

VERTICAL PUBLICS
Landscape Transformation of Vacant Office Towers

**A Thesis Submitted to the Department of Landscape Architecture,
Harvard University Graduate School of Design**

by


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In Partial Fulfillment of the Requirements for the Degree of

MASTER IN LANDSCAPE ARCHITECTURE

May 2024

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Student



Thesis Advisor

VERTICAL PUBLICS

LANDSCAPE TRANSFORMATION
OF VACANT OFFICE TOWERS

TIANYUAN YI



VERTICAL PUBLICS

LANDSCAPE TRANSFORMATION OF VACANT OFFICE TOWERS

Tianyuan Yi, MLA I 2024
Advised by Min Yeo

Vertical Publics explores the potential for reimagining vacant modernist urban office towers through transformative public space interventions. It challenges the conventional use, access, and ownership by blurring the boundaries between landscape and architecture, public and private, street and building. Set in the speculative future of 2058, this thesis introduces the Urban Arboretum Network (UAN) program and uses the Seagram Building as the first experimental site in New York City. This project vertically expands the streetscape by creating solar voids, programmed vertical surfaces, and an accessible circulation system that threads through the new urban experiences.

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I. WALK THROUGH THE UAN

Embark on an immersive journey through the Urban Arboretum Network (UAN), a pioneering urban intervention that vertically expands the public realm within the iconic Seagram Building. This guided tour offers a firsthand experience of the diverse spaces, programs, and landscapes that compose this transformative project, set in the speculative future of 2058.

From the welcoming entrance that blurs the line between indoor and outdoor spaces to the surreal Wonderland filled with upside-down trees and ever-changing seasonal displays, each scene unveils a unique aspect of the UAN. Discover the botanical library, plant and seed lending programs, planting workshops, and specialized areas like “Under the Shade,” where visitors can explore the intricate relationships between plants, fungi, and the urban environment.

MARCH 21
19:37

MARCH 21
19:37

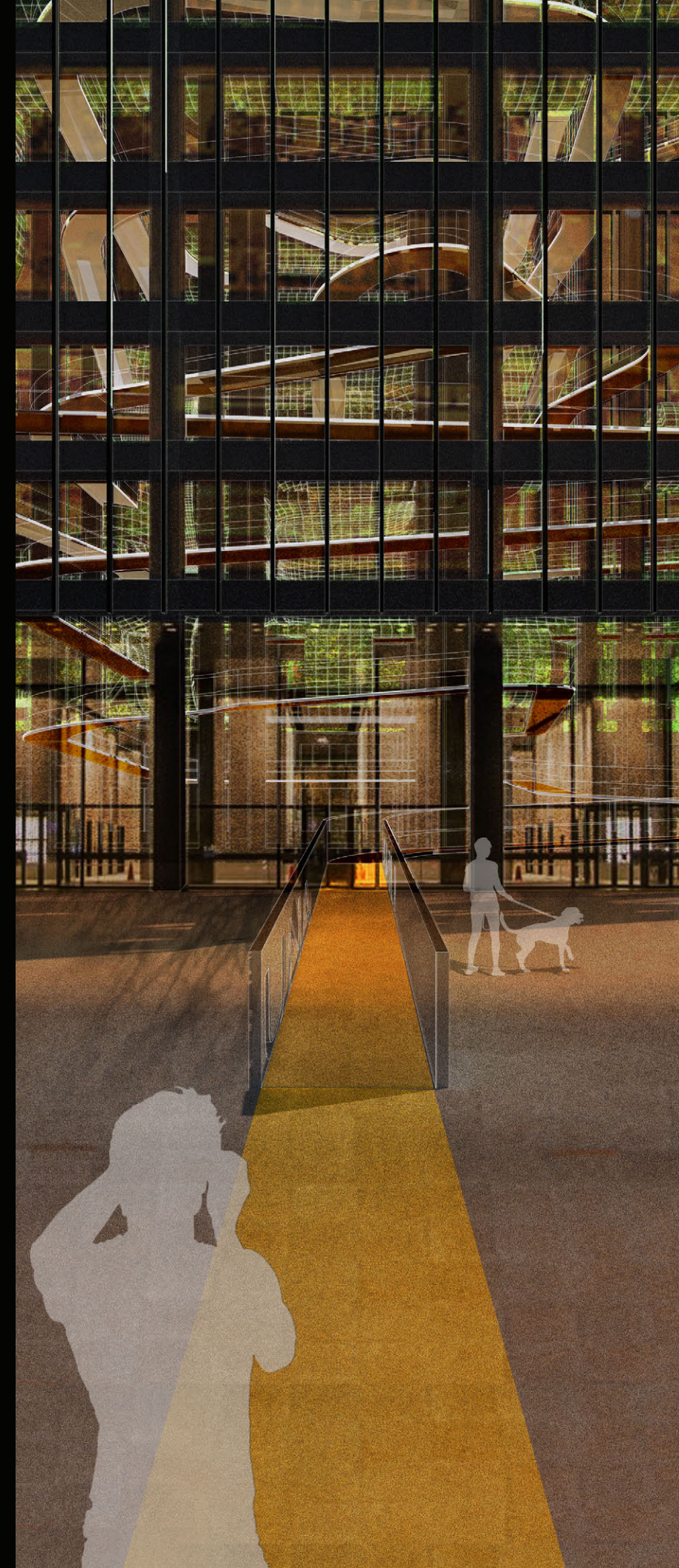


THE ENTRANCE

MARCH 21
19:37

As you approach the Seagram Building, a ramp extends from the interior, inviting you to explore the Urban Arboretum Network (UAN). This transition blurs the line between outdoor and indoor spaces, suggesting an extension of Seagram Plaza.

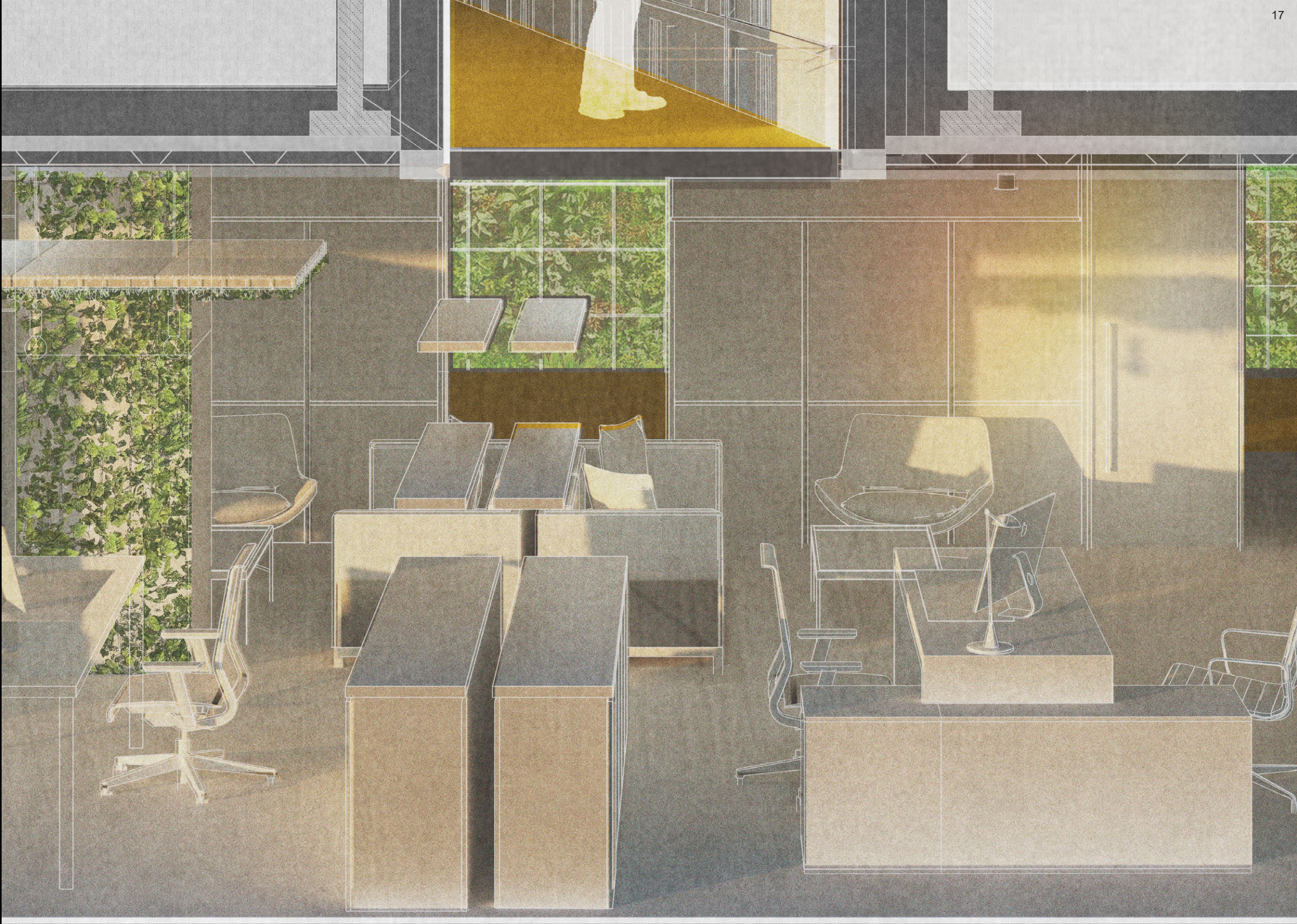
THE ENTRANCE



MARCH 21
08:22



MARCH 21
08:22



OFFICE



MARCH 21
08:22

BOTANICAL LIBRARY

MARCH 21
08:22

The Seagram Building holds office spaces as well as the UAN department. The primary public program is the botanical library, with bookshelves acting as railings along the ramp, separating reading areas and planting workshops on the sides.

