



**O V E R L A Y**

**BY YI LIANG**



Speed Blender  
Summer 2020

Hunts Point 2080  
Spring 2022



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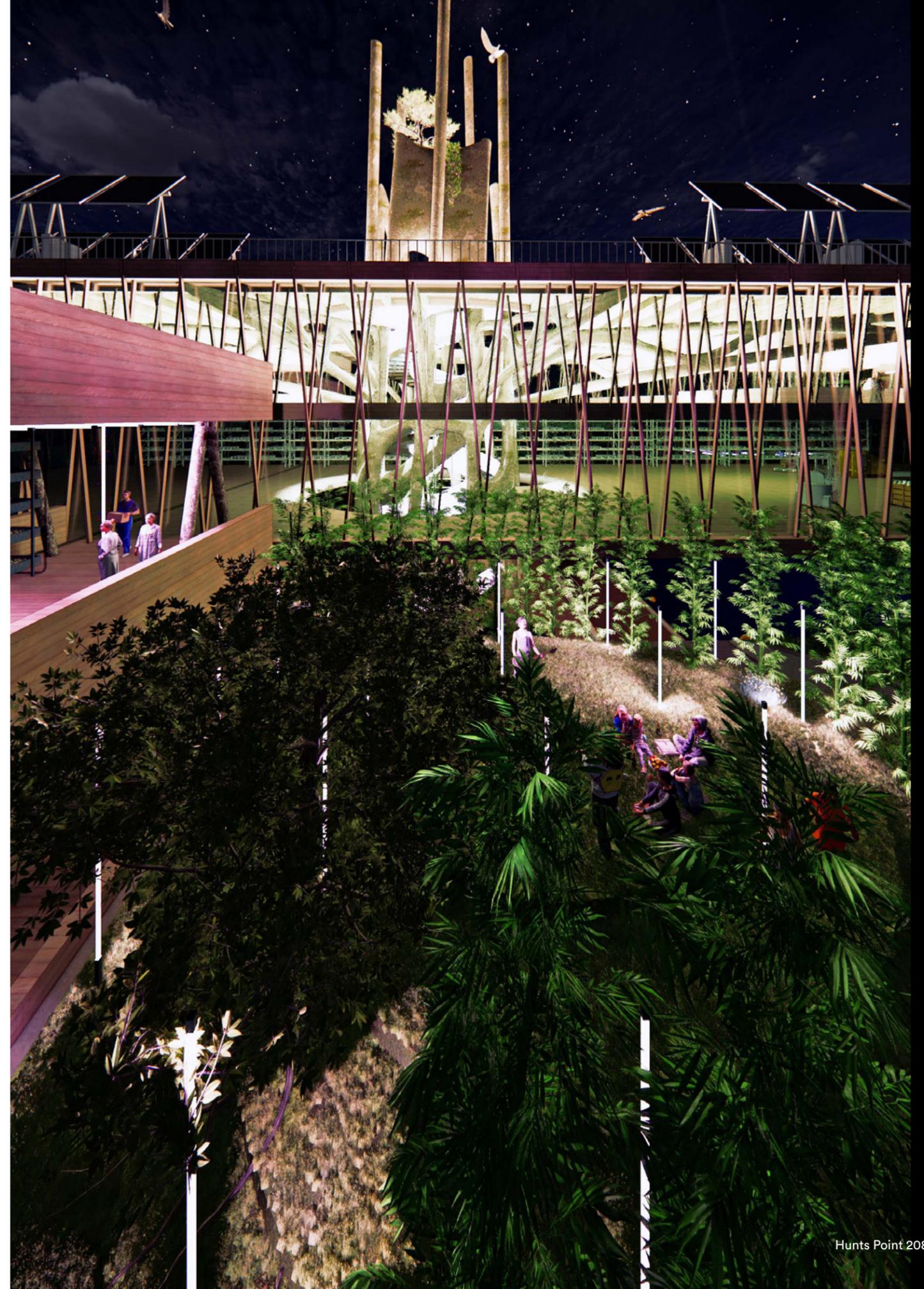


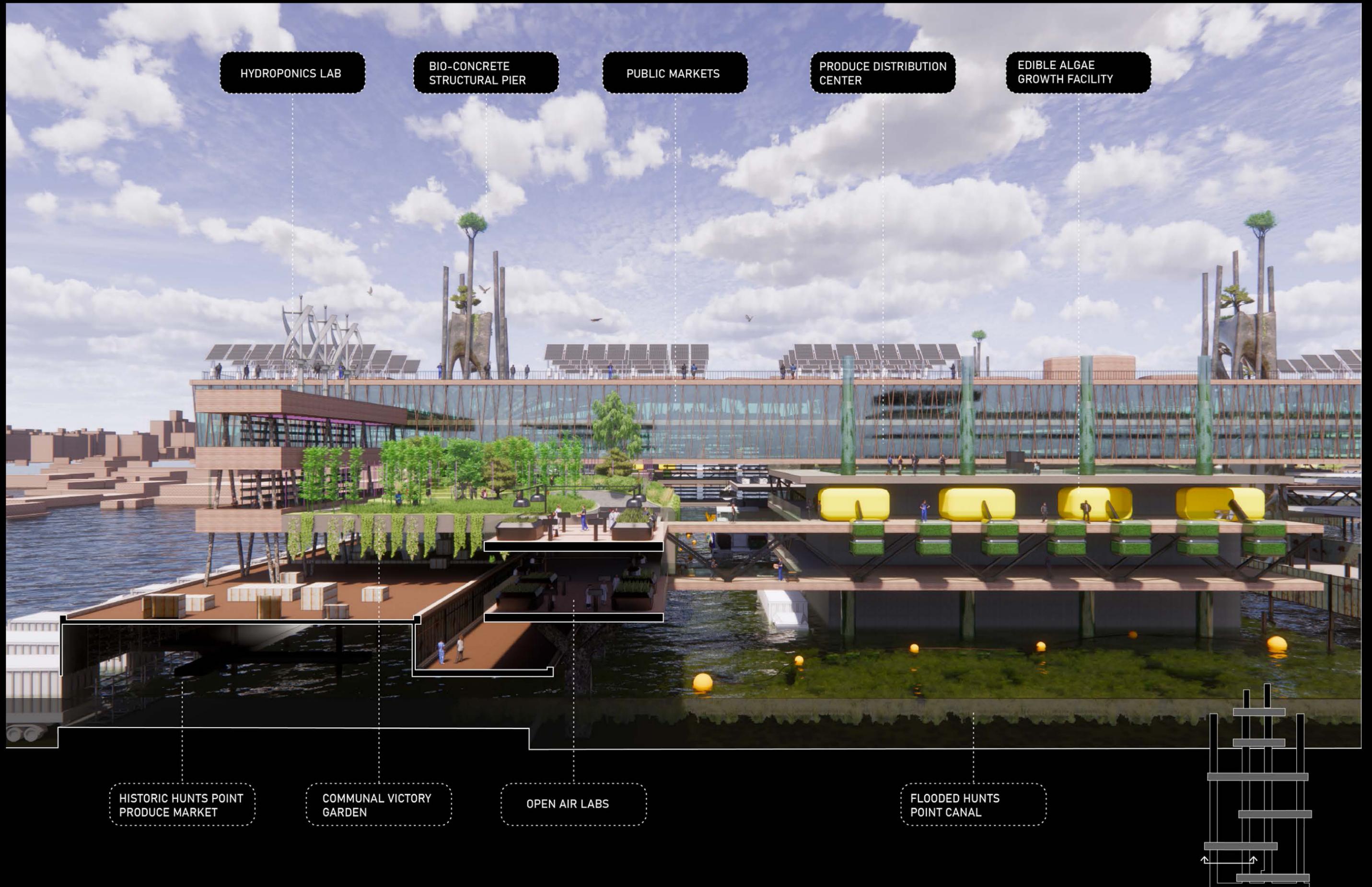
## Hunts Point 2080

*Food Supply Infrastructure in Hunts Point, Bronx*

Hunts Point 2080 is a story that explores uncertain climate risks for the future New York City. In the future, site-specific compound risks, like flooding and extreme heat, will reorient priorities of people, cities, and systems. In 2040, New York City takes drastic steps to secure the food supply chain which could survive in a city that is increasingly being violently flooded. The Hunts Point Produce Market, the current largest produce distribution center for the city, is the focal point of the story. The story follows activist characters in Brooklyn who set out on a quest to find vital food supplies in times of disasters, and who encounter the architectural and infrastructural impacts of a localized food supply chain. The project is envisioned through three phases: 2040, with the existing warehouses; 2060, with structural strengthening elevated bars; and 2080, with extra programs like hydroponic farm, algae pools, and housing grown off of the bars. The culmination of the story is a sense of vitality and survivability in times of disaster, in which architecture can be a triumphant tool for an uncertain future.

Spring 2022, Studio work with Ryan Hansen  
 Instructor: David Benjamin





HYDROPONICS LAB

BIO-CONCRETE STRUCTURAL PIER

PUBLIC MARKETS

PRODUCE DISTRIBUTION CENTER

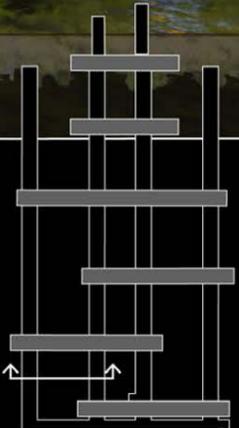
EDIBLE ALGAE GROWTH FACILITY

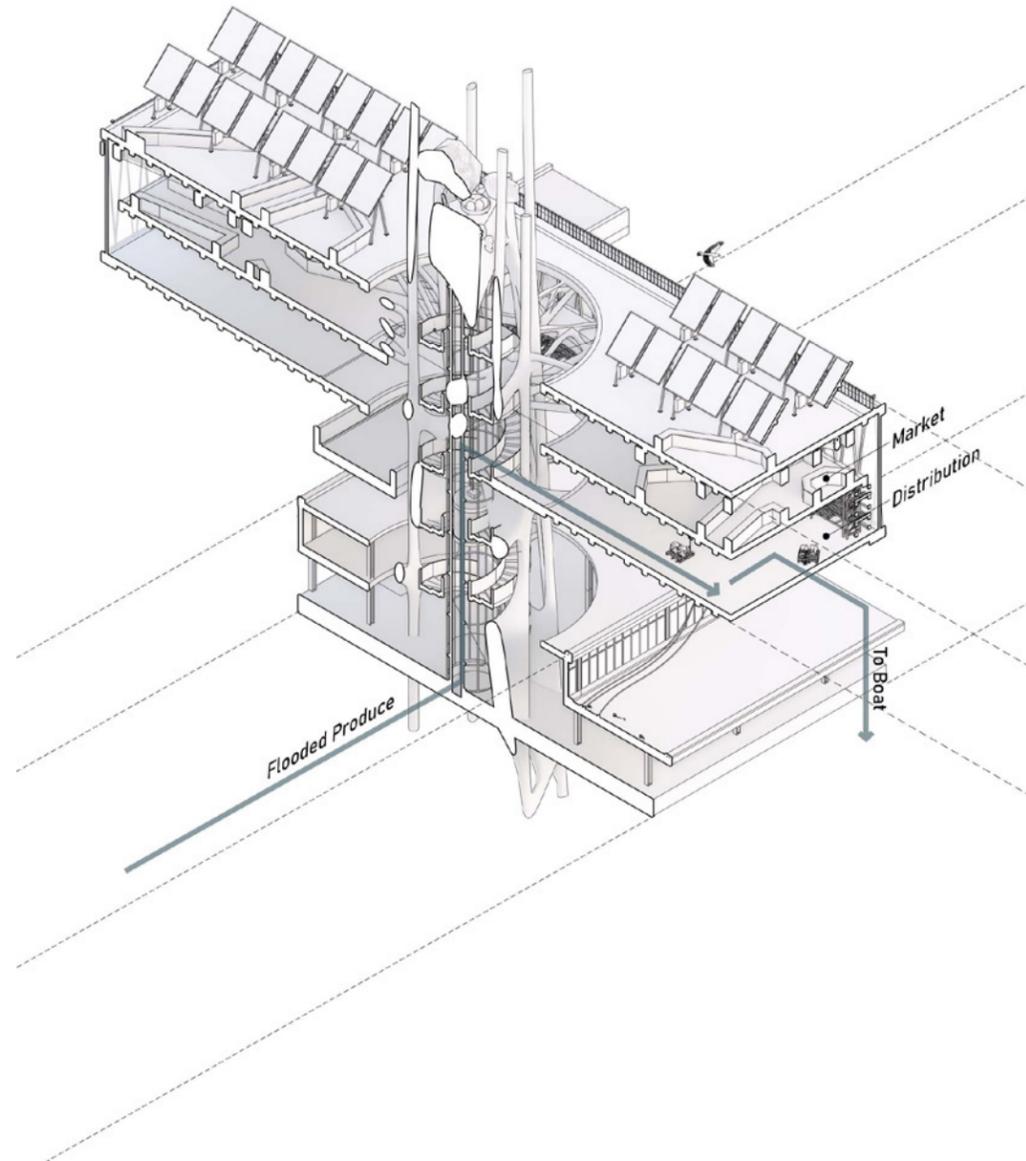
HISTORIC HUNTS POINT PRODUCE MARKET

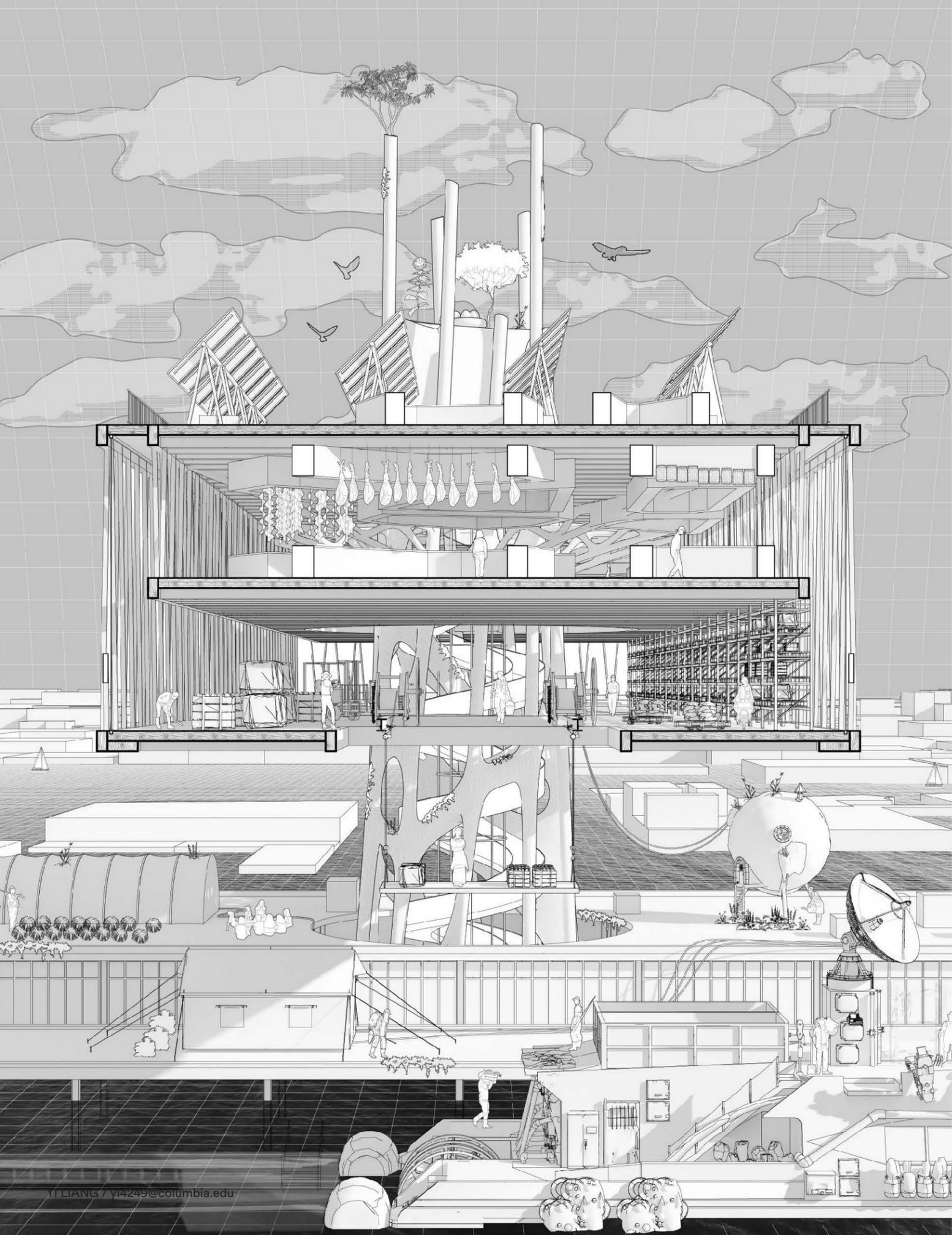
COMMUNAL VICTORY GARDEN

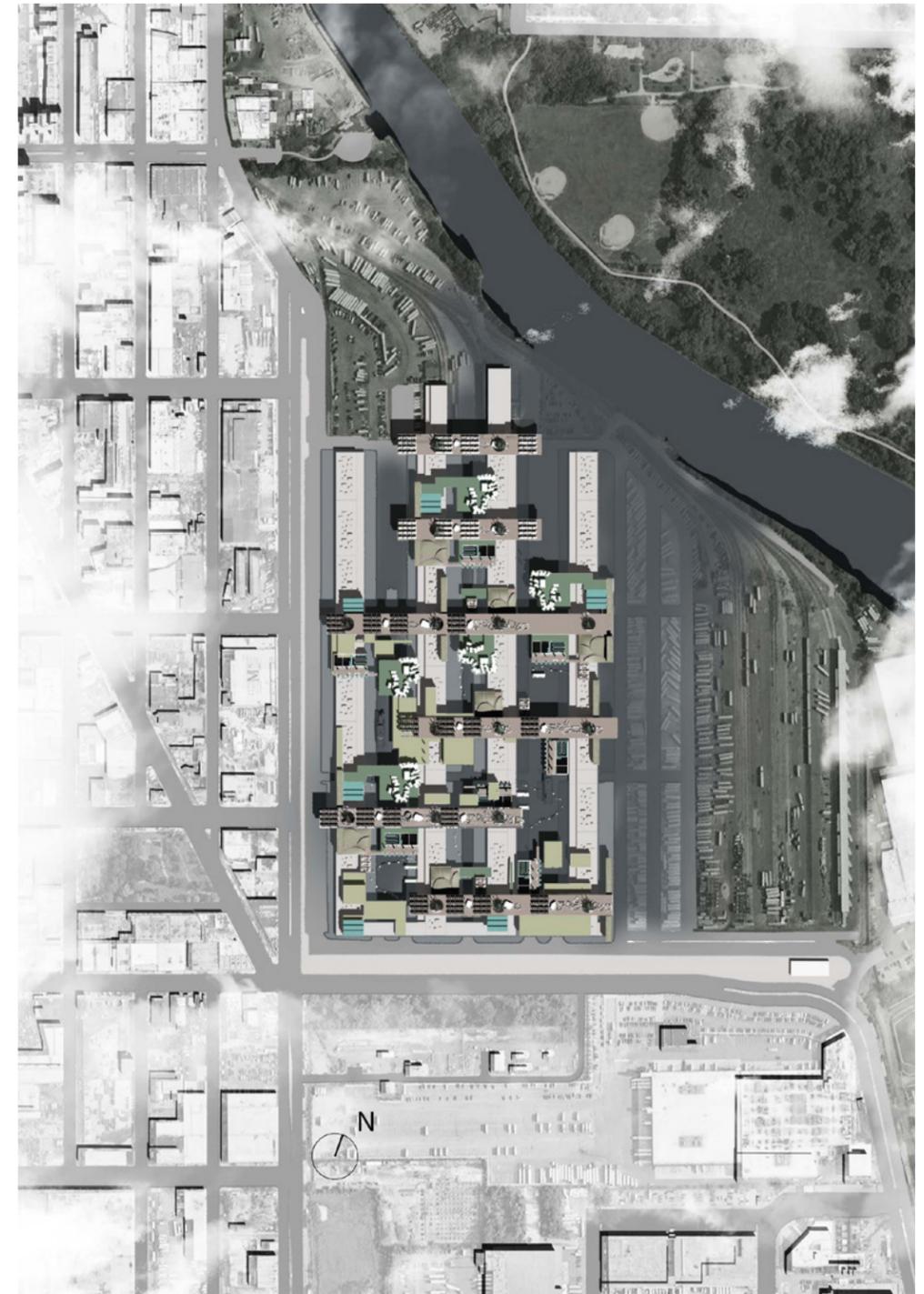
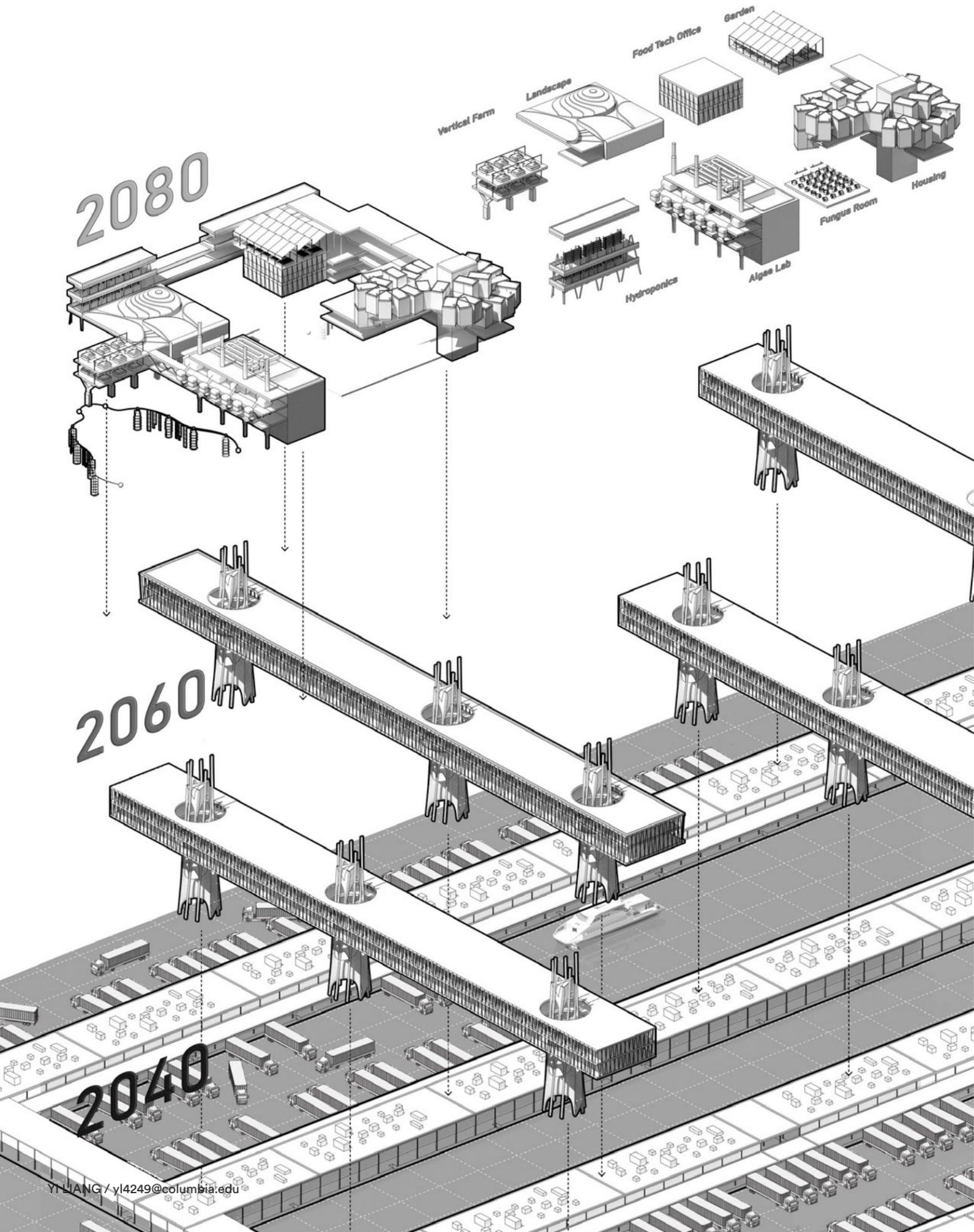
OPEN AIR LABS

FLOODED HUNTS POINT CANAL









## ONE COMMUNITY

*Housing Complex in Melrose, Bronx*

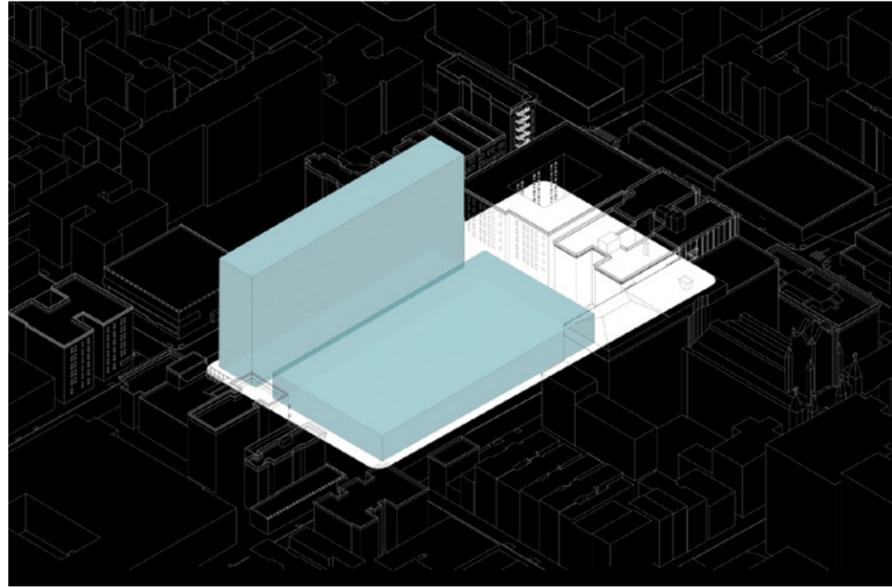
ONE community responds to the demographic diversity, proposing various living conditions while maintaining a cohesive community. Melrose, south Bronx, is very diverse in household composition, language speaking, and age - both senior housings and public schools populate a lot here. But the neighborhood lacks safe street life for kids and senior citizens. We tried to address the issue by varying living choices and outdoor space in different scales and levels, while maintaining community cohesiveness.

Our design approach started from two completely different living conditions - a tower and a plinth. But the differences are coordinated under the continuous surface from the tower's south facade to the plinth's roof. Under the consistency lies various unit choices, from town house to co-living cluster, from single studio to double height unite. Shared programs are subtracted from the mass to provide accessible outdoor space for all the units within its diameter. Despite the high density on site, a wide range of community life parallels domestic life.



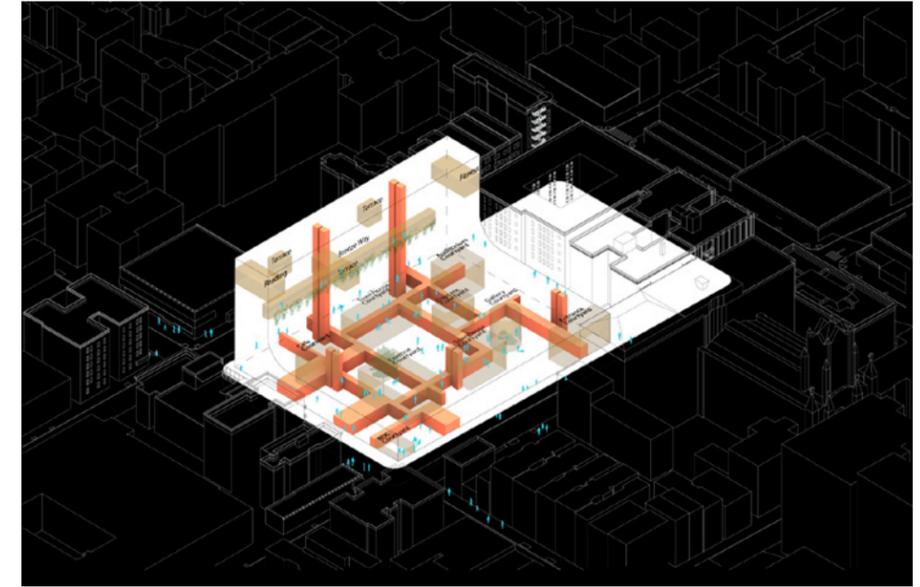
Fall 2020, Studio work with Peicong Zhang

Instructor: Eric Bunge



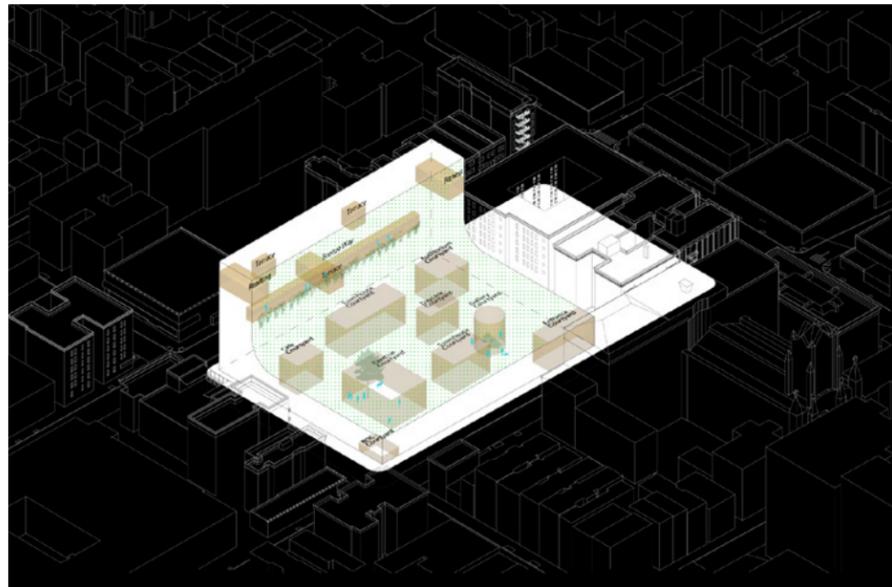
**Tower & Plinth**

We began with looking at two completely different housing typology which will provides various living experiences.



