**Ingrid Porto**
(646)288-0823
yarrudap@pratt.edu

# Architecture Portfolio

**Information**

New York , New York
Phone : (646)288-0823
Email : yarrudap@pratt.edu

**Professional Experience**

Japo Restaurant
Owner and Manager
October 2010-March 2020
Florianopolis, Santa Catarina,Brazil

Cibeli Spolti Architecture | Interior Design
Architecture Intern
June 2023 - August 2023 / June 2022 - August 2022
Brusque, Santa Catarina, Brazil

**Education**

**M.Arch**
Pratt Institute, Brooklyn, NY May 2024

**Bachelor of Science**
Business Economics, Unisul, Florianopolis, Brazil
December 2013

**Skills**

- Photoshop, Illustrator, In design
- QGIS
- VRAY, Keyshot, Enscape, Zbrush, Lumion
- Grasshopper
- Unity, Lumion
- Rhino, Revit, Sketchup
- CNC,3DPrinting, Laser Cutting

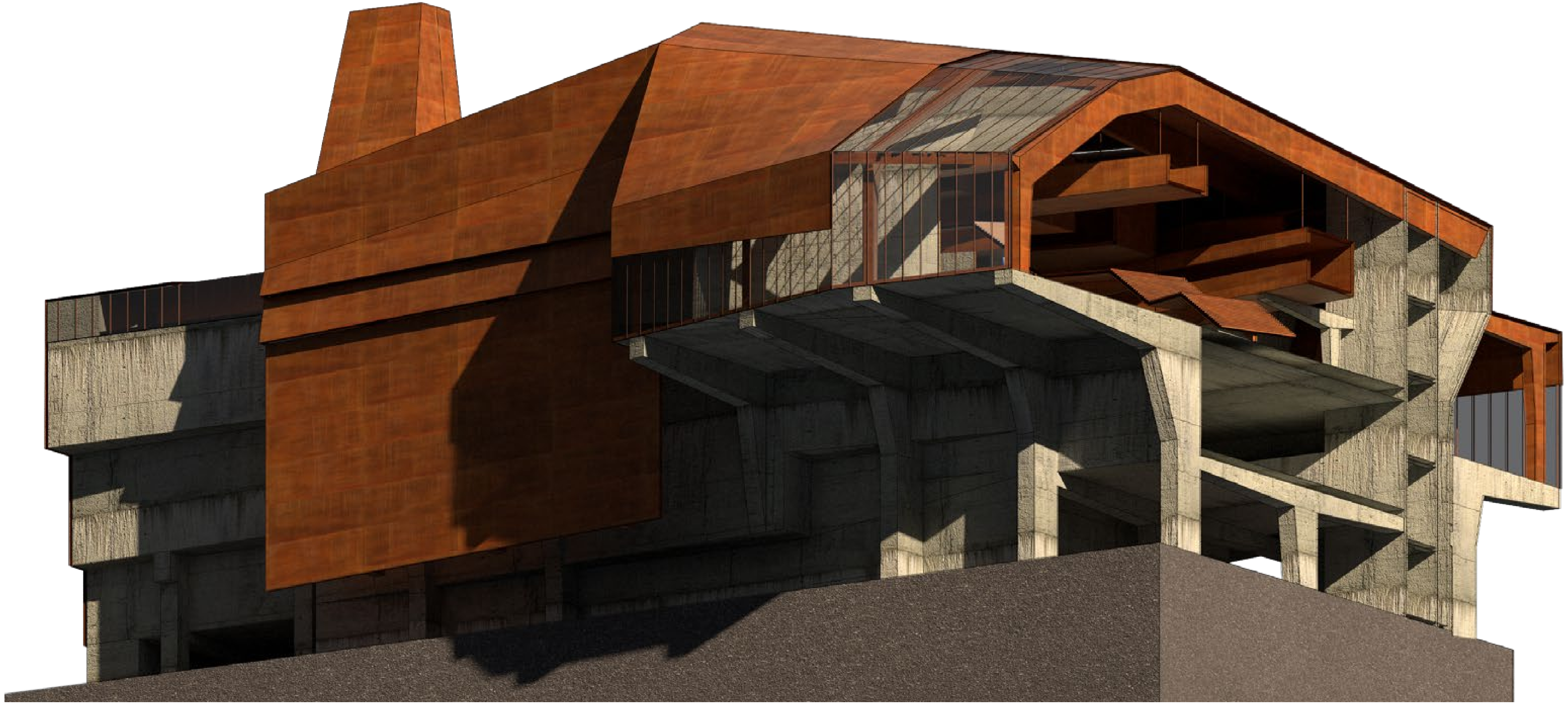
# CONTENTS

# TRASH HAUS

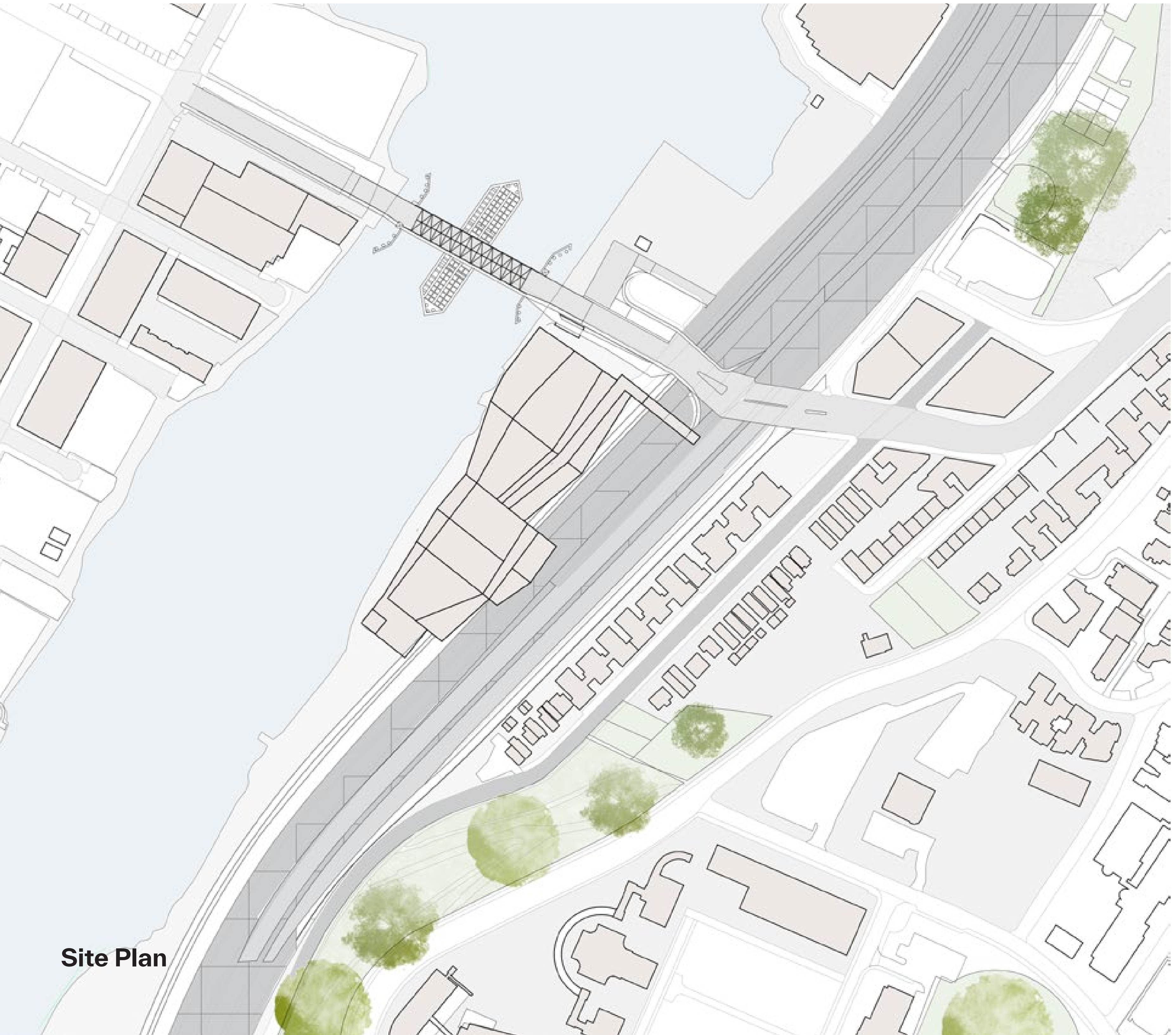
## Project for a Recycling Industry and Night Club in Bronx

The approach for this project is to combat the stigma associated with waste-to-energy and recycling plants by blending the visual and physical boundaries between machinery and occupants. The form is generated through folded planes and lines derived from objects on the site, creating a porous envelope that folds into itself. A concurrent relationship is proposed between the nightclub program, the waste-to-energy (WTE) and recycling facilities, and the educational program. The nightclub and educational programs are located above and between the WTE and recycling facilities, creating opportunities for interaction. Along the river, an enclosed elevated walkway with its own access allows pedestrians to engage with and observe the entire process.

Exporting the city's waste is an inefficient method of addressing the waste overflow, shifting the burden onto others. The aim is to prompt reflection on the quantities we produce and consume, as well as the lifestyles and infrastructure that support these behaviors.

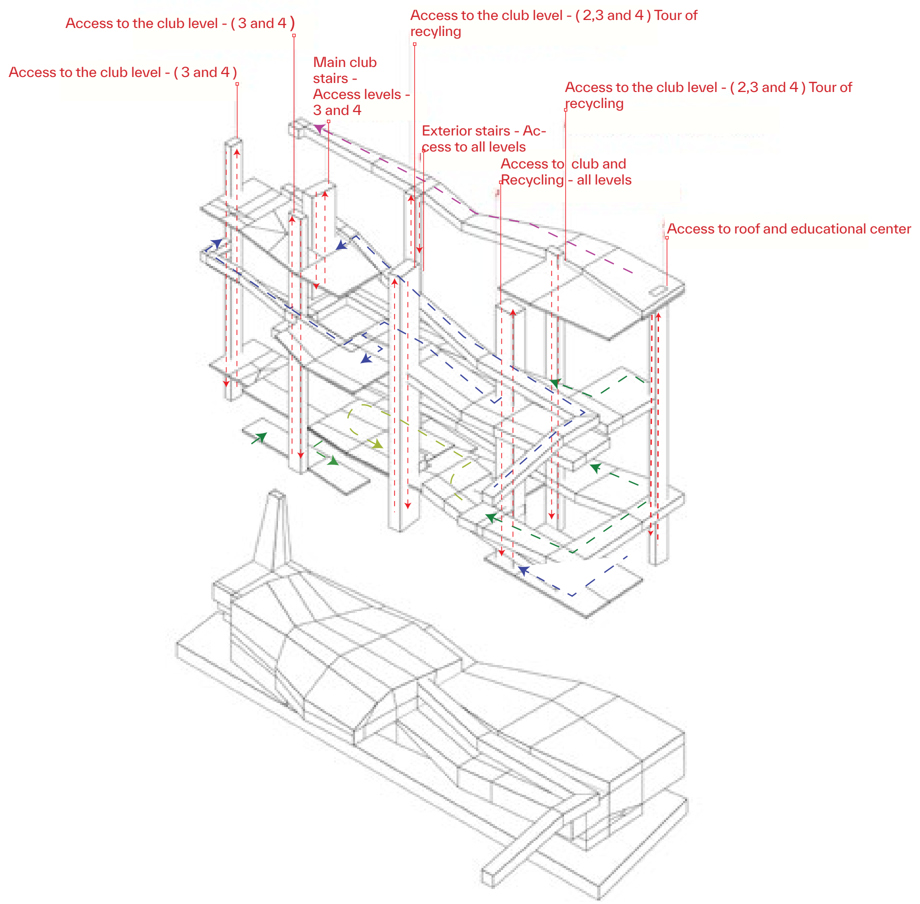


**Program** Rycling ,Waste and Night club
**Professor** Gisela Baurmaun
**Date** Spring 2023
**Location** Bronx, New york - USA
**Partner** Aisha Aljassim

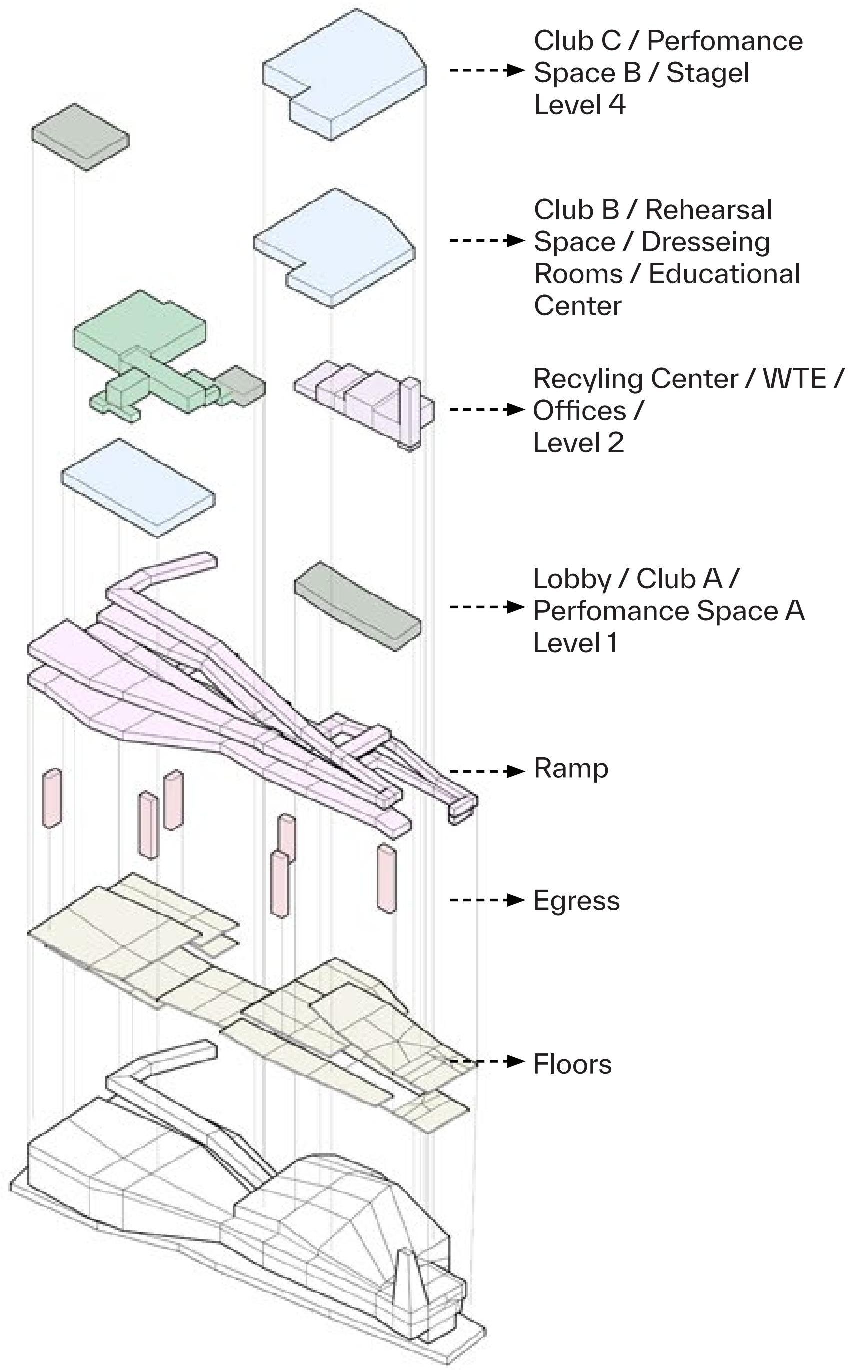


Site Plan

## Circulation



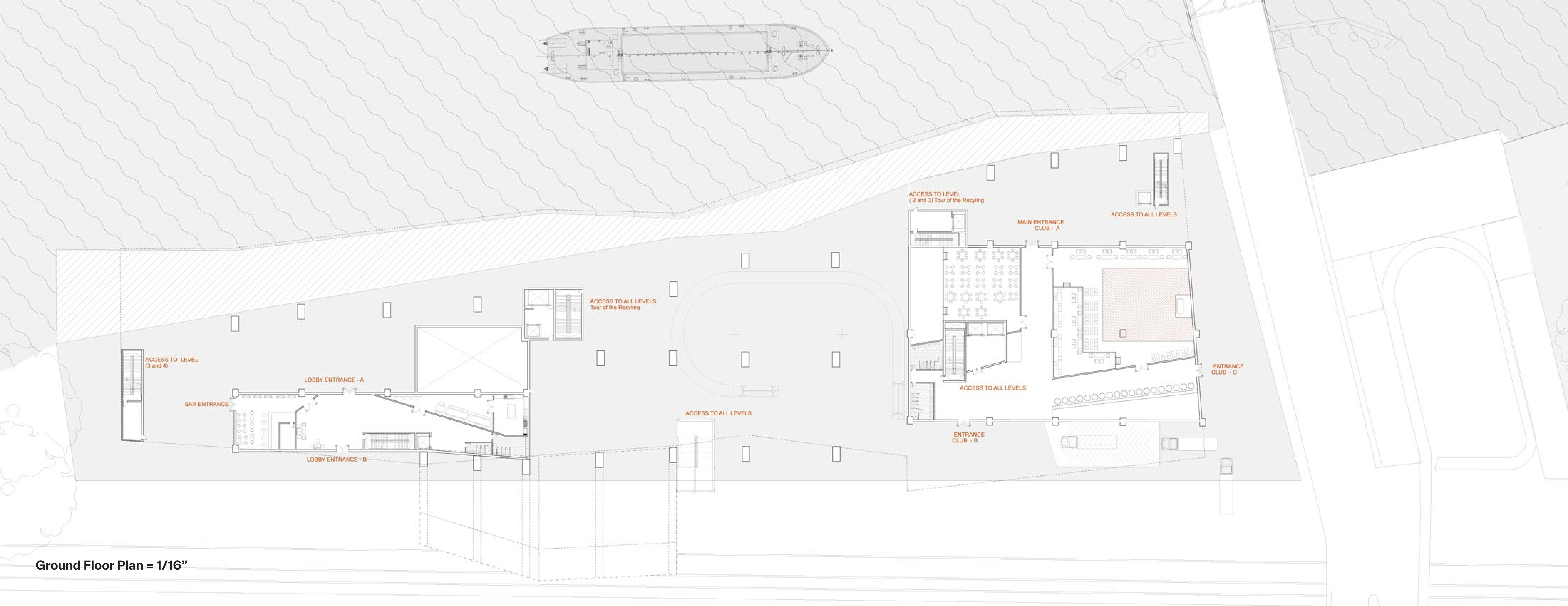

Recycling Circulation
Vertical Circulation Egress
Truck Circulation
Club Circulation
Roof Circulation



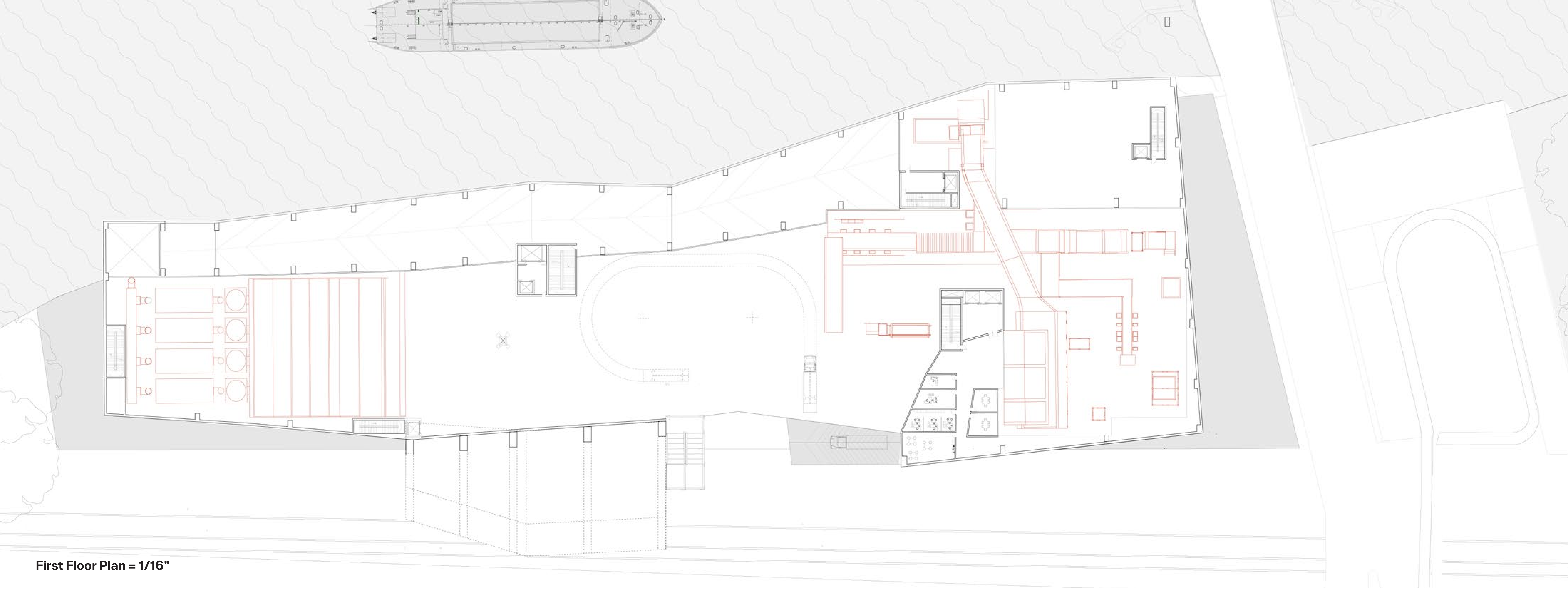

Program

Exterior Render

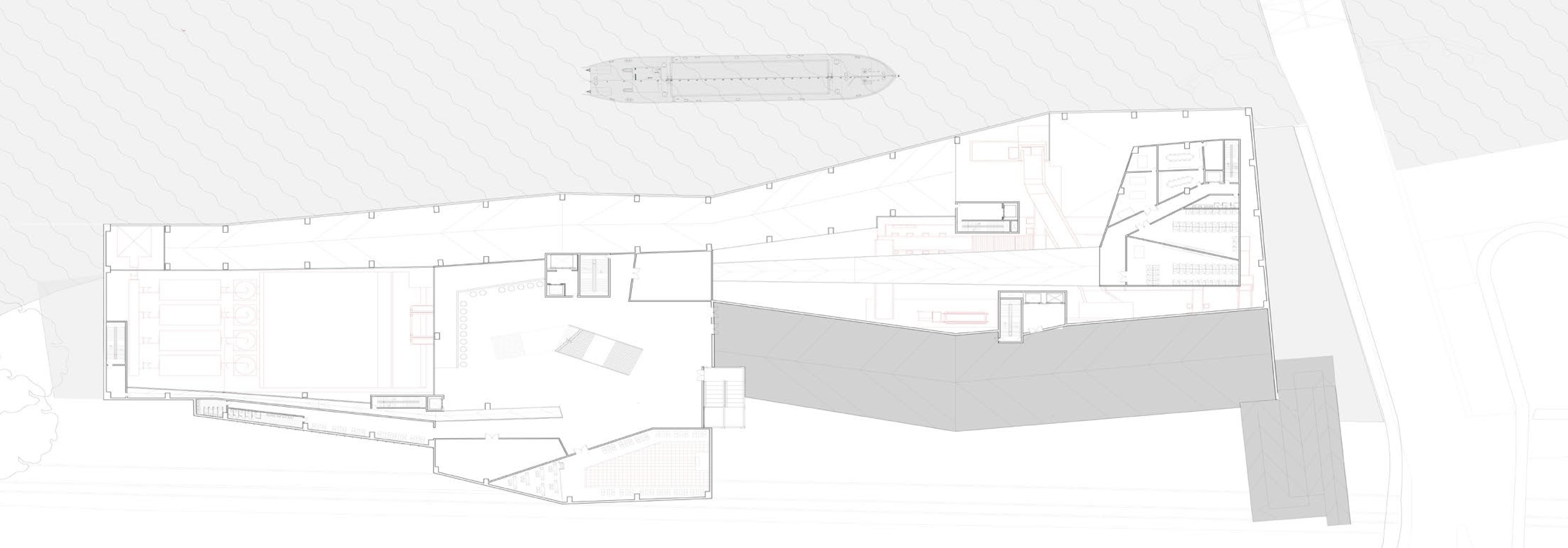
The copper panels envelop the entire building, seamlessly connecting the façade to the roof. Strategic placement of glazing enhances the visitor experience, including on the education center ramp and in the club, where the glazed façade seamlessly extends to the roof. This intentional integration of glazing allows for uninterrupted views while also enhancing the aesthetic appeal of the building.



