

ARCHITECTURE PORTFOLIO

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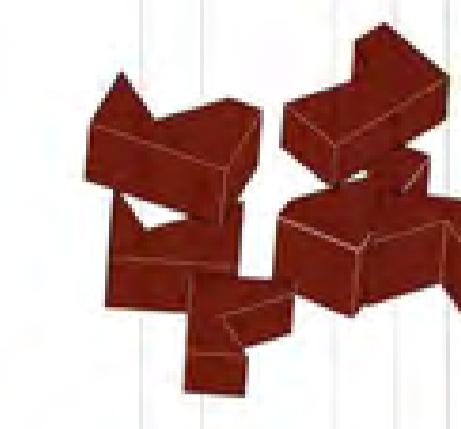
05 "Is"land Danube

06 Eco-Oyster

07 AT 3&4

DD phase of school renovation project

05 School of Exploration



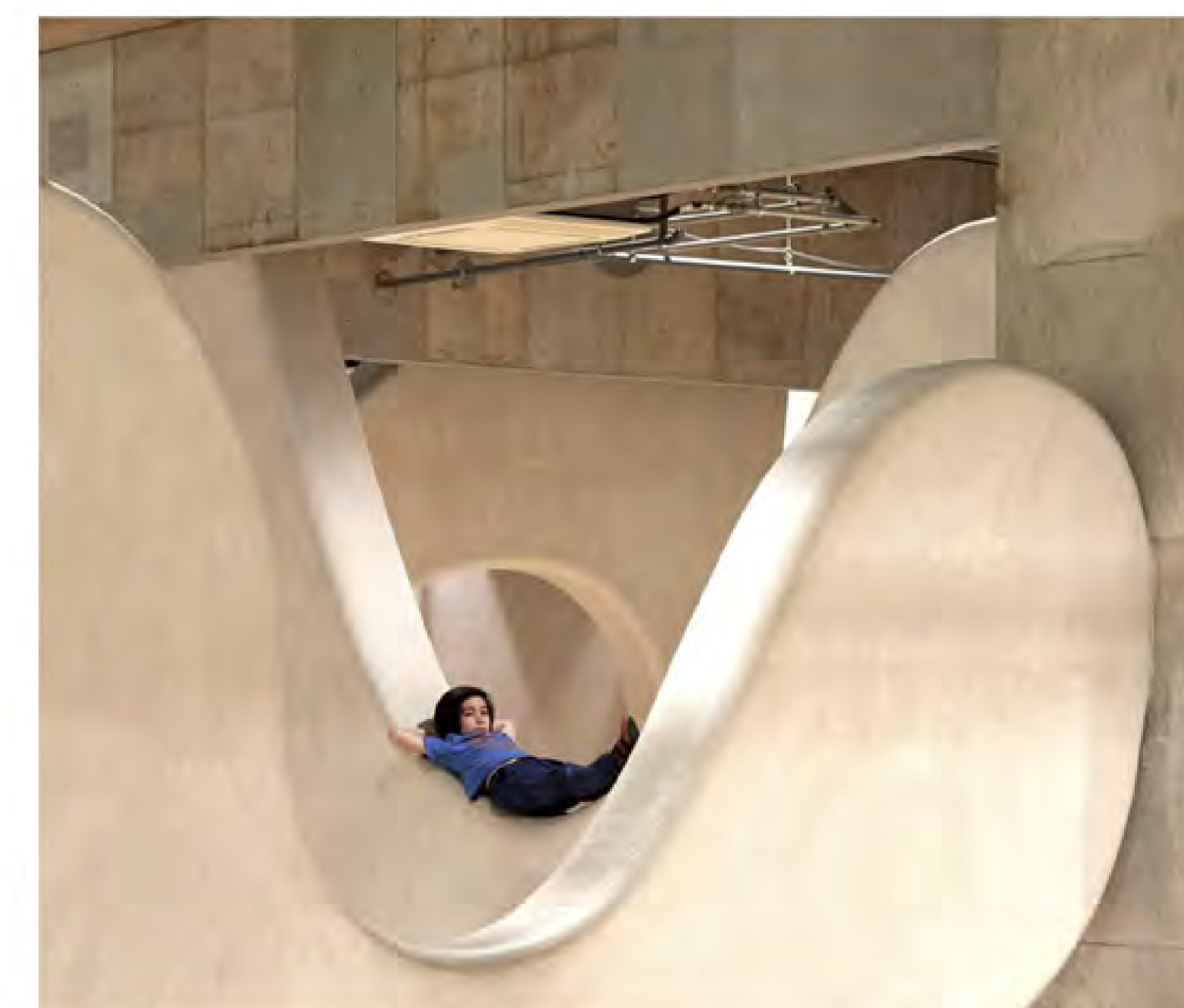
More School -GSAPP

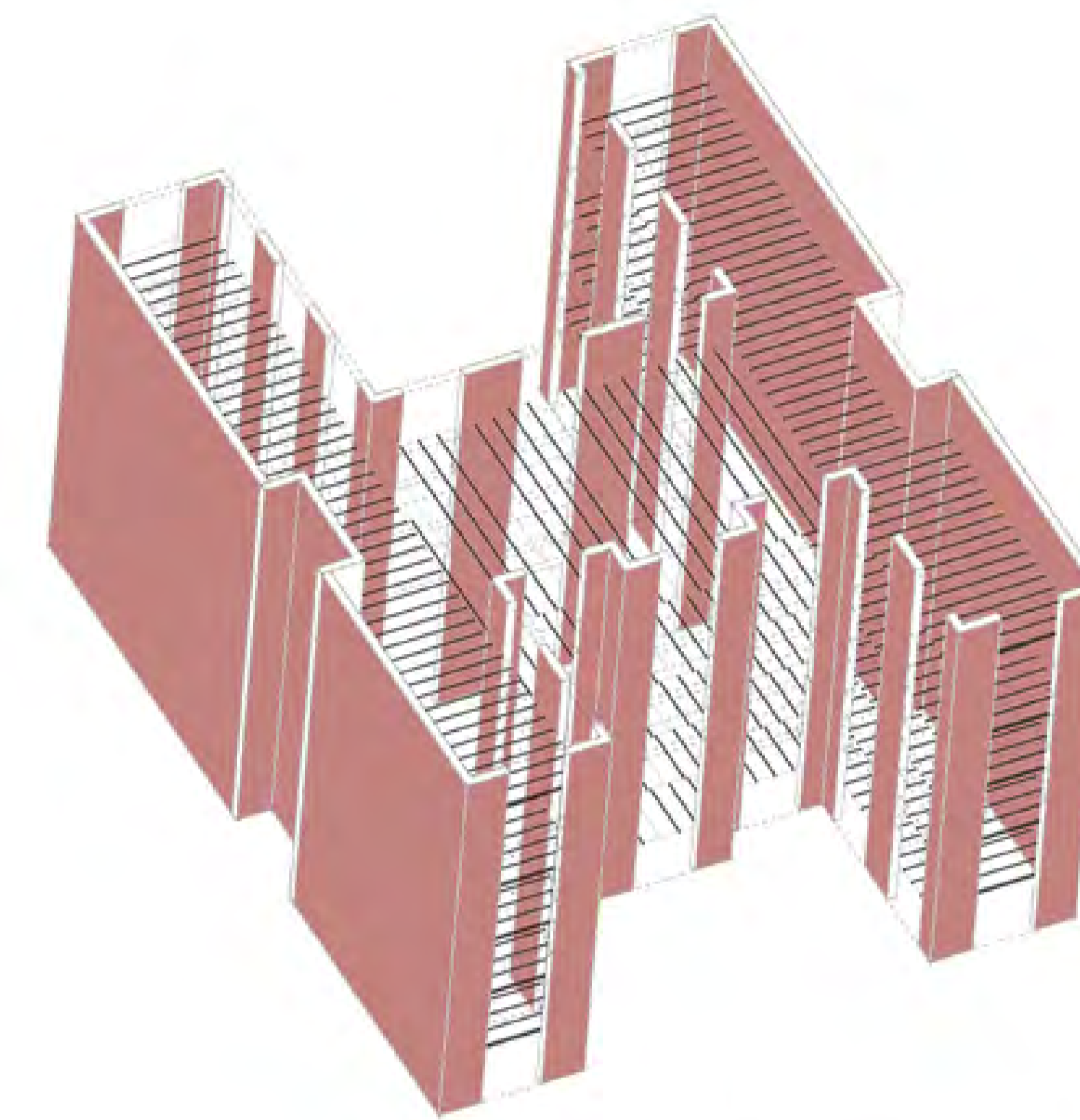
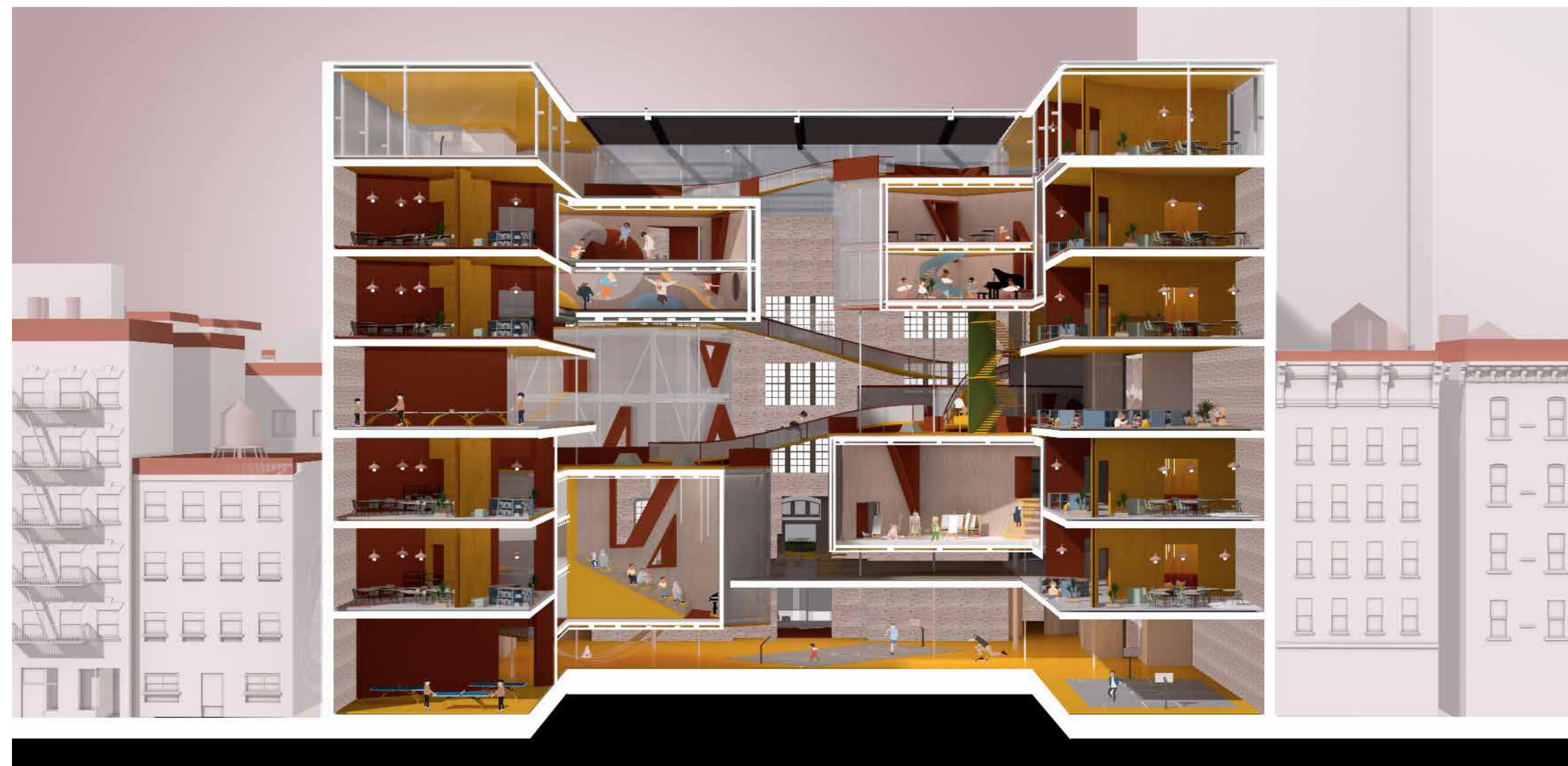
Renew a Historical School
Individual Work, Supervisor: Benjamin Cadena
March, Core2

Integrating school, life and city, this studio focuses on designing for a new type of educational facility that extends its program to double as a community hub for the neighborhood. Given their critical role and physical presence in cities, schools have the unique potential to evolve from isolated educational silos into platforms to interact, learn, and generate meaningful connections for all. In, out and around, this studio will explore how schools can be more, do more, and effectively become more integrated and lively components of the public realm. In cities across the U.S., public schools are among the largest landowners yet only a fraction provide access for a wider public to their schoolyards and facilities. They remain locked and under-used when school is out. This represents a latent potential for school grounds to serve as an urban resource for free, safe, close-to-home places to interact indoors and out in a city that increasingly lacks them – a form of social infrastructure we sorely need to further improve the quality of life, access to nature, health, and well-being of a broader urban community.

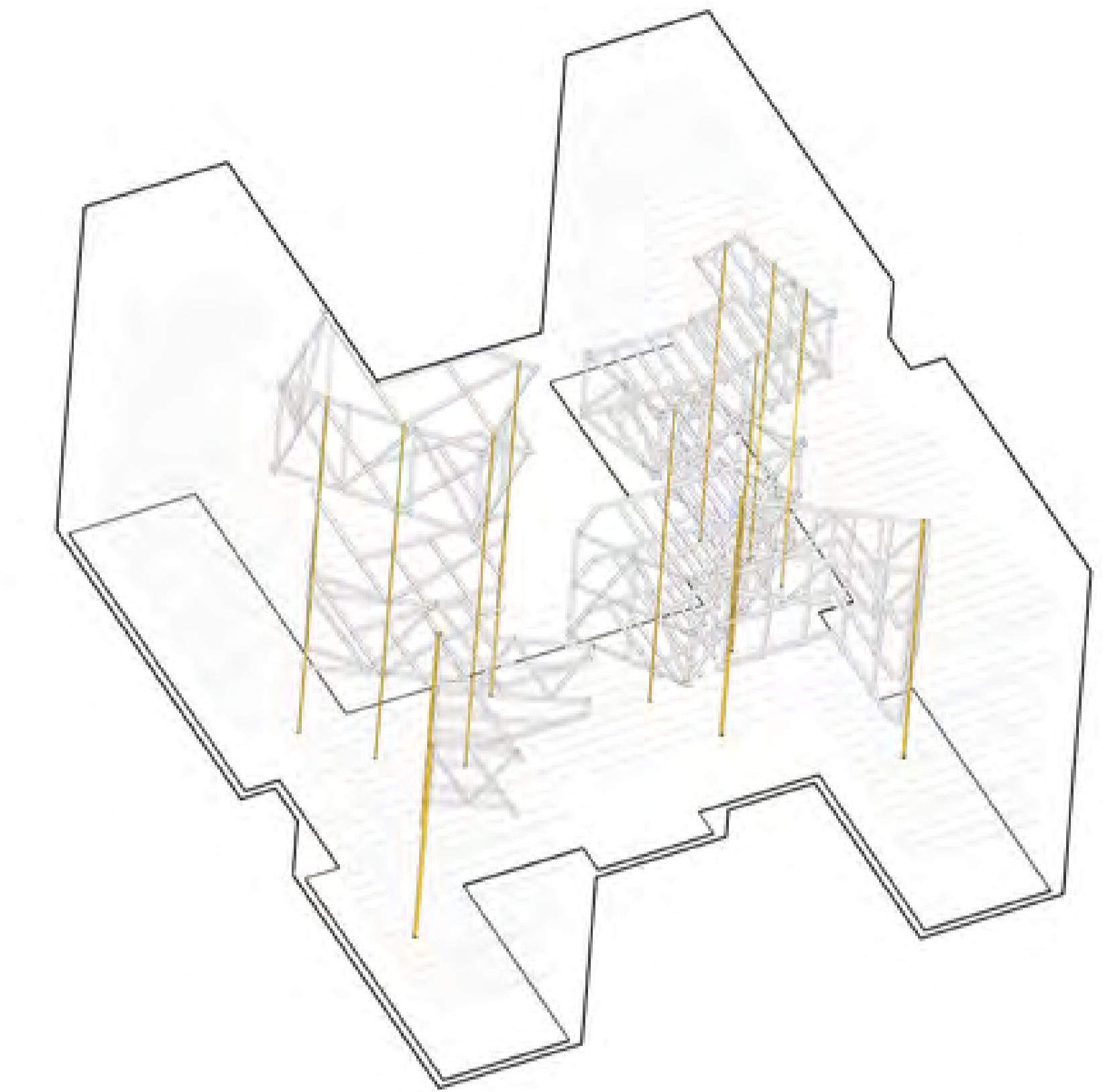


View from the lobby-P.S.64

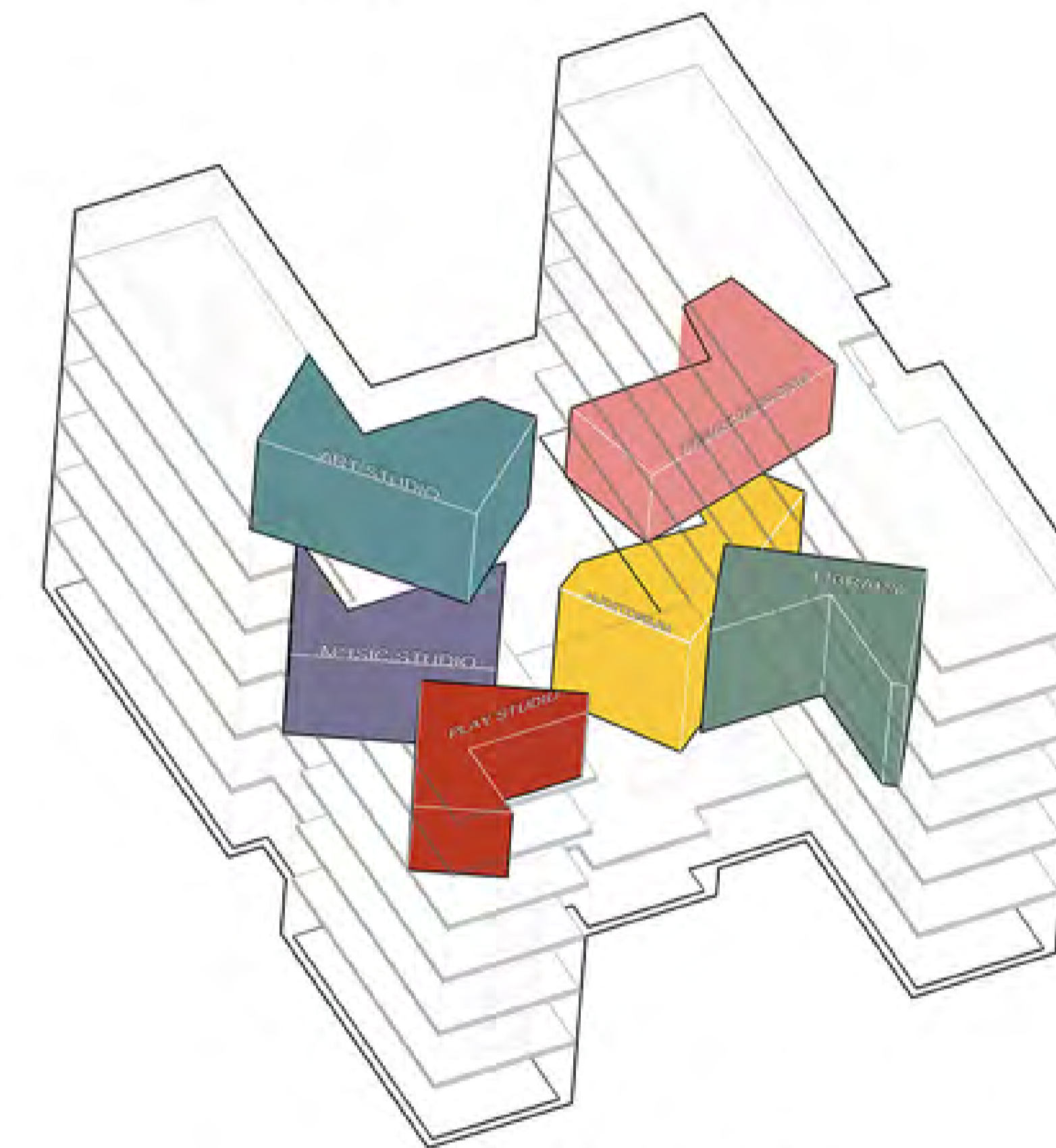




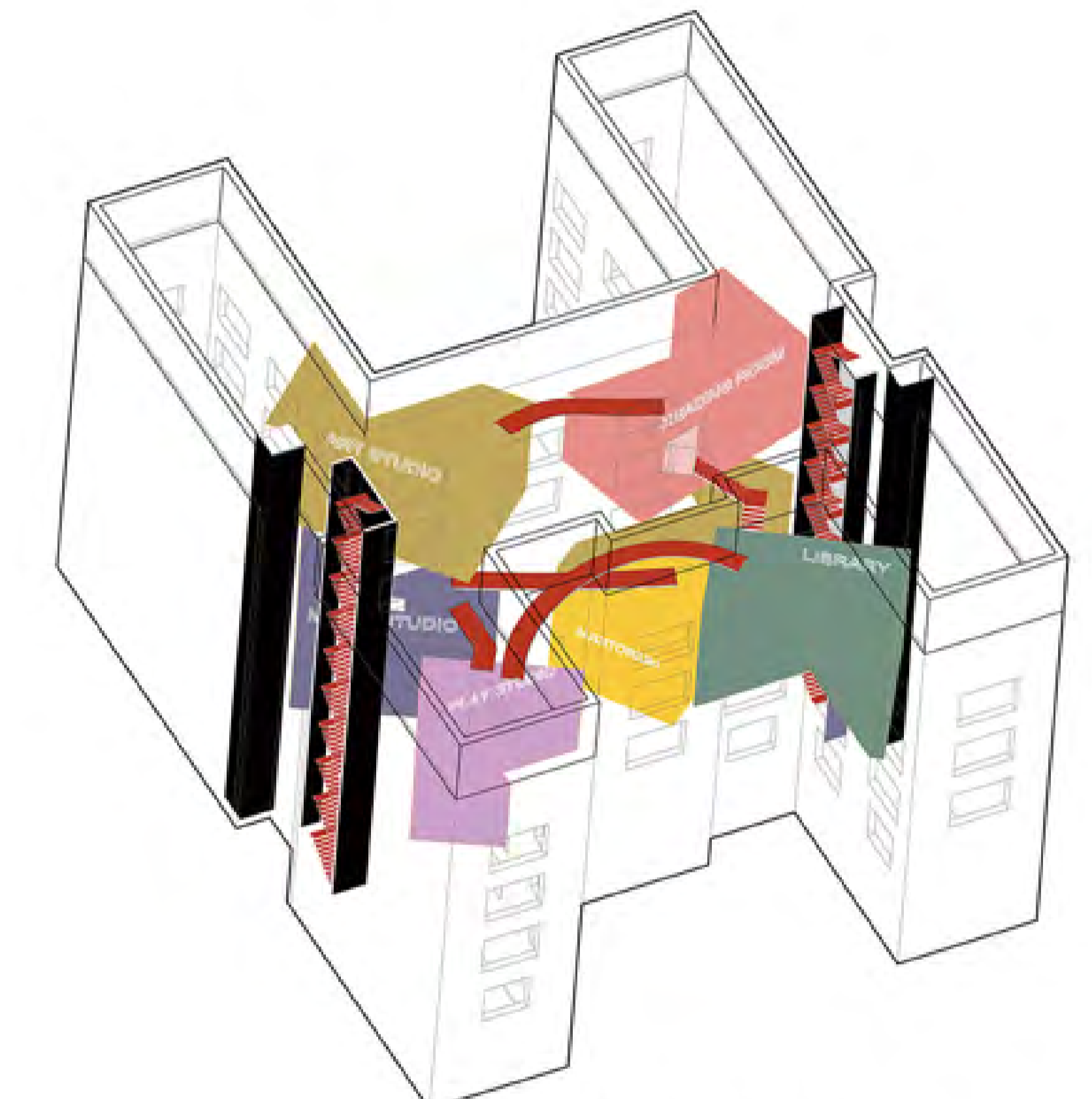
Existing Load-bearing Walls



Truss Structure



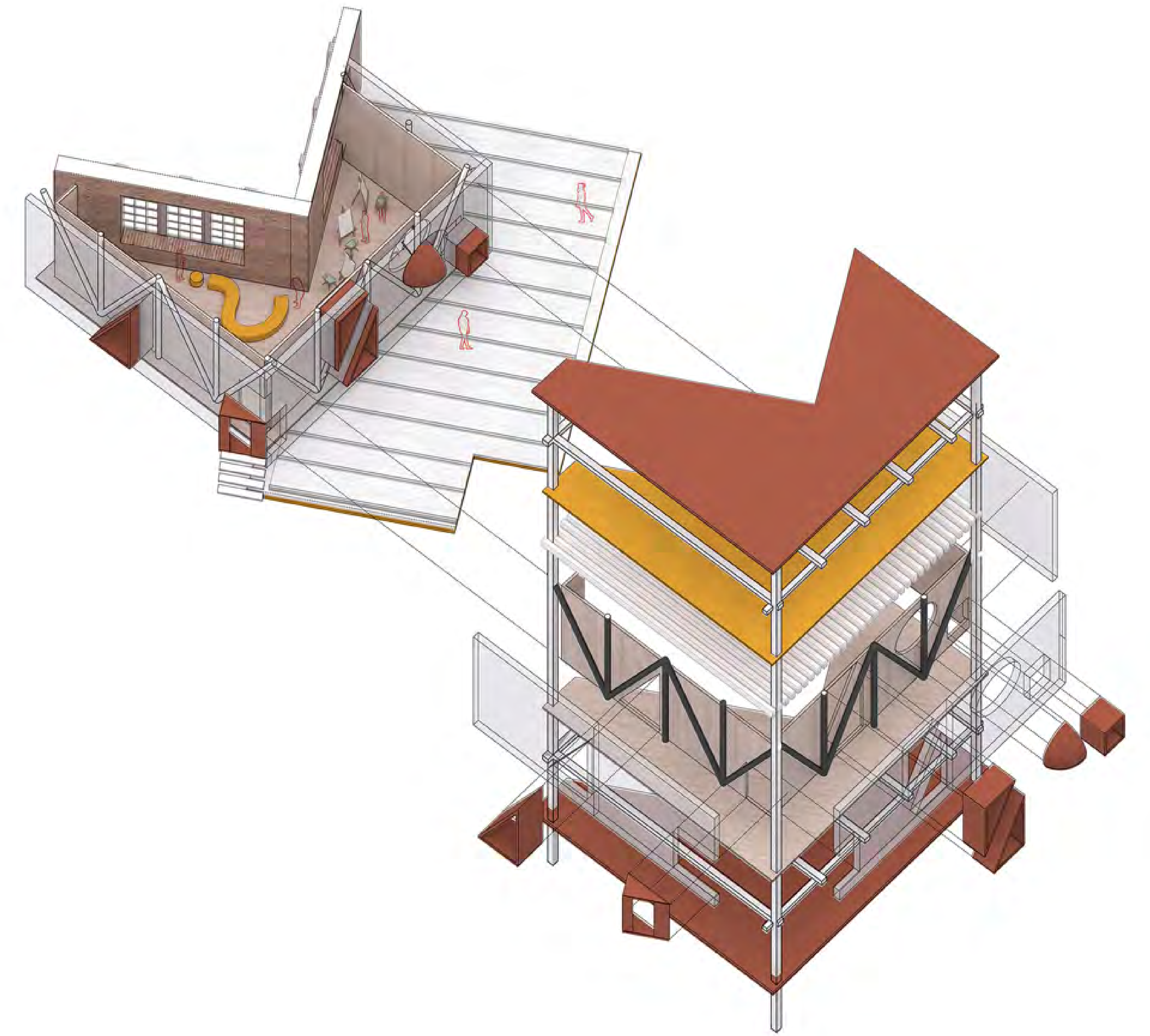
New Public Functions



New Circulations

P.S.64 is full of possibilities. The street is full of vitalities and is adjacent to Tompkinson Park, the second largest park in Manhattan. Educational buildings nowadays no longer only serve as a place to attend school and study, but a spot to memorize and being in-

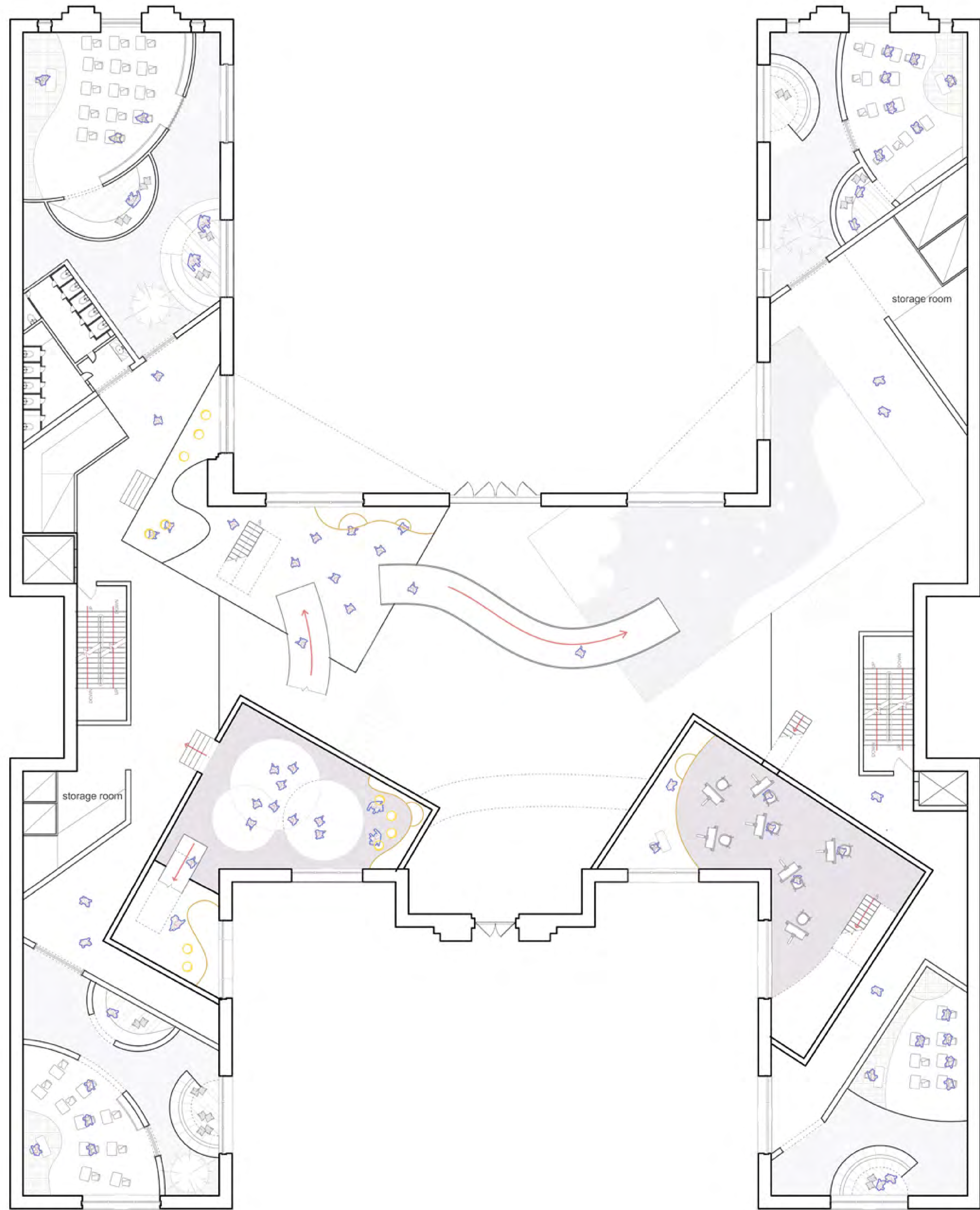
inspired from. This project explores a potential methodology to transit the outdated learning environments to a new type of learning environment by activating volumetric space and bringing new geometries.



