



PORTFOLIO

layla danelle neira

2021-2023 // selected works

academic

01 VISTA MUSEUM

a canaletto experience

typology: canaletto art museum and community hub

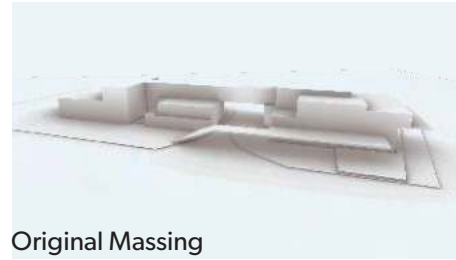
location: venice, ve, italy

december 2023 - semester 7 [prof. marc rosenbaum]

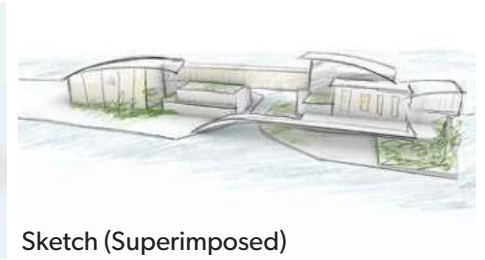
objectives: This project aimed to honor the rich legacy of Venetian art while infusing contemporary design elements that resonate with the vibrant and current architectural ethos. The aspiration was to revisit Canaletto's works, examining them within their historical context and juxtaposing them with the values of the modern era.

Historically, Canaletto's art was a privilege enjoyed by aristocrats, notably on their "Grand Tour", but in the present, it's accessible to everyone, taking on a new significance in the context of broader public interests. Furthermore, inspired by Venice's historical intricate campos and gardens, Vista Museum aimed to emphasize these unique features through the design, particularly in the arrangement of its bi-level galleries.

workflow: Physical Modeling - Procreate - Dream Studio - Rhino - Illustrator - Enscape - Photoshop - InDesign



Original Massing



Sketch (Superimposed)



AI Generation 1



AI Generation 2



AI Generation 3



AI Generation 4



AI Generation 5



AI Generation 6

AI Generative Prompt: Generate a high-quality architectural rendering for a 'Light Museum' above water, featuring a sophisticated and contemporary design inspired by the provided sketch. Prioritize wood elements for a warm and inviting feel, ensuring the rendering exudes cleanliness and sophistication. Emphasize an abundance of windows to maximize natural light and incorporate lush greenery for a harmonious integration with the surrounding environment. The final image should capture the essence of a modern, sustainable, and visually striking architectural masterpiece.





- nautical circulation
- pedestrian circulation

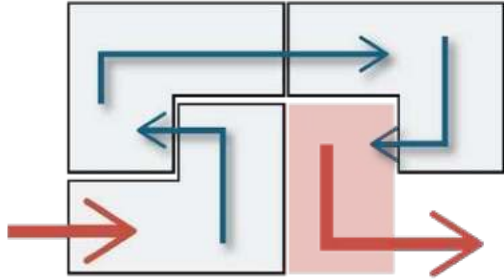


SITE PLAN

SITE CIRCULATION: Observing both the nautical and pedestrian activity on the island, the strategic placement of programs was determined based on these dynamics.

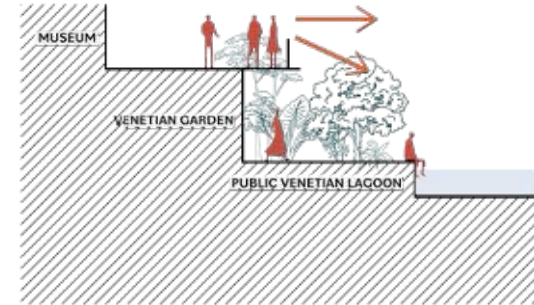
PROGRAM

LOST IN VENICE



GARDENS

PRIVACY OF VENETIAN GARDENS



Stairs from Gallery 2 (lower level) to Gallery 2 (upper level)



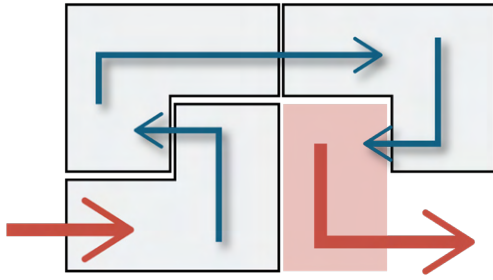
Public Gardens at the museum island

LOST IN VENICE

Drawing inspiration from the intricate pathways of Venice, Canaletto's galleries are strategically organized to create a dynamic and engaging experience. The gallery spaces, predominantly split on two levels, incorporate gardens and courtyards in transition spaces, adding depth to the visitor's journey.

PRIVATE GARDENS

Acknowledging the significance of private green spaces in Venice, gardens are intentionally placed at transition points, subtly revealing themselves as visitors approach different areas. This deliberate integration not only enhances the overall experience by offering glimpses into secluded oases but also provides an enriched perspective and fosters an element of discovery and anticipation.

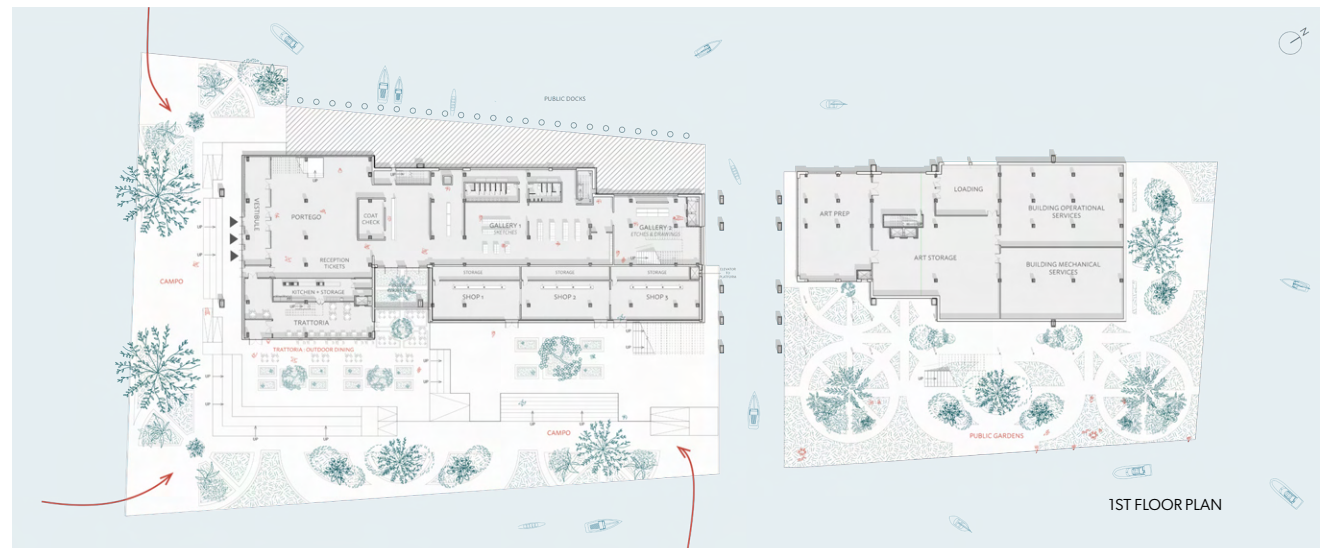
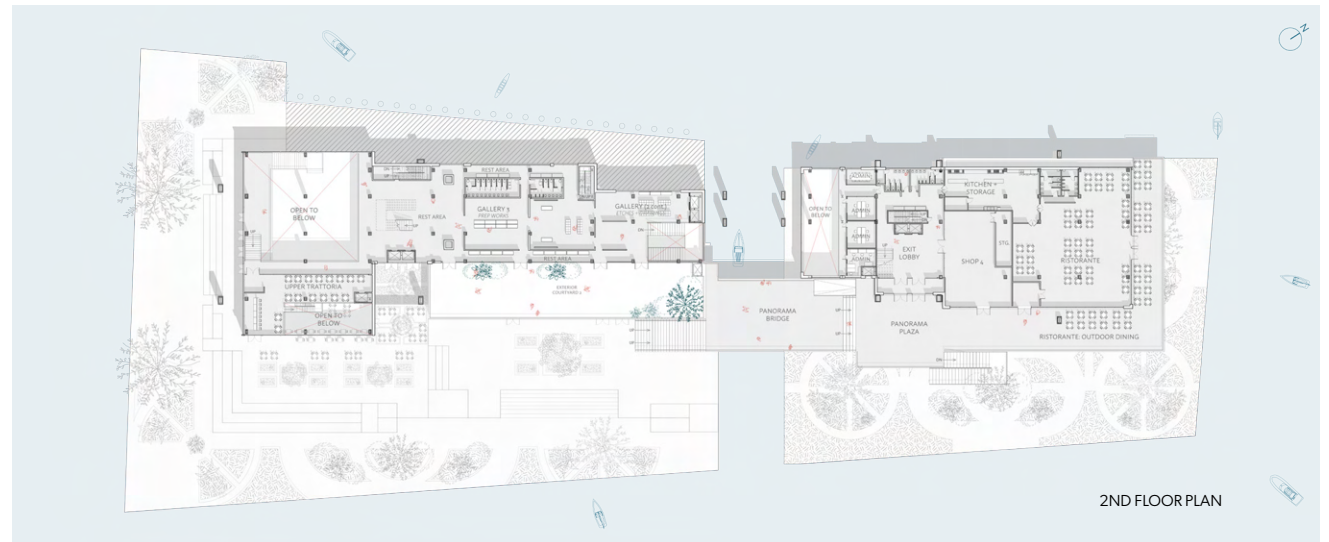
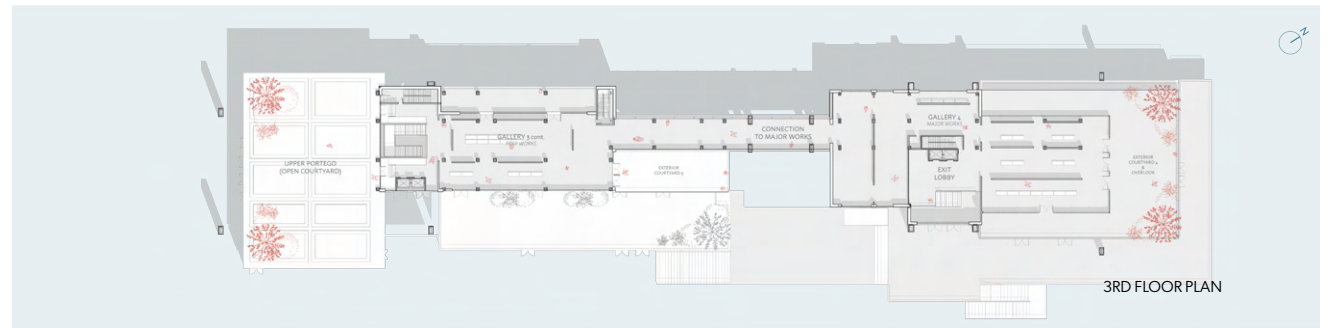


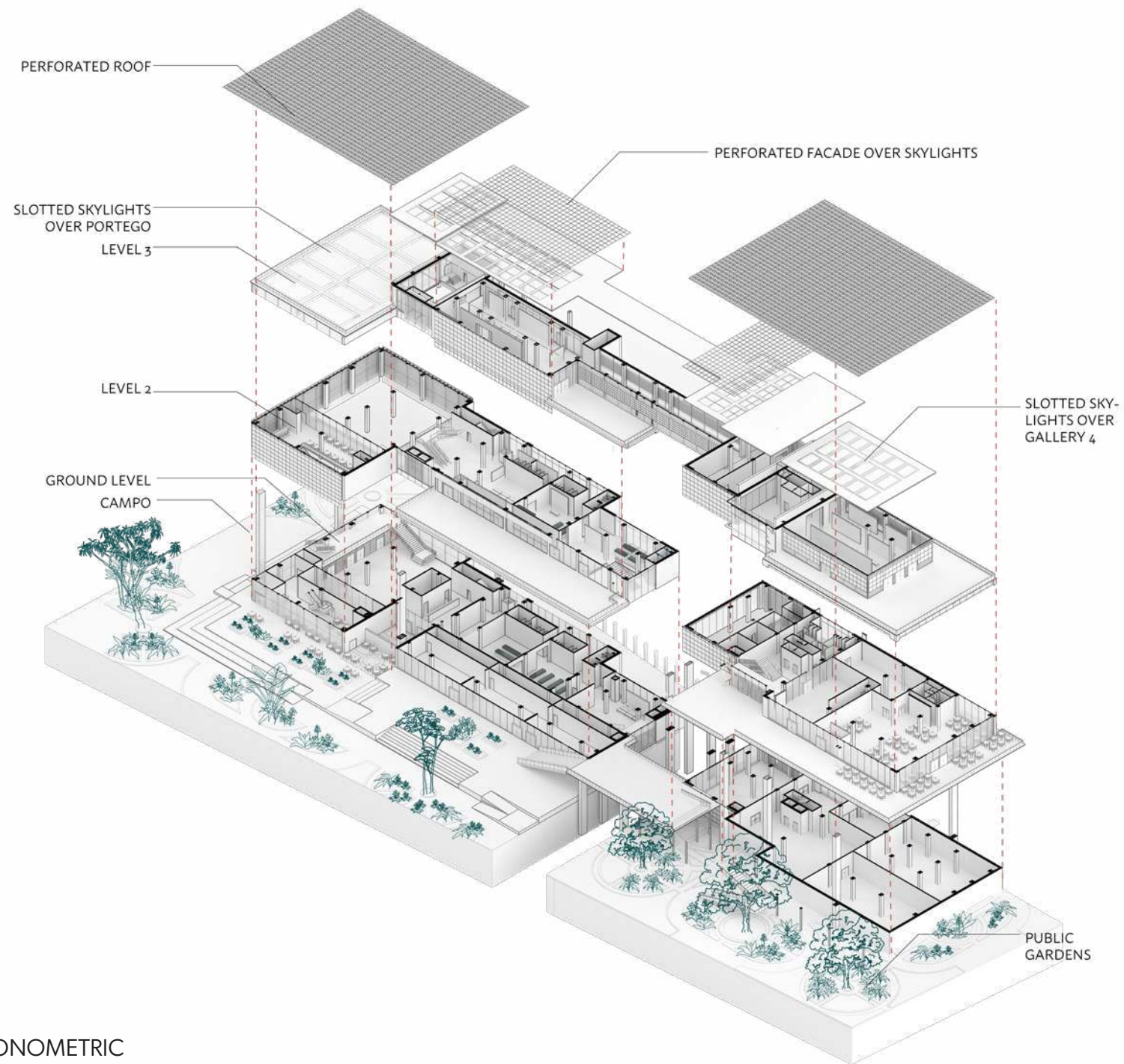
LOST IN VENICE

PLANS: The circulation mirrors that of the aristocratic experience of touring Venice, beginning in an opulent space reminiscent of the arrival at Piazza San Marco—the Portego. Then, navigating through the historical masterpieces of Canaletto unfolds seamlessly, with strategically placed gardens and courtyards at the transition points between each gallery.