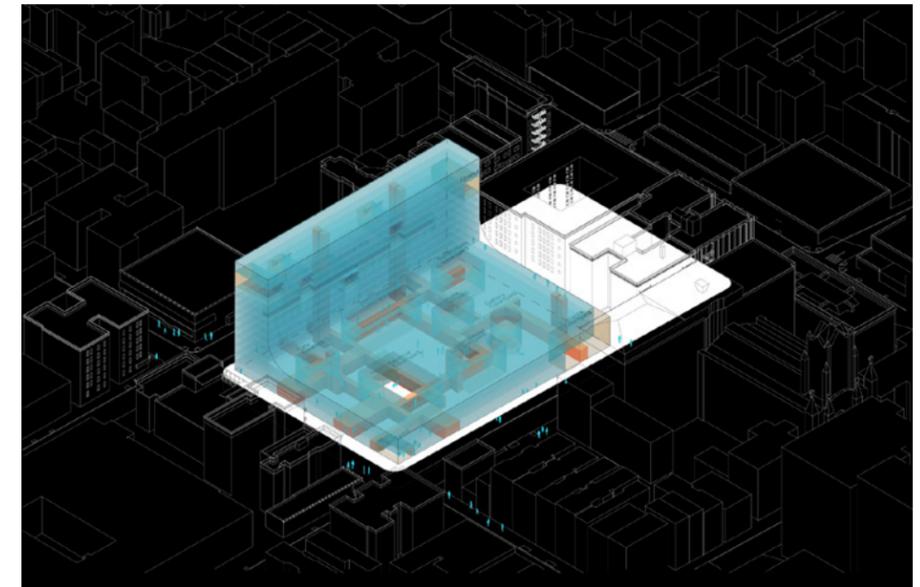
**Interrelated Routes**

An interweaving network of circulation connects between public programs, ground level, and roof terraces.



**Shared Programs**

After coordinating the two masses under a continuous surface from southern facade to roof, we subtracted space for public programs based on their average service radius.

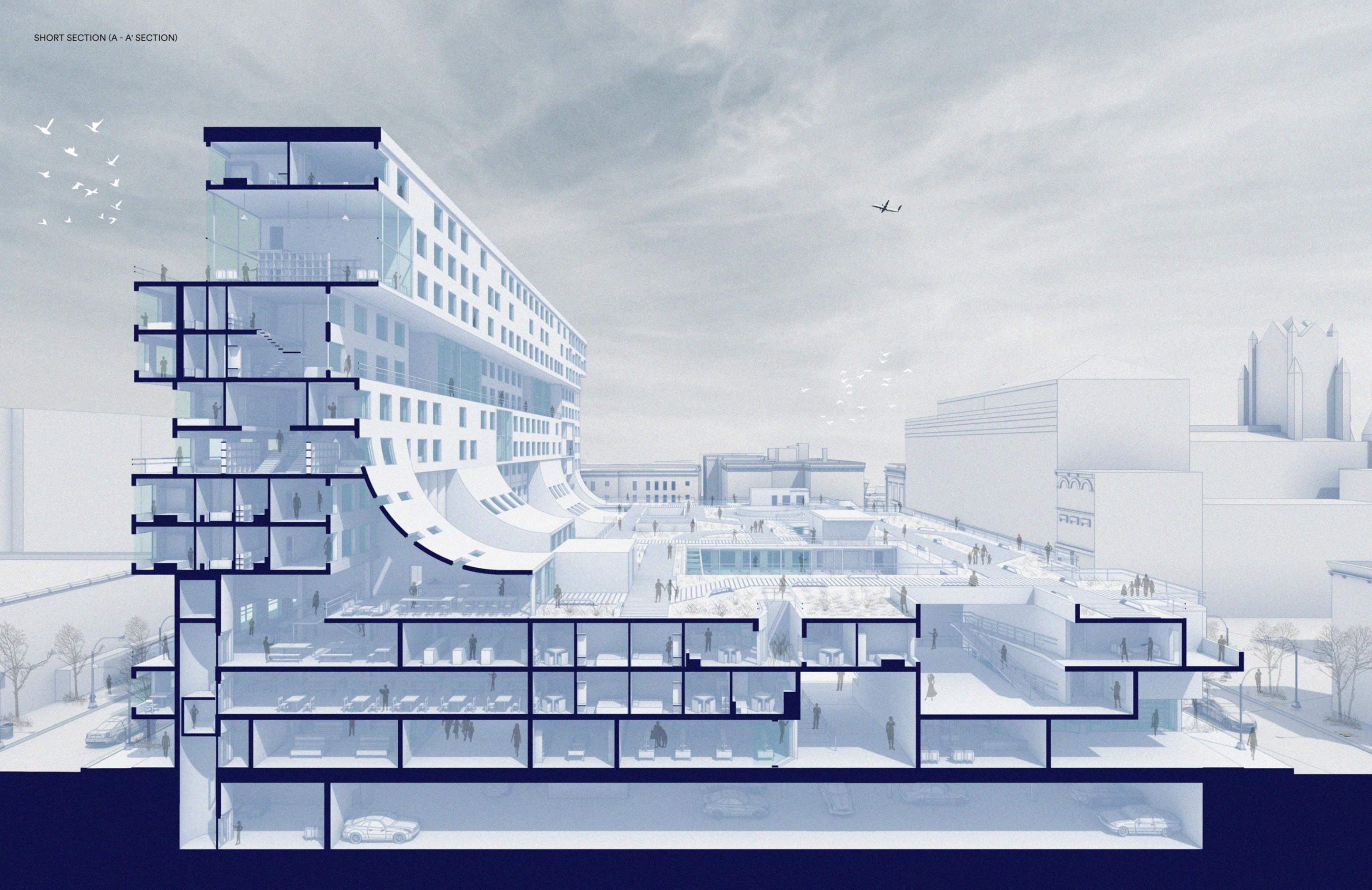


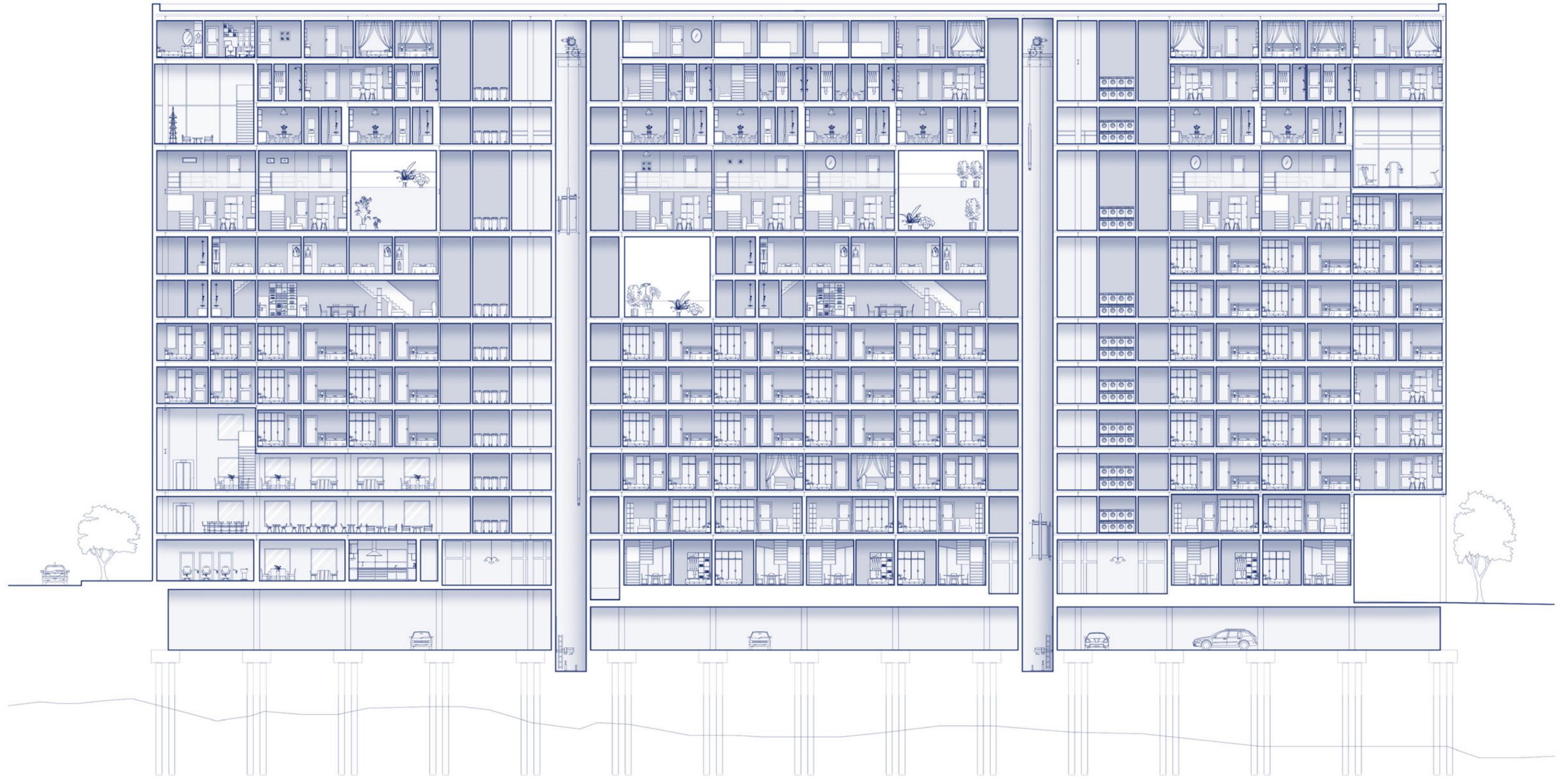
**Housing Massing**

A more articulated massing was developed based on the previous systems.

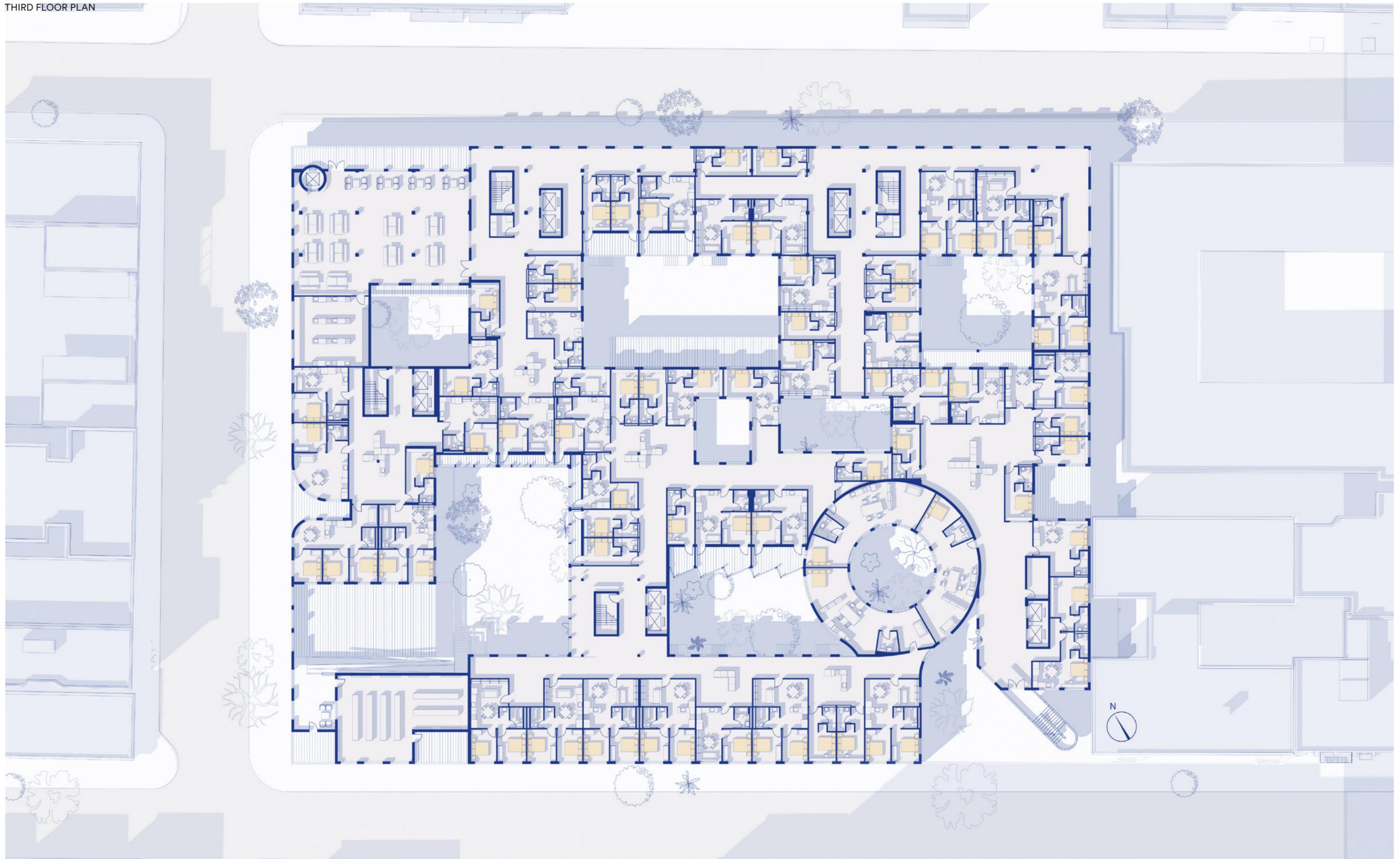
×Screenshots from the original animation

SHORT SECTION (A - A' SECTION)

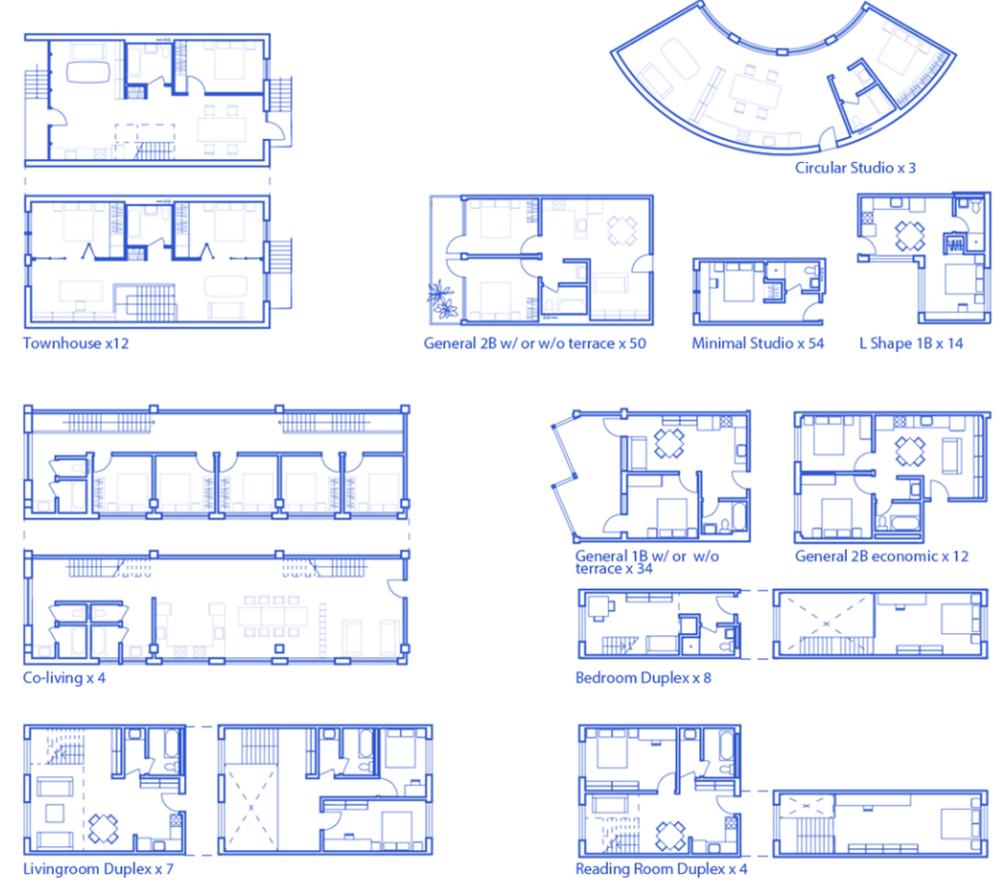
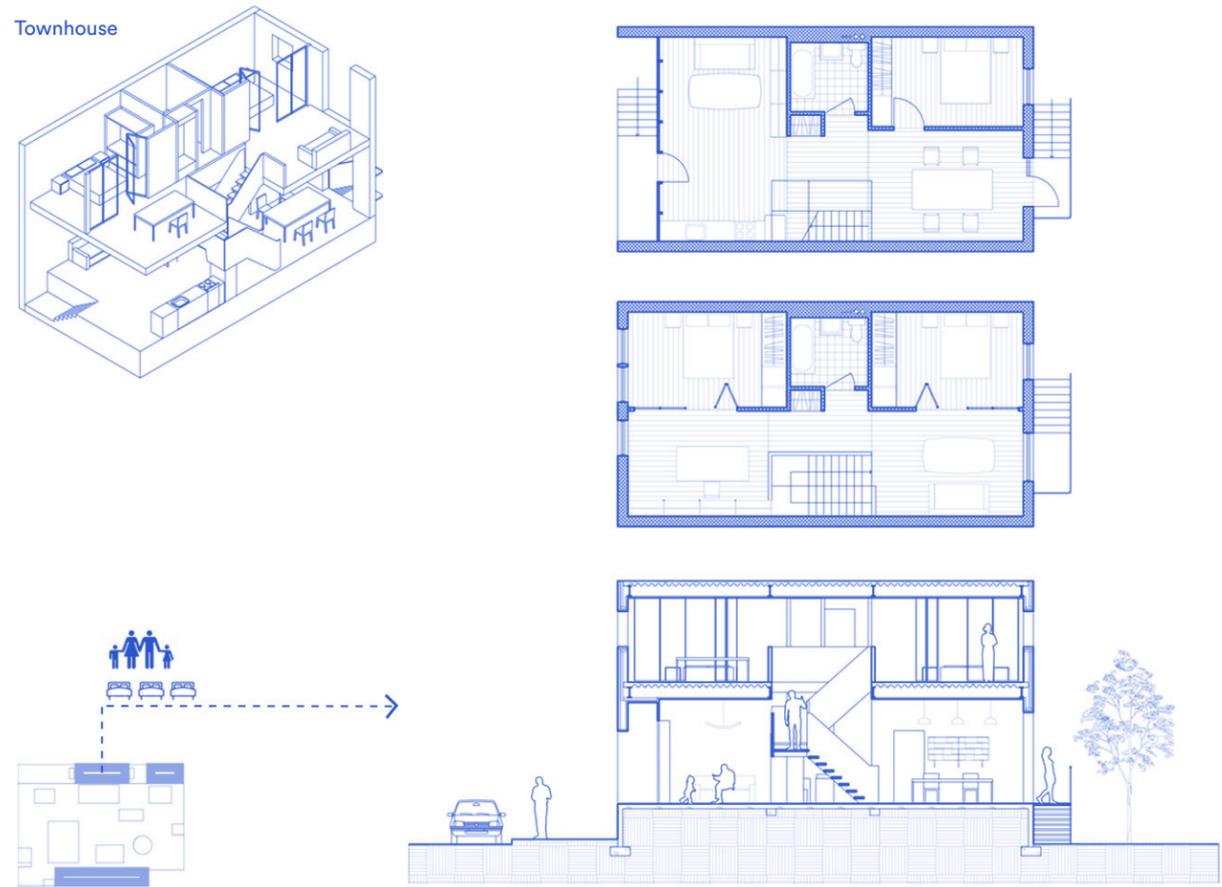
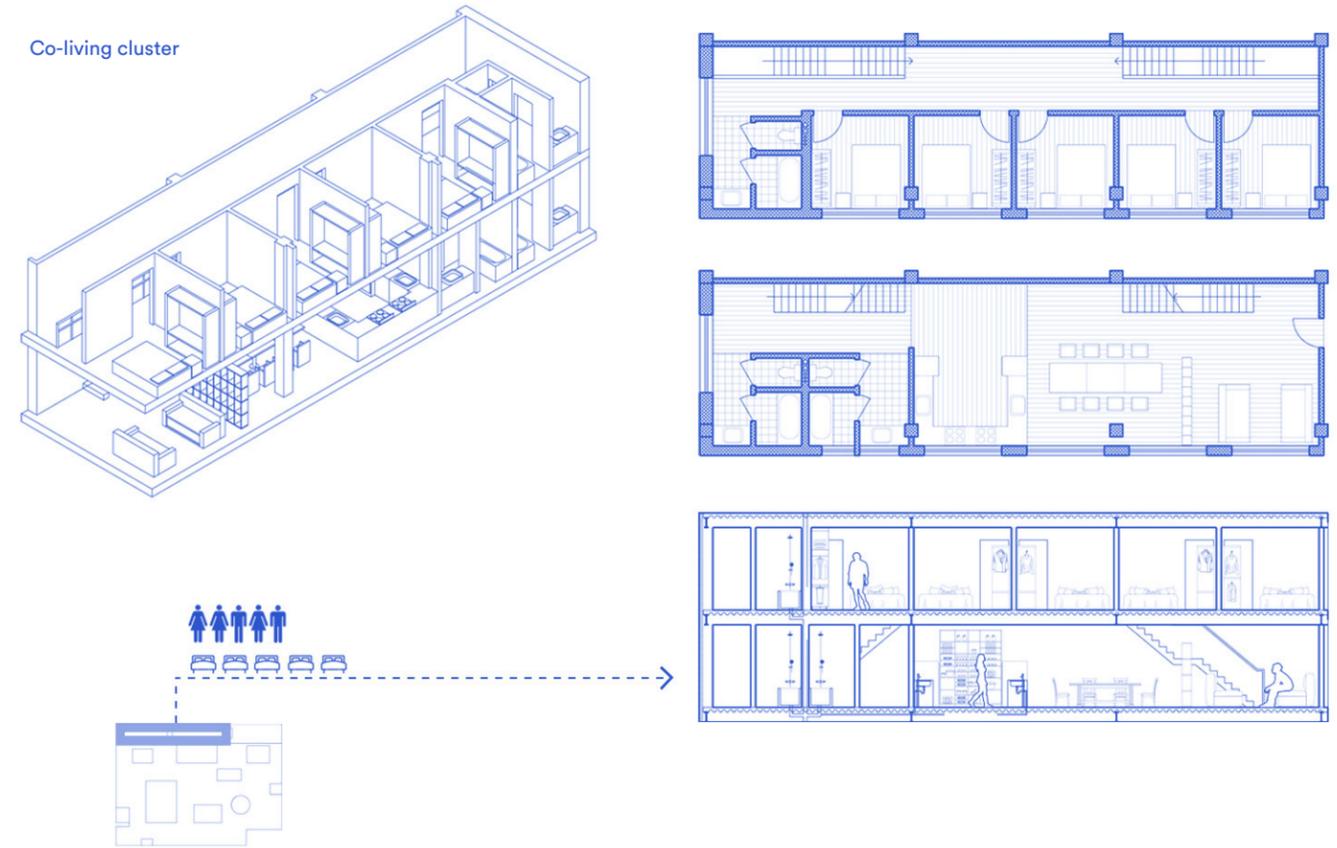








Zooming in into the unit scale, we provide general unit ranging from studio to units holding up to 6 households family, from a single bed in a co-living cluster to townhouses that has individual street access and courtyards.



BEDS IN TOTAL: 301



West Elevation



View from Courtyard in the Plinth



## REBUILDING WATER AUTONOMY

*Transforming micro-watershed in Islamberg, New York*

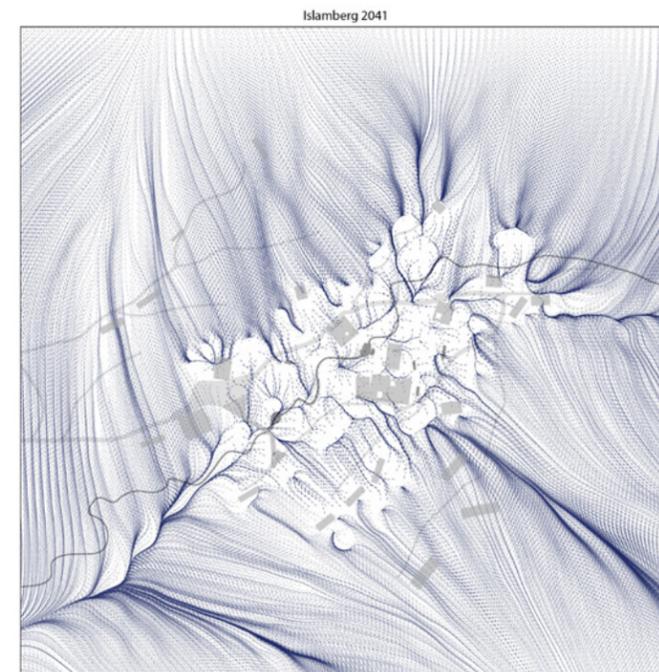
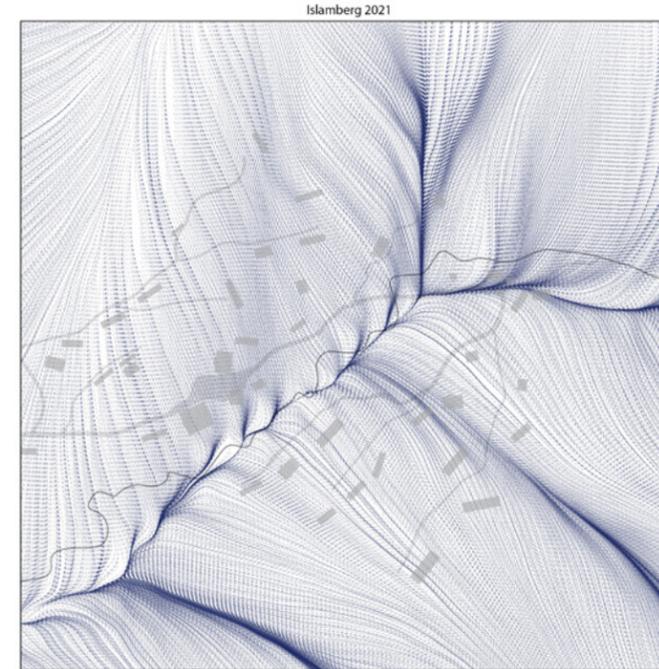
This project looks at transforming the micro-watershed in Islamberg, a rural muslim settlement, through incremental deconstruction and rebuilding of local housing. Around the town, the current use of water is contested, and new york city claims much of the available water, and plans to buy much more land to keep its holds secure. Inside the town, water threats are more acute: poor infrastructure leads to flooded roads, impassable valleys, and long, isolating winters.

The story is two-fold: building and ground inherited different logics from material reuse and watershed analysis. On the building side, existing mobile homes reach the end of their life and salvageable materials are stored at and circulated through "material bank". On the ground side, the proposed diamond shape ground collects rain water and structures a new gradient of water use from clean to grey.

We are envisioning for Islamberg an incremental watershed transformation through a time span of 20 years or more. We want to propose a cohesive town ethos and architecture around the mosque and the creek through its rebuilding over time. By overlaying a new living water infrastructure over the existing religious structure in place, we enable the town to reinforce people's mystic relationship with the natural world.