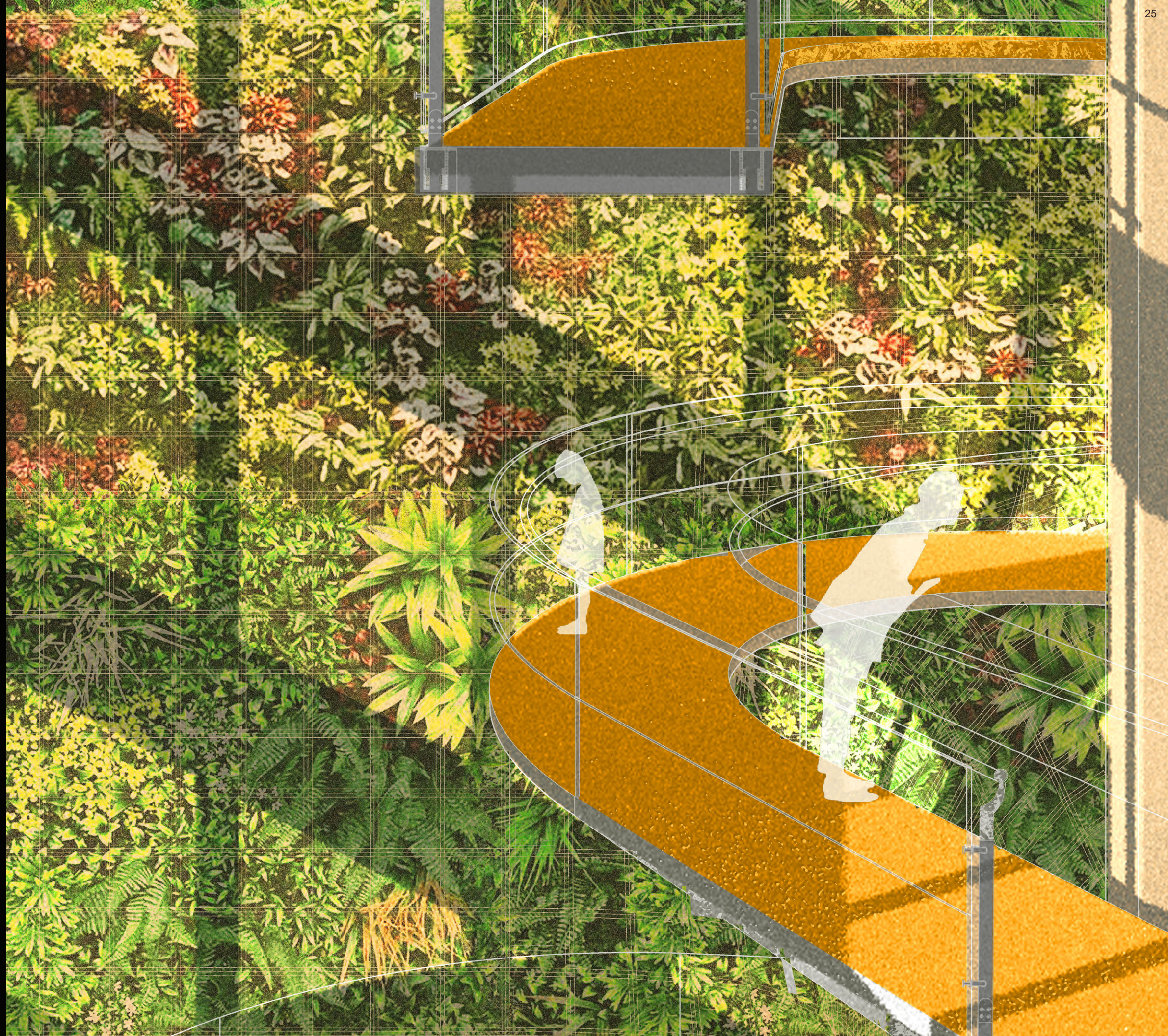
OFFICE AND THE UAN



JUNE 21
14:12



JUNE 21
14:12

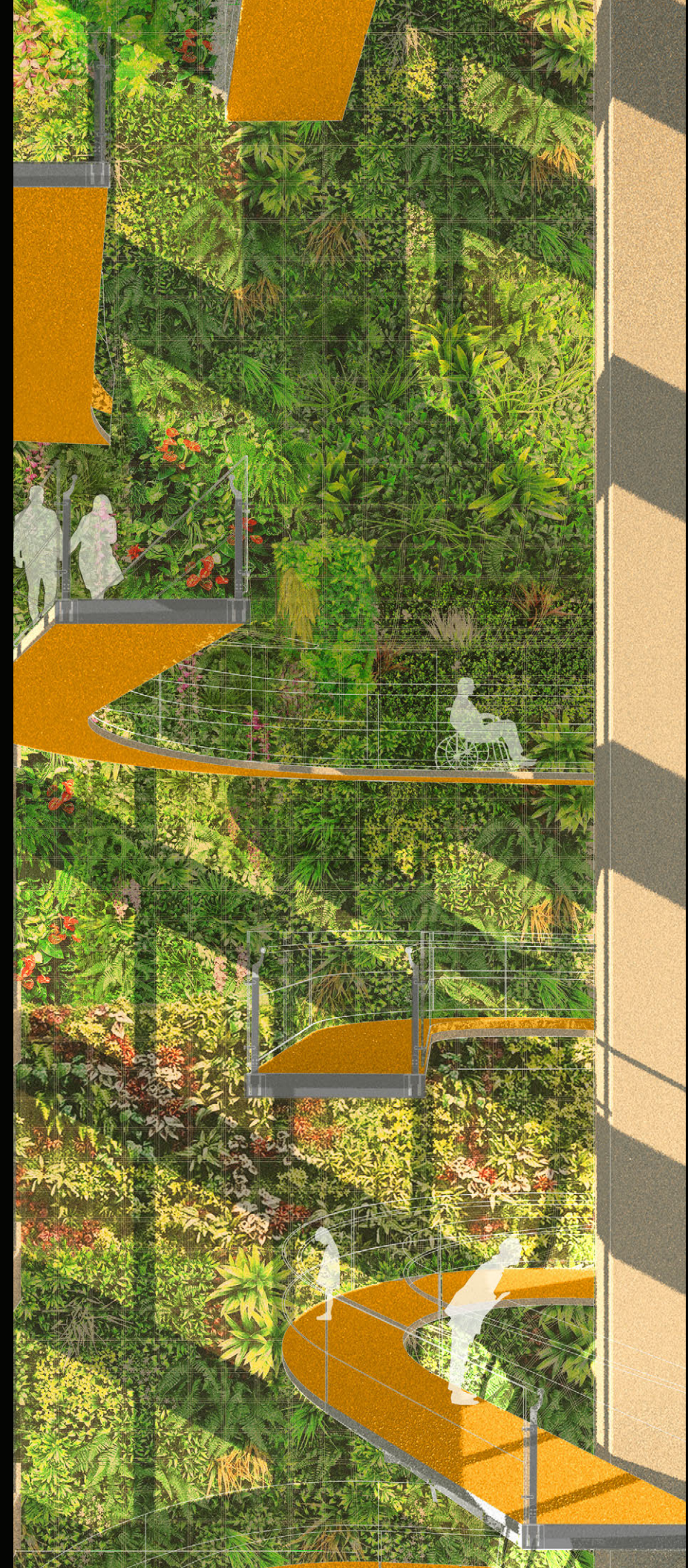


PLANT WALLS

JUNE 21
14:12

As you explore the 2-mile-long ramp, you're led to lush plant walls. Greenery surrounds you, creating a refreshing experience. Sunlight streams through the windows, casting a warm glow on the walls and visitors. The atmosphere is moist and inviting.

THE ACCESSIBLE RAMP



JUNE 21
17:12

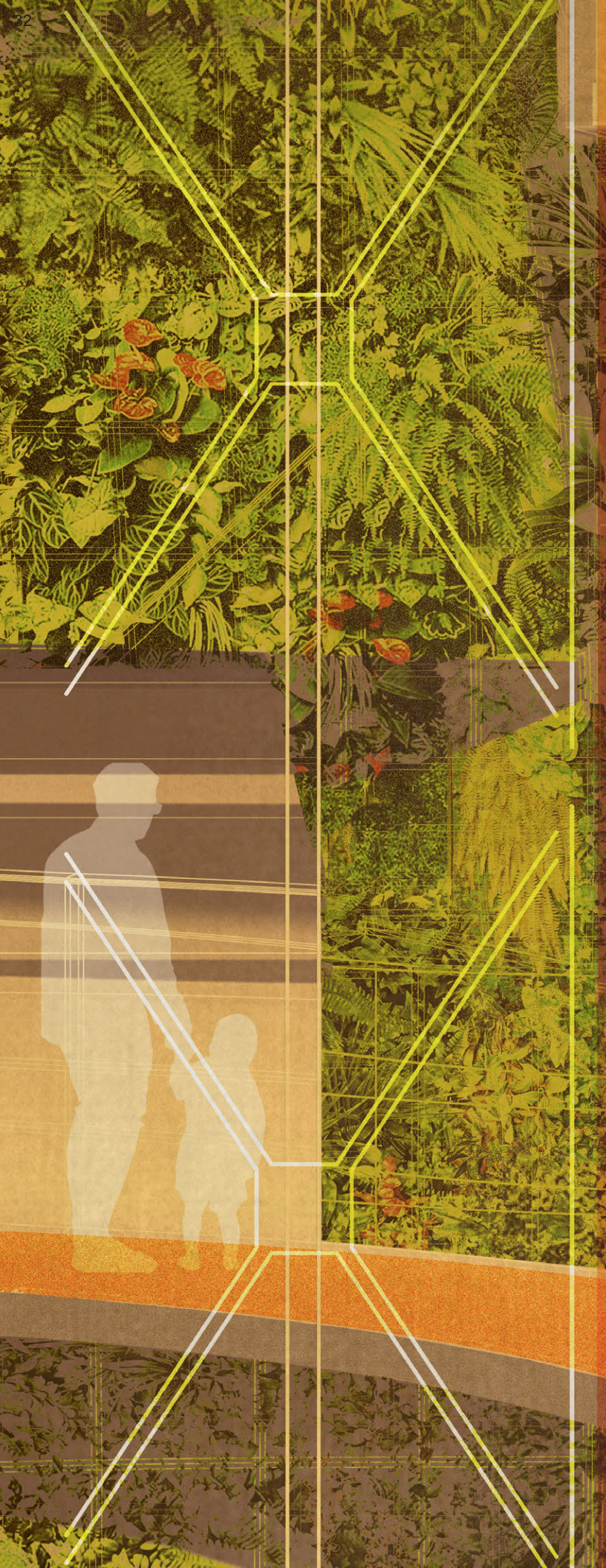


JUNE 21
17:12



SEPARATE ELEVATORS

JUNE 21
17:12



PLANT LIBRARY

JUNE 21
17:12



KIDS ZONE

JUNE 21
17:12

There are separate elevators serving private offices and public use. The Plant Library allows UAN members to borrow potted plants for a month or two before exchanging them. You can explore and learn about different species through this interactive system. Parents can host children in the Kids Zone, an area for learning and play.

BORROW-GROW-RETURN



SEPTEMBER 21
10:10



SEPTEMBER 21
10:10



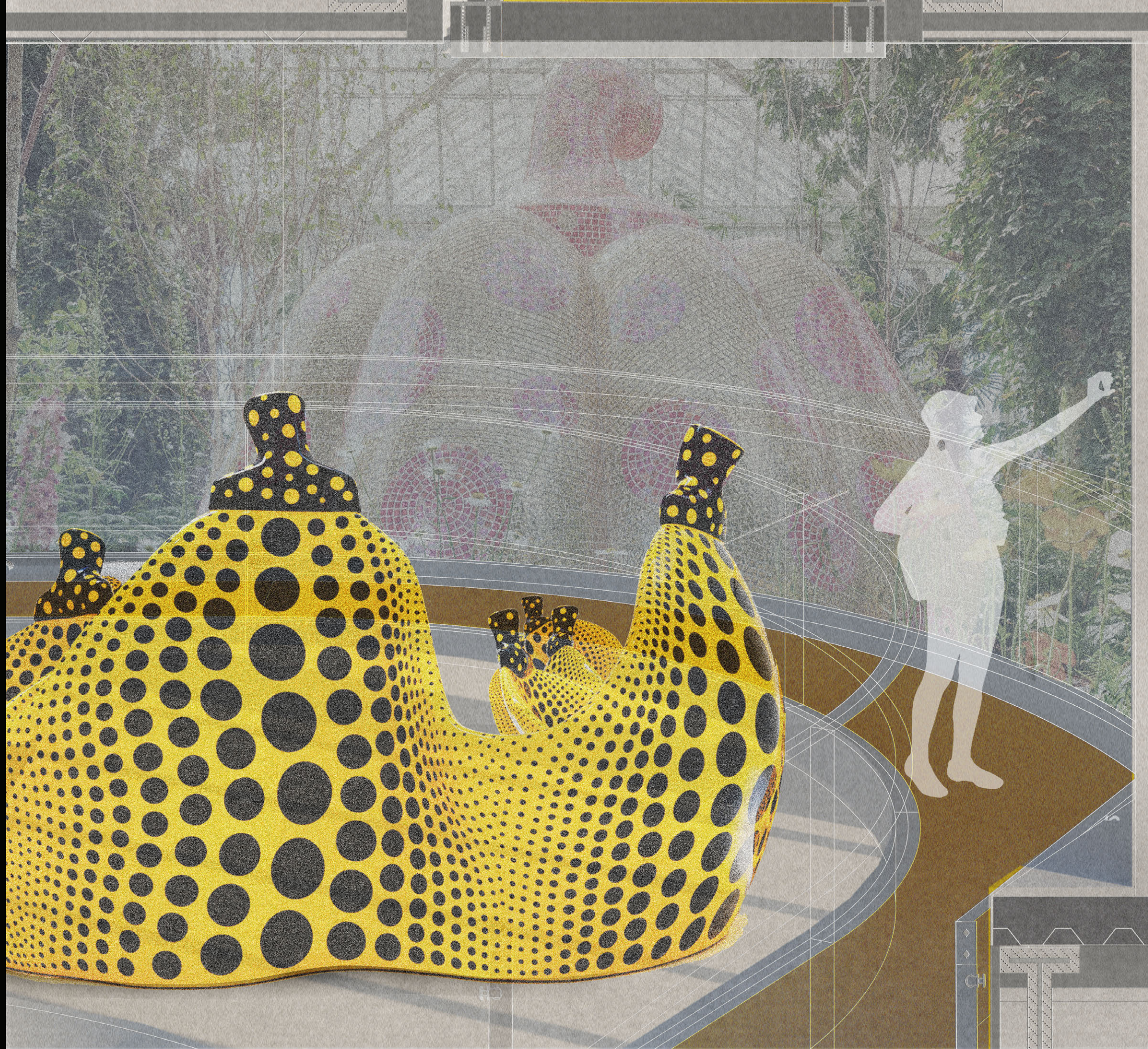
PLANTING WORKSHOP

SEPTEMBER 21
10:10



SEED BANK

44
SEPTEMBER 21
10:10



EXHIBITION

46

SEPTEMBER 21

10:10

UAN organizes planting workshops for children of all ages and field trips in partnership with local schools. The Seed Bank allows members to borrow seeds to grow at home, with the option of keeping the plants and returning some of the fruit or new shoots the following year. Maintenance workshops are also organized to support members' planting efforts. There are also areas for art exhibitions and performances, including a rotating exhibition of Kusama's botanical art piece in collaboration with the New York Botanical Garden in 2021.