Notable stops in this curated progression:

Gallery 2, featuring an elegant garden staircase. Gallery Three, highlighted with a secluded courtyard. Then, a connecting bridge seamlessly blends into the narrative culminating at the Major Works Courtyard, offering a captivating lagoon view. This final space subtly nods to the end of a grand tour, reminiscent of the concluding stop at the Lido.

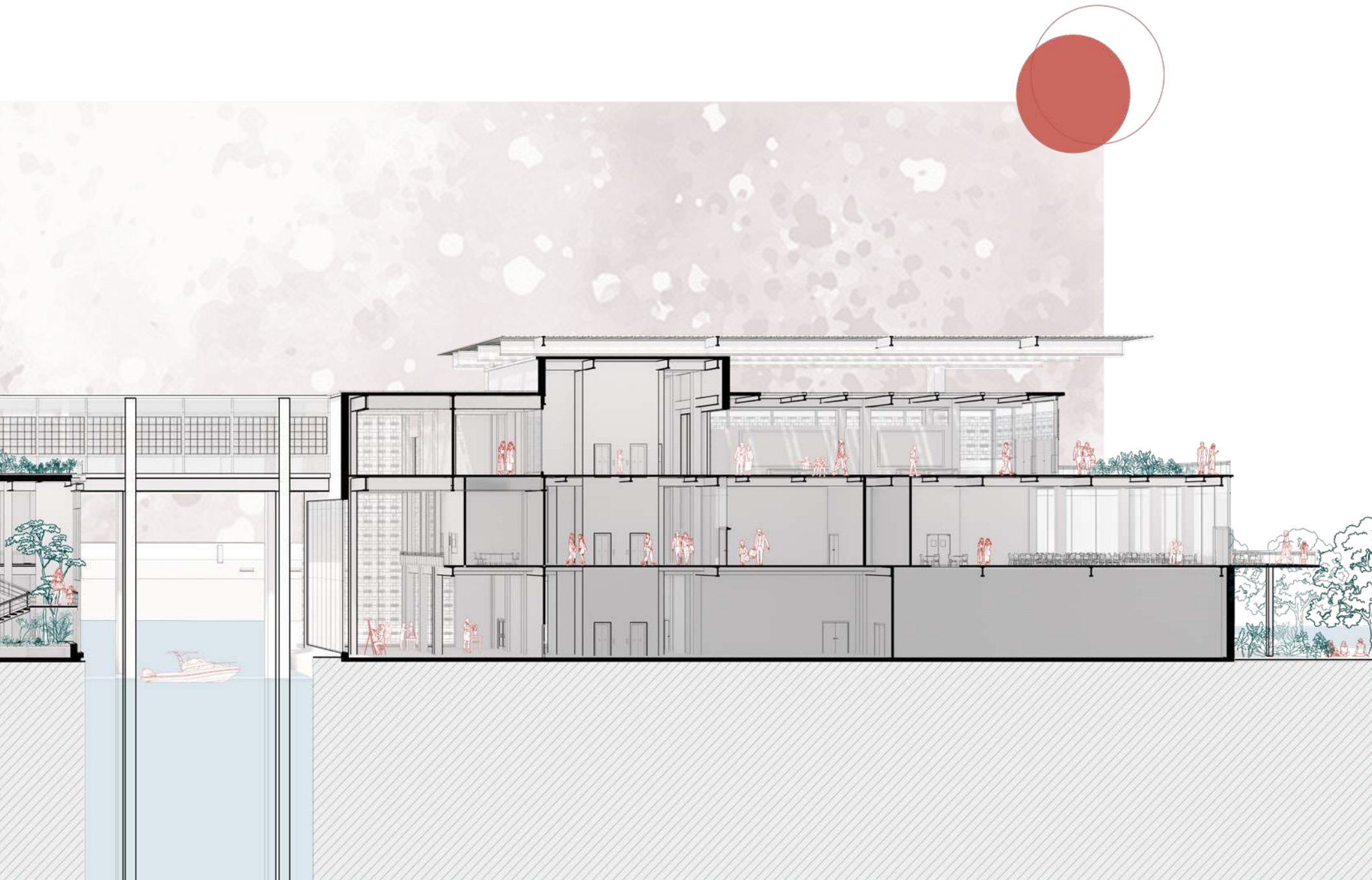




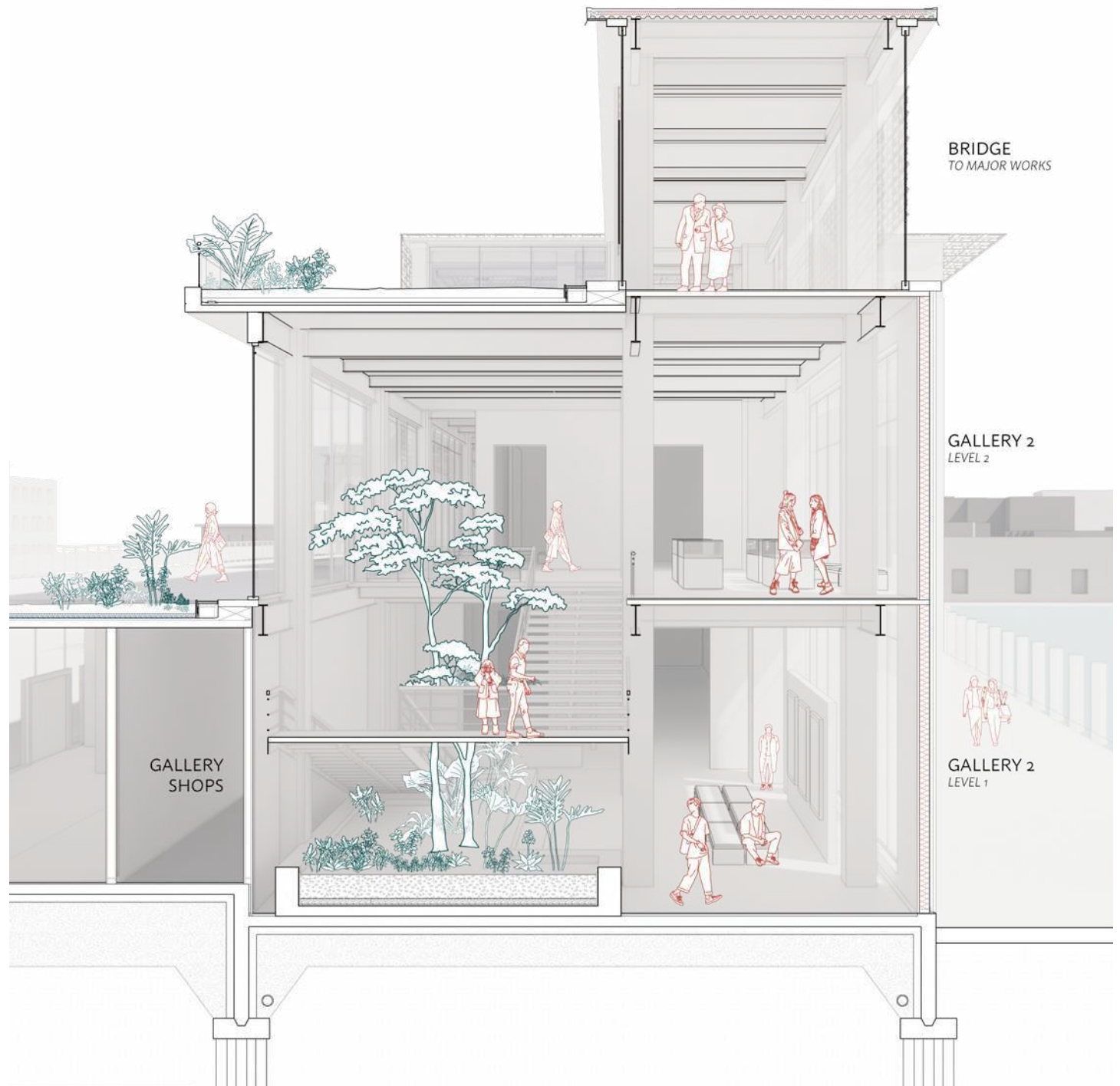
EXPLODED AXONOMETRIC



LONGITUDINAL SECTION PERSPECTIVE

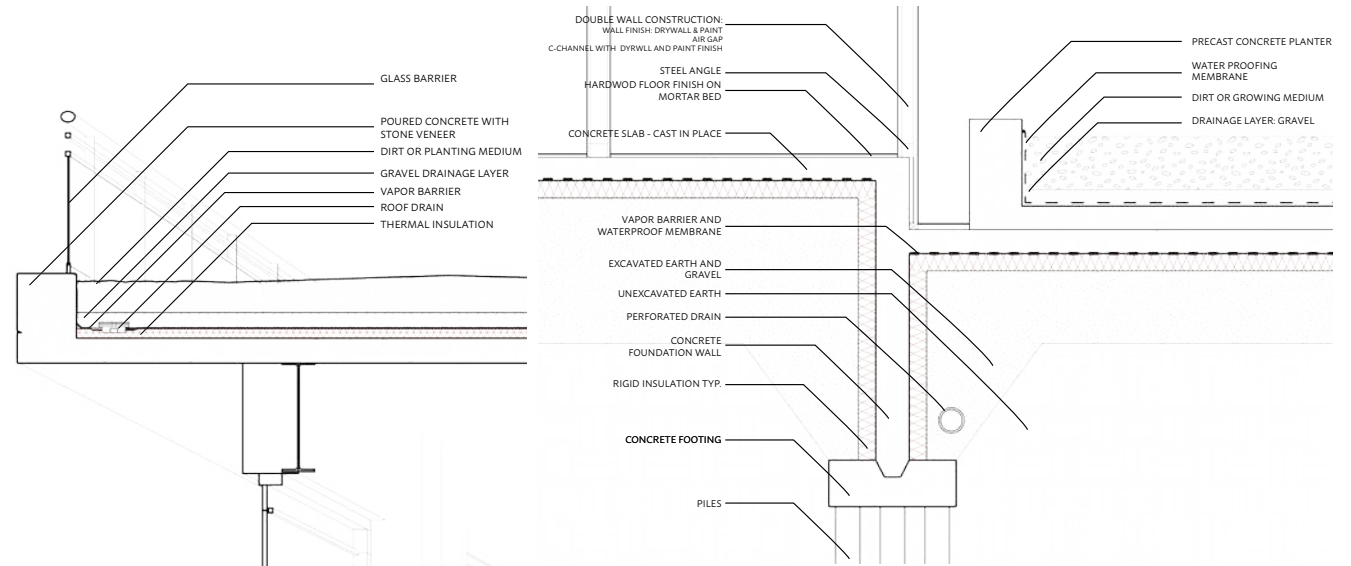


STRUCTURE & DETAIL: the functional harmony of the museum's architecture is highlighted, elucidating the interplay between structural steel components and concrete framework. The emphasis is placed on specific features, like the green roofs and gallery transition points, showcasing the meticulous integration of design elements with structural integrity.

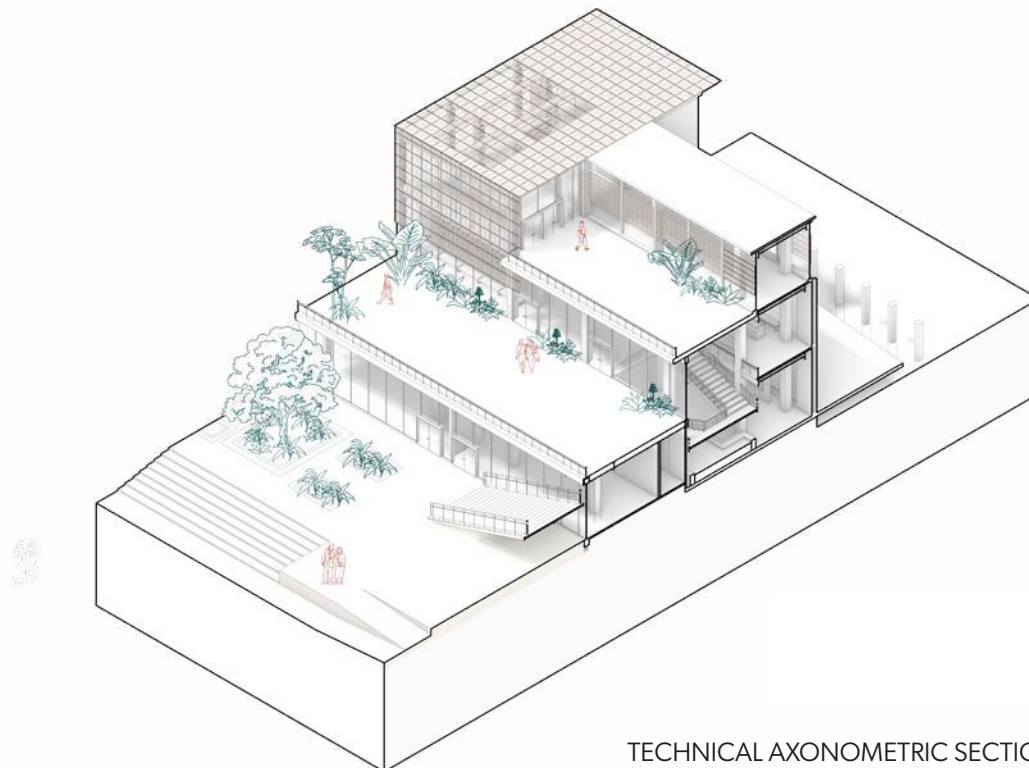




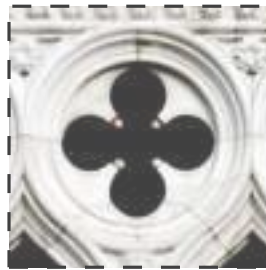
1. GREEN ROOF WITH PARAPAT



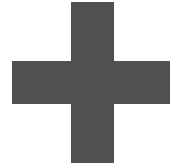
2. FIRST FLOOR FOUNDATION DETAIL



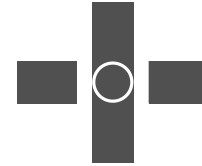
TECHNICAL AXONOMETRIC SECTION



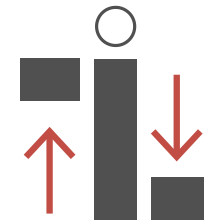
0. SOURCE



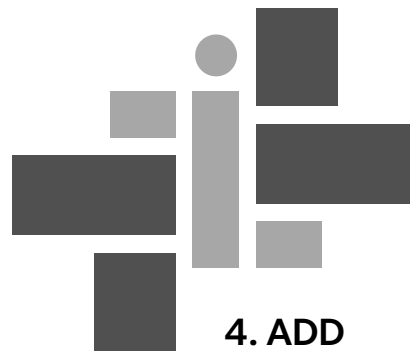
1. SIMPLIFY



2. DIVIDE



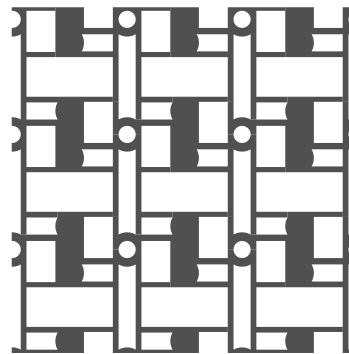
3. TRANSLATE



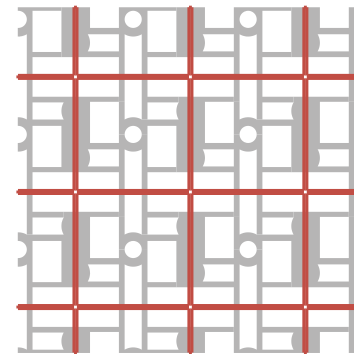
4. ADD

Facade: Abstracting Venetian Gothic

By breaking down the Doge flower cross into its essential elements and integrating them with a layered copper grid, the facade harmonizes with modern society and current architectural languages. This approach not only respects the building's historical values and artistic significance but also strives to maintain a delicate balance between the past and present. The design unfolds as a testament to the building's rich history while contributing to its evolving narrative in a contemporary context.



