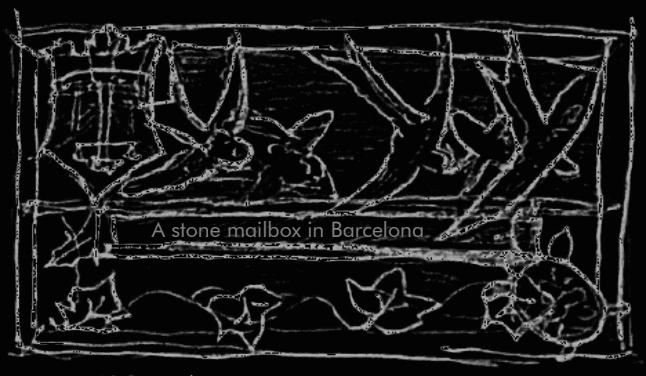
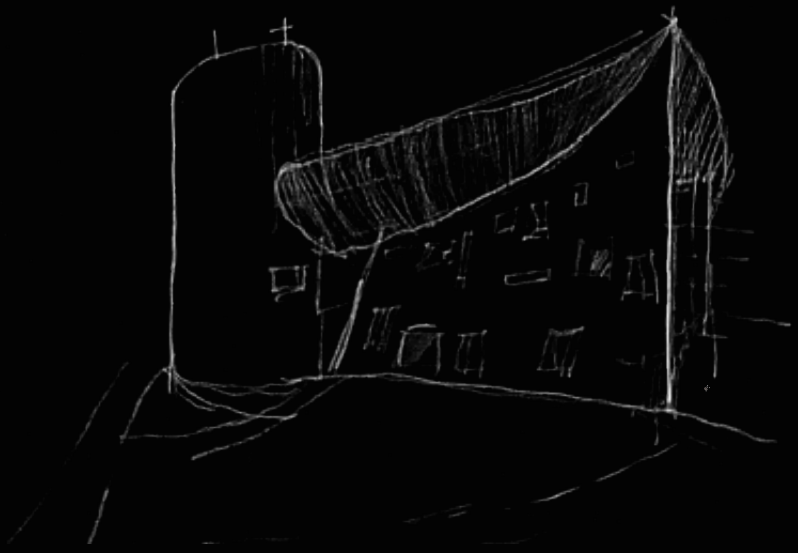
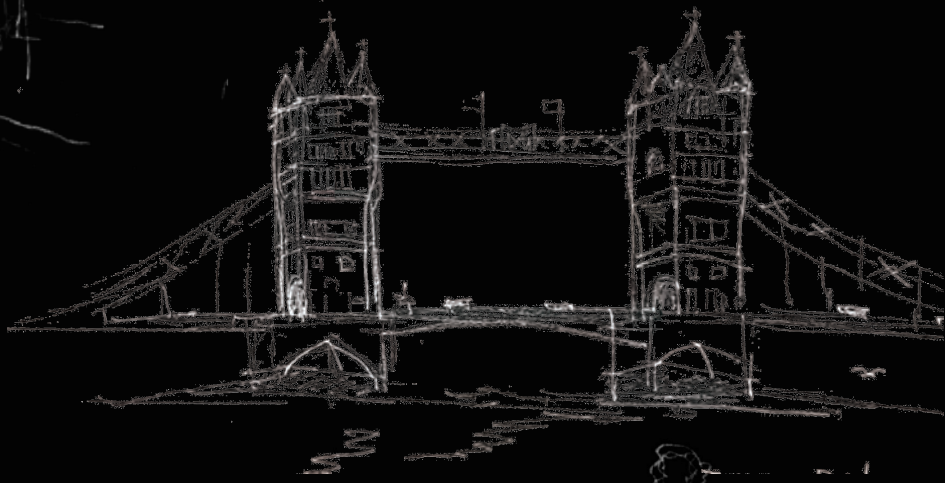


A stone mailbox in Barcelona.

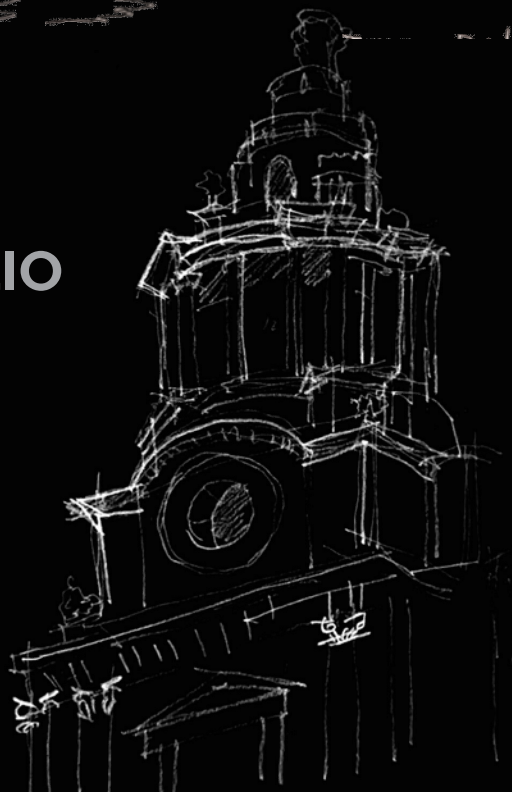
xwang160@syr.edu











DESIGN PORTFOLIO

Cooper Wang

KILN CORE

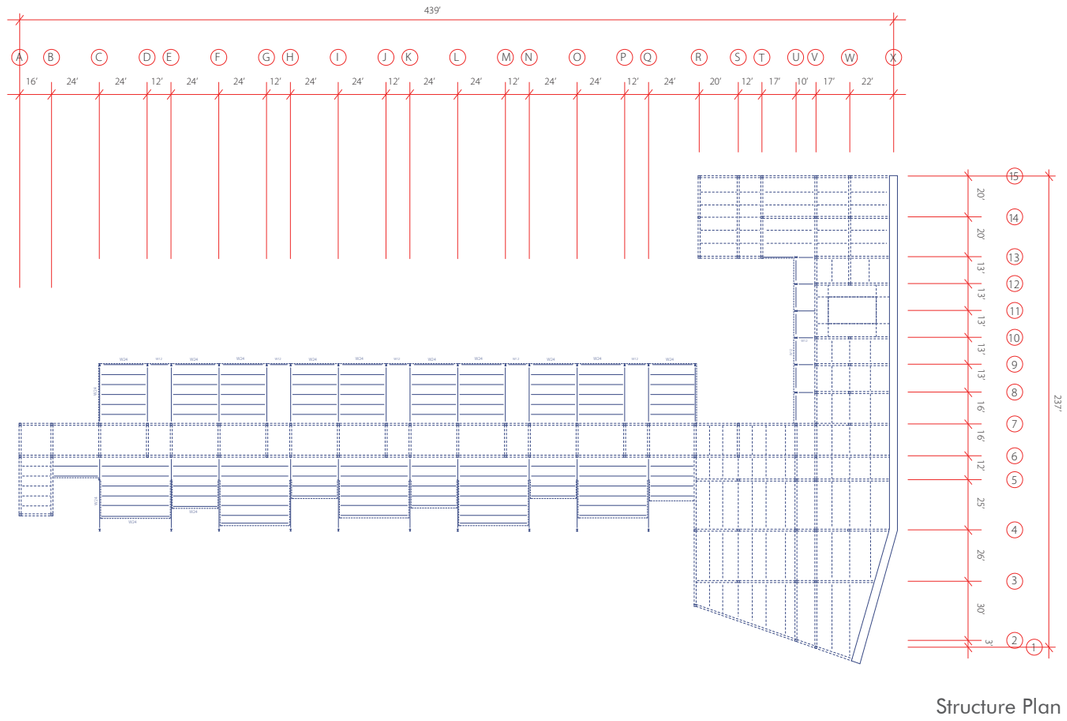
Time: Spring 2025
Location: Syracuse, USA
Instructor: Elizabeth Kamell

This project begins with interviews conducted with students in the ceramics department at Syracuse University, revealing a key spatial issue: the separation between kiln spaces and studio work areas disrupts both workflow and community interaction. In response, the design repositions the kiln as the core programmatic element. Rather than being isolated, it is centrally located and surrounded by a continuous sequence of studios, glazing spaces, and galleries, organized as modular bays. These units repeat linearly, creating a cohesive system where making, finishing, and displaying are integrated into a single spatial loop.

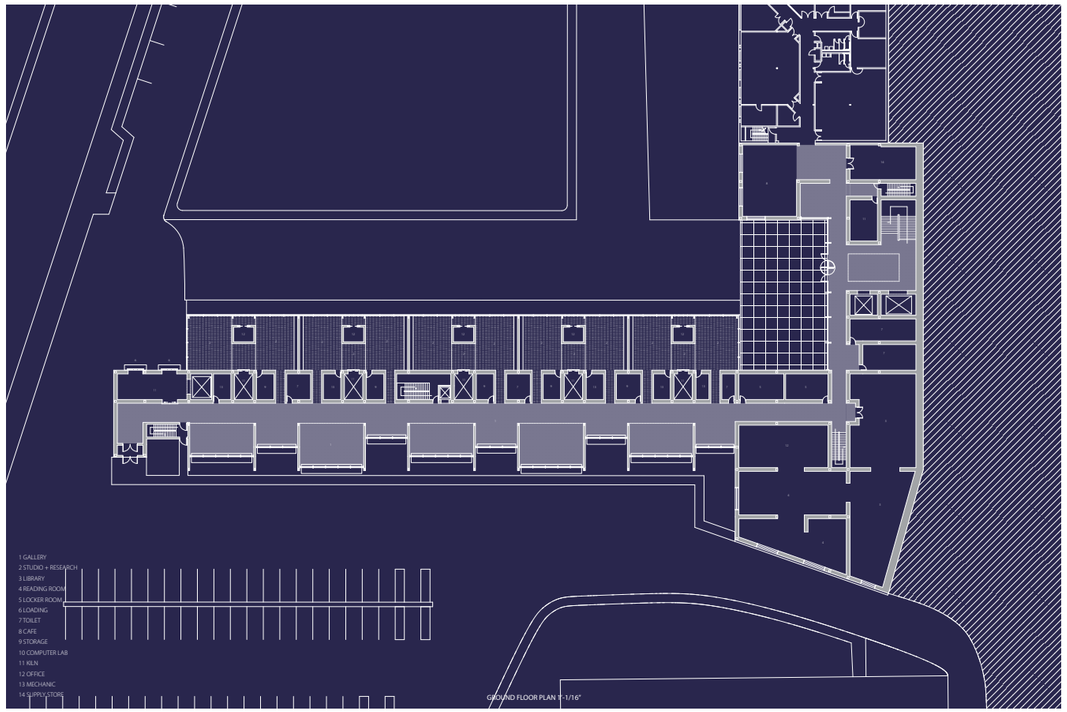
Beyond its functional role, the kiln is also reimagined as an infrastructural device. It operates as a source of heat generation, connected to the building's HVAC system and supported by solar energy, contributing to the overall thermal performance of the building. By reorganizing the relationship between production and infrastructure, the project transforms the ceramics facility into a more efficient, interactive, and environmentally responsive environment.



