

# **PORTFOLIO**

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**CARA DePIPPO**

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# THE CHAZ

Professor Christoph Kumpusch & Patrice Derrington

Partner: D. Graham Drennan III

Advanced Studio VI

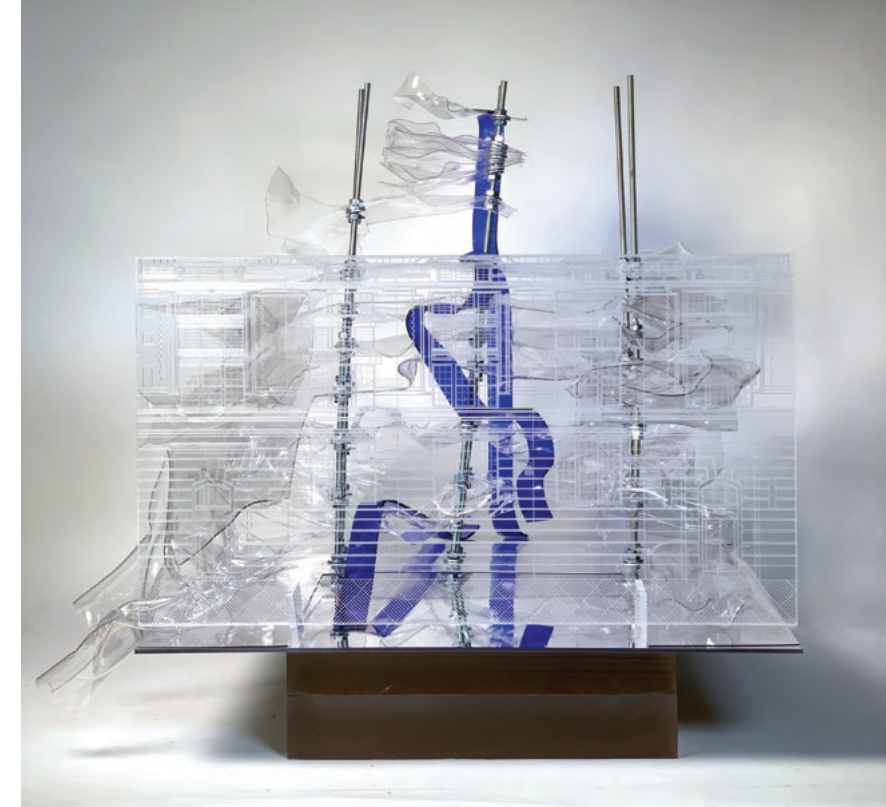
Spring 2022

This studio was a joint studio with architecture and real estate development. The studio interrogated both the design and real estate development processes and emphasized the contrast and critiques that exist within these processes. The site for the project is PS 64, an existing, abandoned former public school in the East Village in New York City.

The existing building, built in 1906, is an iconic H-Plan school designed by renowned architect, Charles B.J. Snyder. The building has sat vacant for over 20 years and is in a state of derelict. A private developer has been trying to develop the site but hasn't been successful because of vehement push back from the community. This studio aimed to shine light on how this project could be successfully developed, and how to incorporate the community's needs, while also being a financially feasible project.

Through model making, and quantitative analysis in excel, this project explores the relationship between fragmented users and uses in creating immersive spaces that are informed and supported by financial decisions. In doing so the project interrogates the traditional development structures and existing spatial qualities of PS 64 and the broader East Village Community. The project sets out first to make explicit the inversion of social and financial value and how they are represented in the built environment. Socially valuable spaces simply do not generate enough income to justify their construction alone. These spaces must be subsidized by spaces with higher financial values, such market rate commercial and residential spaces, including condominiums. However, the whole project would not gain necessary public support unless it includes socially but not financially valuable spaces, such as affordable housing and community programming. Ultimately these fragmented uses and user groups all become part of the community, by virtue of calling the building their home, whether it be an affordable studio, a high end condo or a local business owner renting space at a reduced rate.

In the physical model, spaces with high community use and social value expand to represent the intersection of user groups and interaction of the building and its neighborhood. To contrast this the residential floors are pressed together, and reach out only in a few key places beyond the base of the model, thus tying them to the urban fabric. Despite the model's conceptual form the project is fully rooted in financial metrics and is fully feasible.



Callouts are broken into three categories across the proforma; General, Analysis and Diagram/Drawing Sections.

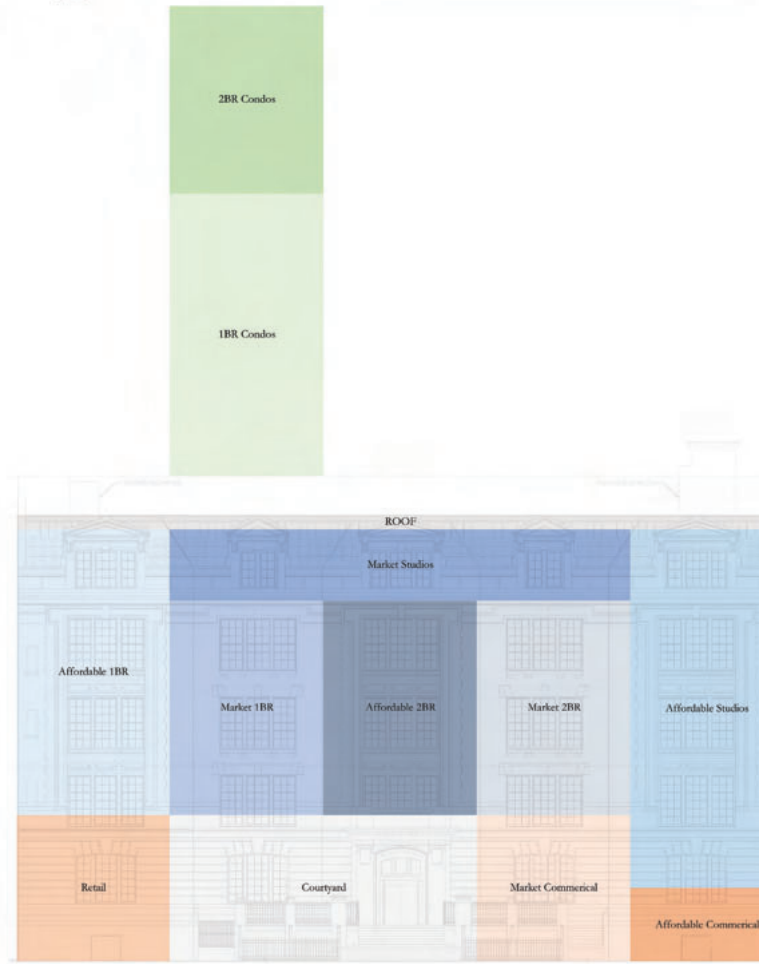
The general section lays out assumptions taken early on in project development and relates mostly to traditional financing structures such as development costs and loan values. These values are input into the proforma, and combined with market research that outputs the analysis section. This section includes rents and sale prices of the building, as well as traditional measurements of financial feasibility such as IRR and Equity Multiple. Both the General and Analysis sections can be seen as pointing out the traditional key moments in the development process.

The Diagram/Drawing section contains drawings that suggest the proposed condo tower and a courtyard drawing which captures the blurring between the public-public space of 10th Ave and the public-private space of the building. The three diagrams included emphasize the inversion of social and financial value and the role of use in realizing financial feasibility. The NPV diagrams show the time-adjusted present financial value of each use, less cost to develop them. Critically the spaces that are the most socially valuable, namely the affordable components, produce negative time-adjusted returns, compared the the other market rate spaces which generate the bulk of the returns. In the end, the negative NPV of the socially valuable spaces are negated by the financially valuable ones and in the end the project is financially feasible. The sale diagram breaks down the final \$91 million price into the financial value each use is measured at at the end of the eight year hold period.





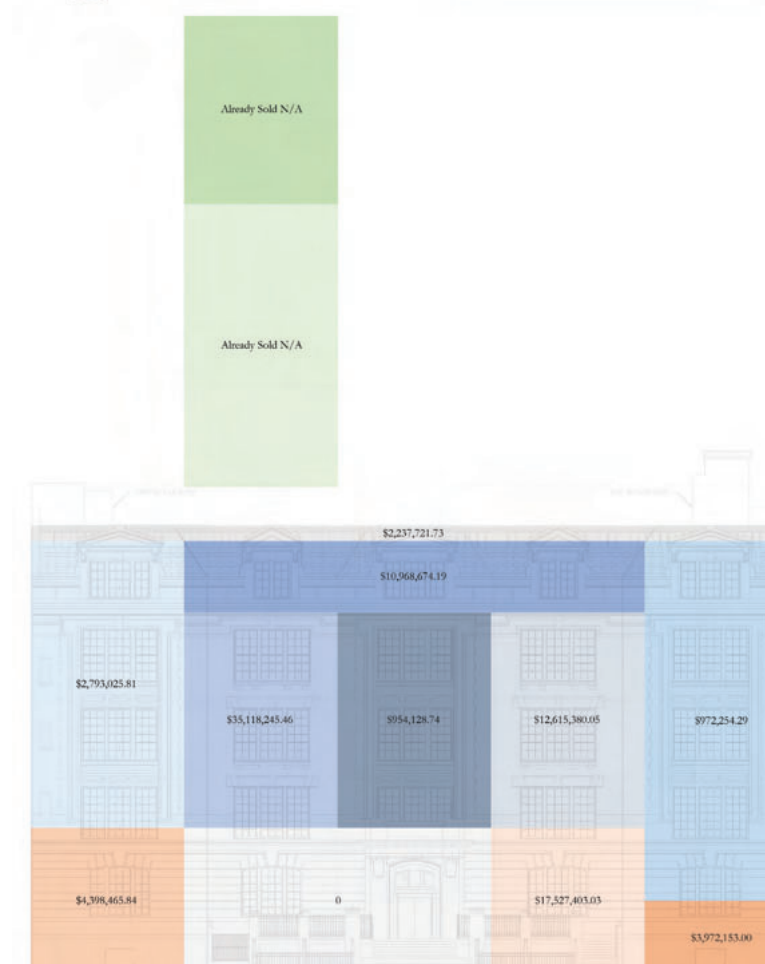
1 Stacking Diagram  
D-103



1 NPV Diagram  
D-104

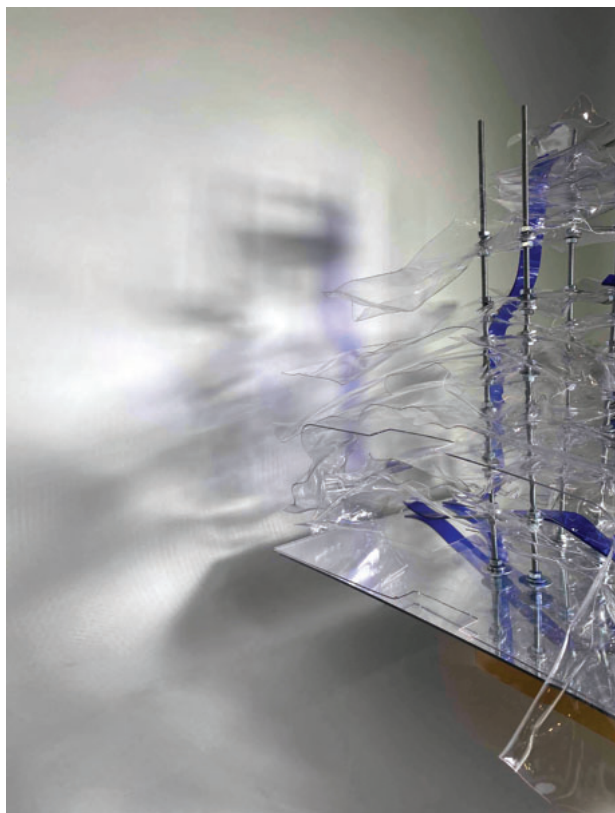


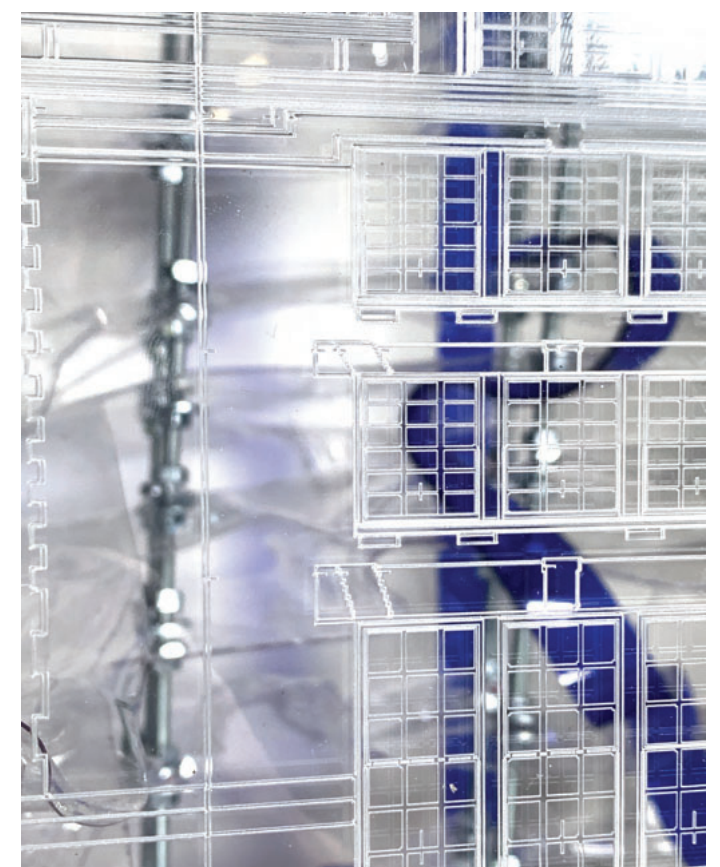
1 Fragmented Valuation  
D-105



1 Courtyard Plan  
D-101







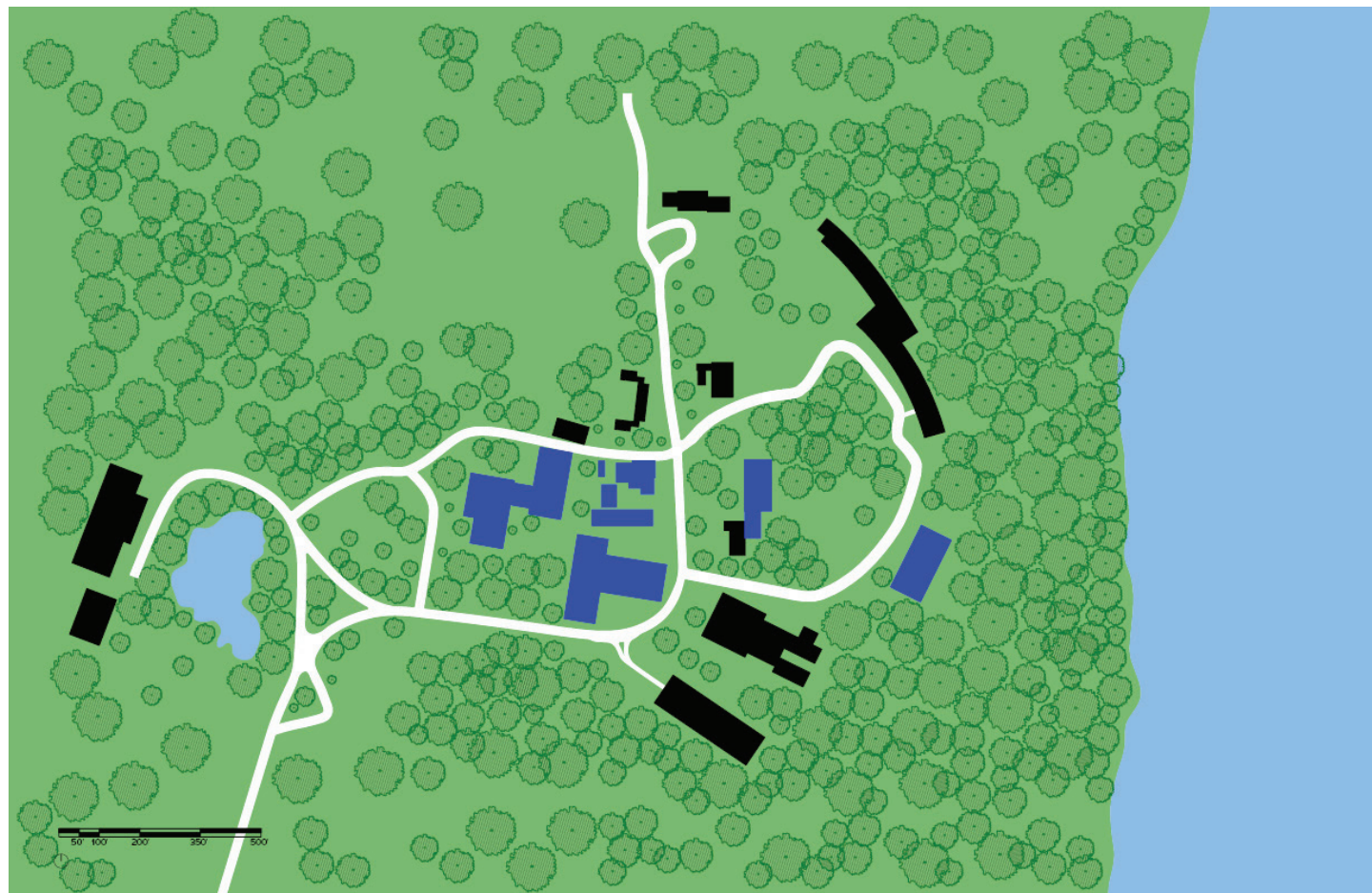


# COLUMBIA CLIMATE SCHOOL CAMPUS PROPOSAL

Professors Mark Rakatansky & Jorge Otero-Pailos  
Advanced Studio V  
Fall 2021

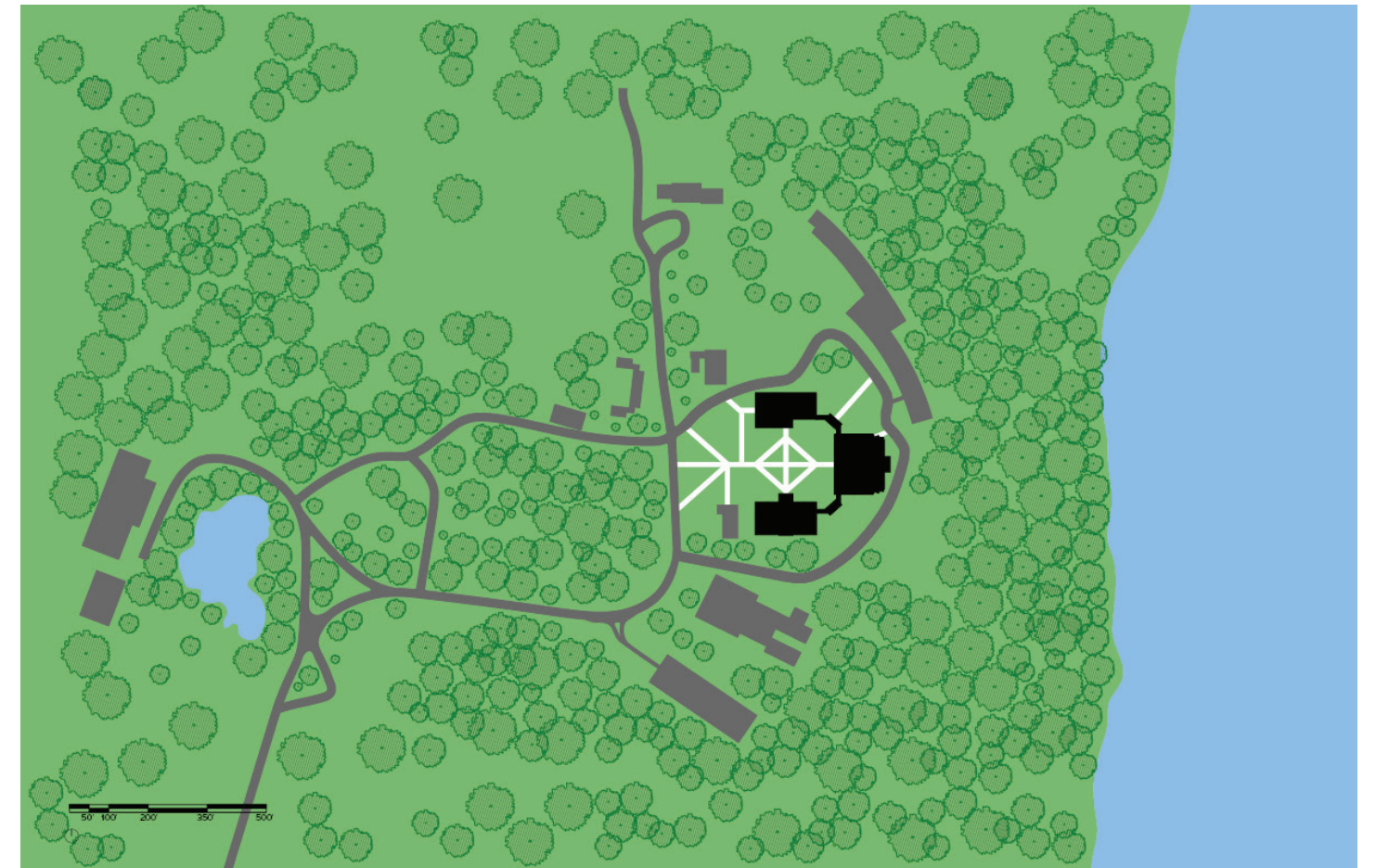
The Columbia Climate School Campus Proposal is a complete redevelopment for the Columbia Climate School Campus, which is located in Palisades, New York. In this studio we attempted to investigate the ways design can visibly enact our environmental entanglements.