5. REPEAT



6. OVERLAY



GALLERY 3 (UPPER LEVEL) SKY-LIT WITH ROOF-PATTERNED FACADE



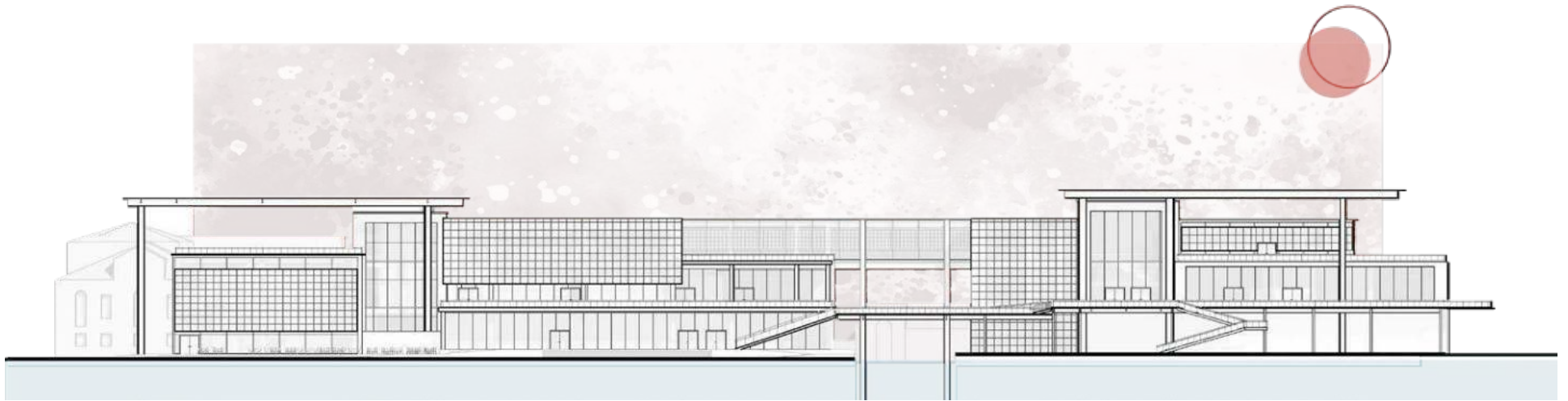
GALLERY 3 (UPPER LEVEL) WITH WRAPPED FACADE



BRIDGE TO GALLERY 4 (MAJOR WORKS)



GALLERY 4 WITH WRAPPED FACADE



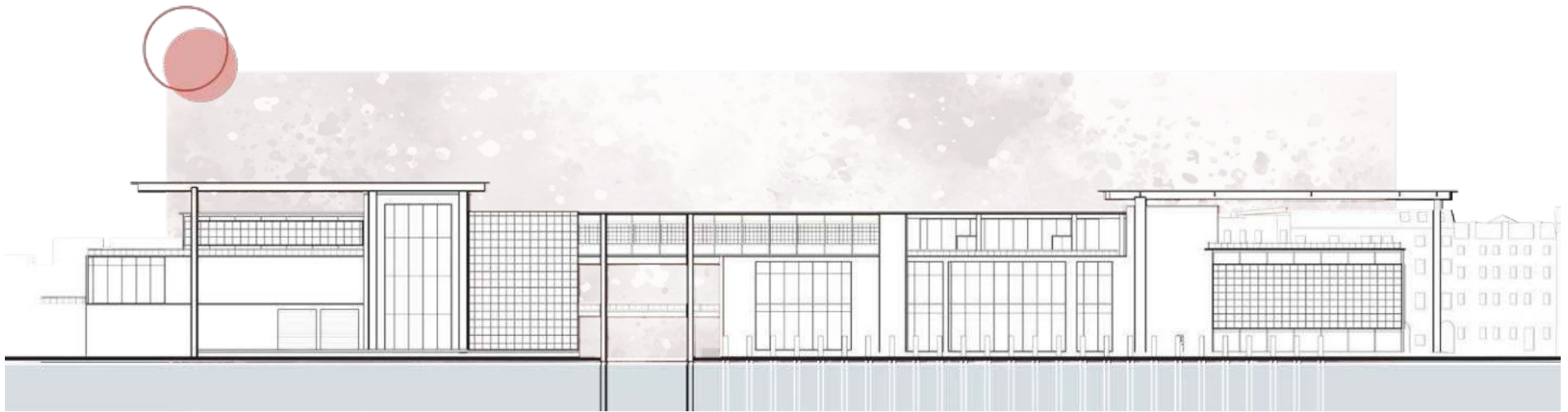
SOUTH ELEVATION



PORTEGO OVERVIEW FROM SECOND FLOOR



UPPER PORTEGO - OPEN COURTYARD (3RD FLOOR)



NORTH ELEVATION



ENTRANCE TO GALLERY 3 (UPPER LEVEL)



GALLERY 4 WITH VIEW TO COURTYARD

02 SHIN-CHIN CENTER

embracing renewal and regeneration

typology: ecology research center & museum

location: brooklyn, ny, usa

may 2023 - semester 6 [prof. viktor diskina]

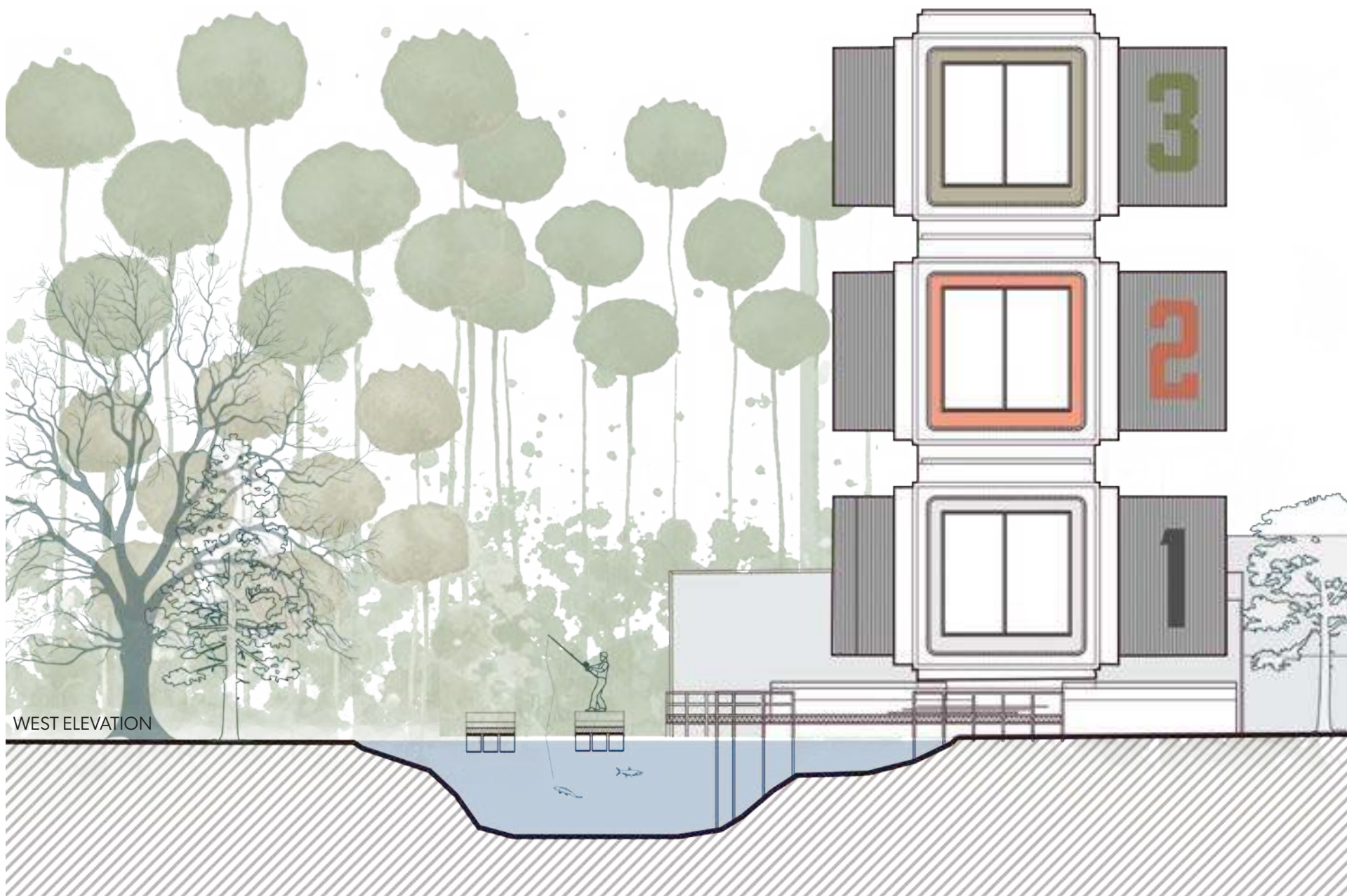
objectives: the project seeks to dynamically respond to natural changes. It aspires to enhance social and physical connections across the canal, breathe life into the industrial area, establish community hubs, and house an ecology research center dedicated to monitoring and studying the evolving dynamics of the Gowanus Canal, including sea level rise.

Deriving from the original Japanese definition of metabolism, The Shin-Chin Center takes from the Buddhist concept of impermanence, and gives notions to the idea of renewal, replacement, and regeneration, resulting in an ecology center that respects the natural processes of nature and human society.

workflow: Rhino - Hand-Sketch - Procreate - Illustrator - Enscape - Photoshop - InDesign

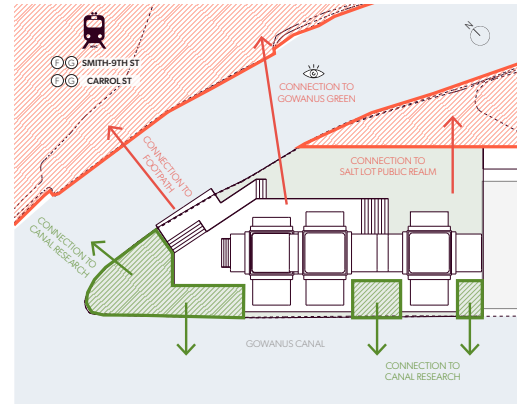


CONCEPTUAL COLLAGE

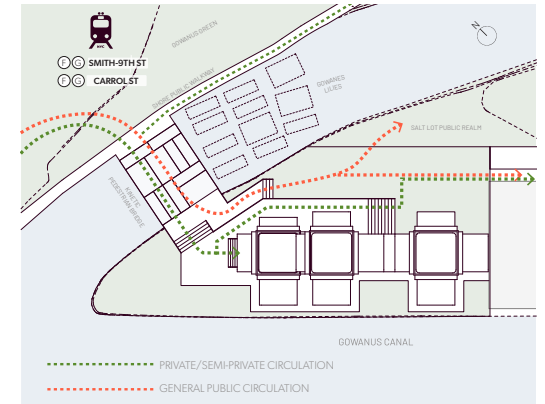


WEST ELEVATION

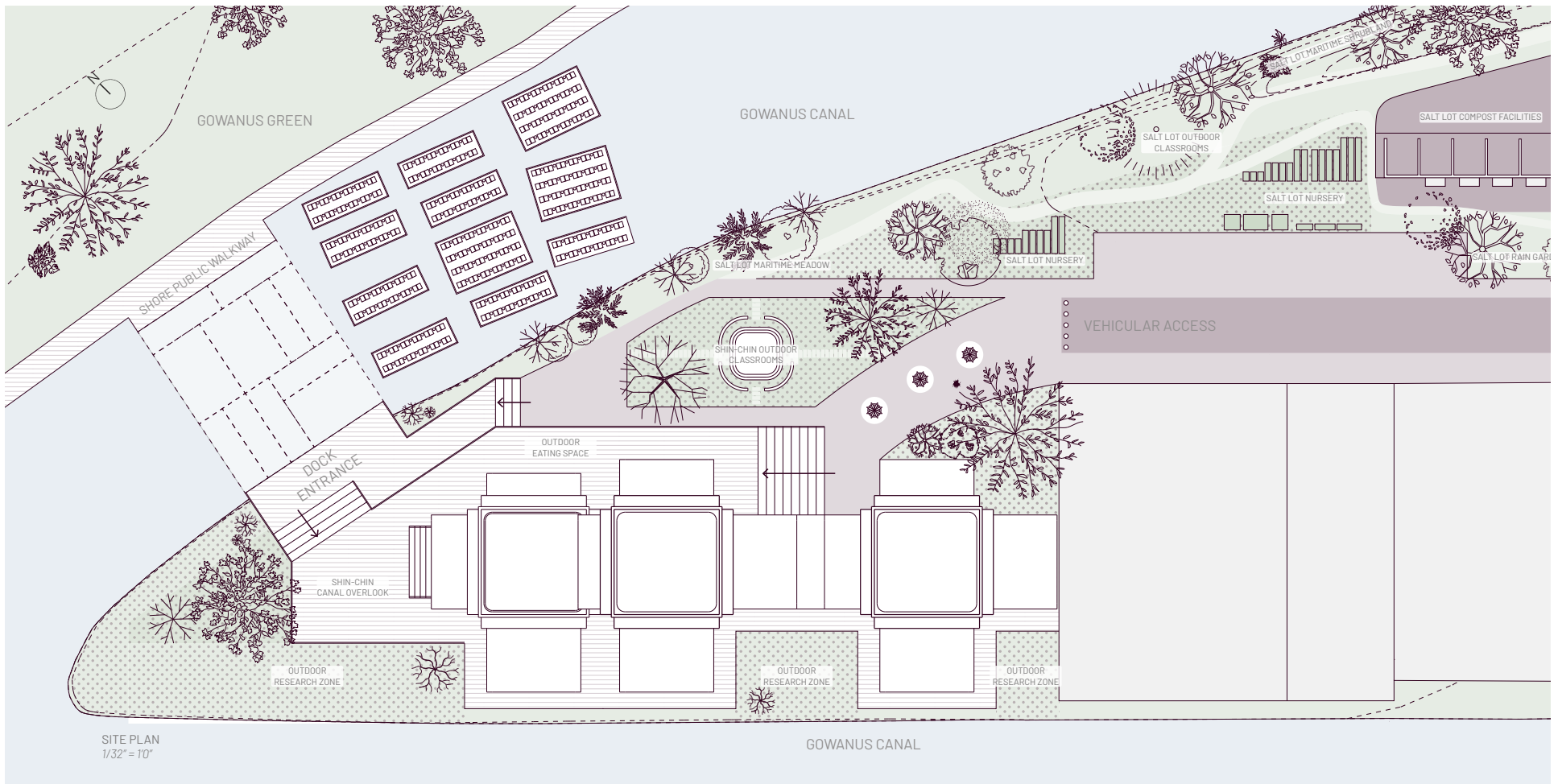
GOWANUS ANALYSIS: This project aimed to highlight connections to existing programs and circulation in and around the site by keeping orientation and building placement intentional. It also looked to connect to different programs in ways that were in line with the project's concept of metabolism and change, by designing modular and kinetic connection bridges across the canal to the rezoned Gowanus Green..

