

# A N W A N G

Selected Works 2021-2022  
Columbia University GSAPP M.S.AAD Candidate  
Nanjing Tech University B.Arch

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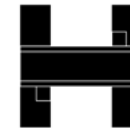
# ARCHITECTURE AS INFRASTRUCTURE

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My graduate studies in GSAPP lead me to focus on the socio-cultural issue of architecture in urban design. My design and research direction is the regeneration of infrastructures in the city with a built environment and historical context. This question could be approached from two directions: First, the built infrastructures not only cater for "The Functional City"<sup>1</sup>but also a potential locus for a high-quality public realm especially when the pandemic is happening; Second, urban regeneration can arouse urban spatial memory, create intimacy between communities and promote social welfare.

The architectural theory and urban history studies lead to my arguments about infrastructures among urban, interdisciplinary, and socio-cultural scope. In the aspect of architectural and urban scales, I agree with the dissolution of architectural scale, as Aldo Rossi's statement in his book *The Architecture of the City*, a single building should be studied with the entire city by analogy<sup>2</sup>. Thus, I expect to embody spatial memory in the scale of the city and create social welfare through renovating singular buildings of infrastructure. Besides, in the aspect of interdisciplinary view, I was inspired by Michael Manfredi's book *Public Natures: Evolutionary Infrastructures*<sup>3</sup>which explores the potential of infrastructures to construct ecological remediation, shape a new public realm and support institutional imperatives. Last, in *Delirious New York*, Rem Koolhaas refers to the "Culture of Congestion"<sup>4</sup>of urbanism, using the skyscraper as an example as a vessel for urbanization, showing that rarely does a place in a metropolis only possess a single function. The theory of Koolhaas inspired me that infrastructures also participate in more than one perspective in the urban environment.

## CONTENTS



### 01 BUILD A BRIDGE NOT A WALL

Topic: Speculative City  
Location: Flushing, Queens, New York, USA  
Instructor: David Eugin Moon(NHDM Office)  
Partner: Mark Kantai  
GSAPP 2021 Summer Studio



### 02 RUNNING CORRIDOR

Topic: Cross Bronx Expressway  
Location: Flushing, Queens, New York, USA  
Instructor: Prof. Michael Bell (Bell Seong Architecture)  
Partner: Qiwei Sun  
GSAPP 2021 Fall Studio



### 03 IN TOUCH WITHOUT TOUCHING (ITWT)

Topic: Psychiatric Clinic  
Location: Manhattan, New York, USA  
Instructor: Hilary Sample (Mos Architects)  
Individual Work  
GSAPP 2022 Spring Studio

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1. C.I.A.M., Athens Charter, Athens, 1938

2. Aldo Rossi, "The Architecture of the City" (Cambridge: The MIT Press, 1984), 10.

3. Manfredi Michael, Weiss Marion (New York, New York: Princeton Architectural Press, 2015)

4. Rem Koolhaas, (New York: The Monacelli Press, 2014.)



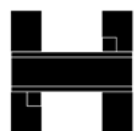
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**01**

**Build a bridge not a wall**

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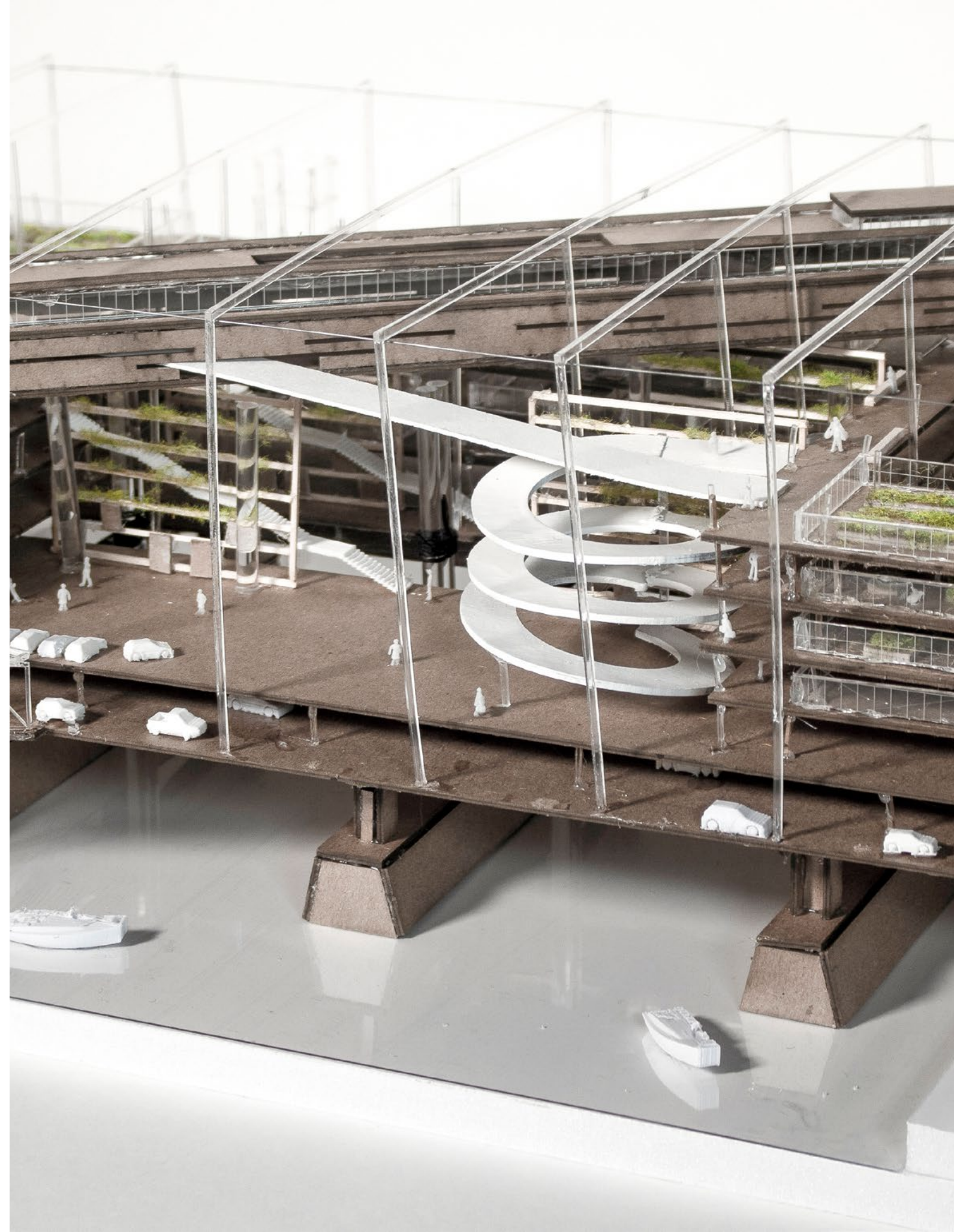
Next-generational Infrastructure renovation



**Topic:** Speculative City  
**Instructor:** David Eugin Moon(*NHDM Office*)  
**Partner:** Mark Kantai  
**Work:** 80%concept, 90%drawing, 60%model  
**Location:** Flushing, Queens, New York, USA  
**GSAPP 2021 Summer Studio**

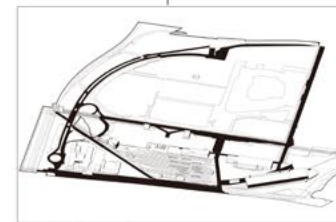
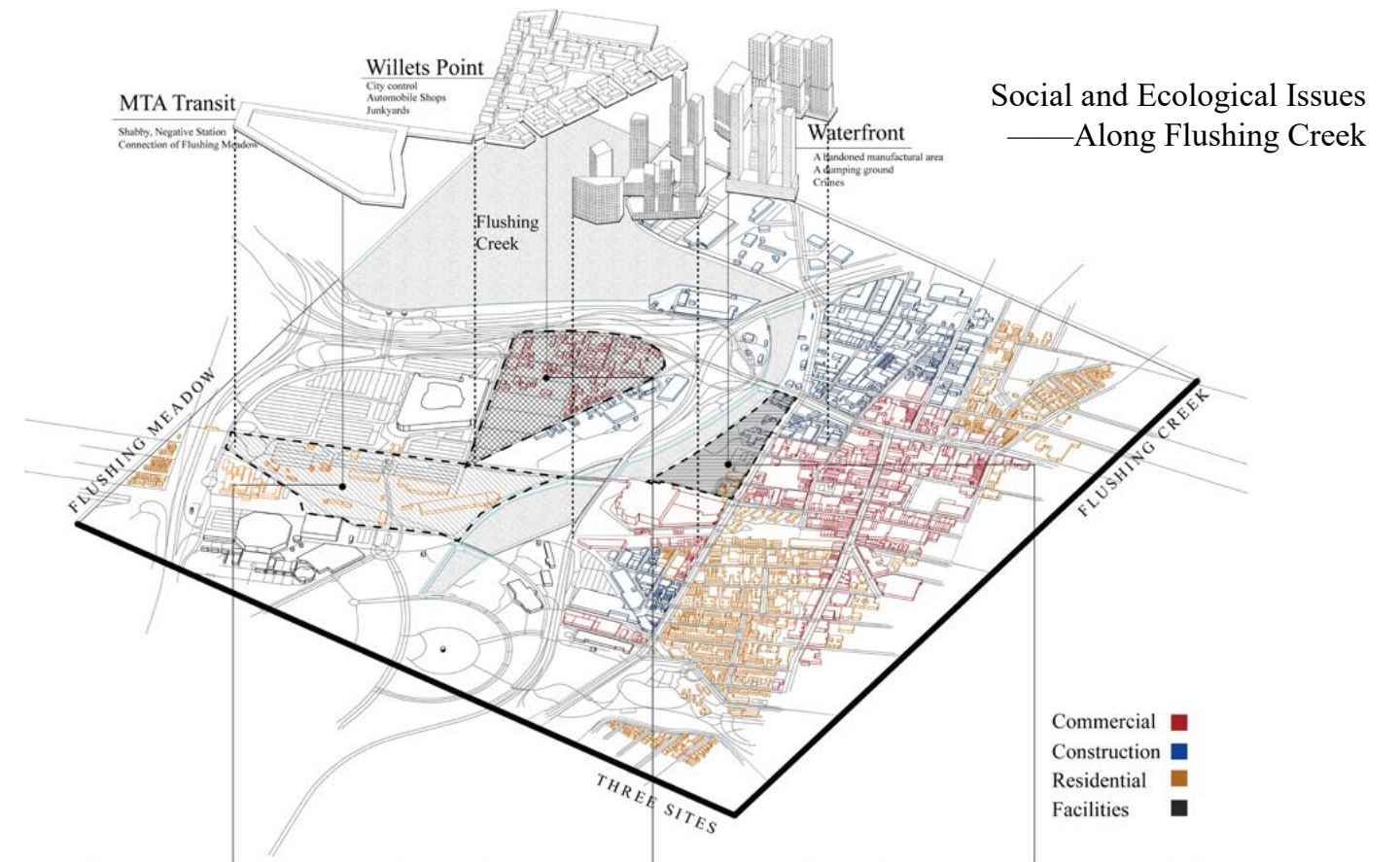
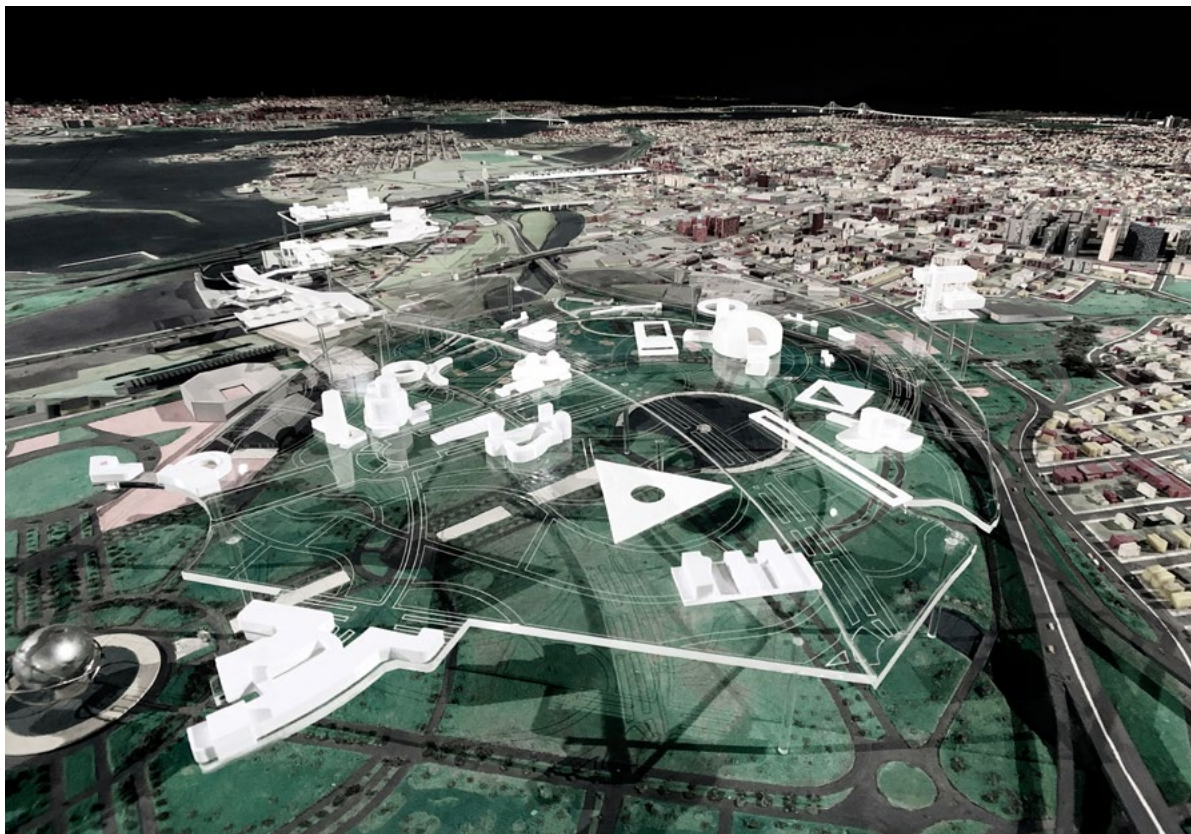
As aligned with the studio's exploration on crisis to speculate future environments, our project's primary focus is on the remediation of flushing creek as well as food distribution in the area with secondary and tertiary spaces such as recreation, education and research among others as both complementary spaces to the system as well as to the existing community.

The genesis of the project was inspired by the ongoing gentrification patterns within immigrant, black and brown communities in flushing and corona as well as the city at large. We sought to perhaps counter the trend by proposing spaces complementary to the community but upon our site visits and analysis we discovered the most urgent need was the purification of flushing creek, as a result of pollution caused by the neighbouring industries. We conceived a device for remediation and opened up the creek to public access due to its inaccessibility to the community empowering them with surveillance over the creek as well as recreational spaces..



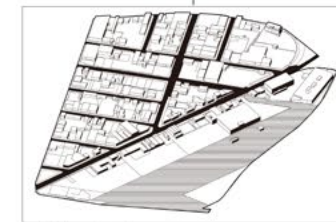


Queens Museum Installation of Studio  
David Moon, Malavika Madhuraj, An Wang (Aug 2021)



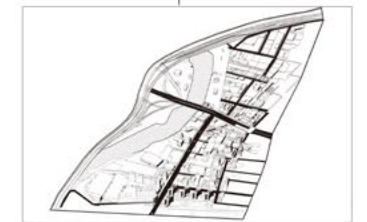
**MTA Transit**

This is the terminal station and the parking place of subway cars of No.7 subway line. Because of its remote location and old disrepair characteristics are relatively negative.



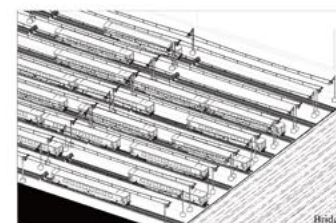
**Willets Point**

It was a commercial area and was controlled by city government. Willets Point, also known locally as the Iron Triangle, is an industrial neighborhood within Corona, in the New York City borough of Queens.



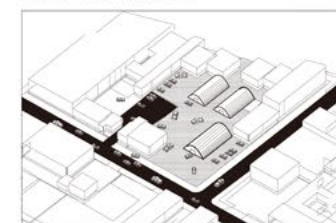
**Waterfront**

It was a manufacturing area and was controlled by city government too. In total 9,954 acres drain into Flushing Creek, of which 7,830 acres are served by combined sewers draining. There are a total of three CSOs along Creek.



**Shabby, Negative Station**

Although the station is in a state of disrepair and full of garbage, it still bears the function of the intersection of human flow from Manhattan and Lower City, and connects Flushing Meadow.



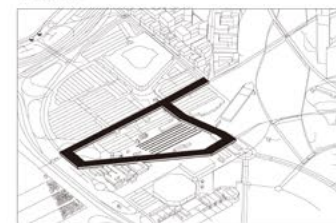
**Automobile and Junkyards**

Willets Point used to be famous for cheap car service. However, due to long-term unaffordability and gentrification, which results in many laid-off workers, the car service economy of this place has fallen behind that time.



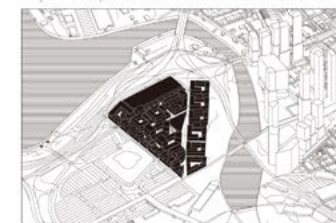
**Dumping and Crimes**

Flushing Creek is also an important sewage discharge river. However, improper management of the river basin for a long time has led to excessive discharge of garbage and sewage here, which seriously polluted the river bank.



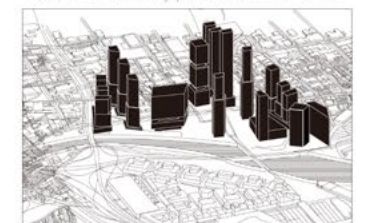
**Reconstruction**

Although the station is in a state of disrepair and full of garbage, it still bears the function of the intersection of human flow from Manhattan and Lower City, and connects Flushing Meadow.



**Affordable Housing**

City officials have released long-awaited plans to develop the Willets Point. But many people there are not consent with this plan because it will not provide enough jobs and houses for them in the long run.

