

40.8075° N, 73.9626° W  
1172 Amsterdam Avenue, New York, NY 10027

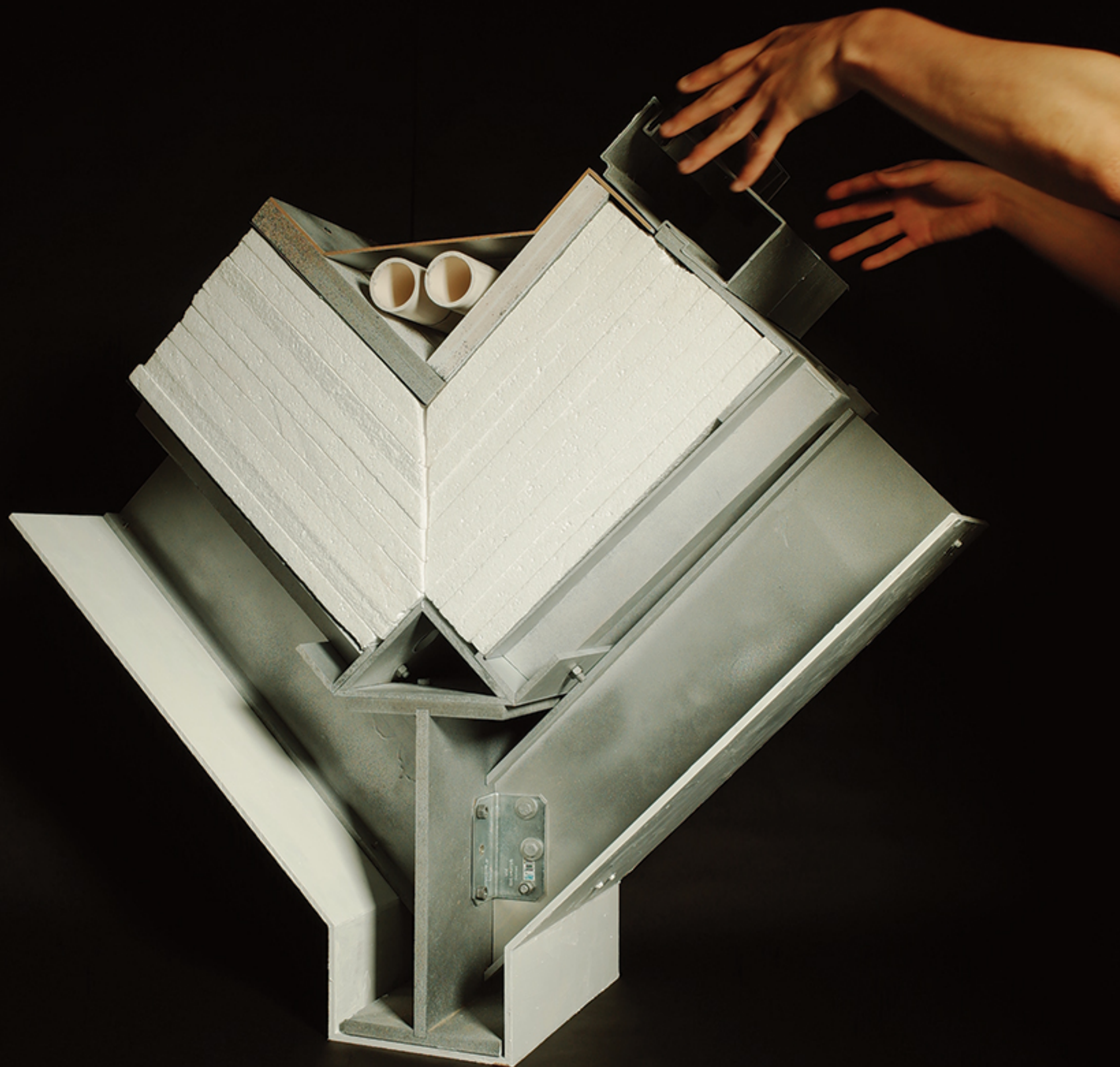
— Sep 2022  
May 2025

# Portfolio

## Selected Works

Yiu Lun Lee - Assoc. AIA, PMP, LEED AP, WELL AP  
yl5158@columbia.edu M.Arch Architecture & M.S. Real Estate Development  
GSAPP Columbia University in the City of New York





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40.8162° N, 73.9425° W  
2296 Adam Clayton Powell Jr Blvd, New York, NY 10030

Jan - May  
2025

***Small Footprints : Architecture of Clinic***

***“WHAT IF”*** diabetes care in Harlem—where rates of Type II diabetes are higher than the citywide average—could begin not in a back room, but at the sidewalk?

Yiu Lun Lee (MLL), *Partner* - Shuncheng Zhang (SZ)

LED BY  
Prof. Hilary Sample

**MOS**  
***5000 sqft, Harlem***



### The Diabetic Section Spatializing Preventive Health



Elevation 0.2 - YLL



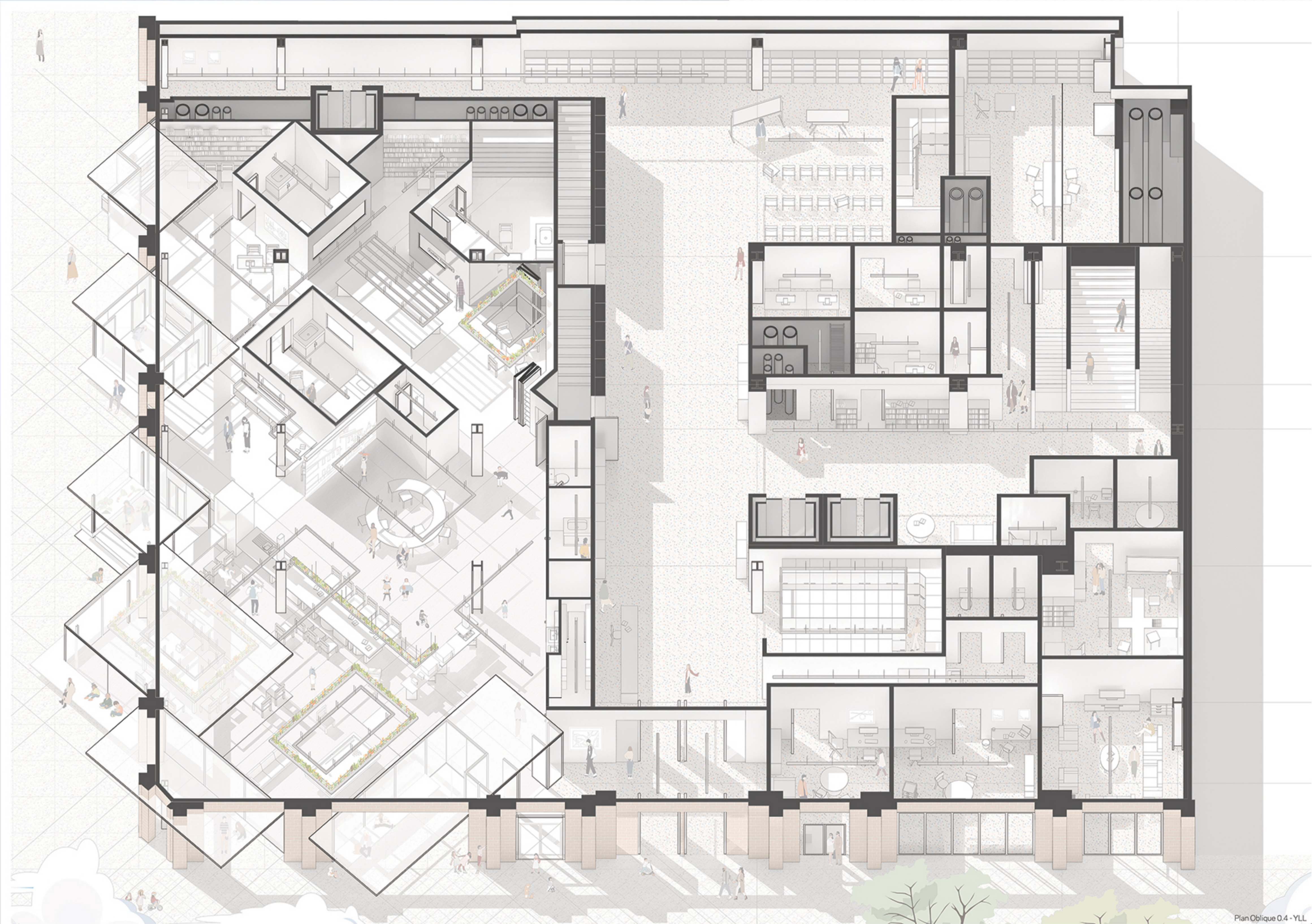
Model 0.3 - YLL & SZ

Sited at 2296 Adam Clayton Powell Jr Boulevard in Harlem, Storefrontosis transforms a building once home to the legendary Small's Paradise jazz club—and more recently a public school and IHOP—into a civic health anchor for chronic disease prevention. This adaptive reuse project addresses Harlem's elevated rates of Type II diabetes by establishing a spatial and temporal architecture of care. Through a rearticulated storefront façade, the building foregrounds access, legibility, and rhythm; clinical programs are coordinated with the daily routine of the community, reinforcing architecture's role as a conduit for health equity.

The plan choreographs both public and semi-private spaces, blurring the boundary between urban life and medical infrastructure. The entrance opens with a hydration bar, water fountain, and public lounge organized around casual seating and a pool table—spaces that encourage rest, socializing, and community presence. A teaching kitchen, public dining area, and farmer's market zone offer nutritional support through shared cooking and food access. These programs activate the street-facing façade, embedding preventive care into Harlem's public life.

