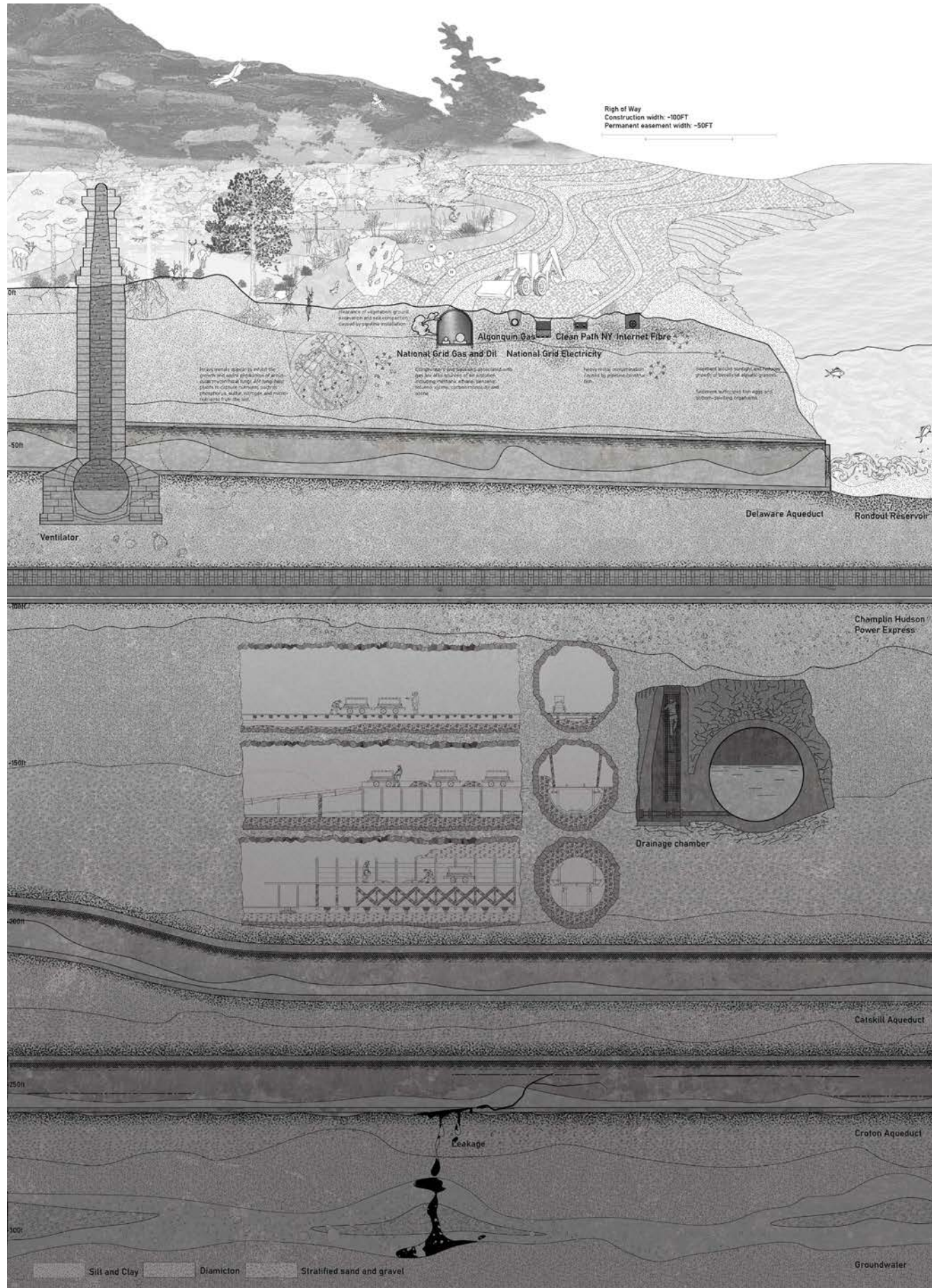








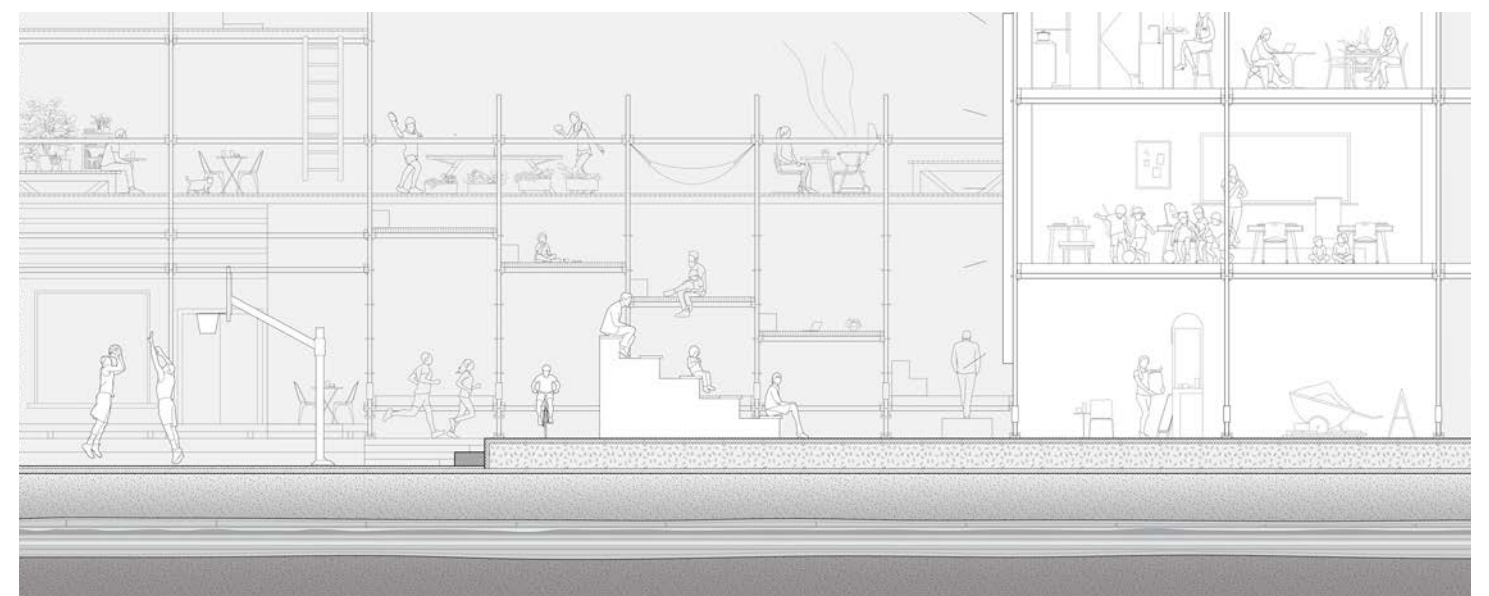
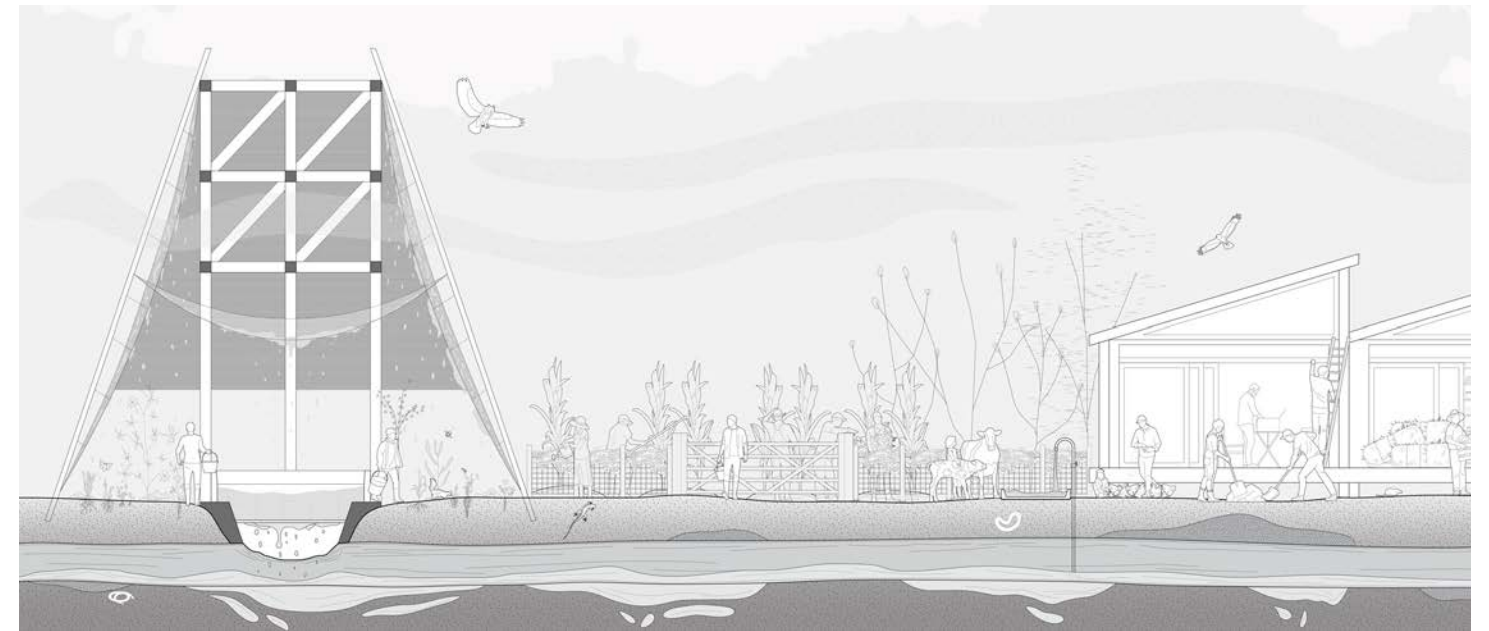