Assemble Drawing



Section Perspective



Third Floor Plan

1:100



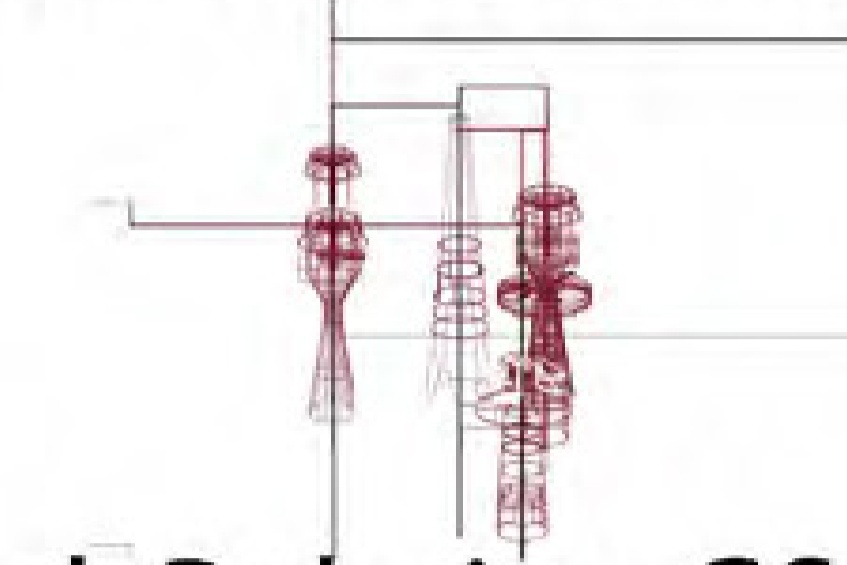
Auditorium



Classroom



02 Urban Farm in Washinton Heights

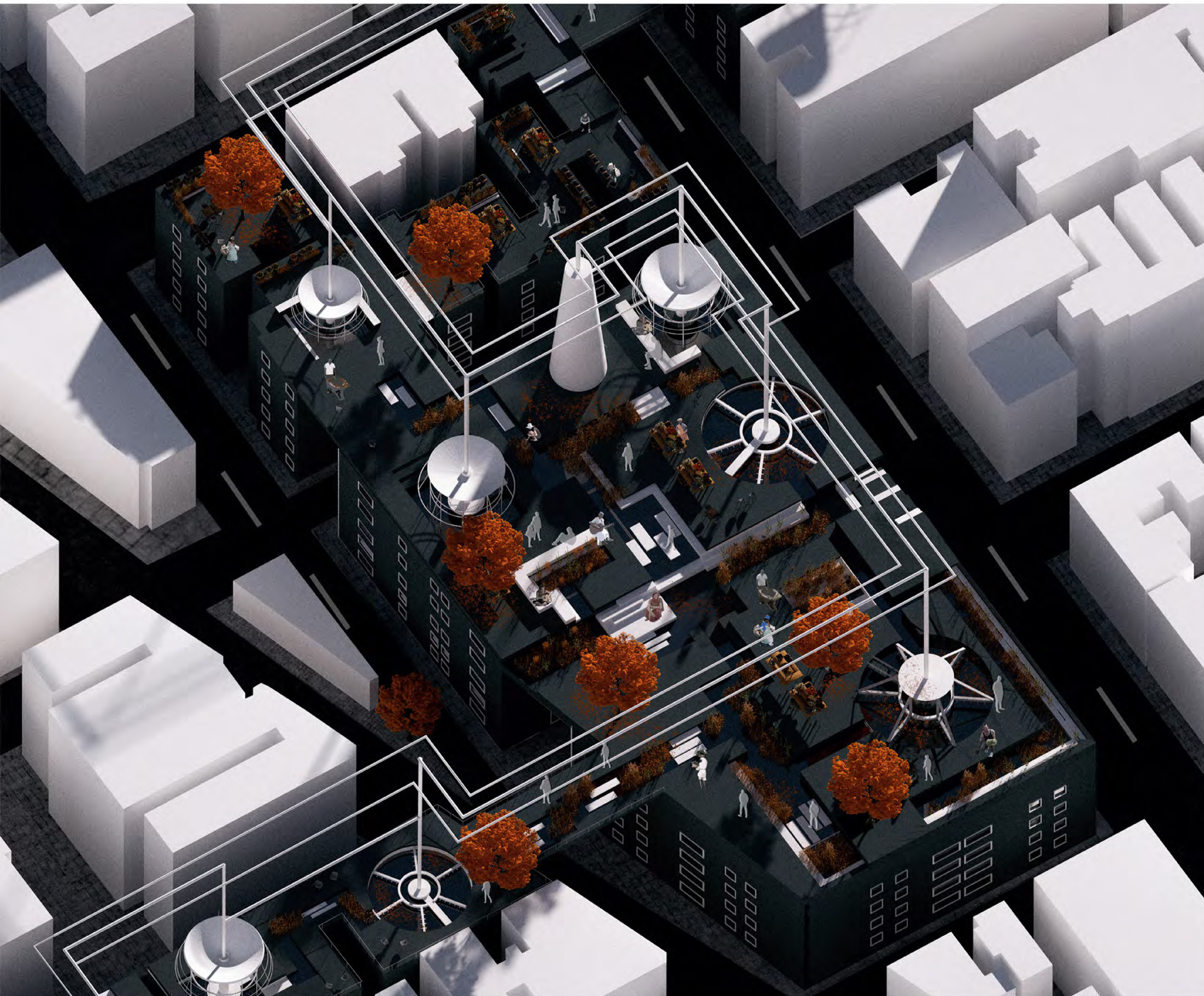


Dark Polarity -GSAPP

A Renew Water System over Manhattan
Individual Work, Supervisor: Jerome Hafred
March, Core1

Despite its timeless condition, Architecture is always rooted in the contemporary. Today, digital technology and new social behaviours are undeniably modifying some assumptions of what Architecture is supposed to be. Rather than the physical spaces themselves, what has radically changed is how we use them and how they relate to each other and to the city: digital platforms are expanding the limits of the house, connecting domestic spaces with the urban environment. Thanks to this new digital landscape, Architecture is becoming networked, and the home as well, inviting thus architects to rethink fundamental disciplinary notions such as limit, typology or program. In our cities, uses and functions merge more and more, both in the urban and the domestic sphere. Houses and workplaces have become increasingly closer to one another. The number of people working from home is rising along with the number of citizens that use their homes as productive spaces thanks to digital technologies. Under this context, our perception of the city and its Architecture differs, more and more, from the paradigms





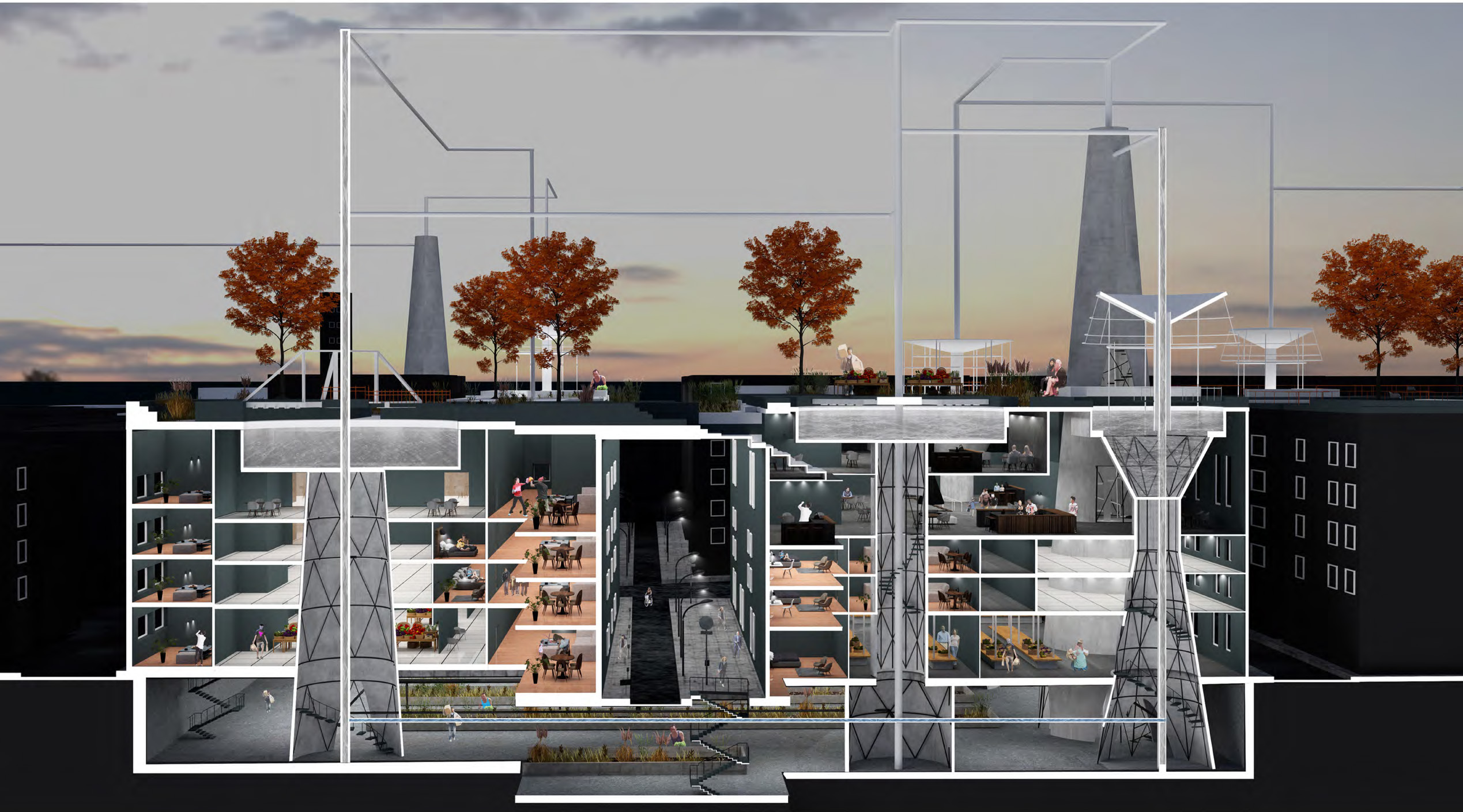
Axon of the New Water System and Urban Farm



New Washinton Heights



Local Community Center



Section Perspective

07 Urban Village

Recasting: Scale, Systems, Structure-GSAPP

Deep look into the future development of prefabrication housing

Group Work, Group Member: Wenjing Tu

Supervisor: Michael Caton

March, core3



In the United States, on average, 276,000 fewer housing units were built per year between 2001 and 2020 compared to the period between 1968 and 2001. According to a recent analysis by Freddie Mac, an American mortgage finance company, this has contributed to the current net housing unit shortage of 2.5 million units nationally. However, housing shortages are not ubiquitous. When considering just the 29 states with housing shortages, New York being one of them, the deficit grows from 2.5 million units to 3.3 million². After all, vacant homes and apartments in West Virginia do little to nothing to help housing shortages in New York City.

The challenge is immense. Further, I've only mentioned the housing supply problem. As a society, we need to build more housing units, planned and developed with radically more equitable practices, designed to much higher environmental performance standards, delivered at lower costs to boot. In short, we need to build housing better, cheaper, and faster than we have since the turn of the millennium for at least the next decade, consistently, year over year, to address the need.

There are at least three approaches to addressing these challenges that aren't mutually exclusive of one another: change what you build (i.e., micro-units, accessory dwelling units), change how you build (i.e., modular or prefab construction techniques), and change the structure of development (i.e., natively integrated development³.) The throughline across all approaches is the imperative to develop strategies to accelerate change in the built environment dramatically. As architects, the first, daunting step in this acceleration is to shift our modus operandi from designing bespoke, one-off projects to designing repeatable product systems - buildings not as projects but as products.



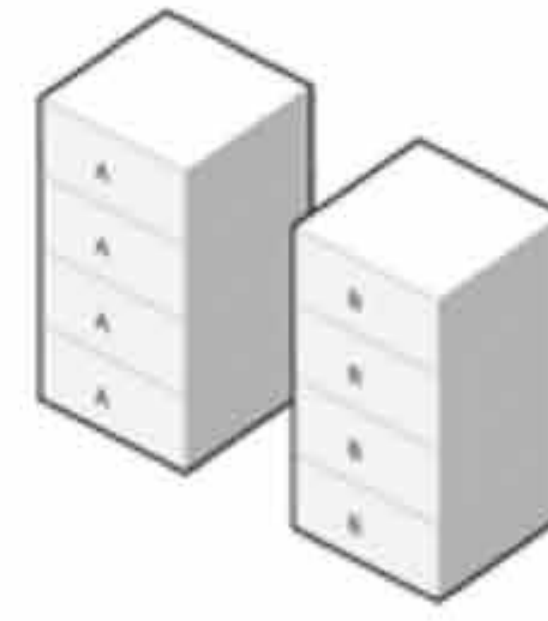
Combo



Buyers



Settled Unit Type



Vacancy → Unit Configuration

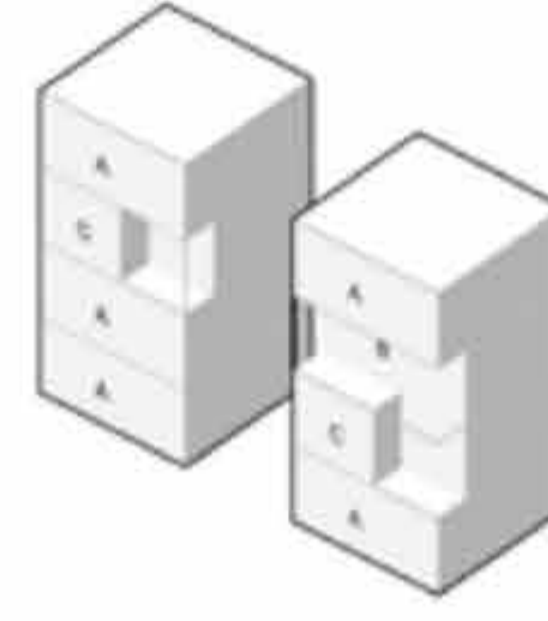
Rental



Developer/Property Agent



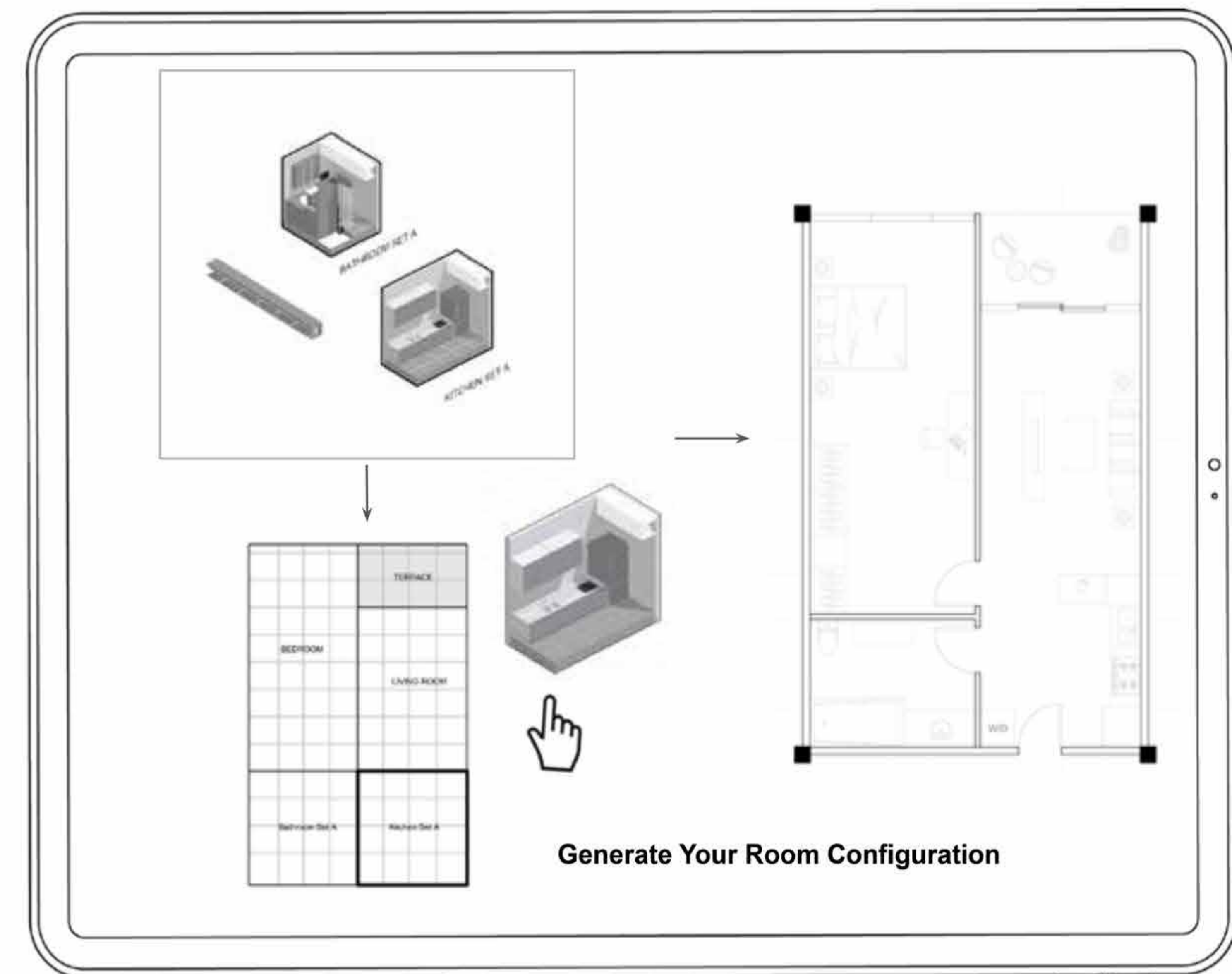
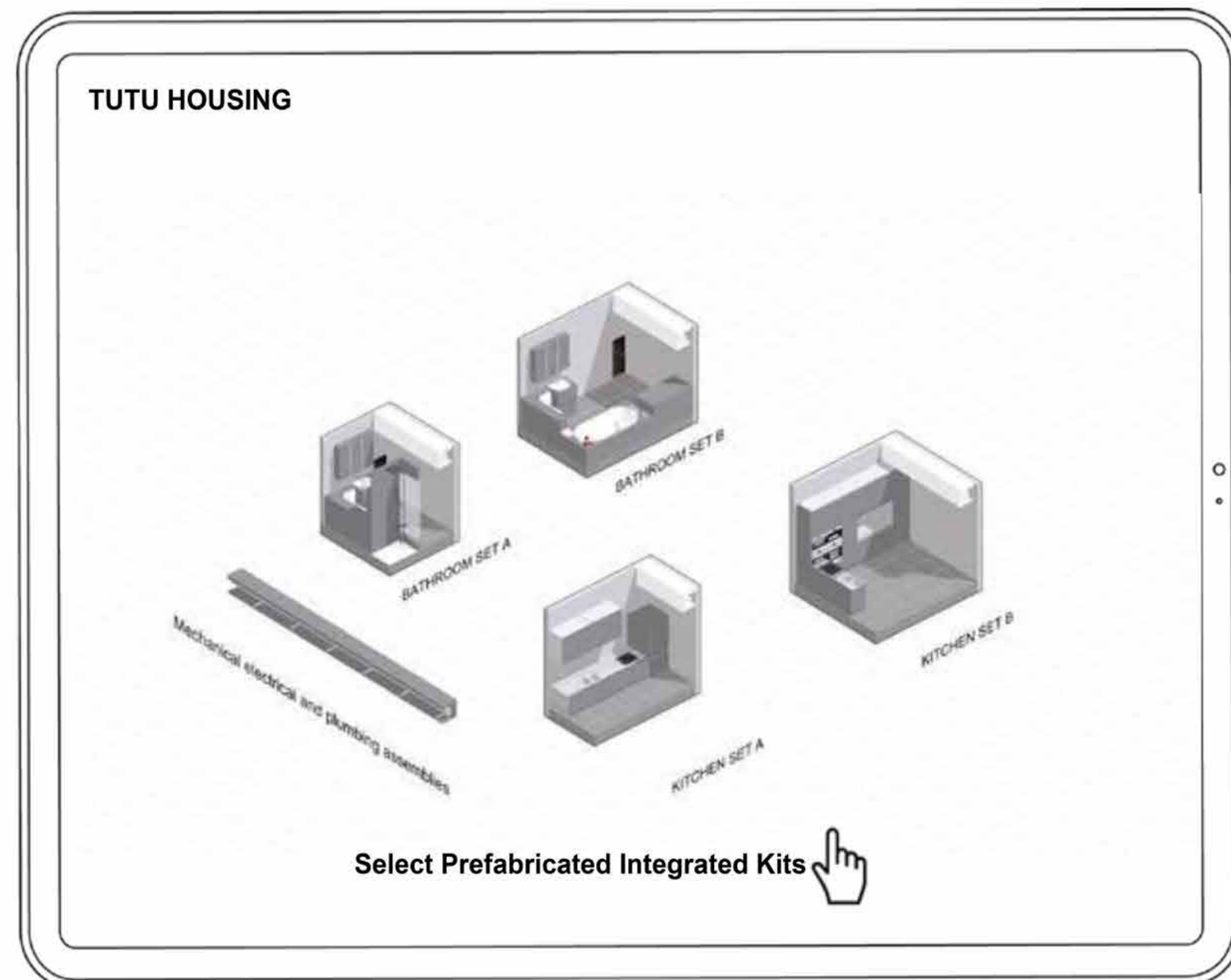
Configured Unit Type



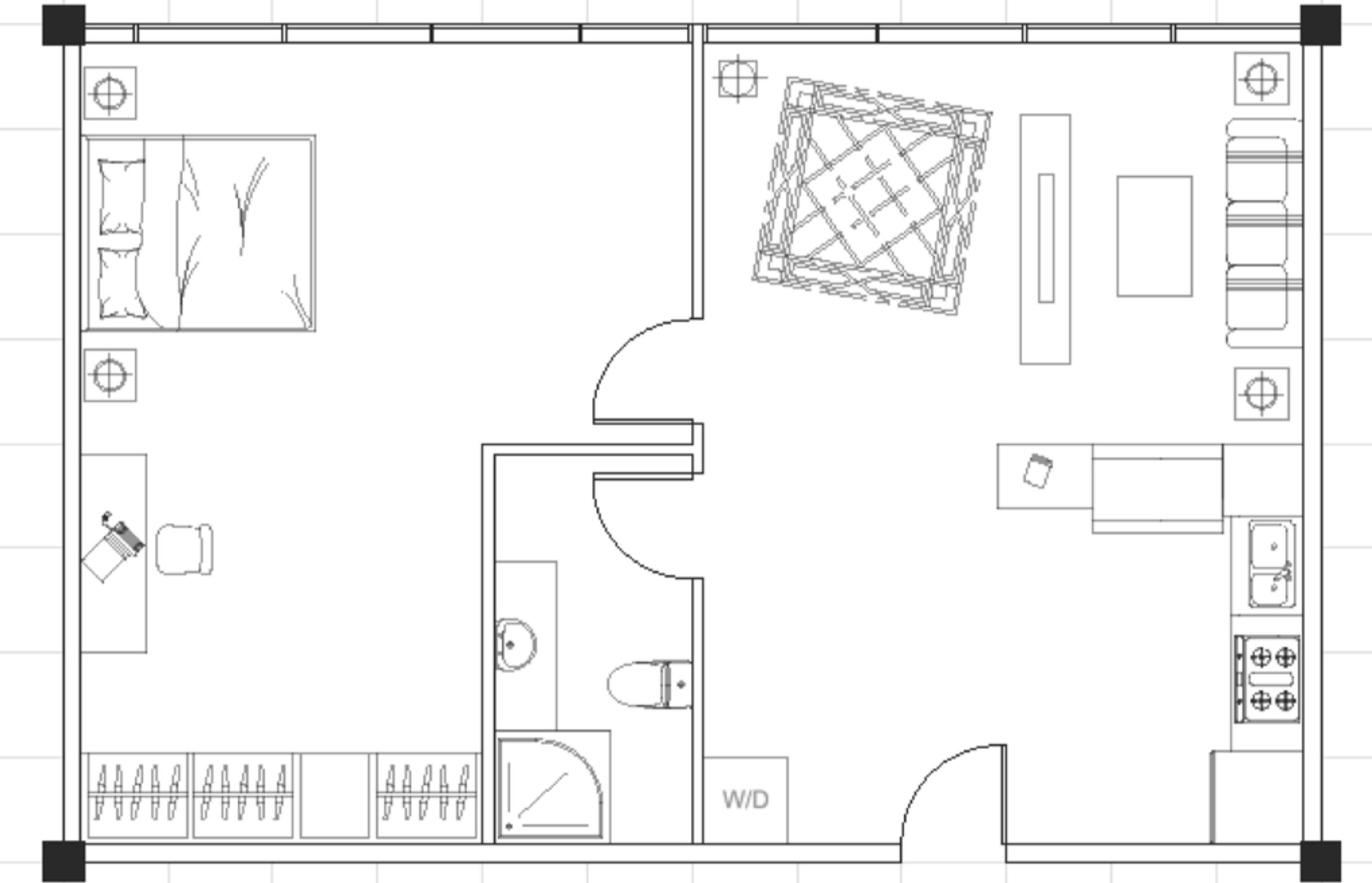
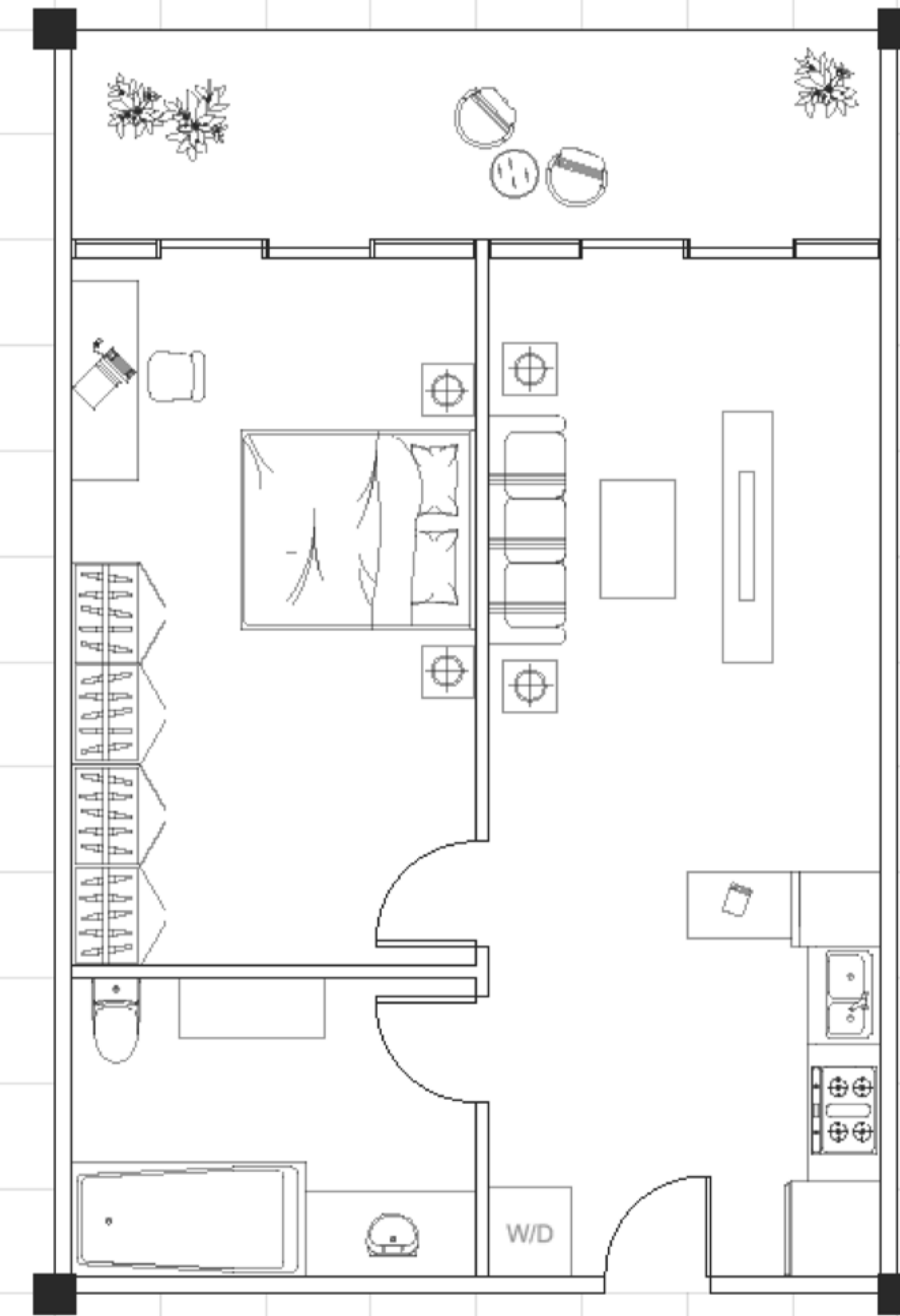
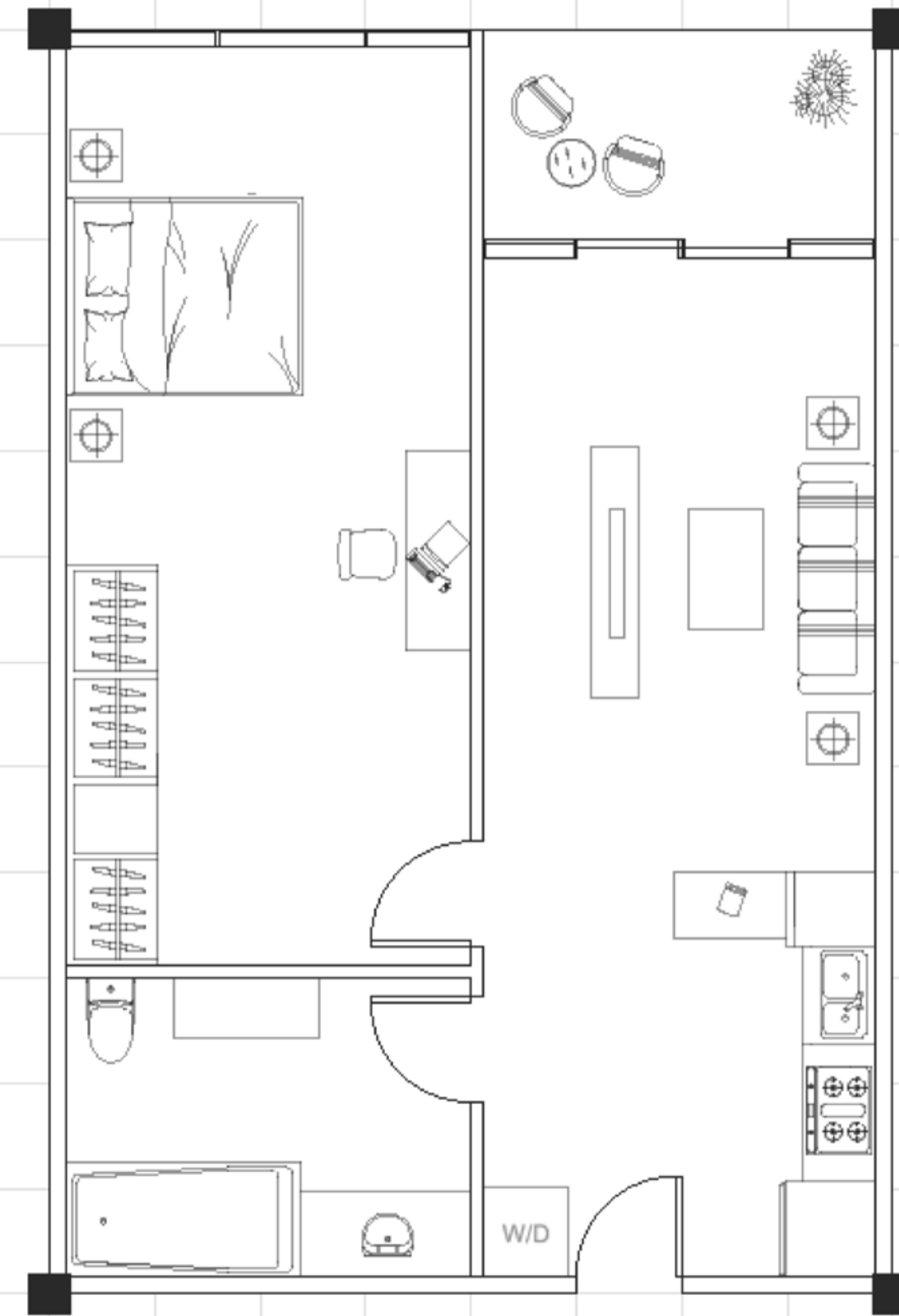
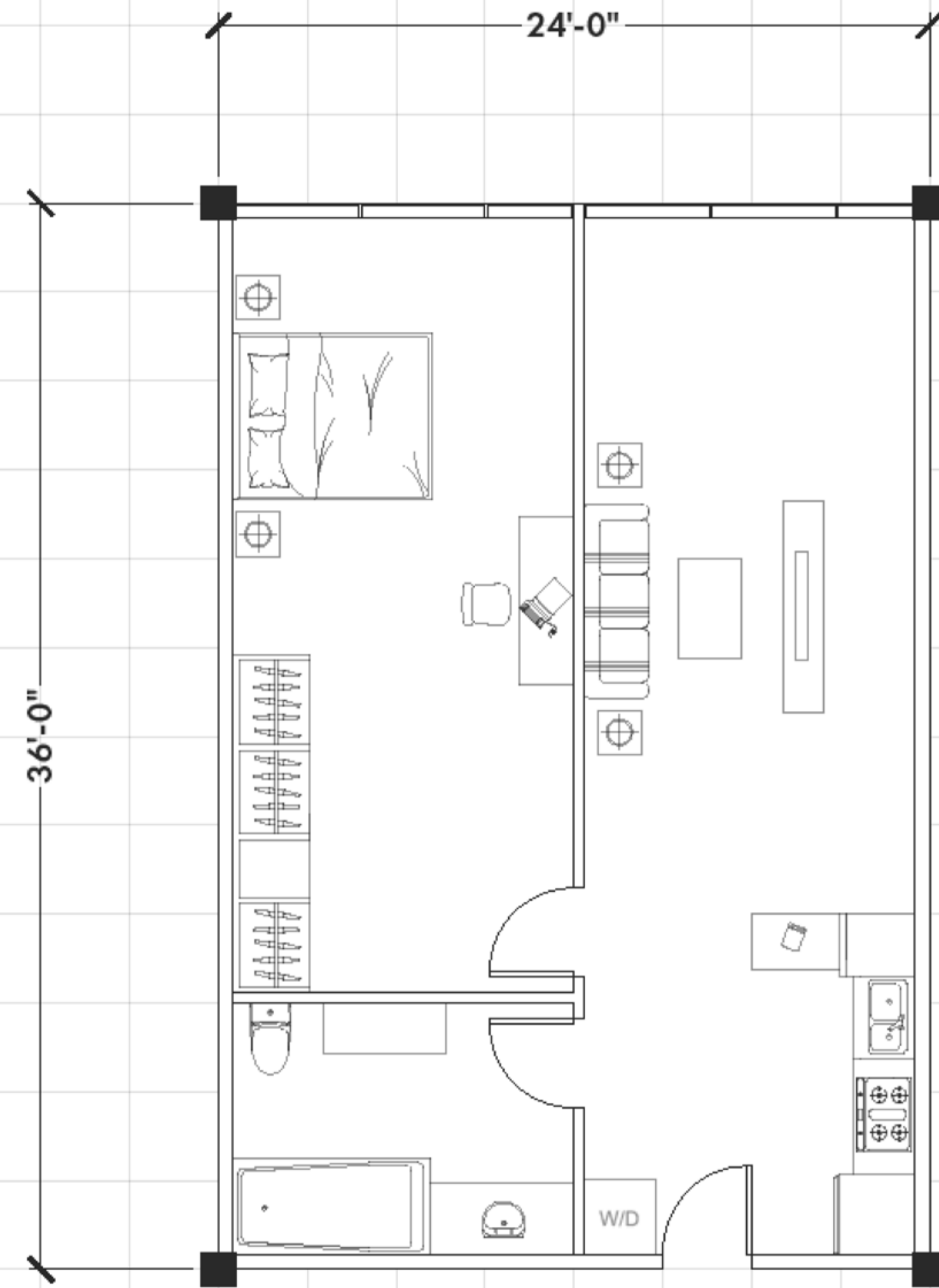
$$\frac{\text{RENT-VACANCY-OPERATION EXPENSES}}{\text{HARD COSTS+SOFT COSTS+LAND ACQUISITION COSTS}} \longrightarrow$$