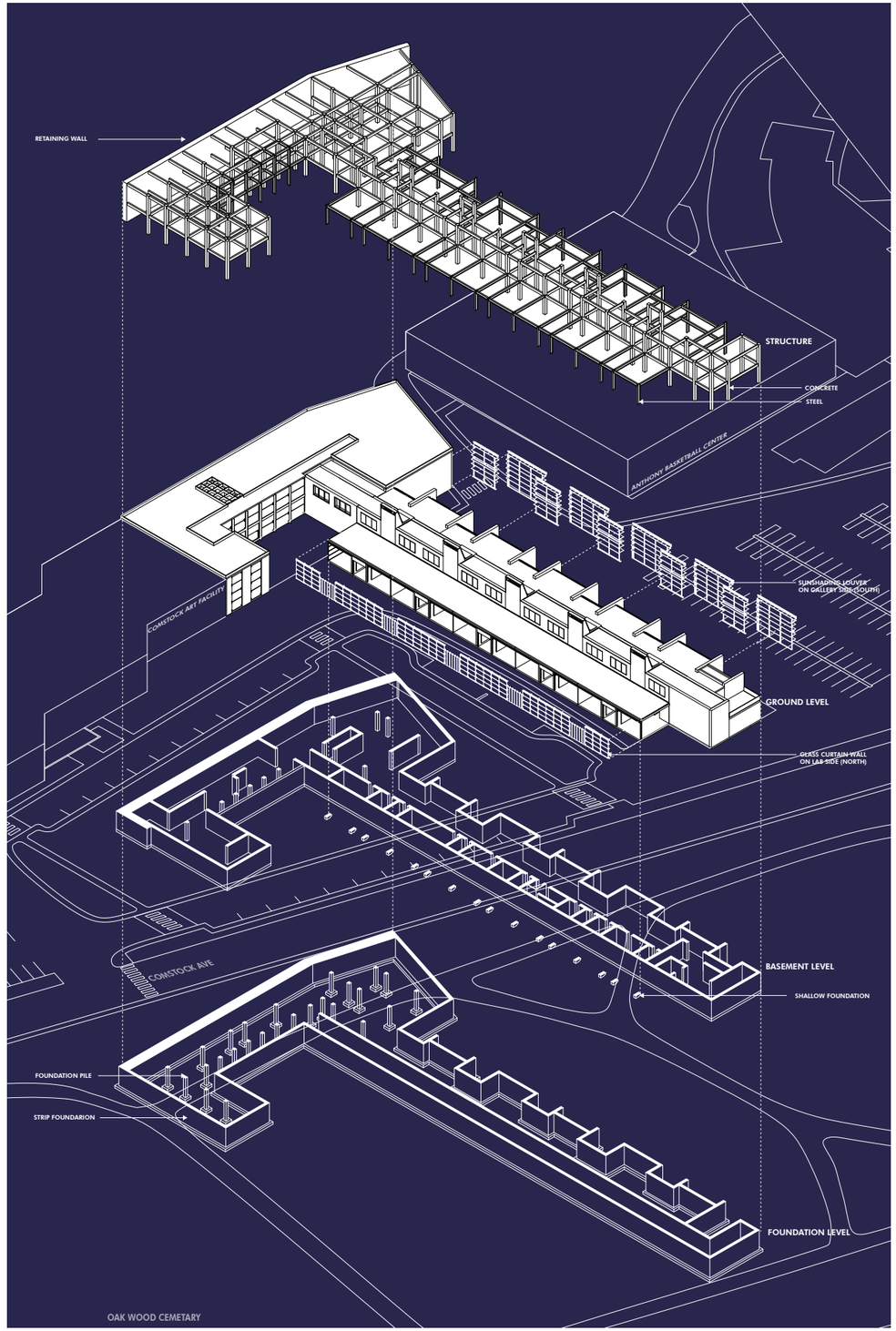




Structure Plan

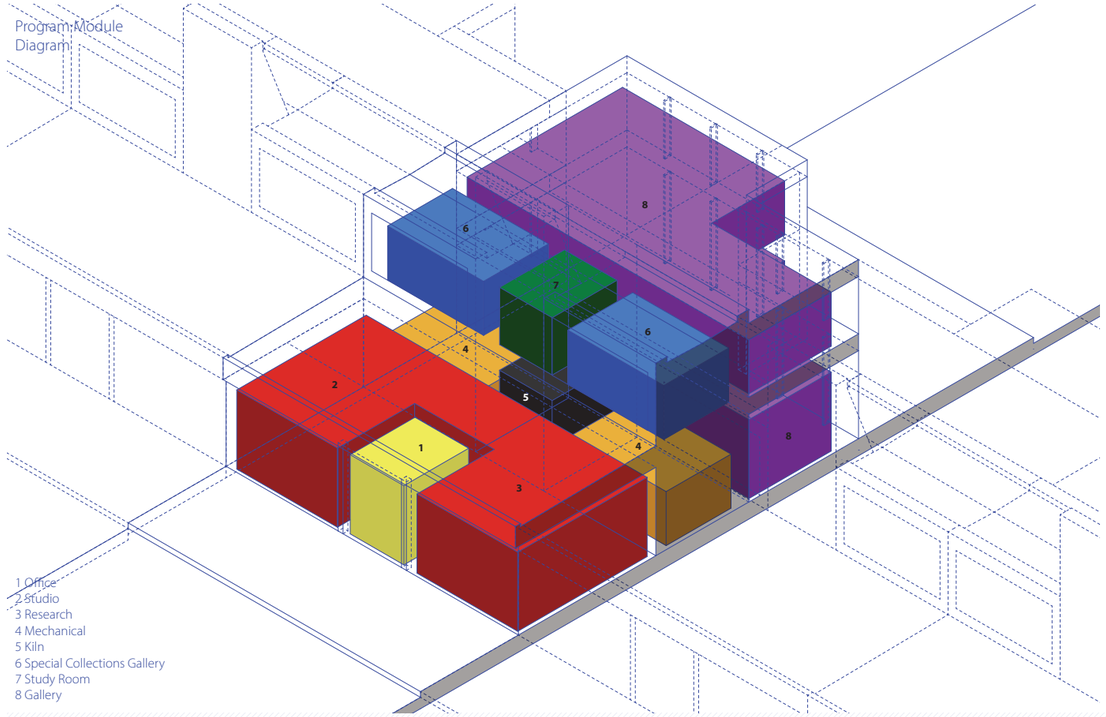


1st Floor Plan

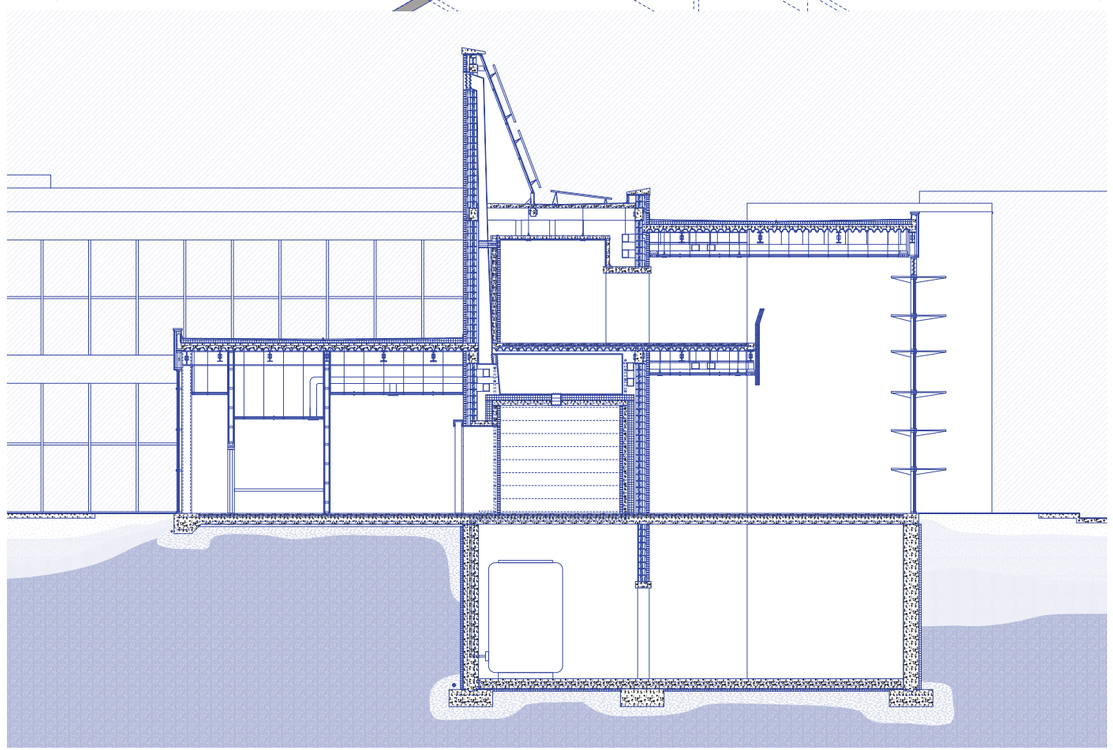


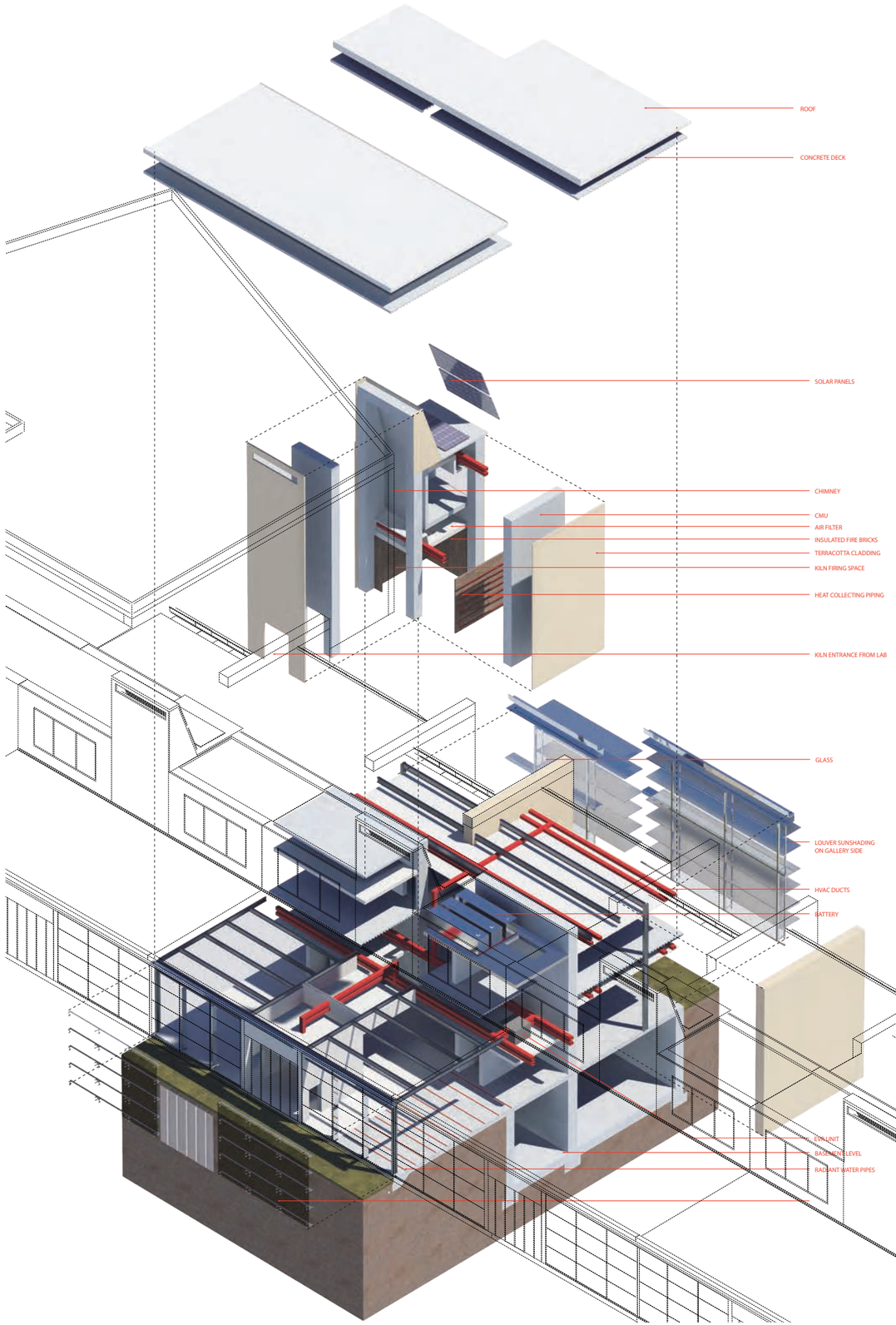
Building Exploded Axonometric

Program Module Diagram



1 Office
2 Studio
3 Research
4 Mechanical
5 Kiln
6 Special Collections Gallery
7 Study Room
8 Gallery

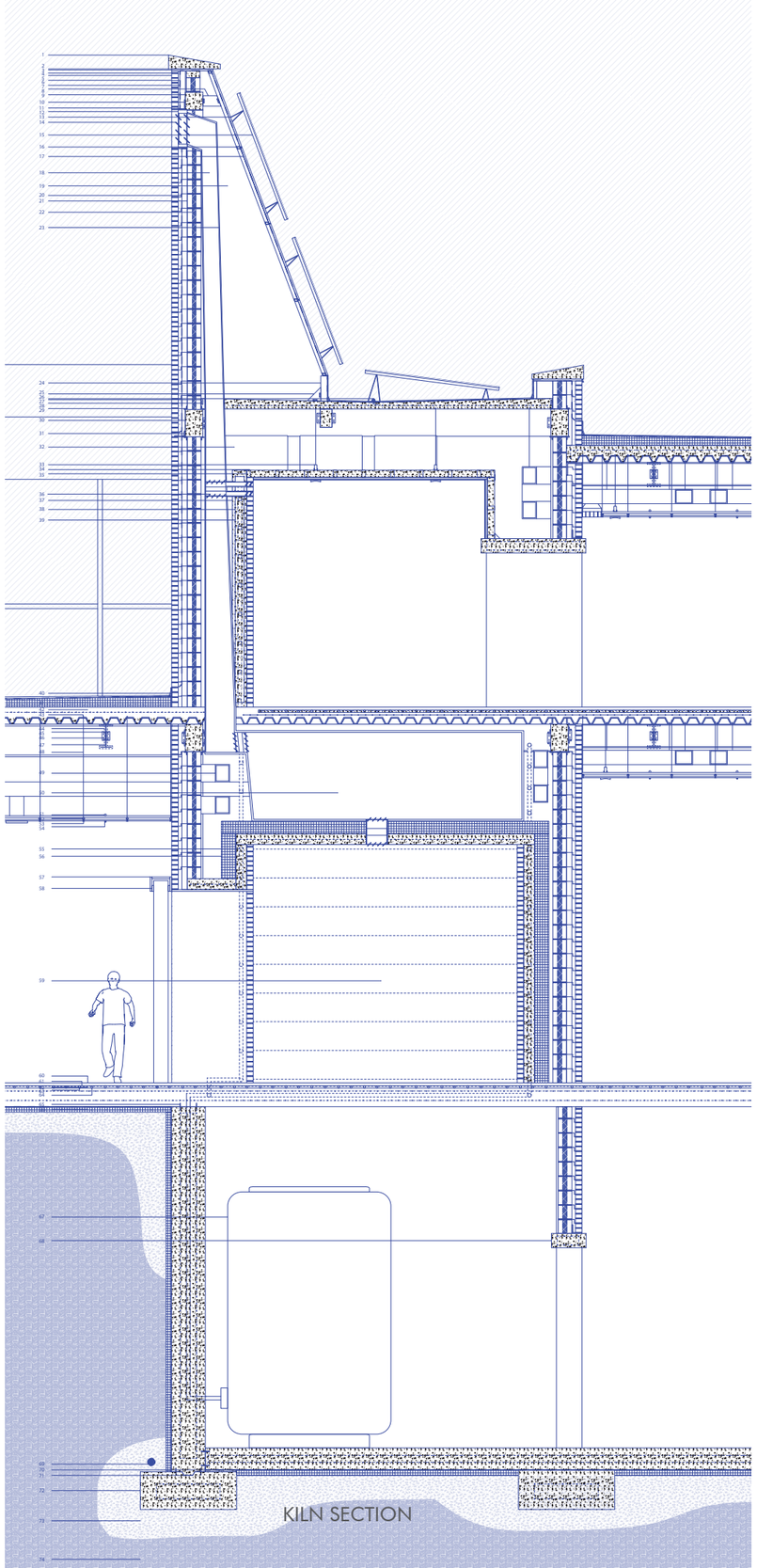




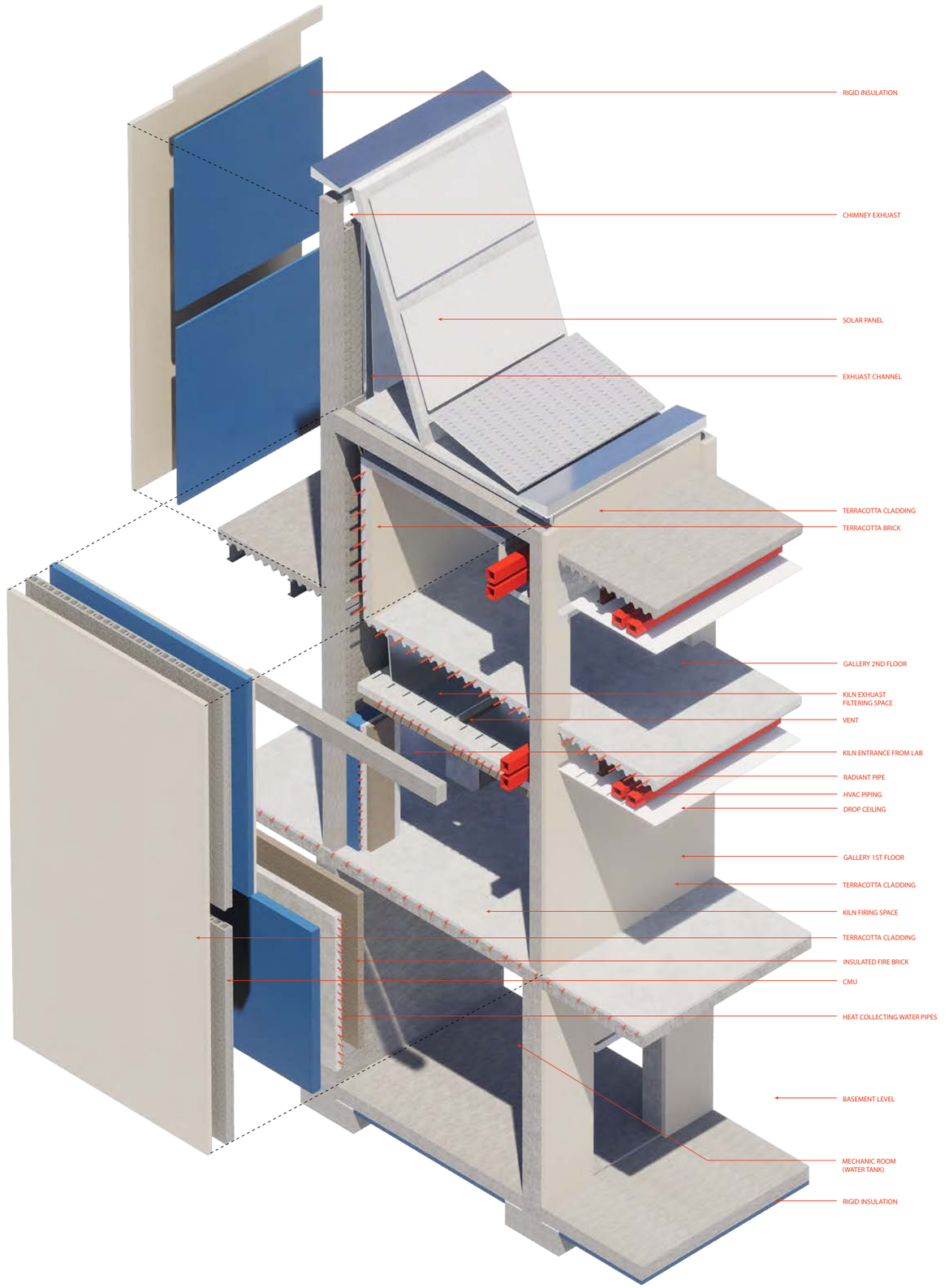
1 Concrete Coping
2 Drip
3 Steel Plate
4 Mortar
5 Terracotta Brick
6 2" Air Cavity
7 Vapor Barrier
8 Steel Girder
9 Concrete Beam (depth 1')
10 Steel Angle
11 Weep Hole
12 2"x4" Wood Block
13 Solar Panel Steel Bracing
14 Automatic Operable Vent Flap
15 Solar Panel
16 Stainless Steel Cross Bracing
17 4"x8" Terracotta Panel
18 Air Vent Cavity
19 Air Cavity
20 Steel Tie
21 CMU Block
22 Concrete CMU Infill
23 Aluminum Vent Wall
24 2"x6" Wood Beam
25 Steel Triangle Bracket

26 Drainage Cap
27 Stainless Steel L Bracket
28 6" Bolt
29 Steel Saddle Bracket
30 Concrete Beam (depth 18")
31 Steel Shelf Angle
32 Solar Panel Battery
33 Ceiling Light
34 Steel C Bracket
35 2"x6" Wood Beam
36 Air Lock Diffuser
37 Concrete Wall
38 Rebar Tie
39 1/4" Rebar
40 Flashing
41 10" Rigid Insulation (roof)
42 Concrete Slab
43 Steel Drop Ceiling Anchor
44 Beam Fire Proofing
45 Stainless Steel 8" L Bracket
46 8" Bolt
47 Steel Beam (W24x56)
48 Steel Drop Ceiling Cable
49 HVAC Supply & Return Ducts
50 Exhaust Air Chamber

51 Sprinkler Pipe
52 Drop Ceiling Bracing
53 Drop Ceiling Connector
54 Sprinkler Water Dispenser
55 Water Pipe
56 Ceramic Fiber Insulation Board
57 Kiln Door Header
58 Door Sliding Tracks
59 Kiln
60 Concrete Top Slab
61 1/2" Plywood Board
62 1"x1" Plastic Spacer
63 1" Rigid Insulation
64 Radiant Pipe
65 Vapor Barrier
66 4" Rigid Insulation
67 Water Tank
68 Concrete Lintel
69 6" Foundation Drainage Pipe
70 10" Steel Bolt
71 Keystone
72 Strip Foundation
73 Gravel
74 Compacted Soil



KILN SECTION



CASA DEL NUOVO INIZIO

Time: Fall 2024
Location: Arborea, Italy
Instructor: Luca Ponsi
Collaboration: Sweni & Anson

This project reimagines Arborea's reclaimed land in Sardinia as a self-sufficient community for refugees, transforming underutilized agricultural grids into a living system of integration and growth.