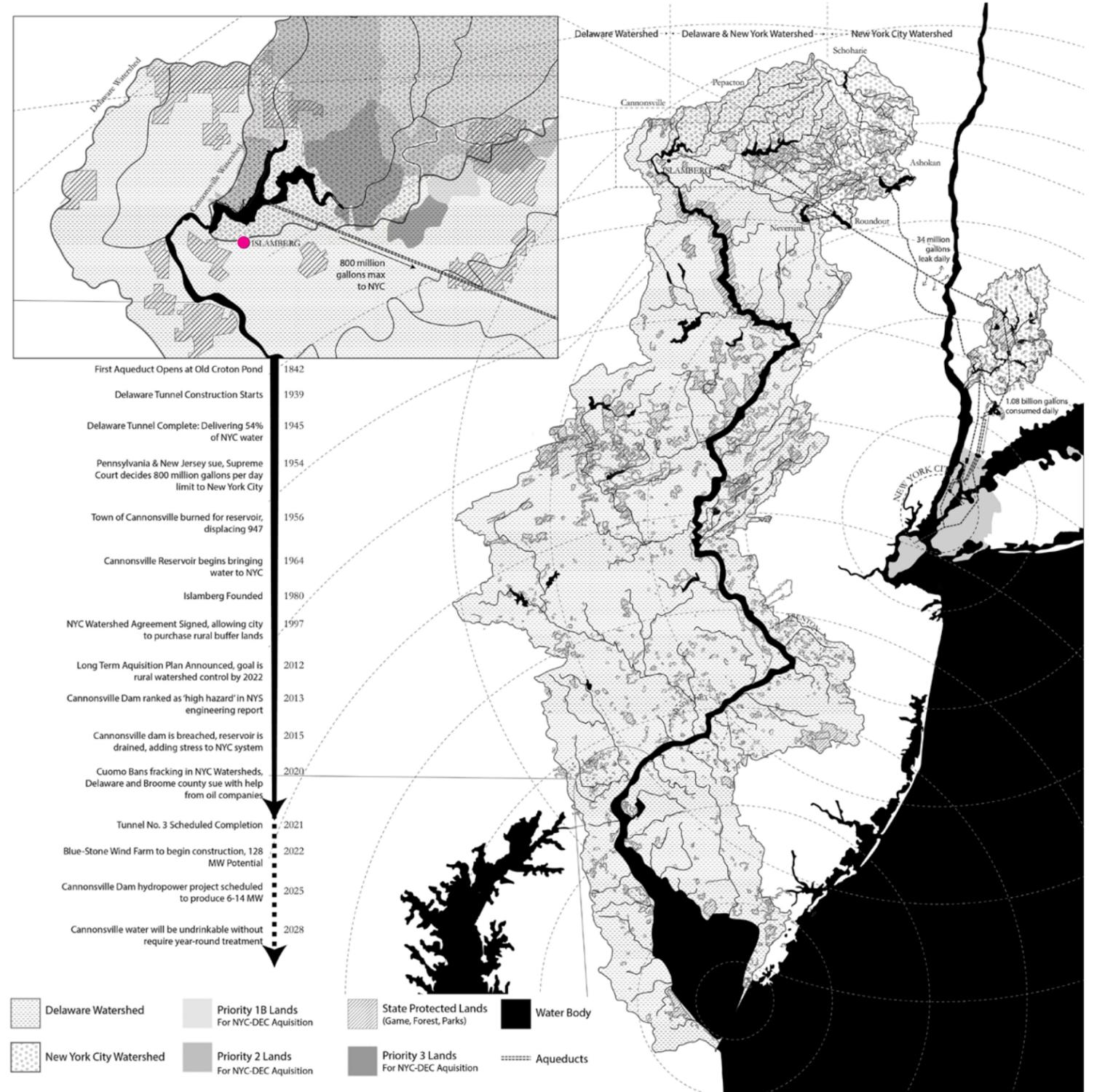
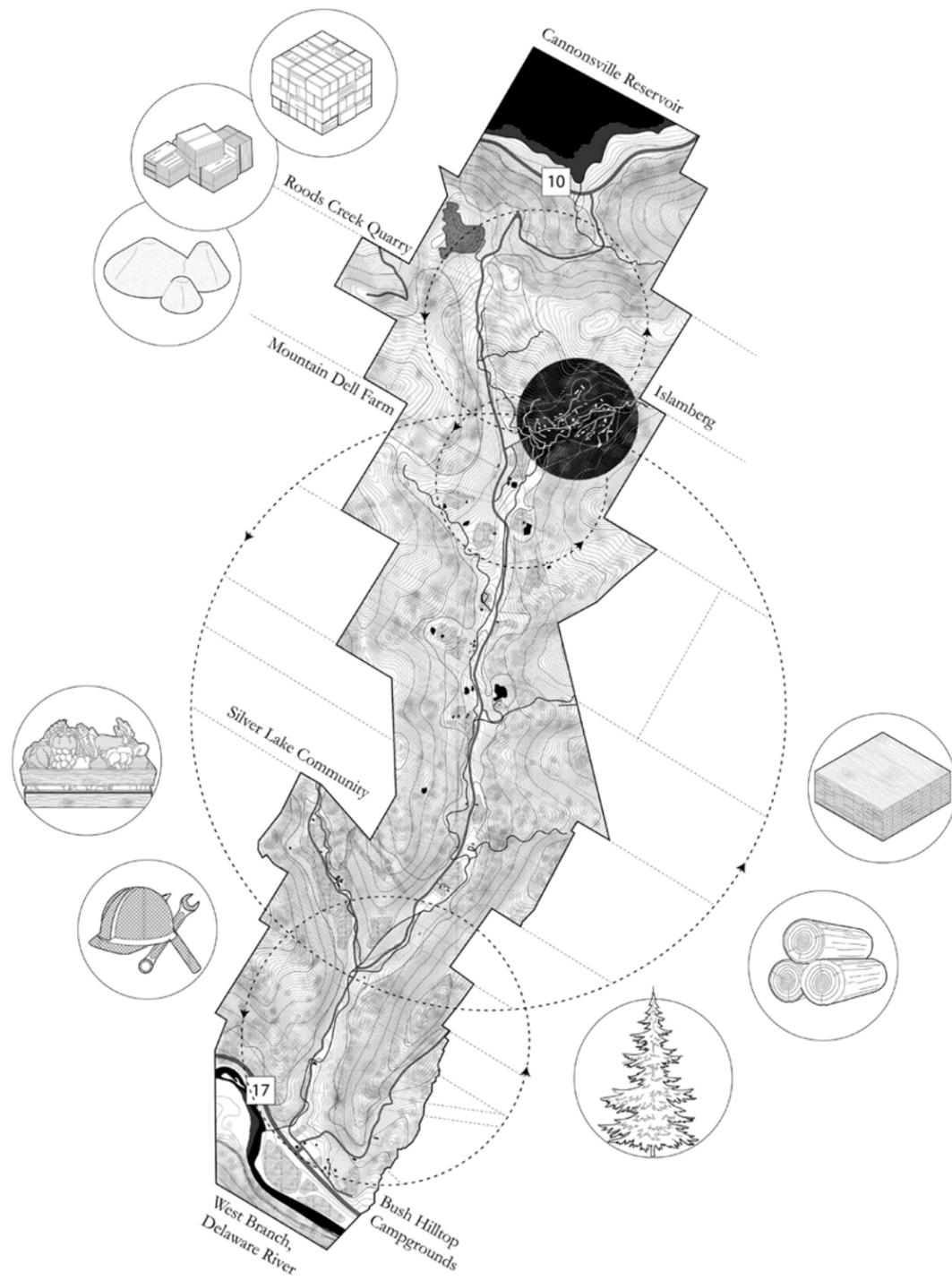
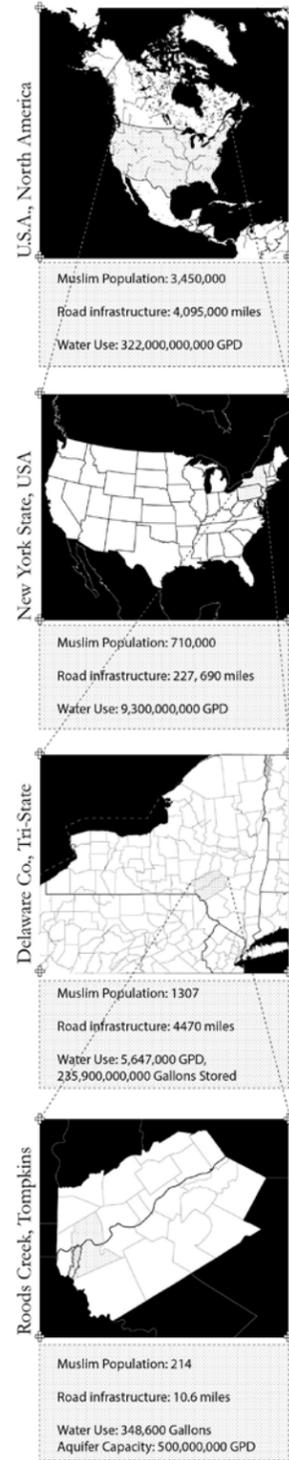
Spring 2021, Studio work with Andrew Magnus

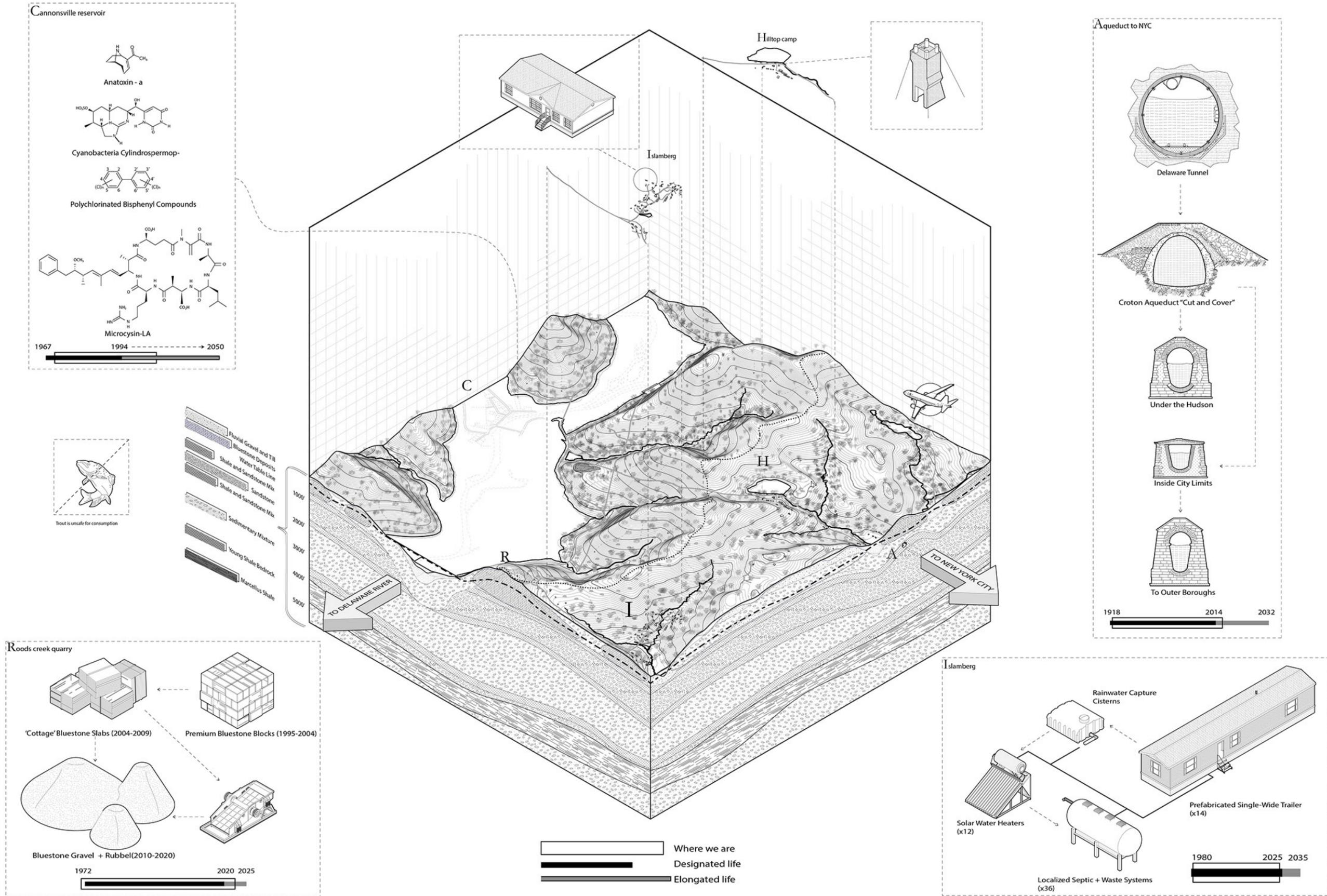
Instructor: Ziad Jamaledine

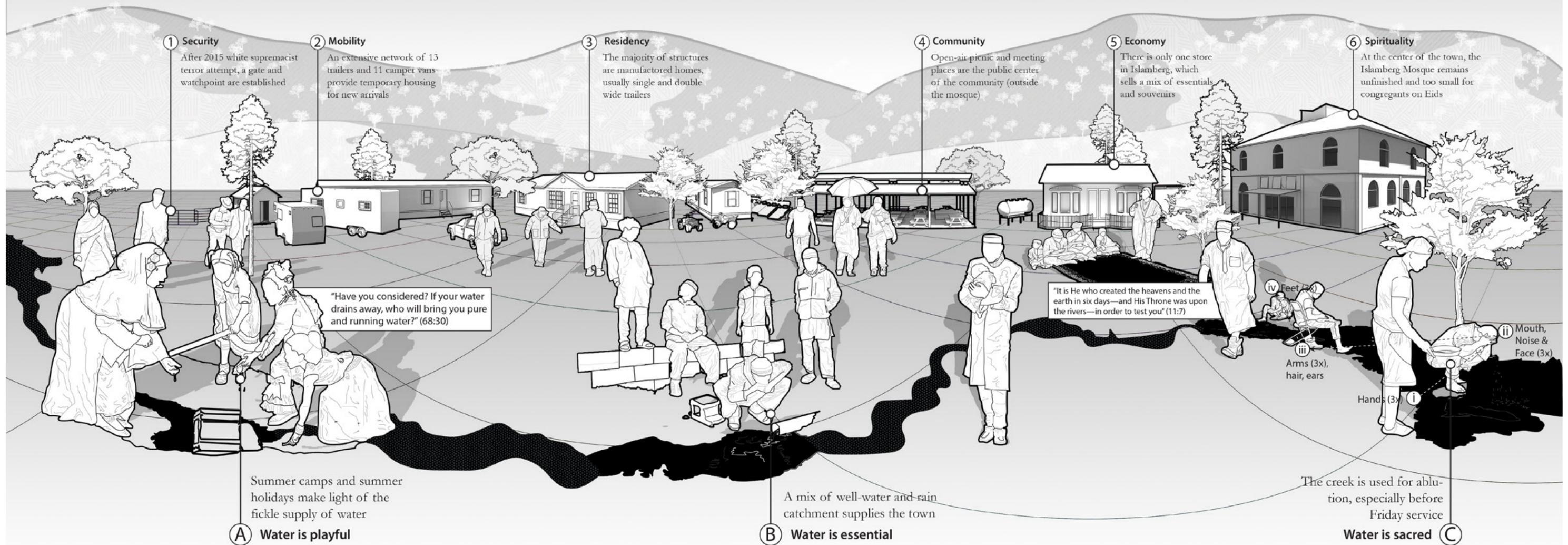


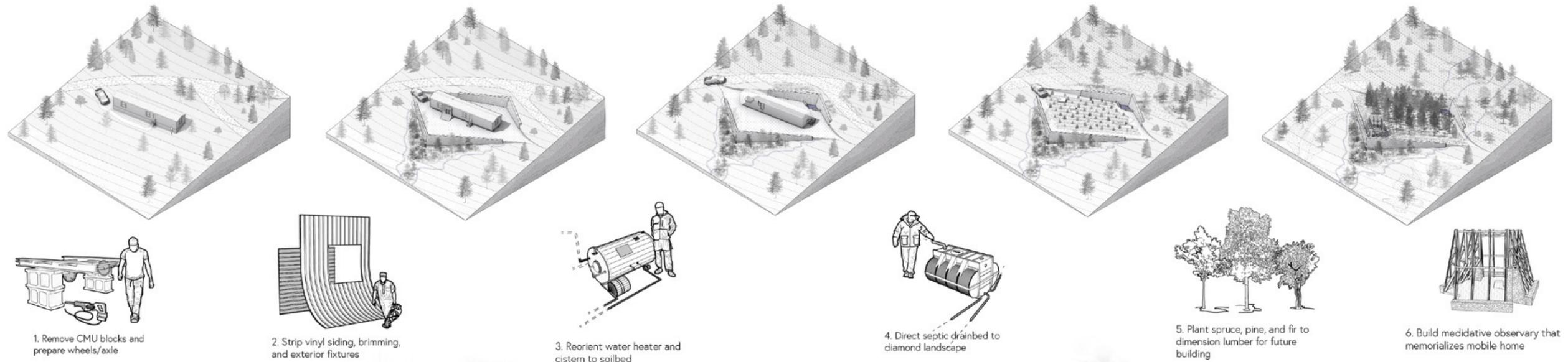
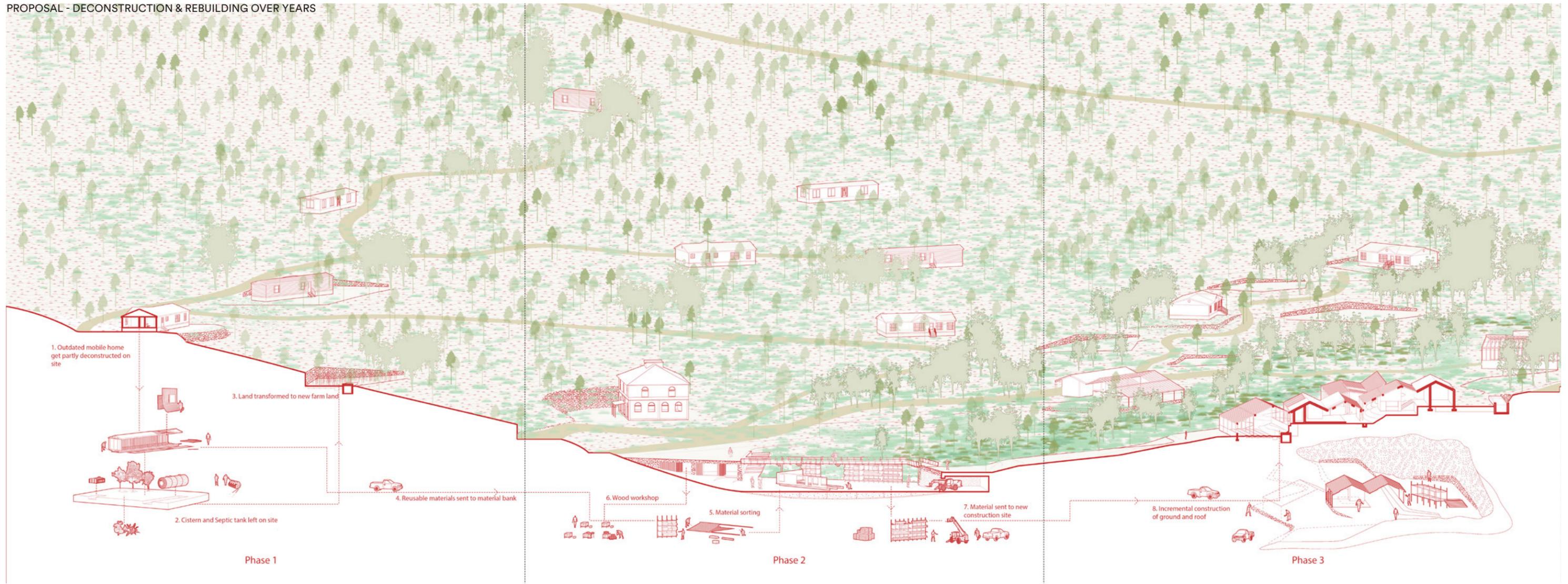
ANALYSIS - INFRASTRUCTURE

Muslim-americans get less investment in water and infrastructure than average americans at any scale, though this is especially true in rural america. We also wanted to explore the material composition of the neighborhood around islamberg in order to create a local material economy and build a stronger relationship to neighbors.

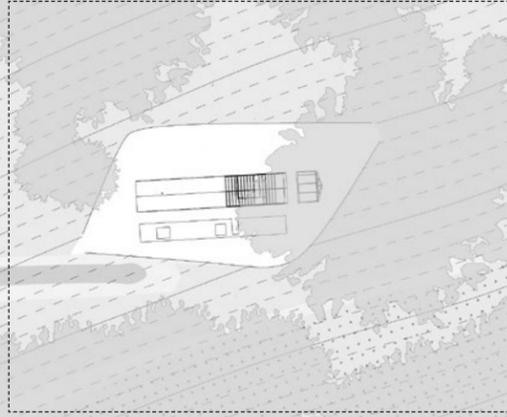




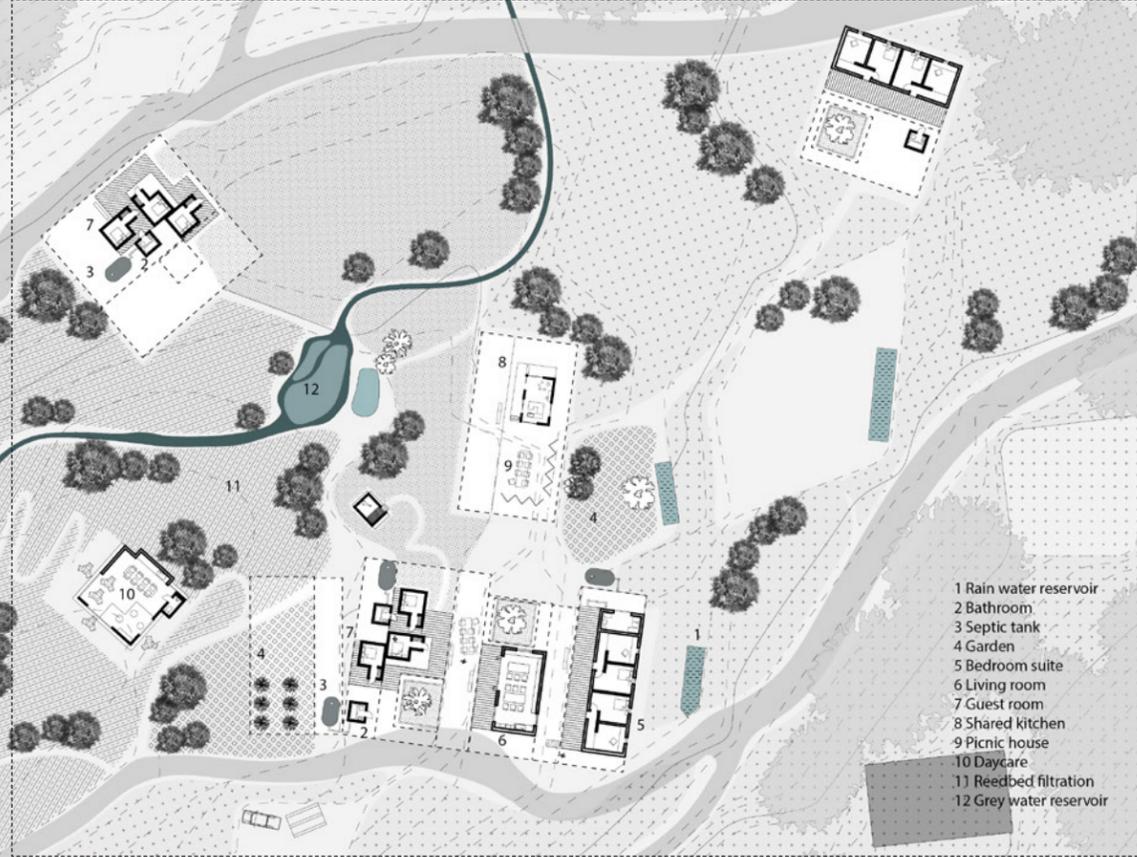




Phase 1 Deconstruction

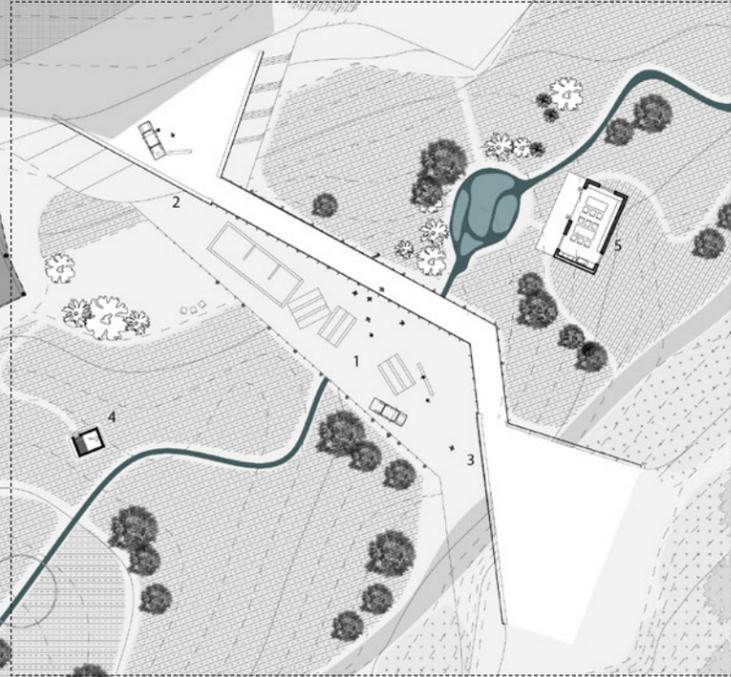


Phase 3 New Housing



- 1 Rain water reservoir
- 2 Bathroom
- 3 Septic tank
- 4 Garden
- 5 Bedroom suite
- 6 Living room
- 7 Guest room
- 8 Shared kitchen
- 9 Picnic house
- 10 Daycare
- 11 Reedbed filtration
- 12 Grey water reservoir

Phase 2 Material Bank



- 1 Deconstruction plaza
- 2 Wood workshop
- 3 Storage
- 4 Meditation House
- 5 Camp House

## Common Air Zone

*Civic Programs Tackling Air Pollution, New Delhi*

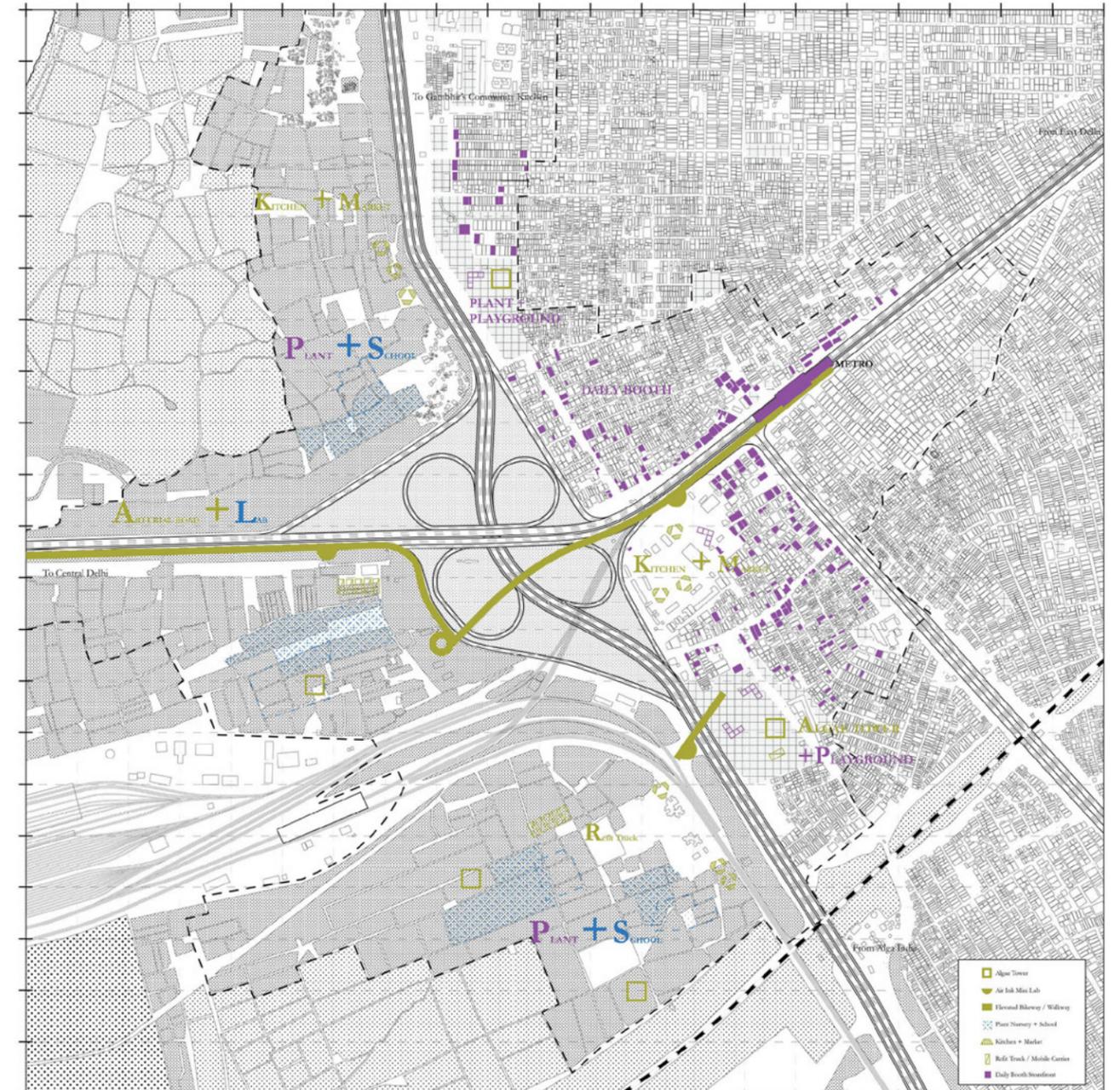
Common Air Zone is a proposal on the contrary to Lutyens Bungalow Zone (LBZ) in New Delhi. It is an urban scale intervention for inequality to the exposure of polluted air.

In New Delhi, one third of the year, outdoor air is rated as very unhealthy or even hazardous. The inequality dates back to colonial legacy from British India. In the early 1800s, the British military set up hill stations on mountains to separate themselves from the ground "miasma". Under the polluted air, kids in good economic condition live in an enclosed environment that's protected by the best air purifiers, from home to car to school. Meanwhile, poor kids have to endure the bad open air all the time. The open air school, which was used as a pedagogical tool in western context, now becomes detrimental.