Farm

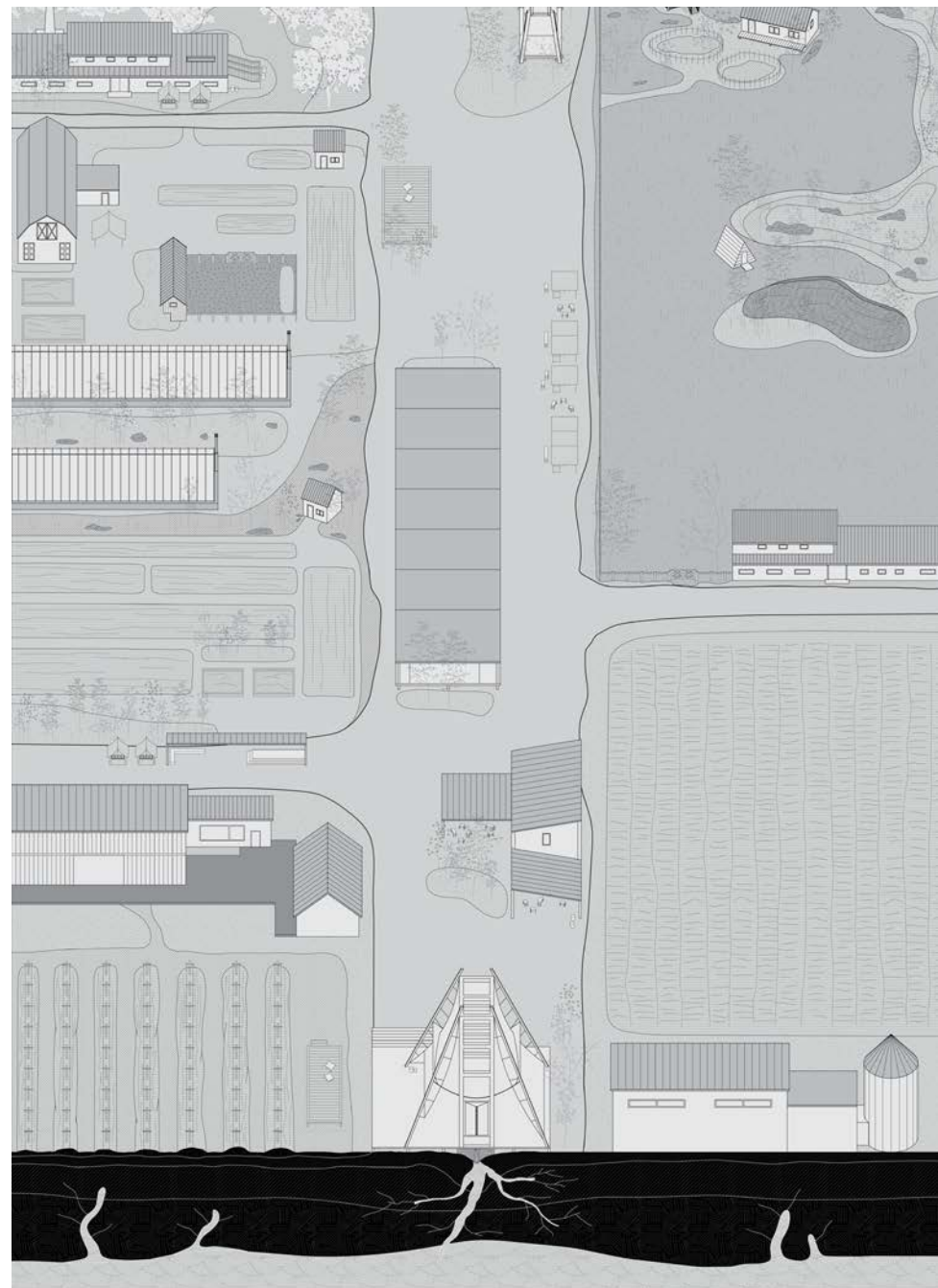
Nature

City





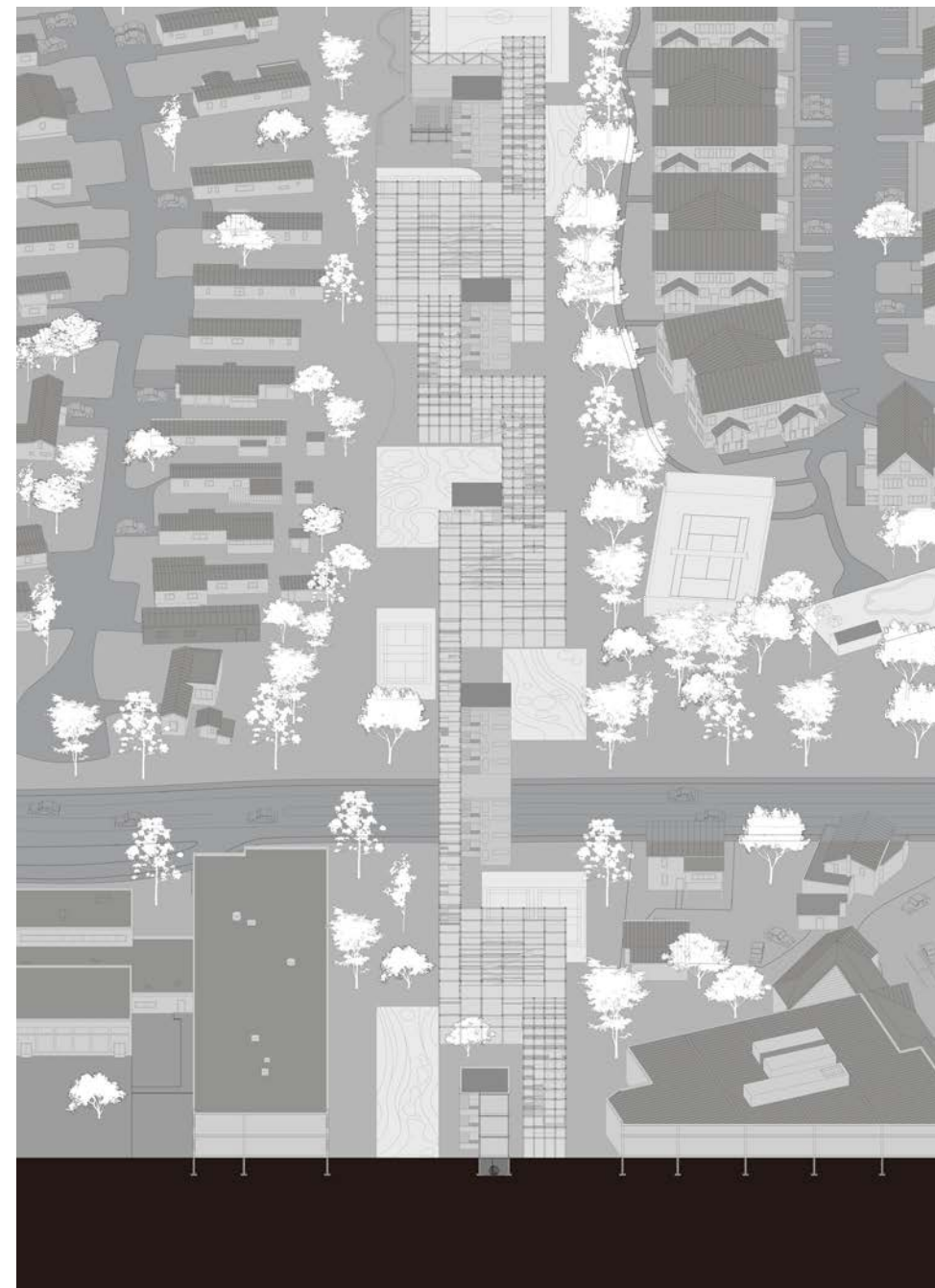
*Farm*



*Nature*



*City*

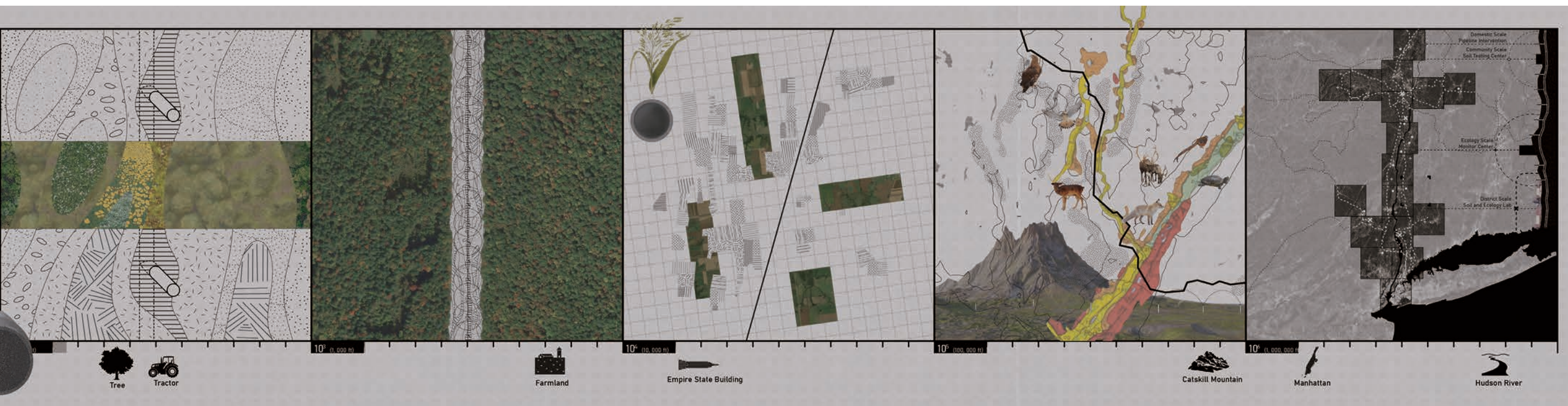






*The power of ten*

We repurpose retired underground pipelines to provide ecological benefits to local animals. This involves creating structures or attaching structures to the pipeline that can provide a substrate for the growth of plants. Over time, the pipeline can become colonized by a variety of species, which can encourage people to visit the habitat corridor.







