

PORTFOLIO

Minghan Lin

2019 -- 2022, M.Arch, GSAPP

ARCHITECTURE STUDIO

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Architectural Daylighting

Staten Island Art Center & Artist Residence

[ACADEMIC]
COLUMBIA UNIVERSITY, GSAPP, FALL 2021,
ADV V

[INSTRUCTOR]
MARC TSURUMAKI

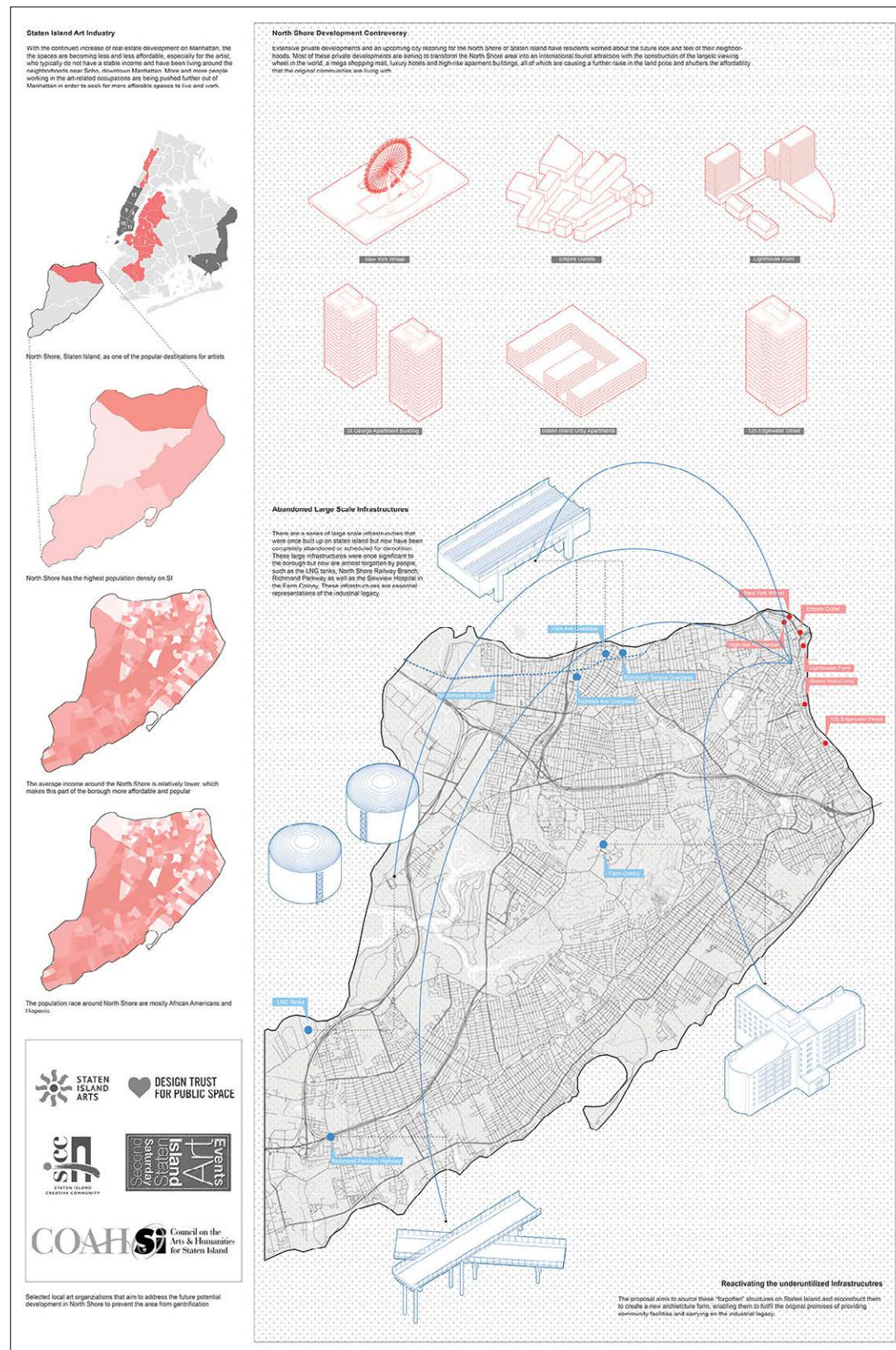
[TYPE]
ARCHITECTURE

[INDIVIDUAL]

With a series of private developments taking place around the North Shore area in Staten Island, there are less and less available spaces for the local artists to occupy, leaving the originally artistic neighbourhood gradually gentrified and capitalised. Meanwhile, Staten Island has also been a territory of abandon and disuse with a lot of large-scale infrastructures dotted across the island.

The project aims to reutilize these large abandoned or disused infrastructural pieces and reassemble them in a new architectural form, enabling them to fulfill their original promises of providing community facilities while serving the local artist groups. The building is seen as a reassembly of made elements instead of a new construction of materials.



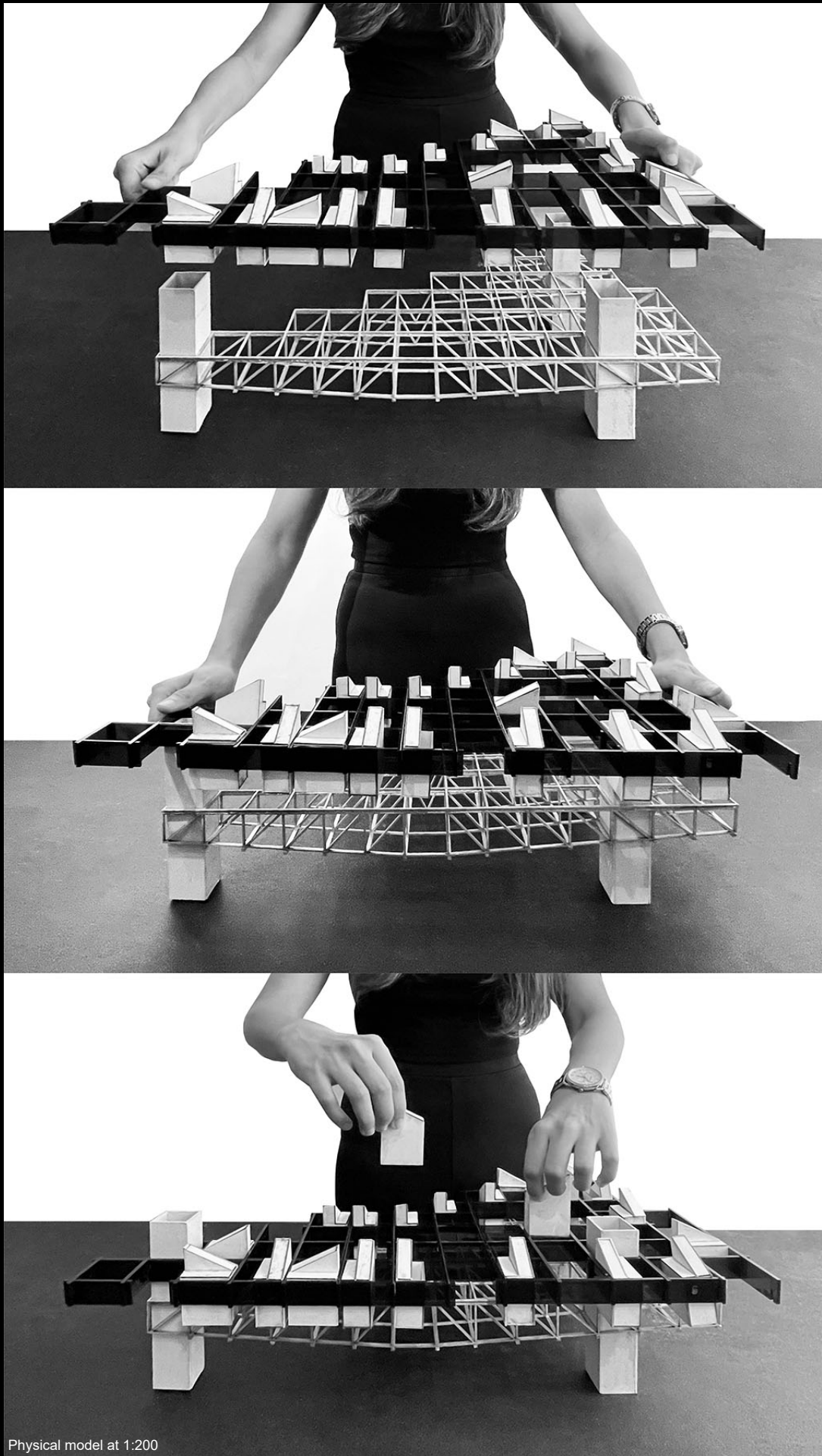


New Developments & Disused/Abandoned Infrastructures in Staten Island

The drawing above shows a collection of 6 typical private developments around the North Shore on Staten Island that have been gradually gentrifying the neighbourhood along with some of the existing notable abandoned or disused infrastructures dotted across the whole island, such as the abandoned railway and highway, gas tanks and derelict housings. All of these frames Staten Island as a conflicting territory of new constructions versus abandoned structures.



Exterior view

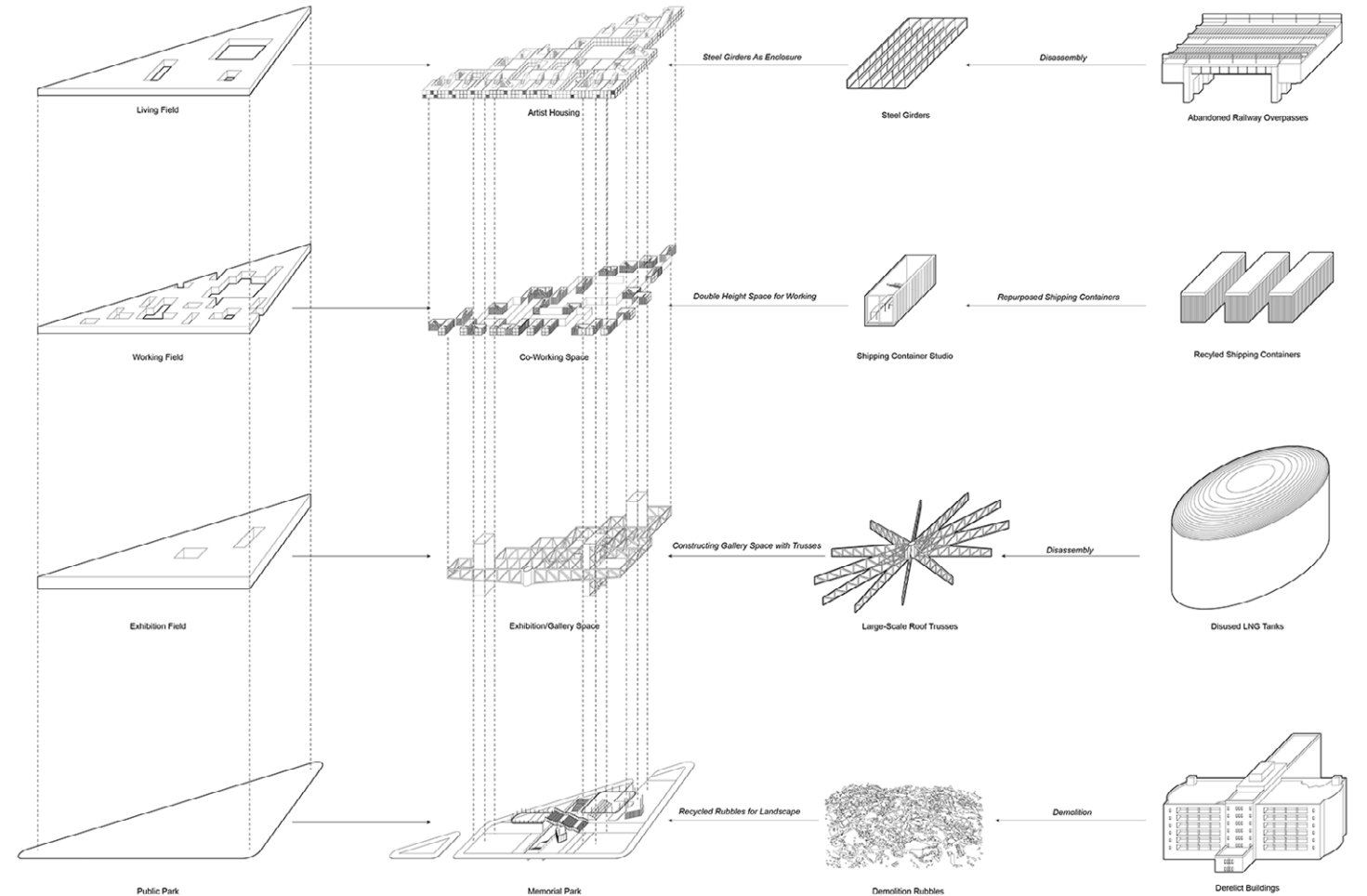


Layering

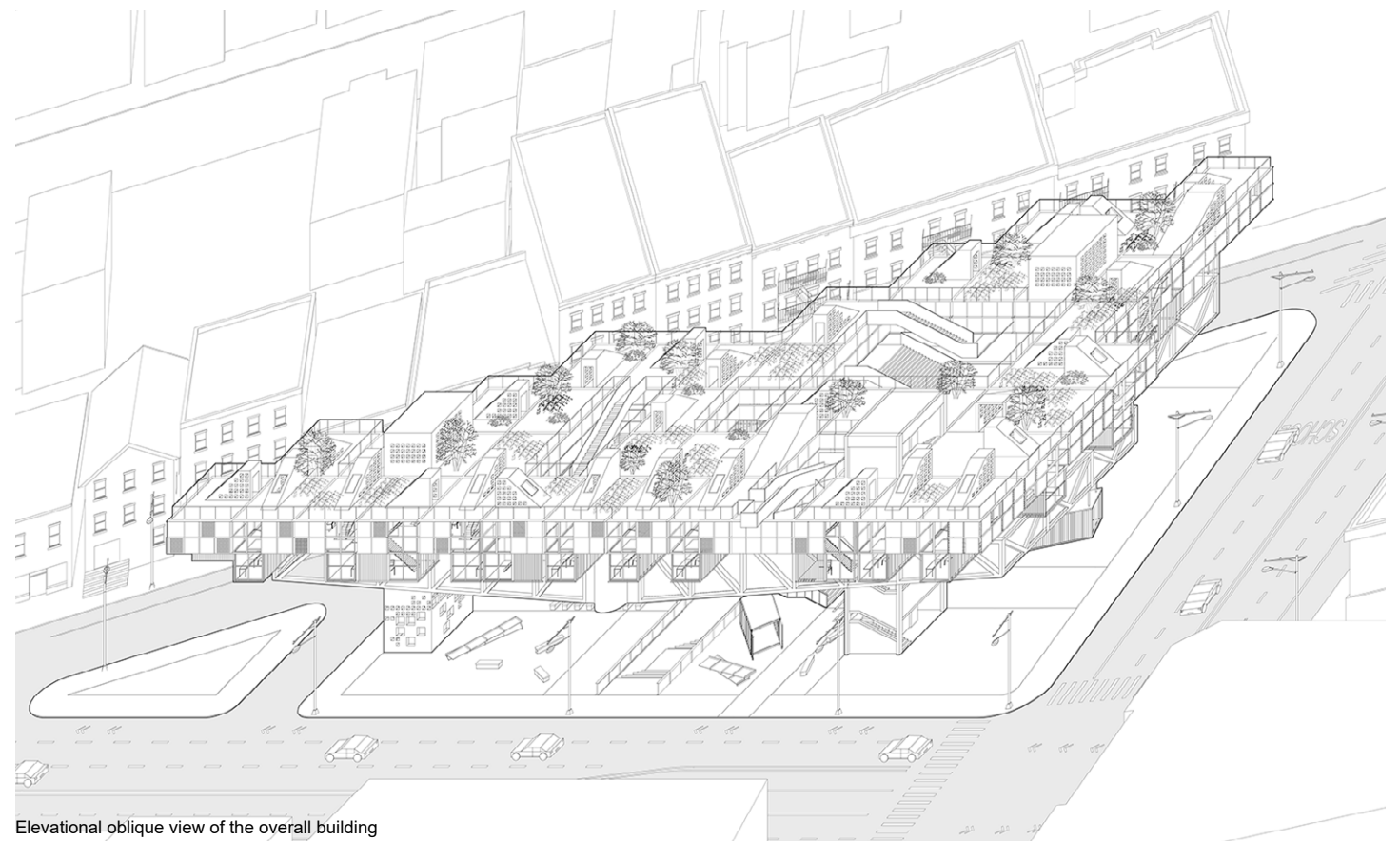
The physical model conceptually demonstrates the stacking of each horizontal level that has come from different sources and is dedicated to different programs---a public park maintained on the ground level, an art center with large-scale trusses on the second level, co-working spaces made with shipping containers and a residential level with steel girders as the facade enclosures.

Each of these elements has come from an abandoned/disused large infrastructure on Staten Island and is reassembled as a new architectural form.

Physical model at 1:200



Concept diagram showing the massing strategies & dis/re-assembly of the abandoned infrastructures