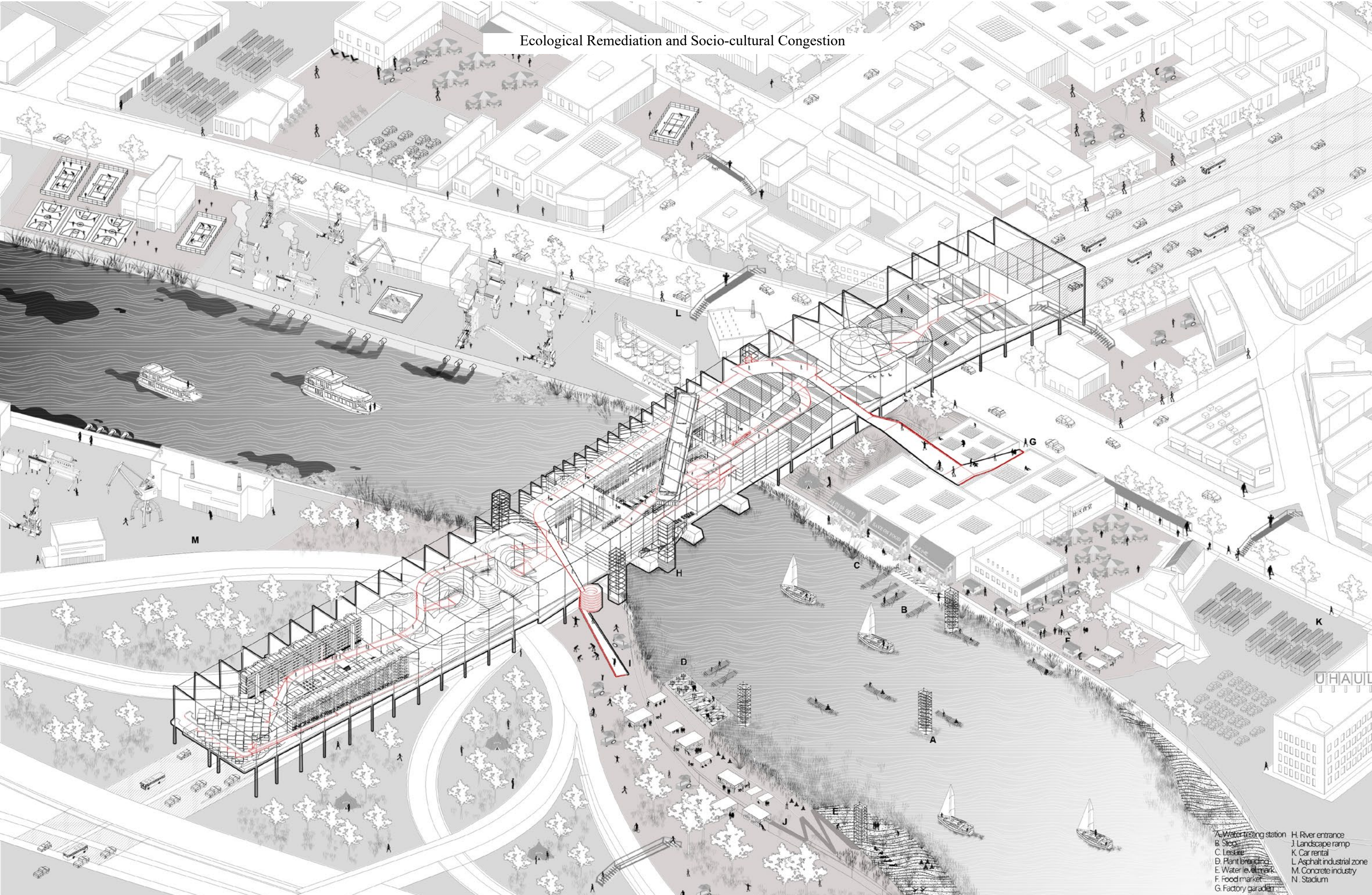


**Waterfront Business District**

The developers hope to establish a "Special Flushing Waterfront District." But many people who opposed the plan saying that it didn't include enough affordable housing and could lead to the gentrification to existing residents.



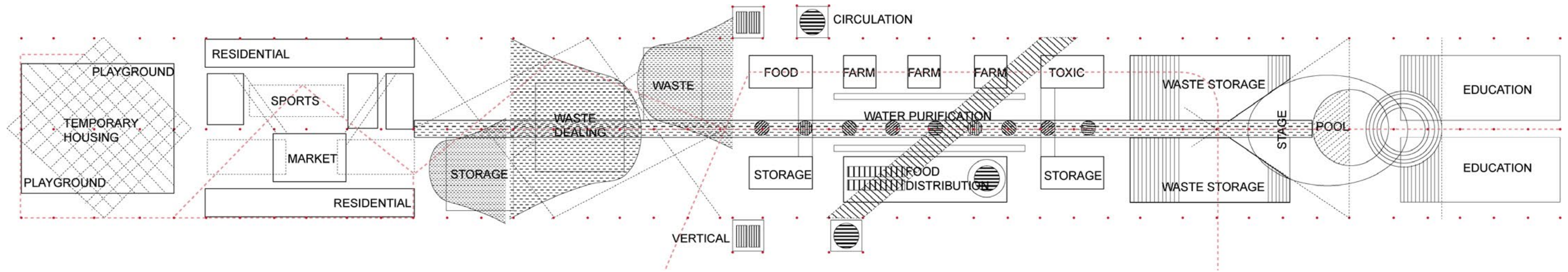
# Ecological Remediation and Socio-cultural Congestion



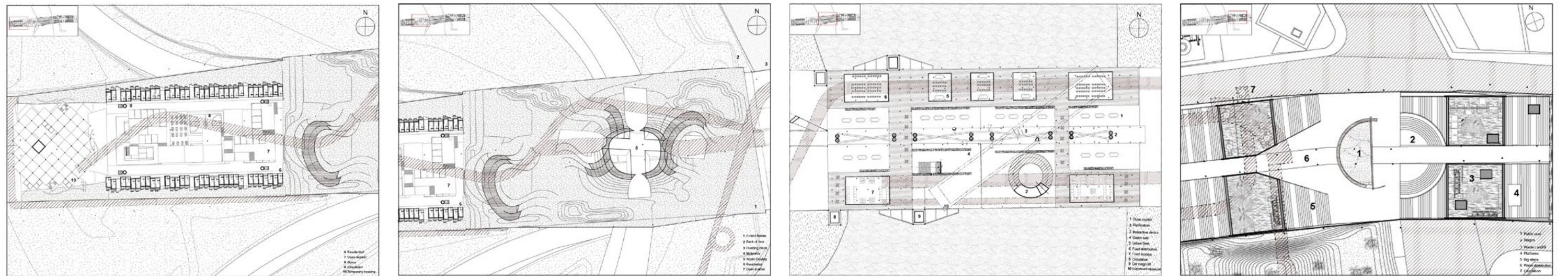
- A. Water testing station
- B. Stop
- C. Leisure
- D. Plant breeding
- E. Water level mark
- F. Food market
- G. Factory garden
- H. River entrance
- J. Landscape ramp
- K. Car rental
- L. Asphalt industrial zone
- M. Concrete industry
- N. Stadium



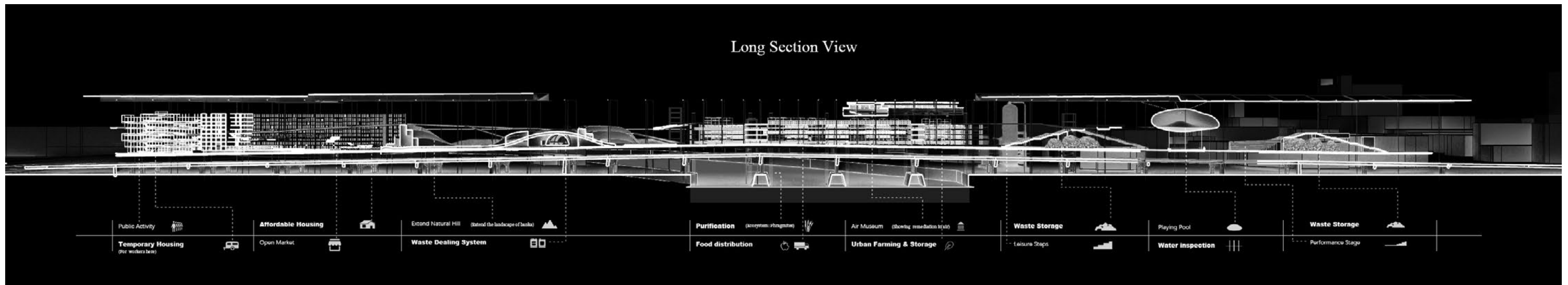
# Remediation entangled with Social Activities



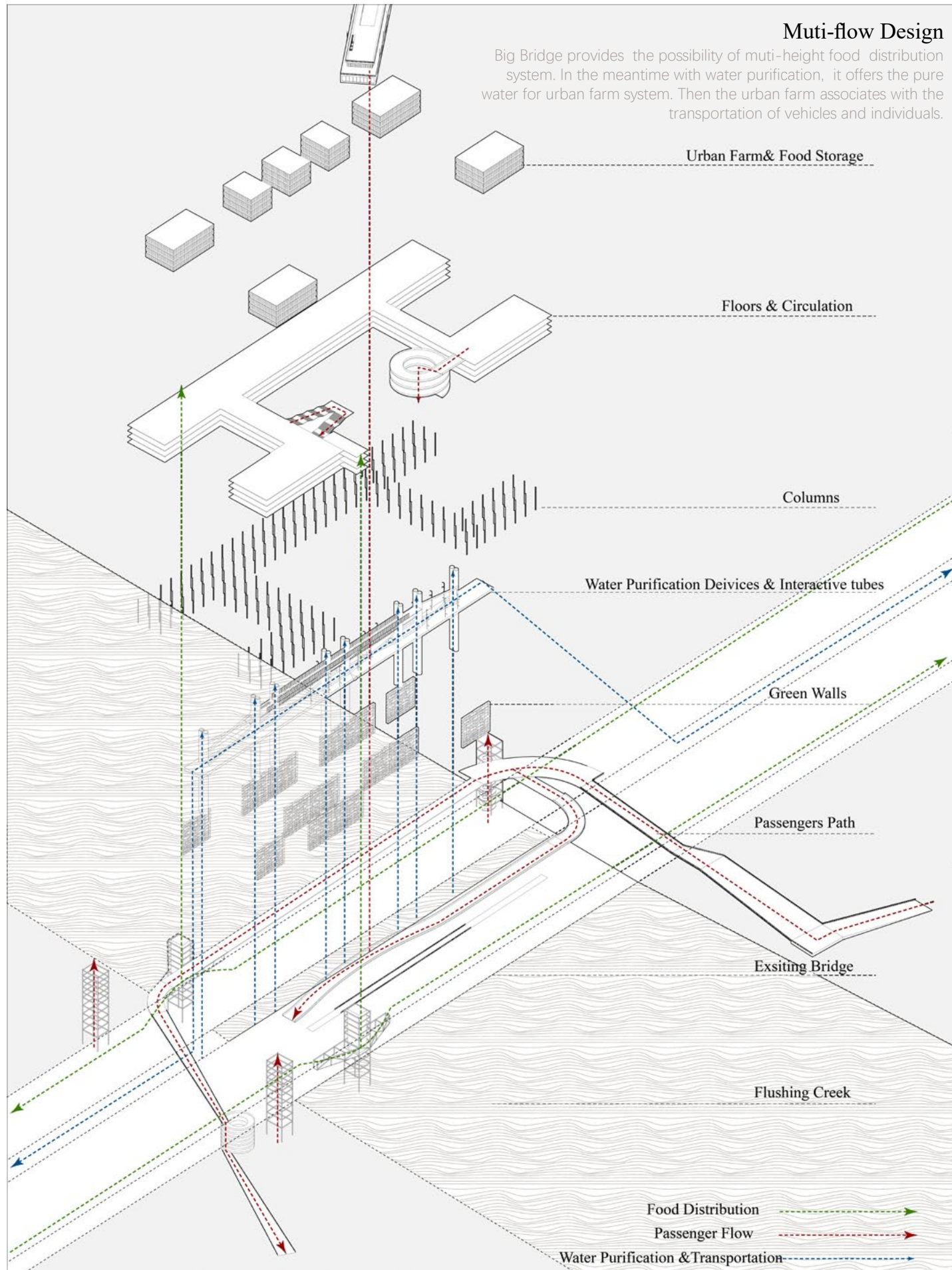
## Sequences of Plans



## Long Section View







**Food Distribution System**

From the physical model, it shows that a complicated system works by different ways of distribution, like the water transportation, vehicle's ground transportation. And here are some vehicle transportation for different objects, like huge lifts for vehicles, ramp for pedestrians.



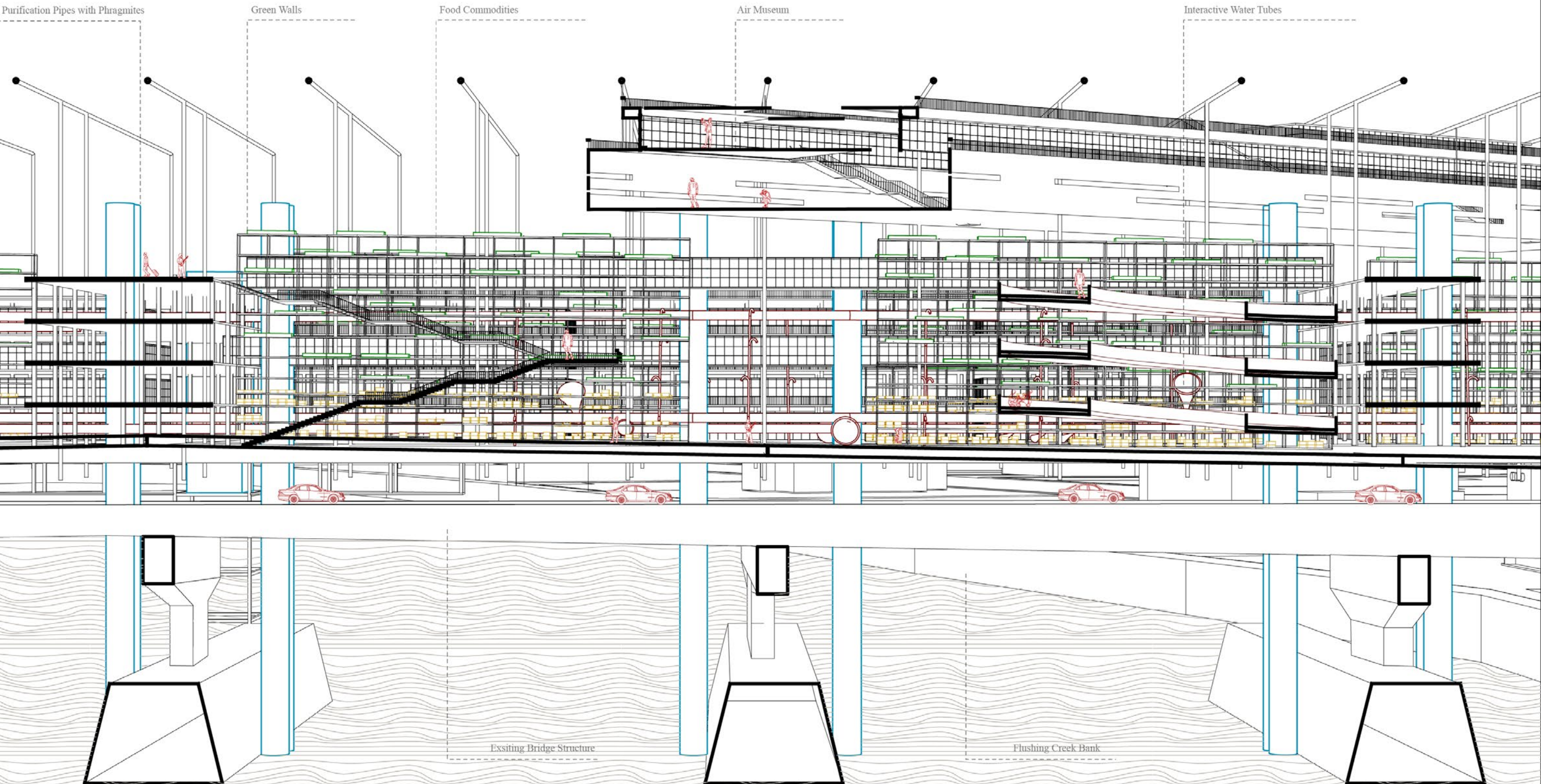
**Urban Farming System**

Based on the advanced distribution system, the urban farming could construct effectively. Multi-level farming system could increase the production better than classical urban farm. Besides, by introducing artificial ultraviolet light, crops could grow under human control.

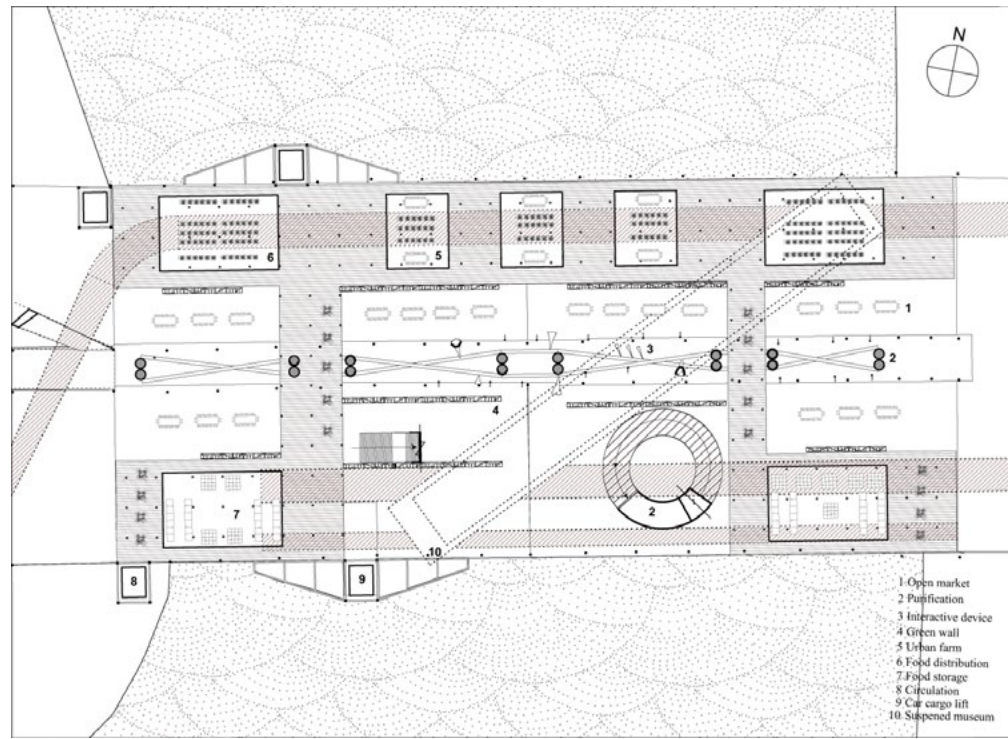


## Section of Food distribution System

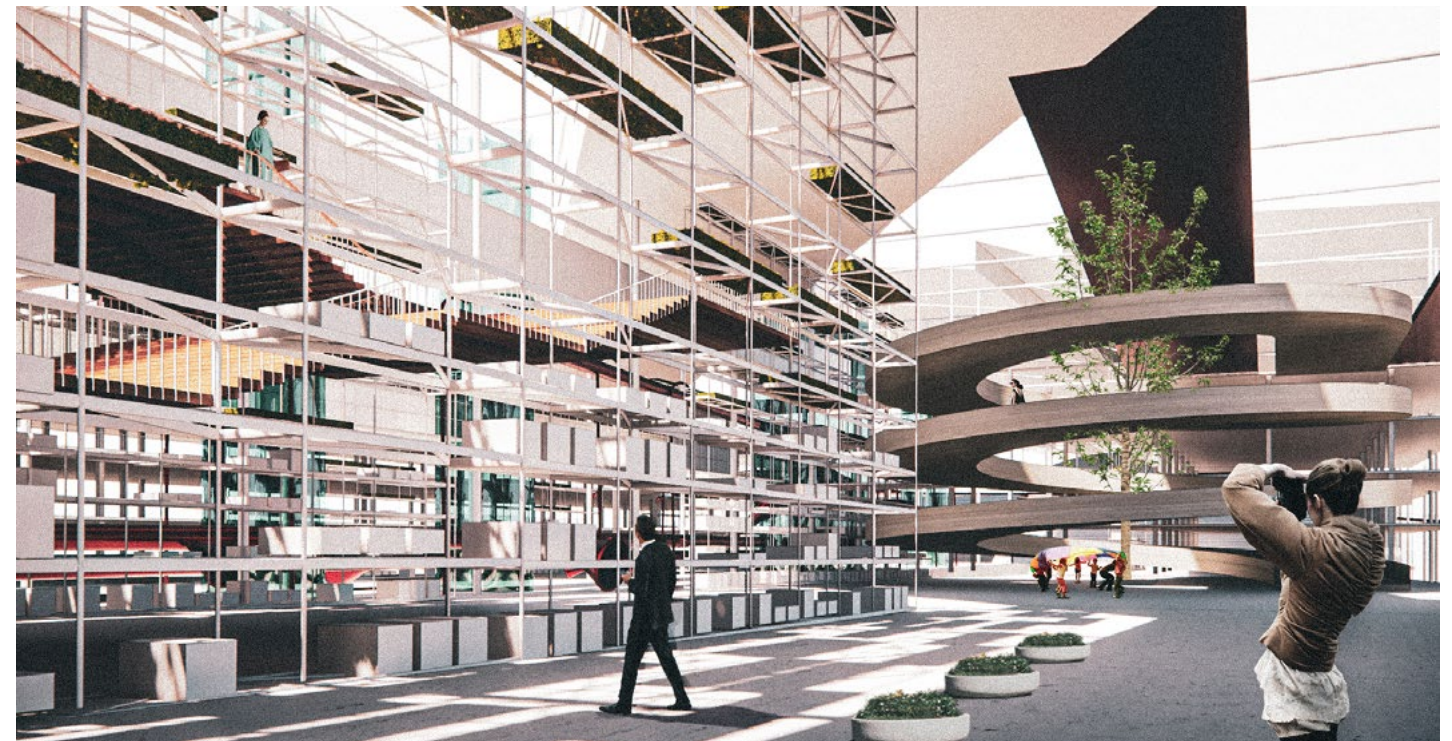
Section view of the central part of bridge shows how this food distribution system works. The system contains purification installations, interactive devices, green walls and a suspended air museum, which is distributed in different heights. The goal of this system is to synthesize the social, ecological and technological effect in a building.