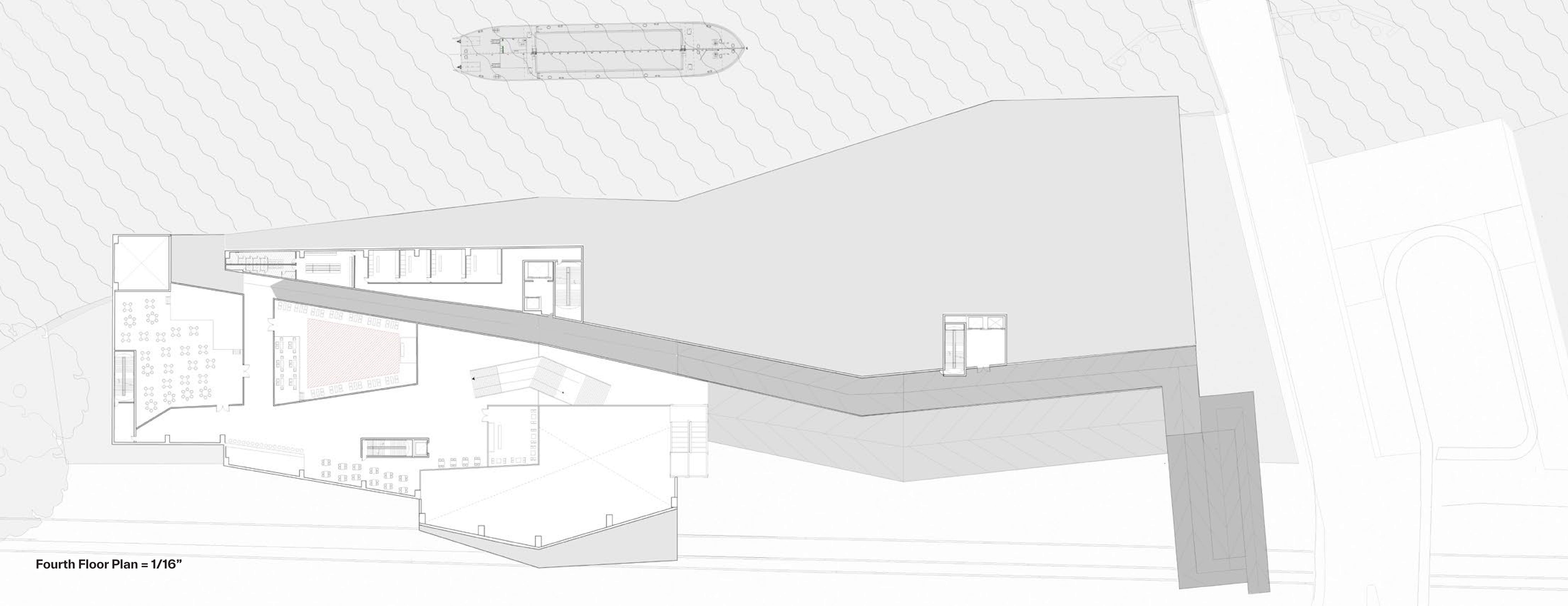

**Ground Floor Plan = 1/16"**



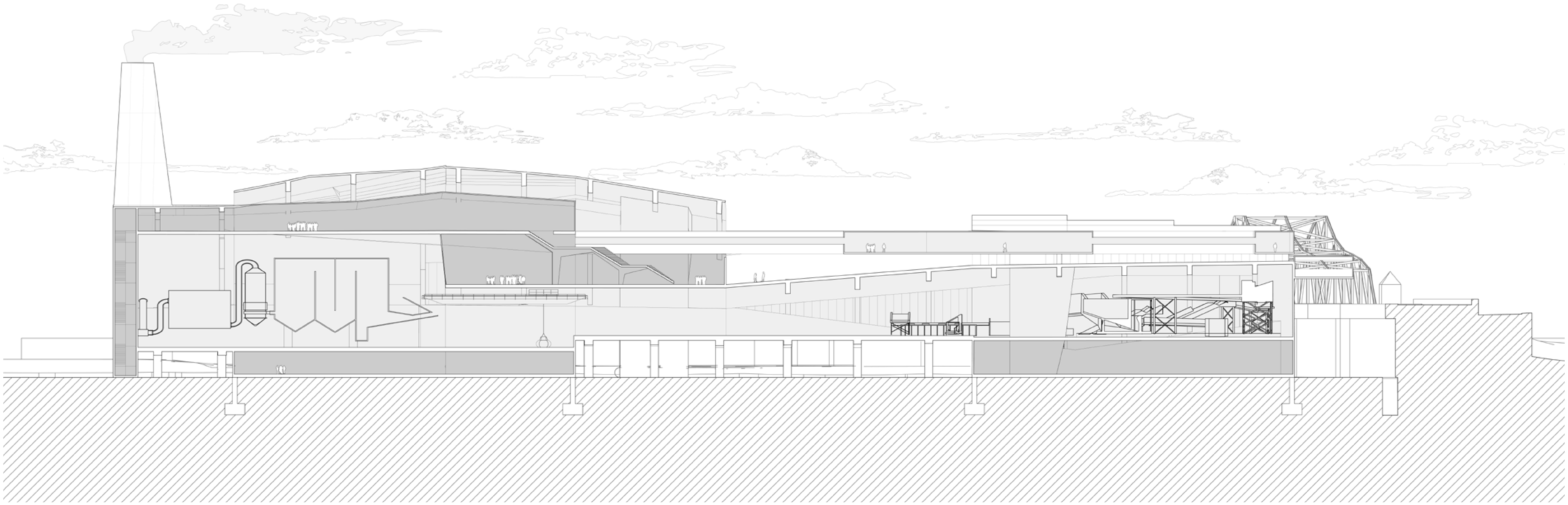
First Floor Plan = 1/16”



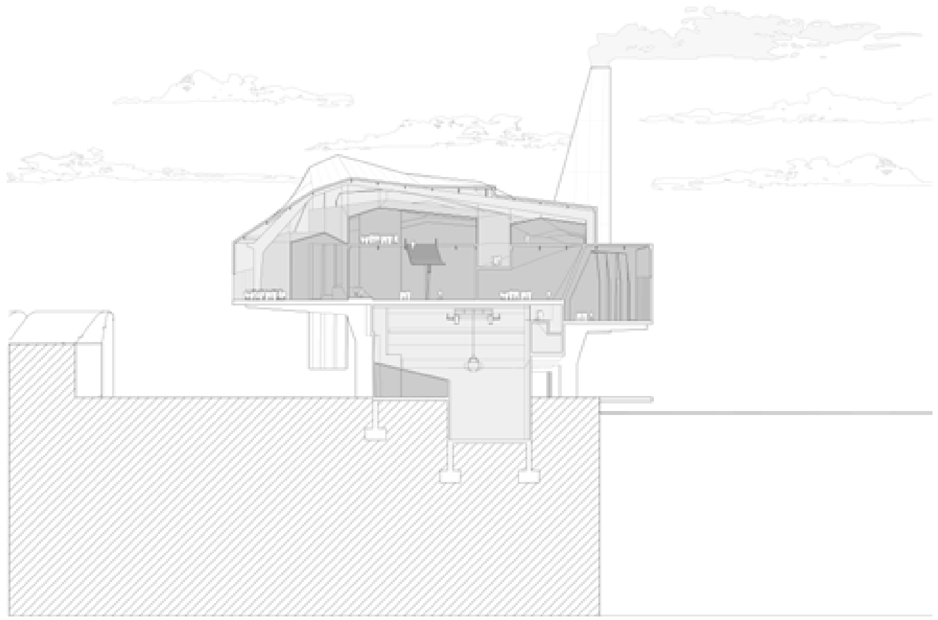
**Third Floor Plan = 1/16"**



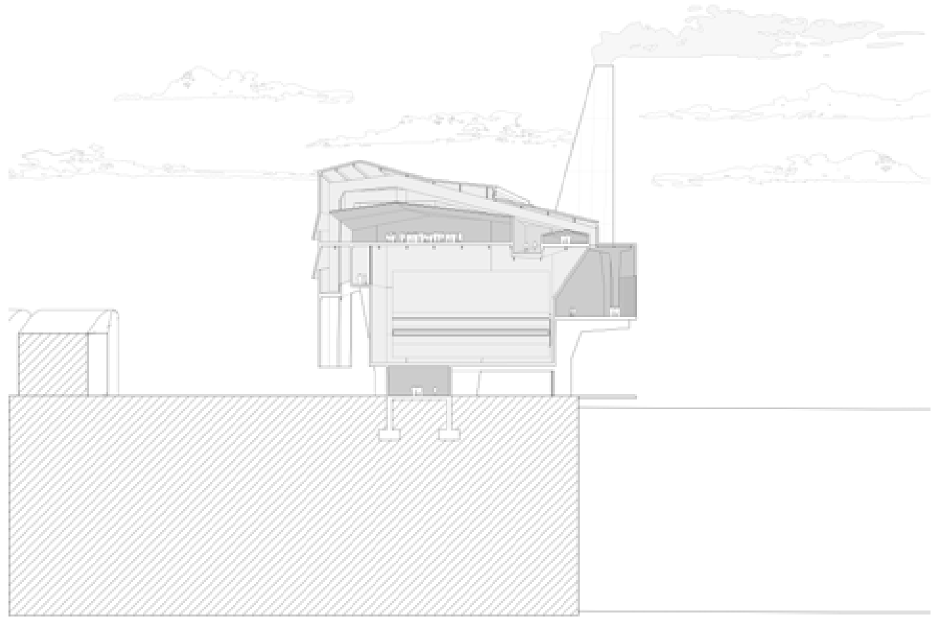
**Fourth Floor Plan = 1/16”**



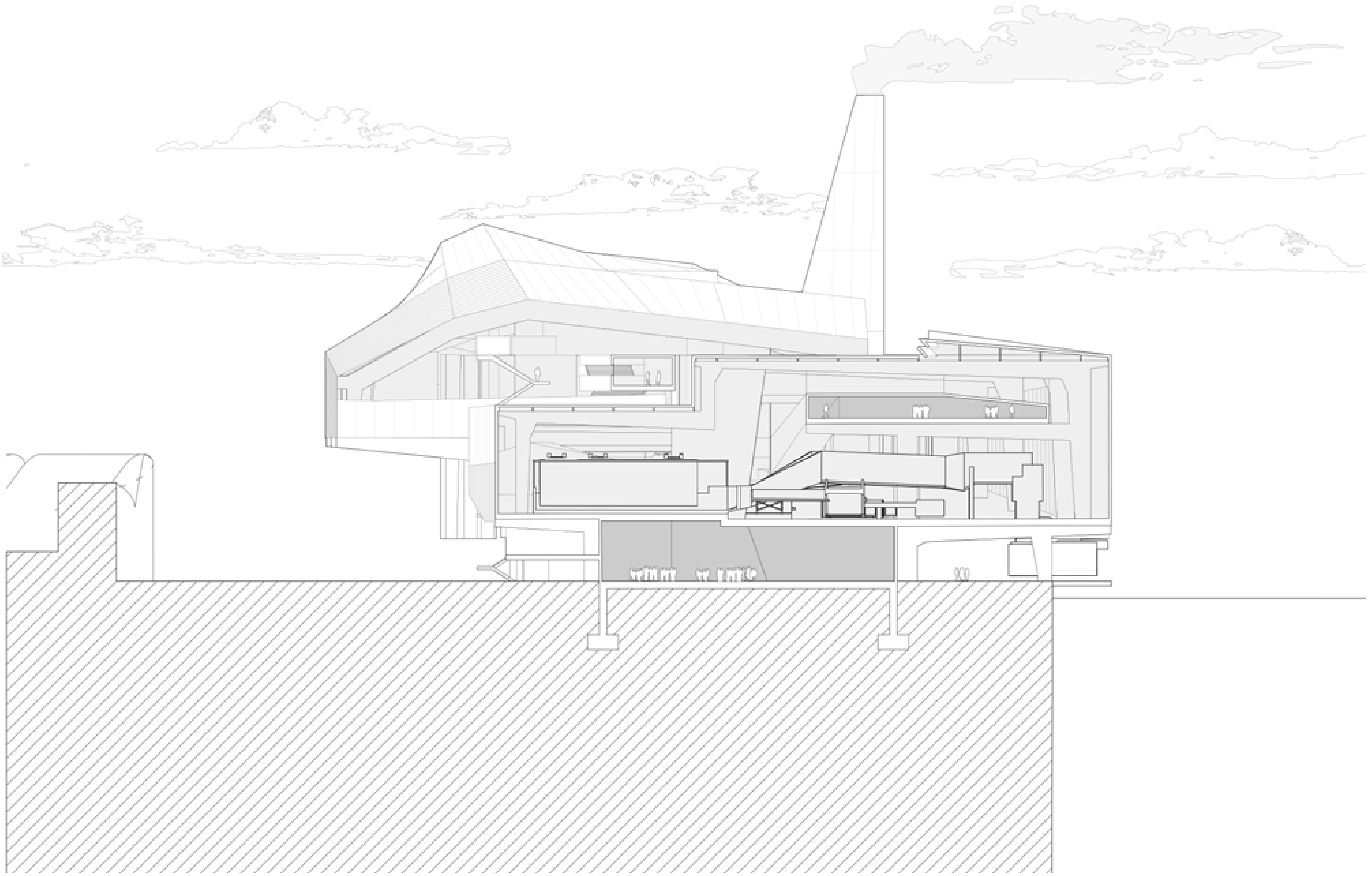
**Longetunial Section C 1' = 1/16"**



Cross Section A 1’ = 1/16”

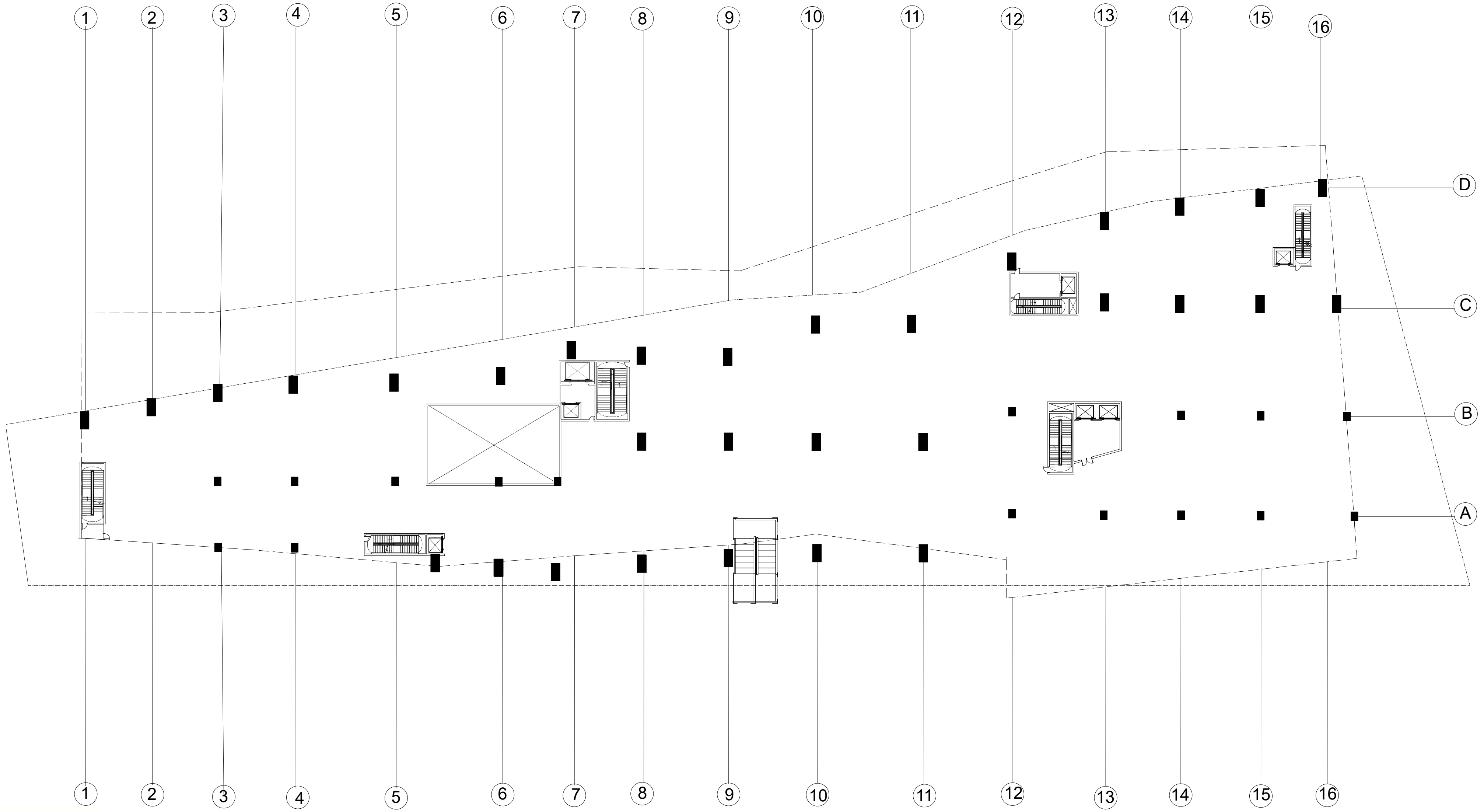


Cross Section B 1’ = 1/16”

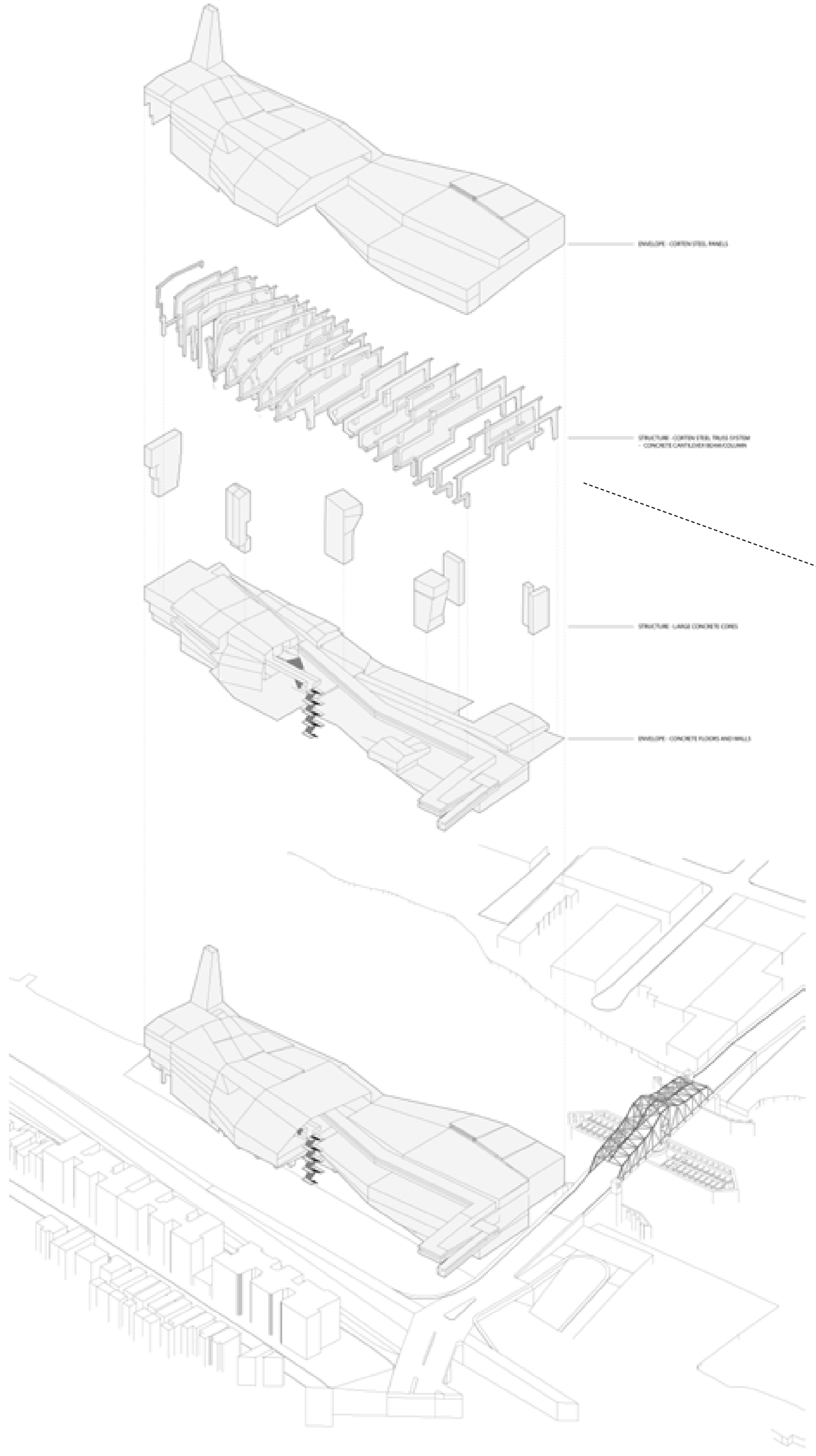


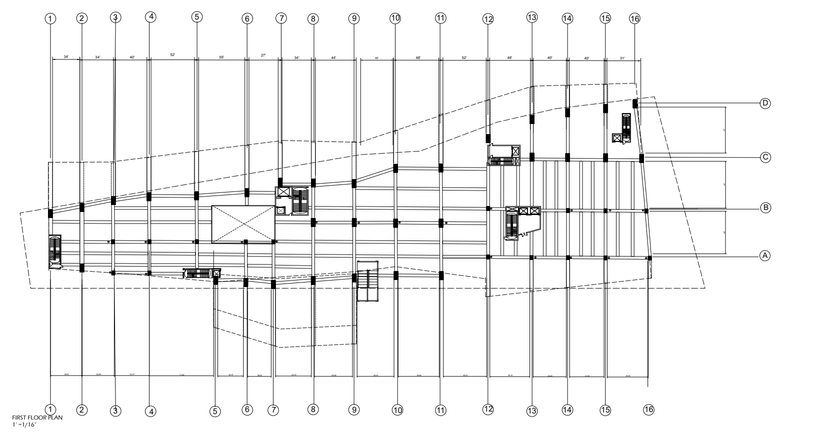
Cross Section C 1’ = 1/16”