The existing campus consists of many individual buildings that aren't related to one another or to their environment.



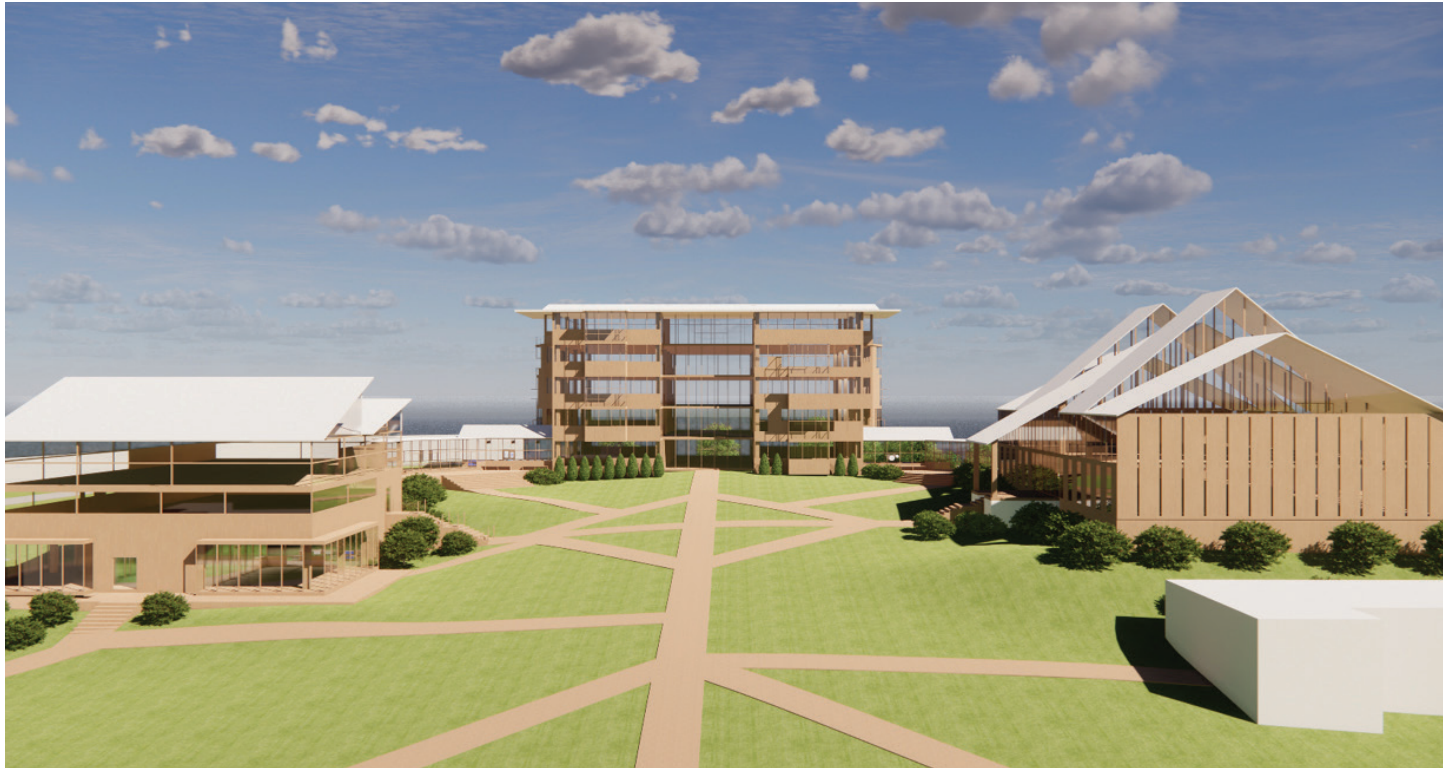
Above shows the existing site plan with the buildings to be removed in blue.

The proposed site plan consists of a quad for the campus that has three connected buildings, shown in black below. These buildings are connected to each other by use, materials and are physically connected. They were carefully placed in the environment at the highest elevation on the site and in the center of campus to serve as the focal point of the site. The placement of the quad also capitalizes on the view of the natural environment, which includes the Hudson River and surrounding forested area.



The quad has two lab buildings on the sides and one central building that acts as a commons building/ student center/ collaborative space. The lab building on the right is for the tree ring lab, seismology and paleomagnetism. The lab building on the left is for marine biology, oceanography and boreholes.

The central building is a combination of the two side buildings, both architecturally and functionally. The glazing in the center of the central building goes all the way up and is on the front and back of the building, giving it an airy feel and allowing one to be able to see through the entire building out to the landscape. All of the buildings are designed out of the same materials which are CLT and glazing used in different ways.

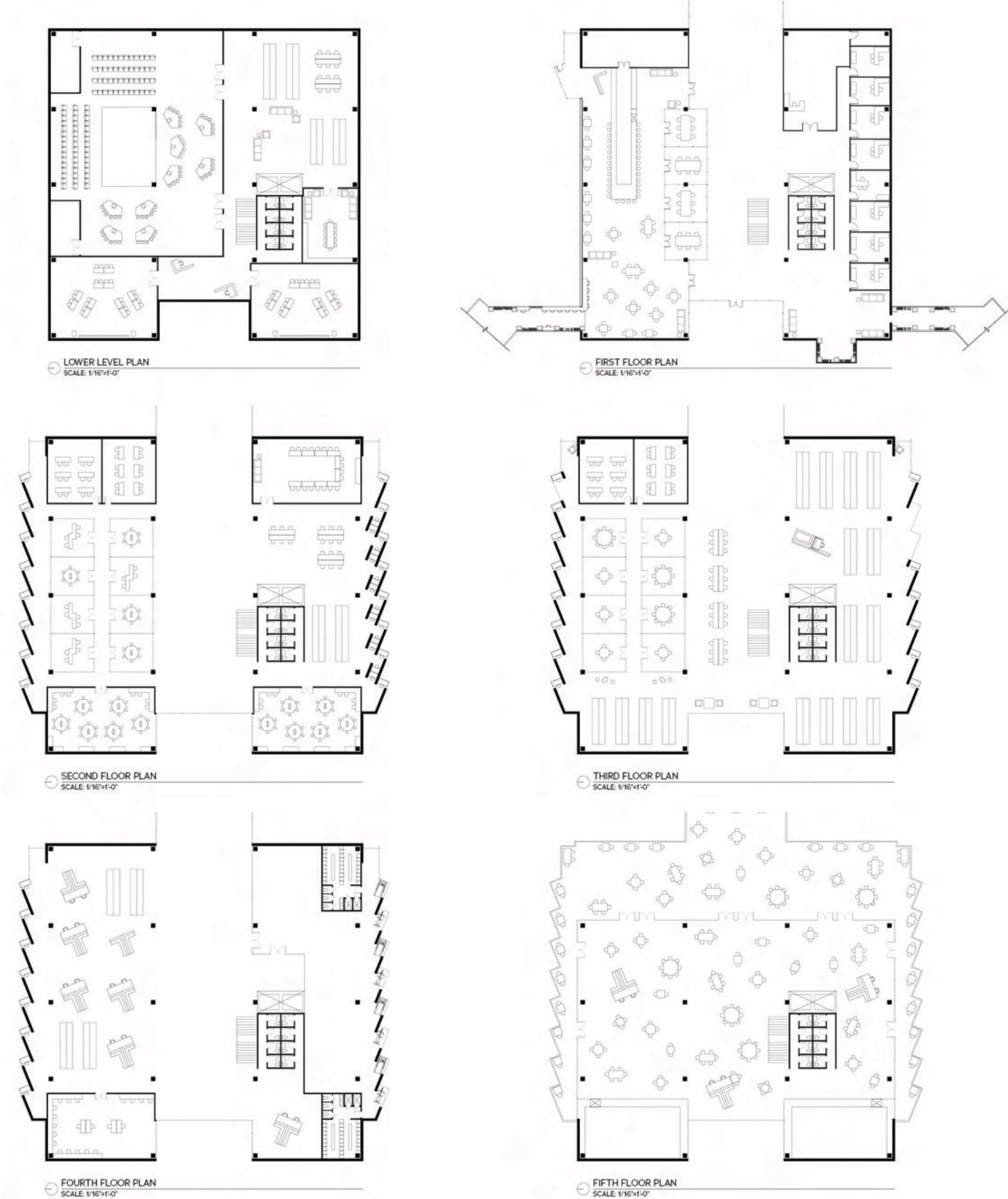


The Commons Building (center), flanked by the two lab buildings, joined by connector buildings.



The Commons Building is light and airy as evidence by the amount of glazing but still has a solid presence that is worthy of its purpose and location on the campus. The commons building, it is located on the highest point of the campus, to take advantage of the water views of the Hudson River.

The plans show all the different uses of the interior space of the Commons Building. This includes auditorium, library, conference space, coffee shop, offices, classrooms, labs, study spaces, stacks, gym and cafeteria on the top floor.



Moving into the commons building, there are study carrels that provide an area for individual work and reflection and a view so the individual can feel connected to the environment. The CLT is used as walls, floors and desks as well as muntins that extend past the glass to help frame the view of the environment and extend inside of the building to frame the scientific information that is on display.



On a different floor, there are study carrels that are again individual, but also some that are for more than one person, to encourage collaboration among the different scientific disciplines. The CLT is also used here as a walls, floors and desks, and also as places for lights and as display cases for items.



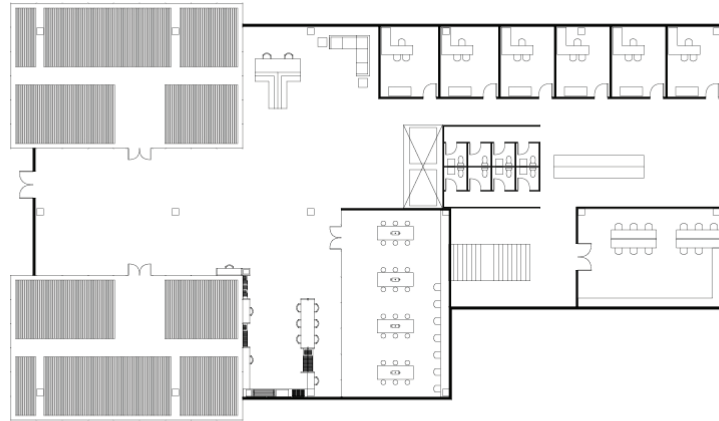
On another floor, the study carrels become alcoves to house athletic equipment and provide an area for physical exercise, in addition to mental exercise, also while taking advantage of the view.



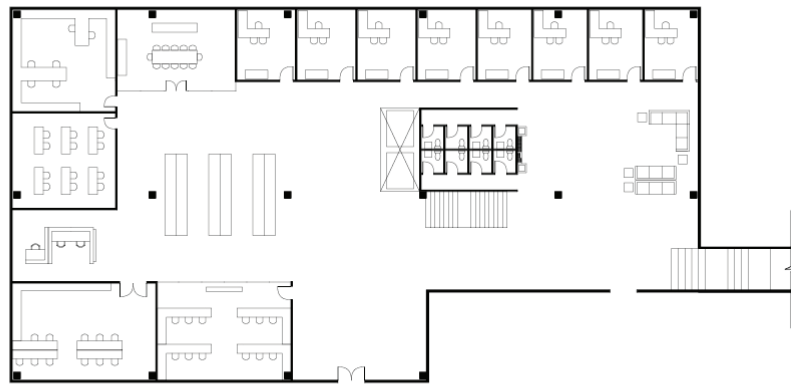
On the top floor, the alcoves become part of the exterior space and are used for dining or studying tables, both single person and multi person tables.



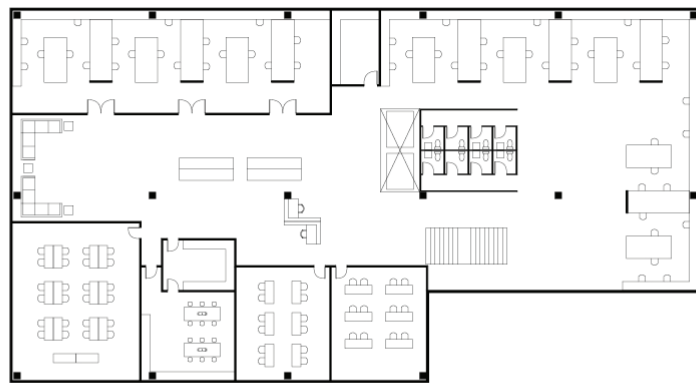
In the lab building, the lower level is used for the borehole research and display. The first floor is for marine biology and oceanography research, offices and classrooms and is also the floor where the two buildings connect via connector spaces. The second floor of the building is for marine biology and oceanography labs.



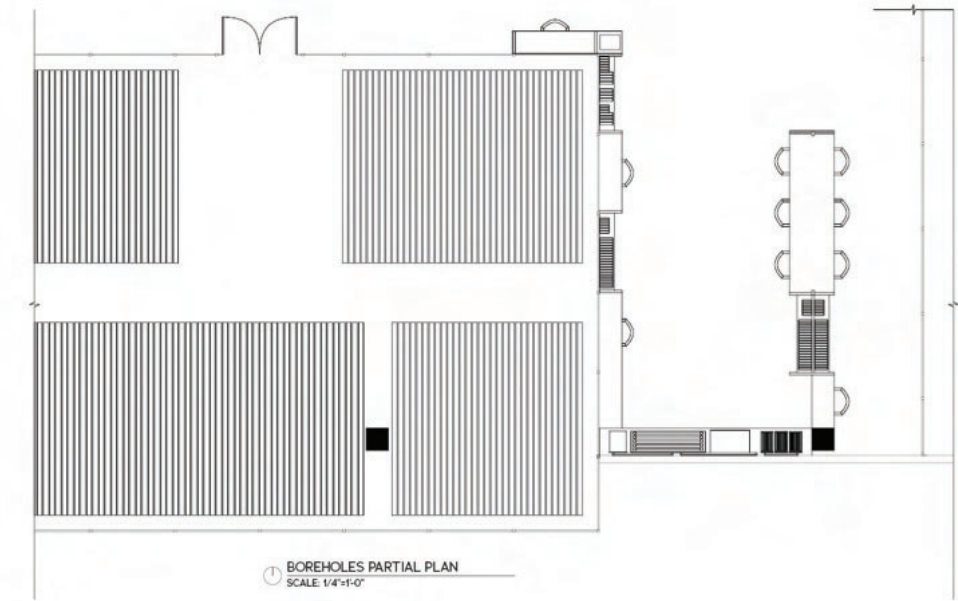
LOWER LEVEL PLAN  
SCALE: 1/16"=1'-0"



FIRST FLOOR PLAN  
SCALE: 1/16"=1'-0"



SECOND FLOOR PLAN  
SCALE: 1/16"=1'-0"



The partial plan of the lab building shows the storage and display of the boreholes.



Note here again how the muntins frame the boreholes, house the lights and then come down and meet the floor, while passing through the desks to create an entanglement of form and function. The boreholes are displayed in a glass encased room.

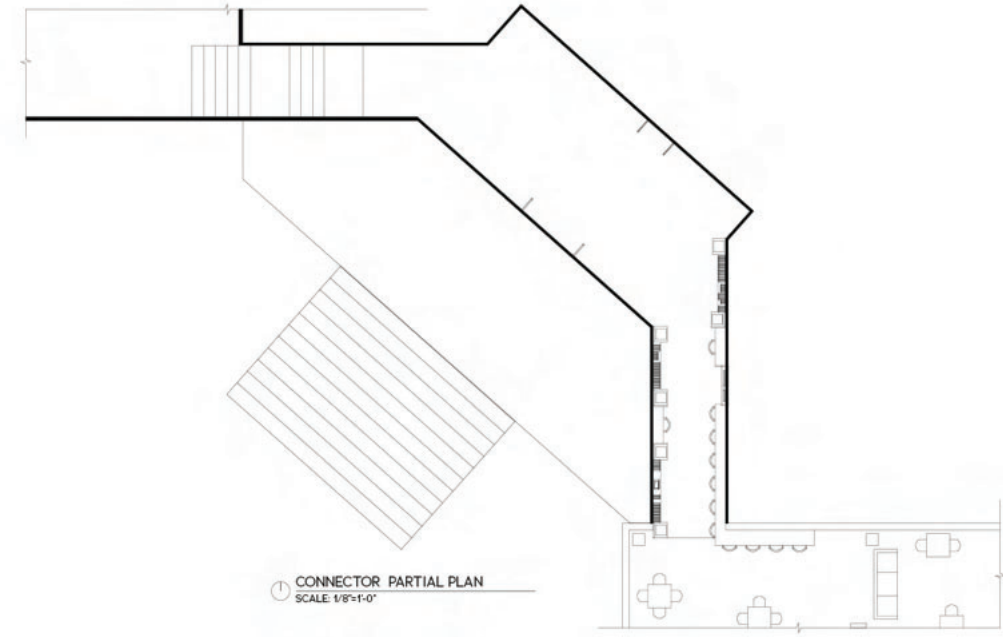
The relative solid look of the boreholes contrasts with the transparency of the glass walls, creating a visually interesting space where the boreholes themselves become the walls and the enclosure.



The glass encased boreholes are also visible from the exterior, where they again create an interesting visual effect.



The connector partial plan shows the connection between the commons building and the lab building. The connectors serve as gathering spaces, museums/ display spaces, library spaces and outdoor spaces.



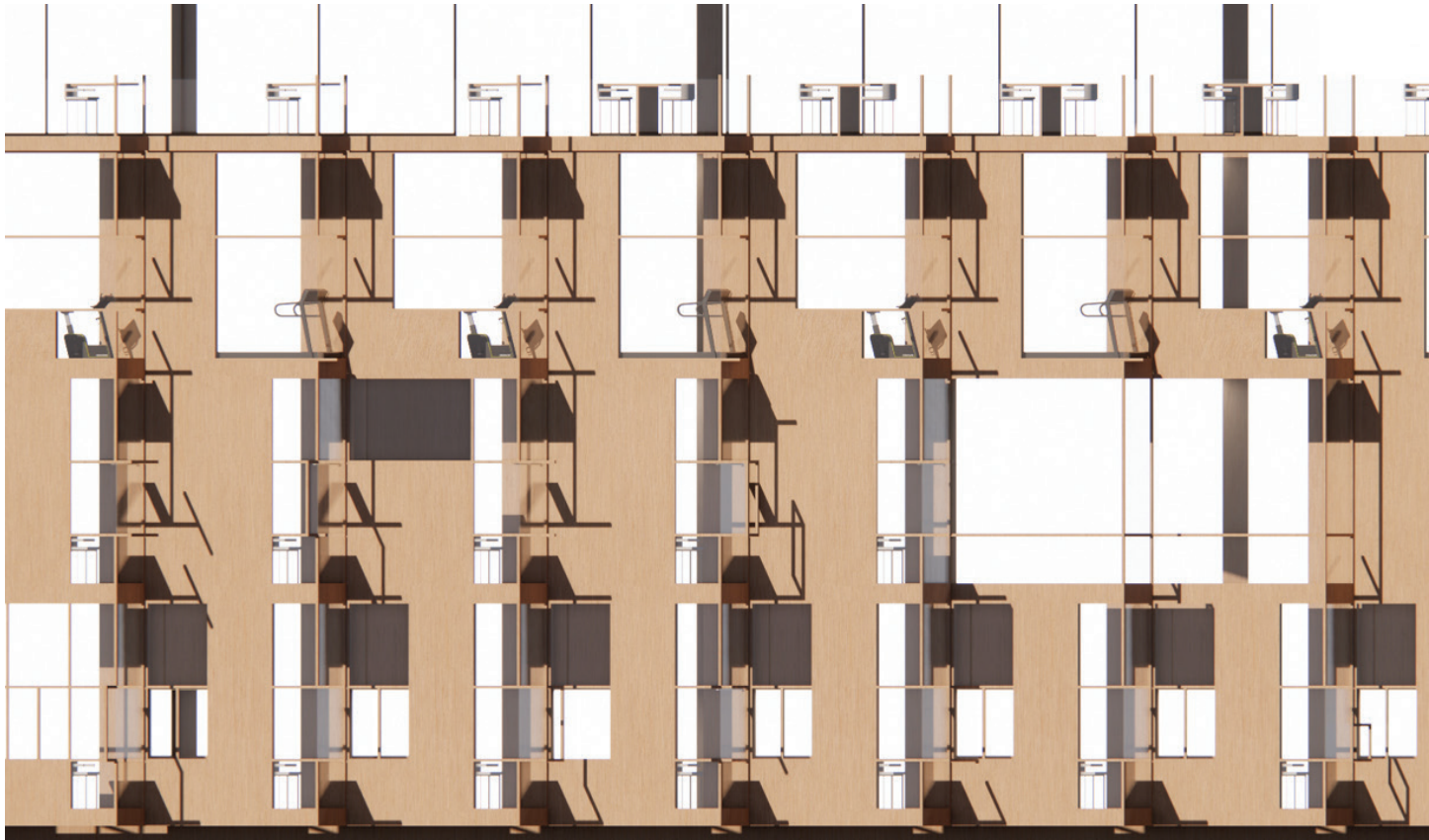
The counter top wraps between the two spaces to connect them physically and functionally.