Model 0.1 - YLL & SZ



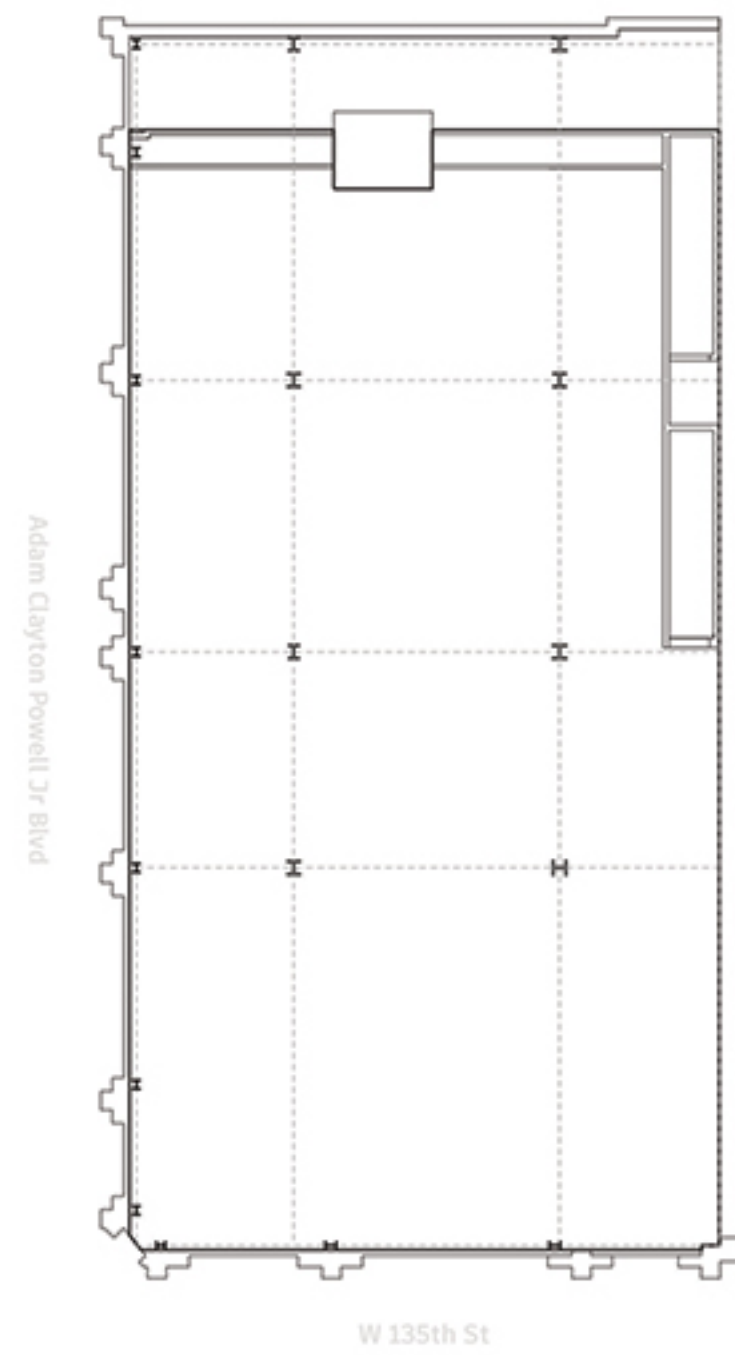




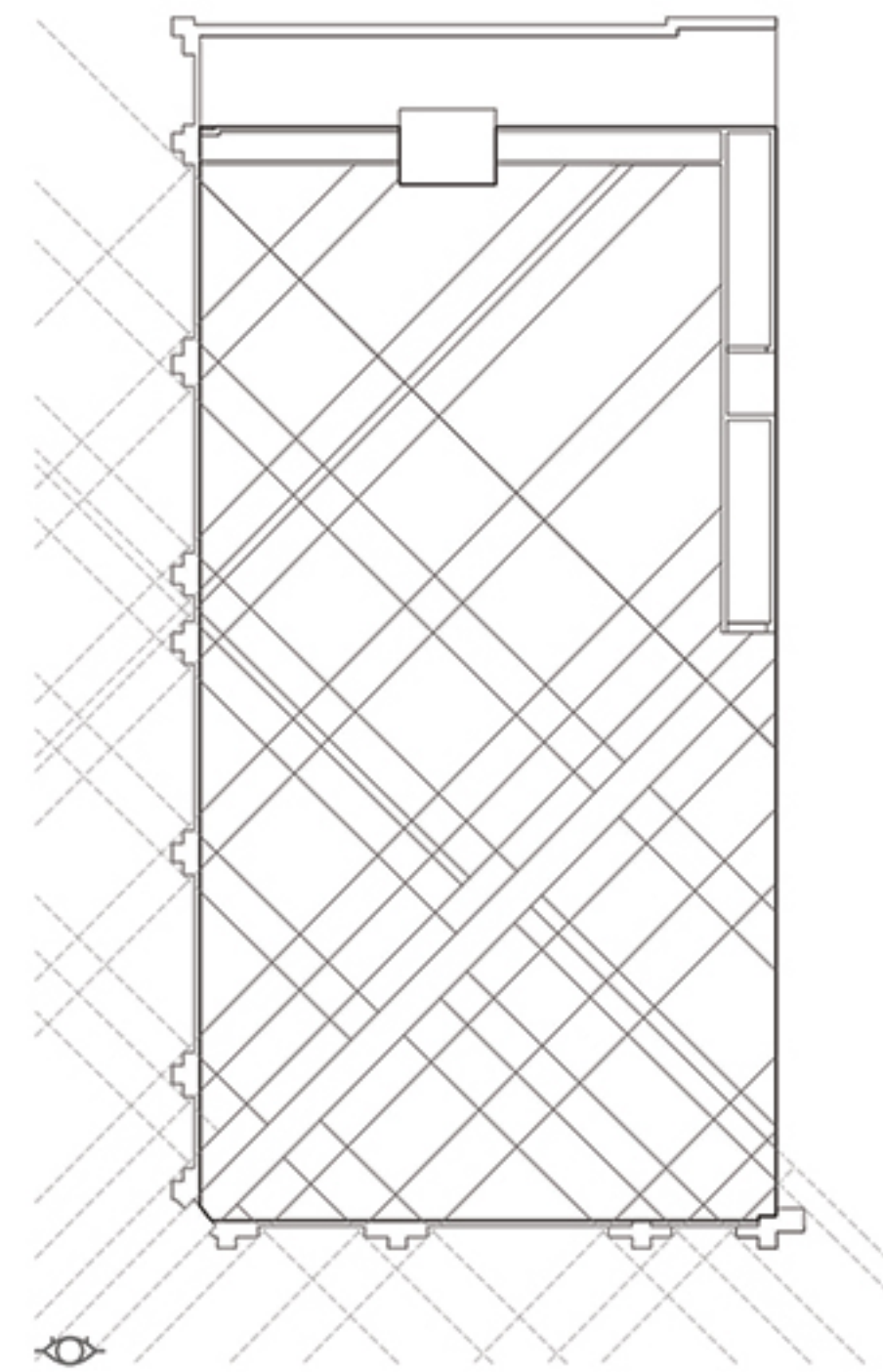
# The 45° Logic

2025

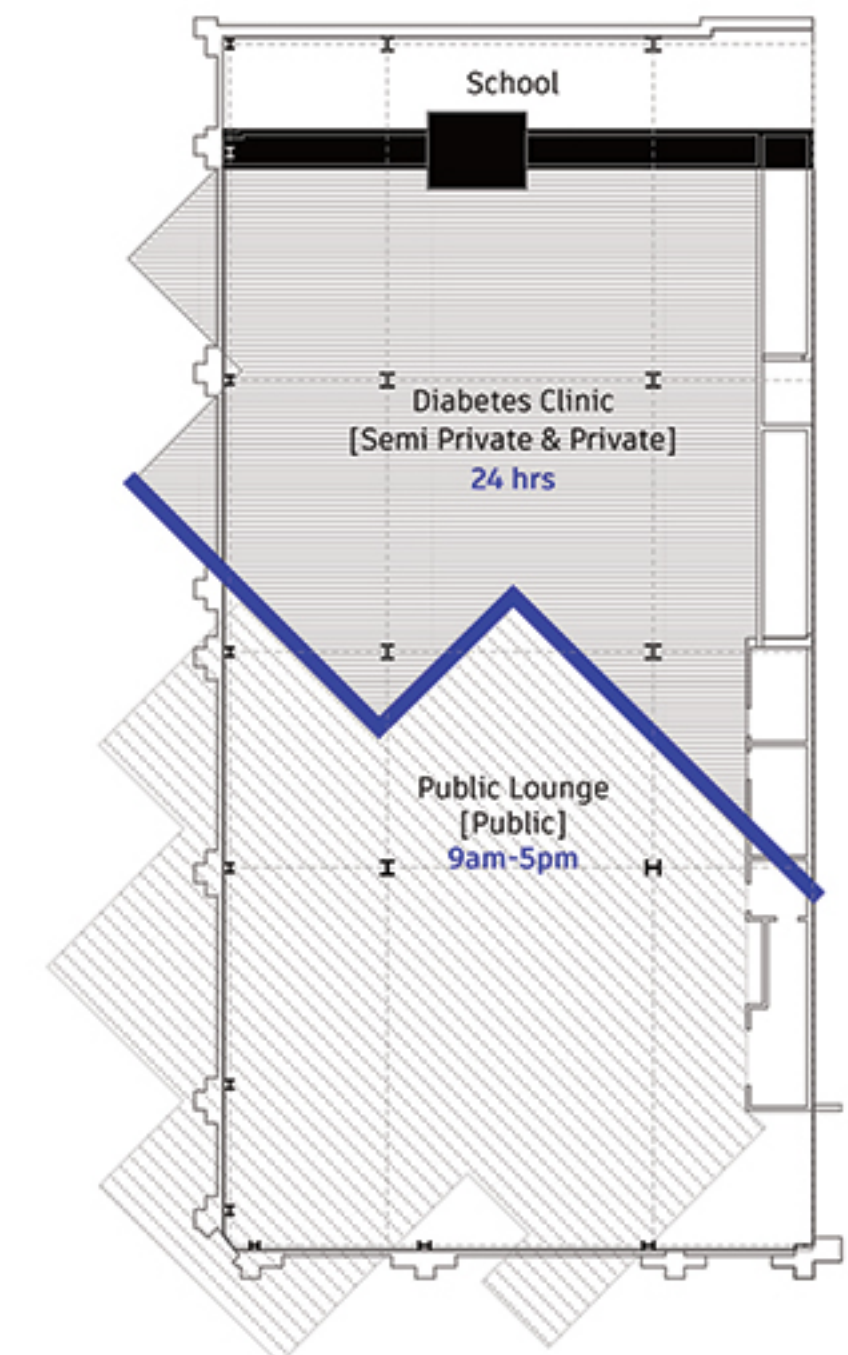
## Visibility Spatial Tactics for Care



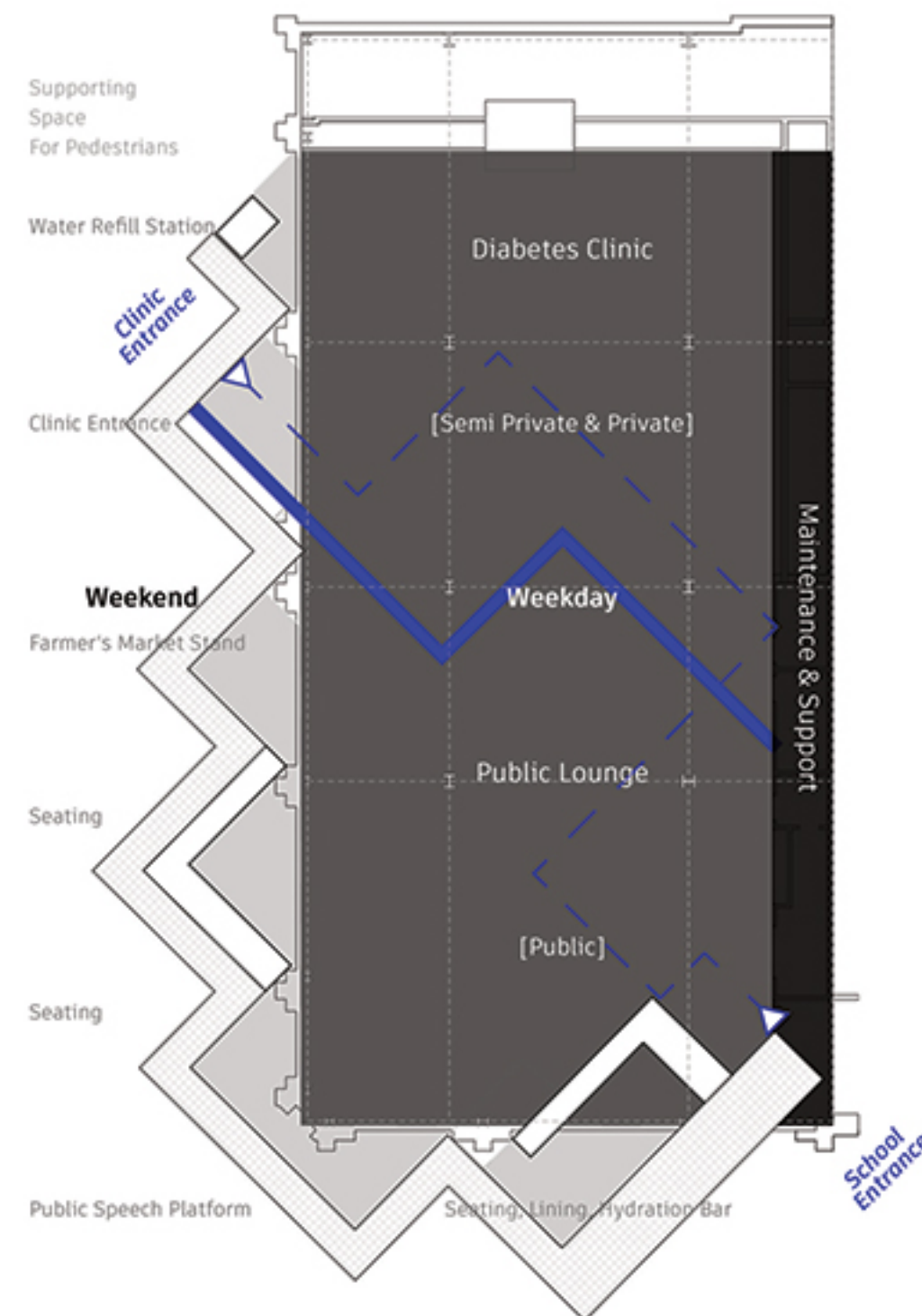
Existing Condition



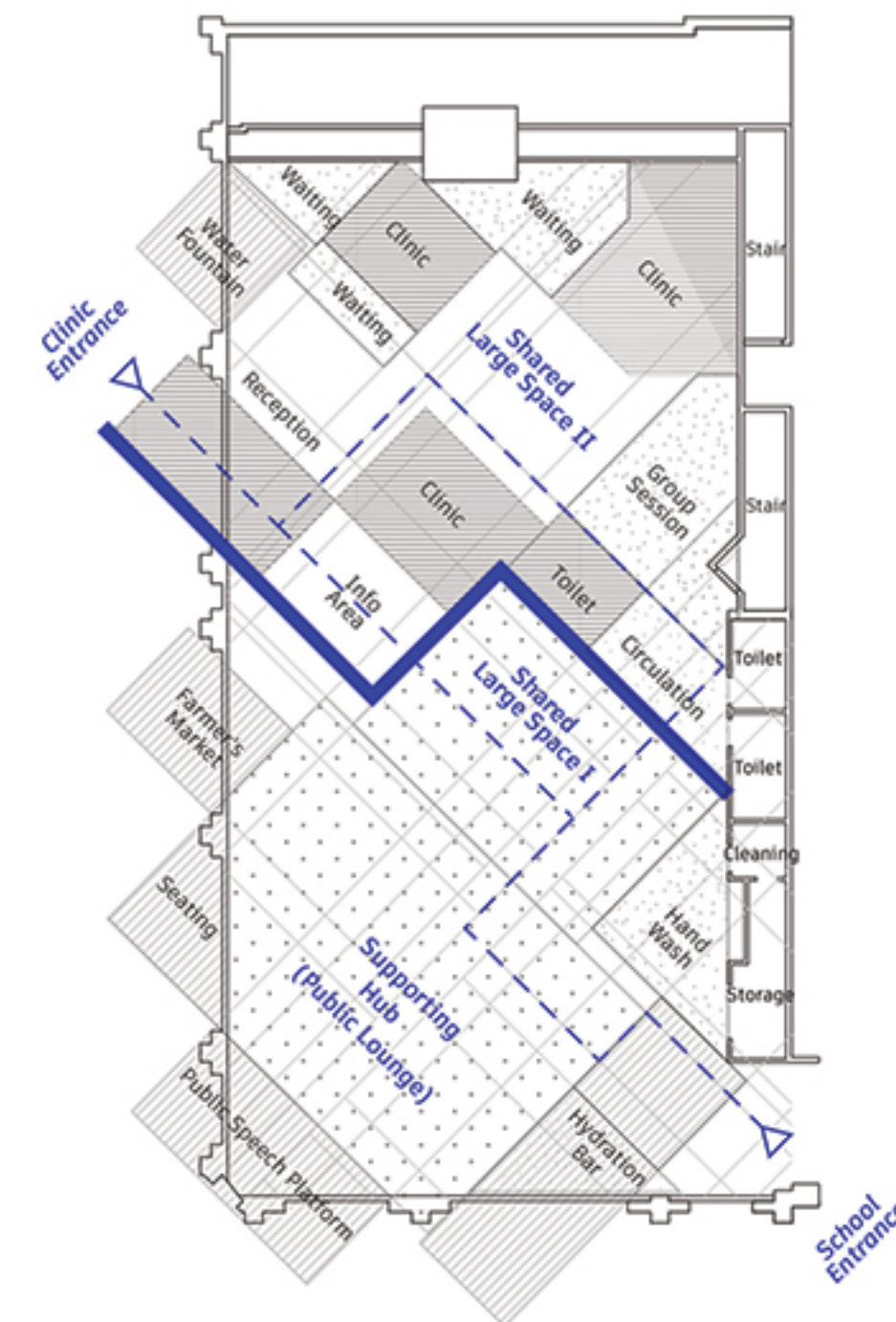
Hint of A Corner :  
Potentials in Storefront Visibility



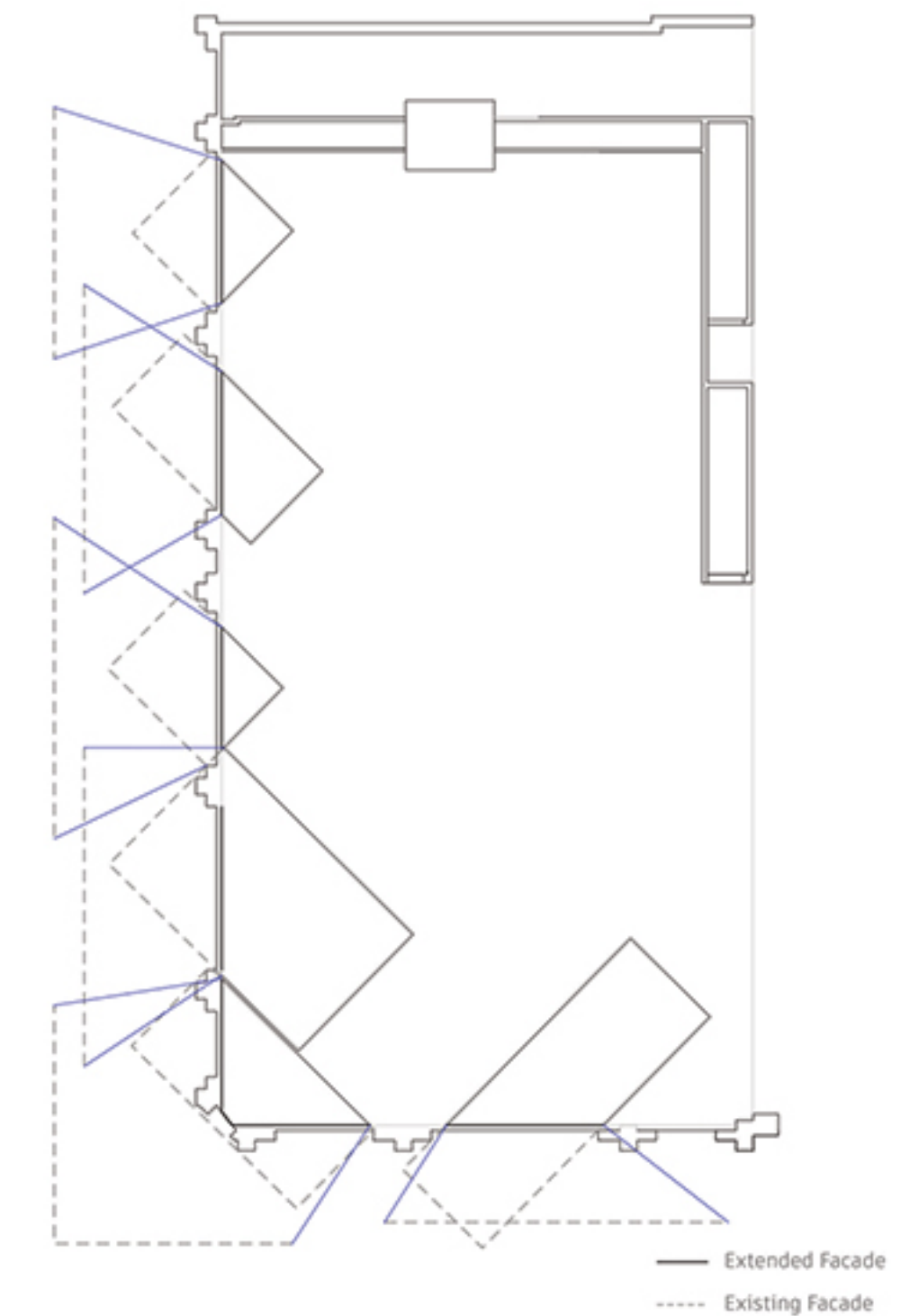
Time-Space Quality:  
NS Direction



Time-Space quality:  
EW Direction



Placement of Programs



Extension  
of Storefront

Above, the Thurgood Marshall Academy continues to operate. The clinic below serves both the broader neighborhood and the student population, reinforcing the link between education, health, and access. Group sessions, lectures, and informal learning spaces support this integration.

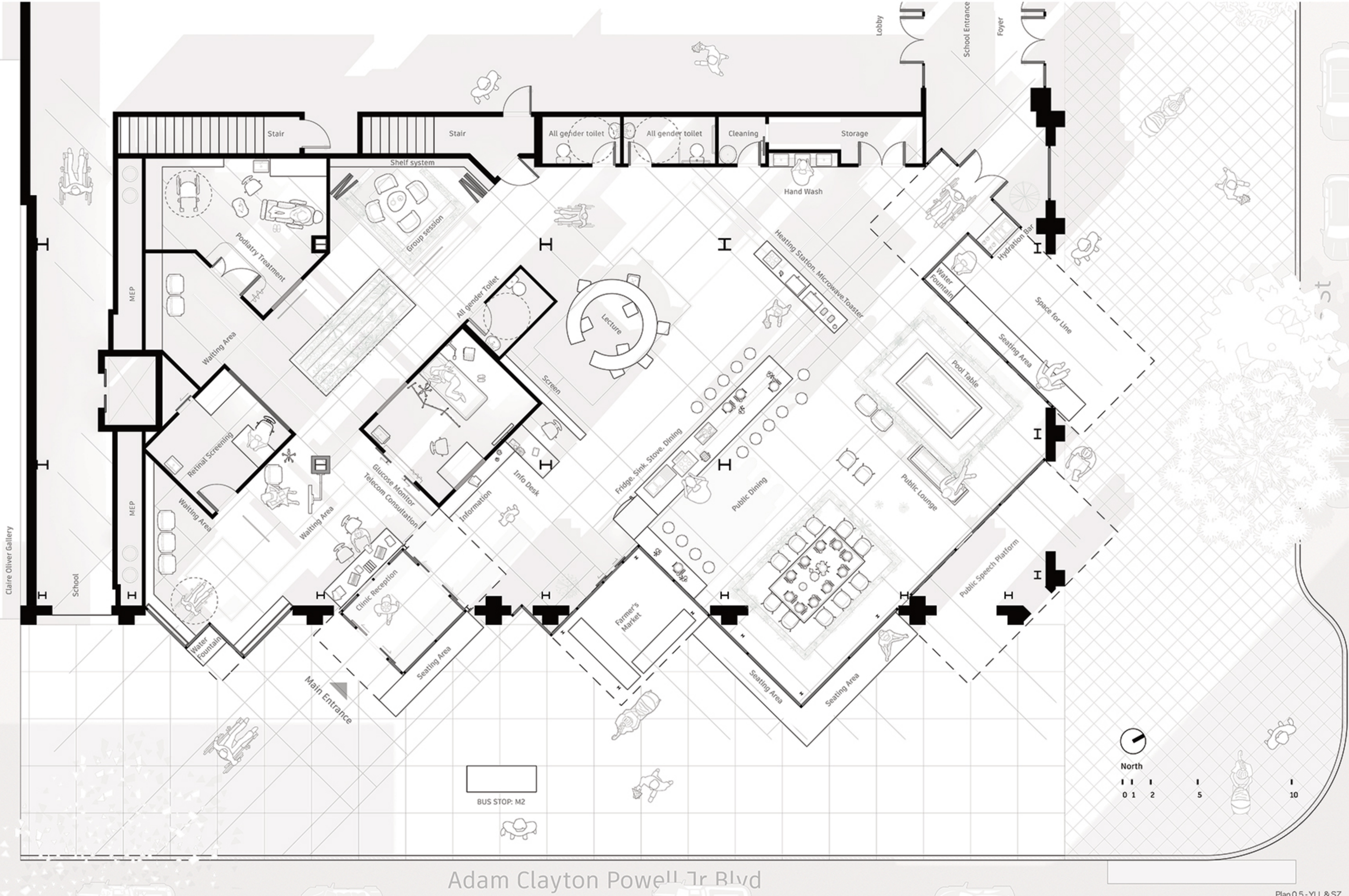
Toward the rear of the plan, semi-private clinical services—including retinal screening, glucose monitoring, podiatry treatment, and a group consultation area—are arranged for efficiency, clarity, and privacy. Amenities such as clinic reception, info desk, hand wash, and all-gender toilets ensure accessibility and comfort across user groups.

By softening spatial thresholds, widening points of access, and transforming the street edge into an active zone of public health, Storefrontosis reframes the façade as more than frontage—it becomes a platform for visibility, routine care, and collective well-being. In doing so, the project proposes a new typology: the neighborhood storefront as site of preventive medicine, social support, and civic health infrastructure.









Adam Clayton Powell Jr Blvd

Plan 0.5 - YLL & SZ

The plan is structured along a gradient of public to semi-private use, guided by a storefront logic that prioritizes accessibility, legibility, and integration with the urban fabric. At its edge, the design activates the façade with hydration bars, seating areas, and a public lounge—spaces that are open, informal, and highly visible from the street, making preventive care part of everyday life. The circulation spine subtly divides the plan: public-facing programs such as the public dining area, farmer's market, and lecture space are placed along the primary street frontage, encouraging casual use and reinforcing the clinic's civic character. As users move deeper into the space, the architecture transitions into more semi-private zones, including retinal screening, podiatry treatment, glucose monitoring, and clinic reception—all organized for clarity, dignity, and operational efficiency. Shared programs such as group session rooms, info desks, and all-gender toilets are positioned at central nodes to reduce redundancy and support both school and community users.



40.6895° N, 74.0168° W  
104 Governors Island, New York, NY 10004

Sep - Dec  
2024

**A(ttic)tecture**

**“WHAT IF”** a Center for Architecture could emerge  
not by erasing the past, but by building upon its forgotten  
rooflines and latent structures?

Yiu Lun Lee (YLL), *Partner* - Fenella Nyoto (FN)

LED BY  
Prof. Wonne Ickx

**PRODUCTORA**

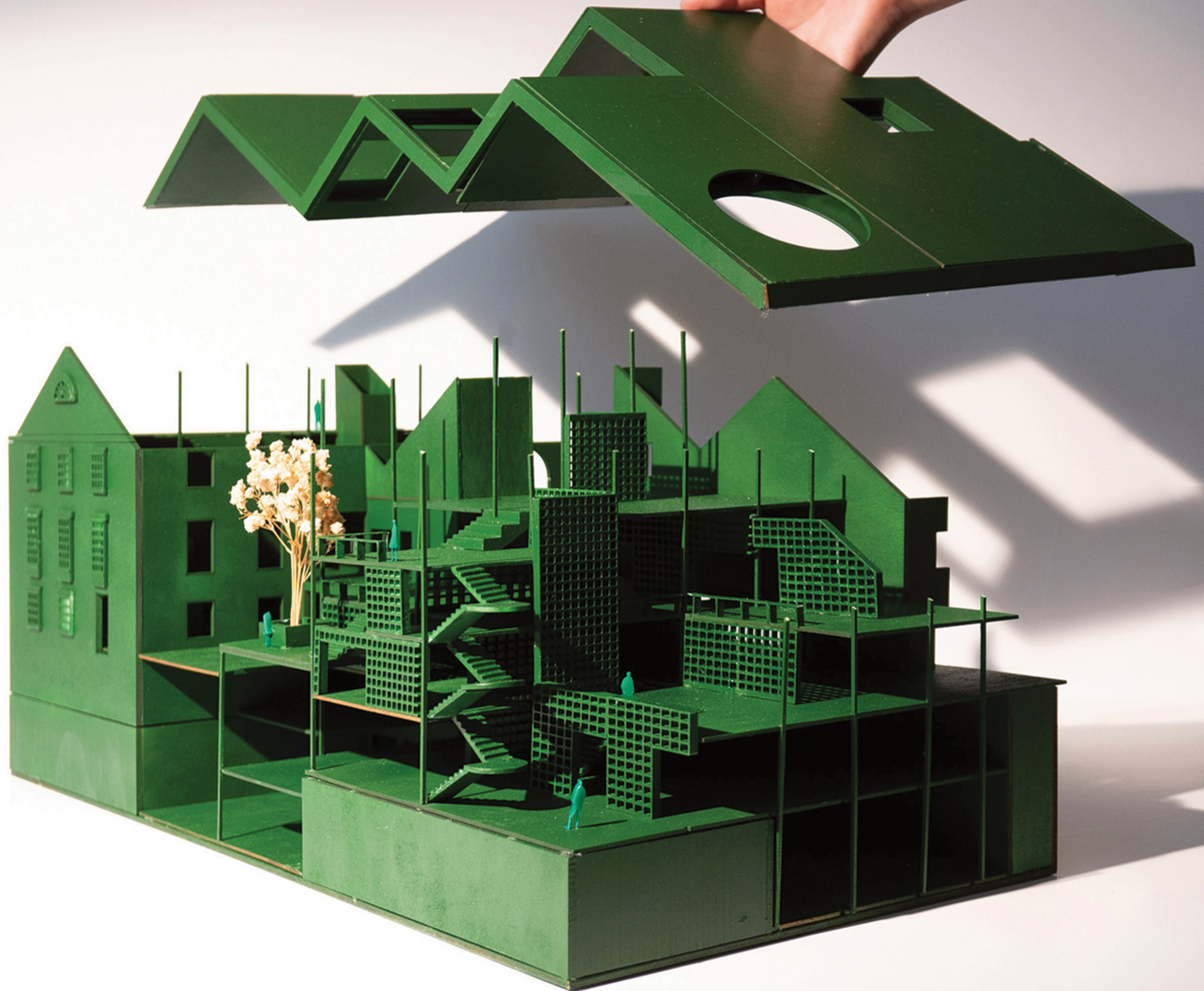
**Building on Buildings**



# A(ttic)tecture

## 2024

ADV STUDIO  
Wonne Ickx



A(ttic)tecture transforms building 125, a former First Army Administration building, into a Center for Architecture. The former administration building employed typical spatial configuration of an office building where enclosed rooms are distributed on either side of a single-loaded corridor. Right across the building, a storagehouse, building 104 exists, creating a non-direct entry access to the building 125. This condition accompanied by the different programmatic phases of the project are weaved together through extending the building 125's roof and its structural framework, encapsulating building 104 and creating diverse attic or 'under-the-roof' experiences for the building users. Contrary to building 125's former functions, safeguarding information, A(ttic)tecture creates access to information and knowledge through varying degrees of visibility as well as remnants of architectural past of the building 125 and 104.





FIRST FLOOR PLAN



0 10 20

ANDES ROAD

CARDER ROAD

A-A'

ENTRY

RECEPTION  
ATRIUM

CAFE

PERMANENT  
EXHIBITION

LIBRARY

LOADING DOCK

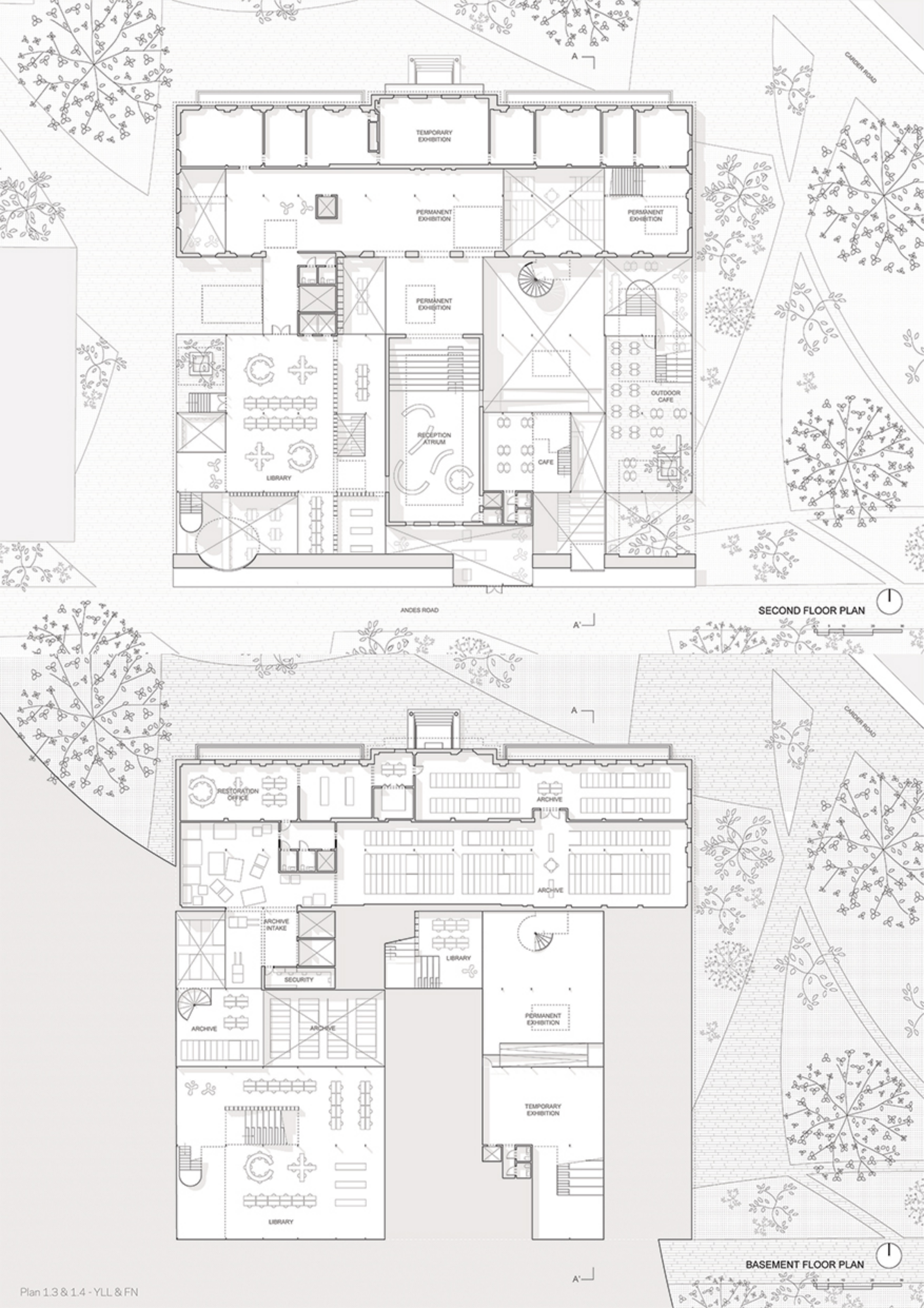
ARCHIVE INTAKE

ARCHIVE

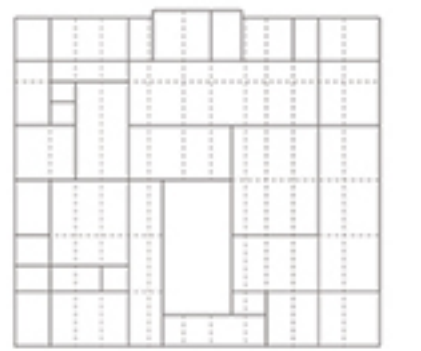
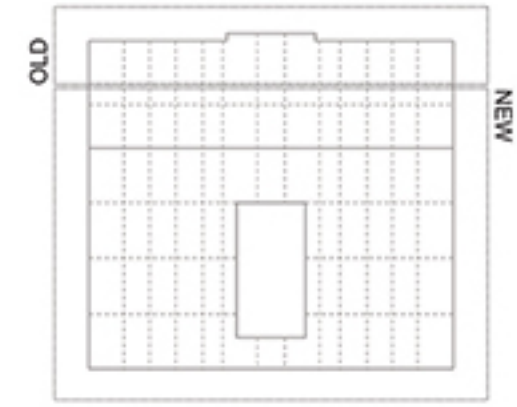
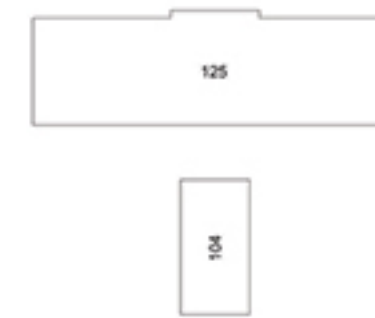
ADMIN  
OFFICE