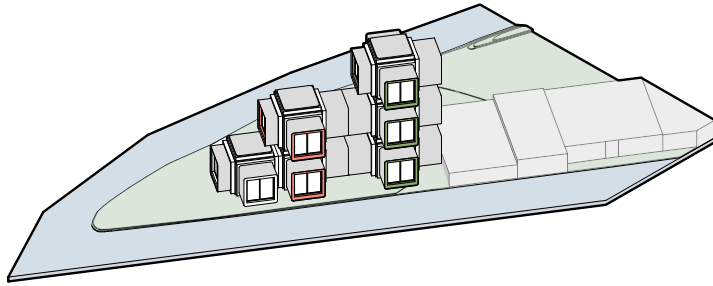


CONTEXT : CONNECTING GOWANUS



SITE CIRCULATION : ACTIVATING THE SITE

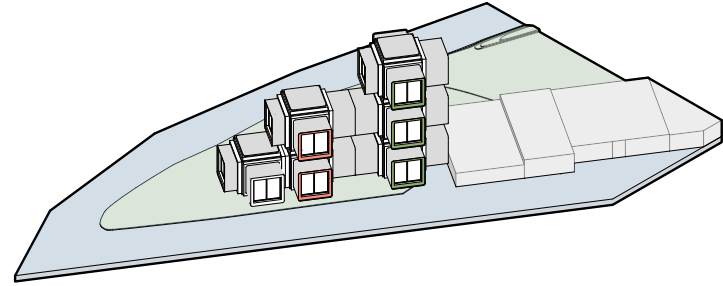




2020s

high tide: 10-in SLR

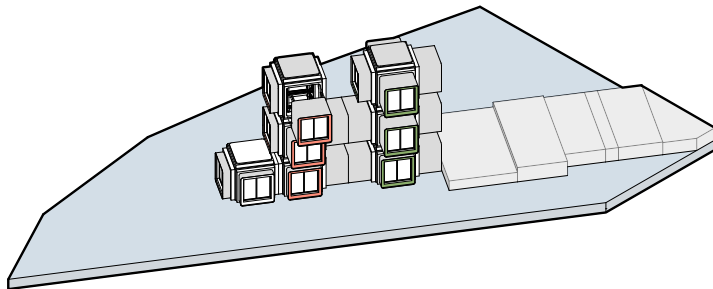
CONFIGURATION 1*



2050s

high tide: 30-in SLR

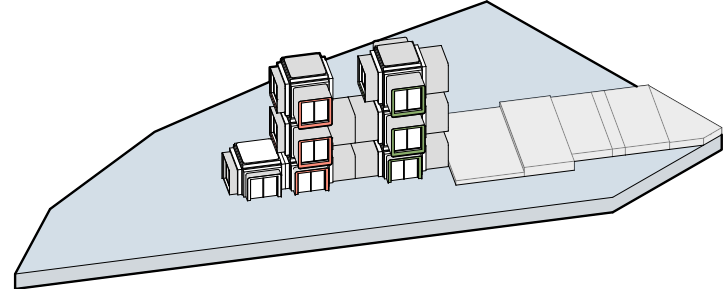
CONFIGURATION 1*



2080s

high tide: 58-in SLR

CONFIGURATION 2*



2100s

high tide: 75-in SLR

CONFIGURATION 2*

TIME APPROACH : LIVING BUILDING:

Over the next 100 years, the water's edge will experience drastic changes possibly altering the everyday lives of the Gowanus community. For this reason, the building is designed to change and adapt to the possible conditions of the future. Above shows just two of the many possible configurations.

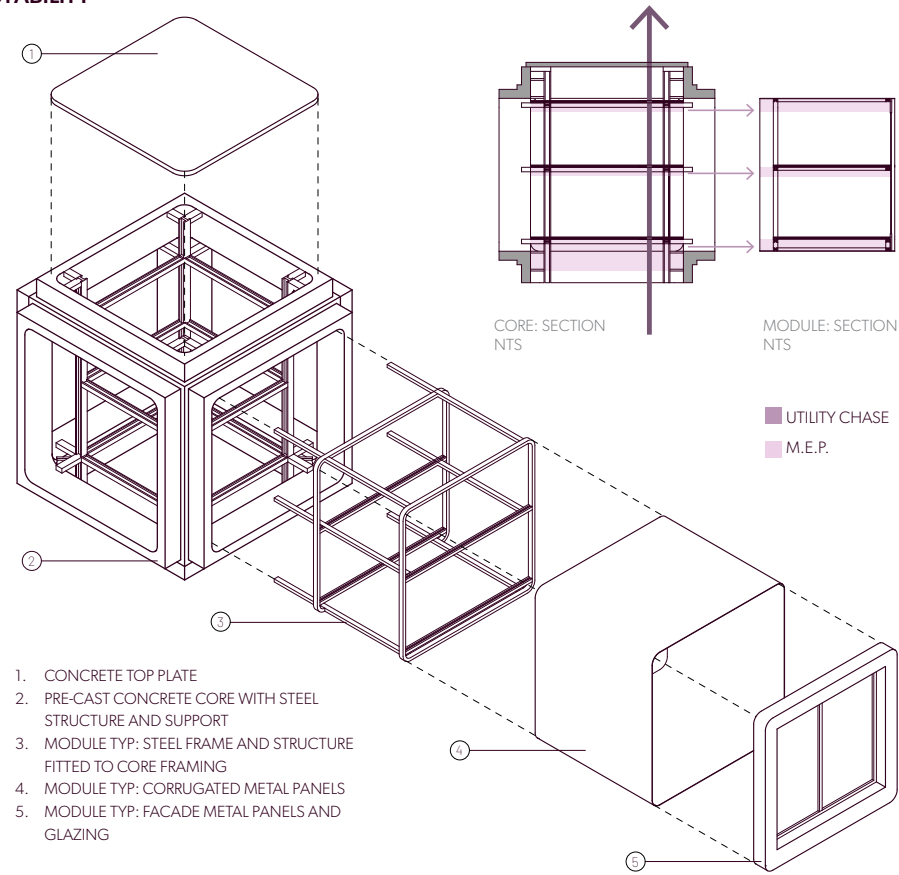
Courtesy of NYC Department of City Planning





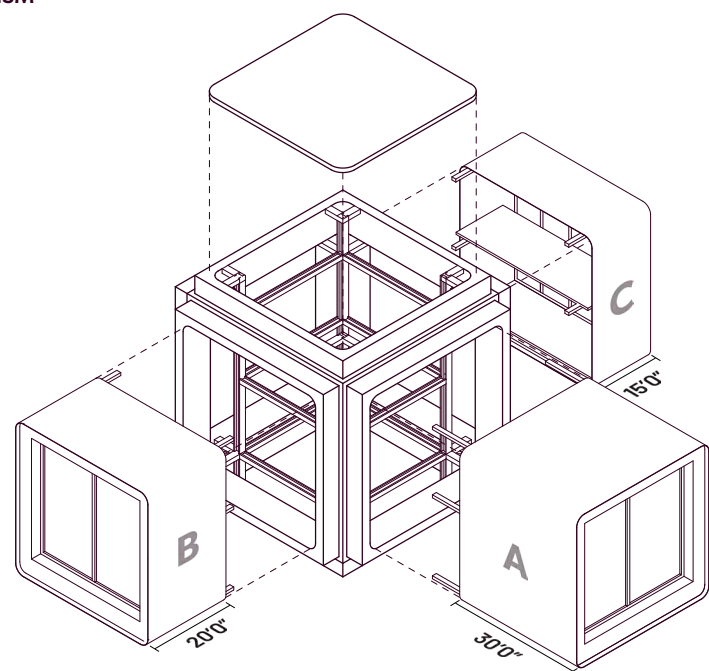
ASSEMBLY // TRUNKS

STABILITY



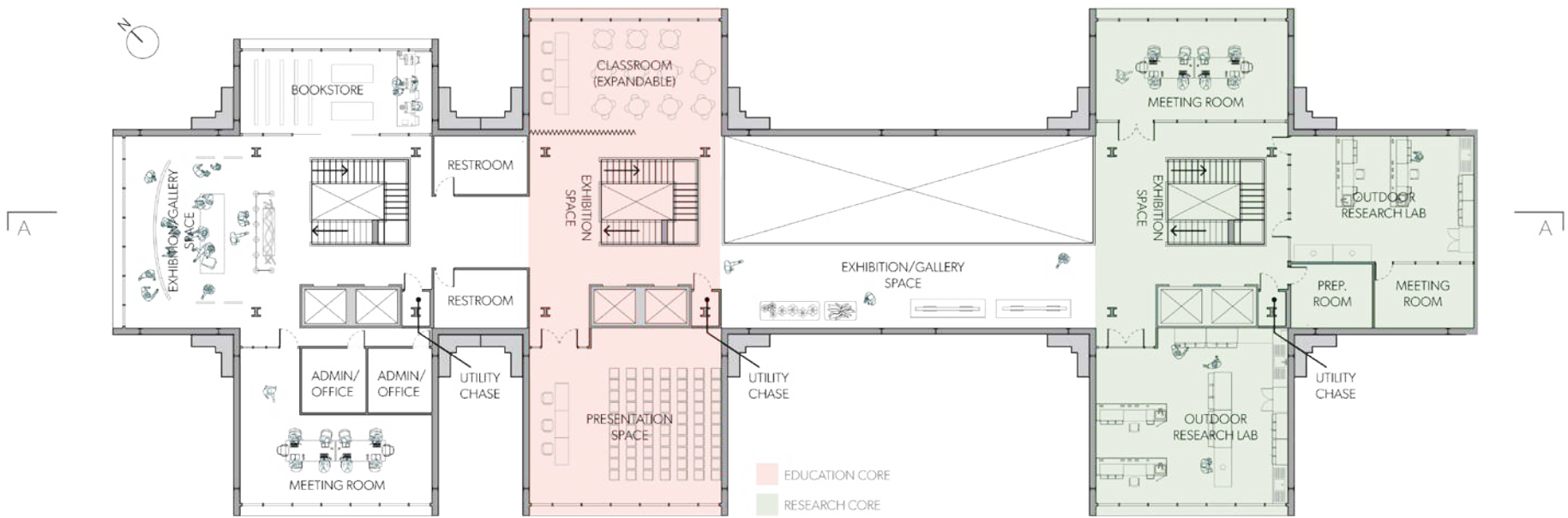
ASSEMBLY // LEAVES

METABOLISM

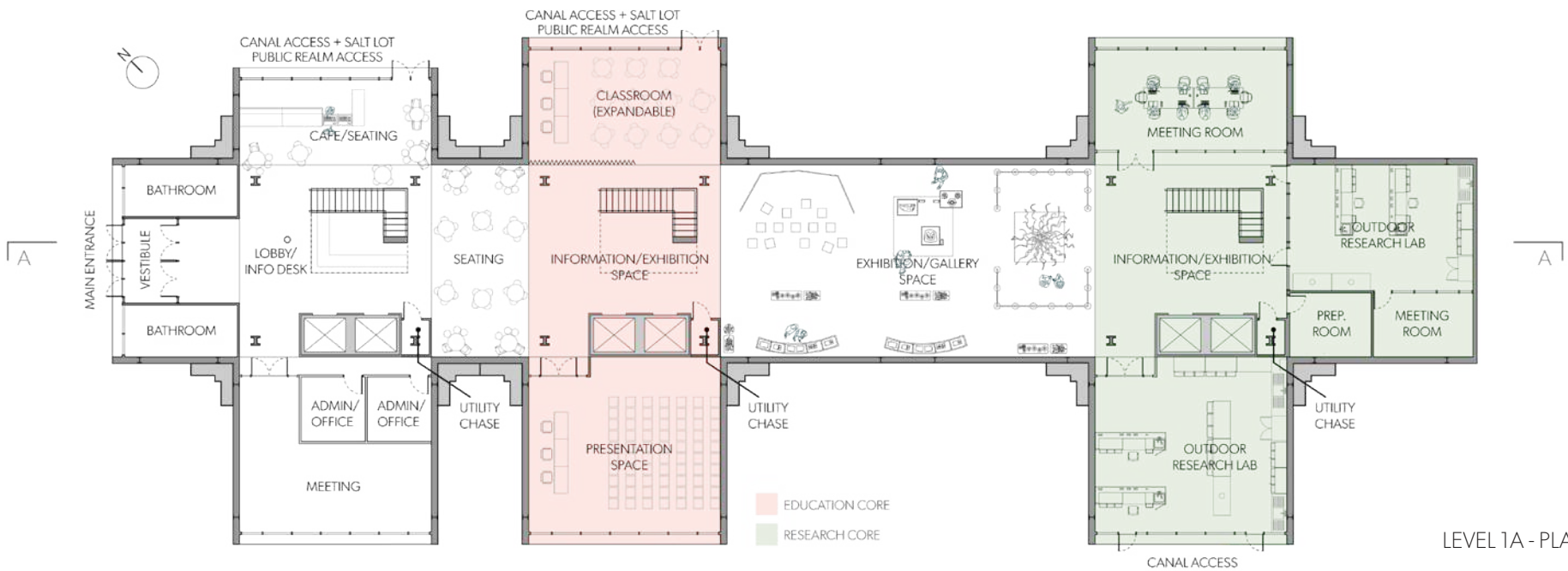


3 MODULE TYPES

- A // 30'-0" X 30'-0"
LABORATORIES, LARGE MEETING, CLASSROOMS
- B // 20'-0" X 30'-0"
CAFE, SMALL MEETING, SMALL CLASSROOM, ADMIN.
- C // 15'-0" X 30'-0"
SMALL DISPLAYS, GALLERIES, SEATING, PRIVATE MEETING