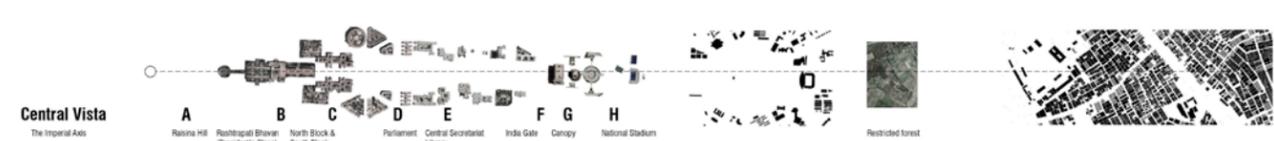
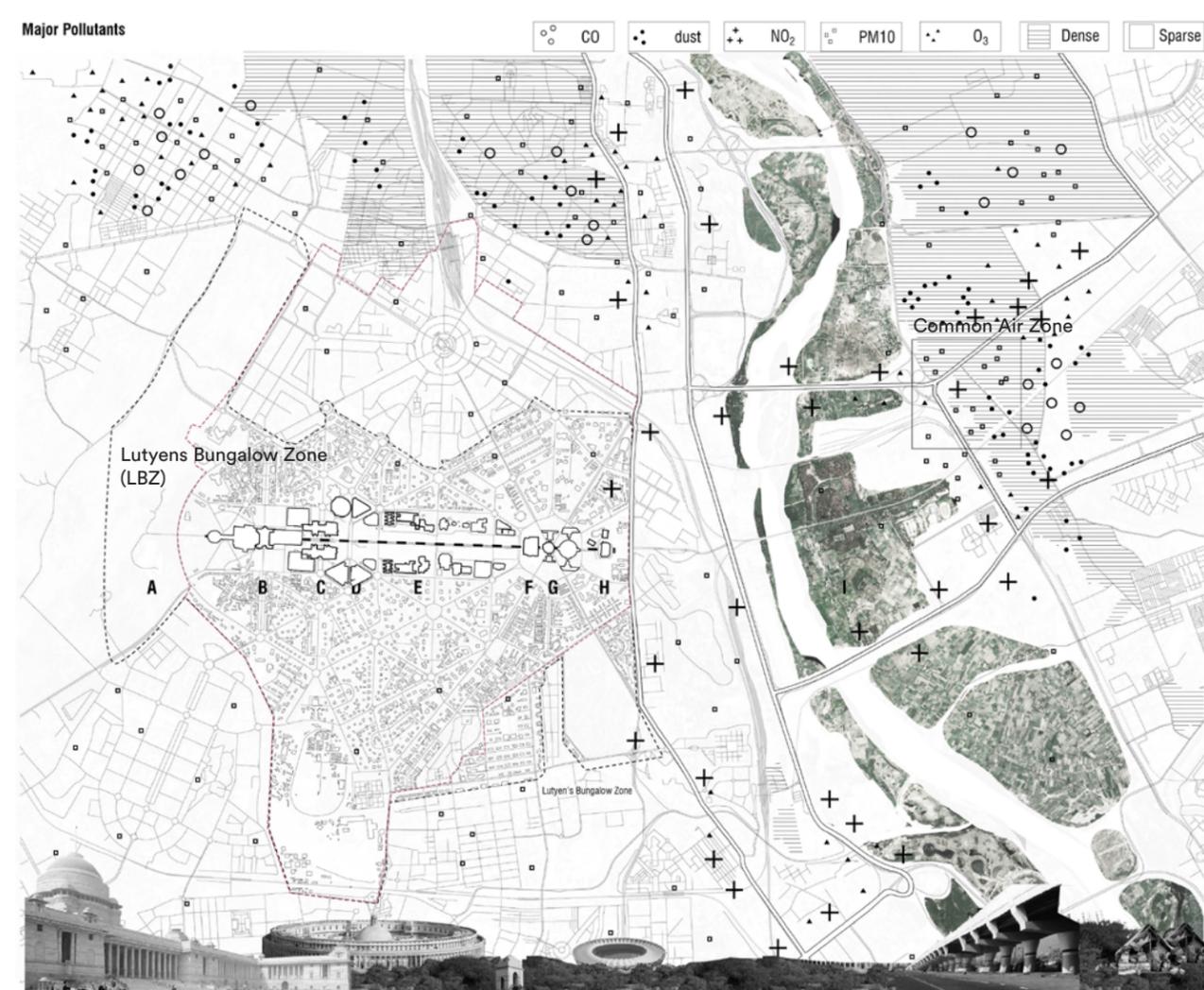
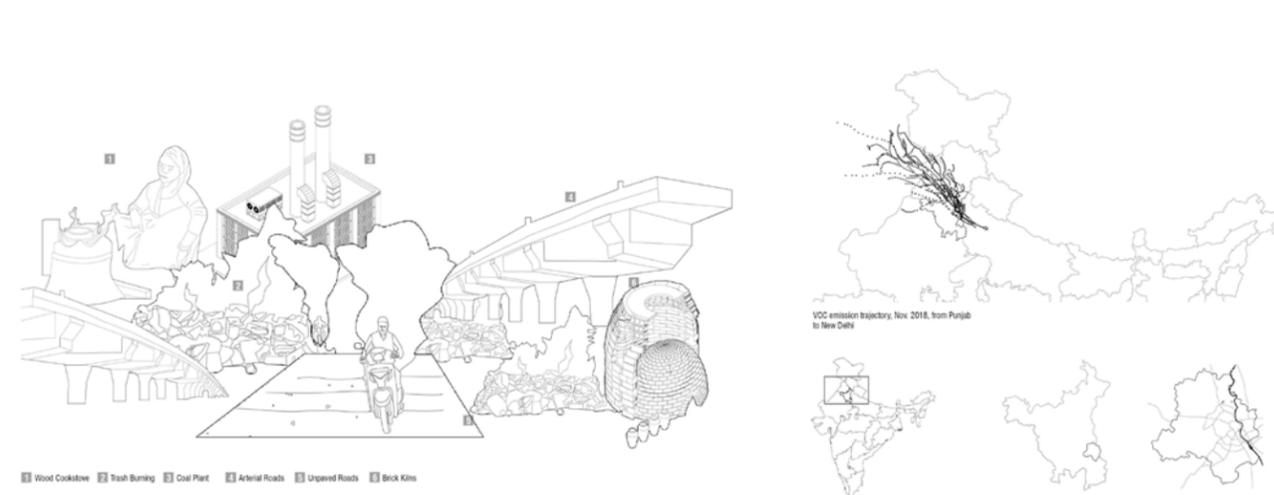
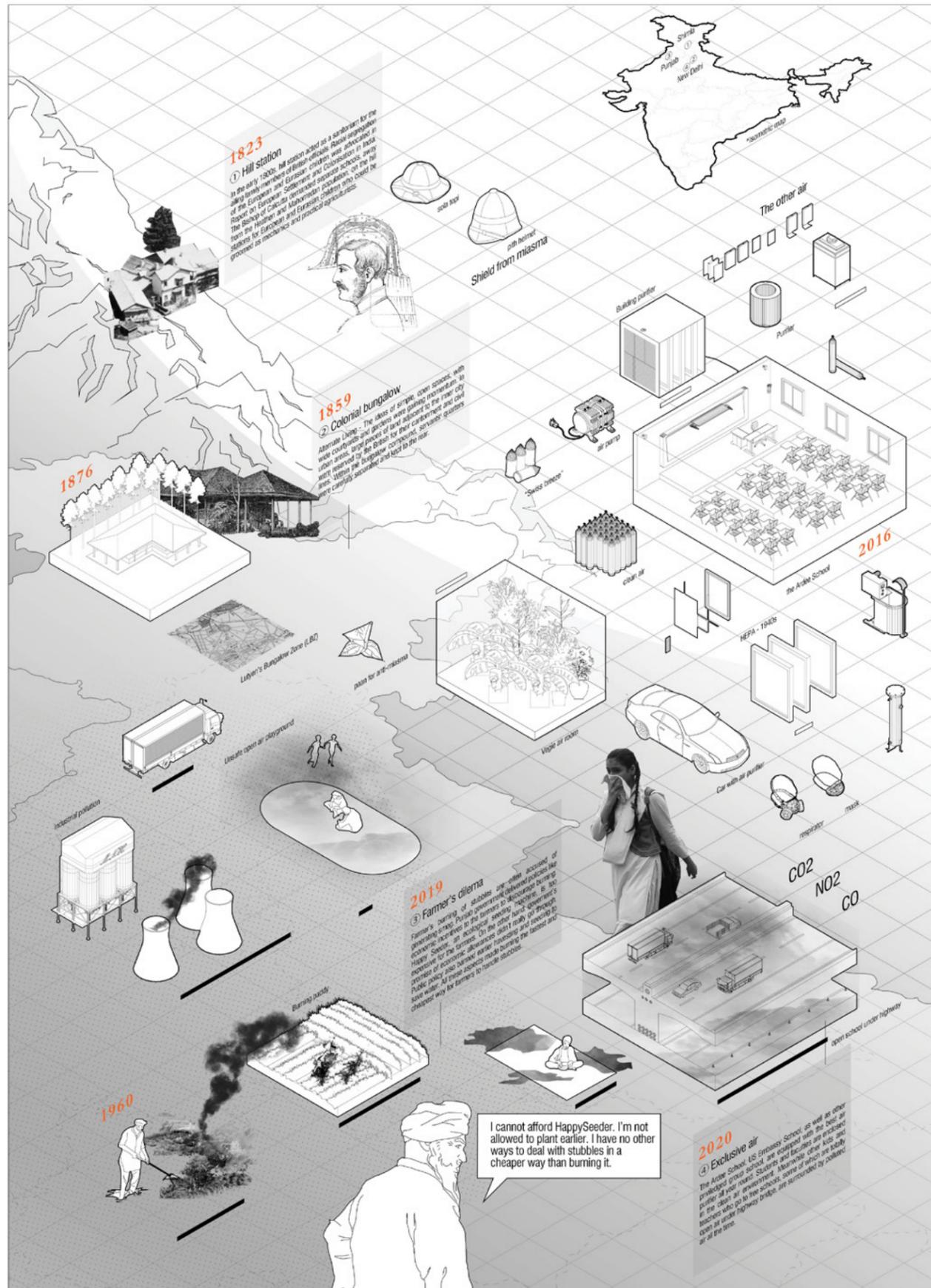
The proposal contains intertwining programs across recreation, health, education, and circulation. The interventions serve as civic programs and infrastructure tackling air pollution at the same time.

Fall 2021, Studio work with Eric Chyou

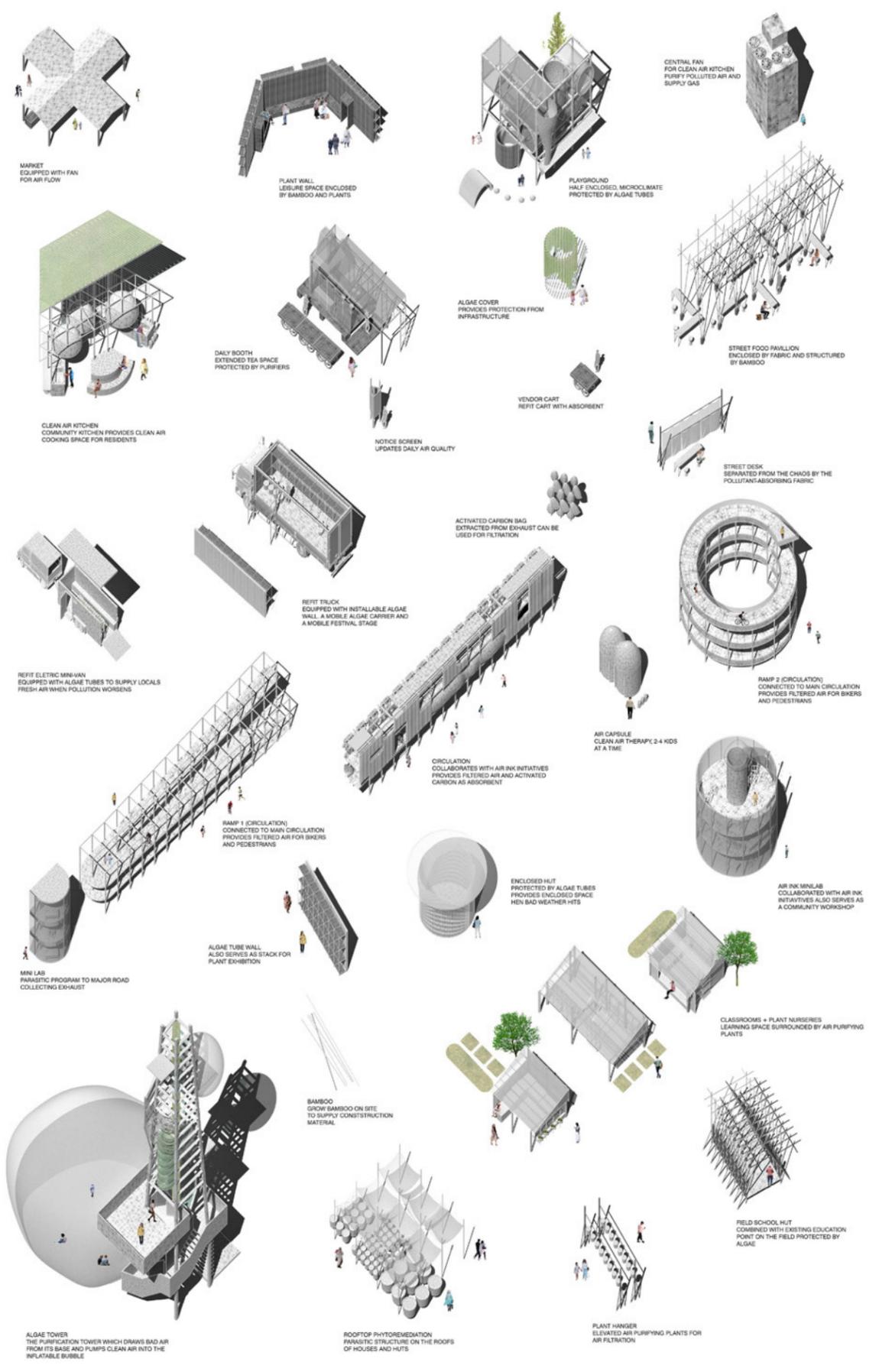
Instructor: Nahyun Hwang



DELHI'S COMMON AIR ZONE







## KNOT OF TUBES

*School Renovation in East Village, New York*

In this project, architecture becomes part of the pedagogical experience and contributes to a collective cultural memory. Built beside the legacy of C. B. J. Synder, a hovering box is supported by gigantic infrastructure from its center, which touches the surface blurrily, indicating the other world space in this marble and stone neighbourhood.

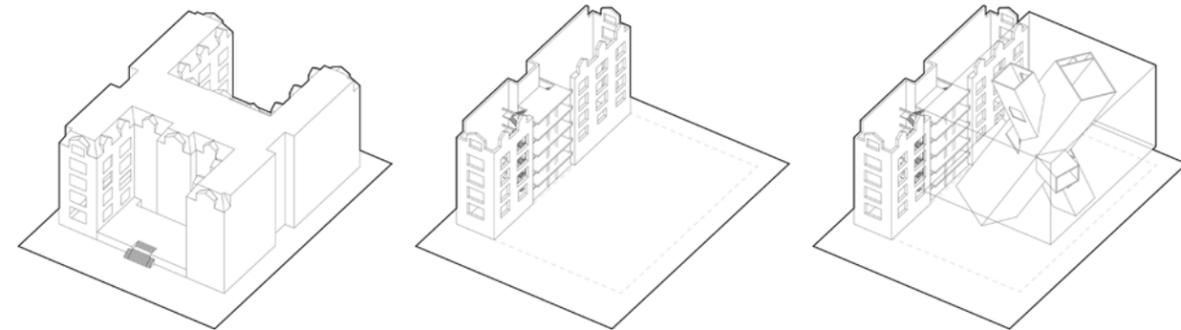
The central tubes host circulation and programs inside. Starting from three ends of the site, they meet each other in the middle and form a larger communal space at the heart of the school. Collective programs like library, cafeteria and gallery inhabit in or orbit around the gigantic tubes, offering encouraging access from all floors. Ground floor is open to the general public, providing a shortcut from east 9th street to east 10th street. Programs are arranged around the tubes based on whether they are collective spaces. So artistic, social and sport programs have direct touching with the tubes while administration and services are at the further end.

Spring 2020, Individual studio work

Instructor: José Aragüez



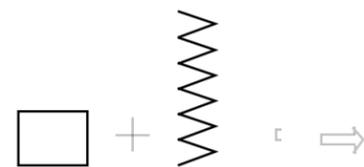
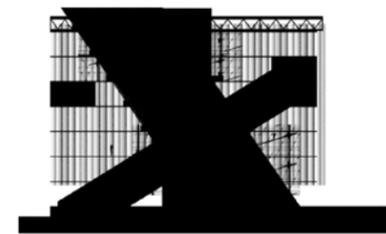
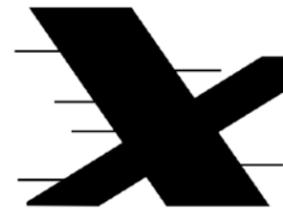
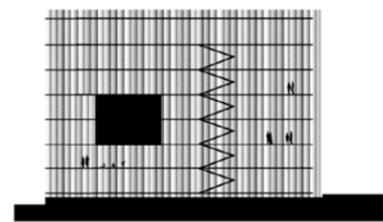
DIAGRAM - CONCEPT



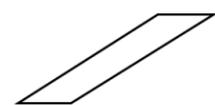
Existing building

Keeping the envelope

New building



Program + Circulation

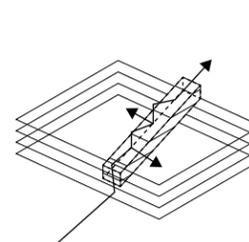
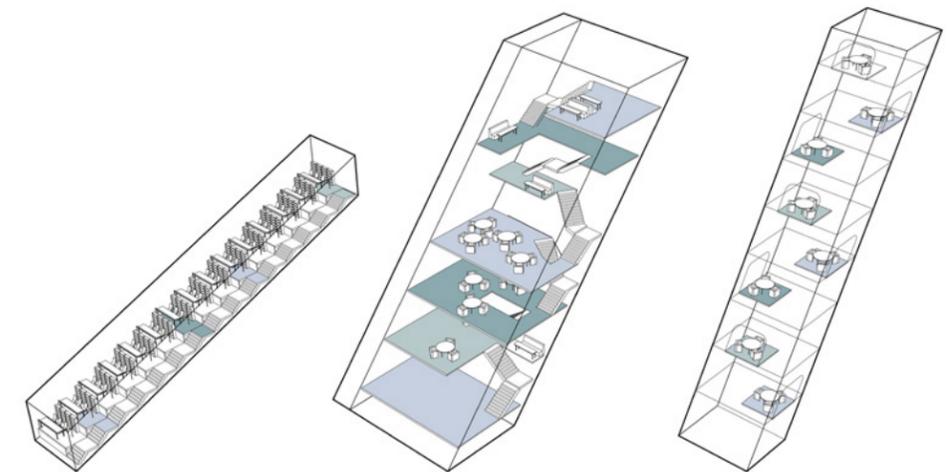
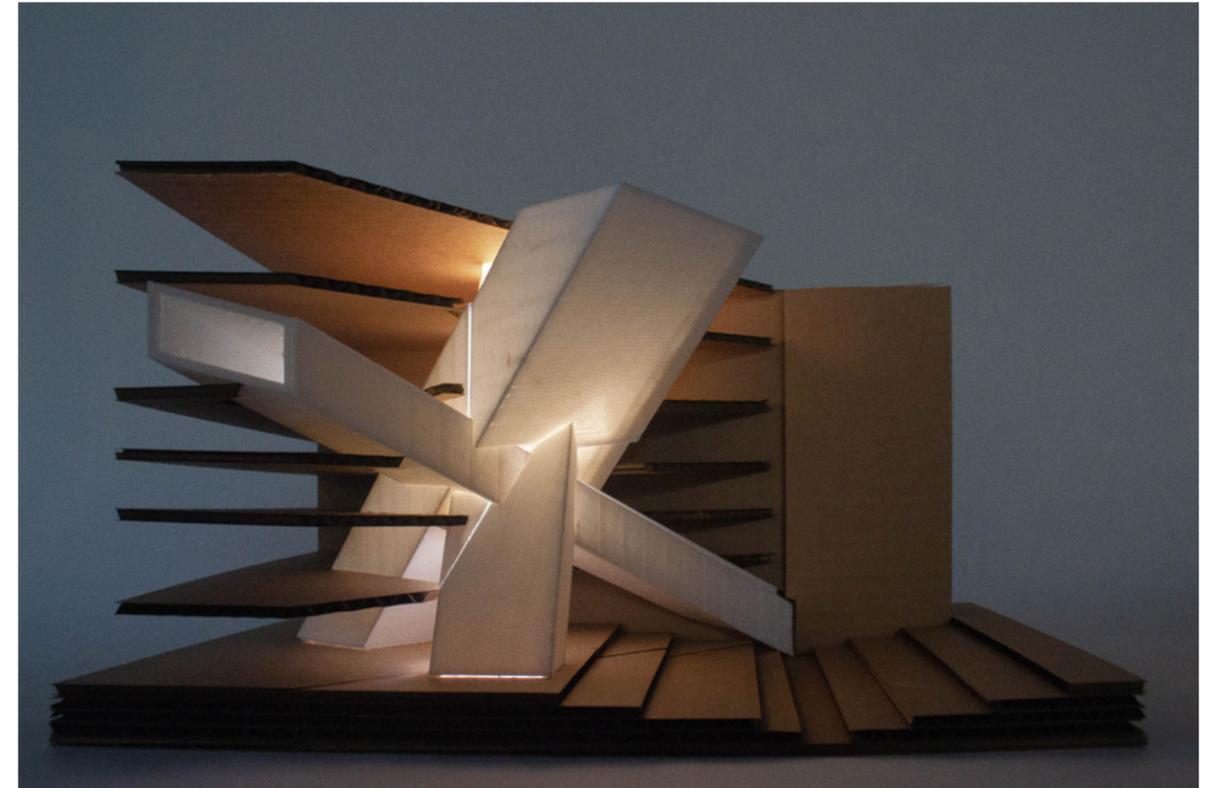


Tilted core

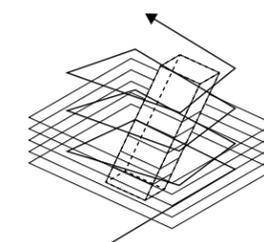


Offering encouraging access for all floors

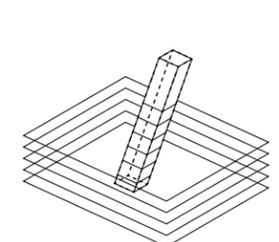
DIAGRAM - PROGRAM COMBINED WITH CIRCULATION



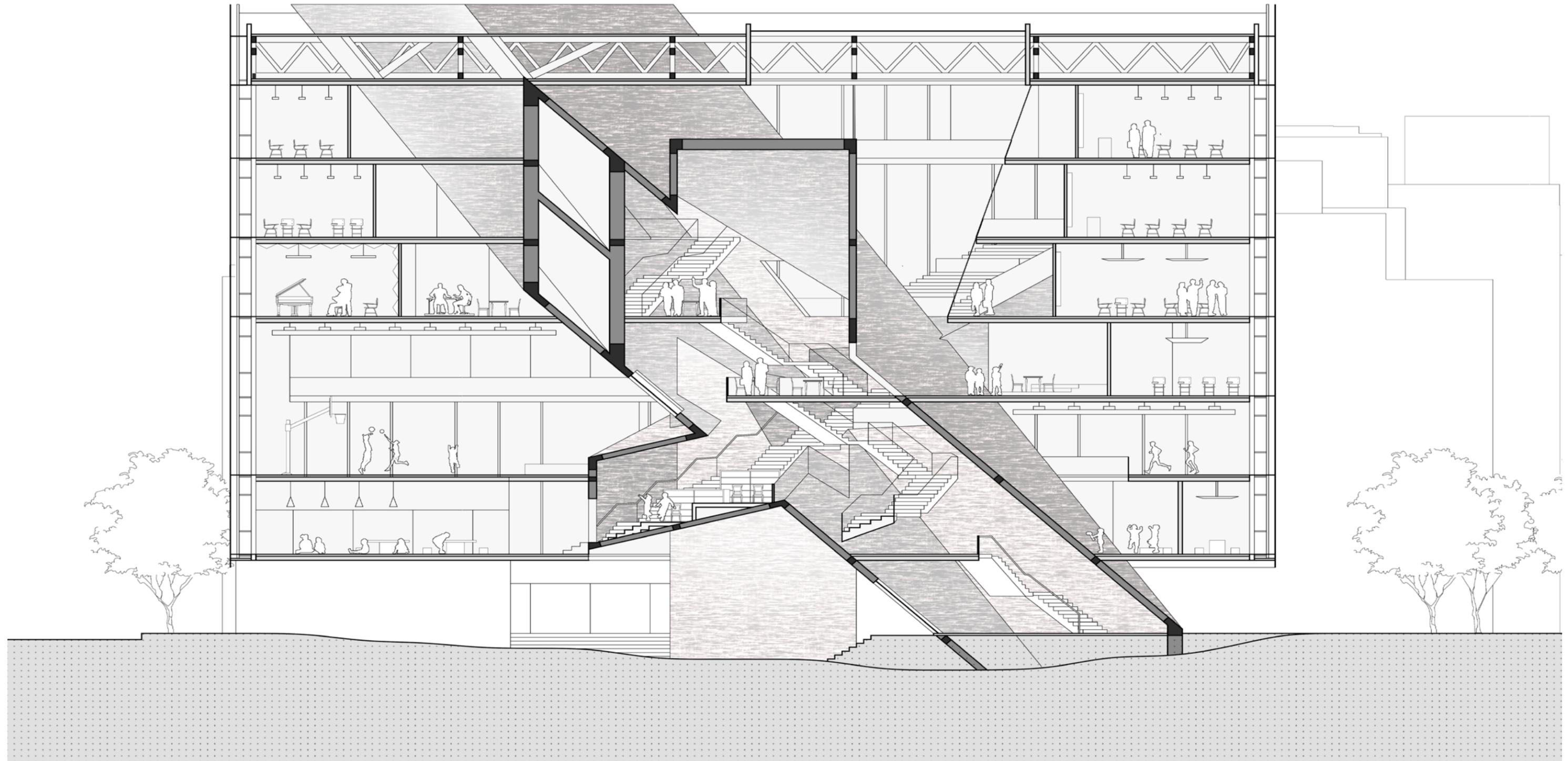
Library tube

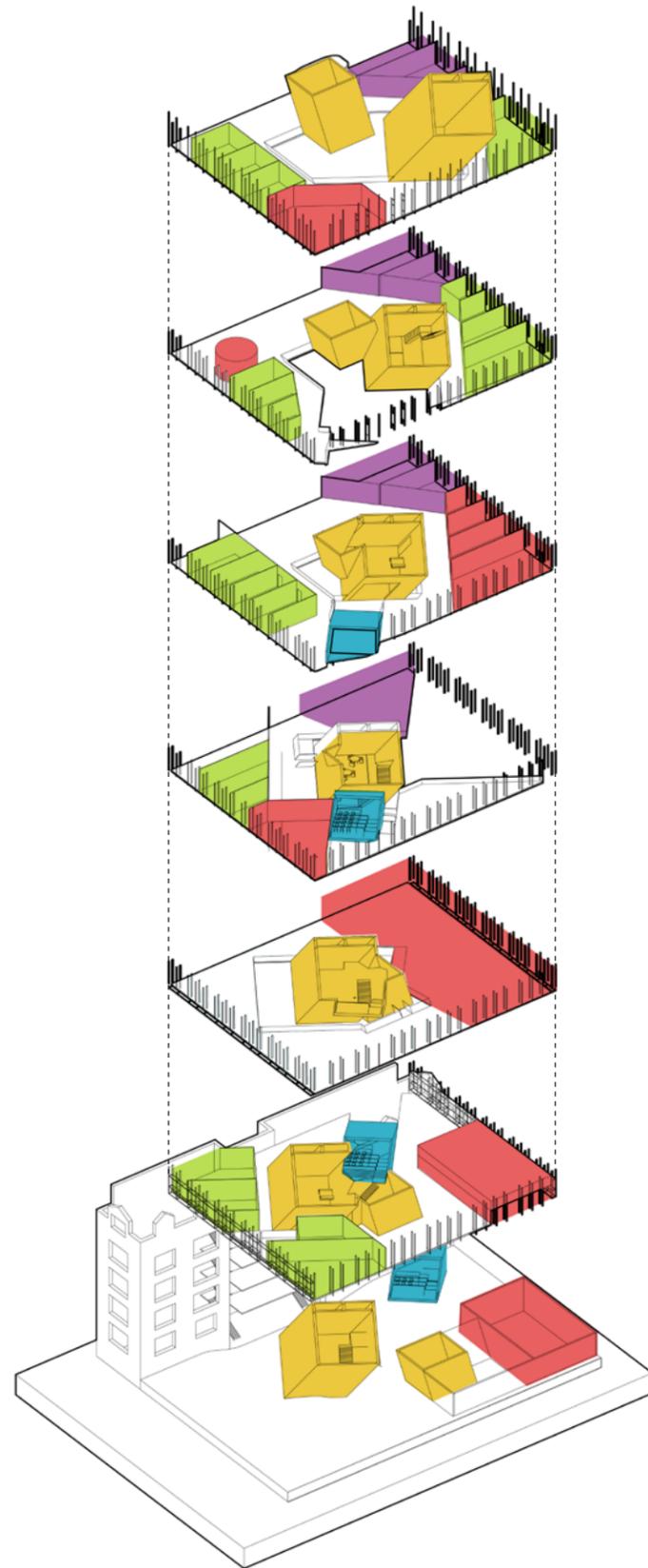


Cafe & lobby tube



Breakout space tube

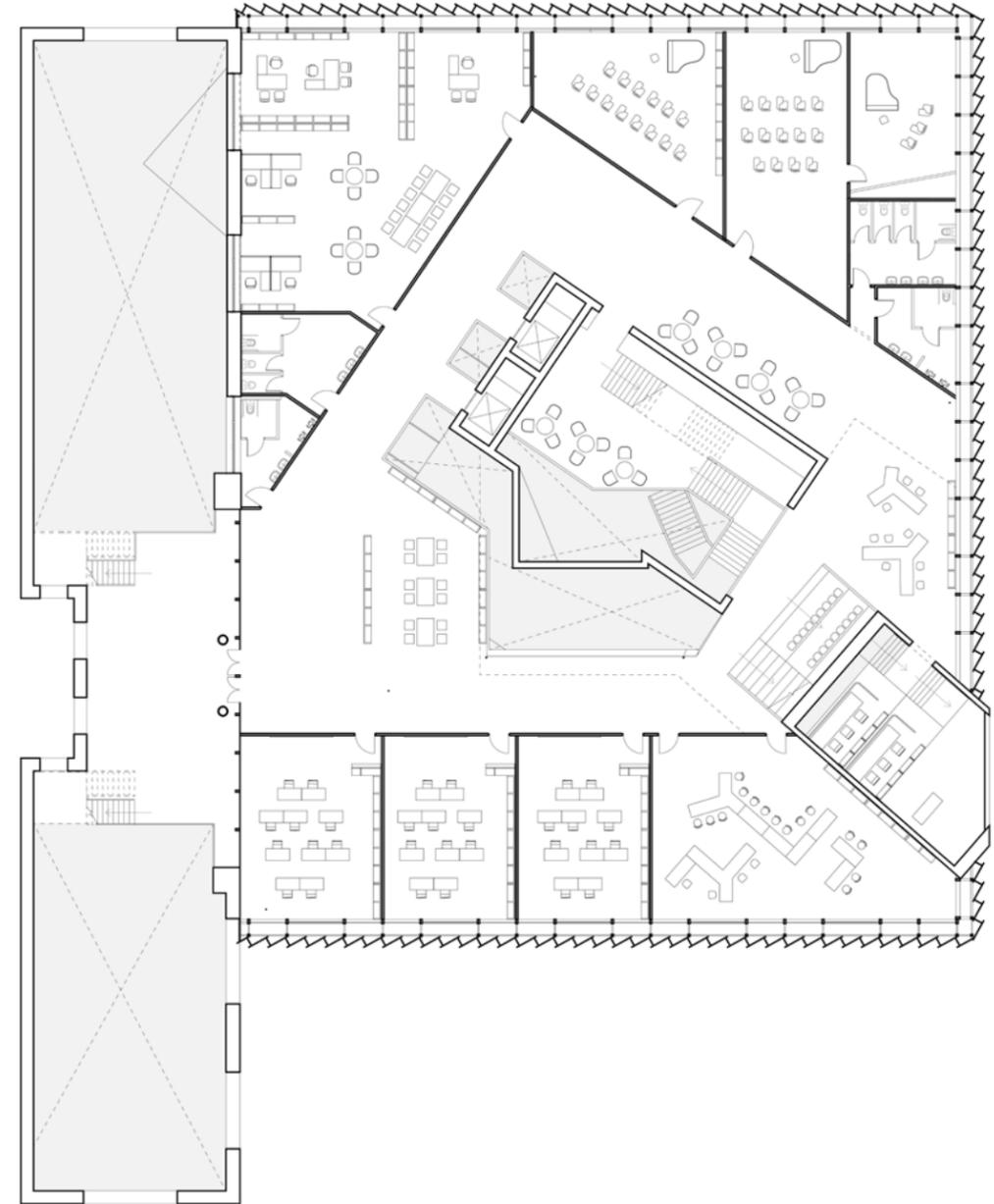
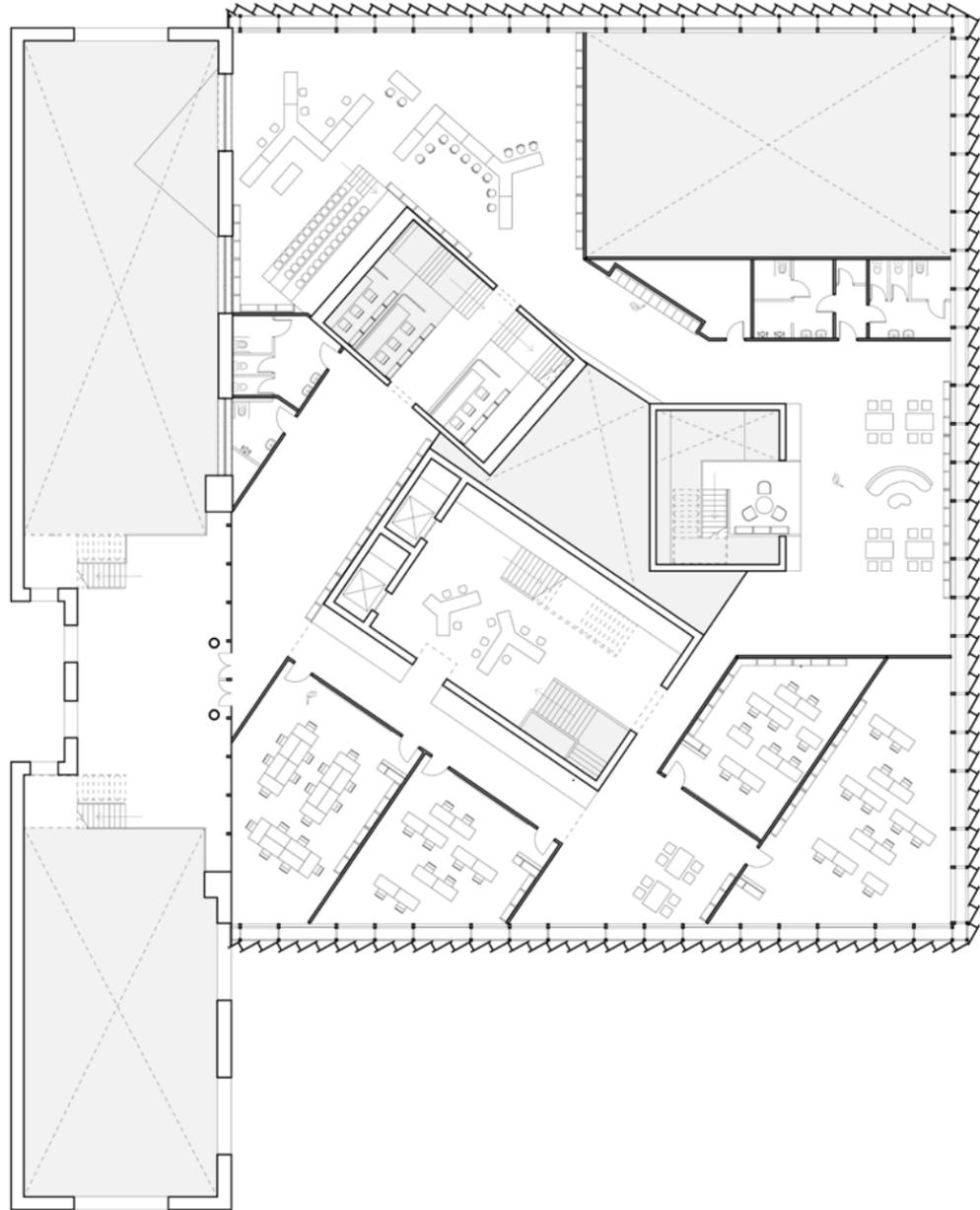