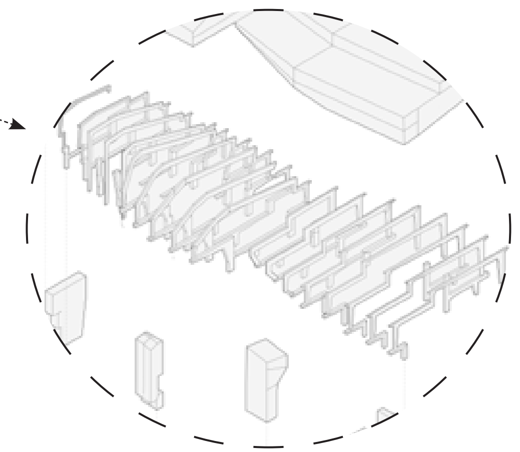
# Structure Detail Plan




Ground Plan  1' = 1/16 "

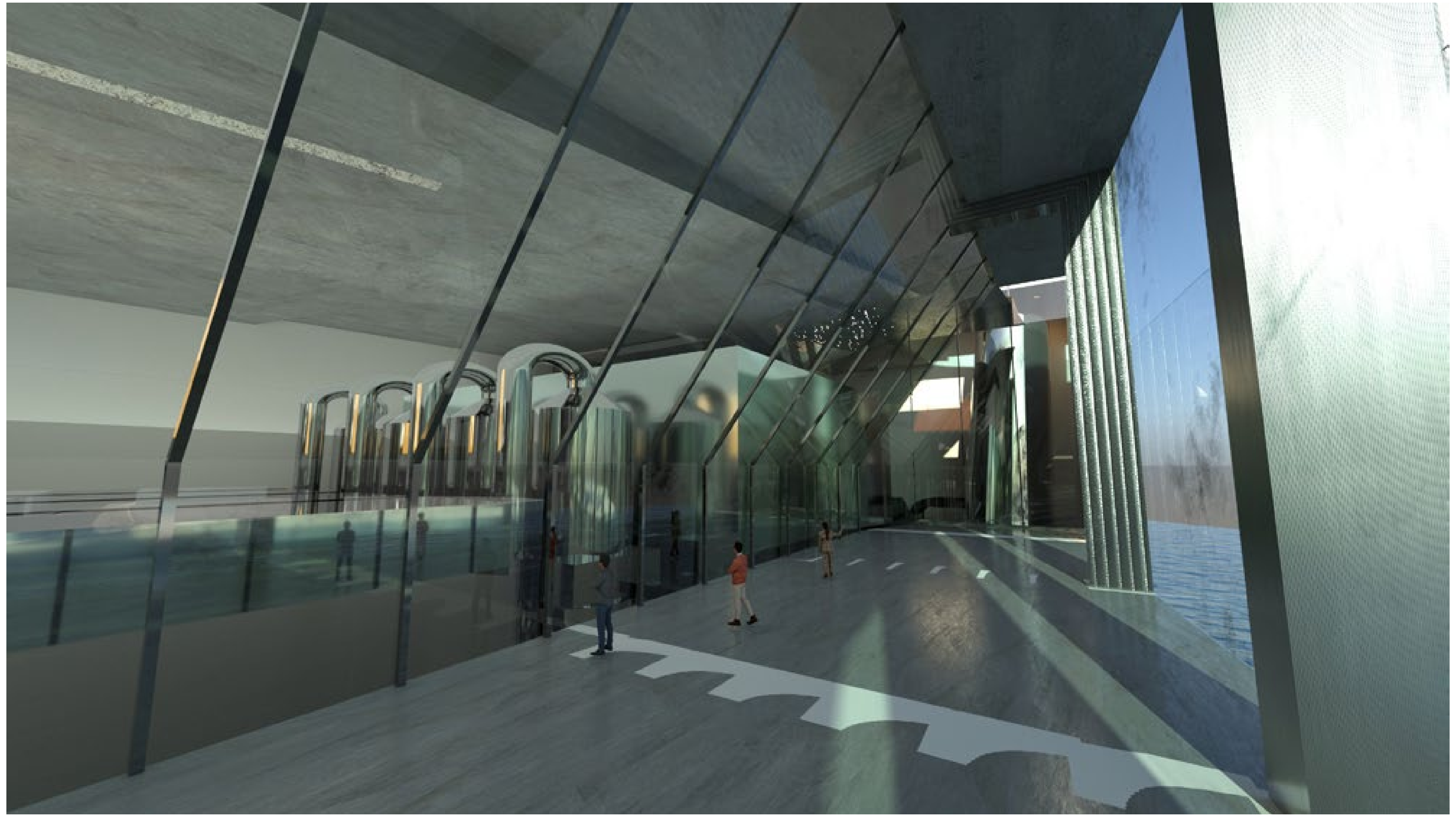






Steel panels provide strong and long-lasting construction, thermal efficiency, environmental friendliness, and economic benefits. The steel truss system, combined with concrete columns and beams, offers exceptional strength and durability, making it ideal for large structures. It provides a spacious interior and excellent load-bearing capacity.

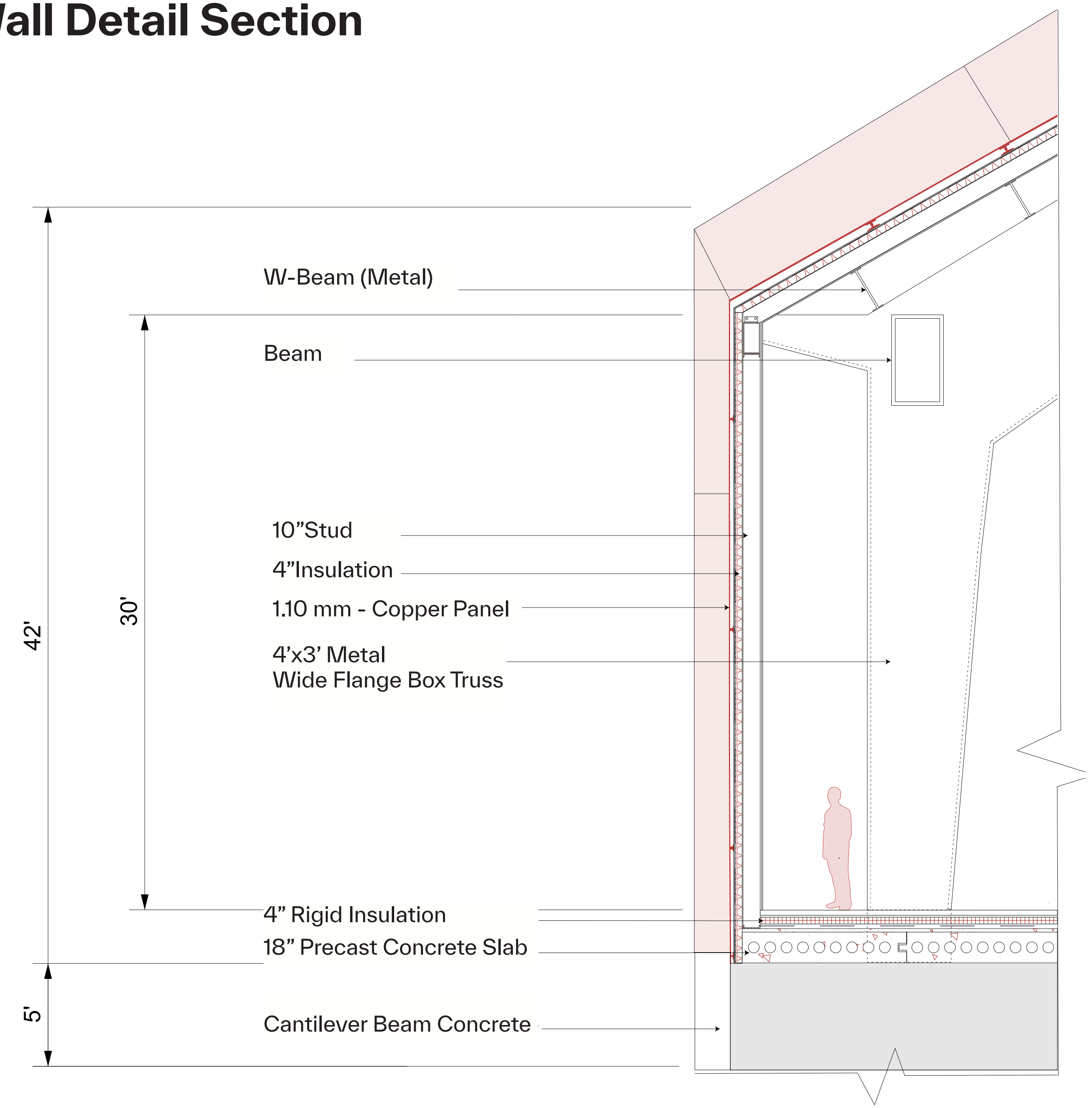
The structure is composed of seven large concrete cores. These cores are used to hold the structure, reducing the number of columns to create an open space. The large cores allow the structure to bear heavy loads, offer fire resistance, and provide sound insulation.

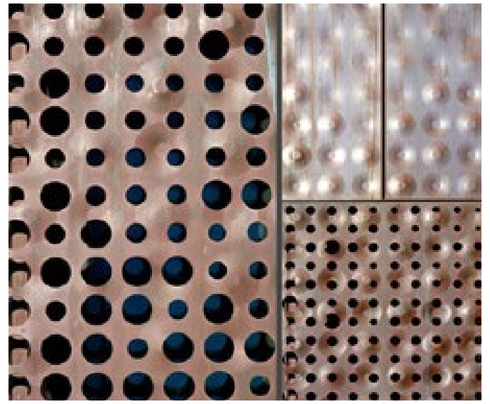


Interior Render - Machinary View

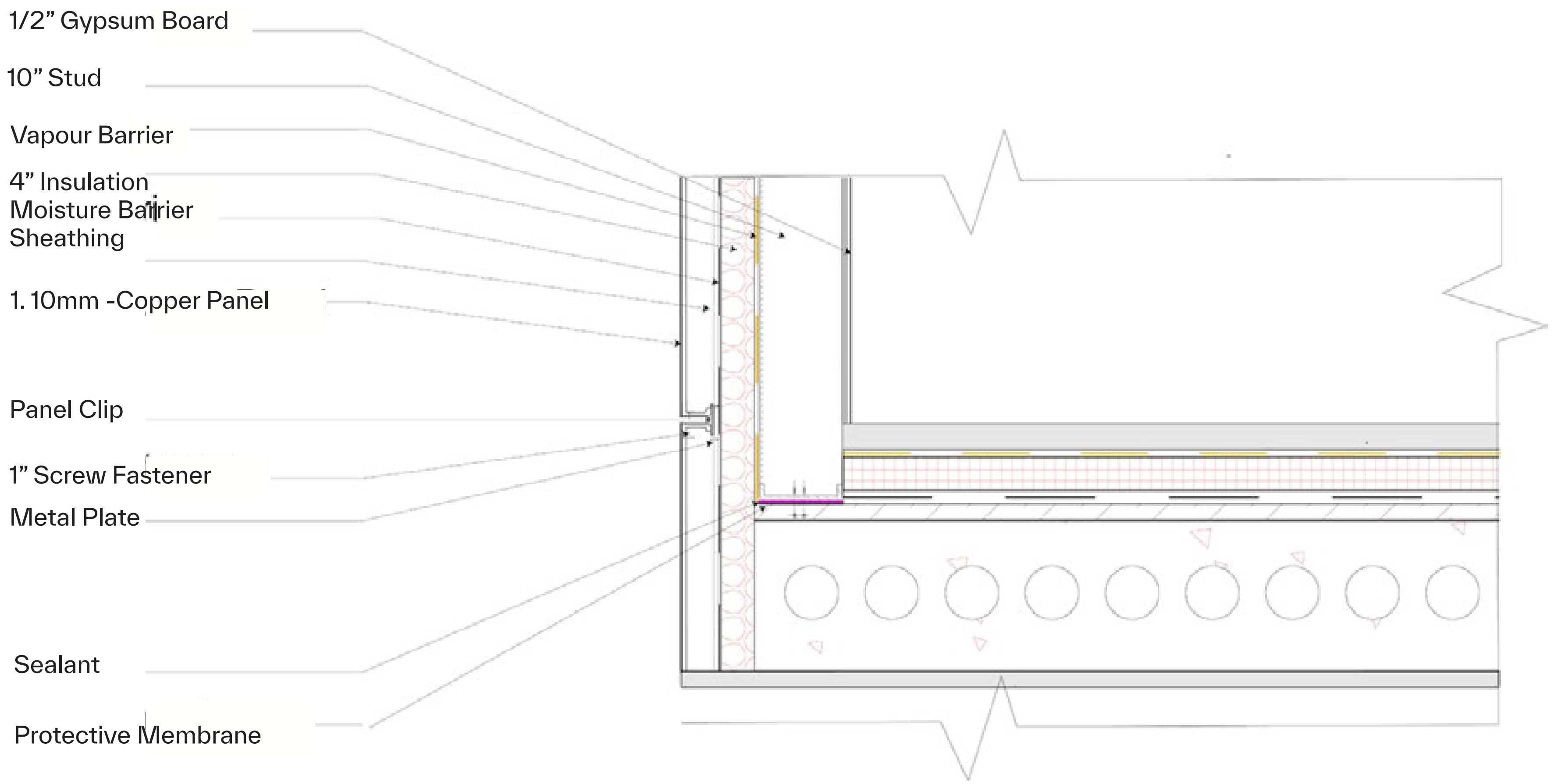
Interior Render - Club Area

# Wall Detail Section

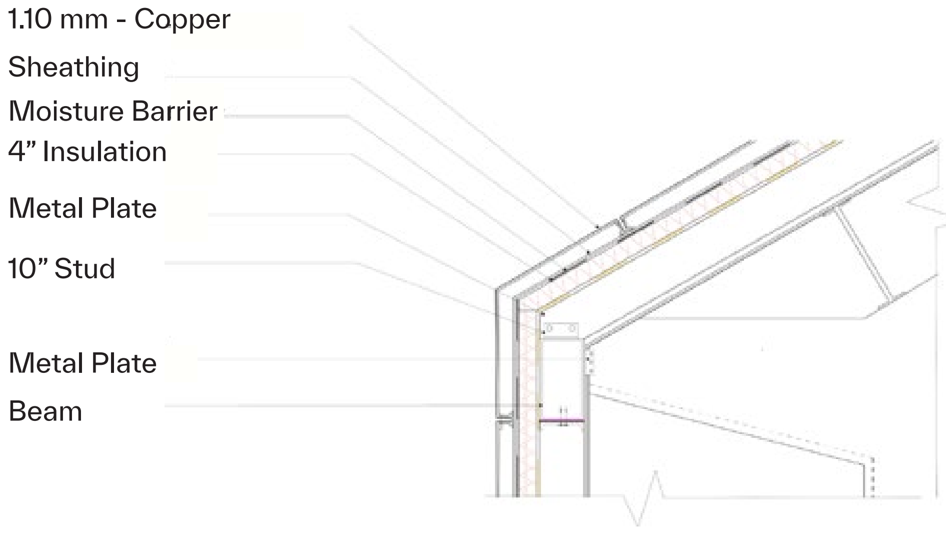


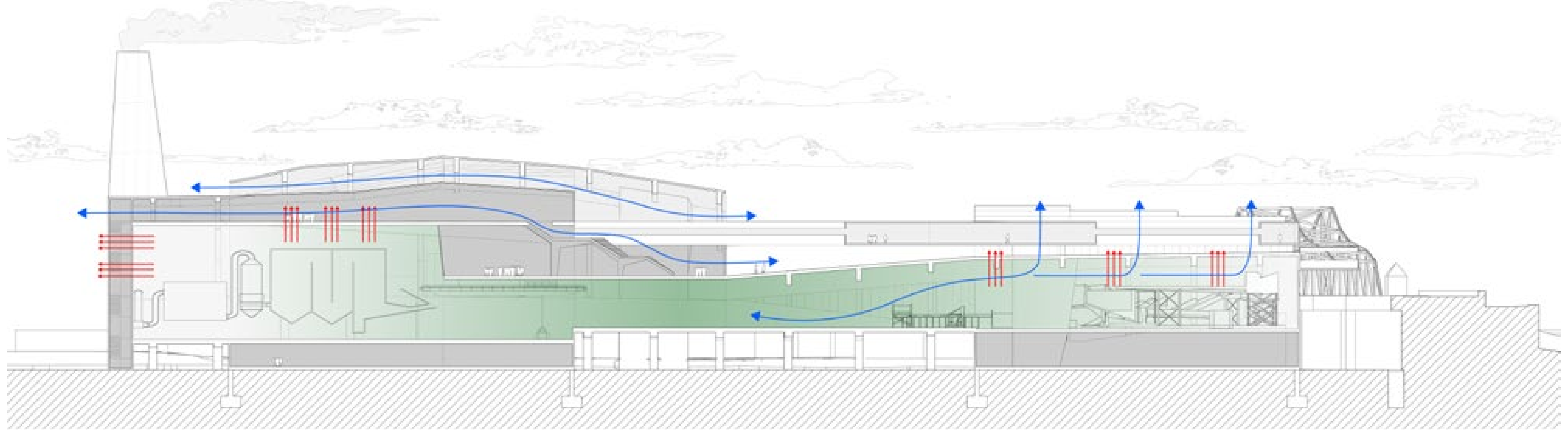
A wall section featuring a truss and copper panels highlights the intricate fusion of structural engineering and architectural aesthetics. The truss, often exposed and meticulously designed, supports the roof, transfers loads, and serves as a visually striking framework. Copper panels clad the exterior, providing a dynamic, weather-resistant façade that evolves in color and texture over time, creating a living surface that interacts with its environment.




## Floor Detail Section




## Roof Detail Section



Section Air Circulation

**Elevation** - The façade of the building is composed of copper panels, glazing, and louvers. The louvers are strategically placed to enhance ventilation.

## Physical Chuck Model

# Cyber Oasis

## Synergy in Sustainability:

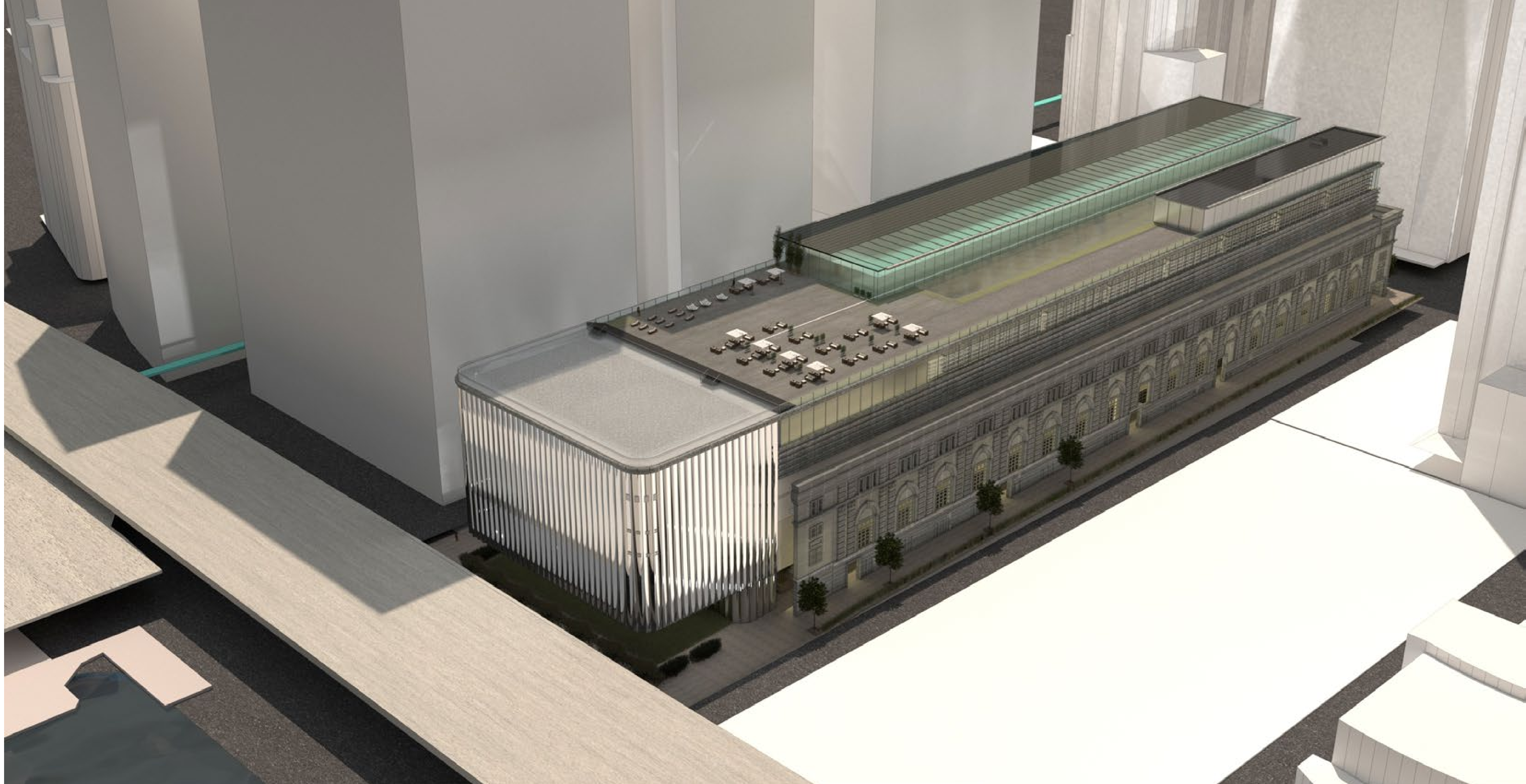
Integrating Data Centers, Vertical Farming, and Bathhouse Amenities

The Cyber Oasis project, located in Hell's Kitchen, New York City, exemplifies a pioneering edge data center that seamlessly integrates historic architecture with sustainable modern design. Designated as a landmark in 2017, it features a preserved façade and a glass extension at the rear, offering enhanced views of the waterfront.