Joint Venture

- Architecture
- Manufacturing
- Construction

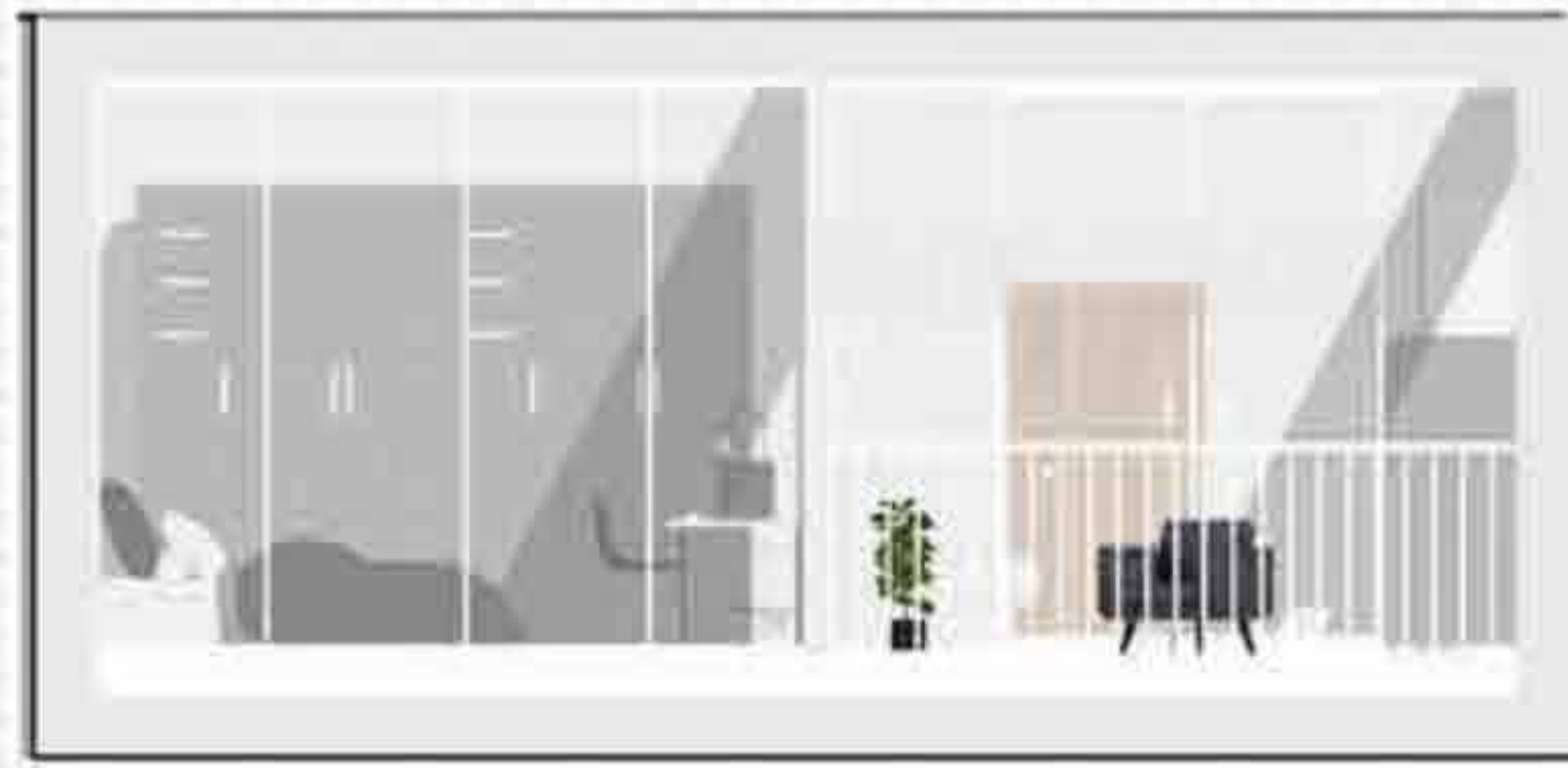


Unit Floor Plan
1bedroom 1bathroom



1BEDROOM 1BATHROOM X 4

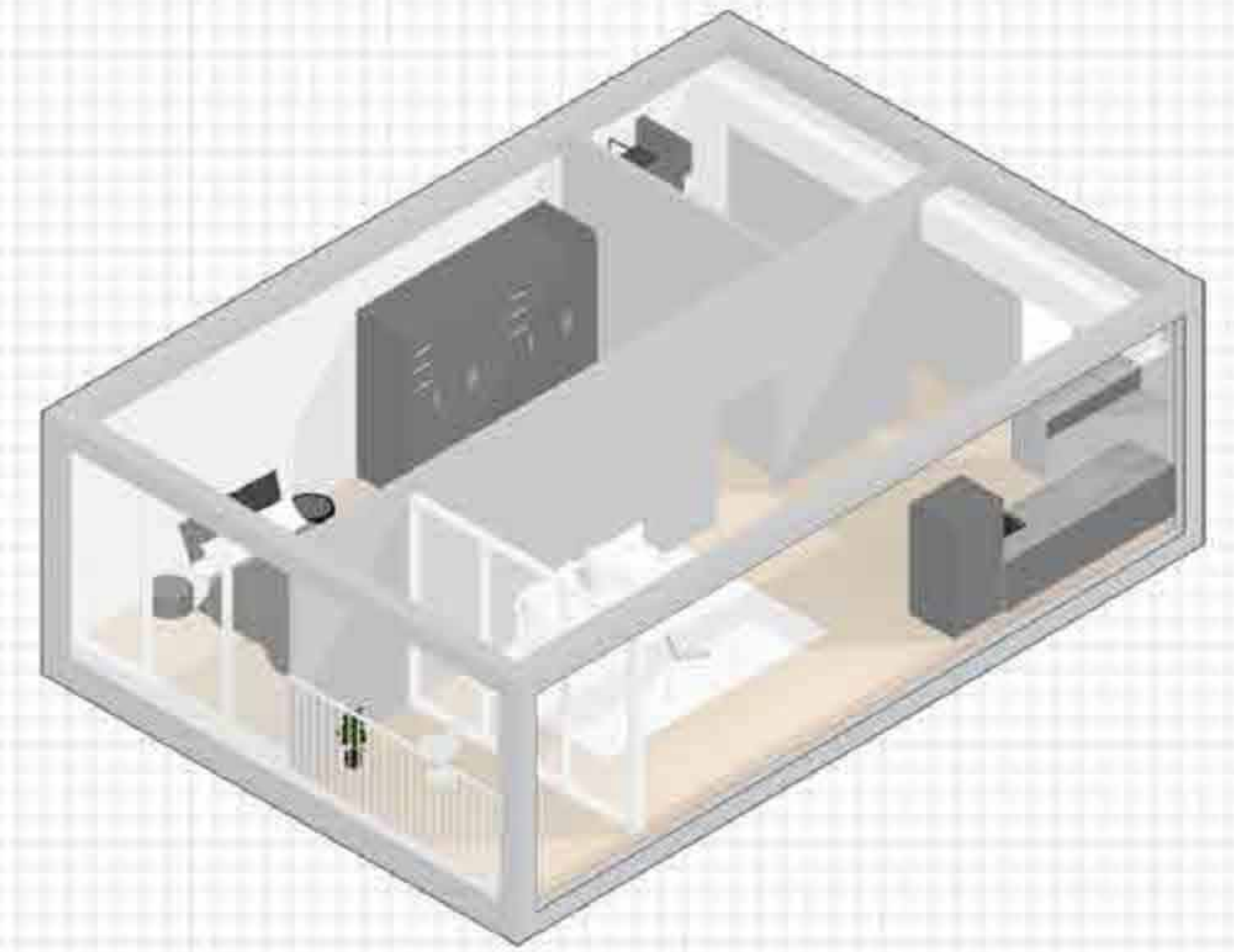
Unit Interior
1bedroom 1bathroom w/ terrace



1b1b w/ terrace elevation

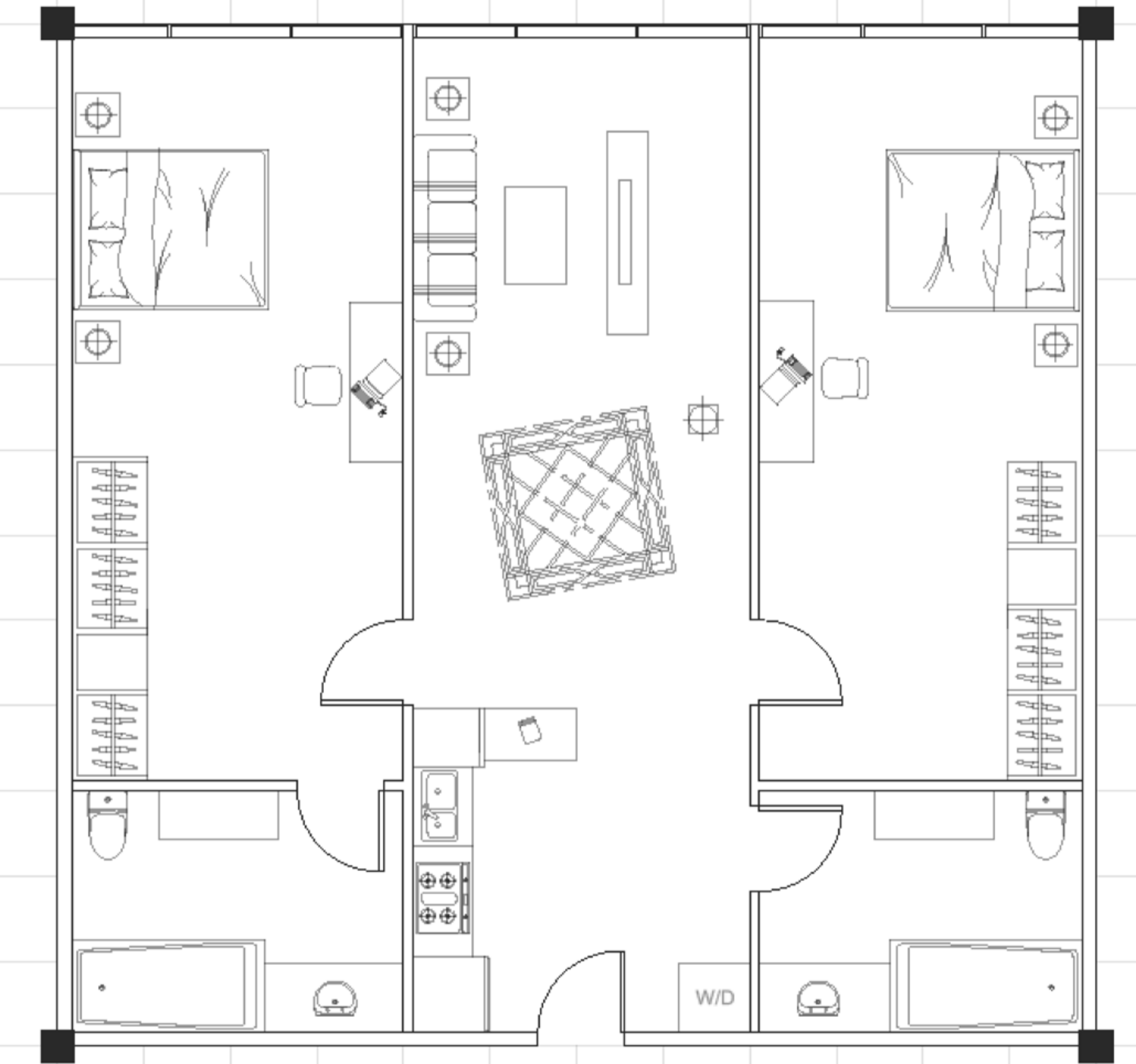
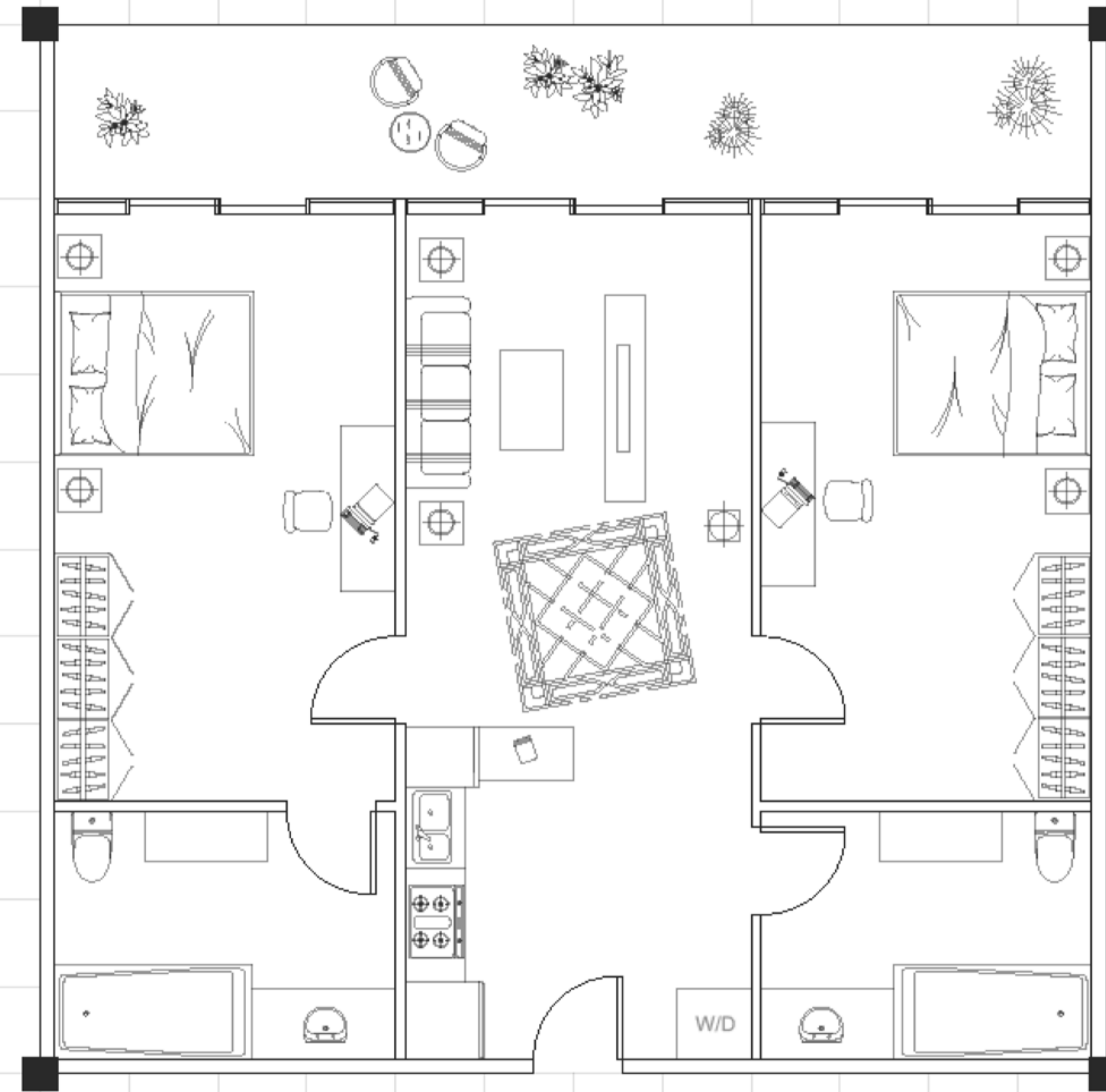
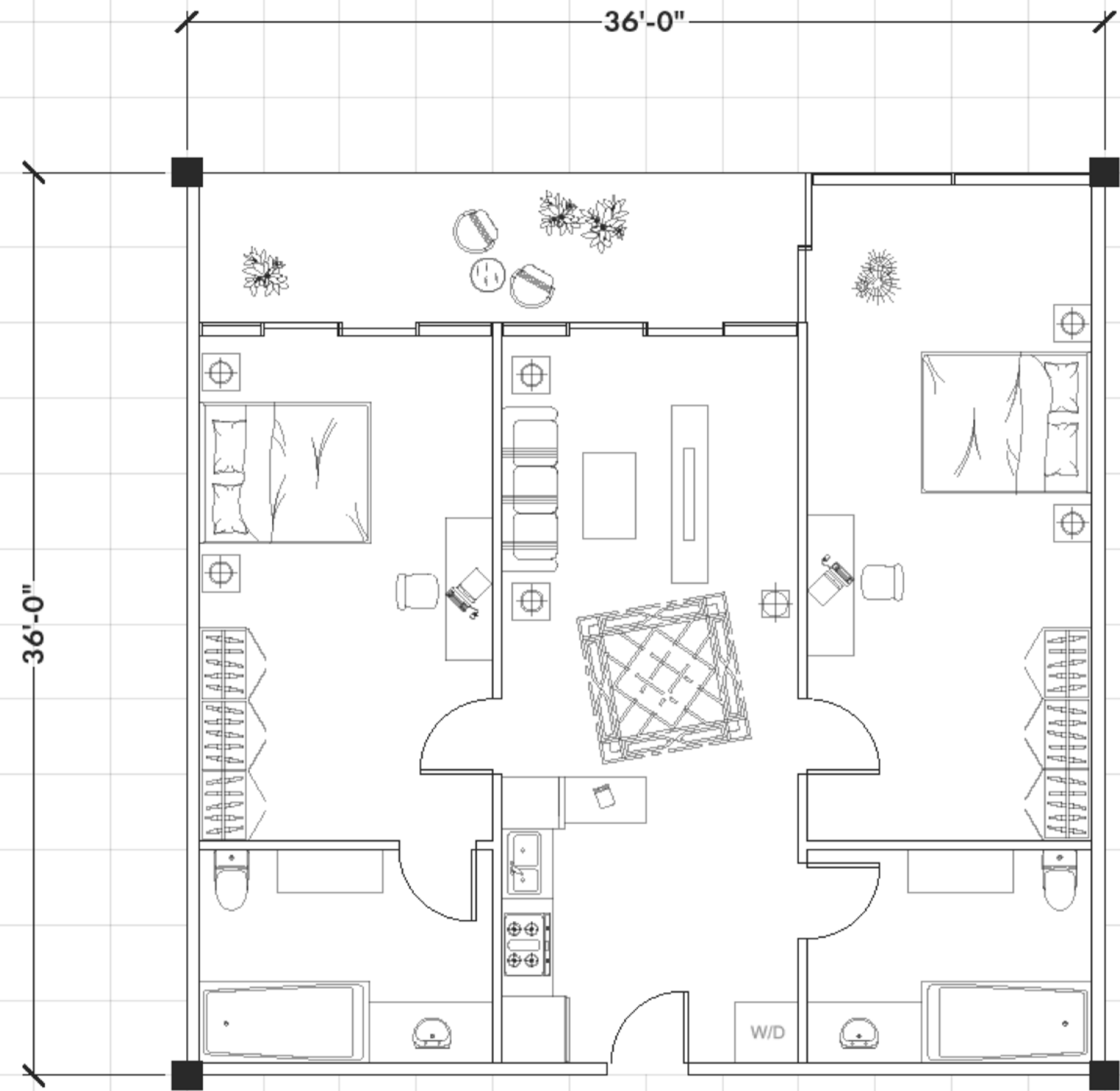


1b1b w/ terrace section



1bb w/ terrace axon

Unit Floor Plan
2bedroom 2bathroom



2BEDROOM 2BATHROOM X 3

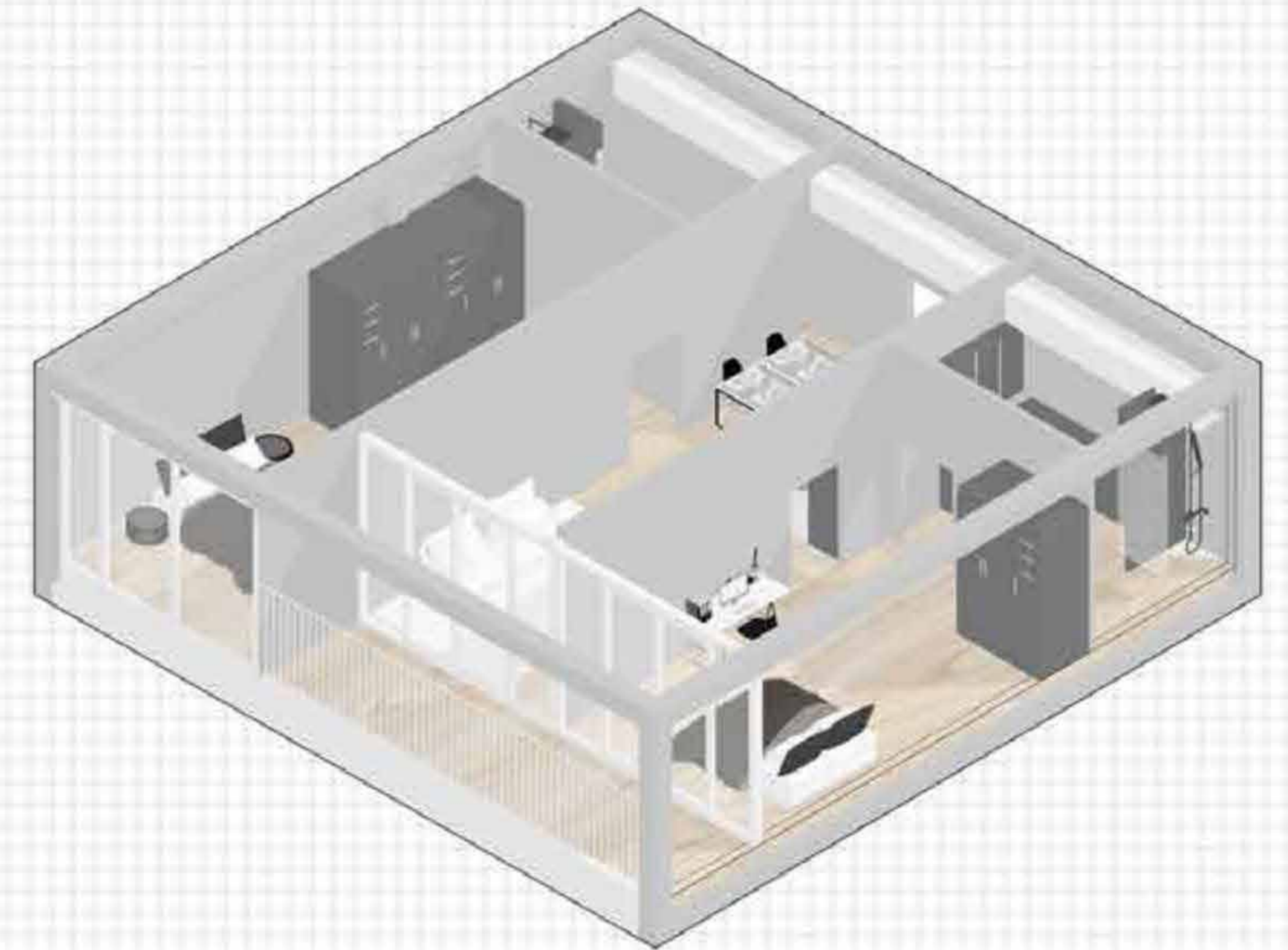
Unit Interior
2bedroom 2bathroom w/terrace



2b2b elevation w/terrace



2b2b section w/terrace



2b2b axon w/terrace

Residential Apartment
Second Level

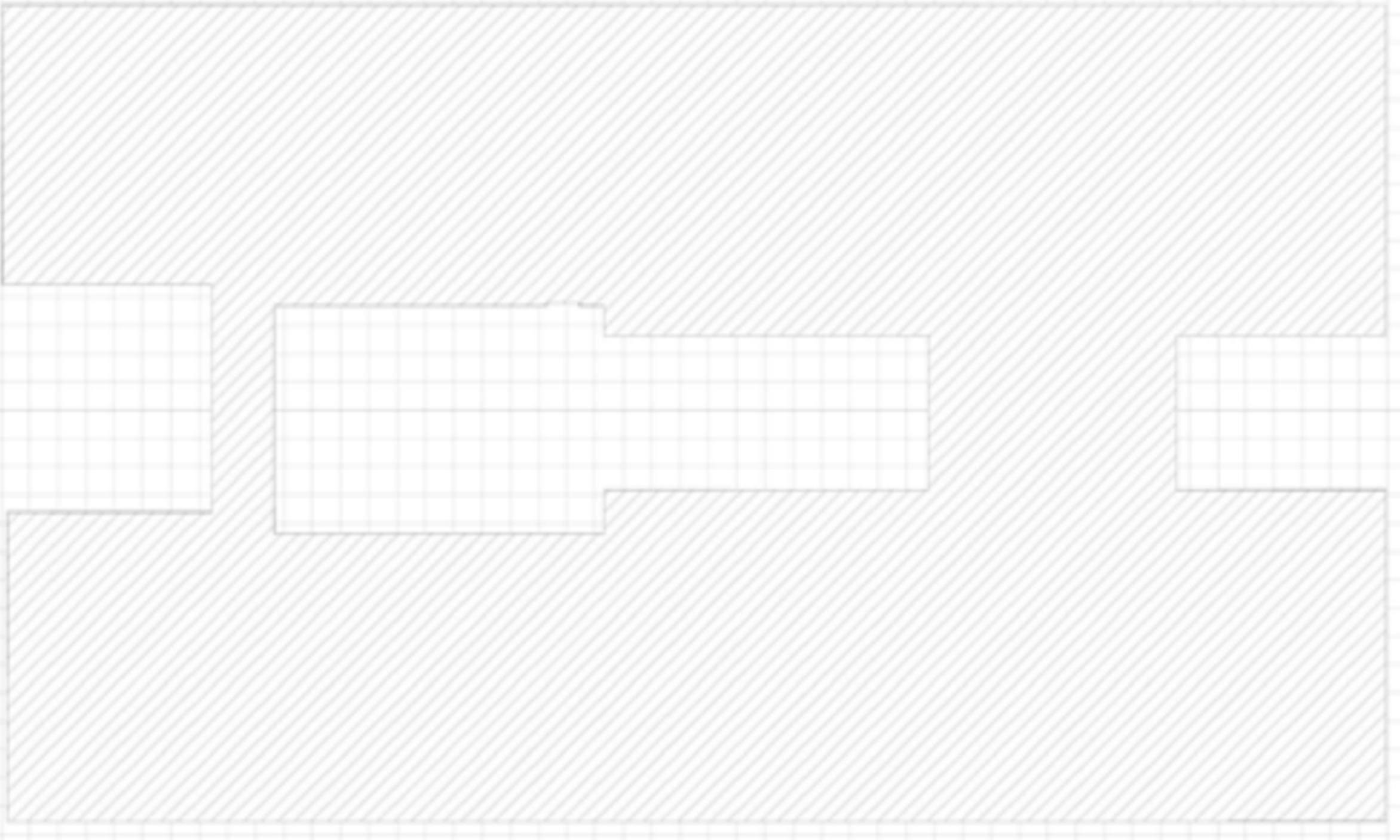
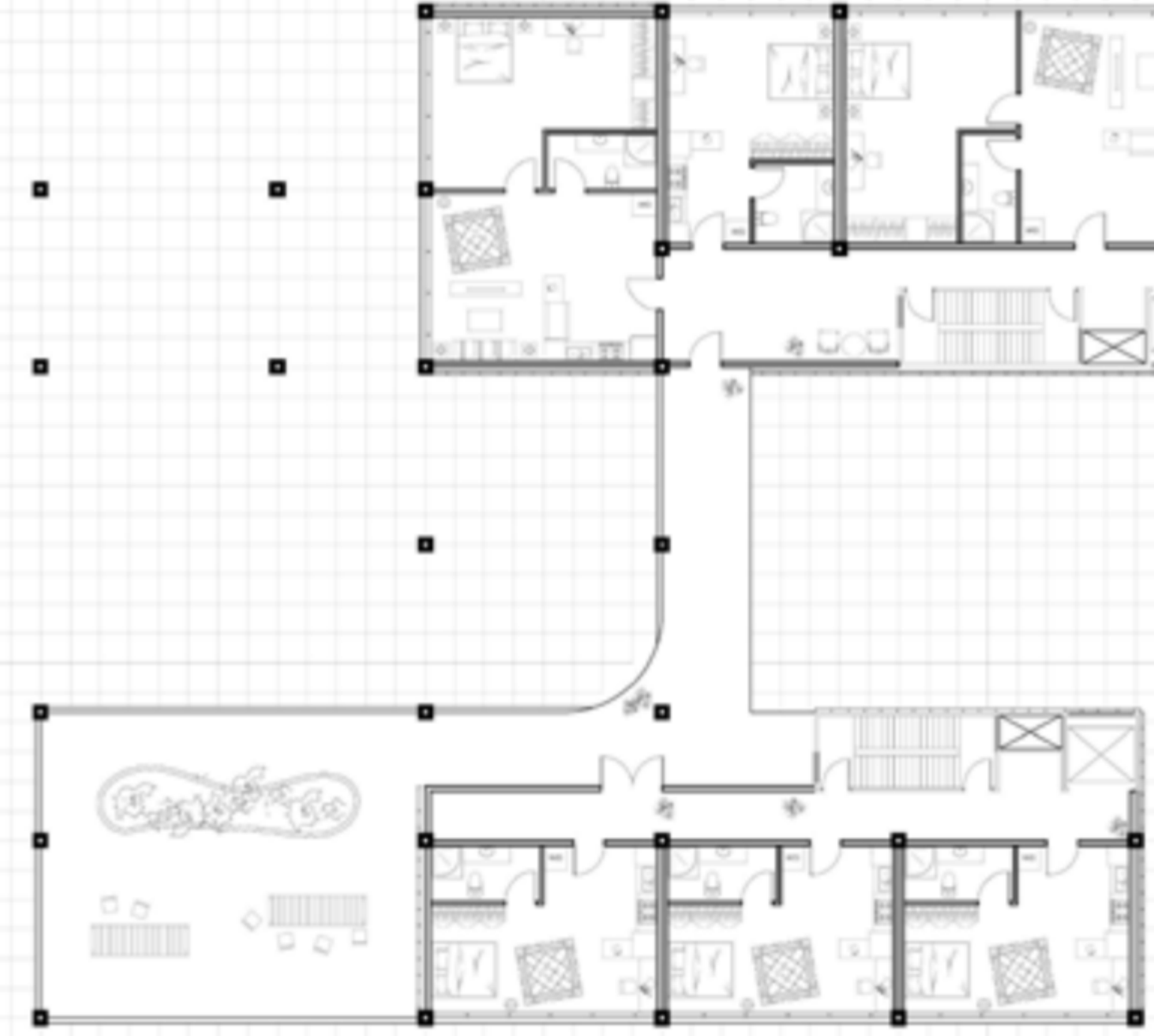
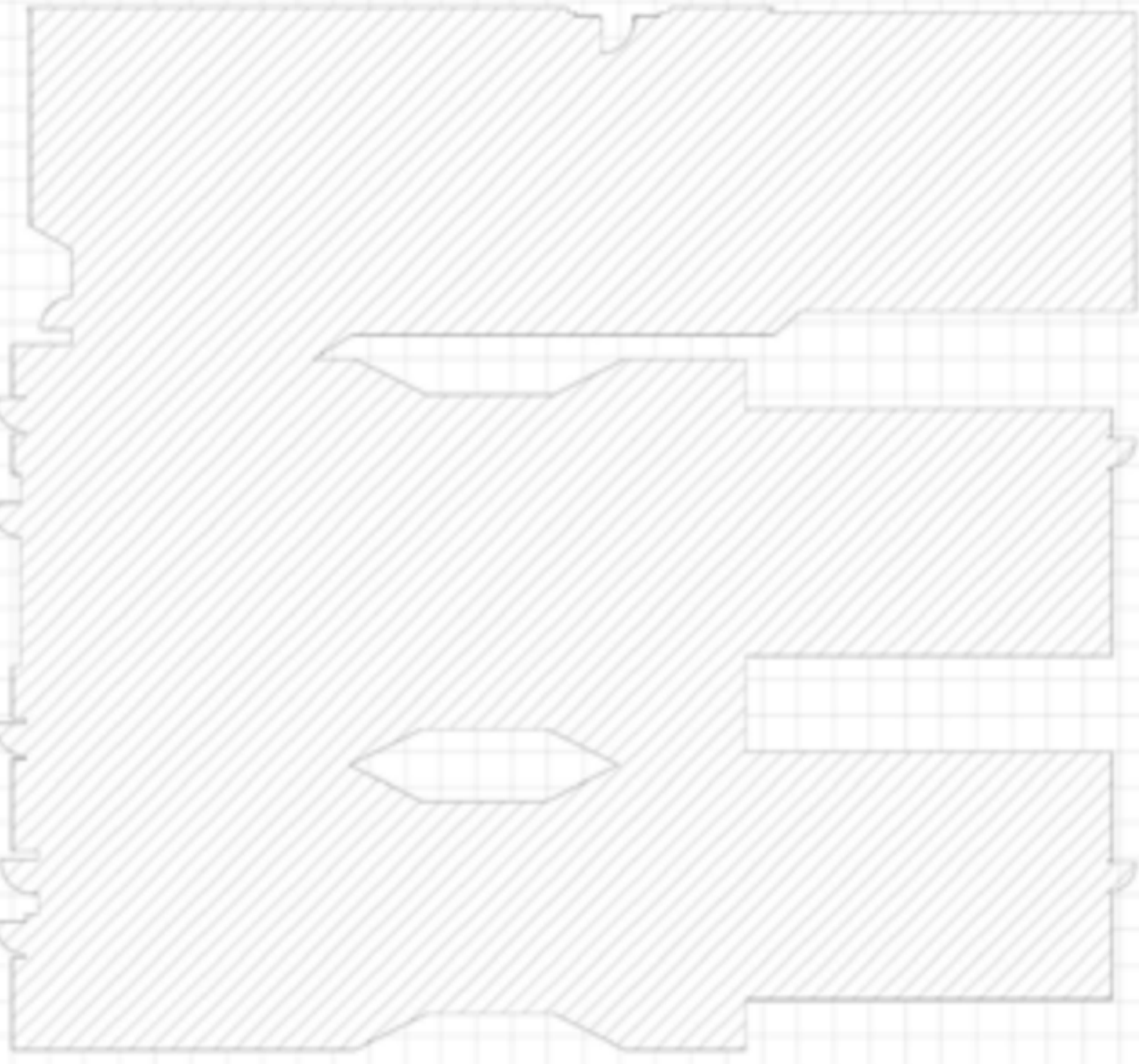
E 152st St