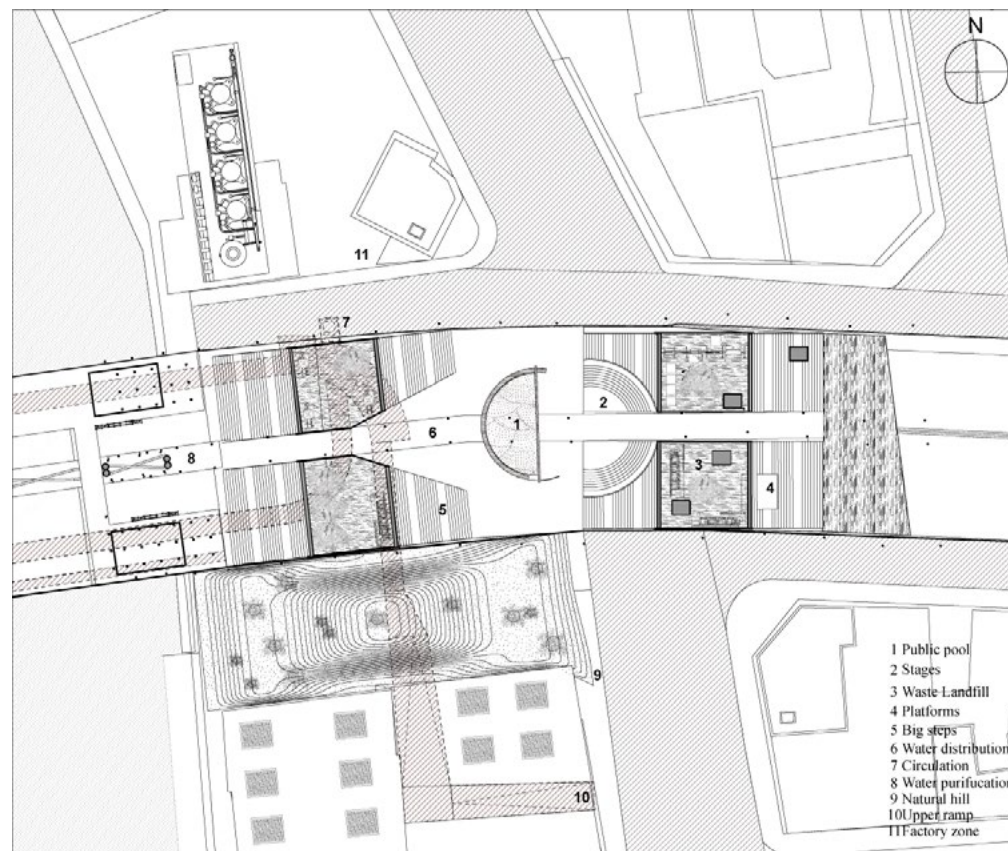


Food Distribution & Open Market Plan

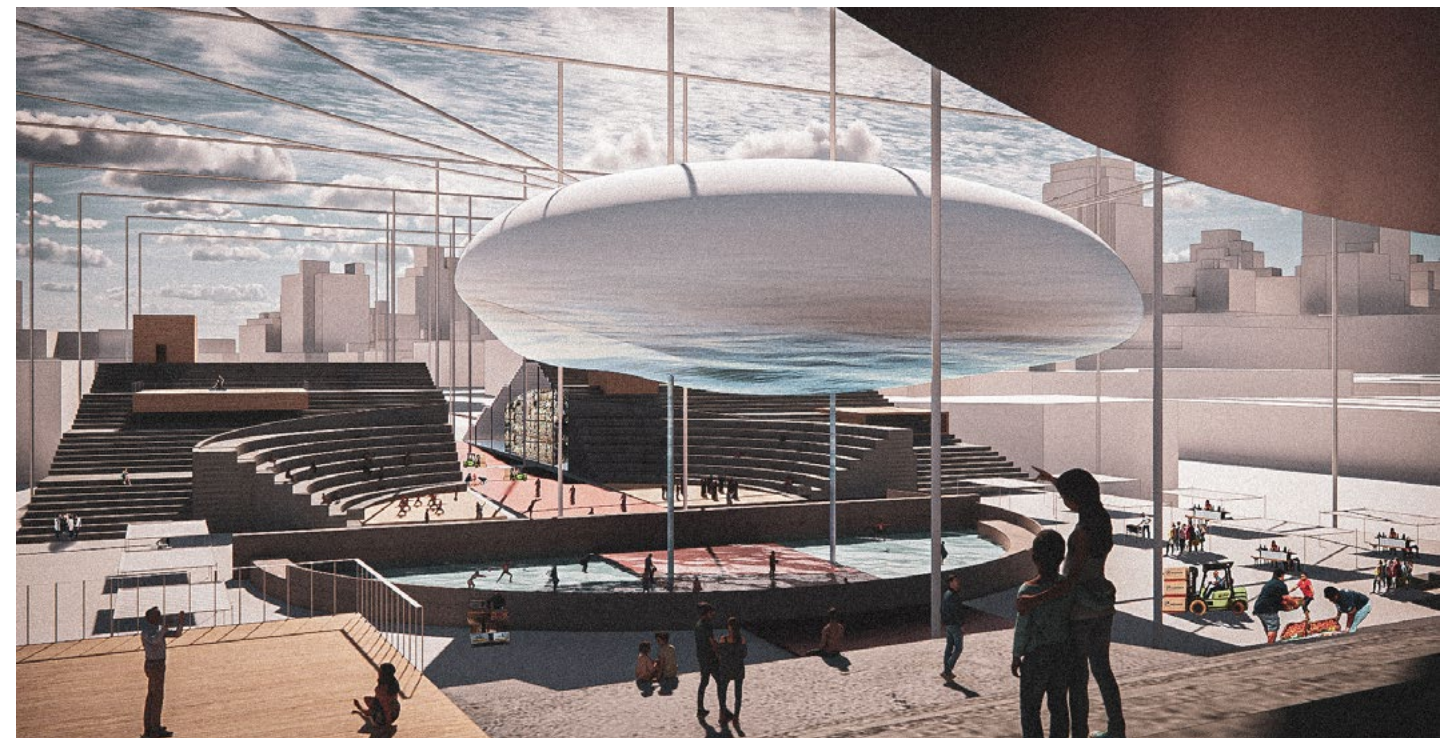


Food Distribution & Open Market

Different from the classical mode of Communal Food Distribution, I develop an automatic market for both of community association and companies. Therefore, transportation of vehicles could make it because of the huge lifts for vans.



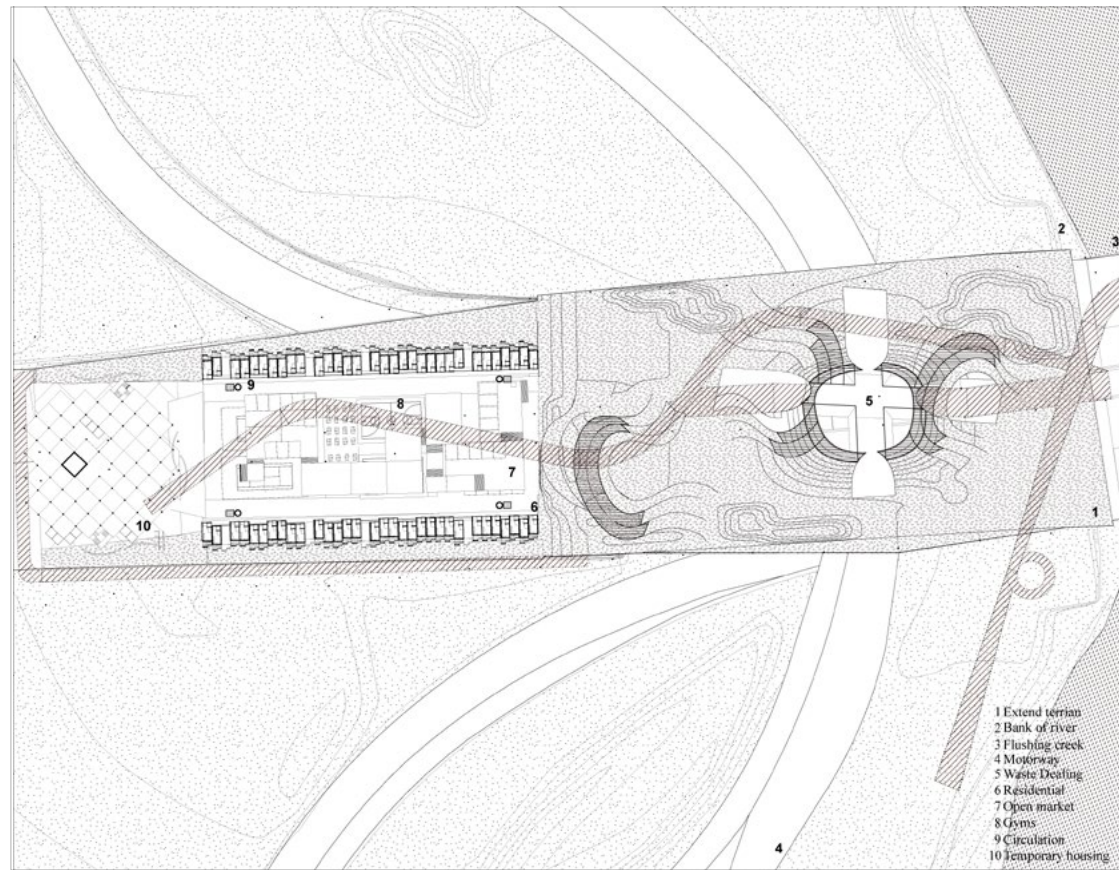
Plaza & Waste Storage Plan



Plaza & Waste Storage

Based on the water purification system, I designed a device to share the pure water with the residents in a pool so that people can feel and participate in this process in some aspects.





Housing & Waste Landfill Plan



Affordable Housing & Temporary Housing

Affordable Housing aims to the workers in the bridge. In the meantime of offering job opportunities for the local community, the project also contains two apartments for the workers of the bridge.



Affordable Housing Detailed Plan



Public Balcony & Green Wall

For the apartments, they could get touch to the neighbours. It is important for the residents here especially when some elderly need help and care. Also, the green balcony could be the natural decoration outside the building.



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## 02

### Running Corridor

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Cross Bronx Expressway Capping Park



**Topic: Cross Bronx Expressway**

**Instructor: Prof. Michael Bell**(*Bell Seong Architecture*)

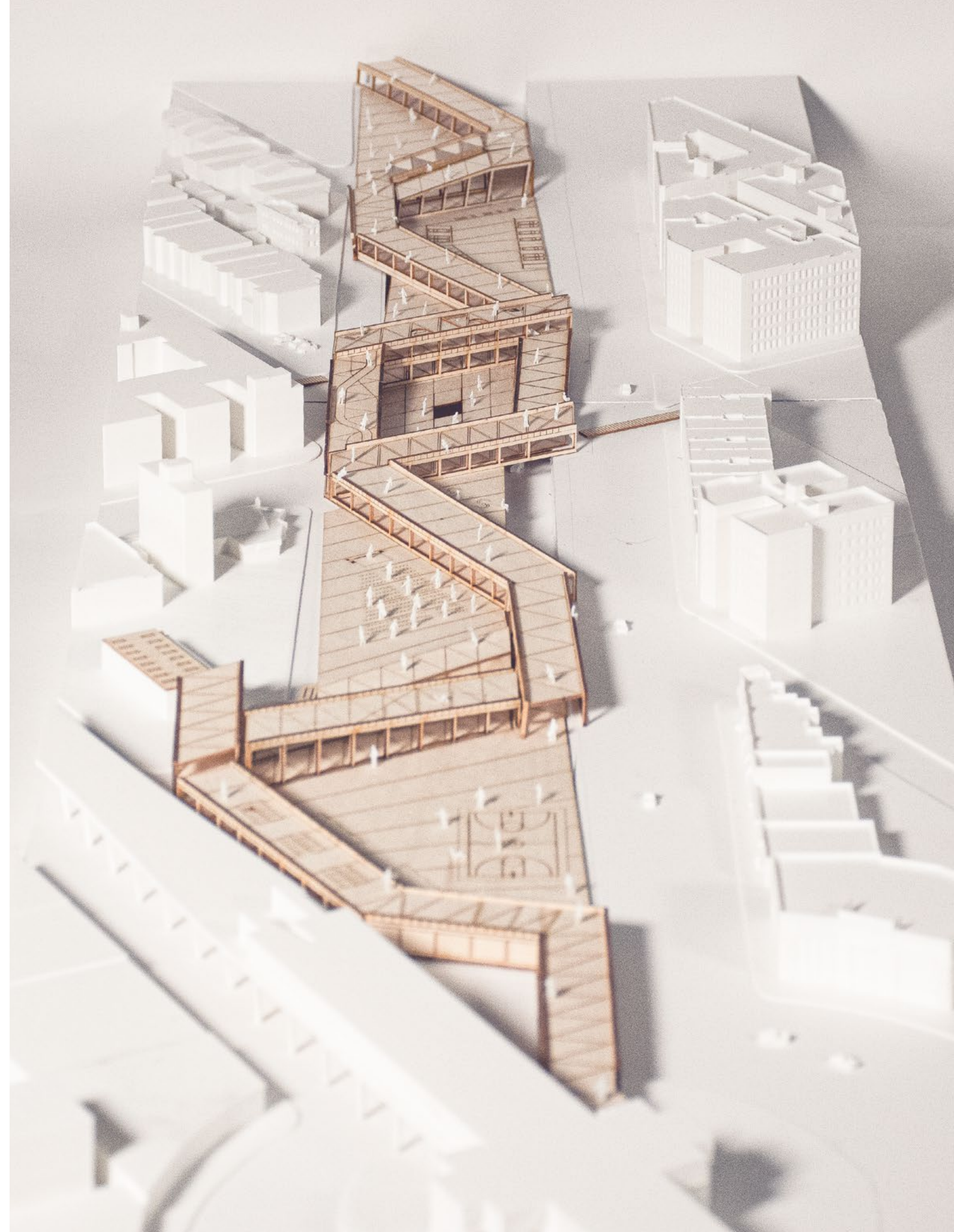
**Partner: Qiwei Sun**

**Work: 70%concept, 60% drawings, 90%model**

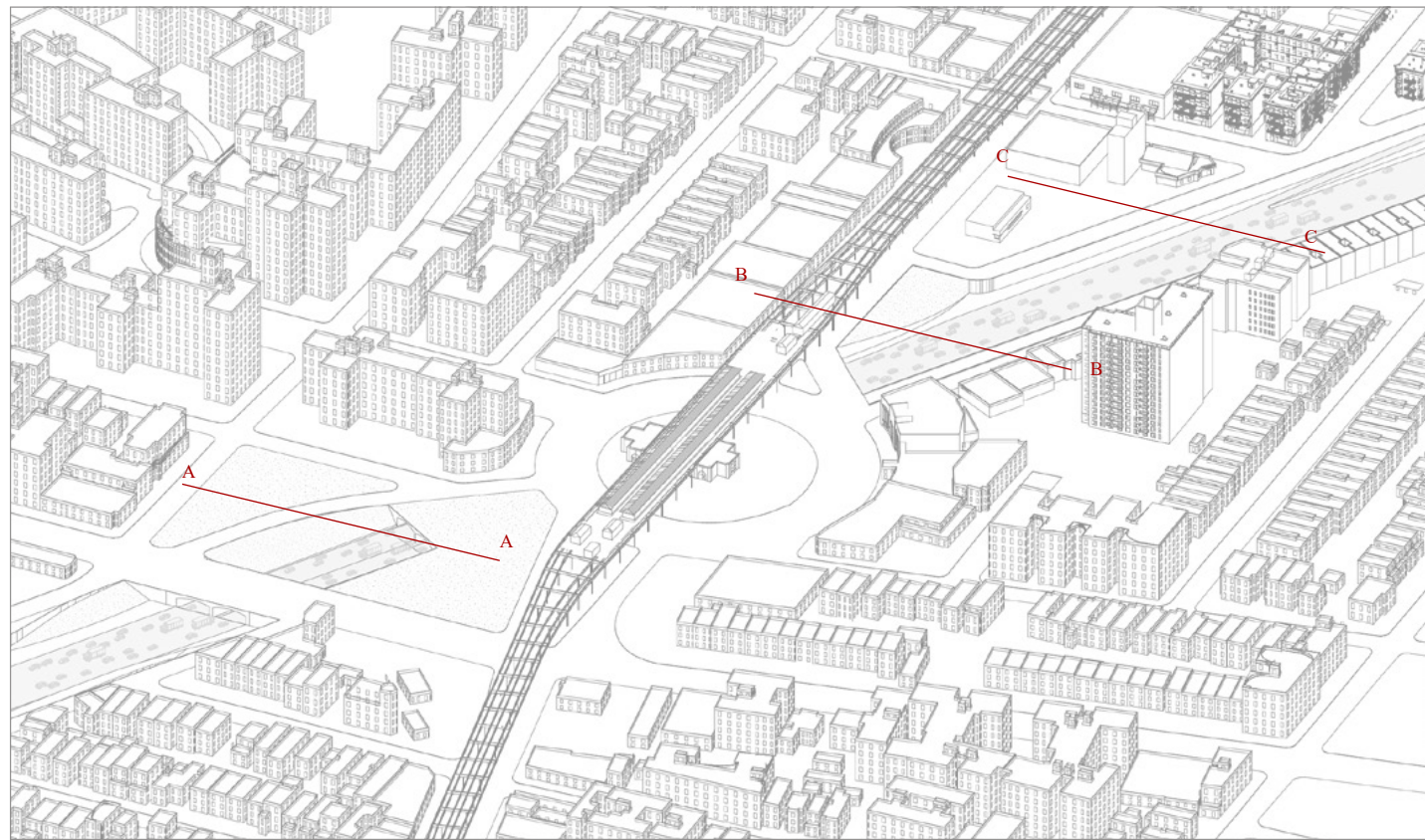
**Location: Parkchester, Bronx, New York, USA**

**GSAPP 2021 Fall Studio**

The project contains a real-site survey and design and is based on the real government proposal that plans to build a deck park over the Cross Bronx Expressway. The community of Parkchester in the Bronx has been suffering from the noise and pollution caused by the Cross Bronx Expressway. The expressway was a broad "corridor", for vehicles instead of the community. Thousands of vehicles run past every day, leaving nothing but chaos. New corridors were to be established over the CBE, creating new pedestrian connections in the community. Activities unfolded in and around the folding corridor, forming a new expressway for local residents. The capping was a mode for reproducing expressway spaces and I designed several structural and space modules which could decrease the budget of construction so that the government and communities can efficiently extend it from Parkchester to the whole Cross Bronx Expressway.