## The Undulating House

*Water, cartographic community*

*Fall 2022/Core III*

*Tutor: Mimi Hoang*

*Site: Bronx, New York*

*Group work: Alice Lin*

The Undulating House is a housing scheme that seek to use landscape and roofscape to intervene with different issues in the area, mainly related to water.

Situated close to the Harlem River next to 138th street and within the flooding zone, our site is potentially related to different forms of water. Our main strategy is to create a wavy prototype on the landscape to treat flooding, and a roof type to collect rainwater. You can see both housing blocks and landscape have a gradient in west-east direction, attenuating the flooding wave from the river.



Site Analysis

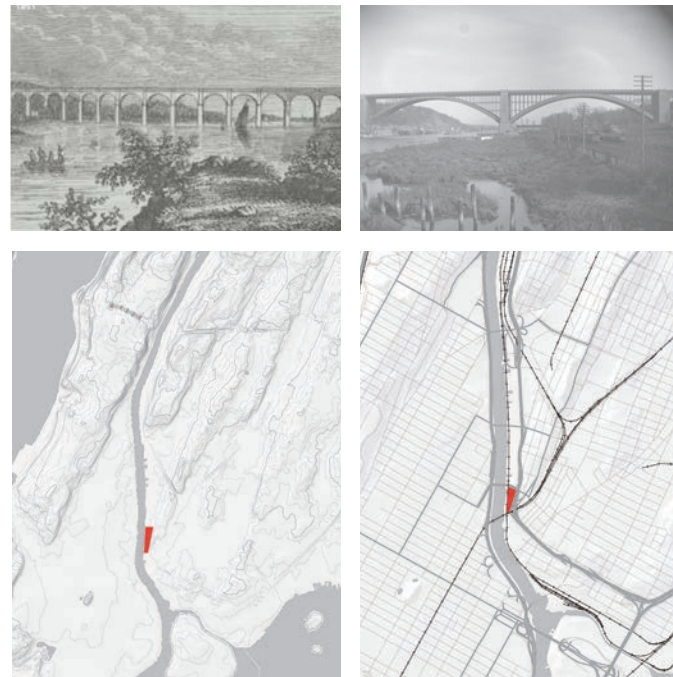
Pre-European Contact (1609)  
Lenape people live in the area, cultivating agricultural fields through slash and burn techniques & using the local waterways for fishing, hunting, trade, and travel.

1902  
Popularity of rowing reaches its peak as boathouses and rowing clubs begin to migrate from the Hudson to the Harlem River; photos from 1902 show at least five boathouses on the Bronx waterfront, number of rowers on the Harlem River reaches nearly 1000.

1937-1963  
Henry Hudson & Moshulu Parkways are completed. Major deegan and Cross Bronx Expressways open.

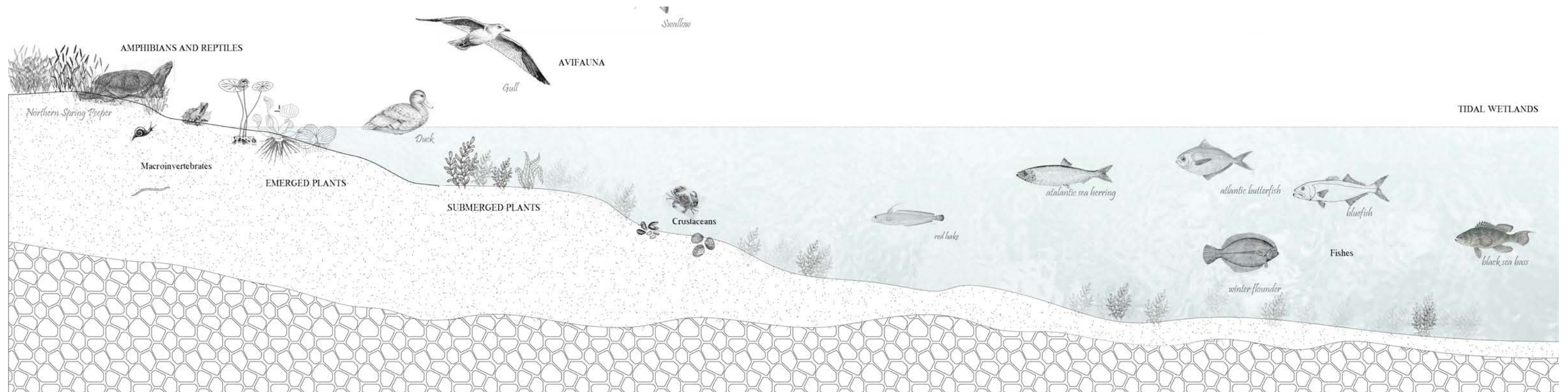
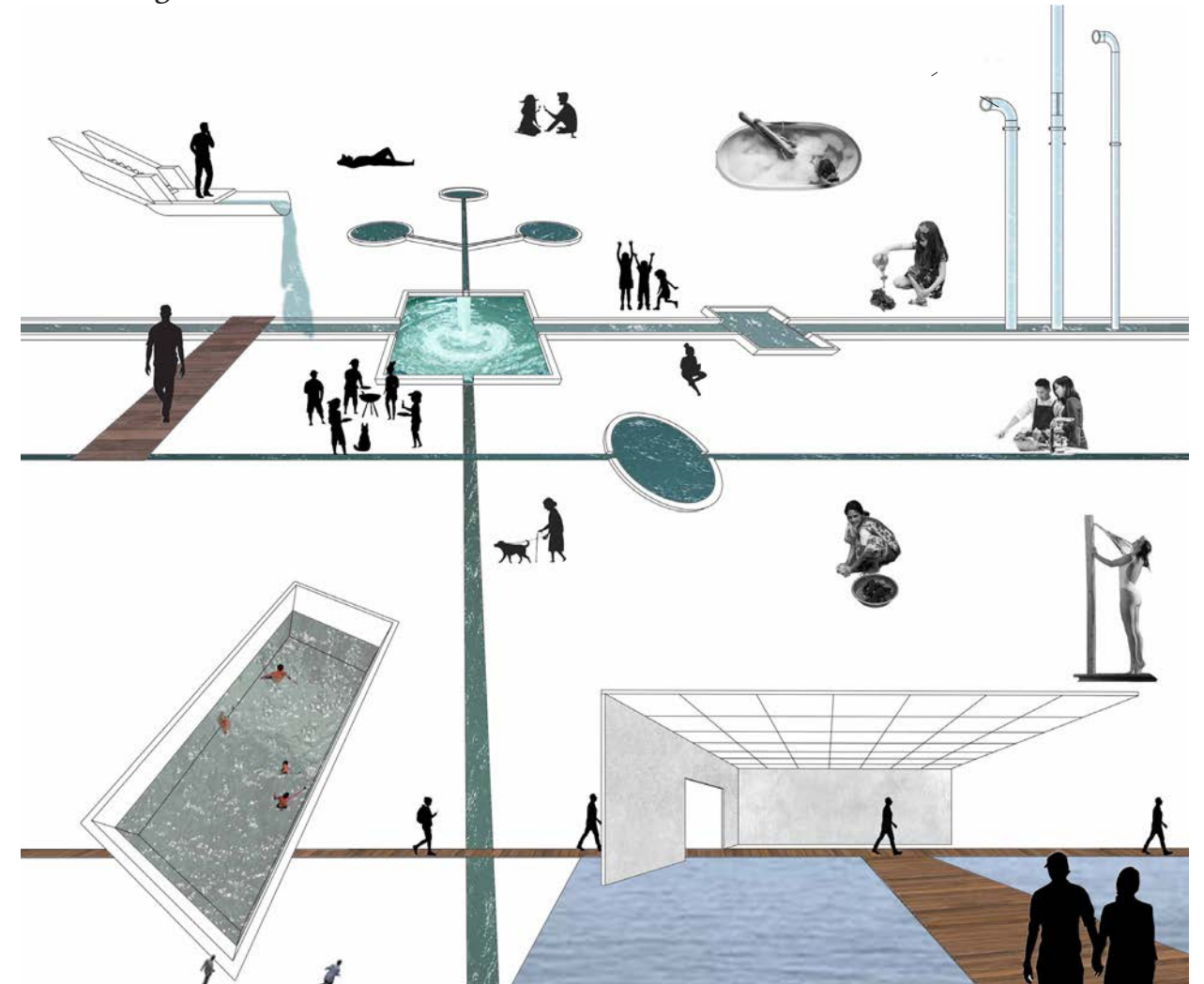
1848  
High Bridge opens to carry clean drinking water through the Croton Aqueduct into NYC, today it is the oldest NYC bridge still in existence.

1912  
Tibbetts Brook is piped into a nearby sewer, today routed to the Ward's Island Wastewater Treatment Plant.



The Bronx, NY gets 48 inches of rain per year, more than the average amount in US. The site is located in Flooding zone AE; it has a base flood elevation level of 11 feet, which indicates the level the waves would reach on top of the storm surge. Here, we can see water is not only a potential element but something that create hazard. In the meantime, water is an indispensable part of people's everyday life.