Courtlandt Ave

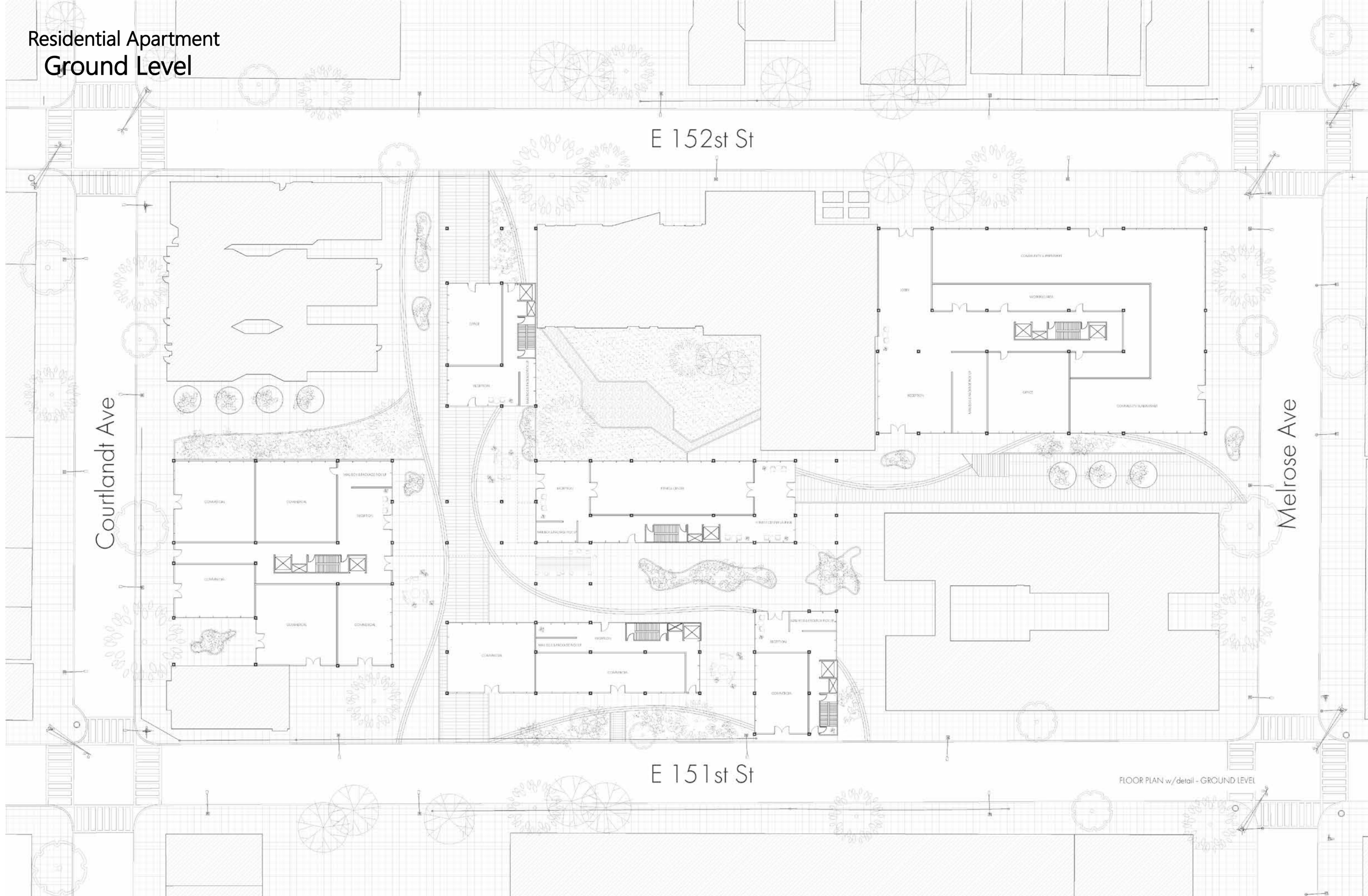
Melrose Ave

E 151st St

FLOOR PLAN w/detail - LEVEL 2



Residential Apartment Ground Level



E 152st St

Courtlandt Ave

Melrose Ave

E 151st St

FLOOR PLAN w/detail - GROUND LEVEL

Building Axonometric View



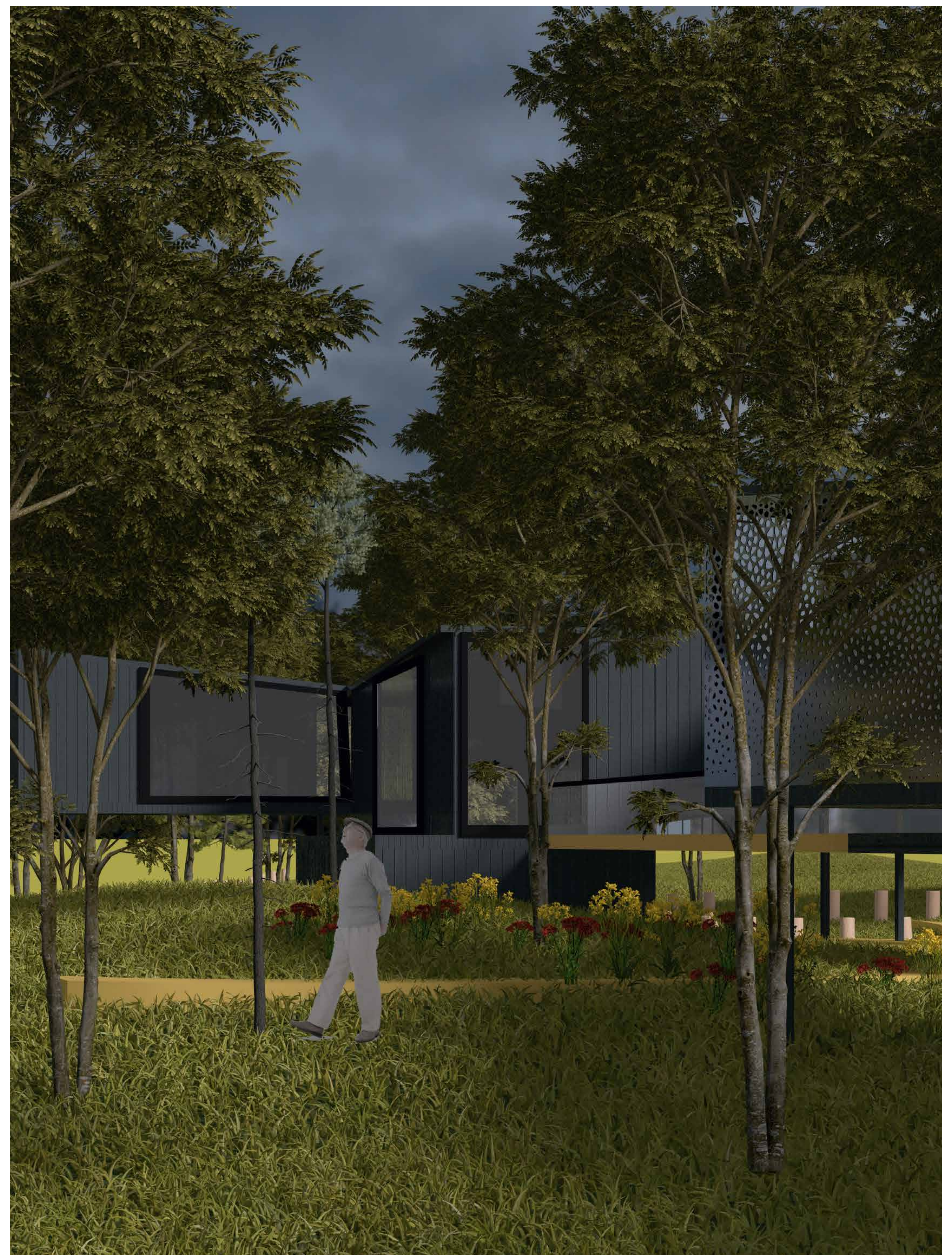
Building Section

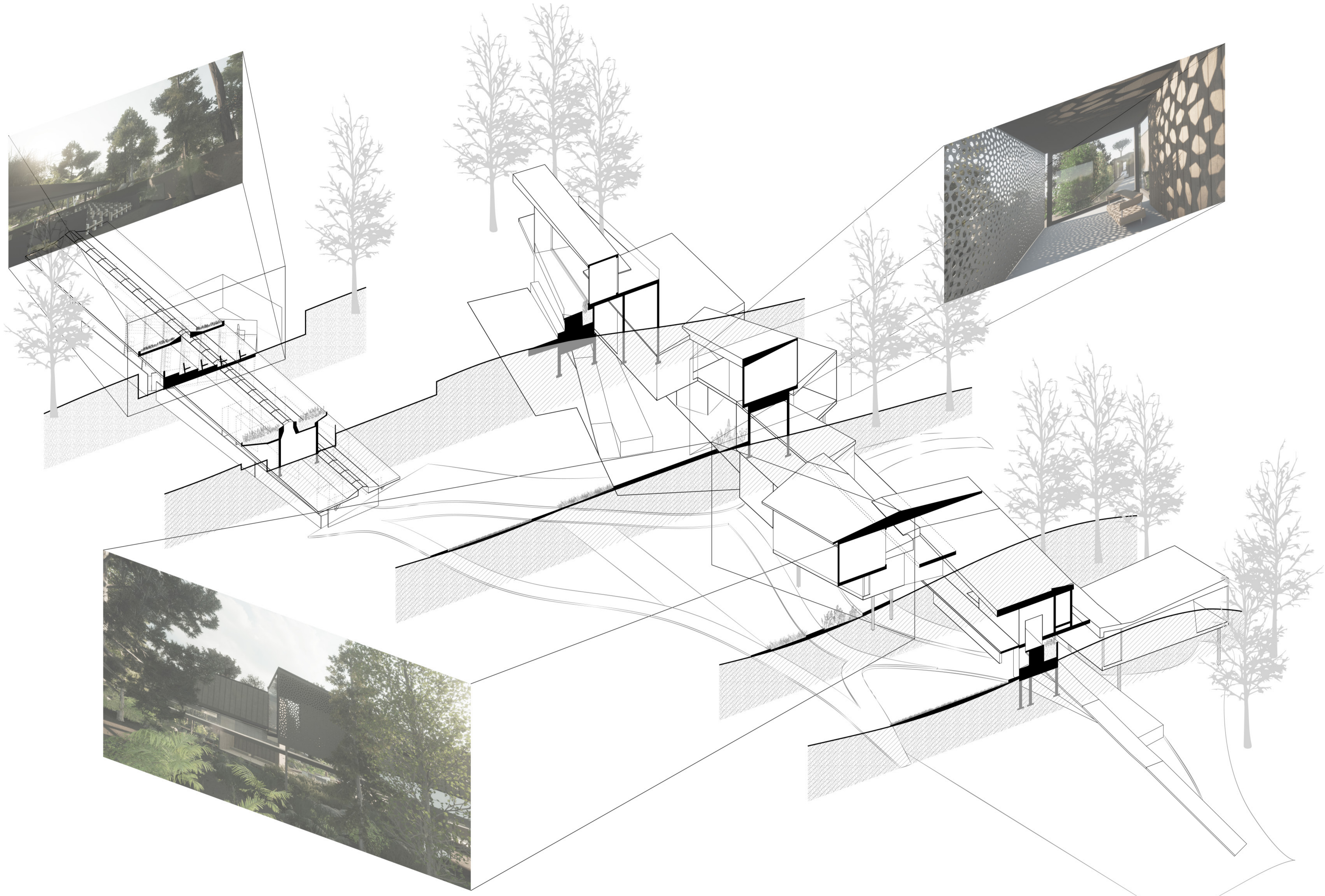


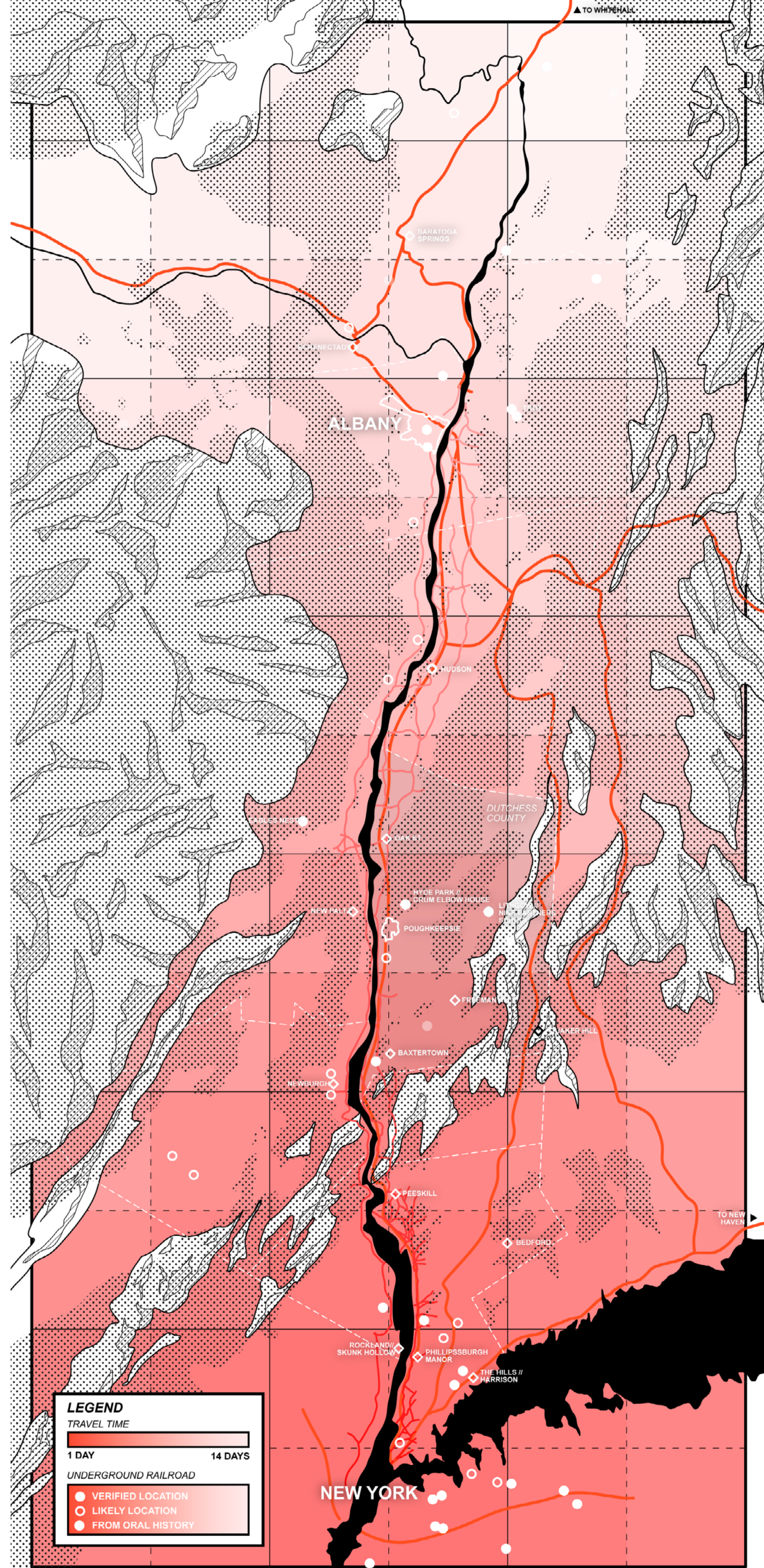
MEADERING THROUGH

KAIXI TU
LAURA BLASZCZAK

Our project proposal is adding a facility building in the existing Hackett Hill recreational trail park and adventure day camp for a multi-purpose space and reflection spaces on the history of the site. From prior research about the site, the landscape historically aided fugitives in the Underground Railroad and was often a sanctuary space for free black settlements towards the path to freedom. From our research about the site, the project is conceptually guided by the landscape condition and the experience of moving through the trees.



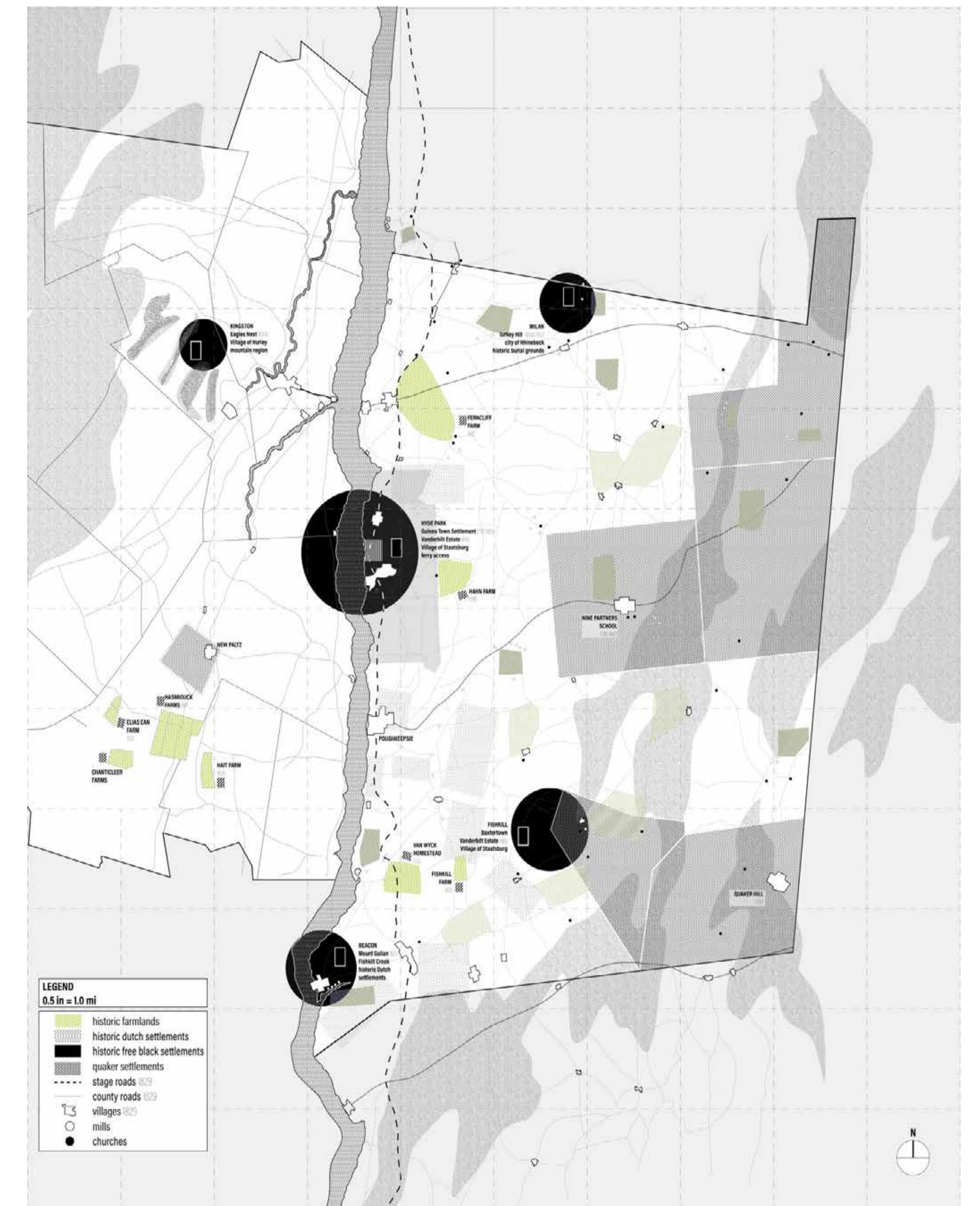




HUDSON VALLEY RESEARCH

01 HUDSON VALLEY'S MARKED AND UNMARKED REFUGE SPOTS

02



Orientation, which areas are being shown. Areas in the Hudson Valley that tended to be more friendly towards fugitives were closely related to the Quaker movements in the areas of Dutchess county shown here on this map and other important landmarks including General settlement patterns in the area Quaker settlements had significant influence on Dutchess county, especially in Beekman and Nine Partners patents that date back to 1705. The area was settled by the Dutch as early as

1683 which originally was Wappinger territory for thousands of years.

The Quakers provided refuge and sanctuaries for enslaved people starting in 1728, [point out the areas on the map] Landmarks like the nine partners school and Quaker hill were known to coordinate and facilitate Underground Railroad movements and safe passage for people escaping the plantations. Similarly Quaker communities in the surrounding areas like in Germantown as early as 1688, were already drafting anti-slavery petitions in the area.

PROJECT RESEARCH AND CONCEPTUALIZATION

01 IMPORTANT CONCEPT MODEL AND COLLAGE

02 CRITICAL COLLAGE ILLUSTRATING THE KEY SPATIAL EXPERIENCES COLLAGE



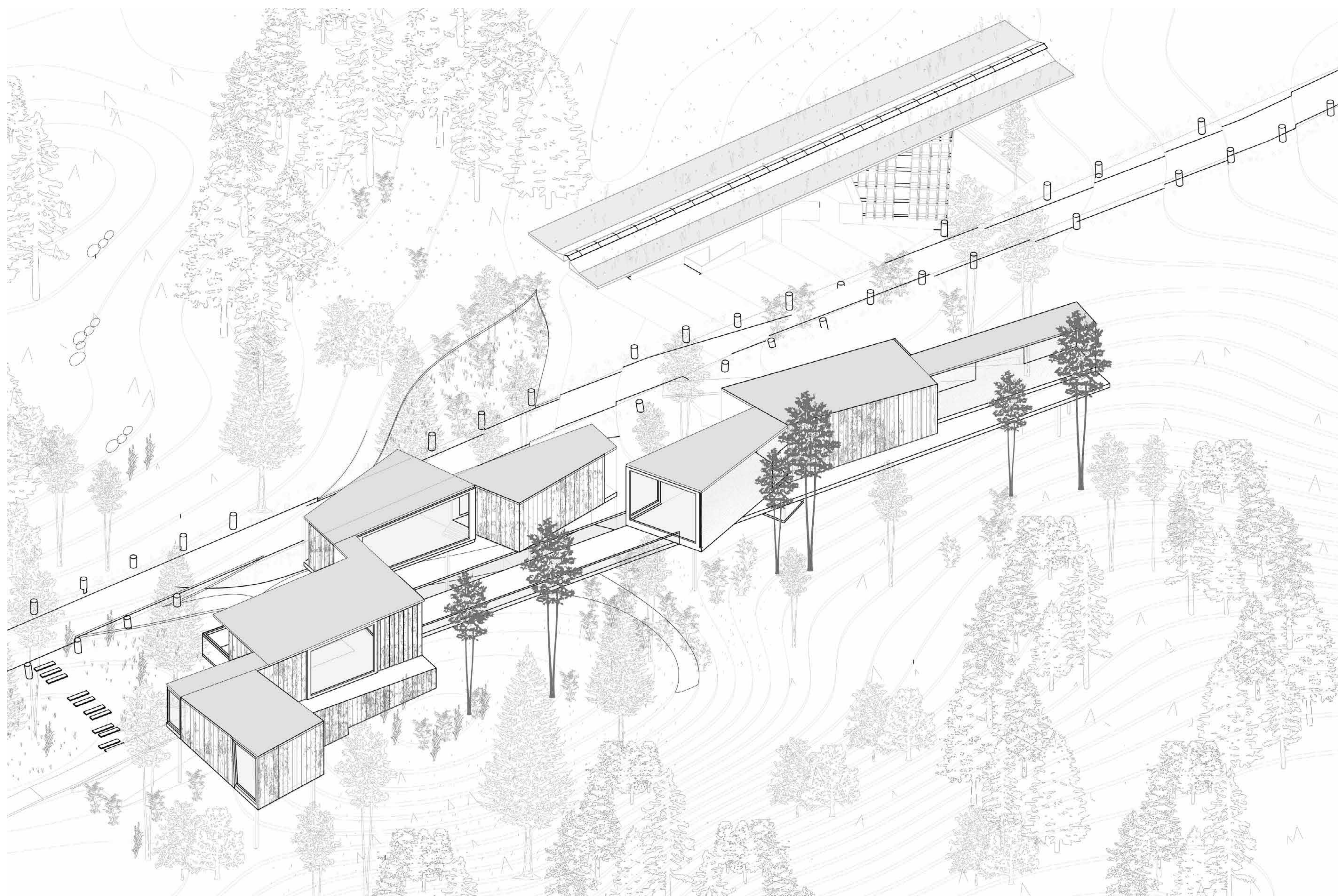
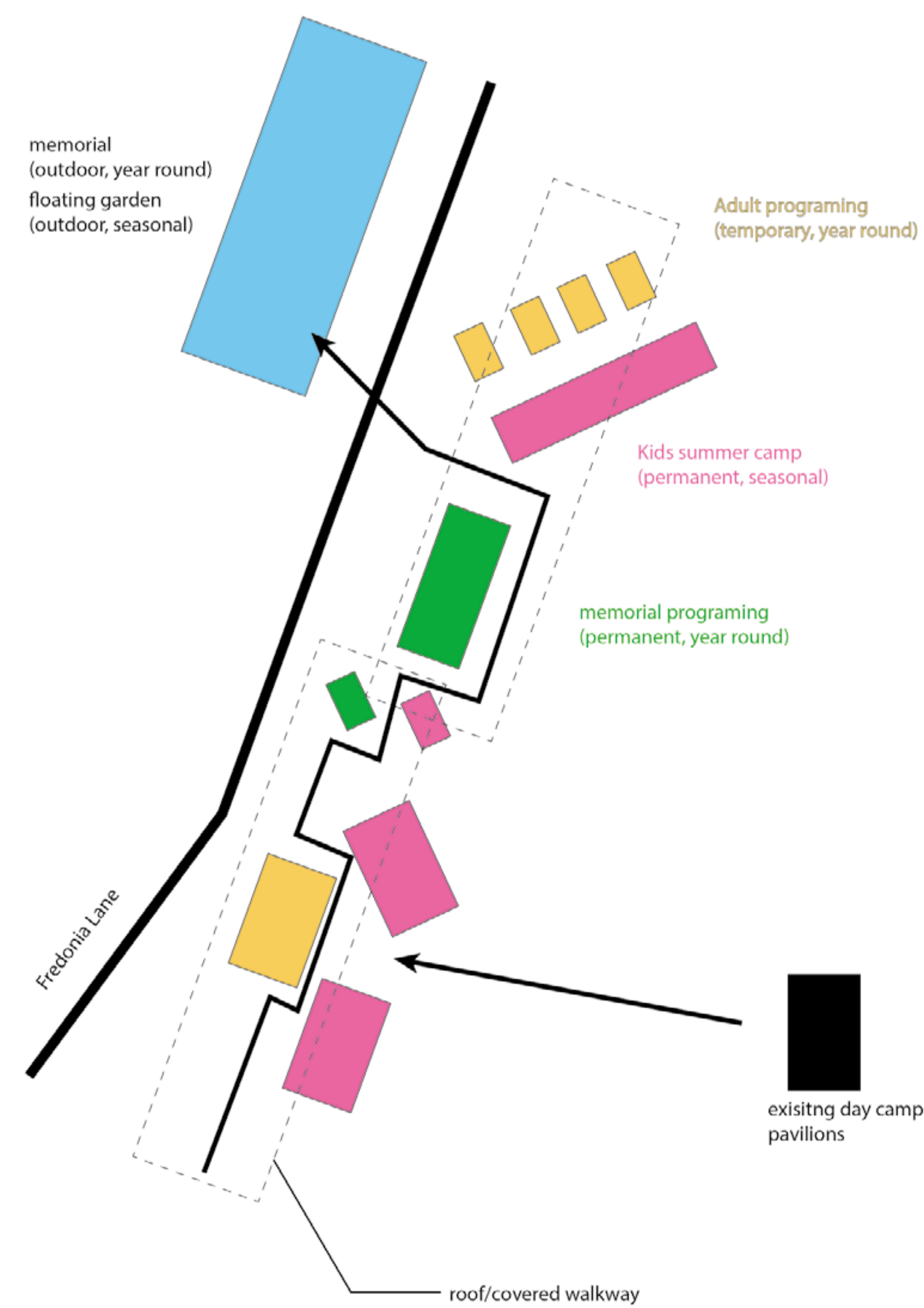
We are interested in floating through the landscape and meandering through the trees, not knowing where the space that's being created ends or starts, a kind of hide and seek in the landscape.

This is a model inspired from this collage, a back and forth between the visible and invisible, and the sacred light and shadow effects created by the buildings and trees are the most important inspirations we got in this model.

On both sides of the freedonia lane, two architectural masses engage with this historic path in a very simple geometric relationship. The space on the right is intended to restore the sense of space in the collage as we discussed previously, where the building meanders through the forest, restoring the concept of hide and seek by playing with visibility and invisibility

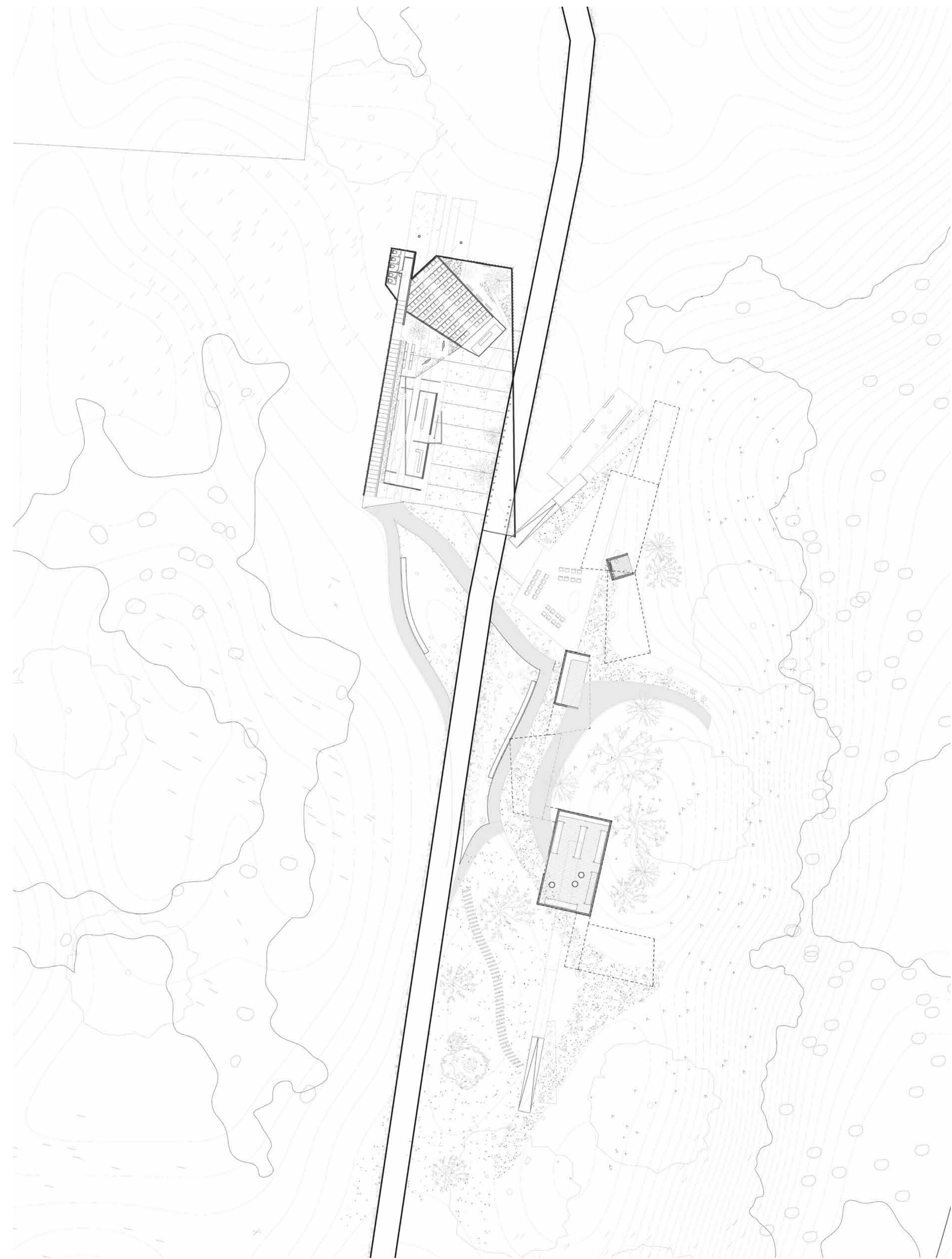
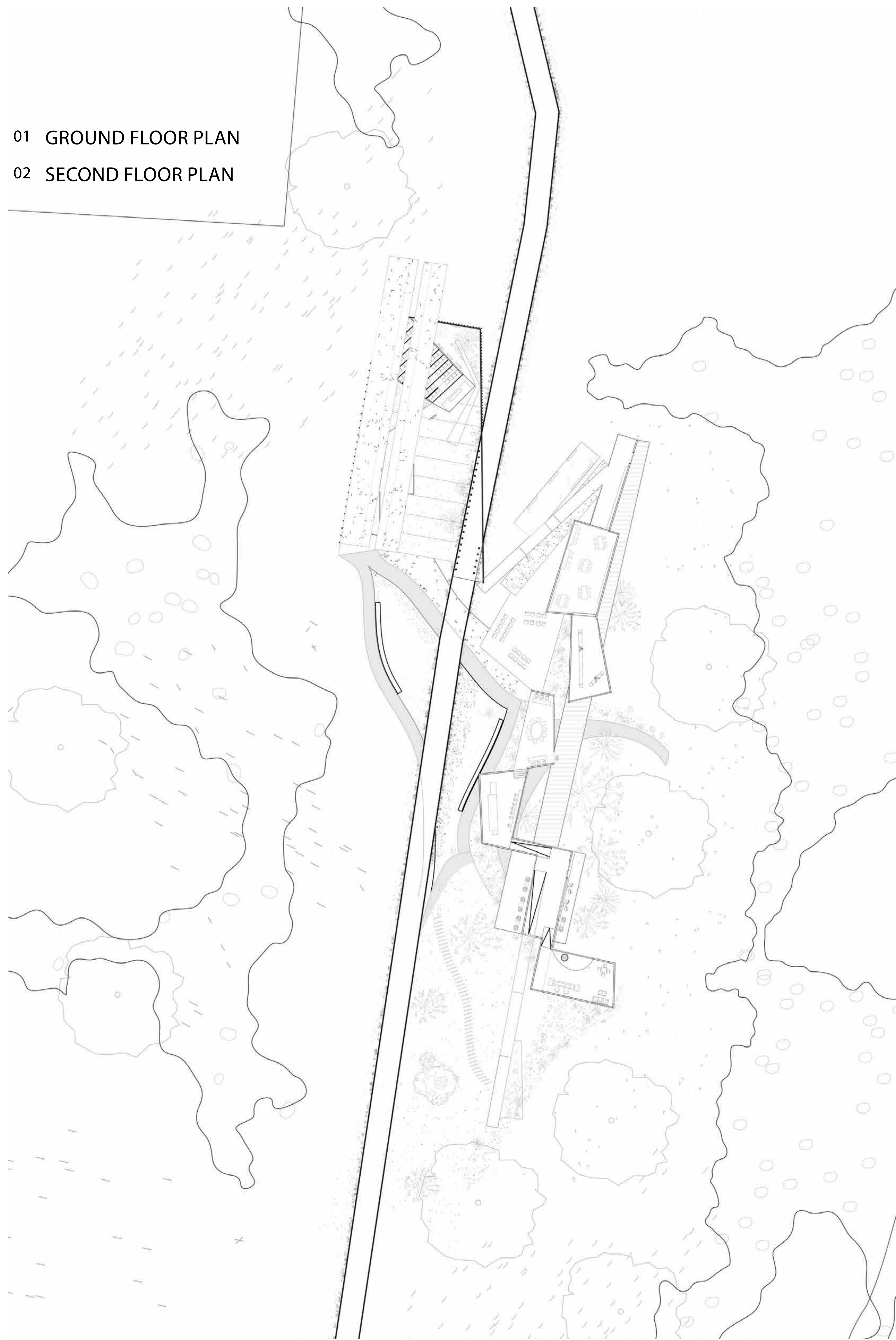
As shown on the site plan, we can see that we created a path from the camp site to the building, where people on the camp site can walk over a paved stone path to get to our site. We can also see in this render that people can see a building hidden in the forest at the foot of the hill, and they are induced to enter by a stone path.