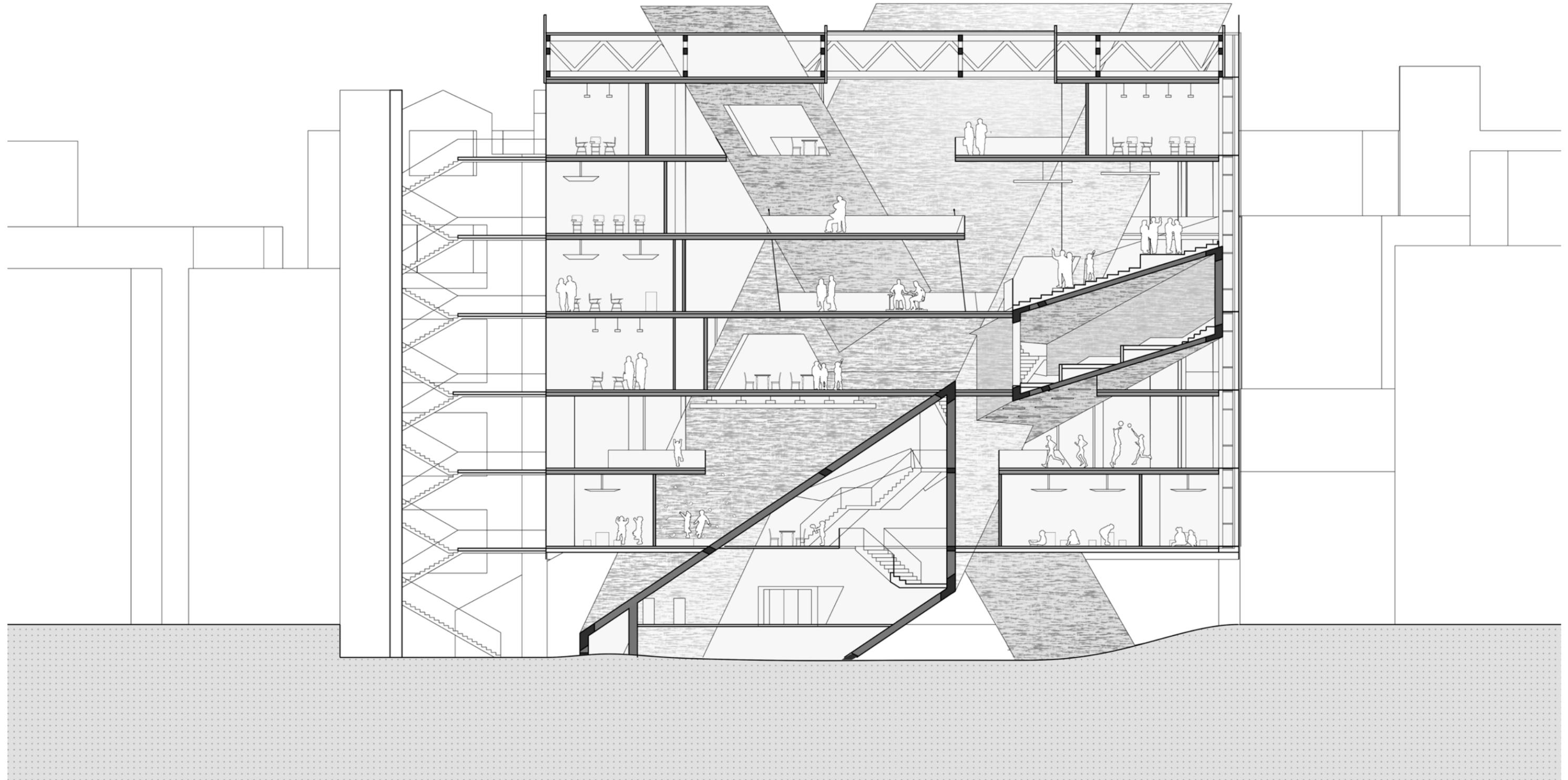


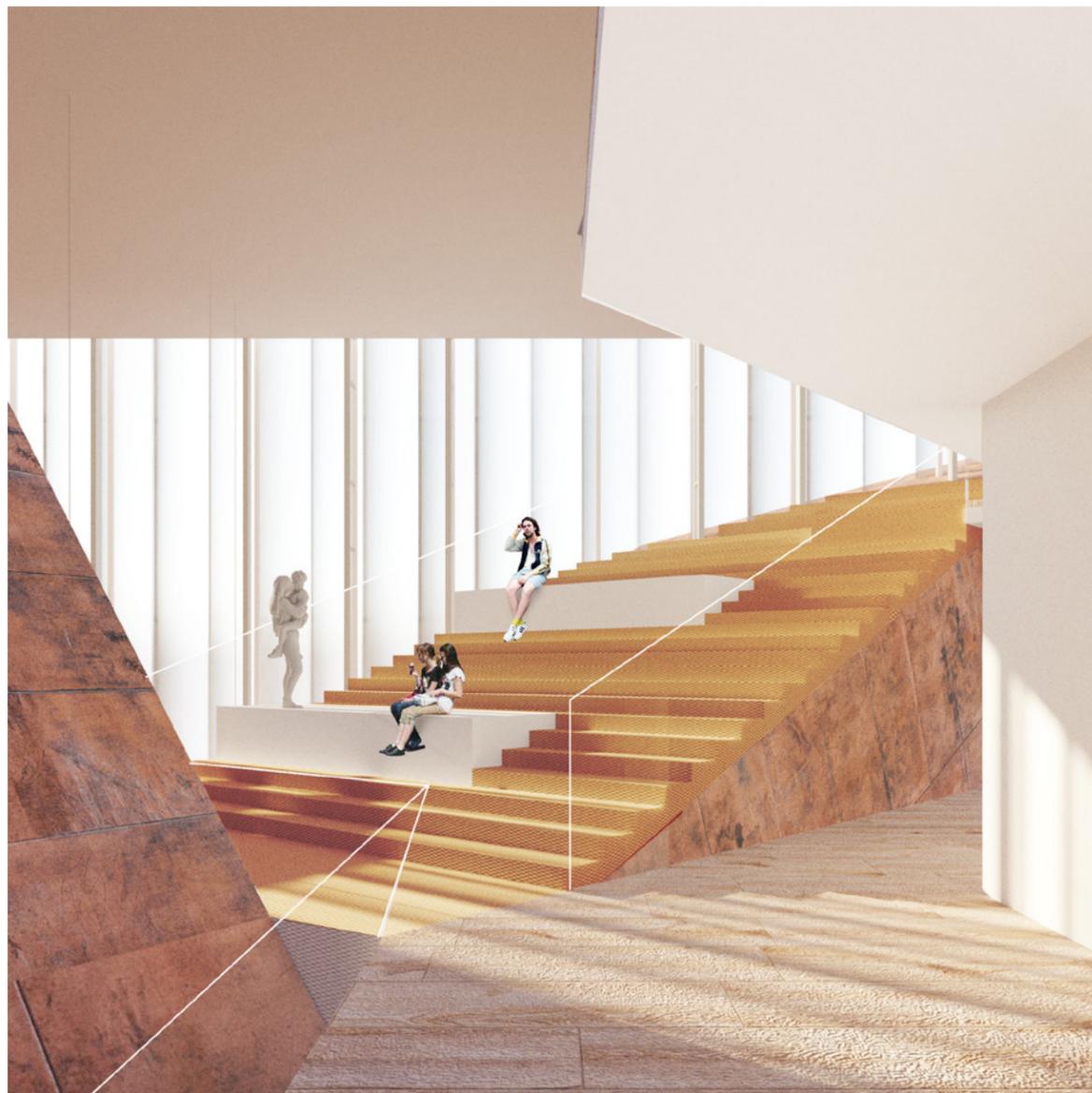
- Classroom
- Art & Sport
- Library
- Cafeteria
- Services



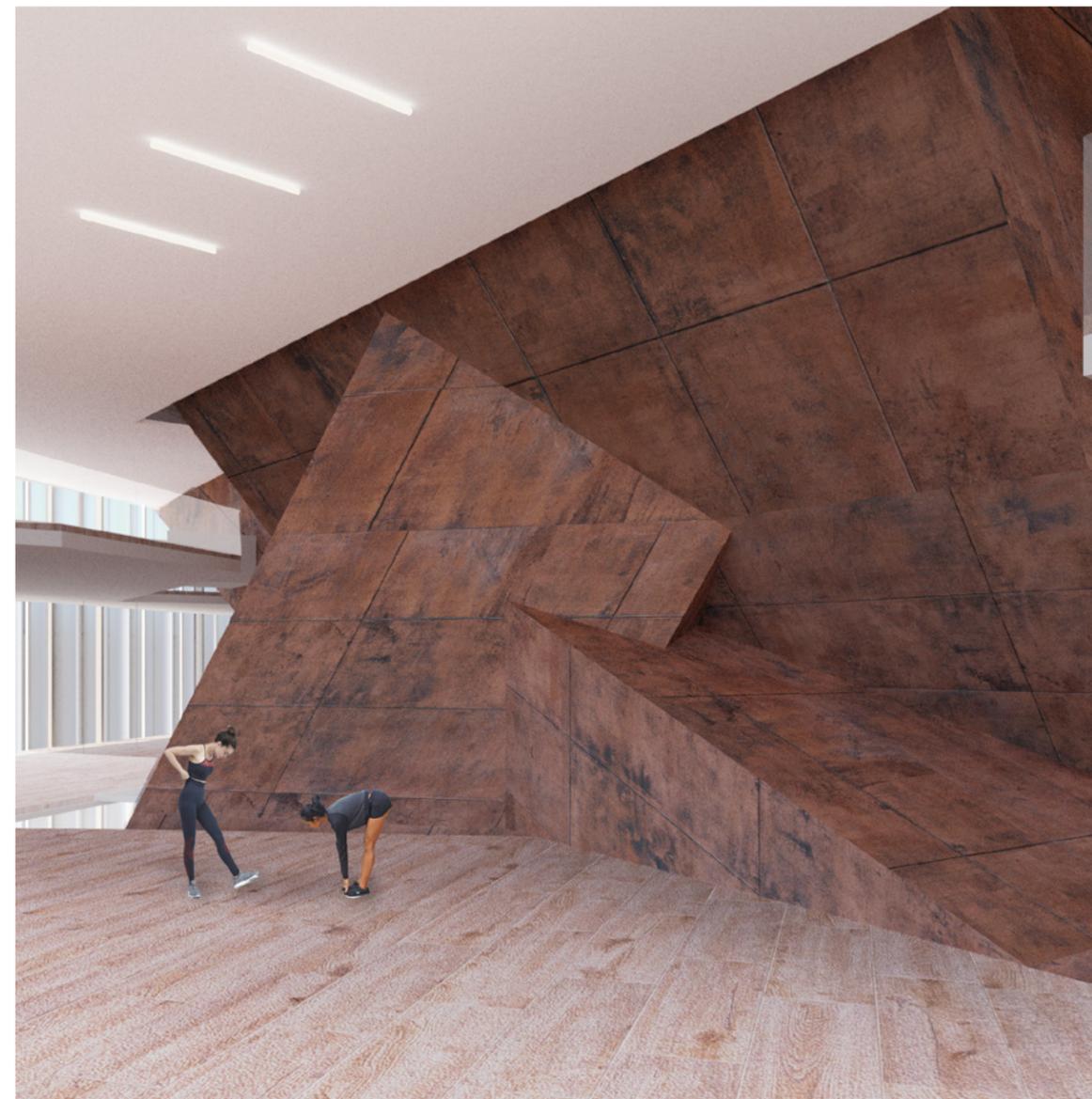








Corridor



Gym

## BROADWAY STORIES

*Drawing exercises in Flatiron District and Union Square*

### Exercise 1: Black and White

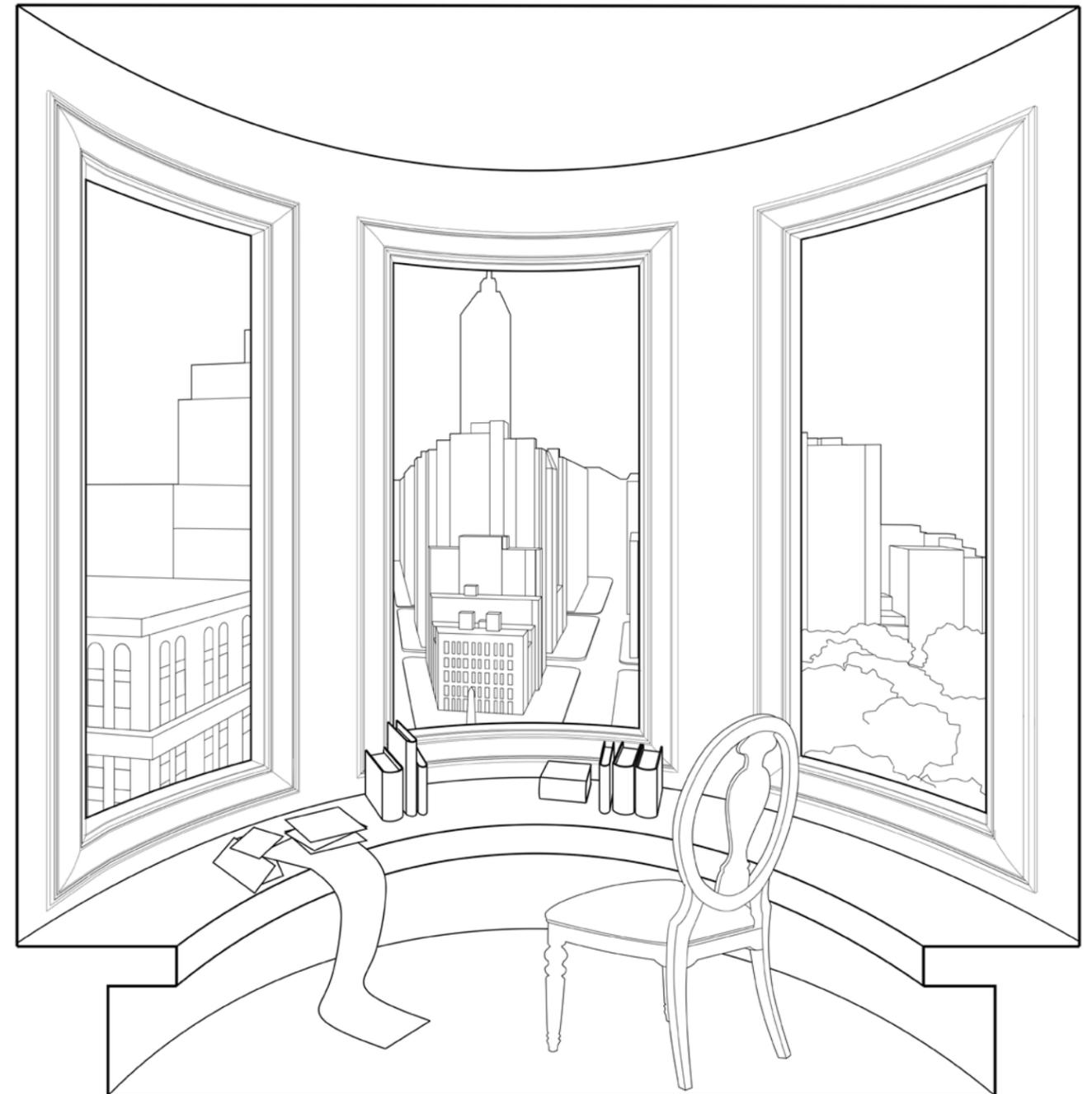
The first exercise was centered on the Flatiron District in lower Manhattan. The drawings look at how visual trajectories of pedestrians and dwellers in the city are shaped by the solid boundaries of buildings. The limits of the visual sphere is not defined by the building's planar projection on the ground. Instead, the lines you see on the plan have spatial depth. The differences in height and geometry form and influence the visual quality of city space.

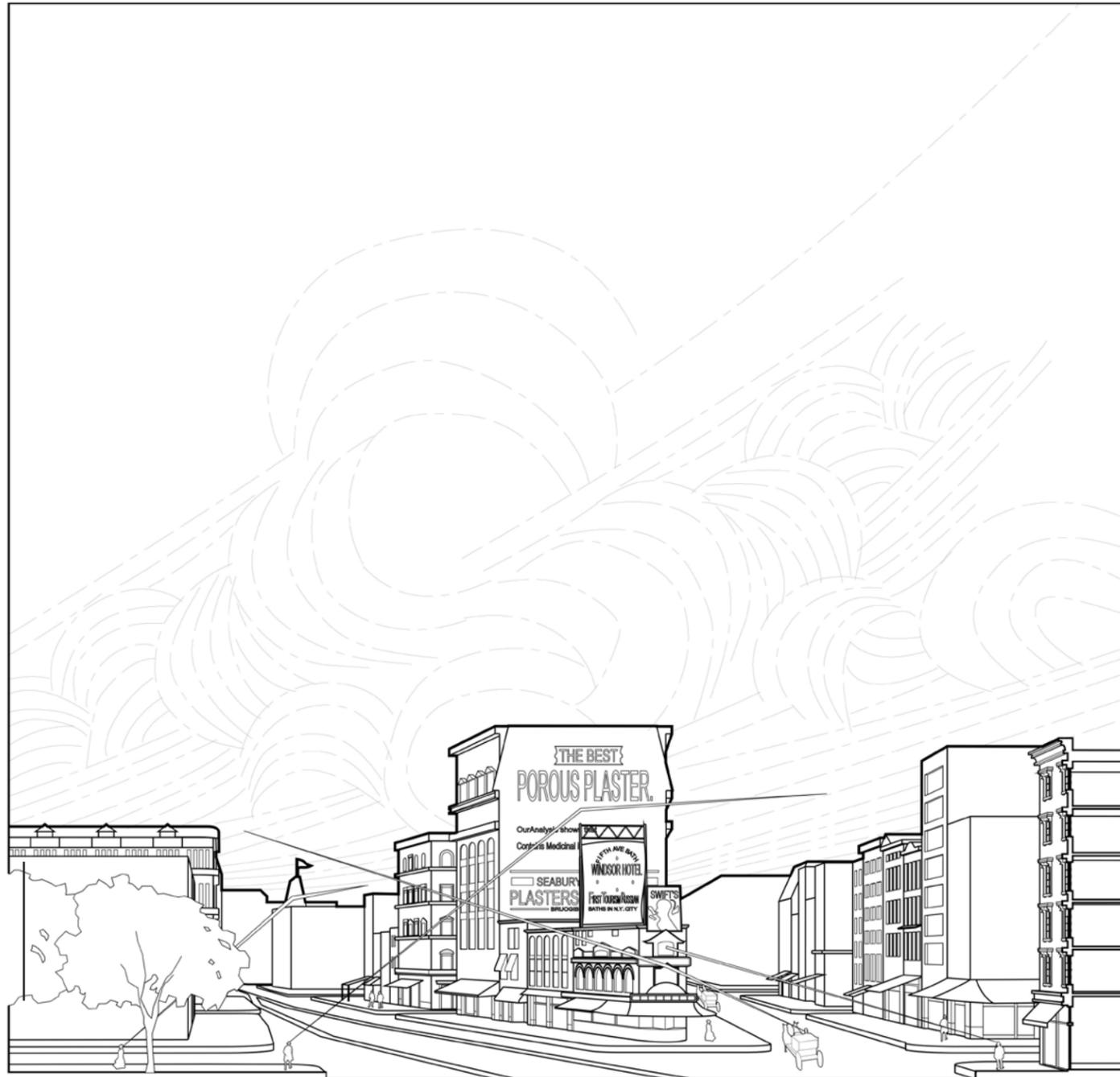
### Exercise 2: Color Blocks

The following color blocks drawings were centered on Union Square. The project offers a better relationship between Broadway and Union Square and constructs a new market landscape based on the existing farmer's market on the plaza. Now Broadway is interrupted by the intersection. My research began from a close look at the thresholds in the surrounding area, followed by manipulation of dragging out these architectural elements as free-standing installations and assigning new meaning to them. Based on the research of how farmer's markets run, the program consists of three kinds of installations: market interface, market landscape and directional spines.

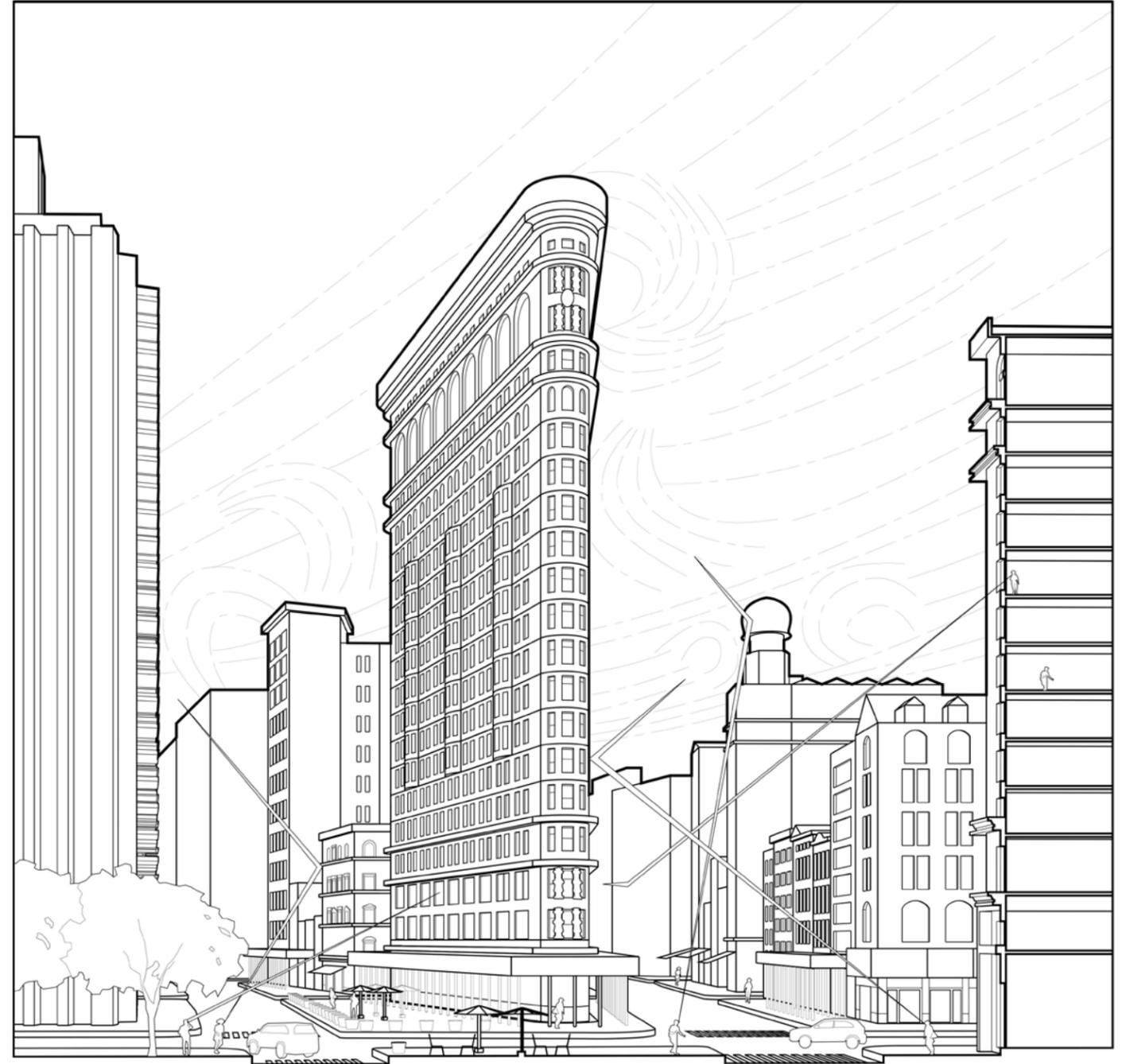
Fall 2019, Individual studio work

Instructor: Amina Blacksher

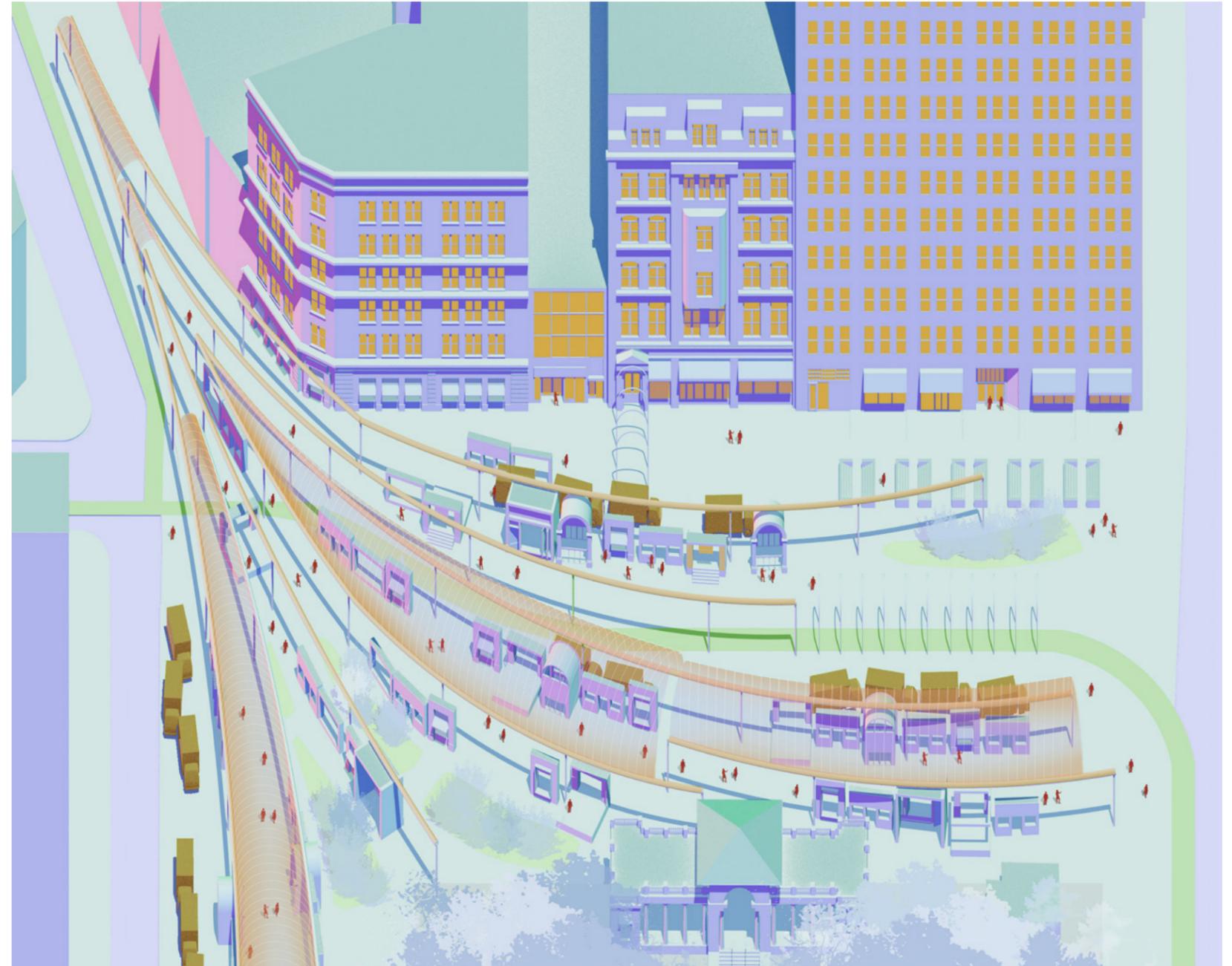
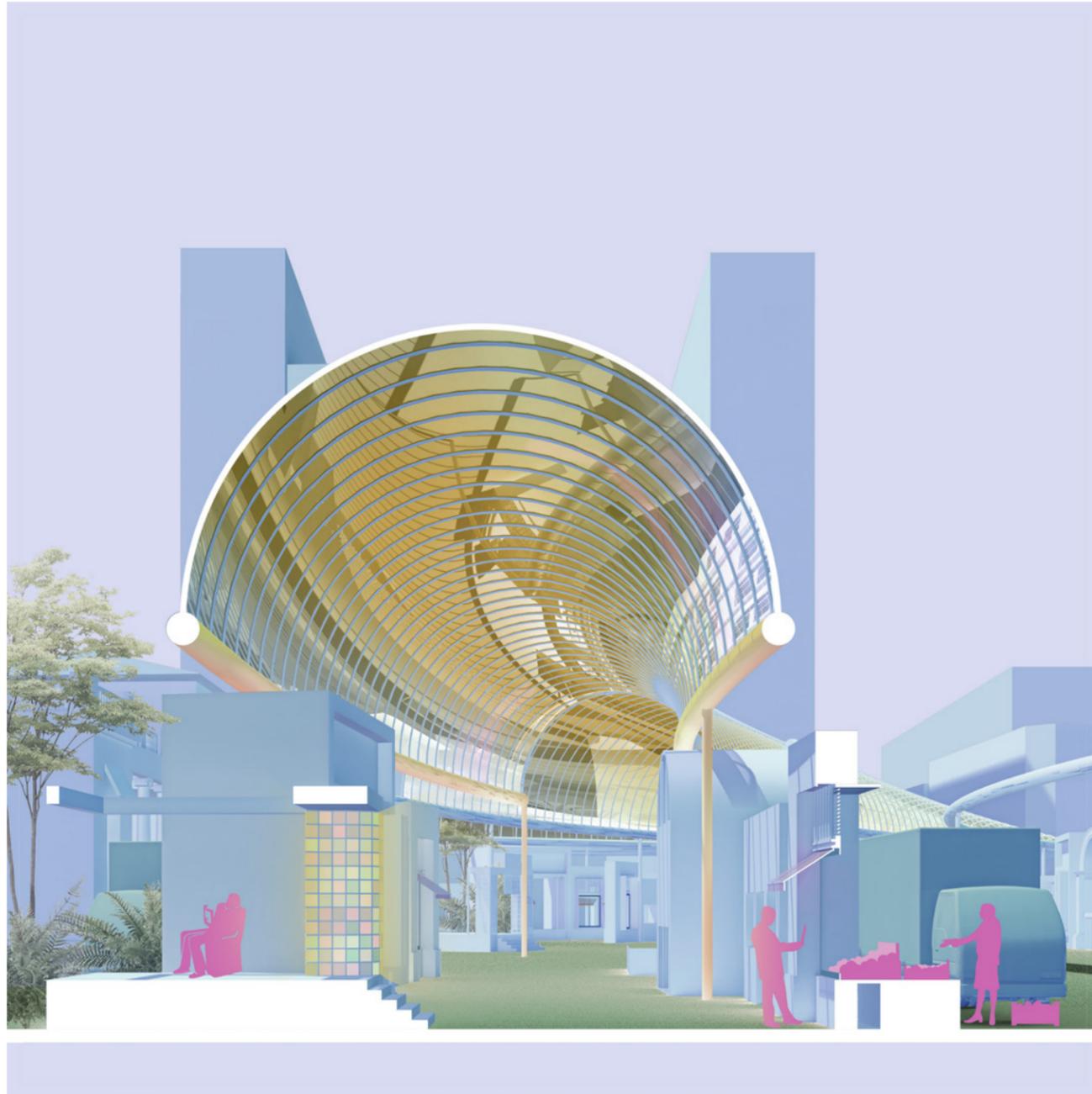