Water Collage





- 1. Atrium
- 2. Food Co-op
- 3. Food Pantry
- 4. Learning Centre
- 5. Restaurants
- 6. Residential Facilities
- 7. Offices
- 8. Gallery
- 9. Vegetable Garden
- 10. Water Hub



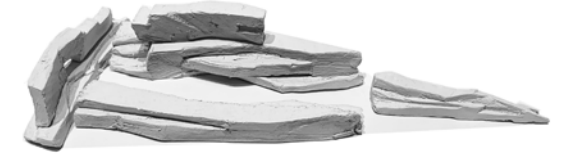
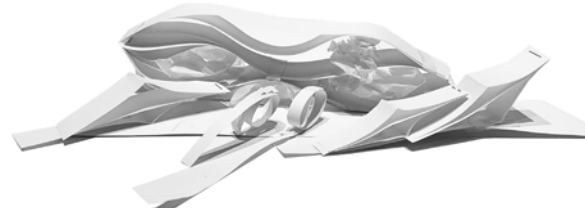
*Typical Floor Plan*



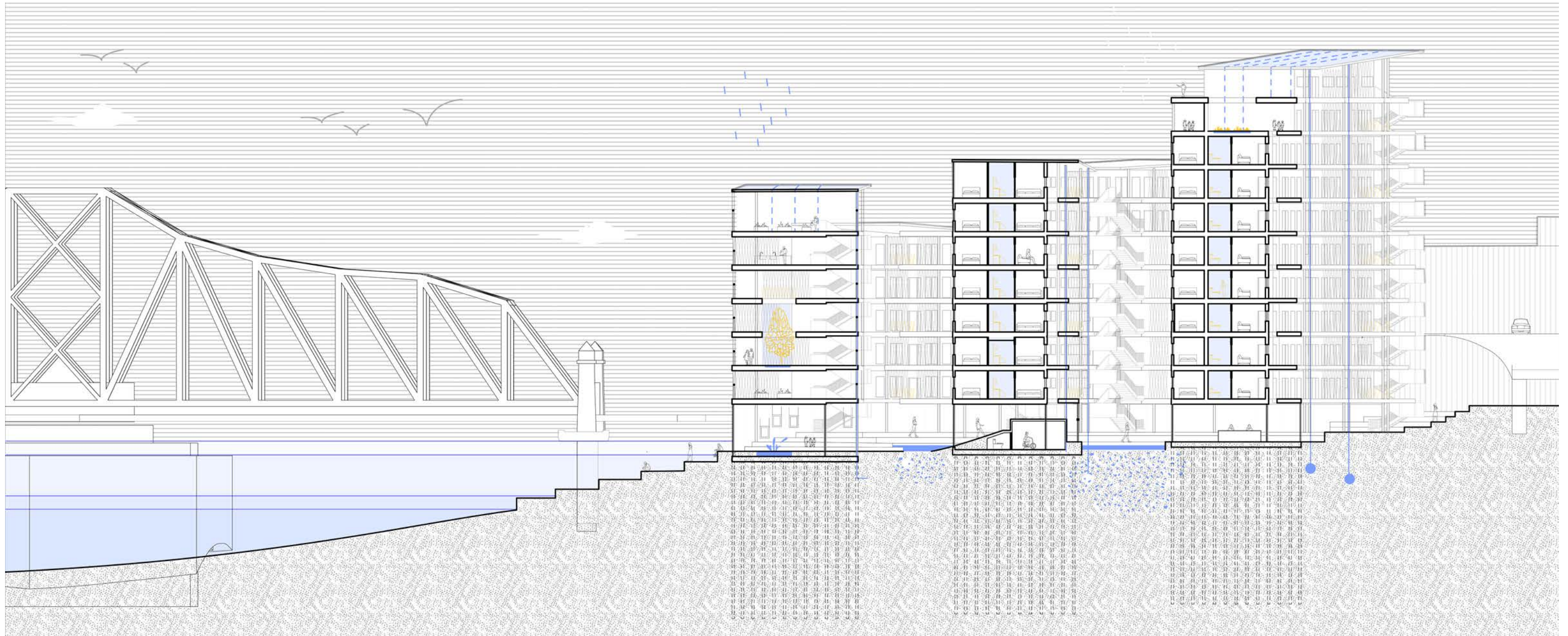
*Ground Floor Plan*



Model Photos



Section







## Exchange School

*Circulation, program, light*

*Spring 2022/Core II*

*Instructor: Erica Goetz*

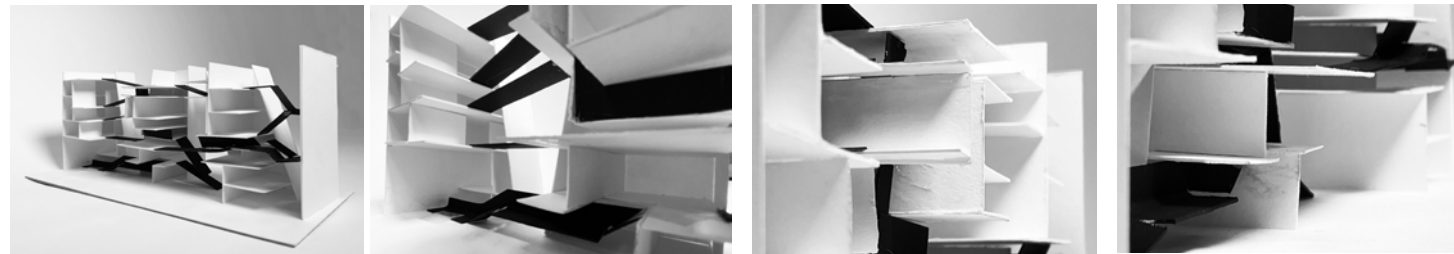
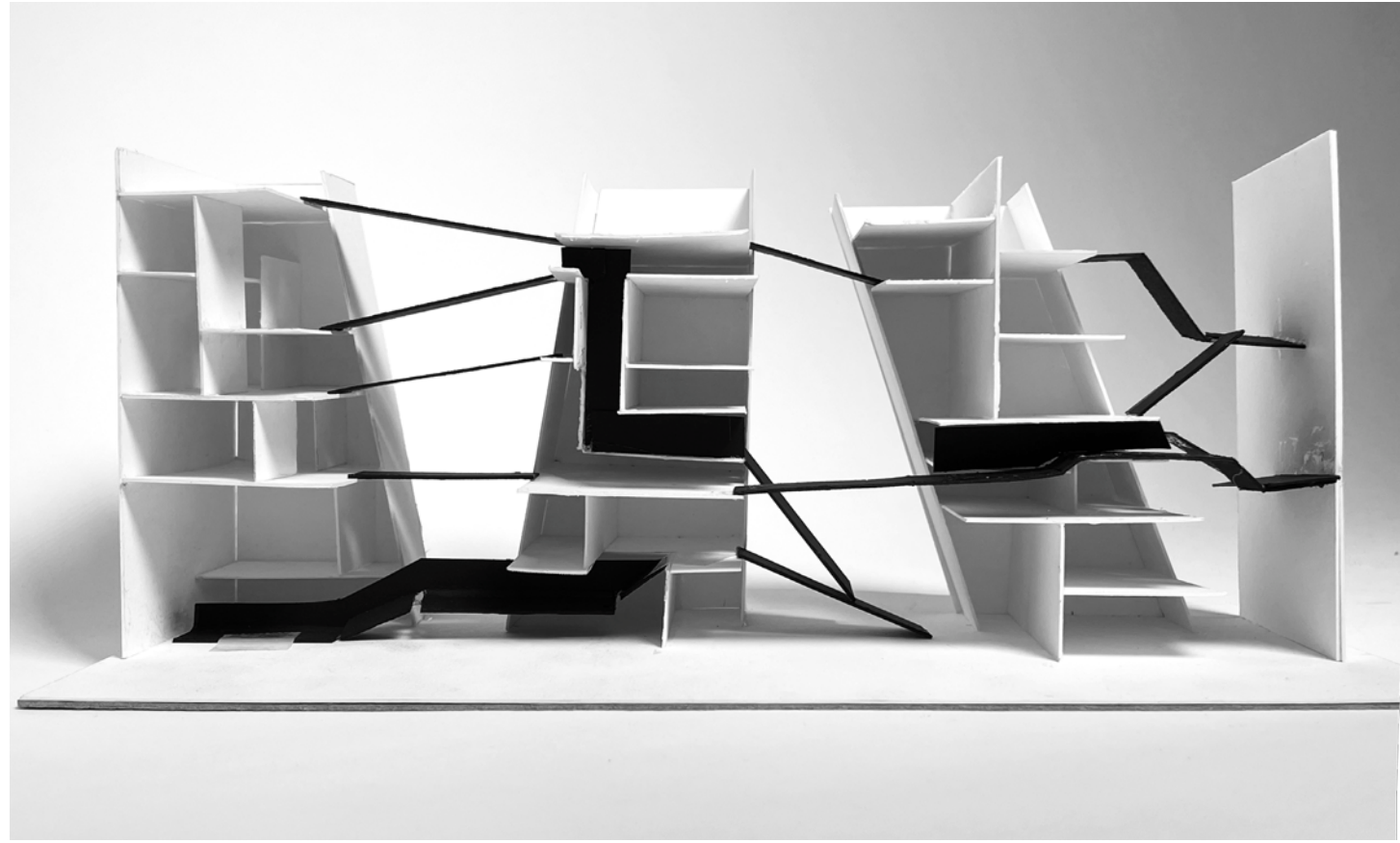
*Site: 198 Forsyth St, New York*

*Individual work*

The philosophy of education in the school is to promote socialization as part of the educational mission and overall well-being of students.

The design of the building breaks down the massing to smaller towers filtering light and air into all of the spaces. The massing strategy breaks the school into smaller communities by age, allowing students to have more intimate and familiar designated spaces while staying connected to the building whole.