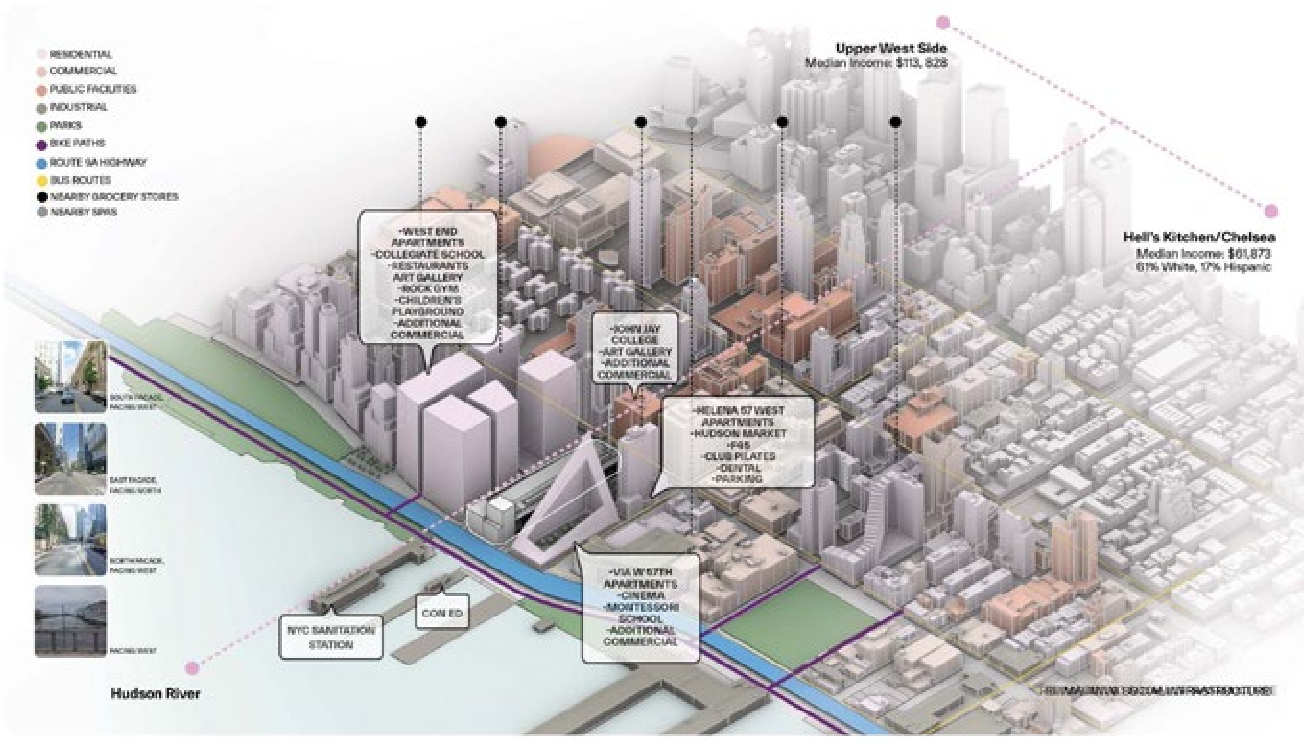
Committed to reducing energy consumption and promoting sustainability, Cyber Oasis combines a data center, a bathhouse, and vertical farming into a cohesive ecosystem. A key innovation is the reuse of heat and water: excess heat from the data center supports the operations of the bathhouse and vertical farms, while recycled water is utilized for cooling and irrigation, significantly reducing overall water and energy demands.

Cyber Oasis establishes new benchmarks in urban development by harmonizing data center operations with community amenities such as a bathhouse and sustainable vertical farming. This integration exemplifies how technological and architectural advancements can foster both community and environmental well-being, positioning Cyber Oasis as a vital part of New York City's economic landscape and a global model for future data centers.

**Professor** Kai-Uwe Bergman
**Date** Spring 2024
**Location** Hell's Kitchen, New York
**Program** Data center, Vertical Farming and Bathhouse
**Partner** Samira Mohamed



The building’s façade incorporates reflective glass, angled to optimize reflectivity and positioned on the rear side to enhance natural light intake while showcasing the bathhouse to the public. This reflective surface brightens interior spaces during the day and serves as a dynamic display to engage passersby, seamlessly blending functionality with aesthetic appeal.

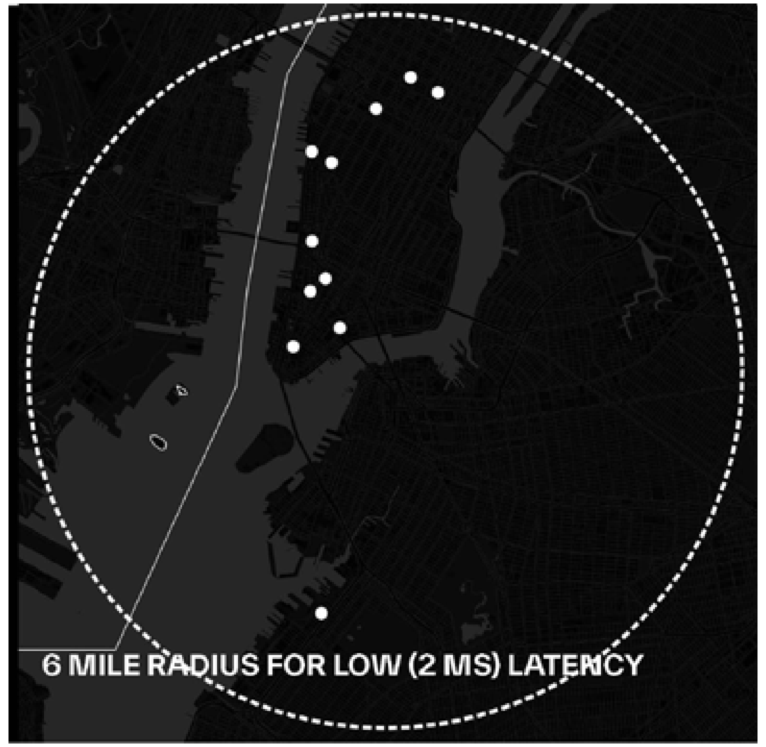



The IRT powerhouse building is situated in a vibrant neighborhood that integrates residential and commercial zones, providing excellent transport links and showcasing a diverse socio-economic profile, highlighted by notable landmarks, including John Jay College, the Hudson Market, and various educational institutions.

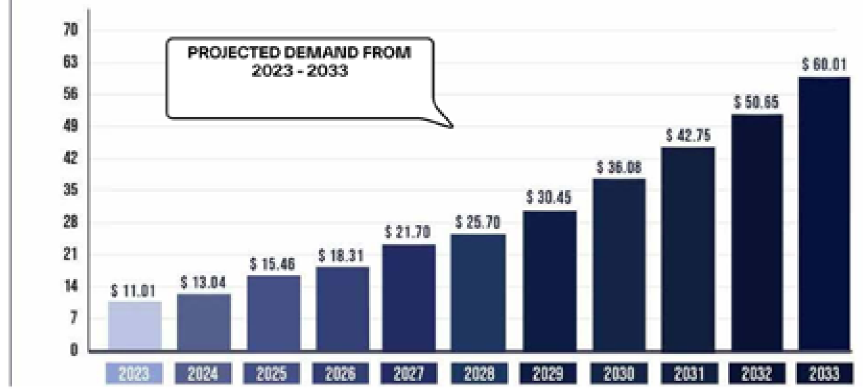

The IRT Building is located in Hell’s Kitchen, New York, a neighborhood bordering the scenic Hudson River waterfront. This area offers stunning views and access to the popular Hudson River Park. Hell’s Kitchen also boasts excellent connectivity, with the West Side Highway providing direct routes for vehicular travel along Manhattan’s western edge.

## Edge Data Center


New york Peaker Plants




Edge data centers, located within a 6-mile radius in New York, are optimized for low latency of 2 milliseconds to enhance data processing and connectivity speeds across the region.

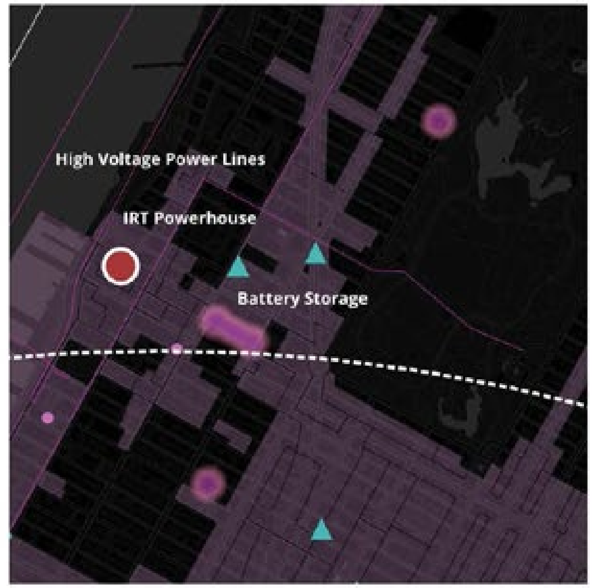



The bar chart projects a significant increase in demand over a decade, from 2023 to 2033, with values rising from approximately $11.01 billion to $60.01 billion.

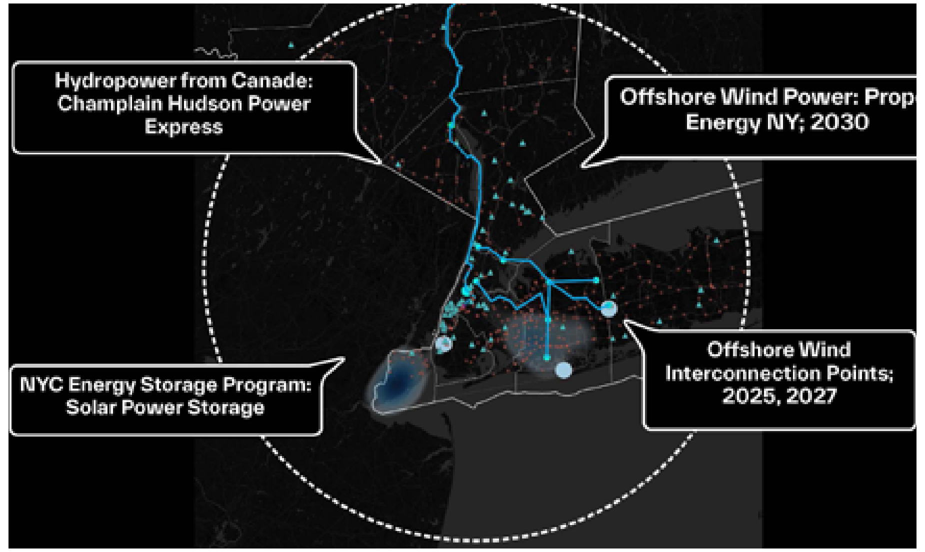
## Site Analysis


Ravenswood Peaker Plant

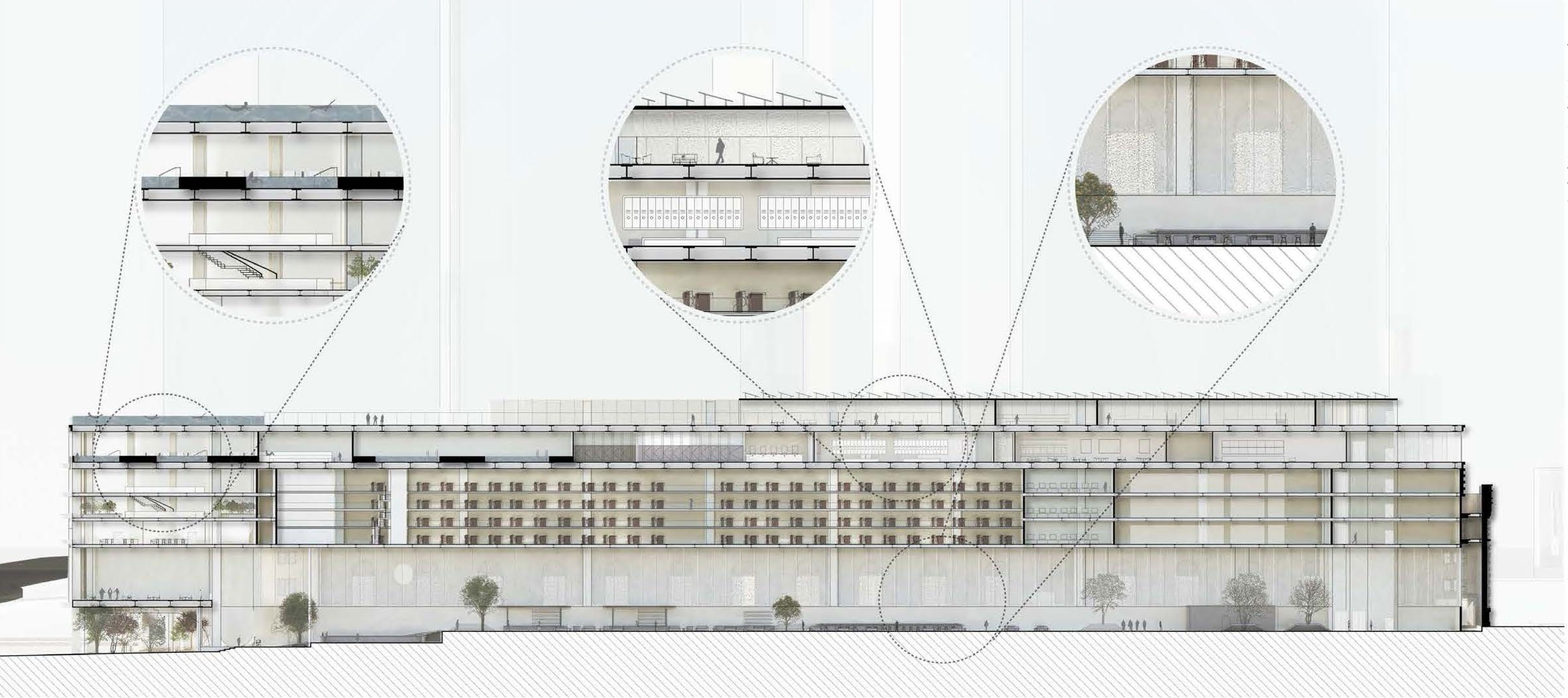

23RD and3RD Power Plant




IRT Power House

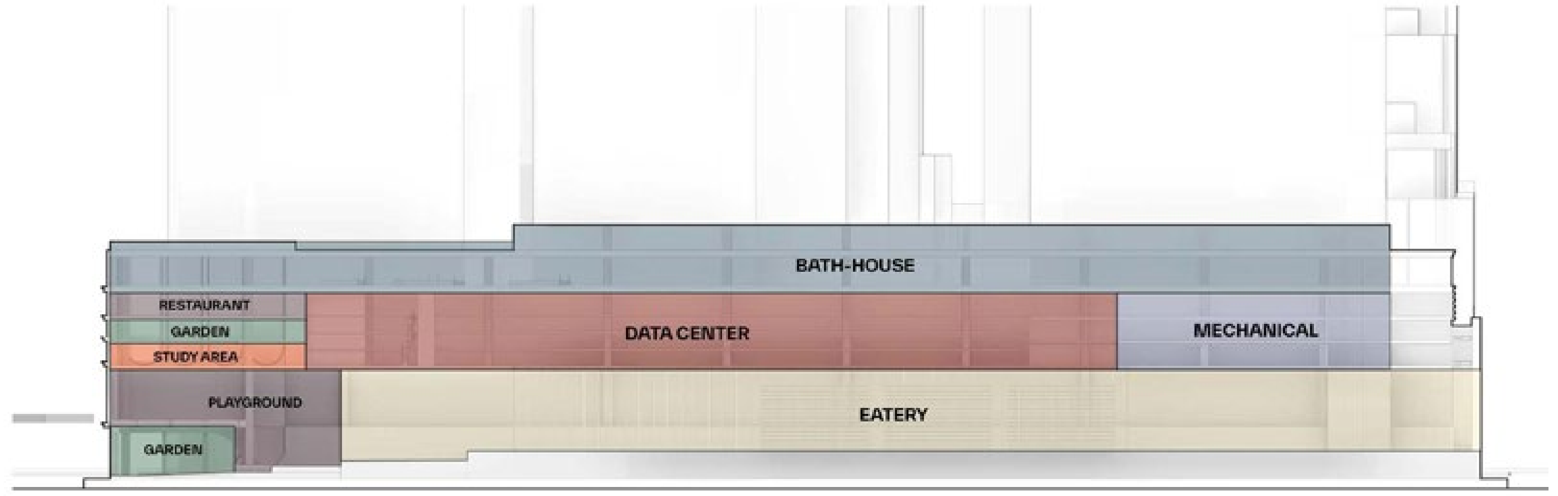



The map highlighted various renewable energy initiatives in New York, such as the Champlain Hudson Power Express, which delivers hydropower from Canada; Propel Energy NY, aimed at achieving offshore wind power by 2030; and the NYC Energy Storage Program, designed for solar power storage. All initiatives are connected through a network of interconnection points planned for 2025 and 2027.

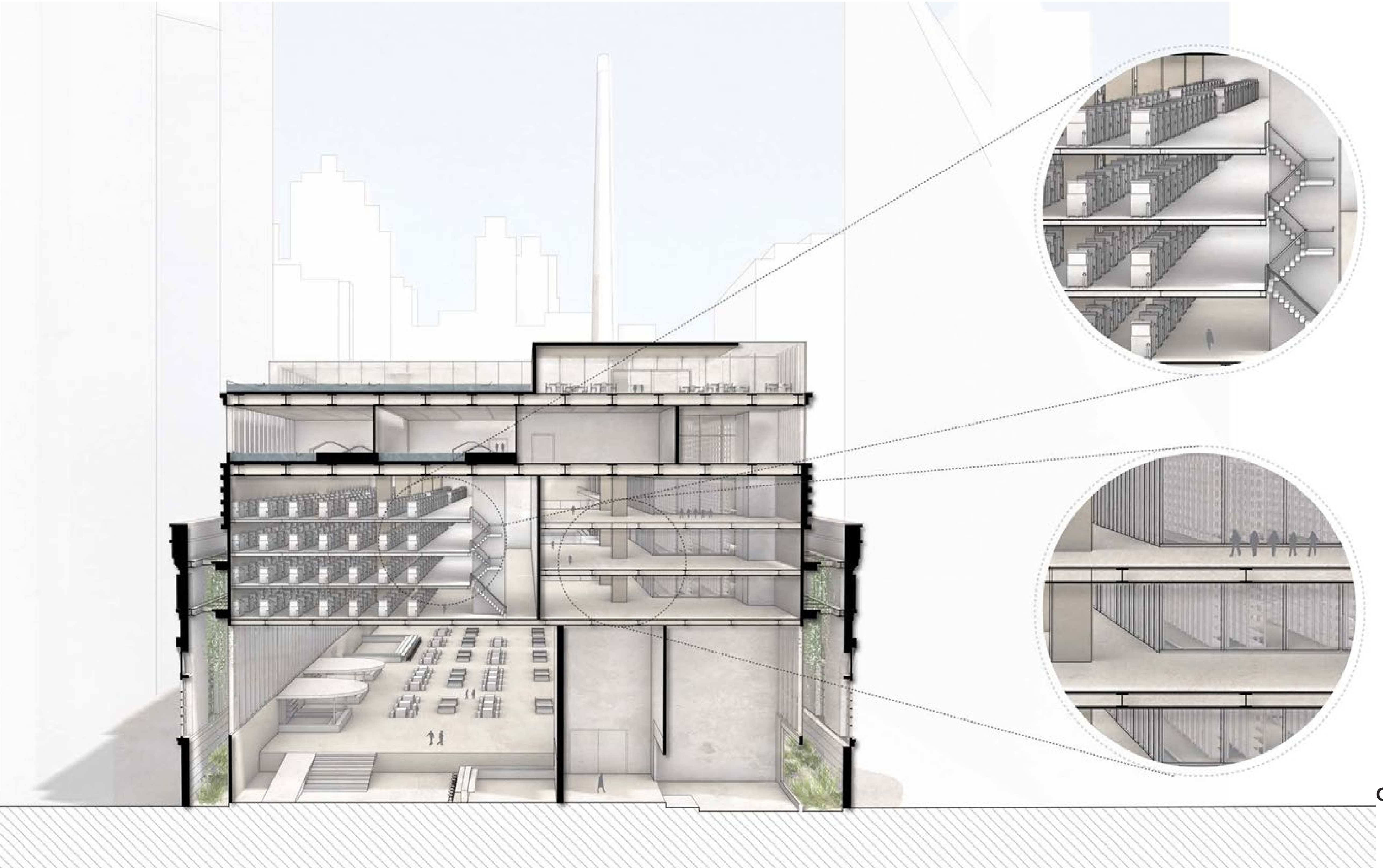


The section illustrates a multifunctional building: the ground floor is an open space accessible to the public, featuring a farm-to-table area, an outdoor garden, and a playground. The second, third, and fourth floors are dedicated to a data center, while the fifth floor houses a bathhouse combined with vertical farming.

# Program

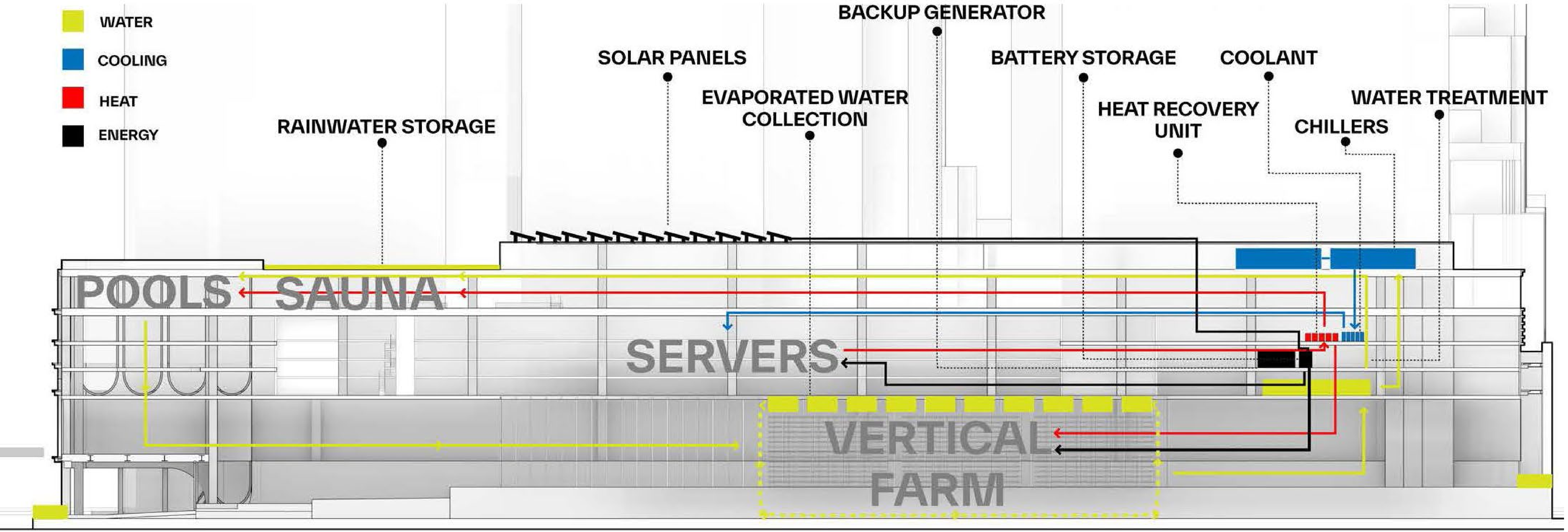



Ground floor - Farm-to-table area, Playground, and Garden.
Second to Fourth Floors - Data center, Vertical farming, Study area, Mechanical Room, and Restaurants.
Fifth Floor - Bathhouse and Vertical farming.
Roof - Pool area and Bathhouse.