Meanwhile, the freedonia lane itself is decorated with short wooden piles and stones, marked in a very natural way.



01 SITE AXON
02 PROGRAM DIAGRAM

01 GROUND FLOOR PLAN
02 SECOND FLOOR PLAN

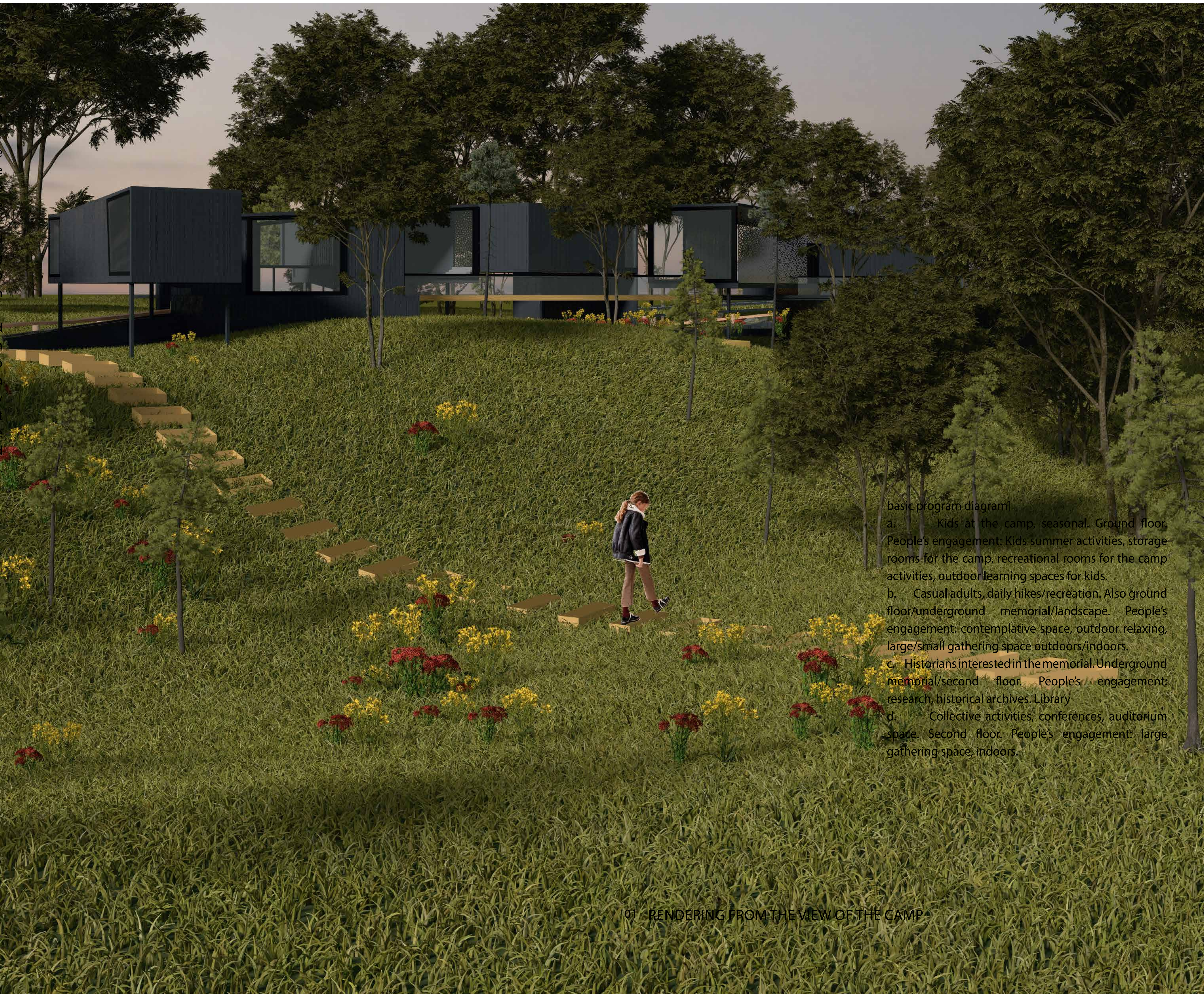


The exhibition space is not completely linear. We intentionally designed a shifted wall to intersect with the linear excavation.

The shifted walls and opening connects with the planter box and also returns to the feelings that the first collage indicates. See from the section perspective here. Above and below ground seem to be separate but inverse to each other.

We simply distinguish between vegetated areas and some platforms for outdoor activities, again using the freedonia lane as an axis. There are basically two outdoor activities spaces, which is also used for an extension of the interior function.

In thinking about the sanctuary space, we wanted to design a structure that would be grounded in the current activities of the site with a sensitivity to the past. Historically, Fredonia Lane was used as a transition space where people would find community and either stay or move to other places. The project thus is a conditioned walkway that is meant to guide the visitors' experience through the landscape and anchor the summer day camp activities of the site. [explain the different user types]



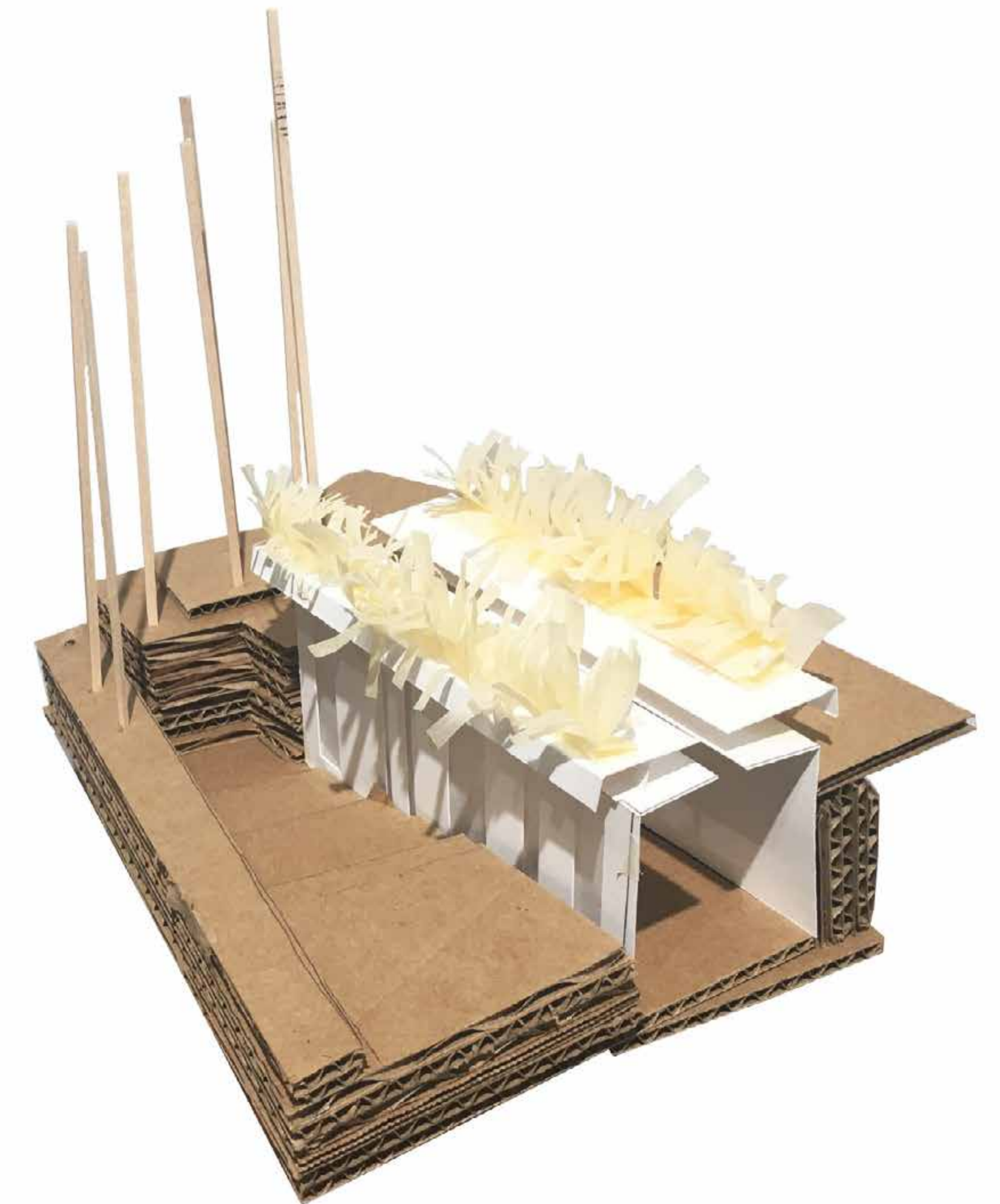
- basic program diagram]
- a. Kids at the camp, seasonal. Ground floor. People's engagement: Kids summer activities, storage rooms for the camp, recreational rooms for the camp activities, outdoor learning spaces for kids.
 - b. Casual adults, daily hikes/recreation. Also ground floor/underground memorial/landscape. People's engagement: contemplative space, outdoor relaxing, large/small gathering space outdoors/indoors.
 - c. Historians interested in the memorial. Underground memorial/second floor. People's engagement: research, historical archives. Library
 - d. Collective activities, conferences, auditorium space. Second floor. People's engagement: large gathering space, indoors.

FINAL PROJECT VISIONING

01 SITE MODEL



02 SECTION MODEL OF UNDERGROUND AUDITORIUM



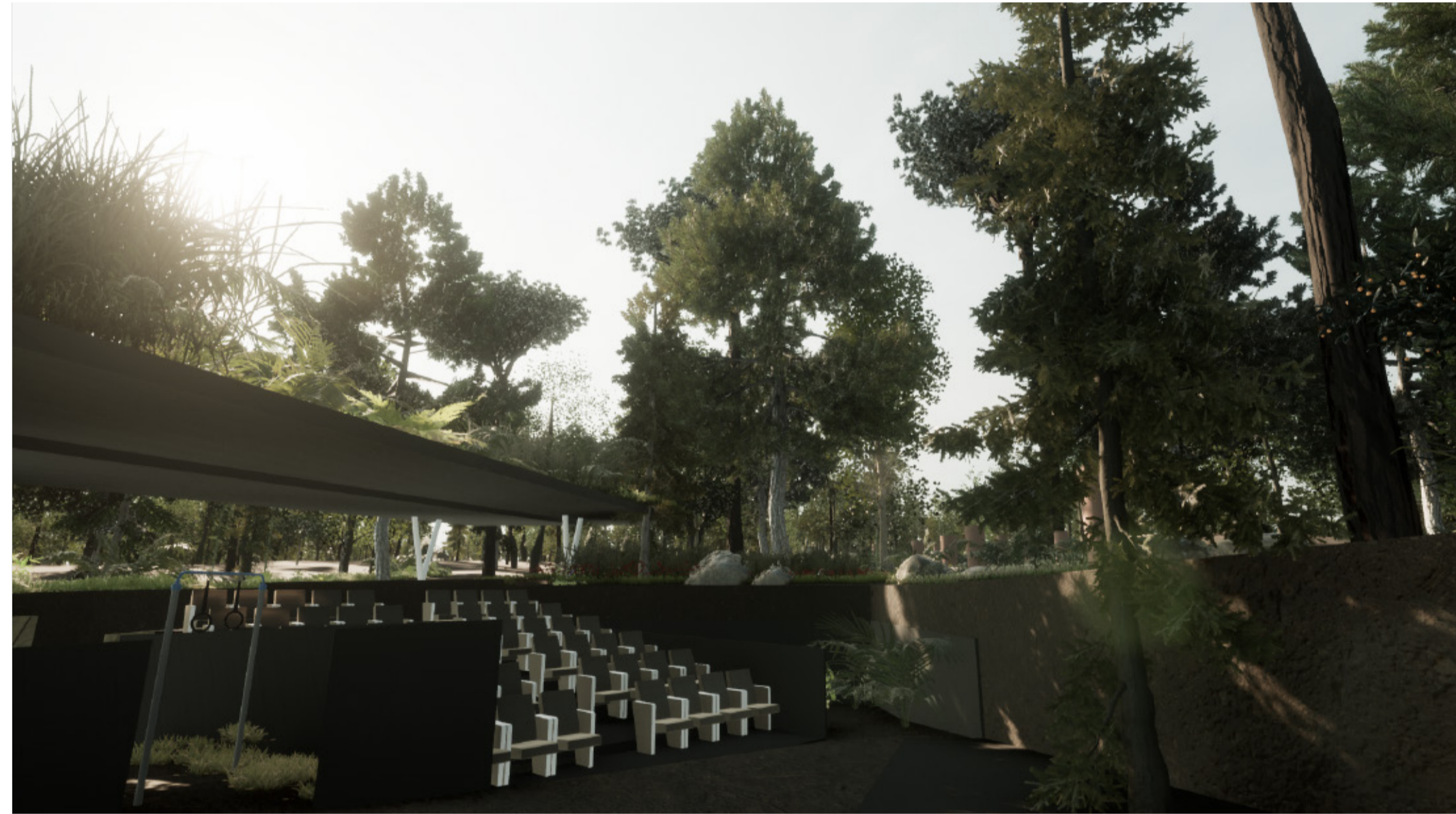
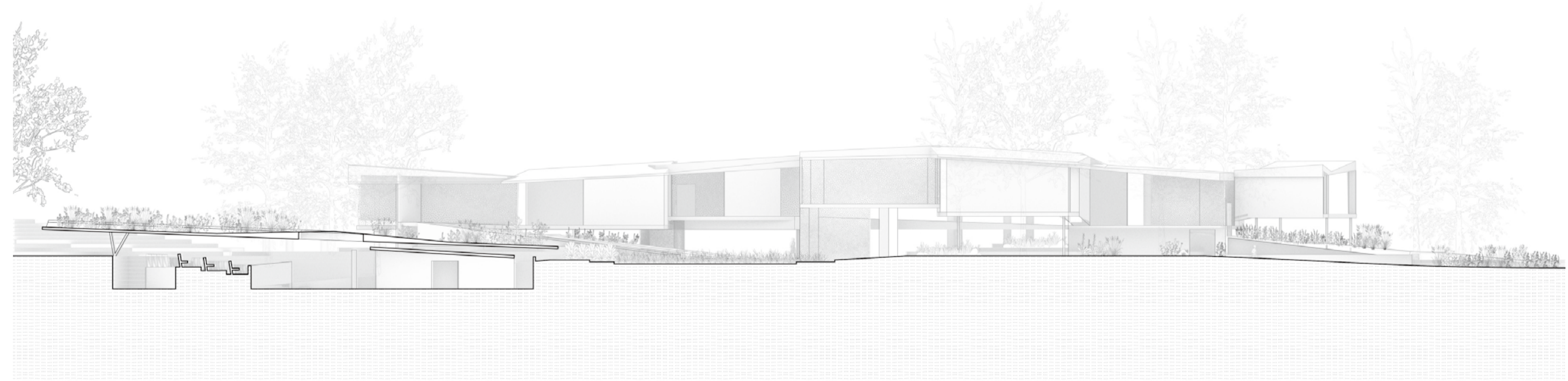
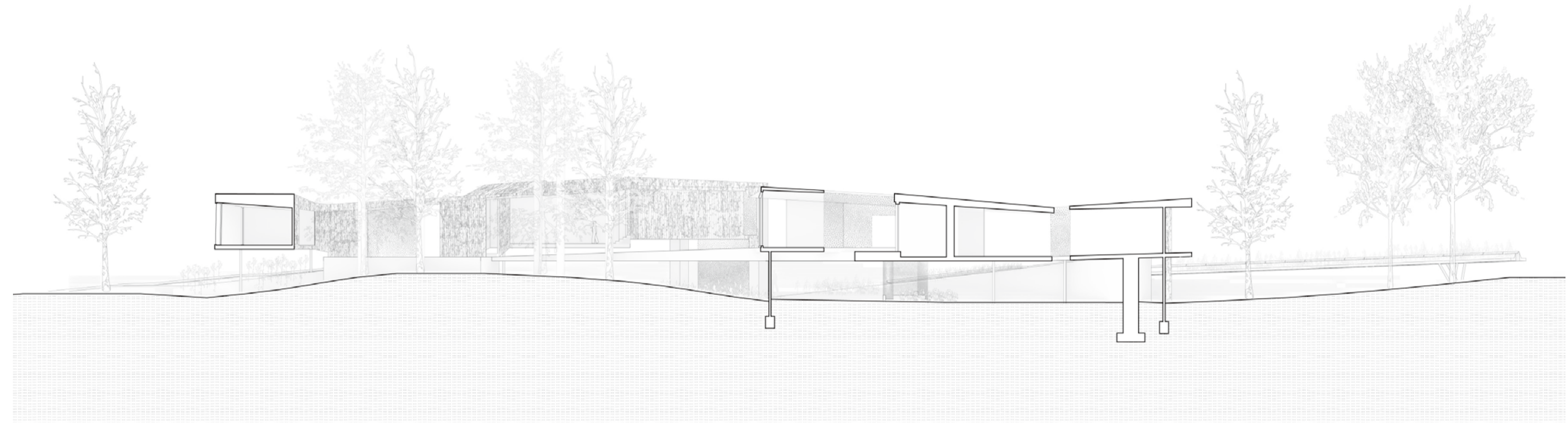
Continuing on this theme of meandering through the trees, this is an analysis drawing of different densities of trees and speculative pathways through the trees as well as the fragmentation of views that's produced in the diagram on the right.

The initial studies for the massing were meant to address sanctuary at a local and domestic scale, in reference to the historic free black settlement that was at the site in the early 1800s.

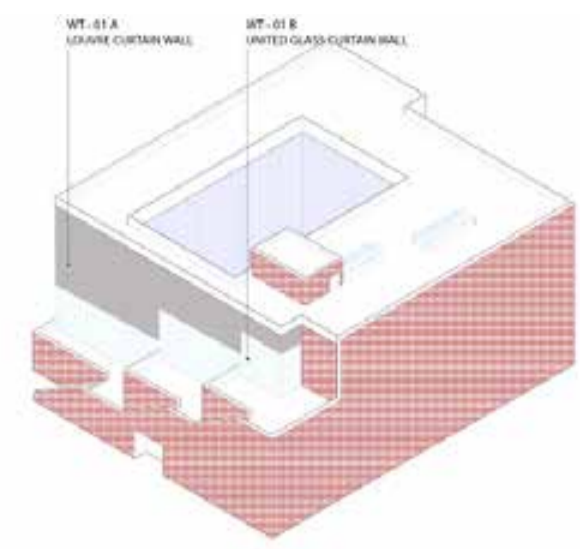
For our massing we are interested in situating the project parallel to the historic Fredonia Lane and bridge a connection between the day camp and the hiking trails nearby while referencing the historical meaning of the site with an underground contemplative space that is on the other side of Fredonia lane.

The rendering below are showing the light effects of the perforated windows as well as the open auditorium surrounded by trees. The sections are showing the continuous roofs that are ups and downs with a gentle slopes. The second section is showing the underground area as an inverse version of the meandering experiences.

We can observe that the architecture exists in the forest with a very modest gesture, with hidden materials, mirrored materials that allow the architecture to hide reverently in the nature.



07 Building System Integration

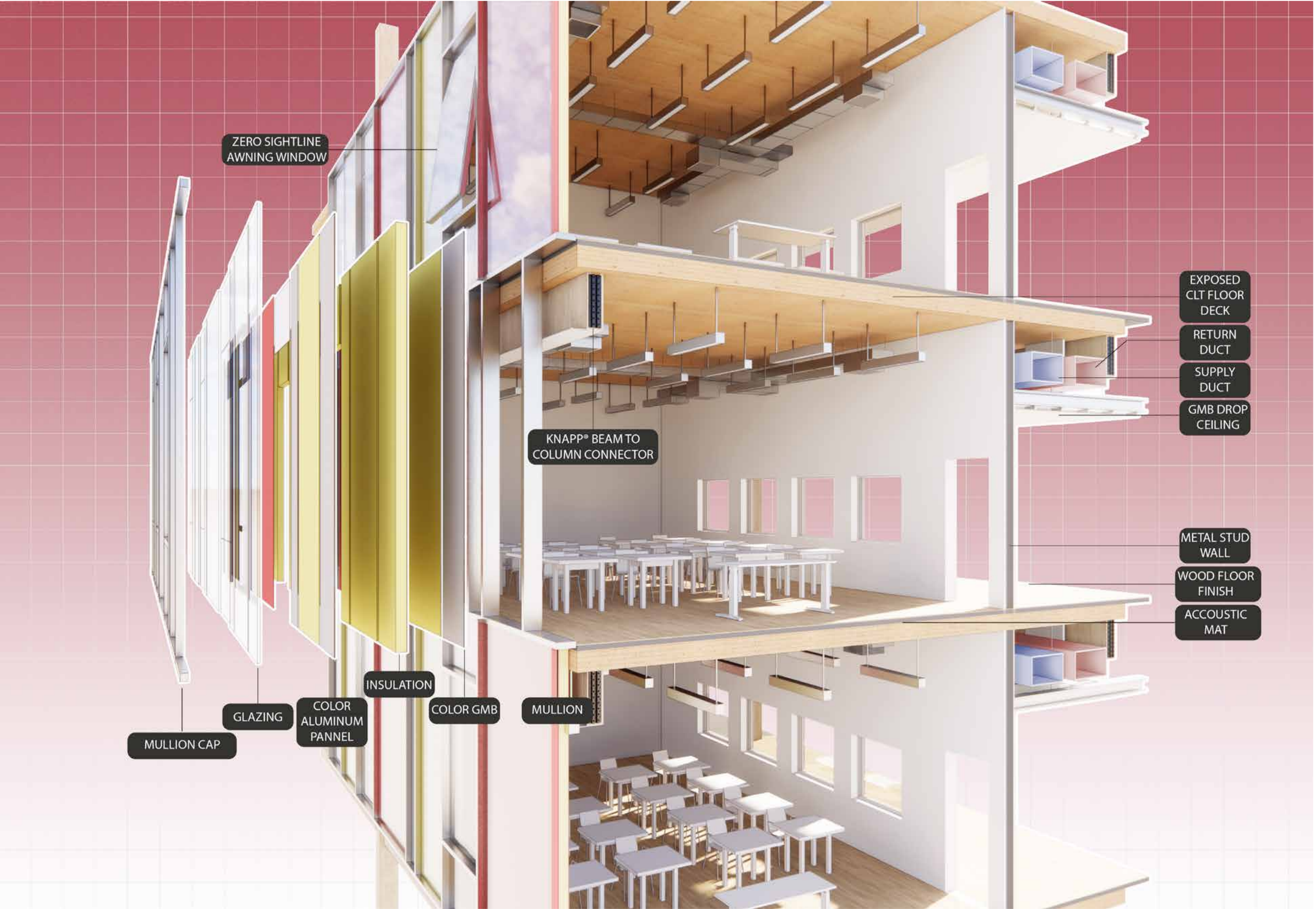


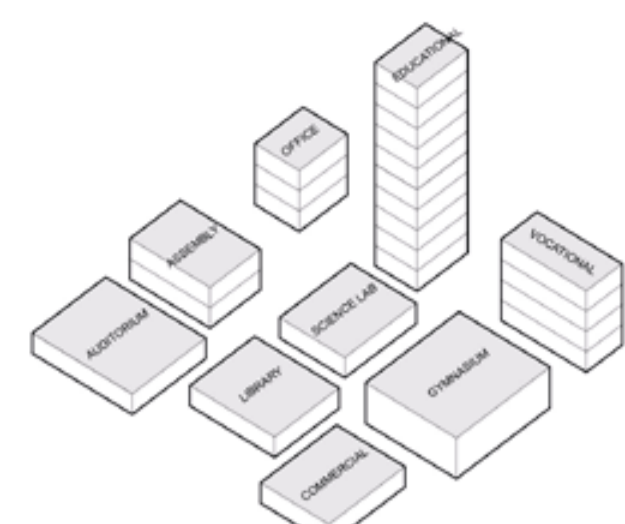
March Building Technology
 Tech 3&4 2021-GSAPP
 Group Work, Supervisor: Berardo Matalucci

Building is the capstone course of the Master of Architecture technical sequence. The course brings together key areas of previous coursework in life safety, fire protection, environmental systems, structure and enclosures. Knowledge, concepts and principles on these subjects learned in previous Tech courses are applied in a design-based project.

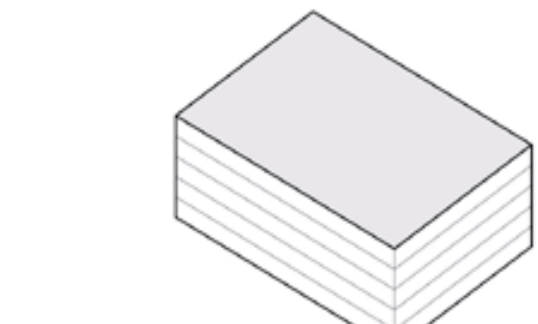
The construction of a building is essentially a part-to-whole problem. It involves the complex integration of multiple building components, systems and processes into a synthetic whole. Architects, engineers, fabricators and erectors work together to develop each respective part. Also, architects hold the key role in ensuring the successful synthesis of these multiple parts into the whole. Through a better understanding of all systems, architects are able to integrate systems more completely with greater economy, elegance and efficiency. A well-integrated building is an efficient one, an elegant one, and most importantly, a well-integrated building gets built.

The intent of the course is an intensive introduction into the application of technical systems through design, development and integration. The course objectives are to establish an understanding and experience in the construction of the technical aspects of architecture. Structural form, environmental systems, materials, construction methods, and fire protection elements are developed systematically and integrated with one another. This is achieved through the development of analytic skills, basic principles and their applications. This course takes a fresh look at each system within a building. What are the key drivers, requirements and intentions around each system? What are techniques to rapidly iterate around design ideas and strategies? This course focuses on a developed and applied understanding of how the parts of constructed form get put together.

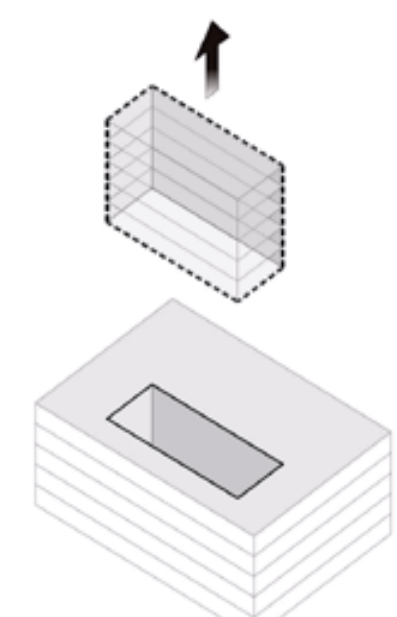




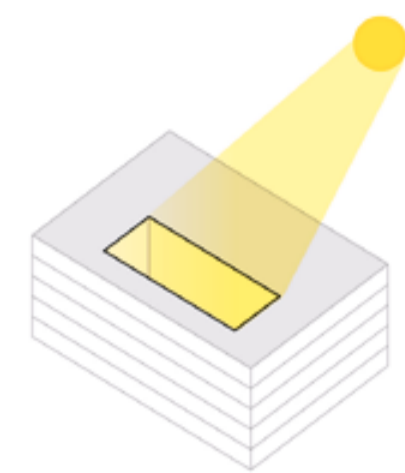
01 PROGRAM REQUIREMENTS
School requires diverse program types.



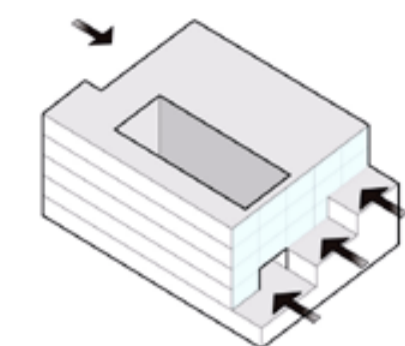
02 MASSING & PROGRAM ORGANIZATION
Programs are organized vertically and horizontally to retain all required adjacencies.



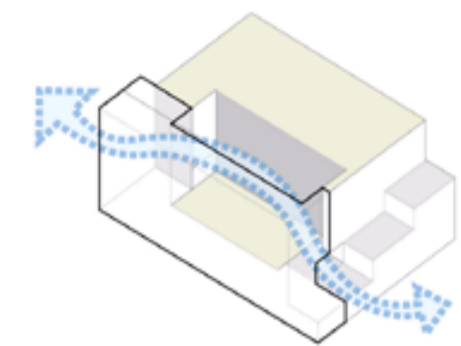
03 CARVE
Programs are stacked around a central atrium as an organizing principal.



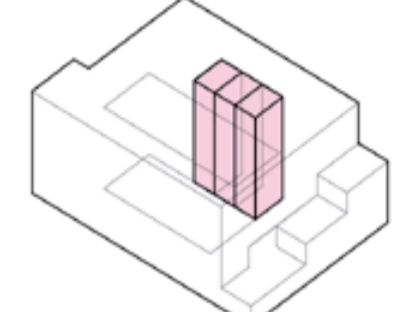
04 COURTYARD STRATEGY
An open courtyard welcomes sunlight and fresh air, all integrated in a sustainability scheme.



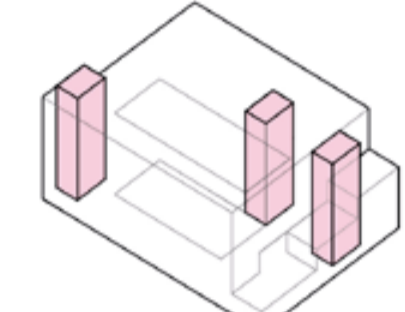
05 SETBACKS AND WINDOWS
The setbacks push the volumes inward to create spaces for windows and grand entrances. These moves also accommodate mandatory mechanical and zoning requirements.



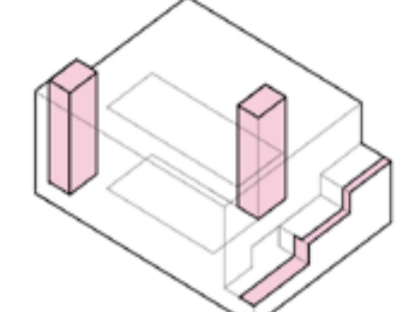
06 INVITE
The open lobby and courtyard on the first level invite passage, social interactions, and natural elements.