Originally developed under Benito Mussolini's "Bonifica" planning, Arborea's hyper-grid once served agricultural production. Today, urban migration and technological shifts have left much of this land vacant.

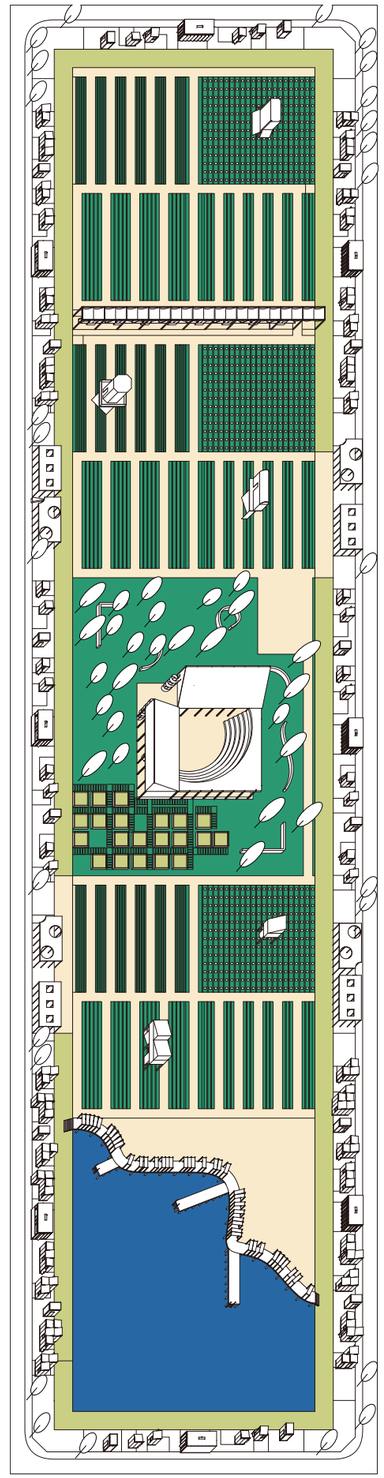
At the same time, Italy's geographic position continues to make it a key entry point for refugee arrivals, placing increasing pressure on centralized infrastructure.

Rather than treating refugees as temporary occupants, the project proposes a long-term, bottom-up model of settlement.

A modular "loop-by-loop" system allows individuals and families to construct and expand their own homes over time, guided by a construction manual. Each unit begins as a minimal structure and evolves through aggregation, forming a dynamic network of living, working, and communal spaces.

Workshops and shared infrastructures act as social condensers, fostering collaboration across cultural and linguistic differences. The rigid historical grid is reinterpreted as a flexible framework—supporting not only habitation, but also local production and exchange.

By prioritizing adaptability, cultural expression, and self-sufficiency, Casa del Nuovo Inizio shifts the narrative of refugee housing—from dependency to agency—while reactivating Arborea's dormant landscape into a resilient and collective form of living.