Elevational oblique view of the overall building







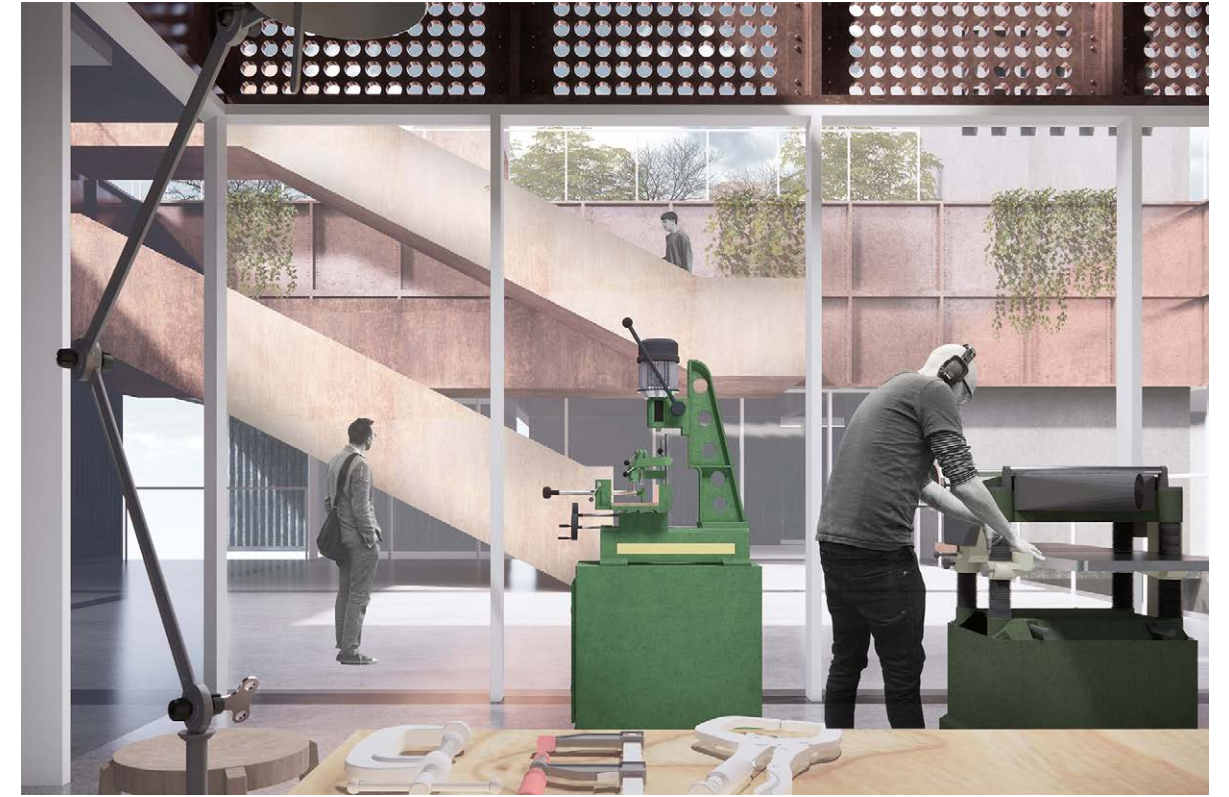
Co-working level plan



Artist housing studio interior view



Level 01 entrance of the public park



Level 03 artists' co-working shop



Level 02 interior view of the art center



Level 05 roof terrace

SANCTUARY CAMPUS ----URBAN ANTIDOTE

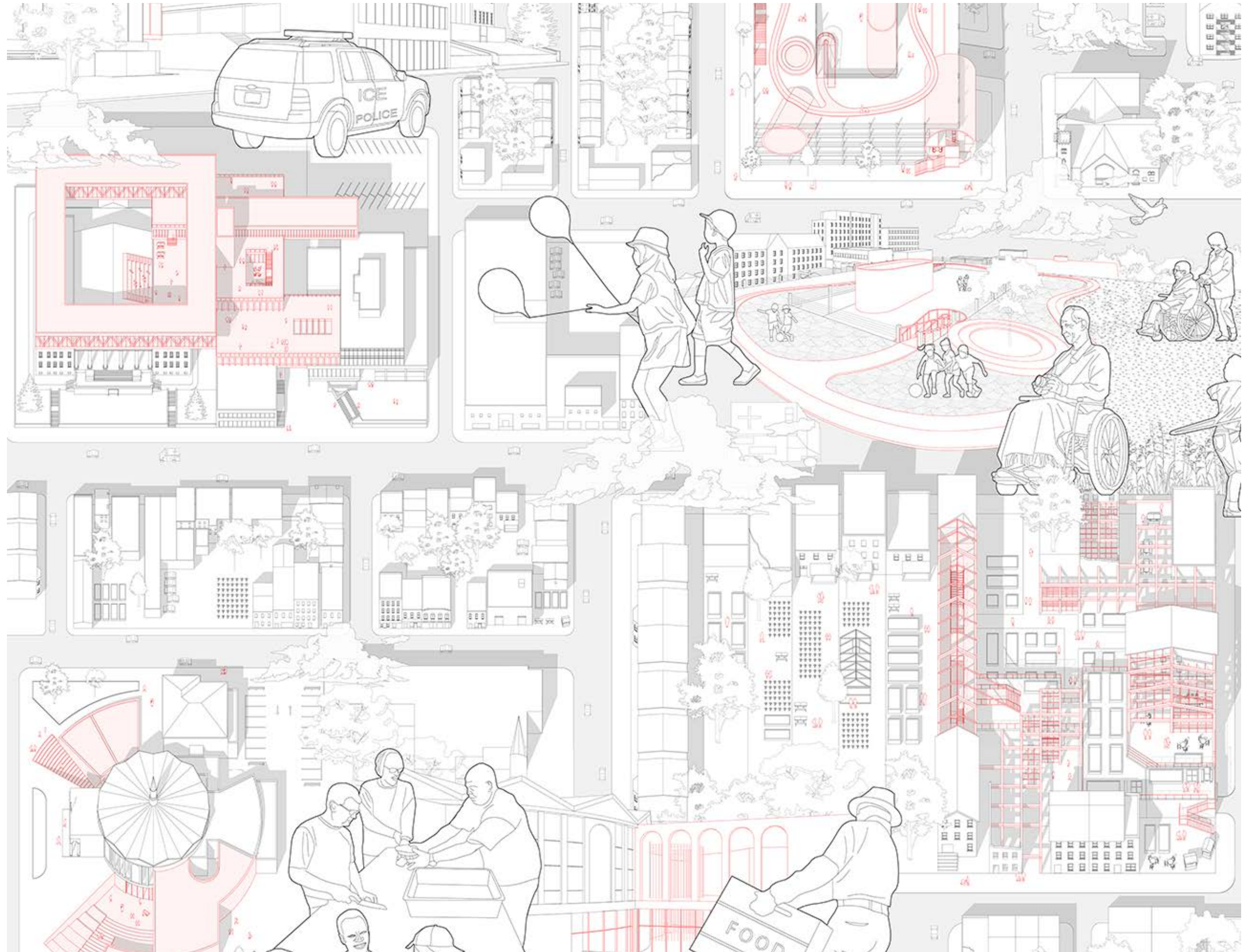
[ACADEMIC]
COLUMBIA UNIVERSITY, GSAPP, FALL 2020,
ADV IV

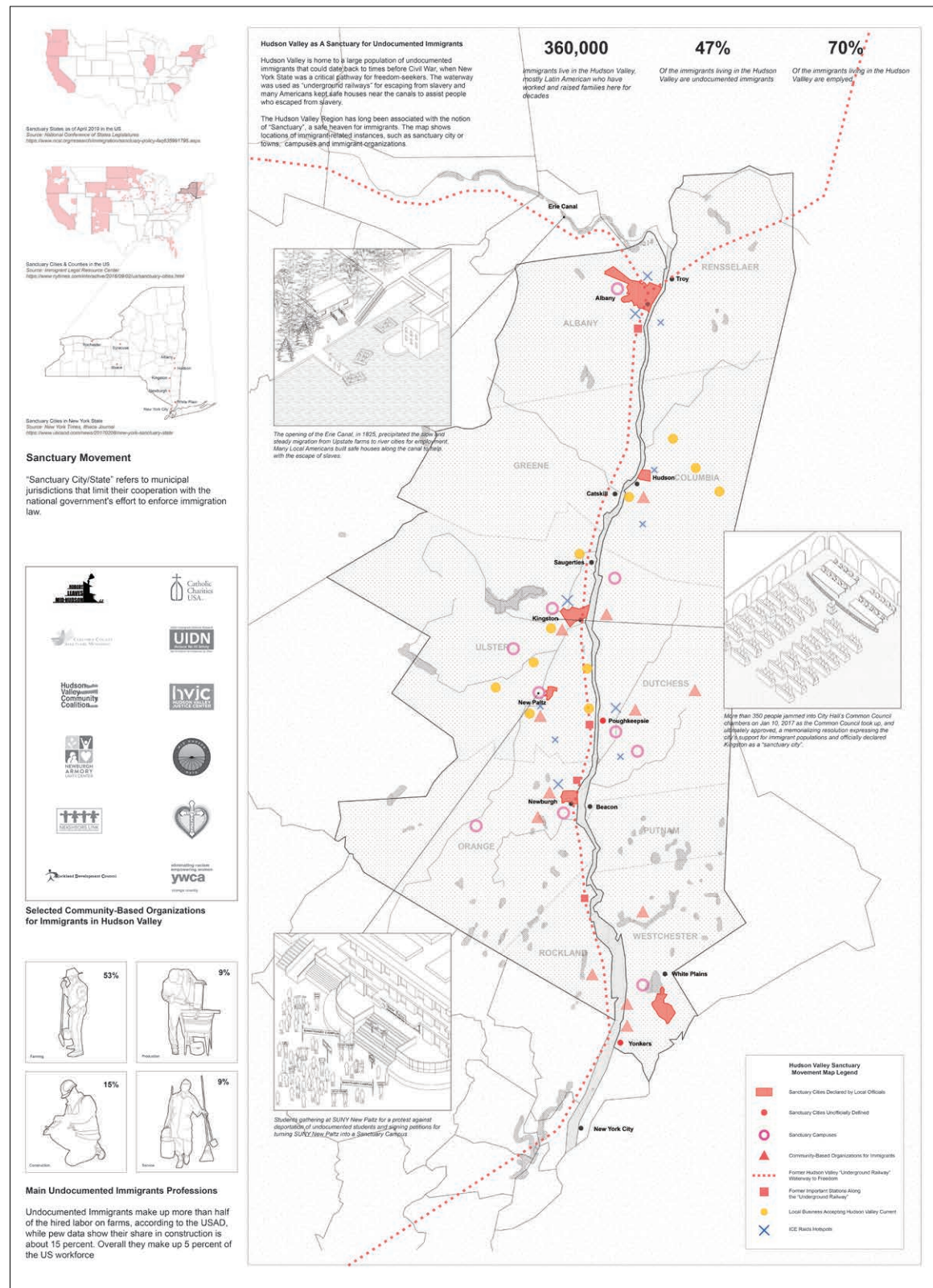
[INSTRUCTOR]
NAHYUN HWANG

[TYPE]
URBAN INTERVENTIONS

[TEAM PROJECT]
WITH MUYU WU

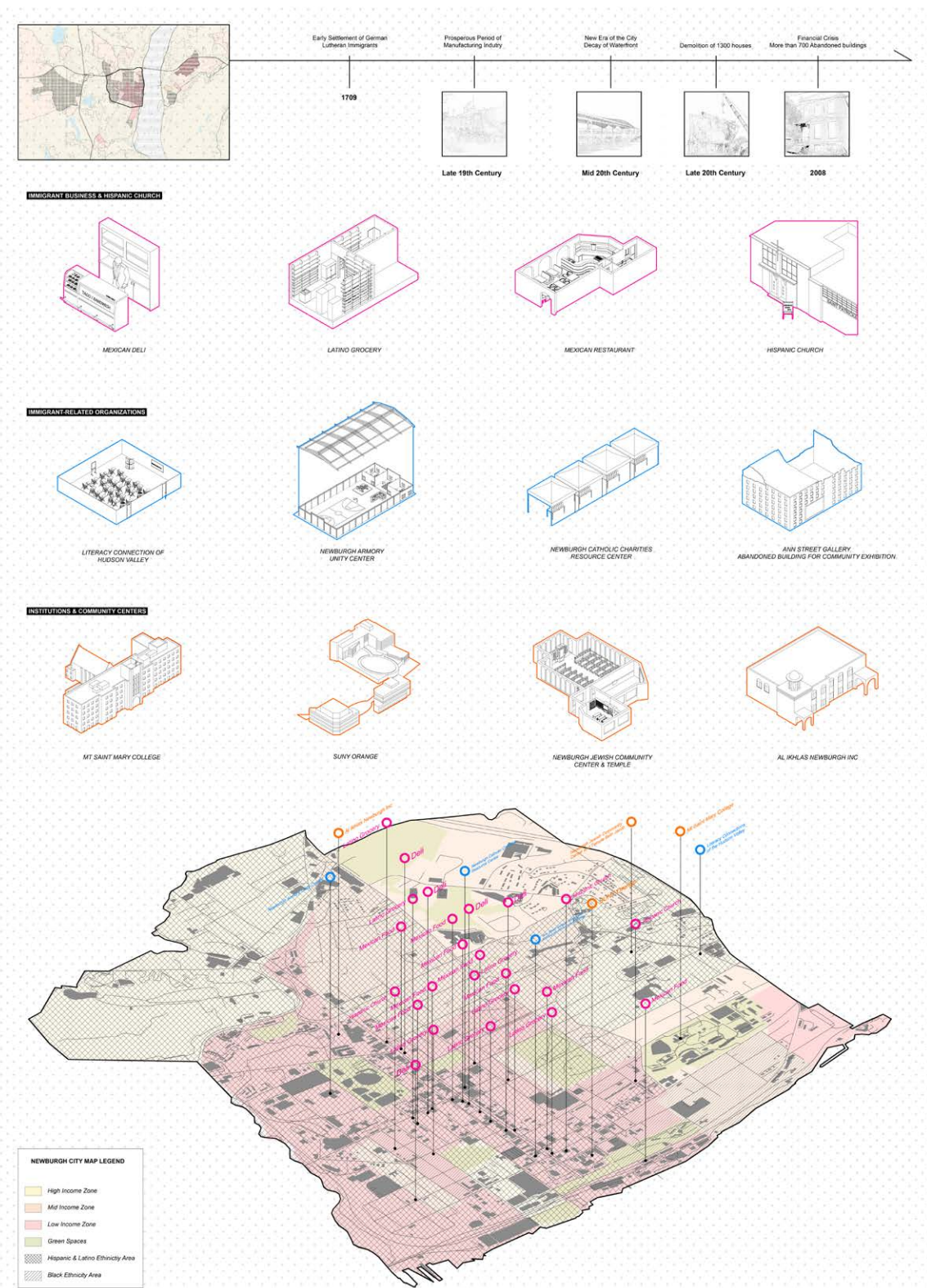
Located in Newburgh, the sanctuary campus proposes a new type of campuses distributed across the city. Based upon both the main professions by the immigrants and the needs of the city, the interventions serve both the immigrant community and aim to gradually rejuvenate and transform Newburgh as a whole. Instead of a conventional enclosed campus, the scattered typology aims to blend in better with the existing urban fabric and create soft barriers, protecting the undocumented immigrants from deportation. More than providing a sheltered space, each of these four campuses serves beyond the means of protection and has its own unique functions and addresses different issues derived from the context they are interacting with.





Hudson Valley as Sanctuary Zones

Hudson valley has long been associated with the notion of sanctuaries for refugees or fugitives and there are currently approximately 360,000 immigrants living in the Hudson valley area. The analysis drawing below focuses on the locations of sanctuary states and cities across the US and specifically mapped out the immigrant-related instances in Hudson Valley, such as local institutions, organizations and businesses.



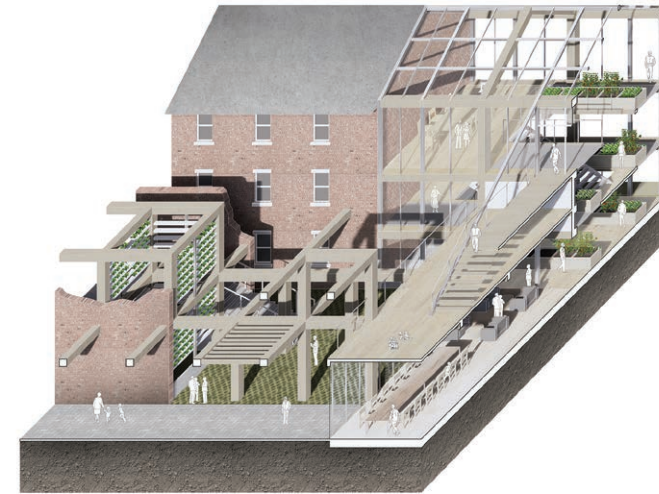
Undocumented Immigrants Spatial Typologies & Distributions, Newburgh

Newburgh, as one of the sanctuary cities in the Hudson valley, is also currently the city that has the most undocumented immigrants. The drawing above shows the distribution and concentration of 12 different spatial typologies related to immigrants in Newburgh, including local businesses and hispanic churches, non-profit organizations and local institutions and community centers.

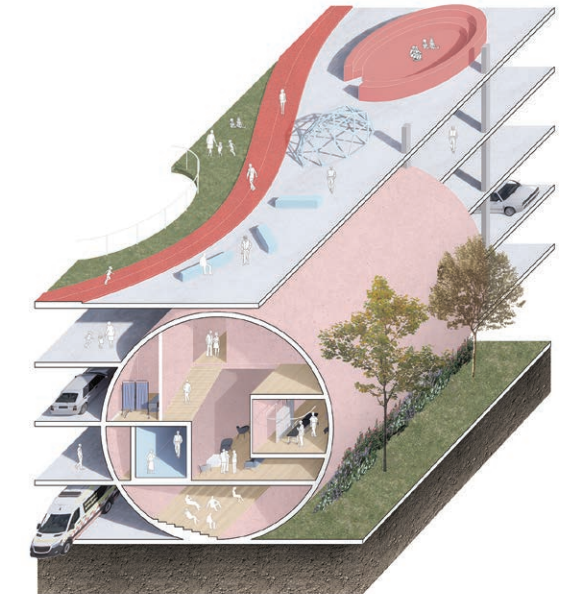


Site Locations

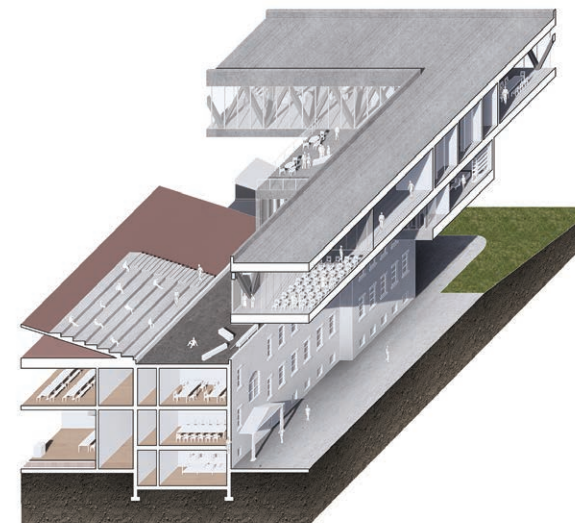
Four specific sites are identified (marked in red) based upon an analysis of the existing spatial typology of the city, each of which is intended to intervene with existing buildings of a unique characteristic. These four building types are vacant or derelict buildings, a hospital, a city court and a catholic church.



School of Urban Agriculture & Construction



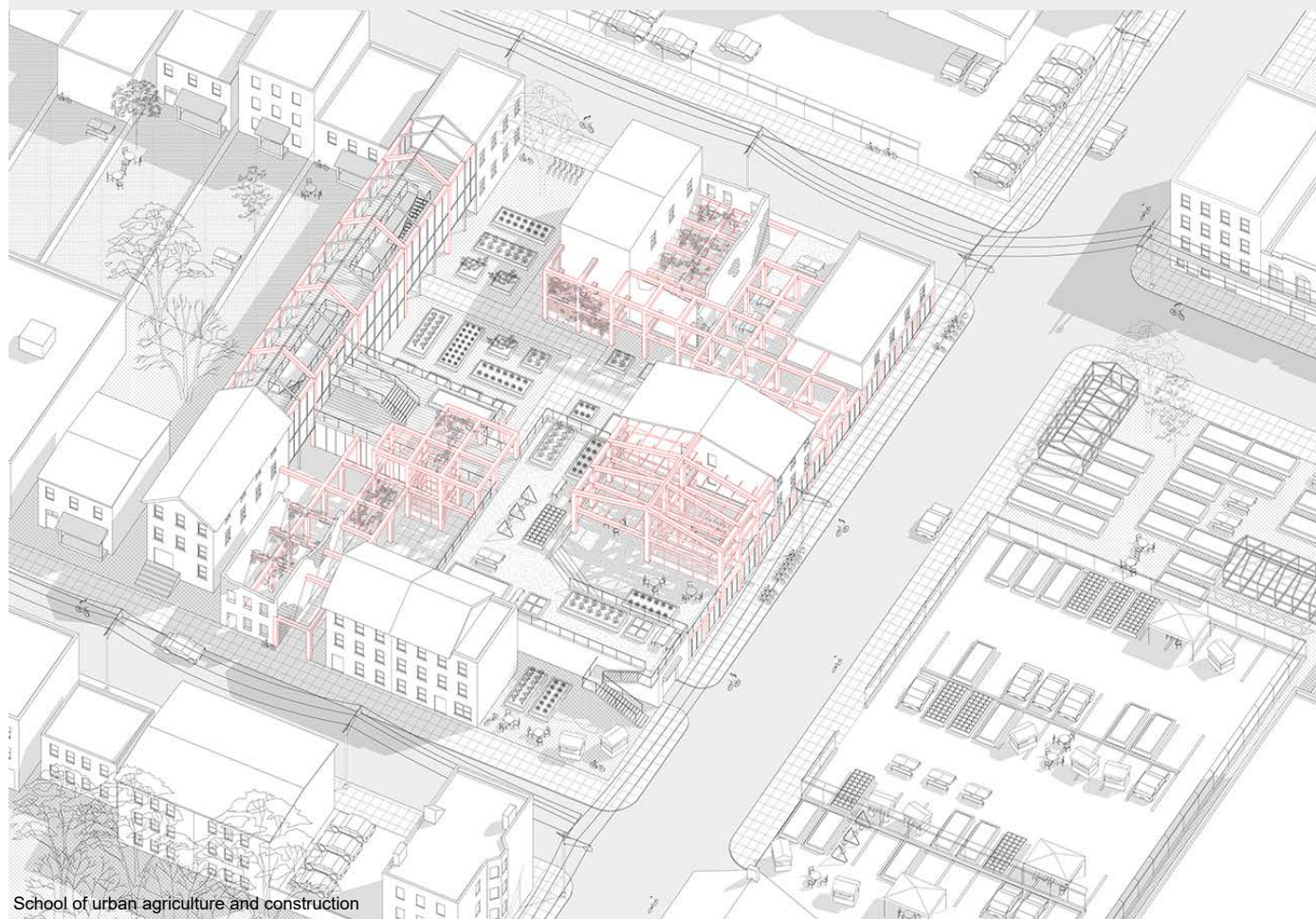
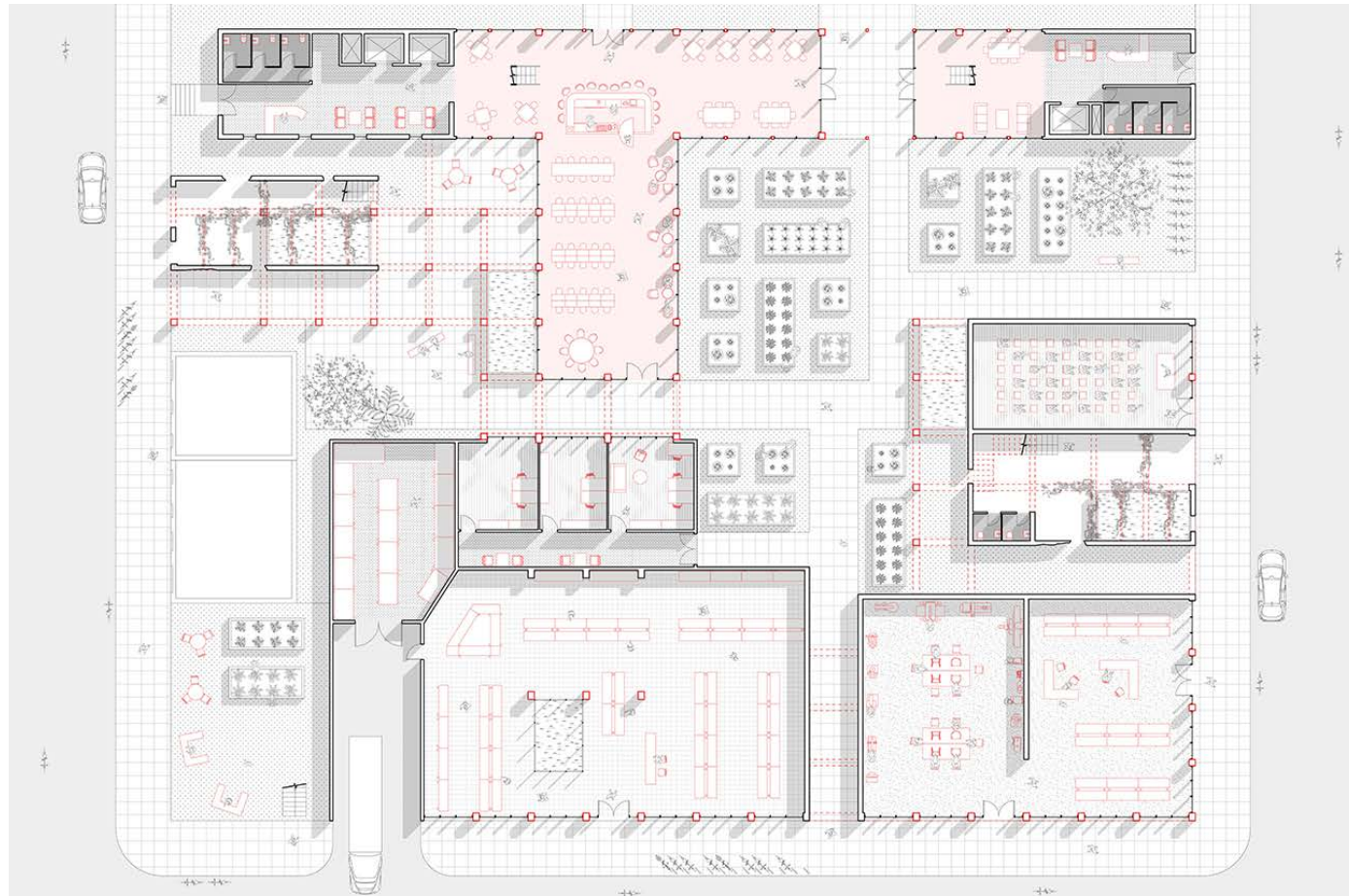
Center of Health & Childcare



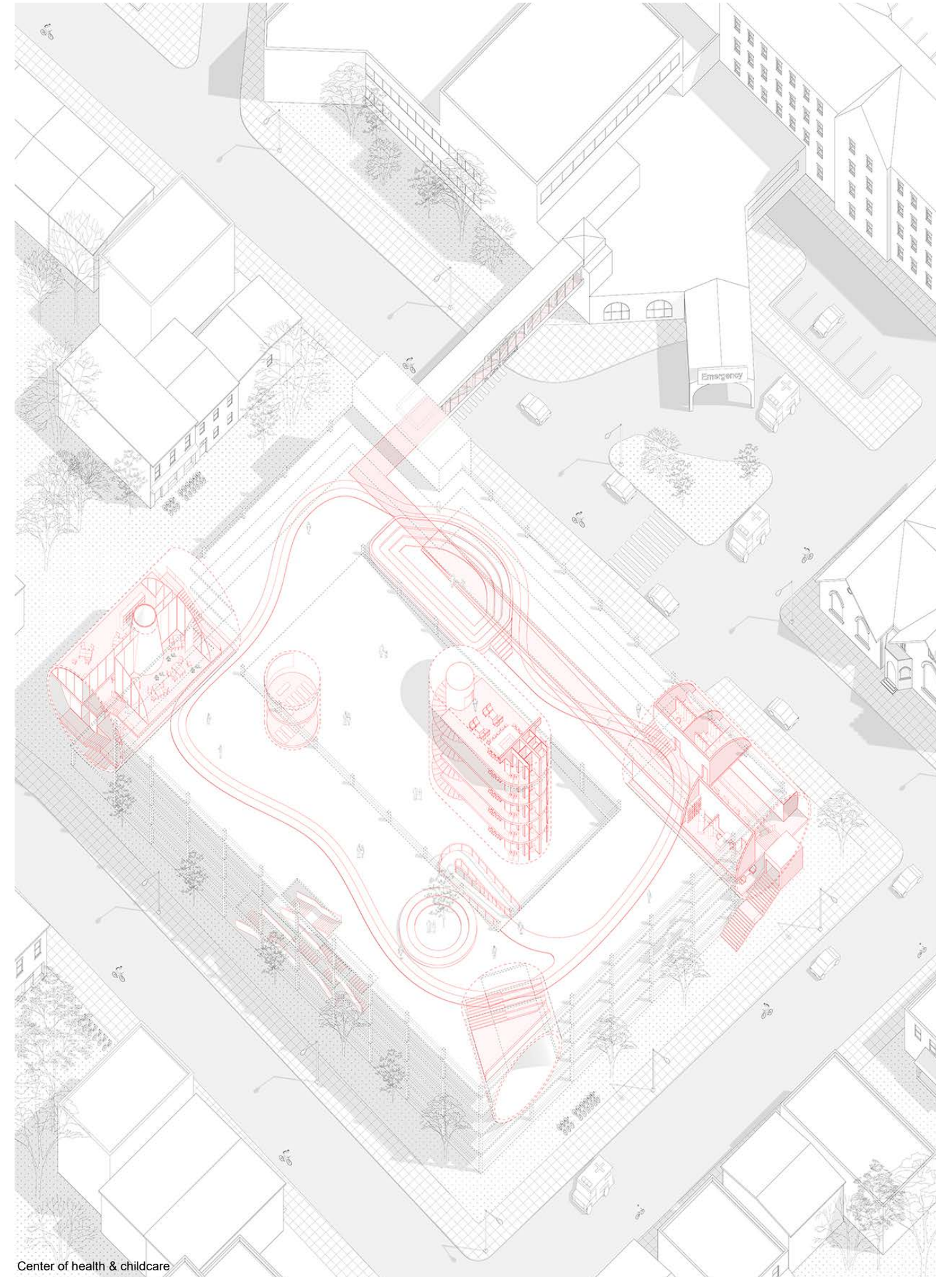
School of Law & Journalism



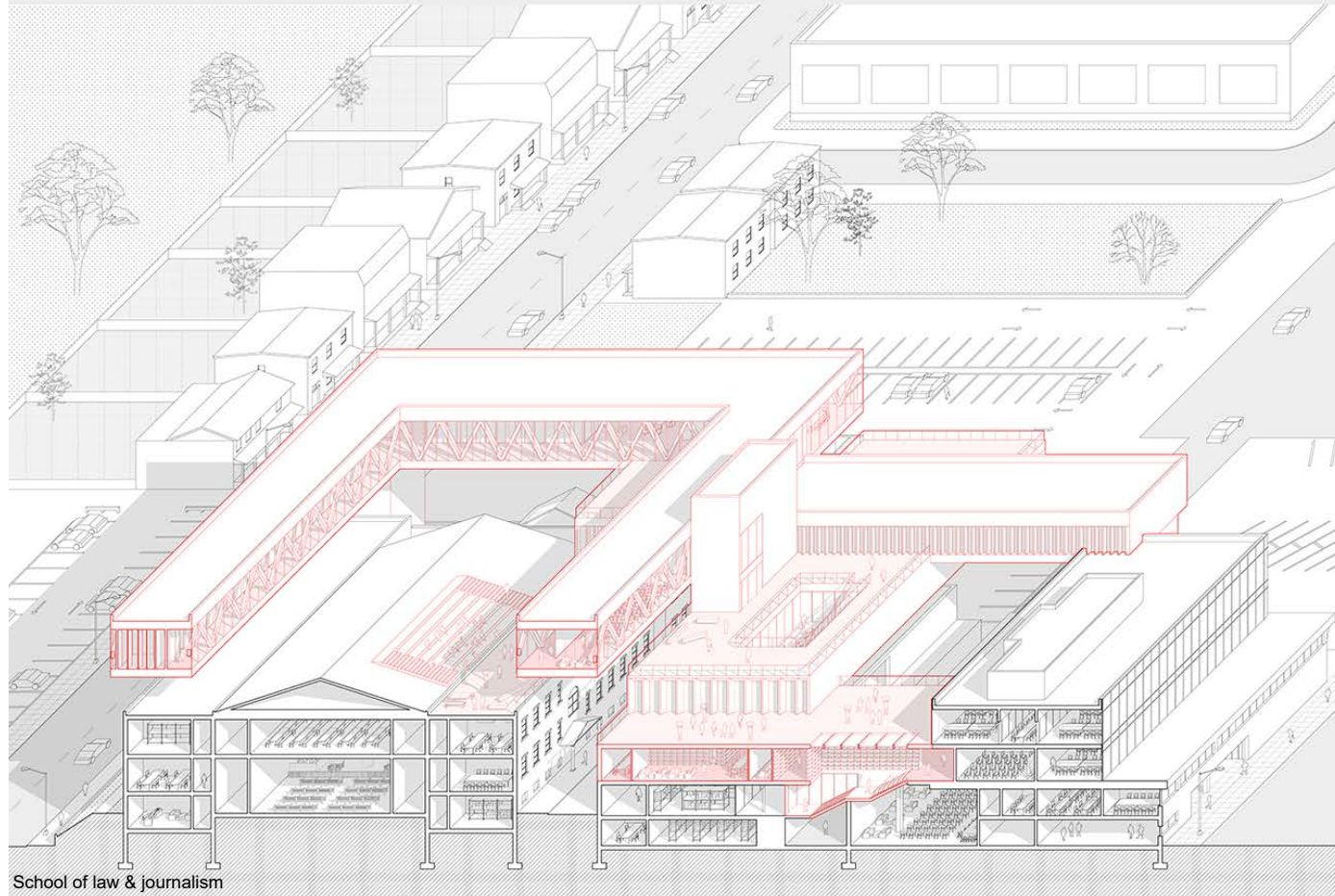
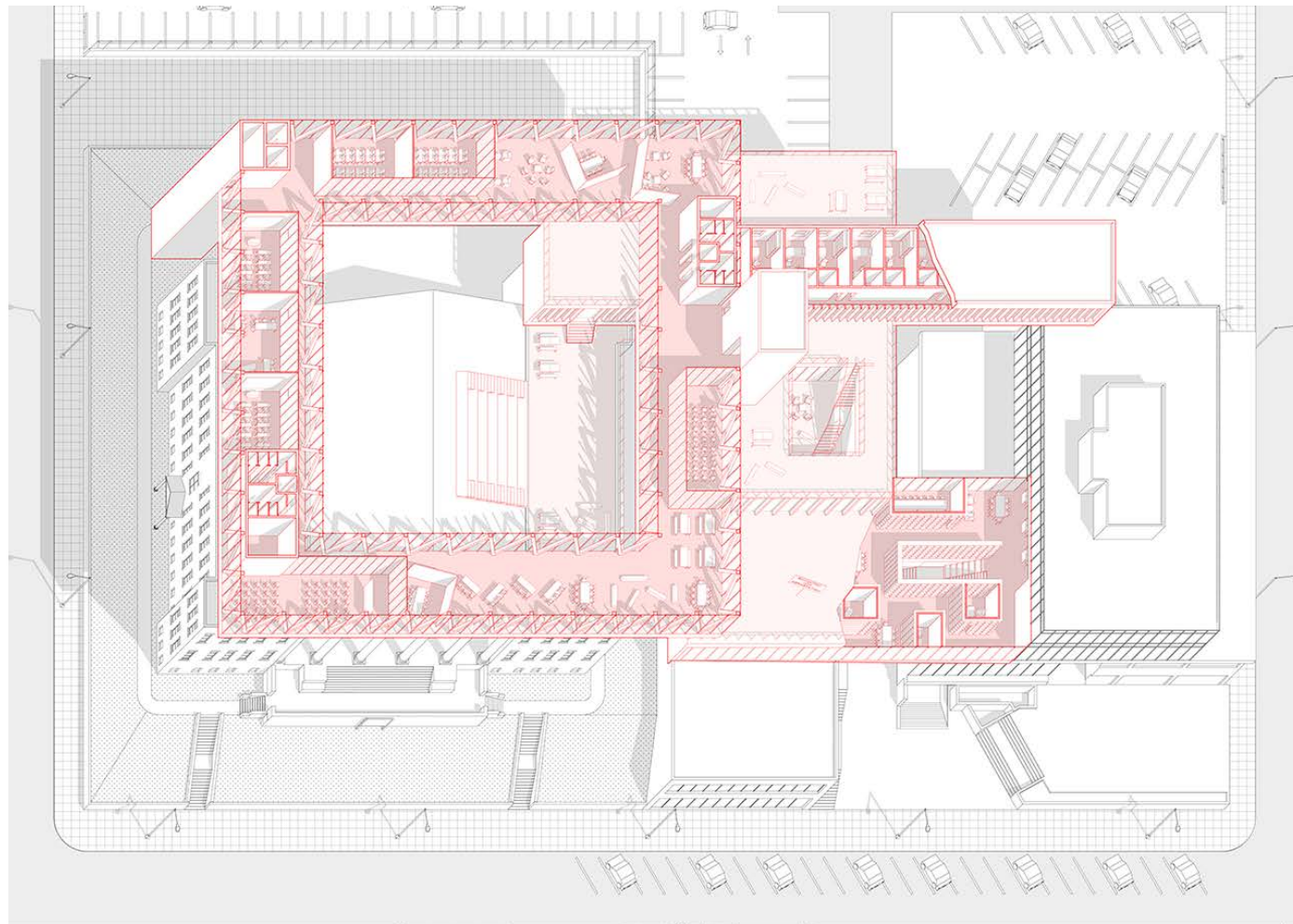
Mutual Aid Kitchen & Language Center