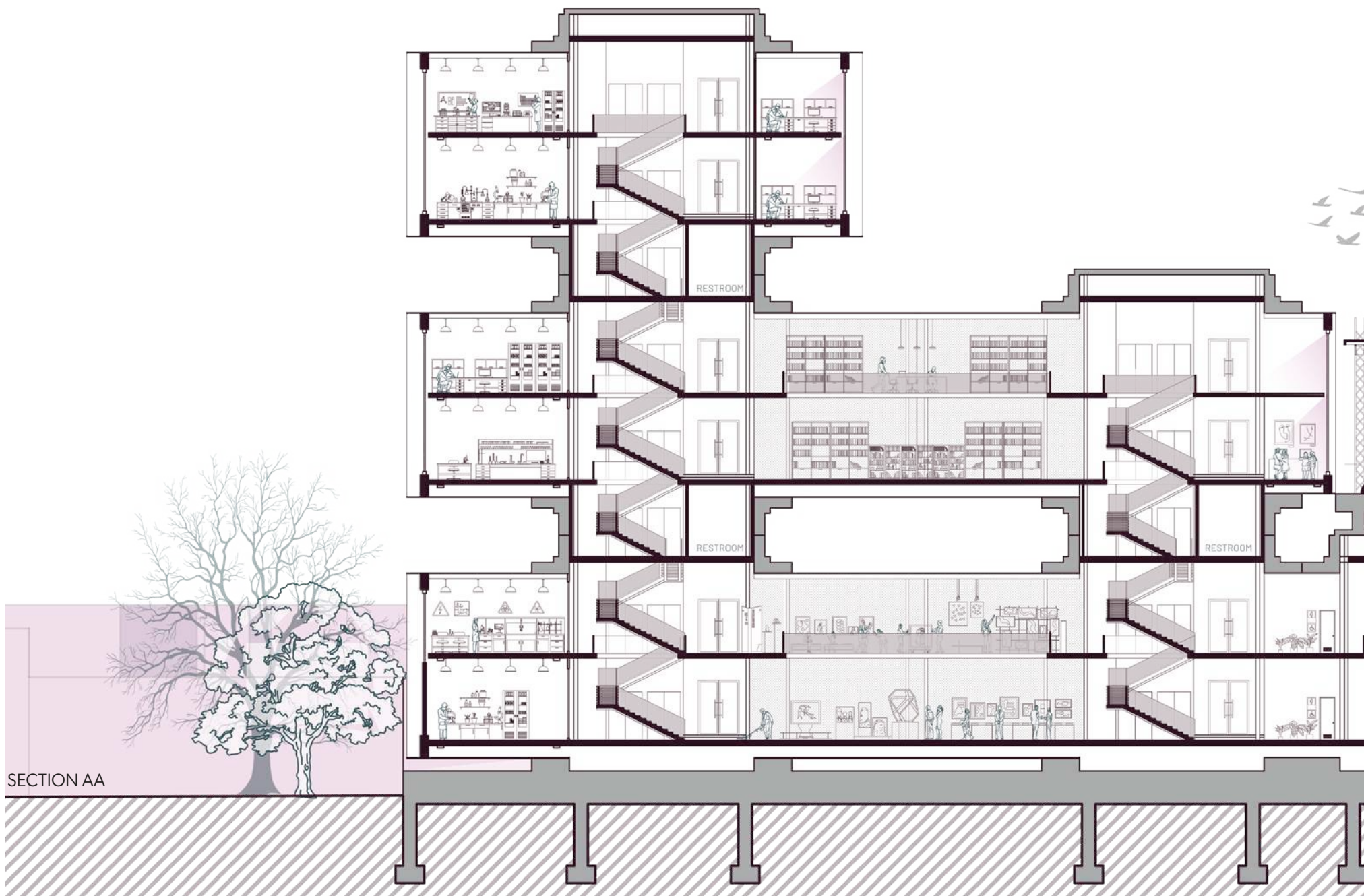


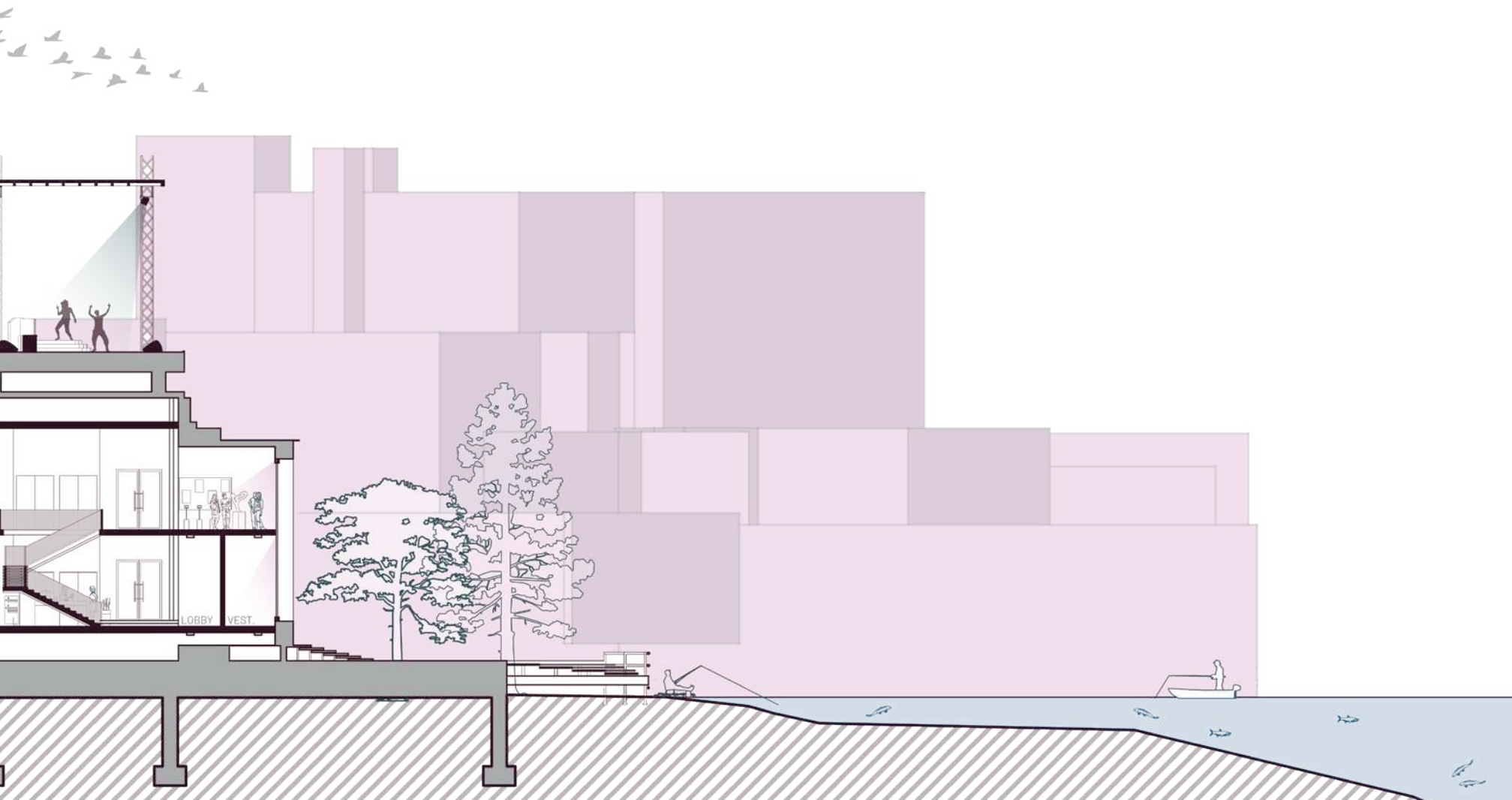
LEVEL 1B - PLAN



LEVEL 1A - PLAN

SECTION AA





03 HYDRO - HOMES

housing: *accommodating change*

typology: community housing

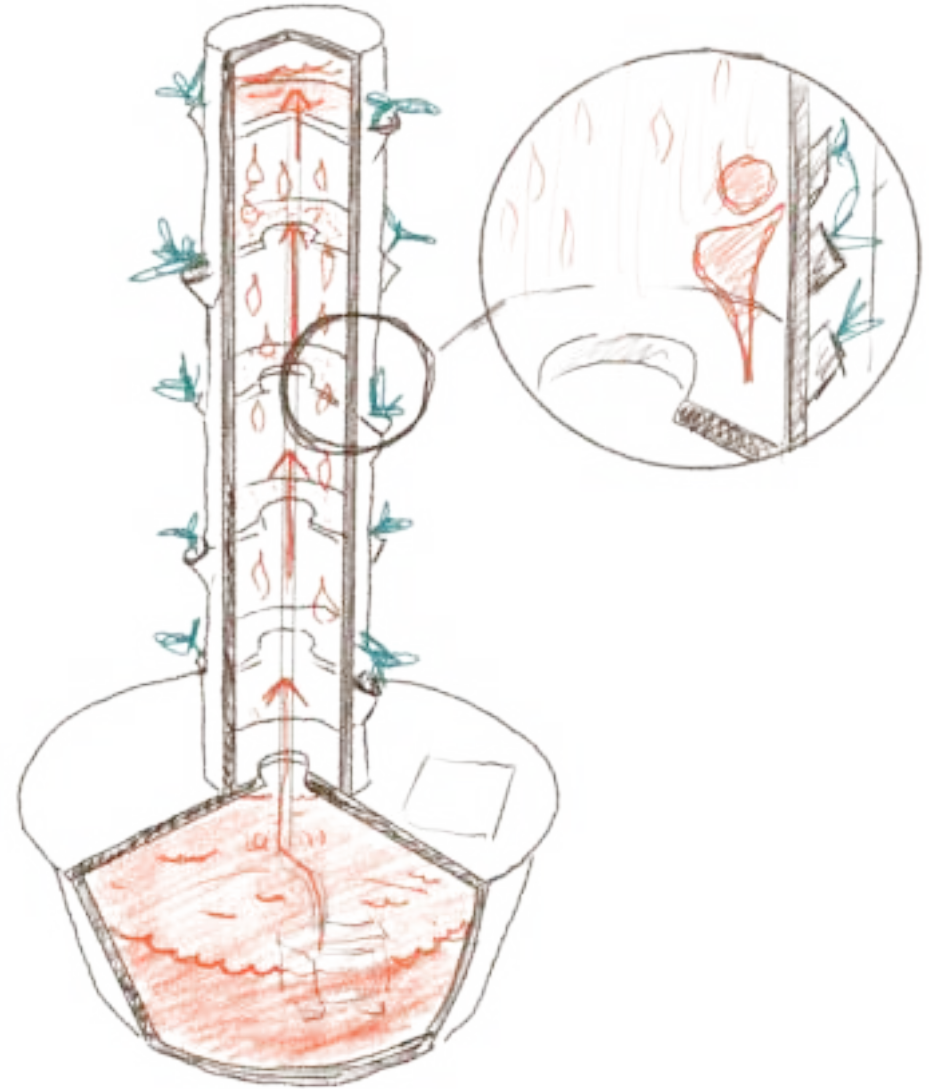
location: newark, nj, usa

november 2022 - semester 5 [prof. vera parlac]

objectives: this project aims to tackle the pressing issues of food quality and availability, by proposes a novel housing community solution, with a “triple 90” concept goal. By integrating vertical hydroponic technology, Hydro-Homes aims to achieve a 90% increase in food production within 90% less space, utilizing 90% less water, and delivering a higher yield of nutrient-dense products.

Through an exploration of various hydroponic systems, the project conceptualized a scaled hydroponic section model, envisioning Hydro-Homes as self-sustaining homesteads that empower residents to generate income and contribute to the community with an on-site farmers market, reducing the carbon and water footprint associated with outsourcing produce.

workflow: Sketch - Rhino - Procreate - Illustrator - Enscape - Photoshop - InDesign