PLAY AND LEARN



SEPTEMBER 21
11:23

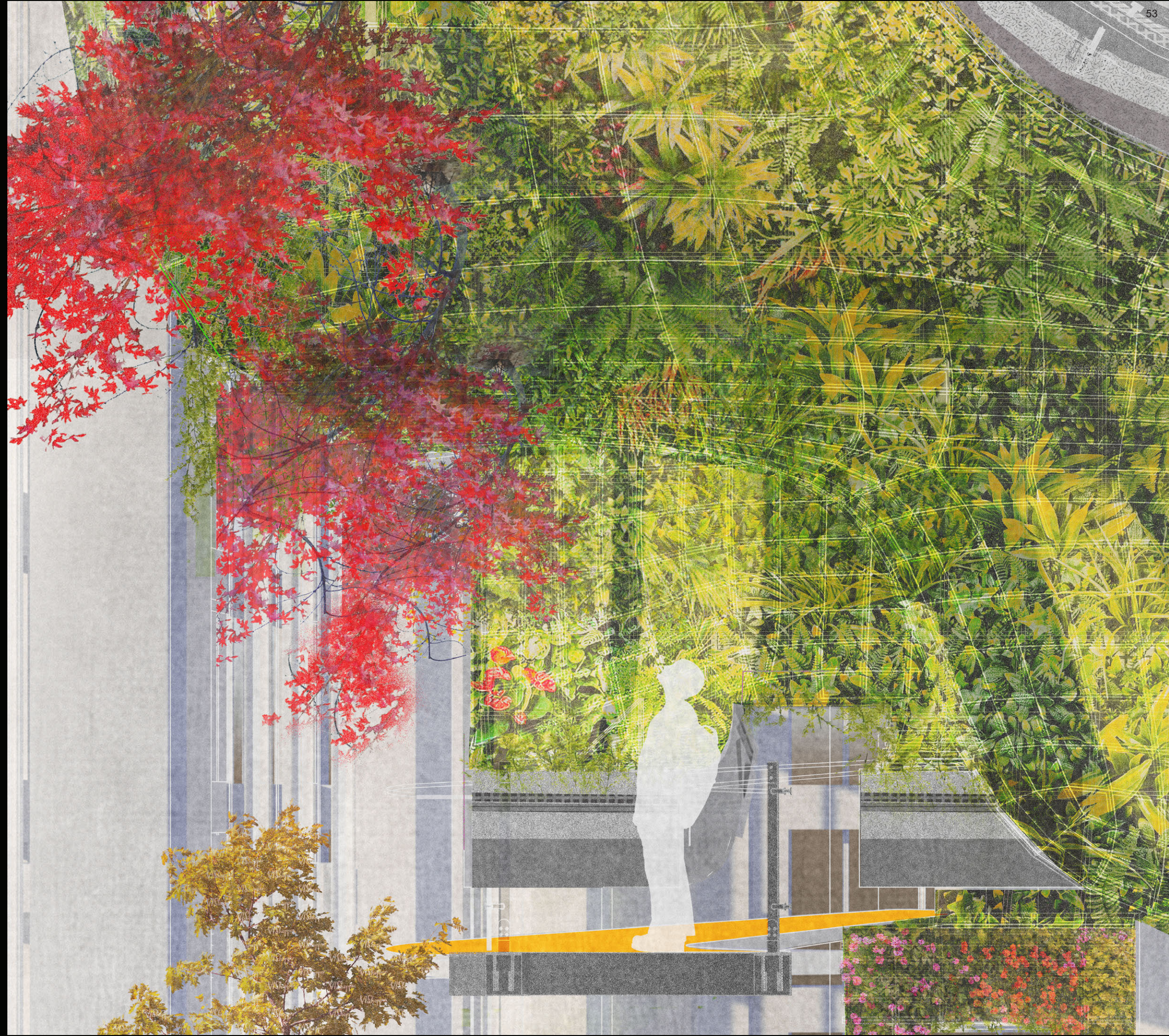




SEPTEMBER 21
11:23

PERENNIAL GARDEN

52
SEPTEMBER 21
11:23



53
UPSIDE-DOWN TREES

54

SEPTEMBER 21

11:23

The Wonderland is a popular attraction within the UAN, filled with flowers that blur the lines between indoors and outdoors. The space features a striking collection of upside-down trees that create a surreal visual experience. You can witness the plants going through the seasons, each presenting a different palette of colors and textures.