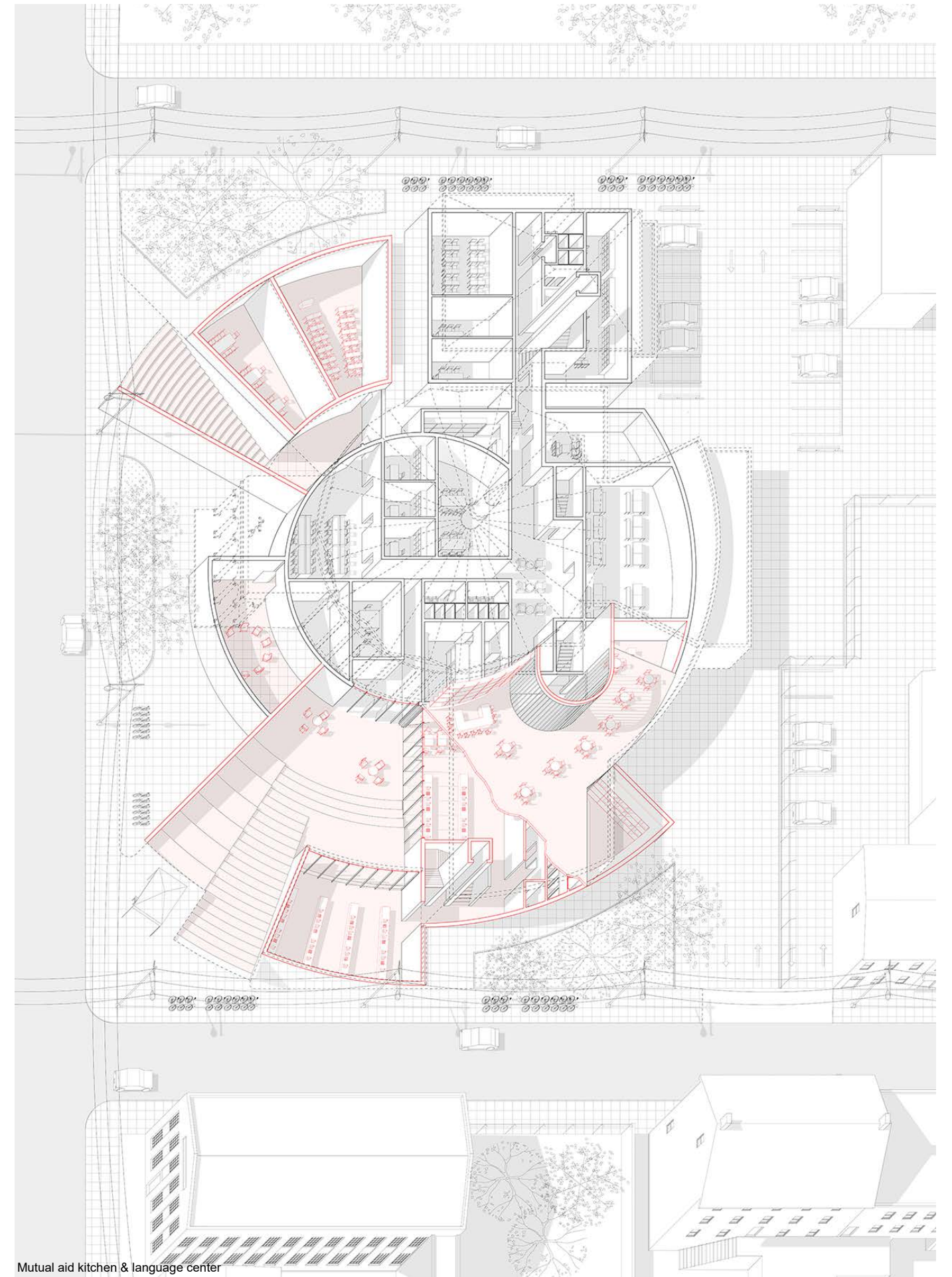
School of urban agriculture and construction



Center of health & childcare



School of law & journalism



Mutual aid kitchen & language center



School of urban agriculture and construction



School of law & journalism



Center of health & childcare



Mutual aid kitchen & language center

Institute of Water

[ACADEMIC]
COLUMBIA UNIVERSITY, GSAPP, SPRING
2022, ADV VI

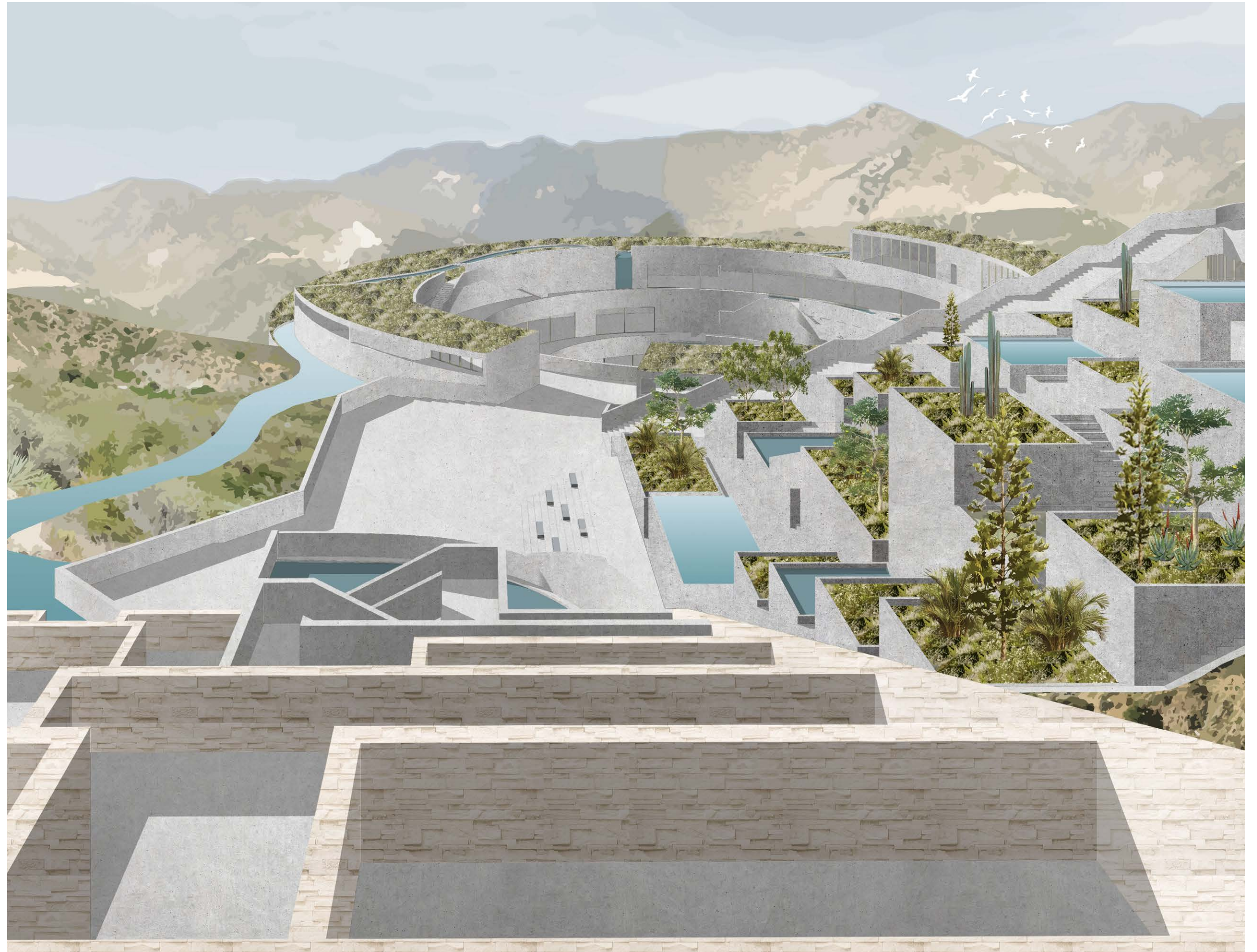
[INSTRUCTOR]
GALIA SOLOMONOFF

[TYPE]
MASTERPLAN

[TEAM PROJECT]
WITH PEICONG ZHANG

Los Angeles has long been associated with water crisis due to its dry climate with little annual rainfall. It is crucial to raise the public's awareness about the water issues and realize the value of water and reveal and exploit the potential embedded within the water.

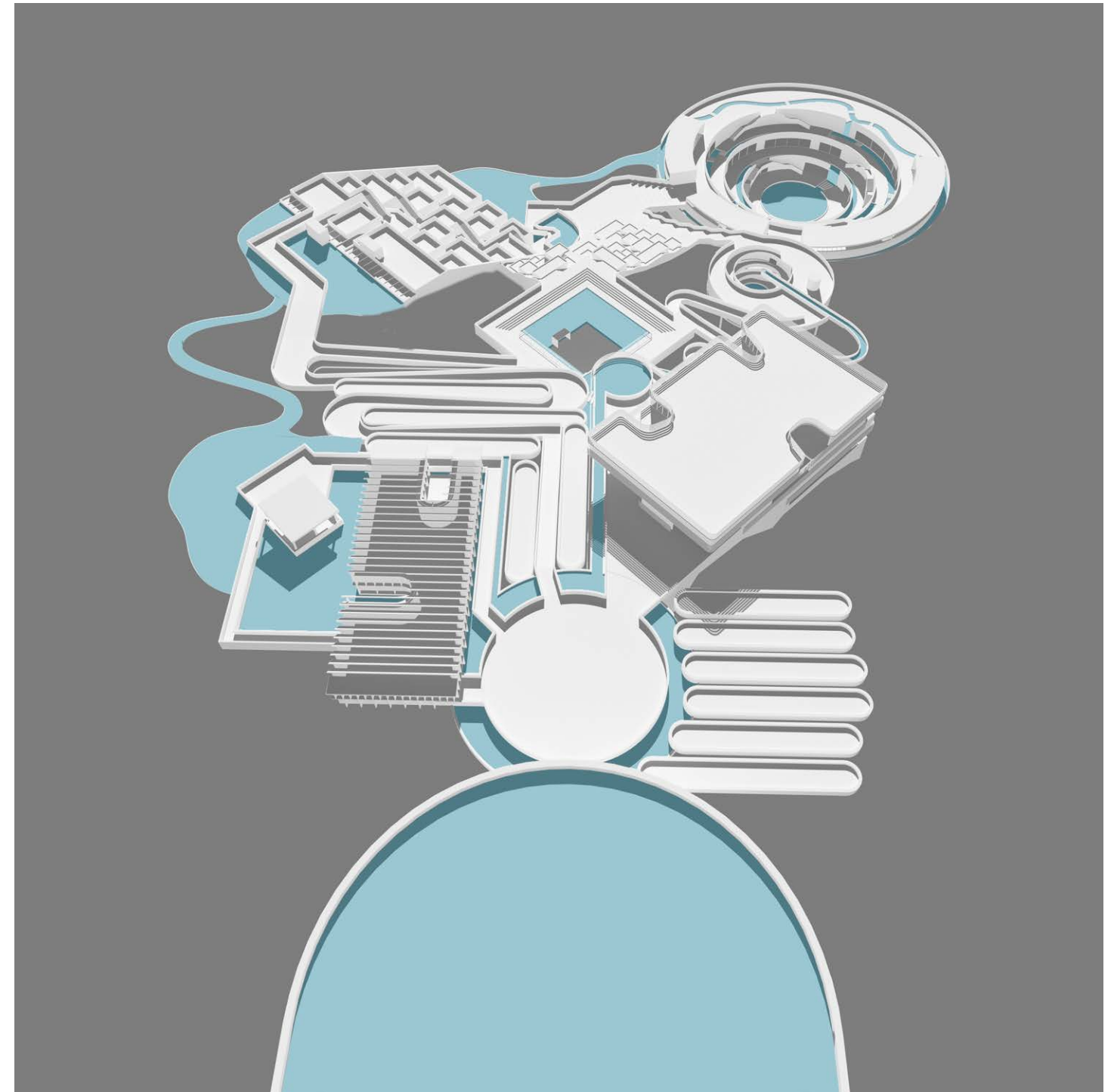
The Institute of Water is a research campus situated among the Santa Monica Mountains in LA, a place of a monumental isolation where water is being treated as gold and appreciated by the people while most importantly, it acts as a manifestation of water collection, filtration and reuse system while creating its own water ecological typologies and unique landscapes that are educational, meditative and entertaining.



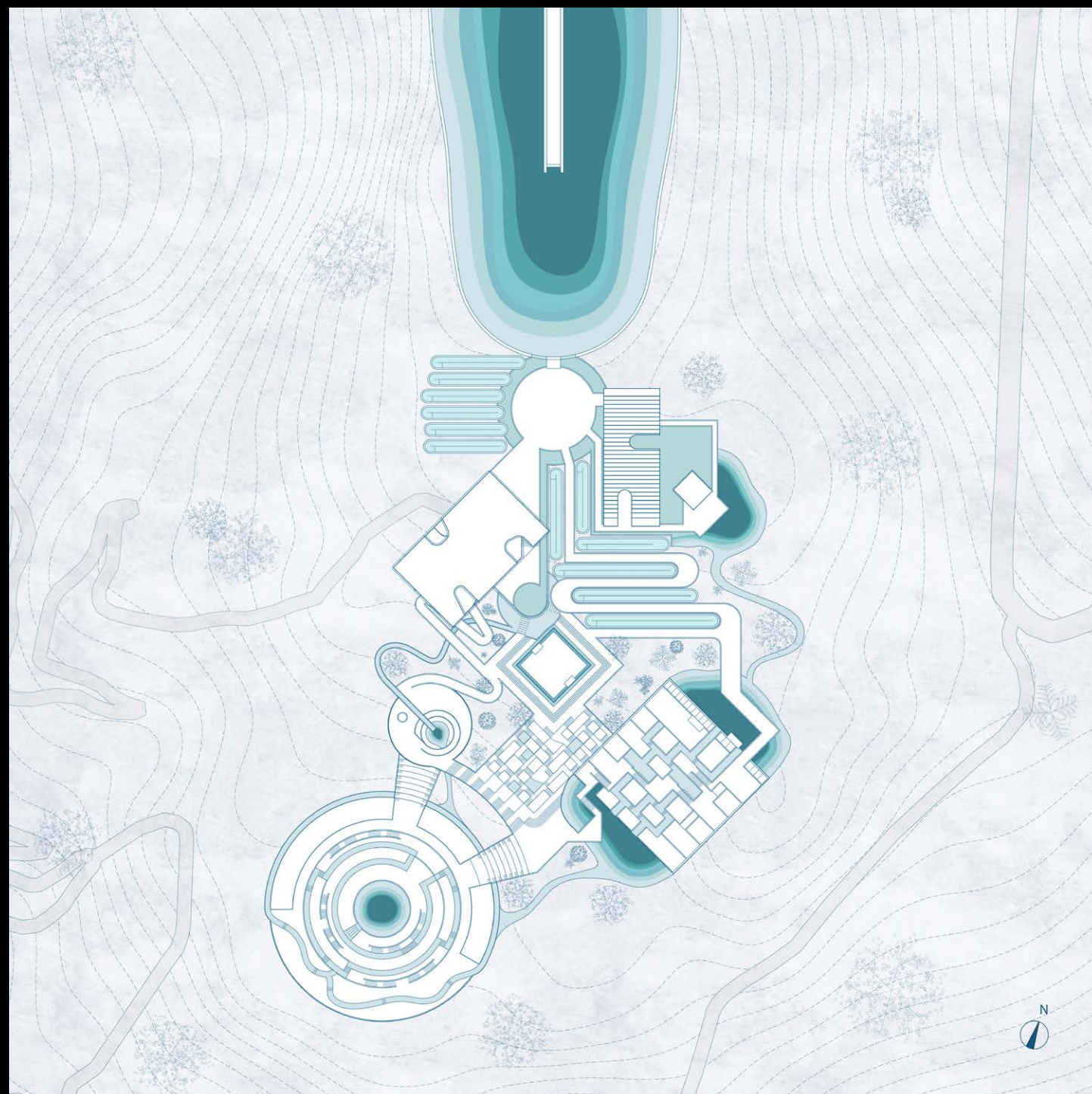


Site Strategy & Sloping Typology

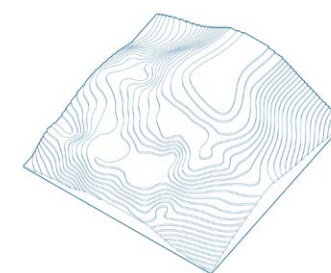
Instead of using the flat ground on top of the hill, the campus is situated along the hill, taking the advantage of the slope and allowing water to flow through from top to bottom using gravity. The massing model above shows the position of each building in relation to the site topography.



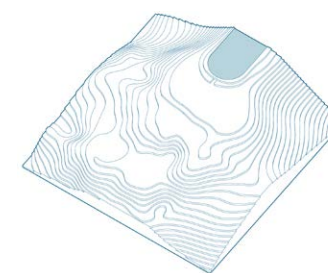
Overall view of the campus showing the relationship between water and architecture



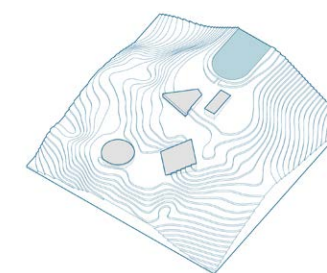
Masterplan drawing



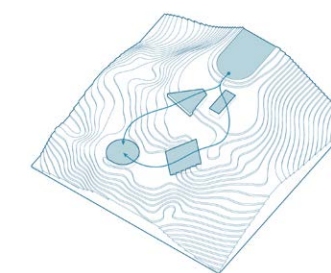
Existing Site Topography



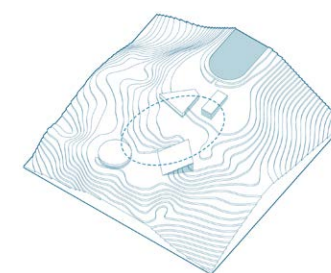
Construction of a Reservoir



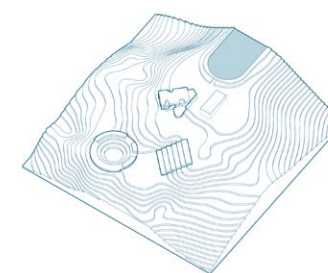
Distributed Typology Along the Hill



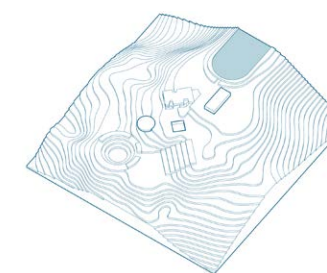
Water Flow from Top to Bottom



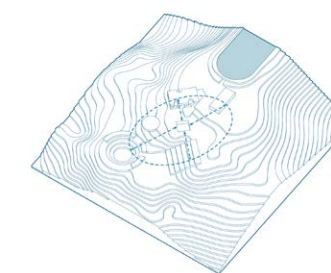
Human Circulation as a Loop



Integration of Housing in Each Block



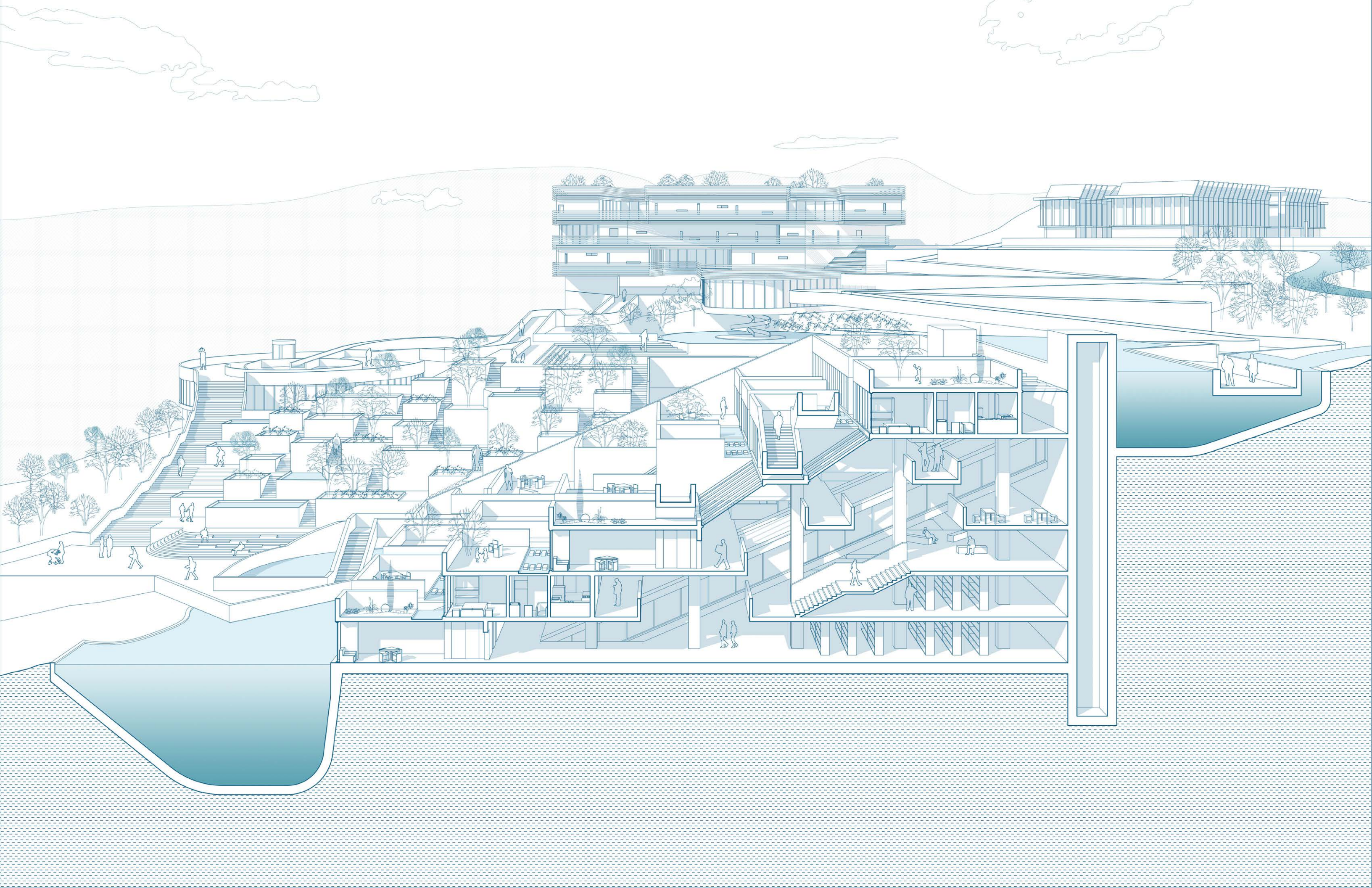
Insertion of Public Programs



Intersection Between People and Water

Massing Development

The diagrams above illustrate the massing development of the campus masterplan, starting with a construction of water reservoir on top onto a stepping spatial typology complementing the journey of water. One important feature of this masterplan is the integration of housing into each research programs. Instead of dividing the campus into research and residential precincts, the scheme aims to create a community with a combination of housing and research programs distributed around the site.