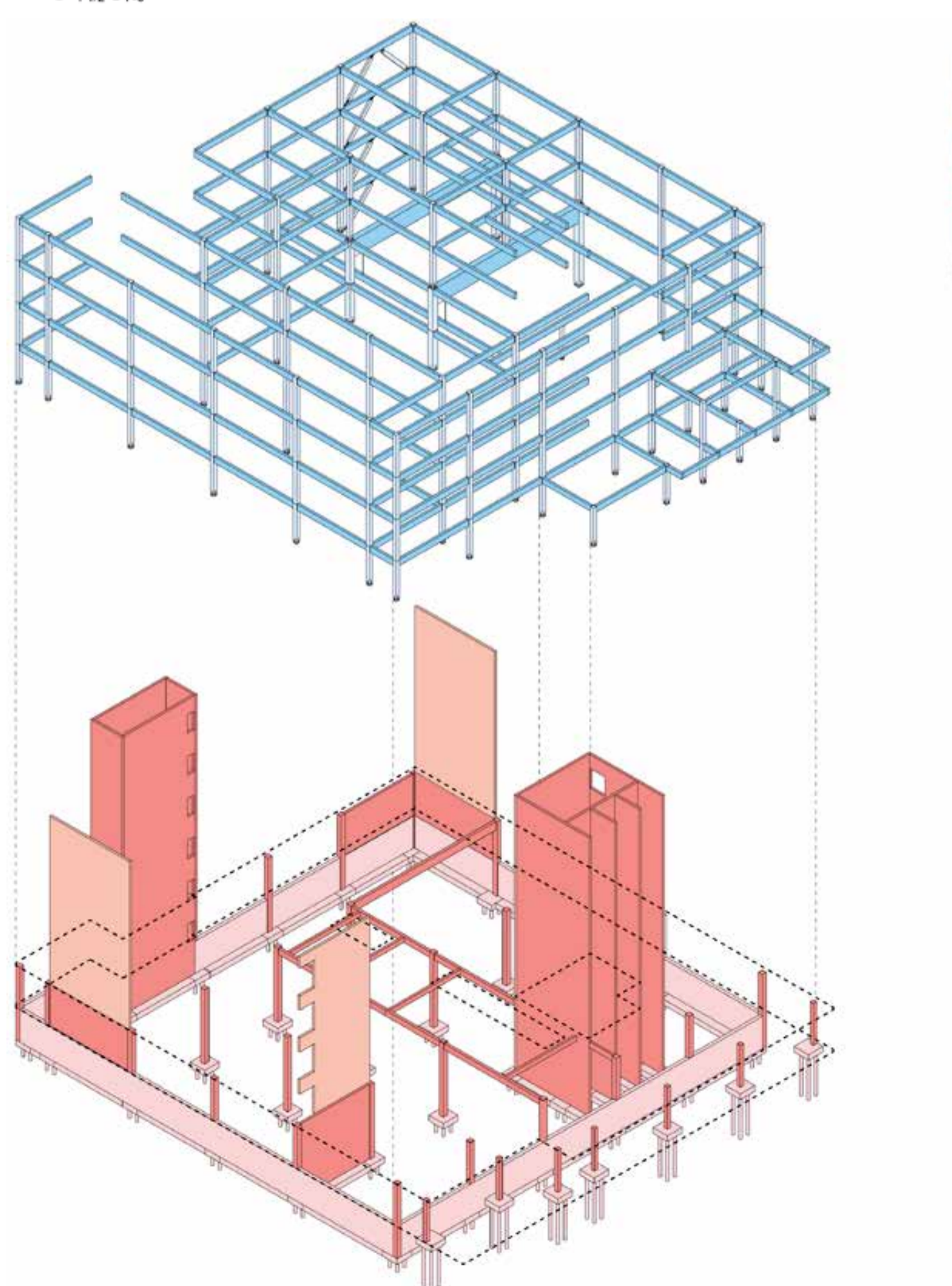
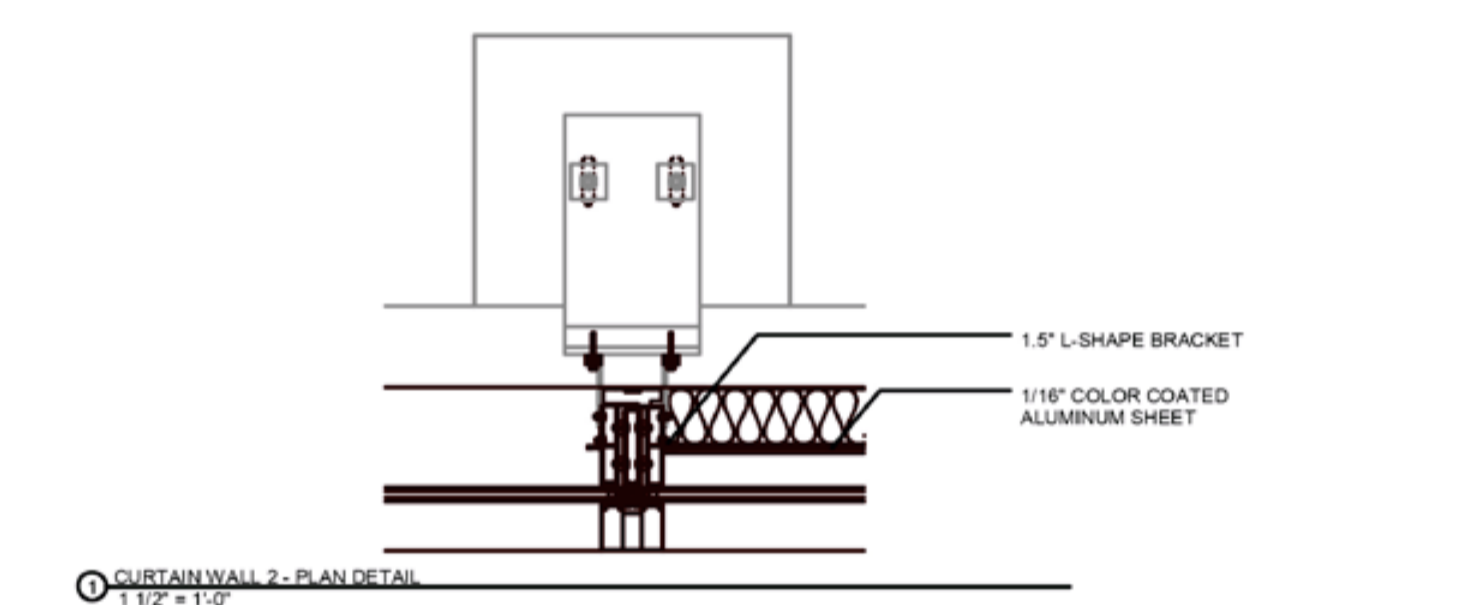
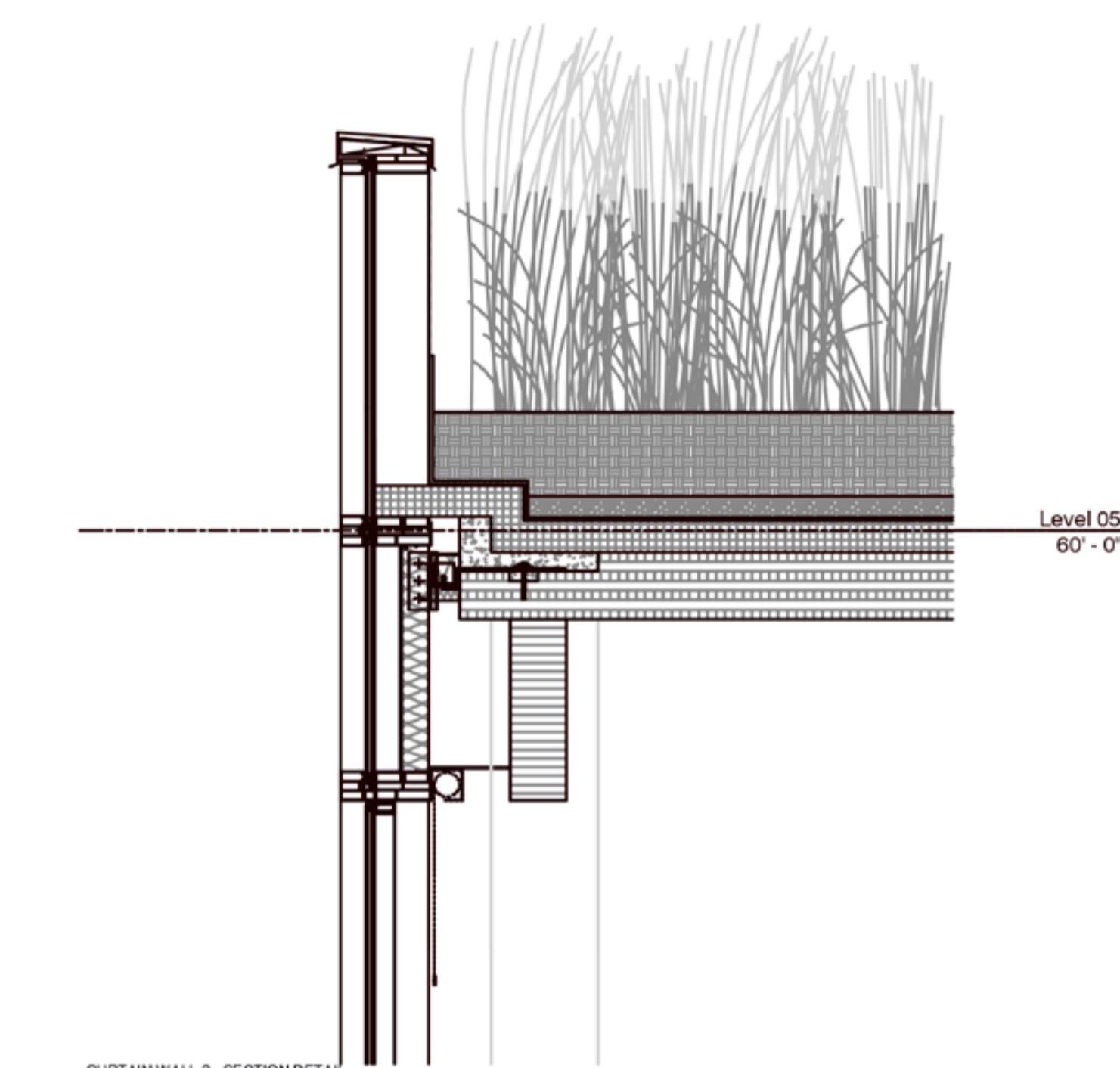
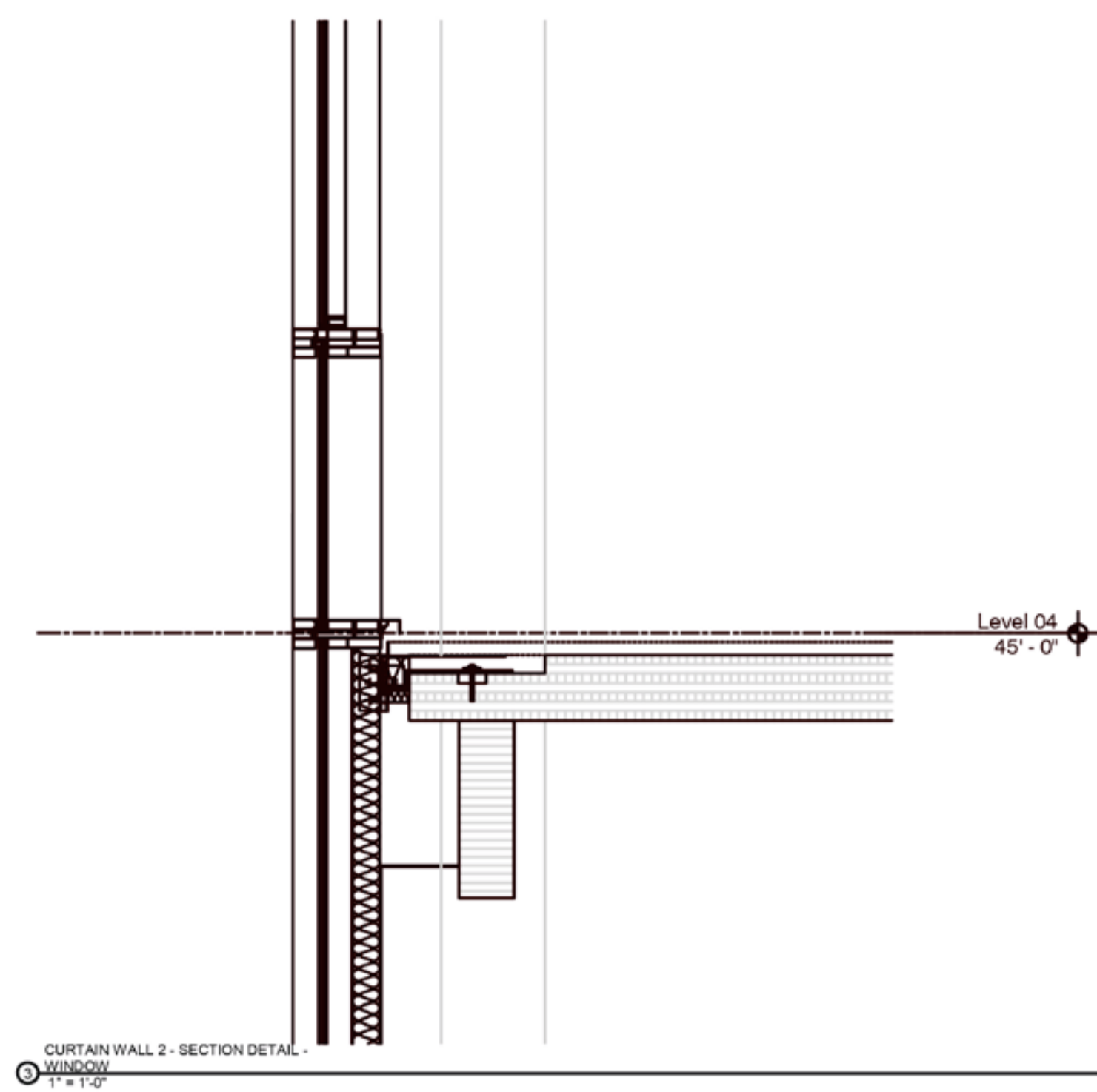
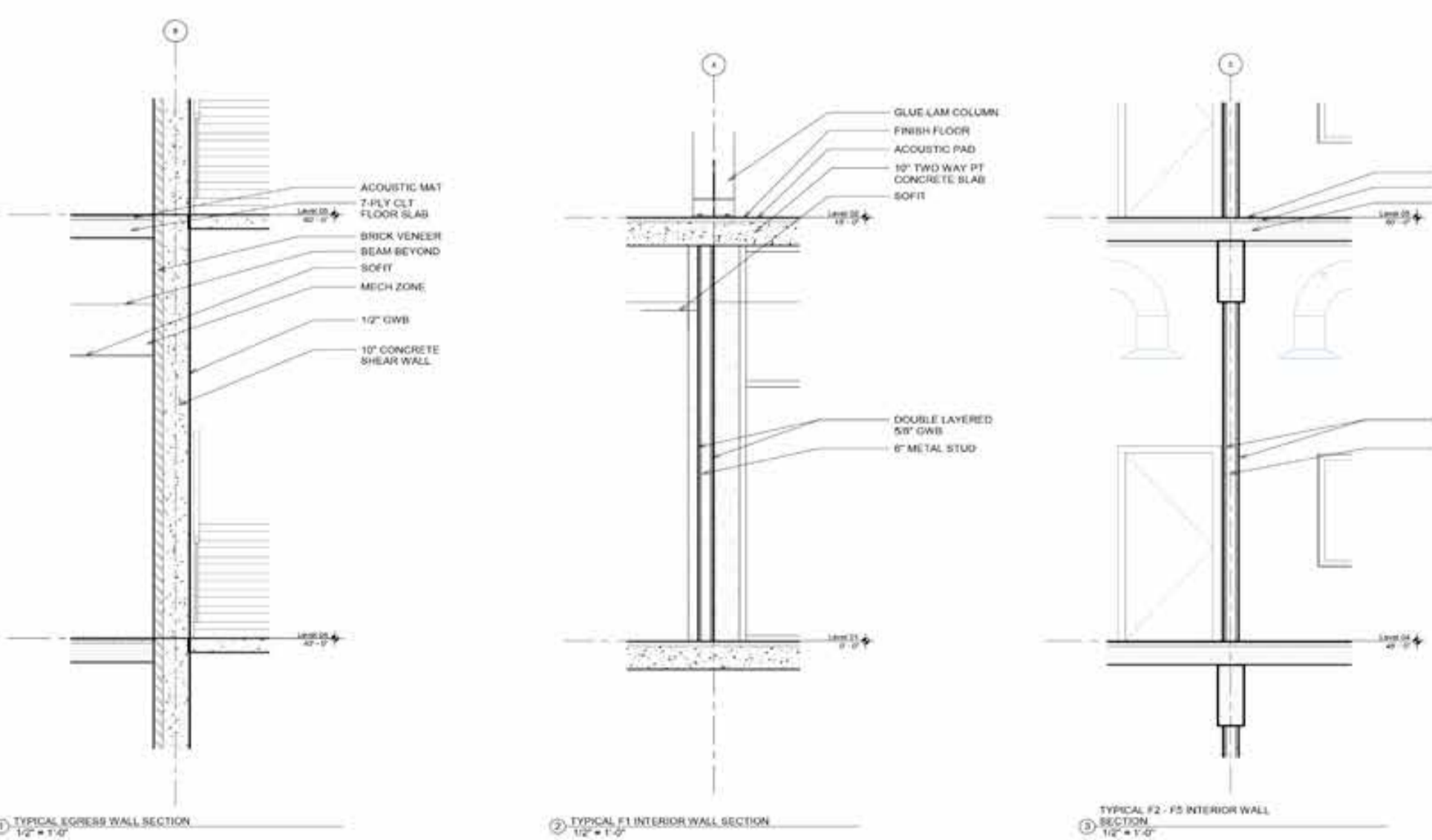
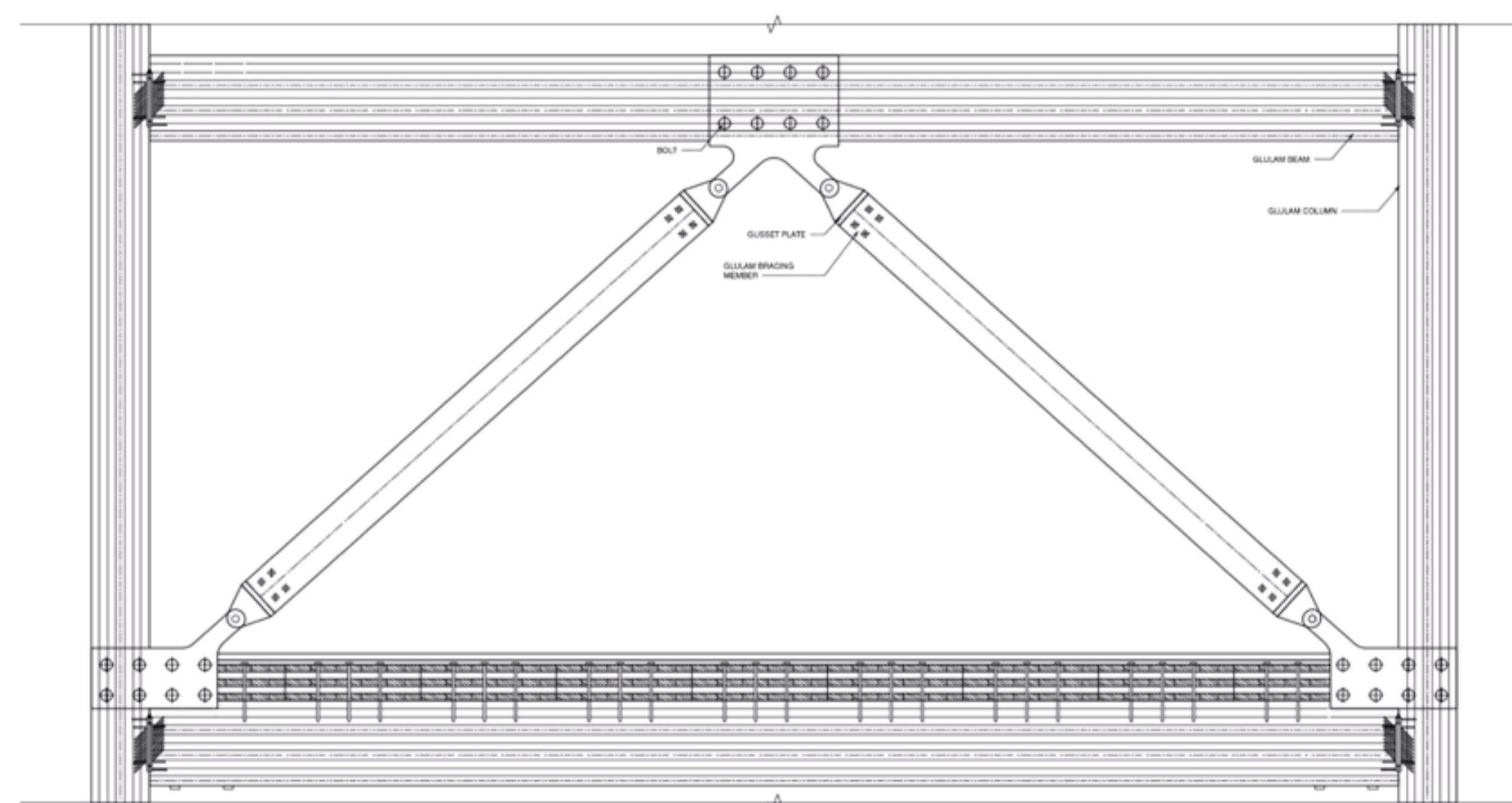
07 INTERIOR EGRESS CIRCULATION
Egress locations are calculated to accommodate the load capacity of each floor.



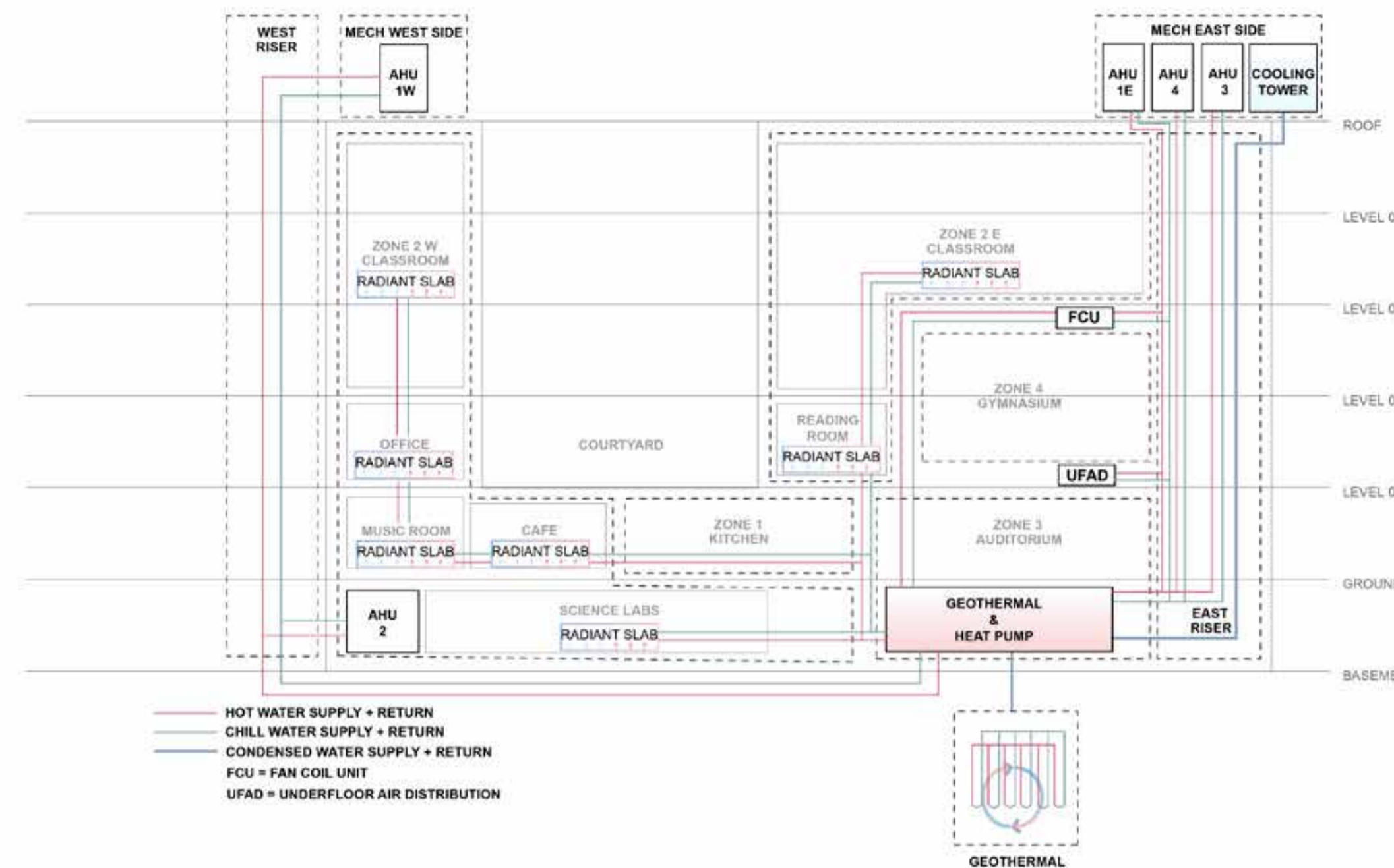
08 MOVING TWO EGRESS TO OUTSIDE
Egresses are strategically relocated to effectively evacuate people.



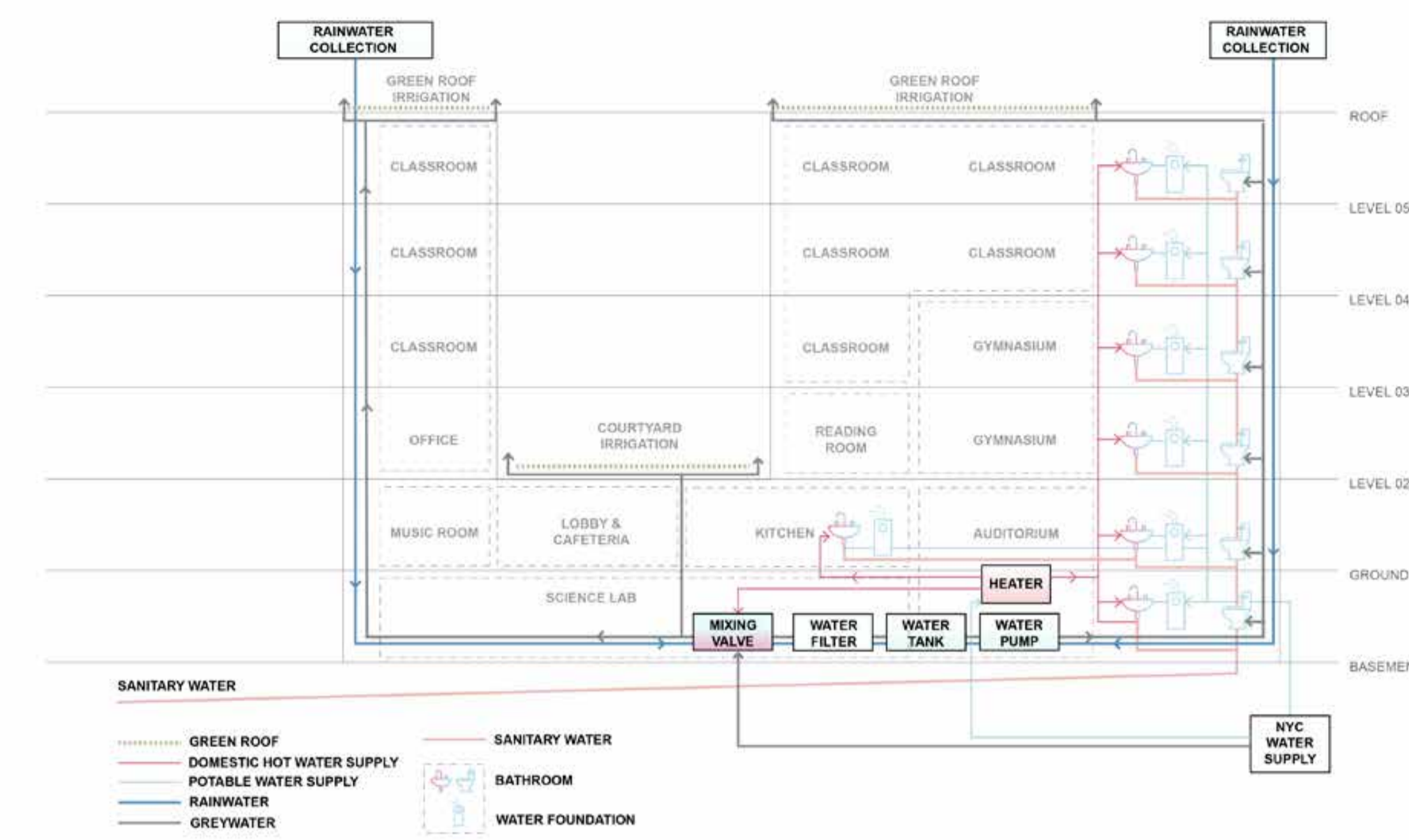
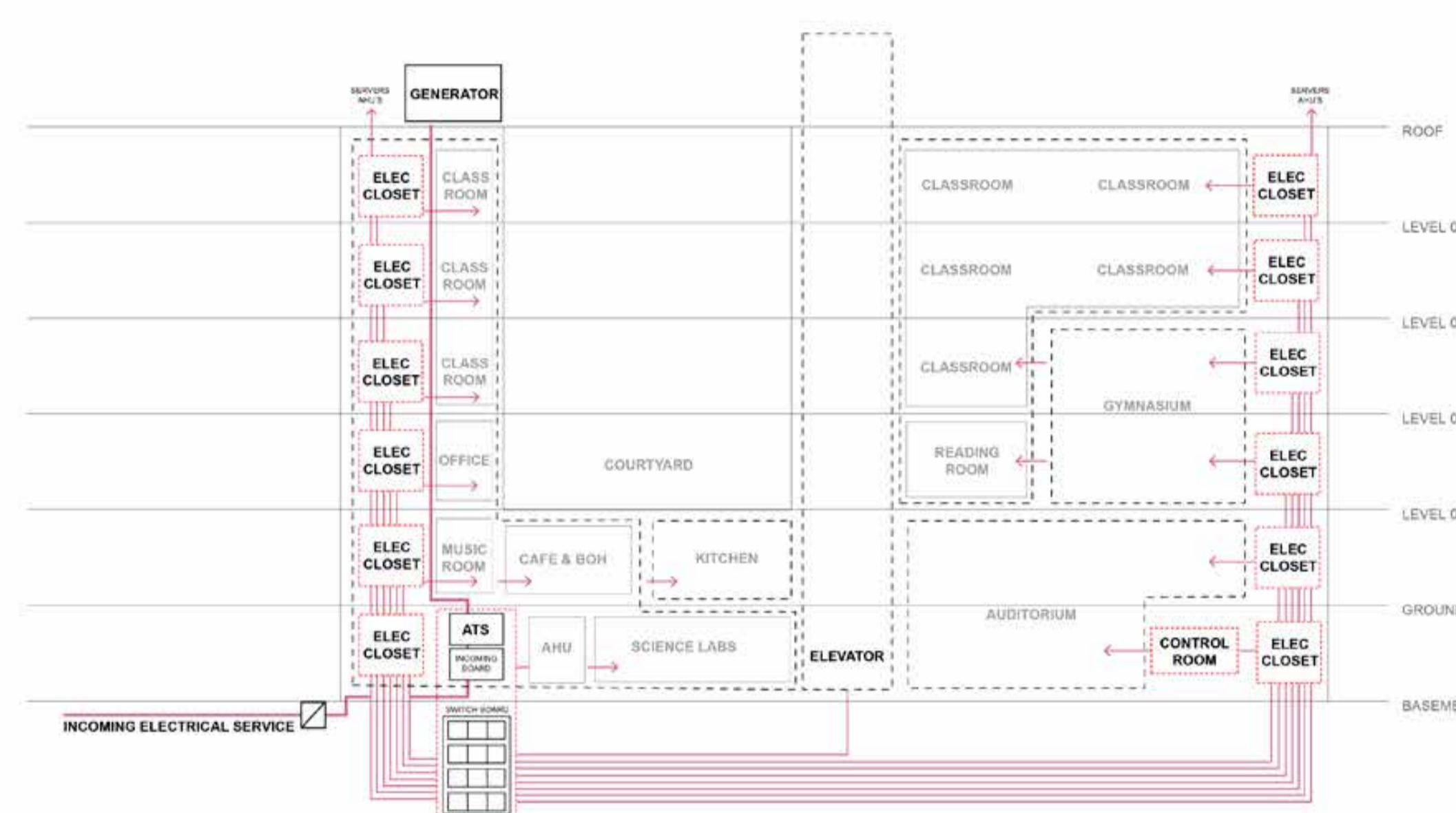
09 TRANSFORM ONE EGRESS INTO PUBLIC SPACE
One egress outside the building facade can also be a public space.