1 / INNER CORE

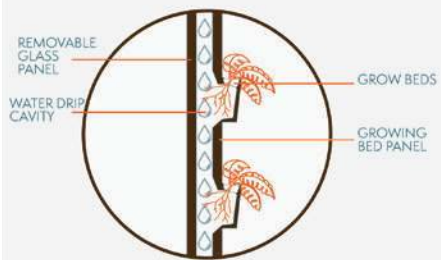
USING THE INTERIOR HYDROPONIC CORE WALLS AS FARM SPACE



— CONCEPT PLAN —



— CONCEPT SECTION —

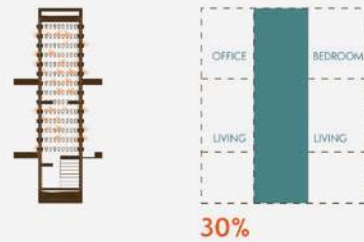


2 / OUTER CORE

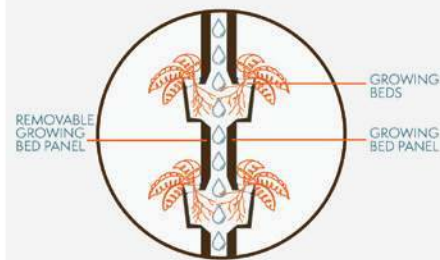
USING THE EXTERIOR HYDROPONIC CORE WALLS AS FARM SPACE



— CONCEPT PLAN —

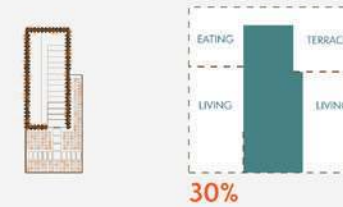


— CONCEPT SECTION —



3 / POND

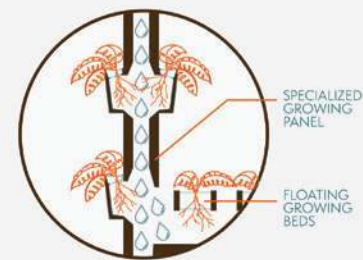
USING A WATER DESIGN FEATURE AS FARM SPACE



— CONCEPT PLAN —

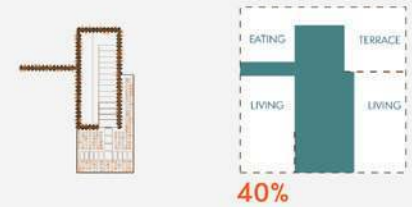


— CONCEPT SECTION —



4 / ADDITIONS

USING PANEL ADDITIONS AS ROOM DIVIDERS AND FARM SPACE



— CONCEPT PLAN —



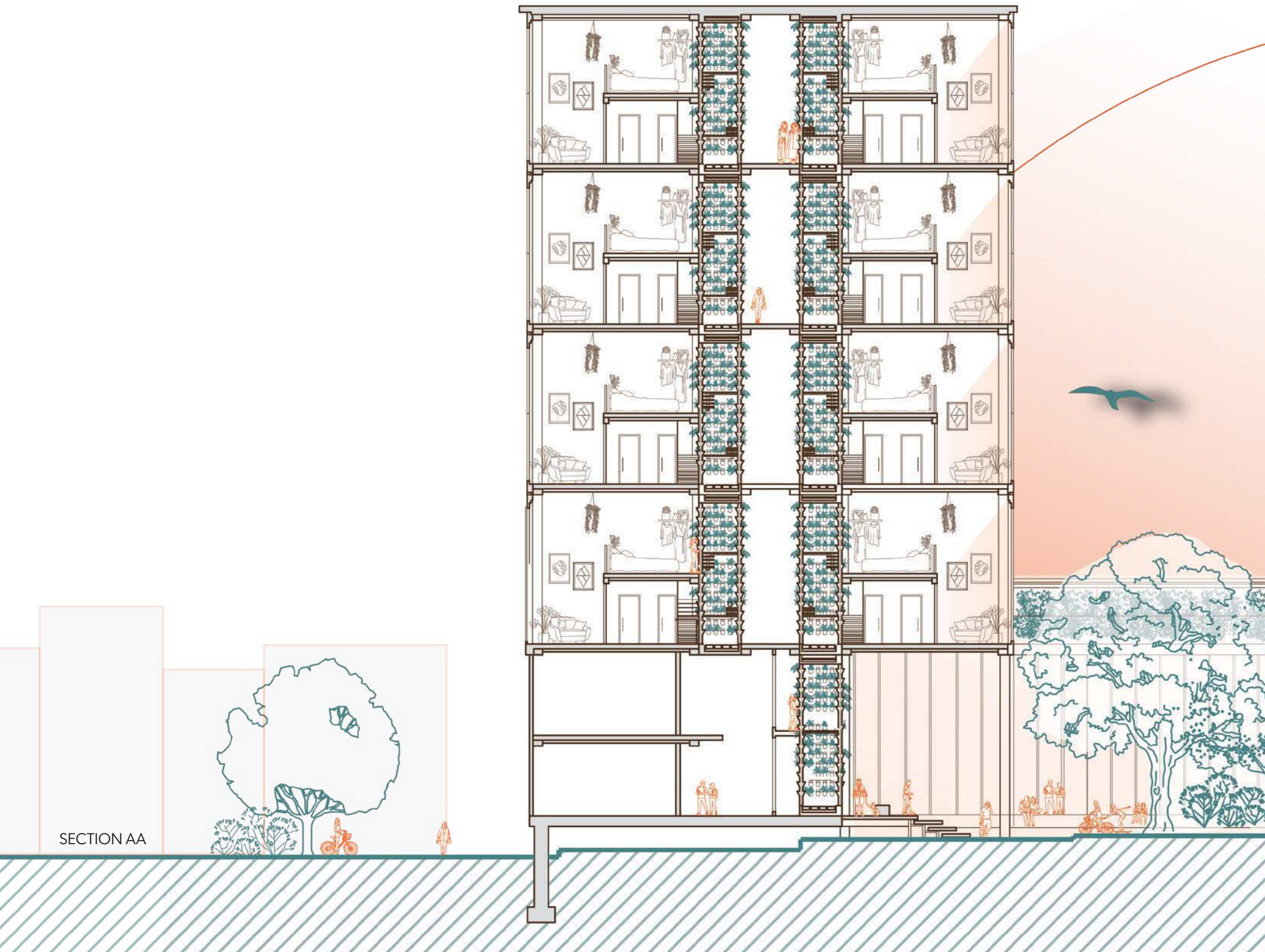
— CONCEPT SECTION —

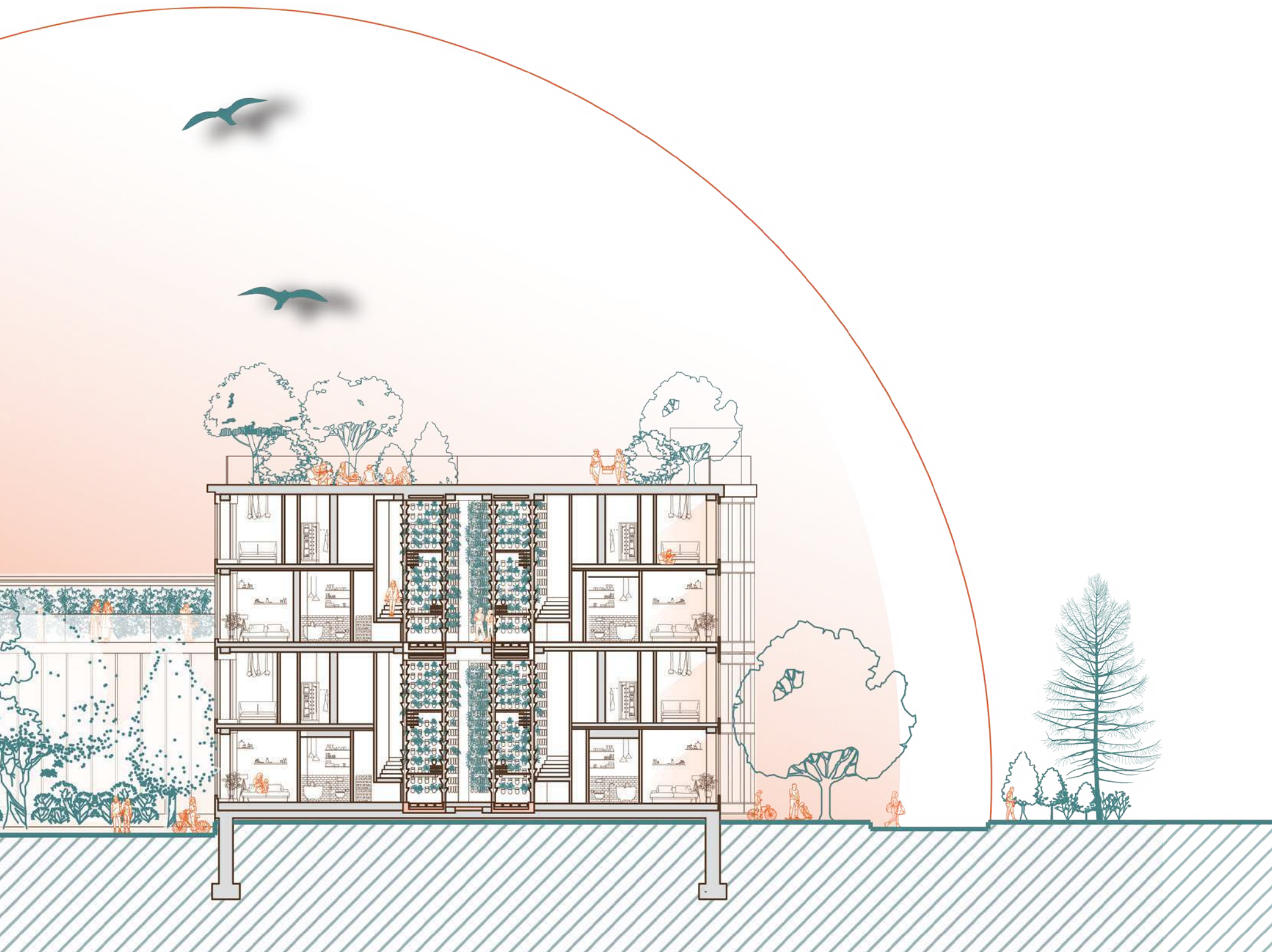


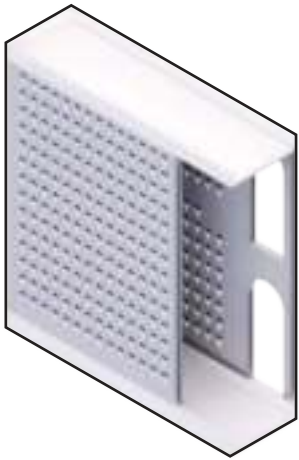
DESIGNING THE FARMING MODULE: Conceptualizing Scale and Function

Drawing inspiration from a conceptualized section of a home hydroponic system, this module aims to address expansion and flexibility concerns by maximizing the harvest area through incremental additions over time. The design process involved a comprehensive analysis of existing vertical farming systems, informing rational decisions regarding the vertical farming scheme's scalability. Conclusively, the project demonstrates that the scale of production capacity is feasible, particularly given the low maintenance of vertical hydroponic systems. This flexibility allows for strategic placement in relation to housing units and public spaces. With minimal soil requirements and no reliance on sunlight, the system seamlessly integrates into various spaces, transforming mundane areas like corridors and circulation spaces into productive and innovative environments.

SECTION AA

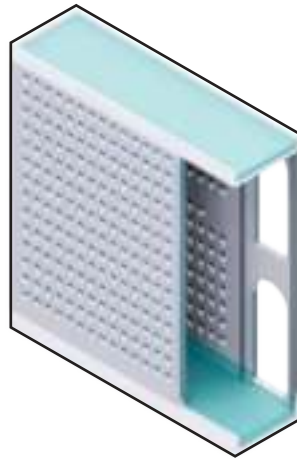






01 THE MODULE

BASINS AND GROWING PANEL WALLS



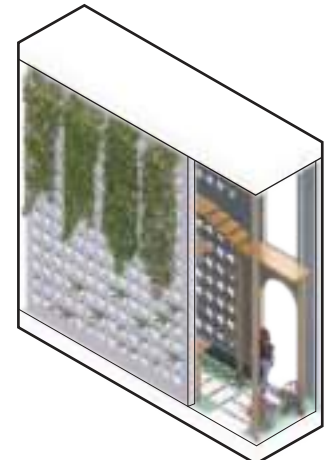
02 HYDRO

WATER PUMP ALLOWS WATER TO
FLOW IN WALL CHANNELS



03 VERTICAL

PLATFORMS & SUPPORT FOR VERTICAL
GARDEN OPTIMIZATION



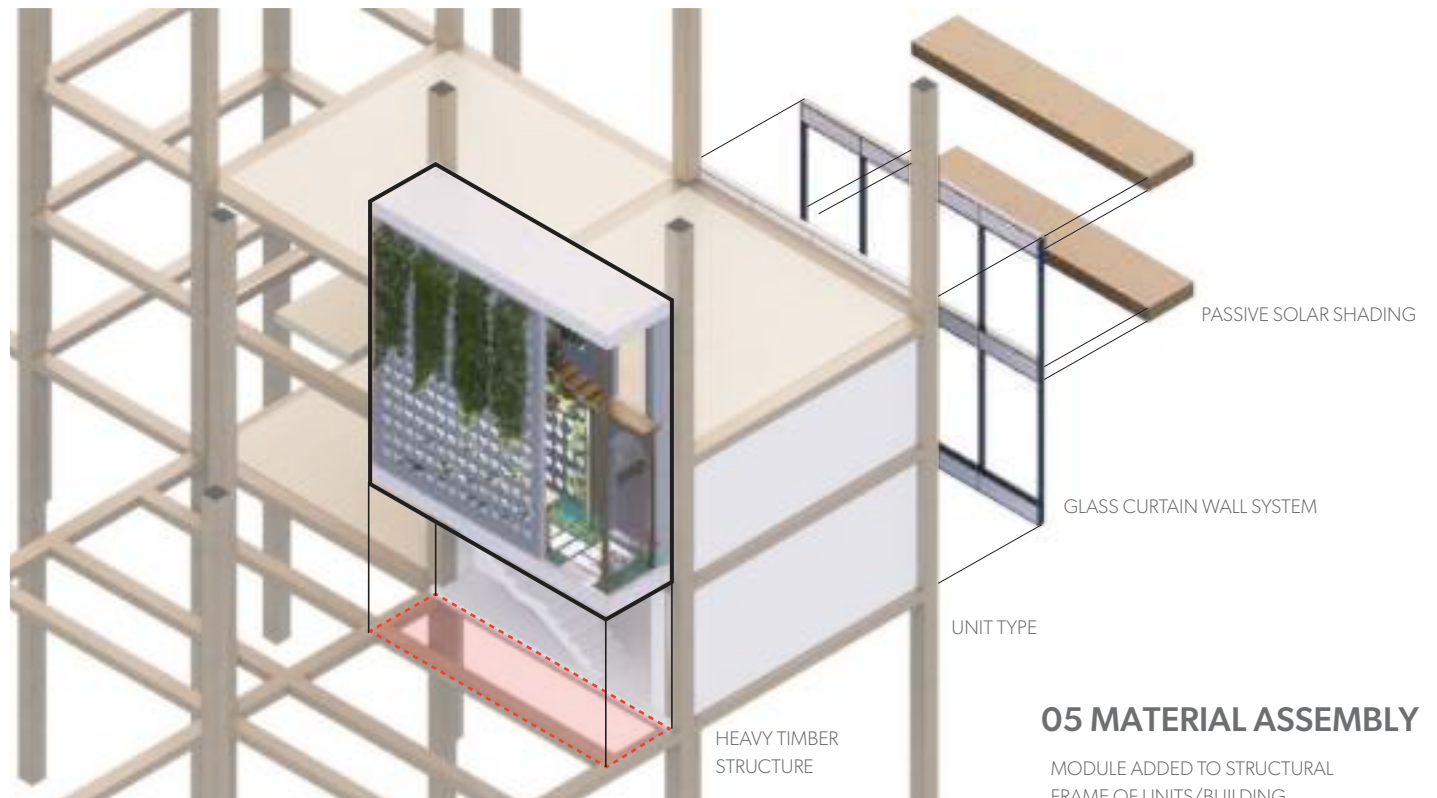
04 MATERIALITY

MATERIAL ADDED FOR LIGHTNESS
& VISUAL APPEAL

THE MODULE : Functionality/Assembly

Through an analysis of various hydroponic systems, the sectional schemes are conceptualized at a greater scale to re-imagine the role hydroponic systems can play in our day-to-day lives.

Developed into a singular module, it is then added to the structural integrity of the building as a whole.