Note the interplay of the muntins on the windows as they go up onto the ceiling and serve as support for the lights.



Going back to the Commons Building (below), the different programmatic uses of the spaces create varying patterns on the facade, enhanced by changing shadows.



SIDE VIEW OF THE COMMONS BUILDING

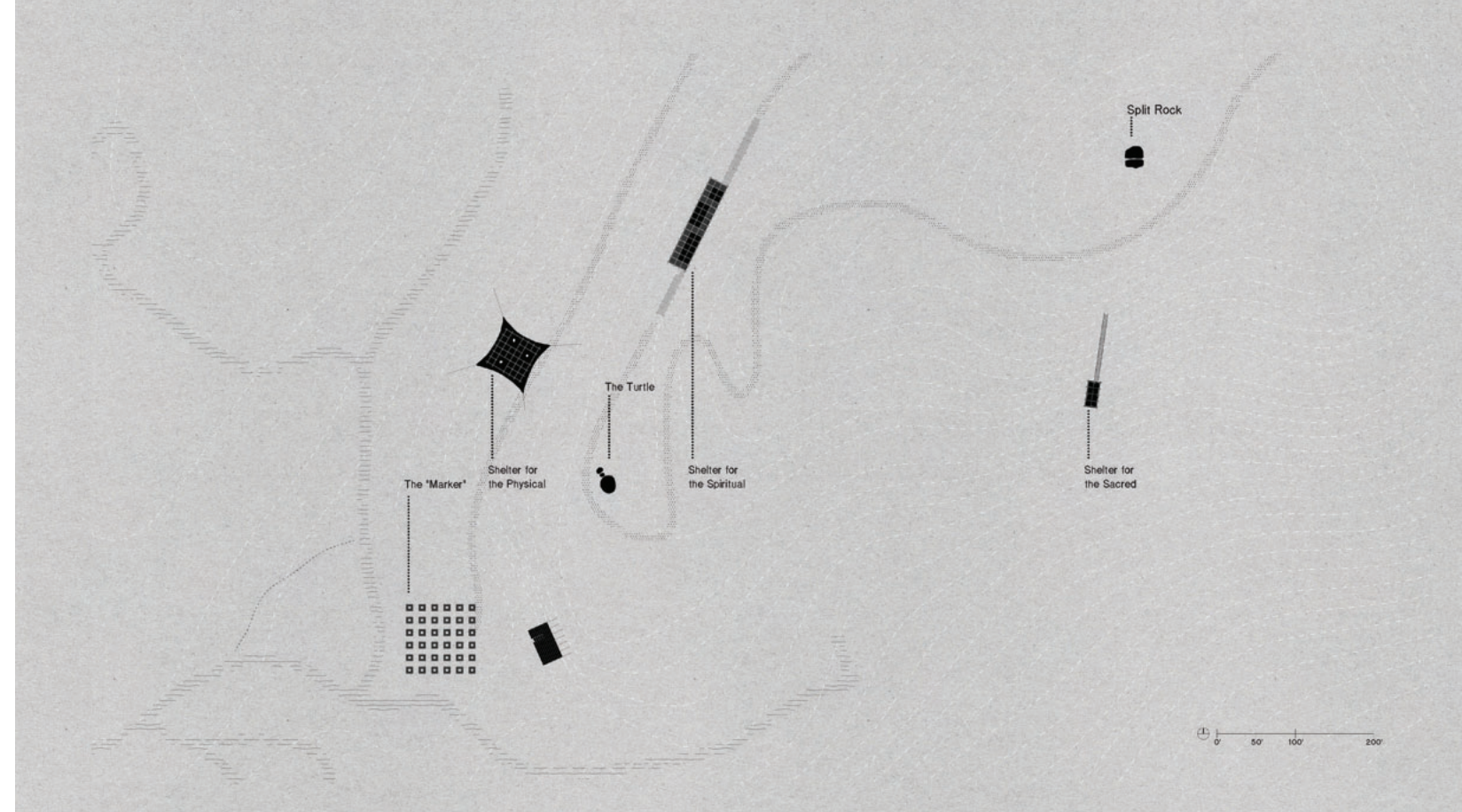
# SPLIT ROCK MUSEUM

Professor Robert Marino  
Partners: C. Asher McGlothlin & Sonny Han  
Advanced Studio IV  
Spring 2021

The Split Rock Museum is located in Mahwah, New Jersey. It is a museum dedicated to the Ramapough Lenape Native American tribe.

The entire compound is composed of four built structures, stretching from the southwest corner of the site, all the way to the area near the Split Rock itself. The four structures are: (1) the Marker, which marks the spatial and temporal presence of the Ramapough Lenape here at Split Rock, (2) the Shelter for the Physical, which houses artifacts of historical importance, (3) the Shelter for the Spiritual, which houses ceremonial artifacts of the past and objects of the present, and (4) the Shelter for the Sacred, which houses objects that are of most spiritual significance, only to be accessed by qualified members of the tribe.

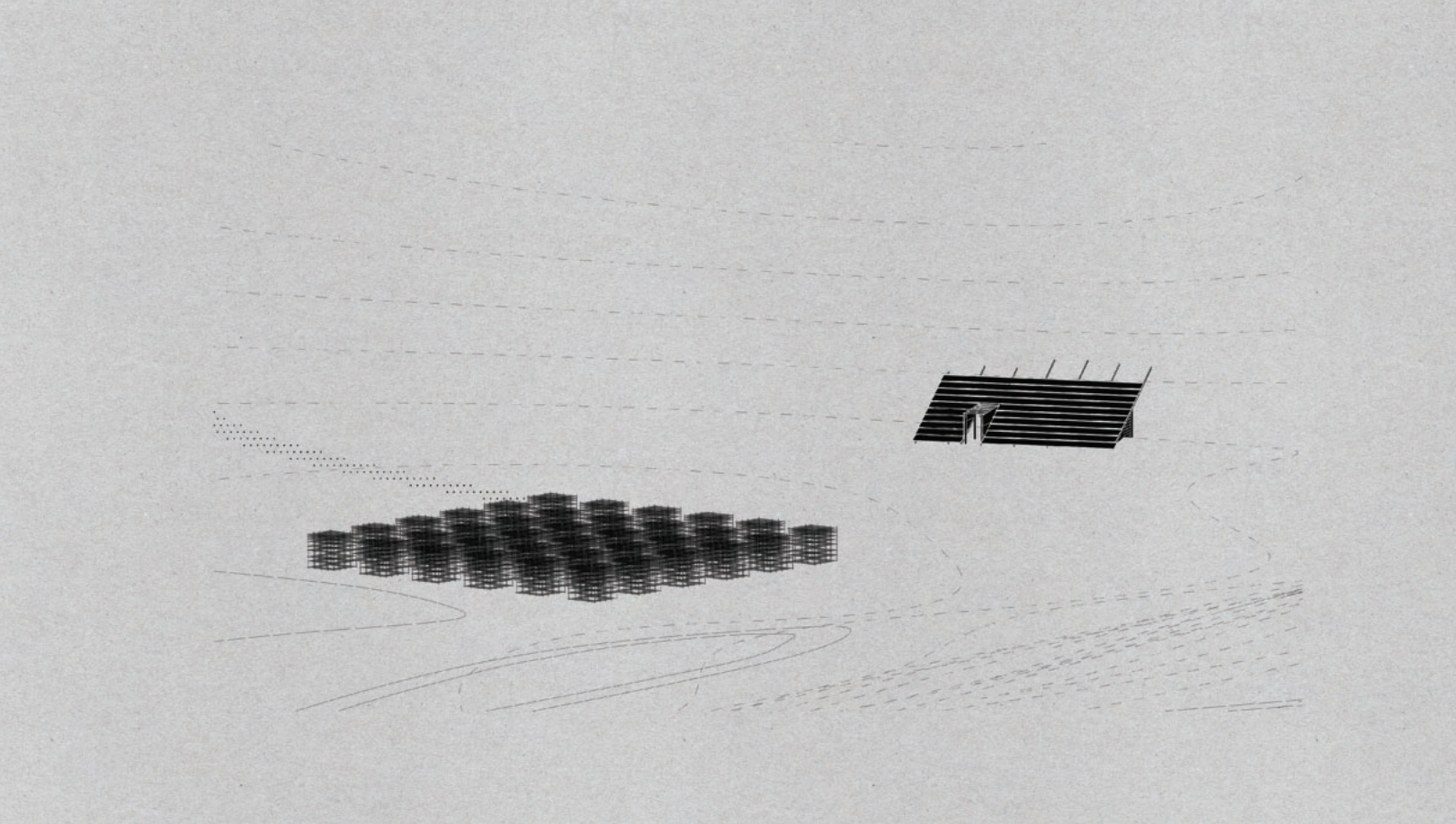
All of the structures are built with lightweight wooden construction using the oak found on site and canvas, so as to disturb the earth as little as possible and open to the elements to varying degrees, with the notion that these structures will exist only as long as the Ramapough Lenape tribe is there maintaining the structures. The only exception to this rule is the Marker, which is composed of thirty-six 8' x 8' x 8' cubes constructed out of metal rebar columns and beams with slots to hold small rocks that the visitors—both from and outside of the tribe—would leave on their visit to the museum. Just like the cairns that were left by the Ramapough Lenape of previous generations, these cubes would persist even after the structures have long disappeared in the far future as a marker to the tribe's place in the world, and in time.