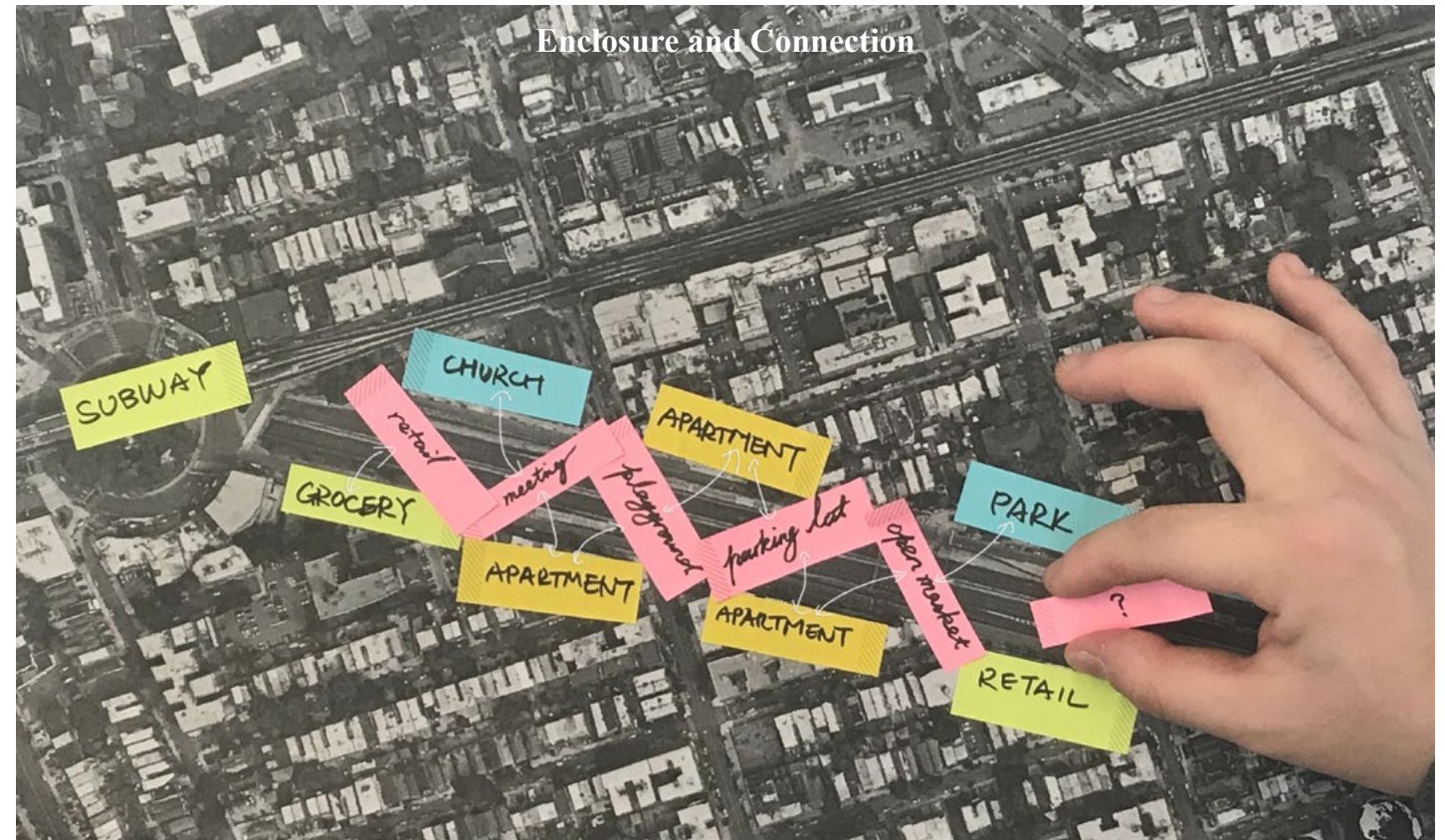




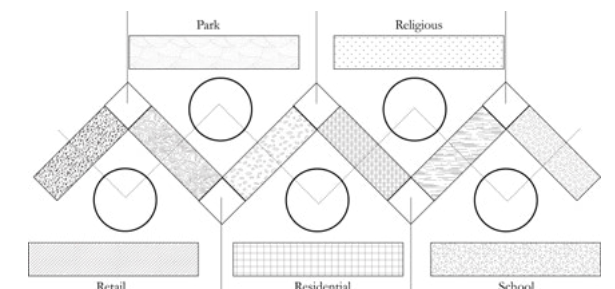
### Disconnection of CBE



### Enclosure and Connection



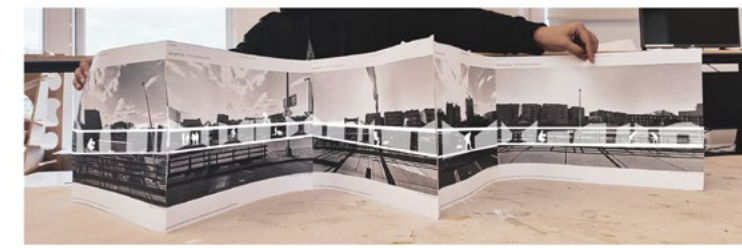
### Functions and Courtyards



1. Continuous Street View

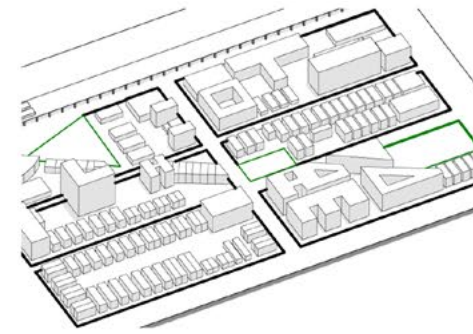
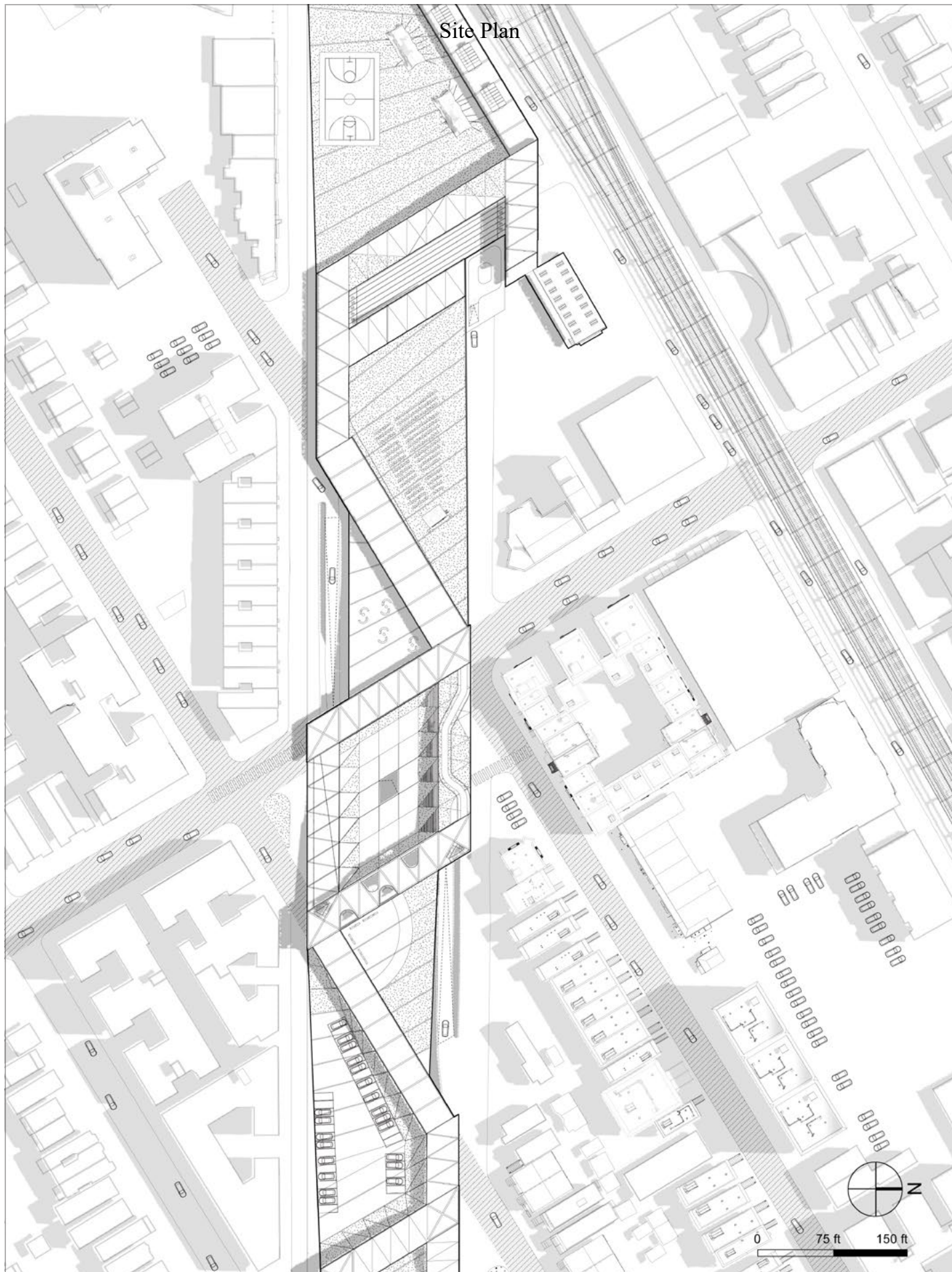


2. Folding the Street View



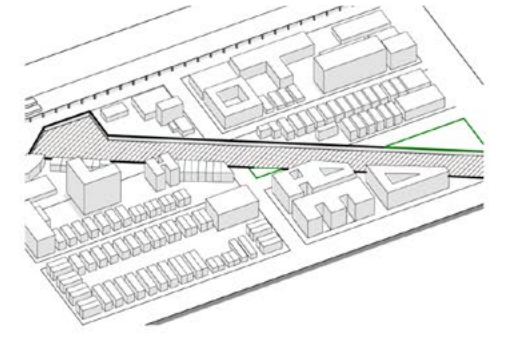
In order to create a pedestrian-dominated street, I found ways of folding from the visual Angle of the street to increase the sense of interest and layering. Then from the site context and function of mutual reference to find space complementary relationship to make corridors and streets more reasonable; Finally, in the strategy of space, we should make full use of the advantages and circumvent the disadvantages, enhance the attributes of some corridors and the enclosing properties of some buildings, so that the whole street becomes vitality.





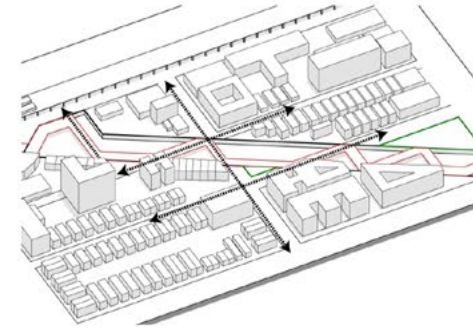
**Original Grid**

Before 1948, Robert Moses didn't begin to build the Cross Bronx Expressway. The grids of communities in Bronx were relatively completed.



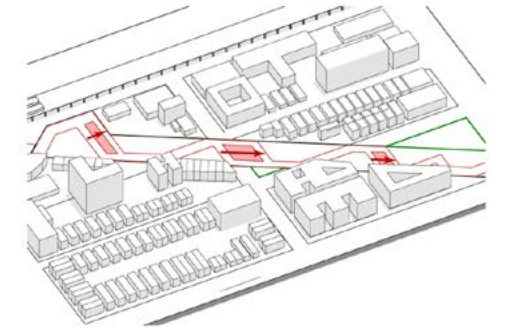
**CBE**

From 1948, Robert Moses began to build the Cross Bronx Expressway. The grids of communities in Bronx became incomplete and the open space are removed.



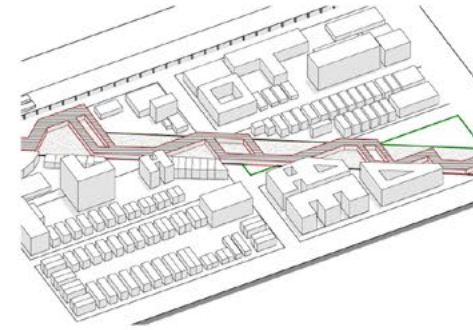
**Reconnections**

Based on the original grids of the Bronx communities, introduce some connections between North and South to turn the table of vehicle-led streets into the pedestrian-led streets.



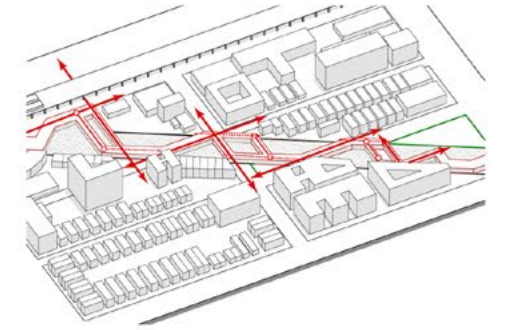
**Offset to Yards**

After creating reconnection between both sides, offset the connection to make some courtyards in the area.



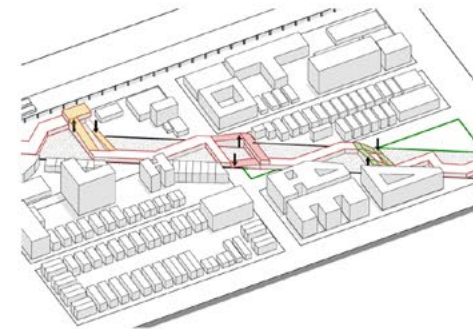
**Corridors**

After confirming the site plan layout, extrude the mass to make the connection become the corridors and create some semi-closed plazas.



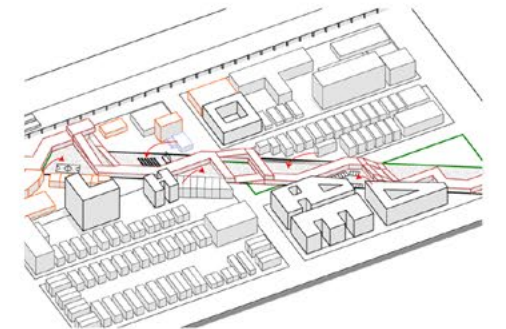
**Properties of Corridors**

After massing the connections, the relationships between the corridors and adjacent buildings are built and the different properties of corridors are divided into passable, semi-passable, closed.



**Types of Corridor**

For the sake of creating more layers and types of corridors, pull up and push down some parts of the corridors to create more slopes for wandering.