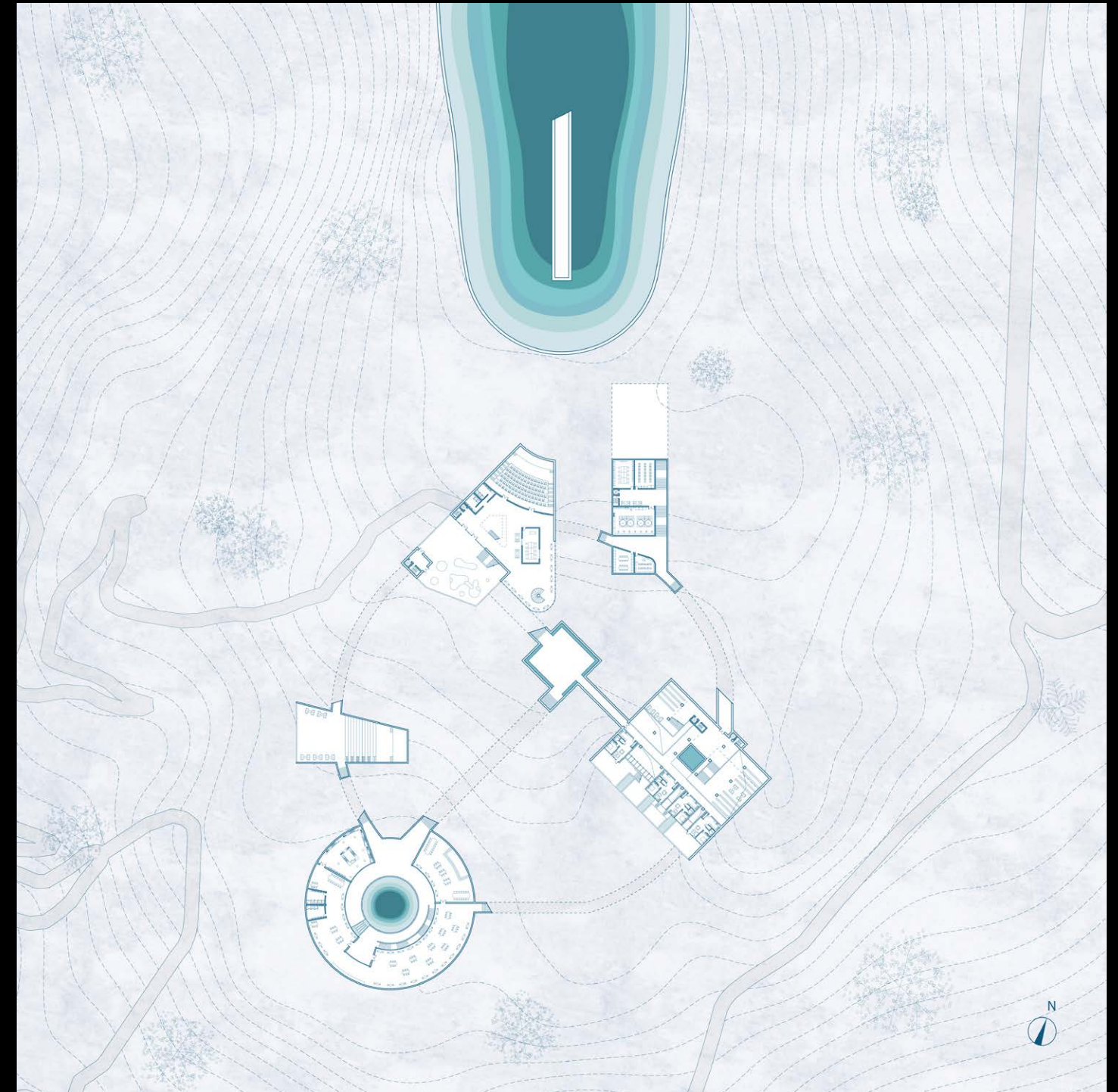




Stepping garden and cascading housing with water flowing through

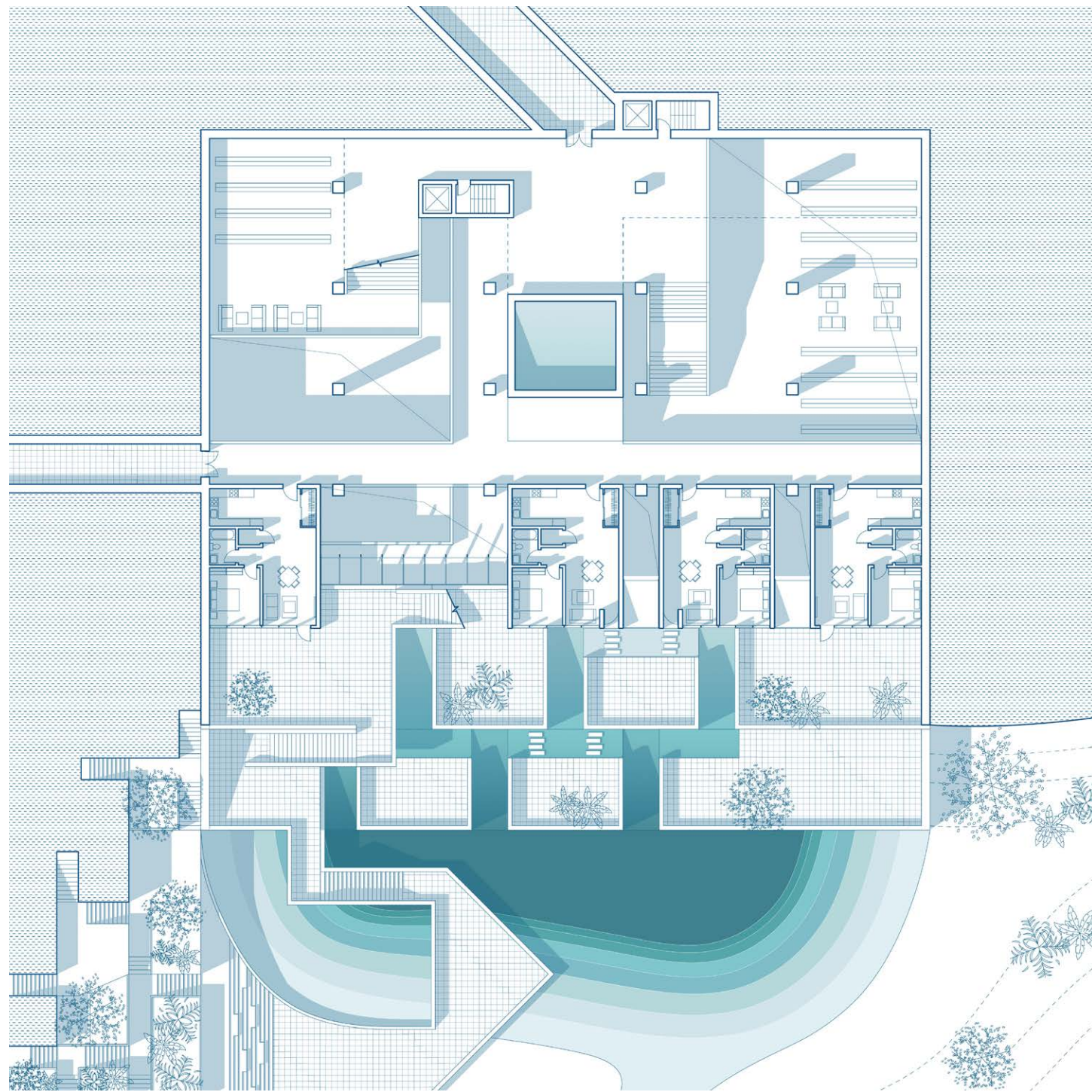


Algae research & housing complex

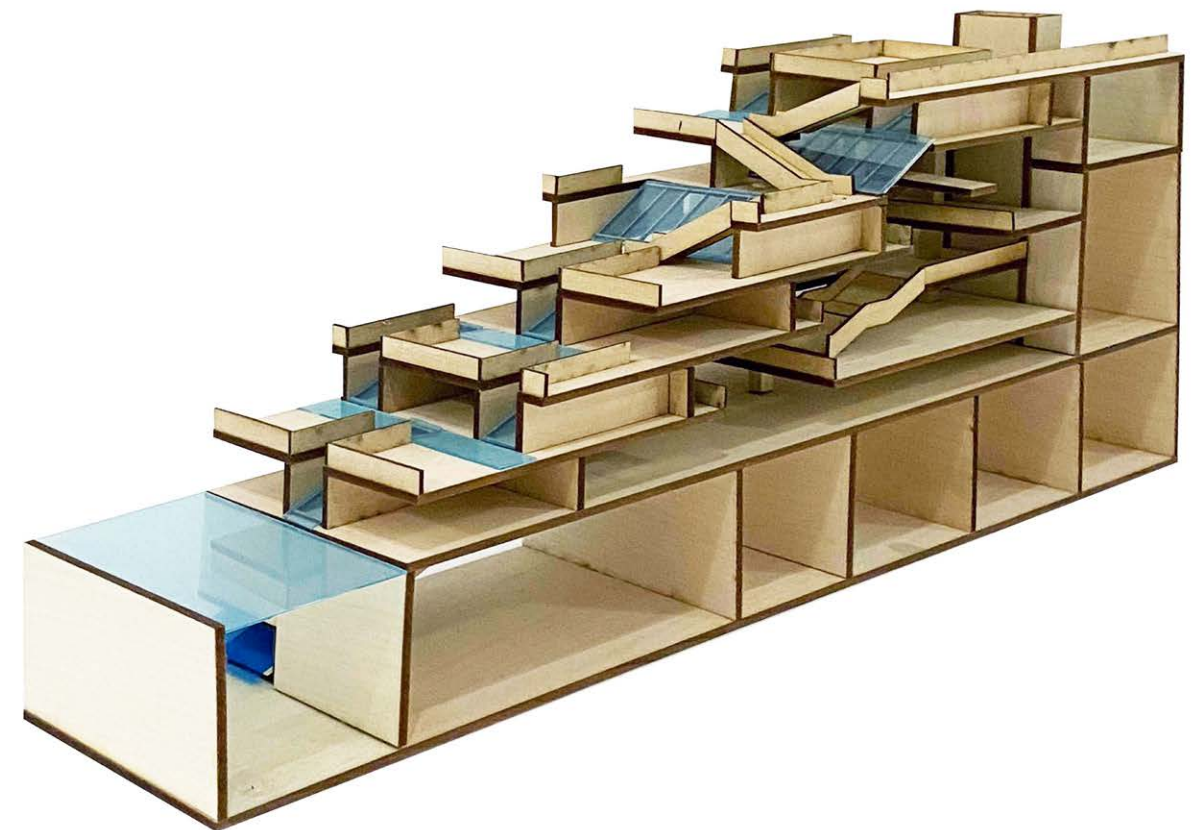
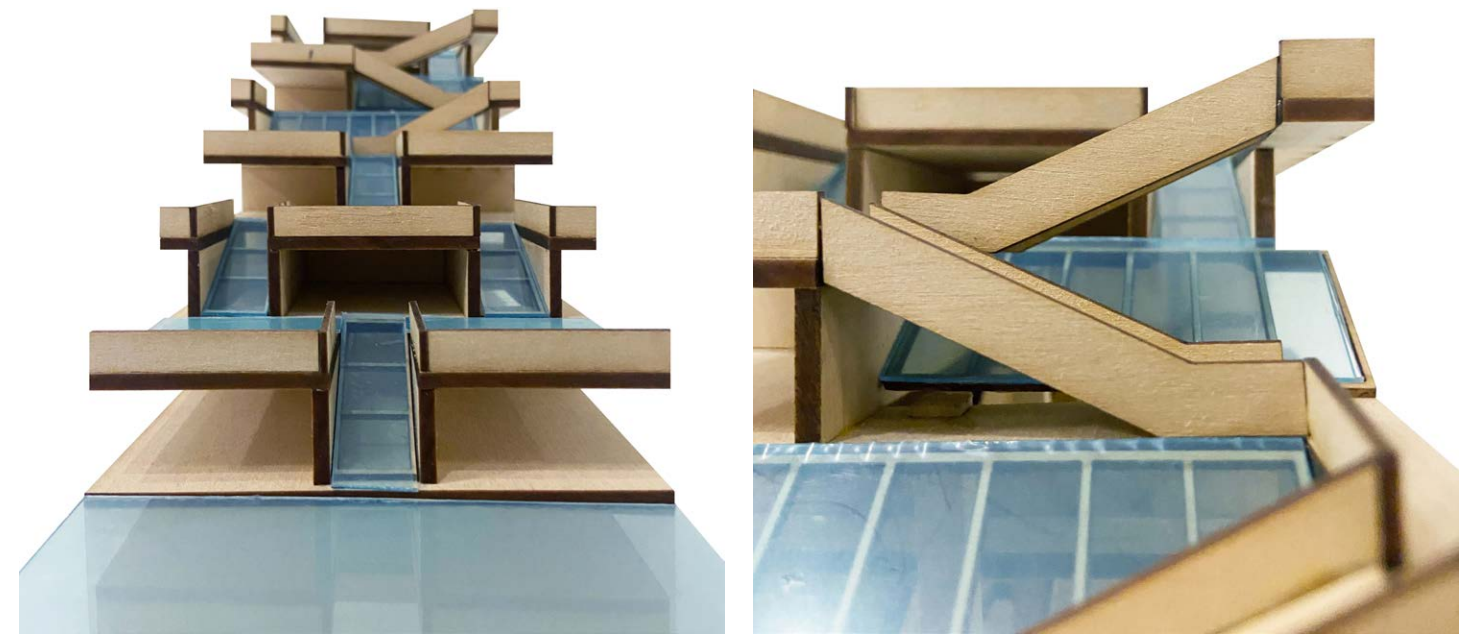


Underground Plan

At the bottom of each complex, a research/institutional program is inserted, from an auditorium, research labs, to a library and market/dining hall, so that the scholars and residents living inside the housing will start to circulate around the whole campus and start sharing in between each complex, triggering interaction and reinforcing a sense of community.



Plan of the water & energy complex with housing units at the front and a library at the back



Fragment model showing the spatial organization of the living units and library as well as the water route

HABITAT IN COMMON ----SHARED HOUSING

[ACADEMIC]
COLUMBIA UNIVERSITY, GSAPP, FALL 2020,
CORE 3

[INSTRUCTOR]
GALIA SOLOMONOFF

[TYPE]
ARCHITECTURE

[TEAM PROJECT]
WITH MUYU WU

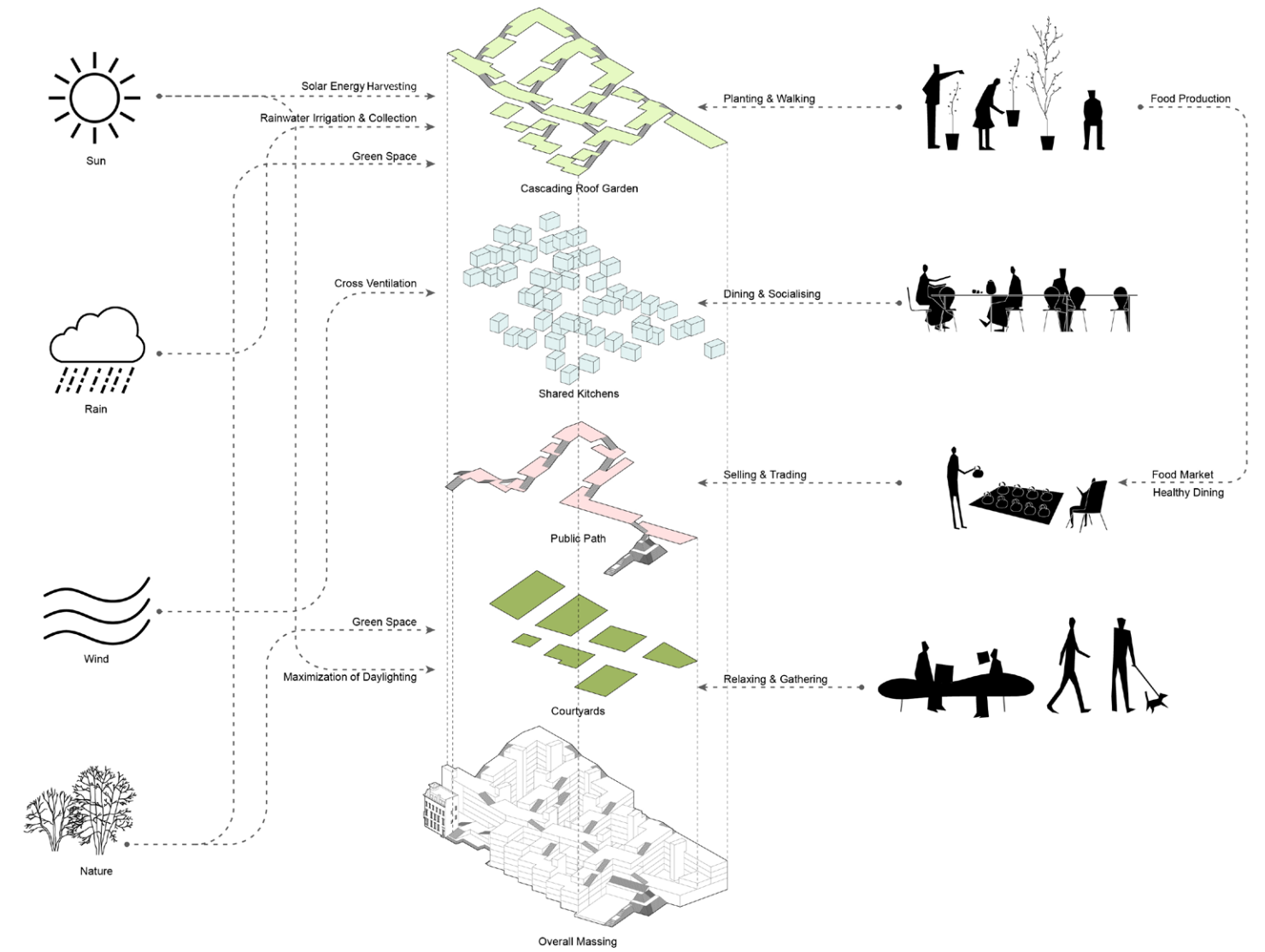
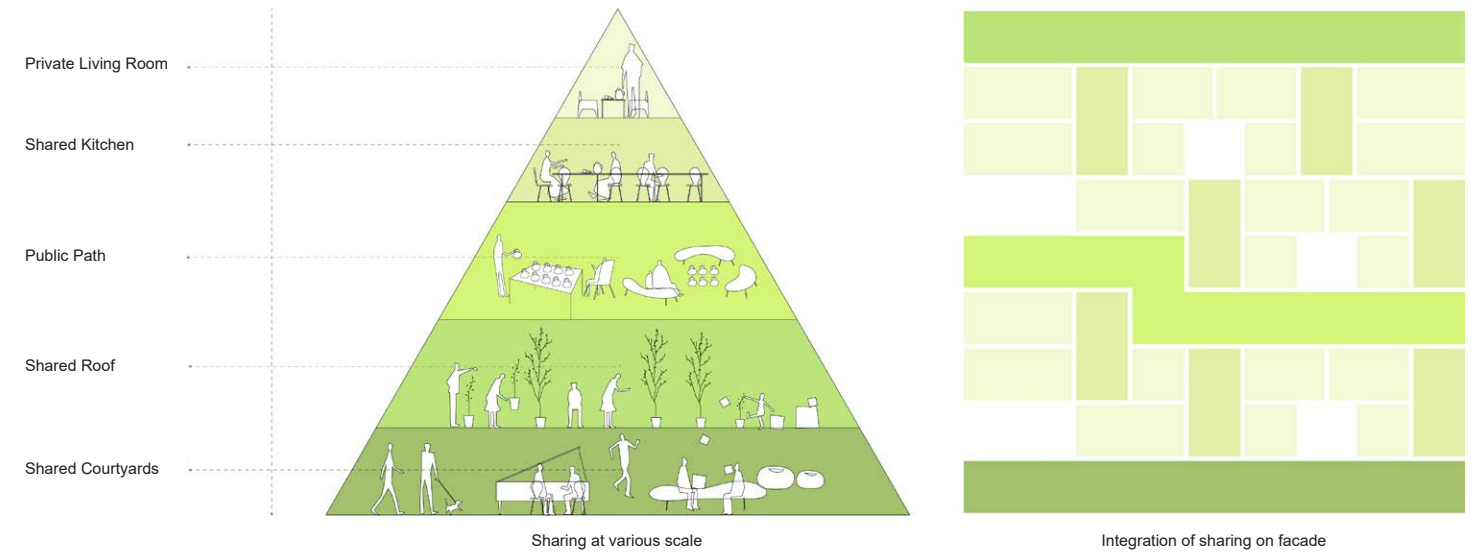
We strongly believe sharing leads to a more efficient, social and sustainable model of living. We see sharing not only as a method to eliminate underutilized appliances, but also an effective tool to bridge social segregation and stimulate human interaction.

Conceived as an urban mountain landscape, the project encourages sharing at different scales: from a kitchen space shared by multiple families to the cascading rooftop shared by the whole community, aiming to create a more self-sustainable culture and a more intimate relationship between the residents.





Axonometric view of the housing complex



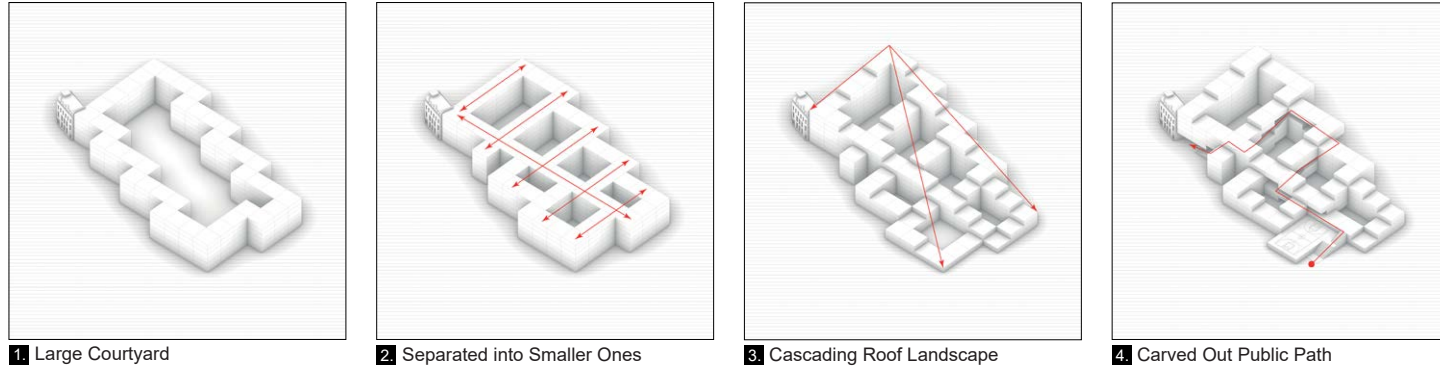
Sharing = More Sustainable

There are four key components of our project that is dependent upon one another to some extent in terms of the scale of sharing and different human activities: the shared kitchen, public path, courtyards and shared roof landscape, each of which also responds to different environmental strategy of the building at both micro and macro scales.

Massing Strategy ---- Roof & Courtyards

Instead of a large courtyard, the block is divided into several smaller courtyards, each of which varies in size in accordance with the height of the surrounding buildings. The several smaller courtyards not only offer a wide range of different activities, but also aim to create a sense of ownership due to its small scale.

The cascading roof landscape maximizes the natural daylighting into the courtyards and the housing units while allowing direct access to the roof to enjoy the views from almost every level without taking the elevator for vertical circulation.





Kitchen As Social Spaces

We recognize food and dining as the essence of homes----a social construct that is both an essential ritual of one's daily life and that could potentially bring people together and encourage other interactions around it. We believe sharing a kitchen between multiple families could maximize the efficiency of the shared space and minimize underutilized spaces. The shared kitchen is the core of the families' living----a space more than cooking and dining, but a place to meet, talk, relax, planting or doing laundry.





Ground Floor Plan



Level 03 Plan





SEASONALITY ----THE XR SCHOOL

[ACADEMIC]
COLUMBIA UNIVERSITY, GSAPP, 2020
SPRING, CORE 2

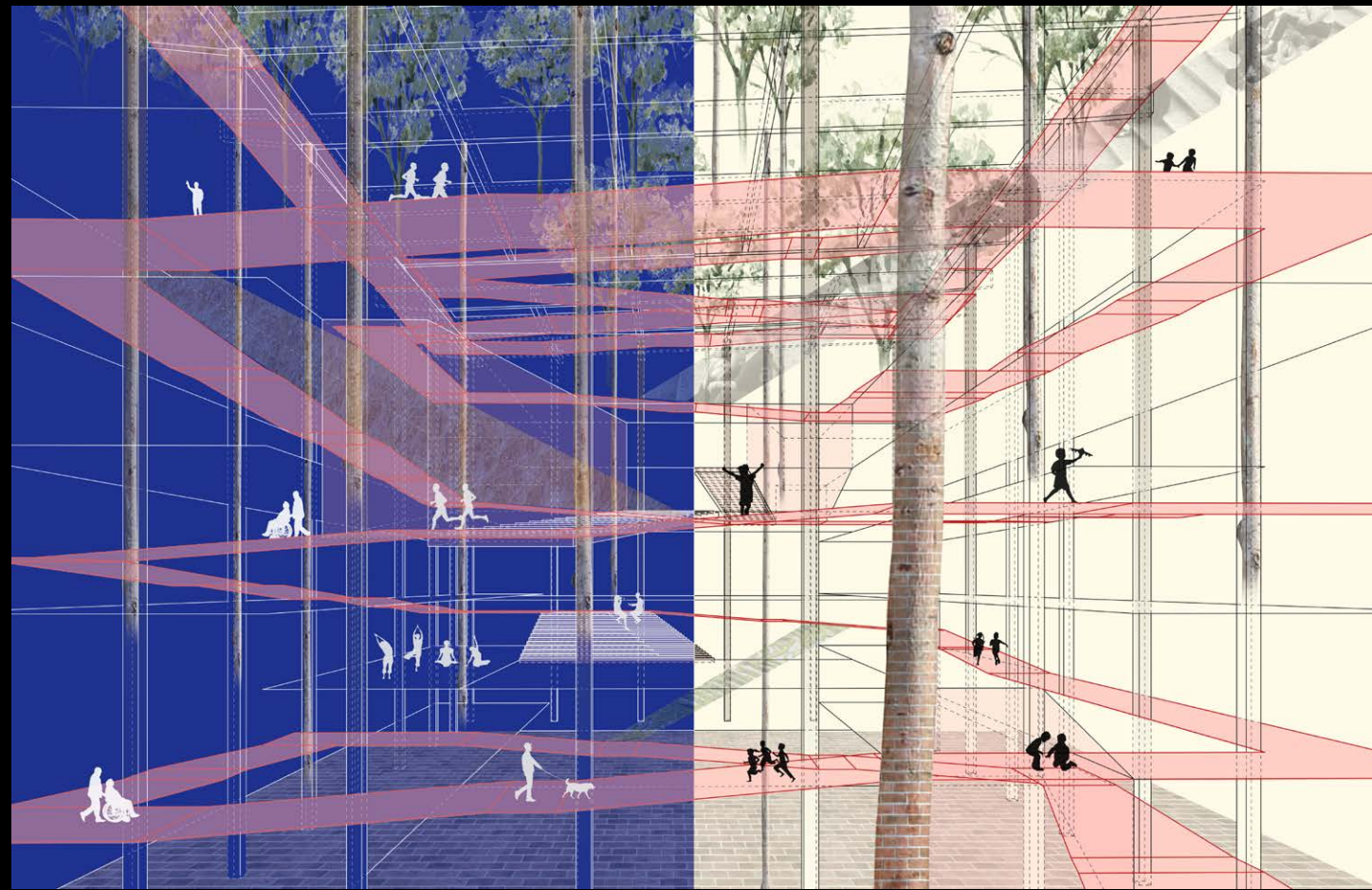
[INSTRUCTOR]
GORDON KIPPING

[TYPE]
RENOVATION & REUSE

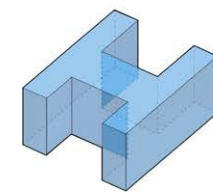
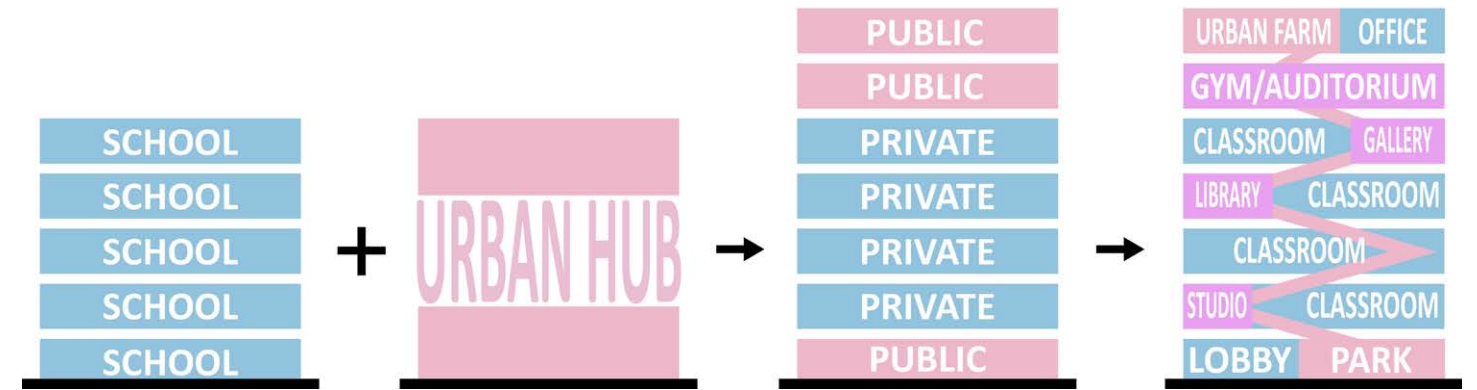
[INDIVIDUAL]

The XR School is a New York City public elementary school with a curricular focus on climate change – its causes and the paths to stabilize it. Other than the classes offered at the school, the building itself will be an integral tool to these lessons for both the public and the students. An open air 24/7 ADA ramp, as a vertical extension of the sidewalk, overlaps with and carves out the existing building, providing a universal access for the general public and connecting a series of shared programs between the public and the school. The school itself becomes an urban interface where the poetics of nature and farming is complimented and elevated through the architecture, redefining the relationship between man-made and nature.