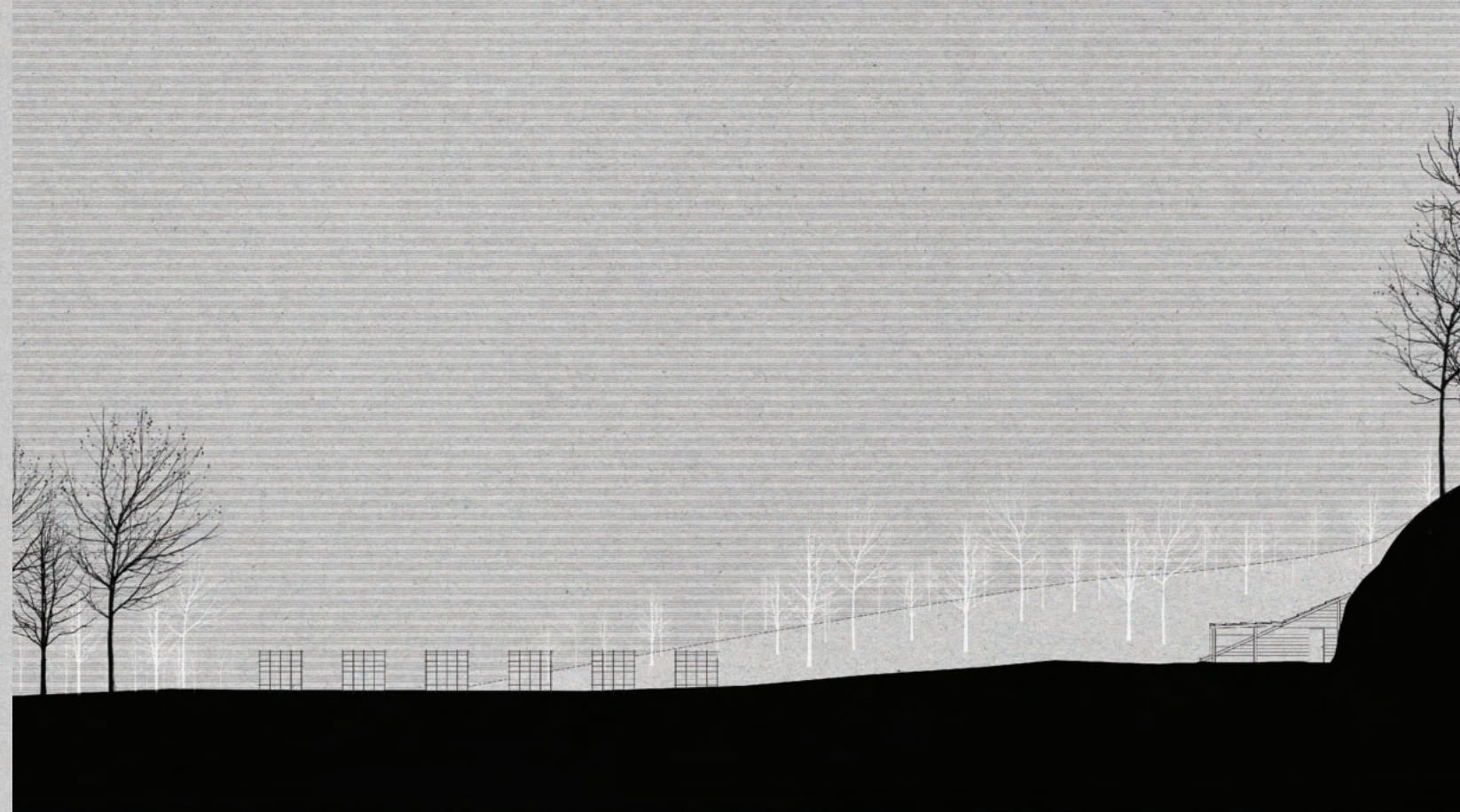
SITE PLAN



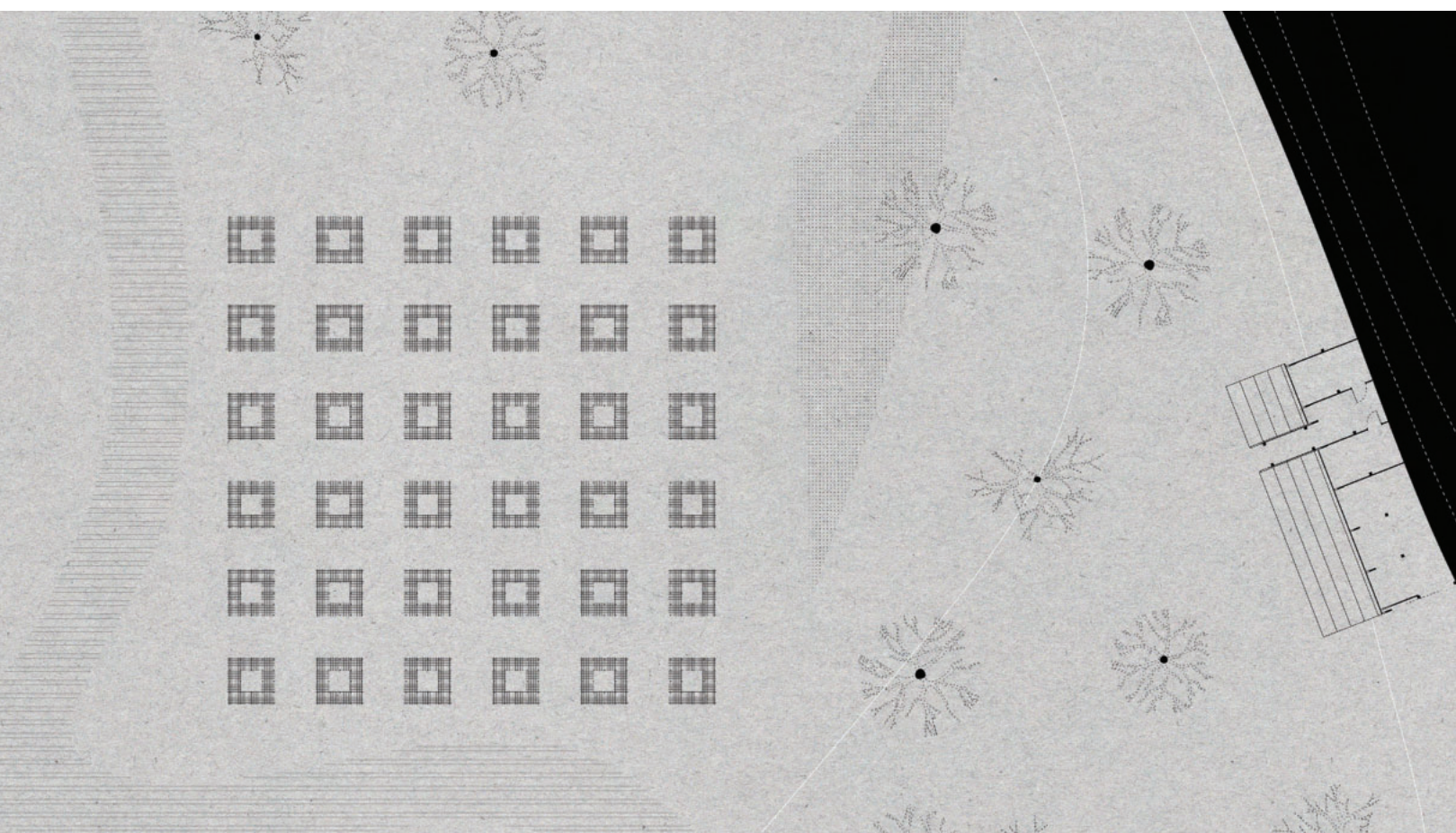
SITE AXONOMETRIC



THE MARKER



THE MARKER ELEVATION

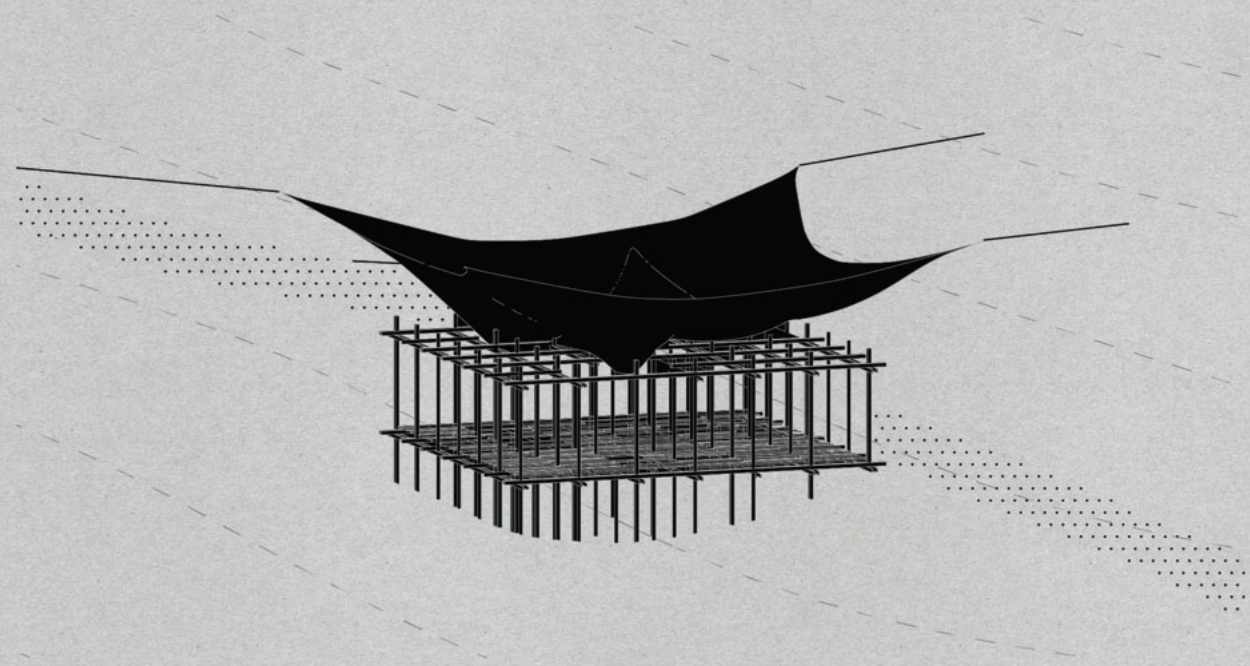


THE MARKER PLAN

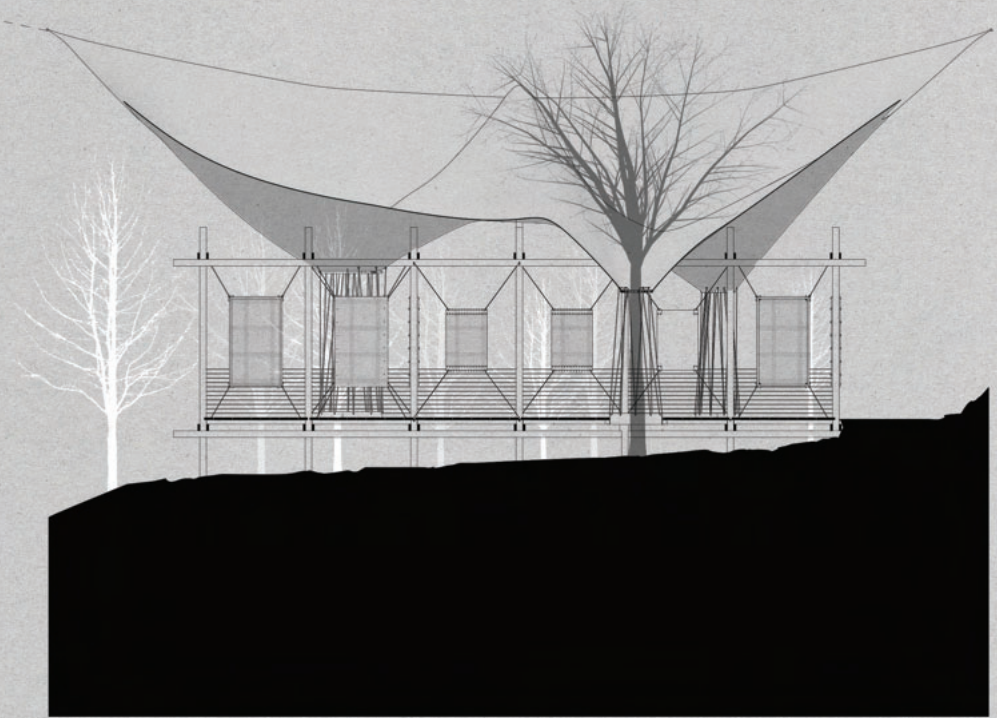


THE MARKER

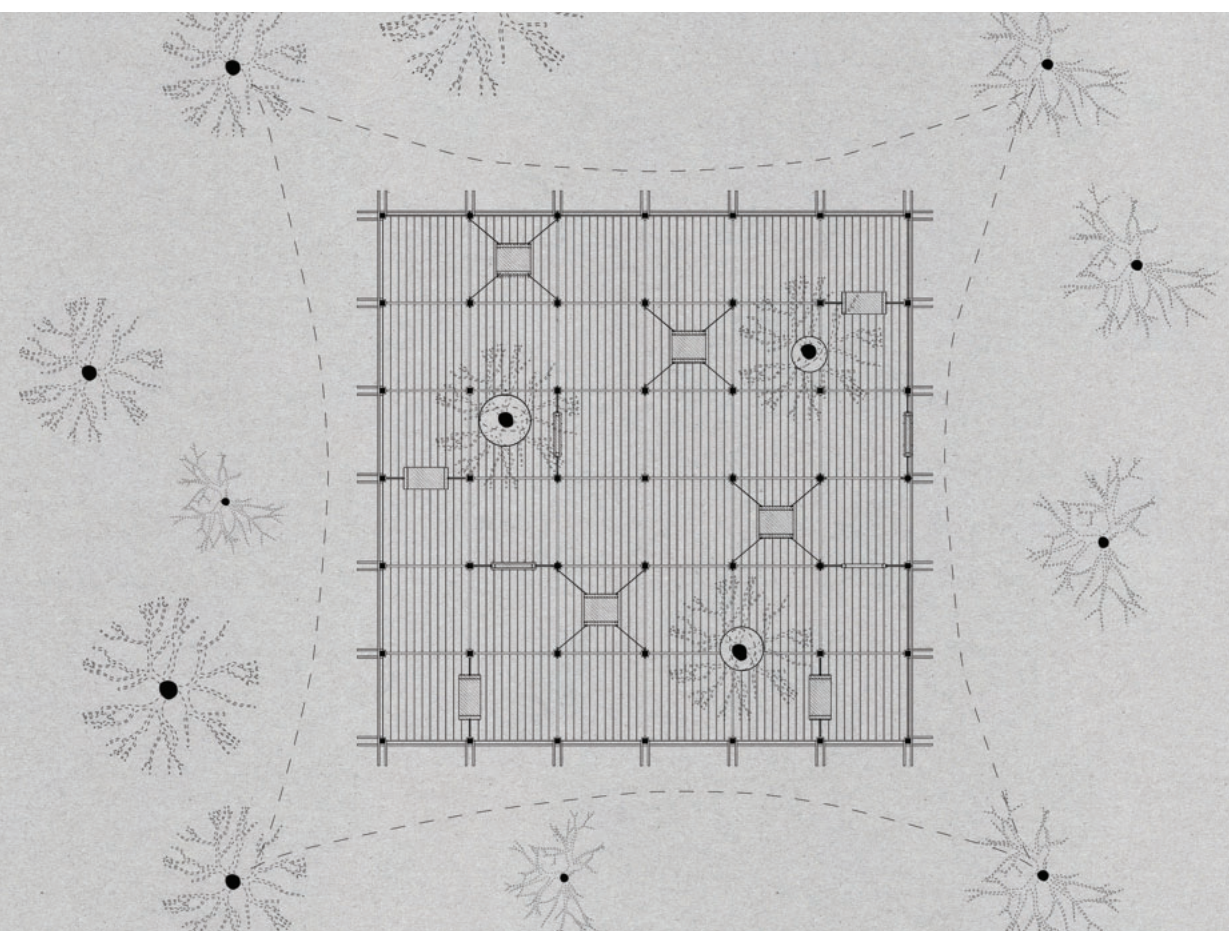




SHELTER FOR THE PHYSICAL



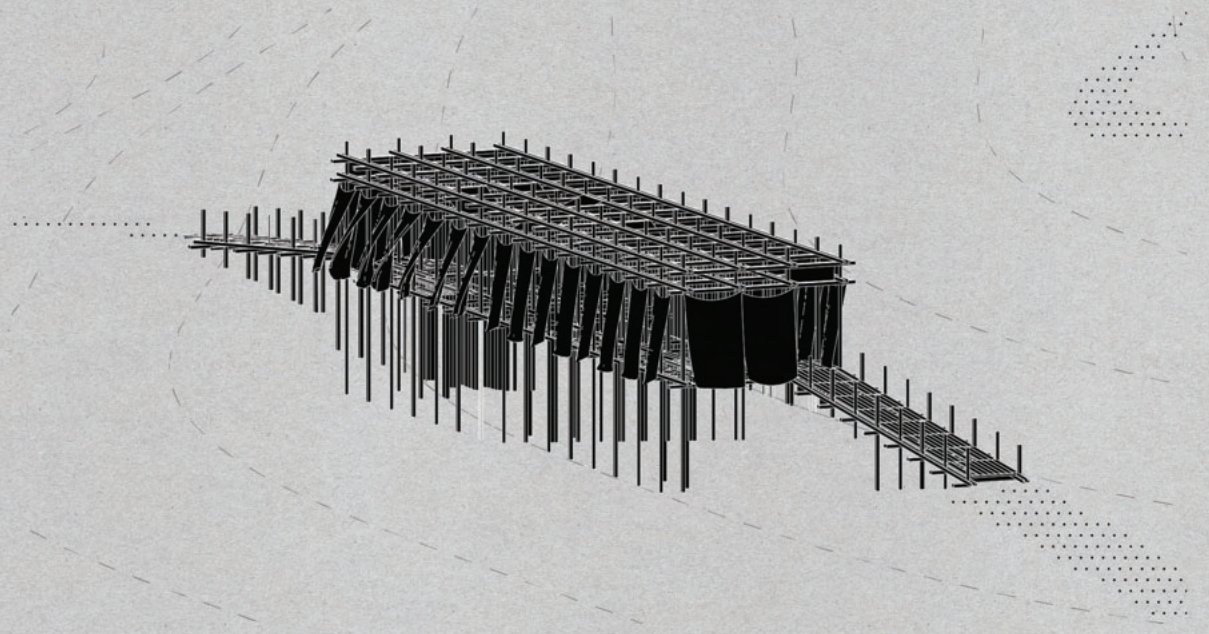
SHELTER FOR THE PHYSICAL ELEVATION



SHELTER FOR THE PHYSICAL PLAN



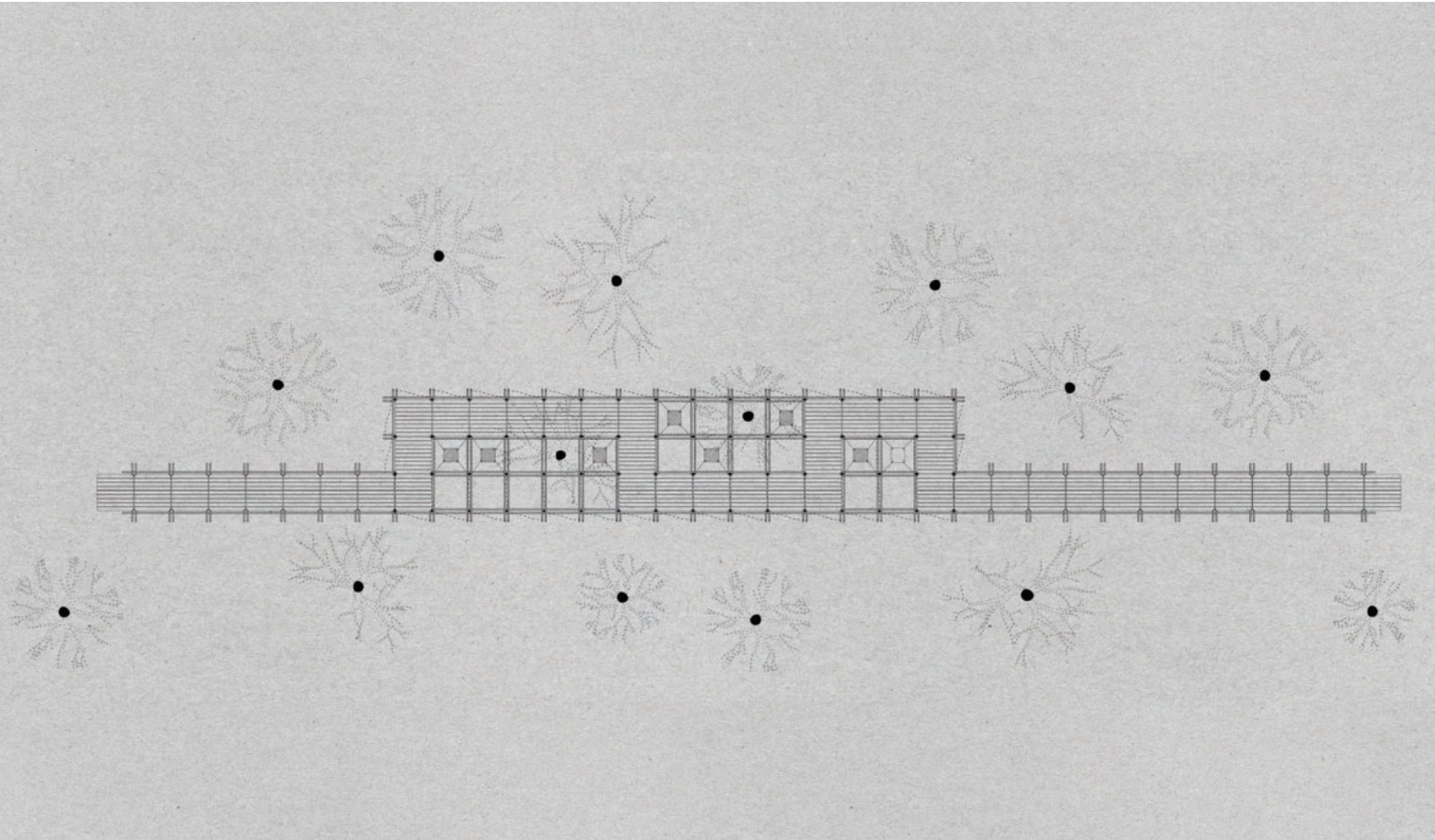
SHELTER FOR THE PHYSICAL



SHELTER FOR THE SPIRITUAL



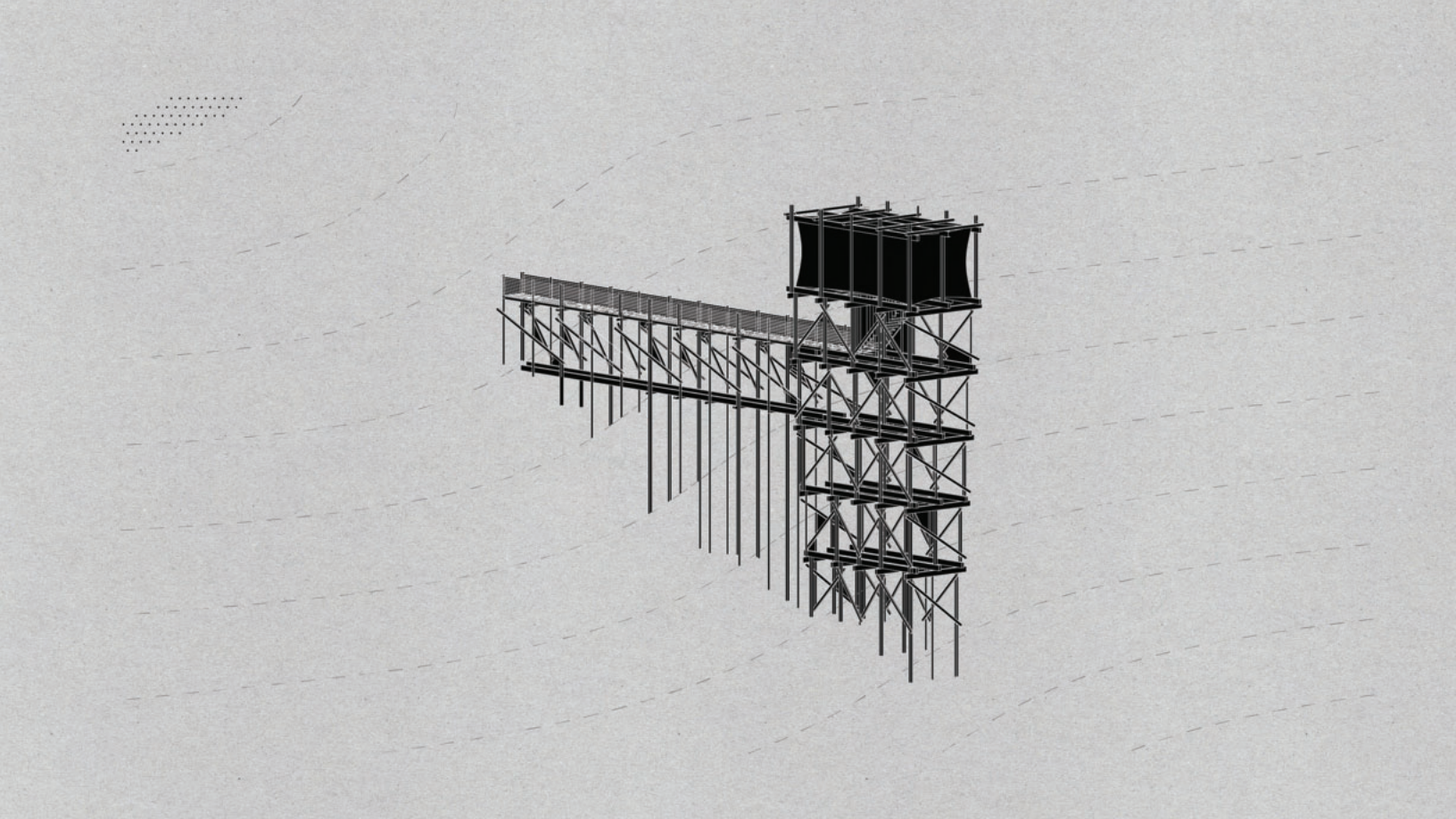
SHELTER FOR THE SPIRITUAL ELEVATION



SHELTER FOR THE SPIRITUAL PLAN



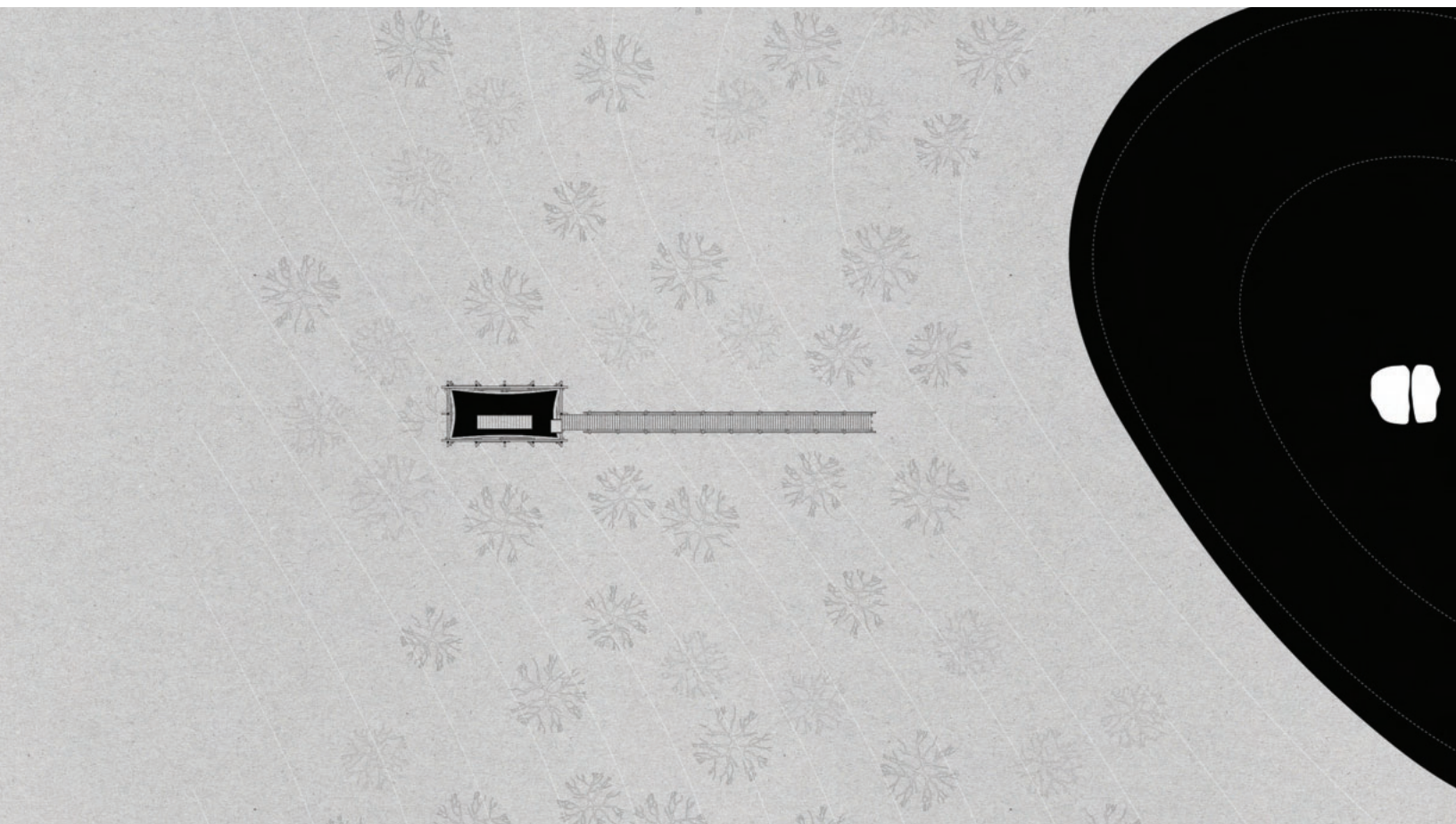
SHELTER FOR THE SPIRITUAL



SHELTER FOR THE SACRED



SHELTER FOR THE SPIRITUAL ELEVATION



SHELTER FOR THE SPIRITUAL PLAN

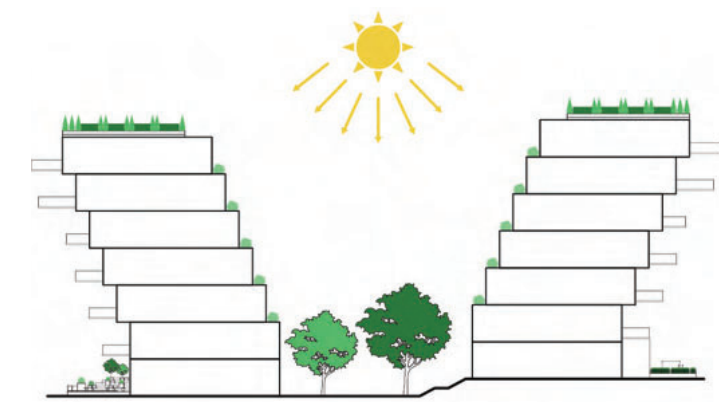
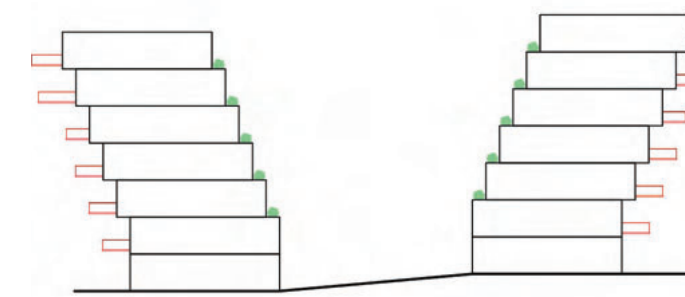
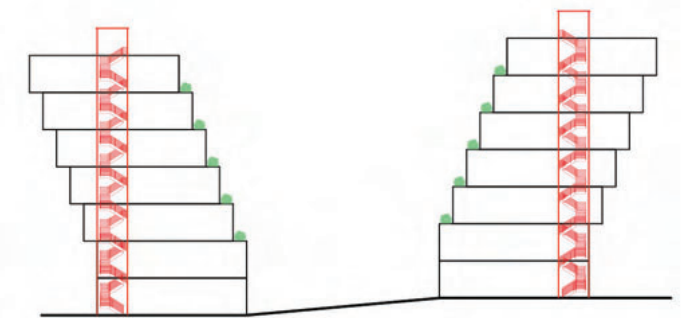
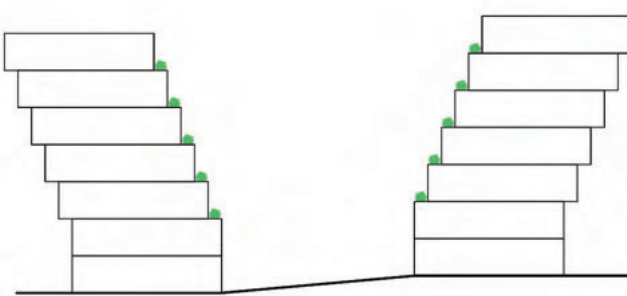
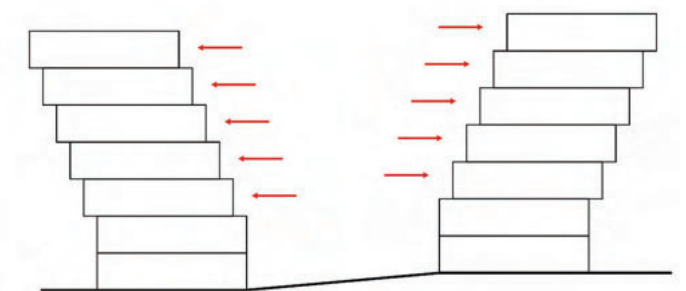
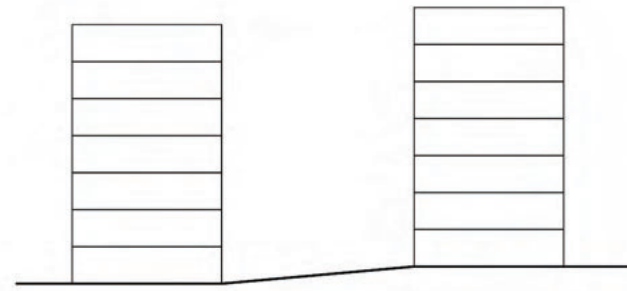
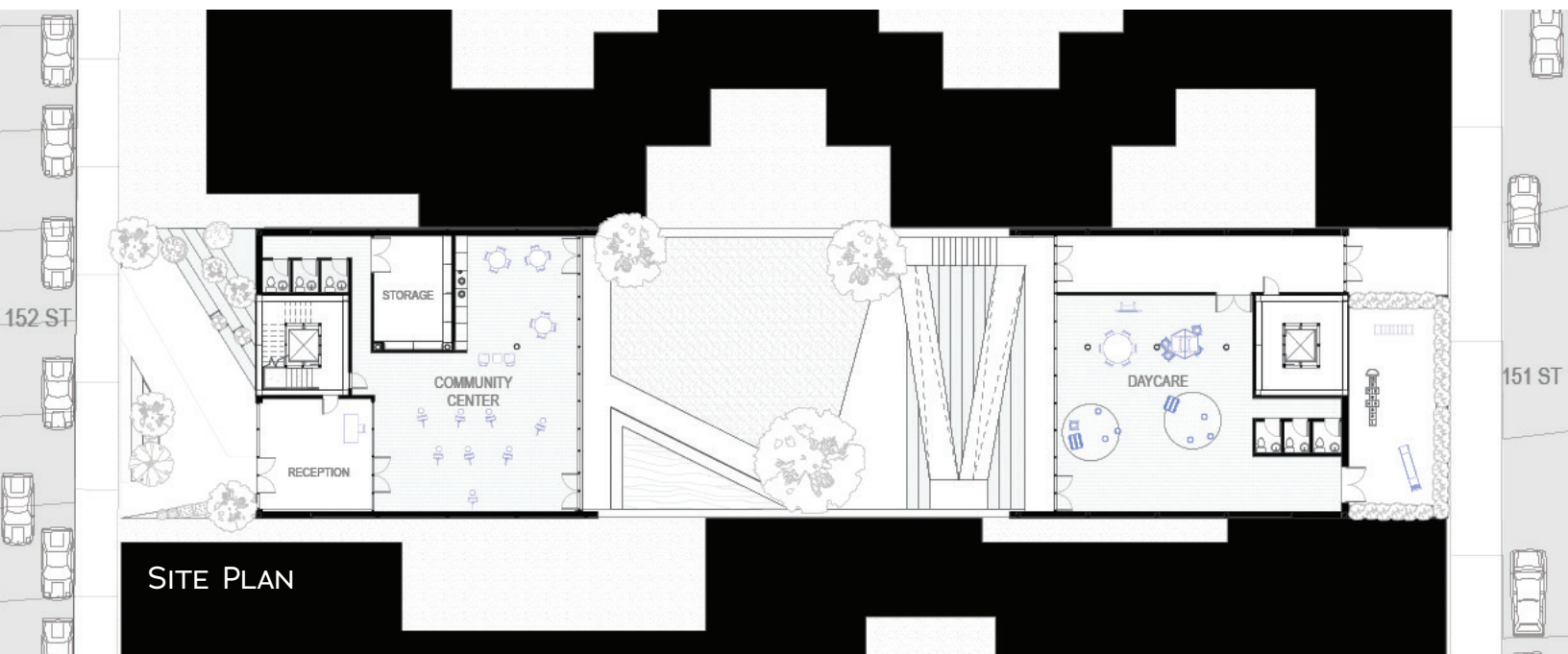


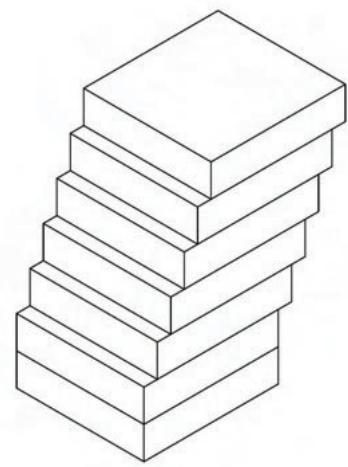
SHELTER FOR THE SPIRITUAL

# THE SPACE IN BETWEEN

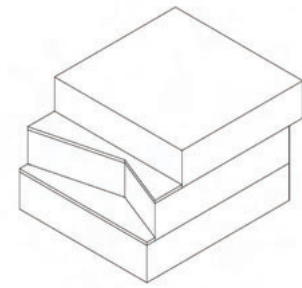
Professor Adam Frmapton  
Partner: C. Asher McGlothlin  
Core Studio III  
Fall 2020