RESEARCH  
OFFICE



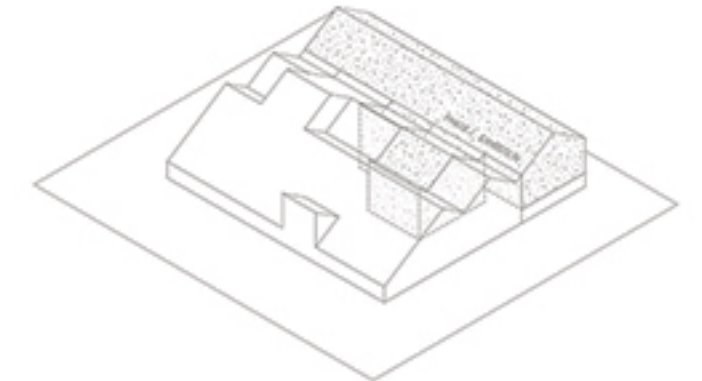
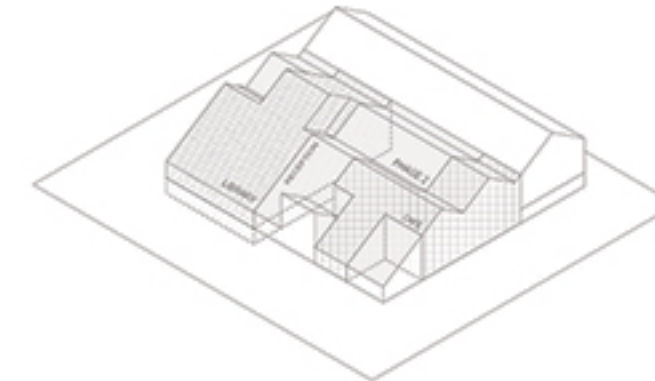
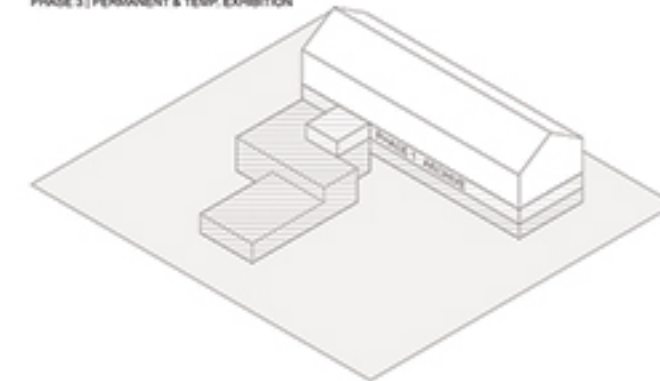


SPATIAL GENERATION DIAGRAM

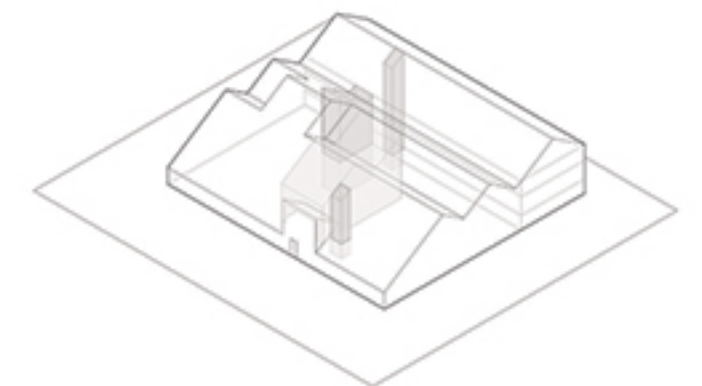
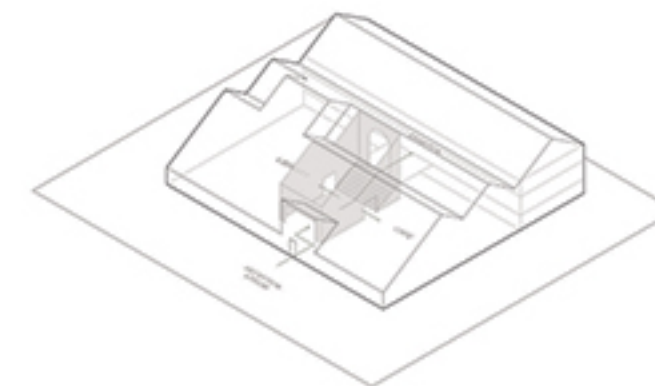
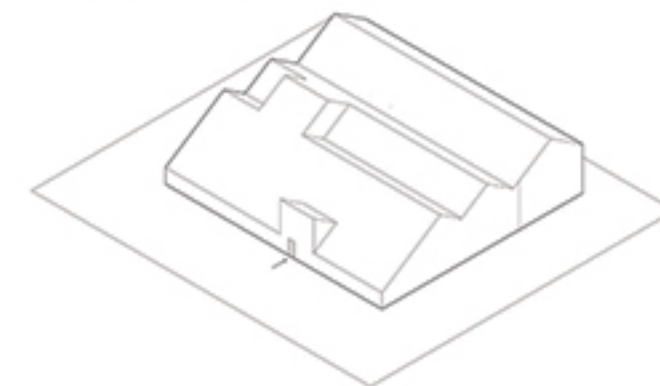


PHASING DIAGRAM

PHASE 1 | ARCHIVE, RESEARCH & RESTORATION  
PHASE 2 | LIBRARY, CAFE & RECEPTION  
PHASE 3 | PERMANENT & TEMP. EXHIBITION



CIRCULATION DIAGRAM



Diagrams 1.5 • FN

## Architecture Through the Attic

### Phasing Space, Memory, and Light

Rather than dismissing the attic as a dusty relic or cinematic trope, A(ttic)ecture frames it as a spatial threshold—between the known and the latent, the administrative and the imaginative. By extending the structural roof of Building 125 to envelop the adjacent storage Building 104, the project stitches together two distinct volumes into a single institutional body. The attic, once a forgotten void, becomes the connective tissue for an architectural center that unfolds in three phases: adaptive reuse, civic activation, and curatorial expansion.

Each phase adds layers of accessibility and spatial complexity. New public programs—library, café, and exhibition spaces—are woven into the attic's volume, where double and triple-height voids, filtered light, and suspended walkways articulate varying proximities to knowledge. A vertical circulation core anchors this ecosystem, guiding movement between basement, ground, and attic, while maintaining the historic rhythm of Building 125's corridor-based layout.

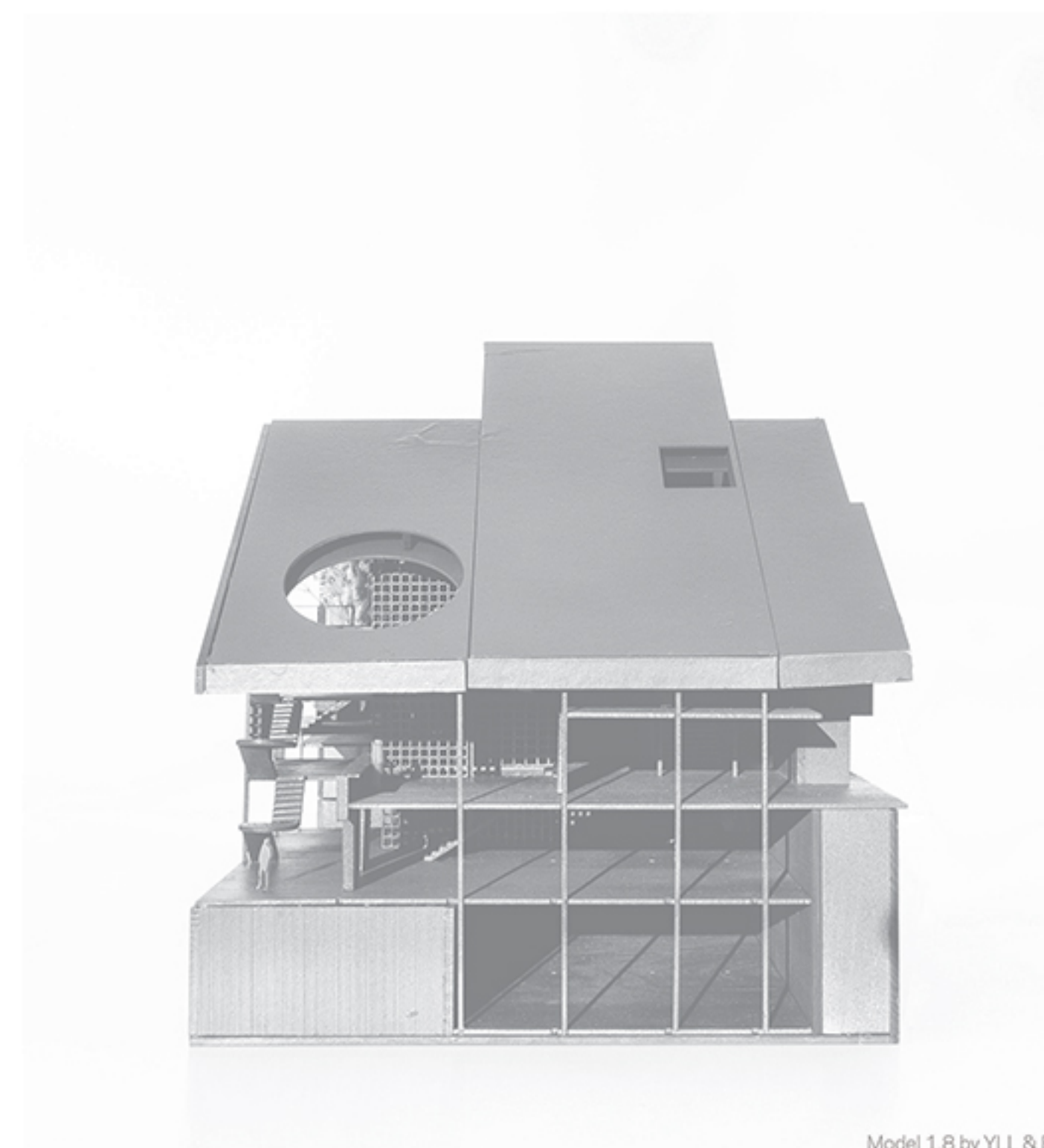
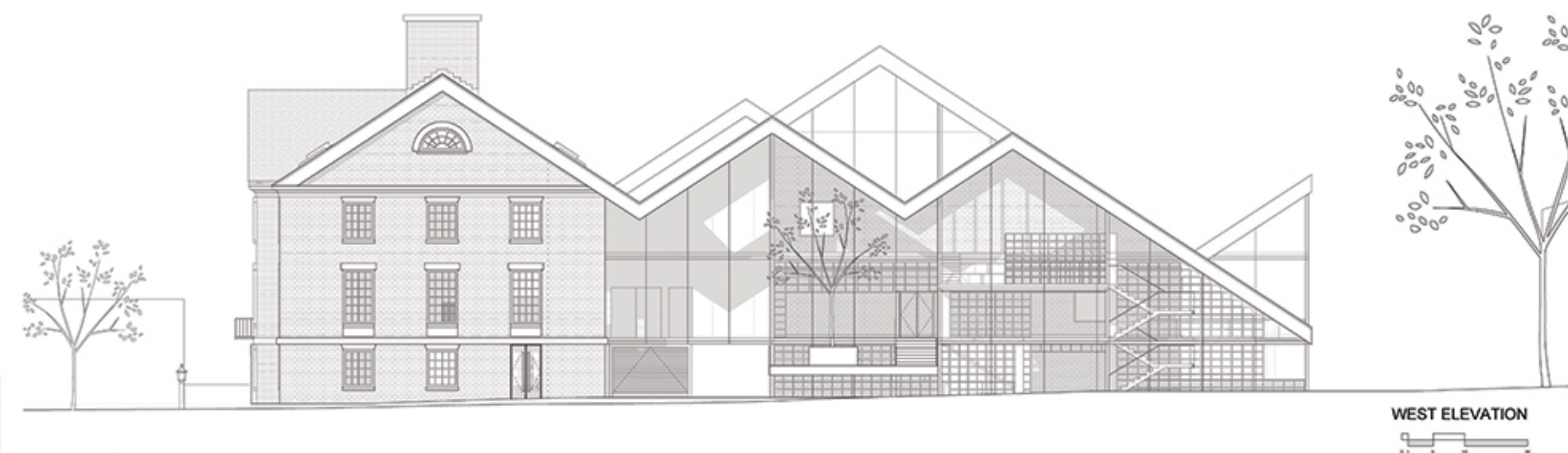
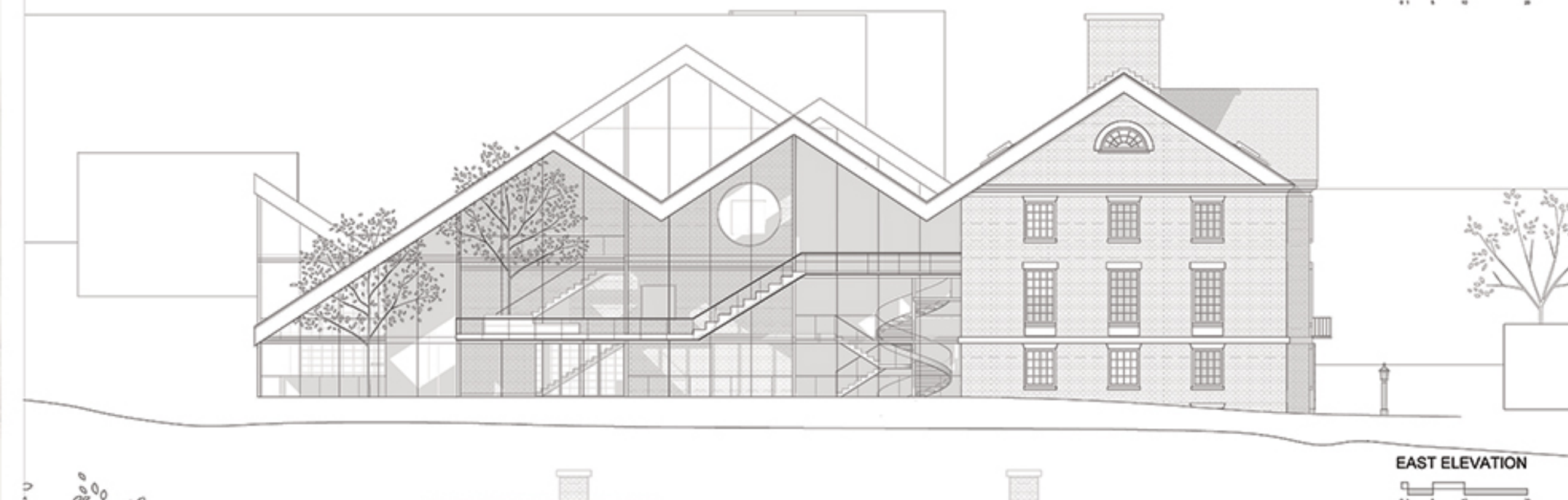
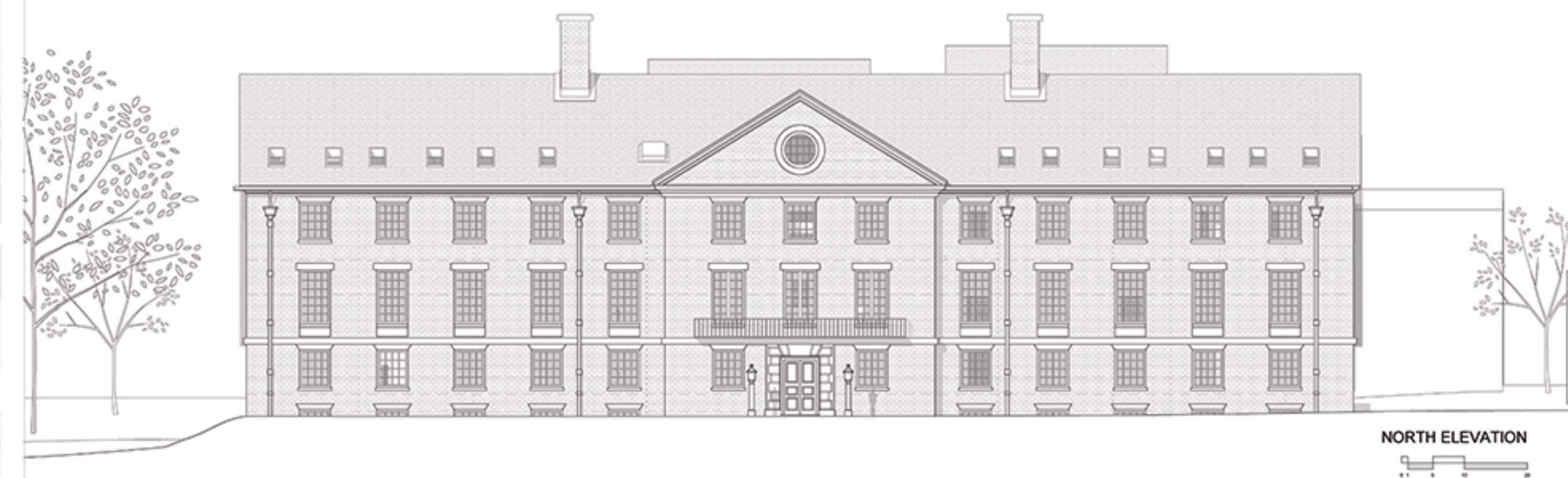
Here, architecture is not only a container of memory, but an active agent in transforming how knowledge is preserved, accessed, and performed. Light filters through curated roof openings, emphasizing the roof as both structure and signal. The attic becomes an index of spatial possibilities—one that questions what lies above, what should be seen, and what architecture can do with what is already there.





The expanded attic becomes a luminous civic hall—where preserved brick arches meet new structural clarity. Light filters through calibrated roof openings, casting temporal patterns across masonry and model alike. A spiral stair anchors the space, guiding visitors upward and downward through exhibitions, archives, and collective memory. The contrast between robust historical materiality and precise contemporary insertions defines the architecture's language: one of continuity, openness, and quiet transformation. This is not just a reuse of space, but a re-articulation of architecture's capacity to hold the public imagination.





Model 1.8 by YLL & FN

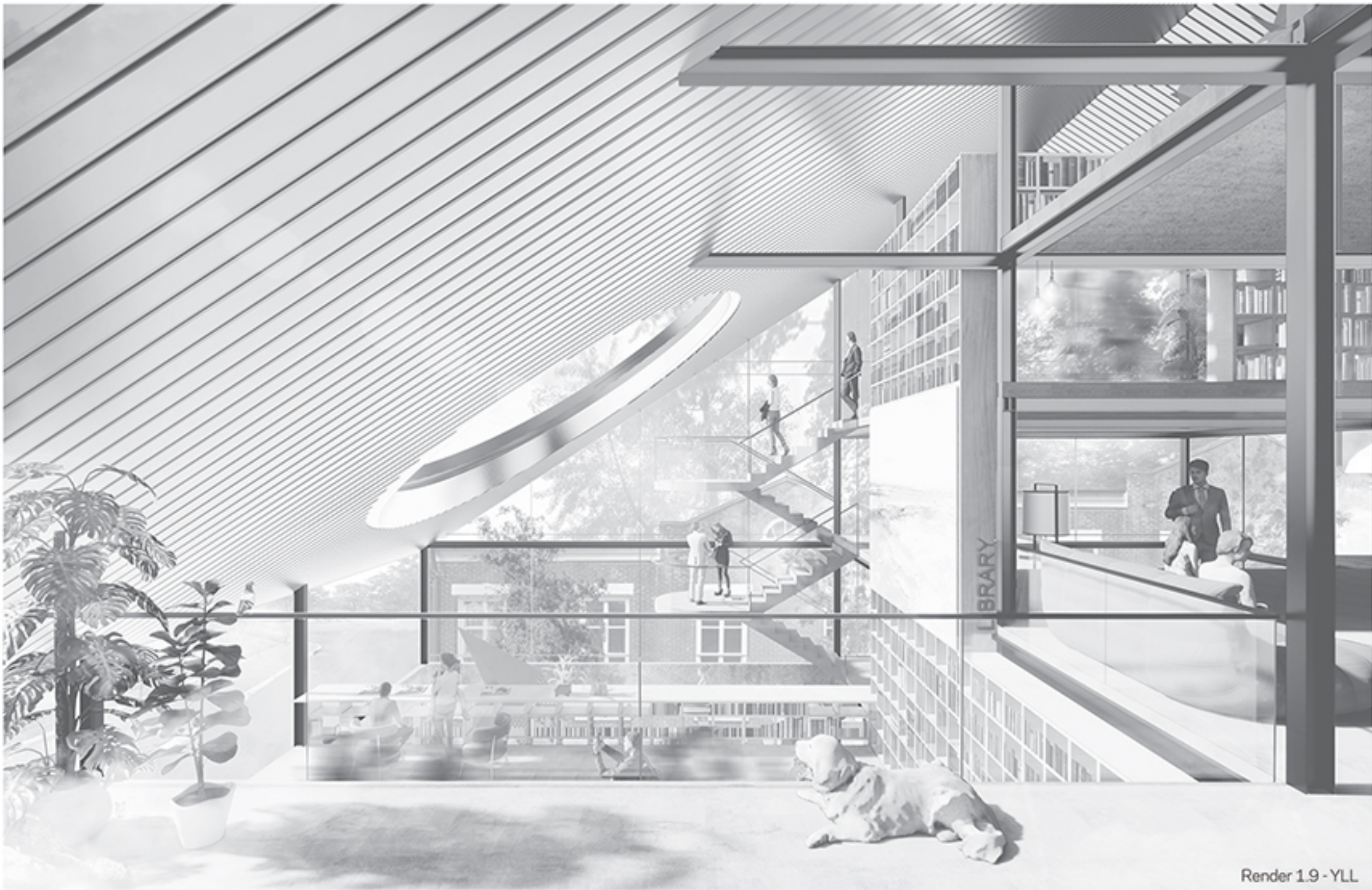
## Revealing the Attic Dialogues in Elevation

The elevations articulate the tension and harmony between preservation and invention. The north elevation remains untouched—a silent witness to Building 125's institutional past, its brick façade and symmetrical rhythm preserved as a historical artifact. In contrast, the east, west, and south elevations express a new architectural language: a crystalline attic structure that breaks free from the rigidity of the original envelope.