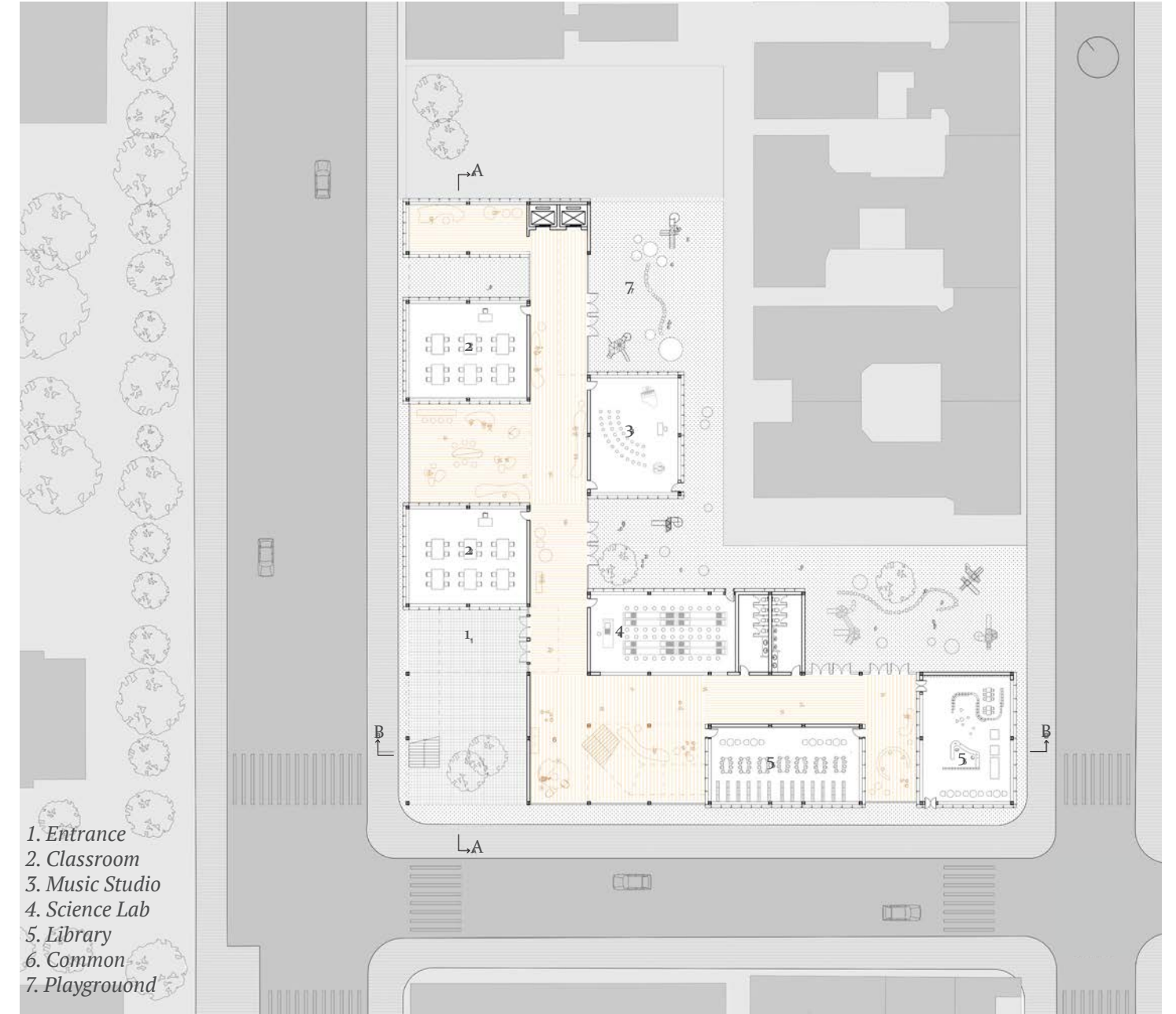


Site Analysis

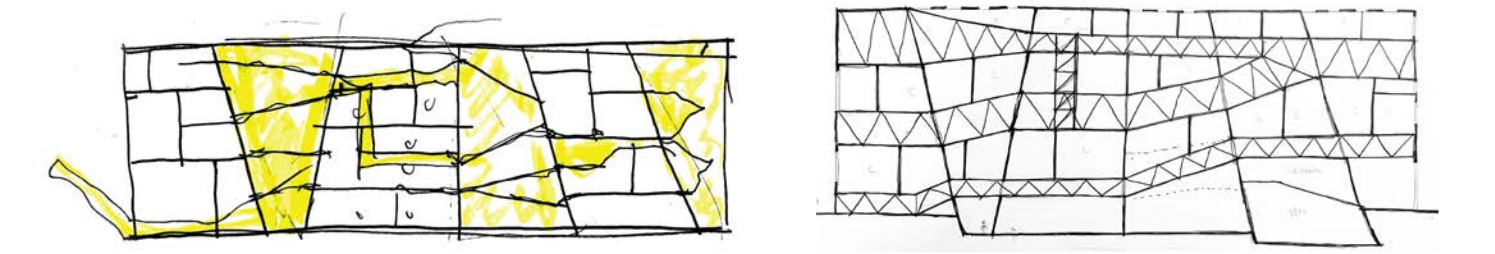


air into all of the spaces.  
s to have more intimate

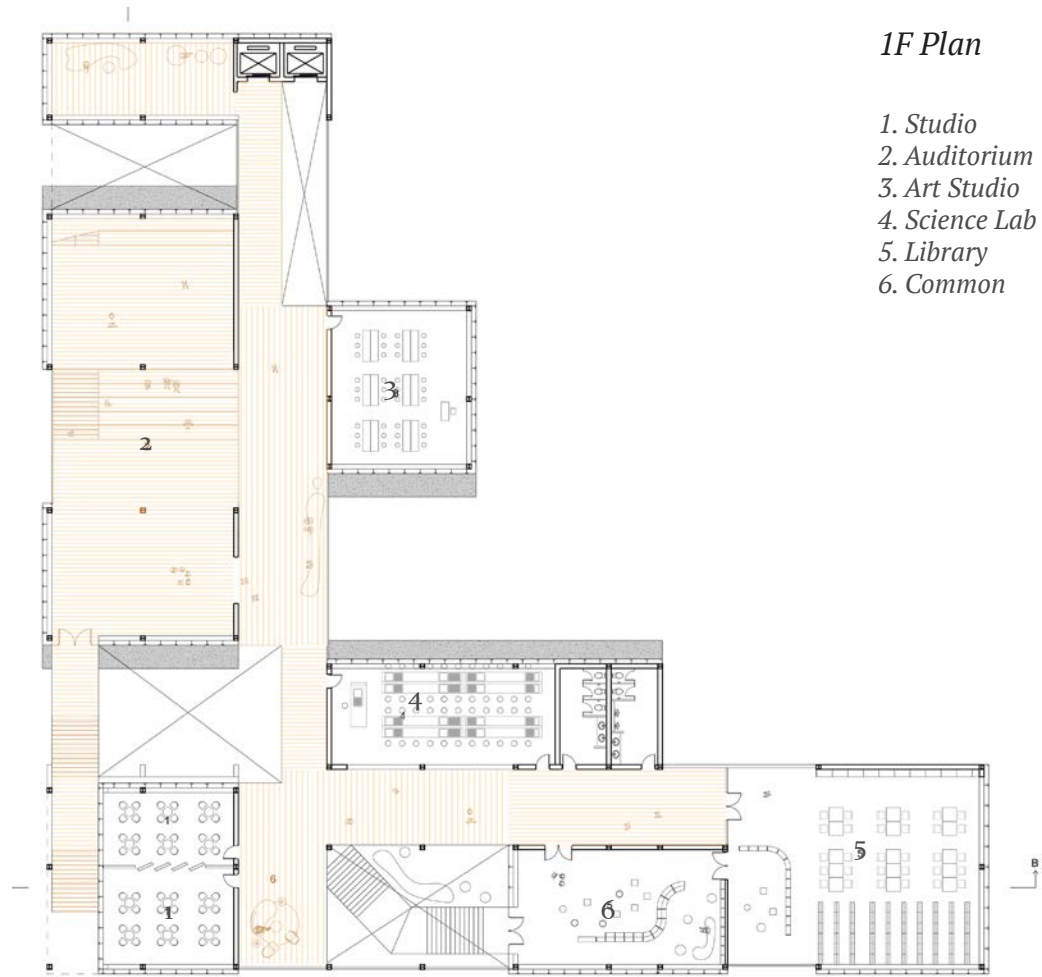
Ground Floor Plan



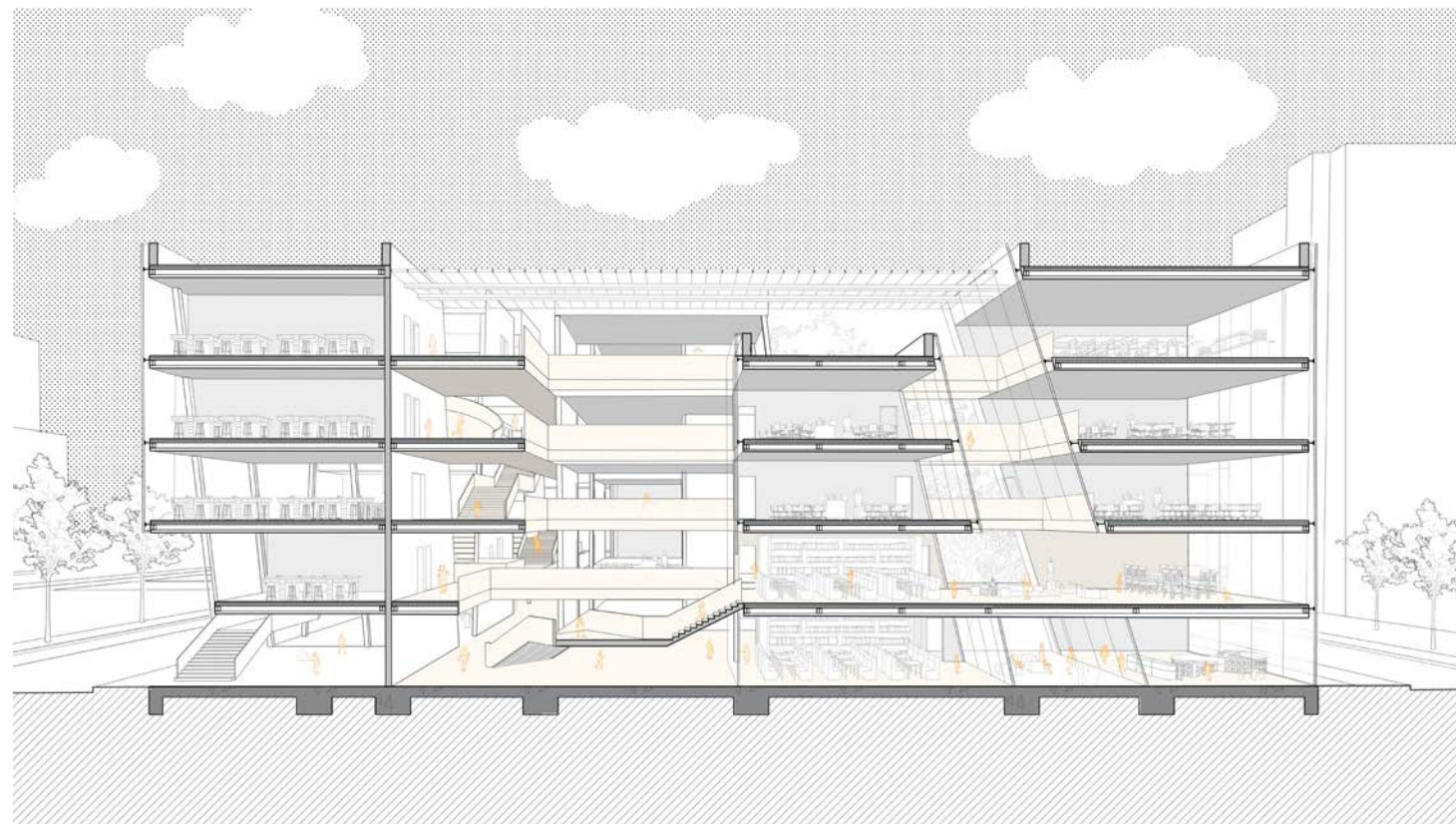
- 1. Entrance
- 2. Classroom
- 3. Music Studio
- 4. Science Lab
- 5. Library
- 6. Common
- 7. Playground