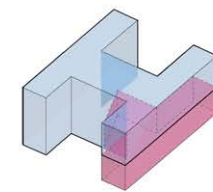




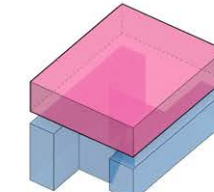
Conceptual collage



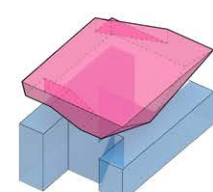
Existing Building Block



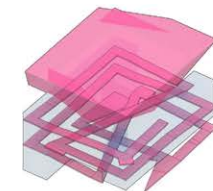
Lifting Ground Level for Public Space



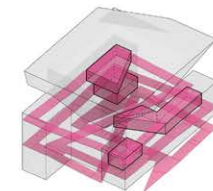
Community Center on Top



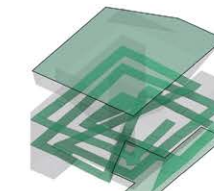
Reshaping the Community Center



24/7 Public Ramp



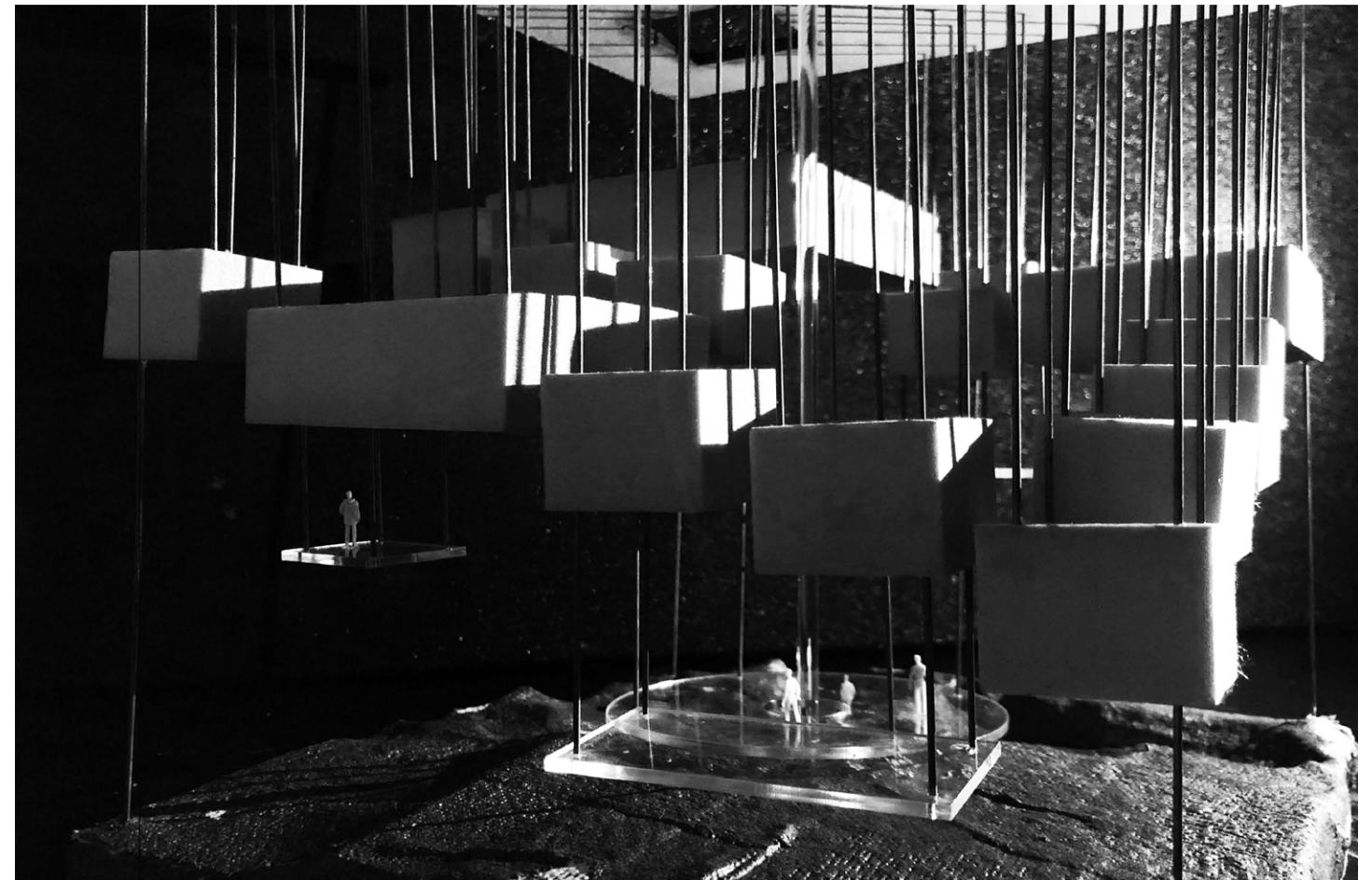
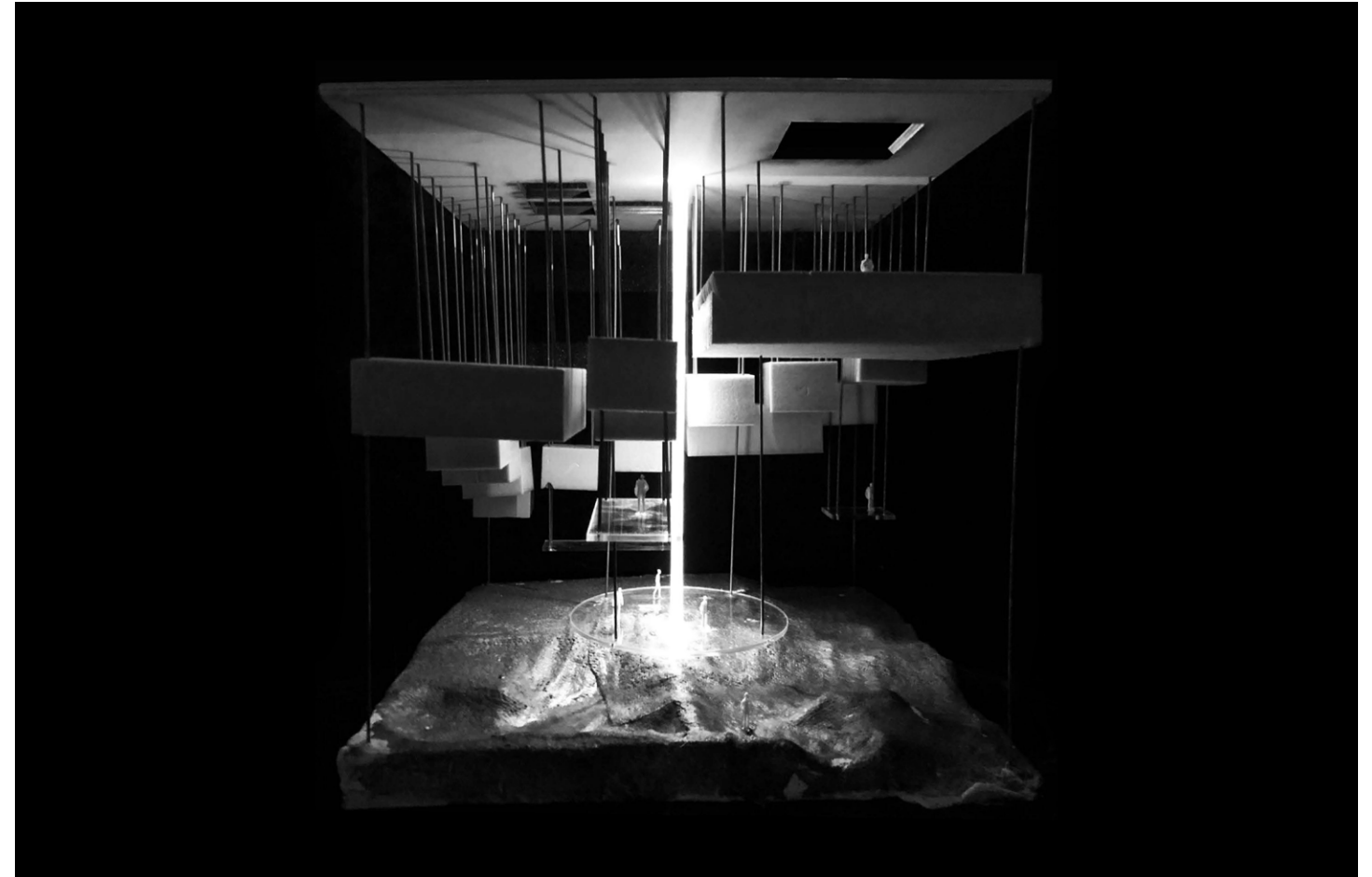
Shared Programs Along the Ramp

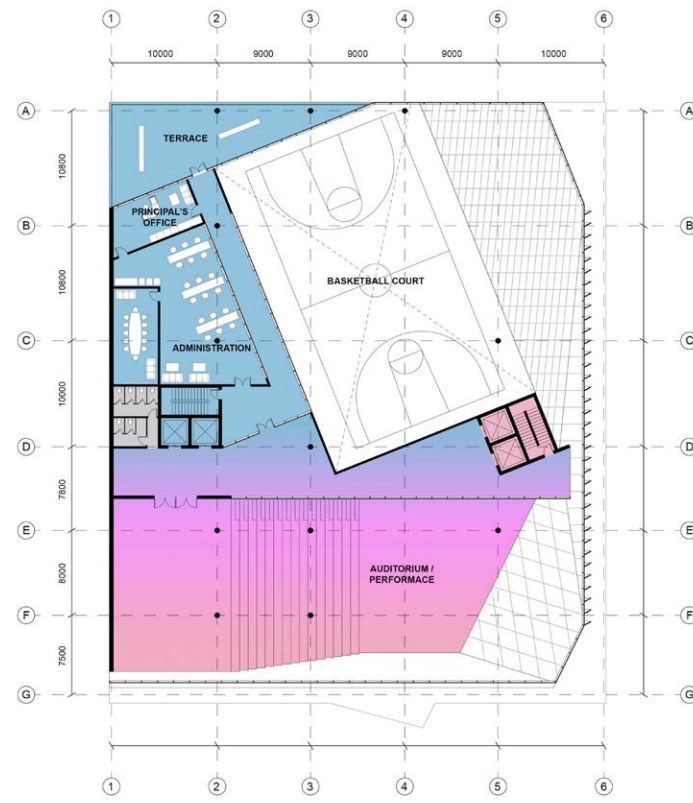
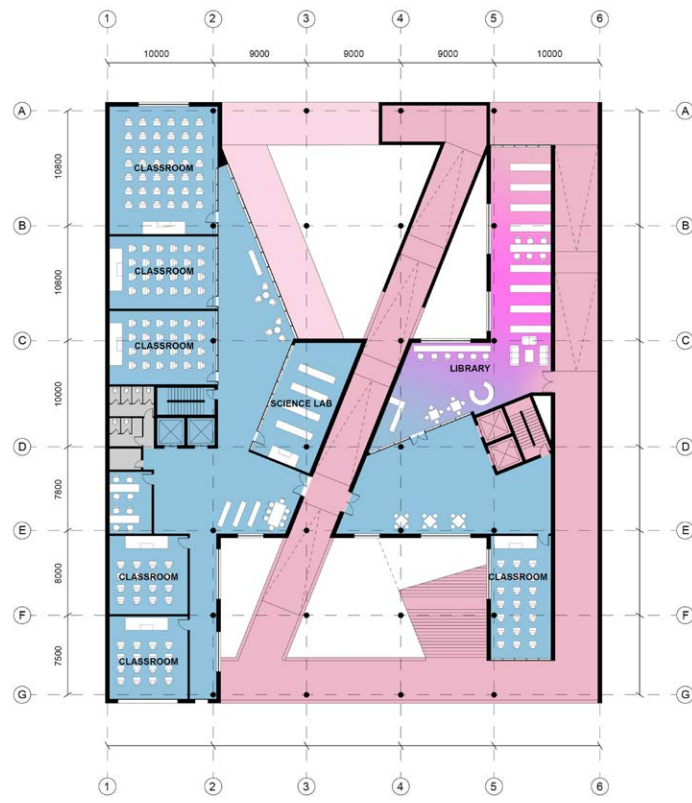
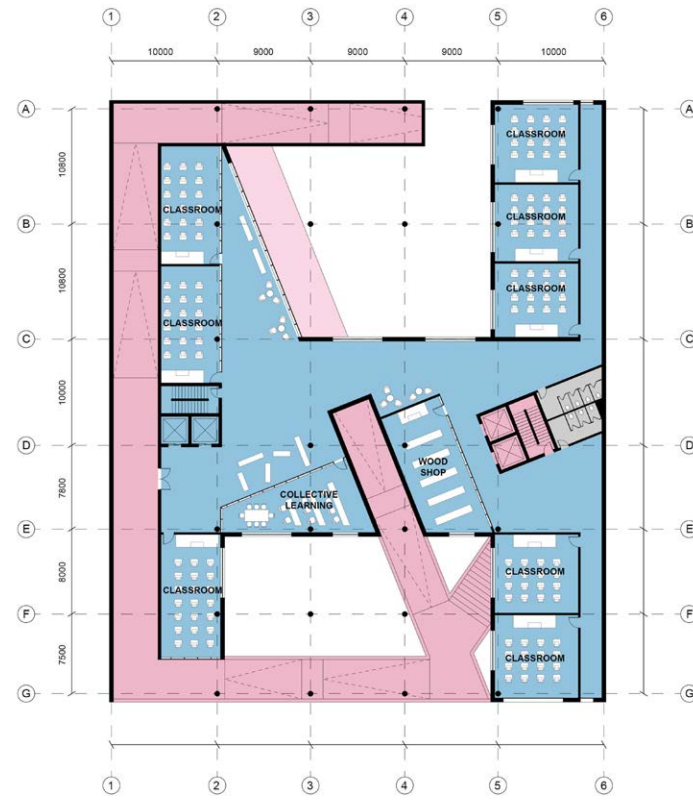
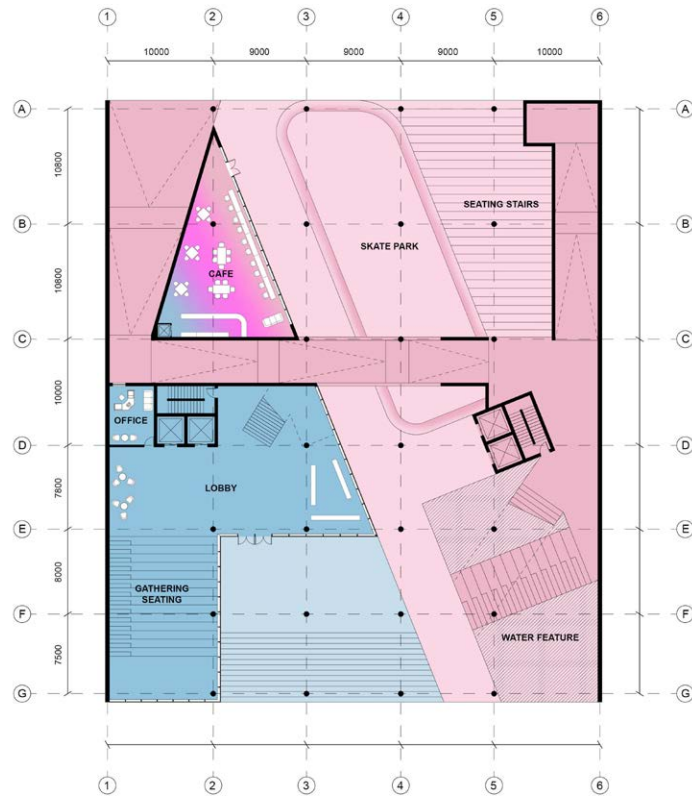