The Space In Between is a Housing project in the Bronx, NY that aims to foster a sense of community for single mothers and their children. The project consists of two towers that utilize a stepped terrace system. This form allows for density in housing, while also providing outdoor space in between the towers. Each unit has private outdoor space, and occupants have access to the large courtyard space in between the buildings. The housing complex is adaptable and can change to the changing needs of its occupants. Flexible walls can be added or removed that can easily transform units from different sizes and numbers of bedrooms.

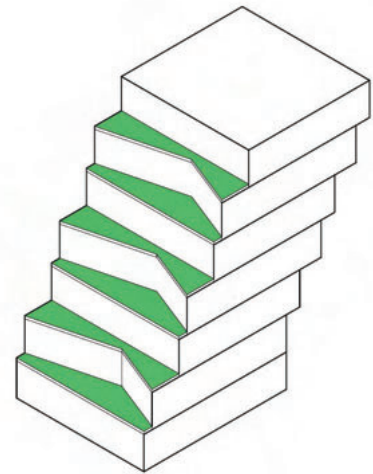




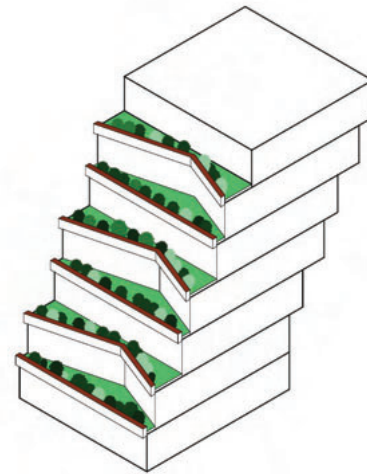
LINEAR TERRACE



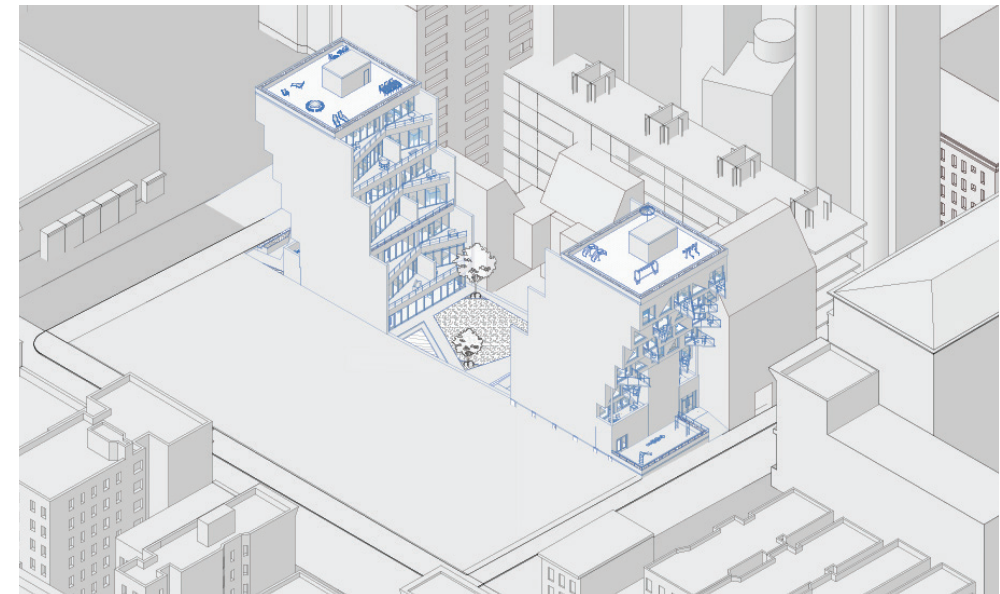
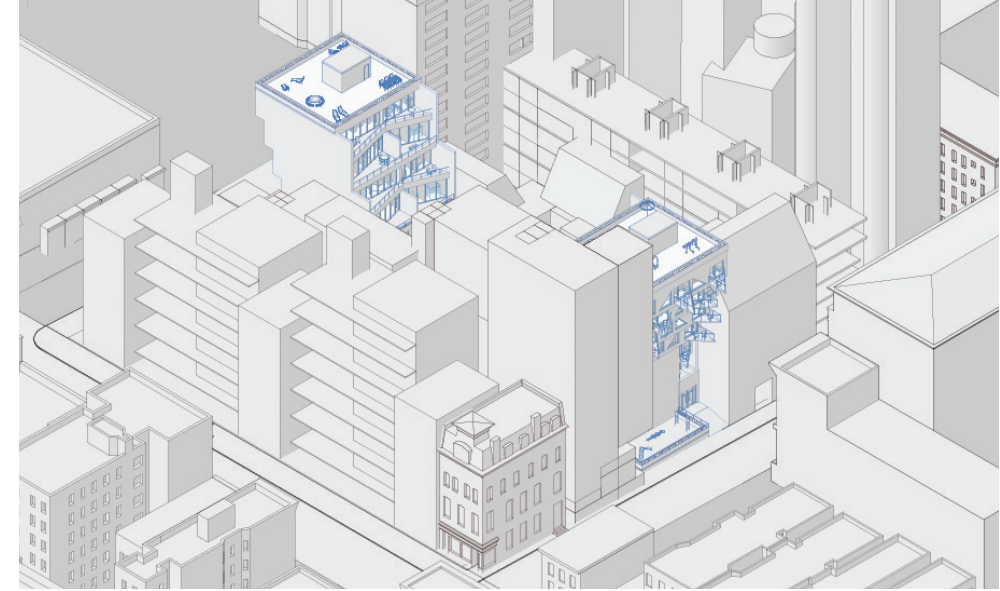
TRIANGULAR STEP BACK



TRIANGULAR TERRACE



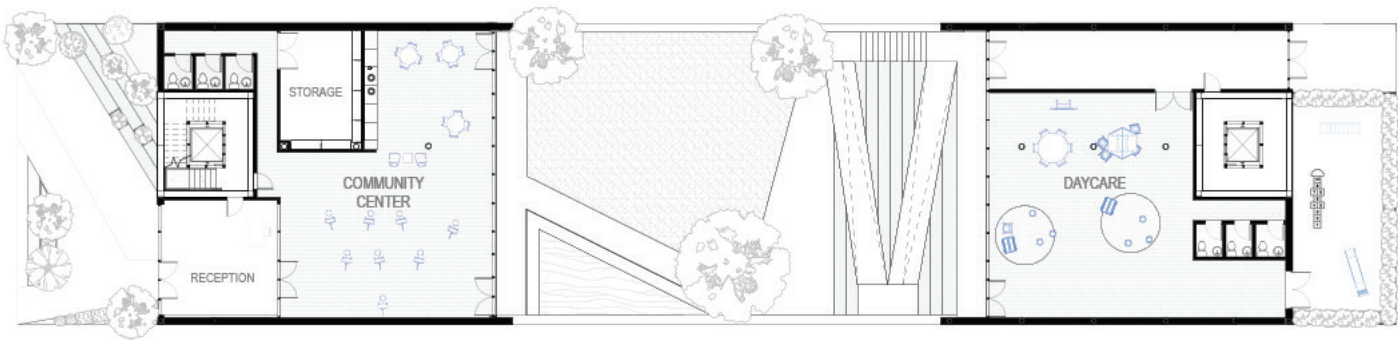
PLANTERS



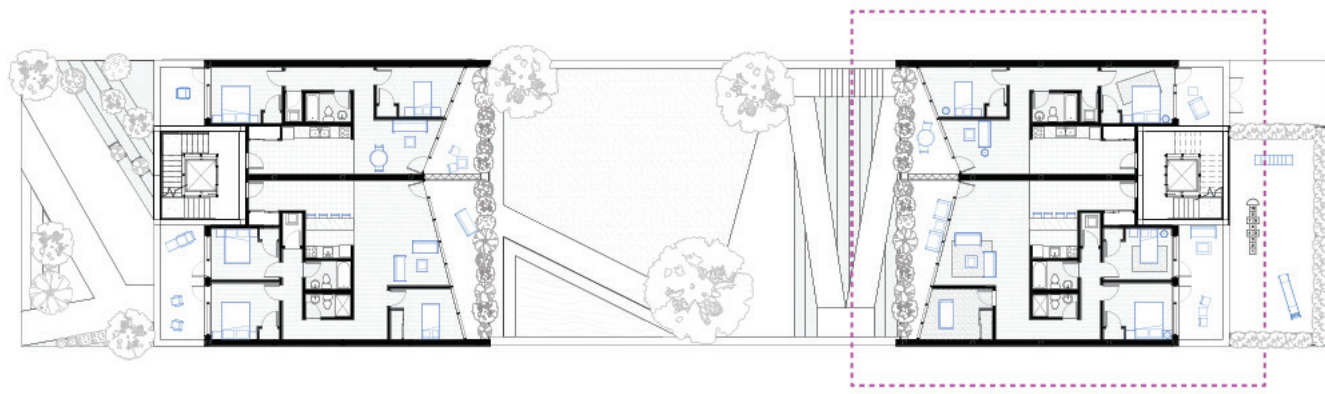
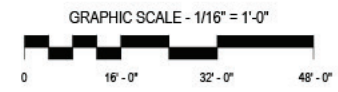
SOUTH ELEVATION  
E 151st St- 1'-0" = 1/32"



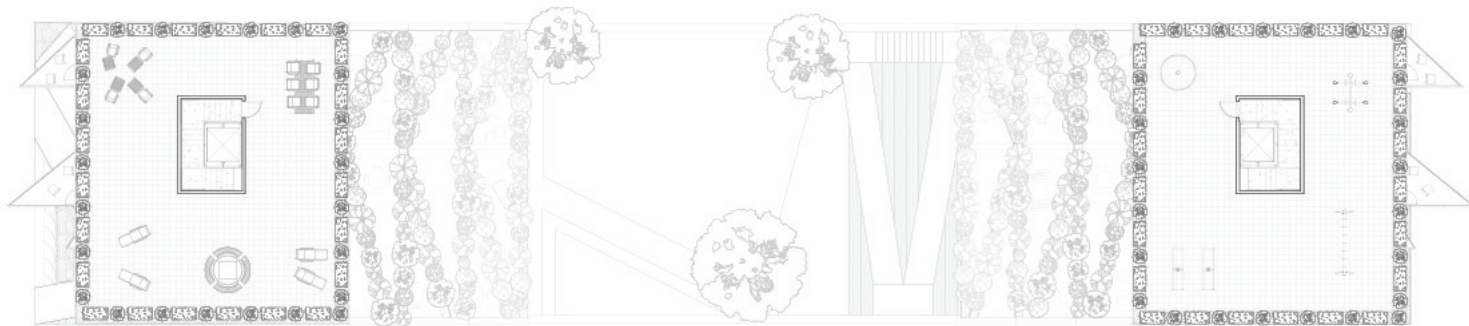
NORTH ELEVATION  
E 152nd St- 1'-0" = 1/32"



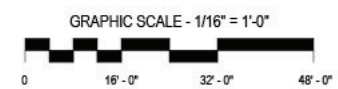
GROUND FLOOR PLAN



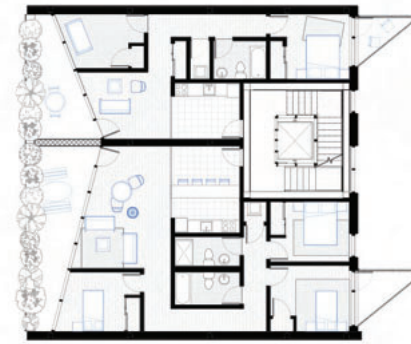
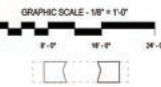
LEVEL 1 FLOOR PLAN



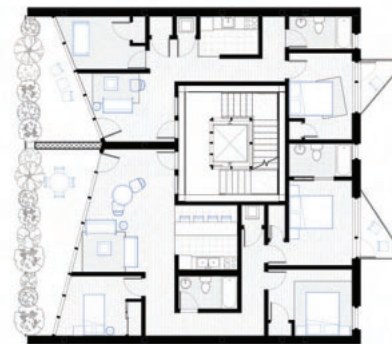
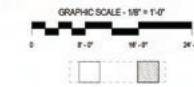
ROOF PLAN



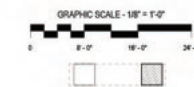
LEVEL 2 FLOOR PLAN



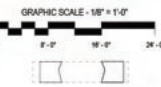
LEVEL 3 FLOOR PLAN



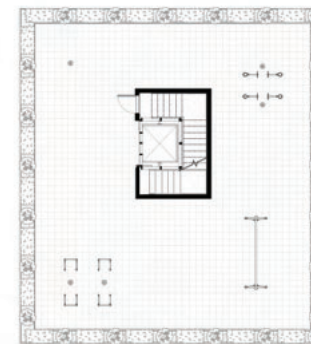
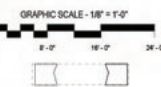
LEVEL 5 FLOOR PLAN