**Cross Section** - Highlighted the Data Center and Vertical Farming

# Mechanical System



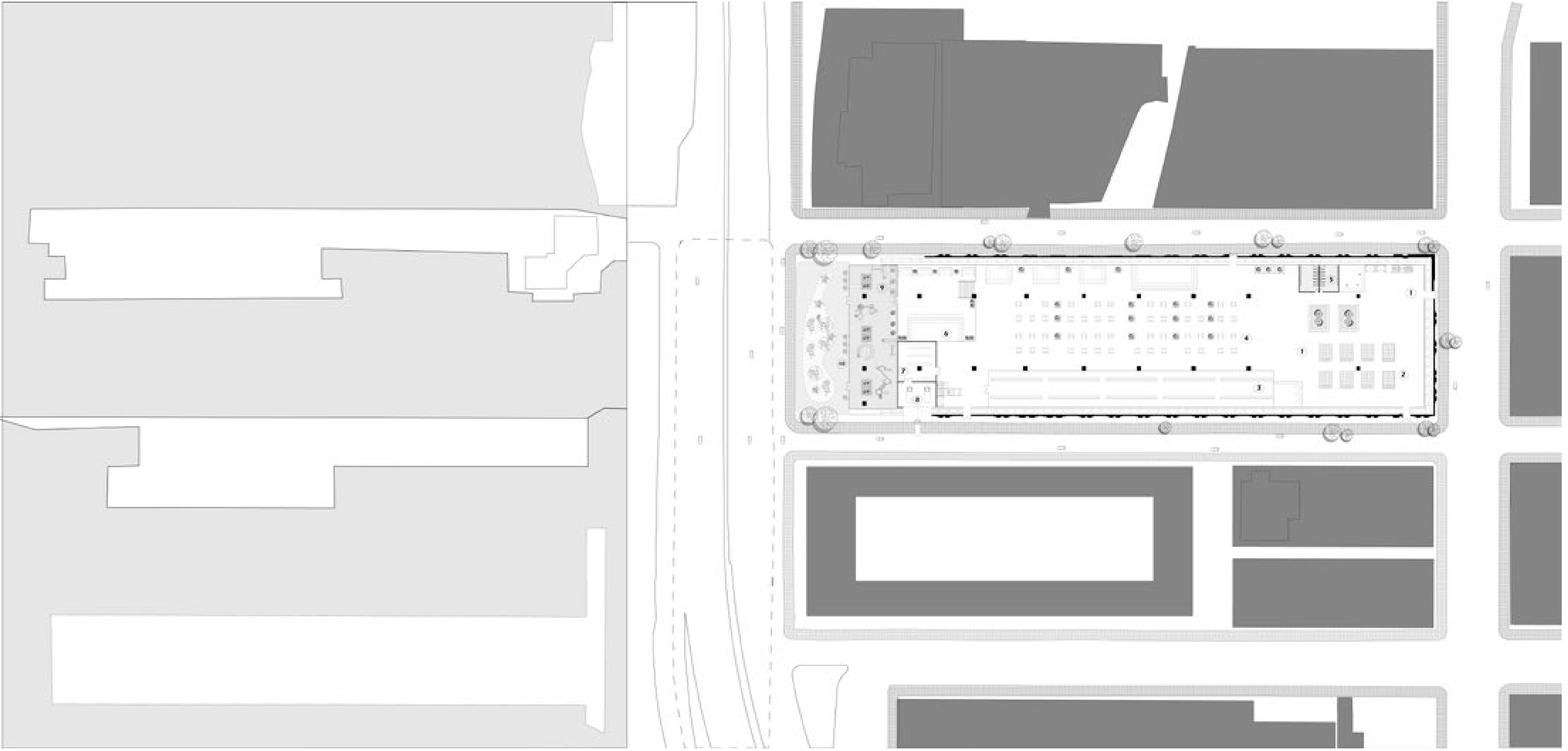

The mechanical system depicts a comprehensive system of water and energy reuse within a complex that includes a data center, bathhouse, vertical farm, and solar panels. Water is efficiently recycled through rainwater collection and treatment processes from the bathhouse for use in irrigation and cooling systems, while energy is sourced from solar panels and excess heat from the data center to power and regulate the facility's temperature. This advanced infrastructure exemplifies sustainable architectural design by optimizing resource use and minimizing environmental impact, establishing a benchmark for future projects in ecological stewardship within social infrastructure.

**Exterior Rendering - Back of the Building**

**Exterior Rendering - Front of the Buidling**

Bathhouse Rendering

Atrium Rendering

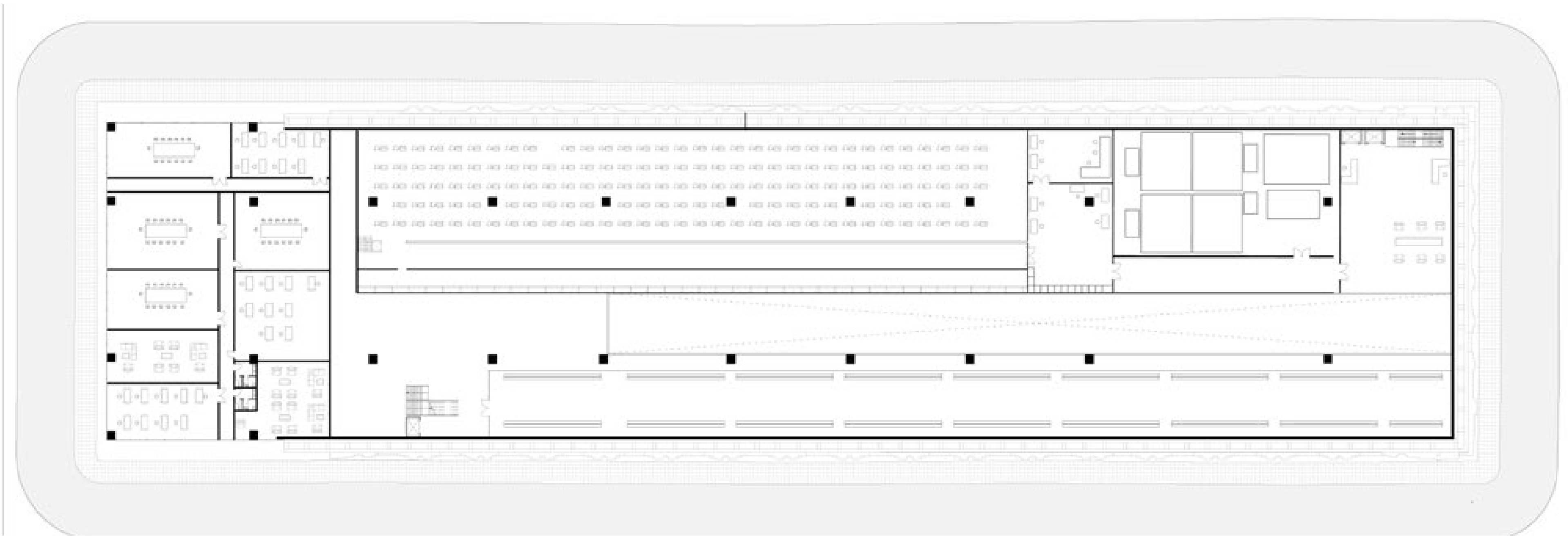


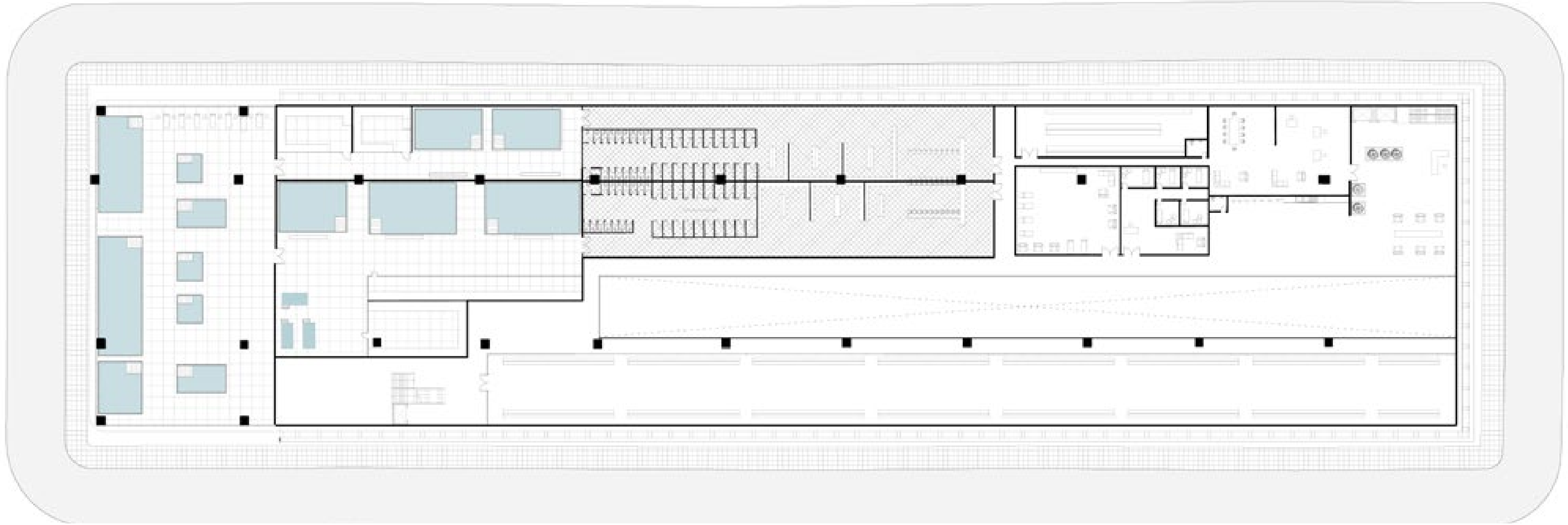
**Ground Floor Plan**
1- Reception
2-  Fresh Food Market
3- Vertical Farm Room
4- Eatery
5- Restrooms
6-Bar
7- Storage
8- Loading Dock
9- Indoor Playground
10- Outdoor Garden

**Side page 2nd Floor Plan**
1- Reception
2- Mechanical Room
3- Security Room
4- Offices
5- Vertical Farm
6-Server Hall
7- Study Areas

**Side page 5nd Floor Plan**
1- Reception
2- offices
3- massagem room
4- lounge area
5- storage
6 women's restrooms
**8- women's bathrooms**
9- Man's bathrooms
10- Pool area
11 - Vertical Farm

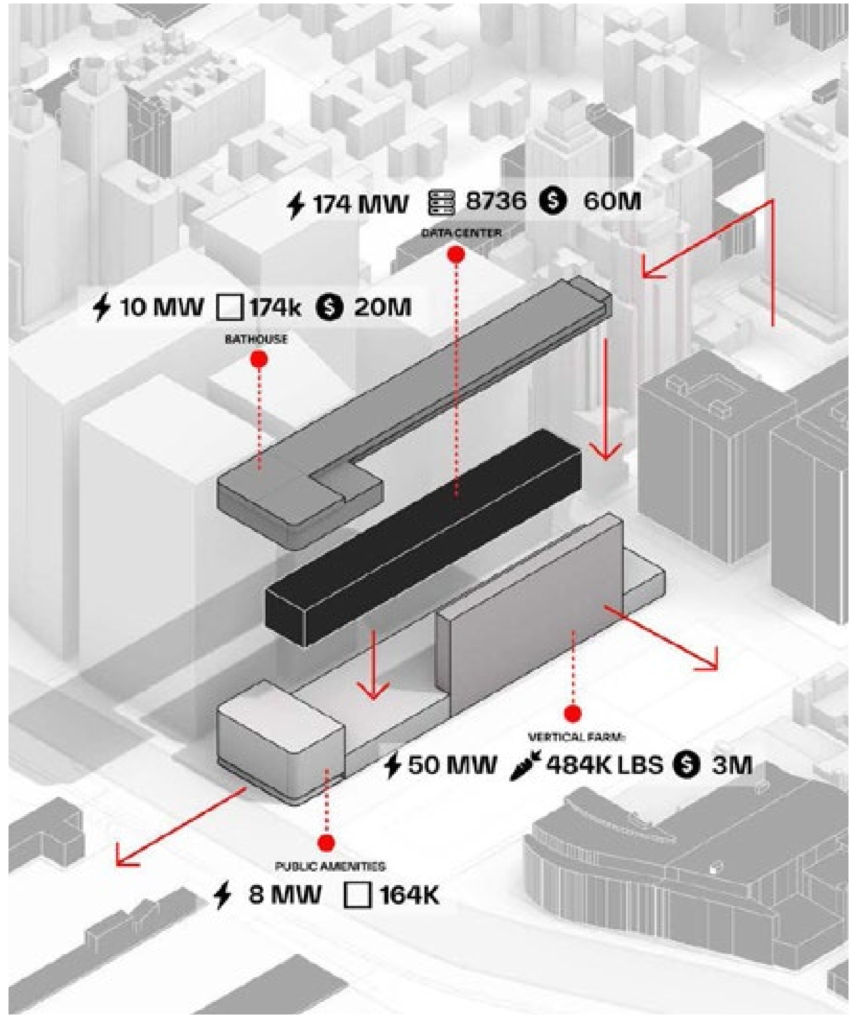
**2ND Floor Plan**



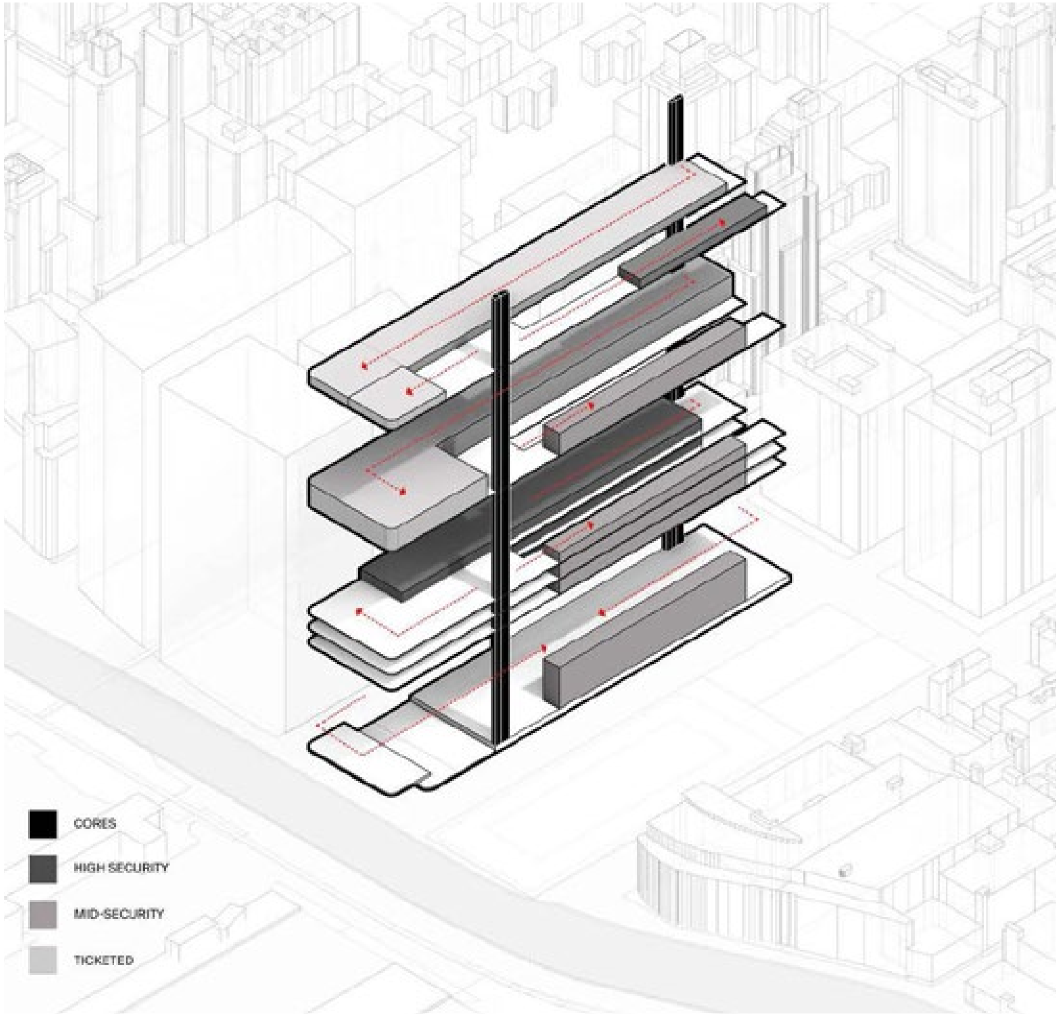


**5ND Floor Plan**

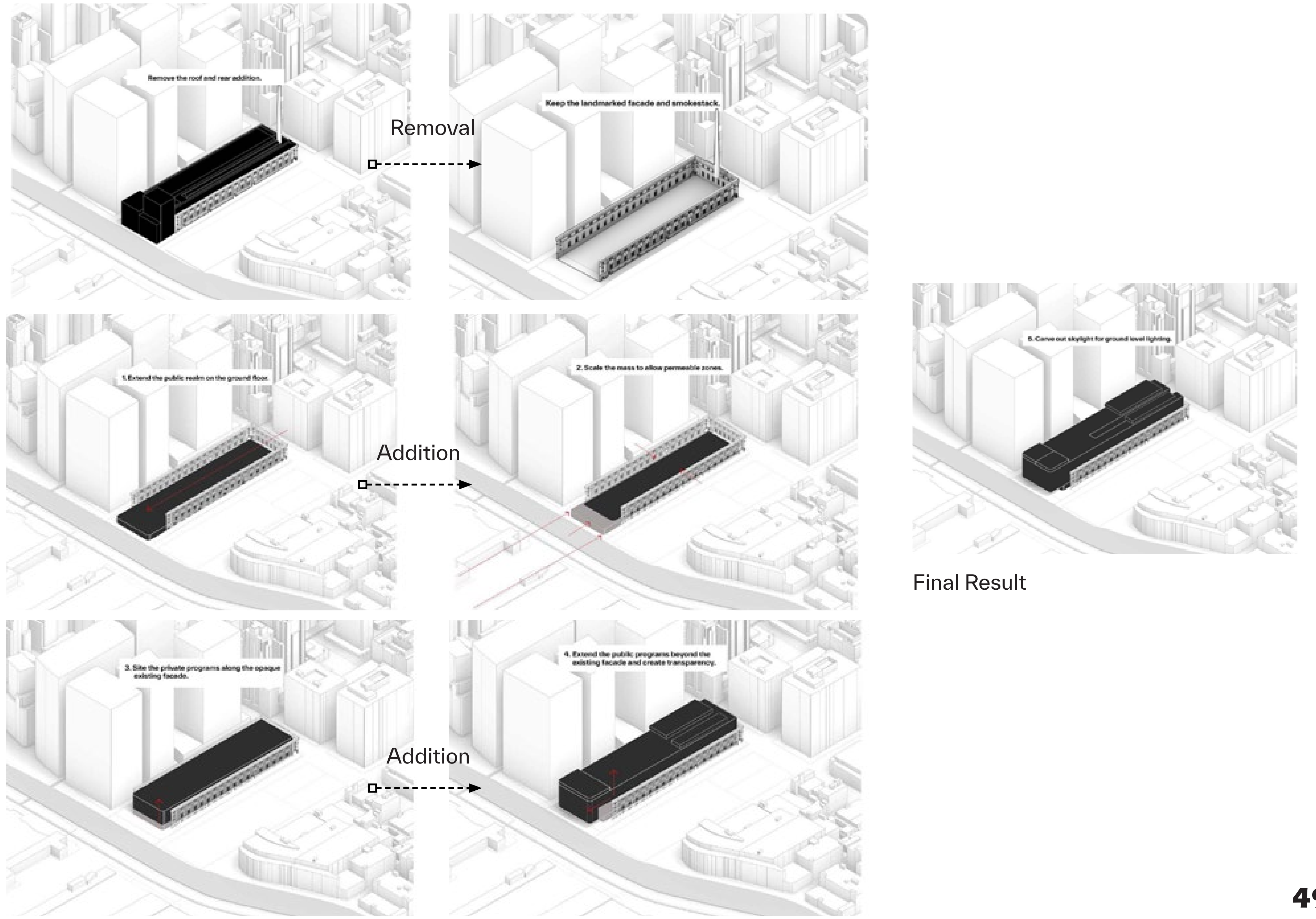
## Capacity and Revenue



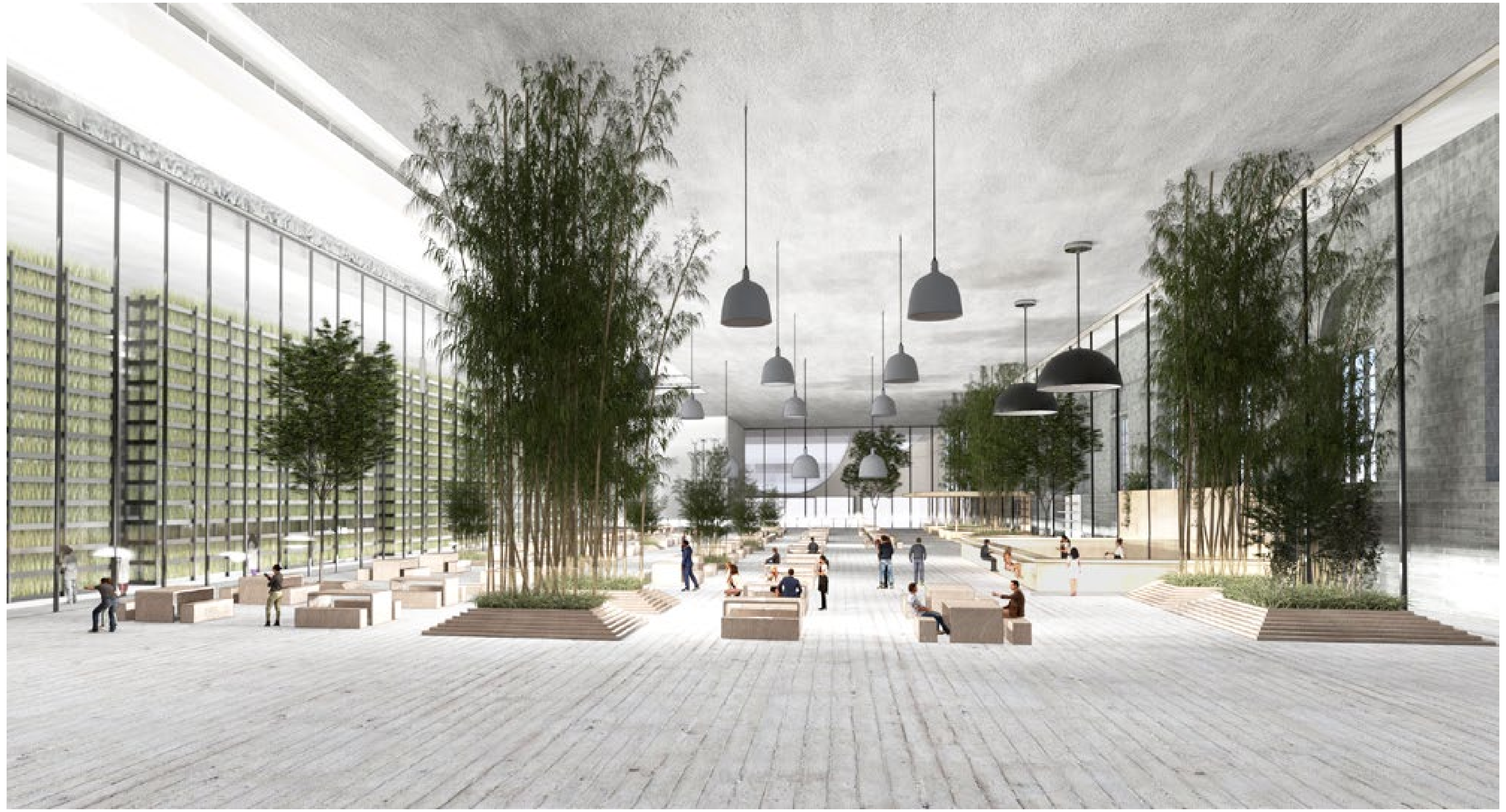

## Circulation




## Diagrams

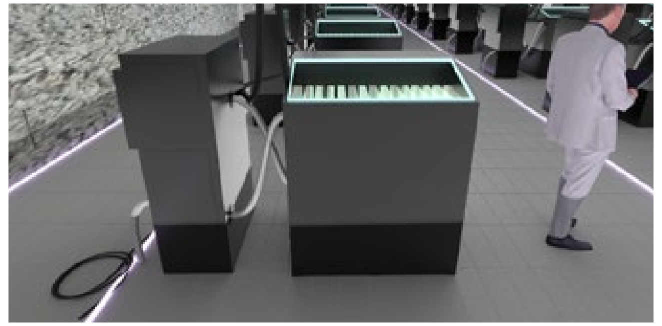



Final Result



Eatery Rendering

Data Center Rendering



Server Hall Rendering

# Rebuild Marshes

"Blending Innovation and Nature: The Marshland Conservancy's Path to Ecological Harmony"