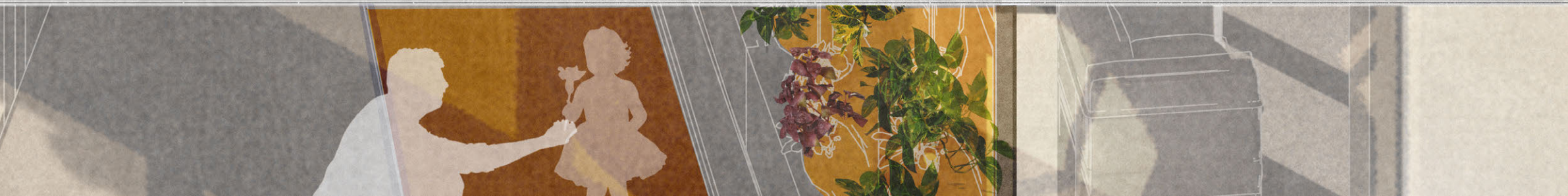
THE WONDERLAND



DECEMBER 21
15:36



DECEMBER 21
15:36



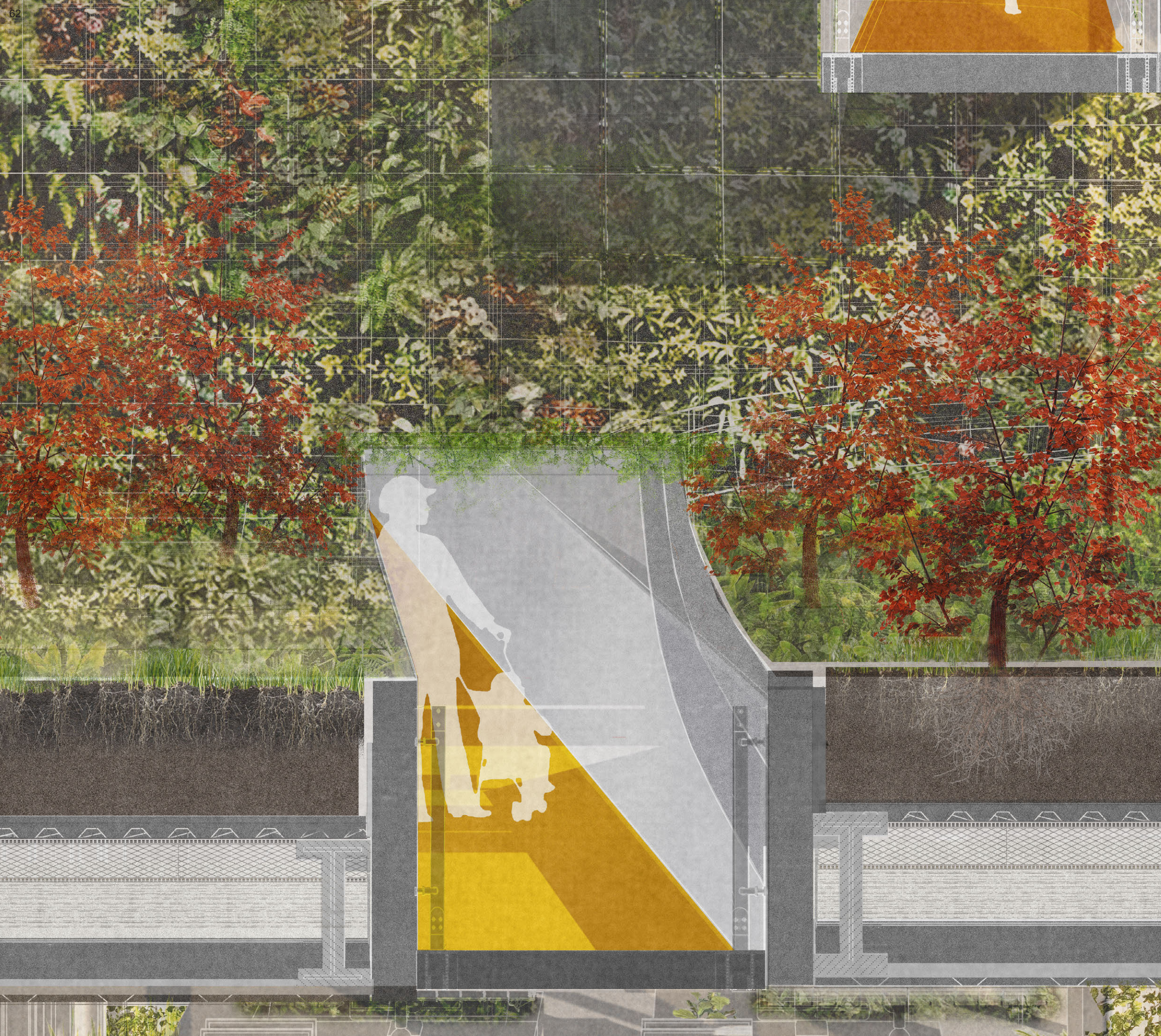
ON-SITE OFFICE

60

DECEMBER 21
15:36



WARM ESCAPE



DECEMBER 21
15:36

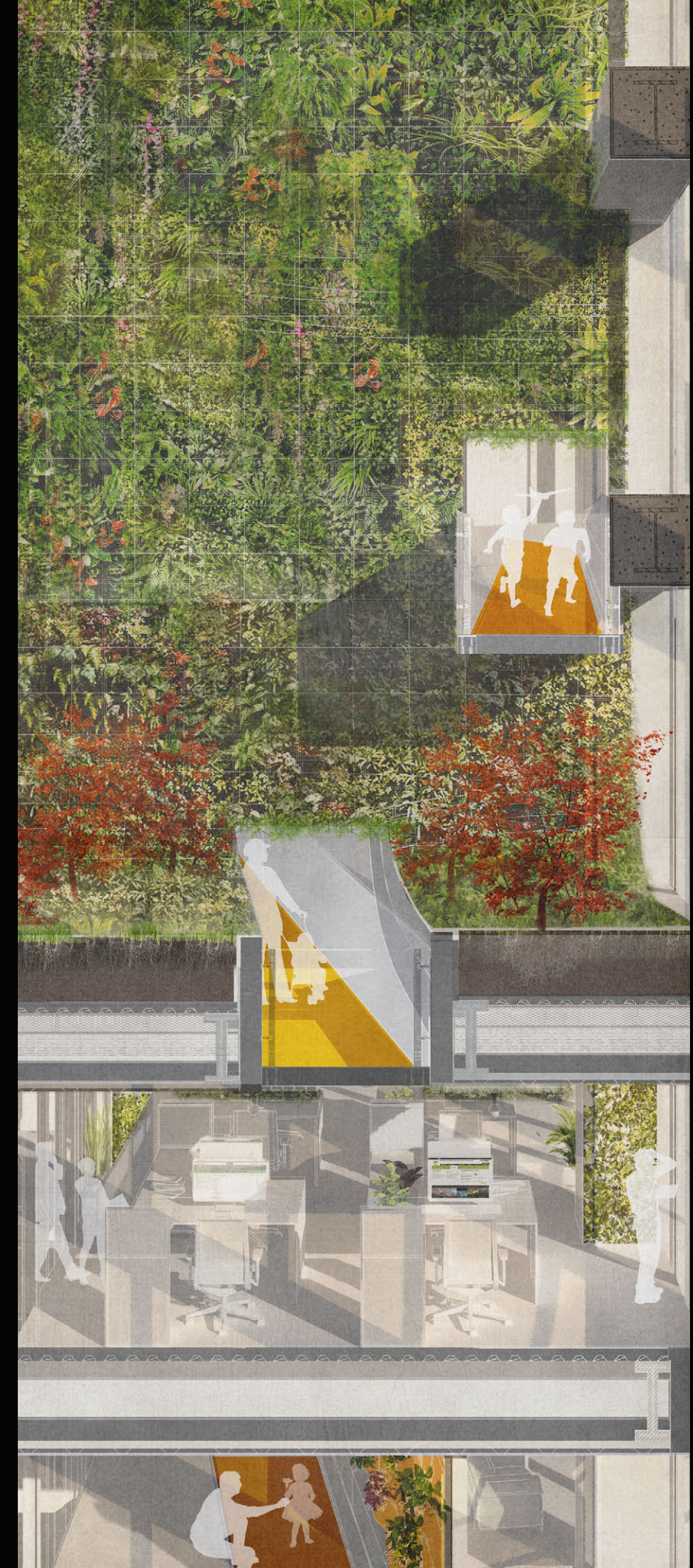
SHORT-TERM NURSERY

64

DECEMBER 21
15:36

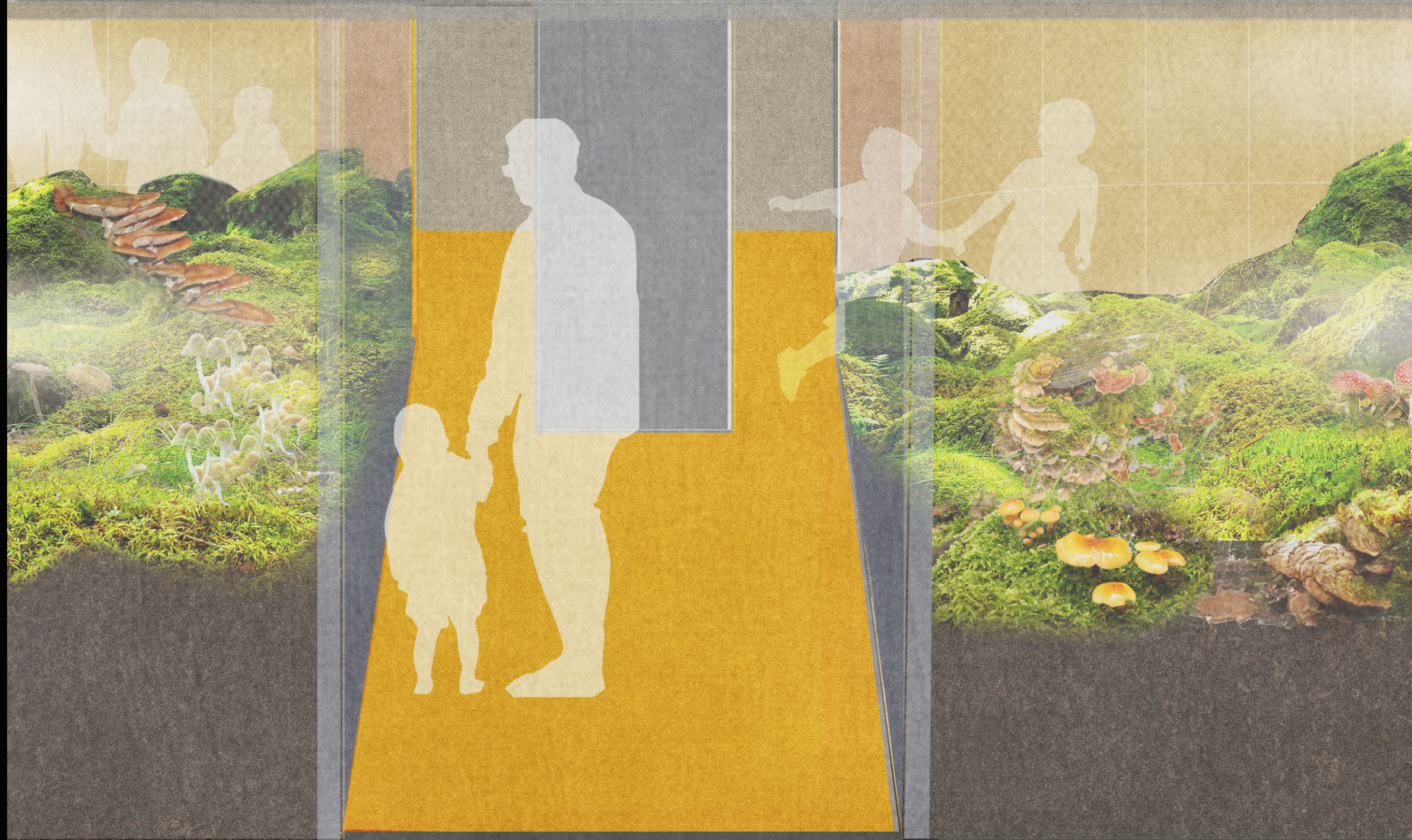
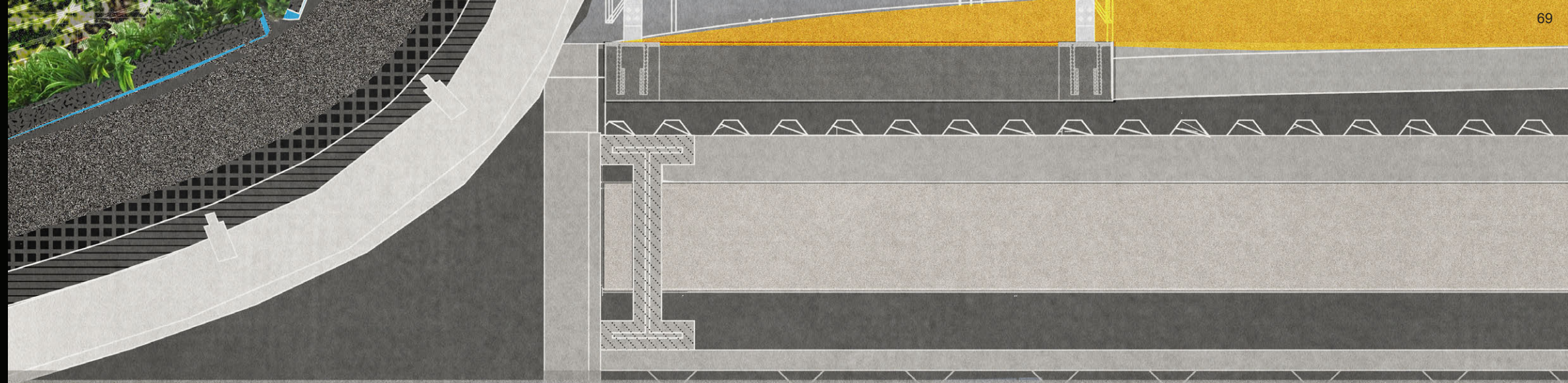
Stakeholders from NYC Parks, New York Botanical Garden, and New York Public Library have their onsite offices to support the UAN program. During the cold months, the UAN provides a warm escape and a short-term nursery for young seedlings and plants from neighboring parks. The nursery program contributes to the health and biodiversity of the urban landscape, and you can learn about plant cultivation through workshops and tours.

URBAN ARBORETUM



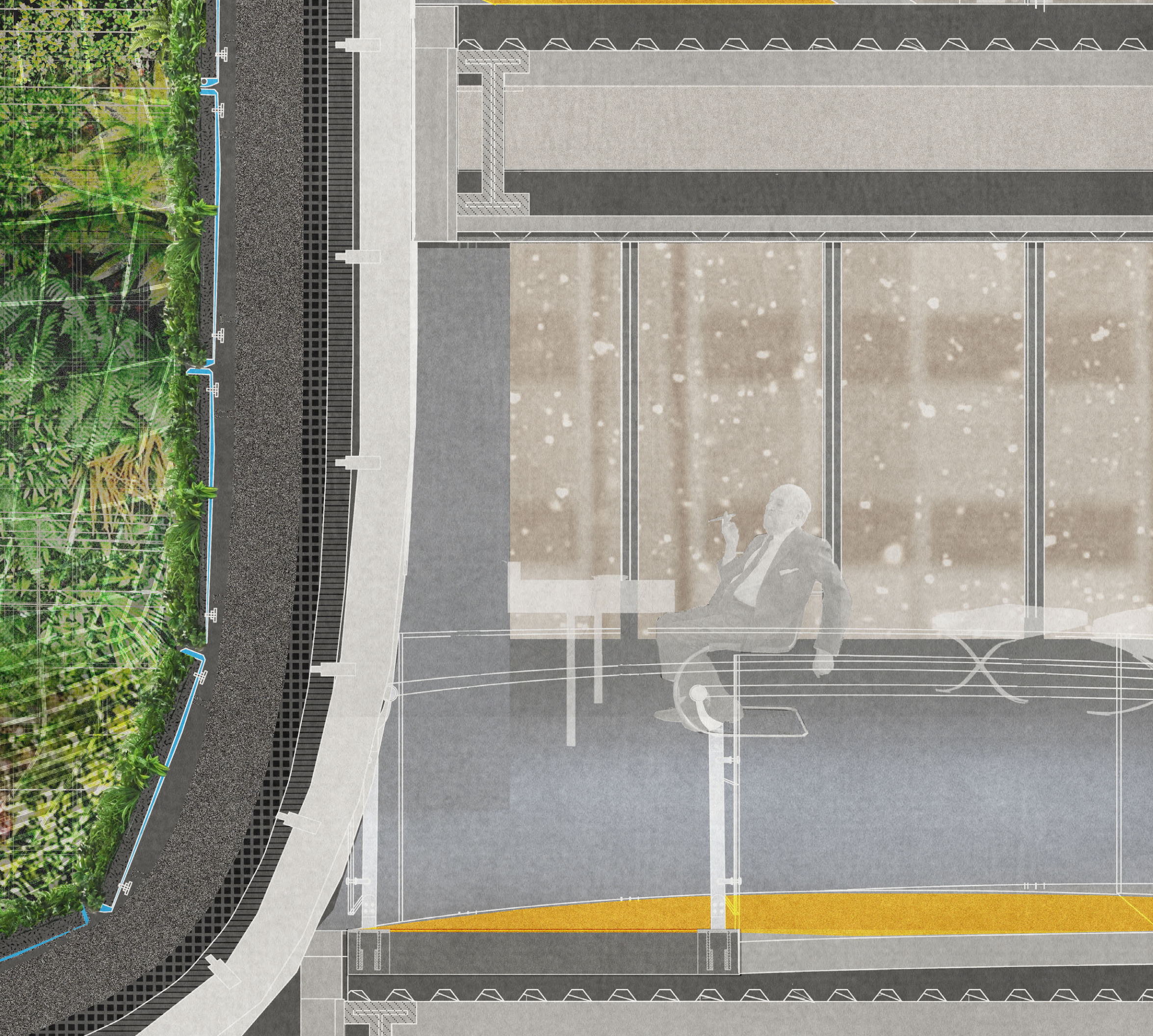
DECEMBER 21
16:20

DECEMBER 21
16:20



UNDER THE SHADE

71
DECEMBER 21
16:20



**IRRIGATION
SITTING AREA**

72

DECEMBER 21
16:20

“Under the Shade” is a unique area within the UAN, featured by its high humidity, which supports a diverse array of mosses and colorful mushrooms. The tour guide explains the important role of fungi in the plant world, focusing on how they transfer nutrients and exchange information with other plants and trees. There’s a close-up view of the irrigation system for the plant wall and a sitting area behind it.

ALL AGES ALL SEASONS



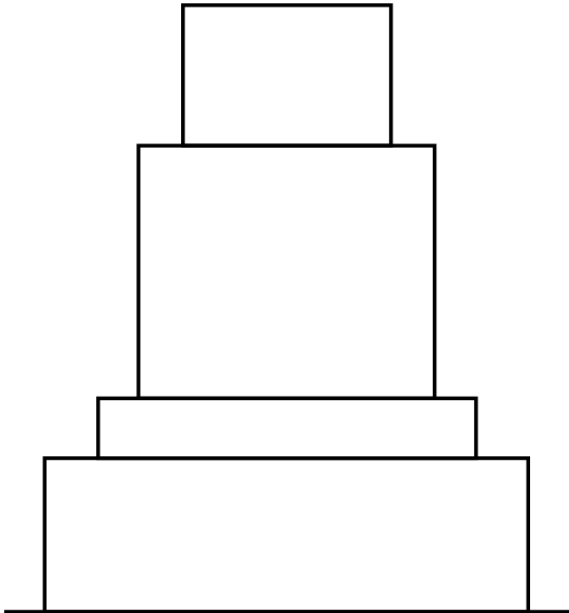
II. THE POPS REGULATION

This thesis is influenced and inspired by the regulation of **Privately Owned Public Spaces** (POPS). Privately Owned Public Spaces, created in 1961 in New York City, have greatly influenced architectural form and offered possibilities for public space in high-density urban areas.