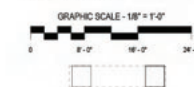
LEVEL 4 FLOOR PLAN

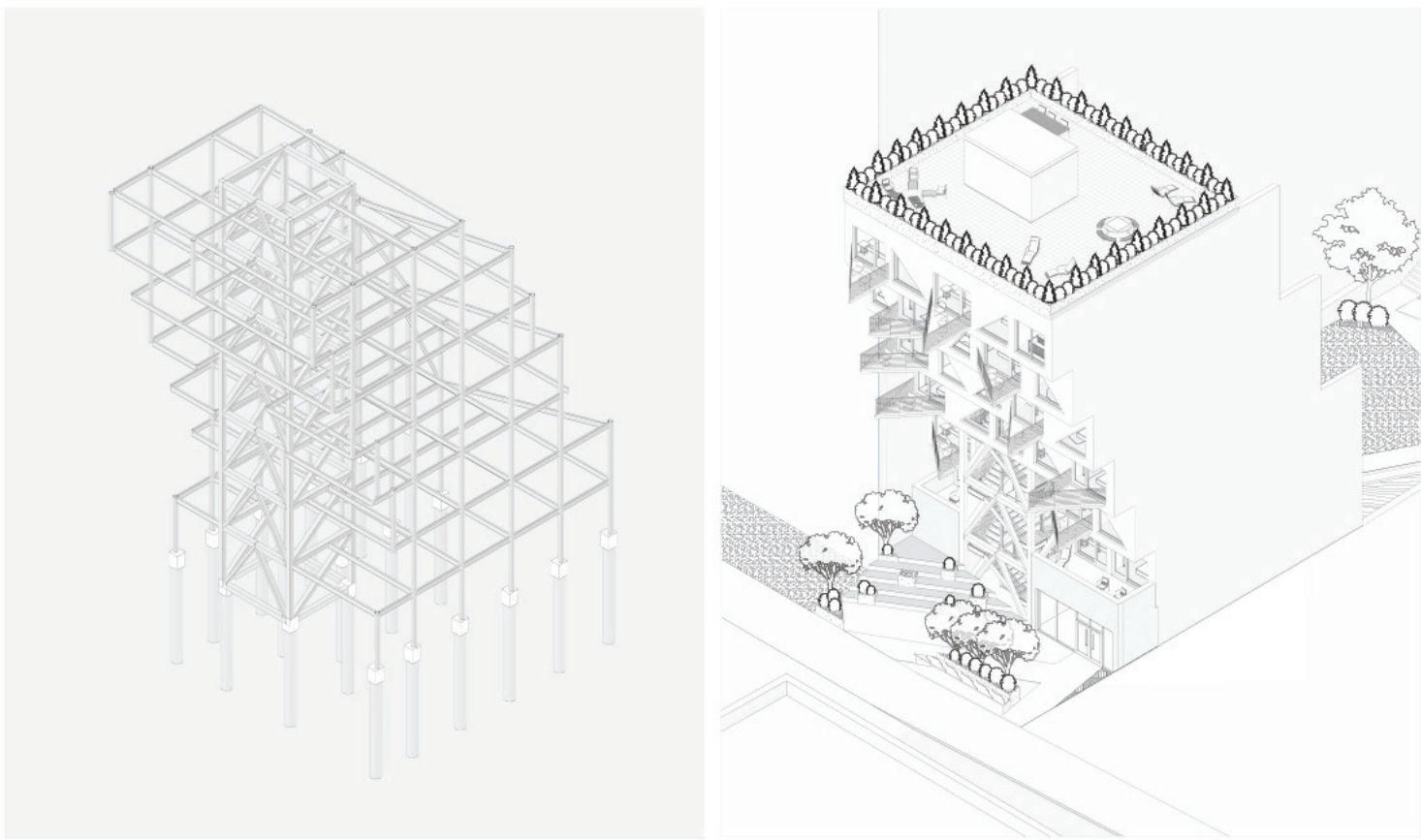


LEVEL 6 FLOOR PLAN

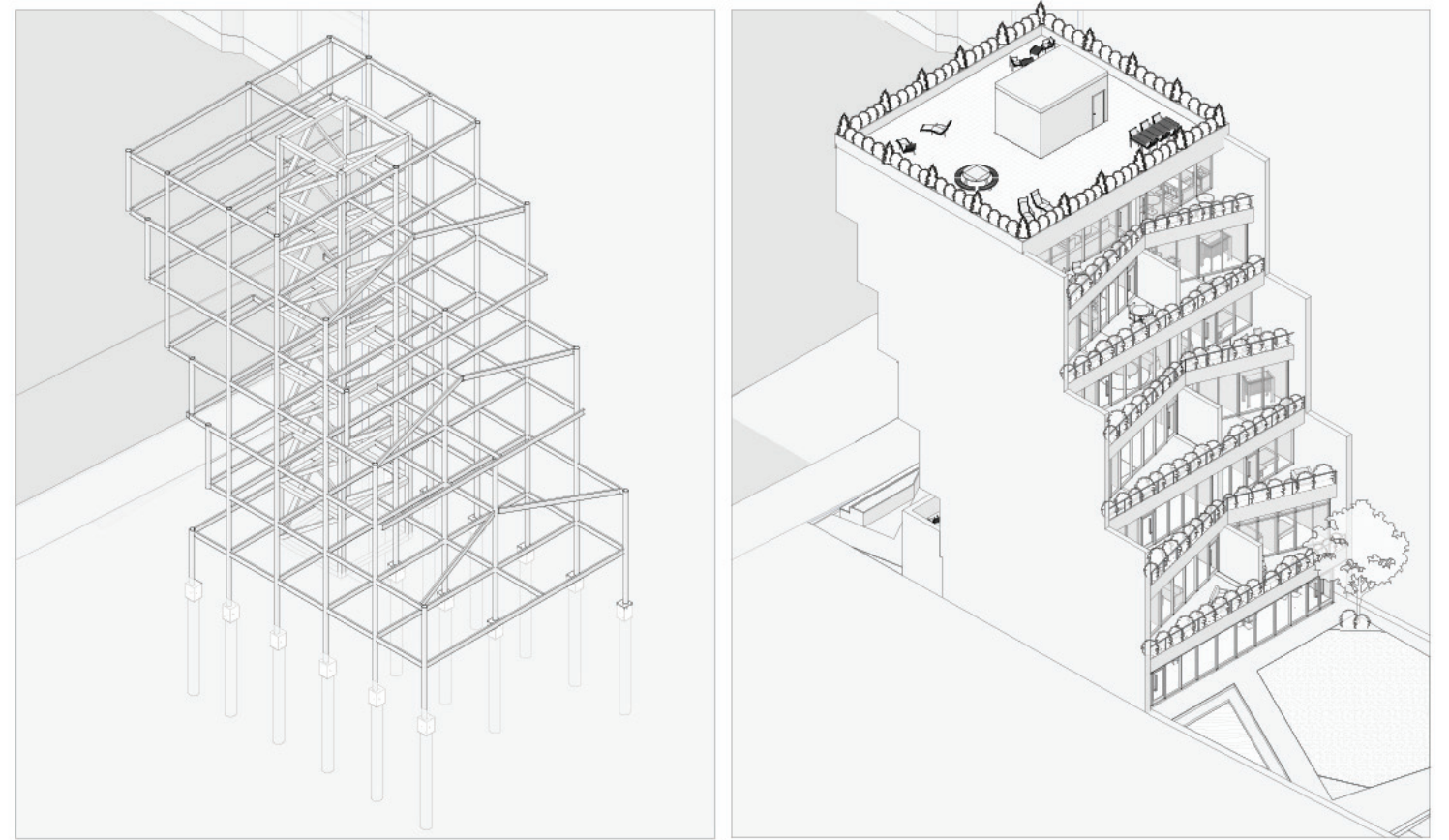


ROOF PLAN

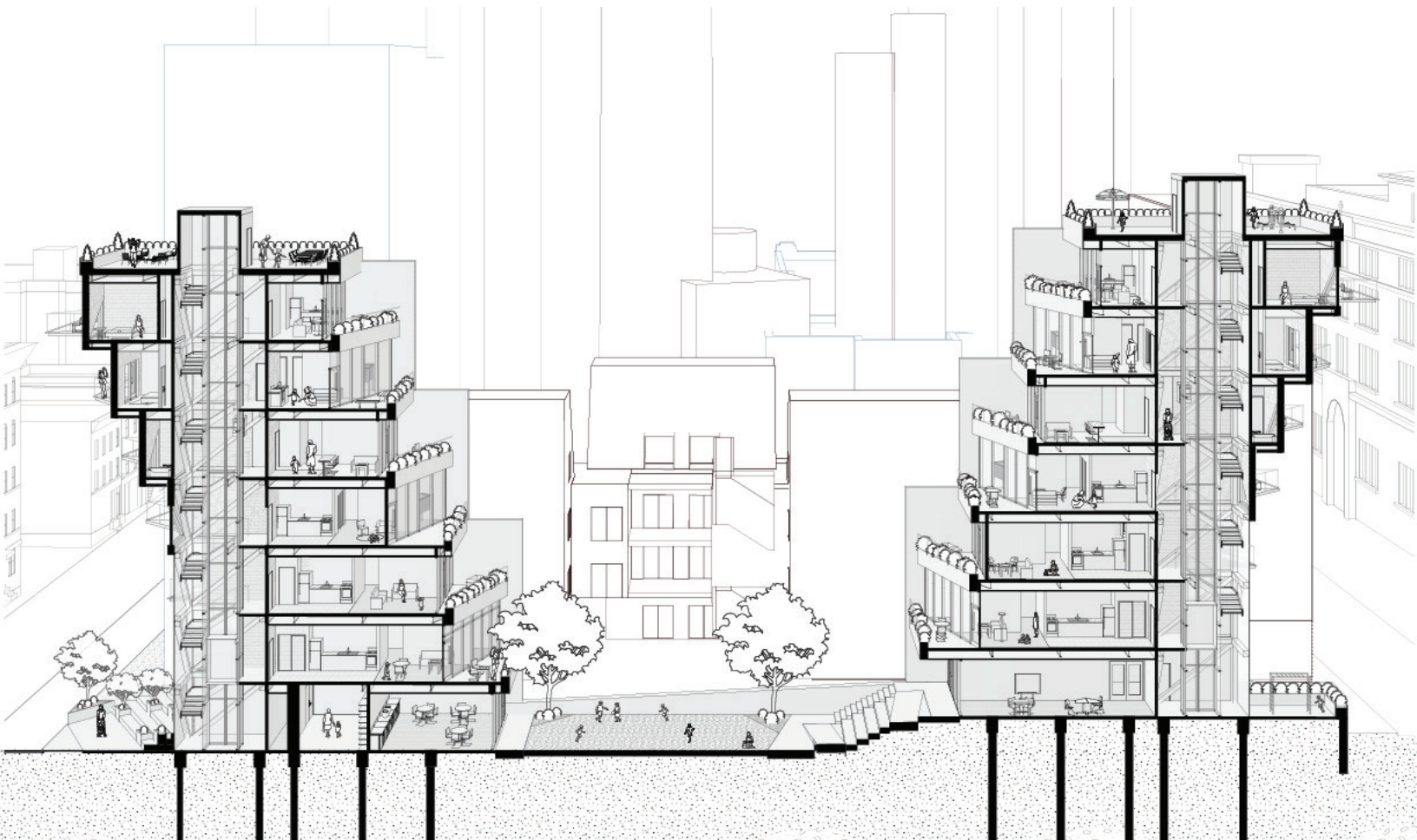




STRUCTURAL FRAMING



STRUCTURAL FRAMING



152ND STREET ELEVATION



COURTYARD ELEVATION



COURTYARD ELEVATION

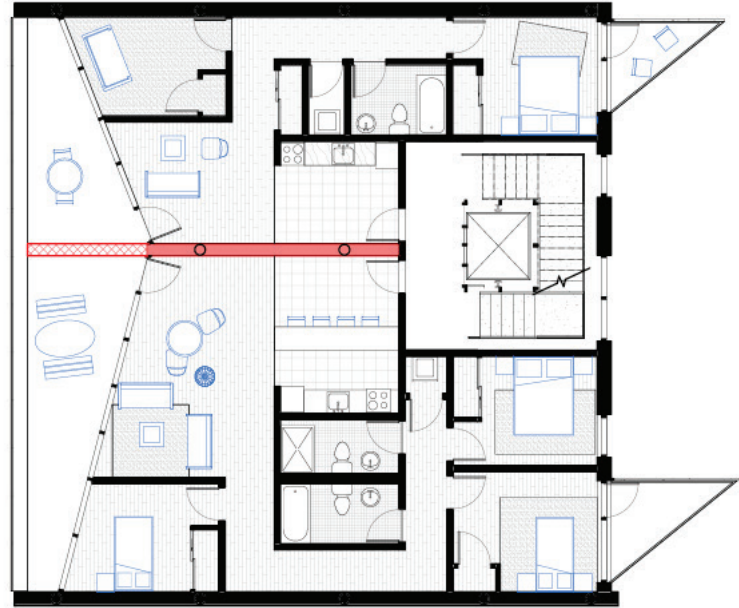


COURTYARD ELEVATION

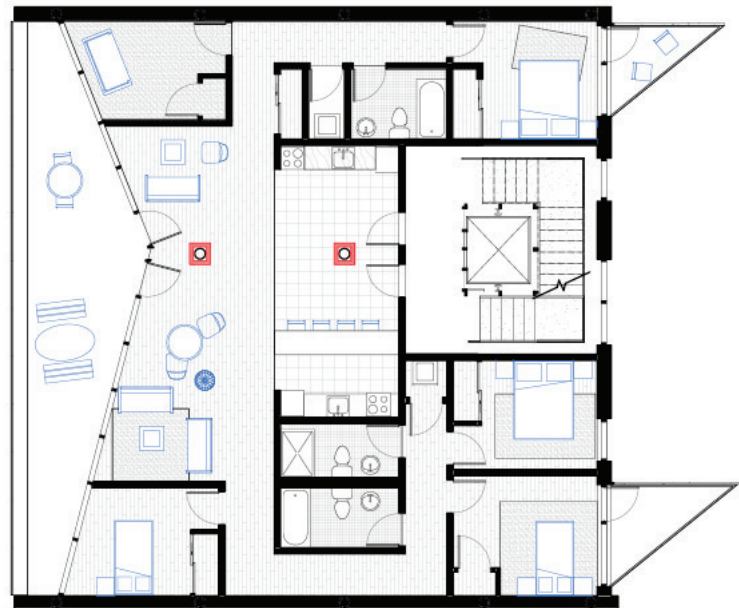


COURTYARD ELEVATION





ADJUSTABLE WALL



ADJUSTABLE WALL



# SCHOOL WITH A VIEW

Professor Gordon Kipping  
Core Studio II  
Spring 2020

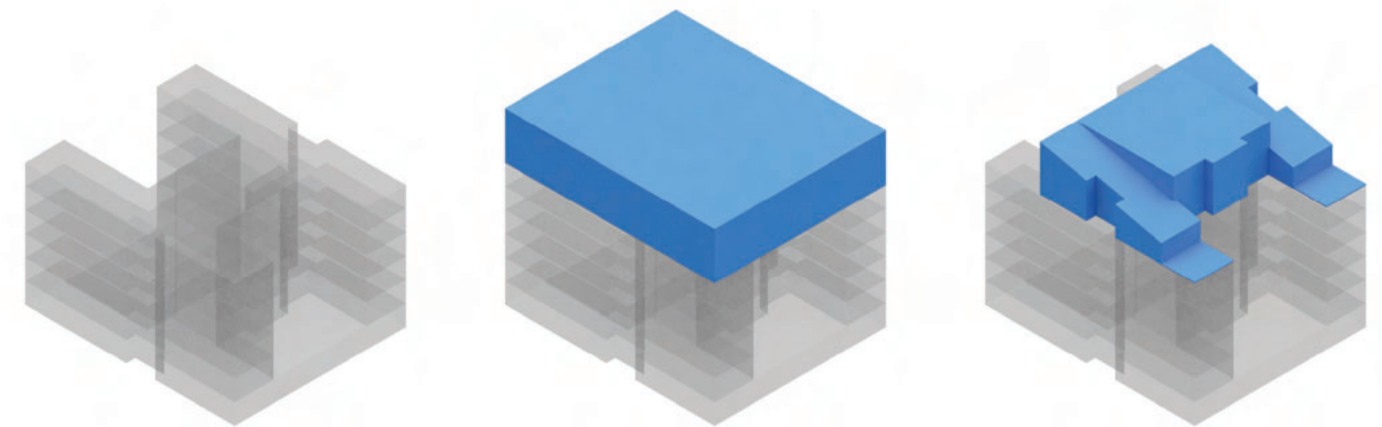
The Extinction Rebellion, or XR, is a global environmental movement that aims to use nonviolent protests to compel government action on climate change. Located in the Lower East Side of New York City, the XR School is a public K-8 elementary school with a curricular focus on climate change. The design utilizes the structure of an existing school designed by C.B.J. Snyder in 1906.

In addition to fighting climate change, School With A View aims to fight another crisis- childhood obesity. In keeping with sustainability, the existing school will be kept in its entirety and an extension will be added on the roof and off of the back. The roof addition will house a gymnasium and the rear addition will house a grand staircase. Both additions will be glass to capitalize on the unobstructed, panoramic views of the entire city.

The school will operate on a weekday/ weekend program basis. On weekdays the school will operate solely as a school and on the weekends the basement level, new grand staircase, gym, greenhouses and urban farms will be open to the public.

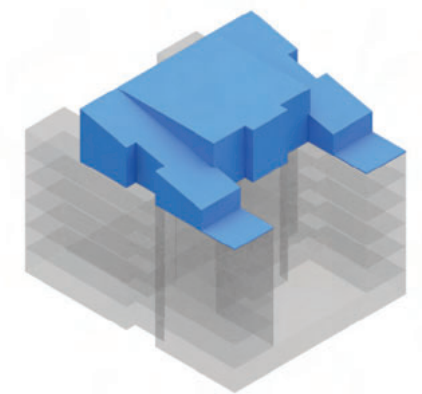


ROOFTOP VIEW

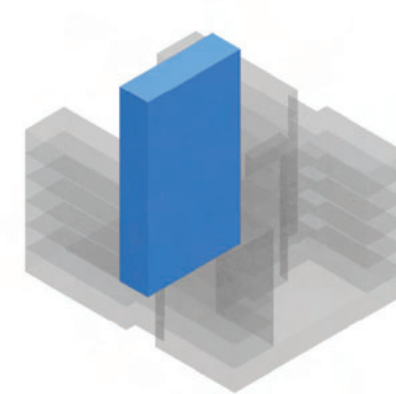


ORIGINAL MASSING

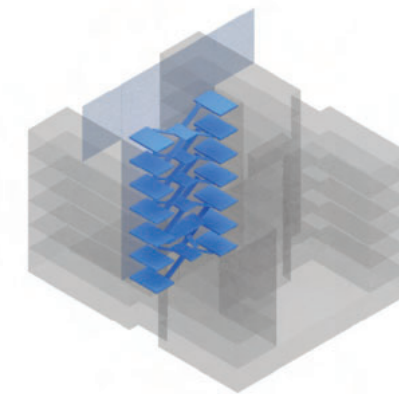
ROOF ADDITION



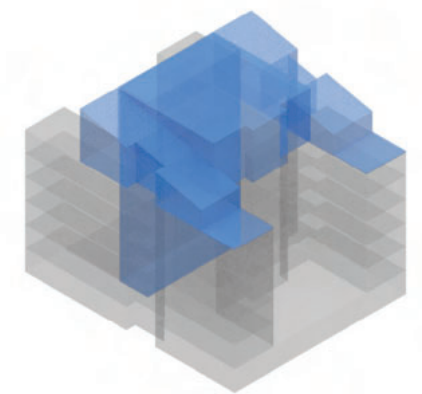
ROOF ADDITION FORM



REAR ADDITION

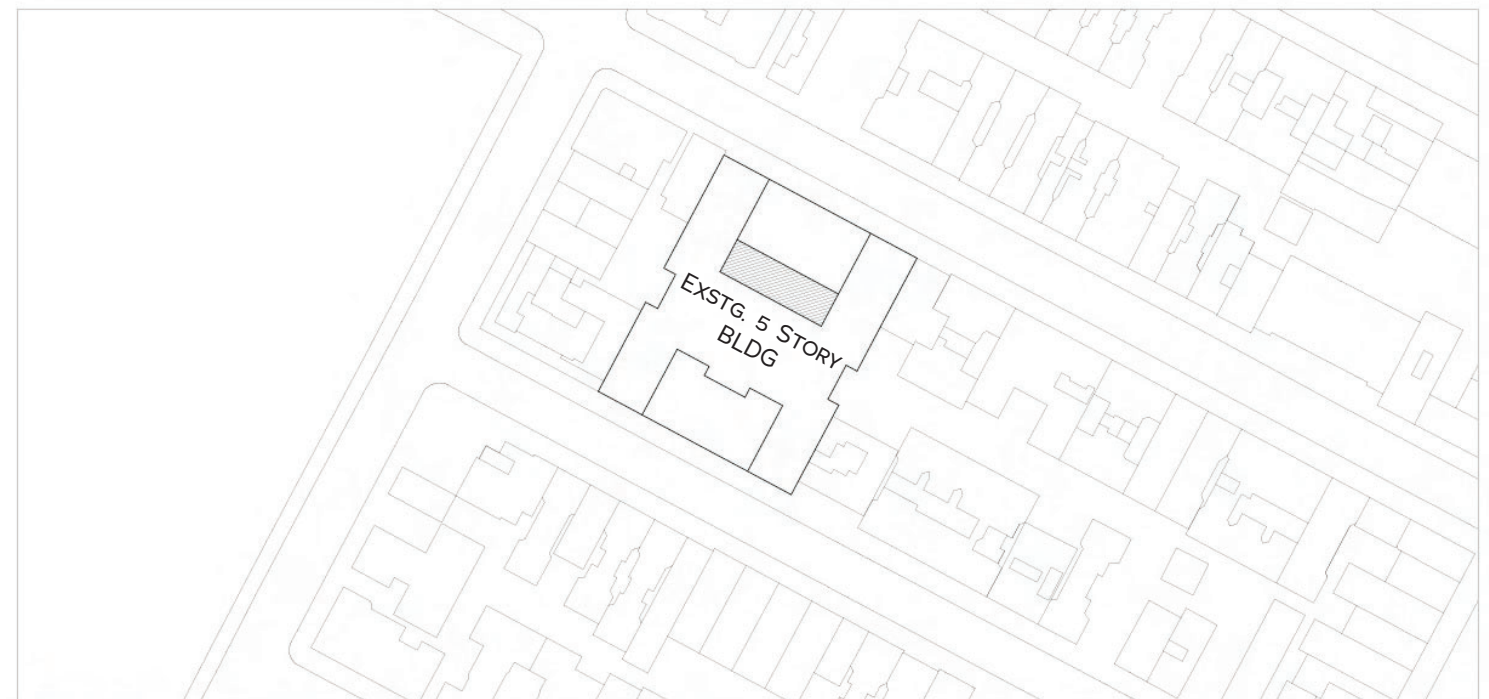


PROPOSED STAIRCASE



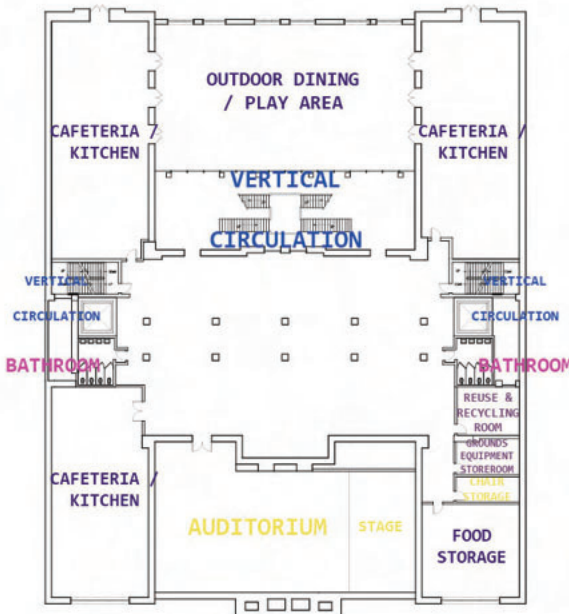
ADDITION MASSING

The massing of the original building will be kept an addition will be added on the roof. The rooftop addition will be on the southern half of the building to capitalize on sunlight. The form of the roof addition will mimic the existing building, with a center piece and two identical side pieces. An addition will be added to the rear of the building that will house a staircase.