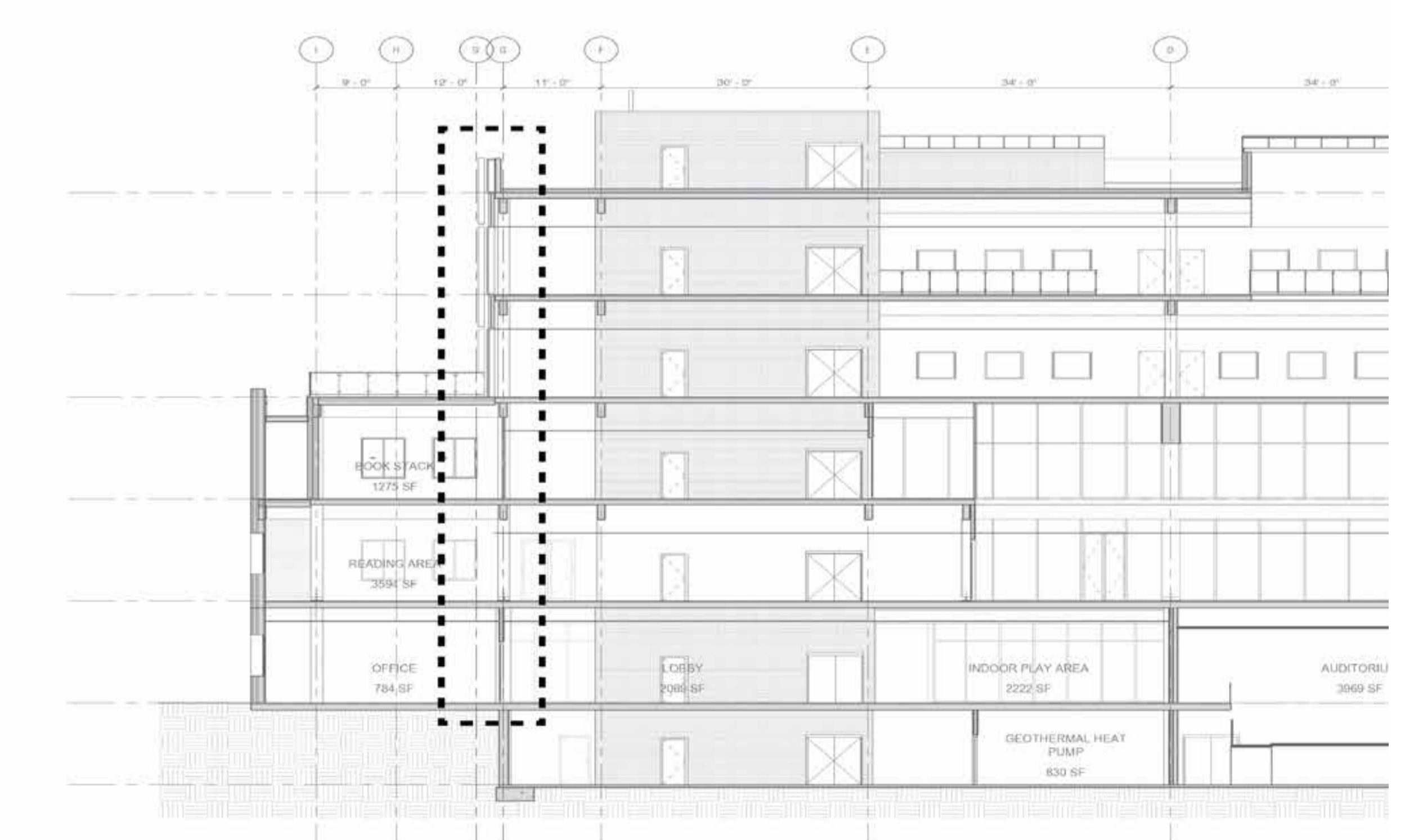
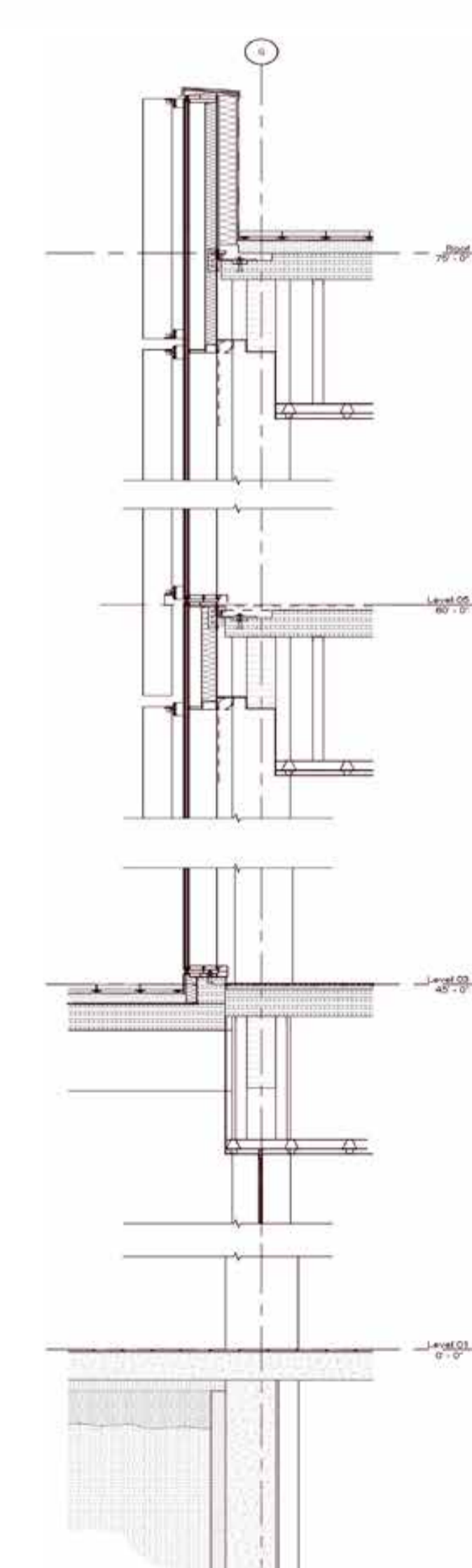
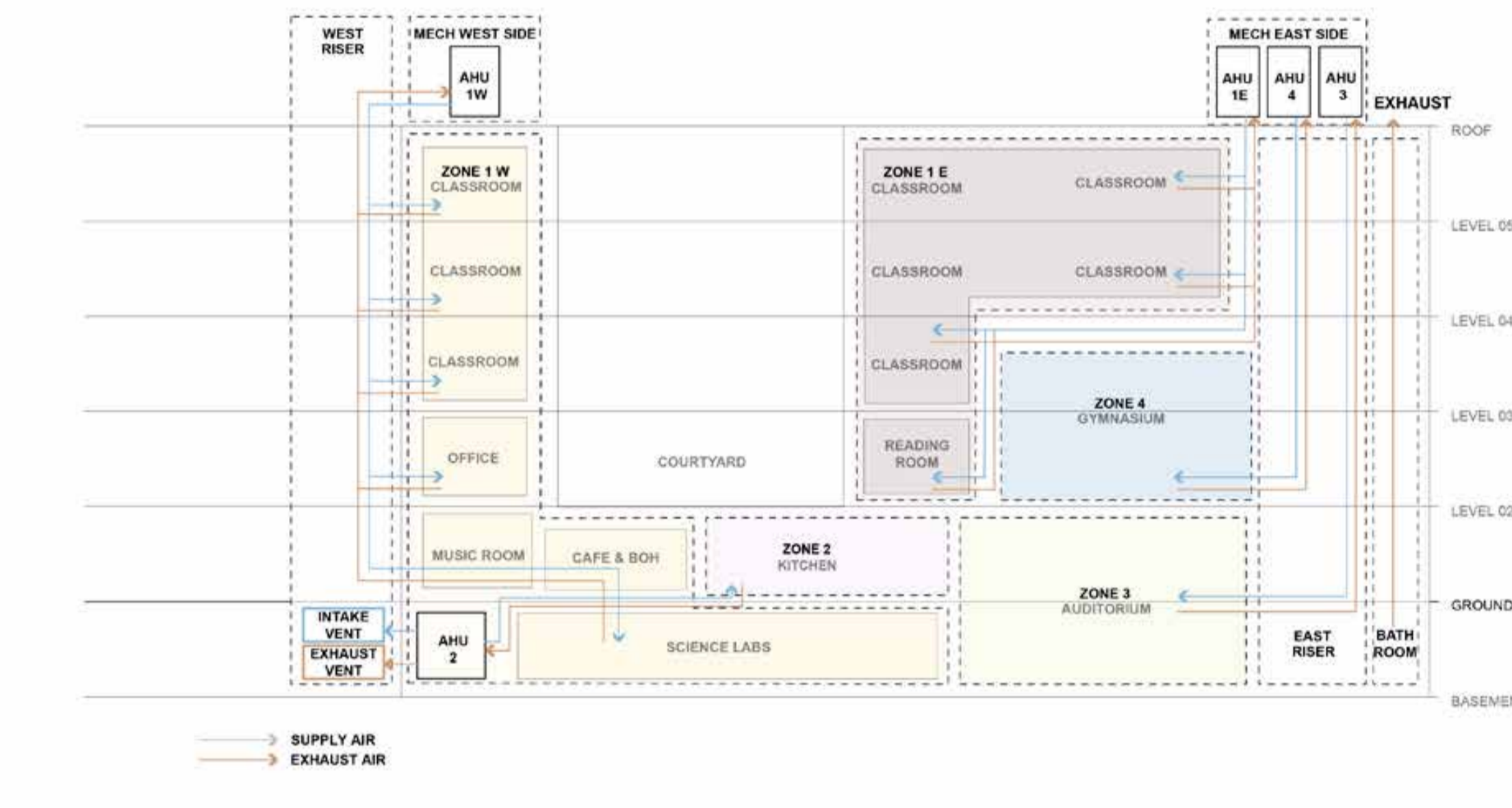
- CLT BEAM
- CLT COLUMN
- CLT WALL
- FOUNDATION
- CONCRETE STRUCTURES
- CONCRETE FLOOR

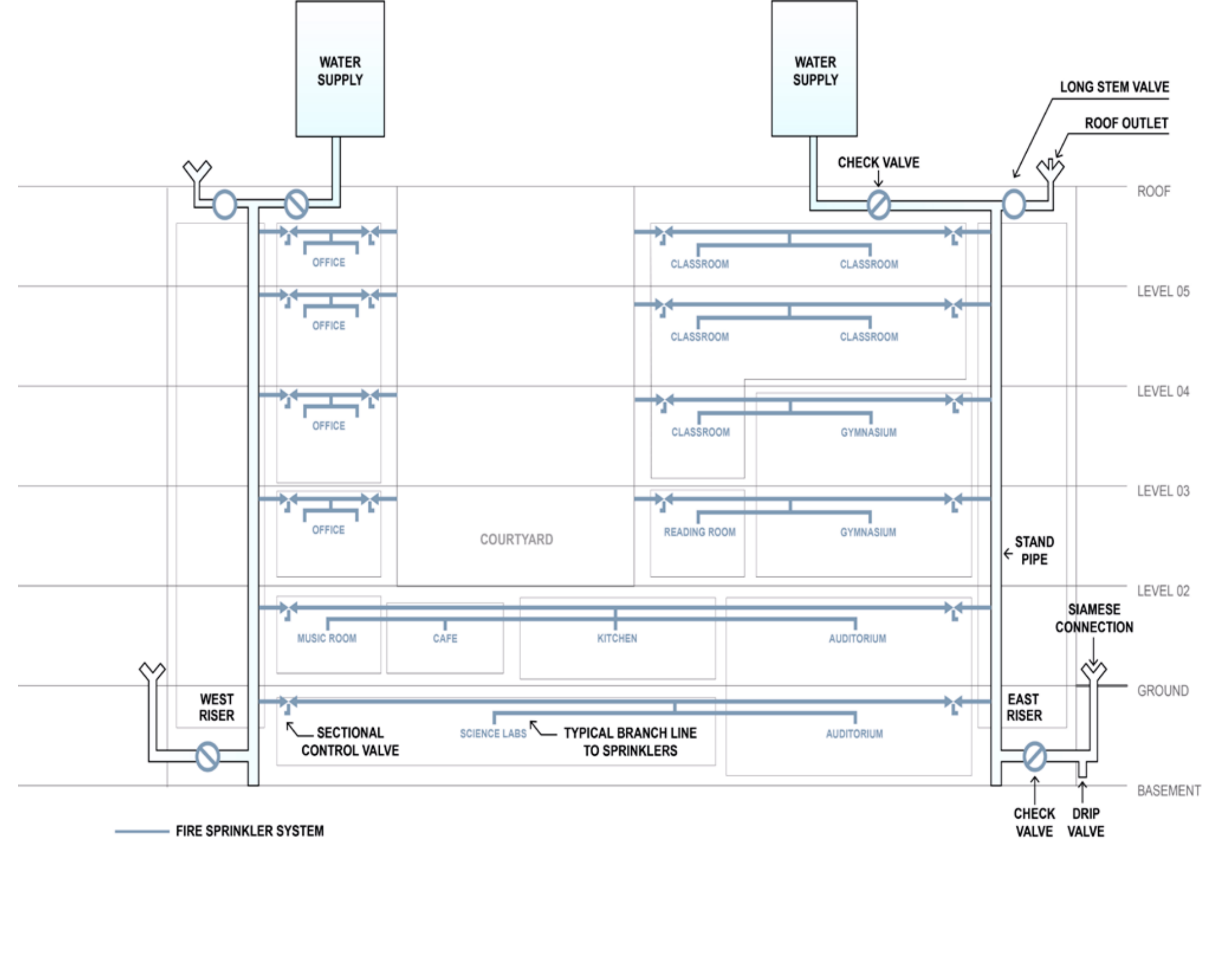
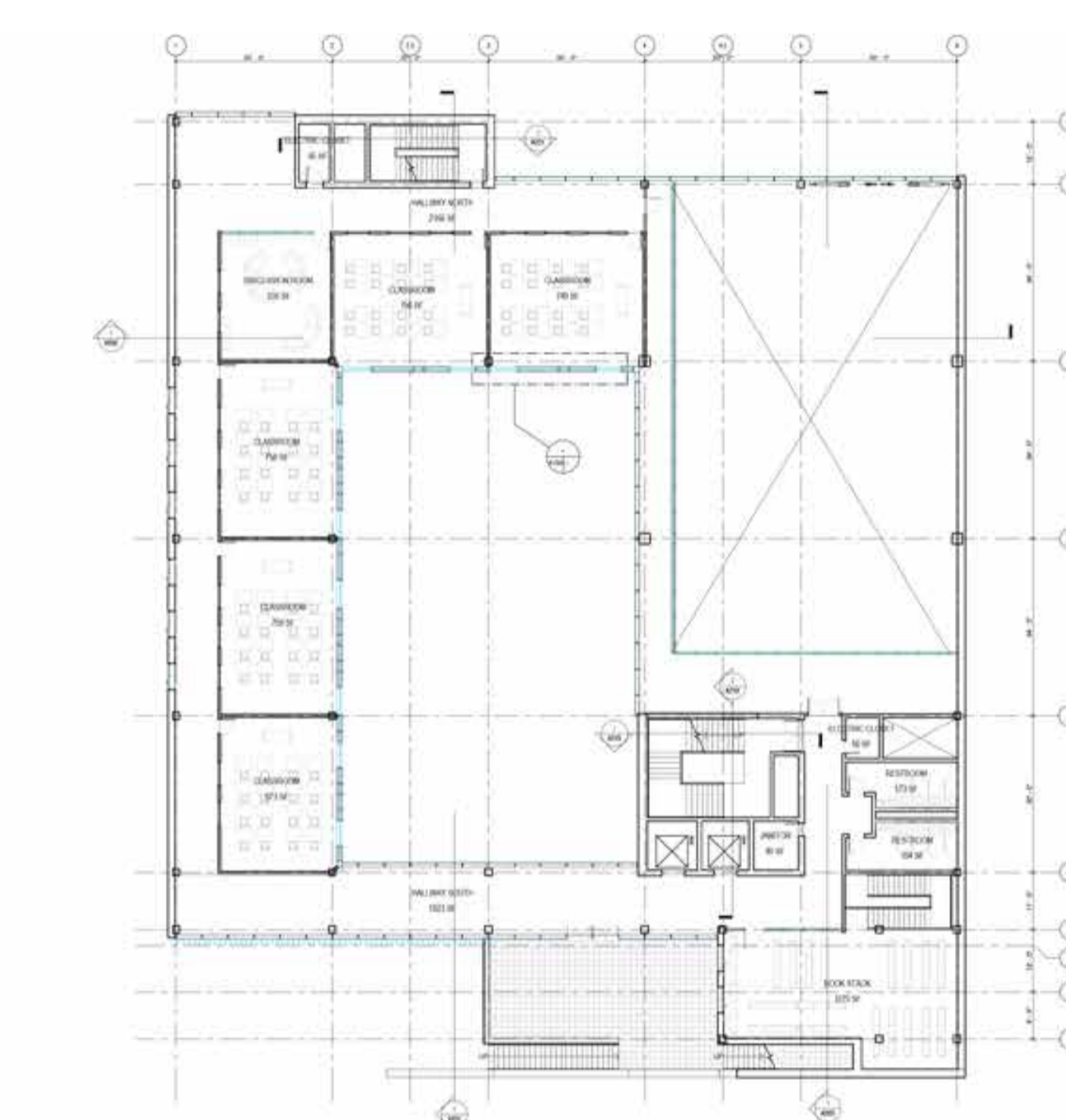
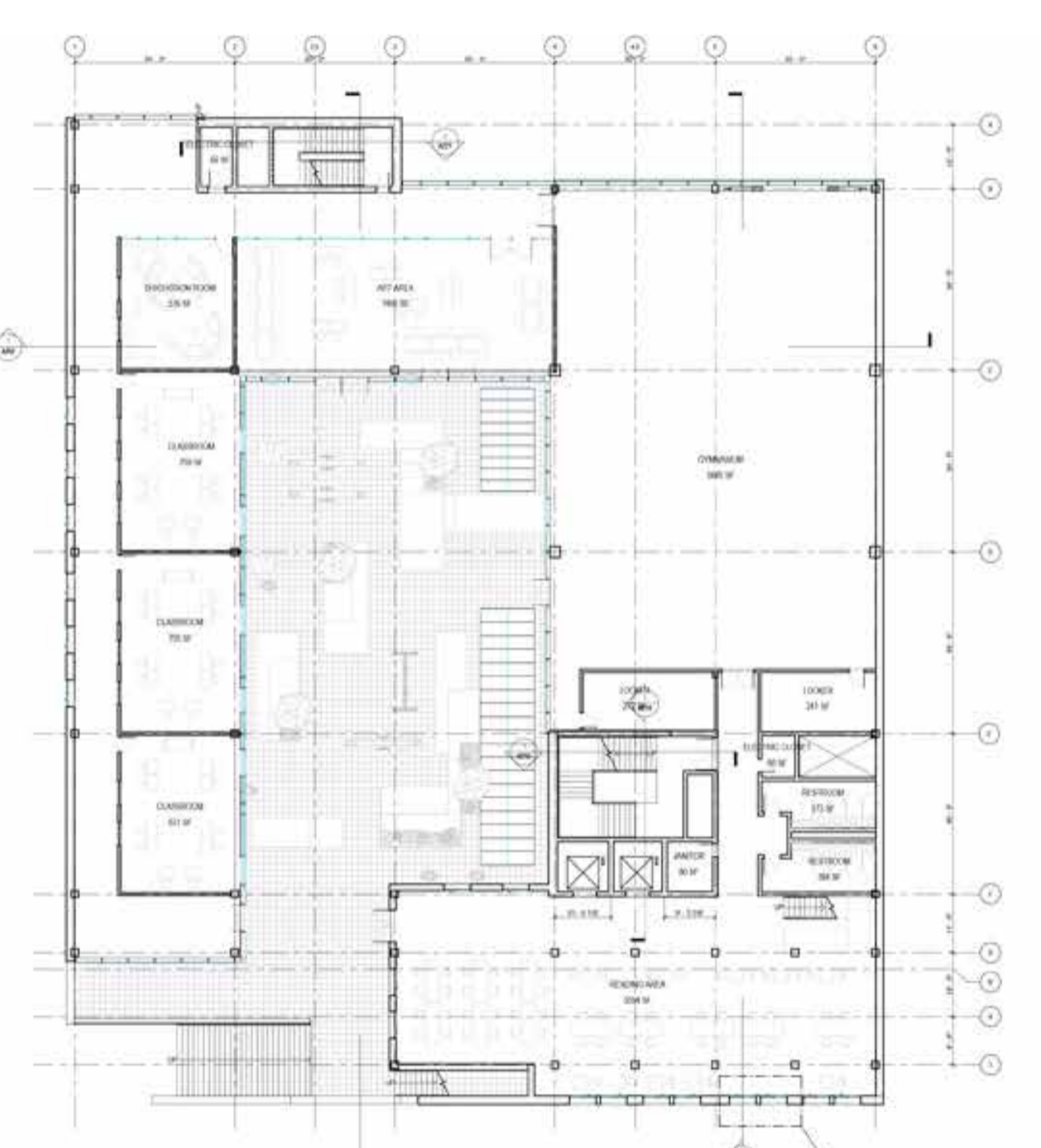
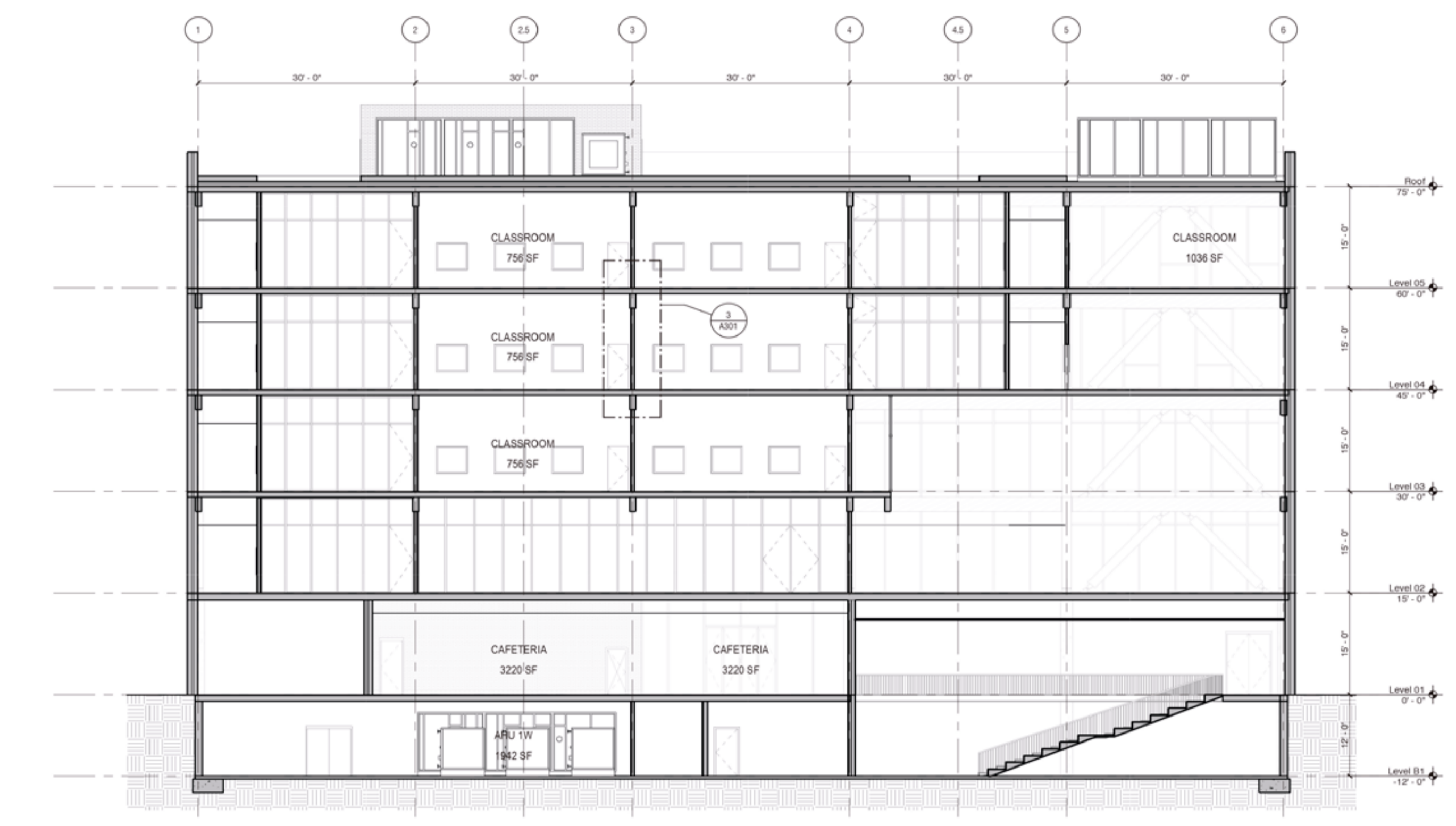
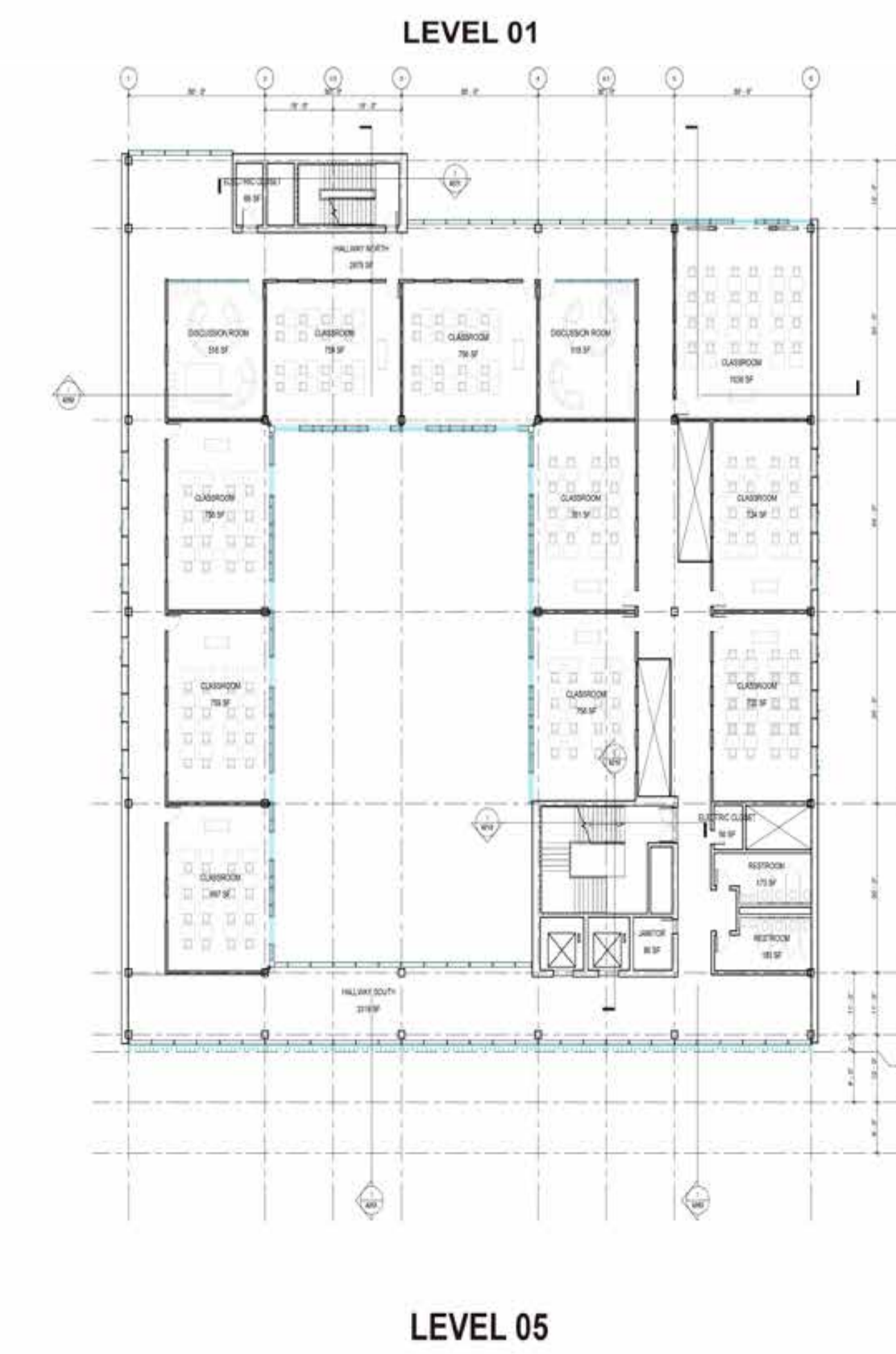
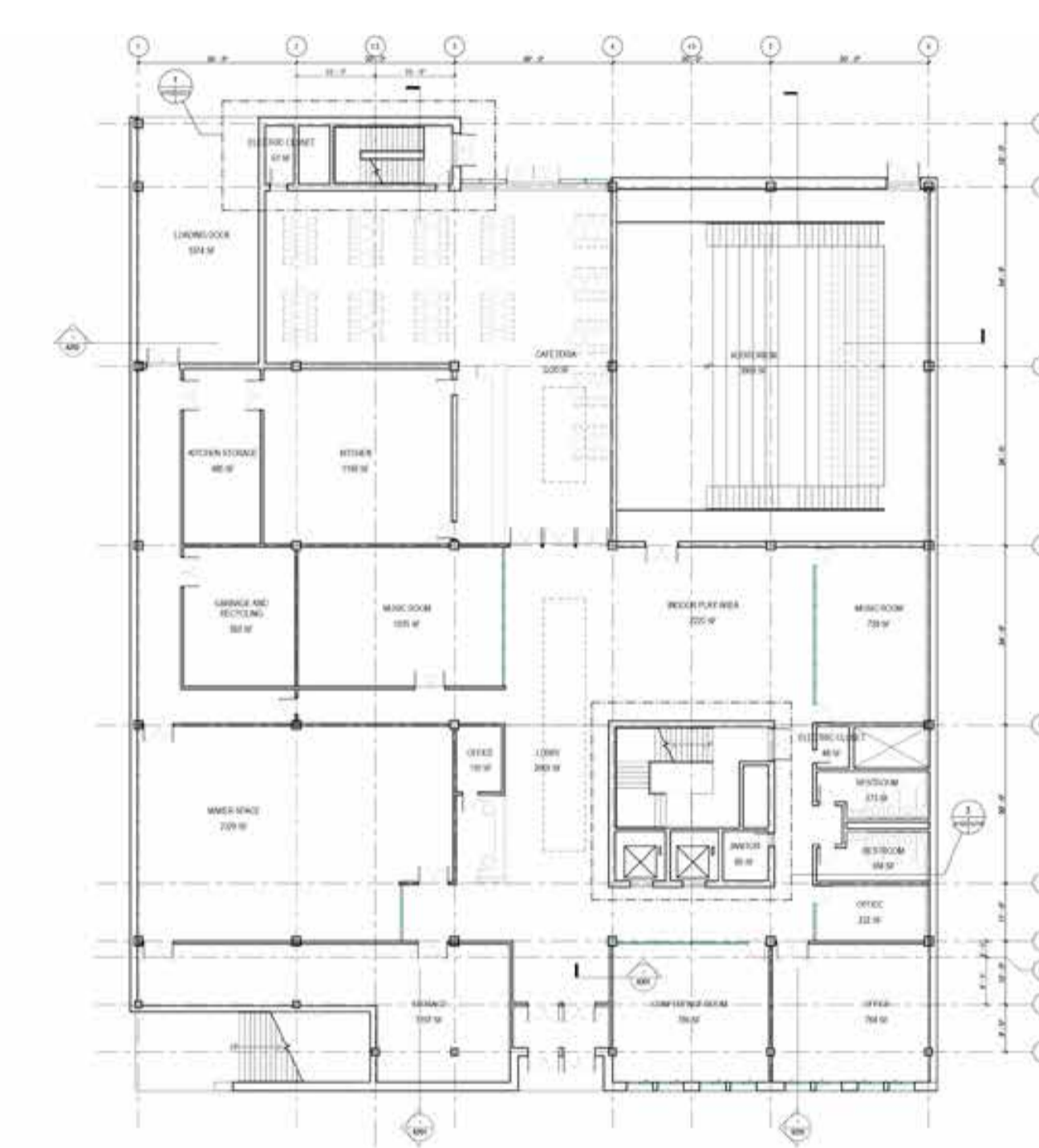
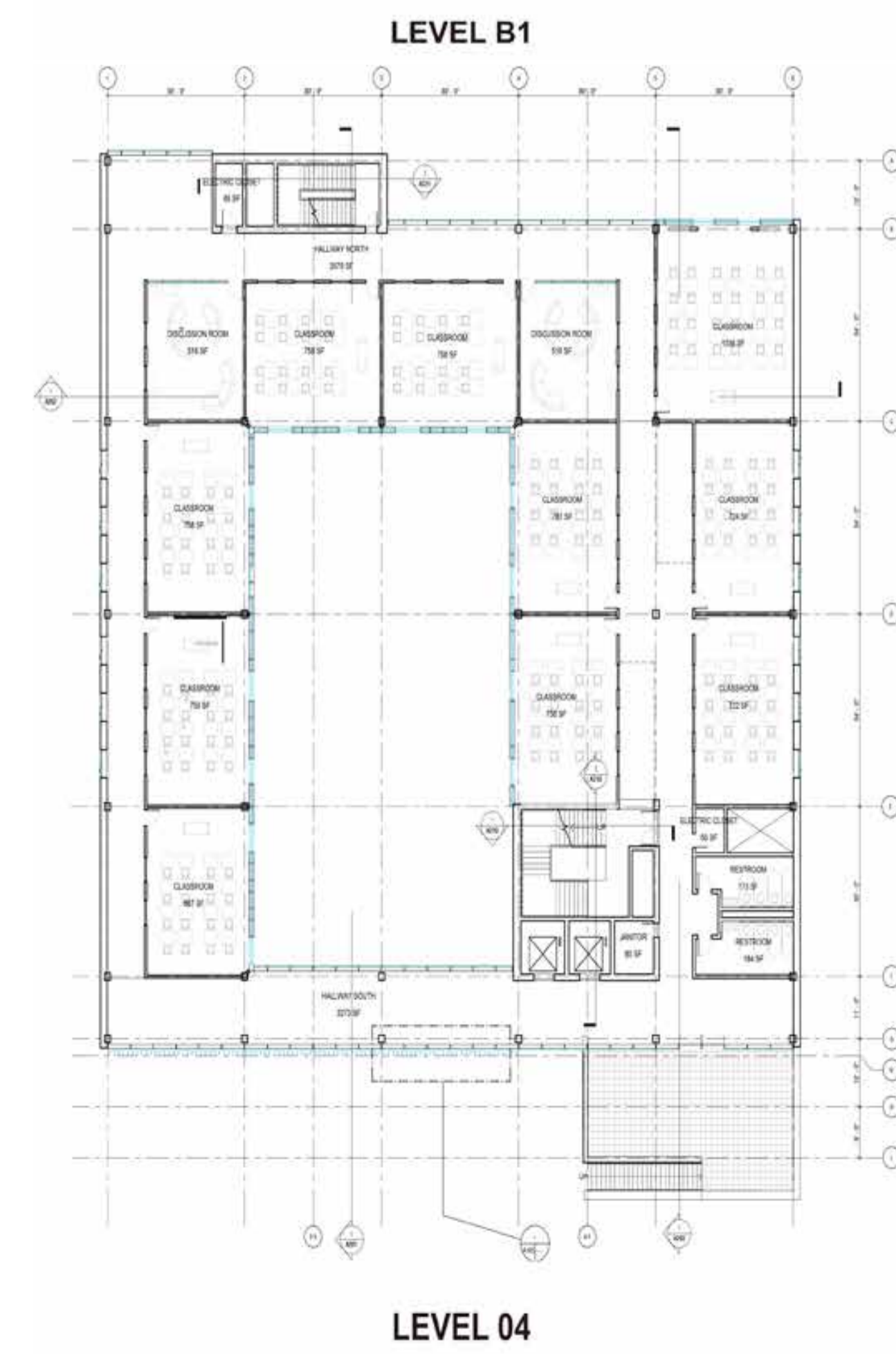
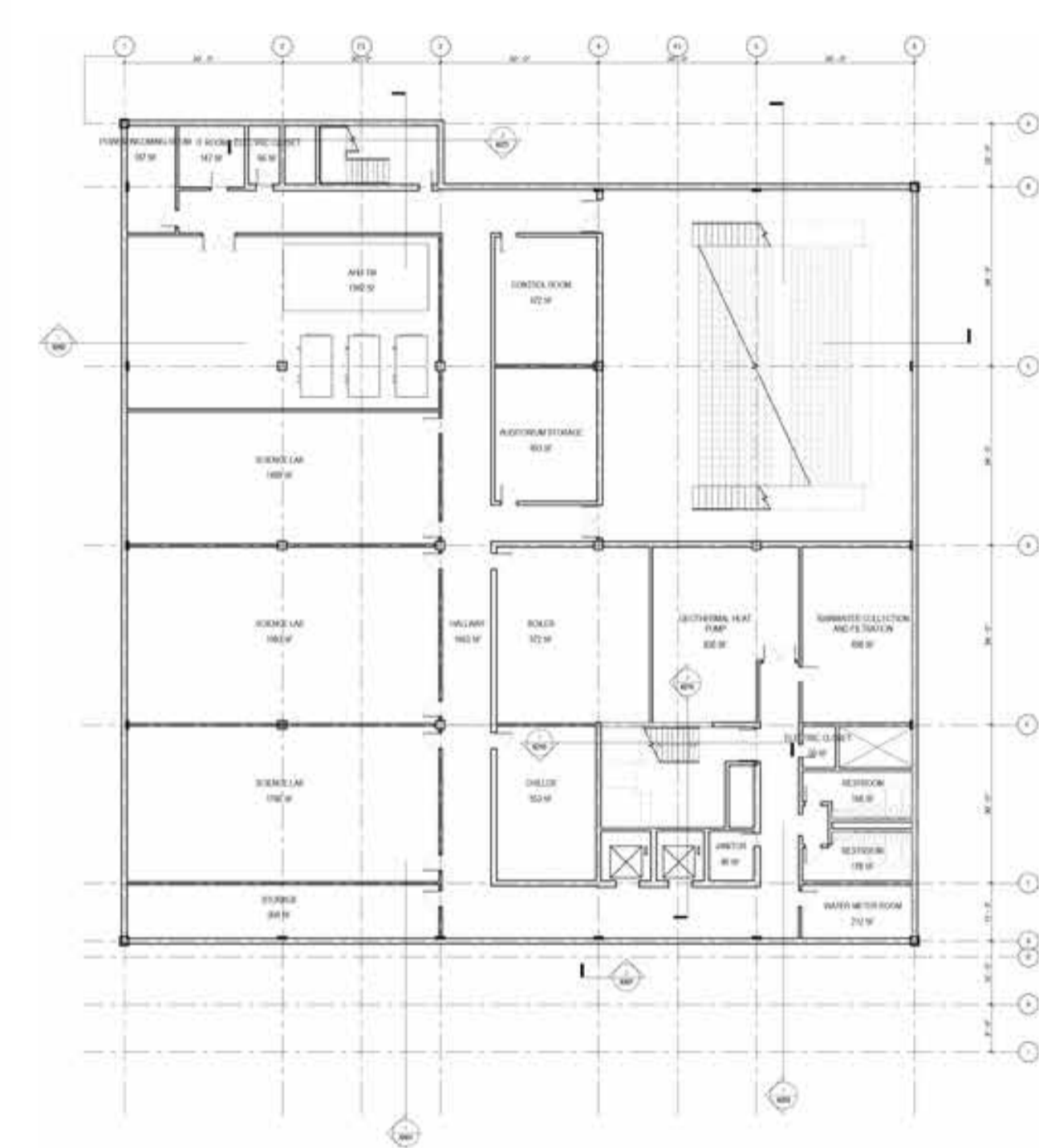
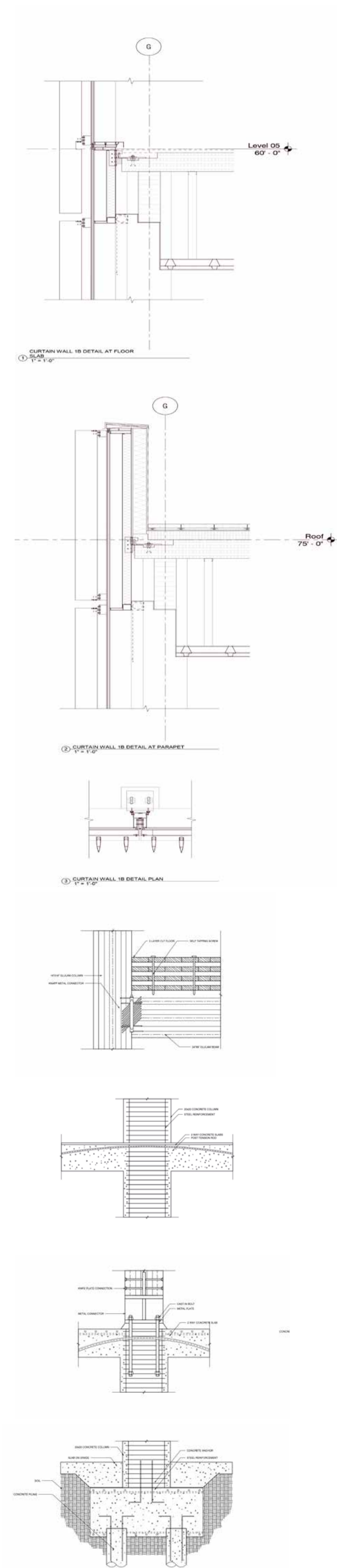
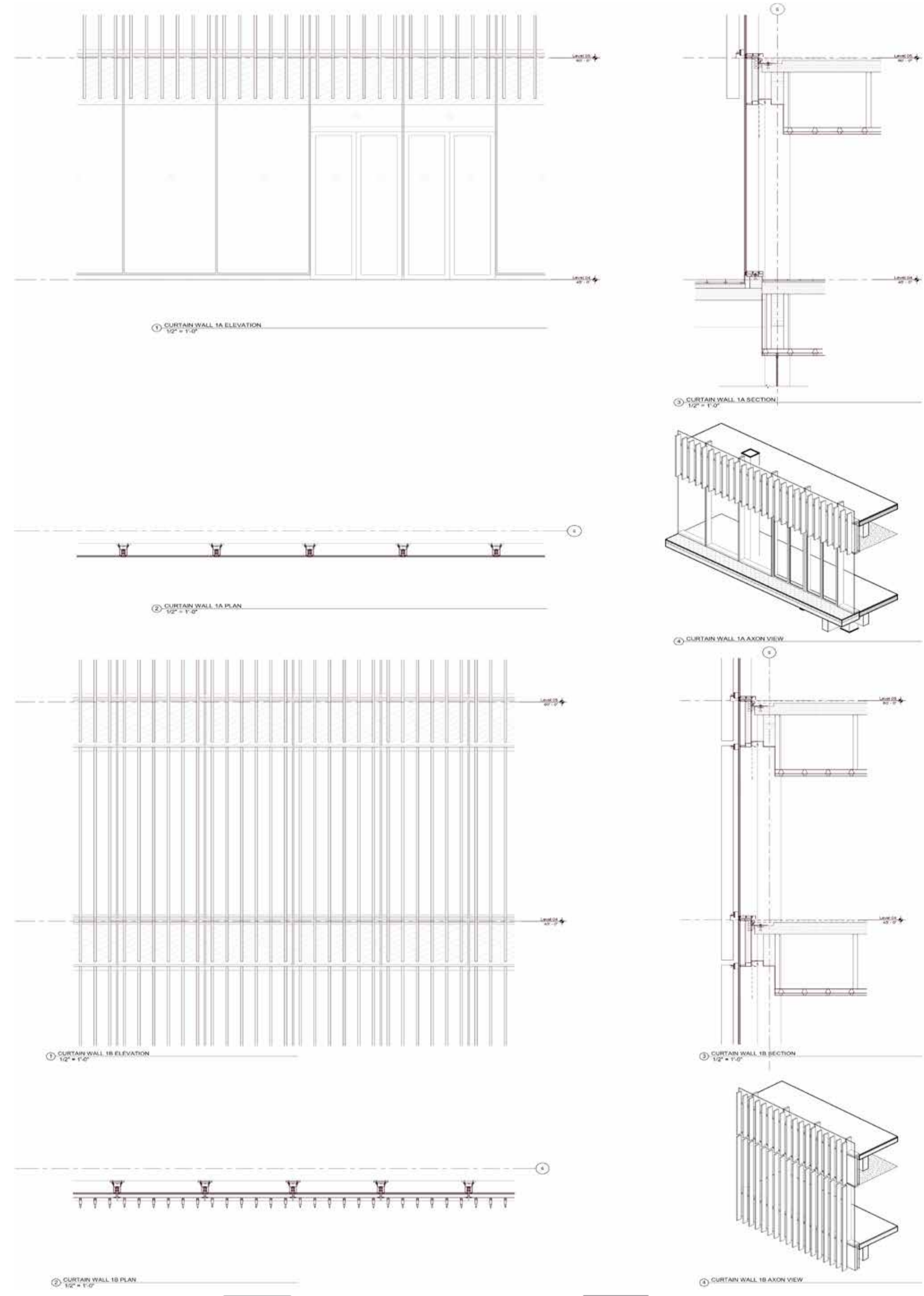