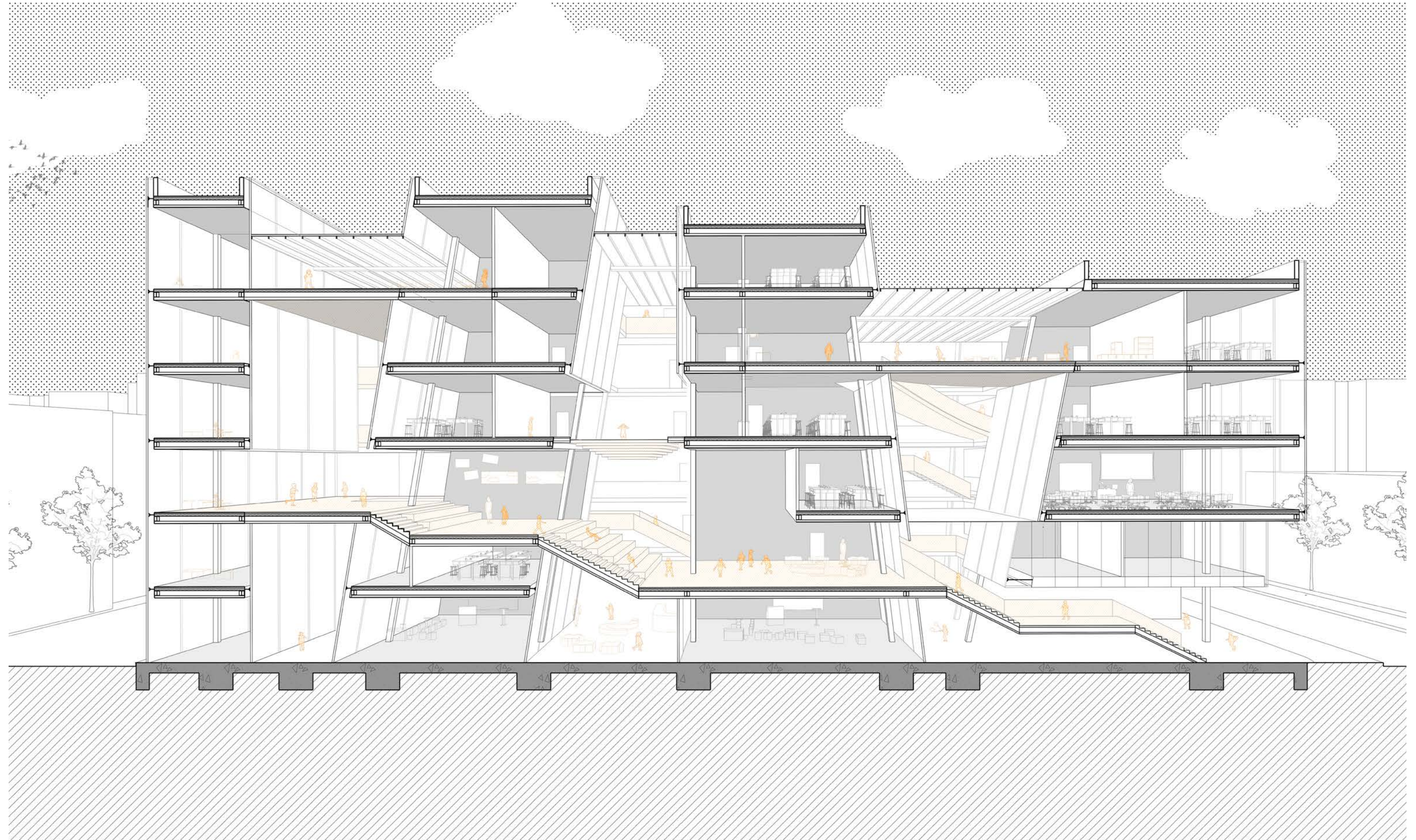
*Section B-B*



Inner patios of various sizes are woven between the building volumes, taking advantage of light and views to create courtyards, playgrounds and other play spaces.

Children of different ages have diverse needs for social space. Hence, space in different scales promote intimacy and smaller scale communities within the school.