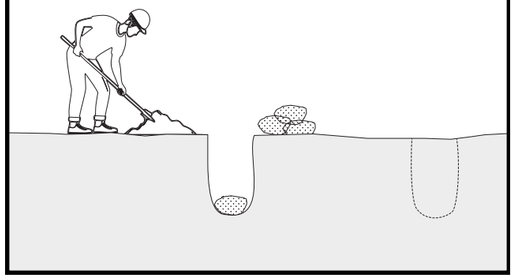
CONSTRUCTION MANUAL

ARBOREA REFUGEE COUNCIL

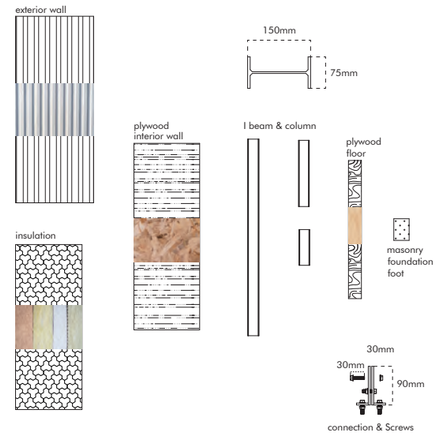
Construction & Metabolism

Manual Book

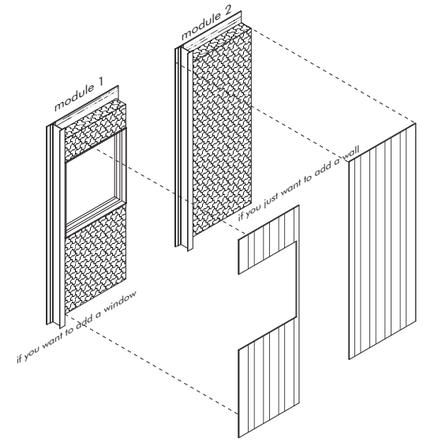
Lay the Masonry Foot Blocks



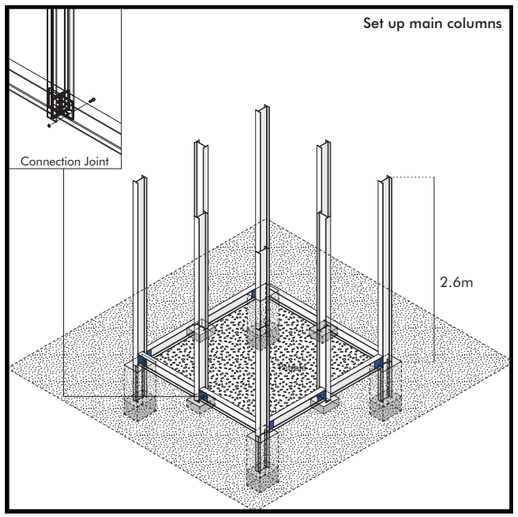
Material



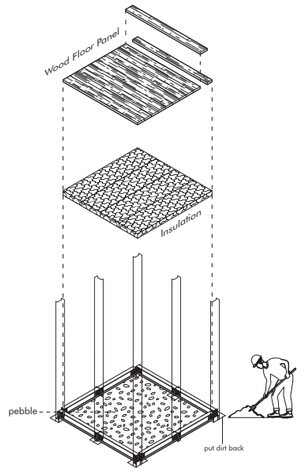
Wall module



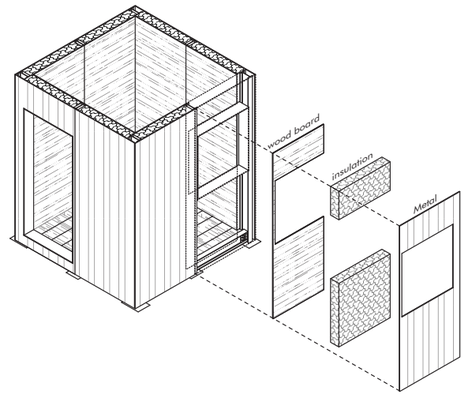
Set up main columns



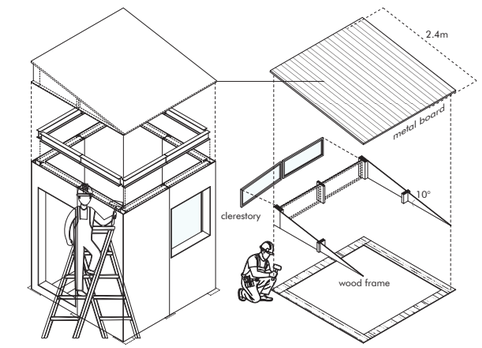
Flooring



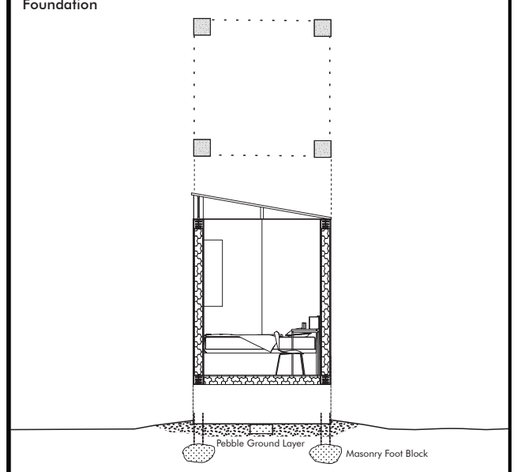
Wall layers



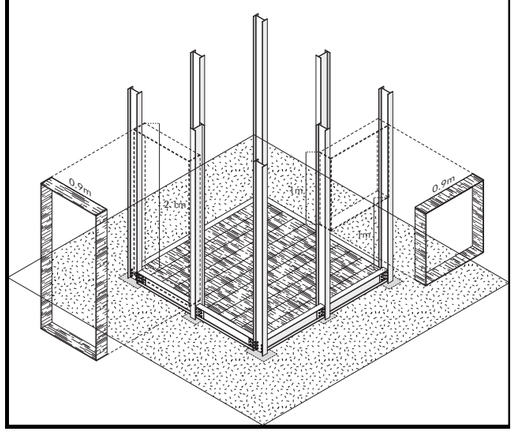
Install the roof



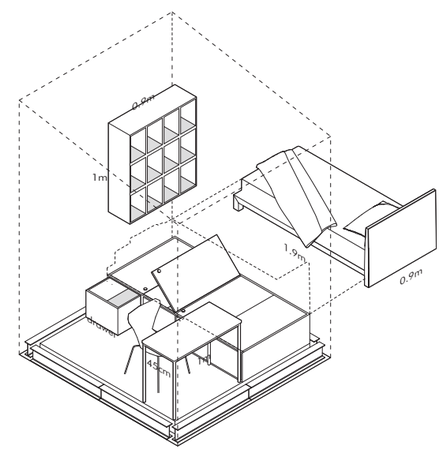
Foundation



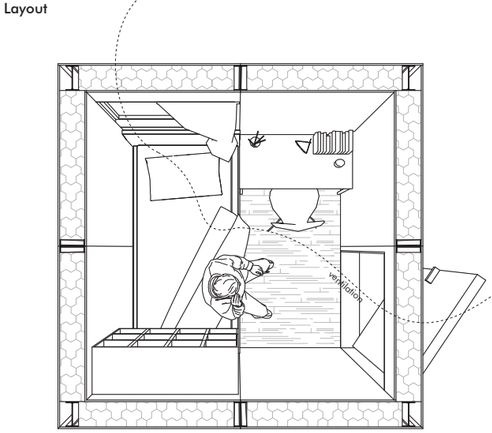
Install window & door frame



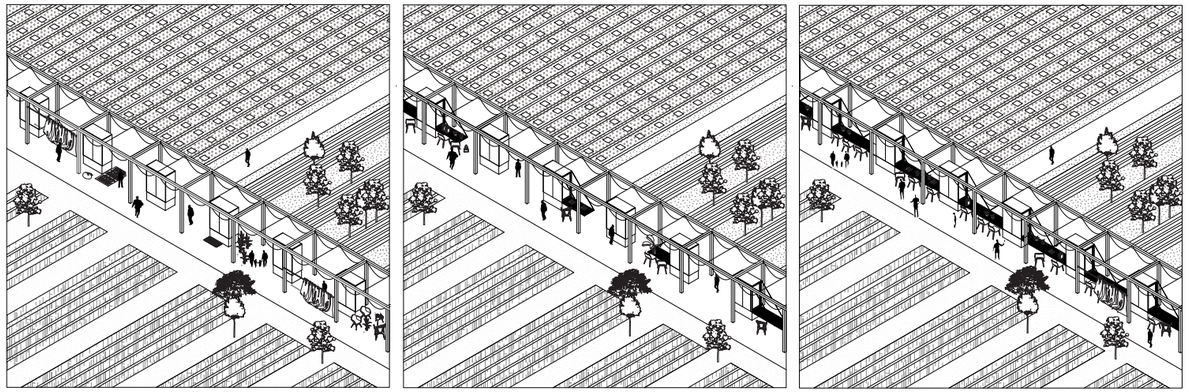
Furniture

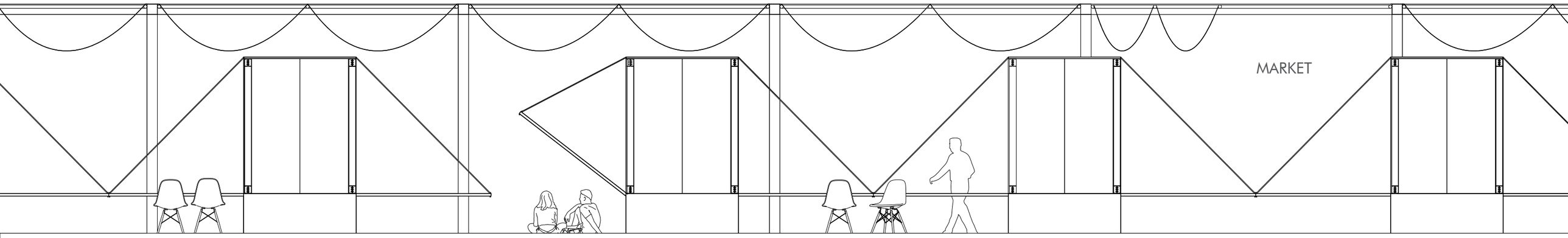


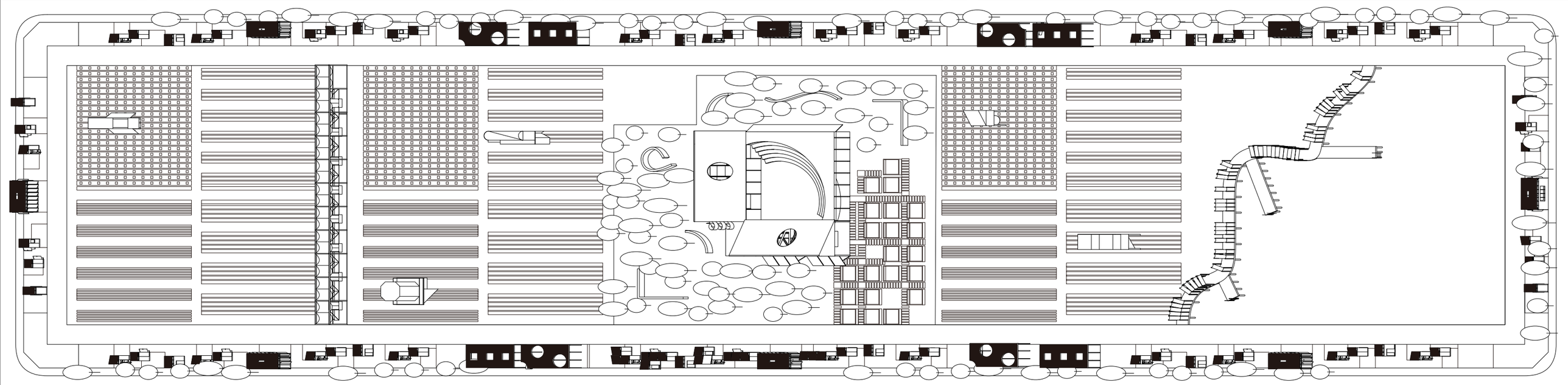
Layout



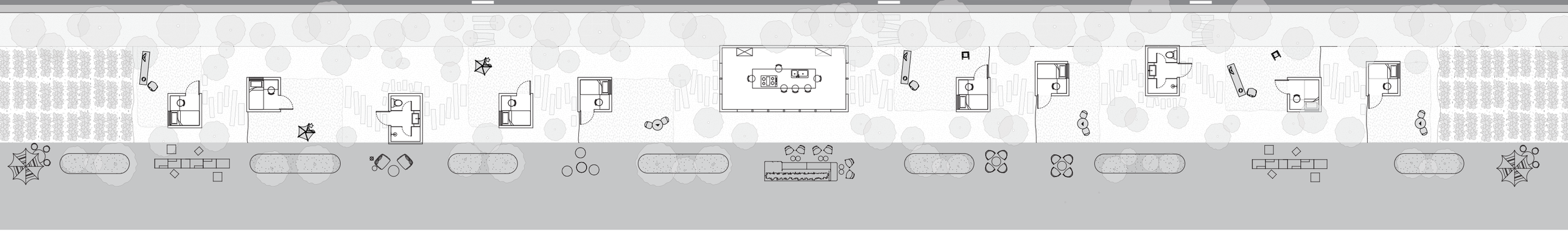
WORKING
AND
LIVING



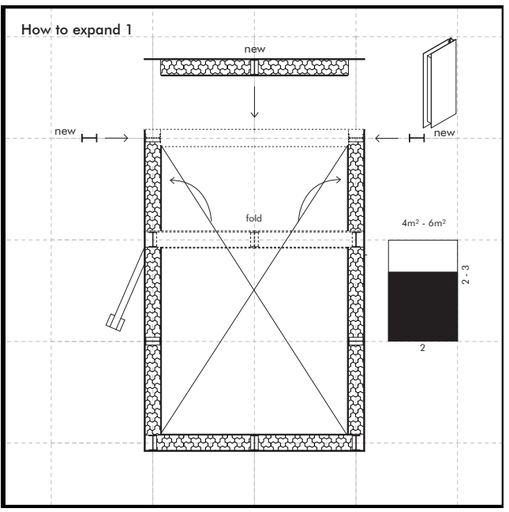


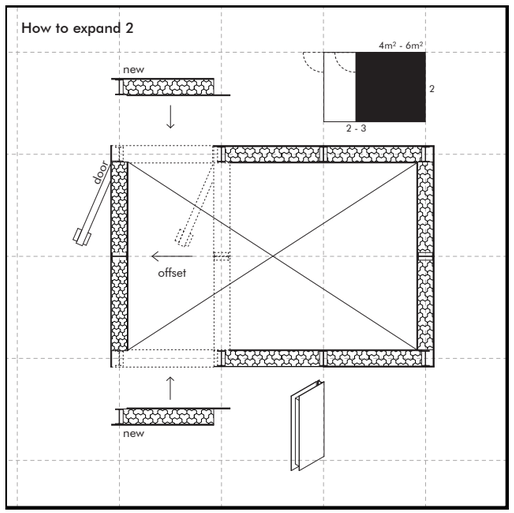


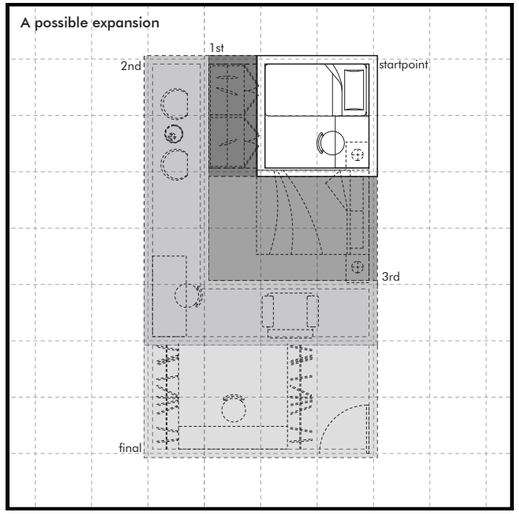
BEFORE EXPANSION

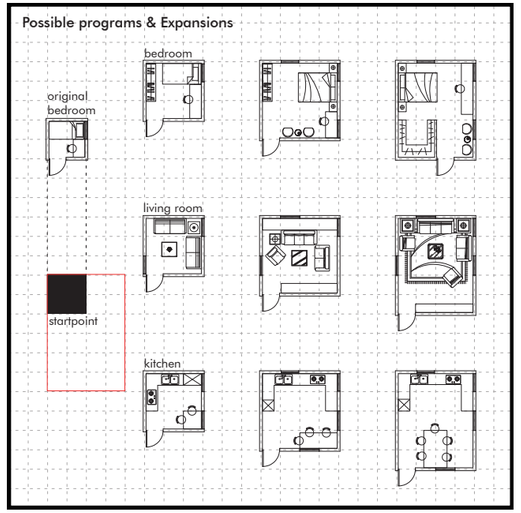


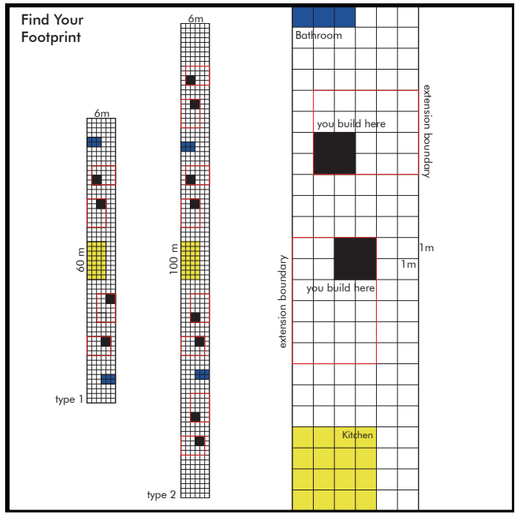
PROCESS OF EXPANSION

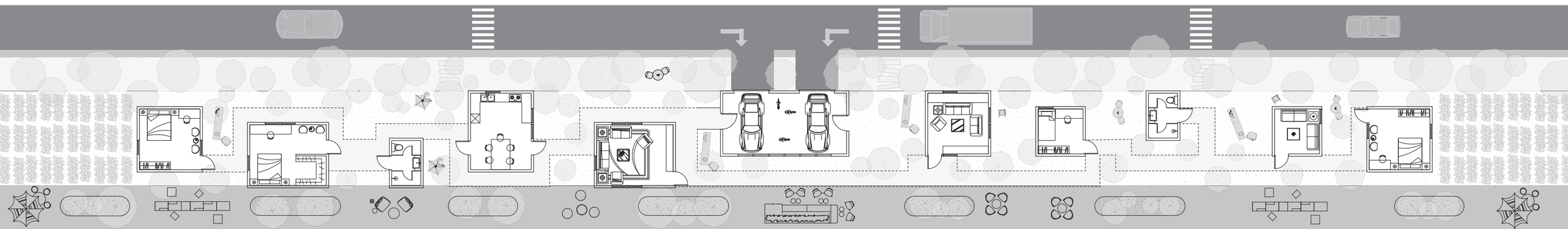












AFTER EXPANSION

1 :1 SCALE CONSTRUCTION

















THE FIELD

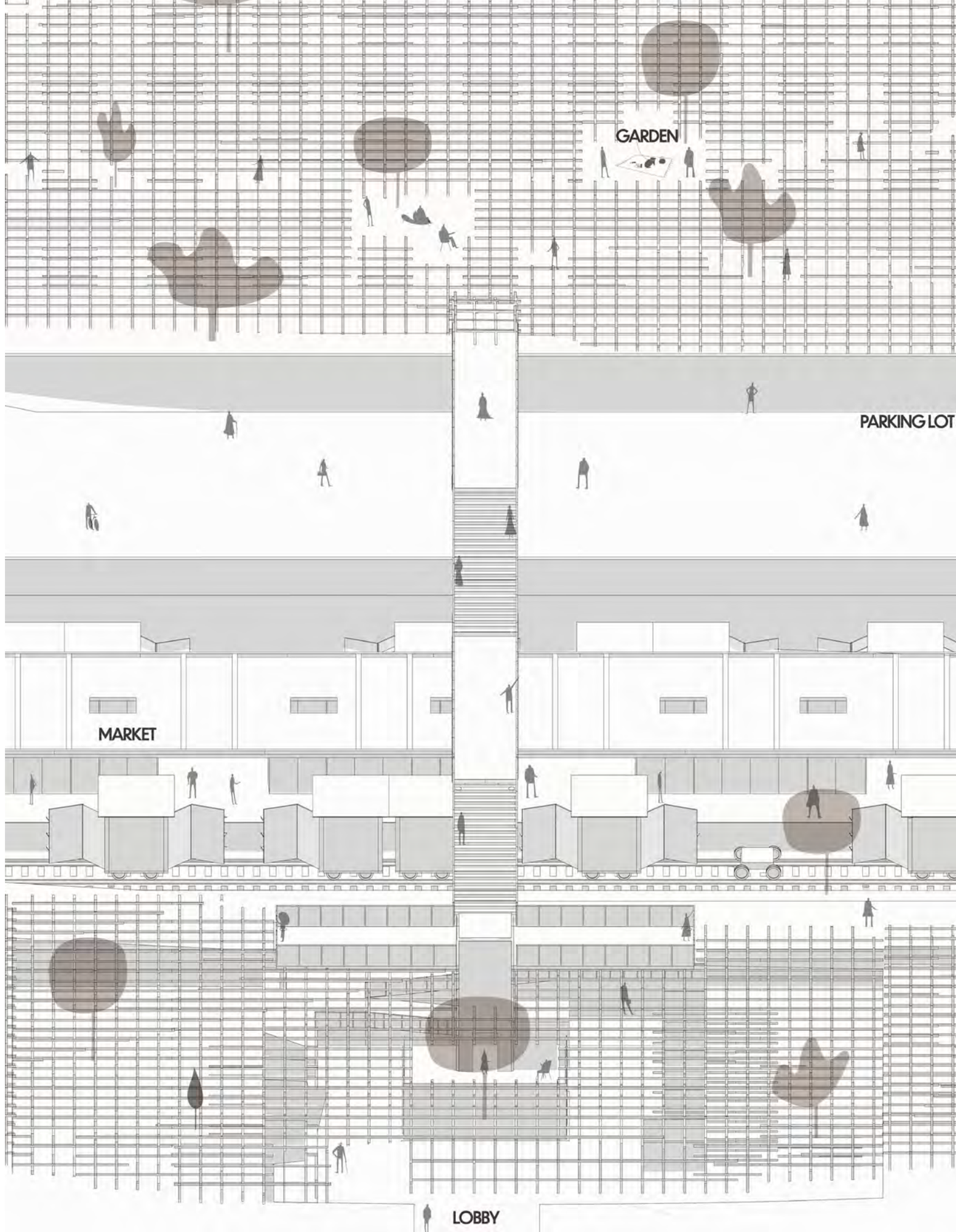
Time: Spring 2024
Location: London, England
Instructor: Amber Bartosh & Vanessa Lastrucci
Collaboration: Rick Li

This project starts from a simple condition: in London, people mostly get food from stores, with little direct connection to how it is grown. Food becomes distant, packaged, and detached from everyday life.

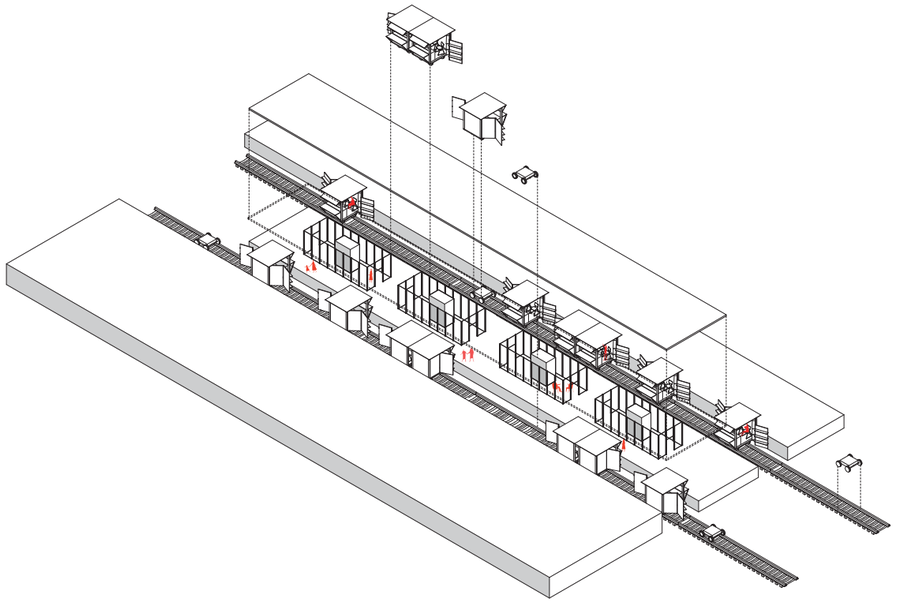
Using the abandoned Highgate train station as a site, the project transforms it into a hybrid of food court, retail, agriculture, and market space. While the station above is unused, an active subway line still runs below, creating a layered condition of movement and potential.

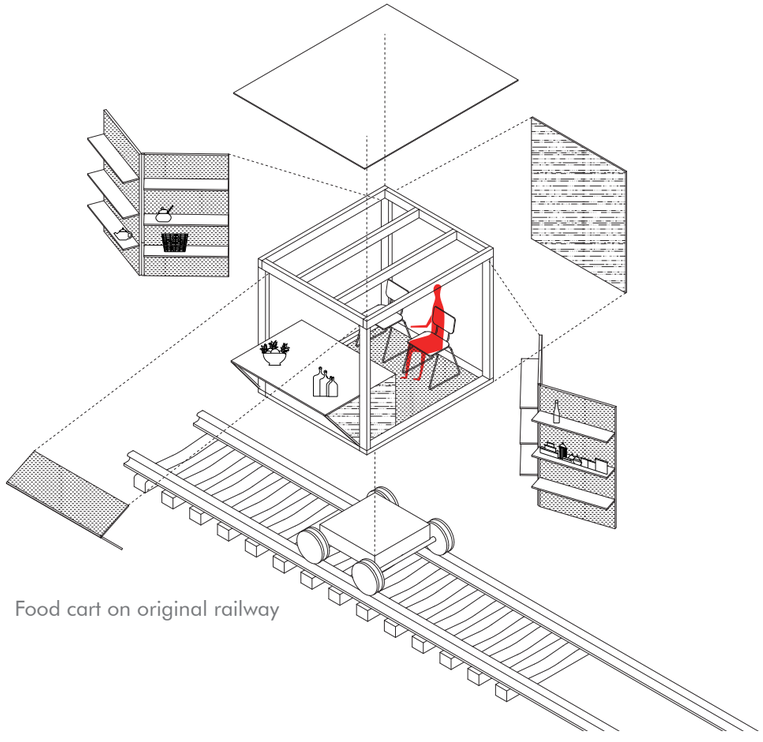
The proposal introduces a modular wooden allotment system that can grow over time and be self-managed. It acts as an urban garden where people can grow, exchange, and sell food directly along their daily transit routes.

By inserting production, consumption, and social space into existing infrastructure, the project reactivates the station as a dynamic environment—where people not only eat, but reconnect with food as part of everyday urban life.