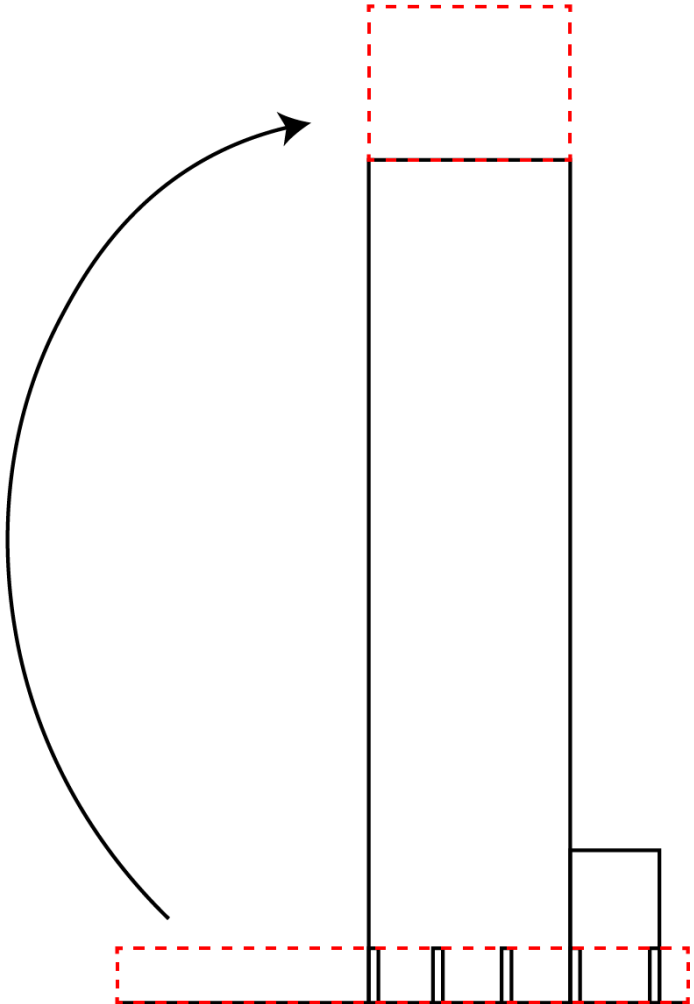
There are 12 types of privately owned public spaces gradually generated in this regulation: **plaza, arcade, elevated plaza, sunken plaza, through block arcade, covered pedestrian space, open-air concourse, urban plaza, sidewalk widening, residential plaza, through block connection, and through block galleria.**

While these spaces were the solution for incorporating public areas into private developments, most POPS are limited to the ground level, offering only ground-plane concessions. This thesis proposes extending the logic of POPS vertically, challenging the traditional confines of public space. Can we elevate public realms to higher levels within towers, further introducing new spatial typologies into the urban fabric?

POPS Privately Owned Public Space (1961)

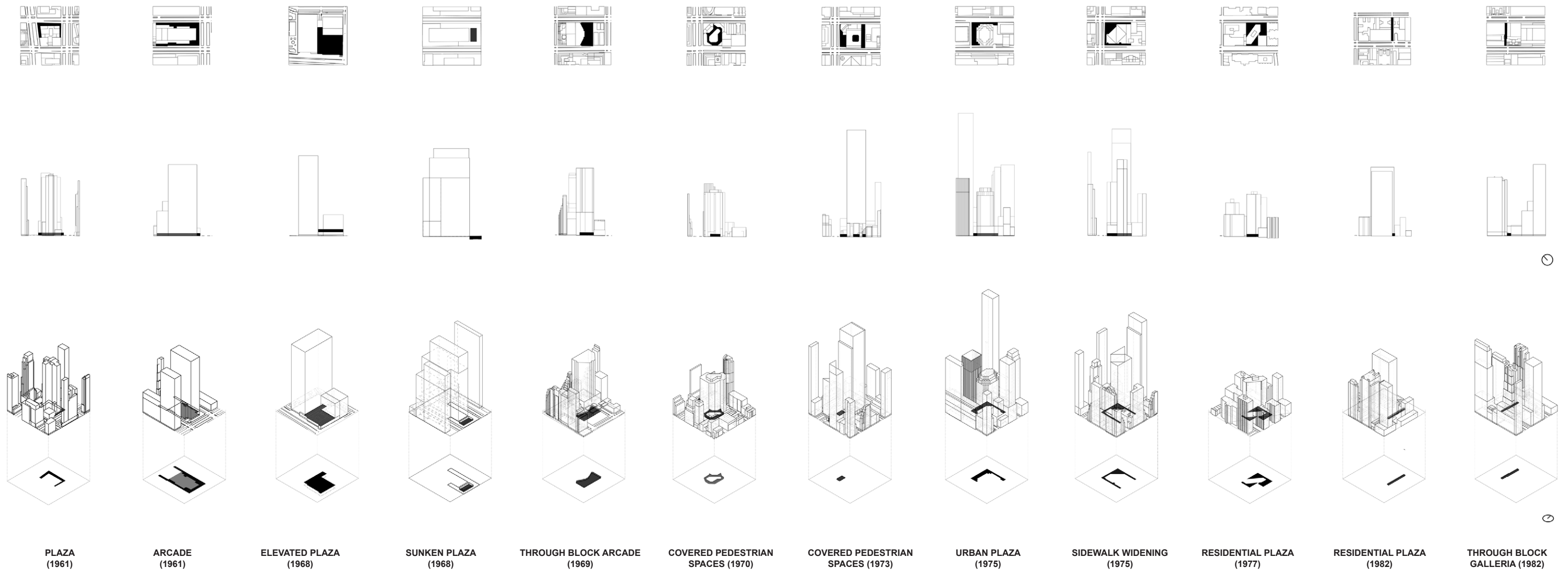


POST 1916



1961 POPS

POPS: Privately Owned Public Space (1961)



PLAZA (1961)

ARCADE (1961)

ELEVATED PLAZA (1968)

SUNKEN PLAZA (1968)

THROUGH BLOCK ARCADE (1969)

COVERED PEDESTRIAN SPACES (1970)

COVERED PEDESTRIAN SPACES (1973)

URBAN PLAZA (1975)

SIDEWALK WIDENING (1975)

RESIDENTIAL PLAZA (1977)

RESIDENTIAL PLAZA (1982)

THROUGH BLOCK GALLERIA (1982)

PLAZA (1961)

* Type: Continuous open area, open to the street along its entire length

* Size: At least 750 square feet

* Depth: Minimum of 10 feet from its front lot line

* Length: Extends along the full length of that lot line or for at least 50 feet, whichever is less

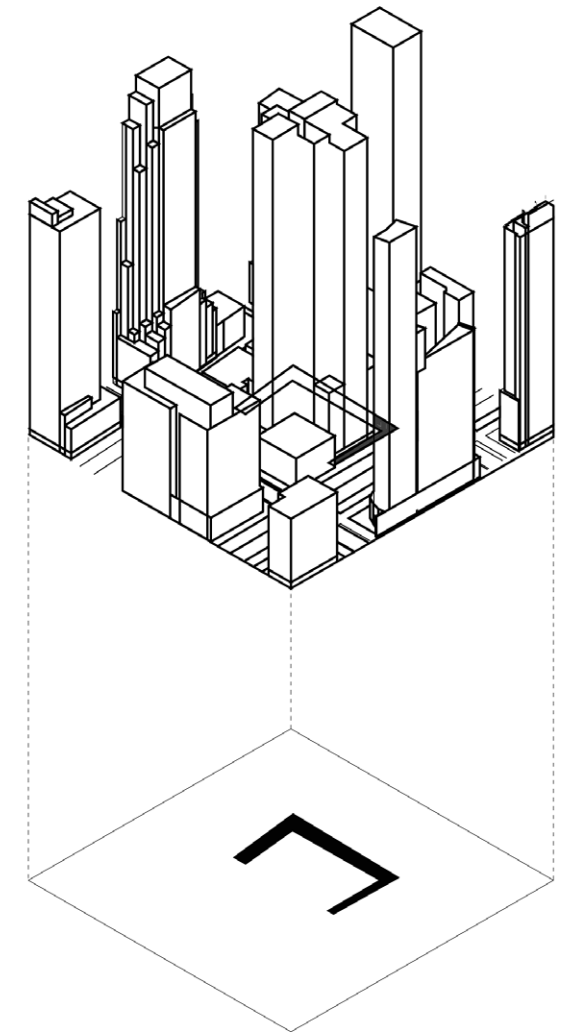
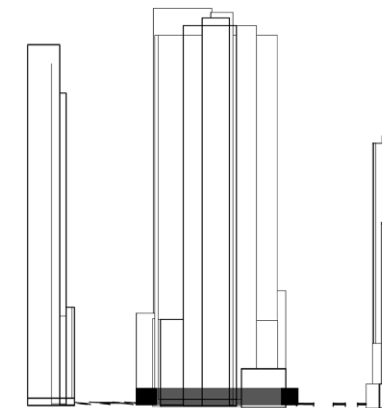
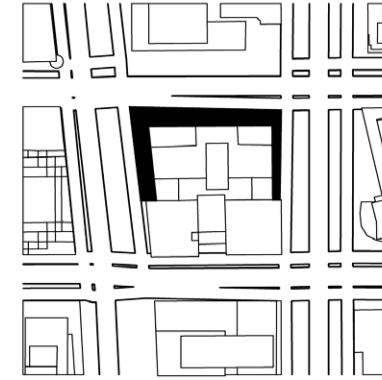
* Height: Not more than 5 feet above no more than 12 feet below the curb level of the nearest adjoining street

* Accessibility: Must be open to the public at all times, unless nighttime closing is authorized by the city planning commission

* Permitted Obstructions: Arbors, trellises, awnings, canopies, railings not less than 50 percent open and not exceeding 3 feet, 8 inches in height, poles, open terraces, porches, steps, subway station entrances, ornamental fountains, statuary, or unenclosed balconies

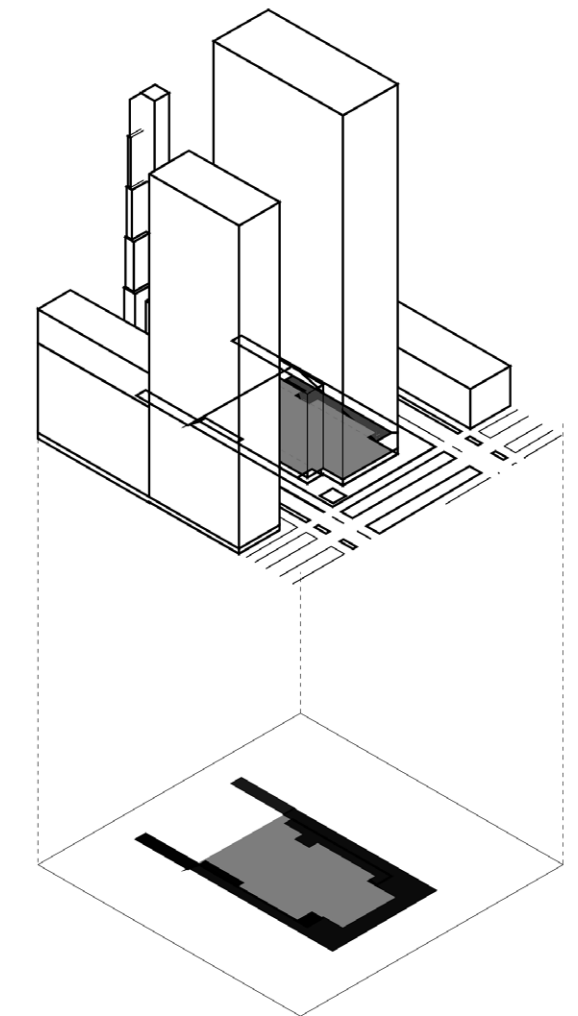
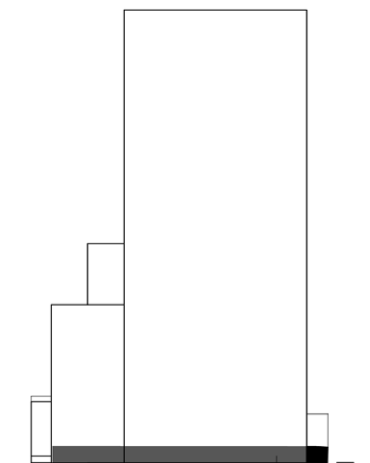
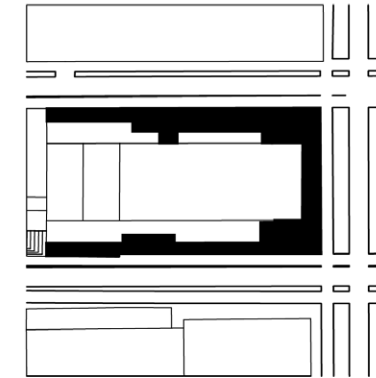
* Plaza Bonus Rate: In commercial zoning districts with the city's highest floor area ratio (FAR) of 15, the plaza bonus rate is 6 square feet for each square foot of plaza; in a 6 FAR district, the rate is 4 square feet