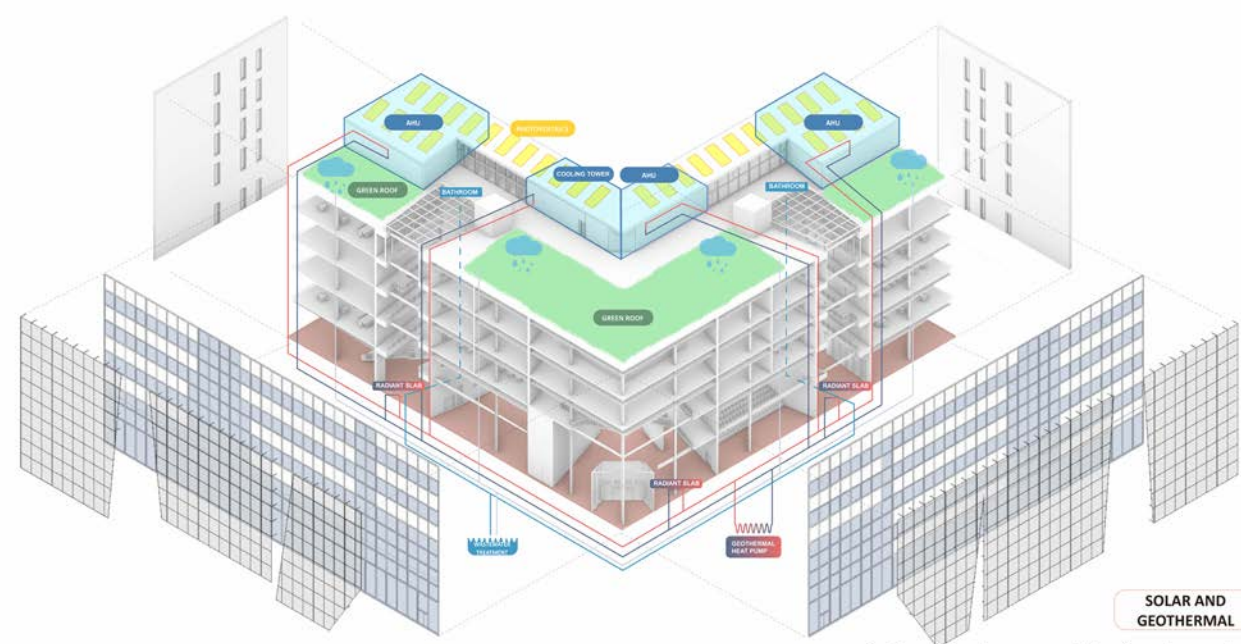
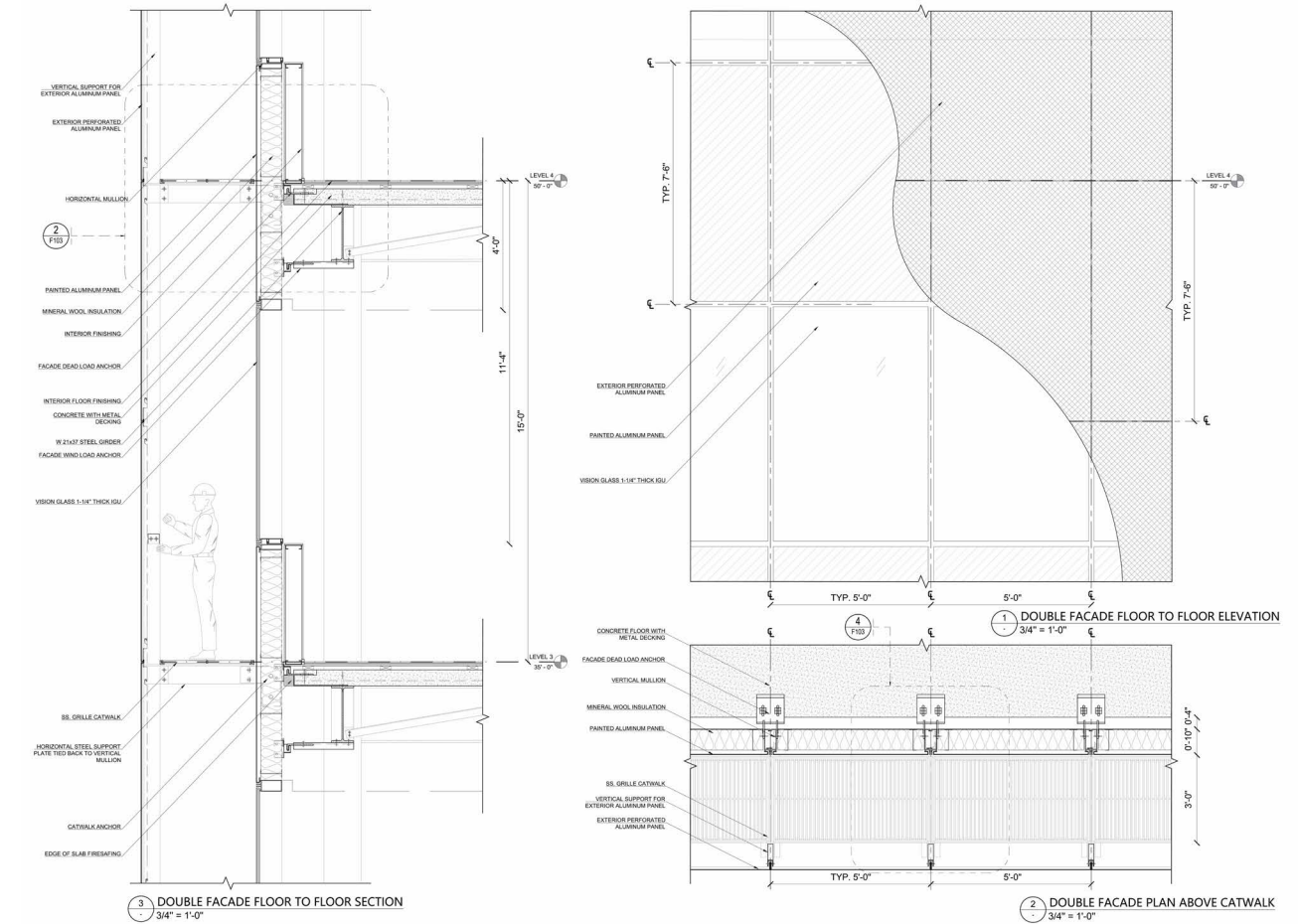
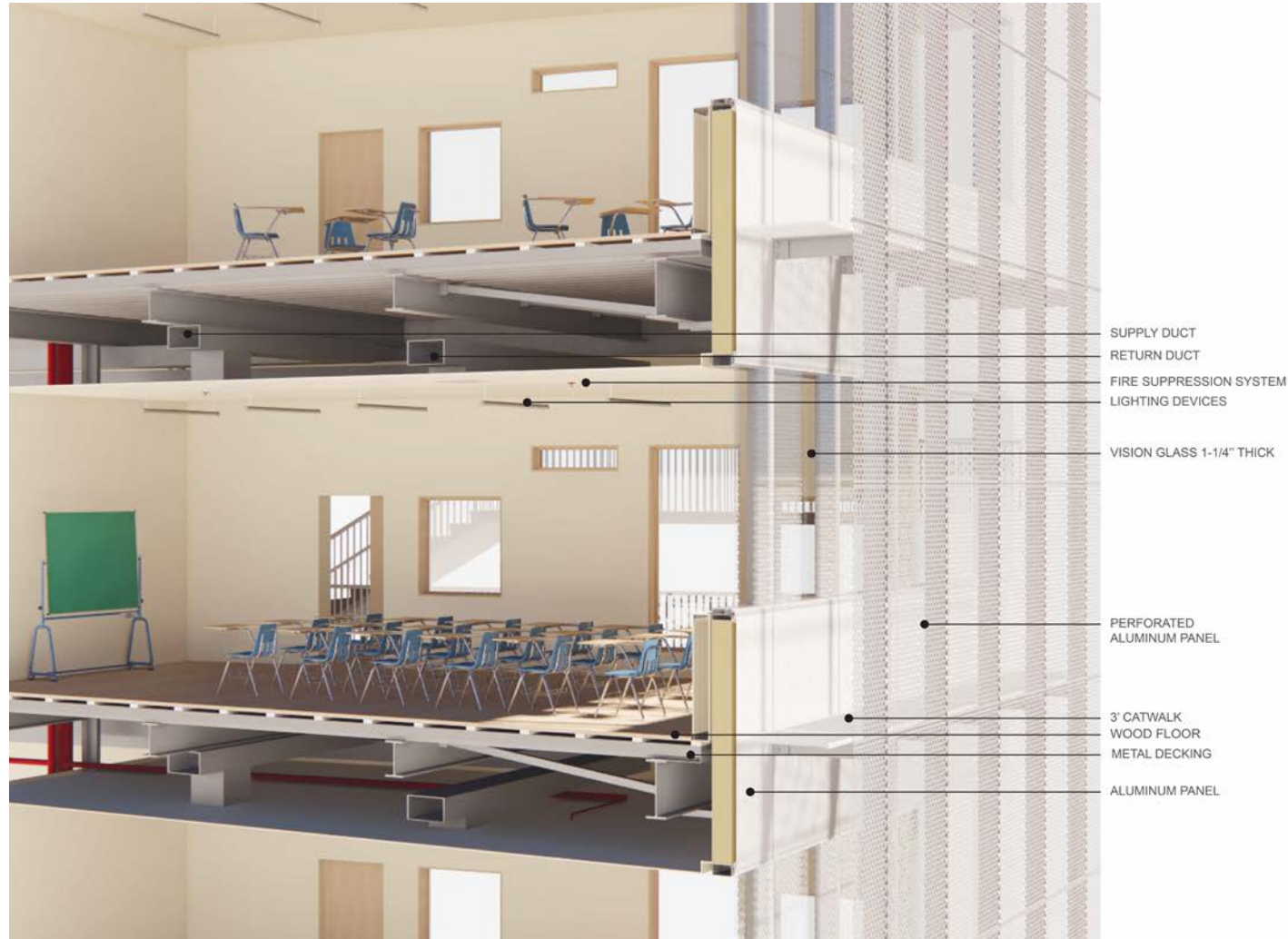




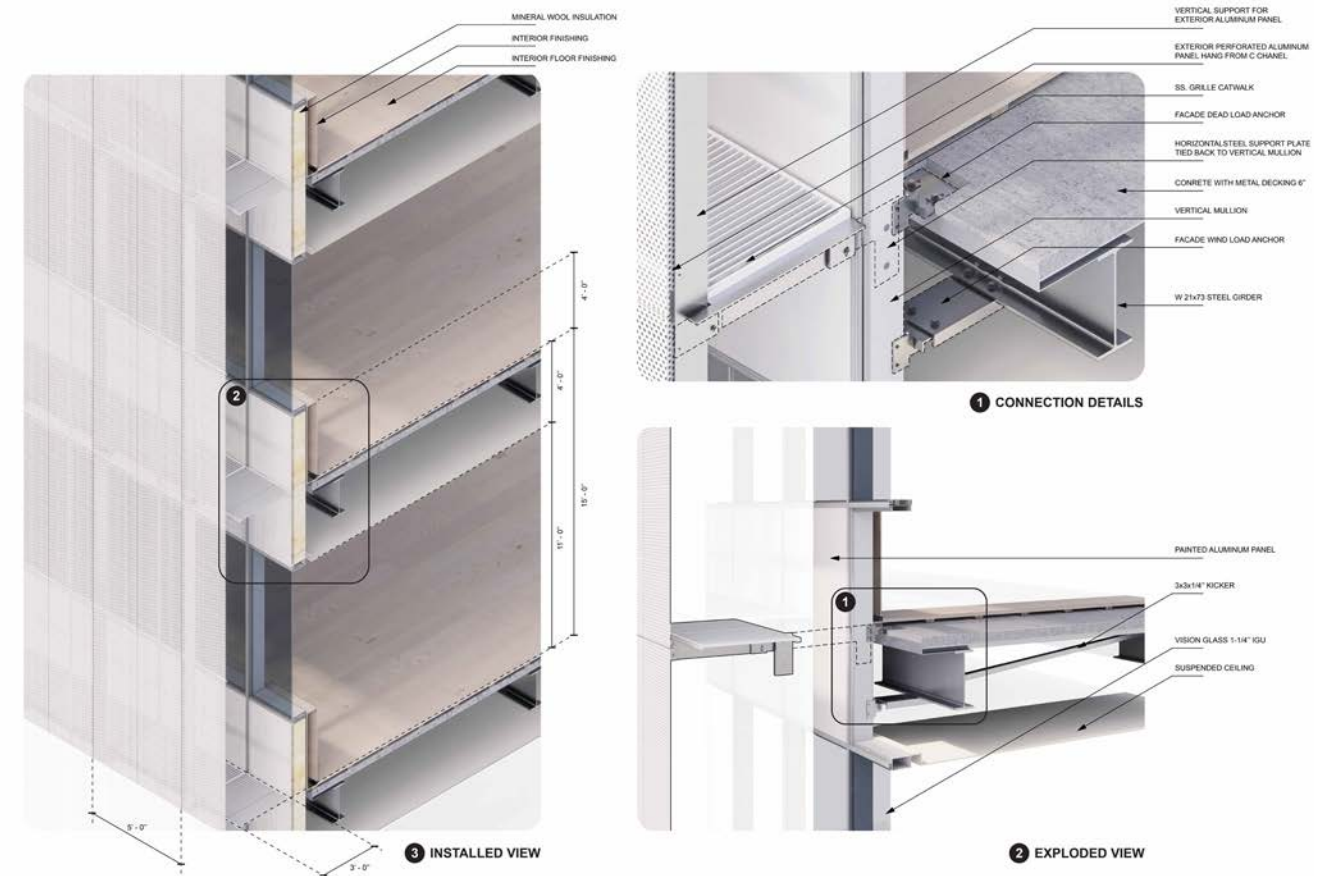
# TECH IV

Instructor: Ayumi Sugiyama, Travis Allen, Walter P. Moore, Michael Esposito, Aaron Davis