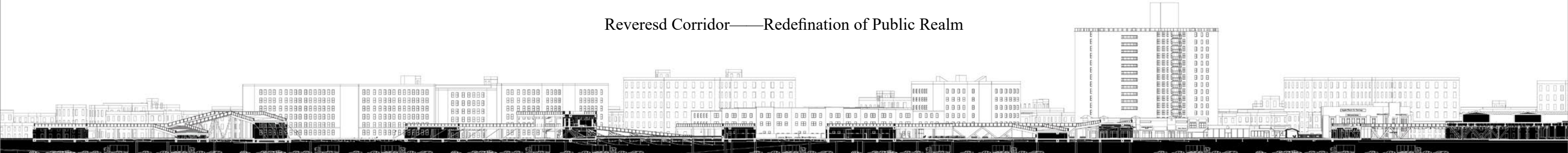


**Reflection of Functions**

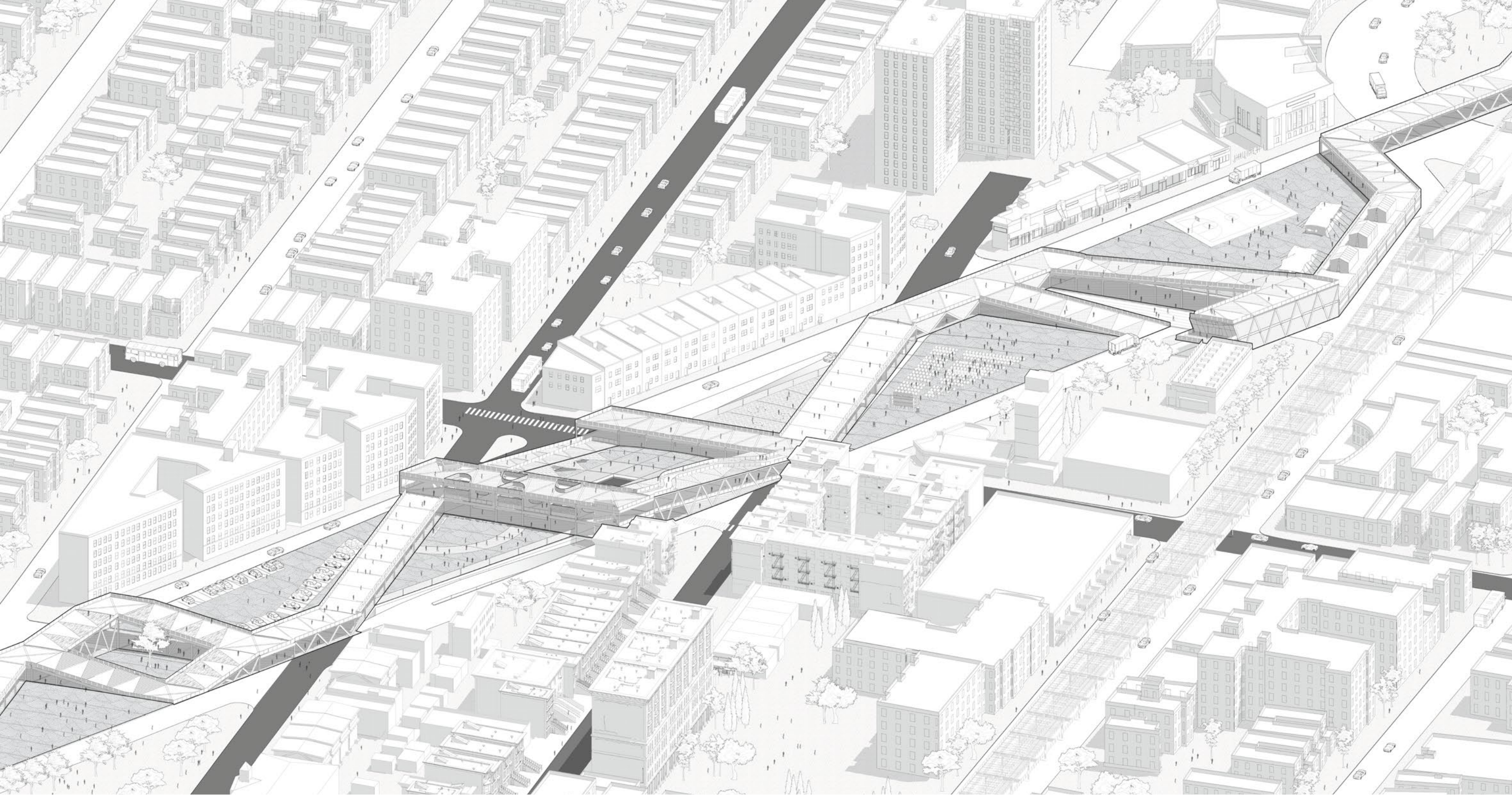
After making the appearance of the corridors, programs and functions are decided by the surrounding communities and reflected by the context.



# Reversed Corridor—Redefinition of Public Realm



Leisure Park	Yard	Parking Lots	Leisure Park	Plaza & Stage	Leisure Park	Open Assembly for Church	Track	Sports Playground & Urban Farm	Open Market	Subway Station
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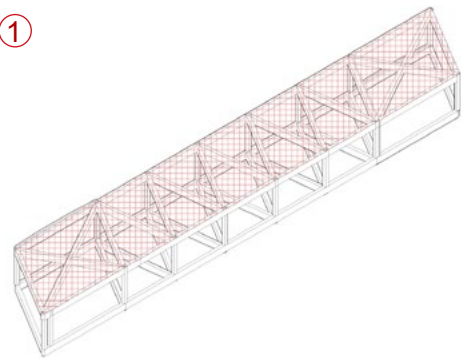


## Reproducible Structural Capping Mode

The capping was a mode for reproducing expressway space and I designed several structural and space modules which could decrease the budget of construction so that the government and communities can efficiently extend it from Parkchester to the whole Cross Bronx Expressway.



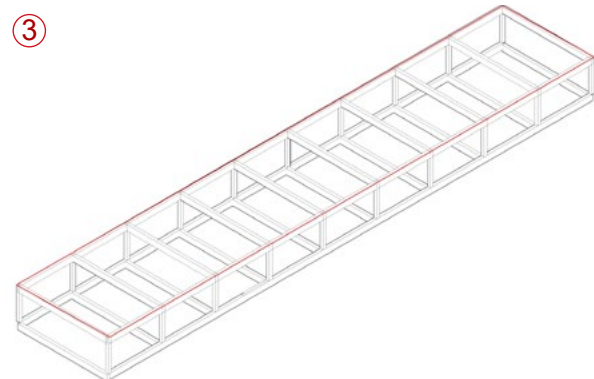
①



### Truss A (connection):

The main span structure connecting the two sides of the expressway.

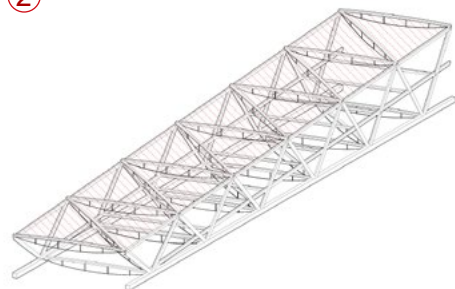
③



### Truss B (passage corridor):

The main span structure connecting the courtyards inside the expressway.

②



### Beam String System A (corridor):

A skeleton of corridor with a big slope, for lesiure and passing.

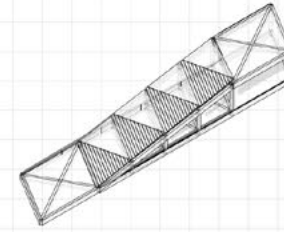
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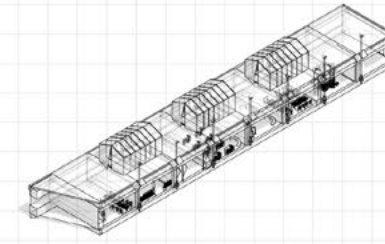
### Beam String System B (ground):

A skeleton of ground with a slight slope, for planting grass or paving.

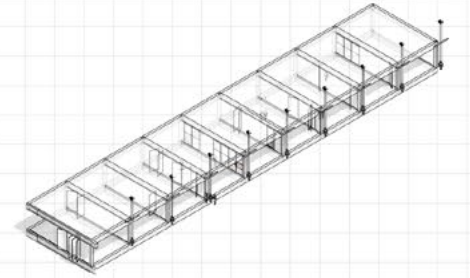
## Prototypes of Corridor



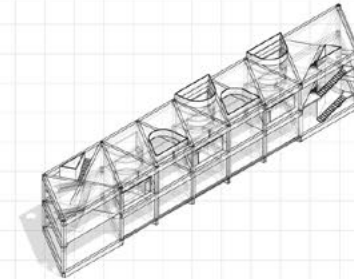
Type: Truss A  
Function: Leisure Stairs ①



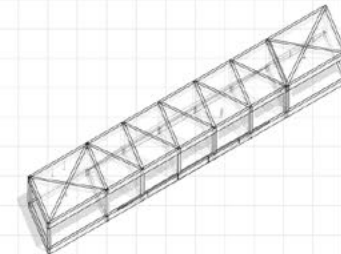
Type: Truss B  
Function:  
Greenhouse+Air Purification ③



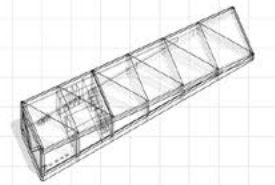
Type: Truss B  
Function:  
Exhibition Panels+Air Purification ③



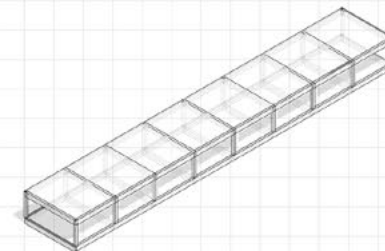
Type: Truss A  
Function:  
Vertical Circulation+lounge ①



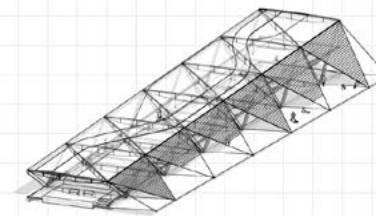
Type: Truss A  
Function: Passage Corridor ①



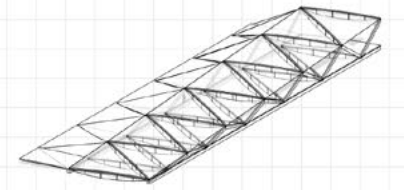
Type: Truss A  
Function: Restroom+Slop ①



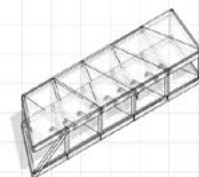
Type: Truss B  
Function: Passage ③



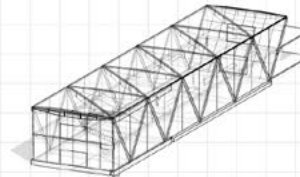
Type: Beam String A ②  
Function:  
Roof Path+Sun Baffle



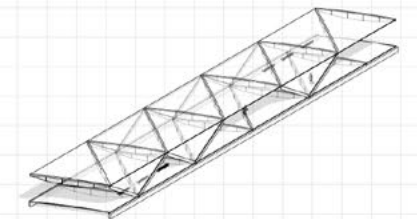
Type: Beam String A ②  
Function: Leisure Stairs



Type: Truss A  
Function: Rest pavilion ①

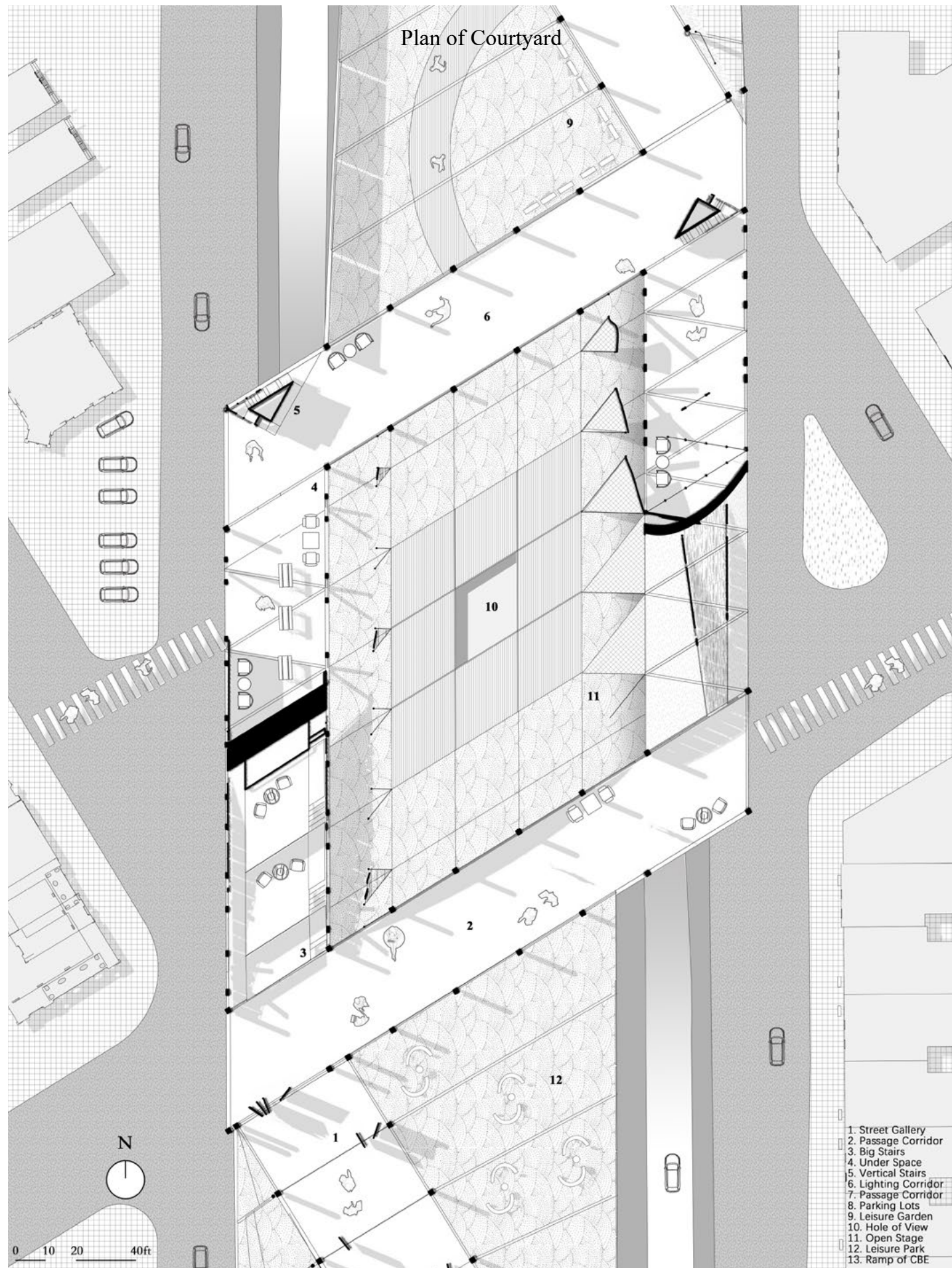


Type: Beam String A ②  
Function: Museum



Type: Beam String A ②  
Function: Rest pavilion





**Roof Top Garden Ramp**

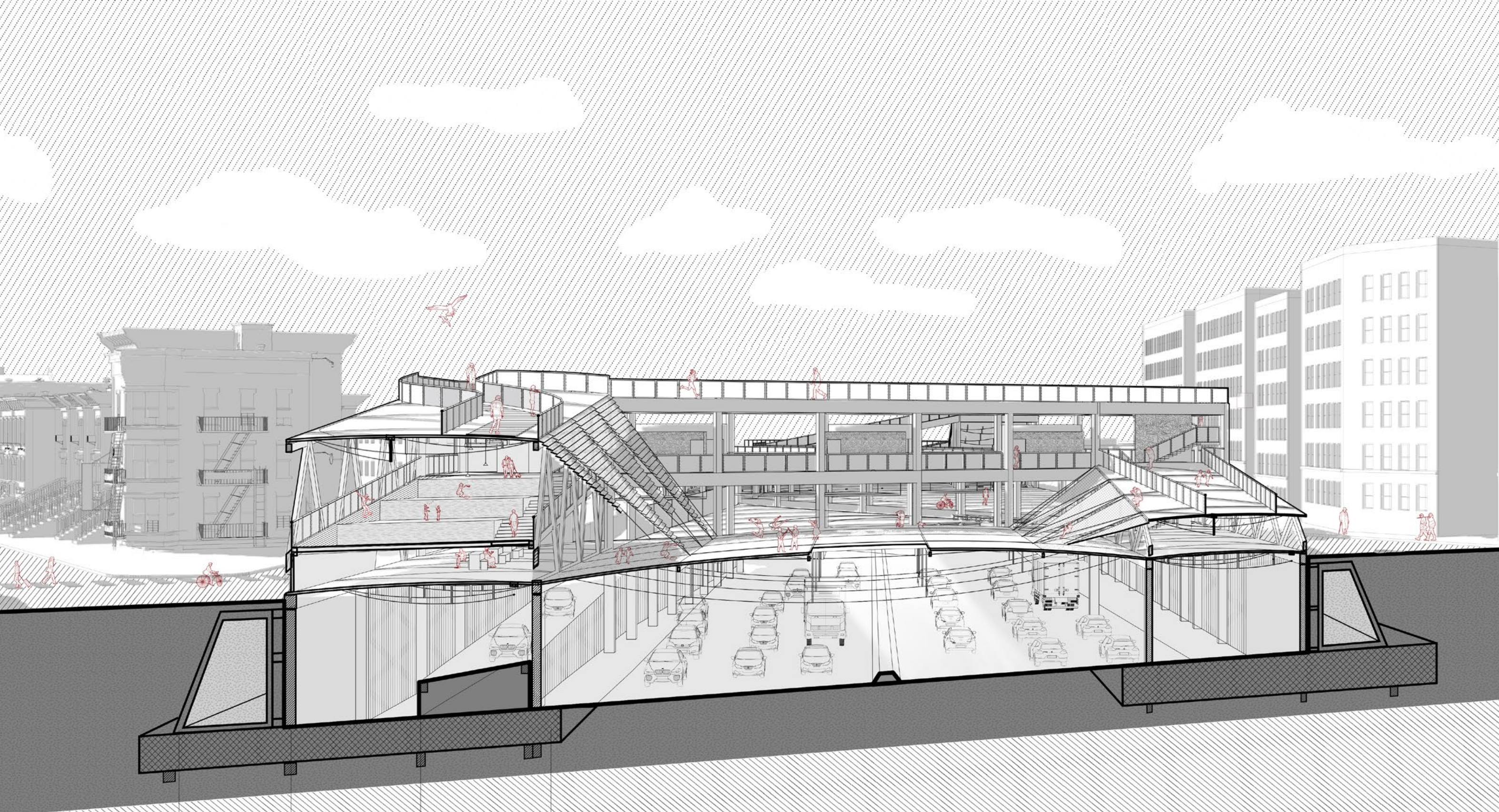
Besides, the roof garden creat a new scenery in Bronx Parkchester, so that people can walk through the whole community instead of vehicle-led the roads and streets.



**Central Courtyard & Big Stair**

The courtyard is not only enclosed by the structures but also is connected to the surrounding context through view and walkability. In contrast, the design turn the scale of the road into pedestrian-led street.





Diaphragm wall

Columns

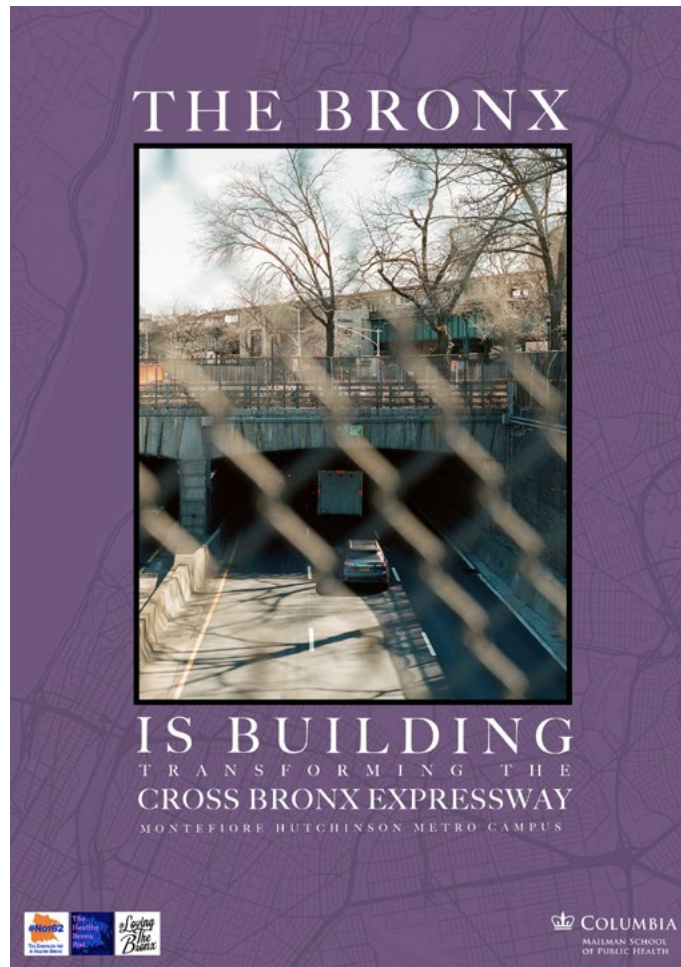
Ramp Slope

Box Foundation

### Section of Courtyard

The Section view of the courtyard shows the basic mode of capping which divides the Cross Bronx Expressway into three parts so that columns could stand on the side of slope. Also, based on the structural analysis, roof part is supported by the beam string system. Therefore, the whole space could become different in heights. Meanwhile, the courtyard becomes a special connection between North and South.