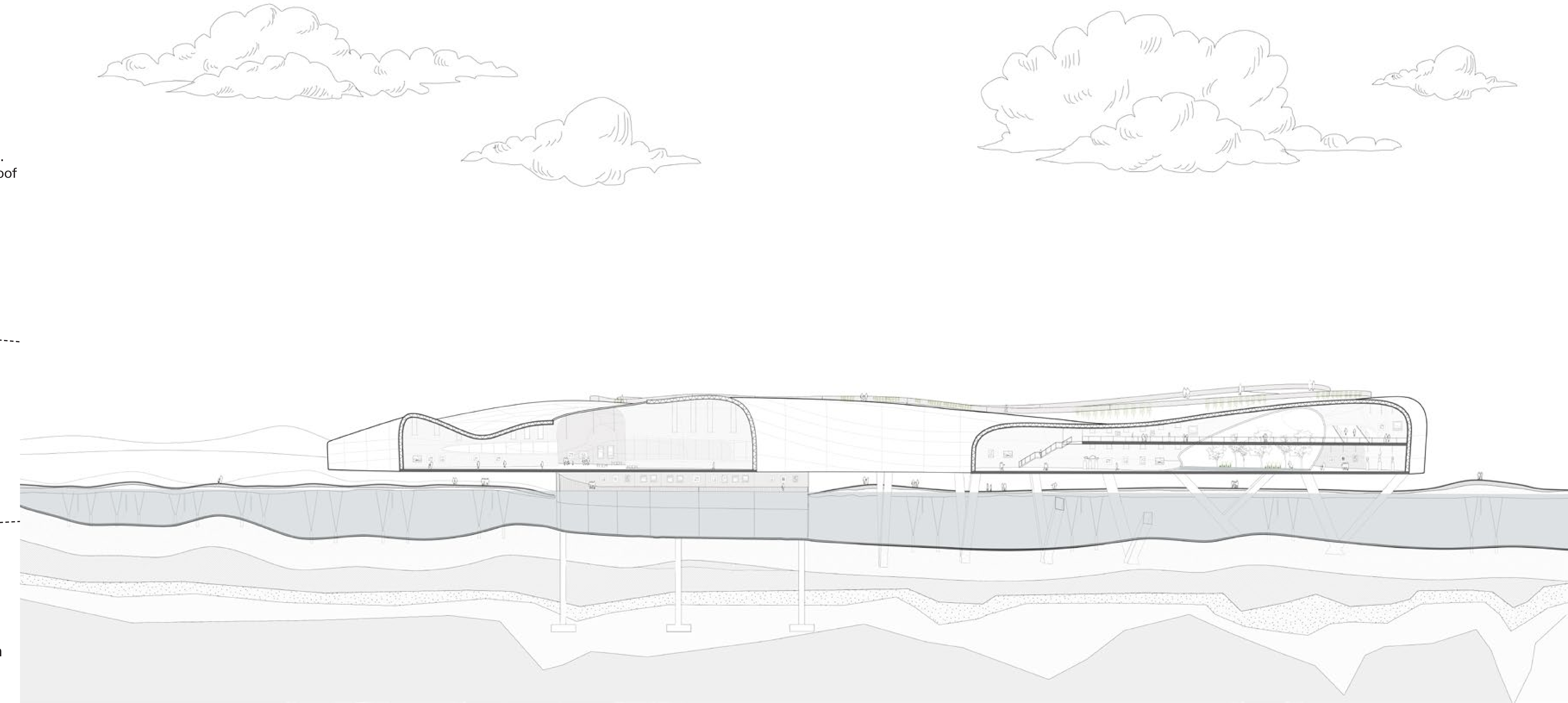
The Marshland Conservancy project represents an innovative fusion of architectural creativity and ecological rehabilitation, integrating human-made structures into the marshland's natural setting in a sustainable manner. By constructing a building that mimics the organic contours of the marshes, the project minimizes environmental impact and promotes ecological harmony. This initiative underscores a commitment to sustainability through designs that respect and enhance the natural landscape, heralding a new era of environmentally conscious development.

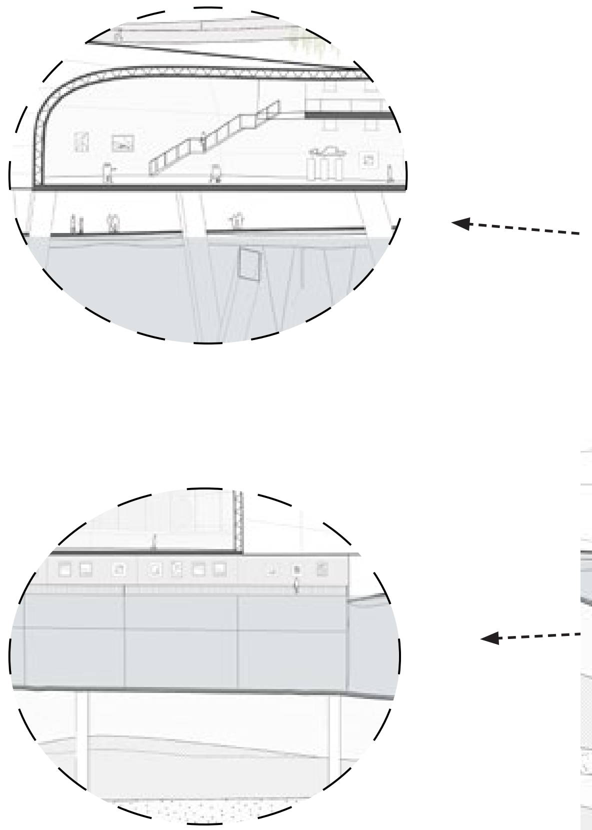
At its core, the project focuses on restoring the marshland ecosystem and introducing underwater vertical farming—a strategy that highlights its ecological ambitions. These efforts aim to bolster biodiversity, improve water quality, and provide a sustainable alternative to traditional agriculture, thereby reducing the environmental footprint of human activity. The project culminates in the creation of a museum dedicated to marshland flora and art, embodying its educational and cultural objectives. By fostering appreciation for the marshland's unique ecosystem, the Marshland Conservancy project sets a precedent for future initiatives that harmonize human development with the urgent need for environmental conservation.

**Program** Museum and Educational Center
**Professor** Alper Dernbogaz
**Date** Fall 2023
**Location** Marshland Conservancy , New york

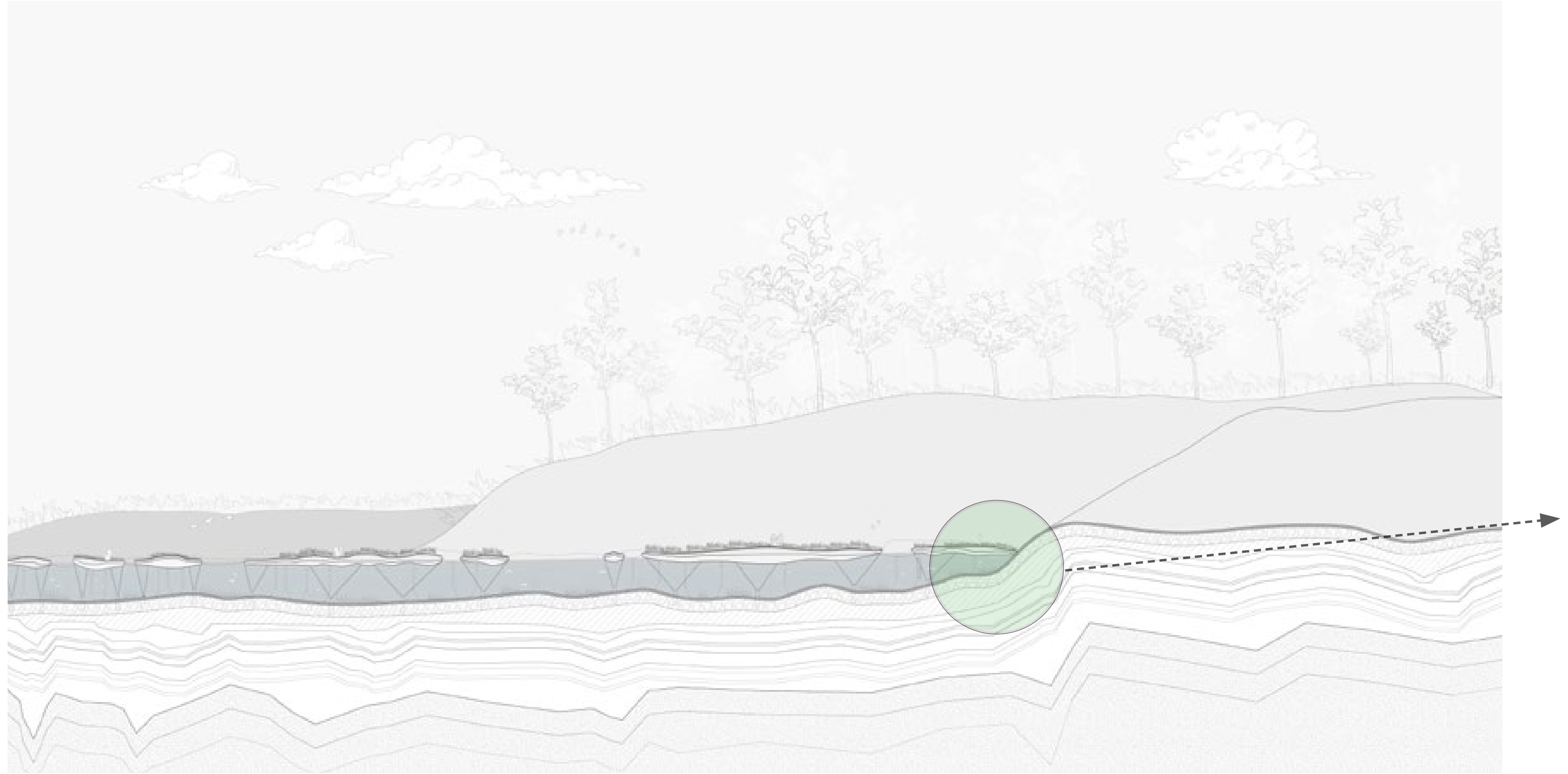
The section highlights two distinctive areas. The first consists of two floors situated underwater, accommodating offices, storage and archives, educational workshops, classrooms, and exhibition galleries.

The second area includes a mezzanine that features exhibition spaces with expansive views and openings overlooking the marshes. This mezzanine also provides access to the roof via a ramp.

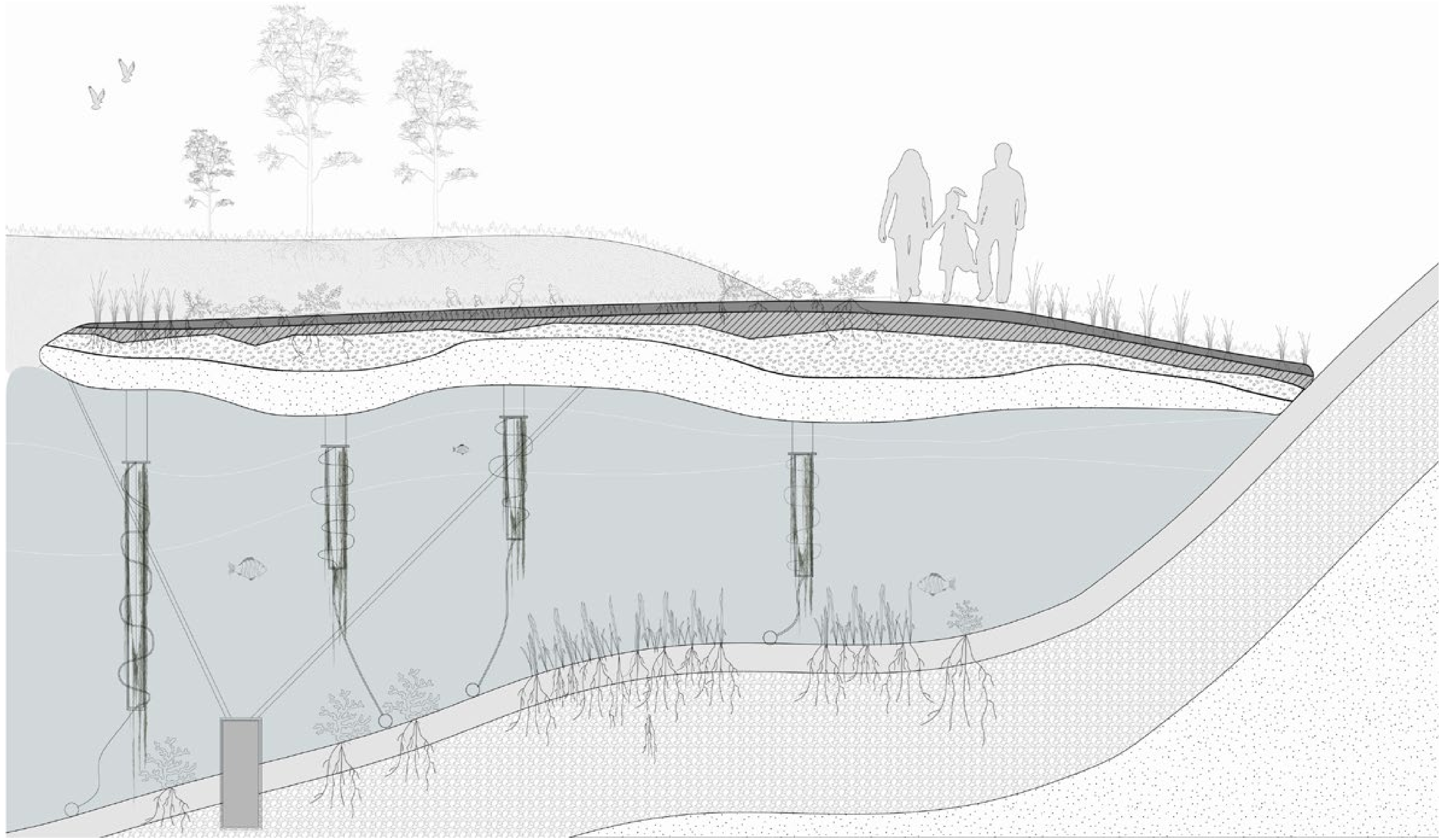




**Longitudional Section**



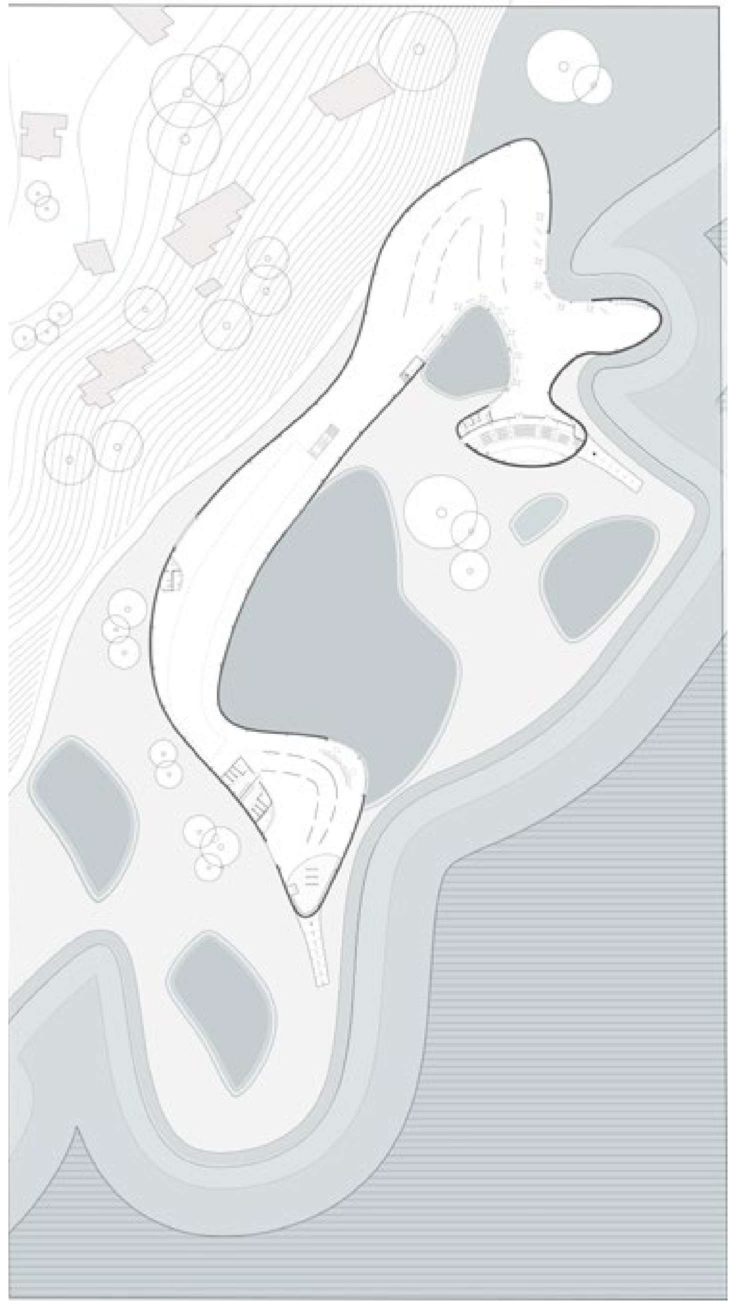
**Section of Marshes**



This project emphasizes marshland restoration by employing biodegradable materials to rebuild ecosystems without leaving a lasting footprint. It integrates vertical farming within these spaces, utilizing stacked layers to grow crops efficiently and sustainably. The biodegradable supports decompose to enrich the soil, fostering a healthier marsh environment. This dual approach not only revives degraded marshes but also establishes a model for eco-friendly agriculture that harmonizes with natural habitats.

Sustainable buildings often feature mixed concrete that includes recycled materials, enhancing durability while reducing environmental impact. Vegetation on building surfaces, such as green roofs and living walls, provides natural insulation, reduces energy costs, and supports biodiversity. Together, these materials create a harmonious blend of man-made and natural elements, contributing to eco-friendly architecture and urban greening initiatives.

This organically designed building, standing over the water and nestled in the marshes, features a rooftop ramp. This ramp spirals gently upwards, unveiling stunning panoramic vistas of the wetlands and waterways.The path serves not only to immerse visitors in the scenic beauty of the natural surroundings but also acts as a graceful architectural element, blending flawlessly with the building's natural contours and the peaceful marsh waters.



**Ground Floor Plan**

**Site Plan**

The site hosts a museum dedicated to marshland flora and art, fostering education and appreciation for this unique ecosystem while establishing a new standard for environmentally responsible development.

The ground plan includes the following: Lobby, Restrooms, Auditorium, Gift Shop, Café/Restaurant, and Exhibition Galleries.

**Exterior Rendering** - The Marshland Conservancy features a building meticulously integrated into the marshland, designed to emulate organic forms and elevated to mitigate flood risks. The roof is covered with vegetation, further blending the structure with its surroundings. Several submerged floors provide panoramic views of the marsh's aquatic life. This architectural approach achieves both functionality and aesthetic harmony, exemplifying sustainable design principles.

The landscape model employs advanced materials and techniques to achieve an accurate topographical representation. The process begins with CNC machining to create precise molds for concrete casting, forming the base that replicates terrain features. Wax is applied to enhance surface textures, representing landscape elements. Resin is added to simulate water, creating a reflective, glossy finish that mimics natural aquatic surfaces. Finally, 3D-printed resin constructs the marshes, providing intricate and lifelike textures.

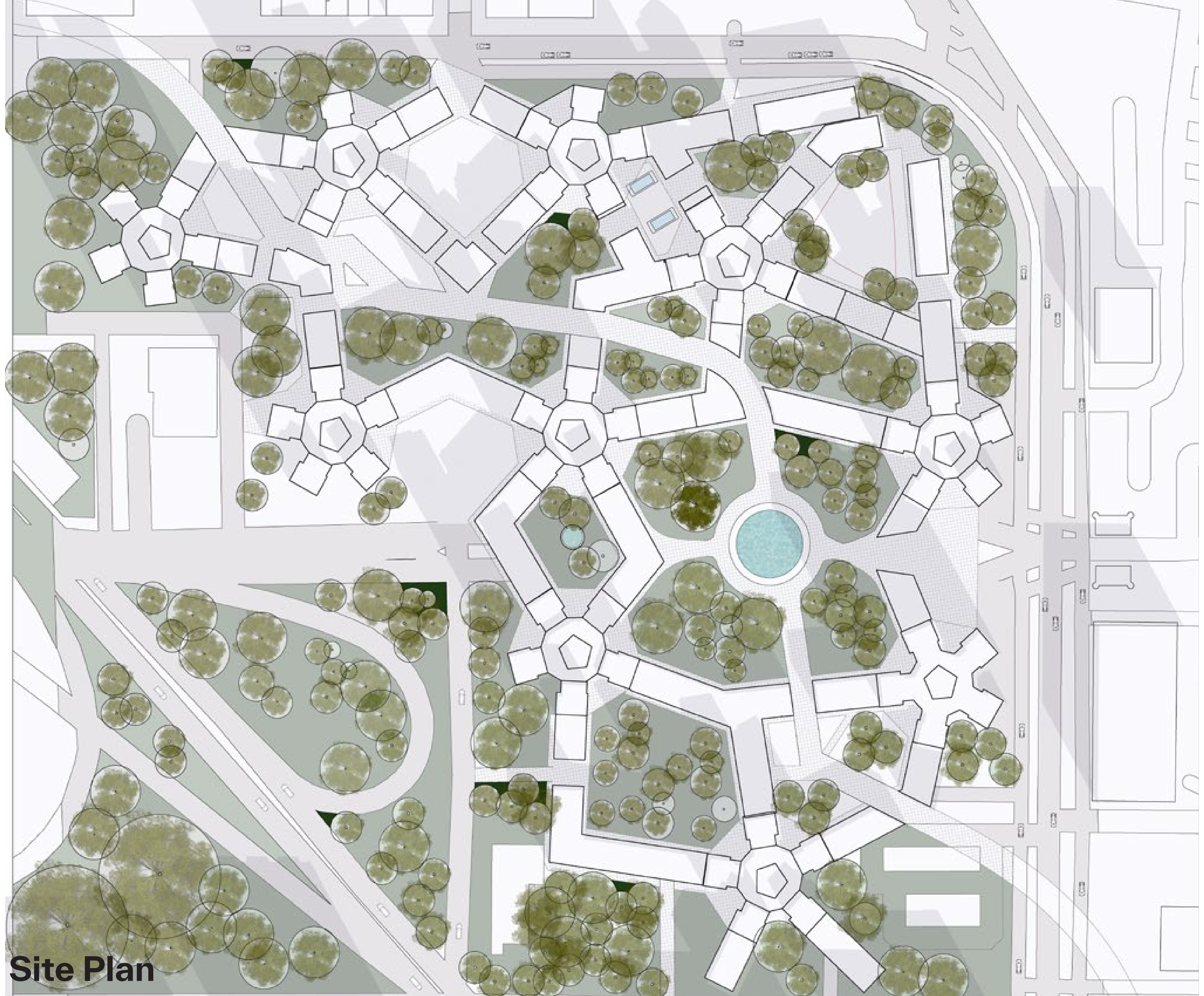
## Physical Model

# Farragut Courtyards

Residential Project

This project reconnects the existing Farragut Houses with the city. Its primary goal is to foster a sense of community within the Farragut Houses while enhancing connections with neighboring blocks through improved green spaces,mixed-use development, and human-scale design. Furthermore, the incorporation of various sustainable technologies and strategies aims to reduce the site's carbon footprint and energy consumption. The project's approach focuses on increasing density and activity throughout the site. By introducing diverse programs and mixed-use spaces, the NYCHA housing will transform into vibrant environments that benefit both residents and neighboring communities.