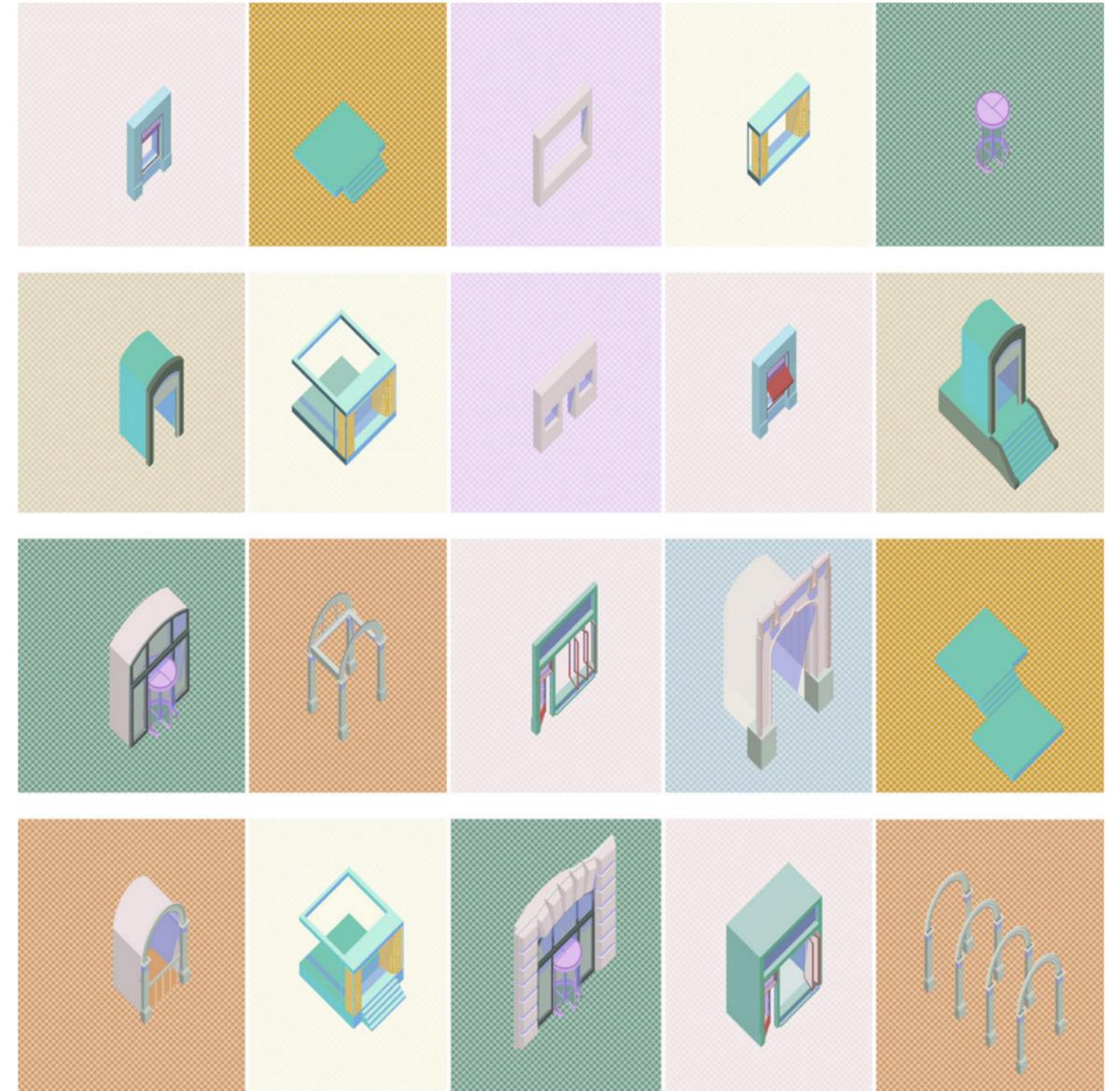
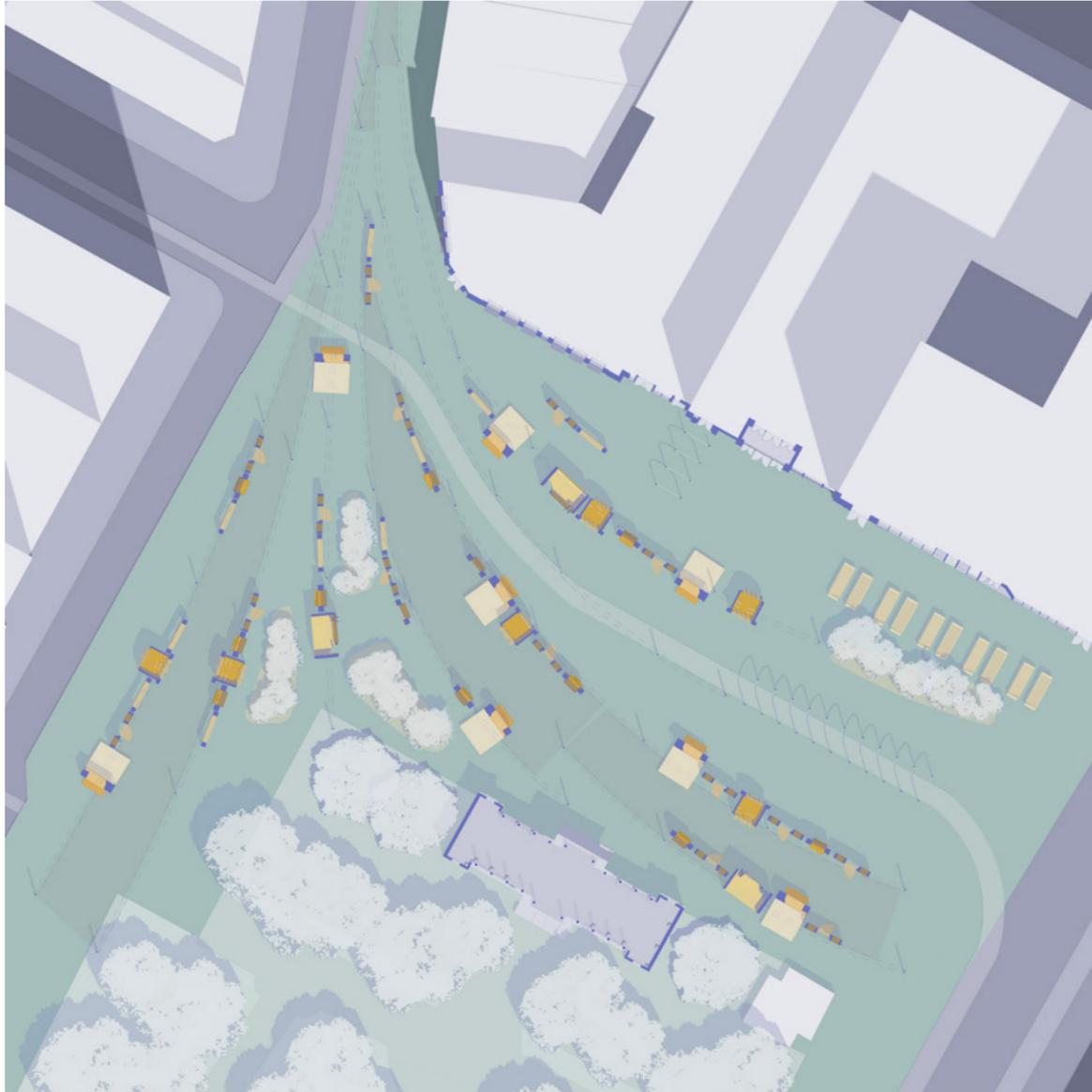


"Flatiron" 1884 - A plane with slogan and ads



Flatiron 2020 - A ship dividing tides of views







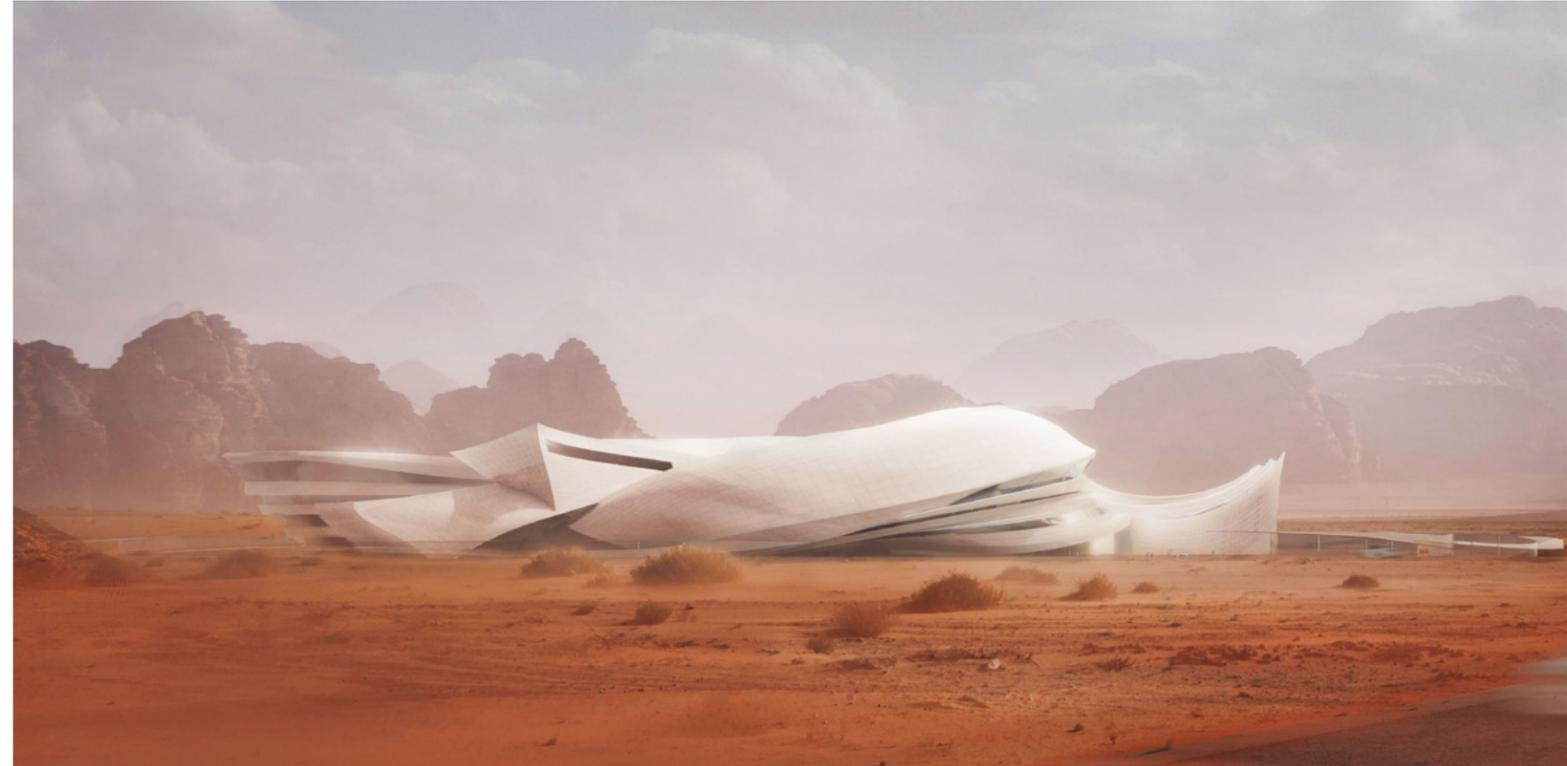
## SPEED BLENDER

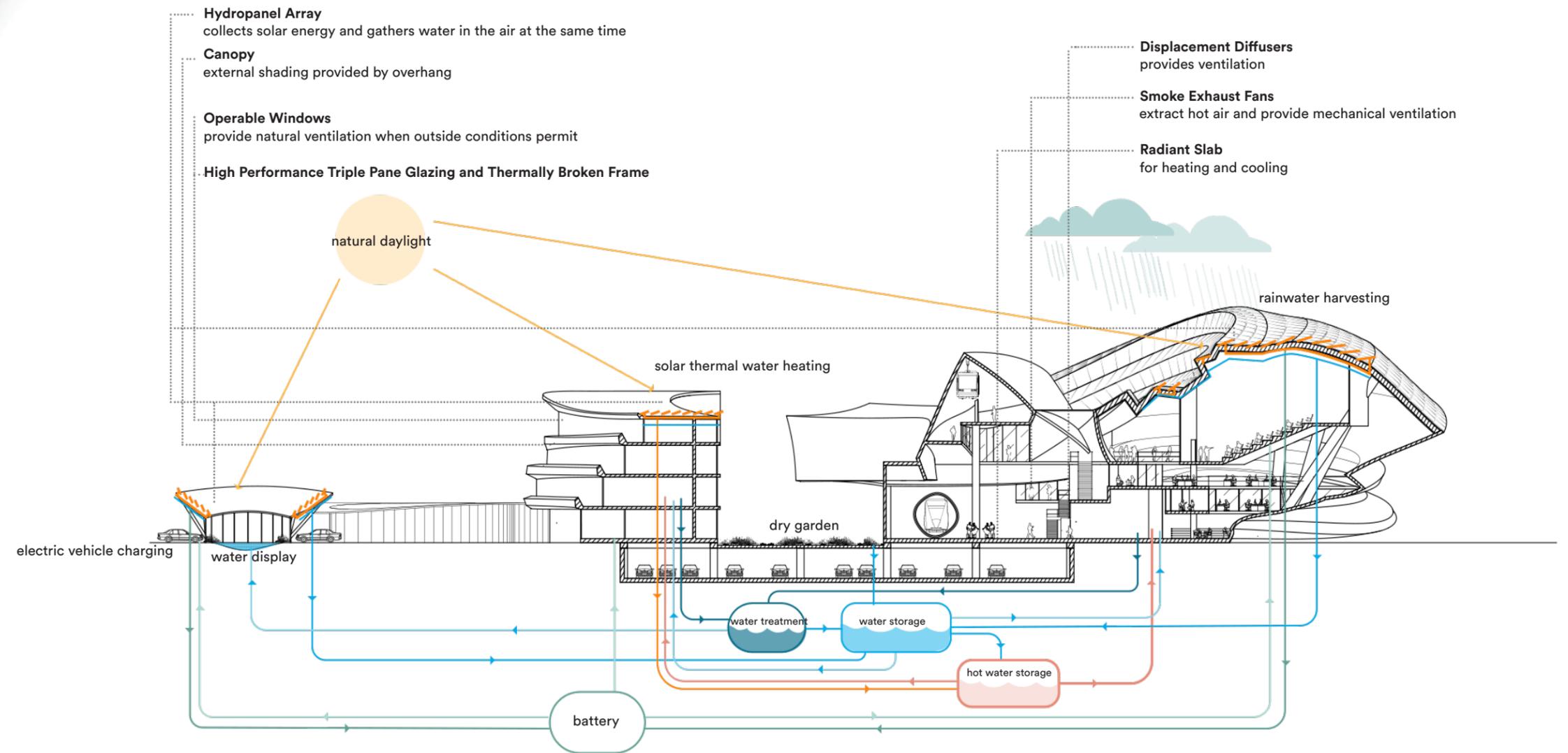
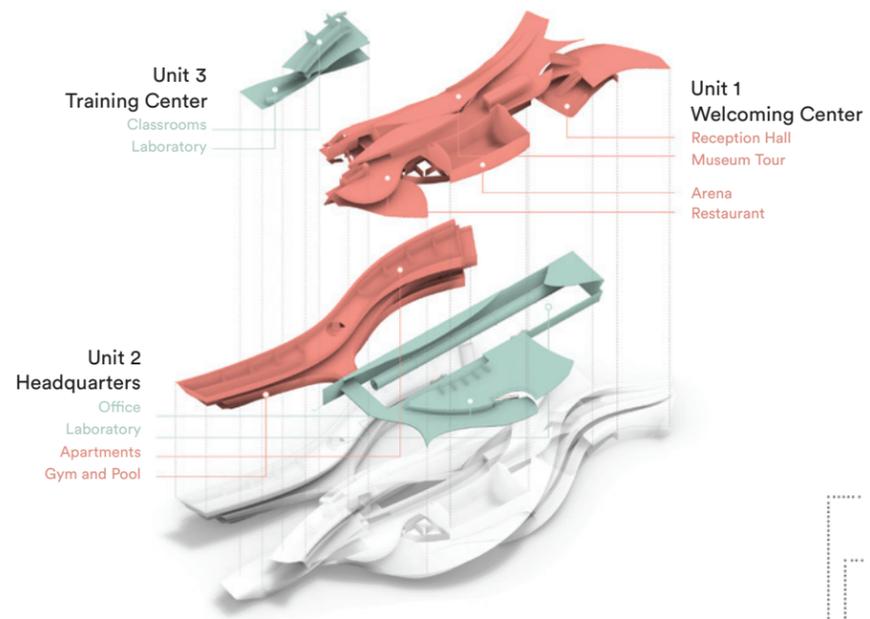
*Hyperloop Desert Campus near Las Vegas*

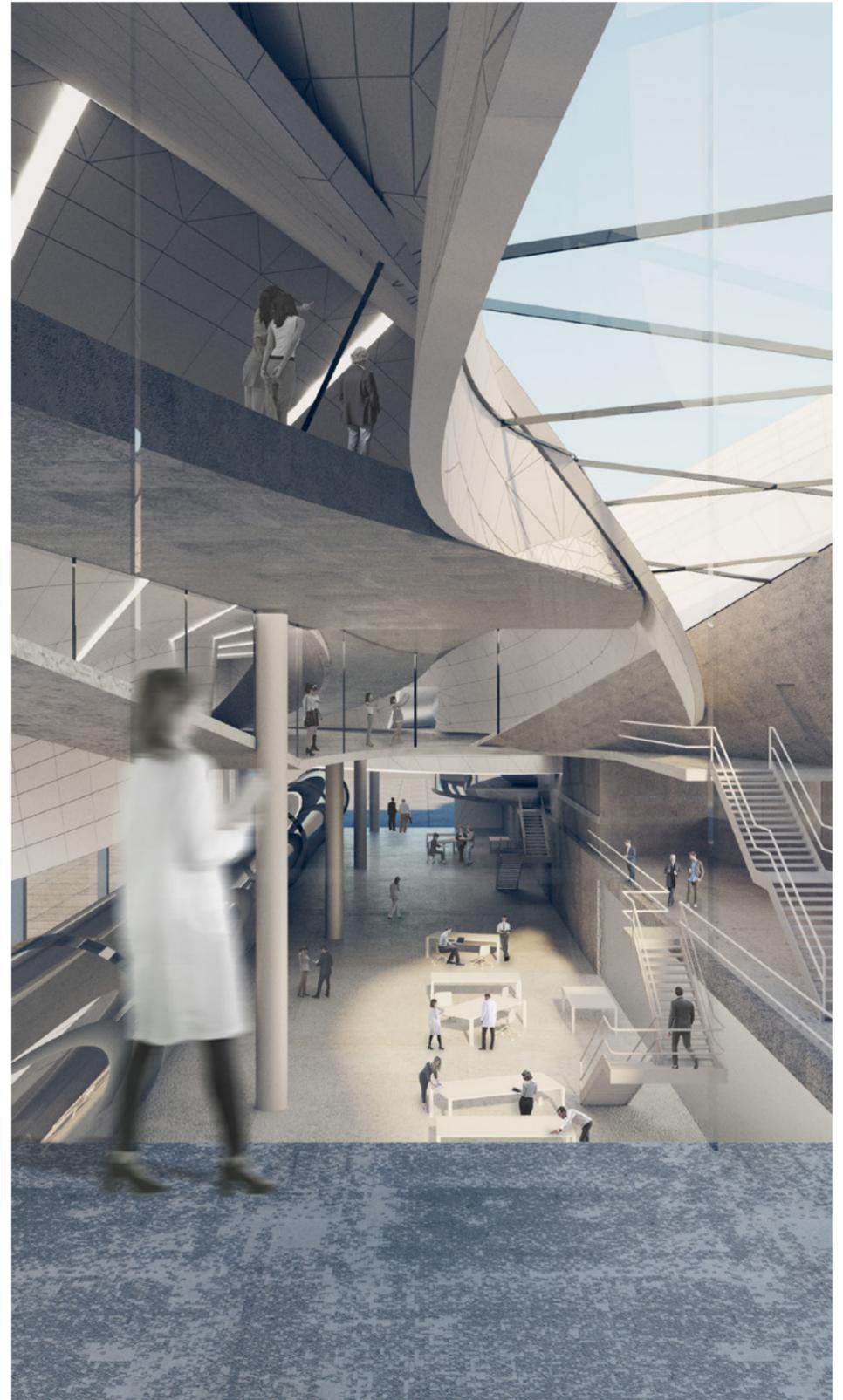
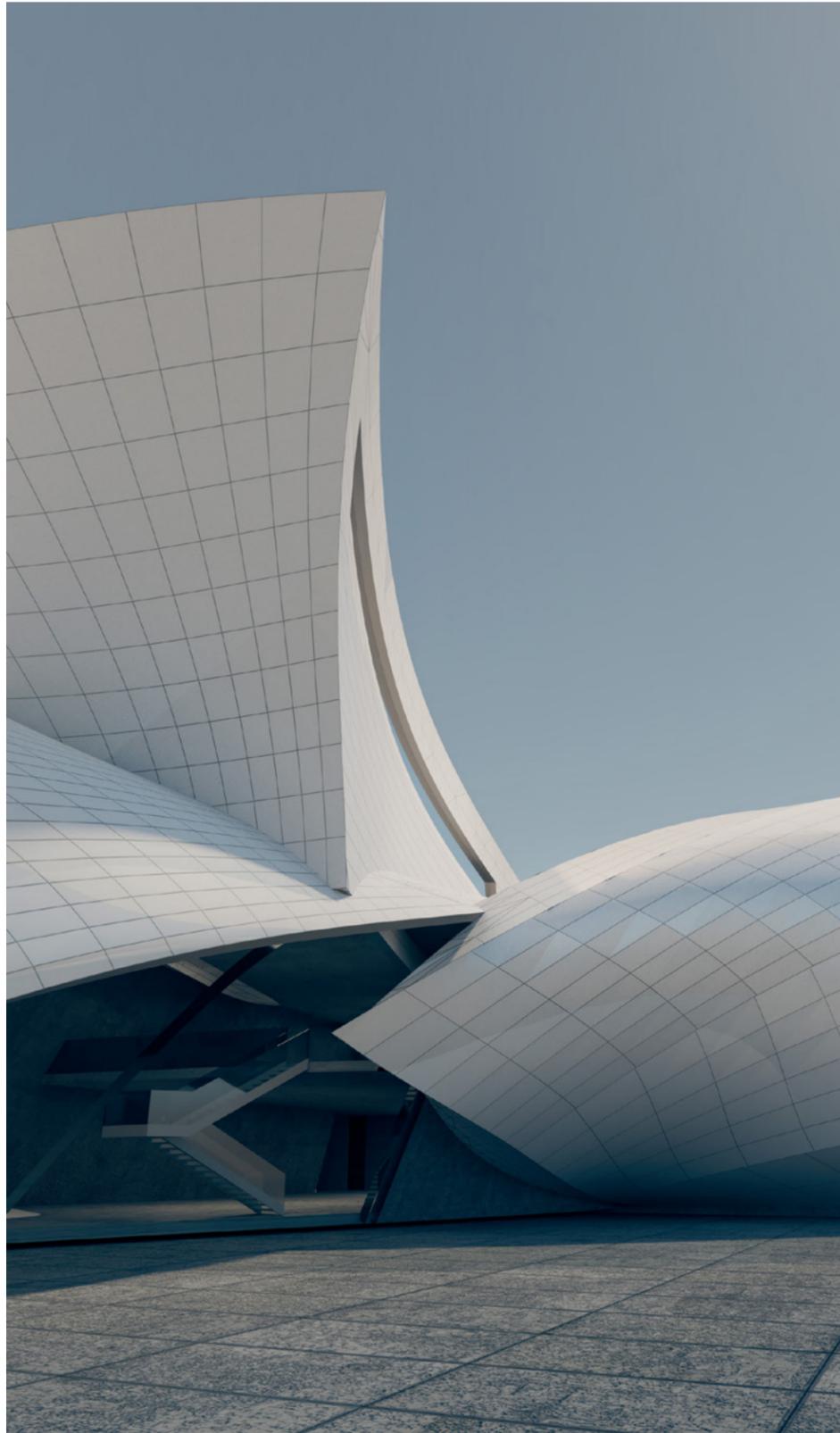
Hyperloop, the next generation transportation, selects one of its future research campus in Nevada desert. In an undefinable space where endless mountains, rocks and desert weave a natural vista, hyperloop campus becomes a statement and monument for celebrating common intelligence and unprecedented advancement.

We noticed the distinct and encompassing programs required by hyperloop campus's different user groups. The project aims at creating close but not interfering relationship between different user groups: the researchers, the visitors, and the students. Each group has a unique working and living pace and our project aims at being a speed blender, weaving different groups' paths while keeping successive layout inside each path for convenience. Based on the user group, the project consists of three major living paths: the researcher path, the visitor path, and the training center student path.

Summer 2020. Collaborated with Chuqi Huang, Claire Chen  
 Young Architects Competitions, Honorable Mention









View from Office



View towards Swimming Pool



## INTERTWINED

*A Three Phases Development Proposal in Downtown Oakland*

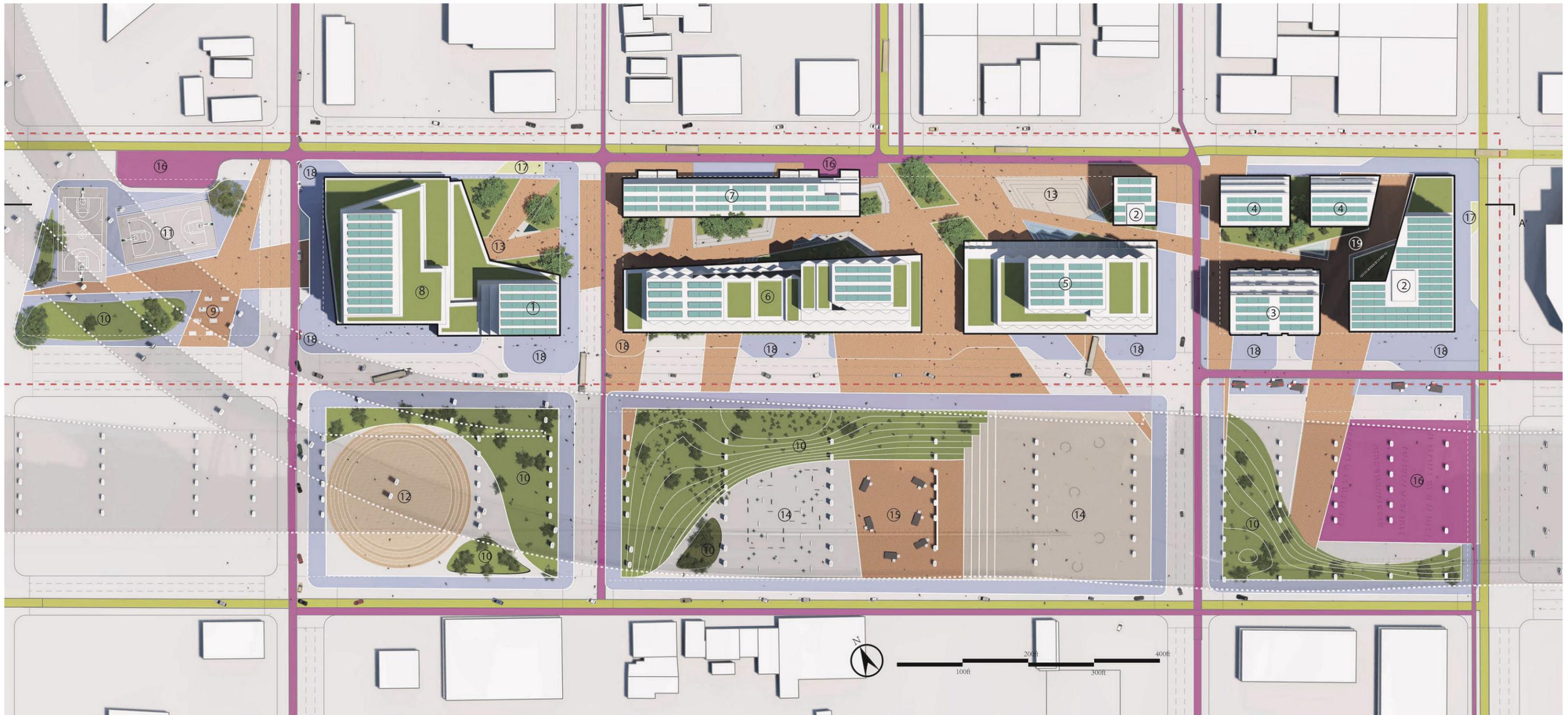
Segregated by the I-980 and I-880 freeways, downtown Oakland has long been isolated from other urban districts. INTERTWINED sits at the edge of the downtown area, serving as a junction point where diverse cultures of food and music overlap with diverse racial and ethnic communities, many overlooked by mainstream urban development. INTERTWINED celebrates the diversity of the communities in central Oakland, an untapped resource for social, cultural, and economic development. The project celebrates connectivity, equity, and resilience to create and share new ways of living, working, and recreation.