## The Bronx is Building: Transforming The Cross Bronx Expressway

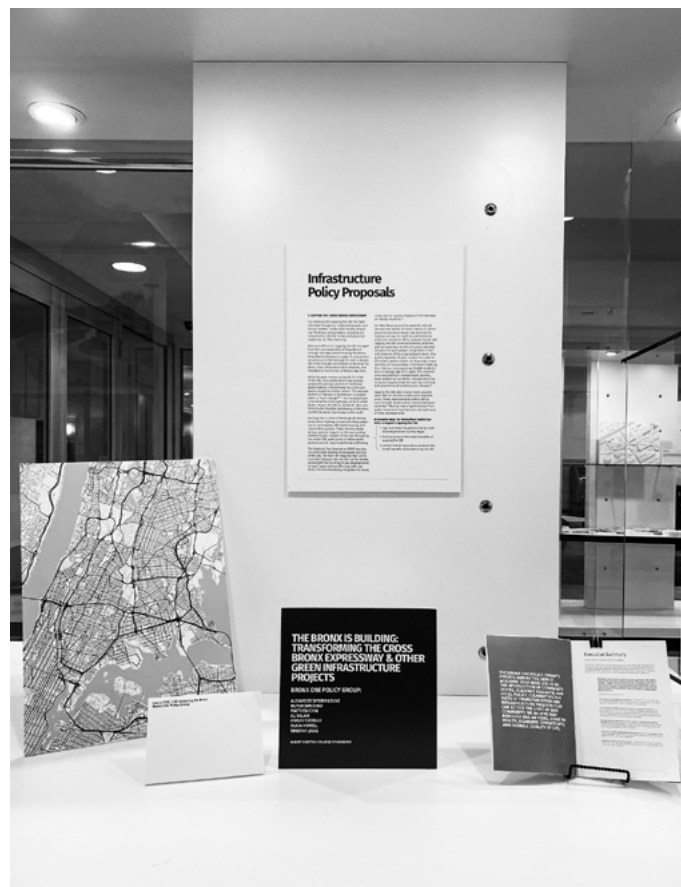
Design + Public Health

This exhibit highlights the collaboration between community members, designers/architects, student doctors and public health professionals to advocate for the transformation of the Cross Bronx Expressway (CBE) as a public health and quality of life intervention.

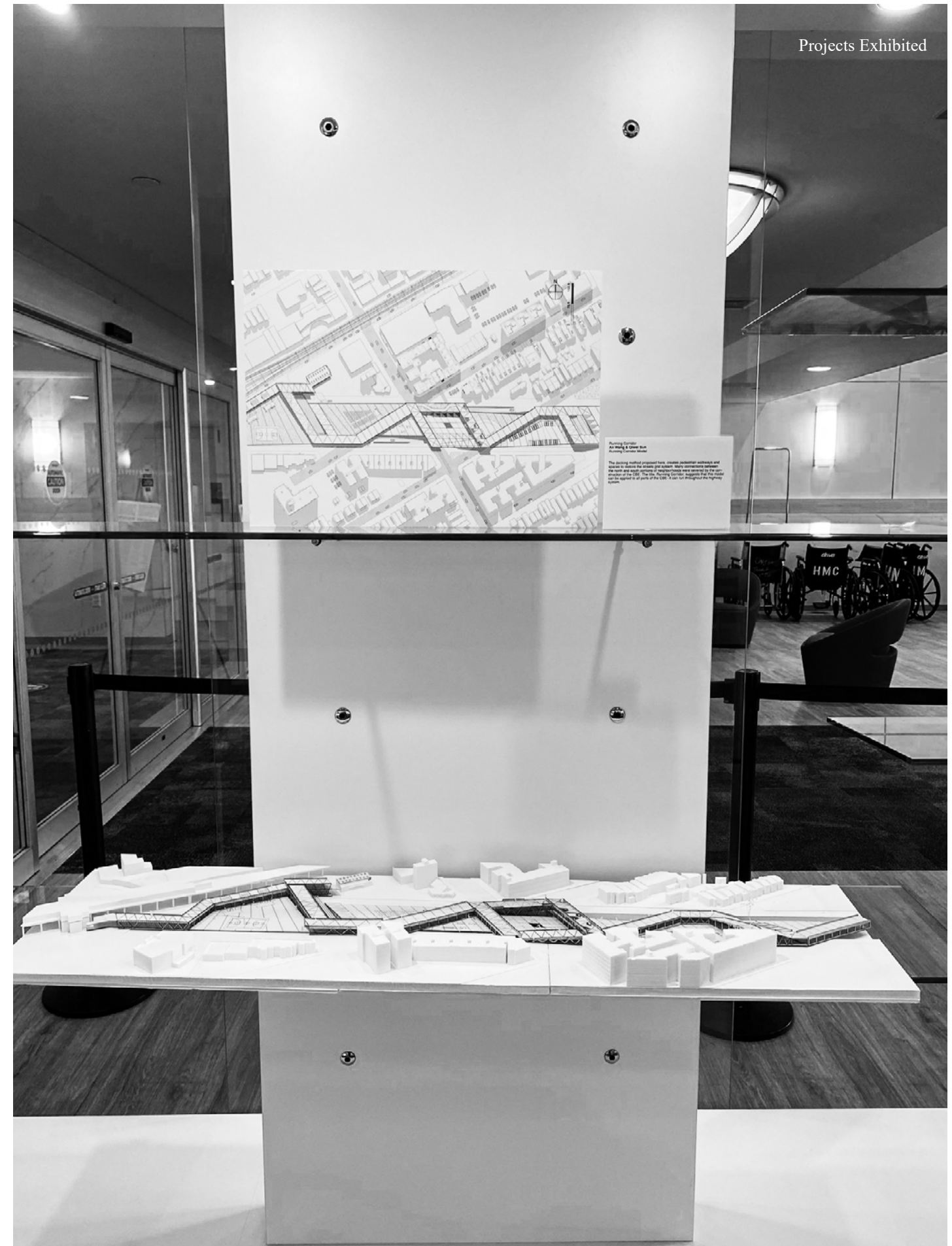
We explore efforts to transform the highway through: (1) Excerpts and original photographs from a manuscript written by 2nd and 3rd year medical students at The Albert Einstein College of Medicine, entitled The Bronx Is Building: Transforming the Cross Bronx Expressway & Other Green Infrastructure Projects for a Healthier Borough. (2) Renderings of architectural and design solutions to transform the CBE by students participating in a studio course taught jointly by faculty at Columbia's Mailman School of Public Health and Graduate School of Architecture and Planning (GSAPP) during the 2021 fall semester. (3) The work of Segregation by Design, a project by Adam Paul Susaneck, "which [uses] historic aerial photography...to document the destruction of communities of color due to red-lining, 'urban renewal,' and freeway construction." Susaneck's work on Segregation by Design is supported by Columbia GSAPP's 2021-22 Incubator Prize. To see more of Susaneck's work, see [www.segregationbydesign.com](http://www.segregationbydesign.com) or follow @segregation\_by\_design on Instagram and Twitter.

This exhibit aims to further the conversation to transform the highway. This conversation is constantly evolving and needs continued community input to create a solution that works best for the borough.

This exhibition is curated by Alexander Levine and Timothy Liang, 3rd year medical students at Albert Einstein College of Medicine in partnership with Nilka Martell, founder of #LovingTheBronx. Loving The Bronx focuses on community building, development, and organizing around social and environmental issues through the use of parks, open spaces and waterways throughout the Bronx.



Exhibition at Bronx Montefiore Hospital's Galleries,  
Team: Alexander Levine & Timothy Liang(Mailman)  
An& Qiwei, Junho Lee(GSAPP)





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## 03

### In touch without touching (*ITWT*)

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Psychiatric Clinic & Adaptive Use



**Topic: Small Footprint**

**Instructor: Hilary Sample**(*Mos Architects*)

**Individual Work**

**Location: Manhattan, New York, USA**

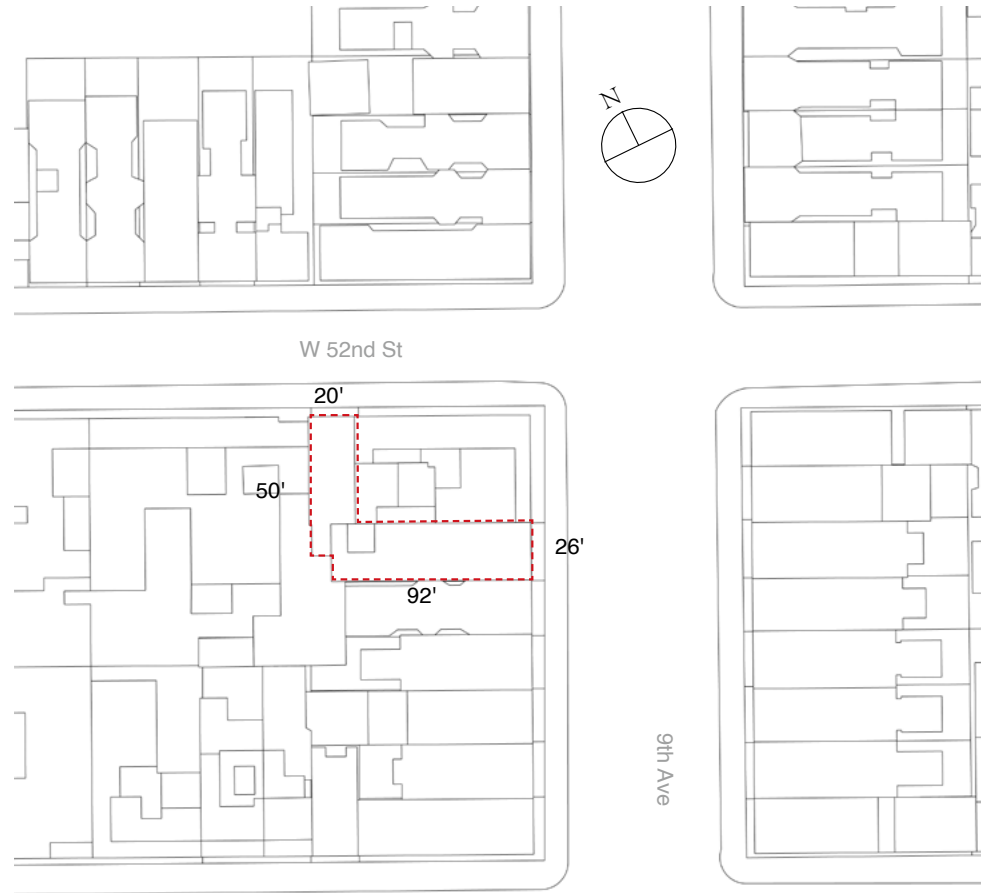
**GSAPP 2022 Spring Studio**

Following the topic of this studio, small footprint & clinic. I found a typical and interesting site in the Clinton area, which is an L-shape site next to the midtown healthcare center. So I want to reuse the vacant buildings to create a space for Anonymous meetings and psychiatric therapy in the local community. After the site trip and research on the NYC Treemap, my first concept was to reuse the existing building as a container for the trees and plants where people can have a pocket park in the city.

In an architectural way, in touch without touching becomes a dialectic relationship between different envelopes and the scenarios it made. So I want to strengthen this specific relationship by reclaiming the existing brick walls and introducing a wood frame and polycarbonate envelopes. Making nature, mechanics, and architecture become in touch without touching. Instead of providing spaces for programs, I took the building itself as a locus for healing. The particular independence between the shape of the envelope and the layout of what is enveloped is an essential device. And to manifest the coexistence in the same event of two non-correspondent logics, which is called incompatibility.

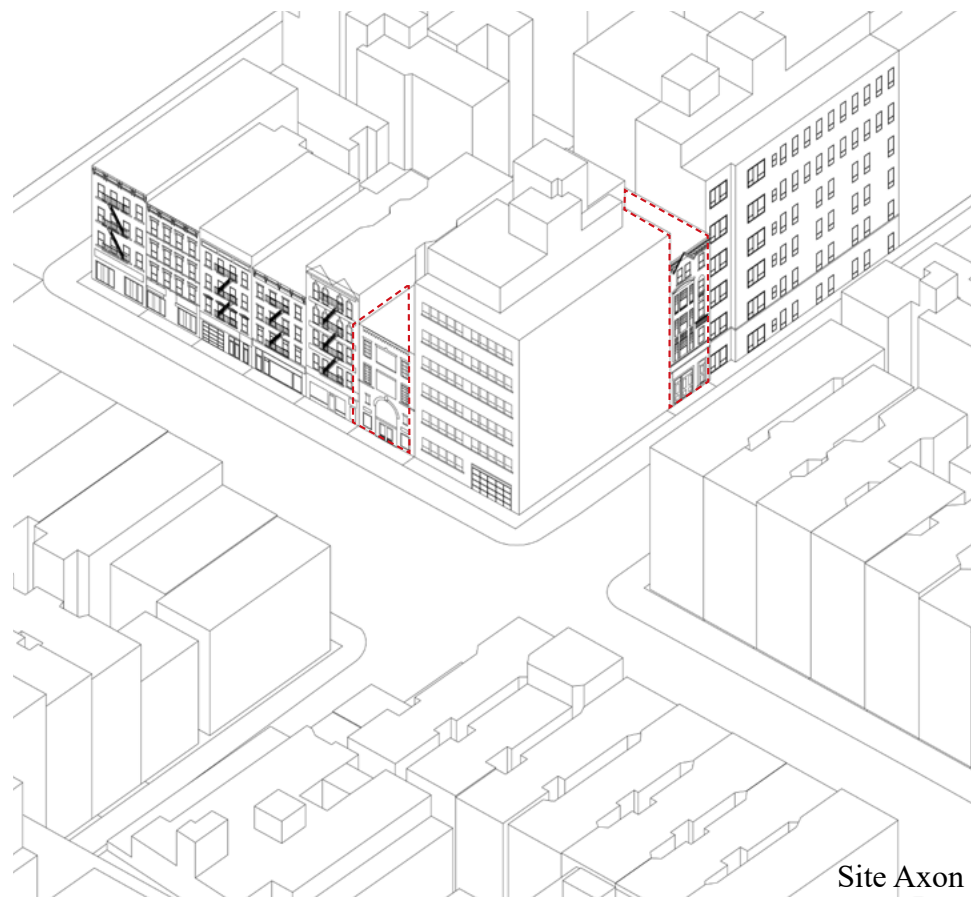






Site Plan

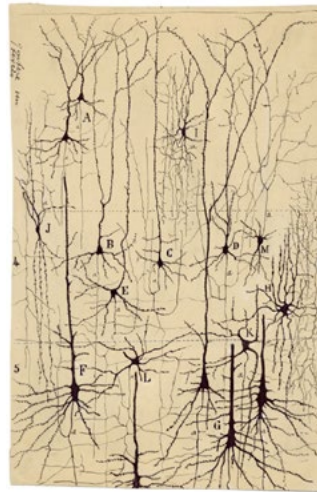
A typical and interesting site is in the Clinton area of Manhattan, which is an L-shape site next to the midtown healthcare center. So I want to reuse the vacant buildings to create a space for Anonymous meetings and psychiatric therapy in the local community. After the site trip and research on the NYC Treemap, my first concept was to adaptively use the existing building as a container for the trees and plants where people can have a pocket park in the city.



Site Axon







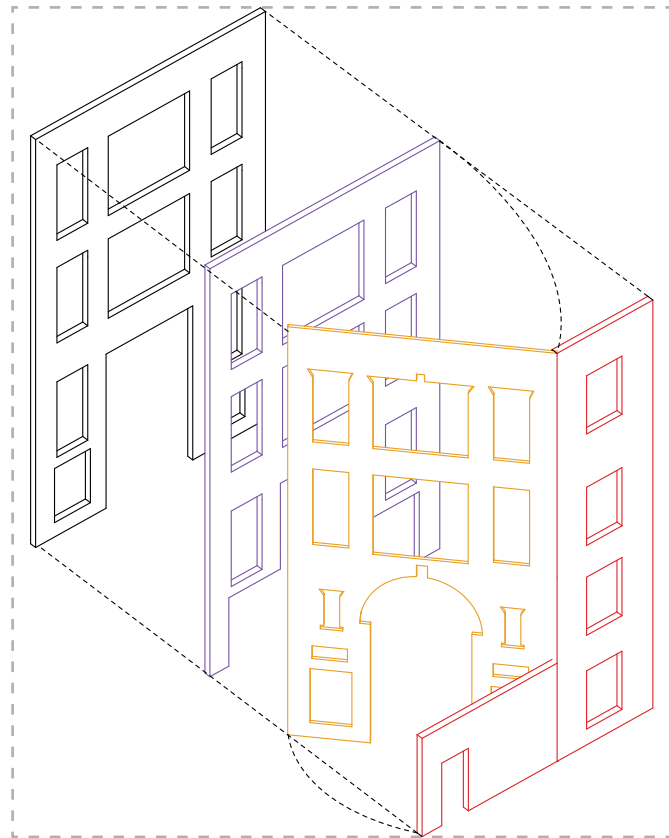
### "In touch without touching" in Neuroscience

Cajal is considered the father of modern neuroscience, as important in his field as Charles Darwin or Louis Pasteur are in theirs (though relatively unknown outside of it). His discoveries, made during the last dozen years of the 19th-century, concern the way neurons, the building blocks of the brain, spinal cord and nervous system, communicate with one another. His theory — immediately accepted by most, but not strictly proven until the 1950s — was that neurons are in touch without touching. They communicate across infinitesimal gaps known as synaptic clefts.



### "In touch without touching" in Arts

The constructive transformation of modernity allows the non-correspondence between external and internal mass to become visible. The real challenge is to manifest the coexistence in the same event of two non-correspondent logics, instead of imposing a transparency aimed at merely erasing the difference between interior and exterior. The intensity of the new modern space largely depends on the perception of this incompatibility.



### "In touch without touching" in Architecture

The existing walls and the new wood frame are in touch but not touching together. And the pipelines can get through the wood columns and truss with reserved holes so that they are not touching.