**Professor** James Garisson
**Date** Fall 2022
**Location** Brooklyn , New York
**Partner** Edgar Gonzalez
**Program** Residential



Site Plan

**Perspective View From West View.**

The facade design aims to create a sense of continuous uniformity between the taller NYCHA buildings and the mid-rise structures. Throughout the site, the ground floor facade features brick and glass construction, fostering a sense of openness and natural light while avoiding a confined appearance.

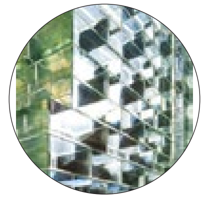
**Aero View**

**Exterior Roof Connection** - Leads to Gym and Interior Pool

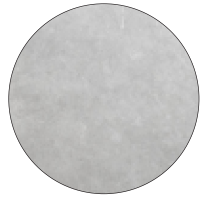
The roofs of the buildings will provide private roof gardens, as well as vertical gardening spaces. As the area is developed and becomes increasingly popular, it is important to provide residents with adequate amenities and controlled outdoor space. These roof gardens also function as connectors between adjacent NYCHA buildings, improving mobility for tenants.

## Front Elevetion

Shading Wood sliding Panels.



Glass Brick facade.



Precast Concrete.

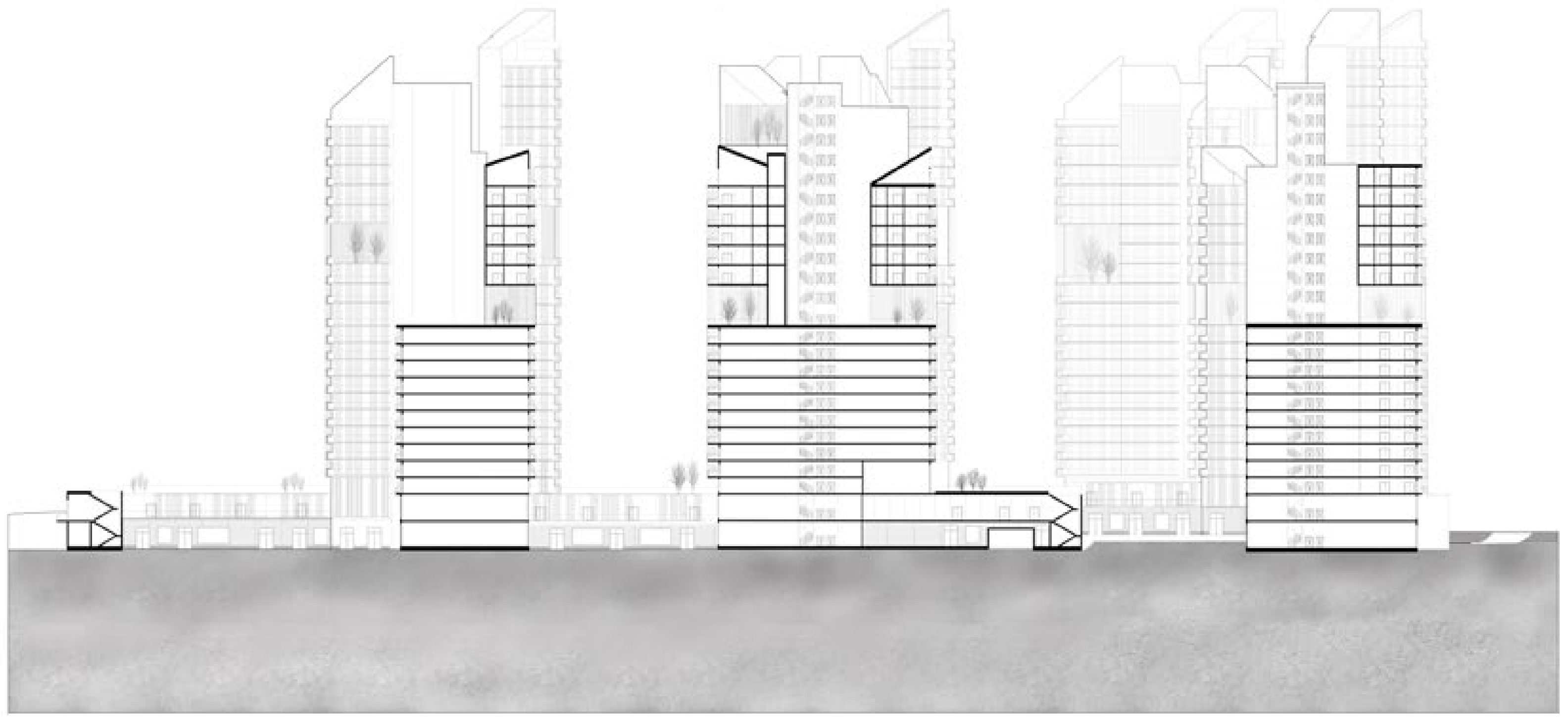
**Front view -**
Ground Level - Commercial Space
1RD Level - Commercial Office for Residents.

The wooden screen facade also allows for adaptability, as residents can freely adjust it to meet their privacy and lighting needs.

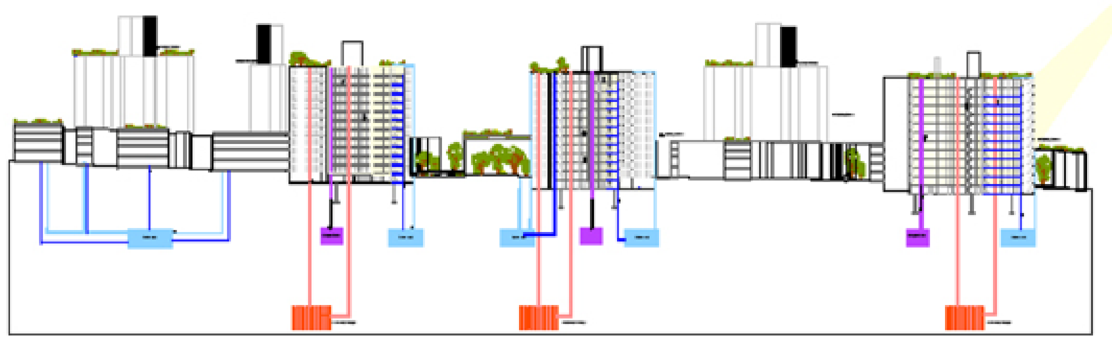
6 Level - Indoor Pool with Access to Exterior Roof.

6 Level - Gym with Access to the Exterior Roof.

Physical Model



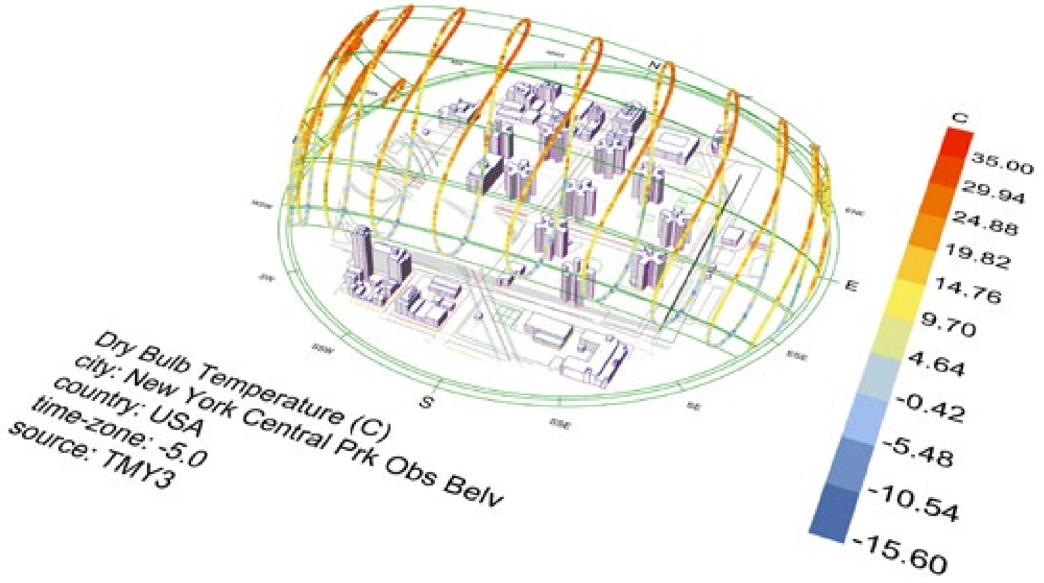
Longitudional Section

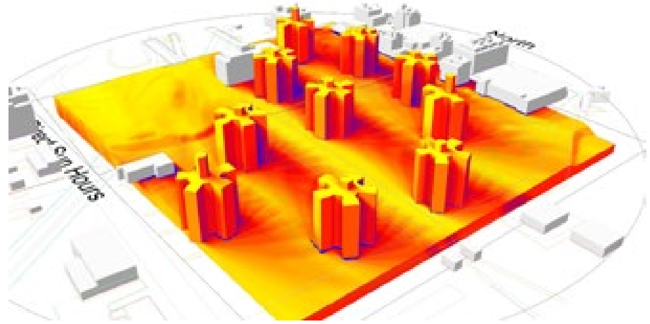


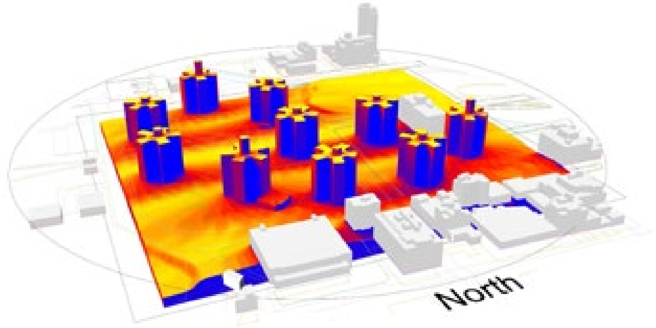
System

The project will benefit from a variety of sustainable technologies and designs that improve the quality of life for residents and visitors. Water retention tanks and filters will be placed underground to collect and recycle sewer water, turning it into gray water, which can be used for watering plants. The roof has a $CO_2$ filtration system that absorbs small quantities of $CO_2$ from the air.

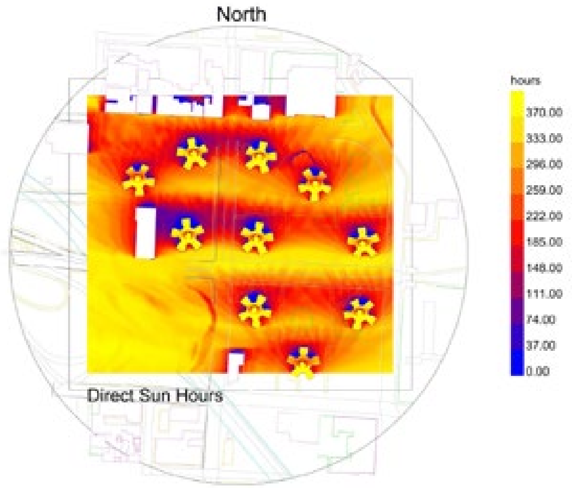
# Site Analysis

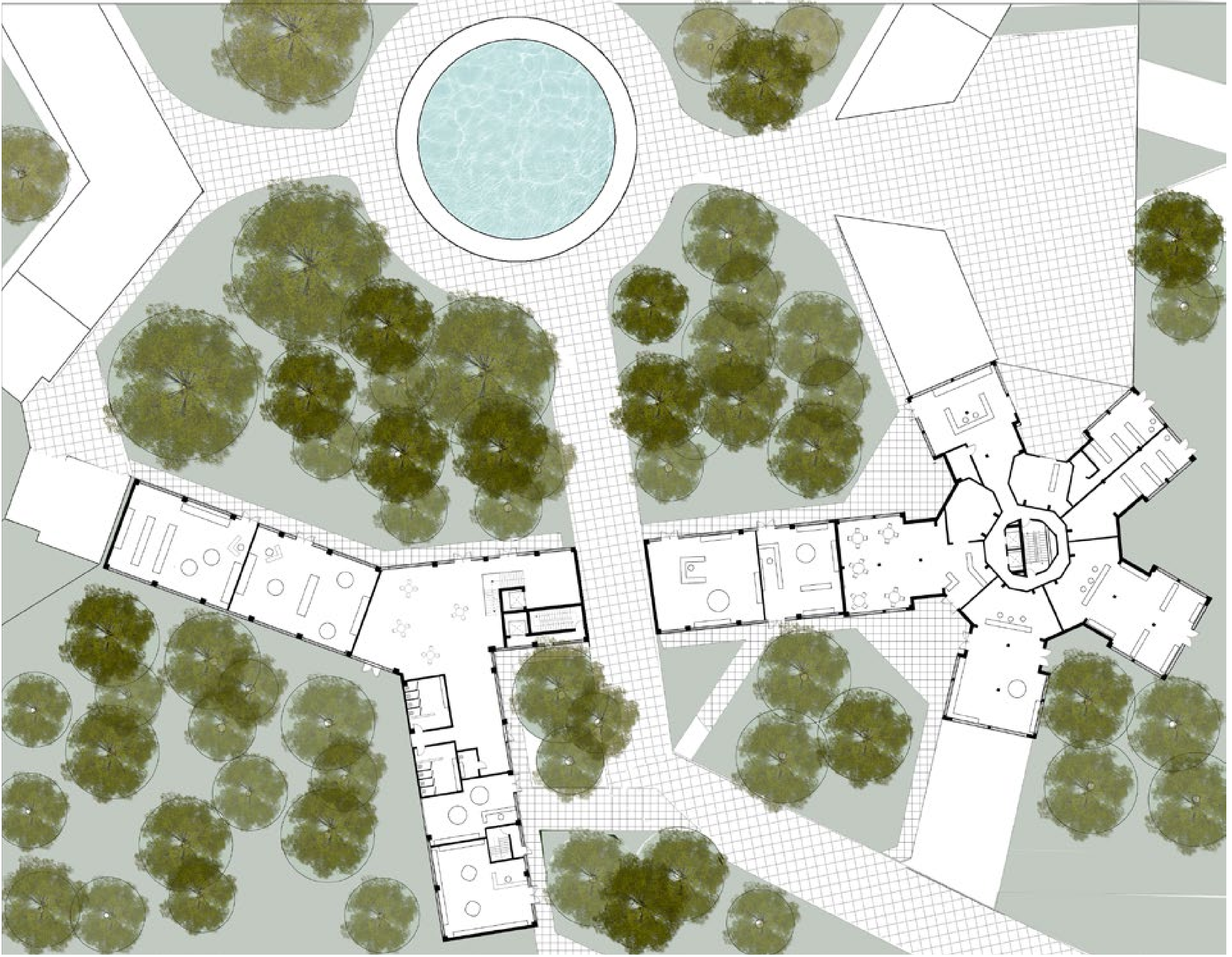





The site analysis of the sun diagram is essential for sustainable architectural design, as it maps the sun's trajectory across the site during various seasons. This information enables architects to optimize building orientation, window placement, and shading to enhance natural lighting while preventing overheating. Consequently, this analysis contributes to the creation of energy-efficient buildings that maintain a comfortable balance of daylight and thermal comfort for occupants throughout the year.





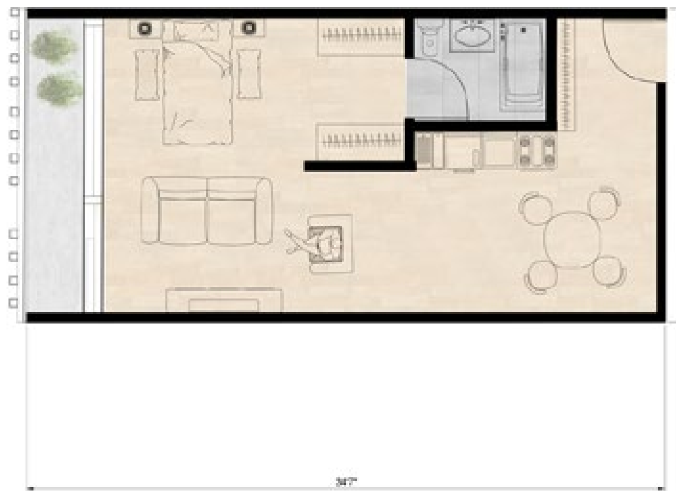
Ground Plan

3RD Level Plan

Side page- Lobby Level (Commercial stores open to the public with sepration throught a private entrance for the residents.

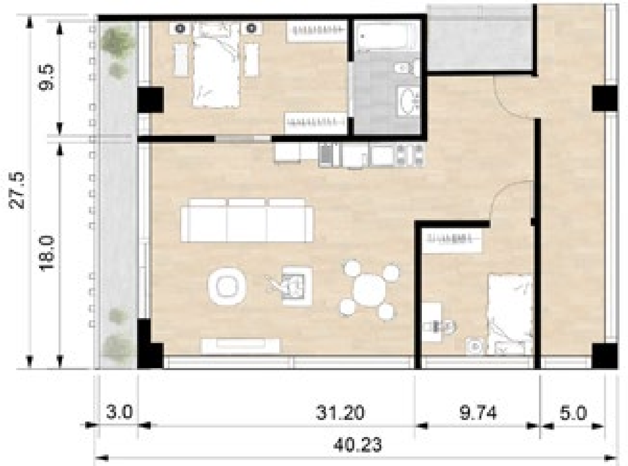
19TH Level

**Unit A - 3RD Level** 2 Bedrooms unit.



**Unit B - 3RD Level** Studio unit .

**Unit D - 3RD Level :** 4 Bedrooms unit.




**Unit C- 3RD Level** 2 Bedrooms option B.

**Unit E- 19TH Level** Studio.
**Unit F- 19TH Level** Bedroom unit.

The Farragut residential project contains a variety of apartmnets layouts. All units contain wood floors and balconies, with ceiling heights of up to 14 feet.The apartemnts has 12- foot ceiling and large windows.
- The studio has 543sq.
- Unit A - 2 Bedrooms - (Kitchen,Balcony,Bathroom,Office space, Living room).

Unit C - 2 Bedrooms.
(Kitchen,Balcony,Living room and dinner space,Bathroom)
Unit D - 4 Bedrooms.
( Large kitchen, Living room and dinner space,1 suite, 2 Bathrooms and powder room).
Unit E- Studio (Large balcony).
Unit F - 1 Bedroom.

# DIORAMA

Base, Object and Scene

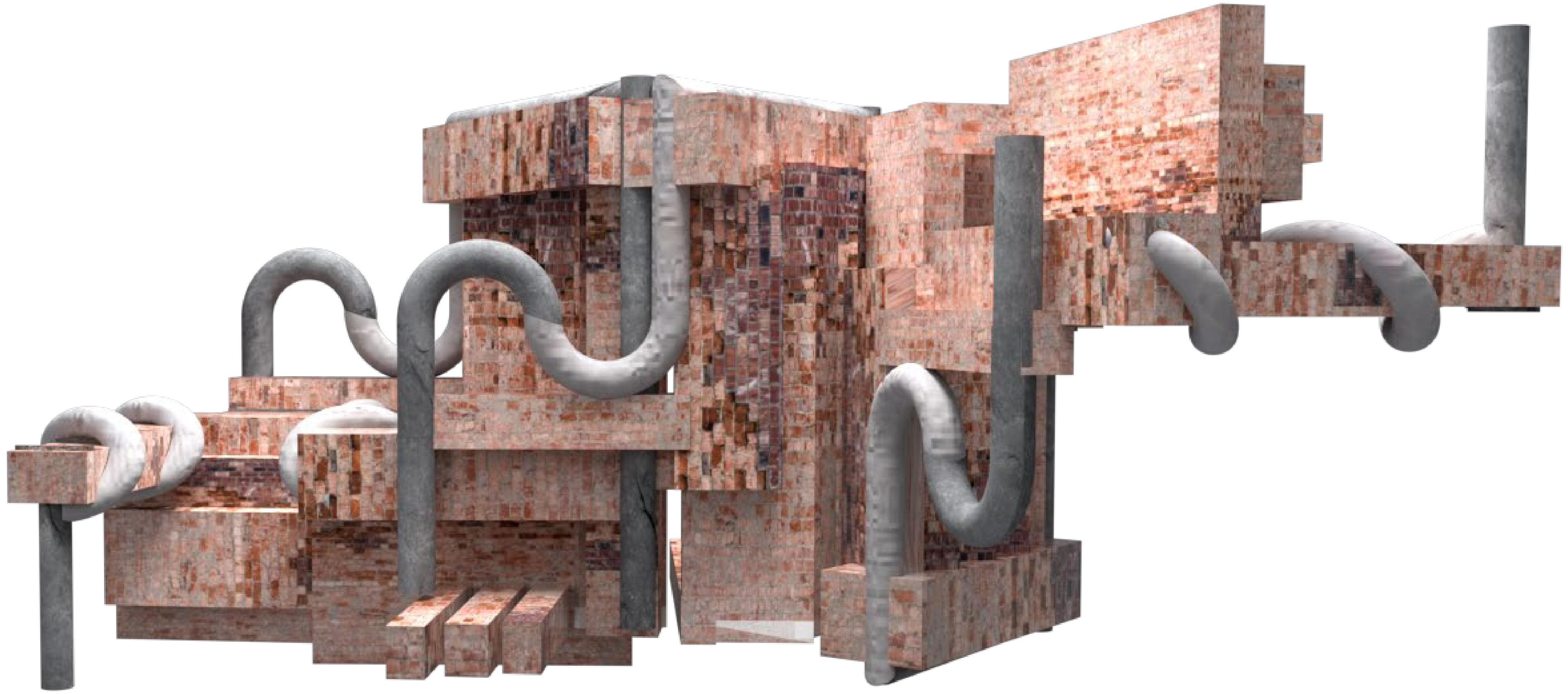
This project is a form of representation that depicts a perspectival scene. This interpretative technique illustrates the relationships between figures in space and provides a narrative for the spectator. The intention of this project was to develop a perspectival scene containing the bi-directional object at its base.

The initial exploration of this project began by photographing architectural details and cropping various images using Photoshop.