INTERTWINED is developed in a public-private partnership with the City of Oakland government. This project provides 25% of its total units to be affordable housing, within which, 20% of the total units are targeted on people with 50% AMI income. INTERTWINED helps to provide just inclusion in downtown Oakland where everyone can participate, prosper and reach their full potential.

2022 ULI Competition. Collaborated with Chuqi Huang, Rae Lei, Zhifan Li, Mason Oh.

Instructors: Kate Ascher, Adam Lubinsky, David Smiley, Chok Lei





- 1. multi-family rental apartment
- 2. retail with office
- 3. multi-family condo  
shared parking
- 4. multi-family rental apartment  
retail
- 5. multi-family rental apartment  
shared parking  
retail
- 6. multi-family rental apartment  
shared parking  
community college-culinary school  
retail

- 7. senior housing  
music bar  
restaurant
- 8. multi-family rental apartment  
community center  
music hall  
gym  
office
- 9. ping pong corner
- 10. rainwater garden
- 11. rainwater collection basketball court
- 12. performance plaza
- 13. sunken plaza

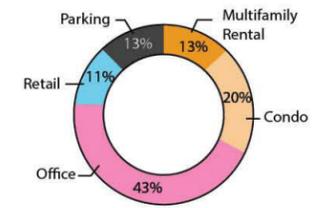
- 14. informal gathering space
  - 15. food cart plaza
  - 16. shared bike/scooter station
  - 17. bus station
  - 18. bulb out space
  - 19. sculpture plaza
- bike lane
  - bus lane
  - new street curb
  - ground paint
  - Development Site

### PHASE I - CREATIVITY INCUBATOR



Total GSF	820,726 SF
Total Development Cost	\$399,025,453
Unlevered IRR	10.9%
Levered IRR	21.4%
Equity Multiple	5.7x
Affordable Housing Units	115 (25%)

Multifamily Rental - market rate	64,763 SF (8%)
Multifamily Rental - affordable	38,036 SF (5%)
Condo - market rate	102,647 SF (13%)
Condo - affordable	60,284 SF (7%)
Office	350,830 SF (43%)
Retail	94,308 SF (11%)
Structured Parking	28,465 SF (3%)
Underground Parking	81,393 SF (10%)



GFA: 404,333 SF  
Office SF: 350,830 SF  
Retail SF: 53,502 SF  
Residential SF: N/A  
Parking: N/A



GFA: 59,480 SF  
Office SF: N/A  
Retail SF: 10,488 SF  
Residential SF: 48,992 SF  
Parking: N/A



GFA: 65,147 SF  
Office SF: N/A  
Retail SF: 11,340 SF  
Residential SF: 53,807 SF  
Parking: N/A



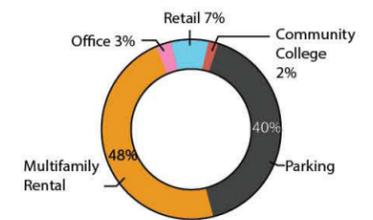
GFA: 210,374 SF  
Office SF: N/A  
Retail SF: 18,977 SF  
Residential SF: 162,931 SF  
Parking: 28,466 SF - 88 units

### PHASE II - CONNECTIVE HUB

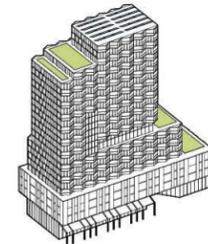


Total GSF	1,294,708 SF
Total Development Cost	\$518,422,605
Unlevered IRR	7.2%
Levered IRR	8.9%
Equity Multiple	1.9x
Affordable Housing Units	267 (25%)

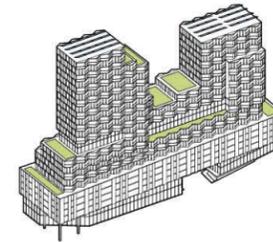
Multifamily Rental - market rate	386,777 SF (30%)
Multifamily Rental - affordable	227,155 SF (18%)
Condo - market rate	0 SF
Condo - affordable	0 SF
Office	41,385 SF (3%)
Retail	87,709 SF (7%)
Community College Culinary Institute	32,028 SF (2%)
Structured Parking	244,145 SF (19%)
Underground Parking	275,506 SF (21%)



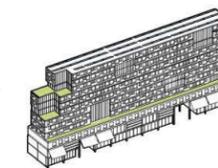
GFA: 46,054 SF  
Office SF: 41,385 SF  
Retail SF: 4,669 SF  
Residential SF: N/A  
Parking: N/A



GFA: 403,174 SF  
Office SF: N/A  
Retail SF: 31,360 SF  
Residential SF: 264,372 SF  
Parking: 107,442 SF - 333 units



GFA: 440,229 SF  
Office SF: N/A  
Retail SF: 13,235 SF  
Residential SF: 258,263 SF  
Community Culinary Institute: 32,028 SF  
Parking: 136,703 SF - 424 units



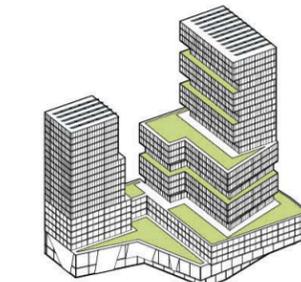
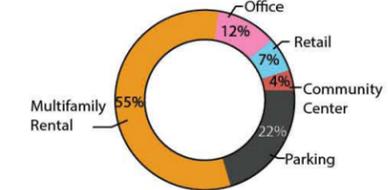
GFA: 129,742 SF  
Office SF: N/A  
Retail SF: 38,445 SF  
Residential SF: 91,297 SF  
Parking: N/A

### PHASE III - ARTISTIC BOOSTER



Total GSF	757,404 SF
Total Development Cost	\$337,568,460
Unlevered IRR	11.8%
Levered IRR	20.6%
Equity Multiple	2.7x
Affordable Housing Units	181 (25%)

Multifamily Rental - market rate	260,849 SF (35%)
Multifamily Rental - affordable	153,197 SF (20%)
Condo - market rate	0 SF
Condo - affordable	0 SF
Co-working Office	93,582 SF (12%)
Retail	56,558 SF (7%)
Community Music Center & Gym	28,168 SF (4%)
Structured Parking	43,639 SF (6%)
Underground Parking	121,409 SF (16%)

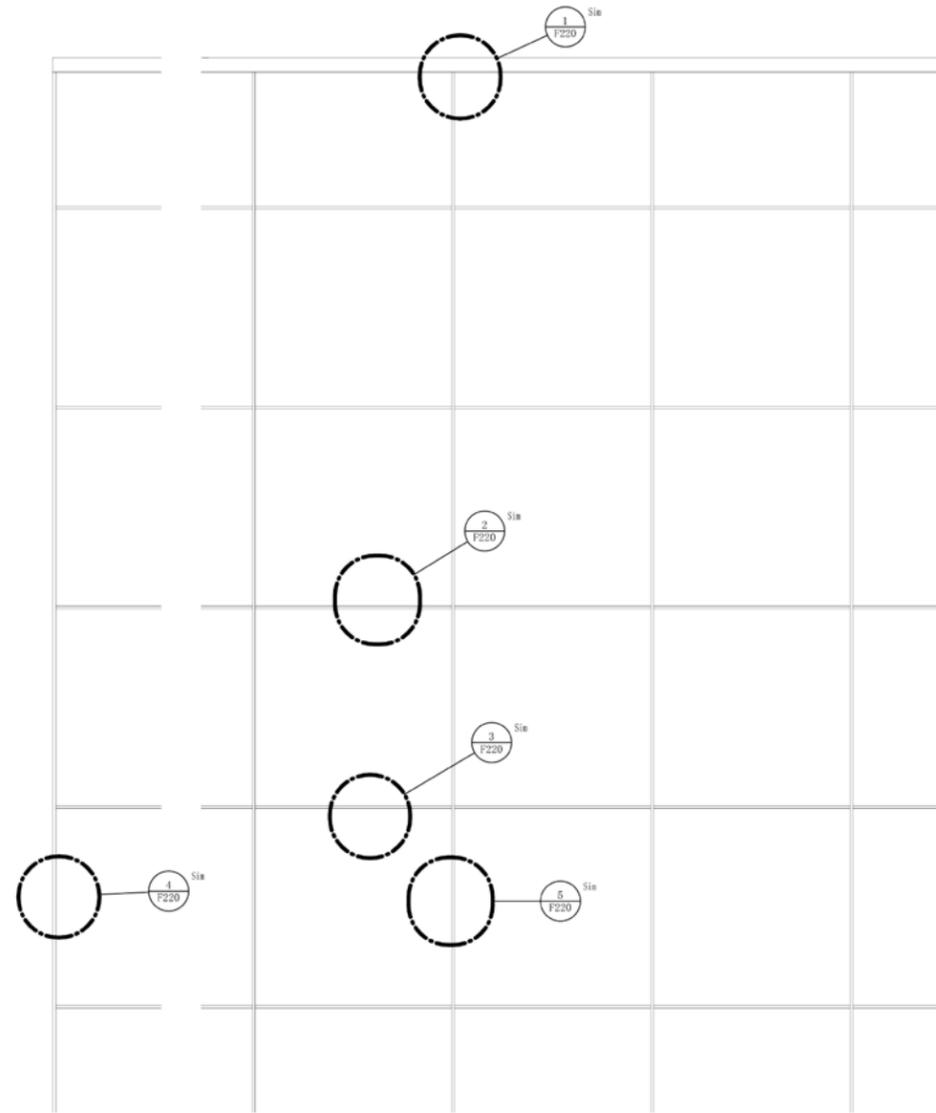


GFA: 635,995 SF  
Office SF: 93,583 SF  
Retail SF: 56,559 SF  
Residential SF: 414,046 SF  
Community Music Center & Gym: 28,168 SF  
Parking: 43,639 SF - 135 units

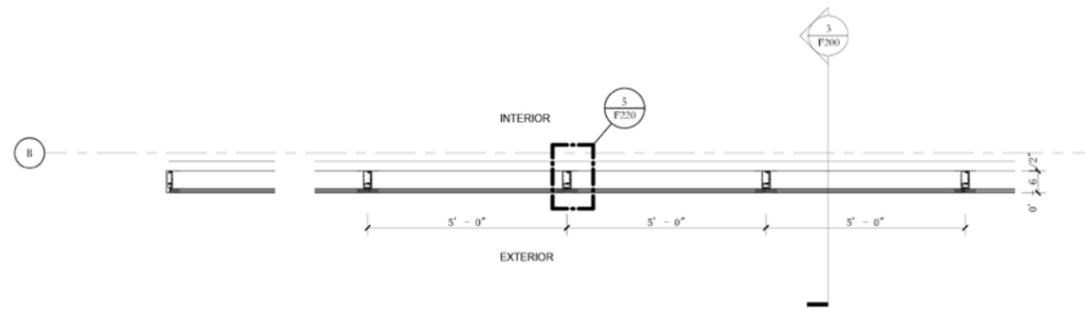
# OTHER WORKS

Fall 2020, Site in New York, Instructors: Ryan Donaghy

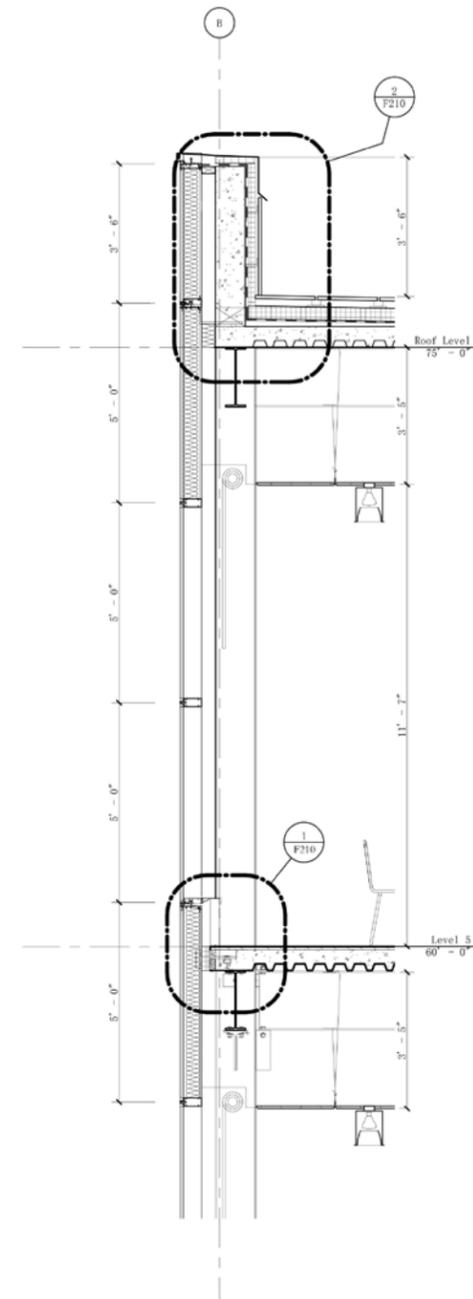
TECHNICAL DRAWINGS  
WT-01 Curtain Wall Detail Drawings



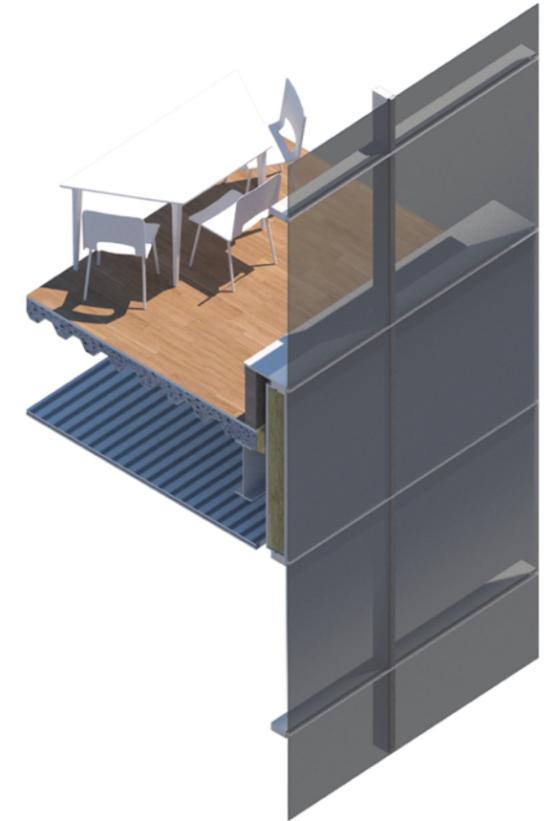
1 curtain wall facade  
1/2" = 1'-0"



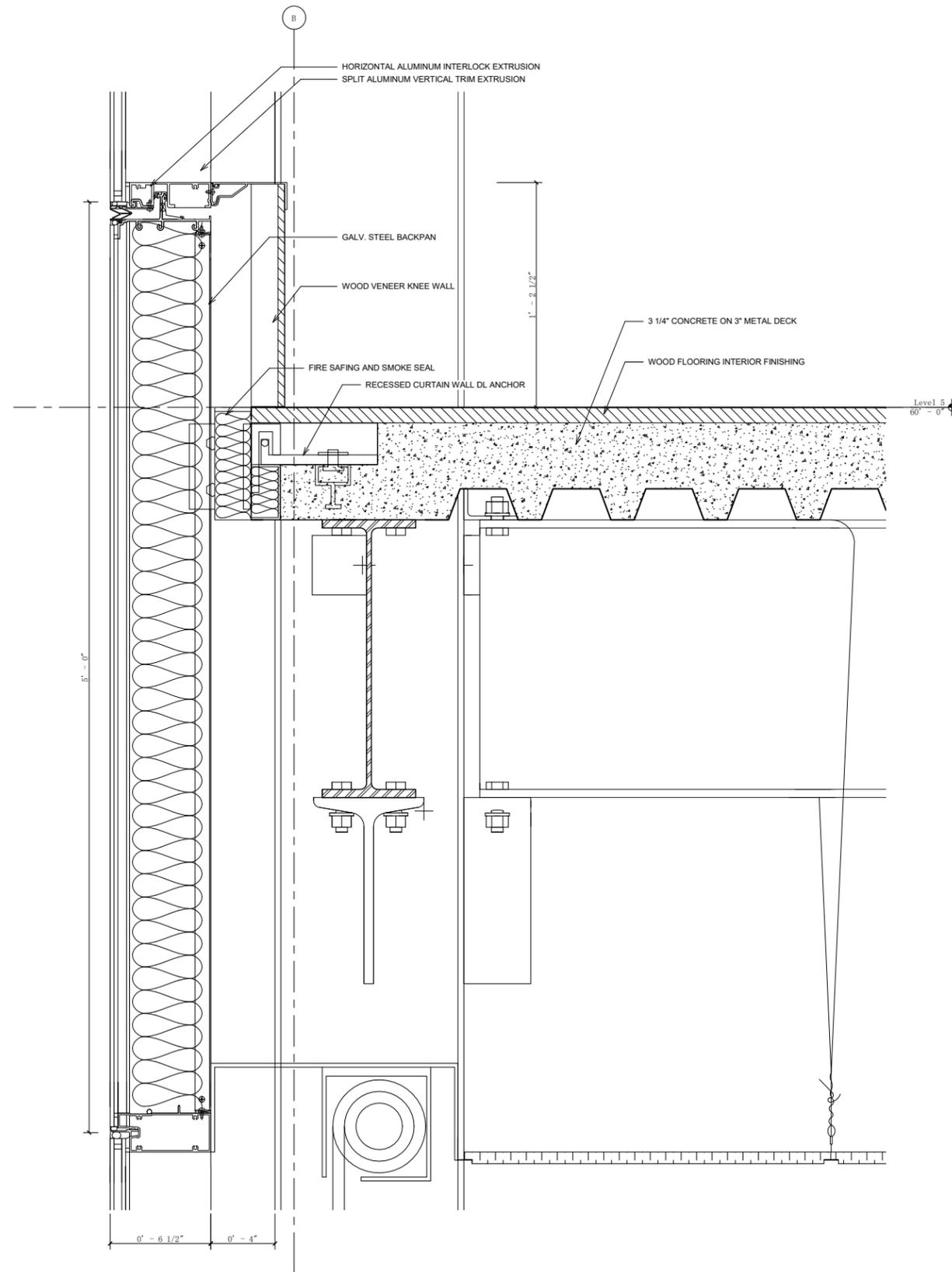
2 WT-01 PLAN  
1/2" = 1'-0"



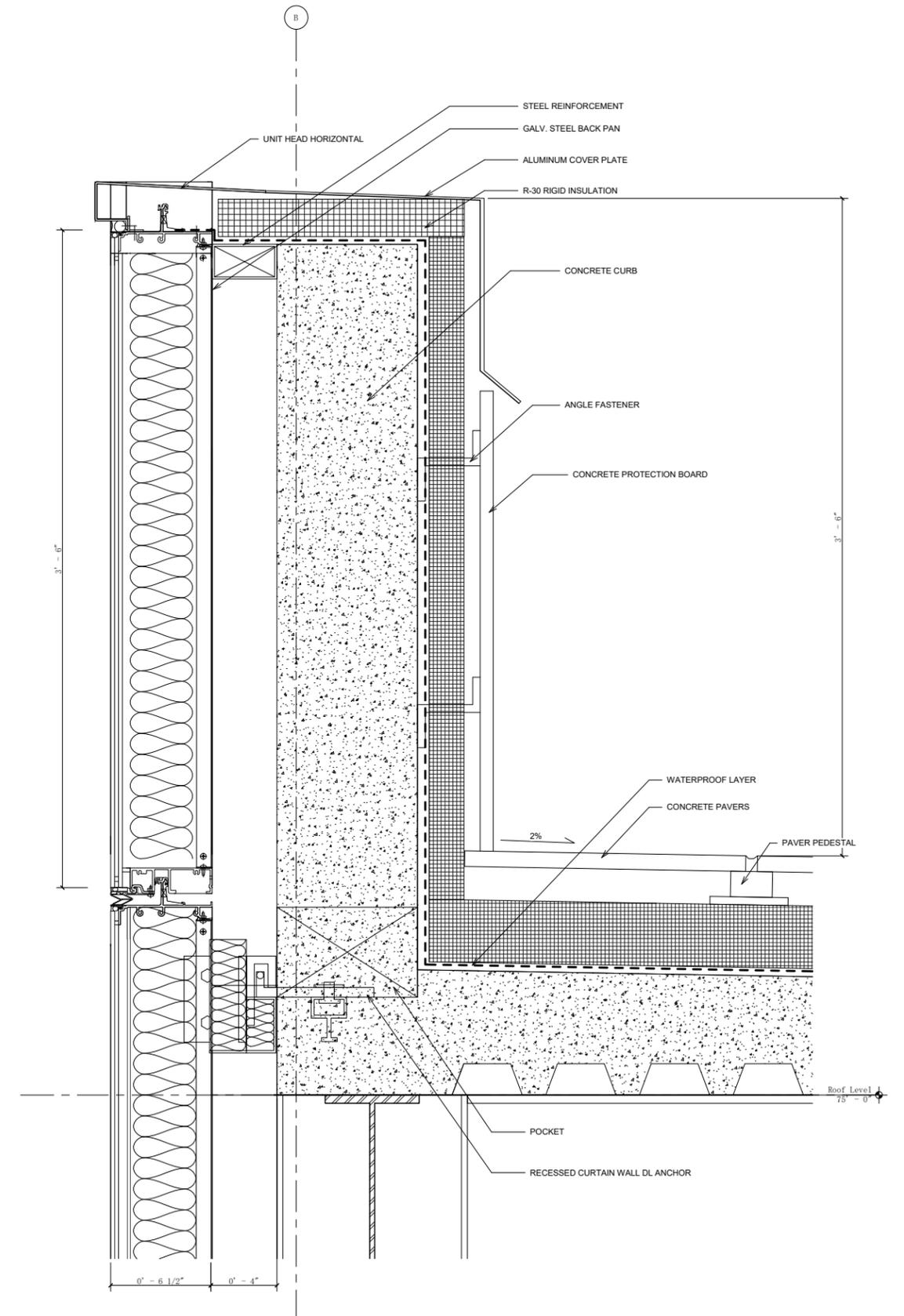
3 WT-01 SECTION  
1/2" = 1'-0"



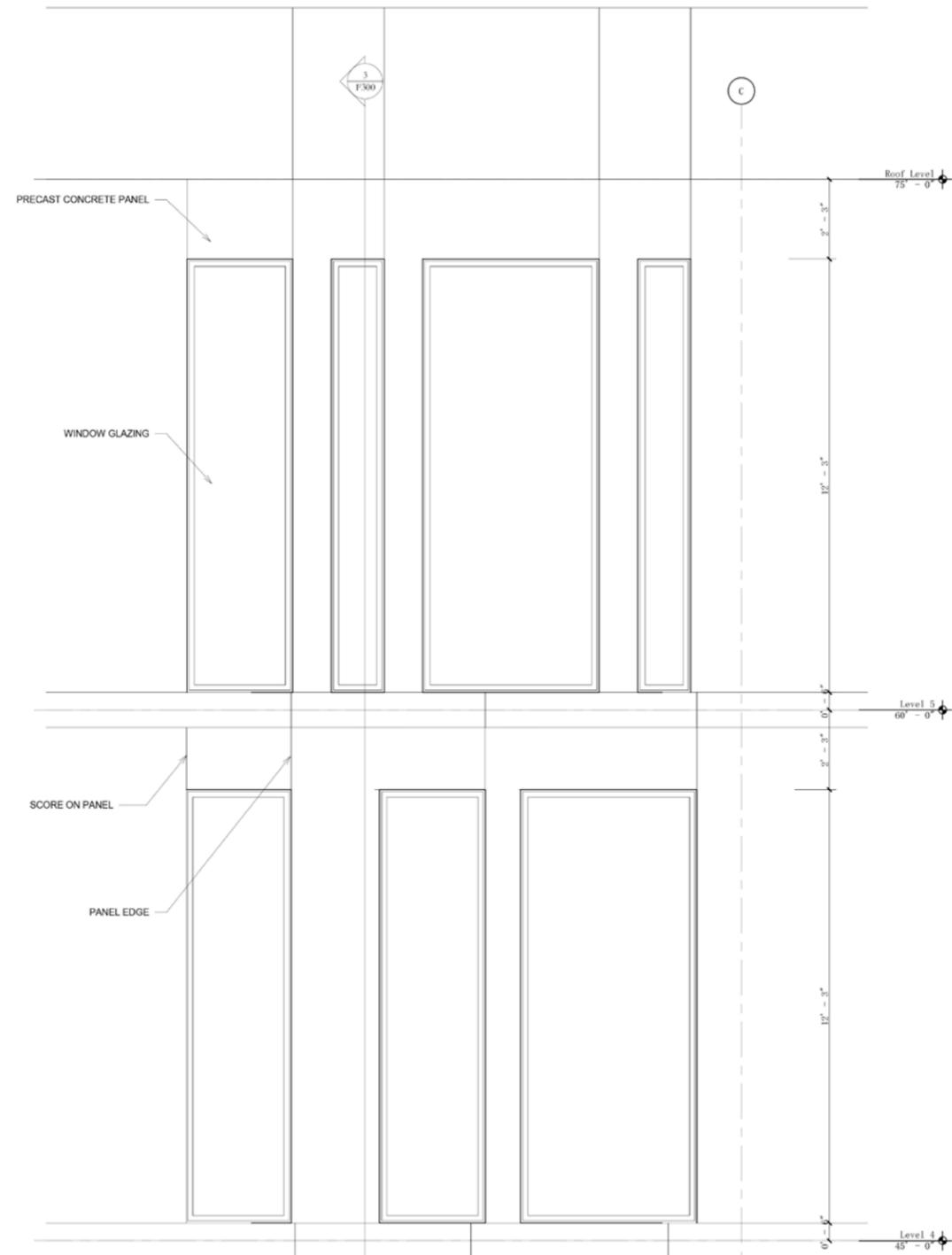
4 WT-01 AXO



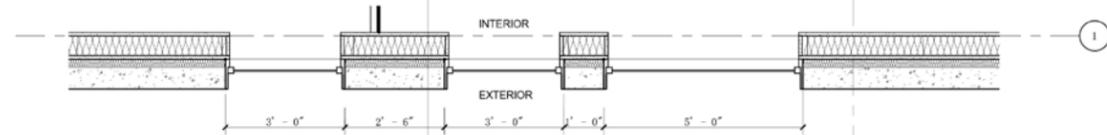
1 WT-01 section detail  
3" = 1'-0"



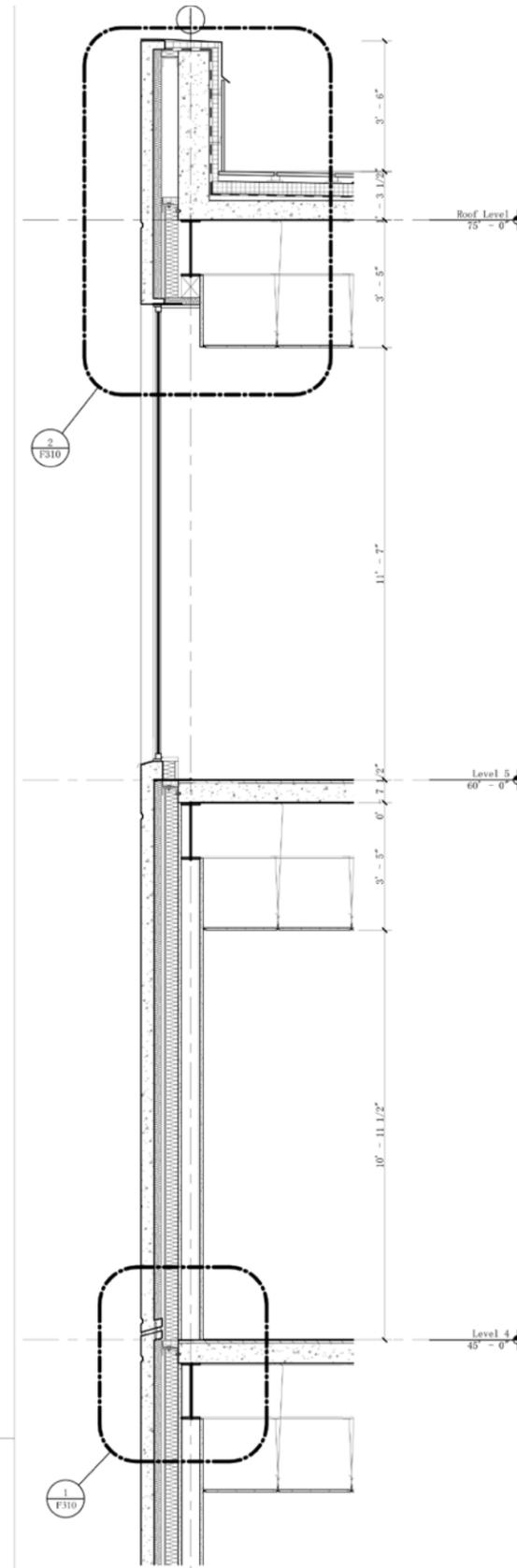
2 WT-01 section detail  
3" = 1'-0"



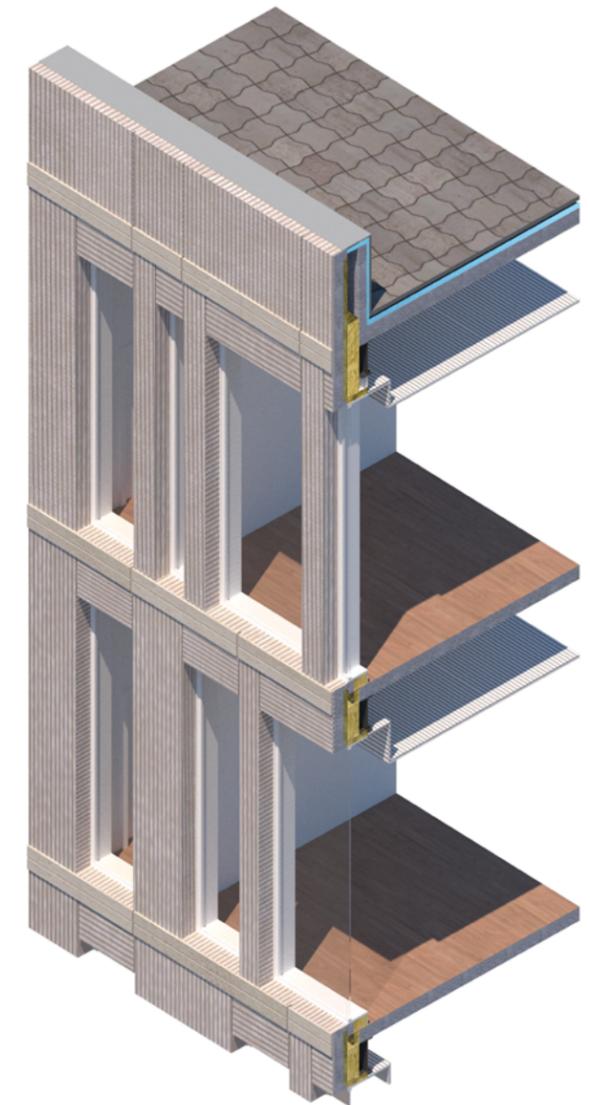
① WT-03 facade  
1/2" = 1'-0"