Abandoned train station renovated into food court





Food cart on original railway

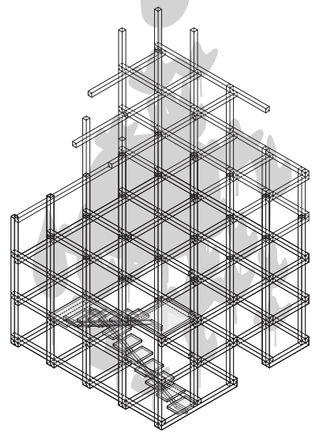


TOP VIEW

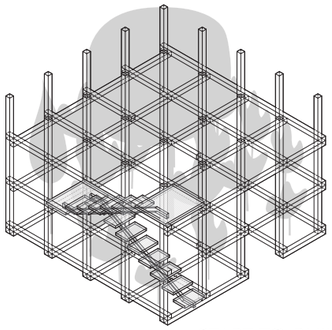


FOOD COURT

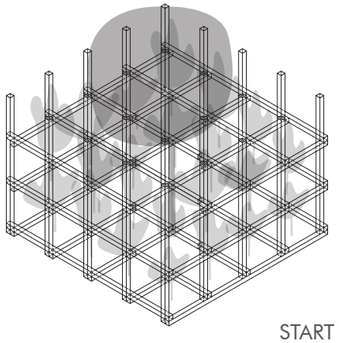
ALLOTMENTS AXONOMETRIC



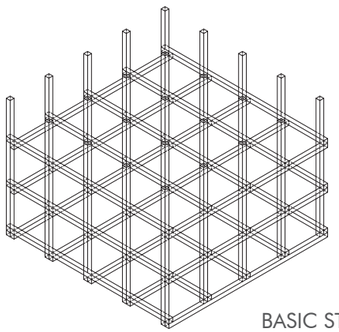
GROWING



START TO BUILD HIGHER



START TO PLANT



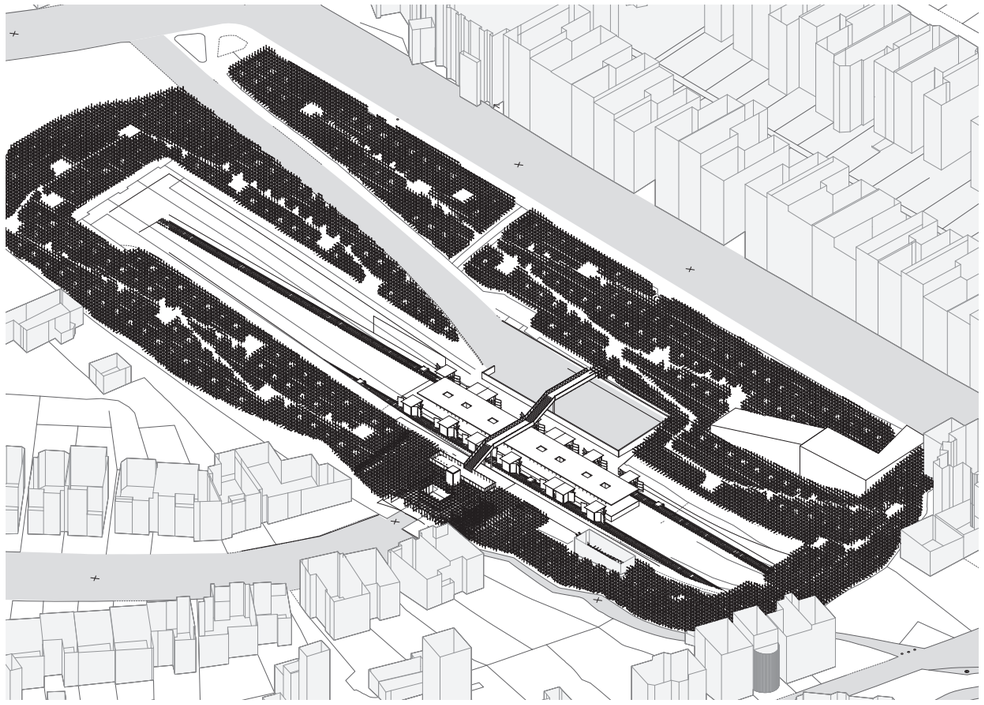
BASIC STRUCTURE

ALLOTMENT PERSPECTIVES

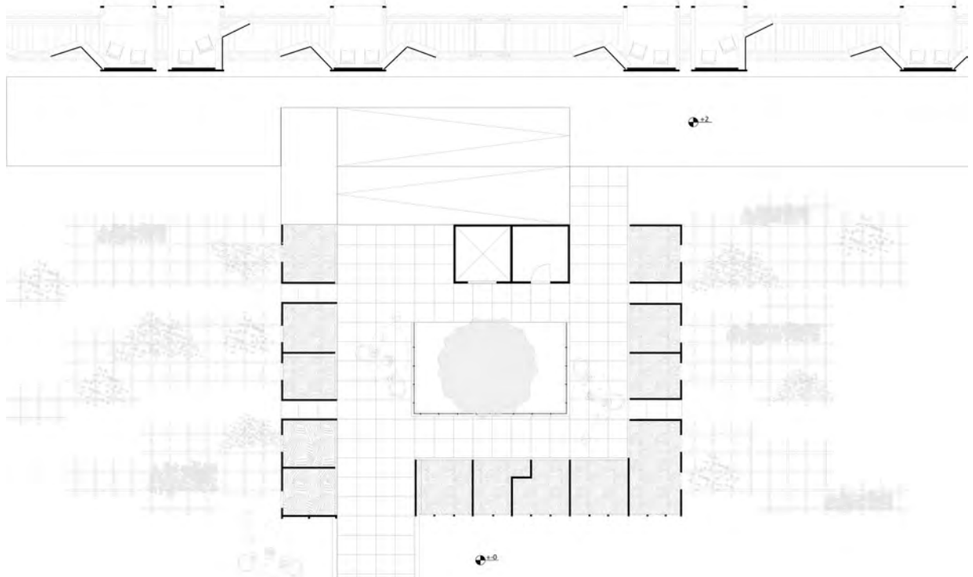




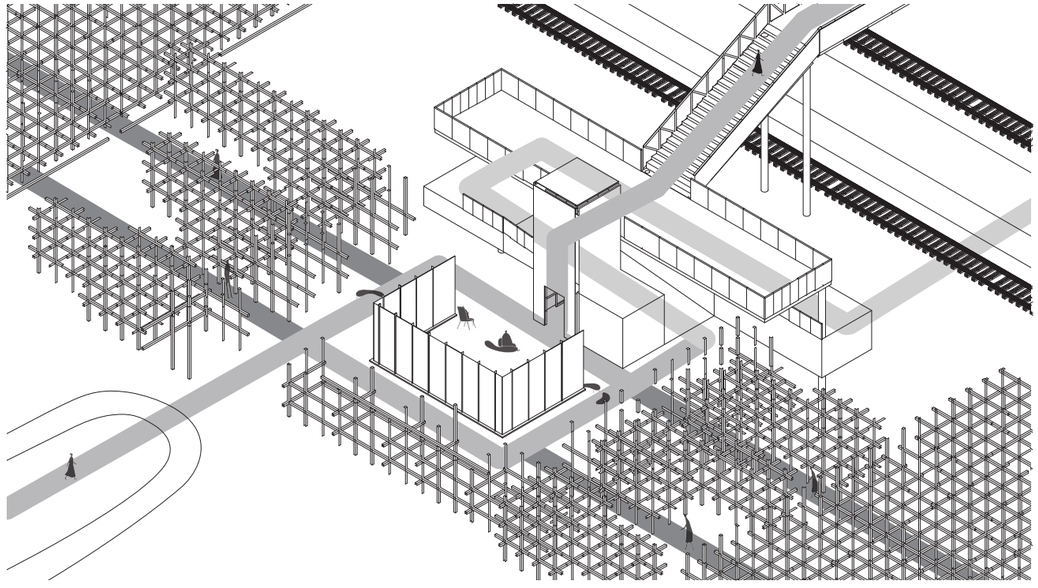
The foyer serves as a primary spatial and circulatory node, connecting the active subway platform below with the surrounding residential fabric while also functioning as a transitional gathering space. Rather than operating solely as a passage, it mediates between different flows of movement—commuters, residents, and visitors—accommodating both circulation and moments of pause. A bridge extends from the foyer to the upper-level allotments, establishing a clear vertical connection between transit infrastructure and spaces of cultivation.



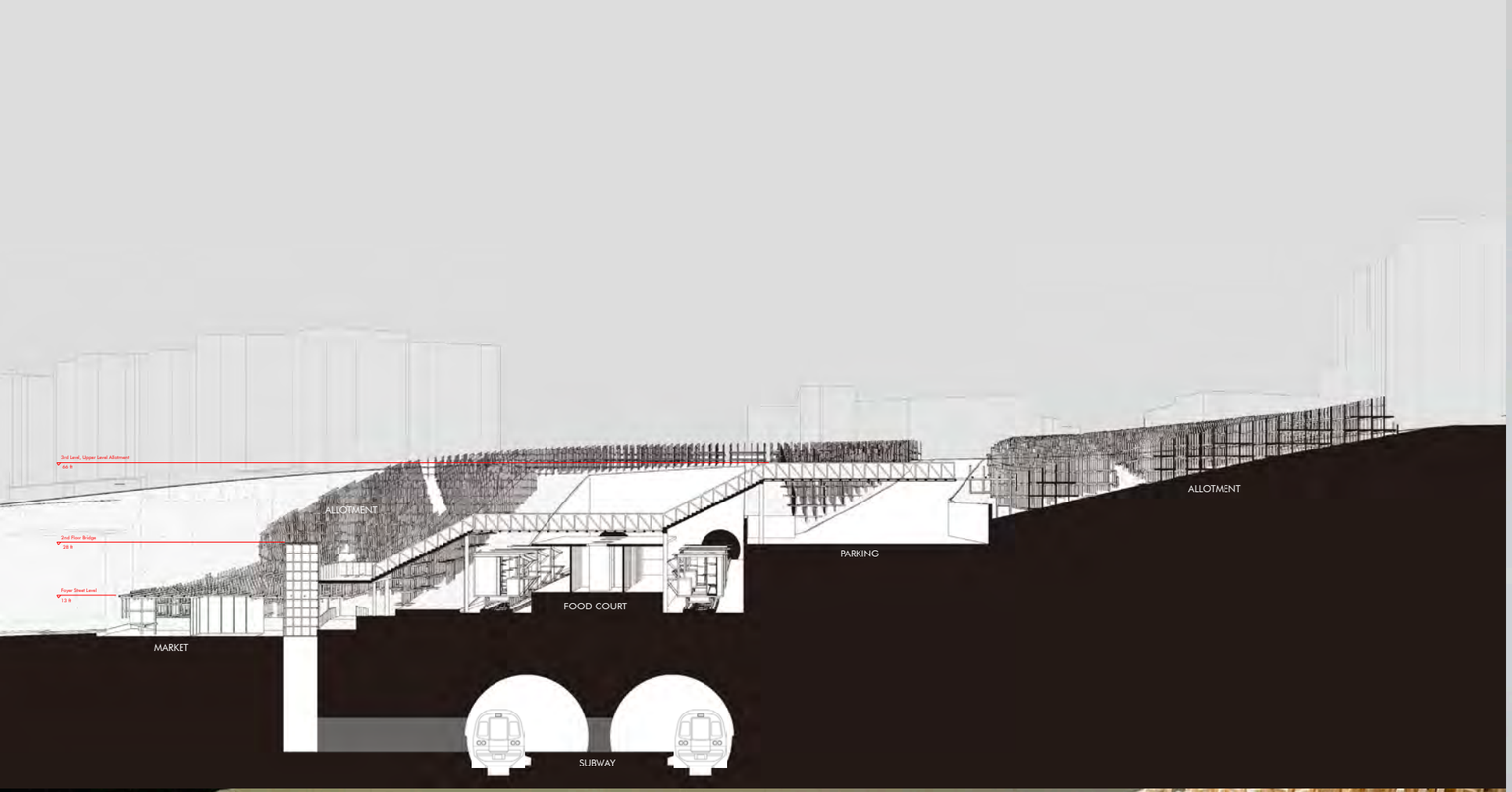
SITE AXONOMETRIC AFTER RENOVATION

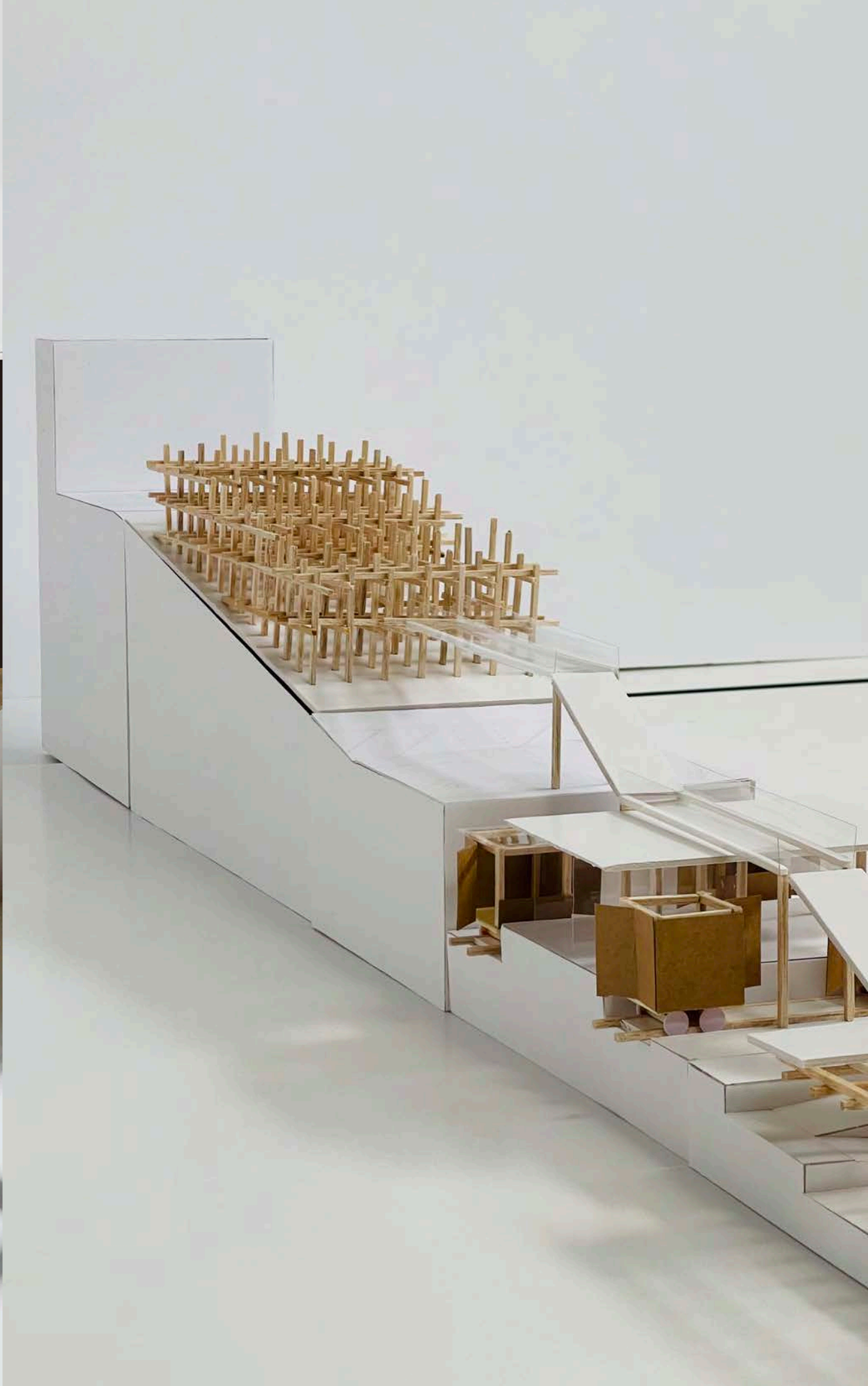


FOYER PLAN



FOYER AXONOMETRIC


2nd Level, Upper Level Allotment
66 ft
ALLOTMENT
2nd Floor Bridge
33 ft
Foyer Street Level
13 ft
MARKET
FOOD COURT
PARKING
ALLOTMENT
SUBWAY