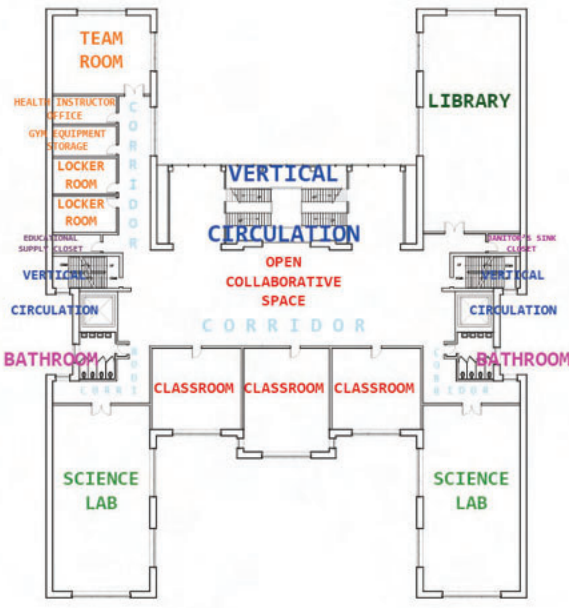


⊕ SITE PLAN

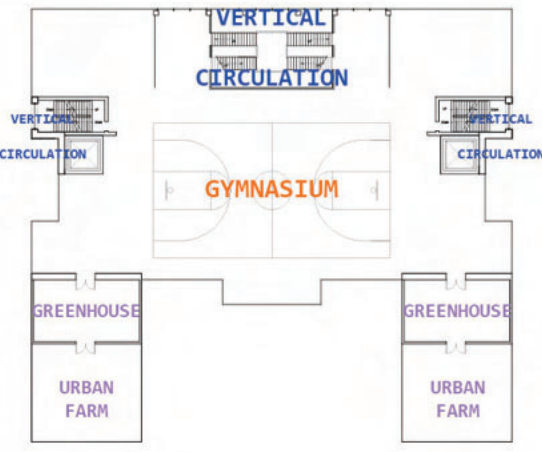
Programatically, School With A View will accommodate classrooms, laboratories, play spaces, assembly spaces, gymnasium, student services, an urban farm, a greenhouse and dining services.