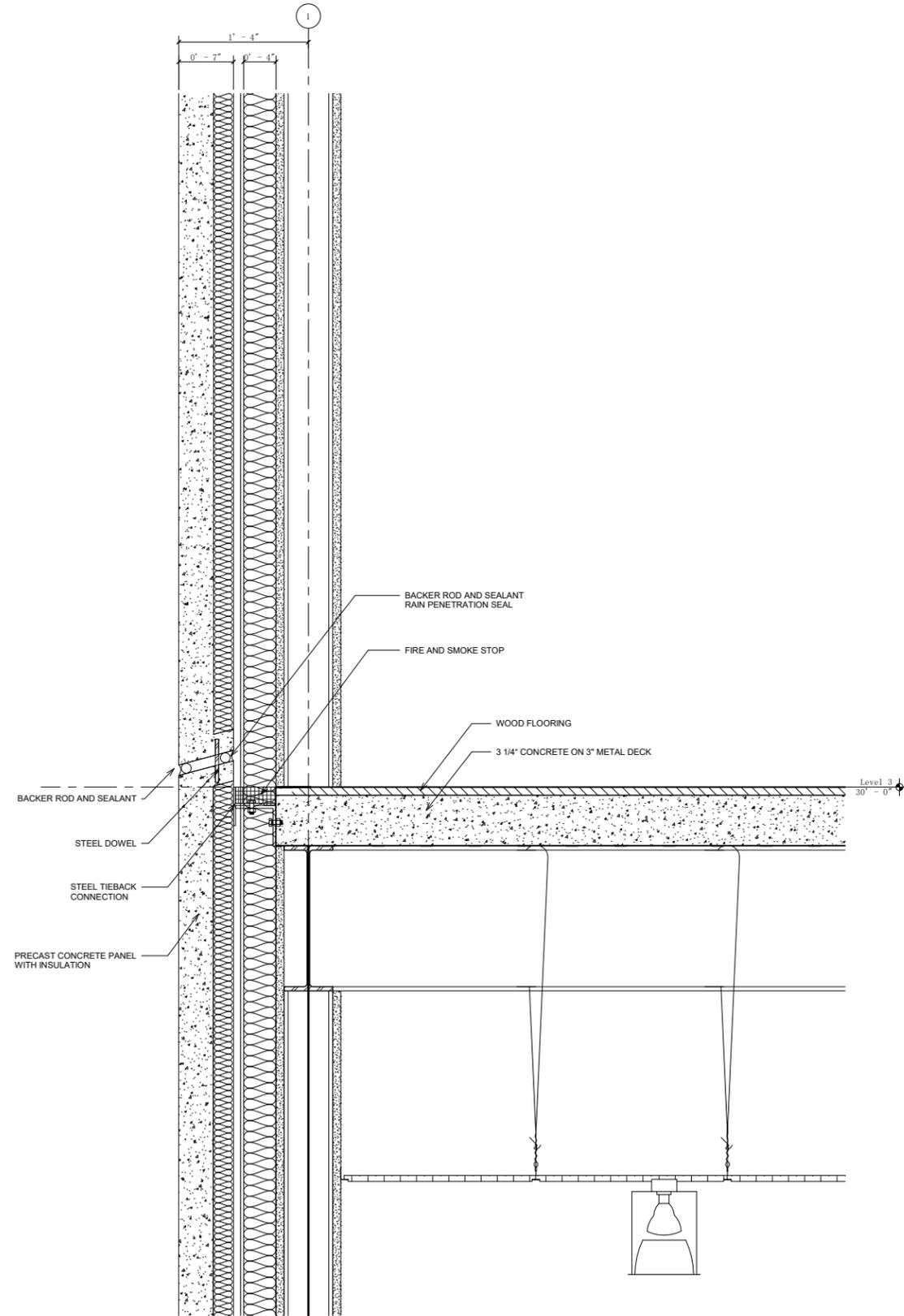
② WT-03 PLAN  
1/2" = 1'-0"



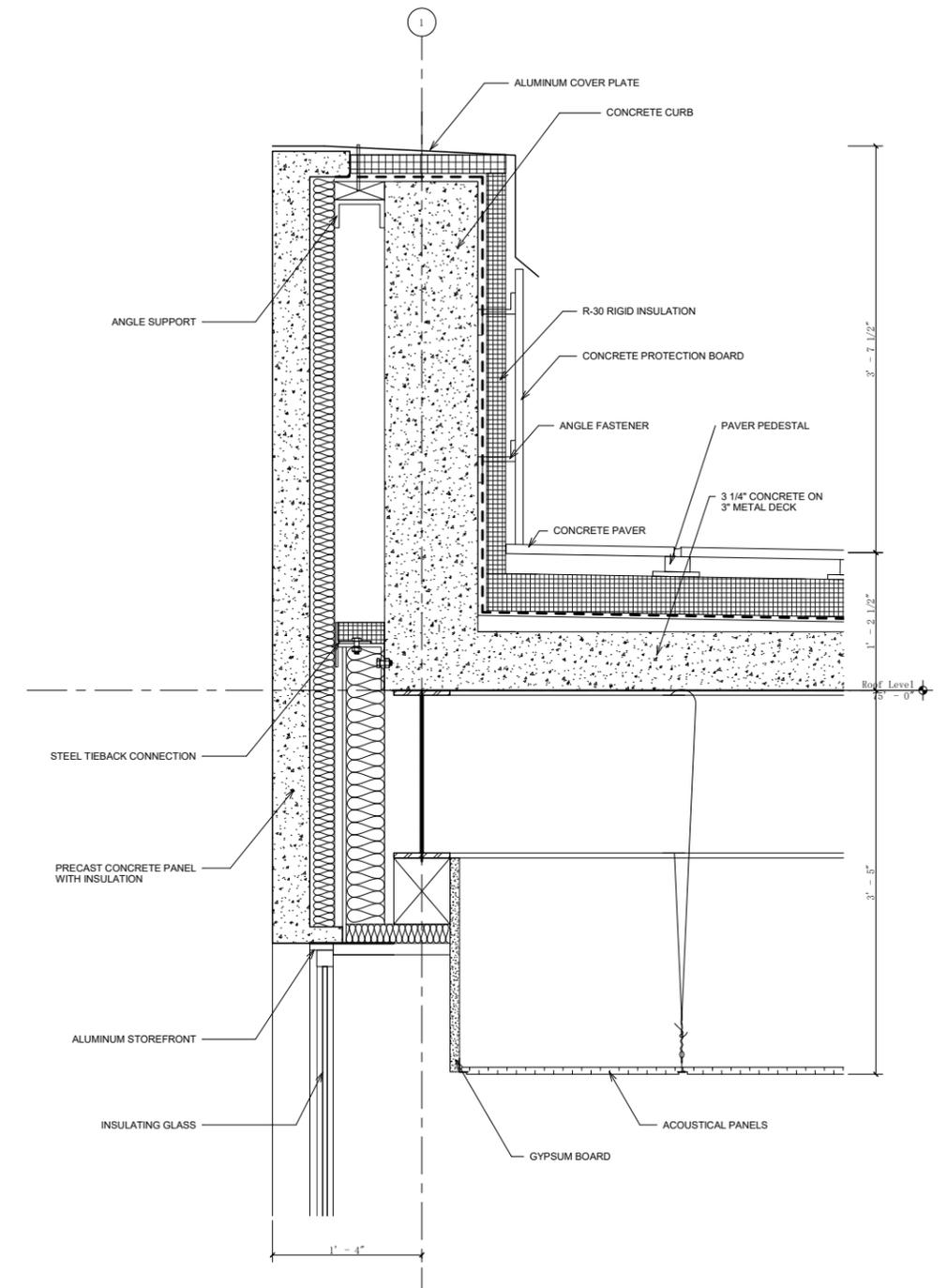
③ WT-03 SECTION  
1/2" = 1'-0"



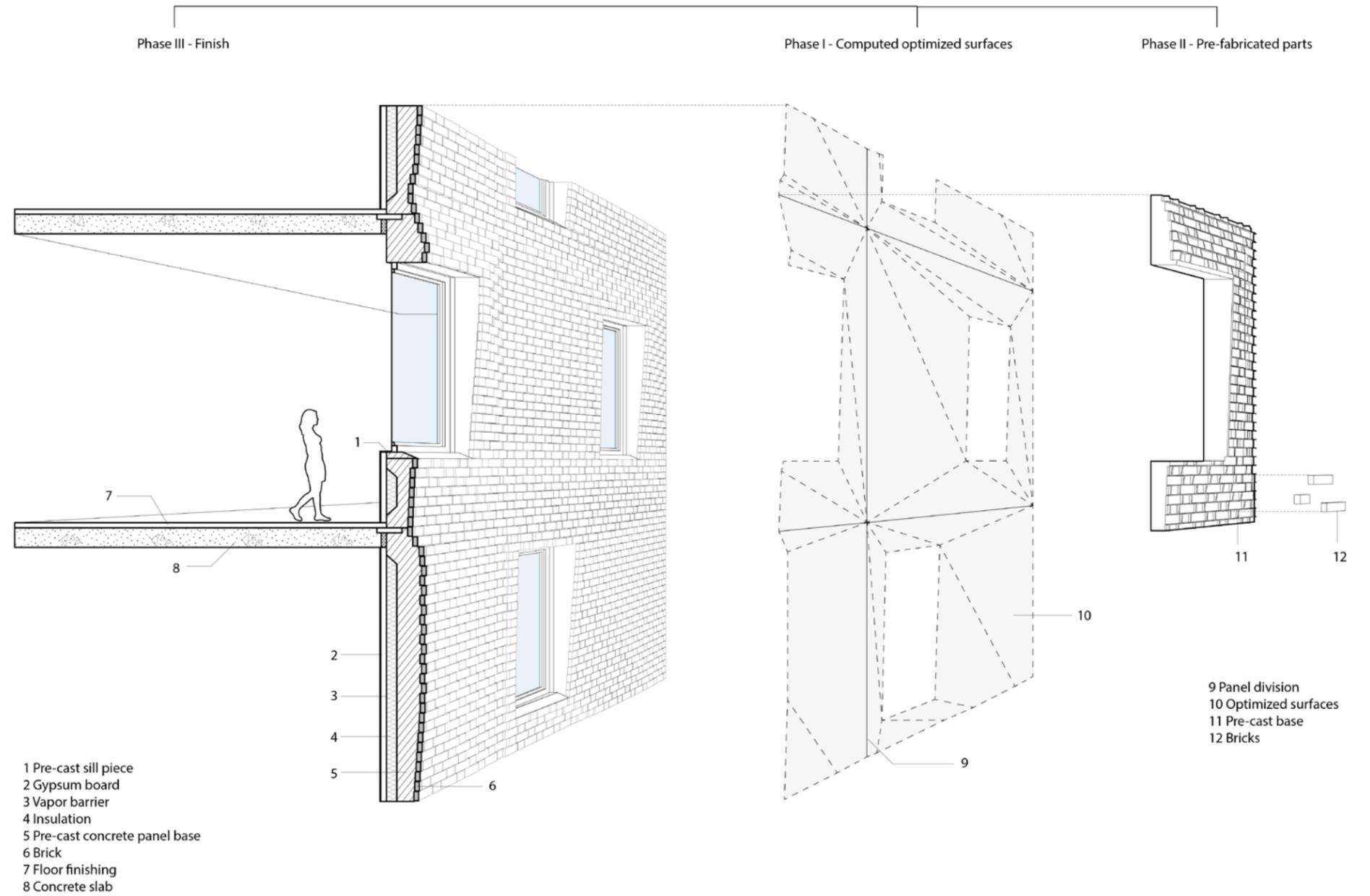
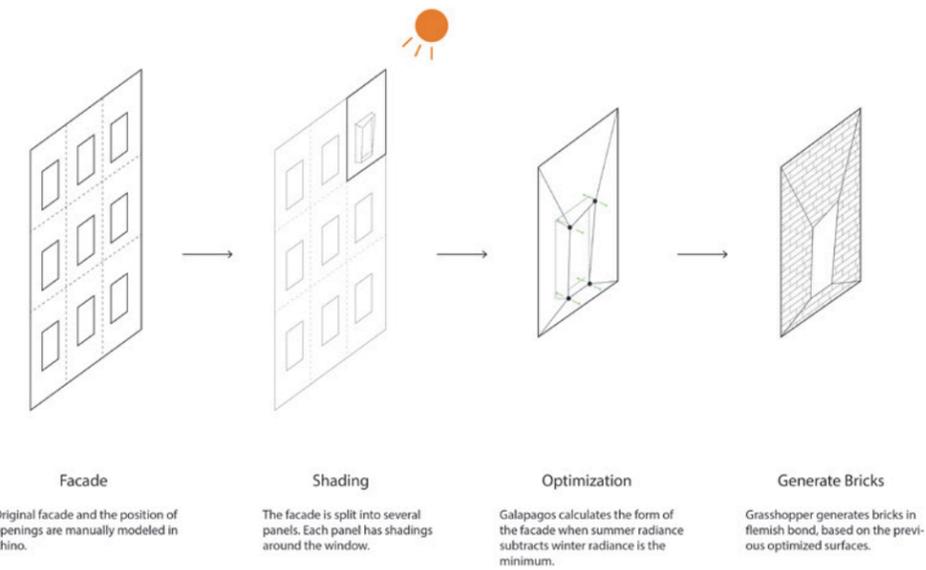
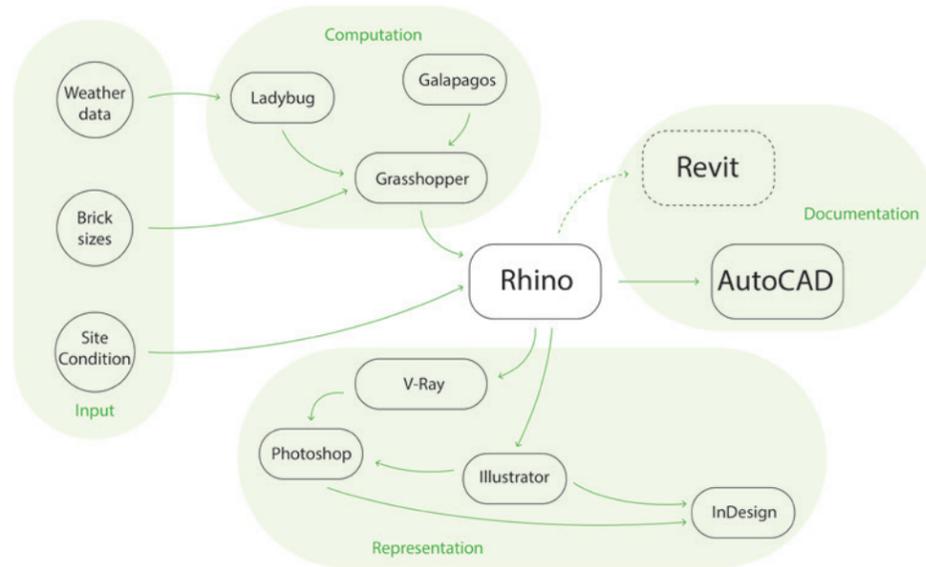
④ WT-03 AXO

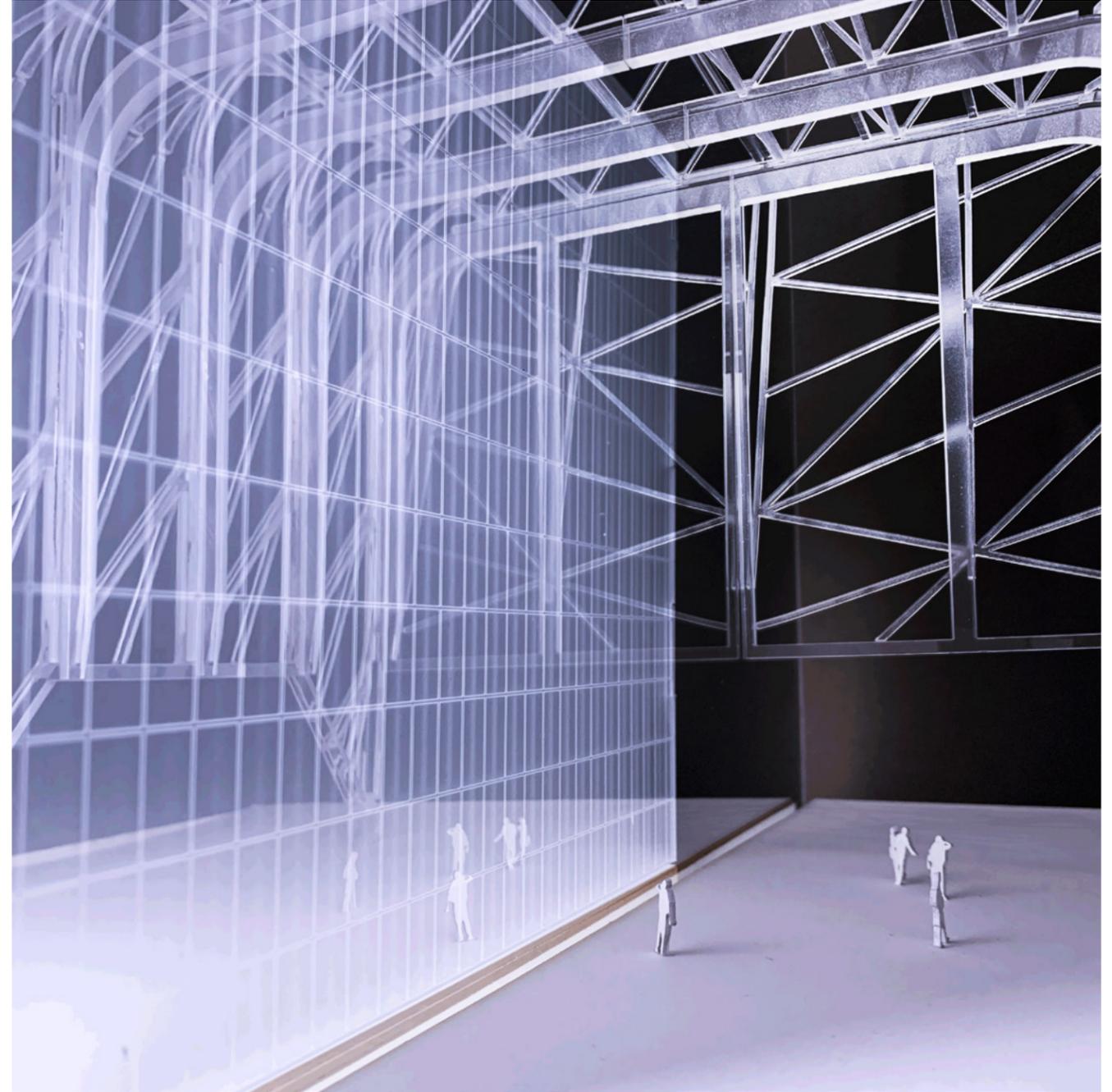
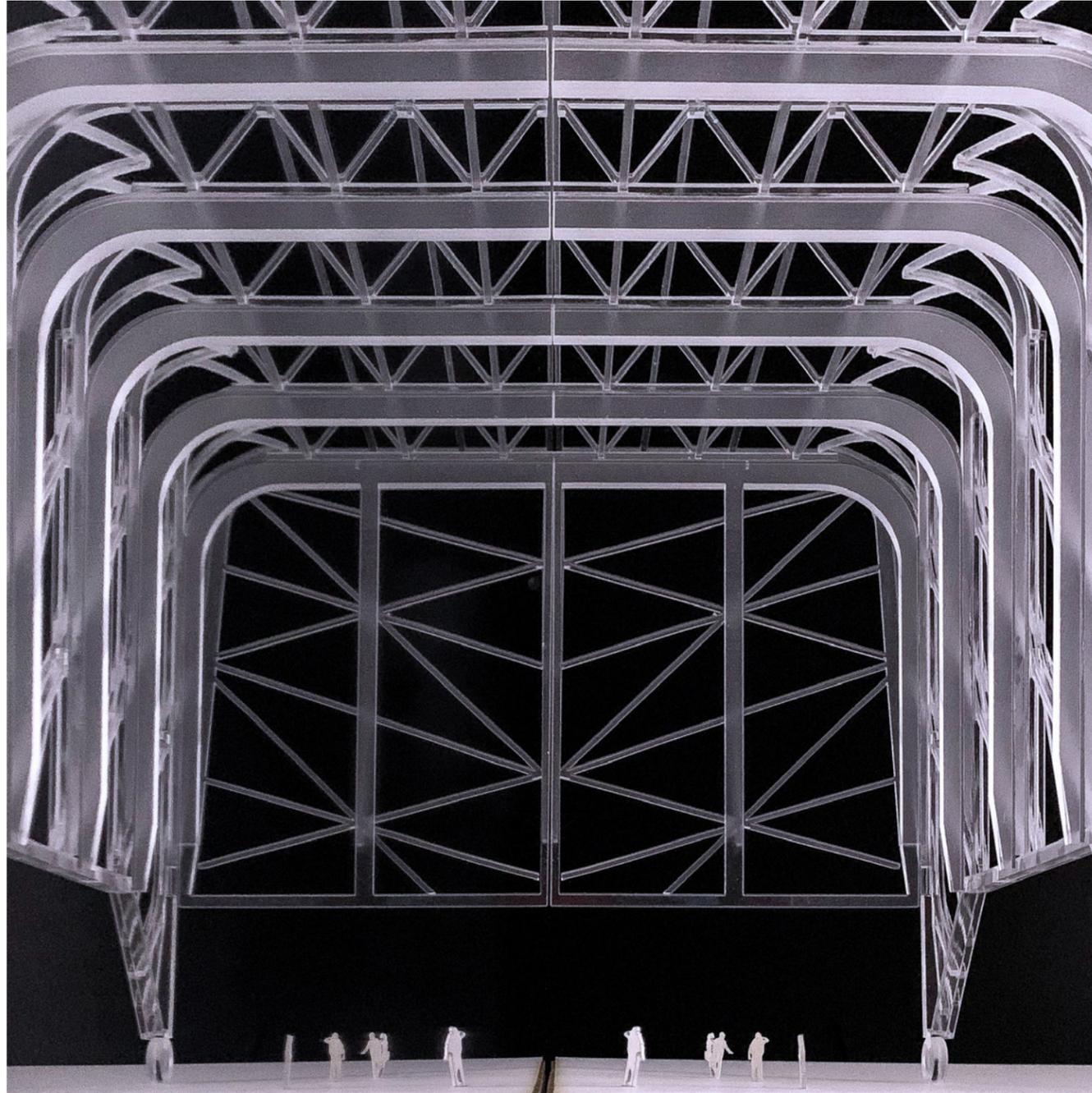


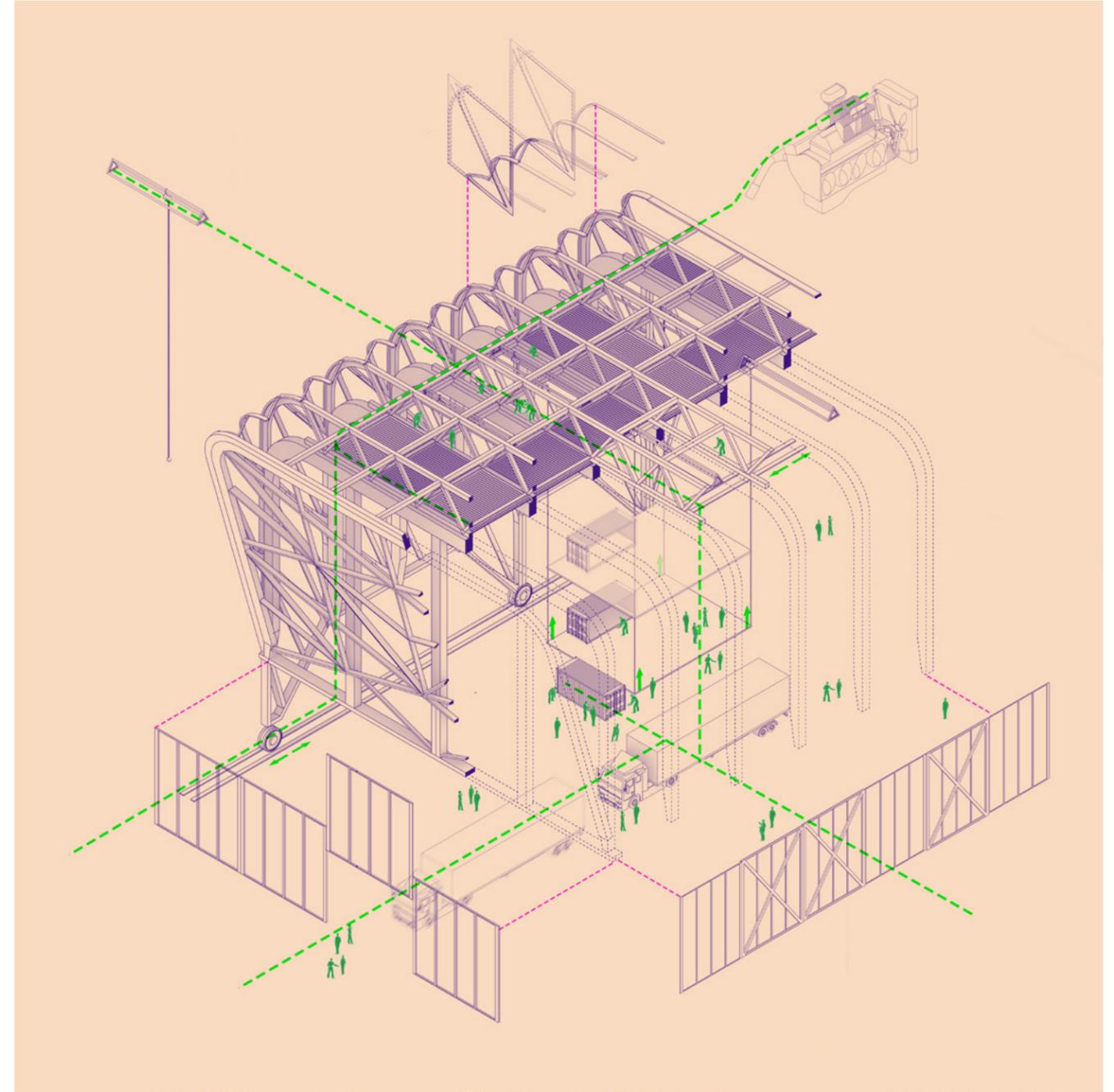
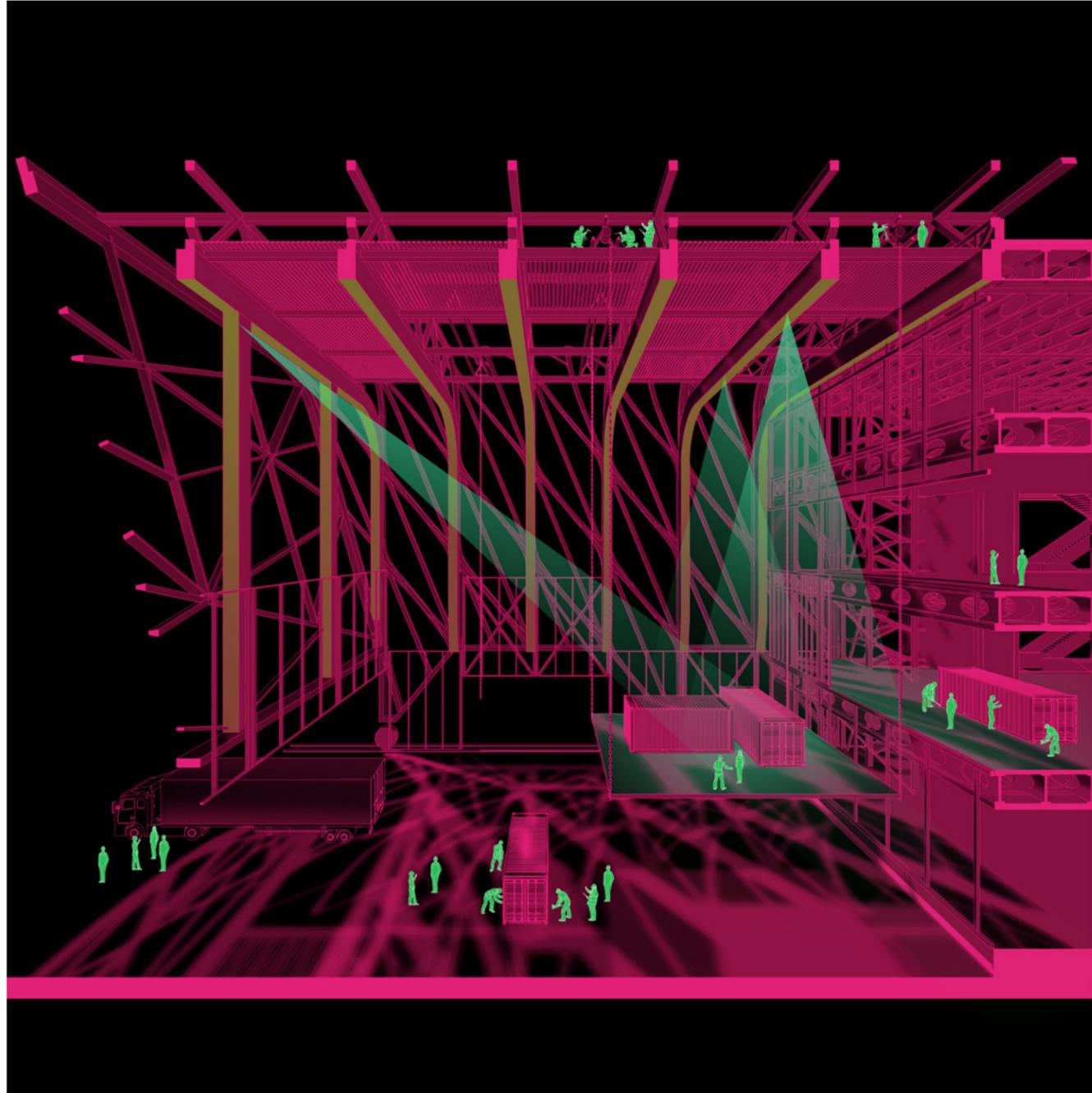
① WT-03 section detail  
 1 1/2" = 1'-0"



② WT-03 roof detail  
 1 1/2" = 1'-0"









**O V E R L A Y**

BY YI LIANG