COEXISTENCE TOWER

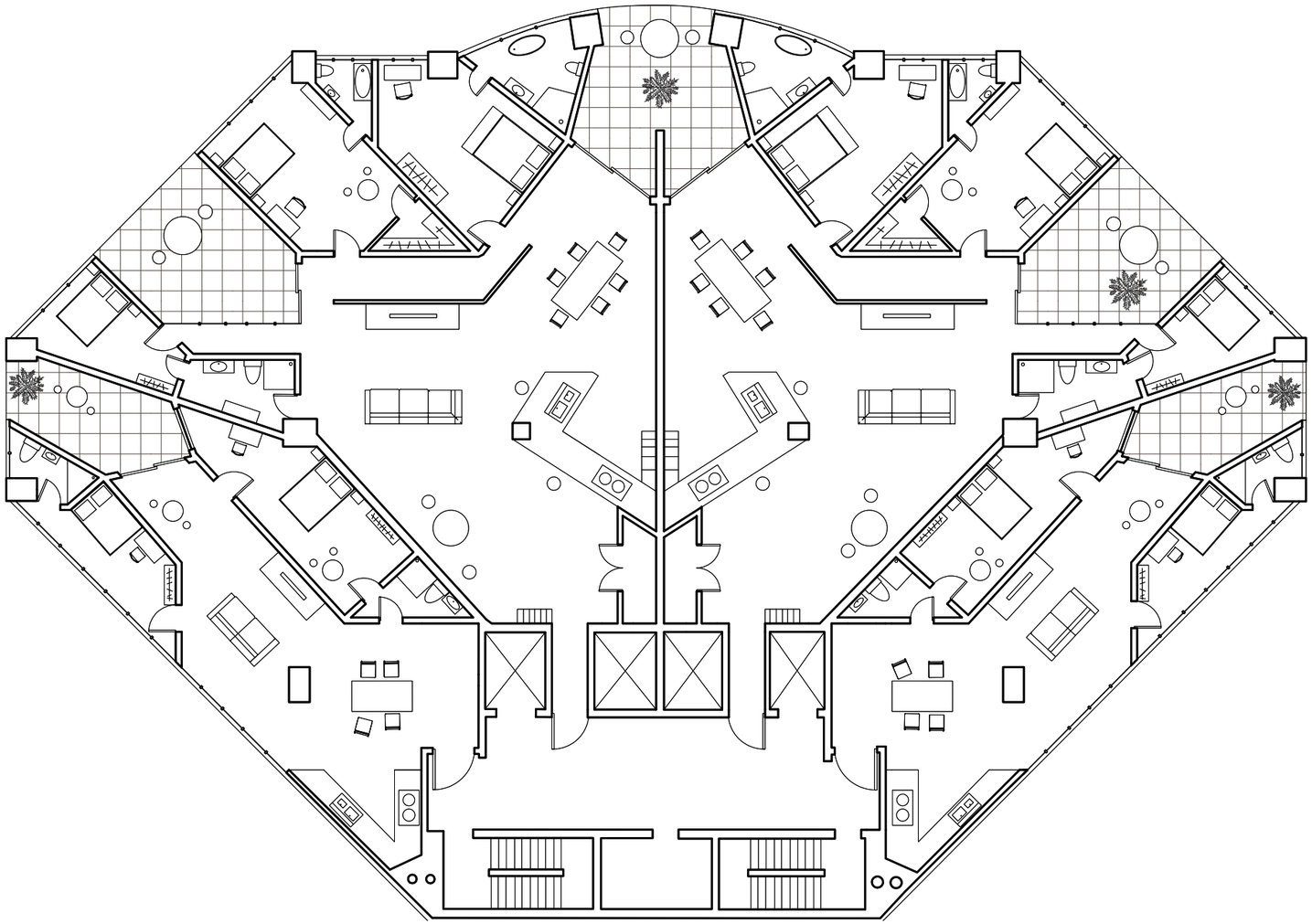
Time: Fall 2023
Location: New York City, USA
Instructor: Laura Salazar

This project transforms an existing office building into a mixed-income housing development, exploring how architecture can negotiate environmental performance and social equity within a single structure. The design introduces three distinct unit types: two-bedroom units that prioritize natural ventilation and sunlight by pushing private spaces outward, a series of top-floor low-income studio apartments, and duplex penthouses occupying the upper levels.

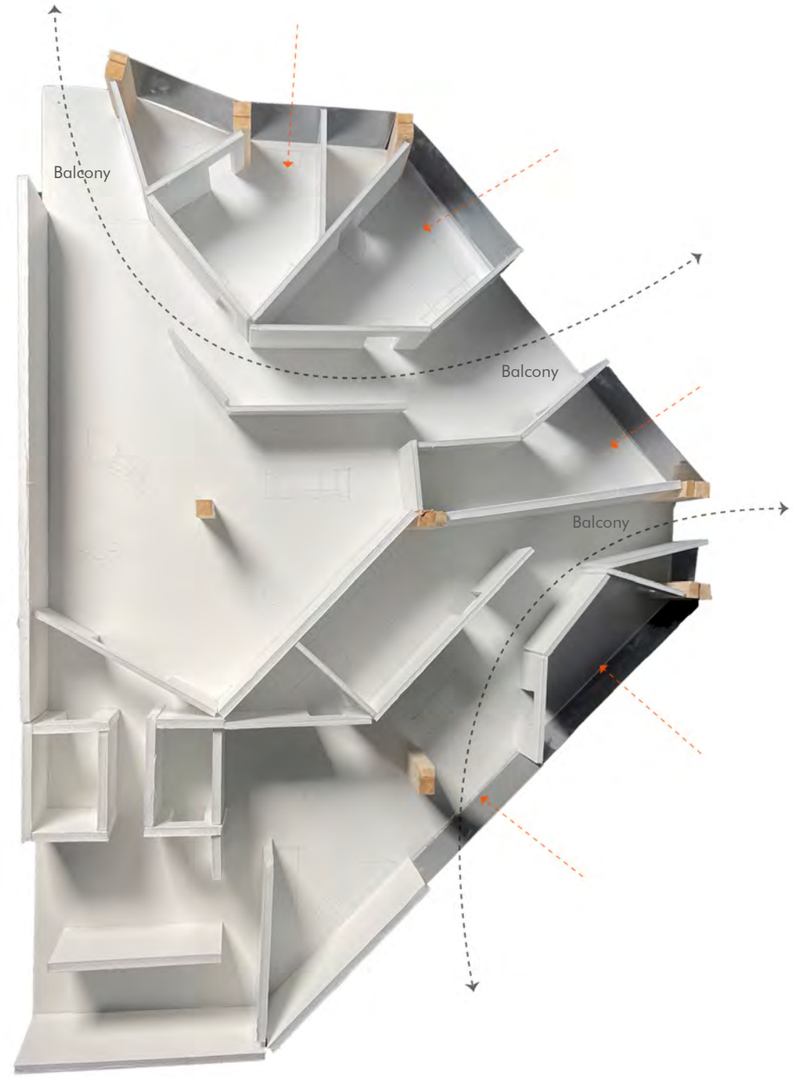
The overall plan develops in a leaf-like configuration, allowing units to “grow” outward to maximize access to light and air. This geometry not only enhances environmental quality but also defines a clear spatial hierarchy between private and shared zones.

The three housing types are vertically integrated as a social experiment, where higher-income residents subsidize affordability within the same building. While circulation systems are carefully separated to maintain privacy and security, all residents coexist within a shared architectural framework, testing the potential for economic diversity within a single urban housing model.