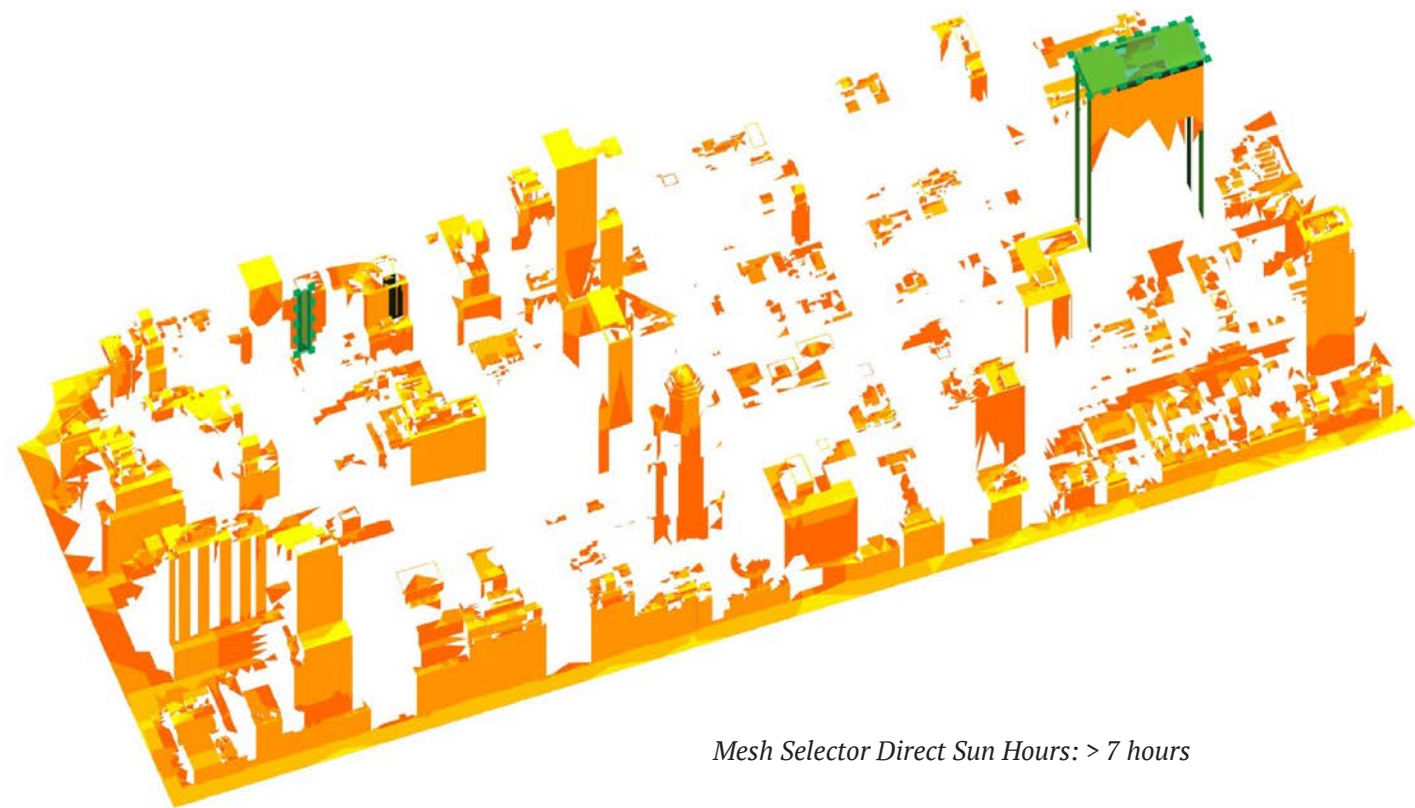
Group work: Wei Xiao, Grace Dong, Liz Liu, Joy Wang



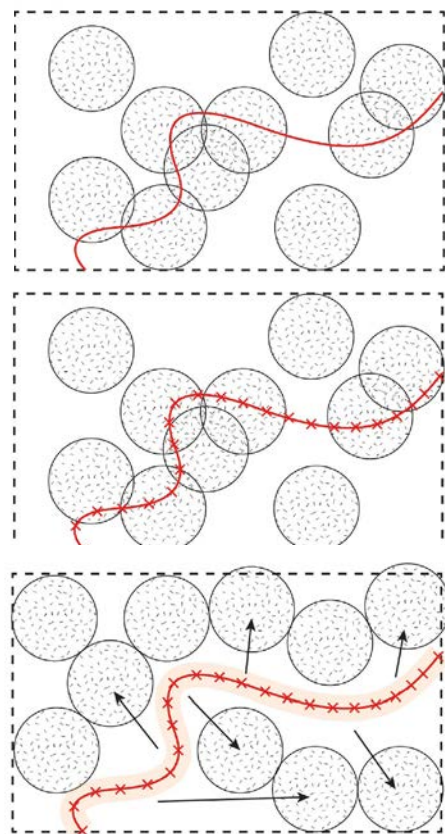
SOLAR AND GEOTHERMAL



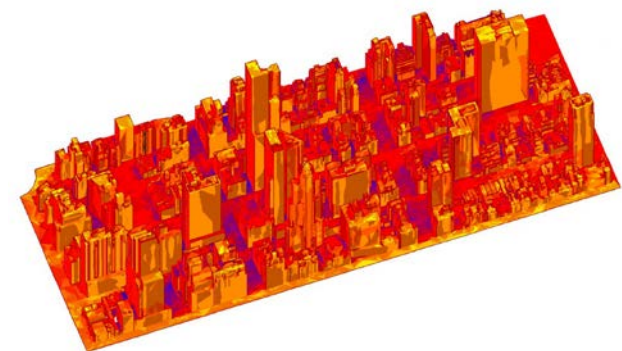




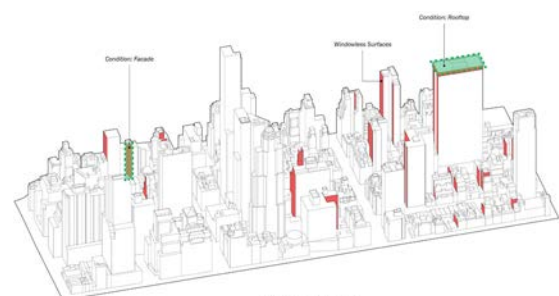
Mesh Selector Direct Sun Hours: > 7 hours



Sun Exposure Calculation



Midtown Manhattan



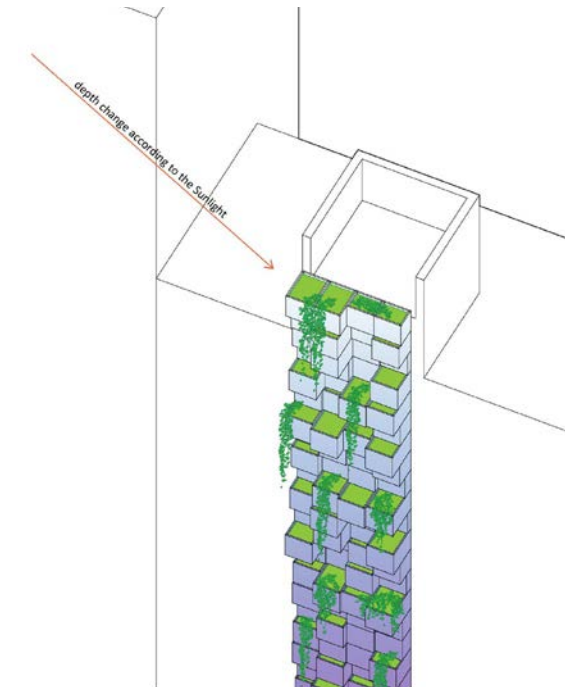
# Generative Design

Spring 2023 | Tech Elective  
 Instructor: Danil Nagy  
 Group Work: Shiri Lyu, Jason Li, Anna Kim, Xavier Zhapan

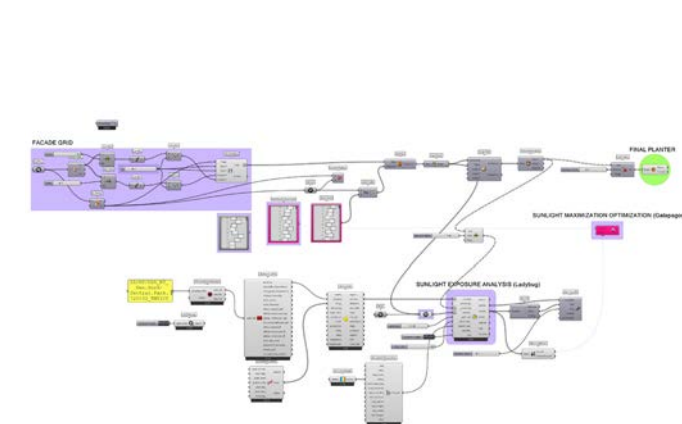
Our project is interested in analyzing and locating optimal areas for green infrastructure in the city of Manhattan. Then, designing these infrastructures to allow plants to gain maximum/sufficient direct sunlight, purify the cityscape and allow human interaction, and reduce urban heat island effect.



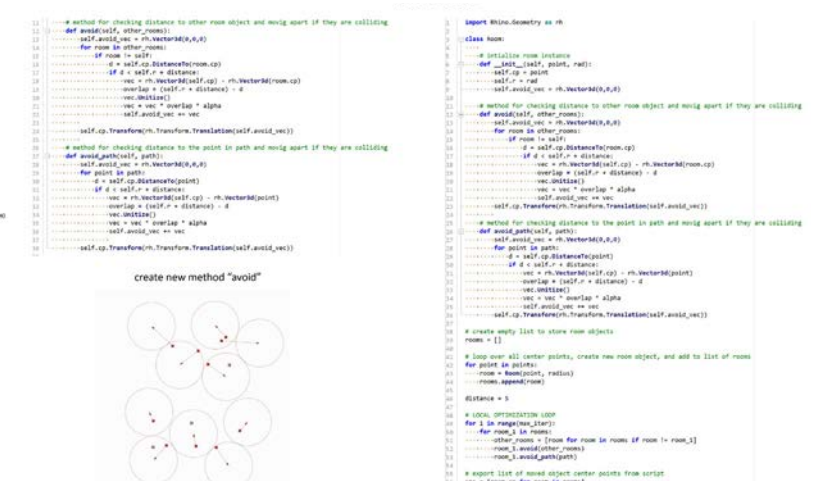
Roof Design



Facade Design



Grasshopper for Sunlight Maximization



Python Script for Optimization





*D.C. Arch Subway Station*



## Rendering System

*Fall 2023 | Visual Elective  
Instructor: Seth Thompson  
Individual Work*

This series of computational images is a window into a simulated and systematized representation of subway reality, creating an entire world from a single grain of sand to the most complicated urban environment.



*Platform*



*Cabin*



Thank you.  
hq2188@columbia.edu