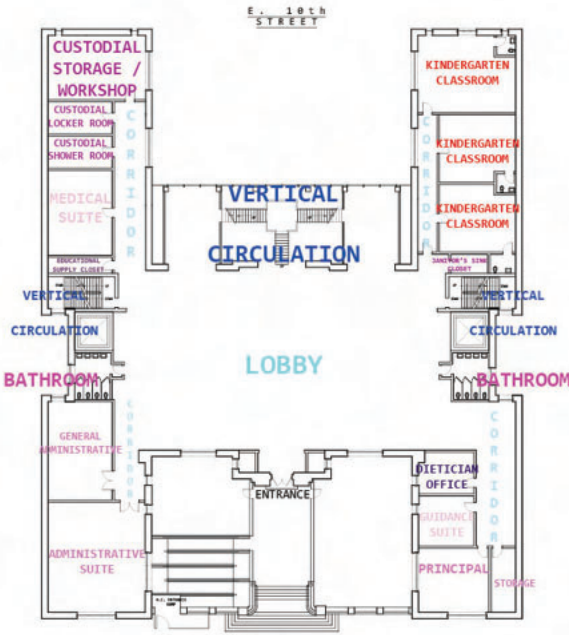
CELLAR FLOOR PLAN



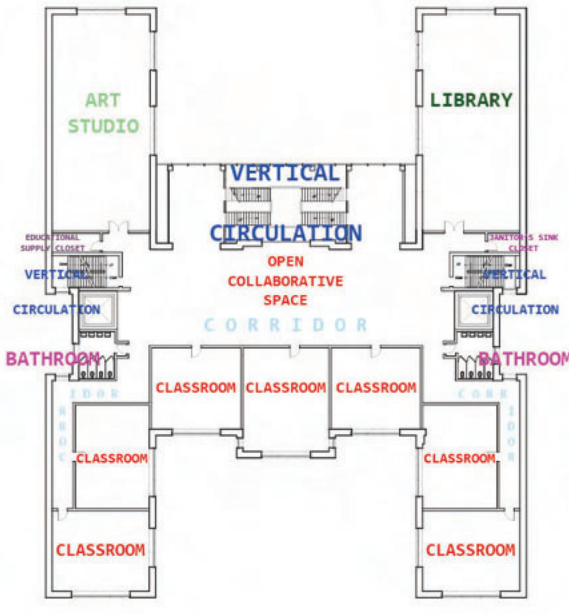
FIFTH FLOOR PLAN



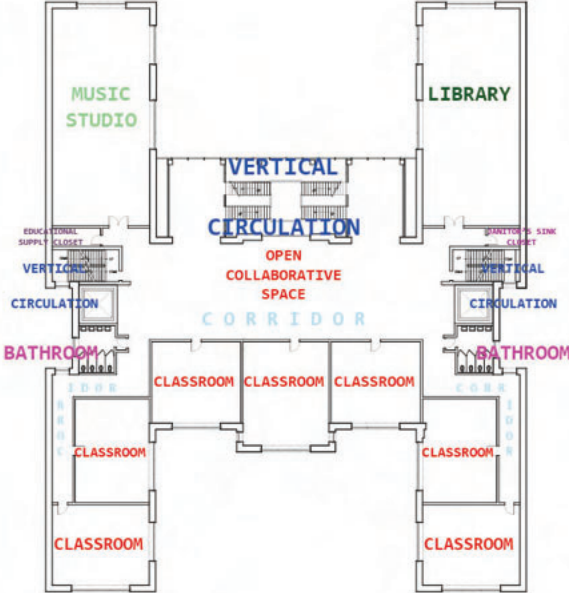
SIXTH FLOOR PLAN



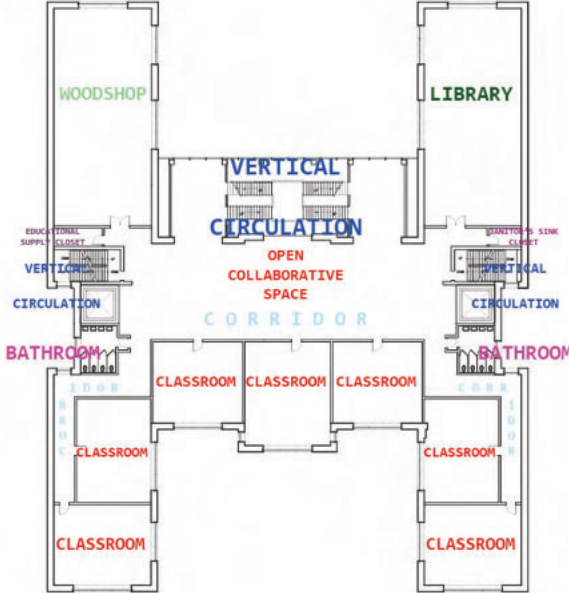
FIRST FLOOR PLAN



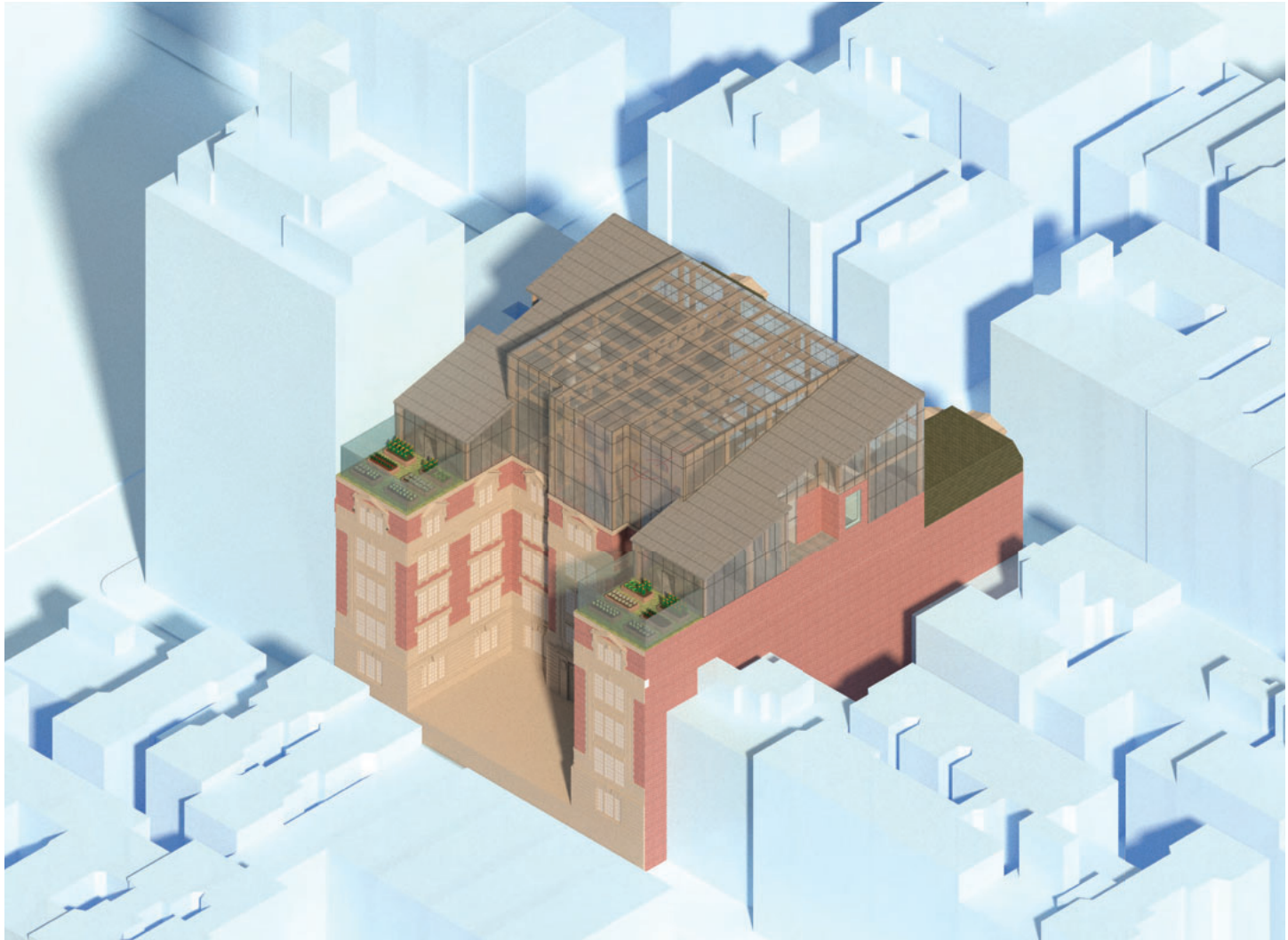
SECOND FLOOR PLAN

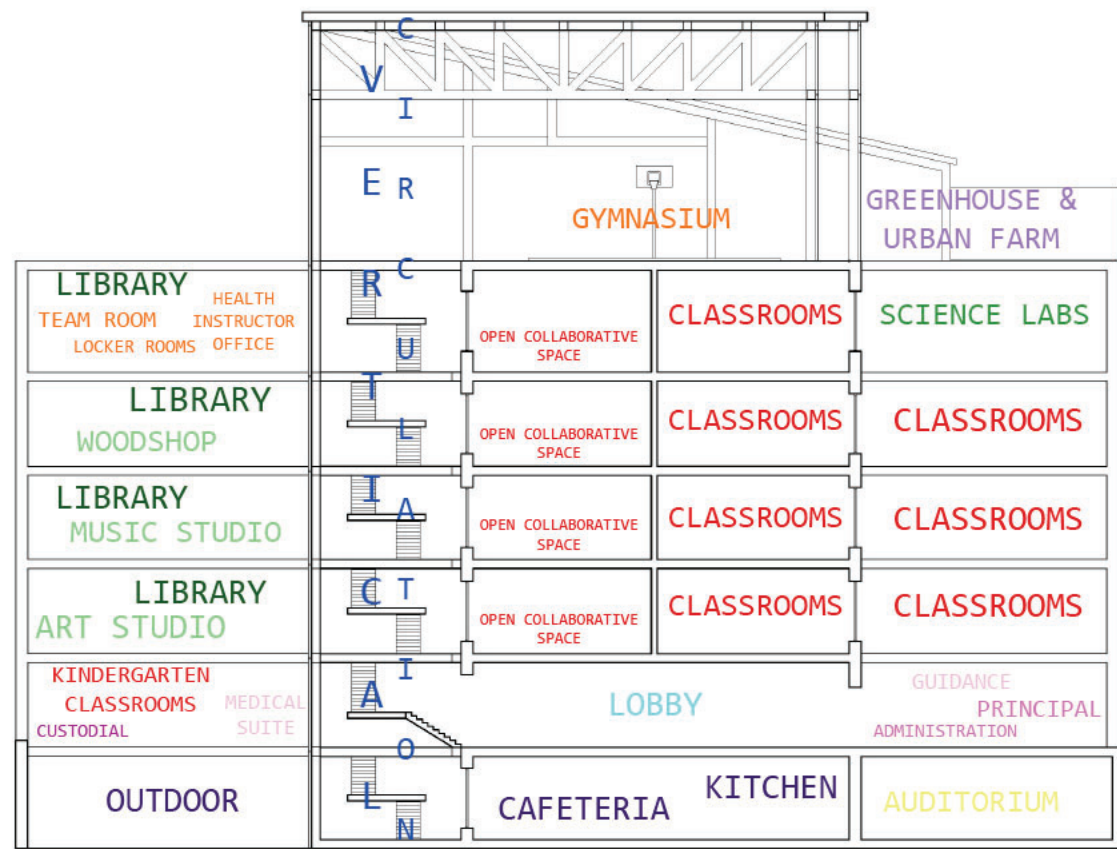


THIRD FLOOR PLAN

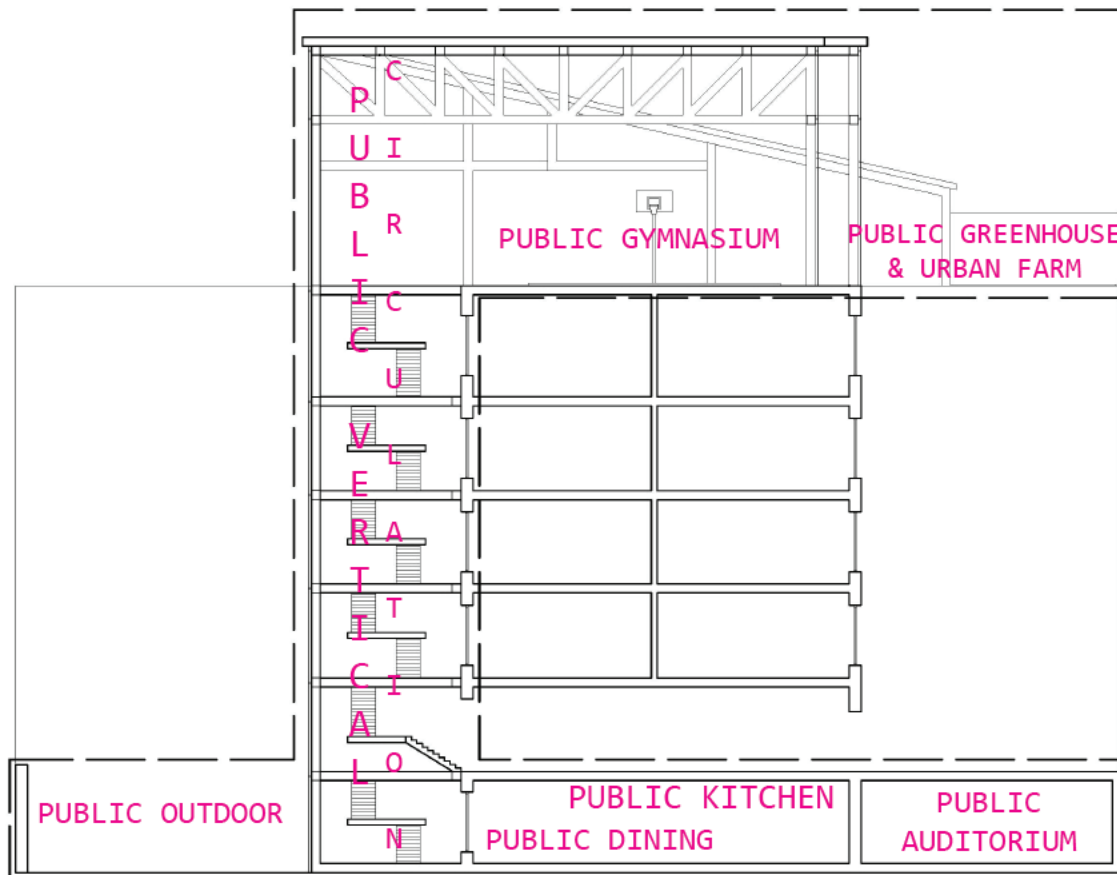


FOURTH FLOOR PLAN

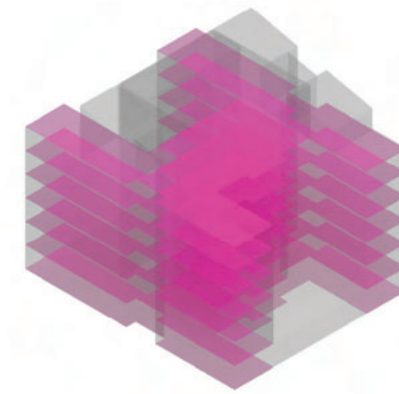




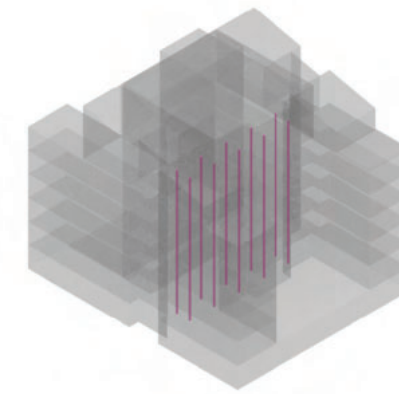
PROGRAM: WEEKDAY



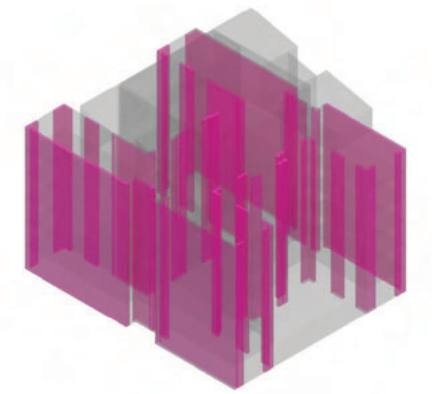
PROGRAM: WEEKEND



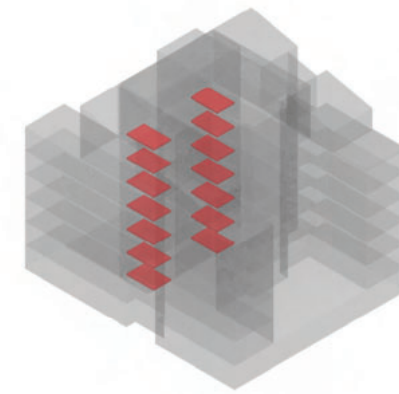
EXISTING FLOOR PLATES



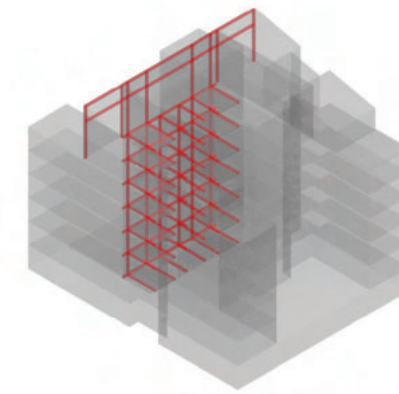
EXISTING COLUMNS



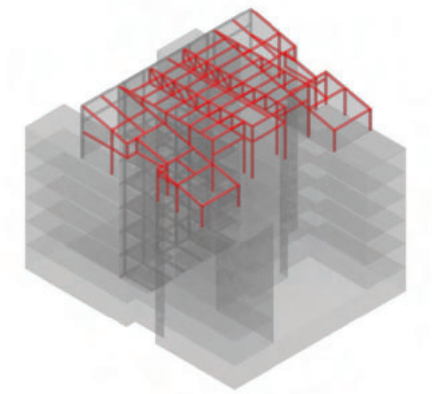
EXISTING MASONRY WALLS



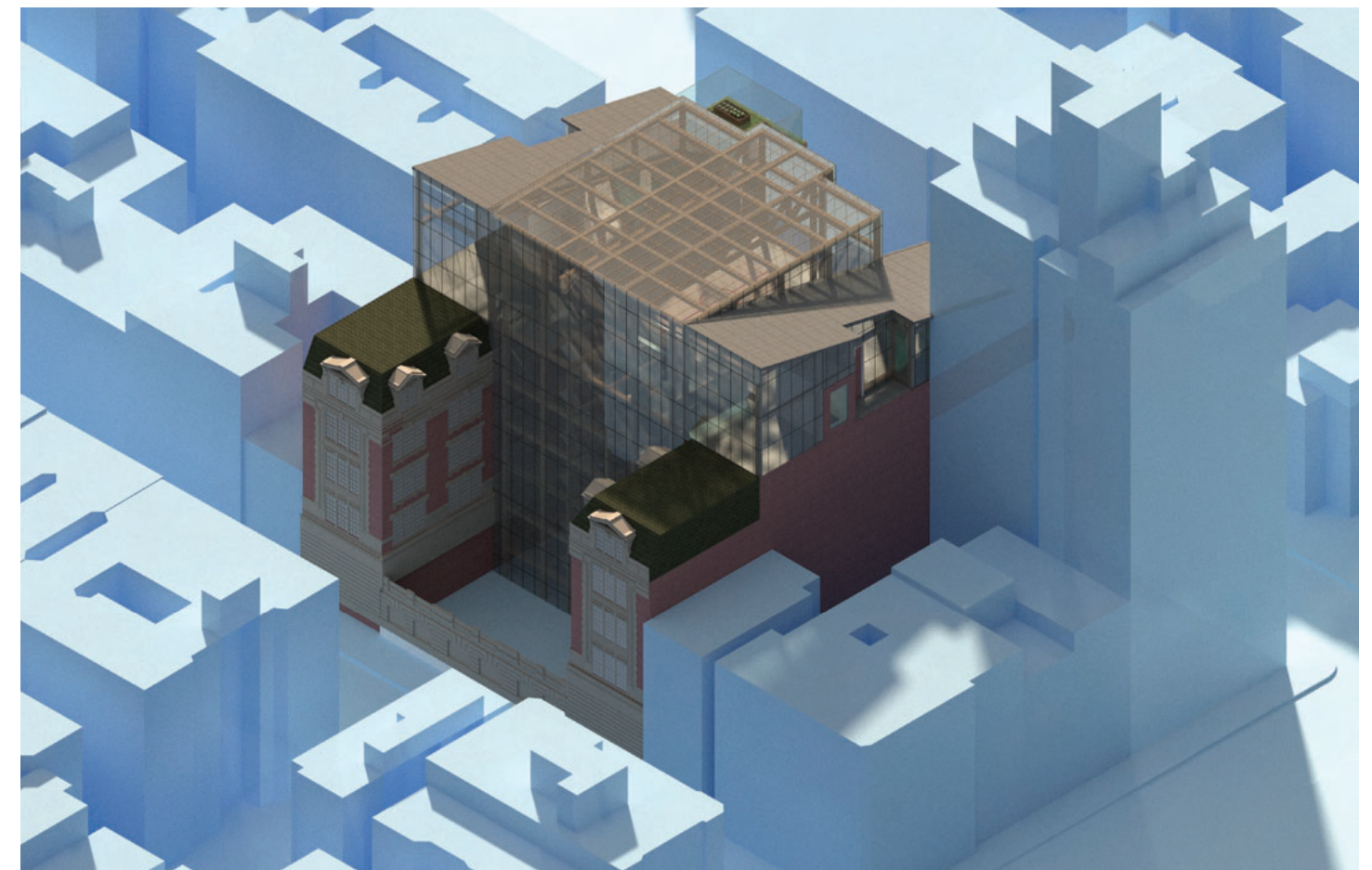
PROPOSED FLOOR PLATES



PROPOSED STRUCTURE



PROPOSED ROOF STRUCTURE





# BROADWAY STORIES

## THE GRAND INTERIOR

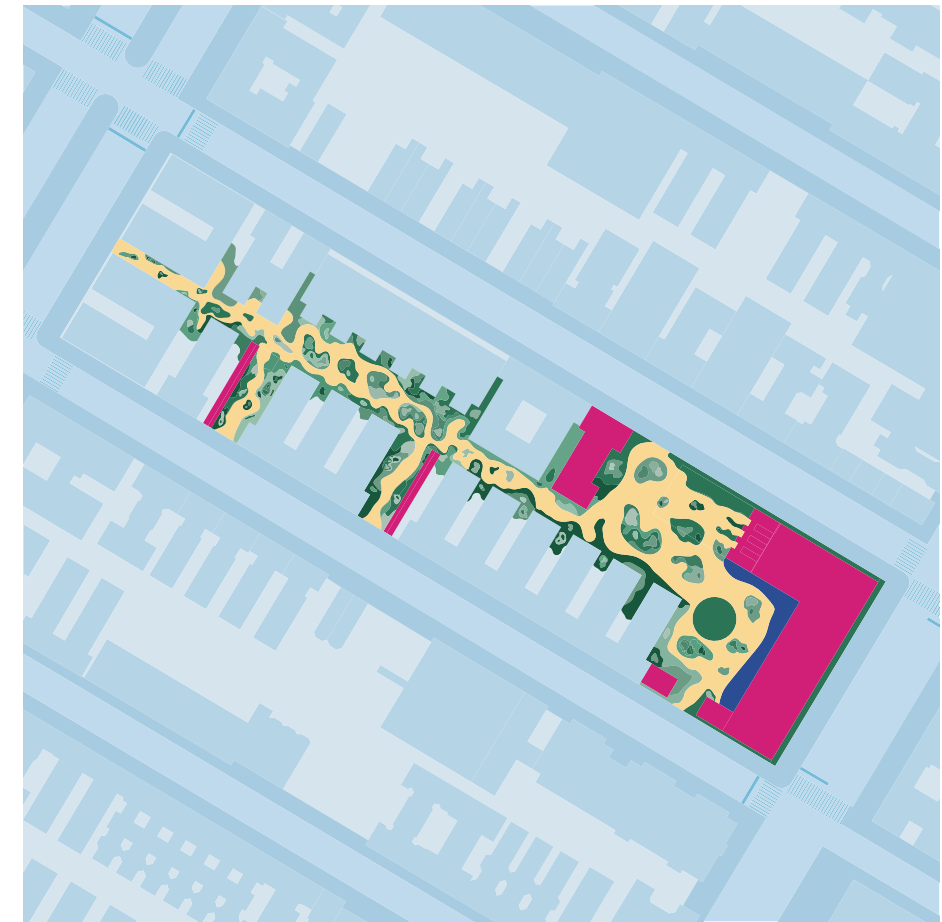
Professor Jaffer Kolb  
Core Studio I  
Fall 2019

The task of Broadway Stories: The Grand Interior was to design an architectural system that operated as a public space along Broadway in New York City. Specifically, the studio focused on marrying the ideals and goals from two New York City agencies. The two agencies used were the NYC Department of Housing Preservation and Development (HPD) and the Department of Parks and Recreation to create a public courtyard within the interior space of a New York City block.

Chunks of HPD buildings were removed and the ground plane in front of them were disrupted by a curved shape to make the buildings look as though they are a continuous part of the ground. The new angled surfaces were ornamented with a facade system with a random pattern of individual tiles. The tiles were a combination of reflective surfaces, adorned with moss or greenery, windows and perforations. The perforated facade creates a continuity between the inside and outside, and the scale and reflectiveness of the new surface will allow users to stand underneath the plane and feel engulfed in a park space.

The ground plane will also be activated with a new pathway system that allow users to meander throughout the interior of a city block on a winding pathway.

The next task of Broadway Stories was to construct a mock up, a fragment of a 1 to 1 construction of a part of the project. A portion of the facade system was built to show the different variations and materials to be used in the tile pattern.



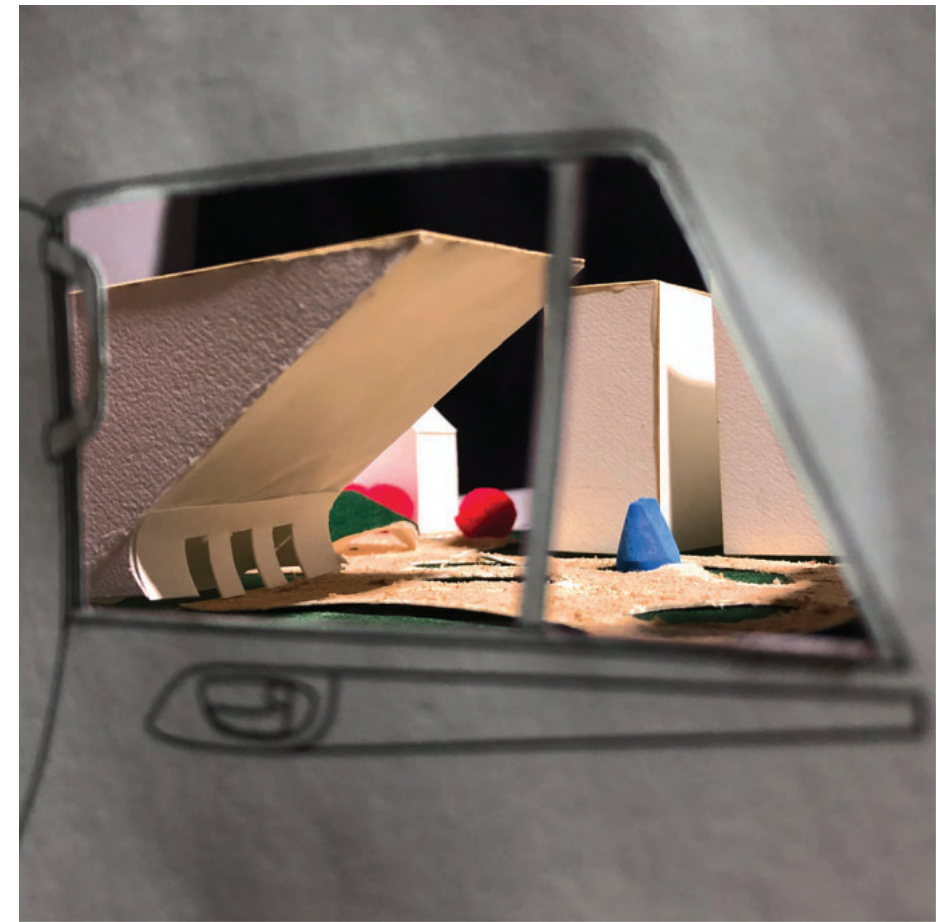
SITE PLAN



HPD BUILDINGS ELEVATION



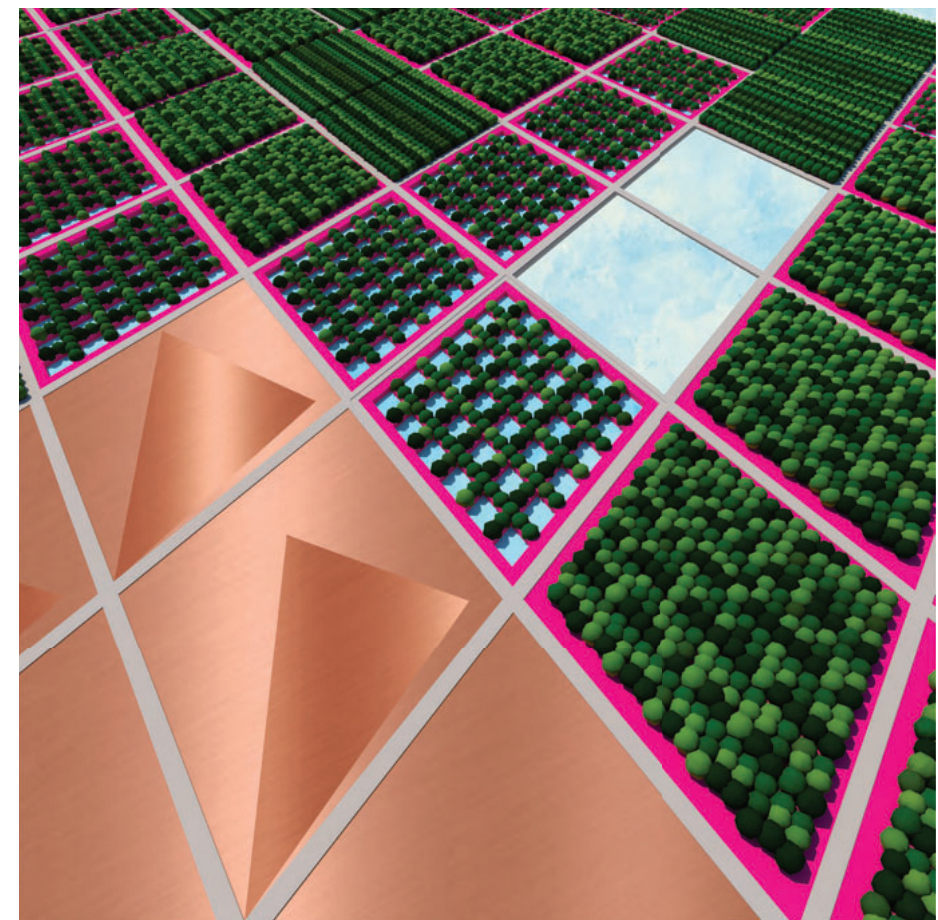
NEW FACADE



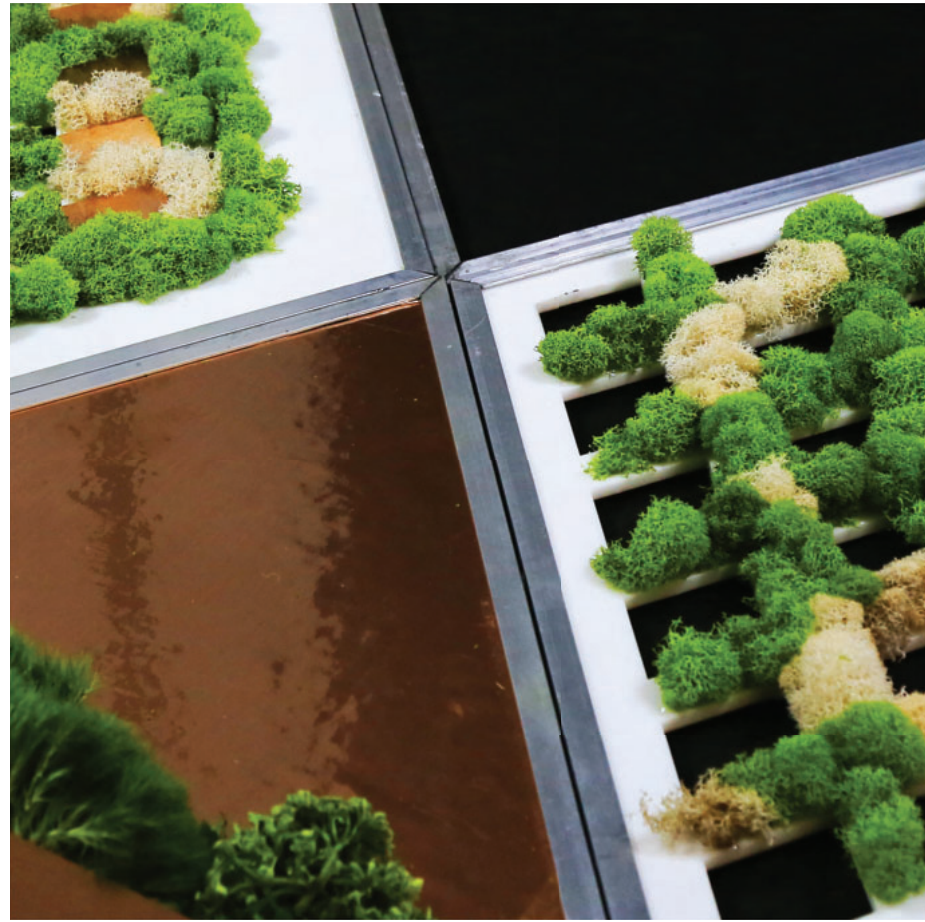
SITE FROM THE INTERIOR OF A CAR DRIVING BY



SITE AXONOMETRIC



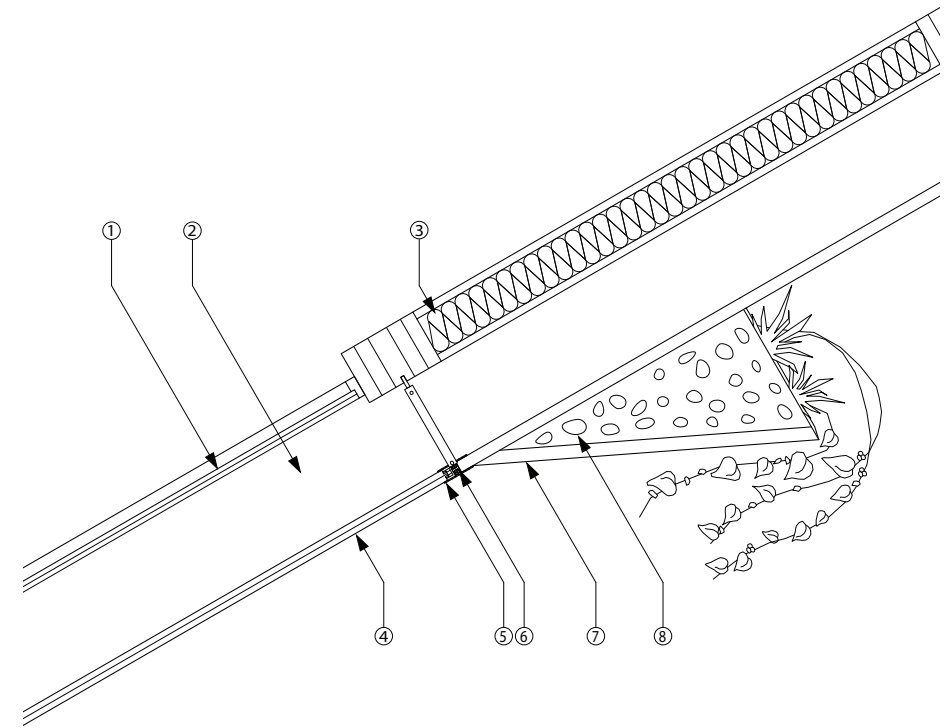
EXPANSE OF THE NEW FACADE



1 TO 1 MODEL

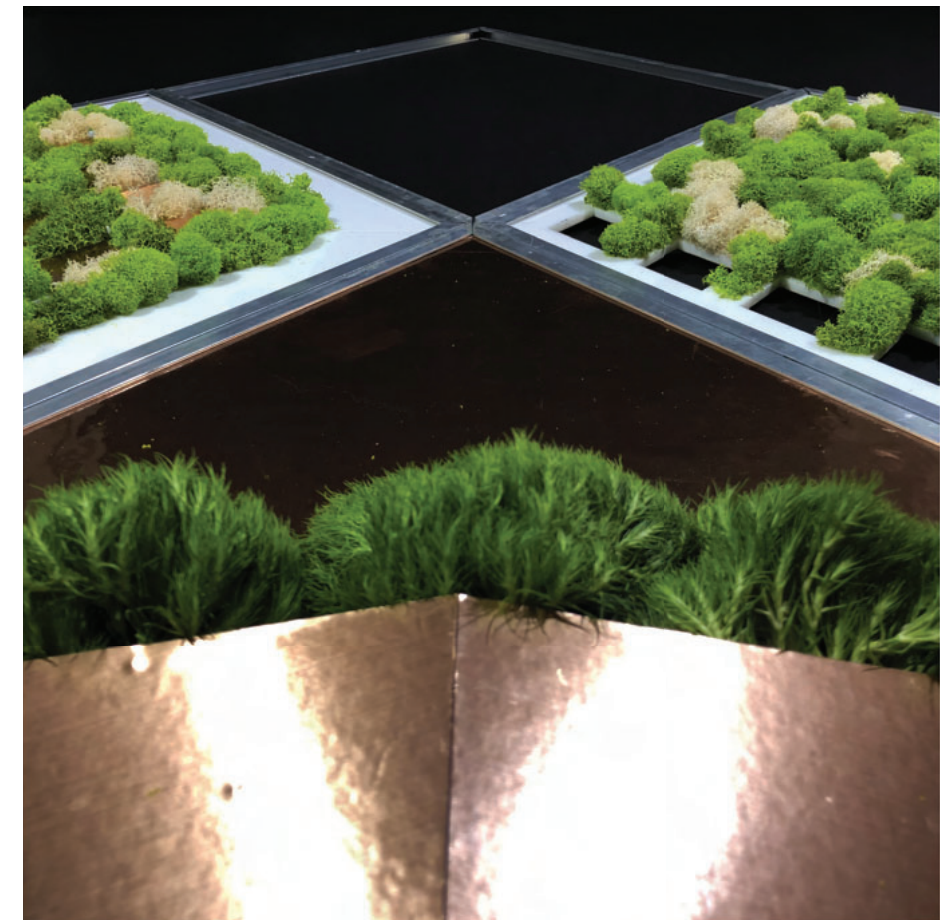


1 TO 1 MODEL



- |               |                      |
|---------------|----------------------|
| ① FIXED GLASS | ⑤ ALUMINUM C-CHANNEL |
| ② AIR GAP     | ⑥ BOLTED CONNECTION  |
| ③ INSULATION  | ⑦ COPPER PANEL       |
| ④ FIXED GLASS | ⑧ SOIL               |

FACADE SYSTEM CONSTRUCTION DETAIL



1 TO 1 MODEL