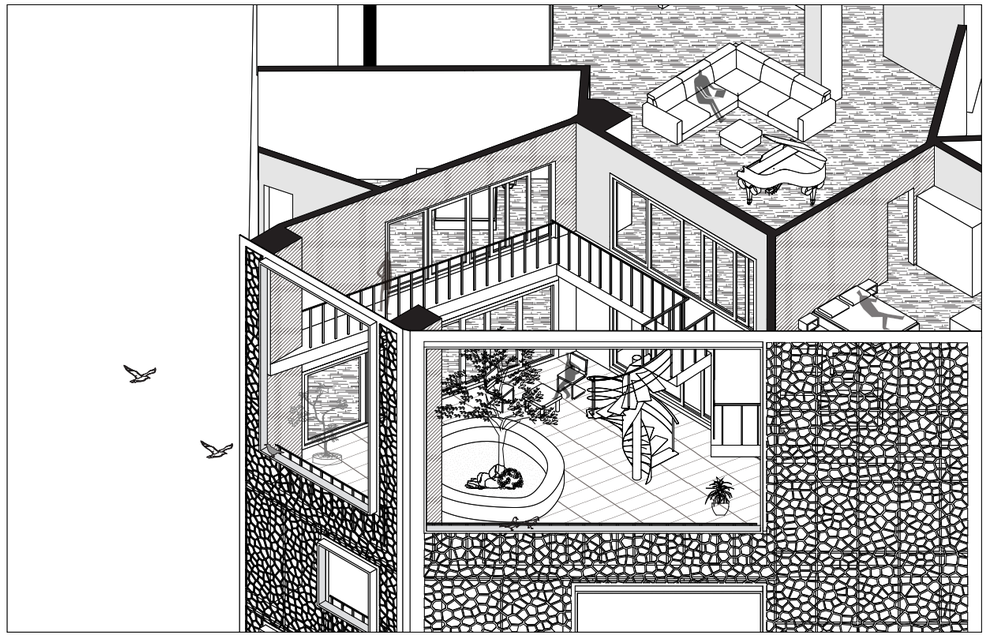




2 Bedroom Unit Plan

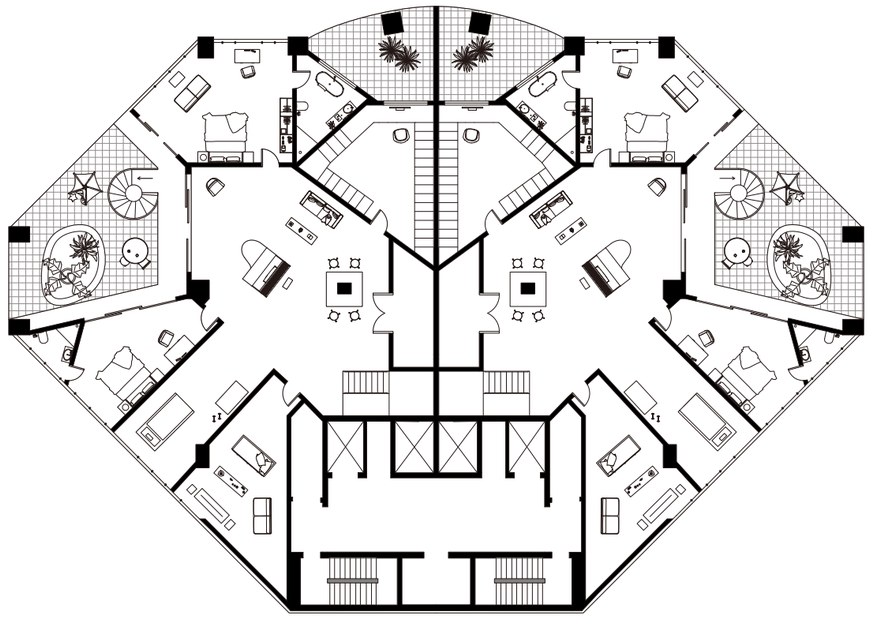


Ventilation & Sunlight

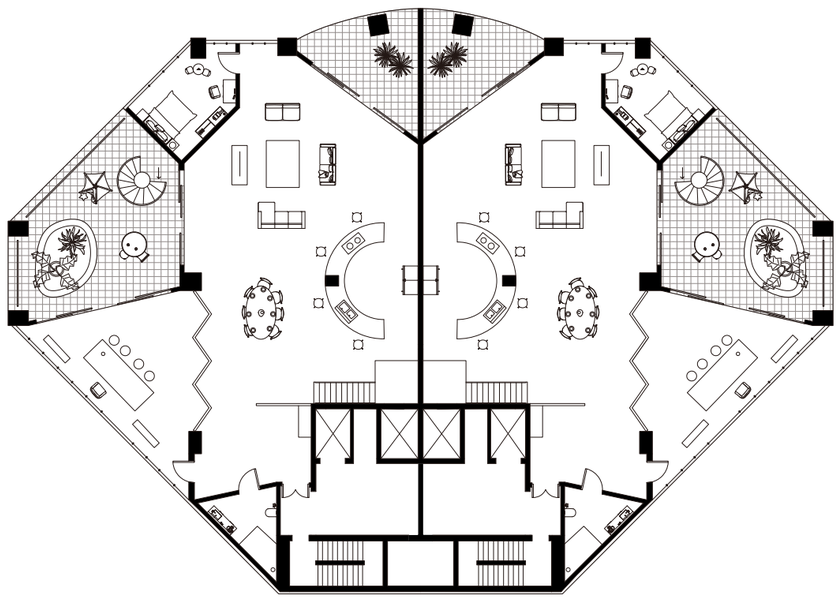


Penthouse Sky Garden Axonometric

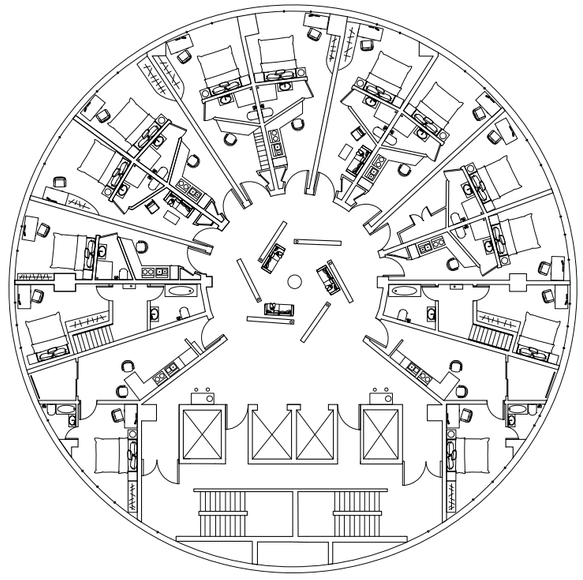
PENTHOUSE UNIT

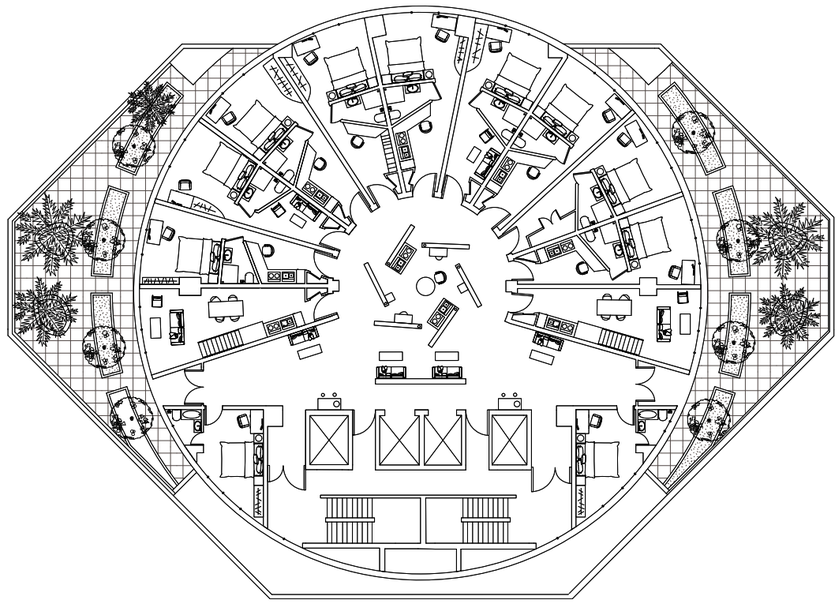


2nd Floor Plan



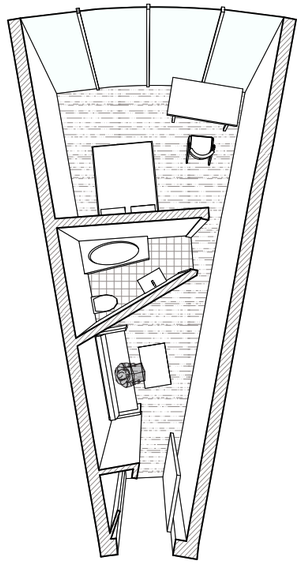
1st Floor Plan



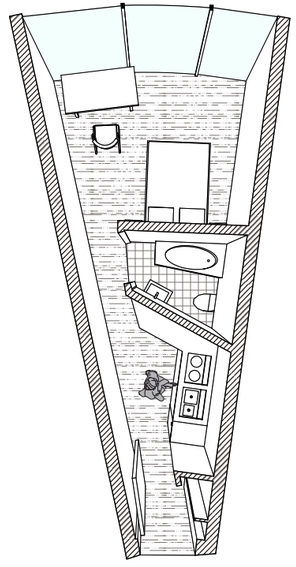


Studio & 1 Bedroom Unit at Upper Level

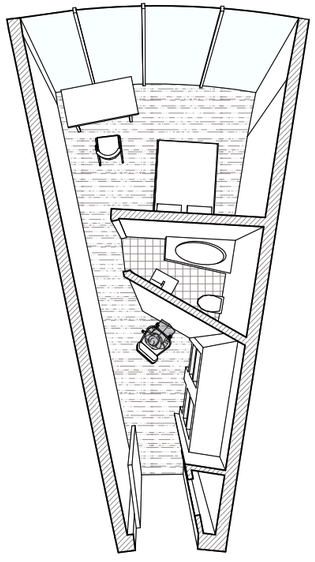
3 Versions of Studio Units



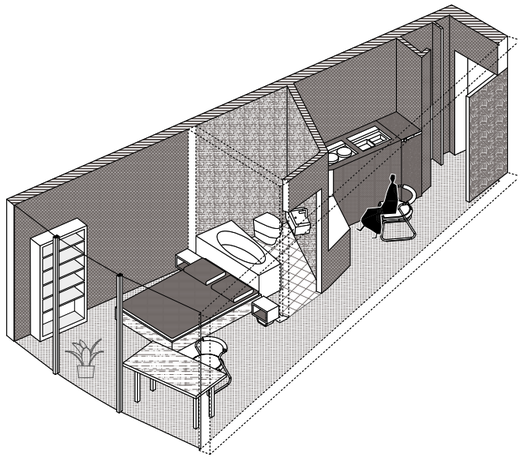
Living Room Type



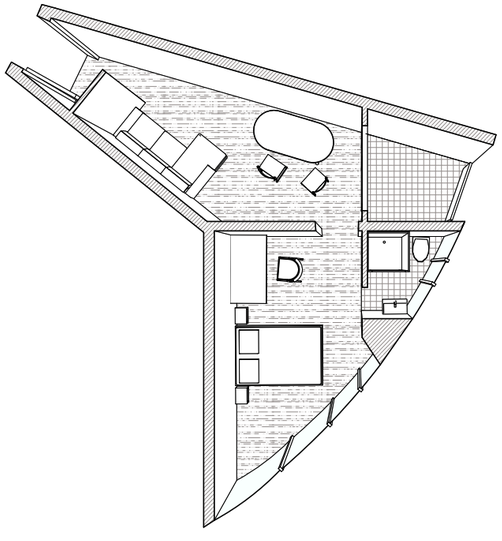
Kitchen Type



Study Room Type



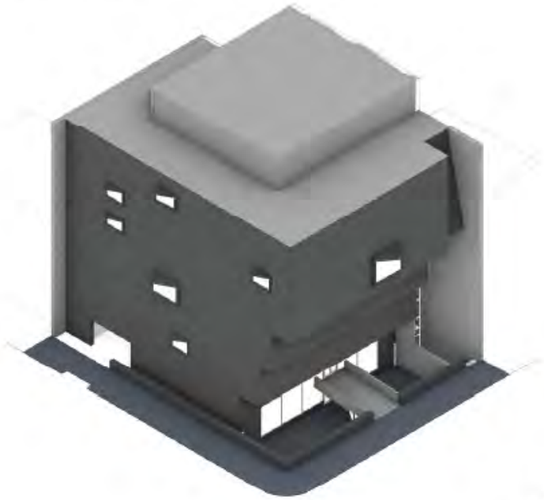
Studio Axonometric

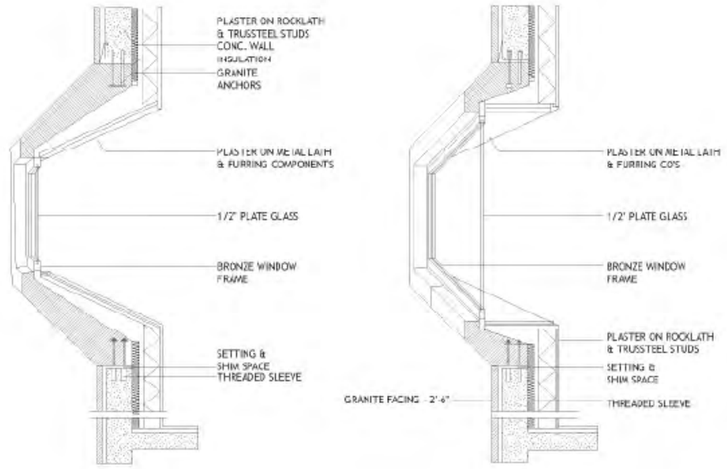


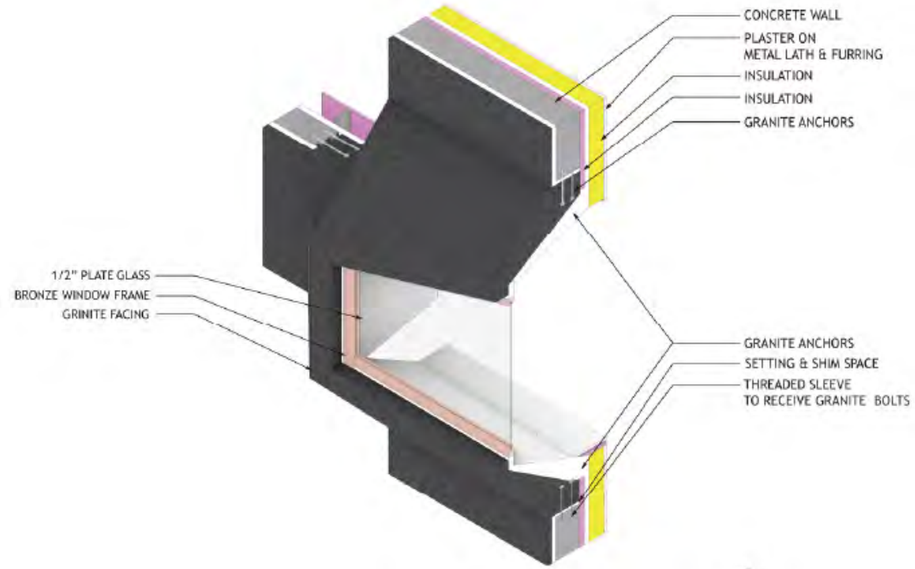
1 Bedroom Unit

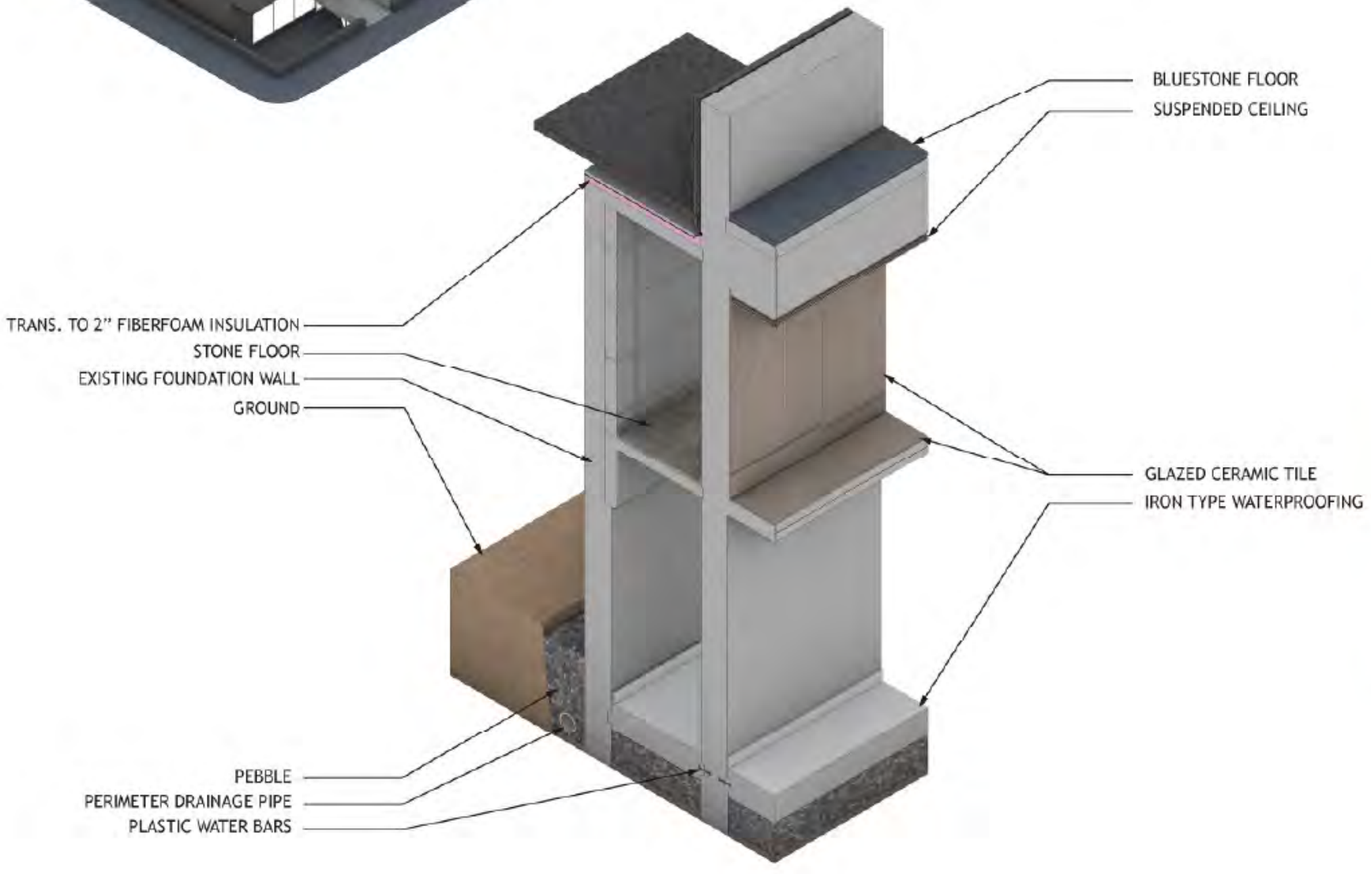
THE MET BREUER
Advanced Building System Research