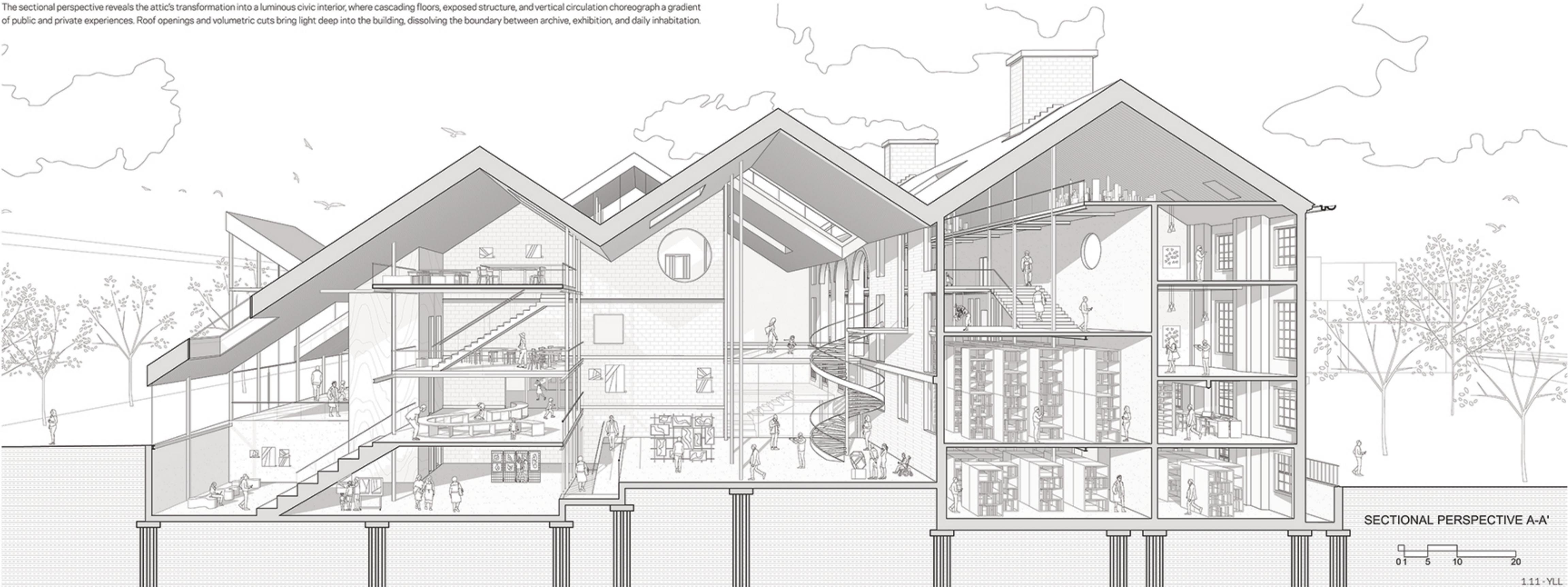
This attic extension emerges as both infrastructure and icon. Fractured rooflines, translucent façades, and inserted voids disrupt the classical massing of the former administration building. Large apertures frame moments of light, tree canopies, and human activity, creating a visual porosity that invites the public gaze into spaces once closed and opaque.

Where the existing masonry reads as grounded and repetitive, the new interventions are dynamic and sectional. The elevations no longer represent static frontality, but layered thresholds—where public entry, vertical circulation, and spatial variation are legible on the façade. This drawing set captures not just a building's skin, but its spatial ambitions: to project a civic institution that is as open and evolving as the knowledge it holds.





The sectional perspective reveals the attic's transformation into a luminous civic interior, where cascading floors, exposed structure, and vertical circulation choreograph a gradient of public and private experiences. Roof openings and volumetric cuts bring light deep into the building, dissolving the boundary between archive, exhibition, and daily inhabitation.





40.6057° N, 73.8713° W  
210 New York Avenue Staten Island, NY 10305

Jan - April  
2024

# ***M(eta)boliCity***

***“WHAT IF”*** Urban Fabrics of different  
Scale Could Self-Regulate like a  
Living Organism and render wwtp  
obsolete around ***Jamacia Bay?***

Yiu Lun Lee (YLL), *Partner* - Joe Zhang (JZ)

LED BY  
Prof. FeiFei Zhou

***Feral Atlas***

***Non-human Justice***



Taking inspiration from the human digestive system, this project reimagines wastewater infrastructure as an urban metabolism—where water moves through the city as nutrients through a body, processed not by a single centralized plant but by distributed, site-responsive organs embedded in the urban fabric. In this system, each neighborhood density becomes a distinct organ, absorbing, filtering, and repurposing water at its own scale.

High-density blocks operate like the small intestine, densely packed with hydroponic farms that recycle over 4.3 million gallons of greywater per year per 60-unit building. Mid-density neighborhoods behave like the large intestine, spreading filtration through 874 green roofs and 949 vertical panels that slow and retain runoff, capturing over 1.2 billion gallons annually. Low-density areas function as the city's final stage of processing—400 algae-based "trees" absorb wastewater like decentralized digesters, each capable of handling up to 2.5 million gallons annually.

Altogether, this decentralized system addresses Jamaica Bay's wastewater burden by absorbing the 4.6 billion gallons of overflow that exceed current WWTP capacity. Rather than remain hidden underground, these systems emerge into the public realm—folded into housing, landscape, and civic infrastructure—rendering metabolism both spatial and visible.

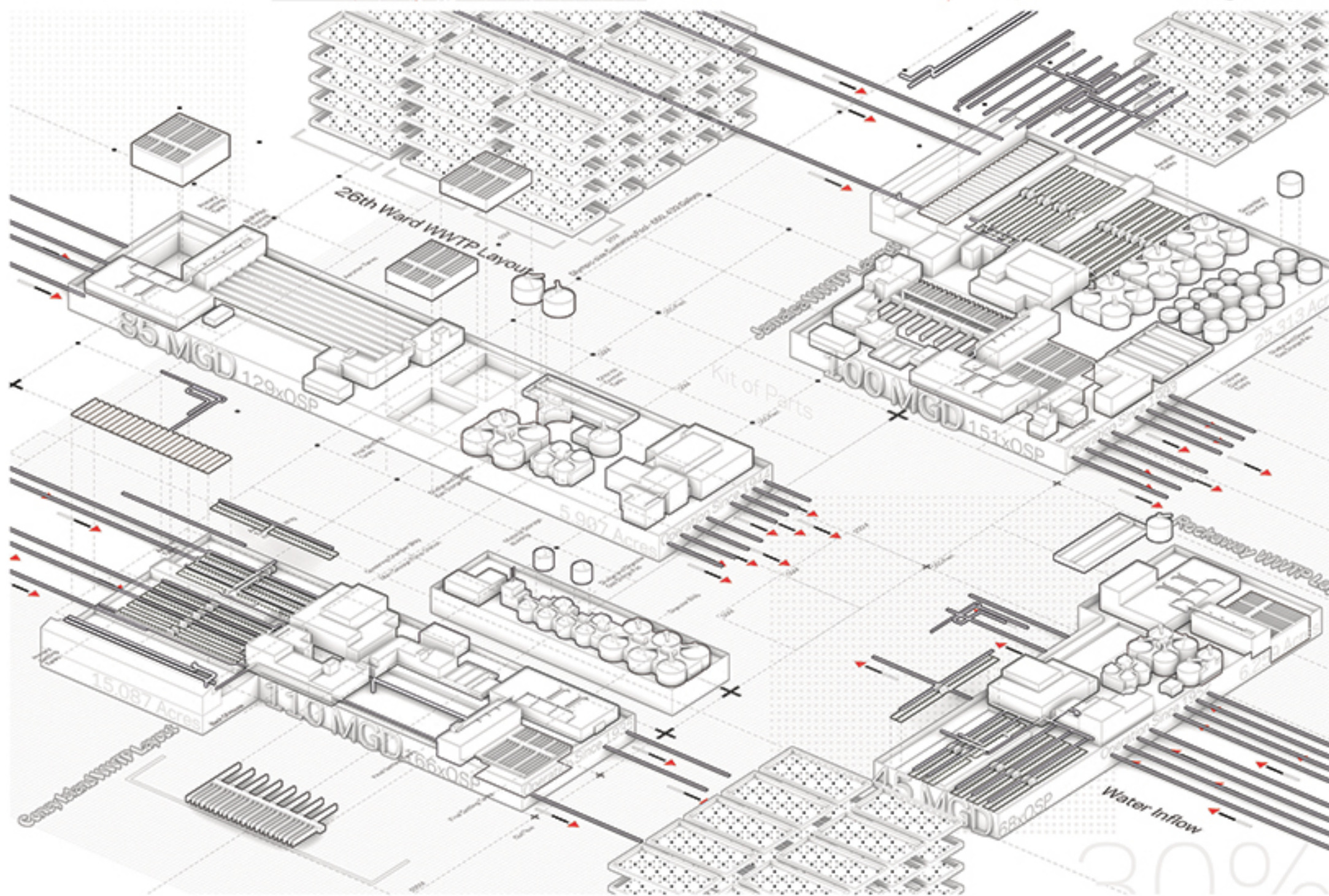
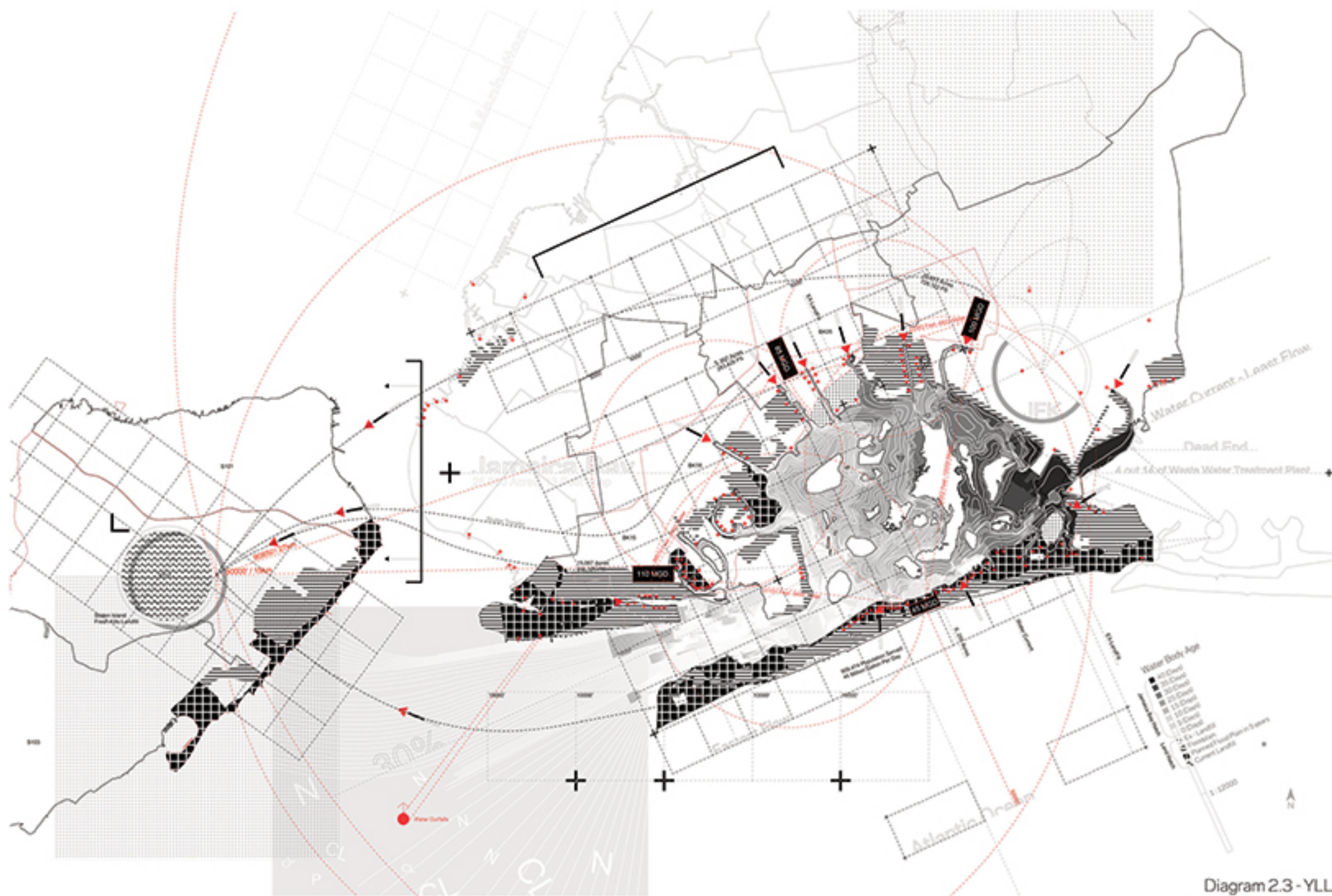


Drawing 2.1 - YLL

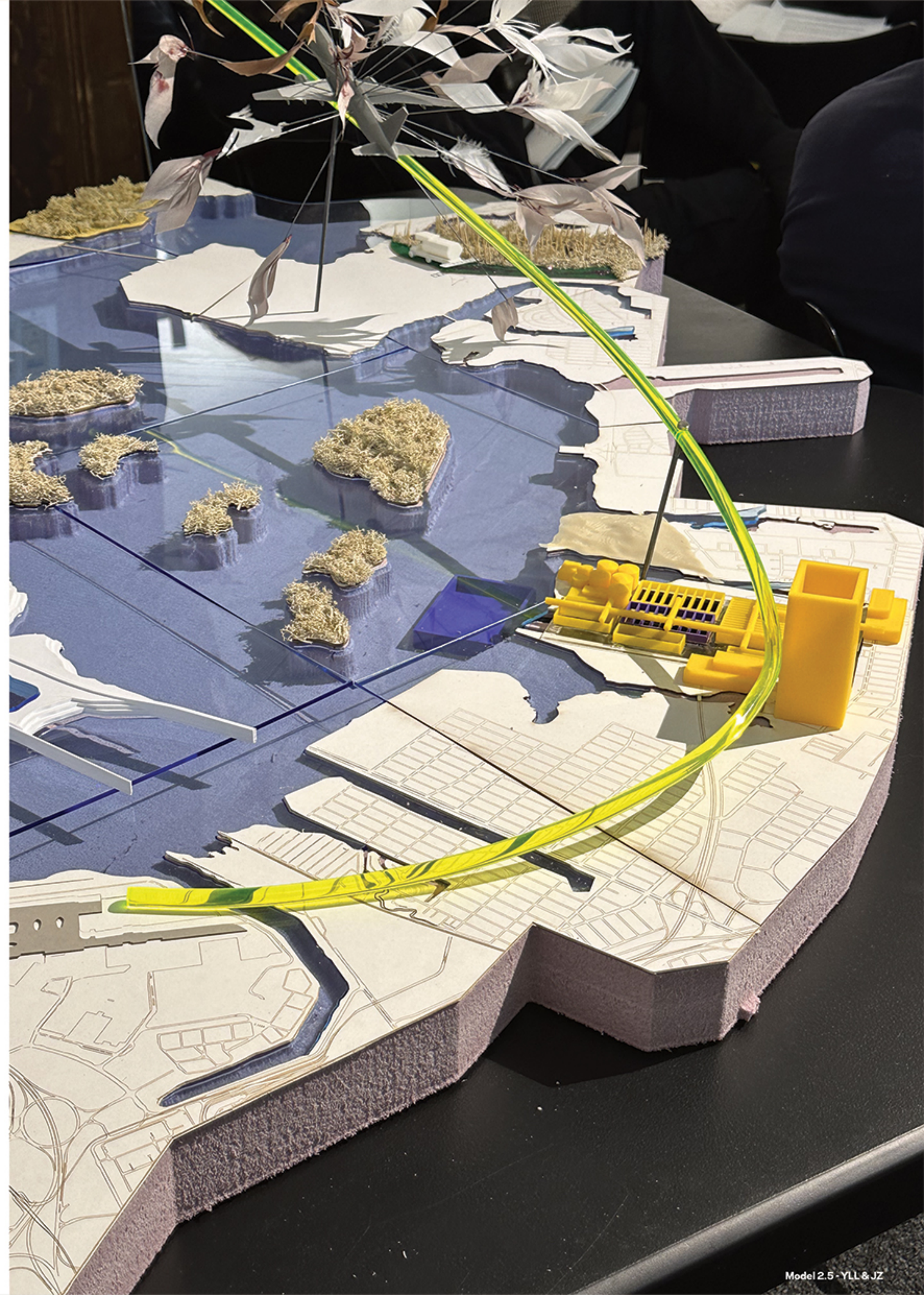


Drawing 2.2 - YLL & JZ 35





Targeting 4.6 billion gallons of annual wastewater, the diagram maps density zones and water flows to localize architectural intervention.

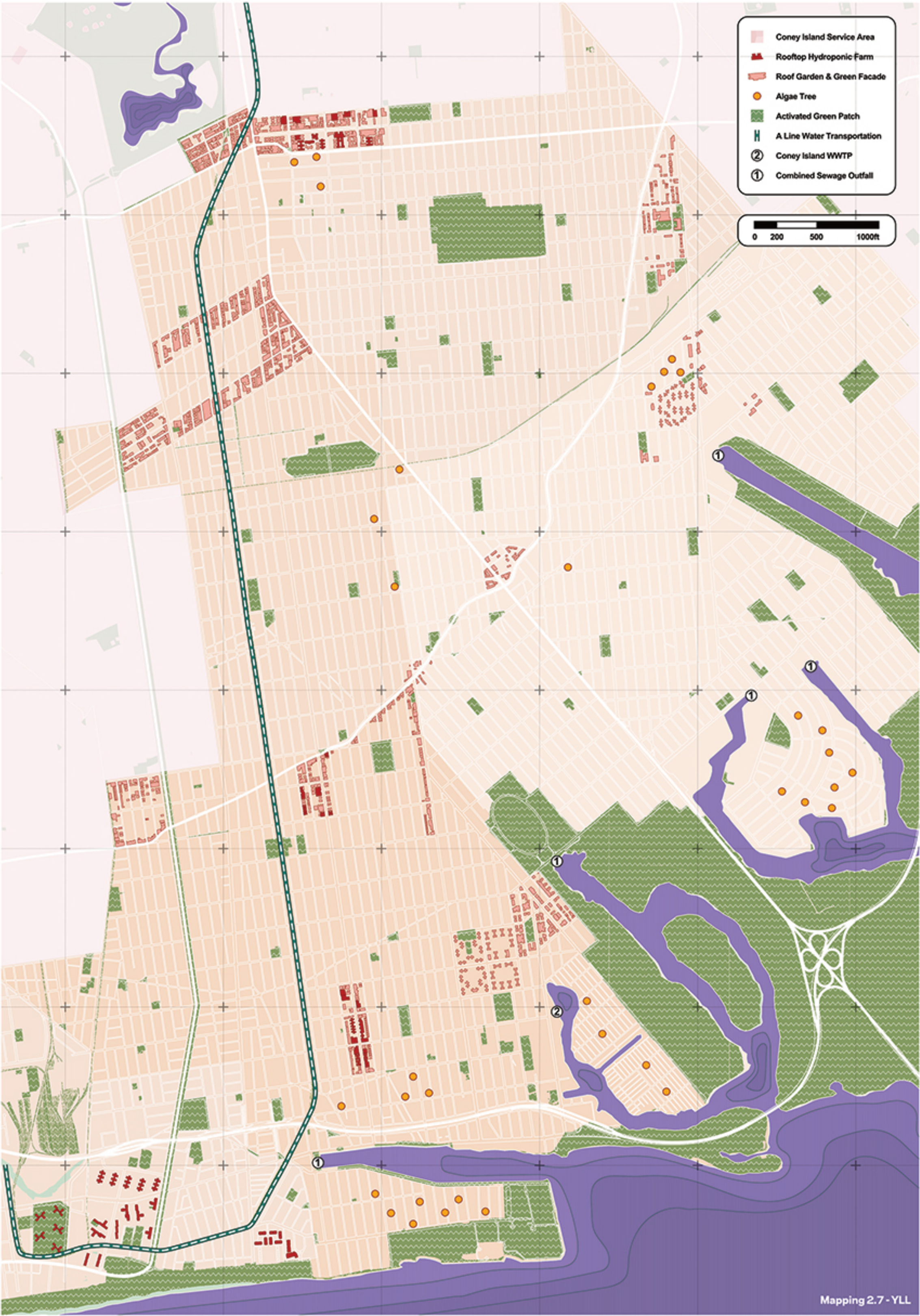
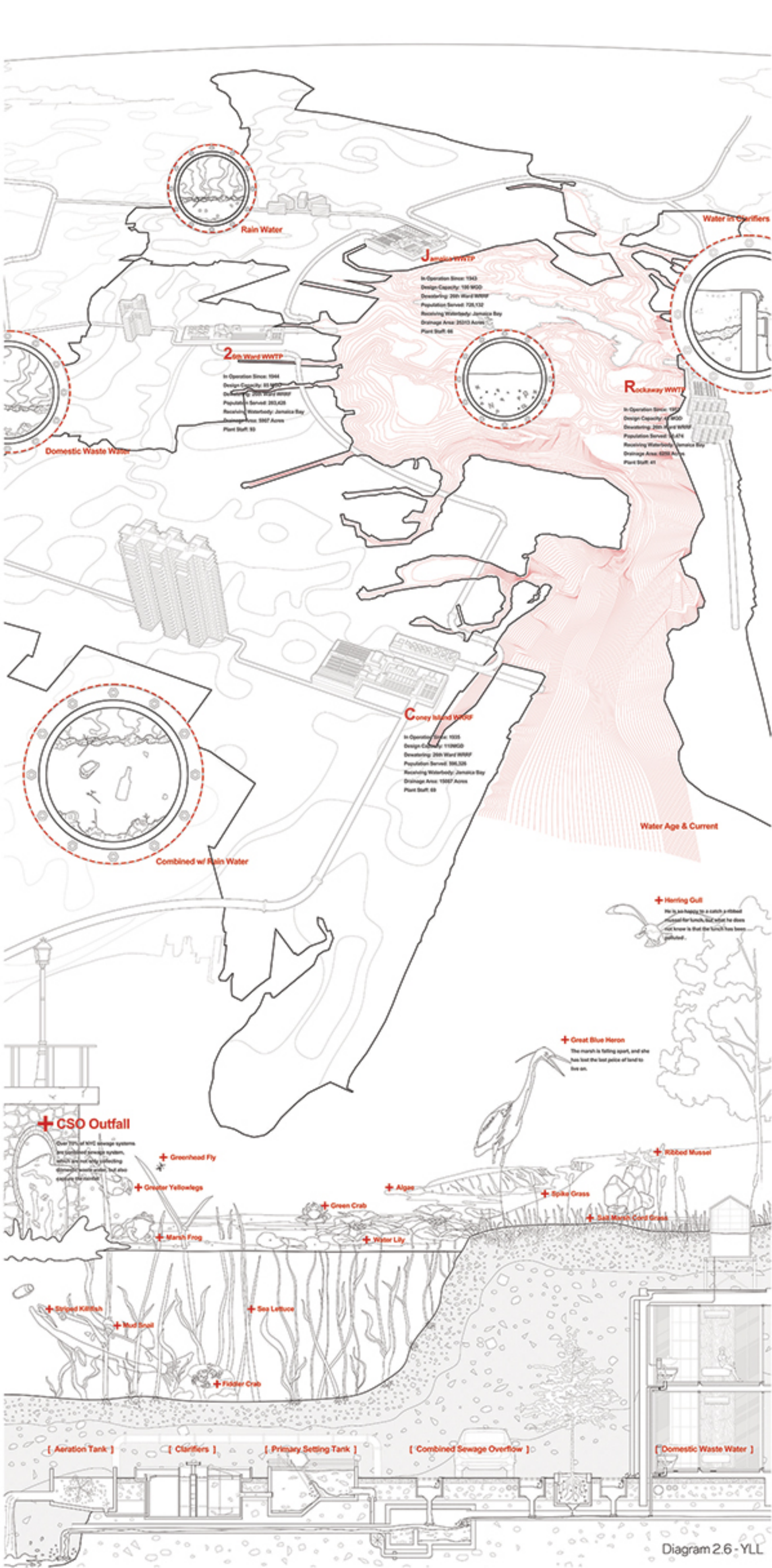




Across the Coney Island watershed, 38 billion gallons of water—20 billion from domestic use, 18 billion from rain—move annually through a fractured system that can no longer contain them. With a WWTP capacity capped at 33.4 billion gallons, an overflow of 4.6 billion gallons bypasses treatment and spills into Jamaica Bay. This mapping and sectional study repositions that overflow not as failure, but as design potential.