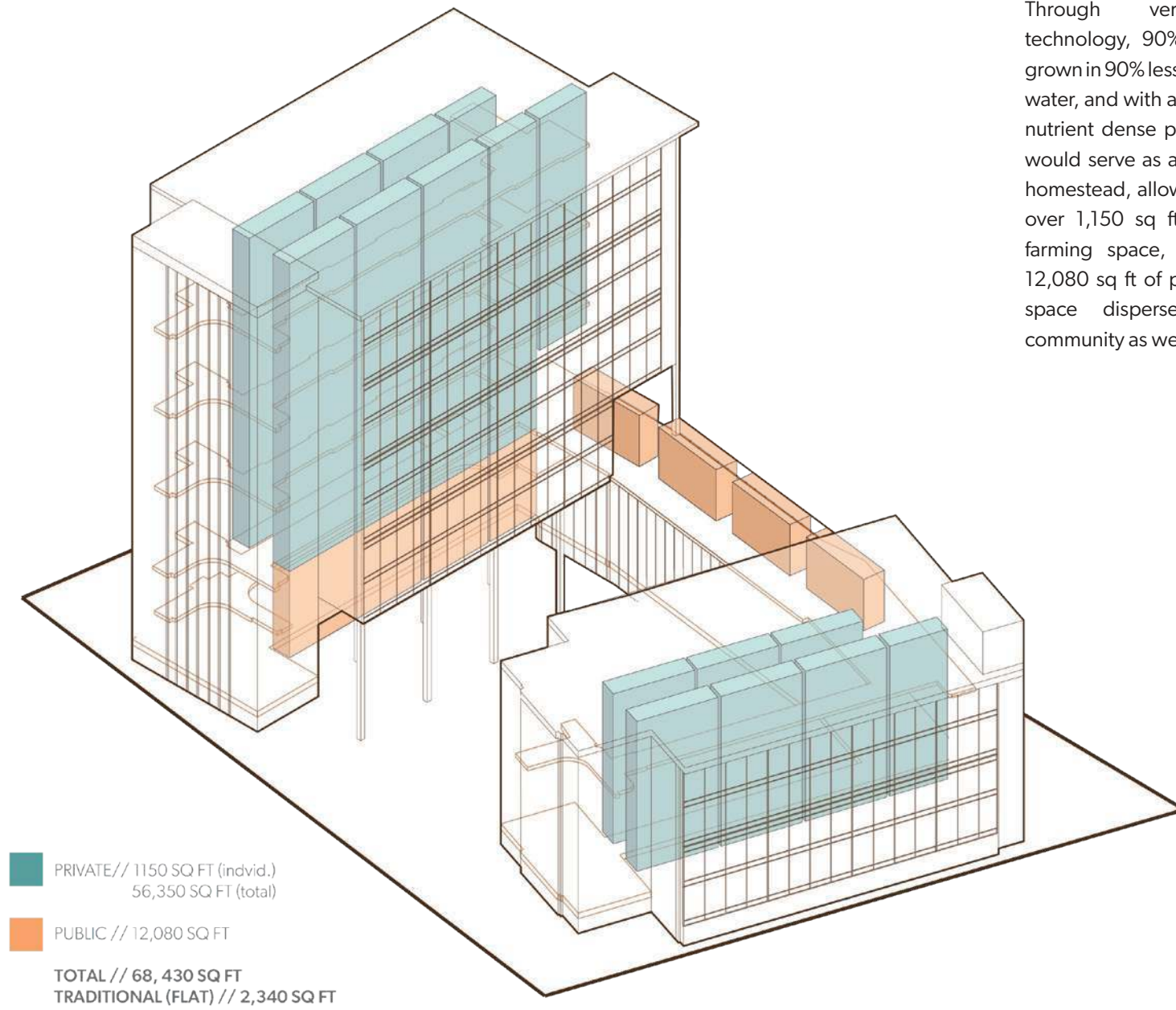


05 MATERIAL ASSEMBLY

MODULE ADDED TO STRUCTURAL
FRAME OF UNITS/BUILDING

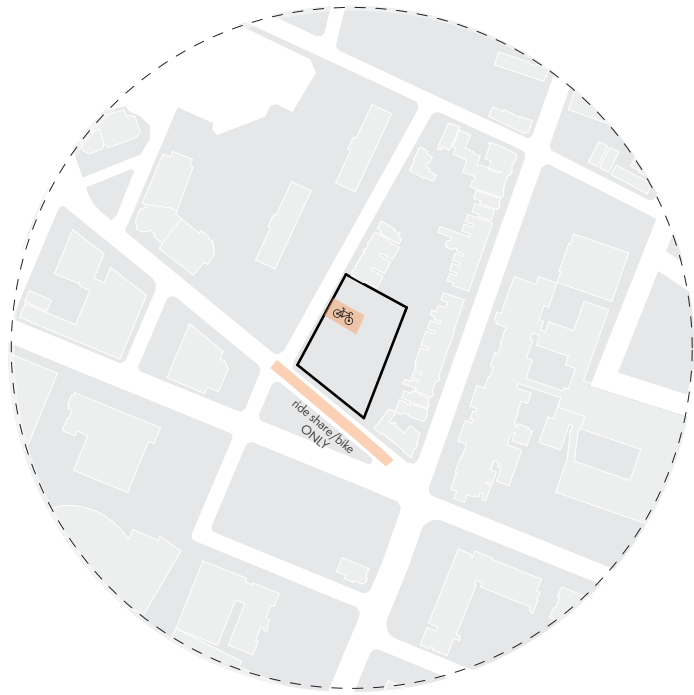
HARVEST: pub/priv projections

Through vertical, hydroponic technology, 90% more food can be grown in 90% less space, using 90% less water, and with a much greater yield of nutrient dense product. Hydro-homes would serve as a live-in "agrihood" or homestead, allowing residents to have over 1,150 sq ft of personal vertical farming space, in addition to over 12,080 sq ft of public vertical farming space dispersed throughout the community as well.

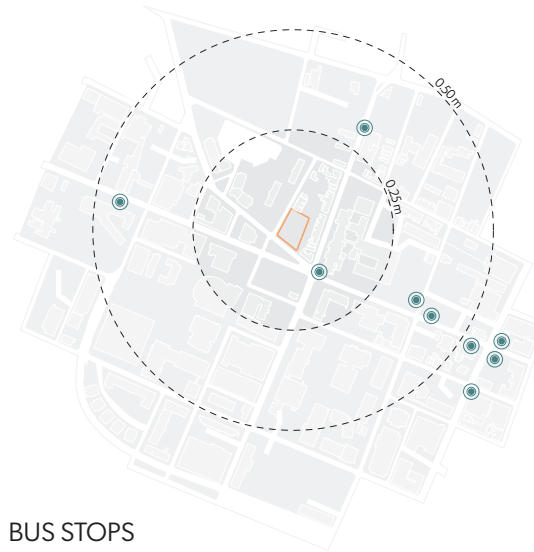




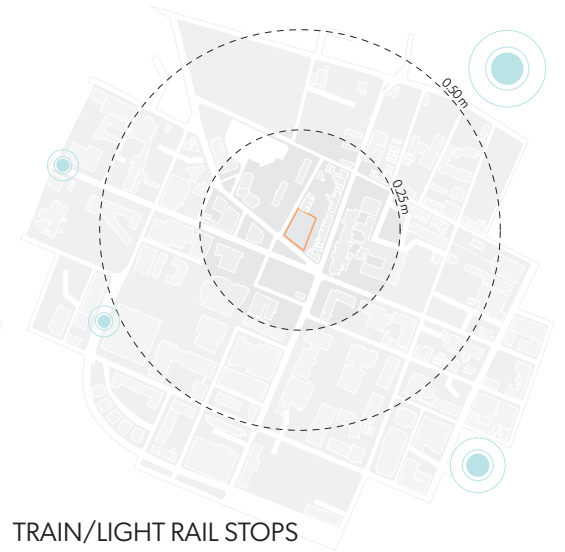
GROUND FLOOR PLAN



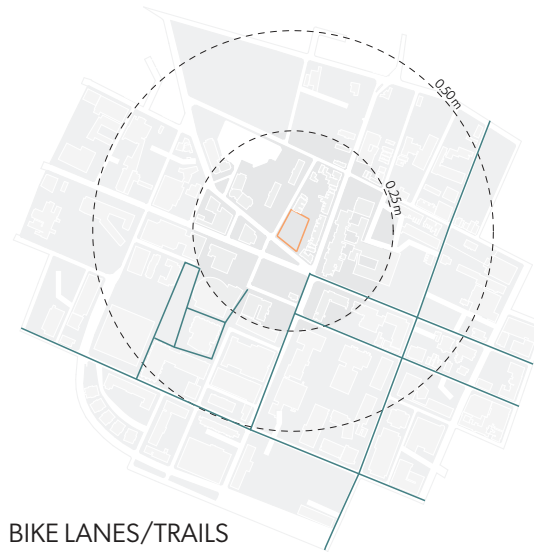
PROPOSED SITE FEATURES



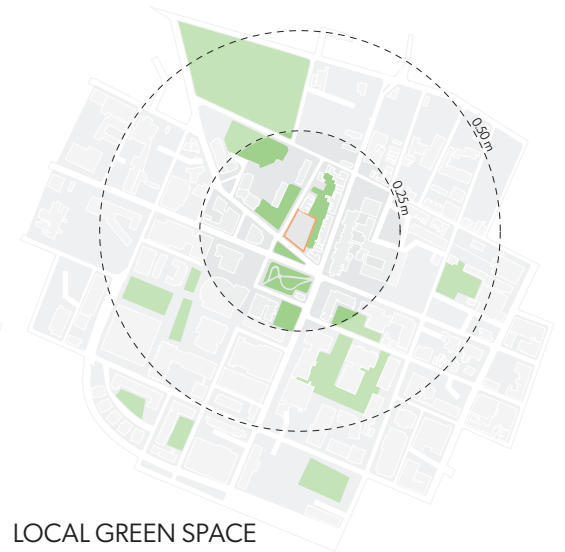
BUS STOPS



TRAIN/LIGHT RAIL STOPS



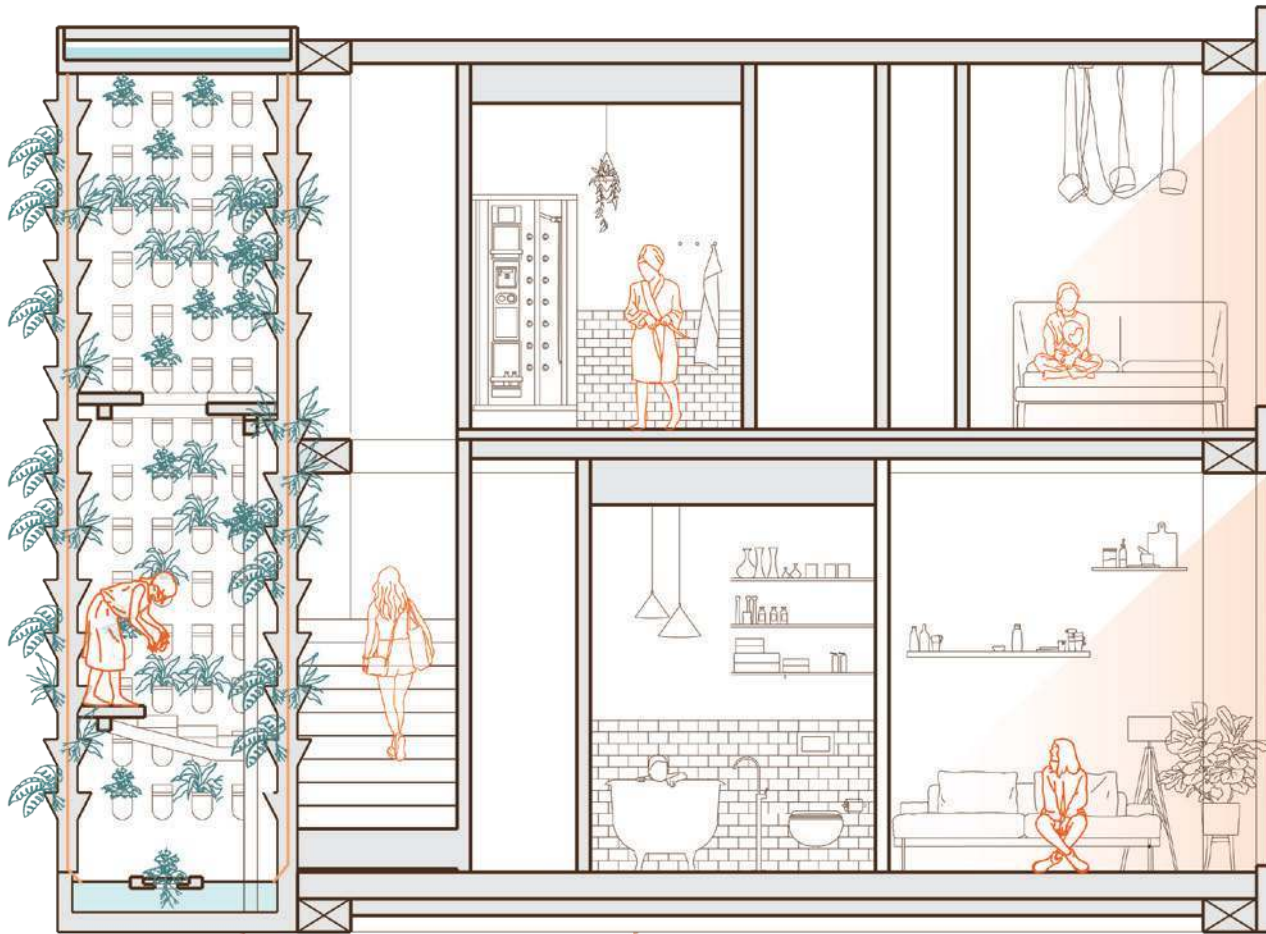
BIKE LANES/TRAILS



LOCAL GREEN SPACE

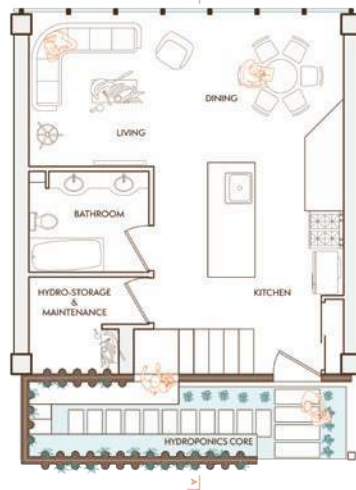
SITE USE

Due to the density of local transportation services and bike routes, it is proposed that the site encourage and incentivise the use of bicycle or public transport, through the implementation of designated bike racks, in place of parking spots, and through the closing of Sussex St.