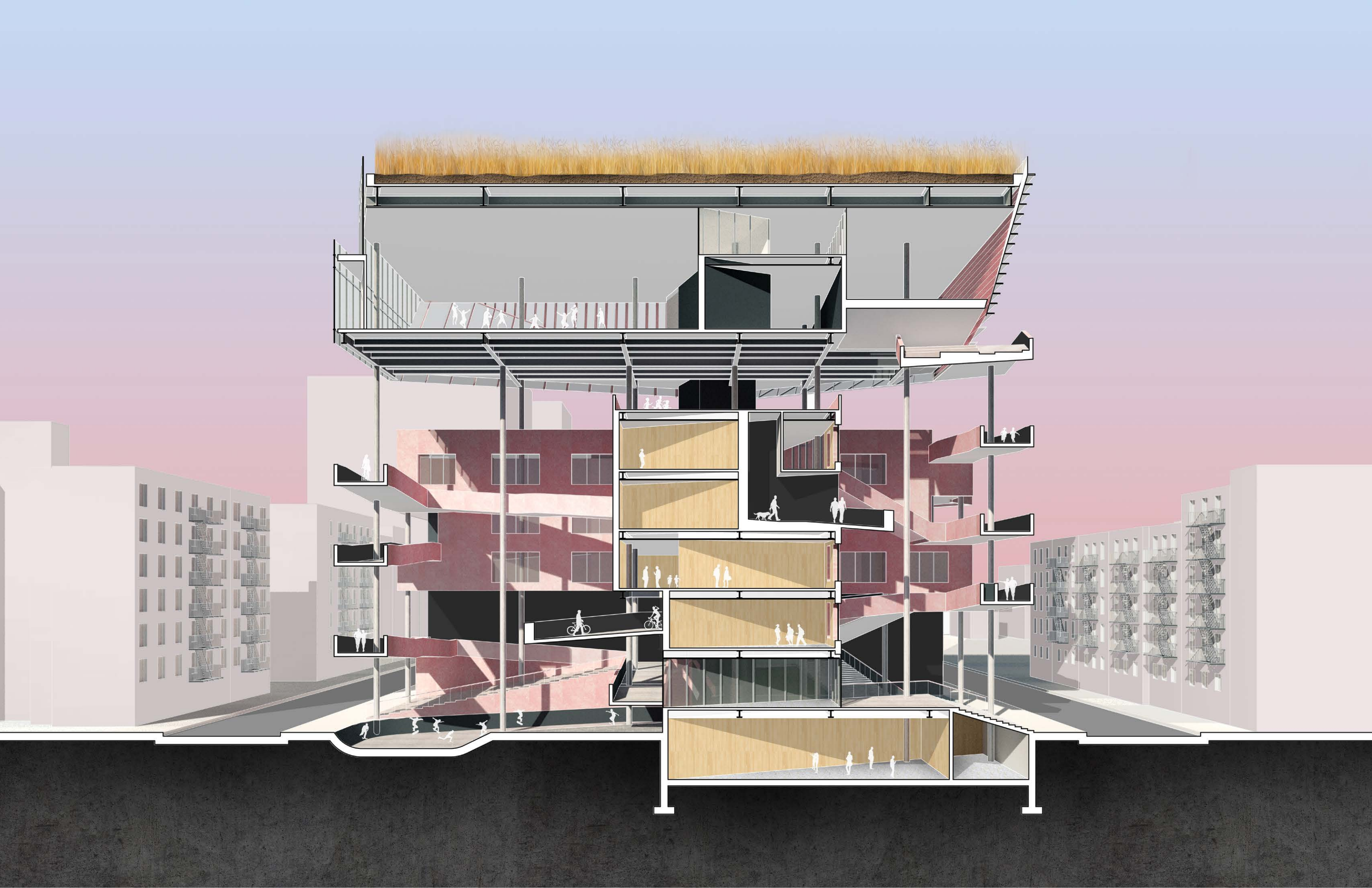
Greenery Navigation

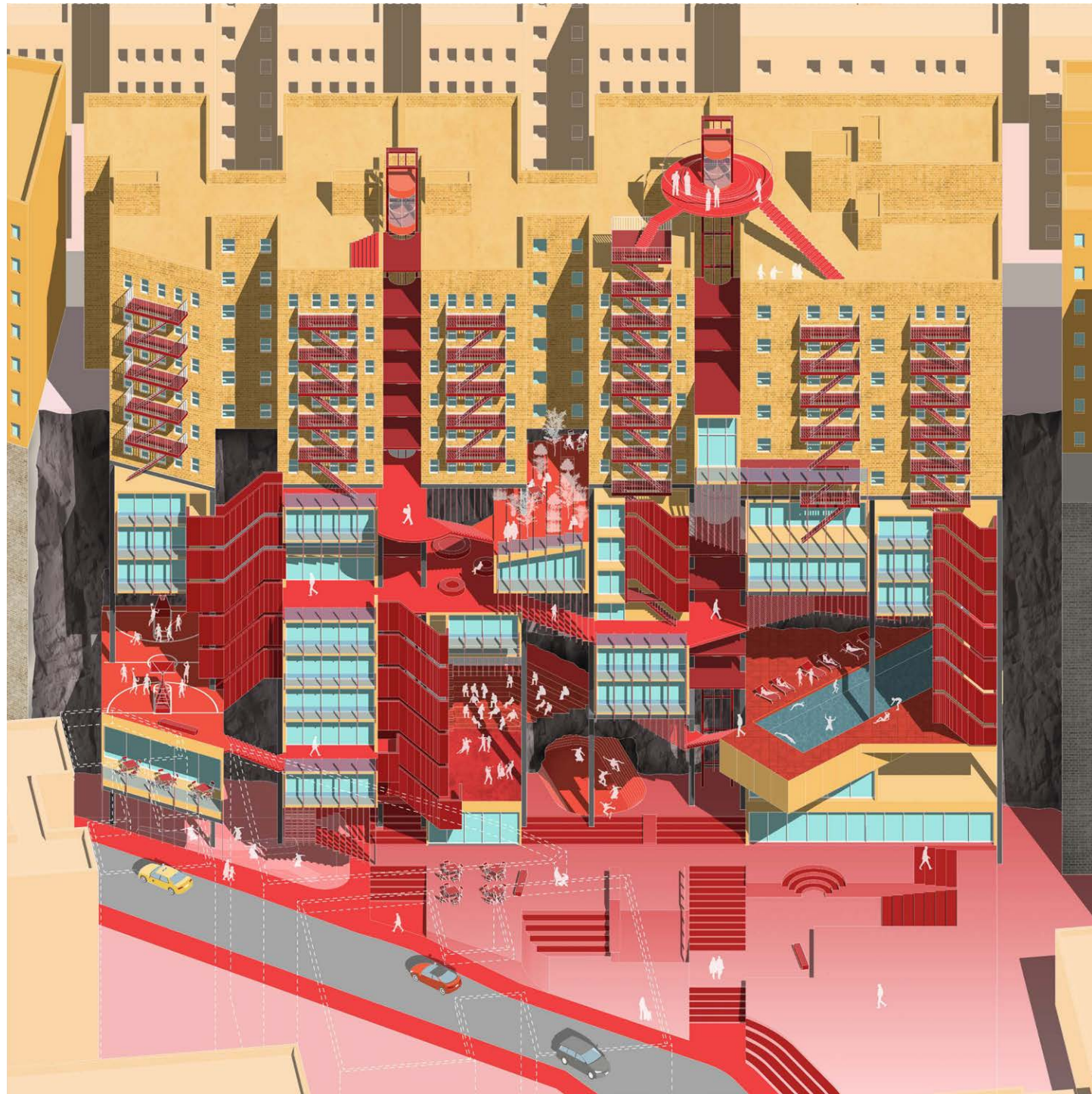


Proposed Massing









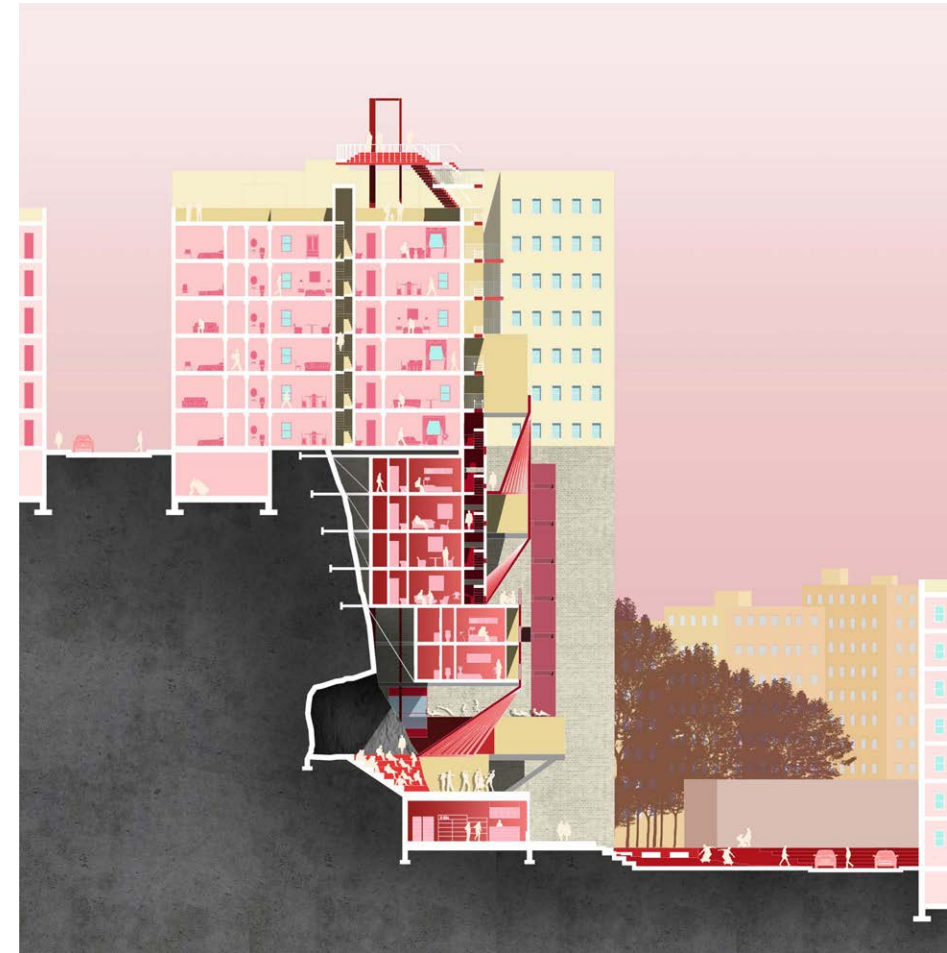
CONSTRUCTING INFORMALITY ----A VERTICAL SIDEWALK

[ACADEMIC]
COLUMBIA UNIVERSITY, GSAPP, 2019, CORE 1

[INSTRUCTOR]
JOSHUA D. UHL

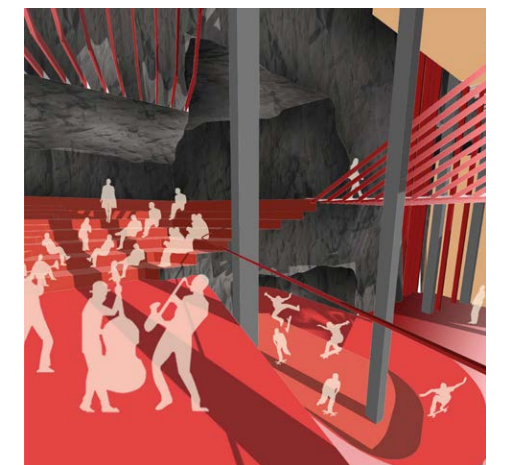
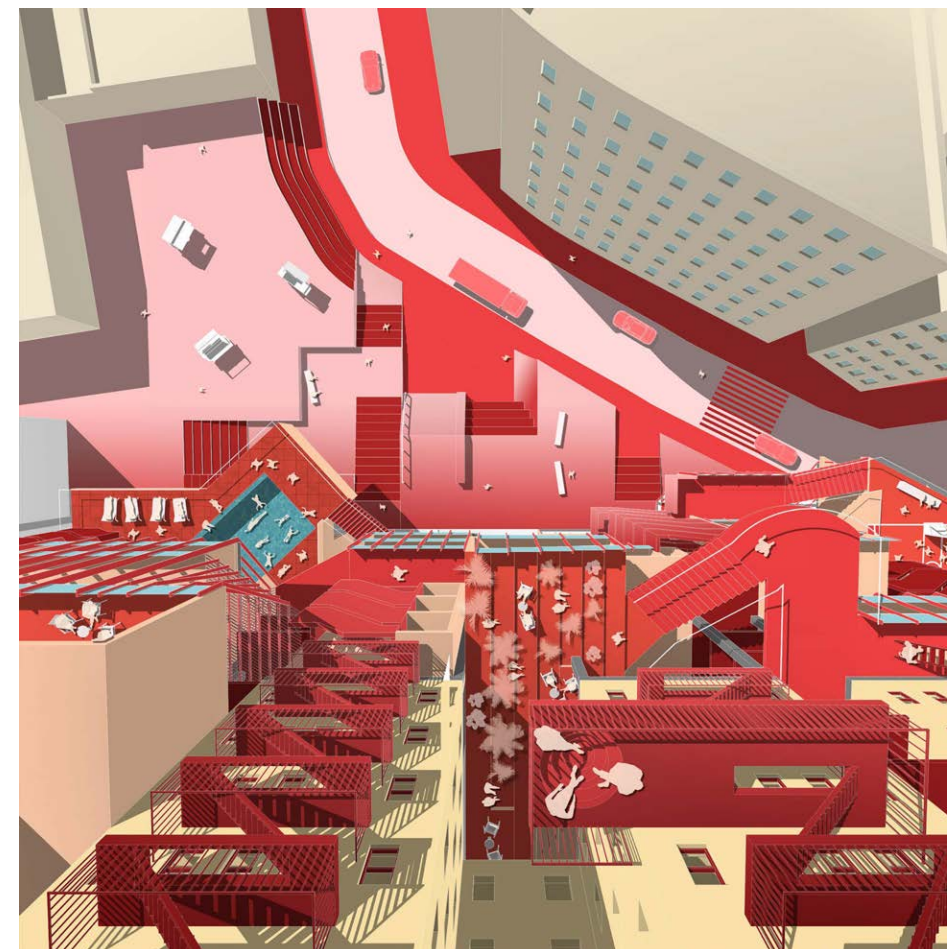
[INDIVIDUAL]

Located under three cantilevered affordable housing over the cliff with a dramatic height difference of 40 meters between the road above and the ground with a lot of inaccessibility and inconveniences for the residents, my new infrastructure, as an extension of the sidewalk, emerges right below the buildings atop, as a cohesive social platform connected by programs, both for the residents and the public. Offering an alternative vertical circulation instead of a detour around, the new vertical sidewalk is seen as a secondary entrance, a grand back door into the existing housing units while offering the community with a series of spaces that really don't belong to anyone as a new third space.

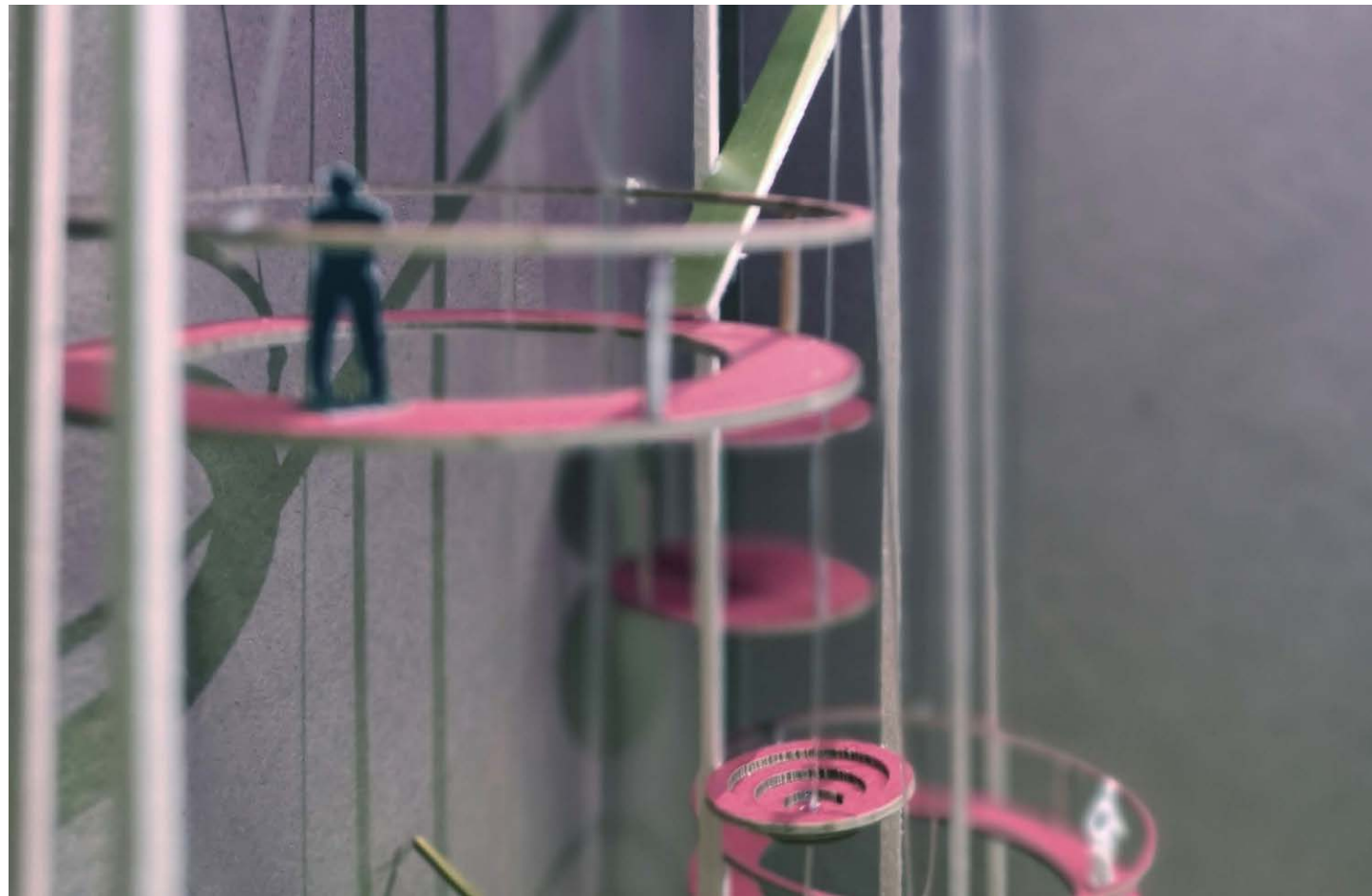


Reactivating the exterior fire escapes above that are dangerous and disused, the system creates an extension of both the public realm and domestic space. It is constituted by key programs that are Inwood-specific, such as a commercial ground level, leisure programs in the middle like basketball court, amphitheatre and a swimming pool. More importantly, more housing units as it approaches the top. There are also spaces left intentionally for the user's definition. As a community also fabricated by void spaces and nature, the sidewalk responds to the natural characteristics of the site and weaves between the cliff surface and exterior based upon different programs, creating a dialogue between the rock and its users.

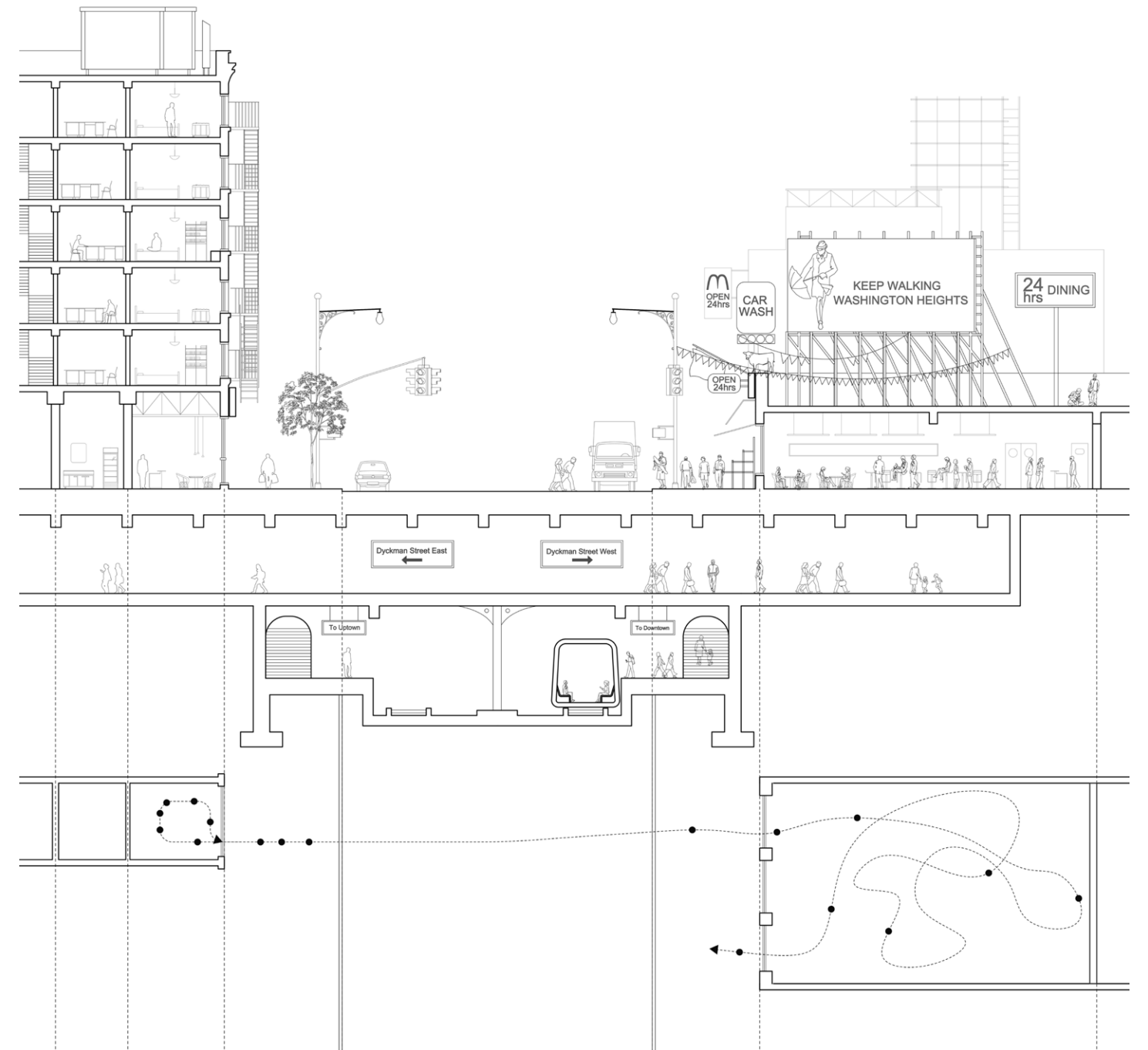
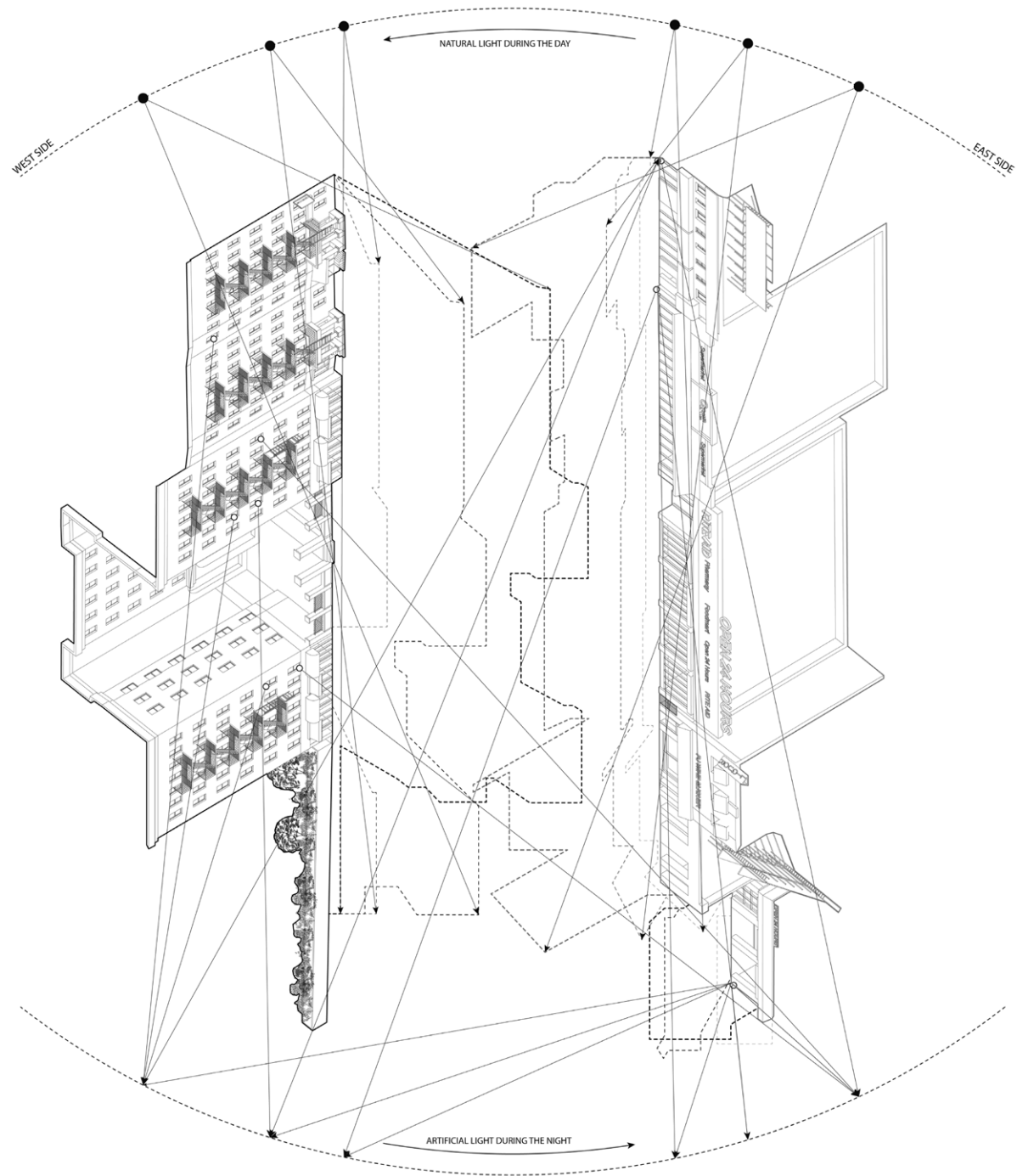
The intervention questions the on-going Inwood rezoning plan and proposes a new vertical stratification with its own zoning and programs that aim to serve both the community and the city.

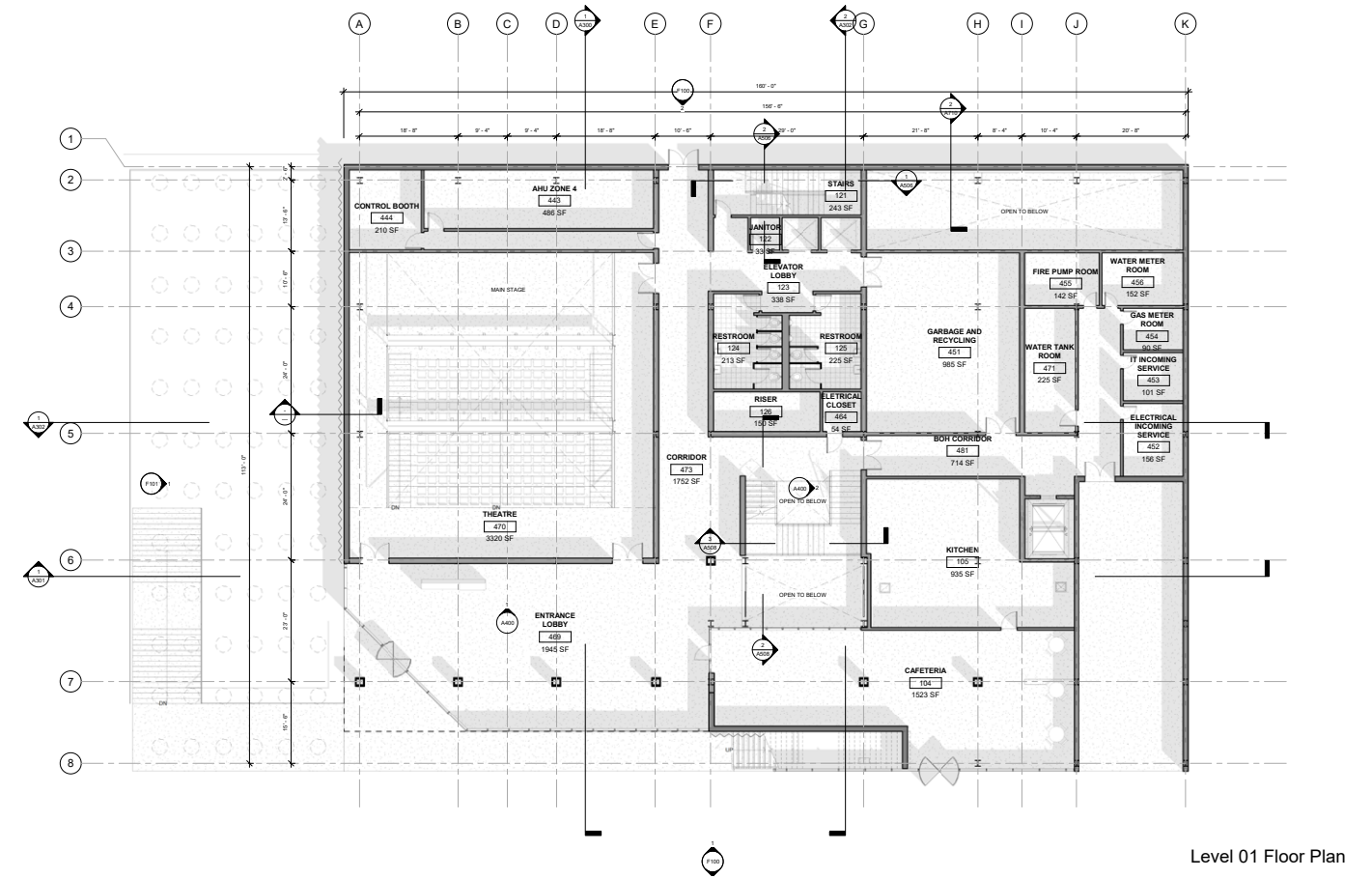




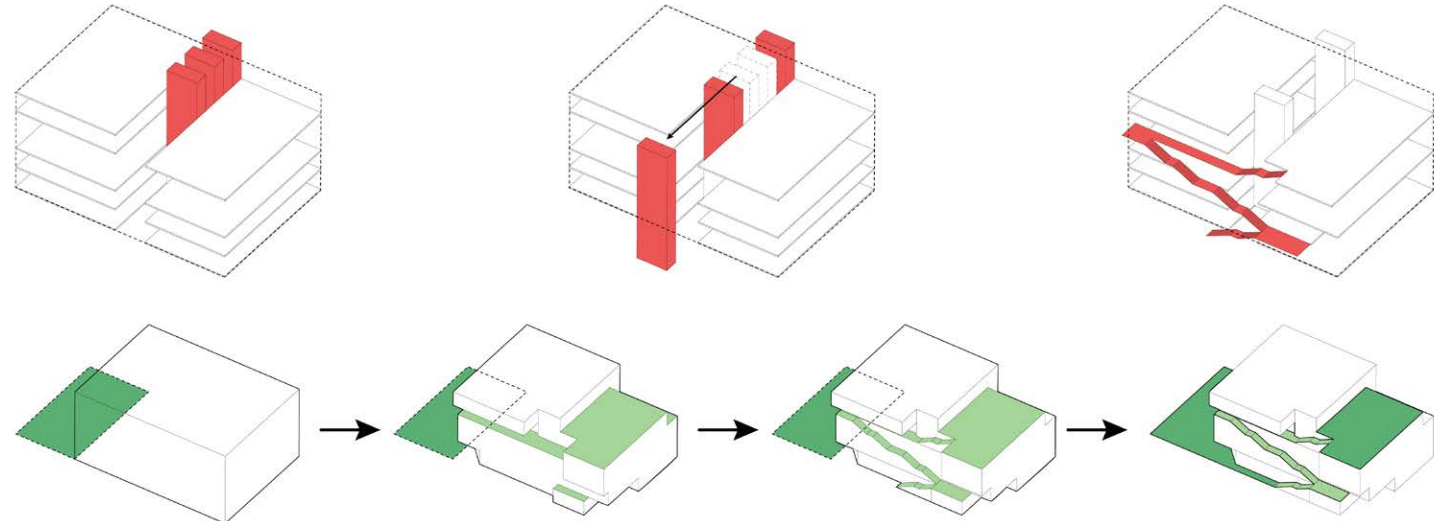


1:1 steel construction exploring the spatial possibilities





Level 01 Floor Plan



Concept Diagram

MELROSE COMMUNITY CENTER

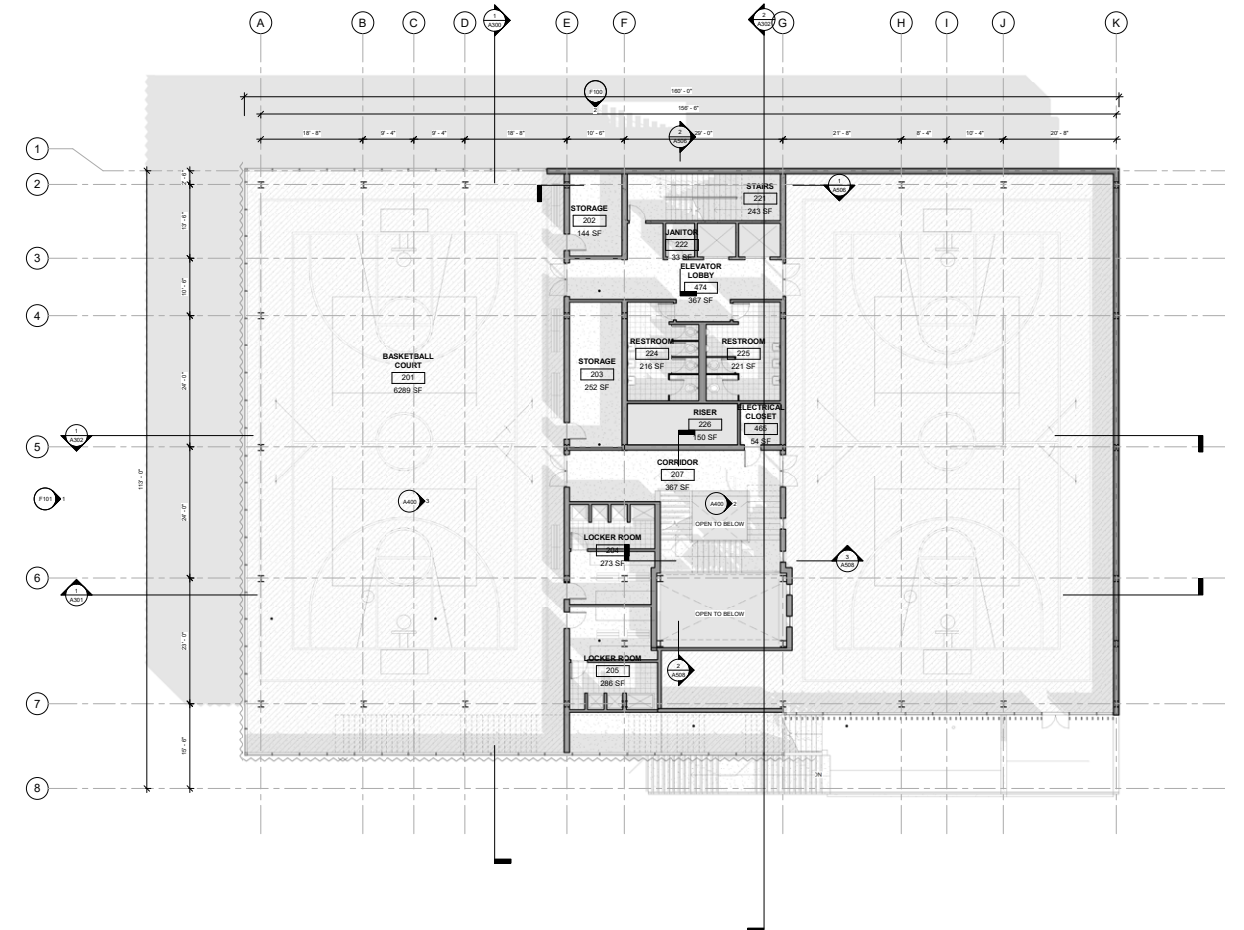
[ACADEMIC]
COLUMBIA UNIVERSITY, GSAPP, FALL 2020,
ARCHITECTURAL TECHNOLOGY III & IV