- HOT WATER SUPPLY + RETURN
- CHILL WATER SUPPLY + RETURN
- CONDENSED WATER SUPPLY + RETURN
- FCU + AIR COIL UNIT
- LUFAD + UNDERFLOOR AIR DISTRIBUTION



- GREEN ROOF
- DOMESTIC HOT WATER SUPPLY
- POTABLE WATER SUPPLY
- RAINWATER
- GREYWATER
- SANITARY WATER
- BATHROOM
- WATER FOUNDATION
- WTC WATER SUPPLY





ROOF PLAN

LEVEL 04

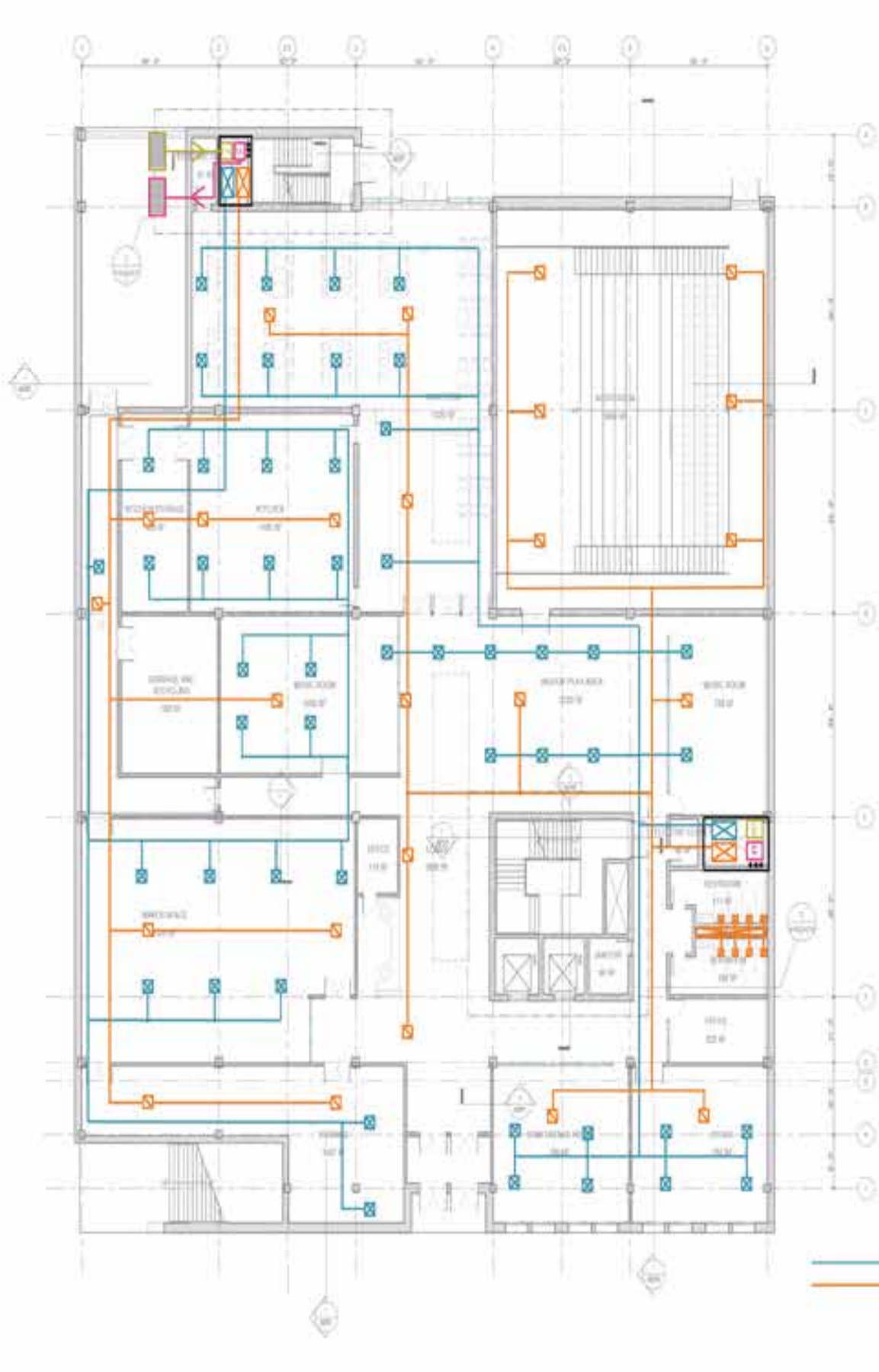
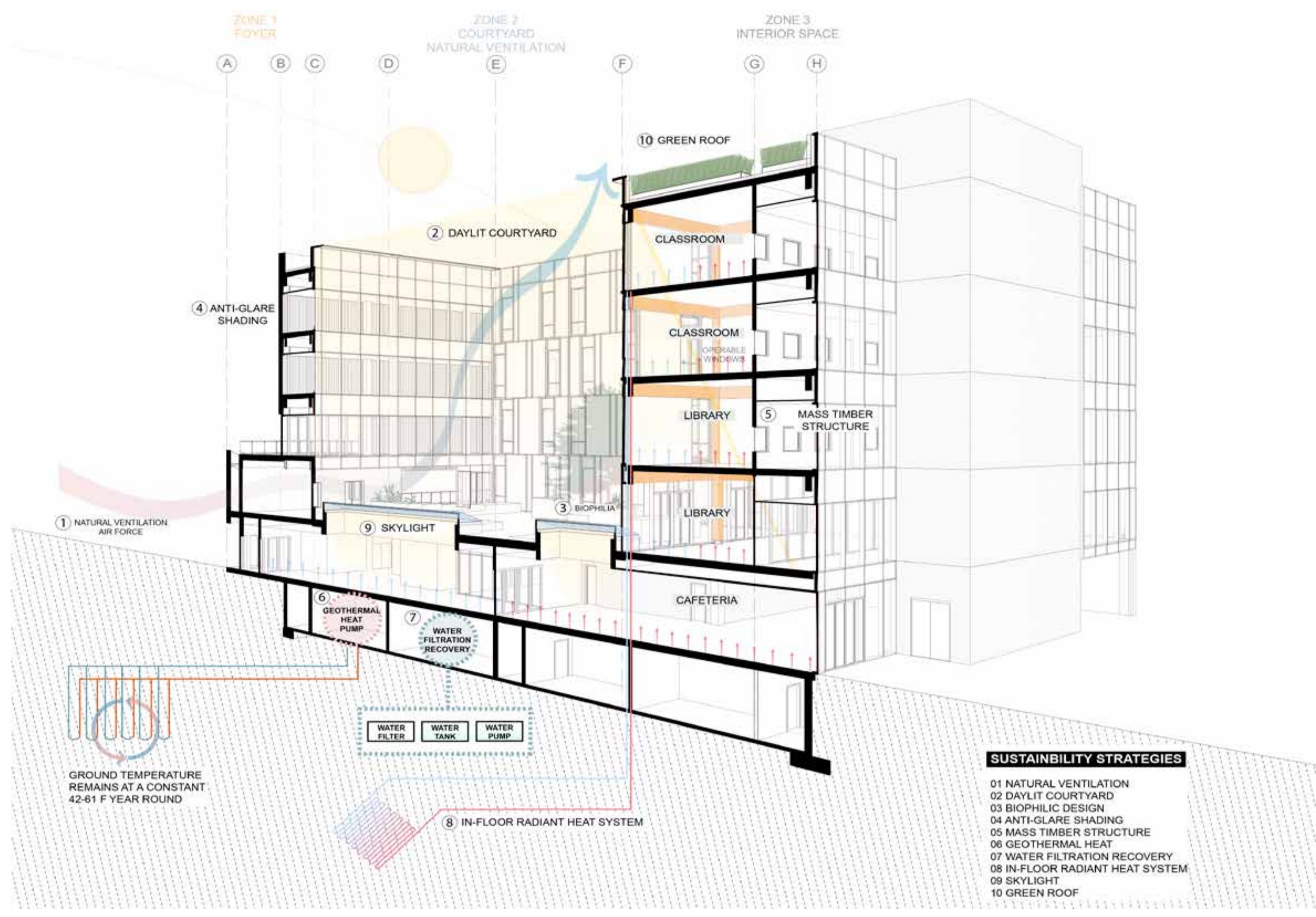
LEVEL 05

LEVEL 03

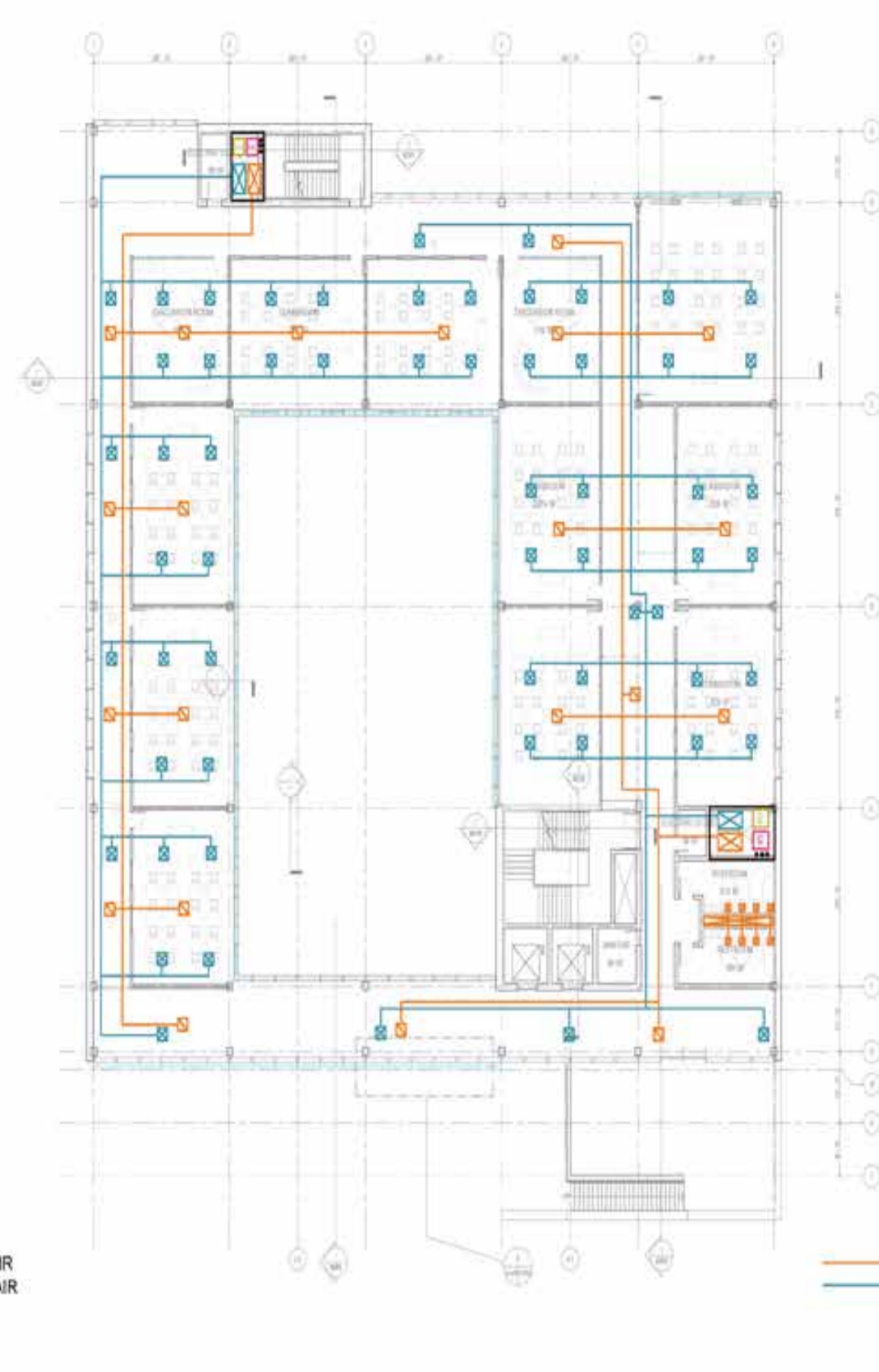
LEVEL 02

LEVEL 01

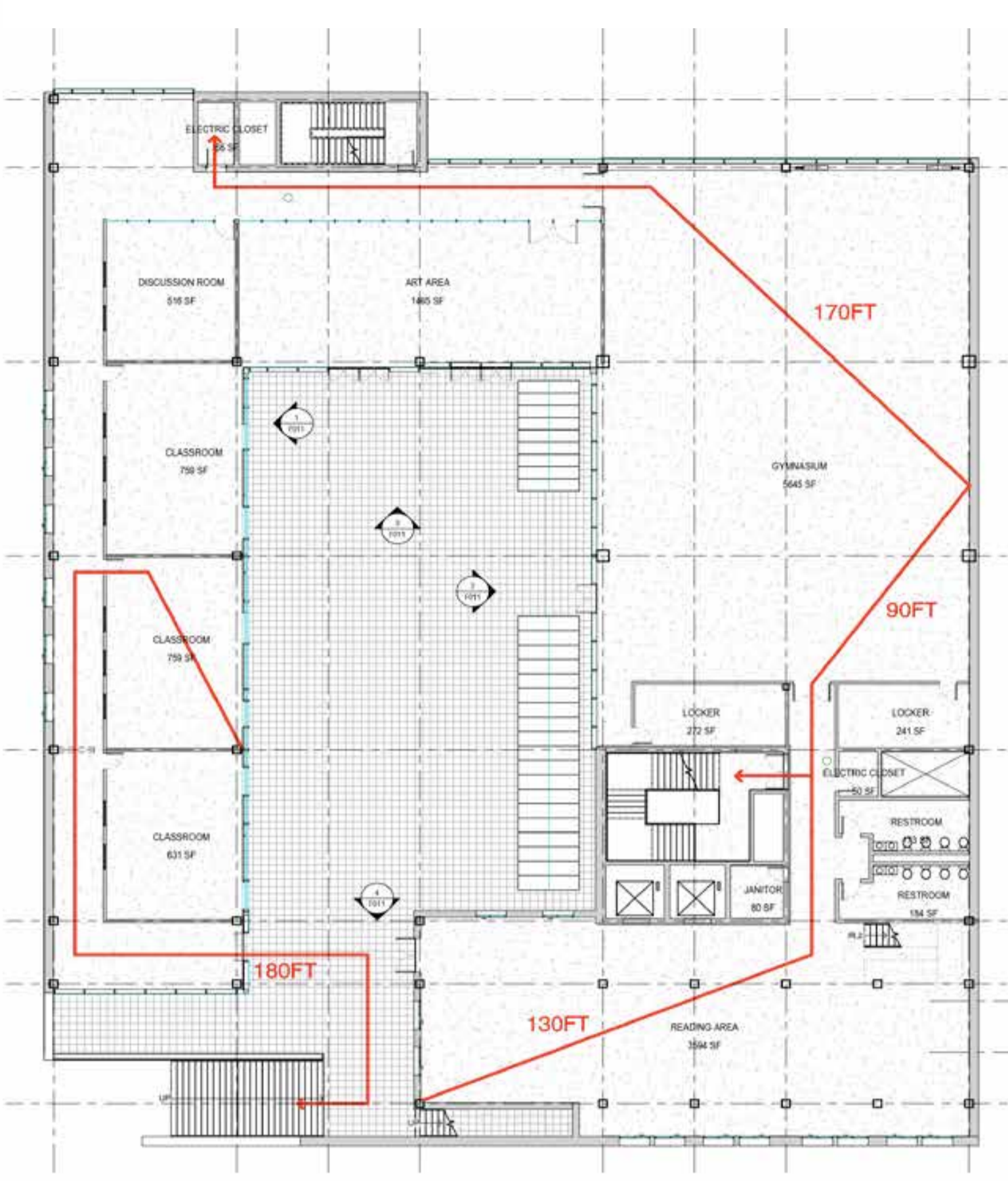
LEVEL B1



LEVEL 01

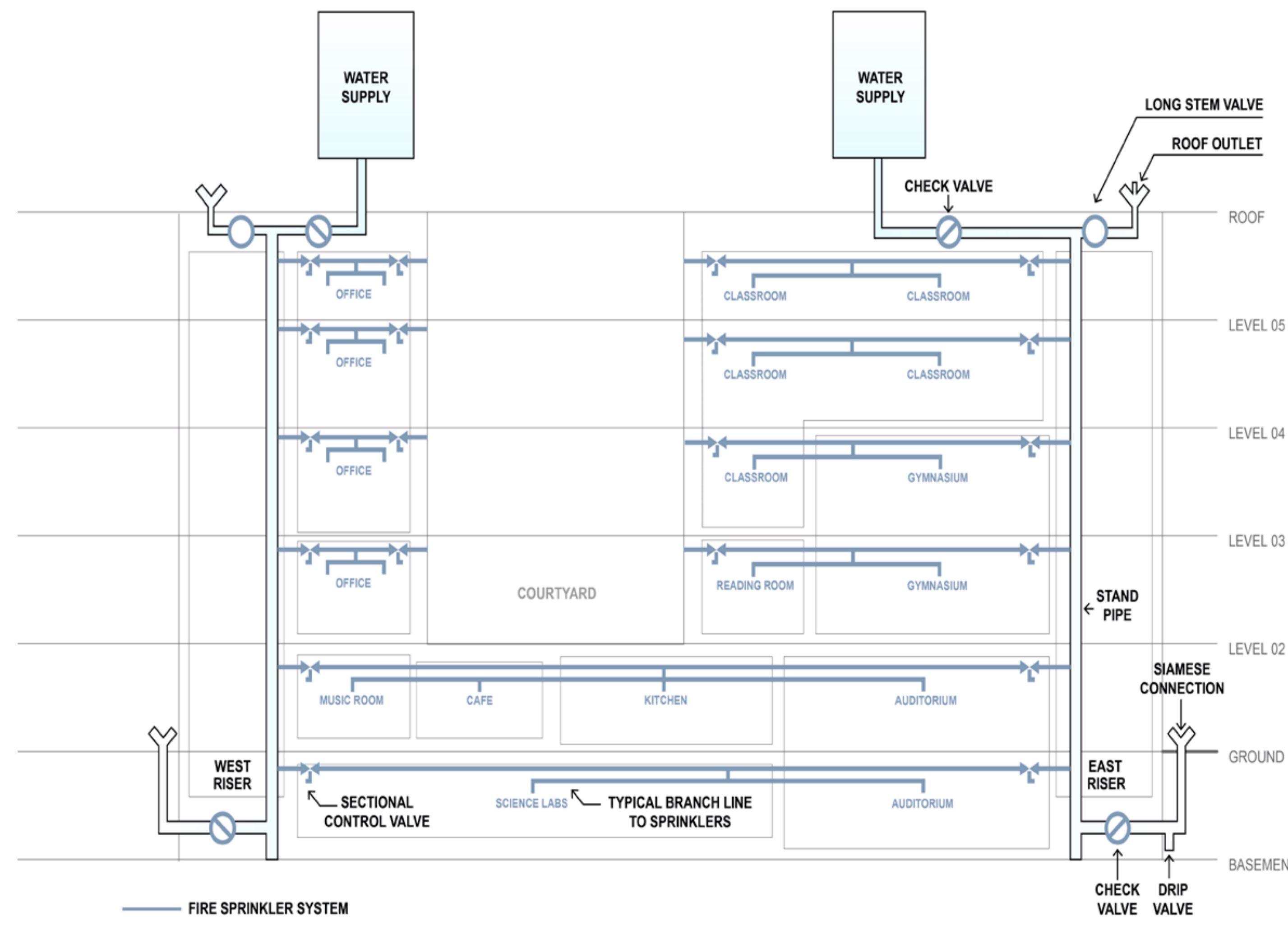


LEVEL 04

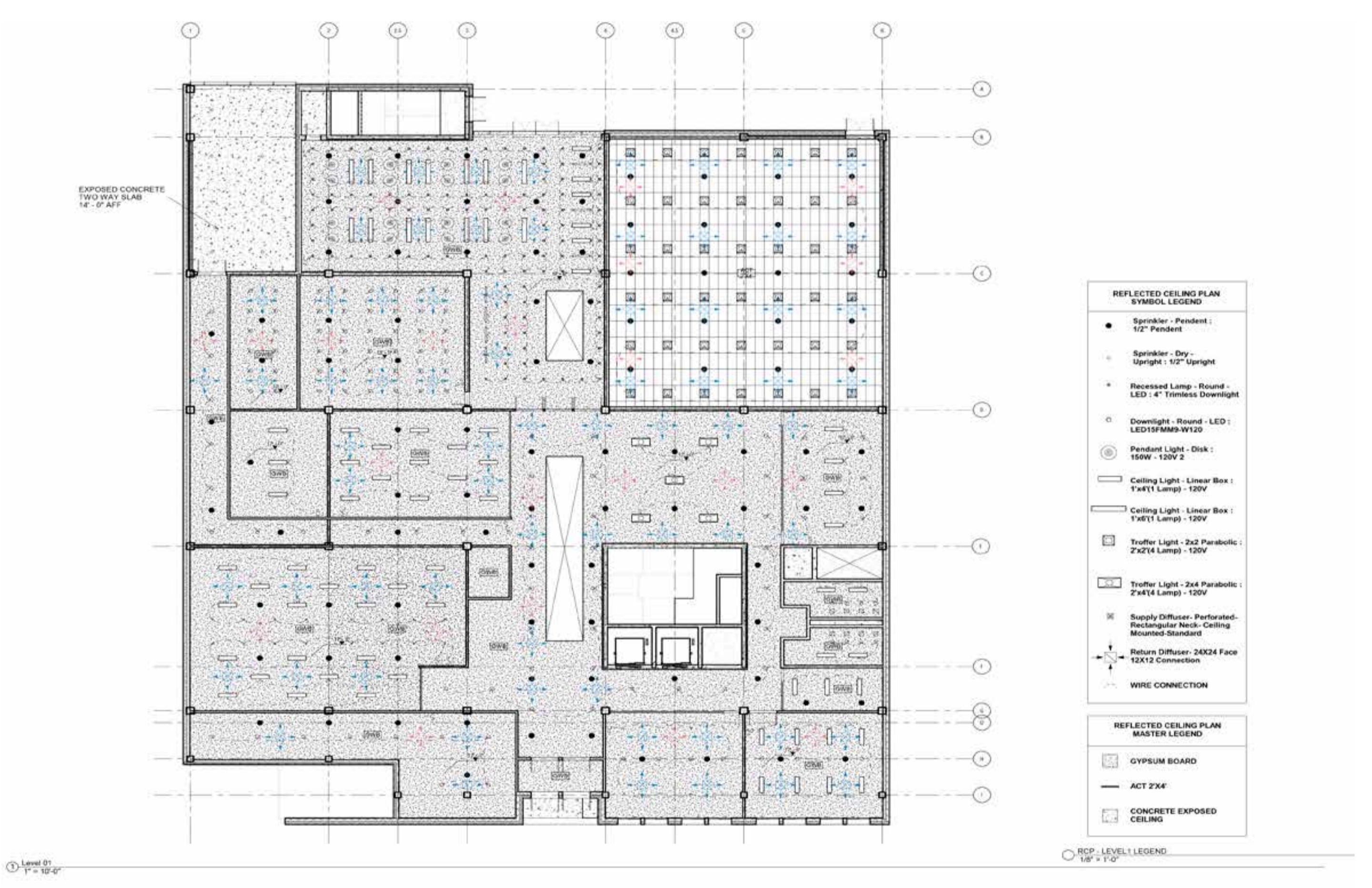


Use of Space	Area (sq.ft)	Floor Area per Occupant	Total Occupant Load
Classroom	712	20	36
Classroom	711	20	35
Classroom	711	20	35
Art Area	1569	50	31
Gymnasium	1503	50	30

Use of Space	Area (sq.ft)	Floor Area per Occupant	Total Occupant Load
Discussion Room	318	20	16
Classroom	739	20	36
Classroom	739	20	36
Classroom	848	20	42
Art Area	1485	50	29
Gymnasium	5605	50	113
Locker Room	272	50	5
Locker Room	281	50	5
Reading Area	3004	100	30
Restroom	173	15	12
Restroom	184	15	12



LEVEL 04



LEVEL 01