The city is reimagined as a metabolic body. Each neighborhood type becomes a specialized organ in a decentralized treatment system. High-density areas act as vertical intestines—dense hydroponic farms reclaiming over 2.3 billion gallons annually through greywater reuse and rainwater harvesting. Mid-density zones become absorptive tissue, where 874 green roofs and 949 prefab walls filter 1.2 billion gallons back into circulation. Low-density blocks anchor the system with 400 algae bio-reactors embedded across lawns and vacant parcels, each processing up to 2.5 million gallons per year.

Rather than channeling all flows to a distant plant, the project disperses them across the urban field—layering ecology, infrastructure, and habitation. The section reveals the choreography: water slowed by sediment basins, filtered by wetland roots, cycled through algae, and absorbed by soil. The map makes this system visible—marking rooftops, outfalls, patches, and trees as civic infrastructure. Together, they form a self-regulating urban landscape that metabolizes excess into resource, and waste into structure.







Drawing 2.7 - YLL

# High-Density

## Absorbtion Rate 49.93%

In high-density neighborhoods, rooftops are reprogrammed as metabolic infrastructure. Across Coney Island, these towers—typically housing over 120 units per building—generate significant wastewater volumes. Just one 60-unit building produces approximately 6.57 million gallons of wastewater annually. Through integrated systems of greywater reuse, rainwater harvesting, and hydroponic farming, each building can recover and reuse up to 4.3 million gallons per year, offsetting nearly 66% of its water o u t f l o w .

Hydroponic farms atop these towers double as filtration systems and food production zones. Tanks store recycled water, while modular plant beds purify and redistribute it across residential uses. Rainwater, accounting for 0.4 million gallons per building, is captured through rooftop catchment systems and routed into the cycle.

When deployed across the district, this strategy targets a total reduction of 2.3 billion gallons, accounting for nearly 50% of the 4.6 billion gallons of untreated overflow that currently bypass the WWTP. These towers become not just housing, but vertical organs—filtering, absorbing, and metabolizing water within the dense fabric of the city. Infrastructure is no longer concealed underground; it is elevated, made visible, and embedded in daily life—an ecology of pipes, plants, and people.

The red-highlighted parcels on the map identify Coney Island's densest residential clusters—vertical neighborhoods with the greatest water output per surface area. These buildings, marked for hydroponic retrofitting, serve as the critical starting points in the urban metabolism. Here, greywater and rainwater are captured, reused, and cycled through rooftop farms and filtration systems, forming the first organ in a decentralized s y s t e m .



Diagram 2.8 - YLL

Coney Island Service Area: 10, 849.5 acres

Goal for High Density Water Reduction: 2297 Million Gallons

- Following Calculation based on Per 60 Units

- Waste Water per day :  $120 \times 60 \times 2.5 = 18000$  Gallons

- Waste Water per year:  $6,570,000 \text{ Gallon} = 6.57 \text{ Million Gallon}$

Rainwater Collection :  $((32\% \times 168000) \times 0.08 \times 1.67) / 17636 = 0.4 \text{ Million Gallons}$

Grey Water:  $6.57 \times 60\% = 3.94 \text{ MG}$

Recycled Water:  $3.94 + 0.4 = 4.34 \text{ MG}$

Hydroponic Farm Water Usage:

-  $1 \times 5000 \times 52 \times 7.5 \times 18 \times 0.12 = 4.3 \text{ MG}$

Therefore:

Total Water Reduction:

-  $51300 / 1.6 / 60 \times 4.3 = 2297 \text{ MG}$

Progress:  $2297 / 4600 = 49.93\%$

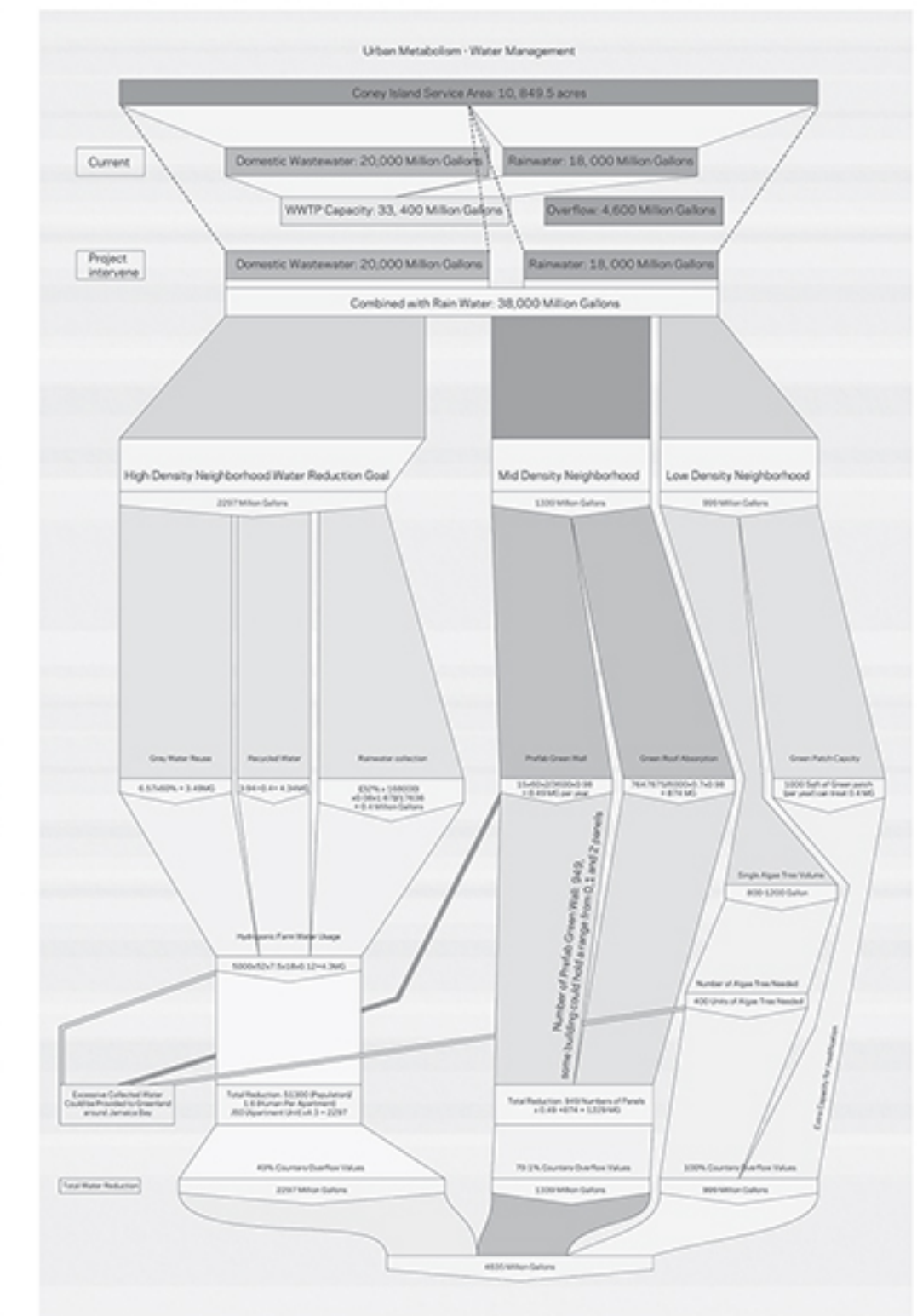
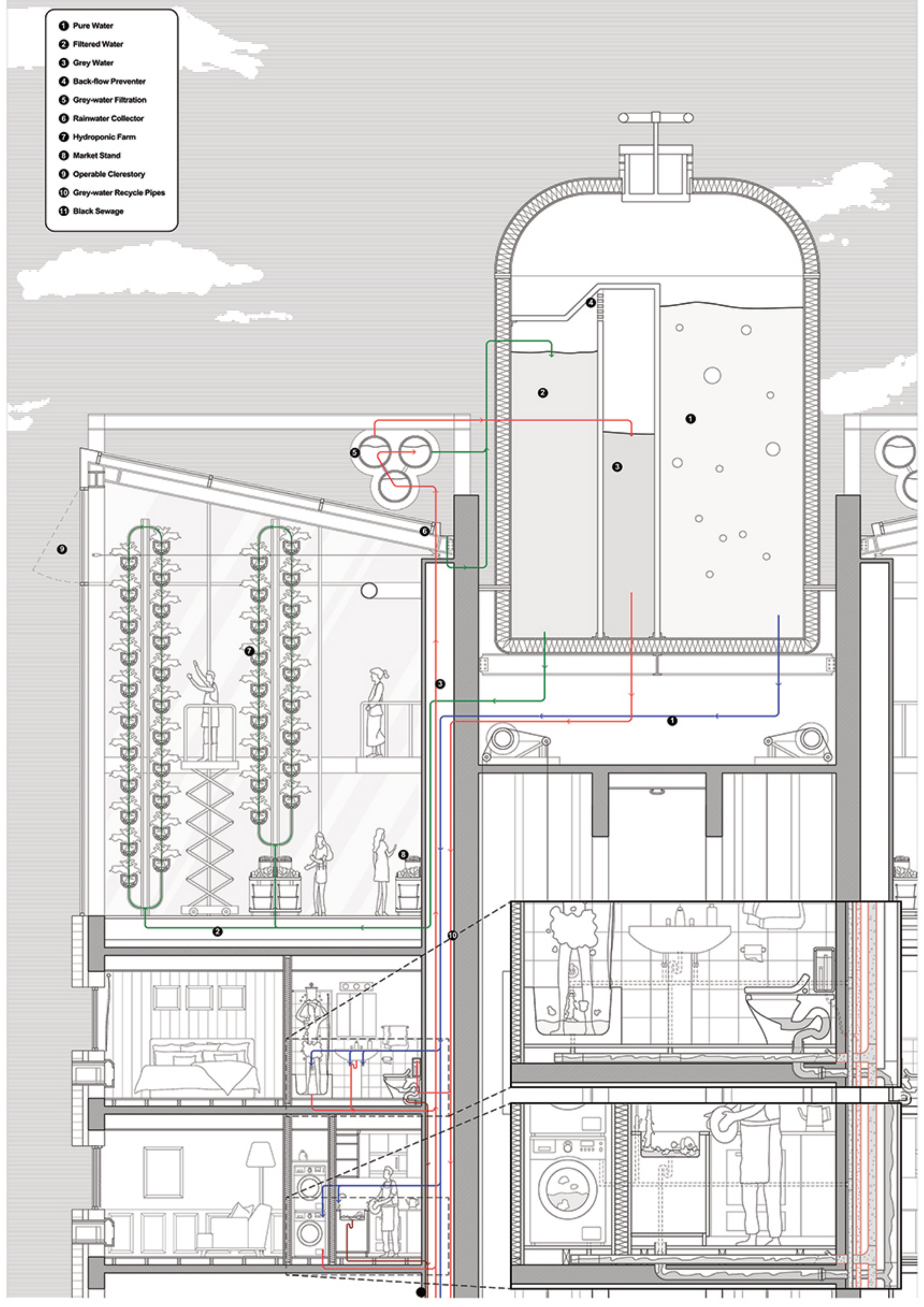


Diagram 2.9 - YLL

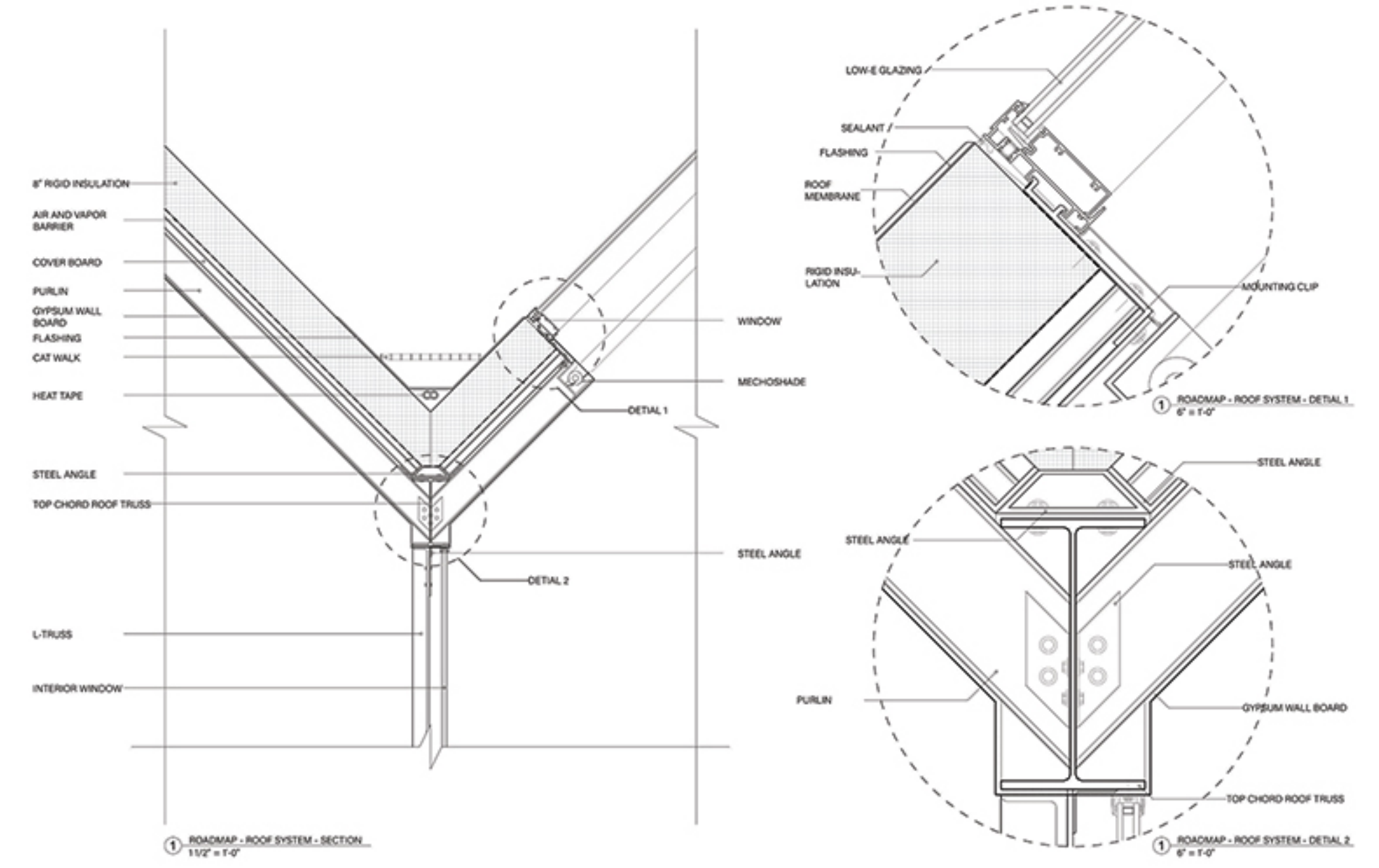




- ① Pure Water
- ② Filtered Water
- ③ Grey Water
- ④ Back-flow Preventer
- ⑤ Grey-water Filtration
- ⑥ Rainwater Collector
- ⑦ Hydroponic Farm
- ⑧ Market Stand
- ⑨ Operable Clerestory
- ⑩ Grey-water Recycle Pipes
- ⑪ Black Sewage







Roof Detail 2.12 - YLL

# 1:1 Sectional Detail Model

## High Density RoofTop Detailing

This rooftop assembly operates as both enclosure and infrastructure—designed to manage thermal performance, structural load, and greywater distribution in high-density housing retrofits. The section reveals an integrated layering system that begins with an 8-inch rigid insulation core, enclosed by an air and vapor barrier and cover board, ensuring a continuous thermal envelope across the roof slope.

At the joint, a V-shaped steel angle truss structure frames the central drainage path, lined with flashing and heat tape to prevent ice buildup and enable year-round flow. Collected water from rooftop hydroponic farms is routed between the steel angles and down through embedded pipes, concealed within the structural depth of the roof. Gypsum wall board lines the interior edge, while a catwalk inserted above allows for maintenance access within the cavity.

At the window junction, the system integrates Low-E glazing with a mounting clip and mechoshade, maintaining solar control while aligning with the architectural rhythm. The assembly balances performance and material economy: purlins carry the structural load, the L-truss reinforces window openings, and a continuous flashing line protects all junctions between materials.

Every component—whether thermal, structural, or hydraulic—participates in the broader metabolism of the building. This is not just a roof, but a responsive surface that collects, retains, and redistributes water—transforming a passive envelope into an active organ within the city's ecological system.





Diagram 2.13 - YLL

## Mid-Density

### Absorbtion Rate 28.24%

Coney Island Service Area: 10,849.5 acres

Goal for Mid Density Water Reduction: 1339 Million Gallons

- Water Absorption Per Panel:  $15 \times 60 \times 2 / 3600 \times 0.98 = 0.49$  MG per year

Mid-Density Green Roof Area:

- 7647675 sq ft also equals to 691 Buildings

Green Roof Absorption:

-  $7647675 / 6000 \times 0.7 \times 0.98 = 874$  MG

Number of Prefab Green Wall: 949, some building could hold a range from 0,1

and 2 panels

Therefore:

Total Reduction:  $949 \times 0.49 + 874 = 1229$  MG

Progress:  $1299 / 4600 = 28.24\%$

In mid-density neighborhoods, the metabolism unfolds across the surface. Here, rooftops are no longer residual—they are repurposed as active landscapes that collect, filter, and slow water. A continuous carpet of 874 green roofs stretches across mapped parcels, capturing stormwater and reducing runoff volume at the scale of the block. These vegetated surfaces work in tandem with 949 prefabricated green wall panels, clipped to existing façades to maximize vertical absorption.

The intervention transforms the building envelope into a living skin. Rainwater filters through layered soil and root systems, percolating into greywater loops or back into the atmosphere through evapotranspiration. The architecture performs like a sponge—retaining, delaying, and redistributing water before it can overload underground systems.

This system reclaims approximately 1.3 billion gallons annually, offsetting over 79% of the projected overflow burden in mid-density zones. As the city becomes more porous, water is no longer managed underground, but through the surfaces we live with and upon. Greenery becomes infrastructure, and architecture becomes ecological interface—layered, expressive, and performative.

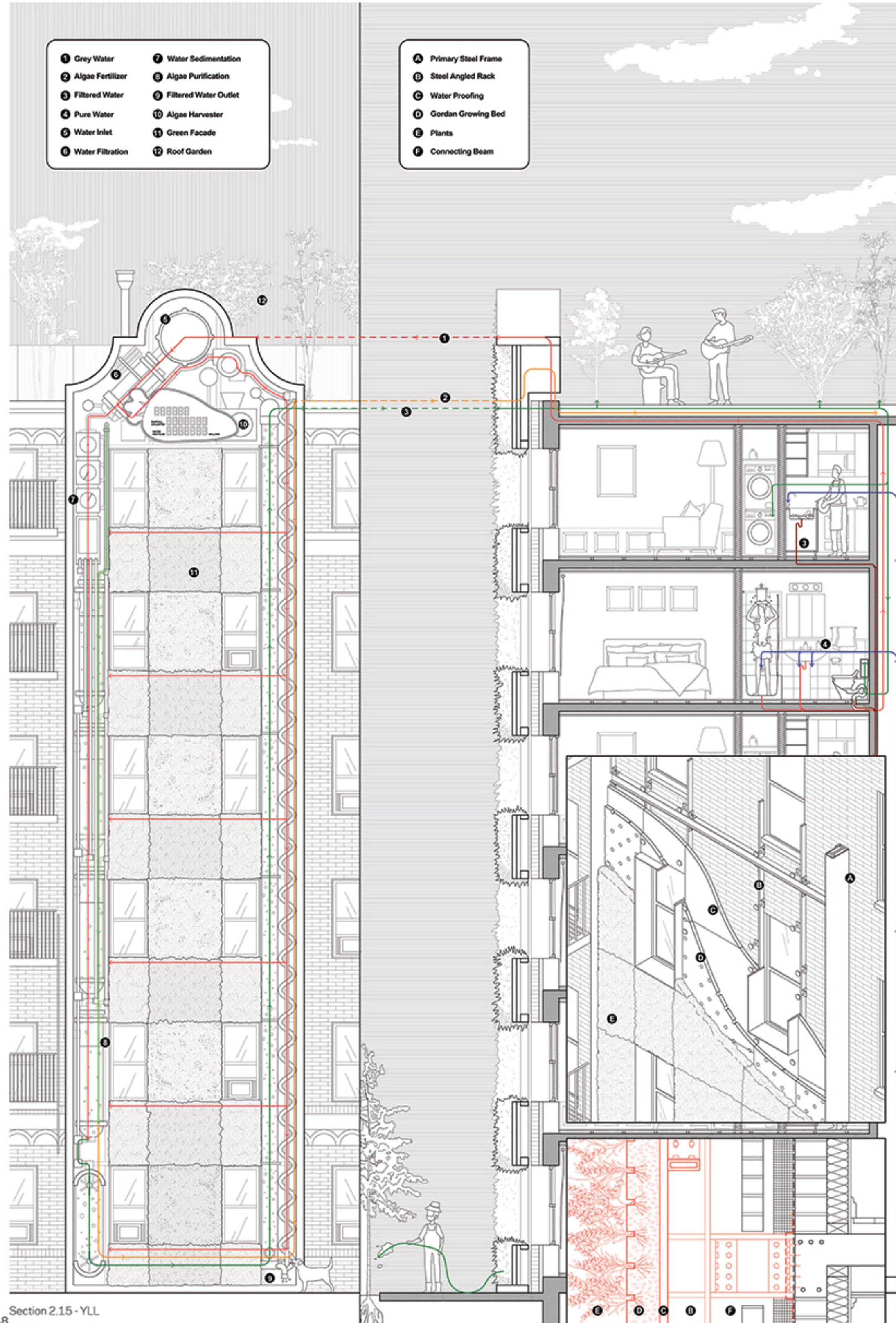


Drawing 2.14 - YLL



- 1 Grey Water
- 2 Algae Fertilizer
- 3 Filtered Water
- 4 Pure Water
- 5 Water Inlet
- 6 Water Filtration
- 7 Water Sedimentation
- 8 Algae Purification
- 9 Filtered Water Outlet
- 10 Algae Harvester
- 11 Green Facade
- 12 Roof Garden

- A Primary Steel Frame
- B Steel Angled Rack
- C Water Proofing
- D Gordon Growing Bed
- E Plants
- F Connecting Beam







Drawing 2.17 - YLL & JZ

# Low-Density

## Absorbtion Rate 21.72%

In the low-density reaches of Coney Island, water moves more slowly—absorbed not by towers or rooftops, but by soil, surface, and vegetation. This metabolism operates horizontally, diffused across yards, setbacks, and open ground. The intervention introduces 400 algae trees, each capable of cycling between 1 to 2.5 million gallons annually through multiple daily filtration loops. These vertical bio-reactors are embedded into domestic landscapes—serving approximately seven households per unit, transforming lawns into active infrastructural sites.