[INSTRUCTOR]
SARRAH KHAN

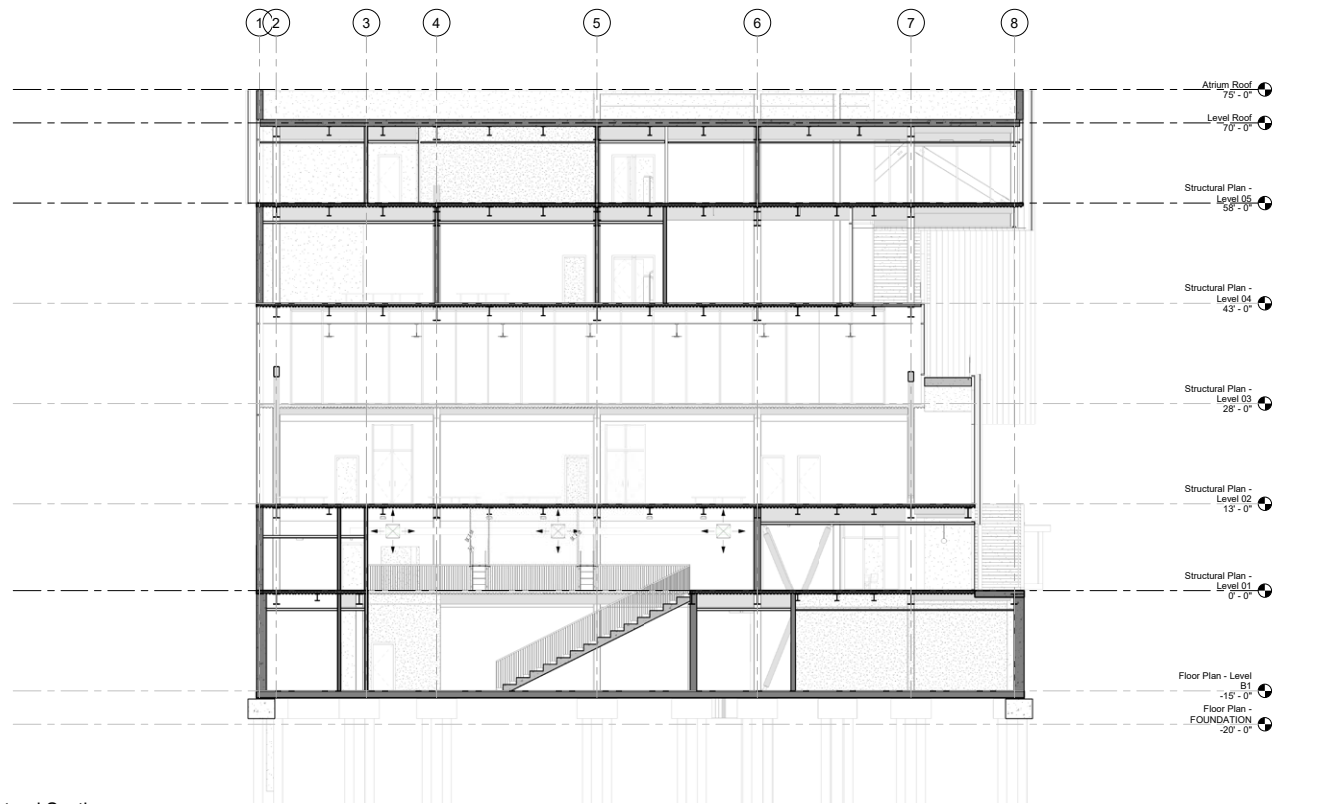
[GROUP PROJECT]
WITH YUCHEN QIU, CHENXI CHEN, QING HOU,
SHUHAN LIU

Located in Bronx, the Melrose community center serves as a multifunctional hub that houses a movie theatre, a cafeteria, two basketball courts, a gymnasium and various study spaces and classrooms. The building features a playful stack of boxes connected through an exterior circulation from the sidewalk to a rooftop garden.

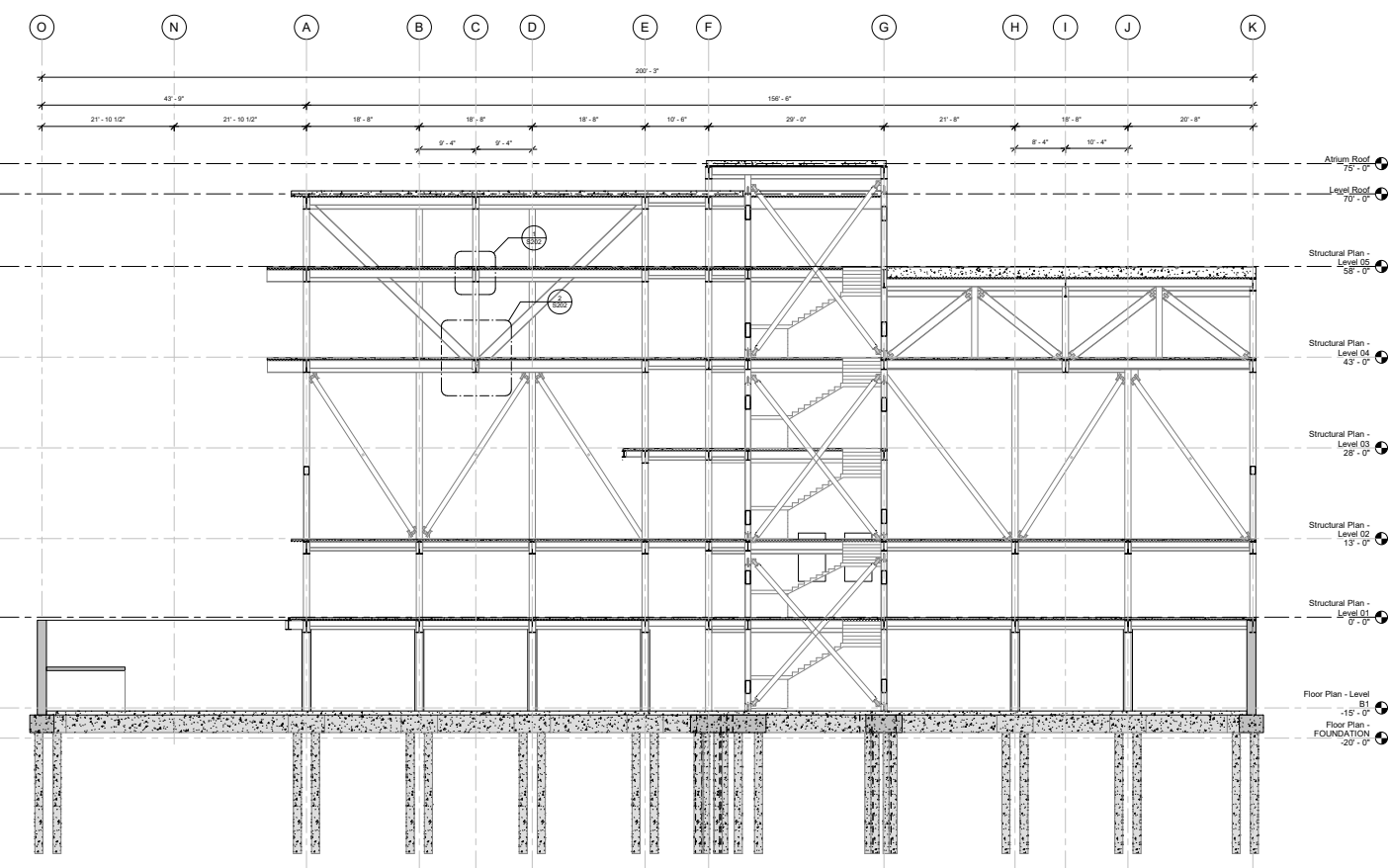
The building also combines multiple sustainable features, such as the sucken garden, green roofs, perforated facade cladding and a central atrium space that acts as a stack ventilation and optimizes the daylight into the interior.



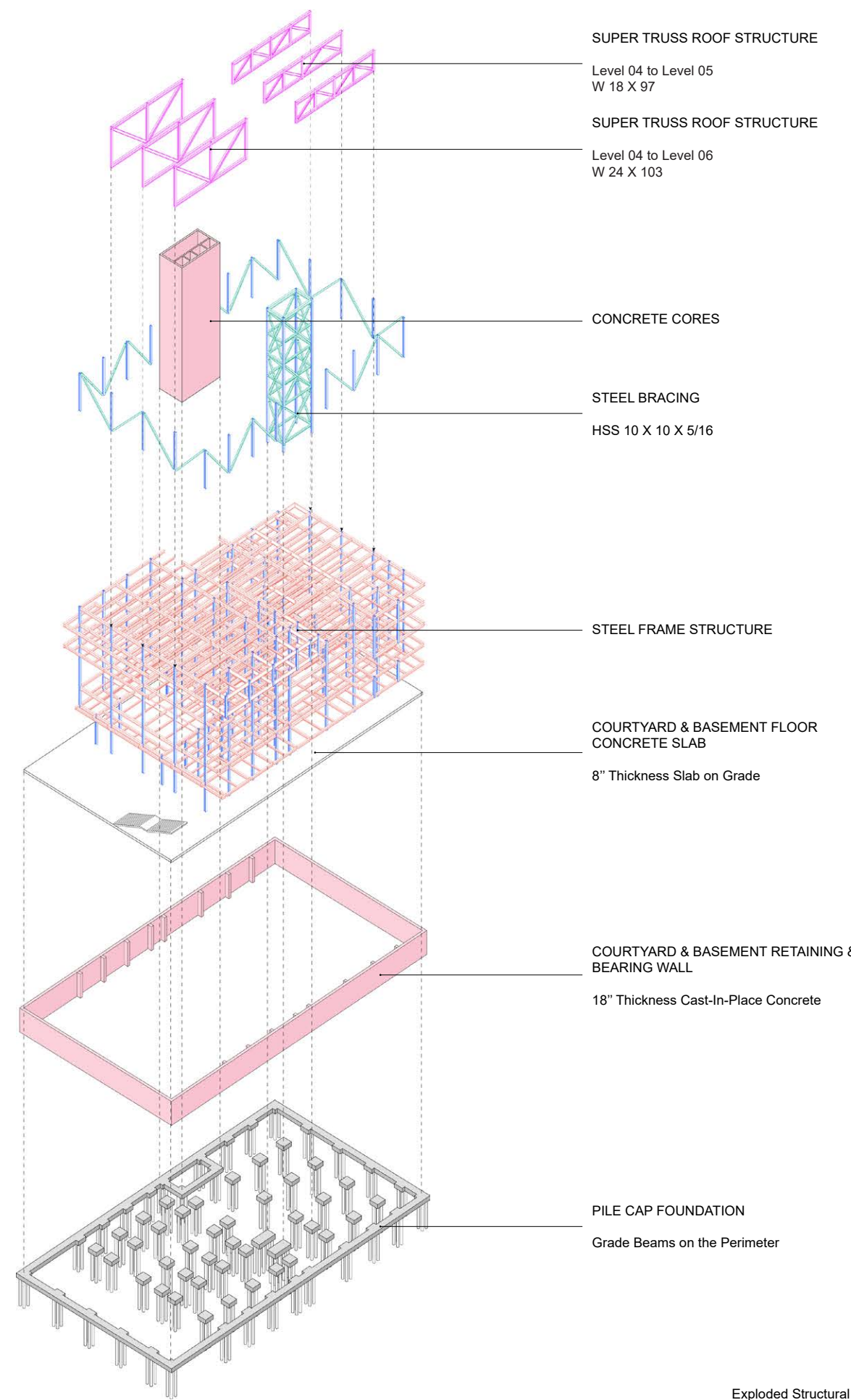
Level 02 Floor Plan



NS Architectural Section



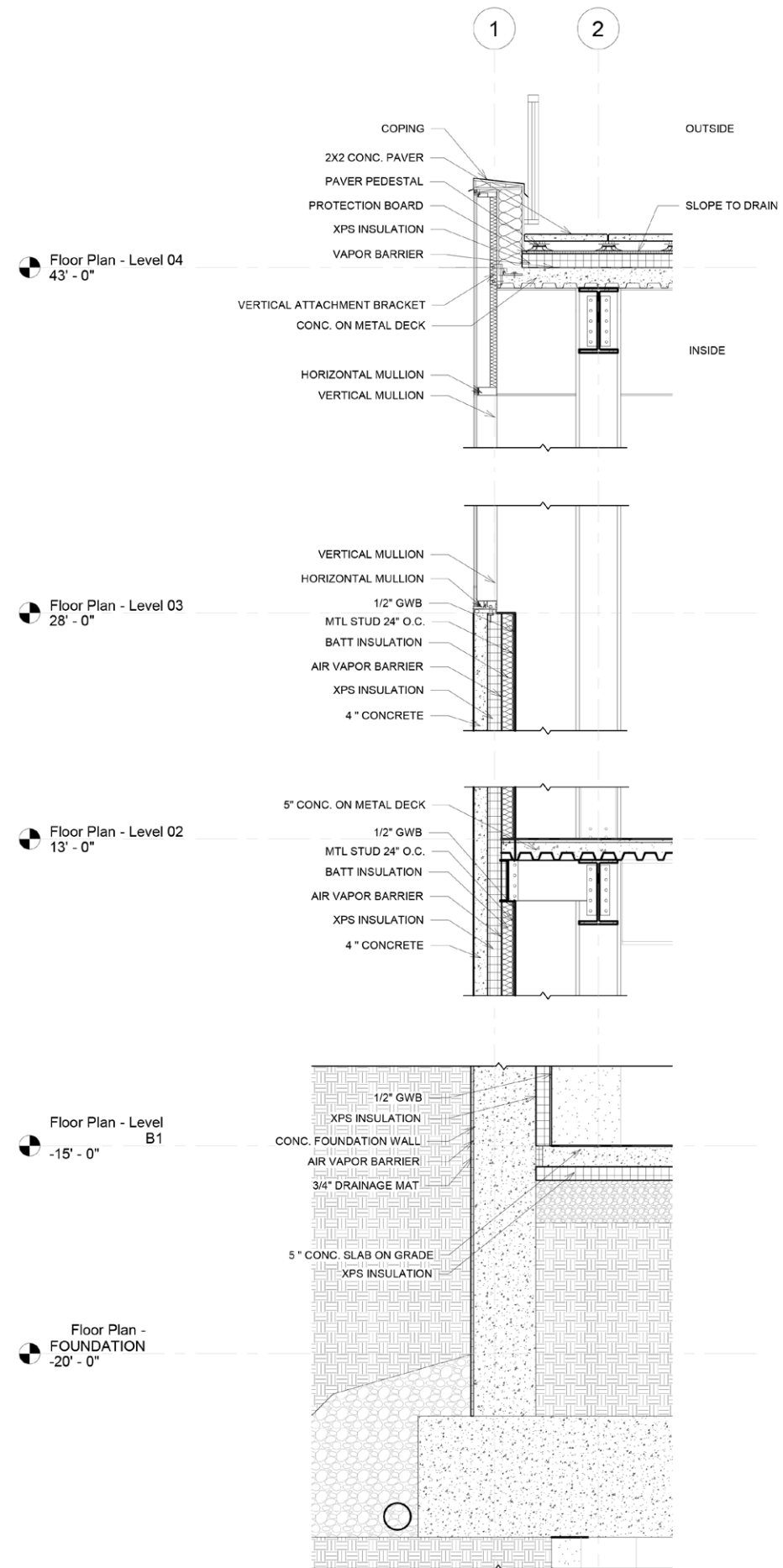
EW Structural Section



Exploded Structural Concept Diagram



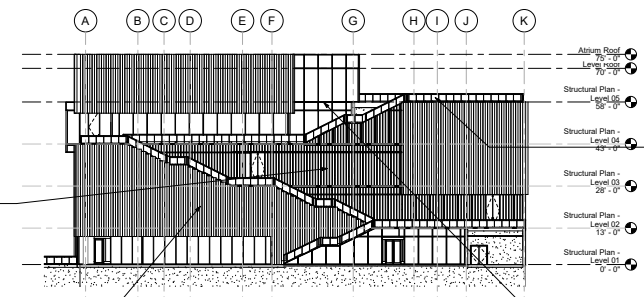
Entrance View & Interior Views



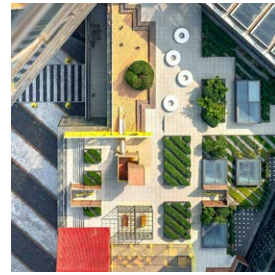
Detailed Wall Section



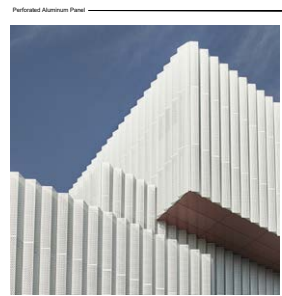
Lower Screen Panels



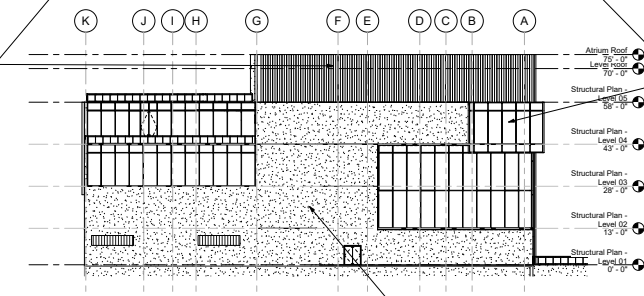
1 South Elevation - Mapped
1/16" = 1'-0"



Cast-In-Place Concrete Wall

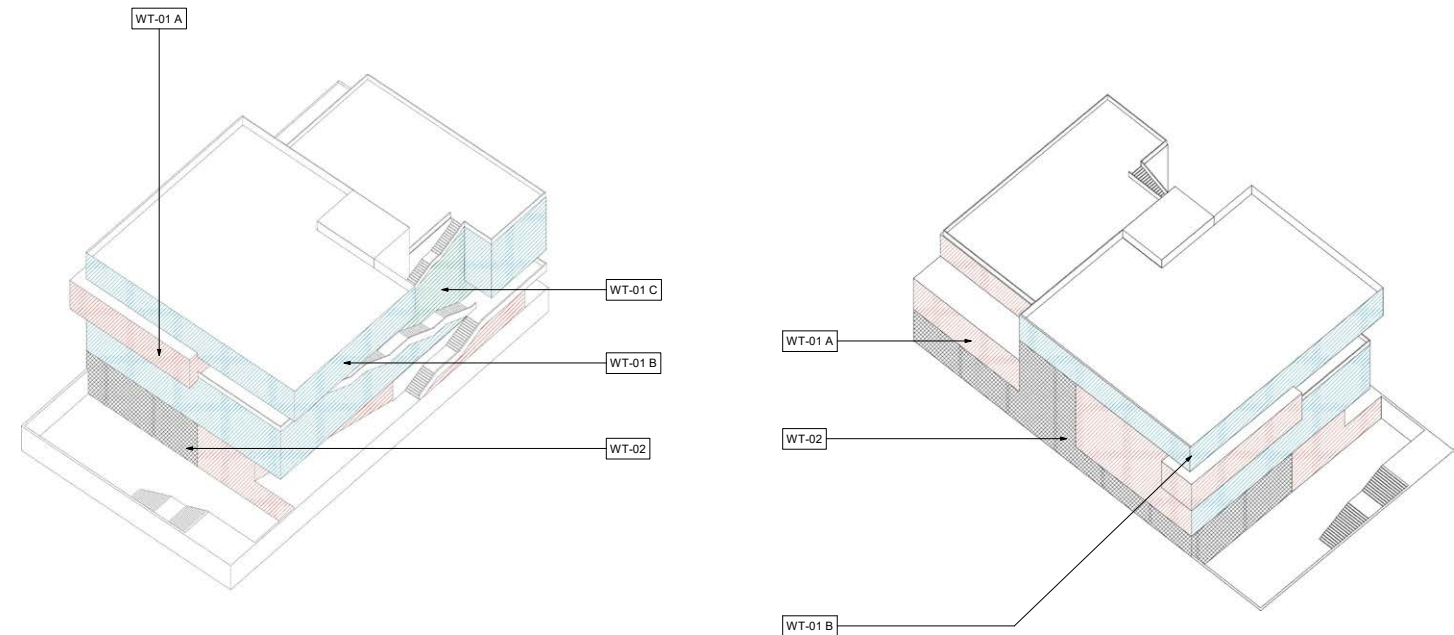


Perforated Aluminum Panel



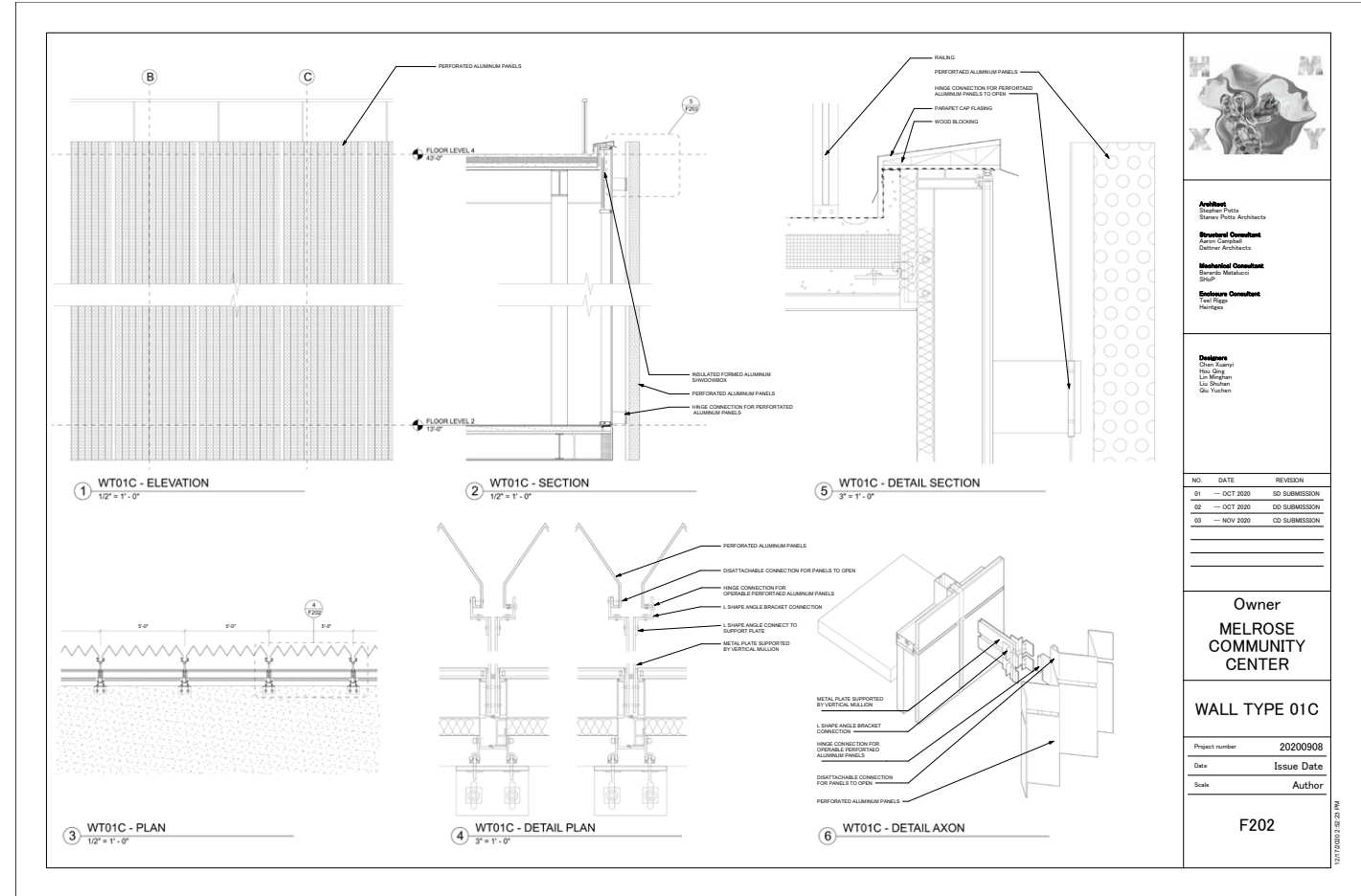
2 North Elevation - Mapped
1/16" = 1'-0"

Mapped Elevation Diagram



Facade Type Diagram

- WT-01 A Unified Curtain Wall
- WT-01 B Unified Curtain Wall with Louvers
- WT-01 C Unified Curtain Wall with Perforated Aluminum Panel
- WT-02 Opaque Wall - Cast-In-Place Concrete