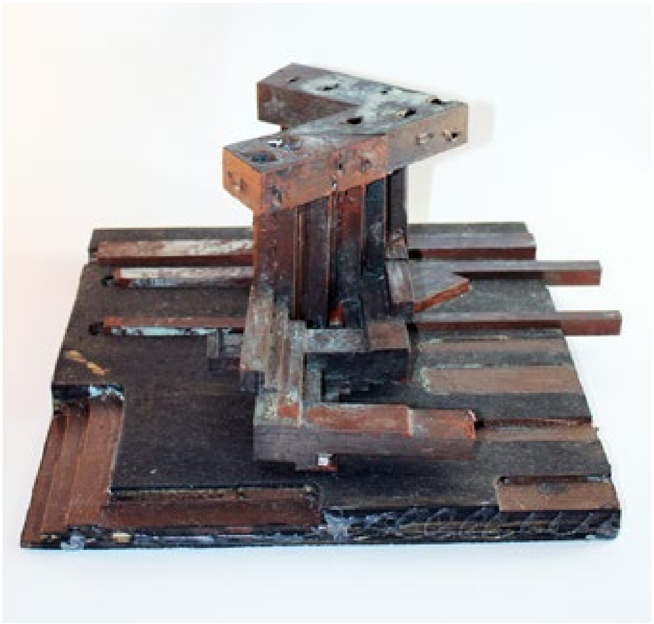
The background was created using rendered 2D elevations and drawing techniques.

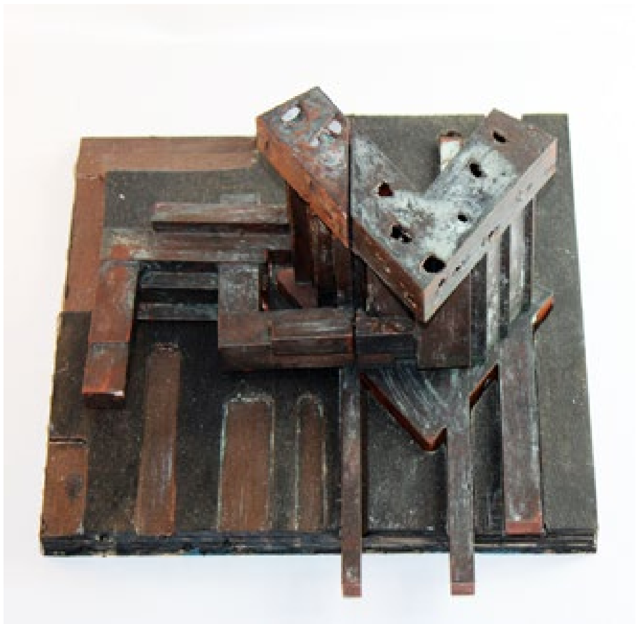
**Professor** Joseph Giampietro
**Date** Fall 2021

**Rendering Object**



## Physical Photos



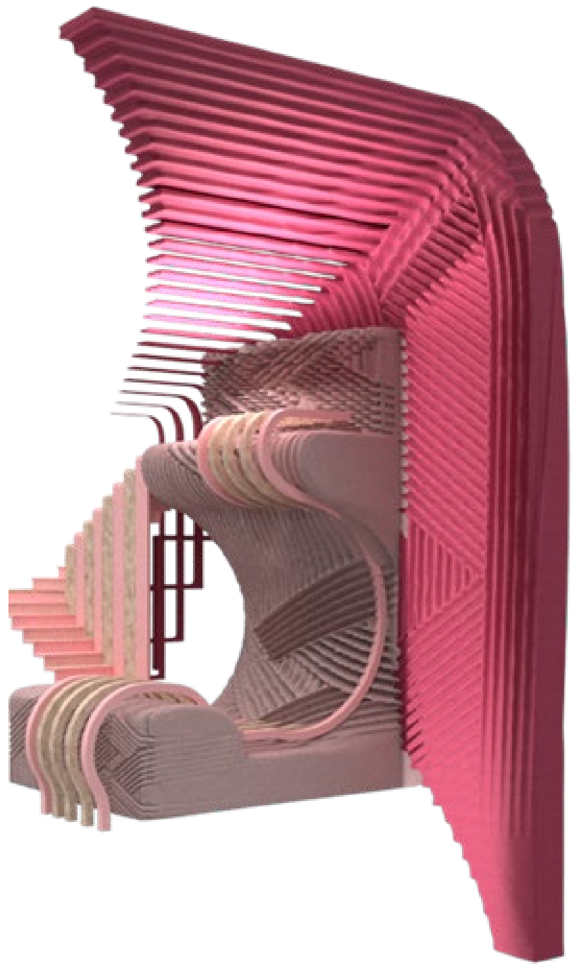


The techniques used in this project included CNC, 3D printing, laser cutting, collage, and painting. The project showcases a rustic painting combined with plaster.

# Higgins Hall

## Chunk Model

( Facade , Walls and Stairs )



This project investigates the architectural relationship between elements to express spatial conditions and showcase refined concepts of interiority.

The design was composed of three parts.

Part one - Focuses on the representation of interior vertical and horizontal circulation derived from a three-dimensional scan of Higgins Hall.

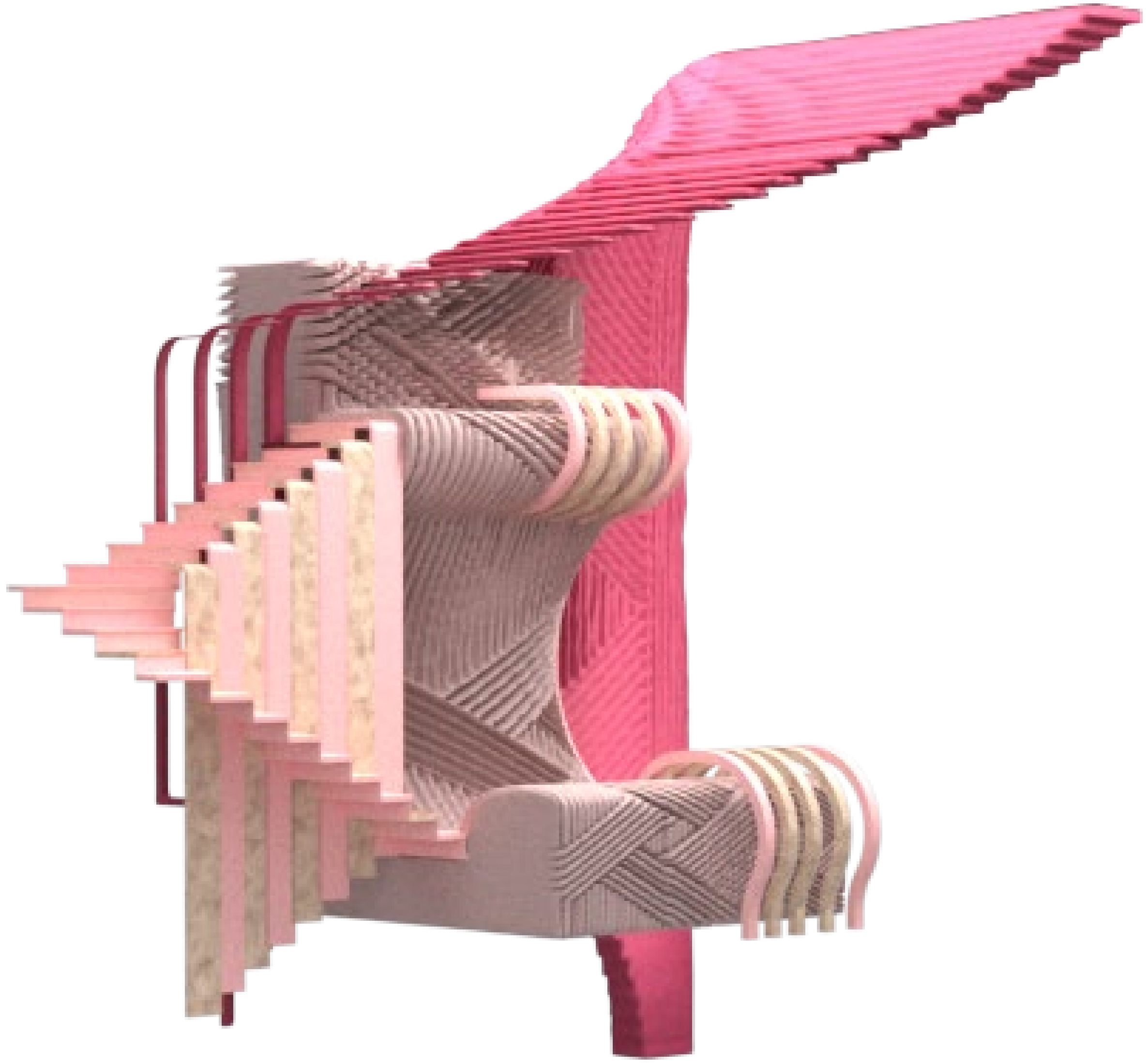
Part two - Involves the creation of compelling interiorities.

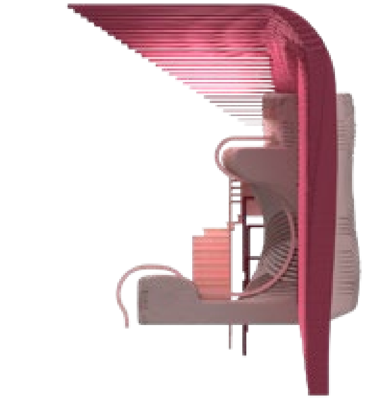
Part three - Utilizes advanced modeling techniques to develop the core of the interiorities.

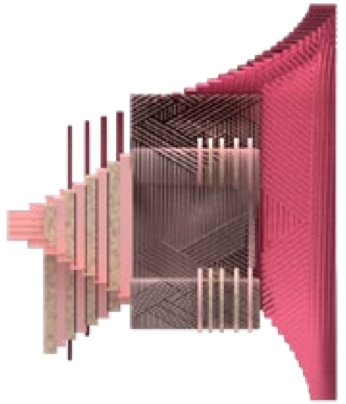
Media used - Revit,Rhino,Keyshot,Vray and Zbrush.

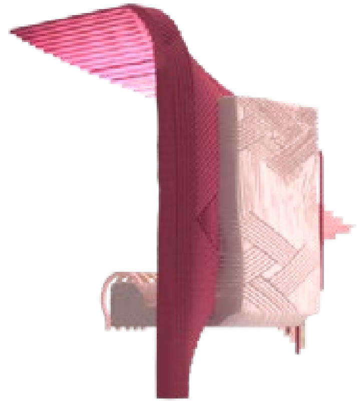
**Professor** Sandra Nataf
**Date** Spring 2022

**Rendering Object**

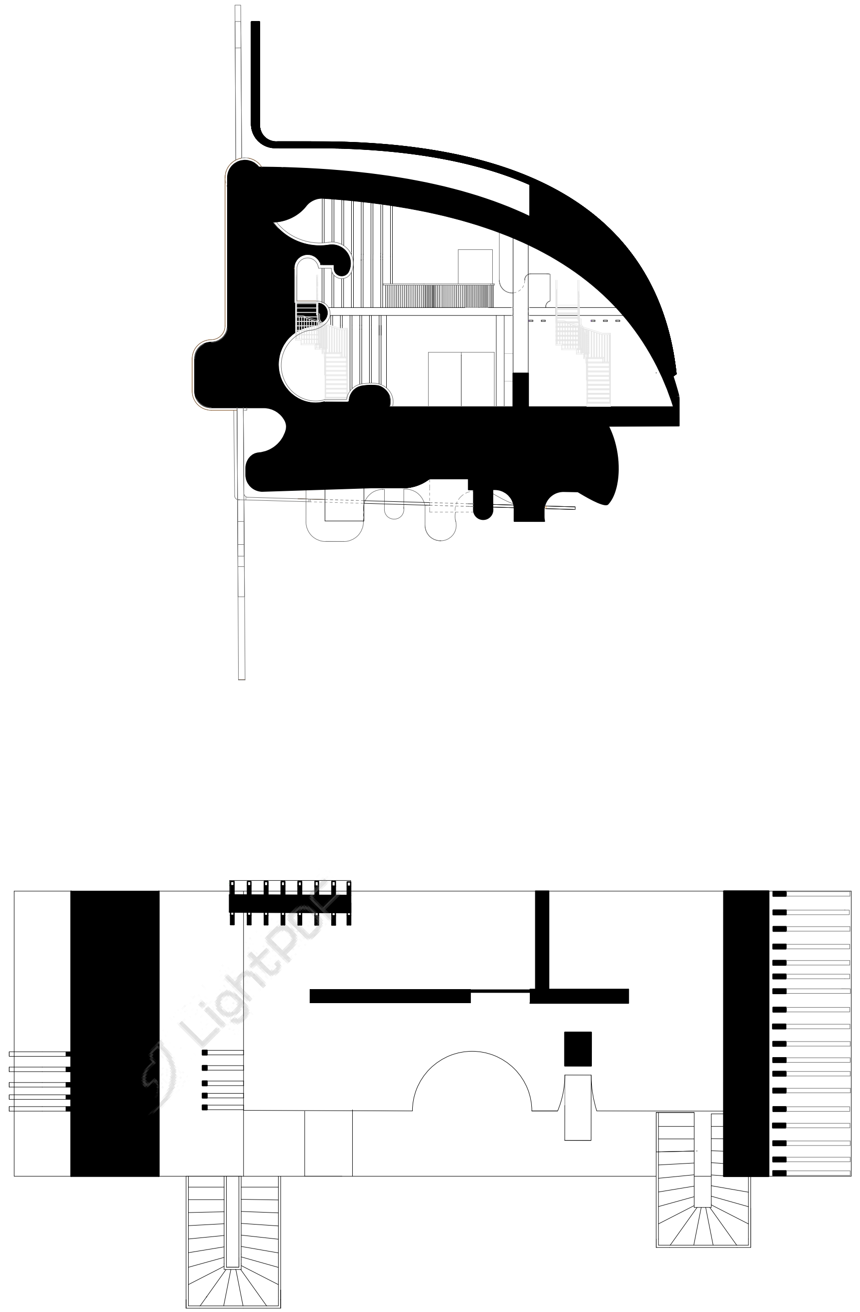




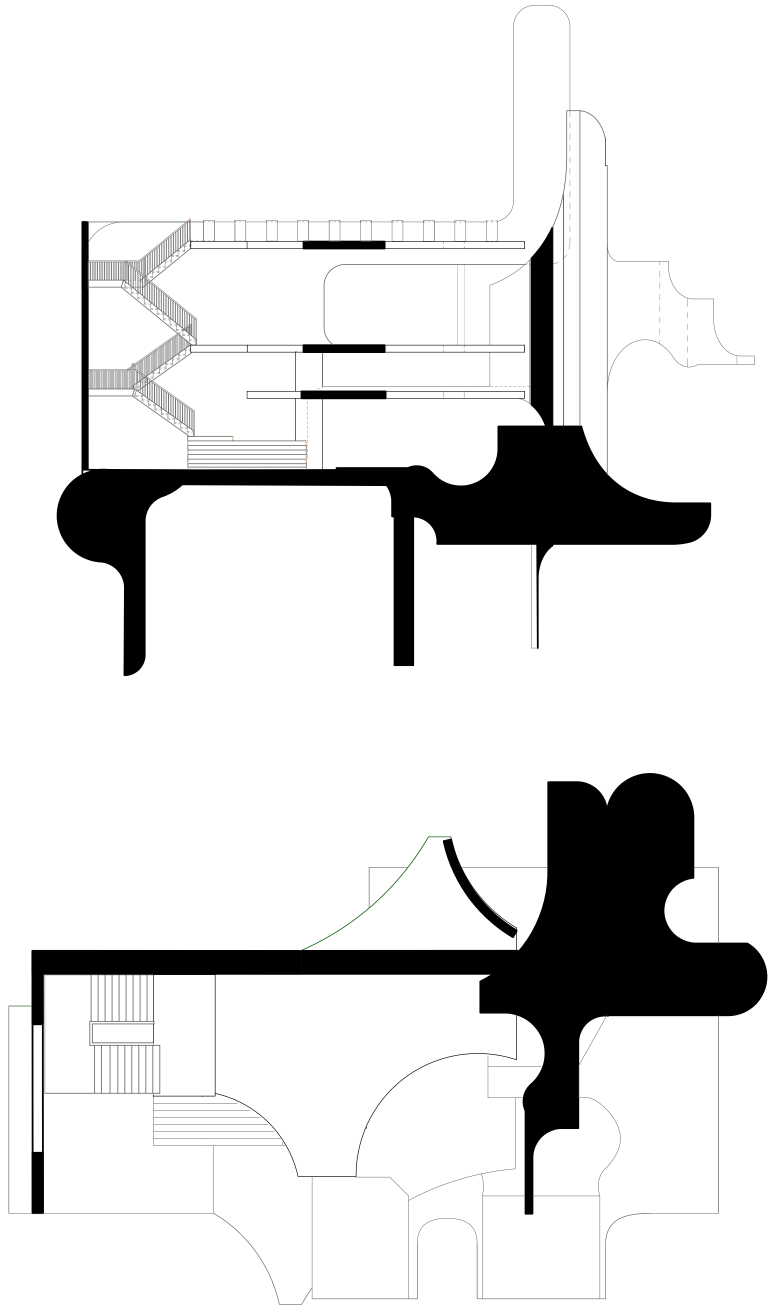




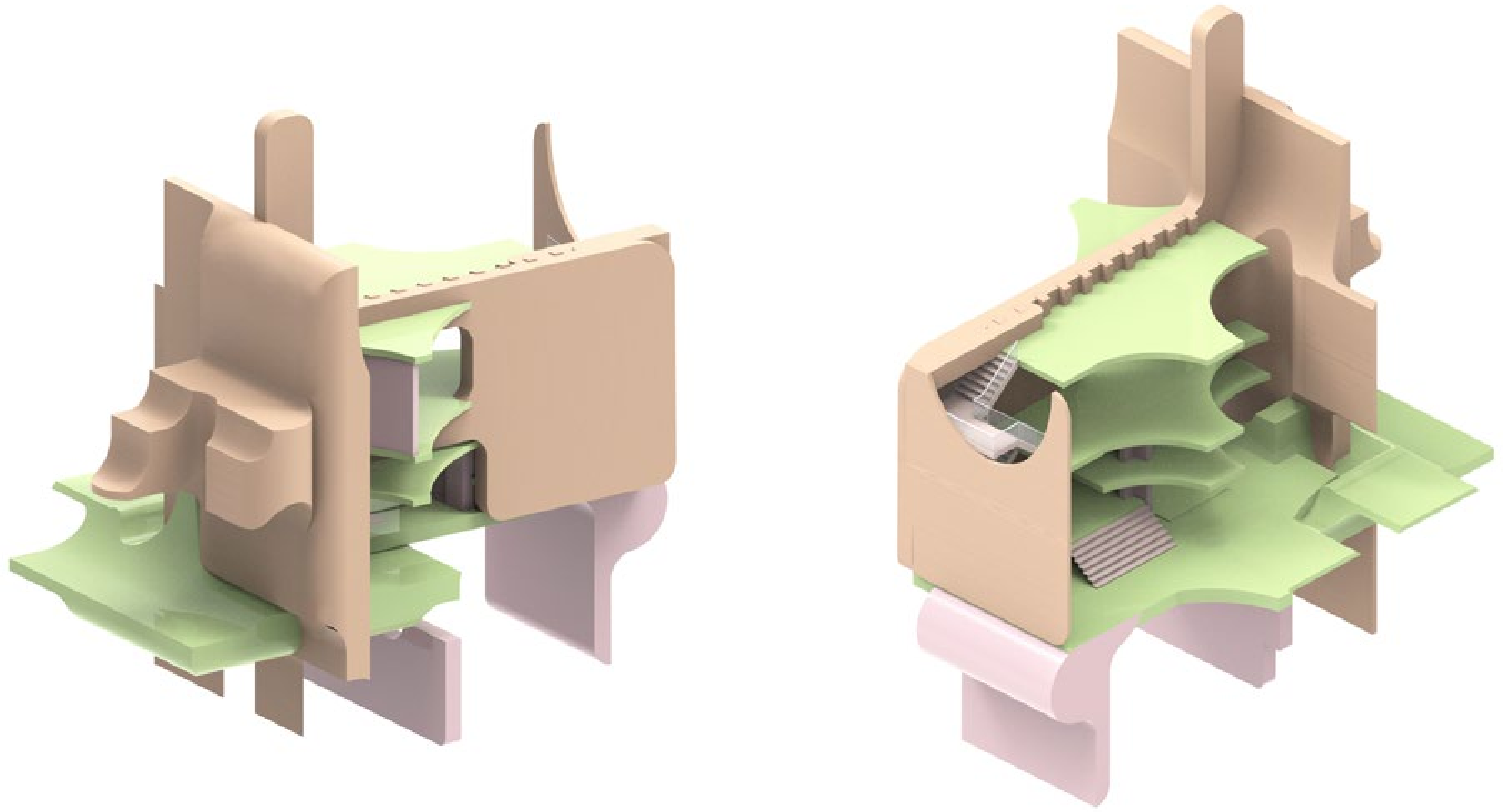
**Drawings Chunk A**

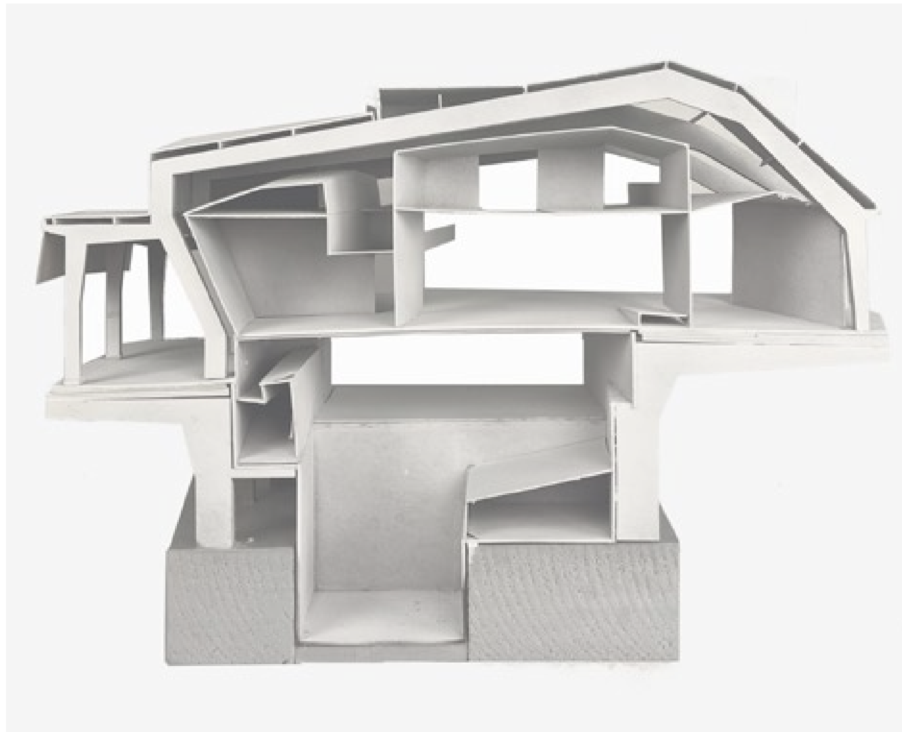


**Drawings Chunk B**



**Rendering Object B**





INGRID PORTO
(646)288-0823
yarrudap@pratt.edu