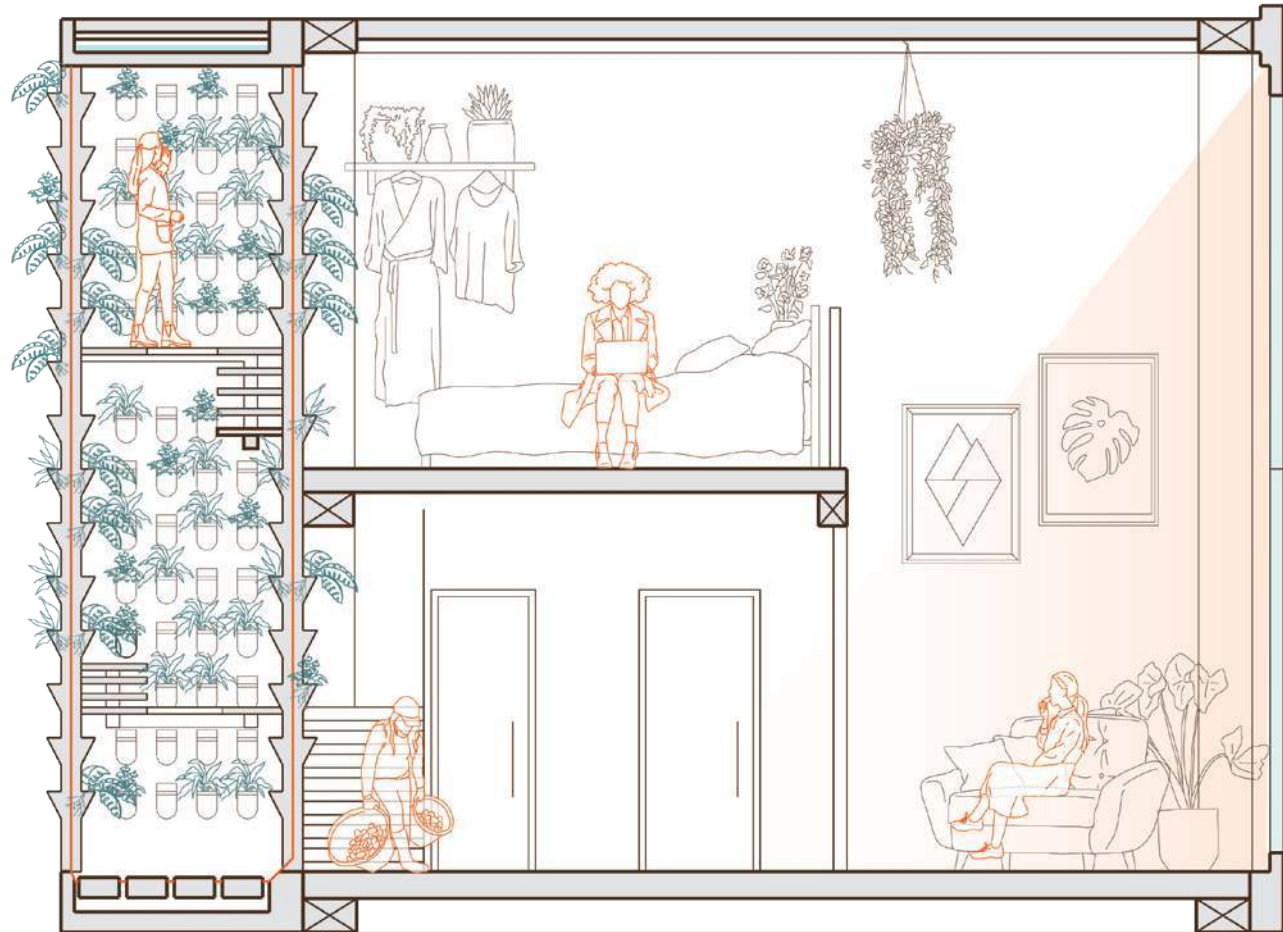
DESIGNING THE UNIT: TYPE A

The module is combined with the circulation and functionality of a family unit, accommodating 2-4 inhabitants.



DESIGNING THE UNIT: TYPE B

The module is combined with the circulation and functionality of a loft unit, accommodating 1-2 inhabitants.



04 LIBERTY CONNECT

Typology: community center

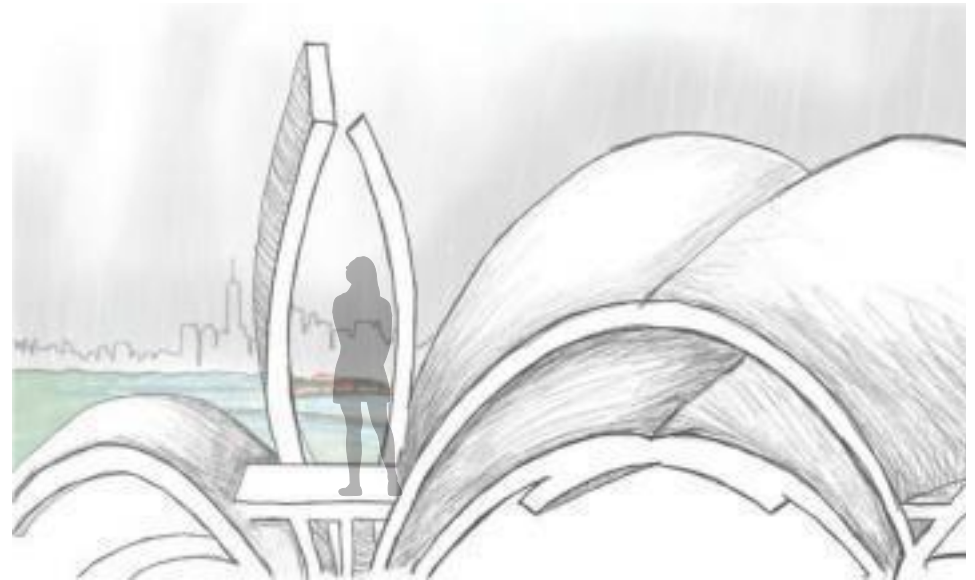
location: jersey city, nj, USA

may 2021 - semester 2 [prof. thomas orgorzalek]

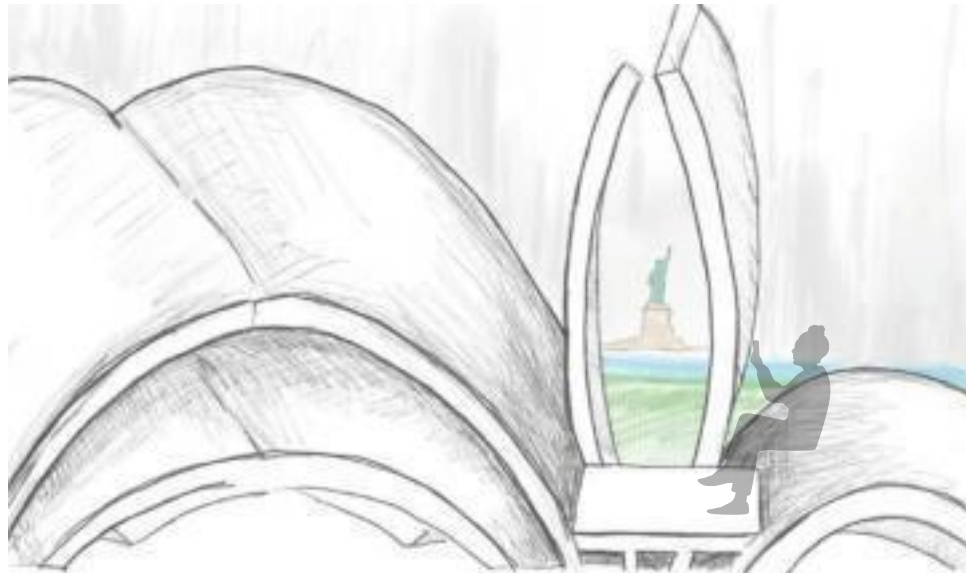
objectives: To design a public park center for visitors at Liberty State Park.

The emphasis was placed on exploring the relationships between people, the environment, architecture, and the formal characteristics of space. Through a more thorough analysis of form/composition and public architectural theory, the aim was to use those ideas to create a space that conceptually addresses a public need and formally establishes an enjoyable environment.

workflow: Rhino - Illustrator - Enscape - Photoshop - InDesign



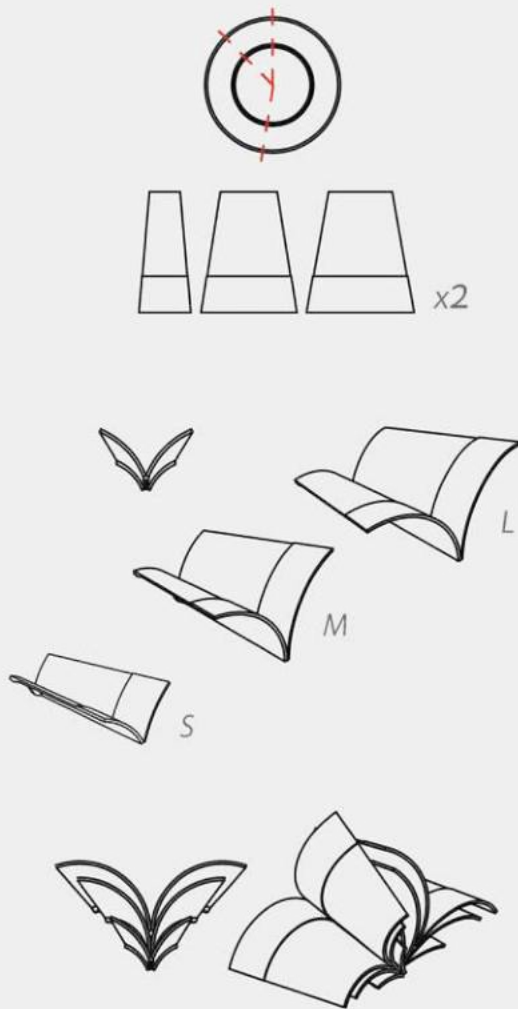
CONCEPT PERSPECTIVE 1 : FINANCIAL DISTRICT VISTA



CONCEPT PERSPECTIVE 2 : FRAMING

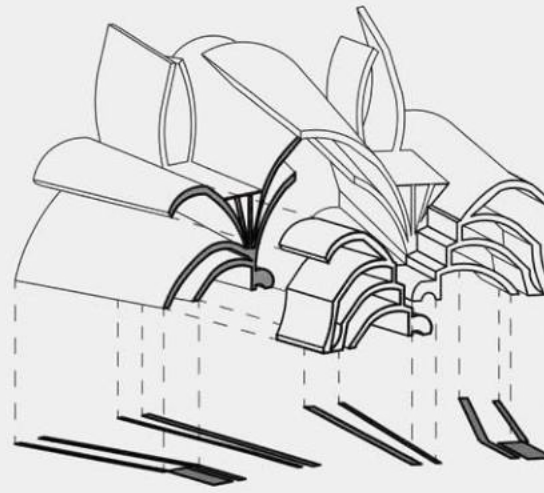
CONCEPTUAL PERSPECTIVE SKETCHES

PLAN STYROFOAM CUP DIVISIONS

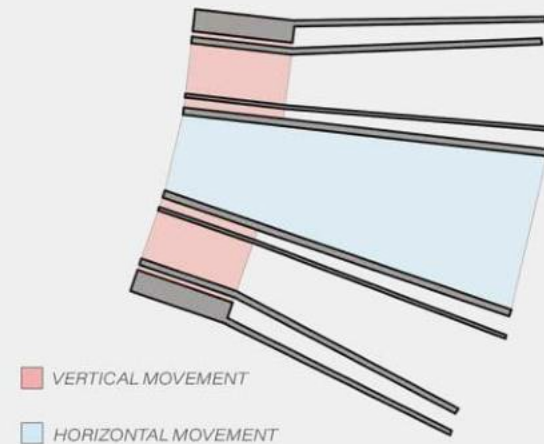


EXPLORING THE BEHAVIOR OF A CUP:

During the beginning stages of design development, there was a lot of experimentation in the configuration of styrofoam cups. One of the more interesting iterations explored the curvature of the cup, and how, in unison, the different pieces could create a complex form.

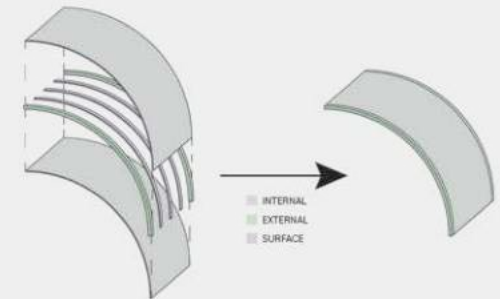
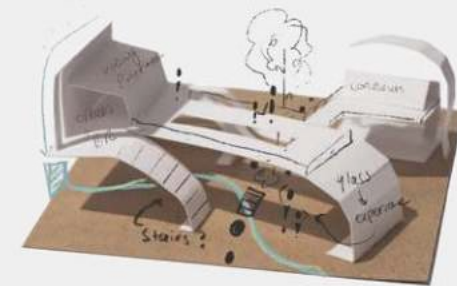
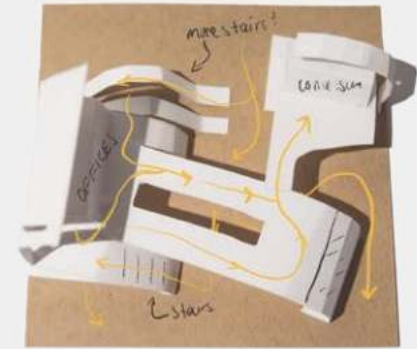


PLAN CIRCULATION DIAGRAM



USING CURVATURE TO CREATE STRUCTURE AND ENCLOSURE:

Ideas gained through the aforementioned exploration helped inform new ideas regarding structure and space division using curves. The spatial occupation of more complex structures was also explored.



SPATIAL EXPERIMENTATION:

Interactive physical modeling explored curves, informing holistic space development and simplifying program division at a relative scale. The structural components of curved forms were also investigated in these iterations.



1. ENTRANCE FROM PARKING LOT

The entrance features a large botanical garden, displaying the emphasis on sustainability present on the site. The entrance also highlights the water collection systems in place by leading the individual towards the two platforms over the bioswale.



2. PERFORMANCE SPACE

This space offers a lot of opportunities for local families and communities as they are all encouraged use the space as they please. Plenty of green space has been left to maximize the community's potential use of the area as well.



3. SUSTAINABILITY INFORMATION CENTER

Following the same path leads the visitor to a sustainability information space, explaining the environmentally considerate features of the structure and gives a reason for its dramatic elevation.



4. CAFE/BAR

The cafe allows visitors and workers to share and connect. Whether one goes to Liberty State Park to walk their dog, on vacation, or to work in an office, this space gives them all a space to eat, drink, and connect. It also features nice views of the park, New York City, the Statue of Liberty, and the Upper Bay.



thank you.