To complement this system, 1,000 square foot green patches are distributed across open parcels, each contributing an additional 0.4 million gallons of treatment capacity per year—equivalent to 0.3 algae trees. Paired with strategically placed rainwater collectors—designed at 20 ft to 6 ft diameters to absorb 22,000 gallons annually—this decentralized system is fine-tuned to match the hydrological patterns of the borough's 1,580-acre low-density zone.

Together, these elements reclaim nearly 1 billion gallons per year, contributing 21.7% of the total reduction goal. In contrast to centralized infrastructure, this system dissolves into the everyday—reframing lawns, gardens, and sidewalk edges as metabolic fields that filter, slow, and regenerate. The result is a domestic ecology—quiet, dispersed, and vital to the city's collective flow.

- Green Patch Capacity (Extra Capacity for modification):
- 1000 Sqft of Green patch (per year) can treat 0.4 MG, which allow us to alter the number of algae tree.
  - 1000 Sqft = 0.3 Algae Tree
- One Algae Tree could serve how many Low Density Housing:
- 1MG per year for Seven household, Therefore One Algae Tree serves 7 households
- Progress:  $999 / 4600 = 21.72\%$
- Goal for Low Density Water Reduction: 999 Million Gallons
- Single Algae Tree Volume: 800-1200 Gallon
- Therefore:
- Number of Algae Tree needed:  $999 \text{ MG (Goal)} / 2.5 \text{ MG (1 Algae Tree Capacity)} = 400 \text{ Units of Algae Tree Needed}$
- Justification of Diameter for collector (Design Decision):
- Amount of Rainwater needed to dilute: 22000 Gallon Per year
  - Area of Collector:  $22000 \times 3600 / 245000 = 315 \text{ sqft (Diameter)} = 20\text{ft to } 6\text{ft}$



Diagram 2.18 - YLL

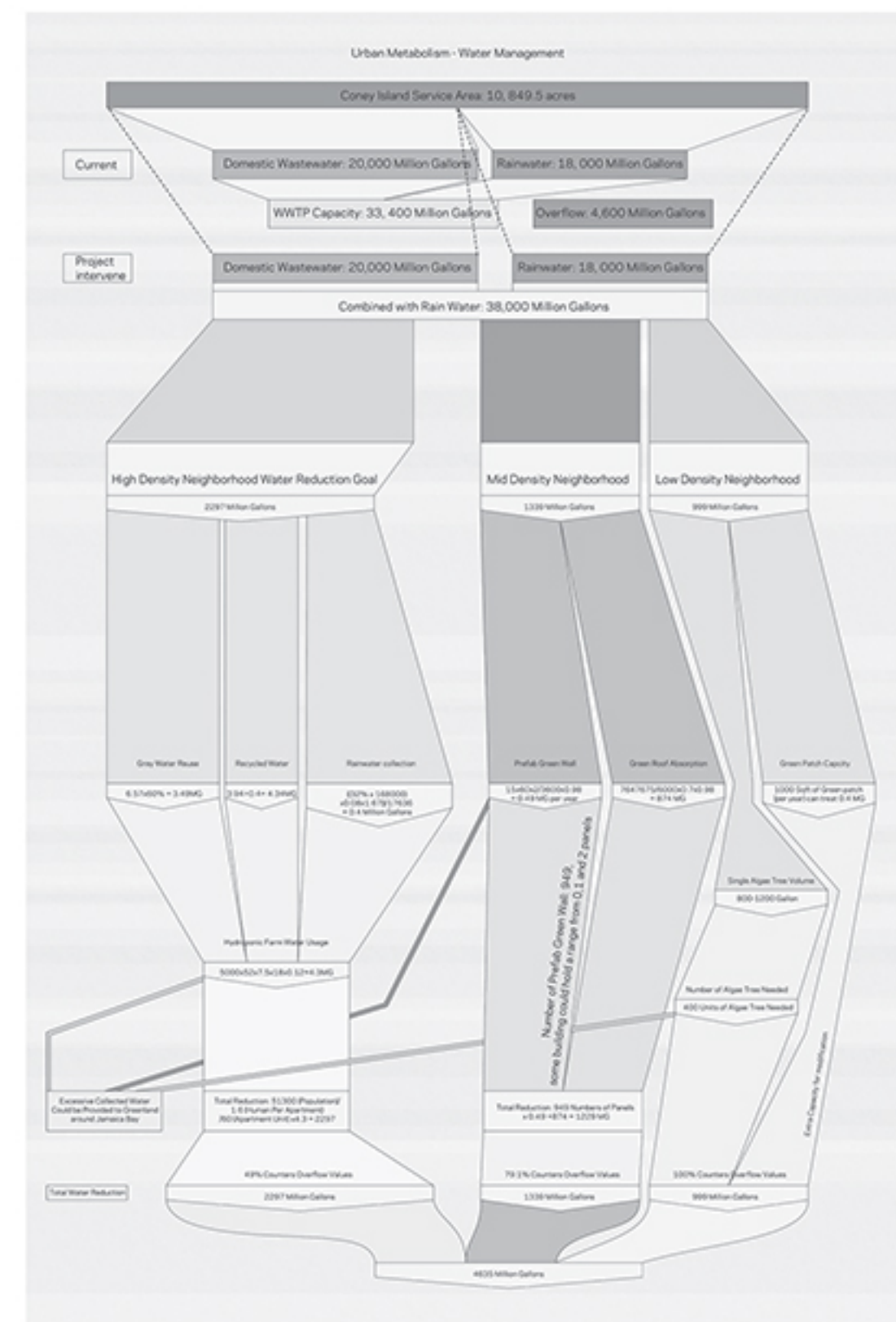
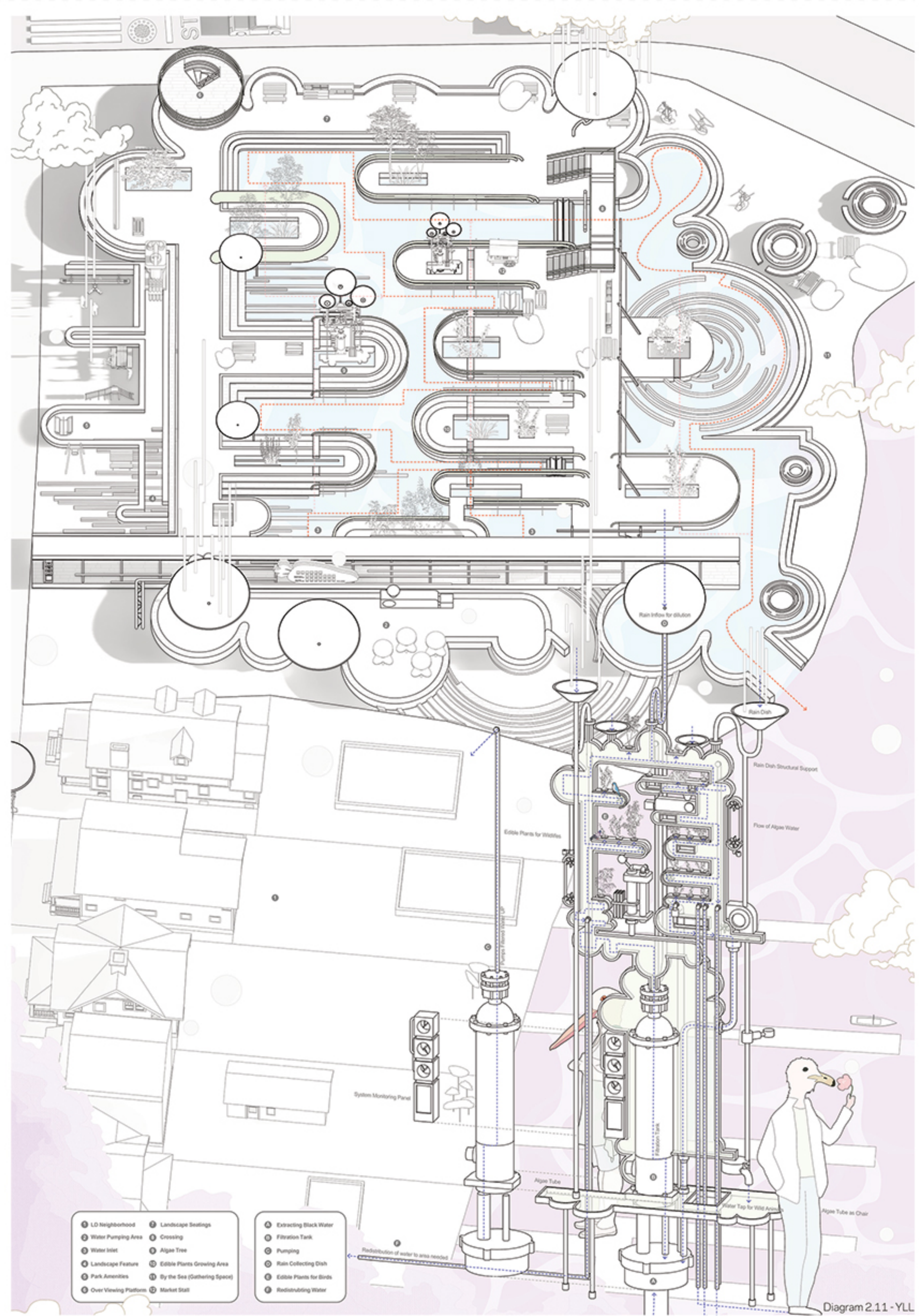


Diagram 2.19- YLL





Drawing 2.20 - YLL & JZ





### CONCLUSION Urban Metabolism

This project envisions a decentralized water infrastructure for Coney Island—one that functions like a living system rather than a singular engineered solution. Spread across a 10,849.5-acre service area, the design restructures wastewater management according to urban density: high-rise towers are retrofitted with rooftop hydroponic farms and internal greywater loops; mid-rise buildings deploy green roofs and vertical panels to absorb and delay runoff; and low-rise neighborhoods integrate algae bio-reactors and permeable green patches to treat water directly on site. Altogether, these systems reclaim over 4.6 billion gallons of overflow each year—nearly eliminating the burden on the centralized WWTP. By embedding infrastructure into the forms and surfaces of daily life, the project turns the city into a self-regulating metabolism: spatial, visible, and alive.

Service Area: 10,849.5 acres  
Domestic Wastewater: 20,000 million gallons  
Combined With Rainfall: 38,000 million gallons  
WWTP Capacity: 33,400 million gallons  
Overflow: 4,600 million gallons  
Phase 1 Reduction: 2,297 million gallons  
Progress: 49.9%





40.6057° N, 73.8713° W  
210 New York Avenue Staten Island, NY 10305

Sep - Dec  
2023

## Canyonria

**“WHAT IF”** housing wasn’t stacked in repetition, but carved like a canyon—where movement shaped form and shared space replaced isolation?

Yiu Lun Lee (YLL), *Partner* - Leslie Li (LL)

**nARCHITECTS**

CORE III STUDIO  
Eric Bunge

**Galleria**



# Concept Images

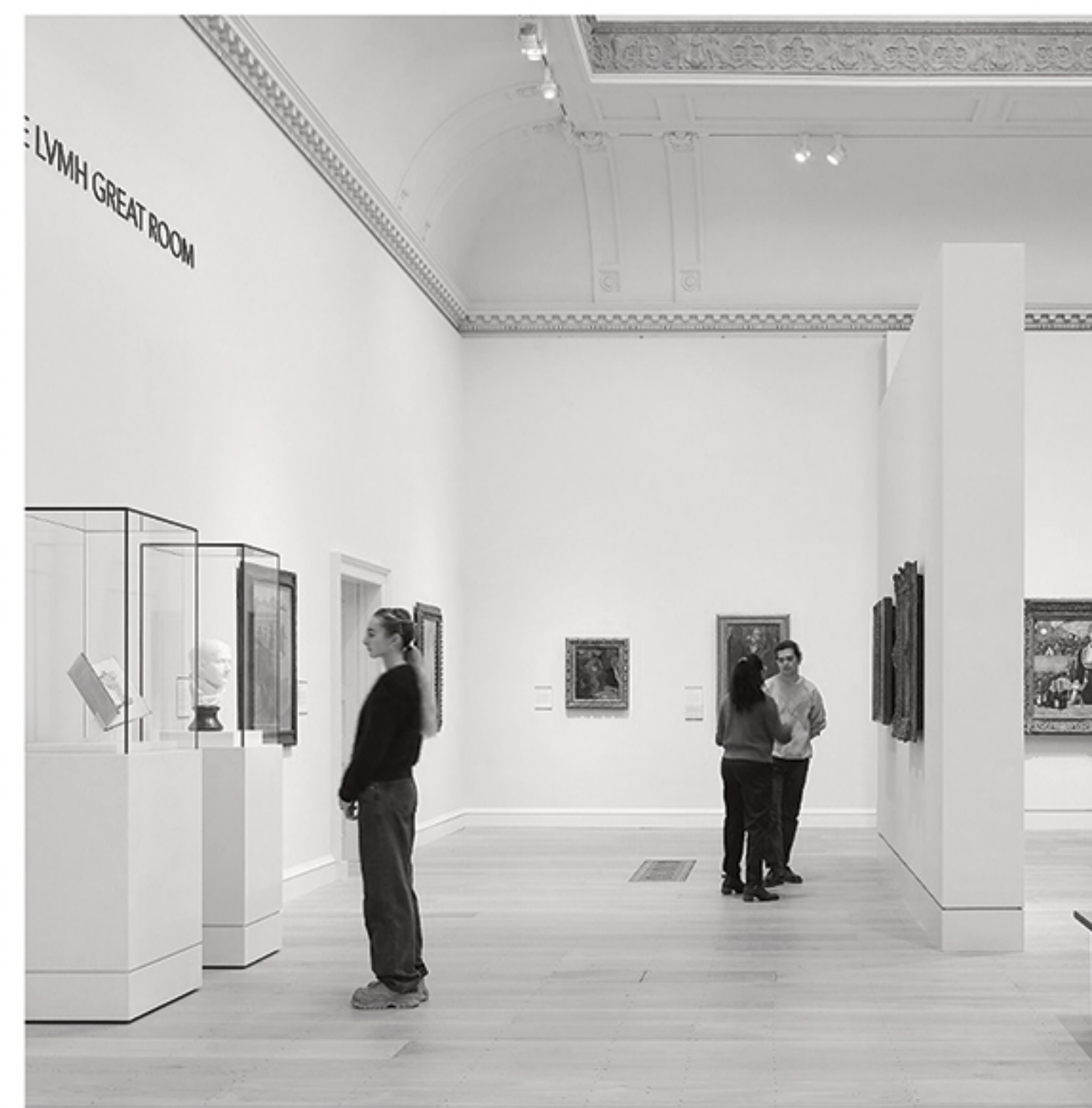
## 2023



Galleria



Canyon



Gallery



# Canyonria 2023

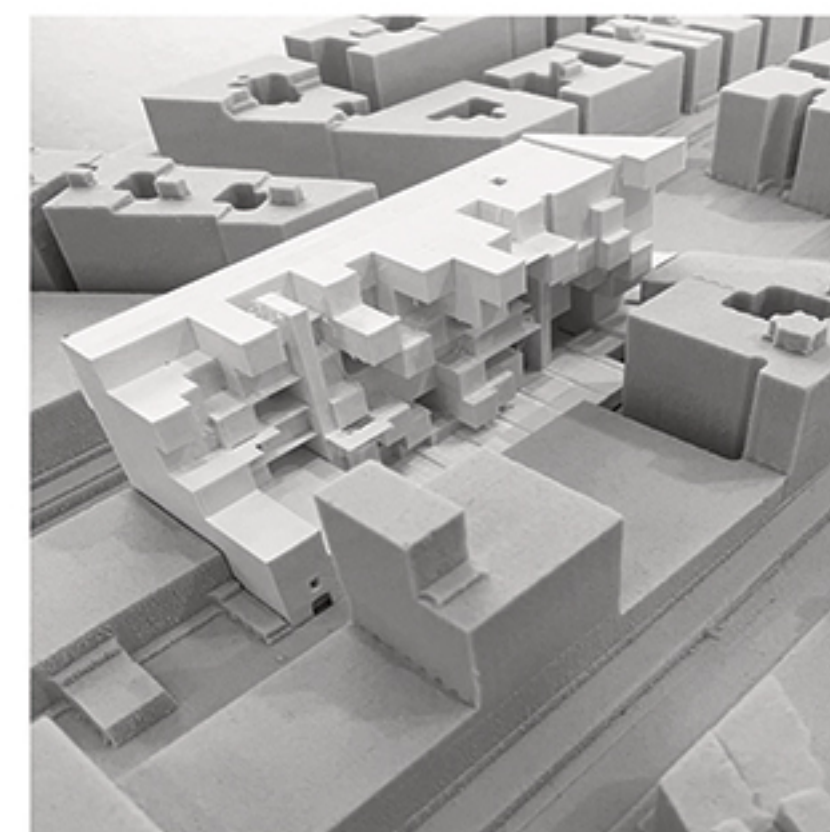


Diagram 2.1 - YLL

## 3D Printed Massing & CNCed Surrounding

"Canyon-ria" reinterprets the archetype of Galleria arcades through an architectural lens, articulating a canyon-esque morphology. This configuration strategically orchestrates a spectrum of diverse unit typologies (North Side) in symbiosis with communal living areas (South Side), blurring the dialogue between private habitation, public interaction, and open space as the architectural piece's response to collectivity.

The project sets itself apart with its amalgamation of open gallery spaces into the existing building on West 128 Street, where the concept of "Canyon-ria" is used as a continuous fabric, weaving diverse functional spaces across floors one to eight. These areas surpass the standard scope of housing units, transforming into hubs of connectivity that cater to both artists and, short/long-term residents. This integration not only enriches the local community life but also resonates with the abundant artistic programming prevalent around the site historically.

Architecturally, Canyon-ria achieves a harmonious blend of traditional red brick with contemporary brick and tile tectonics, striking a balance that acknowledges local Harlem architectural heritage, while introducing a distinct, communal aesthetics – a concept aptly described as "a gentle handshake with the surrounding building." The impact of Canyon-ria transcends beyond conventional housing roles; it redefines urban dynamics, orchestrating a fluid interplay between residential, educational, and artistic zones. This approach redirects the movement of people within the urban fabric, fostering an organic and integrated flow of urban life from West 128 Street to Convent Avenue.

Render 3.1 - YLL





Model 3.2 - YLL & LL

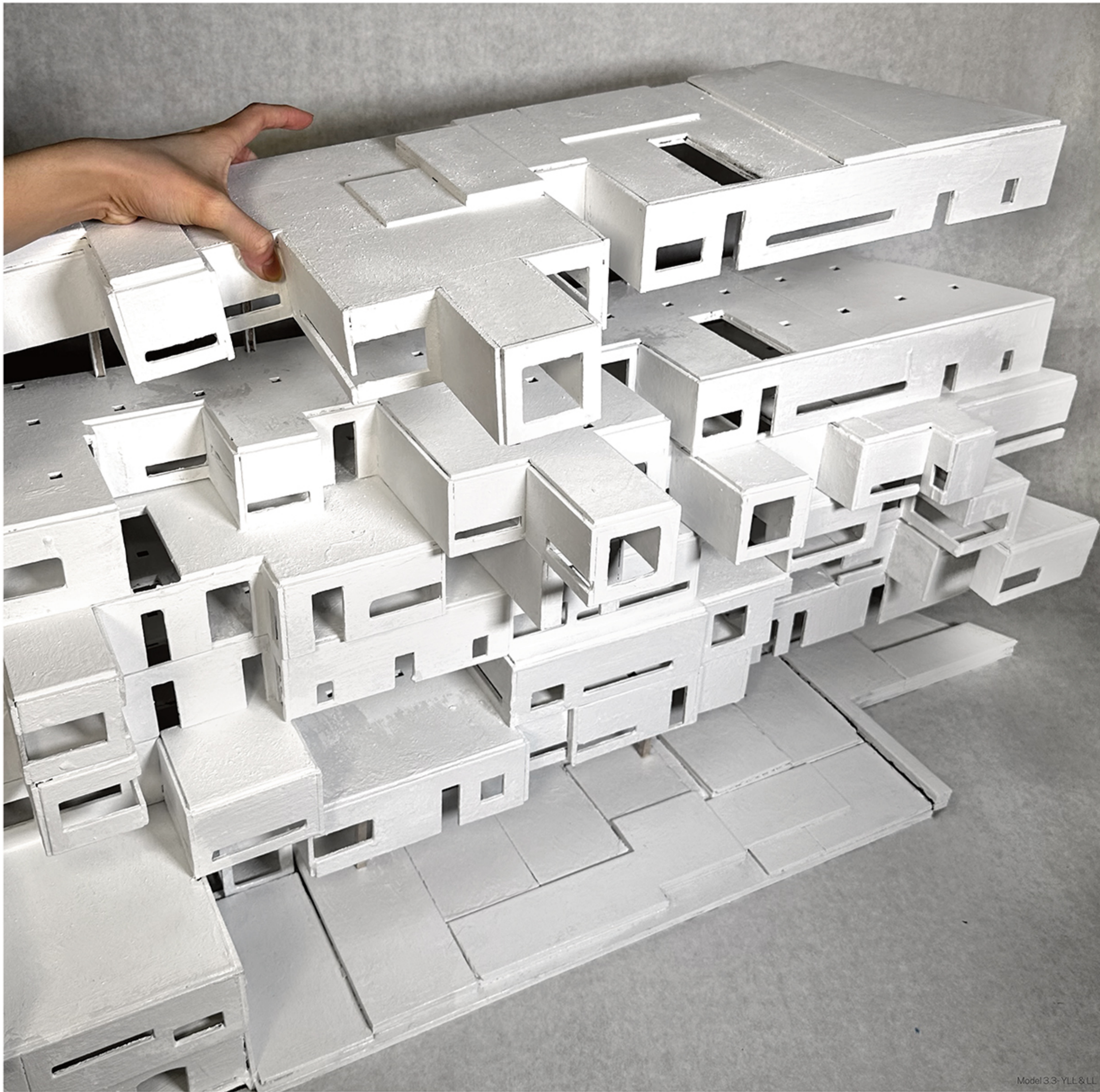
# Physical Model

## Modular Aggregation as Responsive Urban Form

This study model investigates architecture as an evolving, accretive system—one that resists formal singularity in favor of aggregation, porosity, and modular adaptability. Constructed through a kit-of-parts logic, the design operates like an urban scaffolding: units slide, interlock, and cantilever to form a layered, inhabitable terrain. The massing prioritizes spatial diversity and edge conditions, creating a rhythmic assemblage of thresholds, voids, and overlaps that challenge the typical figure-ground dichotomy.

Inspired by informal housing clusters and megastructural precedents, the physical model articulates a three-dimensional framework where public and private realms bleed into one another. Units are differentiated by scale and depth yet conform to a shared tectonic language, emphasizing flexibility without erasing identity. The negative spaces—slots, gaps, and interior courtyards—become critical actors in the architectural narrative, enabling ventilation, light, and social interaction.