X

X

X

A.W



0 5 10 ft

- 1. clinic entrance
- 2. reception
- 3. bar
- 4. staircase
- 5. restrooms
- 6. elevator
- 7. backyard
- 8. residential entrance



Ground Floor Plan

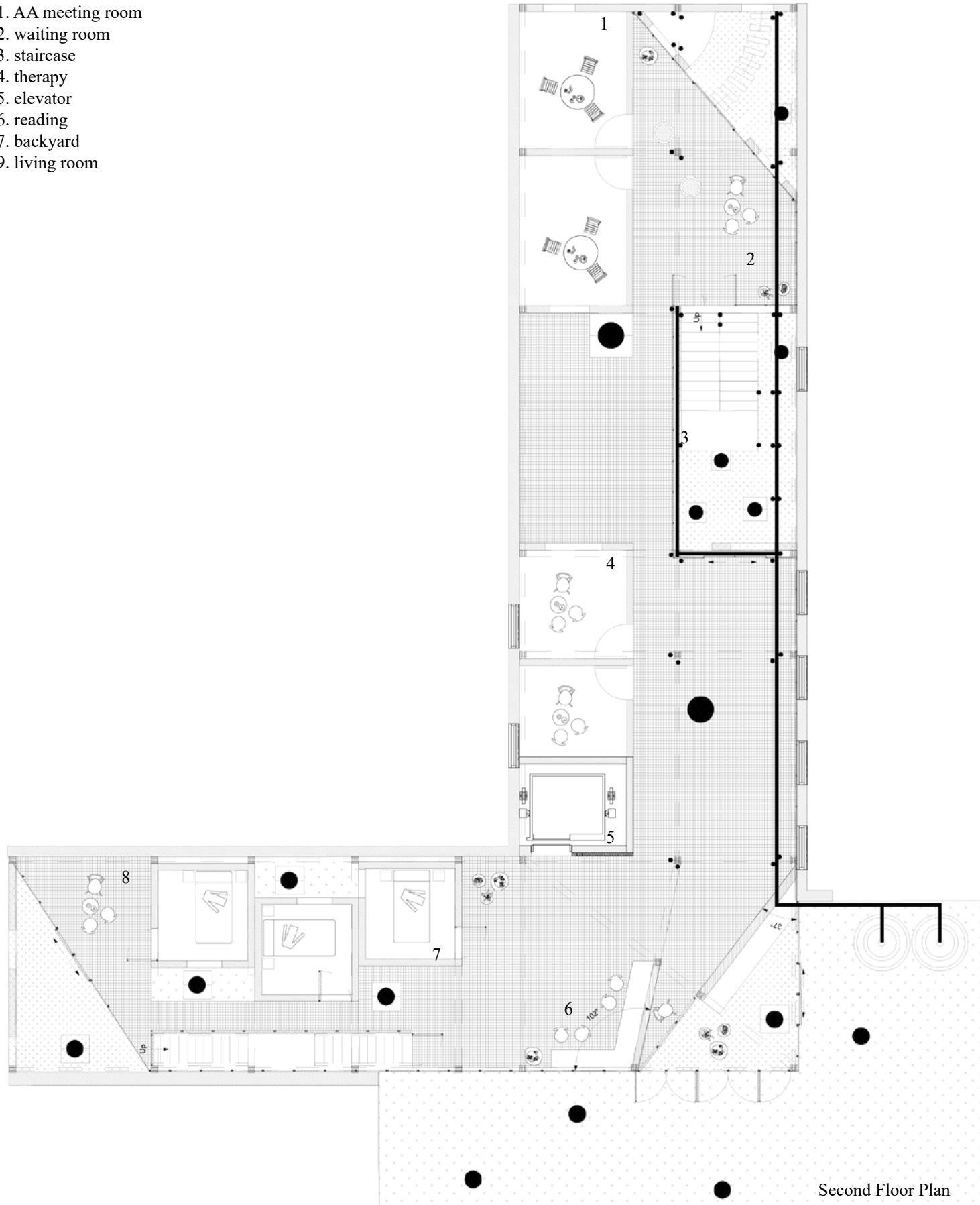


Ground Floor



0 5 10 ft

- 1. AA meeting room
- 2. waiting room
- 3. staircase
- 4. therapy
- 5. elevator
- 6. reading
- 7. backyard
- 9. living room



Second Floor Plan

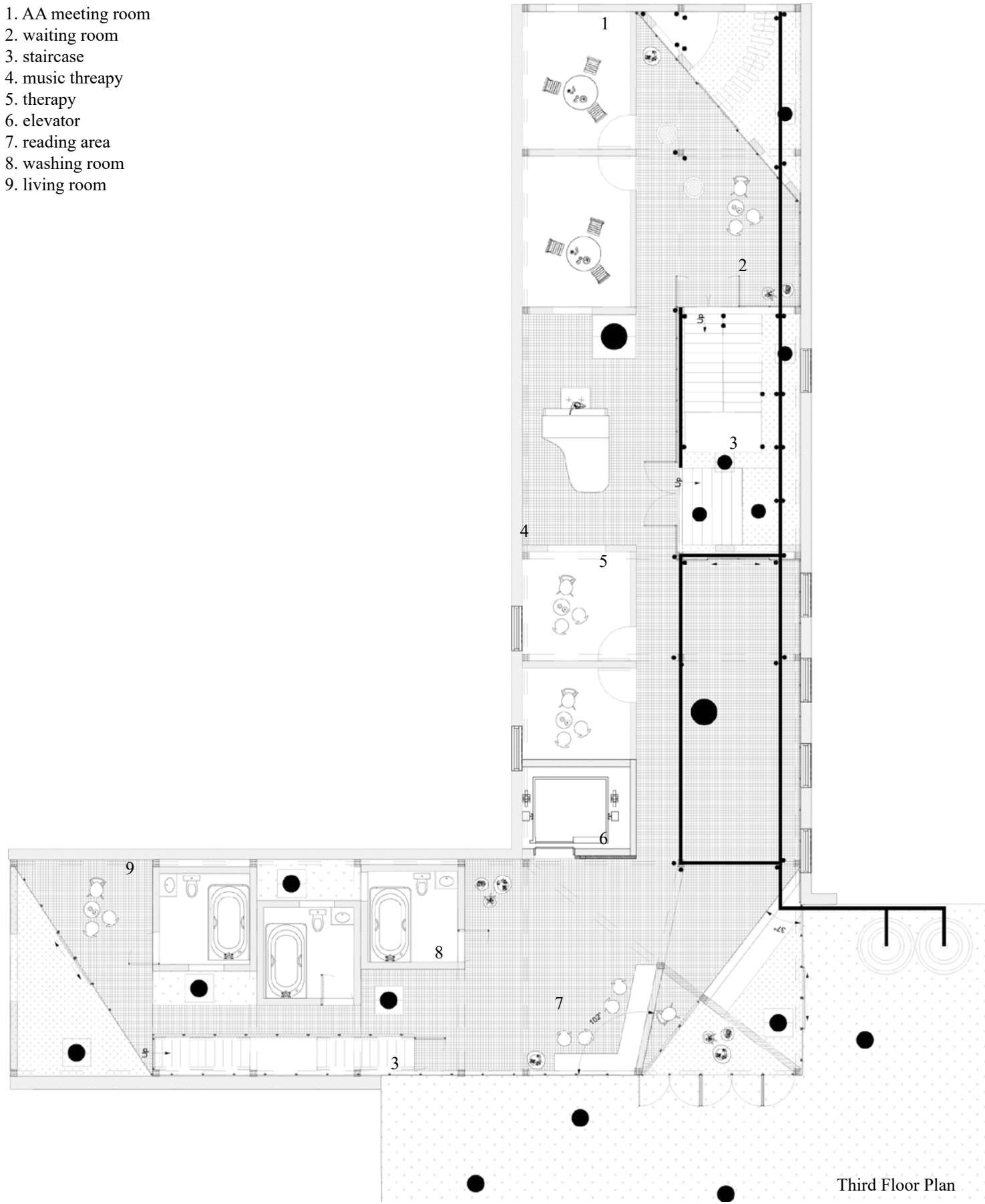


Therapy Room



0 5 10 ft  
[Scale bar]

- 1. AA meeting room
- 2. waiting room
- 3. staircase
- 4. music therapy
- 5. therapy
- 6. elevator
- 7. reading area
- 8. washing room
- 9. living room



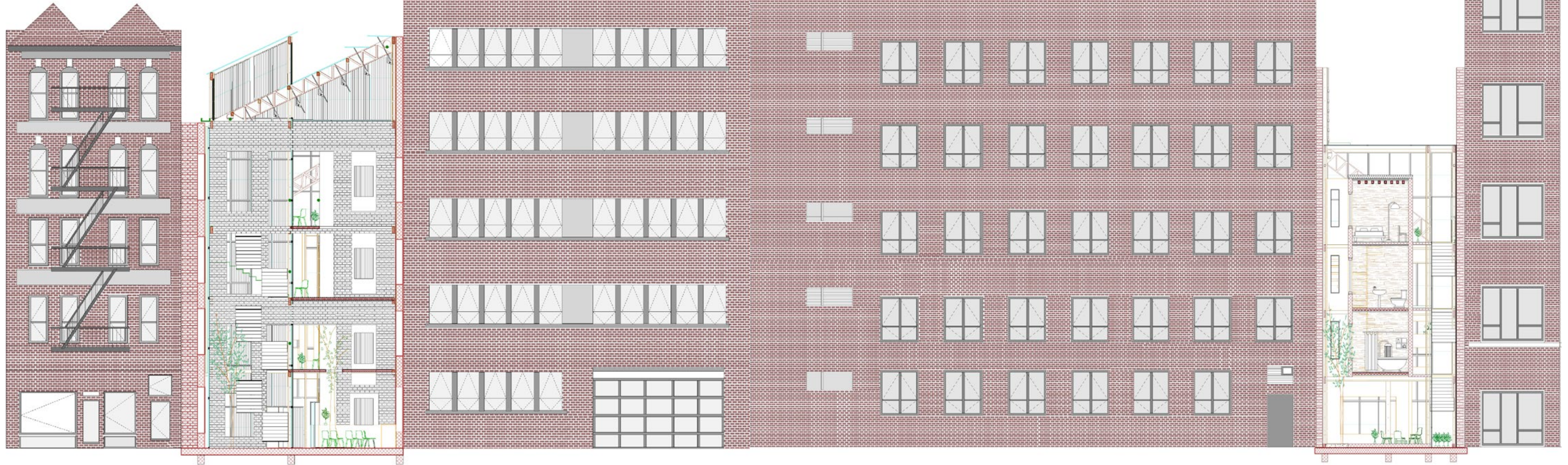
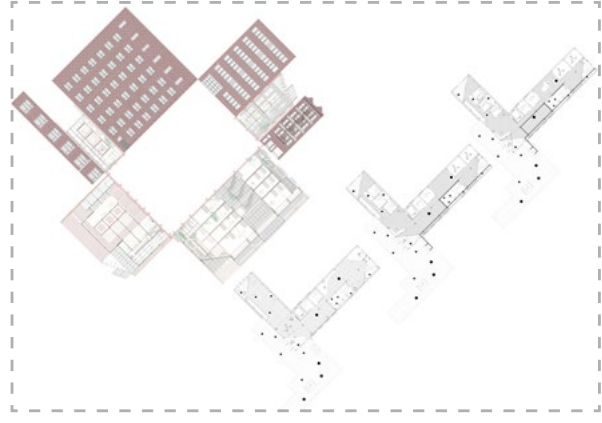
Third Floor Plan



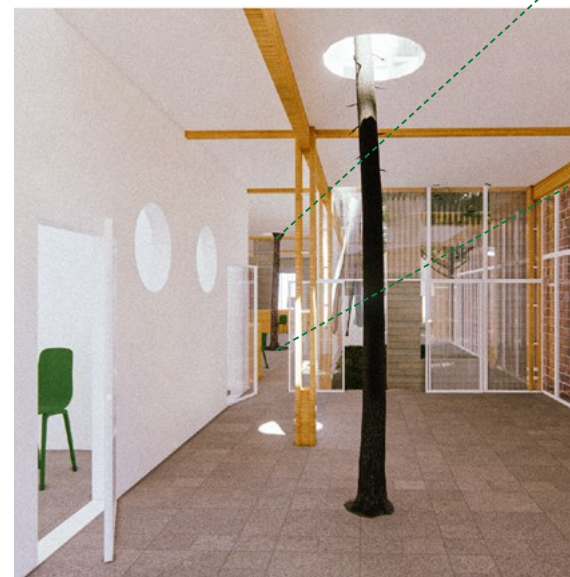
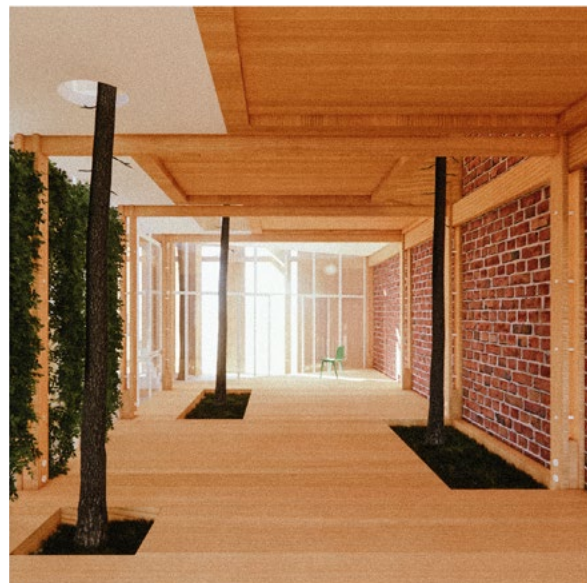
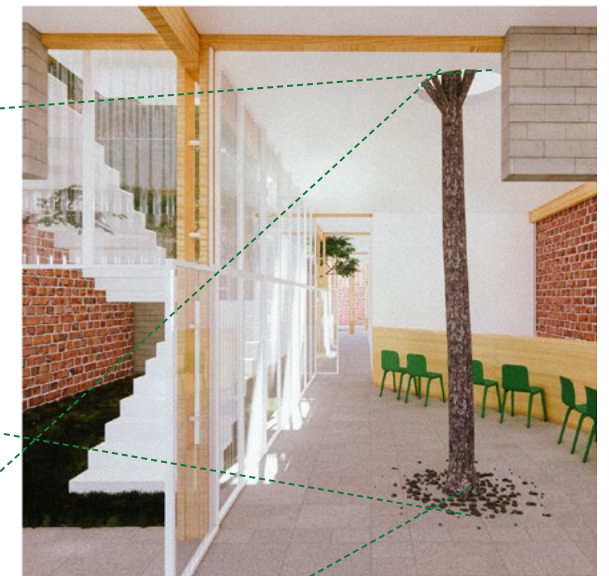
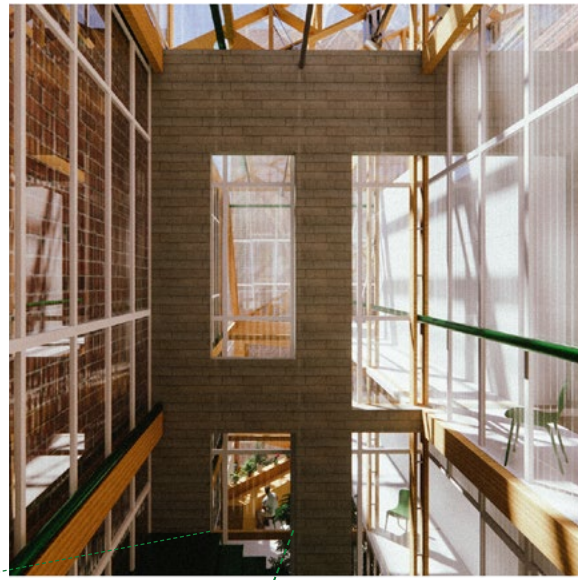
Balcony