* Bonus Cap: The total bonus is capped at 20 percent of the base FAR



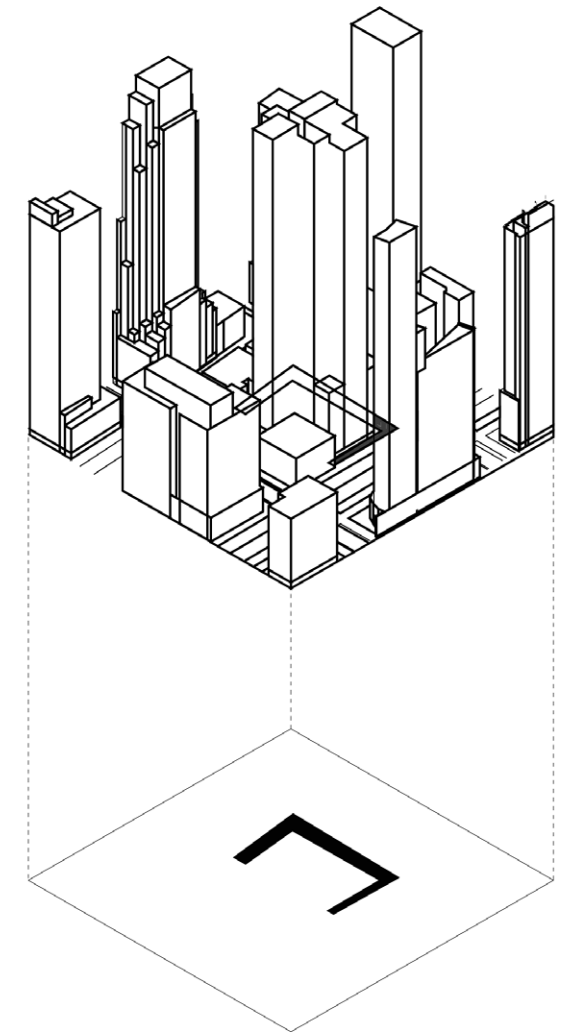
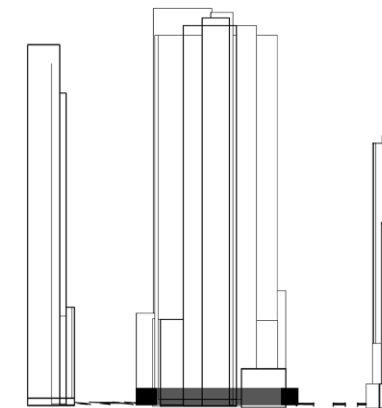
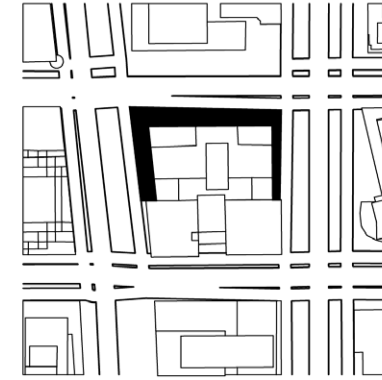
ARCADE (1961)

- * Type: A continuous covered space fronting on and open to a street, residential plaza, or urban plaza for its entire length, except for building columns.
- * Height: Not less than 12 feet.
- * Depth: Not less than 10 feet nor more than 30 feet.
- * Length: 50 feet or the full length of the street line or boundary of the public space on which it fronts, whichever is less.
- * Level: The arcade may never be above the level of its adjoining street or public space.
- * Accessibility: The arcade must be accessible to the public at all times.
- * Prohibited: On-street parking spaces, passenger drop-offs, driveways, or on-street loading berths are no longer permitted within it or within 10 feet of any bondable portion of it.
- * Arcade Bonus: An arcade earns a bonus of 3 square feet for every square foot of arcade, with the total bonus capped at 20 percent of the base FAR.
- * Approval: Enjoy approval “as-of-right.”



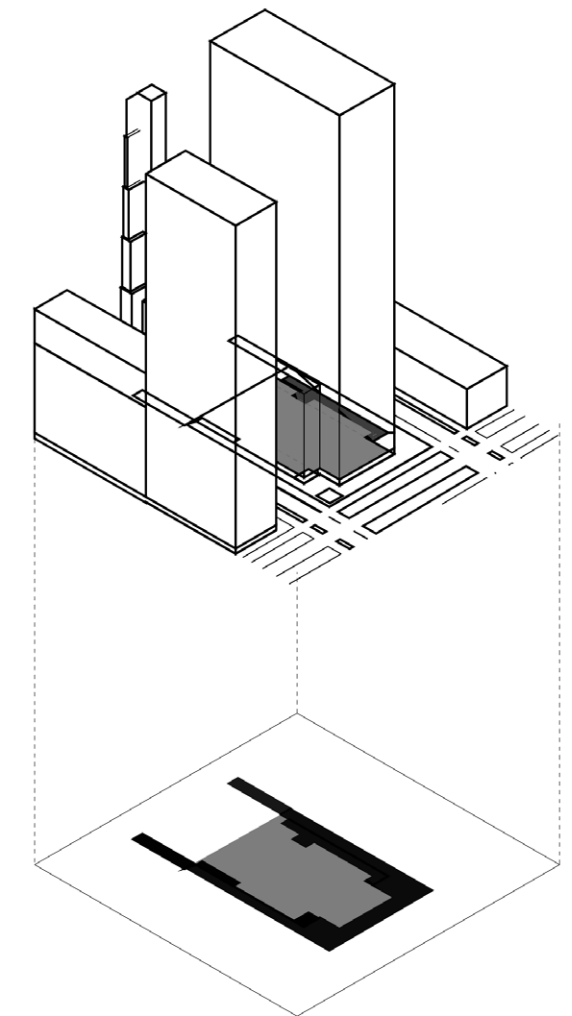
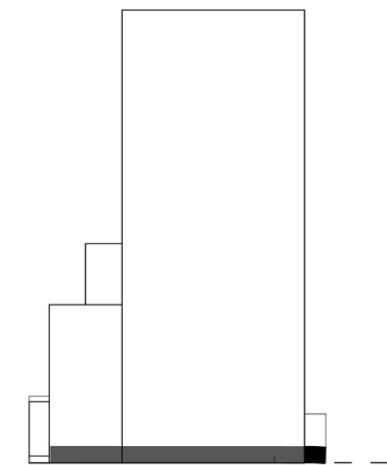
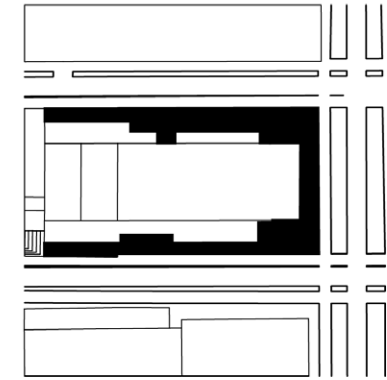
ELEVATED PLAZA (1968)

- * Type: Plaza located more than 5 ft above curb level
- * Location: In commercial districts
- * Size: Minimum 8,000 sq ft total area with 80 ft minimum dimension
- * Access: Must provide easy access from street level
- * Standards: Must meet all requirements for urban plazas
- * Approval: Requires special permit
- * Bonus: 10 sq ft bonus area per 1 sq ft plaza in 15 FAR districts
- * Proposed change: No longer eligible for bonus under unied bulk proposal



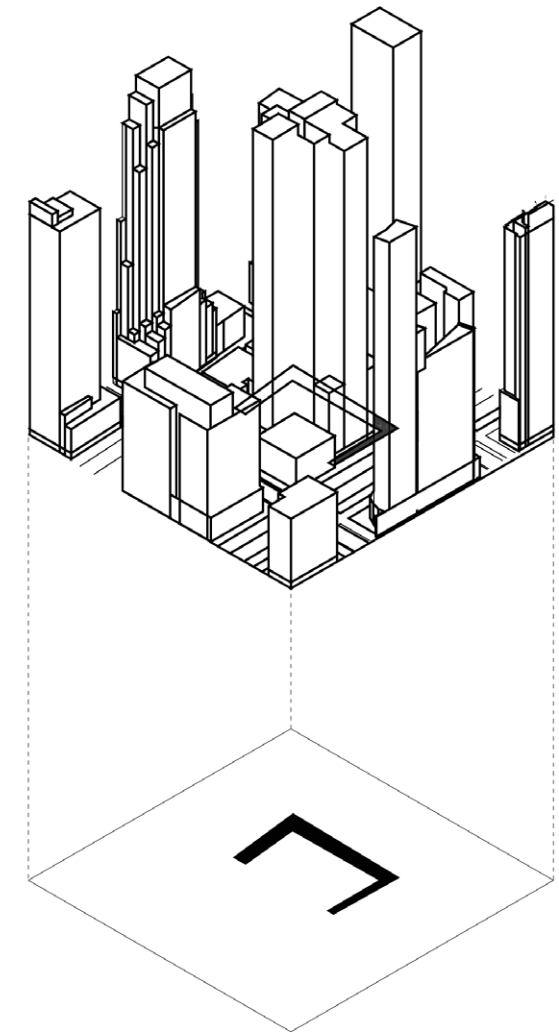
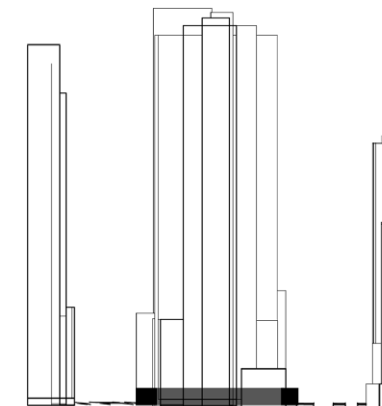
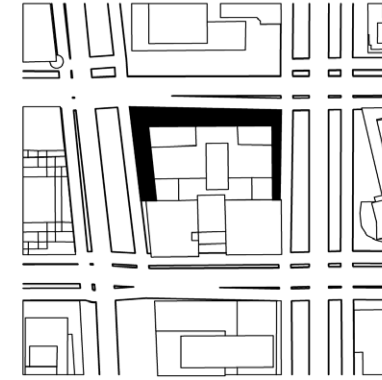
SUNKEN PLAZA (1968)

- * Type: Sunken plaza, must meet urban plaza standards.
- * Elevation: Up to 50% of the urban plaza may be more than 10 feet below the nearest street curb level.
- * Accessibility: Must provide direct pedestrian access by stairs or escalators from an adjoining street, arcade, plaza, etc., to a subway station, mezzanine, or concourse.
- * Obstructions: Stairs or escalators above the depressed level are permissible, up to 15% of the entire urban plaza area, and must be open to the public during normal working hours.
- * Bonus: Urban plaza bonus may be increased from 6 to 10 sq ft bonus area per 1 sq ft of sunken urban plaza area.
- * Proposed Change: The proposed unified bulk program would eliminate sunken plazas from bonus eligibility.



THROUGH BLOCK ARCADE (1969)

- * Type: Continuous space connecting two streets through a block.
- * Location: In commercial or mixed-use buildings.
- * Width: Minimum 20 ft.
- * Height: Minimum average 20 ft.
- * Grade: Level with adjoining street, plaza, or arcade at both ends.
- * Access: Can be open or enclosed at ends.
- * Purpose: Improve pedestrian circulation, provide secondary retail frontage.
- * Bonus: 6 sq ft bonus per 1 sq ft in high-density districts, 3 sq ft in lower density districts.
- * Proposed Change: No longer bonus-eligible under unied bulk program.



COVERED PEDESTRIAN SPACE (1970)

* Type: Enclosed space for public use, providing shelter and comfort for the general public.

* Accessibility: Must be open to the public between 7am and 12 midnight or on a schedule suitable to meet public needs.

* Physical Requirements:

* Minimum Area: 3,000 square feet.

* Minimum Height: 30 feet.

* Minimum Width: 20 feet at any point.