Architect
Shaw-Welby
Shaw-Welby Architects

Structural Consultant
Jain Group
Jain Group

Mechanical Consultant
S&B
S&B

Electrical Consultant
T&E
T&E

Owner
MELROSE
COMMUNITY
CENTER

NO.	DATE	REVISION
01	OCT 2020	SD SUBMISSION
02	OCT 2020	DD SUBMISSION
03	NOV 2020	CD SUBMISSION

Project number 20200908

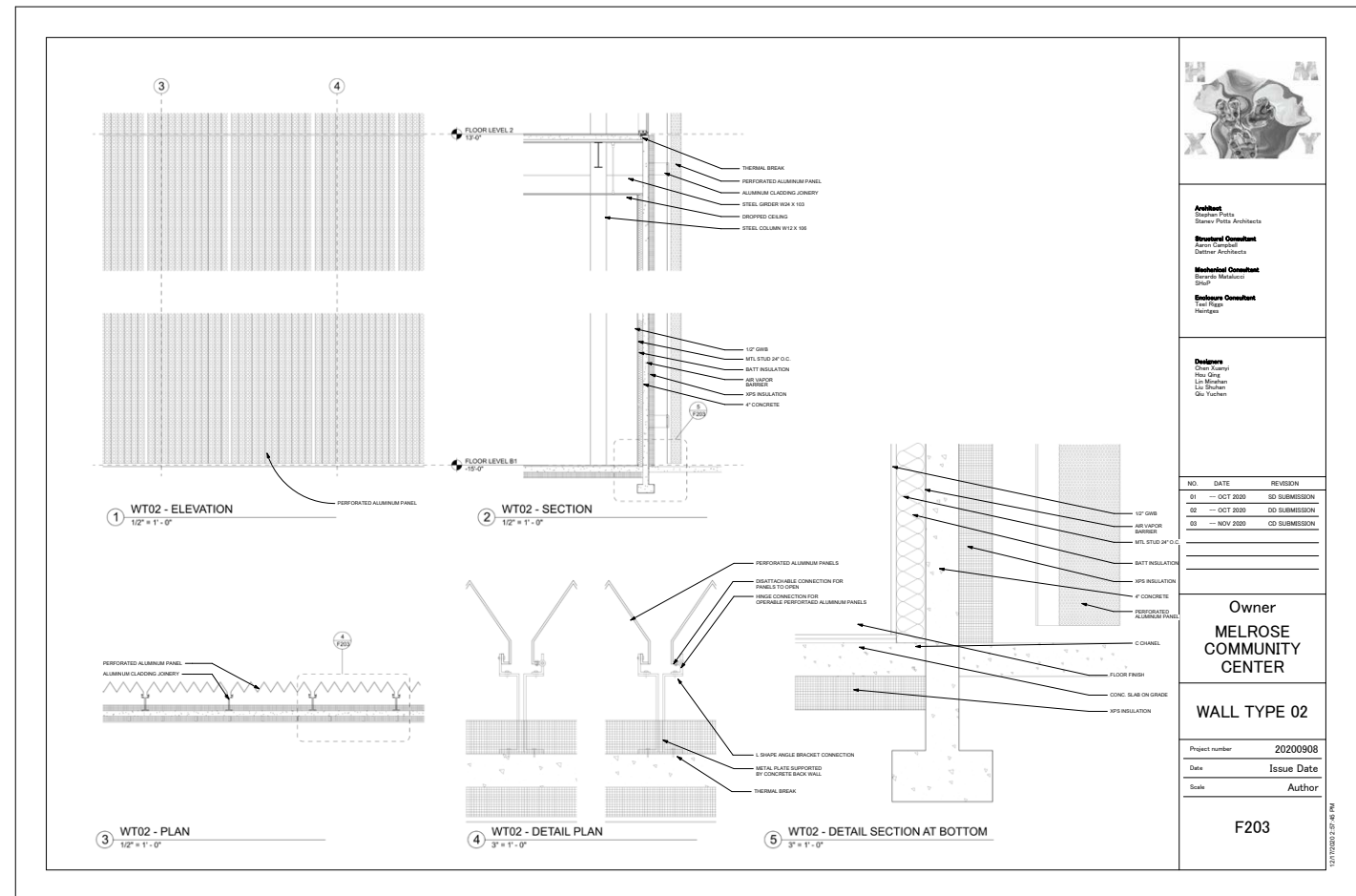
Date Issue Date

Scale Author

WALL TYPE 01C

F202

1/17/2020 10:00 AM



Architect
Shaw-Welby
Shaw-Welby Architects

Structural Consultant
Jain Group
Jain Group

Mechanical Consultant
S&B
S&B

Electrical Consultant
T&E
T&E

Owner
MELROSE
COMMUNITY
CENTER

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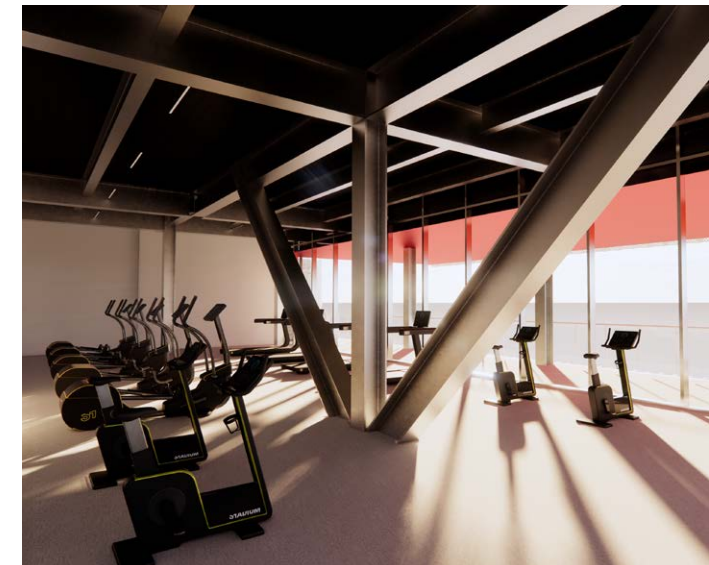
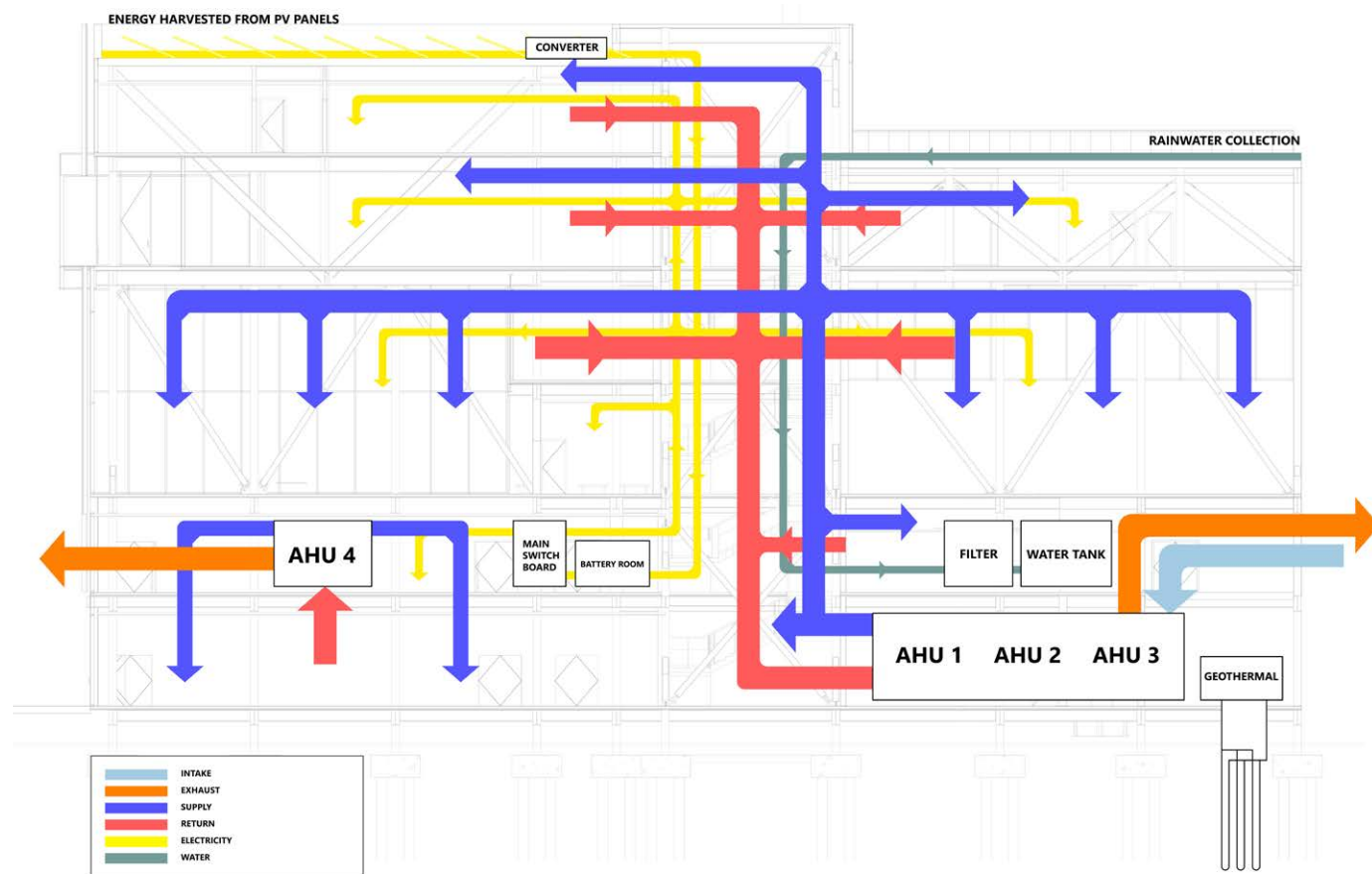
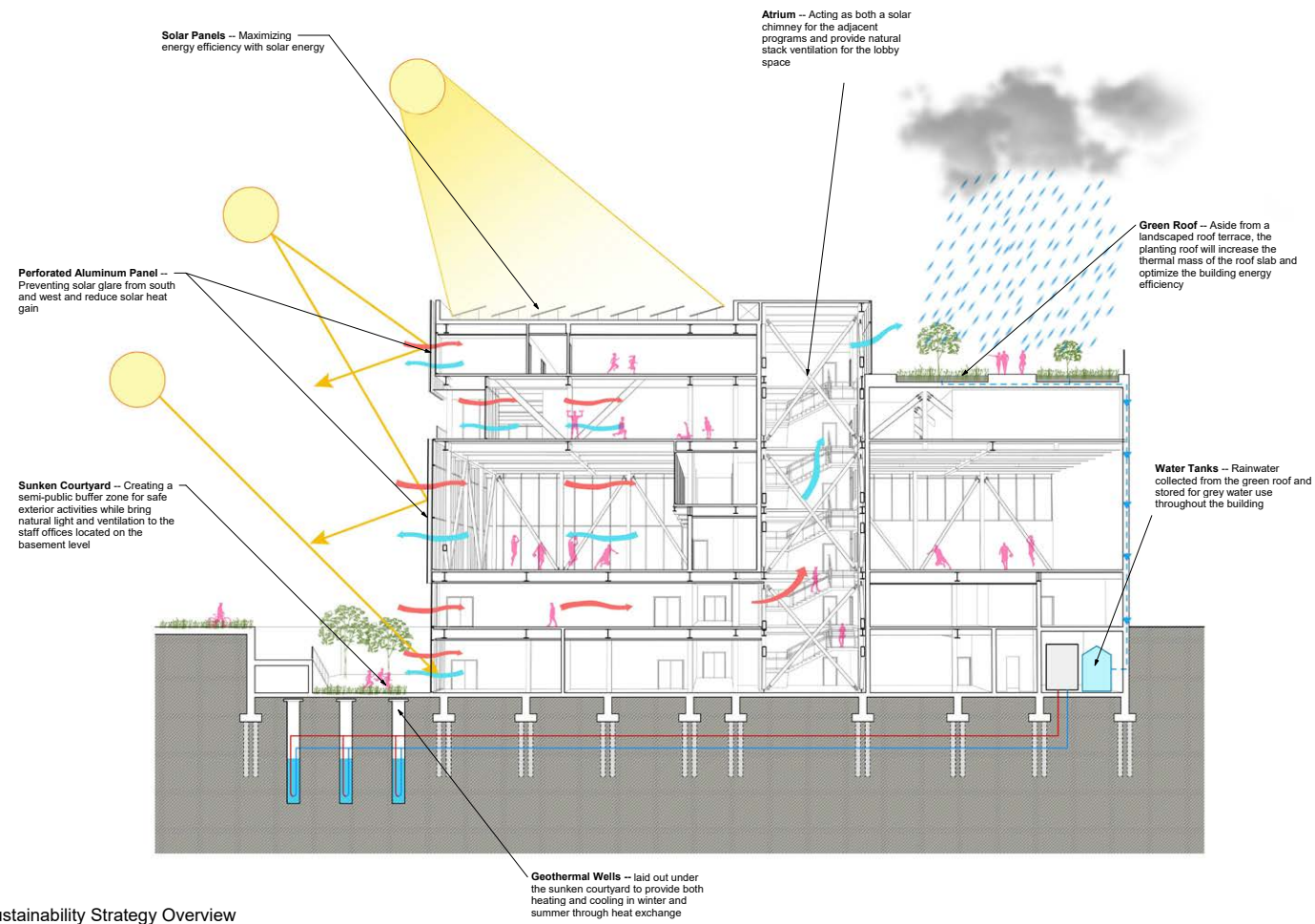
Date Issue Date

Scale Author

WALL TYPE 02

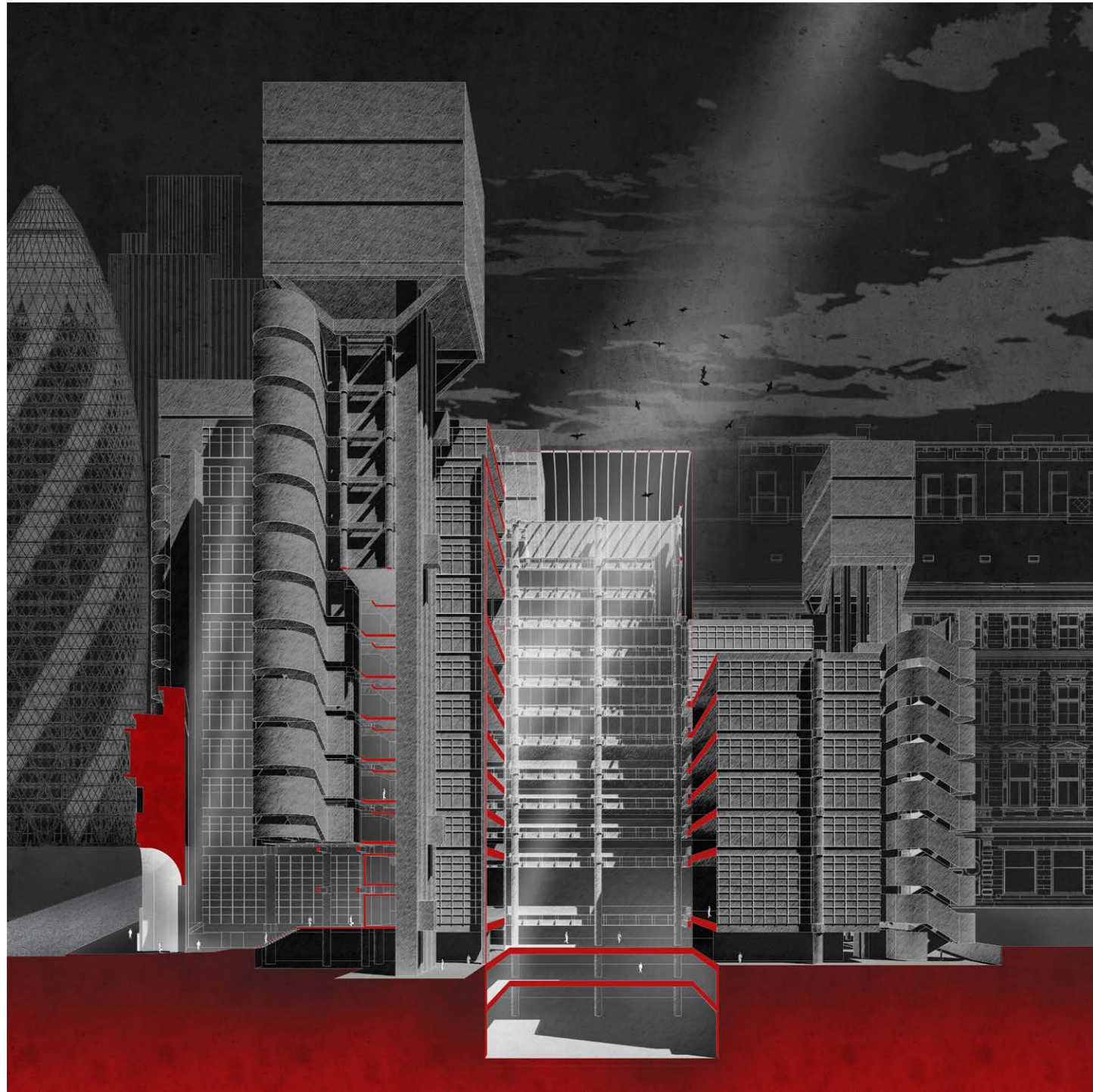
F203

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Distribution System Diagram

Building Facade View & Interior Views



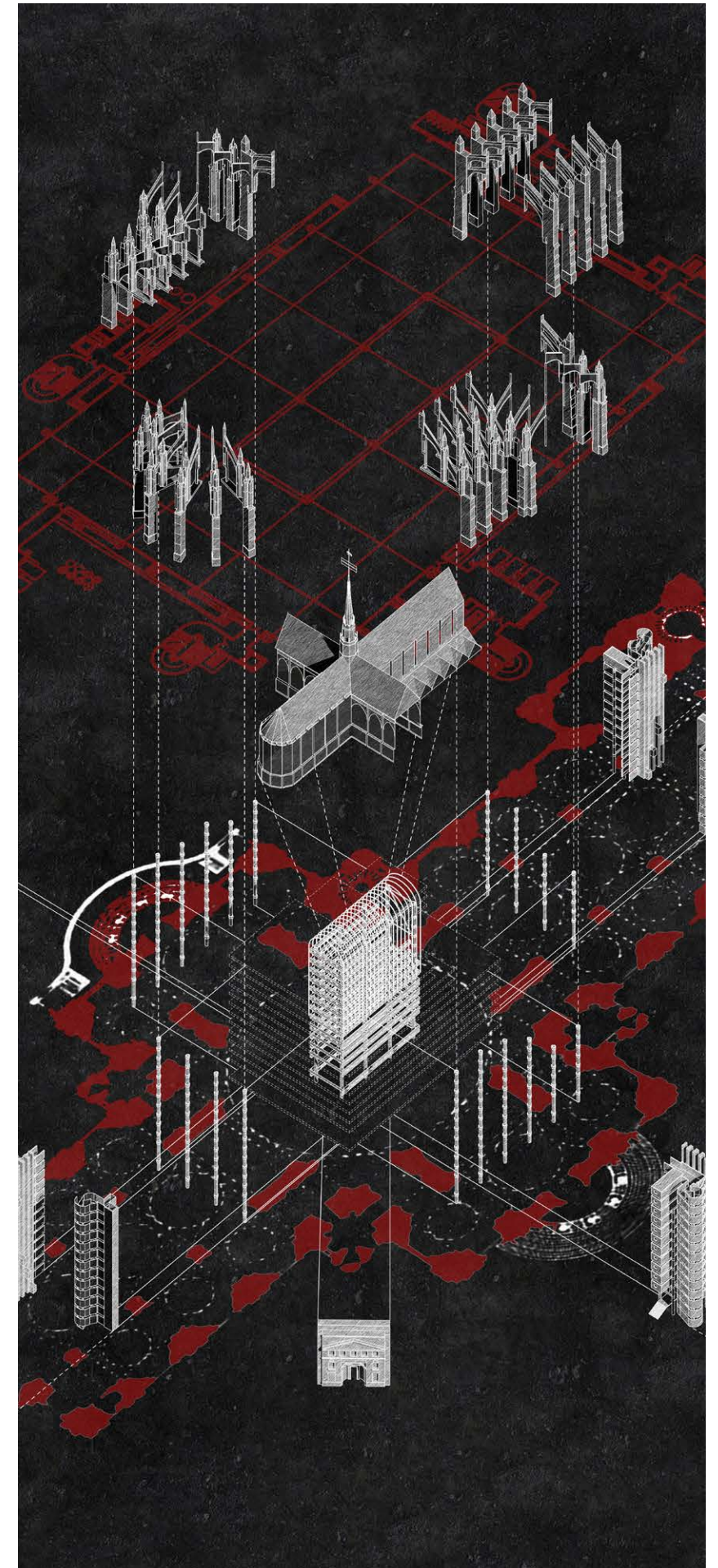
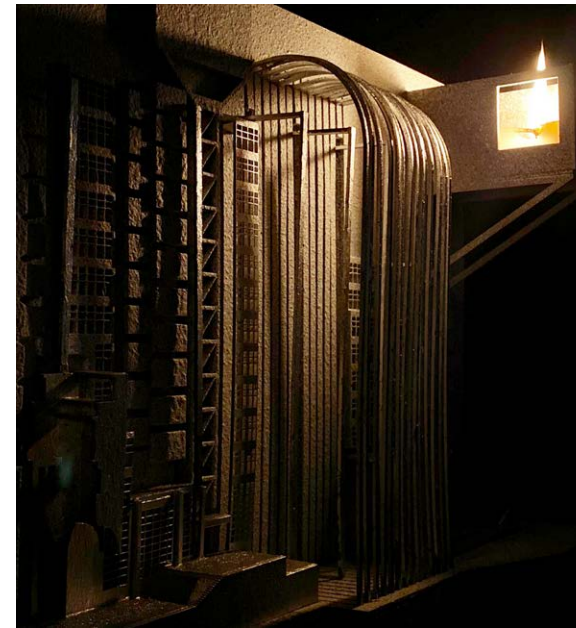
REINTERPRETATION ----THE LLOYD'S BUILDING

[ACADEMIC]
COLUMBIA UNIVERSITY, GSAPP, 2019
ARCHITECTURAL DRAWING & REPRESENTATION

[INSTRUCTOR]
JOSHUA D. UHL

[INDIVIDUAL]

The Lloyd's Building has always been conceived as a role model for high-tech architecture. Inspired by the retaining Gothic facade that is still used as a secondary entrance for the building along with its towering atrium, the following drawings and models, however, reinterpret the Lloyd's building as a Gothic Church. The section drawing explores the relationship between light and its atrium while the exploded axonometric drawing shows the correlation in terms of physical presence, such as the similarities shared between its repetitive circulation towers and the flying buttresses. The model converts the building into a relief where the negative space of the building pops out and create a sacred atmosphere with light and shadows.

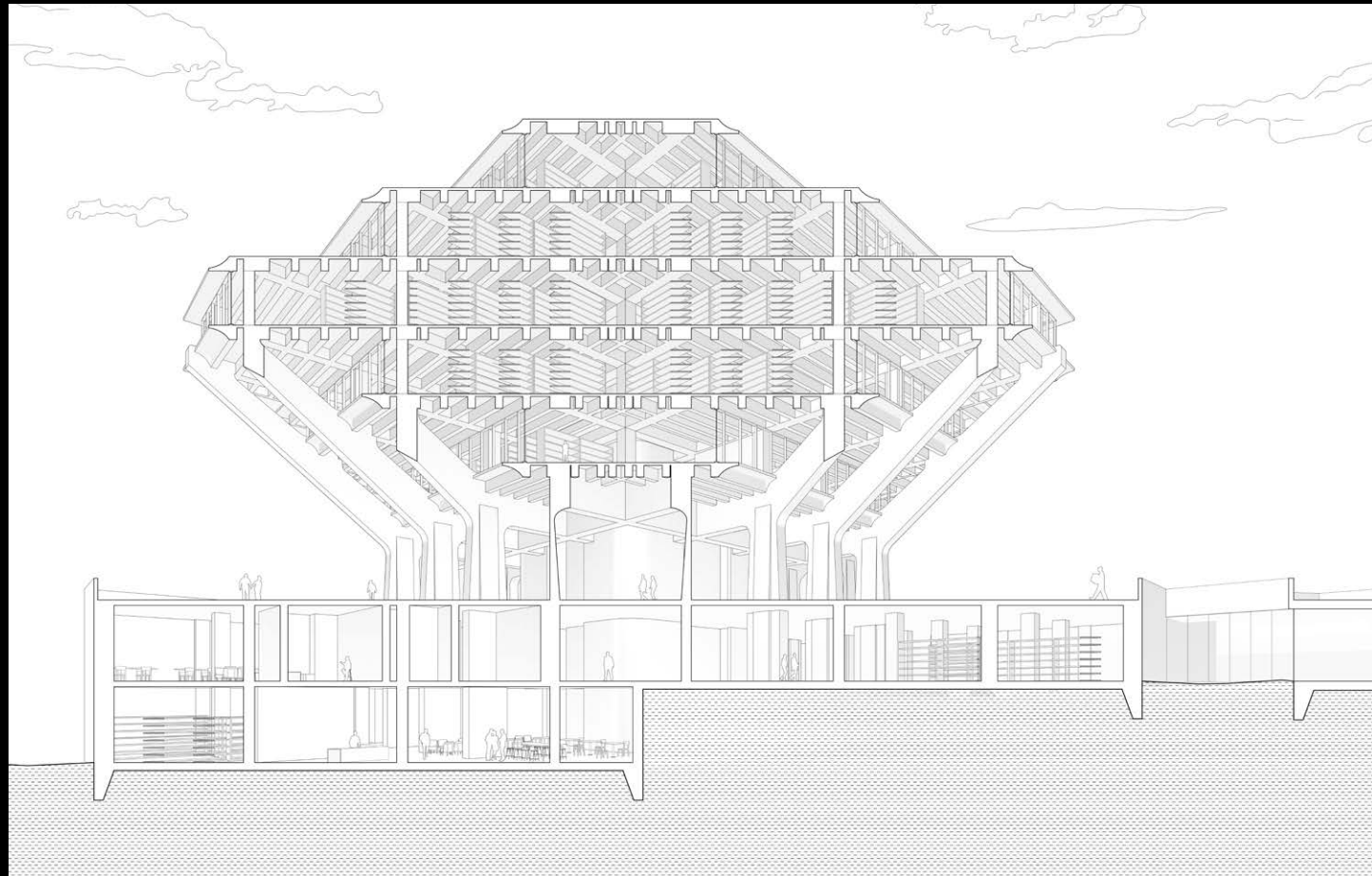


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[INSTRUCTOR]
MARC TSURUMAKI

[INDIVIDUAL]



POETICS OF NATURAL LIGHT

[ACADEMIC]
COLUMBIA UNIVERSITY, GSAPP, 2020 SPRING
ARCHITECTURAL DAYLIGHTING

[INSTRUCTOR]
DAVIDSON NORRIS

[INDIVIDUAL]