The act of holding a single unit in the hand foregrounds the project's modular intelligence and constructional intent: each piece is both structural and spatial, capable of being rearranged to respond to evolving needs or site constraints. This proposal imagines not just a building, but an architectural ecology—open-ended, reconfigurable, and contingent on its inhabitants.



Model 3.3- YLL & LL



# A Choreography of Living

## Interlocking massing

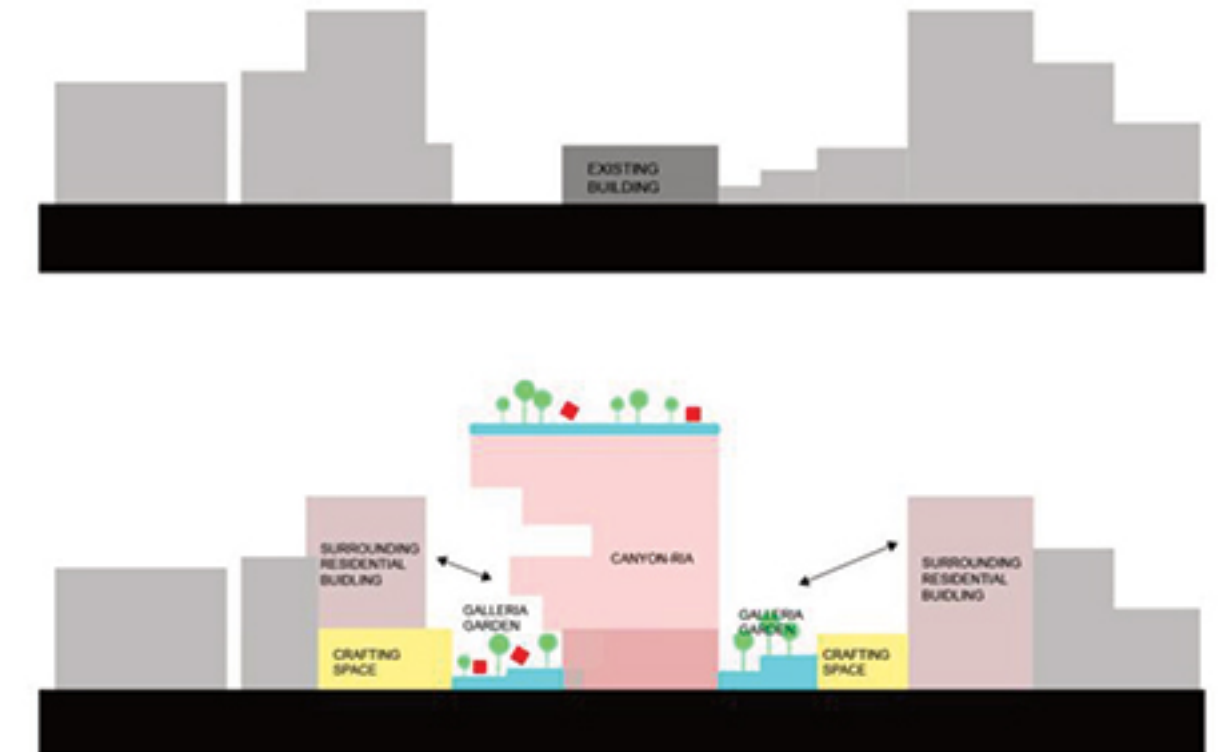


Diagram 3.7 - LL

the spatial porosity and neighborhood integration at the heart of Canyonria's architectural intent. Rendered perspectives highlight how a fragmented yet interconnected massing strategy introduces a tactile urban intimacy—where red brick, ceramic tile, and articulated setbacks stitch together old and new. The rooftops are not residual spaces but become active terraces, gardens, and stages for informal gathering, education, and exchange.

Internally, the sectional canyon brings daylight and visibility deep into the site, fostering transparency across programs. From co-working zones to residential enclaves, thresholds blur between public and private, domestic and civic. The project orchestrates a choreography of circulation that moves vertically through stacked community spaces, while horizontally linking shared courtyards and open-air corridors.

The street view rendering anchors the project within the Harlem context, showcasing the sensitive scale transition and material continuity along West 128th Street. Meanwhile, the diagrammatic section on the right underscores the project's urbanistic ambition: to reimagine the back-of-house and leftover voids as connective urban infrastructure, reinvigorating circulation and cultivating an architectural commons.



Render 3.4 - YLL



Render 3.5 - YLL



Render 3.6 - YLL



# Plan

## Life Style

The ground and second floor plans of Canyonria reveal a carefully layered spatial strategy that blends civic engagement with intimate domesticity. On the ground floor, the layout prioritizes public accessibility—anchored by a generous co-working and cultural commons on the western end, envisioned as a flexible civic hall for learning, making, or gathering. This space seamlessly connects to a shared kitchen, breakout lounges, and adaptable rooms that support community programming. Moving eastward, the plan transitions into a denser cluster of smaller private units and support spaces, suggesting short-term residencies or artist accommodations. Generous corridors, punctuated by planted courtyards and translucent partitions, ensure permeability and visual continuity across the plan.

Ascending to the second floor, the program shifts toward a more residential character. A double-loaded corridor organizes a diverse array of living units, each carefully articulated to maintain privacy while remaining visually and spatially connected to shared amenities. At the building's core, a central lounge and communal kitchen form a social anchor, supporting daily interaction among long-term residents. Meanwhile, pockets of open-air terraces and internal gardens blur the boundaries between private life and collective experience. Together, these two levels demonstrate Canyonria's architectural ambition: to dissolve the thresholds between housing, learning, and gathering through a continuous, canyon-like spatial fabric.

2<sup>nd</sup> FL Plan 3.7 - YLL & LL

GFL Plan 3.8 - YLL & LL





Sectional Perspective 3.9 - YLL

## Sectional Perspective

A layered section where living, gathering, and circulation intersect across vertical space.

The section slices through the heart of the project, revealing a stacked composition of interlocking volumes, cascading terraces, and porous communal thresholds. Public life unfolds at the ground level, where a lushly planted civic courtyard is activated by playgrounds, gardens, seating nooks, and performance zones, extending the street into a vibrant social commons.

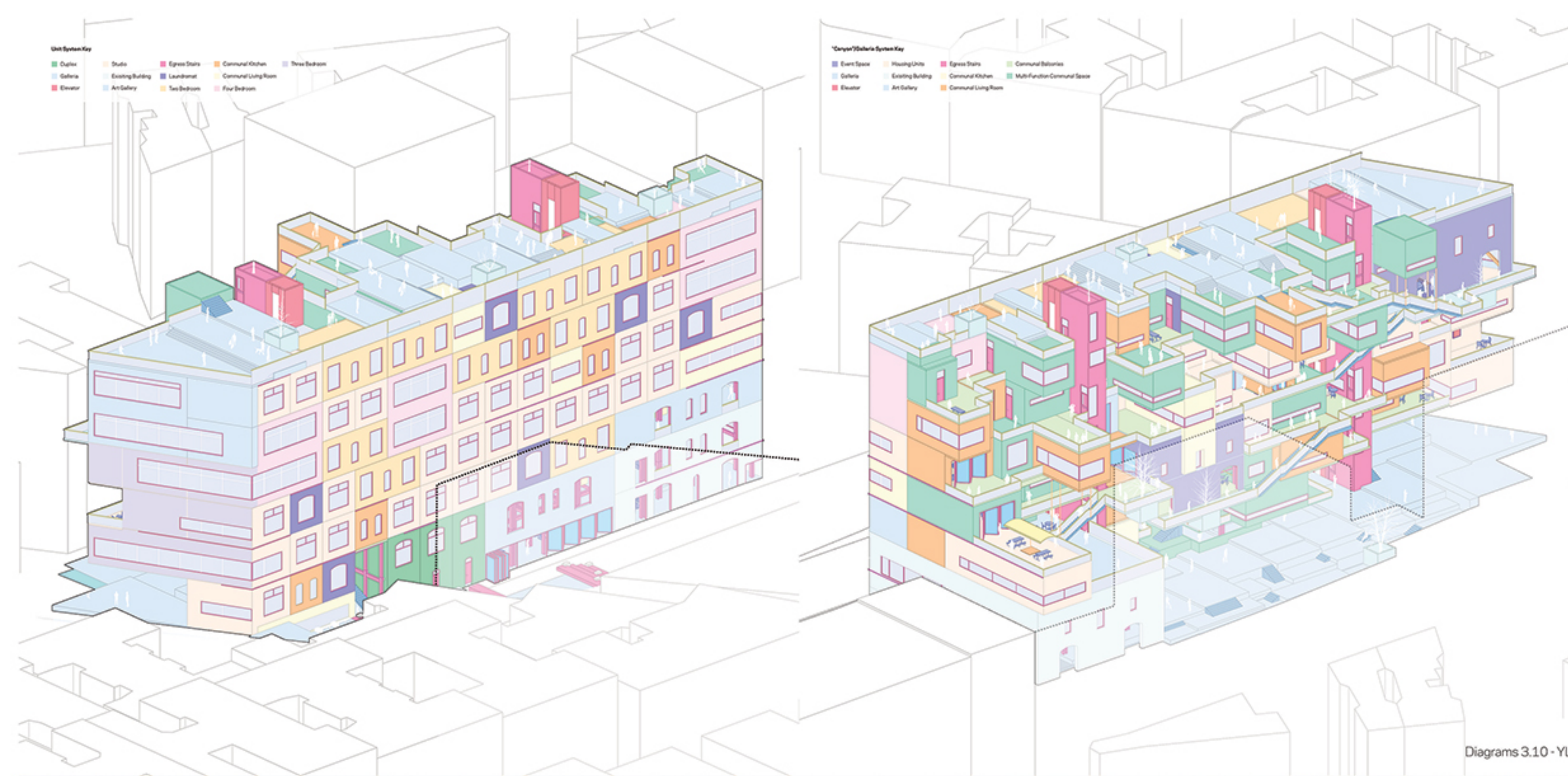
Above, staggered units of varying depths and orientations—clad in a mosaic of red brick and emerald green tile—are threaded together by a continuous, exterior stair spine. This system choreographs vertical circulation while offering ever-shifting views, chance encounters, and pockets of occupation. The architecture balances compression and release: units press inward to form intimate moments, then project outward to create generous balconies and shared platforms.

Programmatically, Canyonria cultivates a hybrid life: homes, studios, workshops, and collective gathering spaces are suspended in a dense matrix that mirrors the energy of Harlem's social fabric. The sectional cut makes visible how air, light, people, and programs move fluidly through the building—transforming it into a canyon-like infrastructure for urban coexistence.



# System

Interlocking units and shared spaces form an urban living ecosystem.



The diagrams illustrate the evolution of the Canyonria housing system, transitioning from a conventional block structure (left) to a dynamic canyon-like typology (right). The left axonometric reveals a traditional multi-story apartment building populated with a mix of studios, duplexes, and one- to four-bedroom units. Programmatic elements such as laundromats, art galleries, communal kitchens, and elevators are carefully distributed, but largely remain bound within the conventional logic of stacked floors and corridor-accessed units.

On the right, this typology is exploded and reimagined as a porous, interconnected canyon system. Housing units, communal balconies, and public amenities interlock vertically and diagonally, producing an organic morphology of stepped terraces and interstitial courtyards. Circulation is no longer limited to elevators and hallways but expands into a network of ramps, stairs, and bridges, creating fluid movement and social connectivity throughout the structure. Communal kitchens and living rooms are embedded across different levels, reinforcing moments of gathering and shared domesticity. The vibrant color coding clarifies the mix of unit types and public-facing programs, emphasizing flexibility and density without uniformity.

Canyonria thus becomes a spatial ecosystem—densely layered but human-scaled—where architecture mediates between privacy and collectivity, offering a new urban housing model responsive to both spatial and social needs.





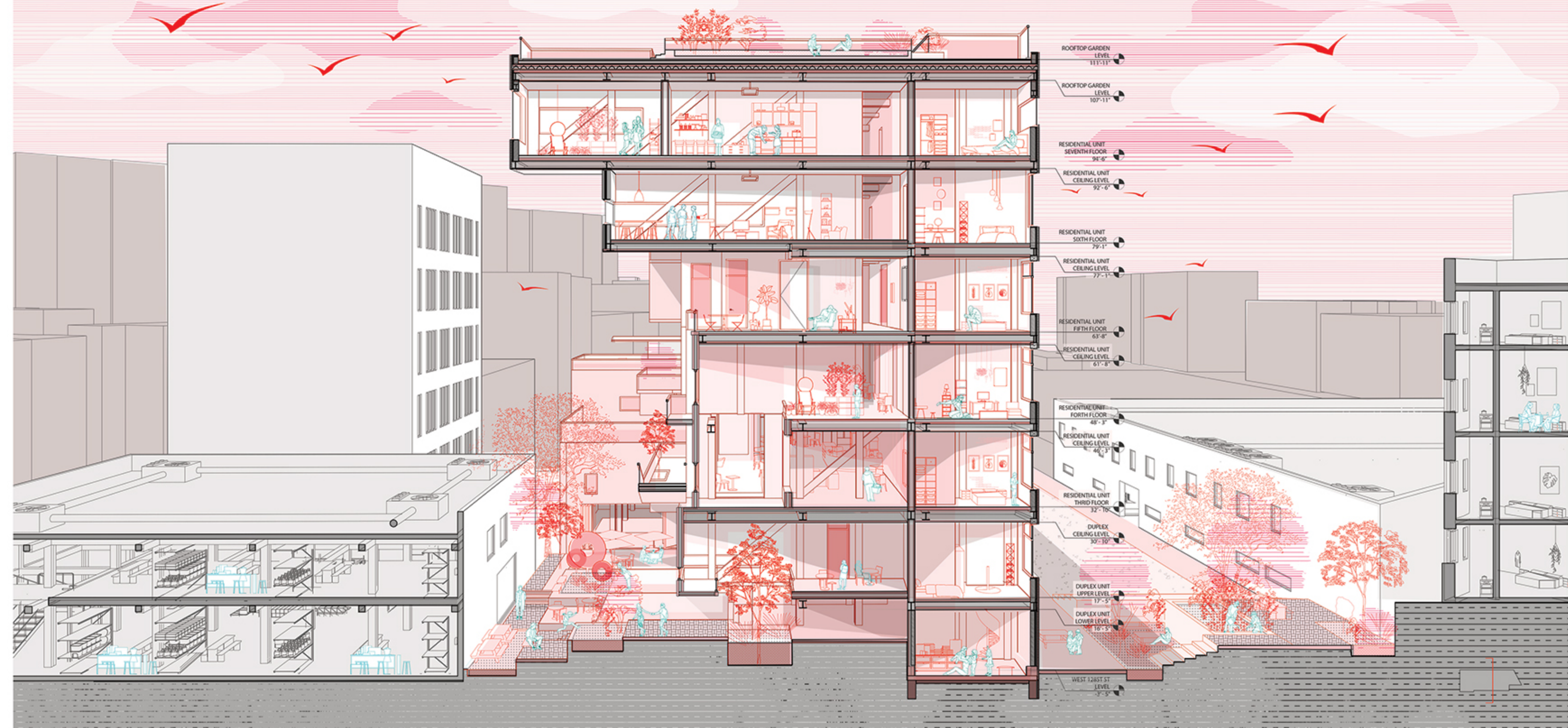
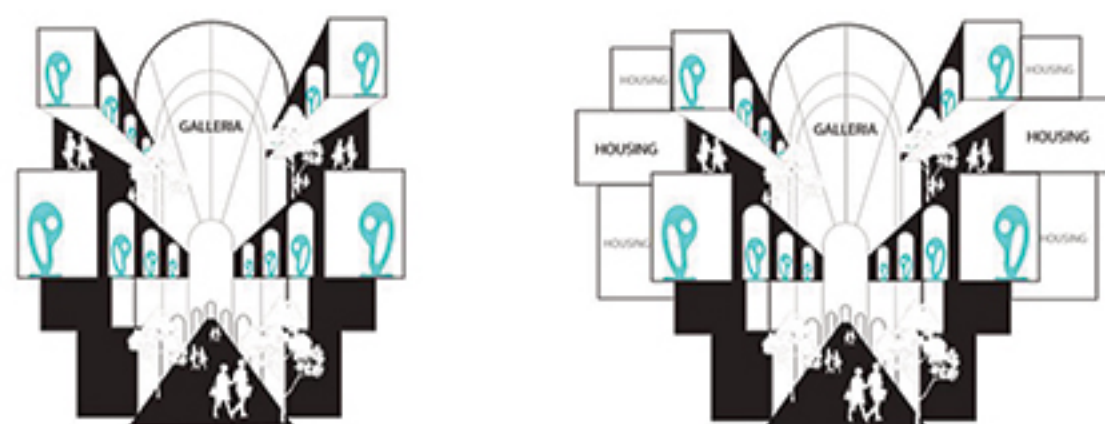


Diagram 3.12 - YLL & LL

## Vertical Living Layered Community



This northwest-facing sectional perspective reveals the vertical layering and intimate choreography of domestic life within the Canyonria scheme. From the stepped street entrance on West 128th Street, the section curves upward through a series of duplex and single-level units, exposing a fluid interplay between interior living spaces and communal terraces. Natural light filters through from multiple directions, activating shared balconies and threshold zones that function as both circulation and social interfaces.

Each level accommodates a variety of unit types—duplexes, single-resident homes, and garden-access dwellings—woven together by cascading stairways and interconnected floor slabs. Mid-level voids and cutouts create visual and physical connections between levels, while enhancing air circulation and spatial legibility. The section reveals a rhythm of solid and void, where lush plantings and strategically placed furniture blur the line between interior and exterior, fostering a sense of openness and permeability.

Above, rooftop gardens crown the structure, offering residents elevated moments of retreat and gathering. Below, a lively communal courtyard sits at the building's base, its shaded seating areas and trees reinforcing the project's ethos of ecological and social integration. Overall, the section articulates Canyonria's ambition to reframe vertical housing as an interconnected urban village—layered, porous, and alive.





Board 3.13 - YLL & LL

## Canyonria Overview

### Collective Urban Living Reimagined

Canyonria is a mid-density housing prototype that reimagines urban living through a richly layered spatial system of stacked residences, communal terraces, and cascading voids. Set in Harlem, the project weaves private and public programs—residential units, educational spaces, kitchens, and galleries—into a porous canyon-like fabric that fosters interaction, adaptability, and community resilience. Architectural tectonics of red brick and green tile nod to the neighborhood's heritage, while modular aggregation strategies allow for varied unit types and flexible social thresholds. Through sectional variety and infrastructural interconnection, Canyonria offers a new typology where collectivity and individuality coexist.



40.7101° N, 74.0059° W  
40.7101° N, 74.0059° W  
Fulton Street, Lower Manhattan, New York, NY, United States

Sep - Dec  
2022

***Build, Unbuild and Rebuild***

***“WHAT IF”*** scaffolding wasn’t a symbol of decay or delay, but a scaffold for regeneration—reused to build spaces of care, dignity, and solidarity for the very workers who keep the city standing?

Yiu Lun Lee (YLL)

***MATTAFORMA***

Core I Studio  
Lindsey Wikstrom

***Scaffolding***





- List of Materials in Quantities**  
(302 Grids) Occupied
- 2416 x Scaffolding Planks
  - 302 x Banners
  - 1208 x Decking Sheets
  - 7550 x Aluminum Beams (V&H)
  - 3020 x High Load Frames
  - 1208 x Cross Braces

- 8 Scaffolding Planks
- 1 Banner
- 4 Decking Sheet
- 20 Aluminum Beams
- 5 Vertical Aluminum Beams
- 10 Hi-Load Frame
- 4 Cross Brace

6.5M  
6.5M

# Reframing the Temporary

## A Union Space for Lower Manhattan

CORE | STUDIO

Lindsey Wikstrom

The project emerged from a close observation of steel's pervasive role in shaping the everyday urban condition of Lower Manhattan—most notably, its manifestation through sidewalk scaffolding. What began as a temporary safety measure has, over the decades, become a permanent fixture of the streetscape, transforming steel from a construction material into an architectural artifact of inertia.

These sidewalk sheds—legally mandated by Local Law 11 after a tragic accident in 1979—were intended to protect pedestrians from falling debris. Yet in practice, they often linger for years, becoming a latent layer of the city's visual and social landscape. One such structure stood for over 23 years, a symbol of both deferred maintenance and the blurred line between temporality and permanence in urban space.

Rather than dismiss this infrastructure as waste, the project imagines an alternative afterlife. What if the very materials associated with urban neglect—retired scaffolding, discarded steel, fallen façade debris—could be harvested and reassembled into a space of dignity and utility? Located on one of the few remaining vacant lots along Fulton Street, the proposal intervenes not with new construction, but with strategic reuse.

The project reconfigures this surplus into a circular economy prototype: a union-oriented communal hub for Lower Manhattan's often-invisible labor force. It provides essential services—nutrition, healthcare, psychological support—within a low-carbon, materially conscious architecture. In doing so, it reclaims both material and spatial agency, transforming residue into resilience.

This speculative reuse not only critiques the economics of disrepair and visual pollution but also celebrates the latent potential of urban leftovers. The architecture proposes a future where scaffolding does not signify abandonment, but support—literal and metaphorical—for those who uphold the city each day.

By elevating materials often associated with neglect into an architectural language of care and solidarity, the proposal redefines value and visibility in the urban landscape. The repurposed scaffolding system becomes an armature for new social infrastructures—shelters, community kitchens, mobile clinics, and shaded gathering spaces—all designed with and for the labor force that has historically been overlooked.

This transformation also challenges conventional narratives of permanence. Rather than aiming for monumental longevity, the project embraces temporal modularity, allowing the structure to grow, adapt, and relocate as community needs evolve. It is both responsive and regenerative—an urban commons born from architectural refuse.

In doing so, the project not only diverts construction waste from landfills but also reframes maintenance and repair as active urban design strategies. It becomes a civic act: honoring the rhythms of labor, embedding social care into the streetscape, and establishing a new model of circular, worker-centered urbanism in the heart of Lower Manhattan.