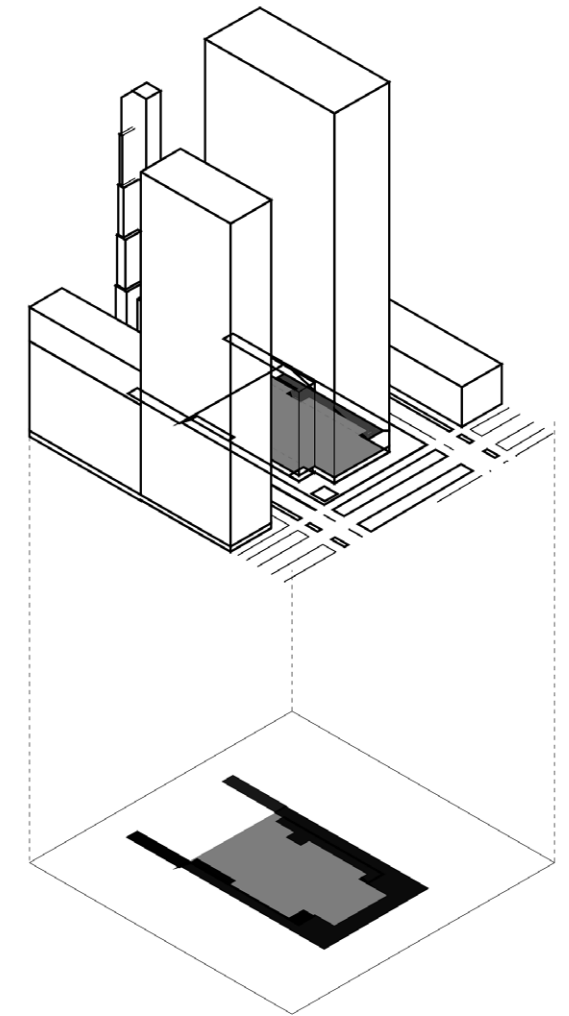
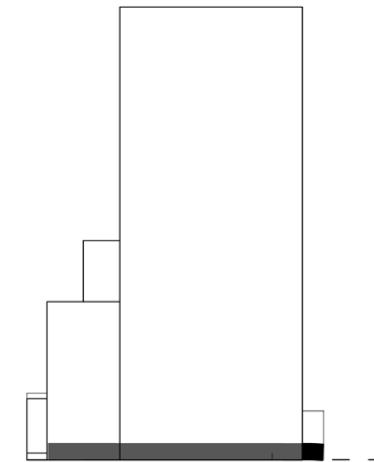
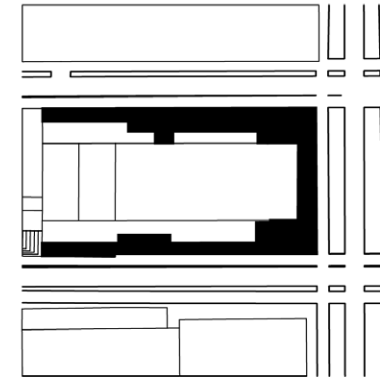
* For spaces 100-150 feet in length, the width requirement increases to 25 feet.

* Spaces longer than 150 feet must have an average width of at least 30 feet.

* Enclosed Space: The term “enclosed” does not necessarily mean fully indoors; covered pedestrian spaces may be open at their entrances.

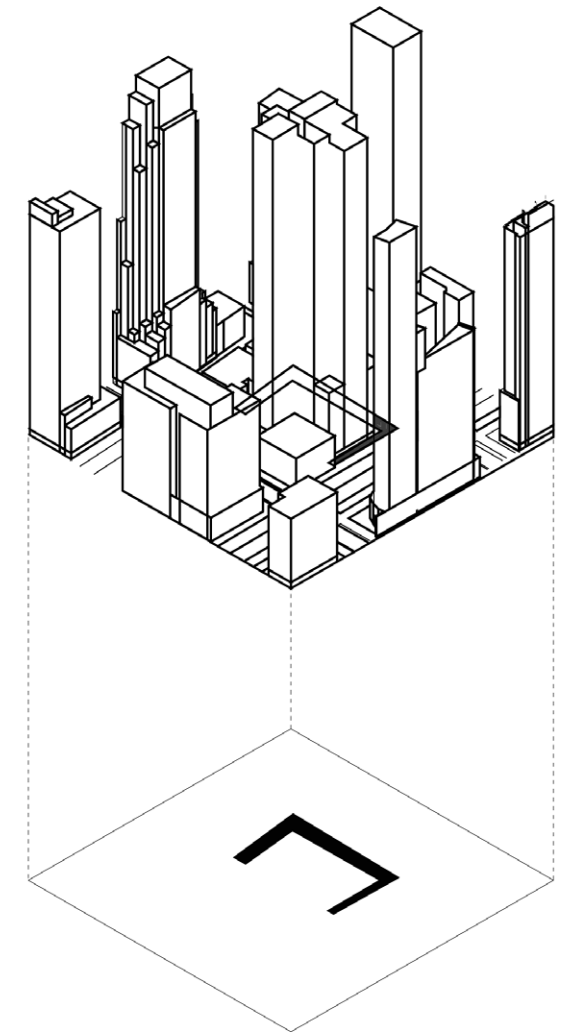
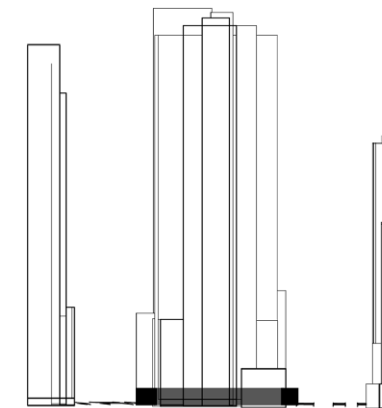
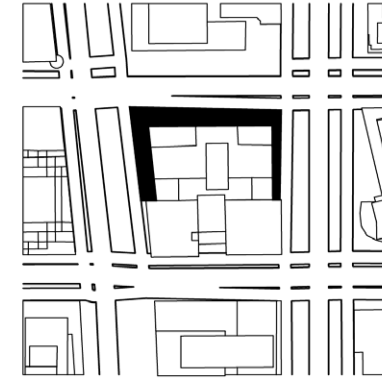
* Bonus: The bonus size ranges from 11 to 14 square feet for every square foot of covered pedestrian space in high-density districts and from 8 to 11 square feet in lower-density districts, encouraging desired elements.

* Subway Connection Bonus: If direct access from the covered pedestrian space to a subway station is provided and kept open for the same hours as the space, an additional bonus of two square feet for every square foot may be added to the maximum allowable bonus of 14 square feet, achieving a 16-to-1 bonus ratio.



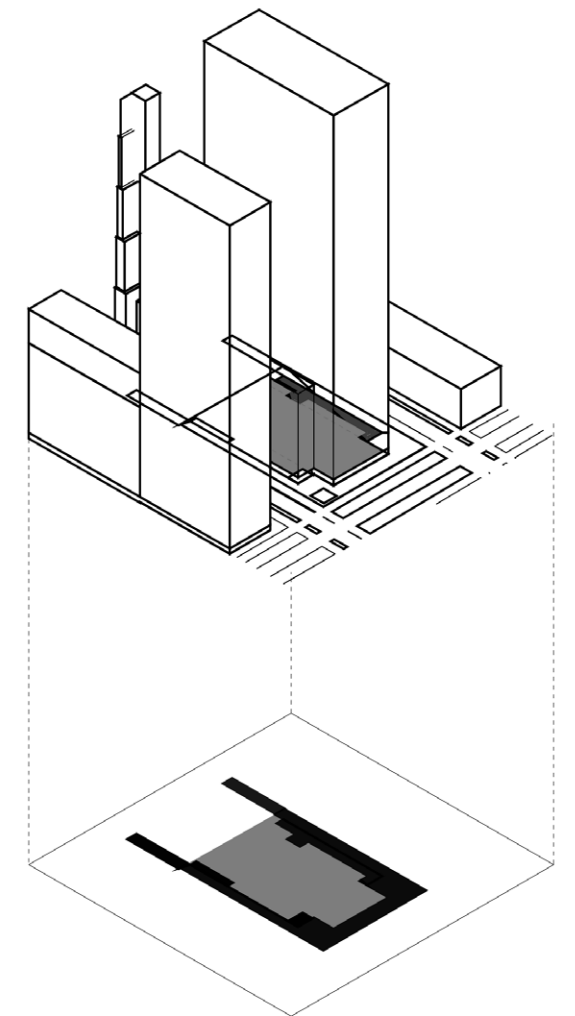
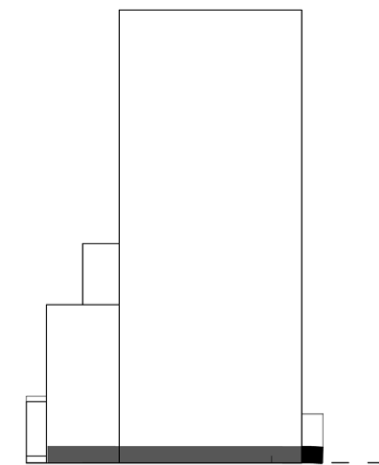
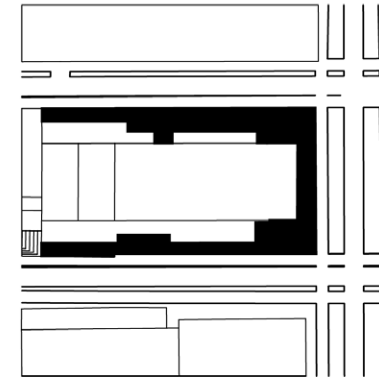
OPEN-AIR CONCOURSE (1973)

- * Type: Two-level pedestrian space connecting street to subway
- * Mezzanine portion:
 - * Size 4,000 - 8,000 sq ft
 - * Max 3 ft above subway platform level
 - * Adjacent to subway station
 - * Open during subway hours
- * Street level portion:
 - * 20-30 ft wide encircling mezzanine
 - * Max 3 ft above/below street curb level
 - * Directly accessible from sidewalk
 - * Unobstructed except temporary weather protection
- * Access between levels:
 - * Stairs at least 10 ft wide
 - * No ramp required due to mandated elevator access
- * Retail frontage: 50% of qualifying walls
- * Amenities: Plaques, paving, trees, lighting
- * Not permitted: Parking, drop-os, driveways, loading, vents
- * Accessibility: 5 ft minimum width path
- * Bonus: 10 sq ft bonus area per 1 sq ft



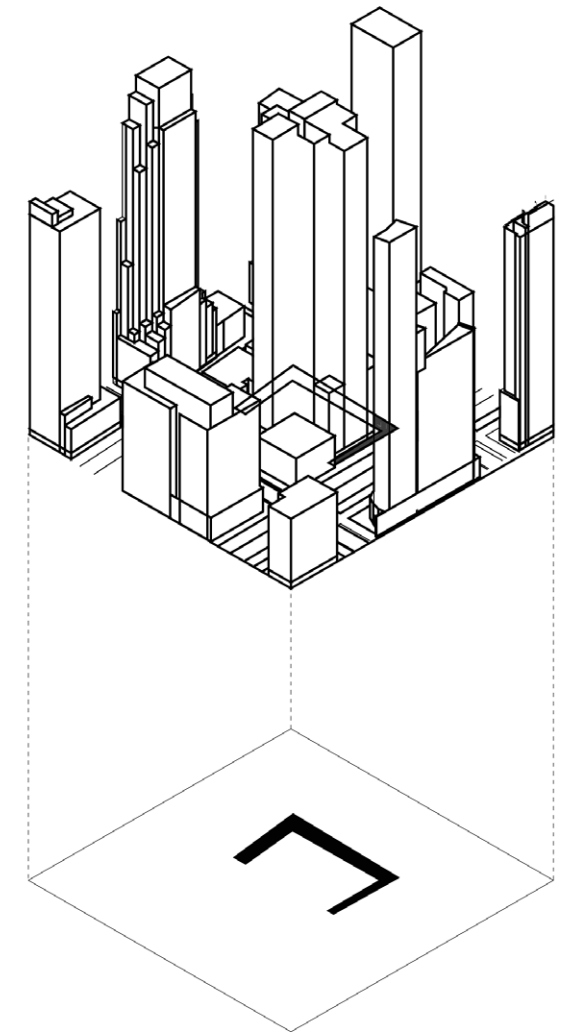
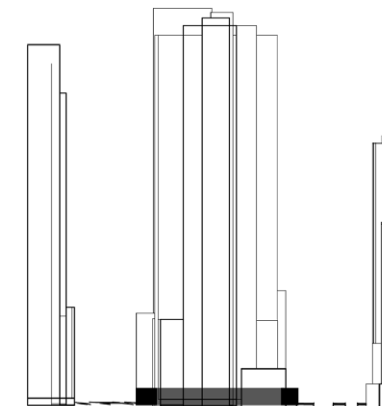
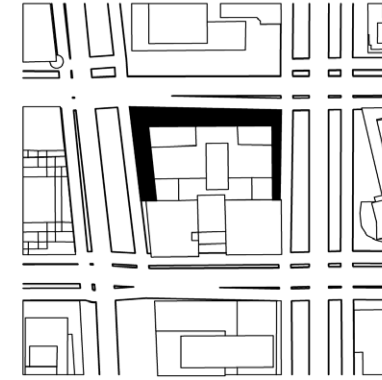
URBAN PLAZA (1975)

- * Type: Open area for public use
- * Minimum Size: 1,600 sq ft
- * Location: Limited to commercial and manufacturing districts
- * Frontage Limits: Cannot occupy more than 33% of zoning lot frontage if another open space within 175 ft occupies more than 33% of its block frontage
- * Setbacks: Cannot be within 50 ft of street frontage requiring retail continuity in Midtown
- * Accessibility: Must be open to the public at all times, unless nighttime closing is authorized
- * Grade: Must be at sidewalk level for 50% of frontage to a depth of 10 ft, within 3 ft above or below curb level
- * Obstructions: 50% of frontage must be clear to a depth of 20 ft; remainder can have obstructions up to 3 ft high
- * Amenities: Must have seating (1 linear ft per 30 sq ft) and trees based on plaza size; 5% of seating must have backs
- * Circulation: 5 ft minimum width path to major portion; ramps 3 ft minimum alongside stairs
- * Not Permitted: Parking, drop-os, driveways, loading, trash storage
- * Shape: All points must be visible from other points within the major portion (40 ft minimum dimension)
- * Orientation: Cannot face exclusively north; south-facing orientation encouraged
- * Bonus: 1 sq ft plaza equals a 10 sq ft bonus in the highest FAR districts, up to 20% of base FARpercent of the base FAR.
- * Approval: Enjoy approval “as-of-right.”