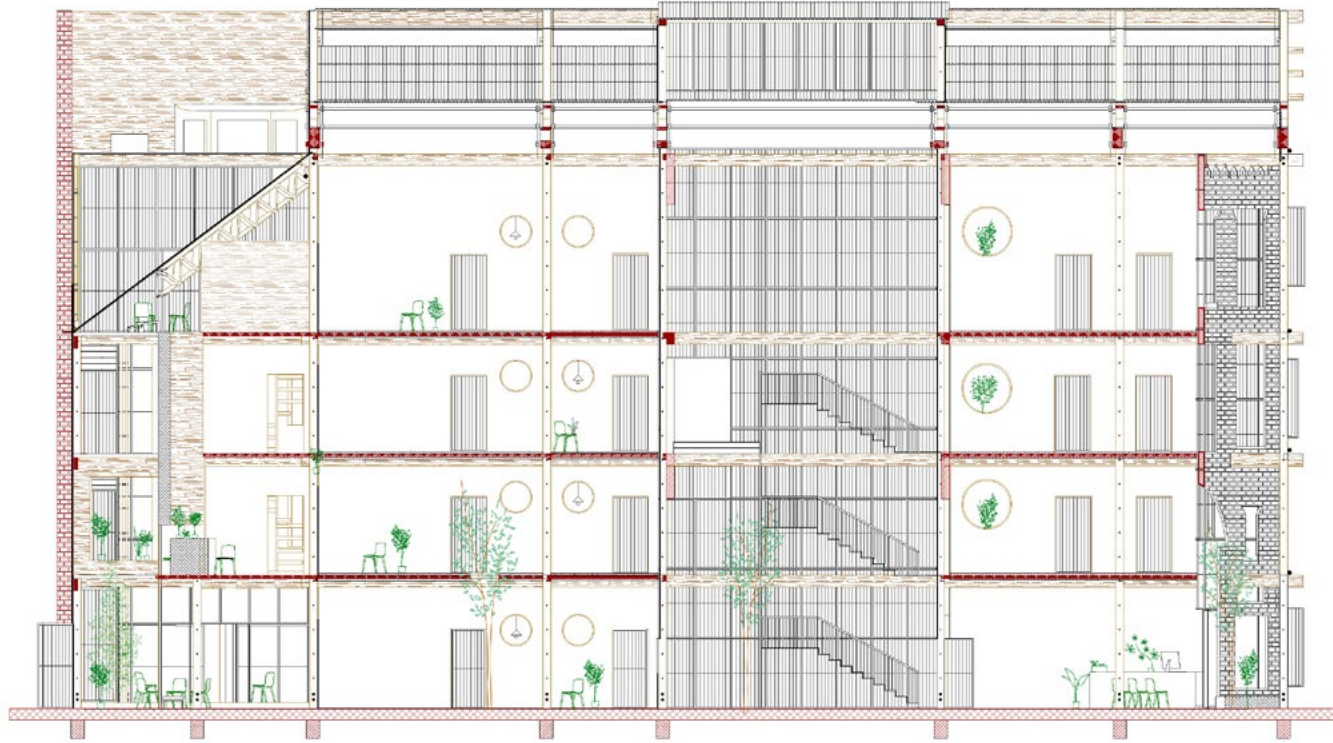
Foldable Section











Clinic Area Section



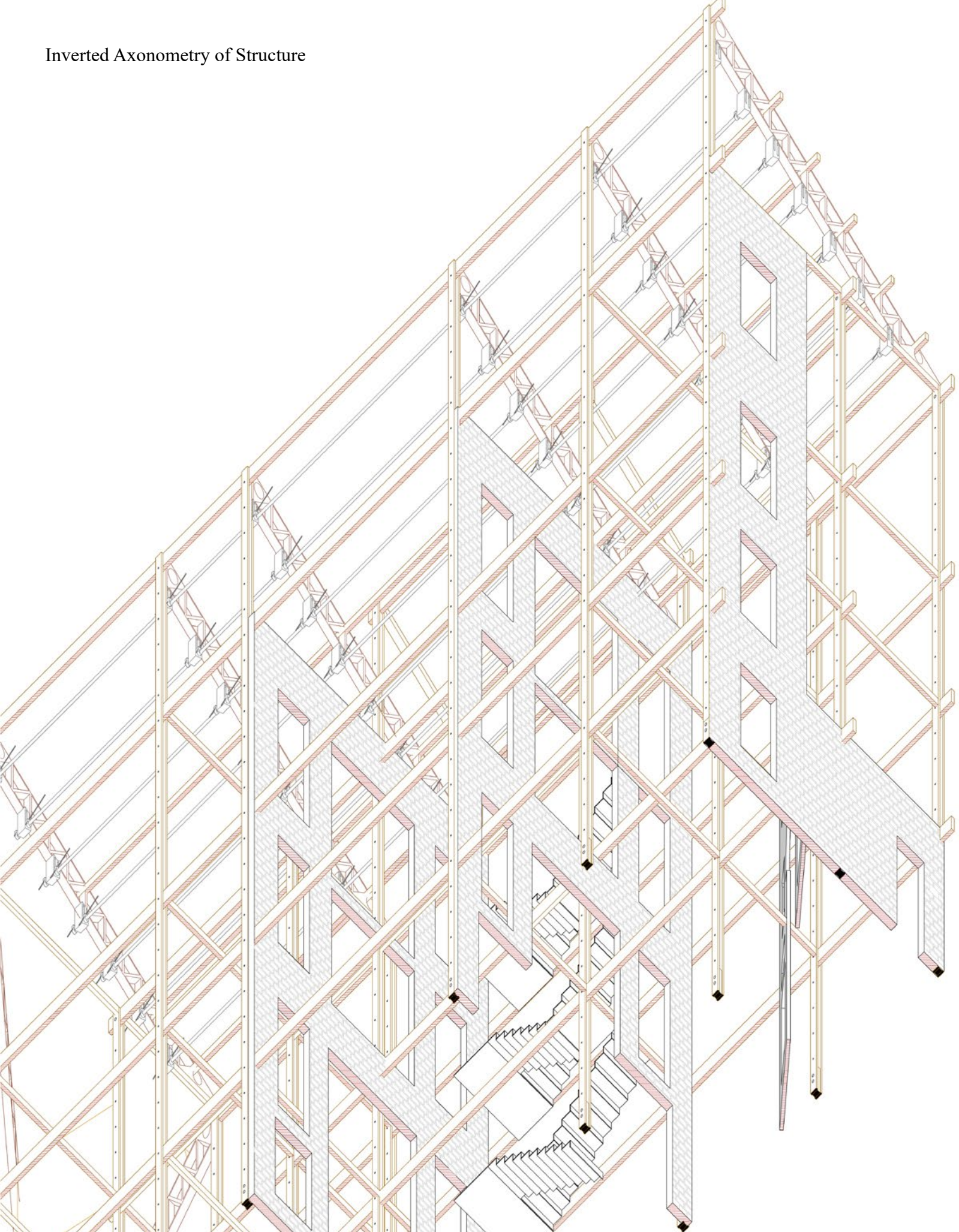
Residential Area Section



Daytime Front



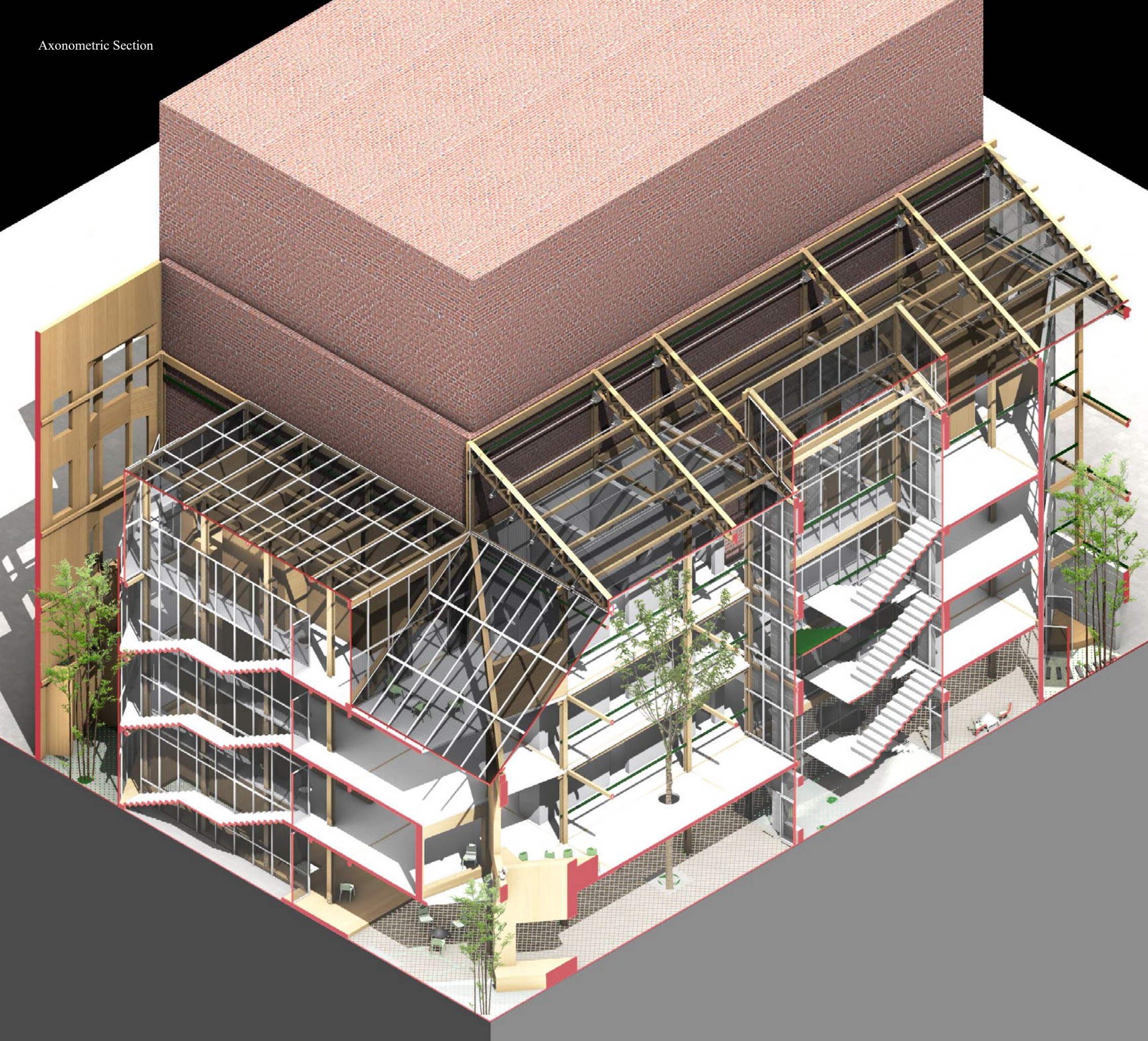
Inverted Axonometry of Structure



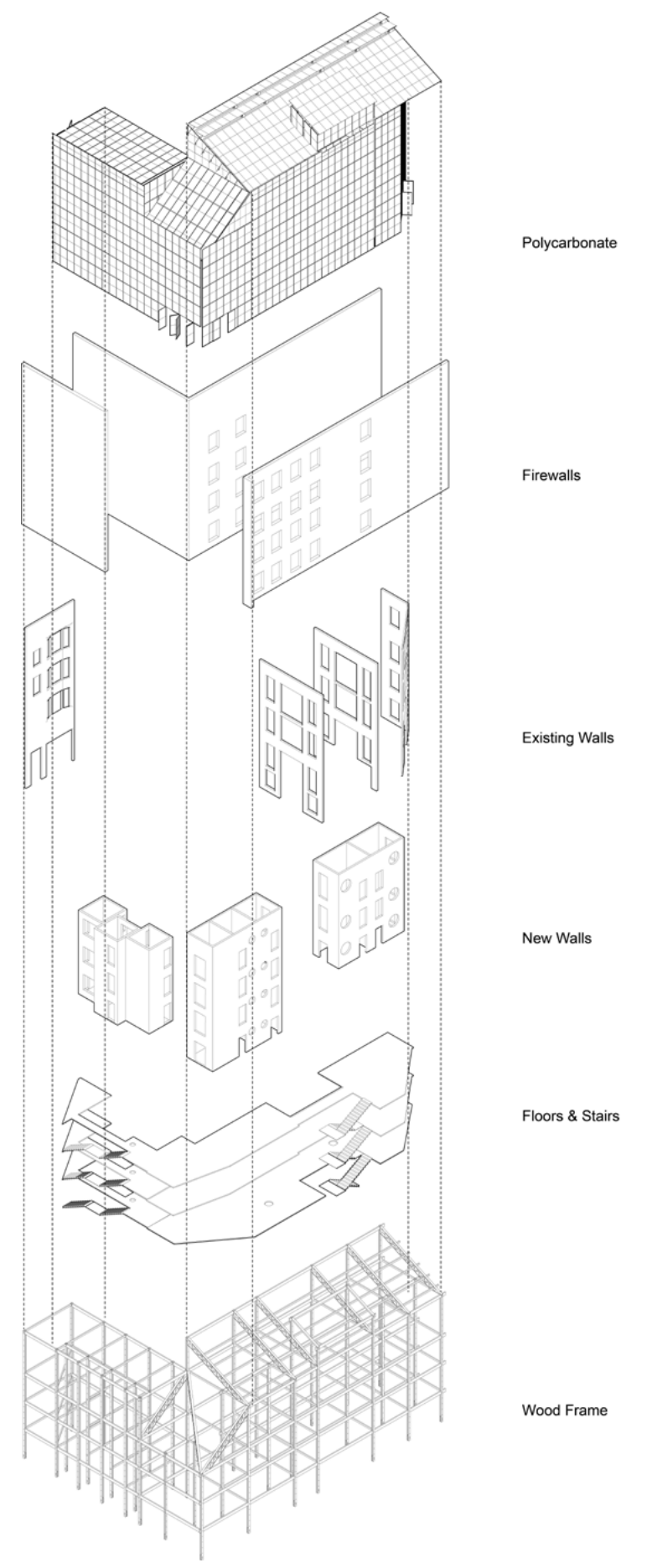
Night Front



Axonomic Section



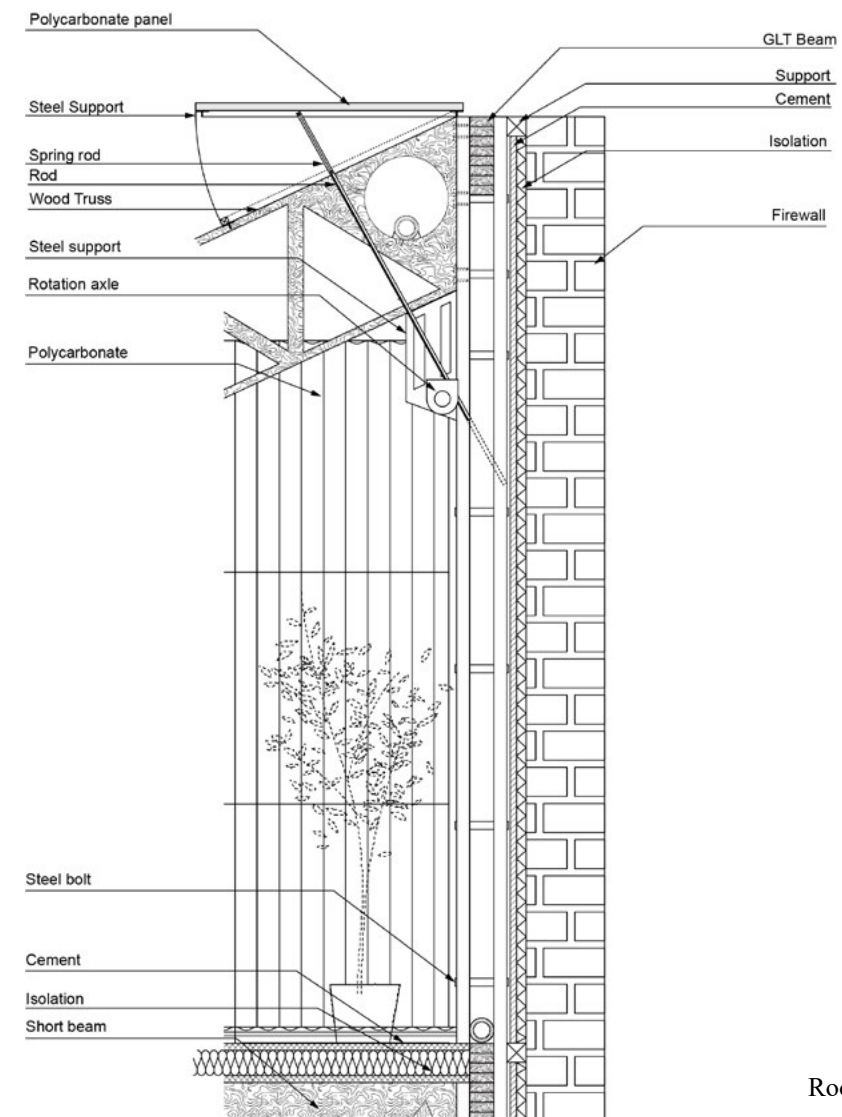
Exploded Structure



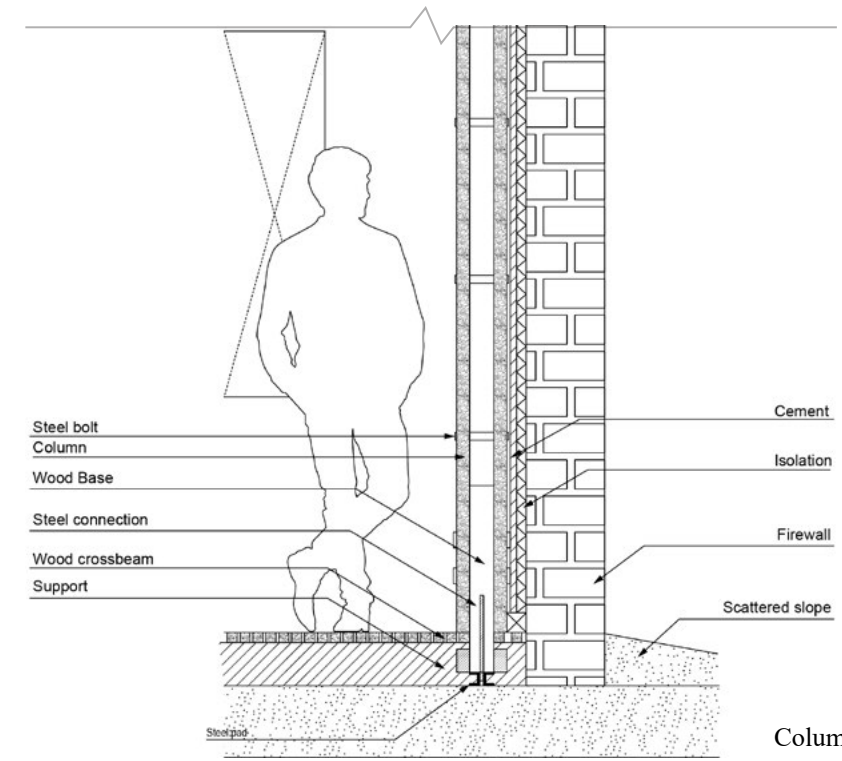




Staircase View

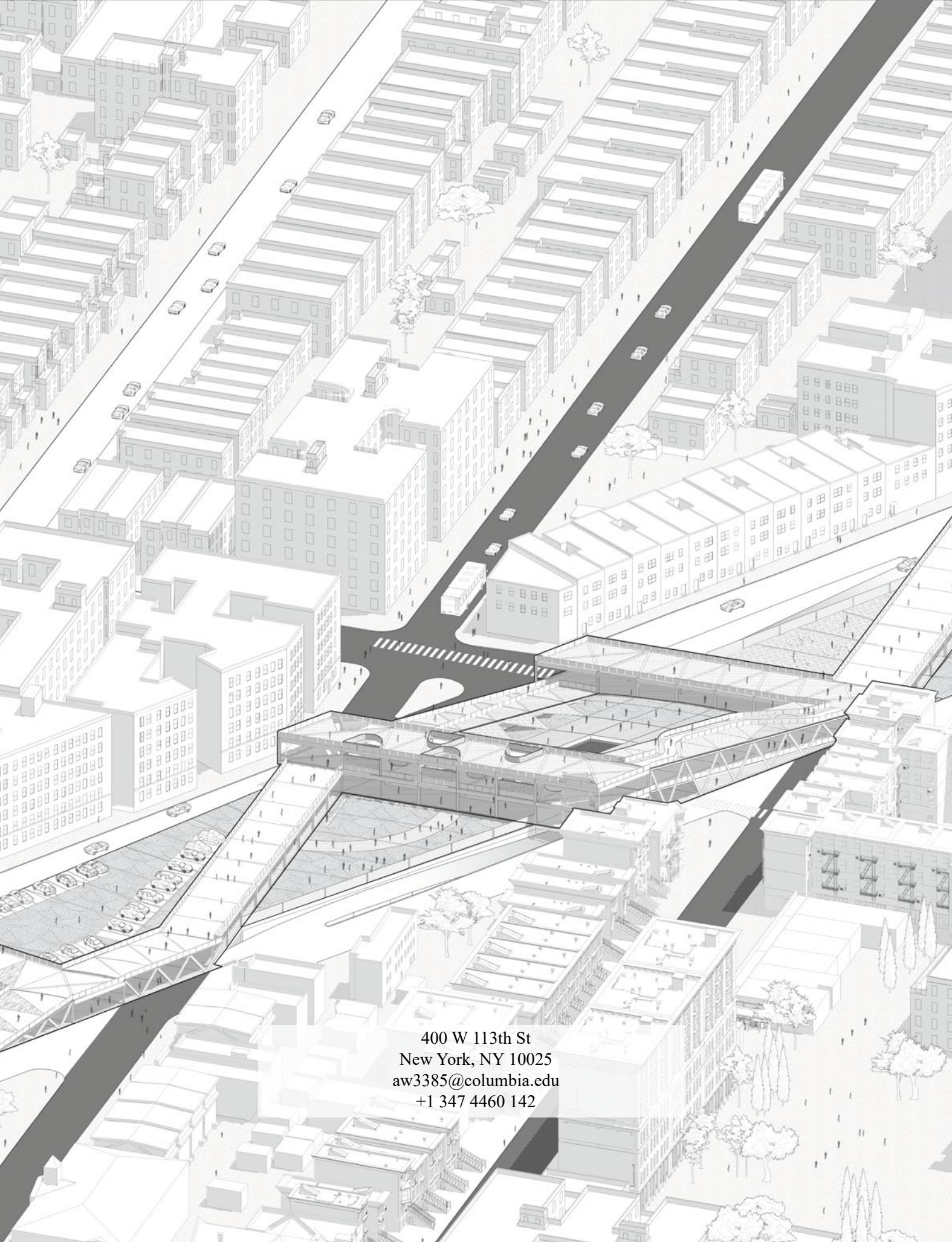


Roof Detail



Column Detail





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