Spring 2025





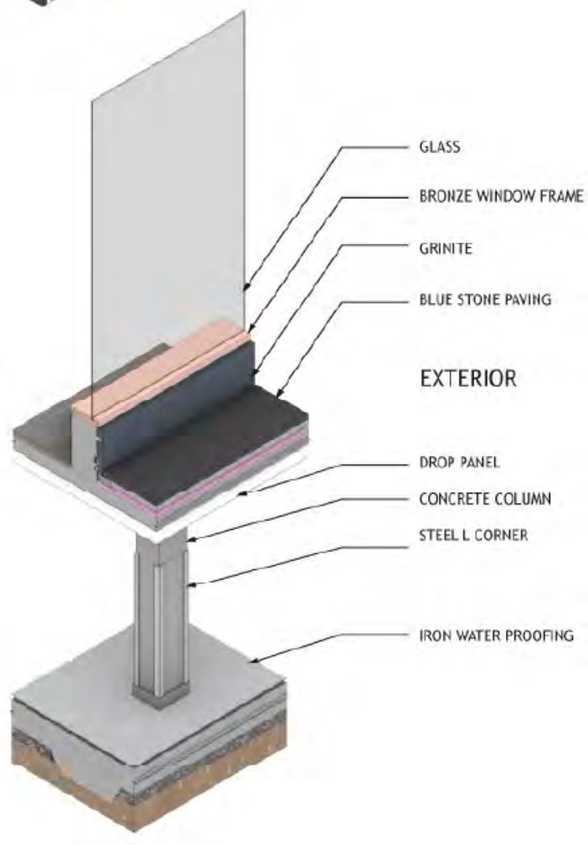


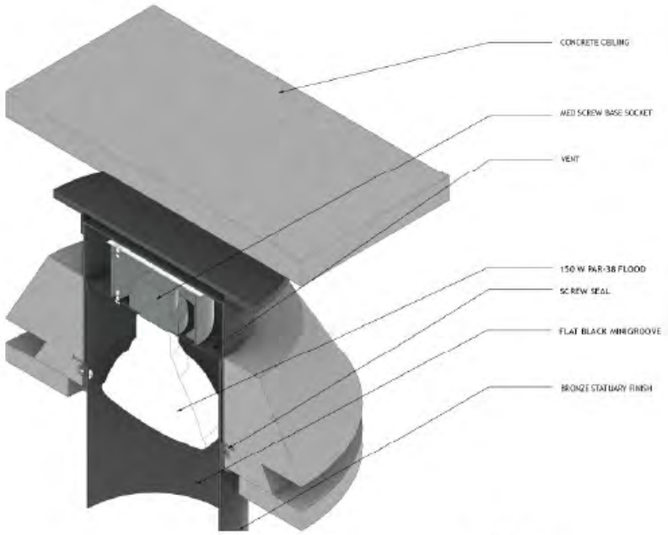


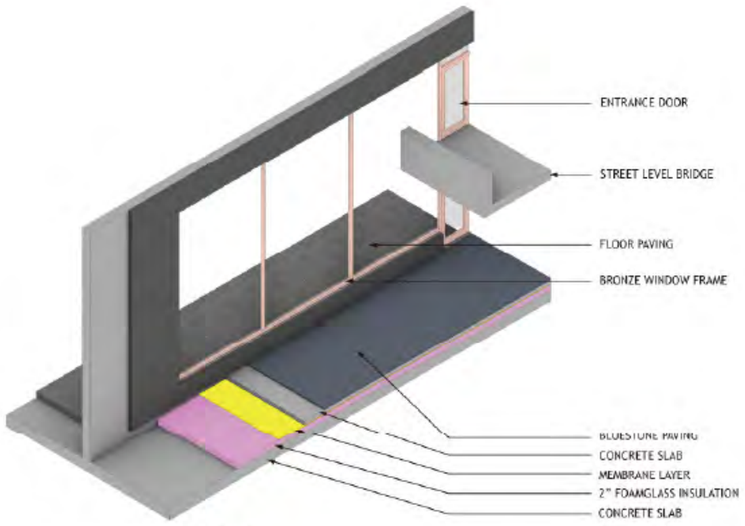


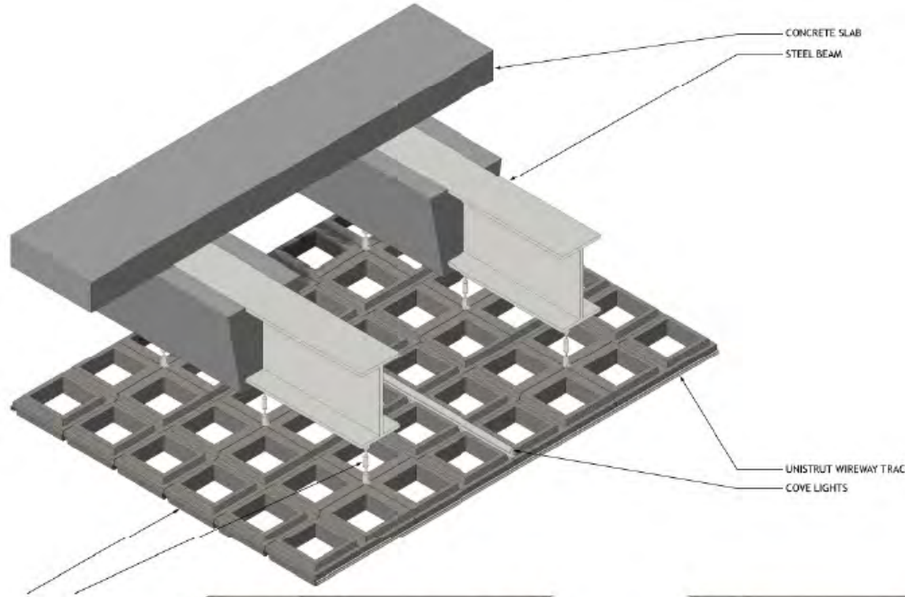
INTERIOR

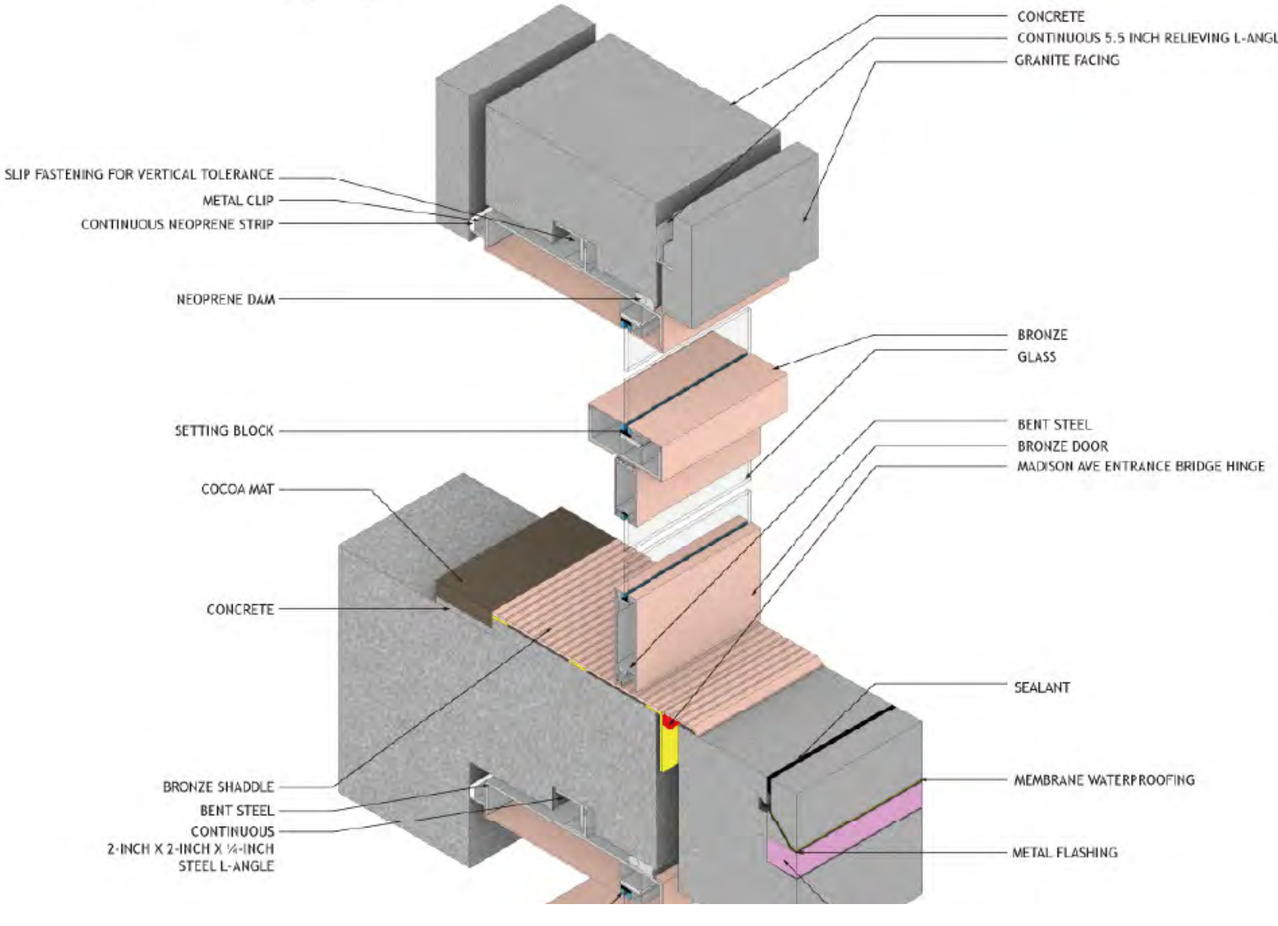
EXTERIOR

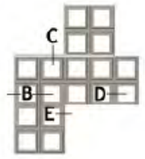


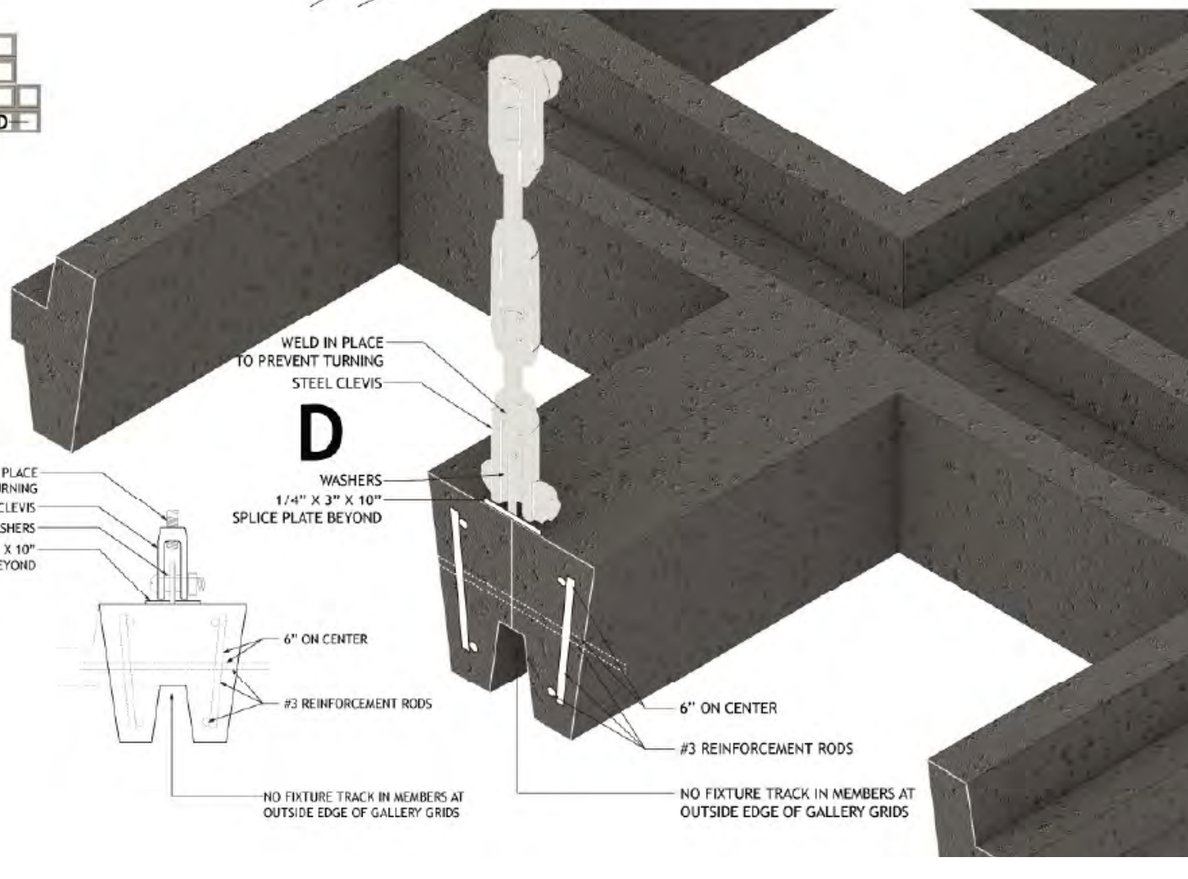

CONCRETE CEILING
MED SCREW BASE SOCKET
VENT
150 W PAR-38 FLOOD
SCREW SEAL
FLAT BLACK MINIGROOVE
BRONZE STATUARY FINISH


ENTRANCE DOOR
STREET LEVEL BRIDGE
FLOOR PAVING
BRONZE WINDOW FRAME
BLUESTONE PAVING
CONCRETE SLAB
MEMBRANE LAYER
2" FOAMGLASS INSULATION
CONCRETE SLAB


CONCRETE SLAB
STEEL BEAM
UNISTRUT WIREWAY TRAC
COVE LIGHTS


CONCRETE
CONTINUOUS 5.5 INCH RELIEVING L-ANGLE
GRANITE FACING
SLIP FASTENING FOR VERTICAL TOLERANCE
METAL CLIP
CONTINUOUS NEOPRENE STRIP
NEOPRENE DAM
BRONZE
GLASS
SETTING BLOCK
BENT STEEL
BRONZE DOOR
MADISON AVE ENTRANCE BRIDGE HINGE
COCOA MAT
CONCRETE
SEALANT
BRONZE SHADDLE
BENT STEEL
CONTINUOUS
2-INCH X 2-INCH X ¼-INCH
STEEL L-ANGLE
MEMBRANE WATERPROOFING
METAL FLASHING


C
B
D
E

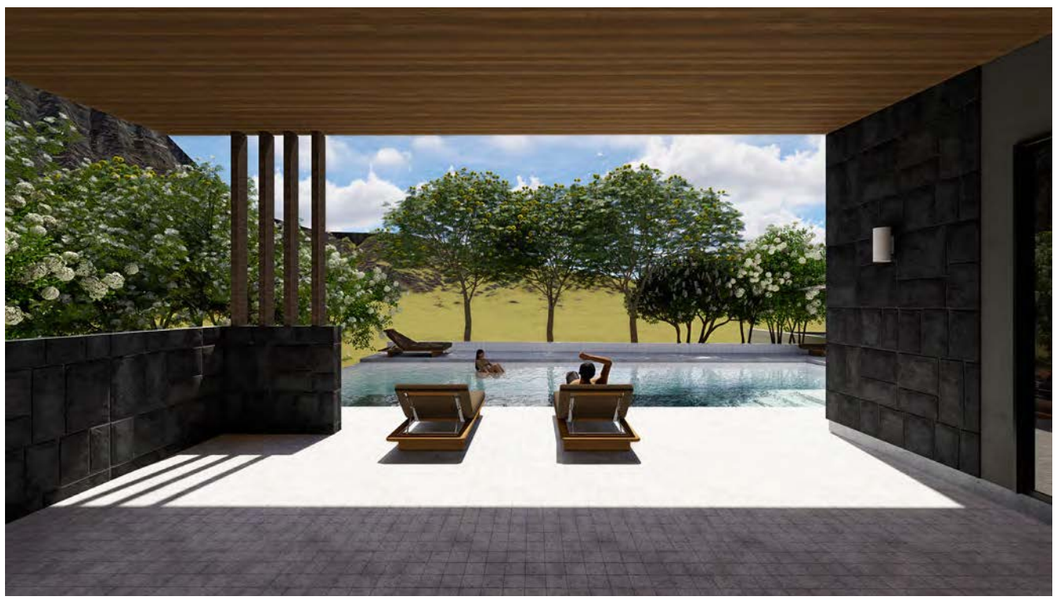

WELD IN PLACE
TO PREVENT TURNING
STEEL CLEVIS
D
WASHERS
1/4" X 3" X 10"
SPLICE PLATE BEYOND
6" ON CENTER
#3 REINFORCEMENT RODS
NO FIXTURE TRACK IN MEMBERS AT
OUTSIDE EDGE OF GALLERY GRIDS

INTERNSHIP WORK SAMPLES

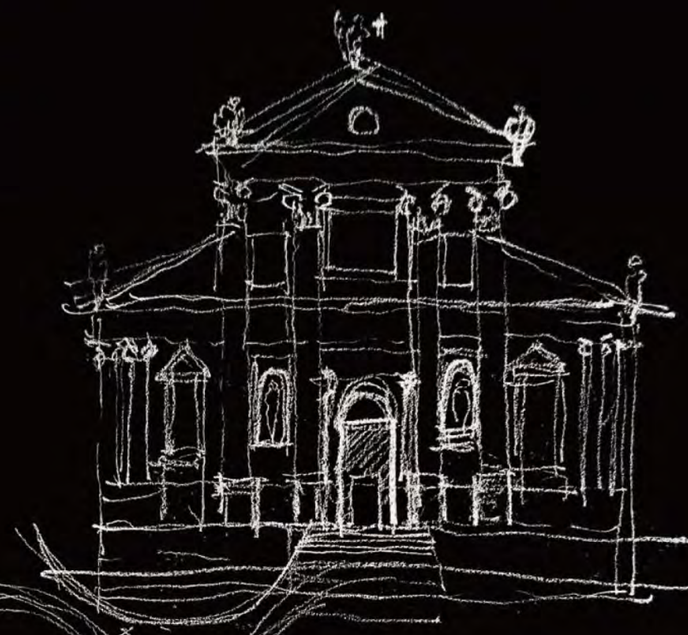




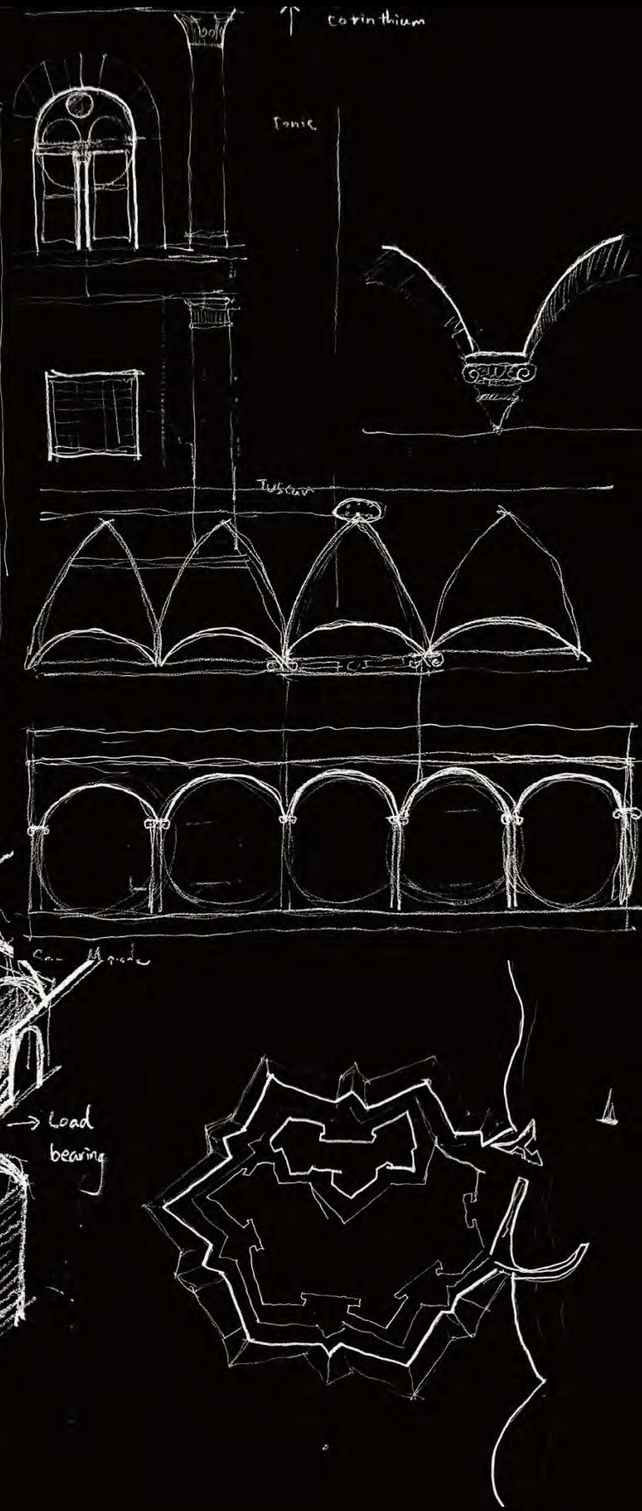


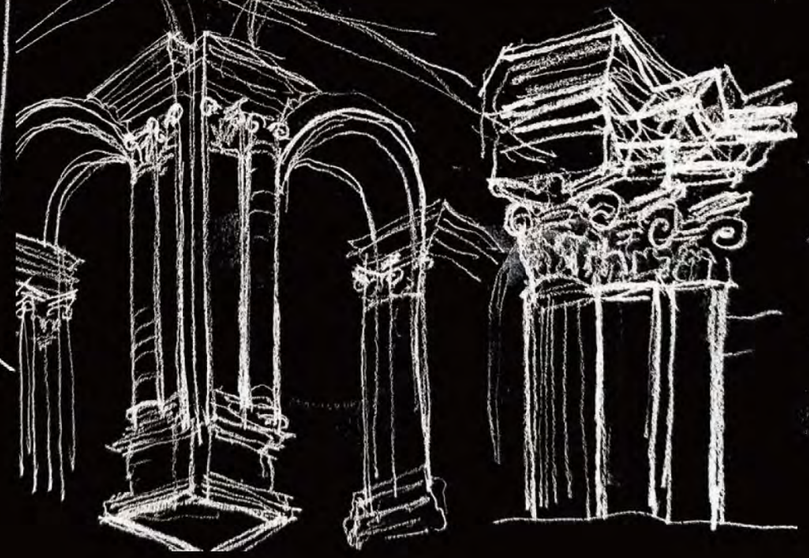


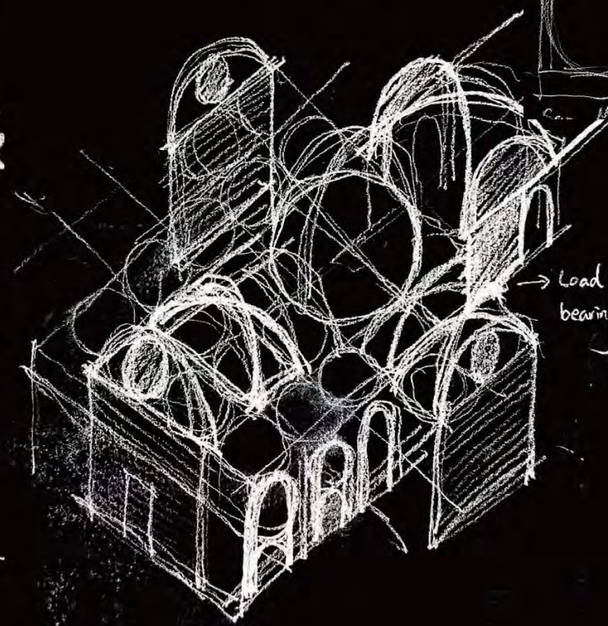












Two Facade