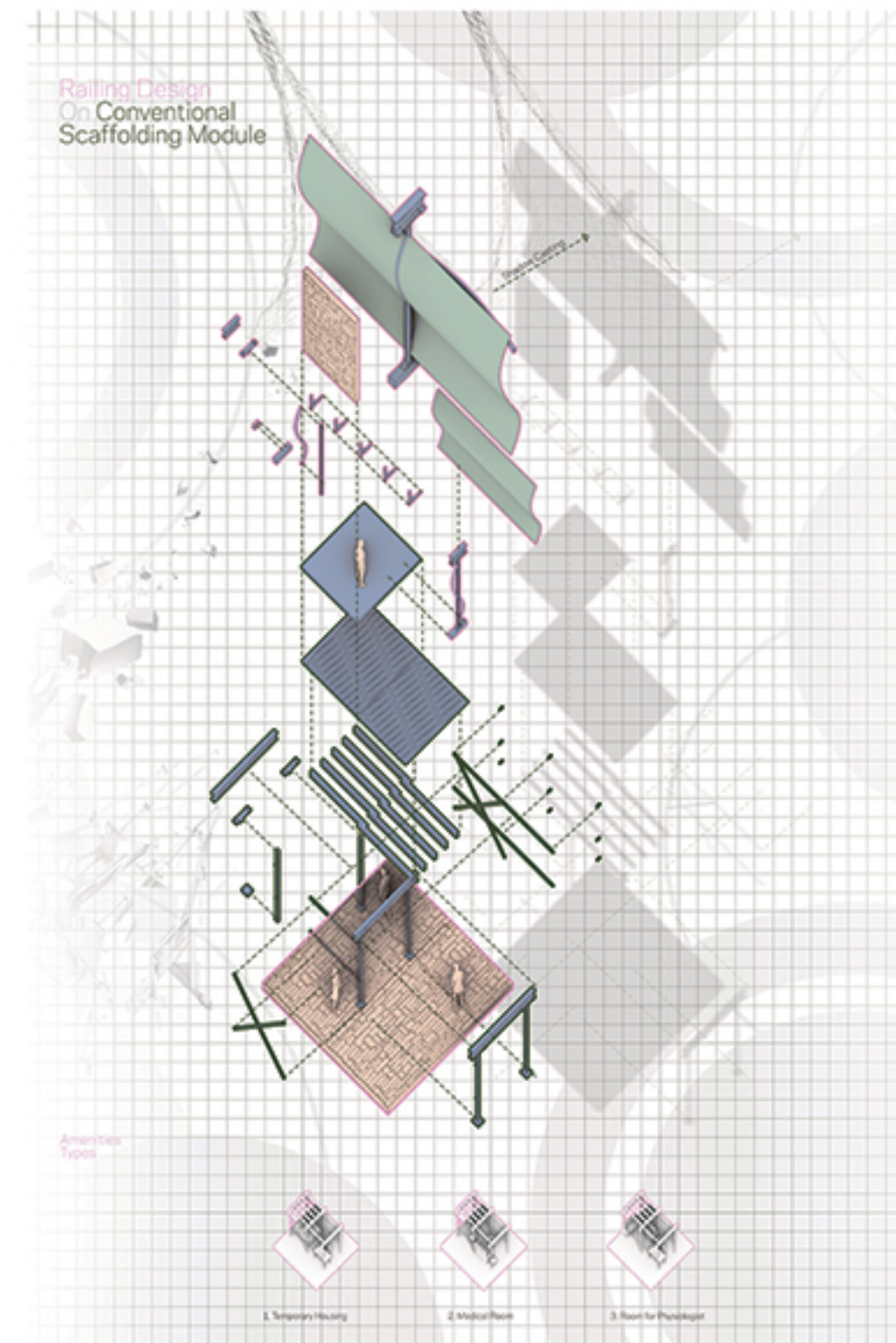
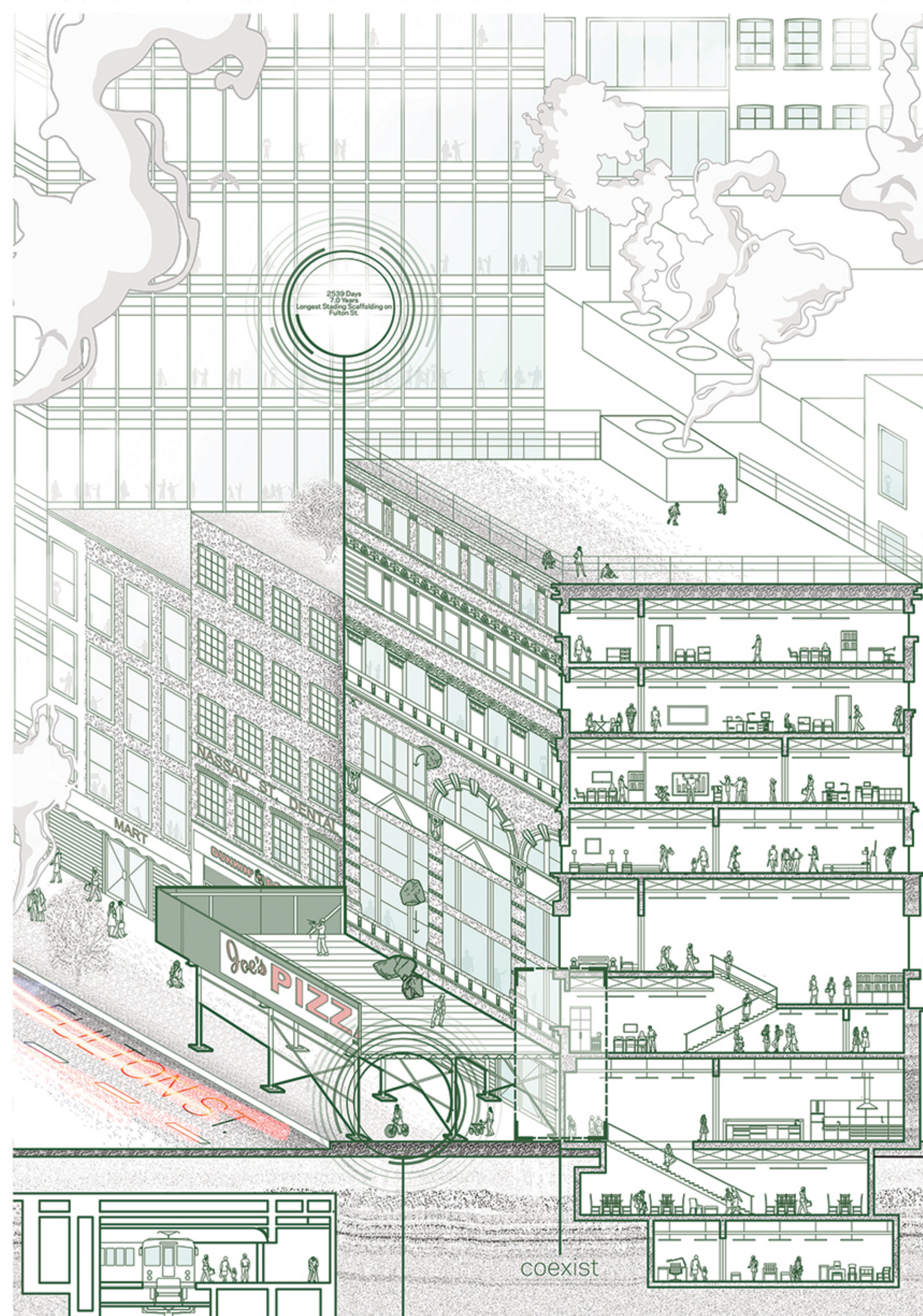
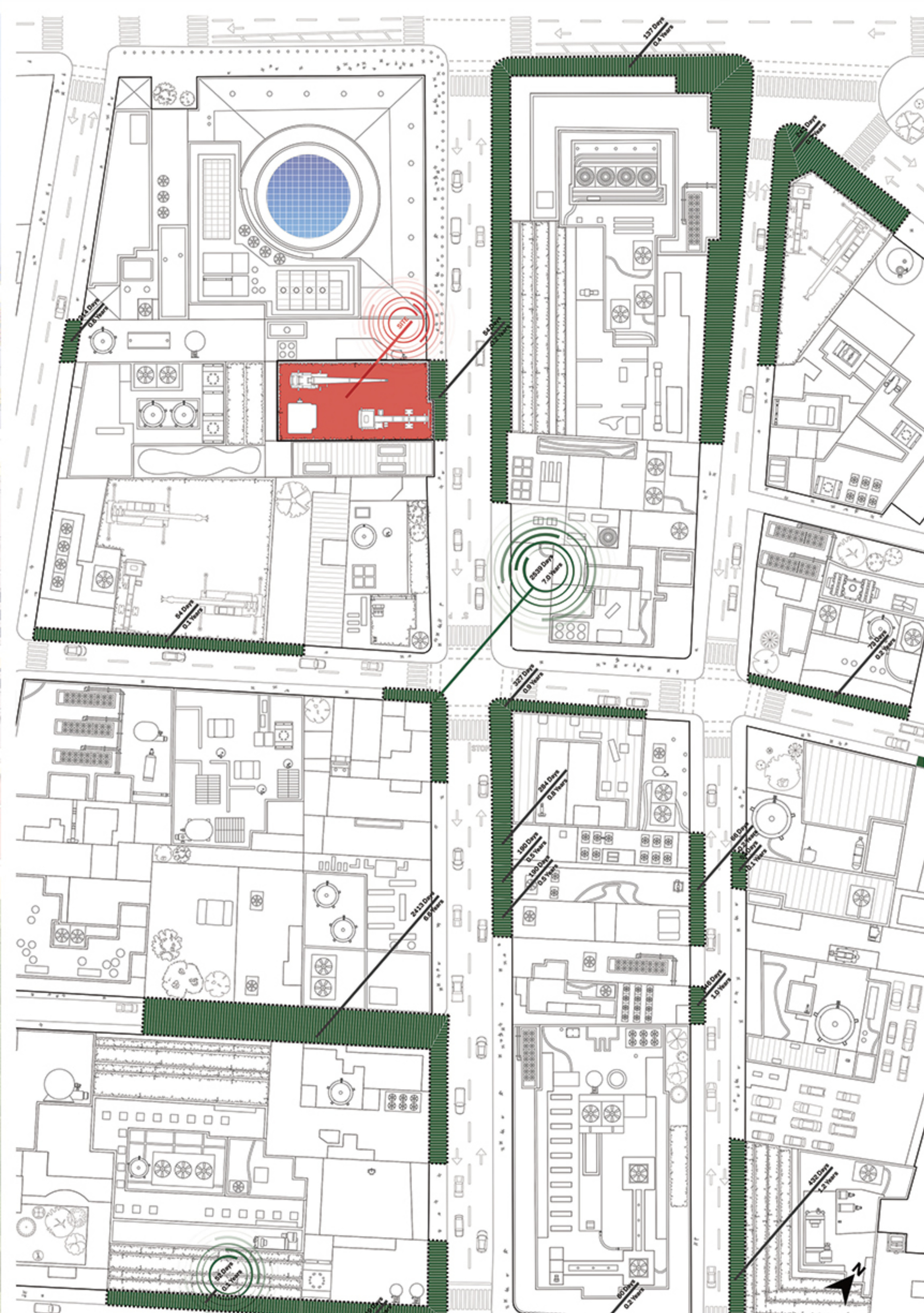


Diagram 1.1 - YLL



Photograph 1.2 - YLL







# Urban Residue as Resource

Scaffolding Reused as Social Infrastructure

CORE | STUDIO

Lindsey Wikstrom

Scaffolding is often seen as a temporary fix—an architectural afterthought that clings to facades in decay. Yet in Lower Manhattan, these metal frames have become permanent fixtures, lingering for years, even decades. This project begins with a critical question: what happens when the temporary becomes embedded in the city's identity? The answer lies in reinterpreting scaffolding not as blight, but as latent structure.

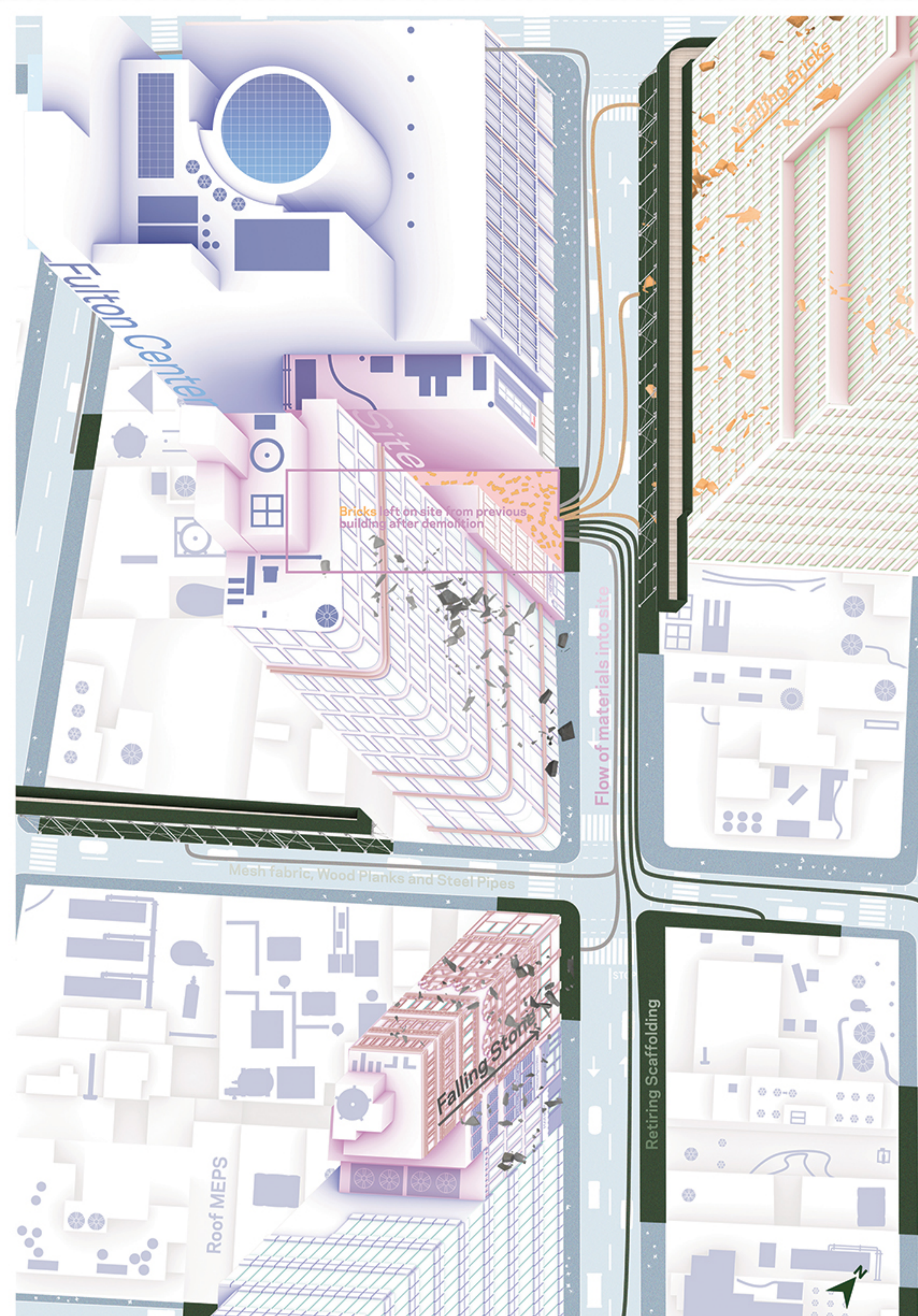
The map on the lower right traces over 950 active scaffolding sites across Lower Manhattan. Among them, the longest-standing installation has endured for 23 years—longer than many buildings are designed to last. Instead of removal, replacement, or ignorance, this condition reveals a chronic symptom of urban disrepair masked as maintenance. Scaffolding becomes both a signifier of systemic neglect and an accidental monument to cycles of delay.

The aerial plan at left zooms into the Fulton Street corridor, revealing the choreography of falling facades, mesh canopies, and steel walkways as they fold into pedestrian life. The sidewalks are no longer pass-throughs—they are shadowed corridors shaped by these temporal scaffolds. The urban metabolism slows as buildings await repair that never comes. But in this slowness, a spatial opportunity emerges.

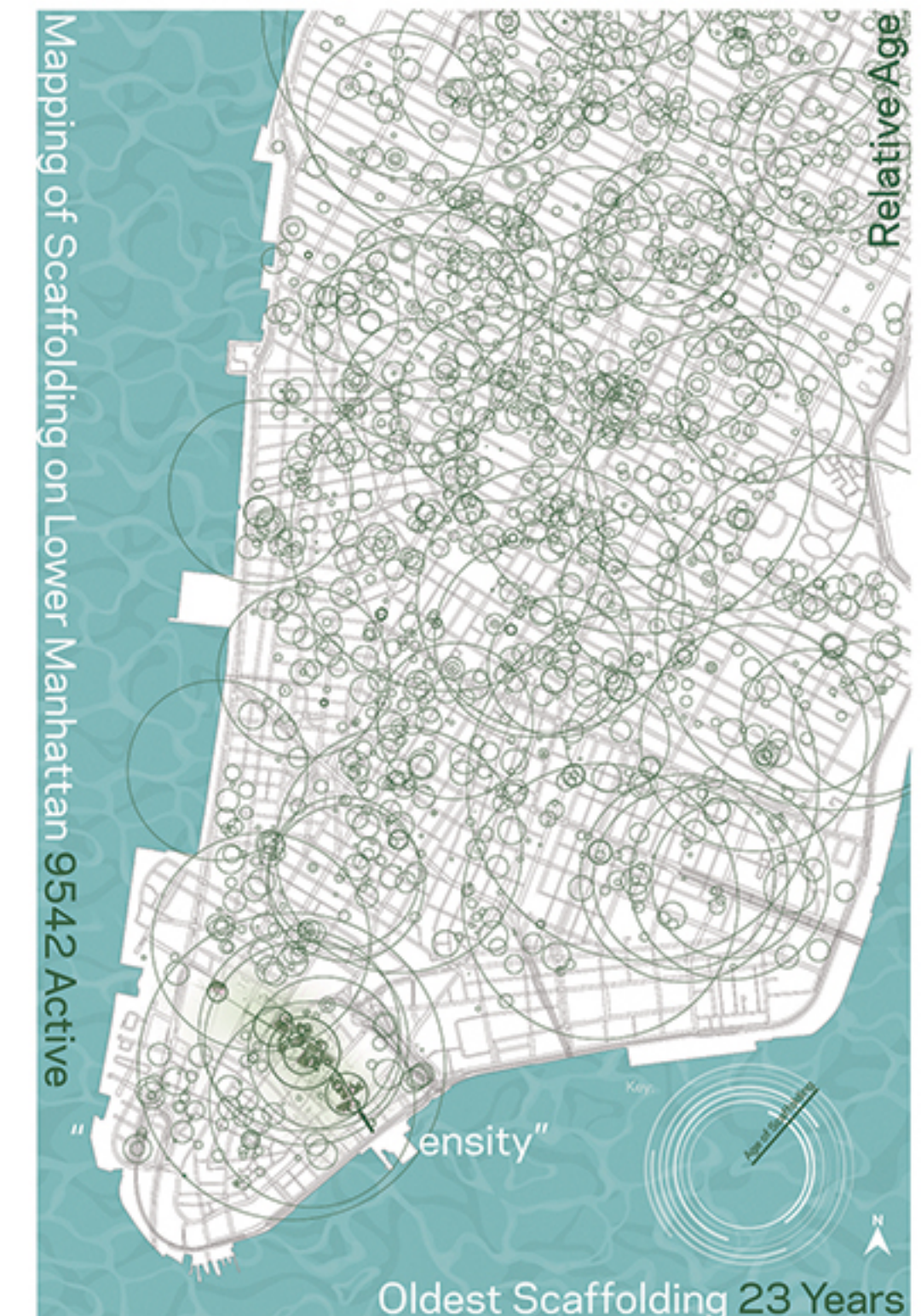
The central proposal imagines rerouting this cycle. Instead of discarding rusted pipes, fractured joints, or mesh netting, the city reclaims these elements to build anew. A material inventory (shown in the lower middle) categorizes recovered components by type and condition, treating them as a palette for design rather than waste. The project speculates on how these fragments can become the scaffolds of care—housing labor union services, health clinics, and communal kitchens.

Rather than acting as passive wrappers, these reused structures now support life inside and around them. Their visibility makes visible the labor that maintains the city—janitors, cooks, cleaners—those typically hidden behind the curtain of infrastructure. The built space is no longer smooth or seamless, but textured with stories of work, decay, and reuse. Aesthetic becomes evidence.

This proposal suggests a model of circular urbanism. By mapping, sorting, and reassembling the city's leftovers, it critiques the wasteful cycles of speculative development and celebrates the quiet potential of what is already here. Scaffolding, in this vision, is no longer a symbol of delay—it becomes a symbol of dignity and resilience.

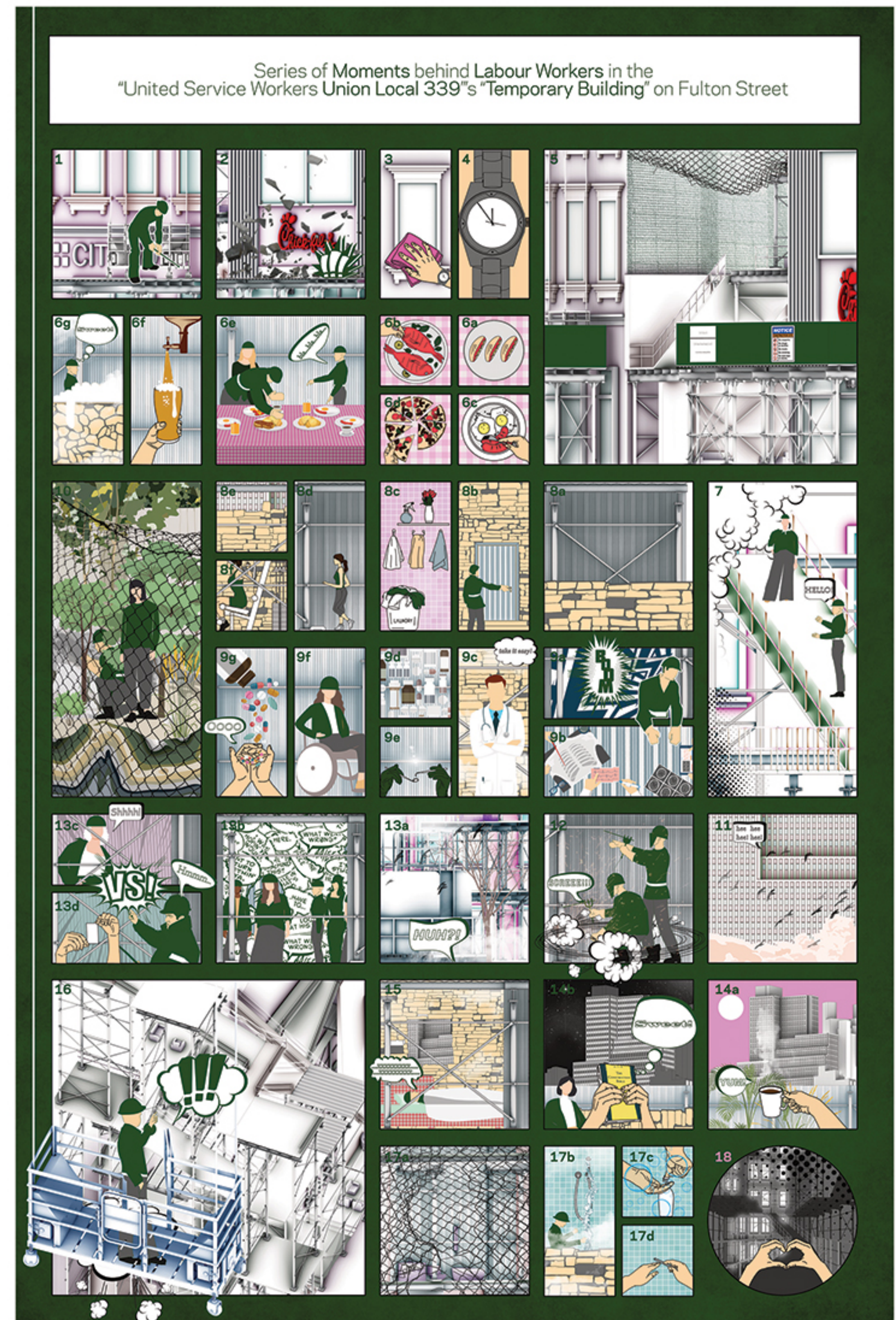


Photograph 1.3 - YLL



Drawing 1.4 - YLL







40.8075° N, 73.9626° W  
1172 Amsterdam Avenue, New York, NY 10027

— Sep 2022  
May 2025

*End of Portfolio*

Yiu Lun Lee - Assoc. AIA, PMP, LEED AP, WELL AP

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