SIDEWALK WIDENING (1975)

- * Type: Continuous open area at sidewalk elevation
- * Width: 10 ft on wide streets, 5-10 ft on narrow streets
- * Length: Entire length of street frontage, with exceptions
- * Purpose: Improve pedestrian circulation
- * Accessibility: Directly accessible from street at all times
- * Obstructions: Generally not permitted, with exceptions
- * Integration: Paving to match public sidewalk, no demarcation
- * Street trees: Required in public sidewalk, not in widening
- * Adjoining uses: 50% of qualifying walls must have retail/service uses
- * Bonus: 10 sq ft of bonus area per 1 sq ft of widening
- * Approval method: Previously certified or as-of-right



RESIDENTIAL PLAZA (1977)

* Type: Open area for public use, subdivided into primary space (minimum 60%) and residual space.

* Primary Space:

* Dimensions: 30-50 ft, depth up to 2-2.5 times street frontage.

* Elevation: At sidewalk level for a minimum of 10 ft, maximum 3 ft above/below curb level.

* Sunlight: Southern exposure preferred.

* Paving and lighting requirements.

* Accessibility: Must be open to the public at all times, unless nighttime closing is authorized.

* Amenities:

* Mandatory: Seating, trees, bike parking, drinking fountain.

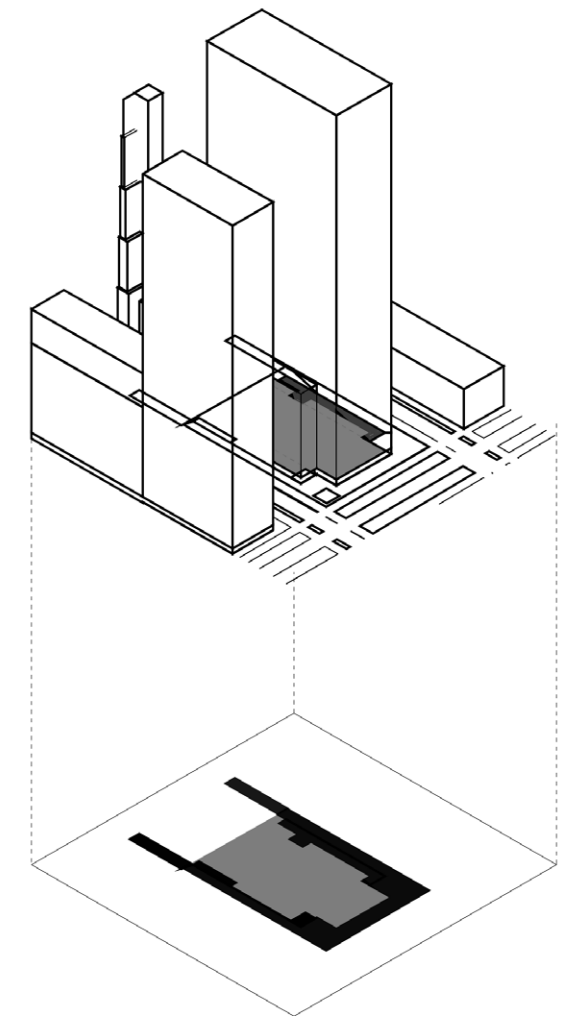
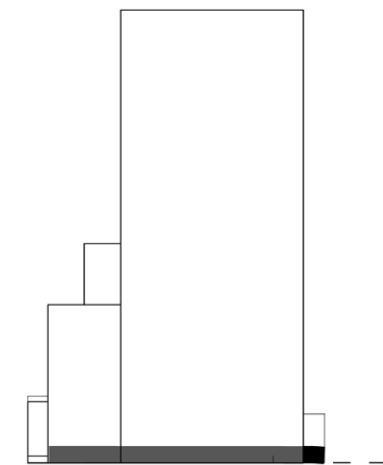
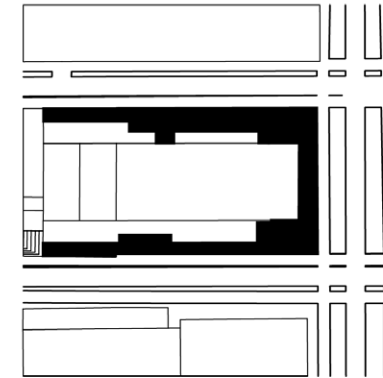
* Additional (2 required from list): Extra trees, plantings, grass, artwork, water feature, play equipment.

* Accessibility: Primary space must be accessible, with a 5 ft minimum width path.

* Not Permitted: Parking, drop-os, driveways, loading, trash storage.

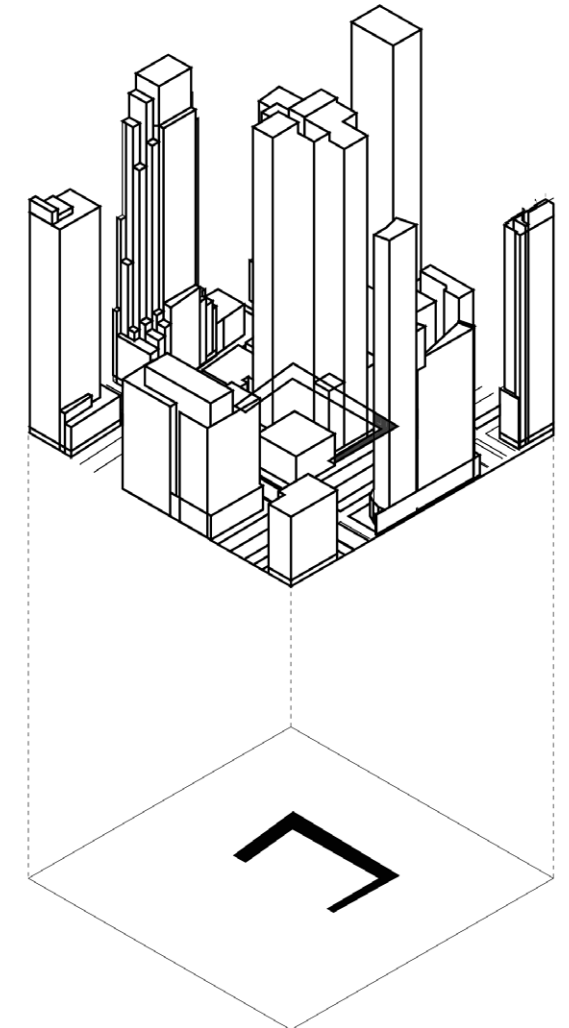
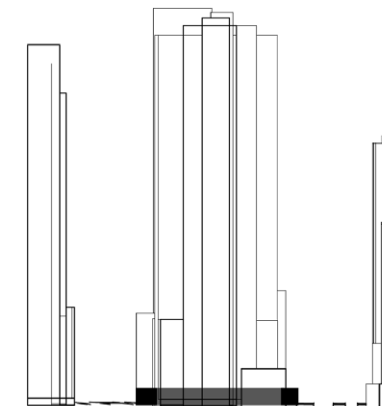
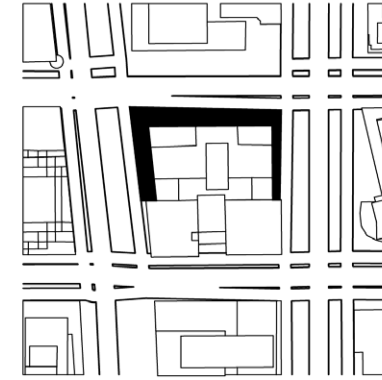
* Bonus: 1 sq ft plaza equals a 6 sq ft bonus floor area, up to 2 FAR bonus in R10 district.

* Maintenance: The city can use bond proceeds to fix violations.



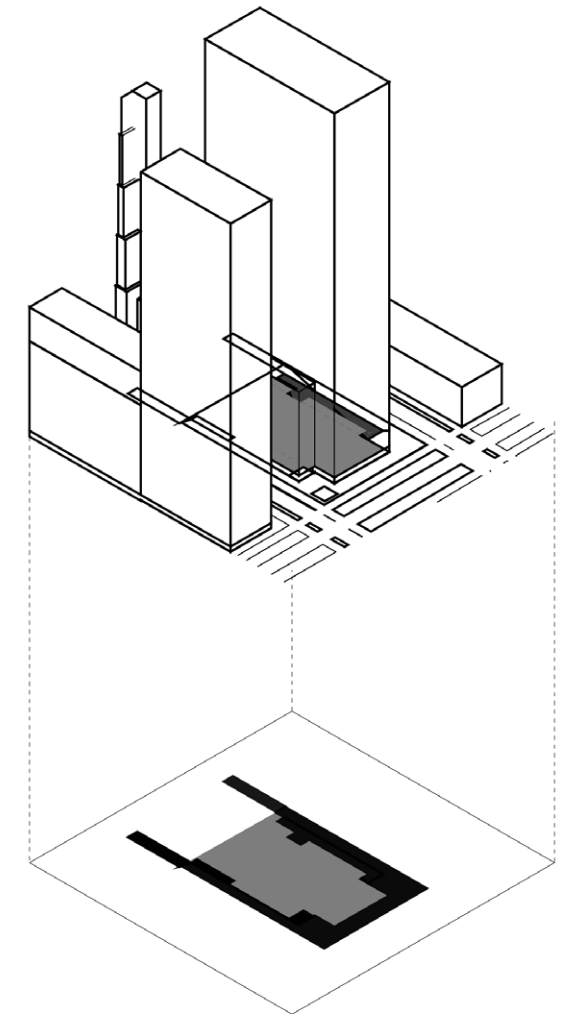
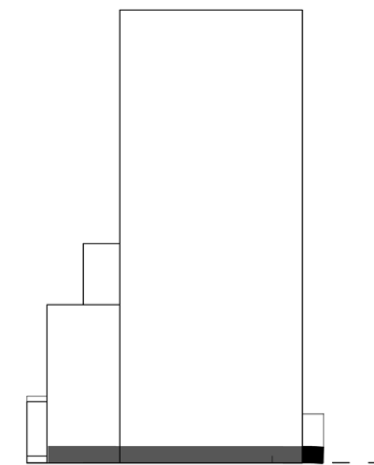
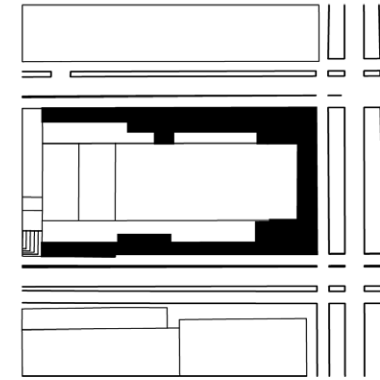
THROUGH BLOCK CONNECTION (1982)

- * Type: Open or enclosed space connecting two parallel streets through a block
- * Purpose: Provide unobstructed pedestrian access through a block
- * Width: Minimum 15 ft width
- * Height: Minimum 15 ft clear height if covered
- * Grade: Within 5 ft above or below curb level
- * Accessibility: Must be accessible 8am-7pm when building open
- * Signage: Entry plaques at each street entrance
- * Location: At least 150 ft from street intersection, part of network
- * Amenities: Strictly for passage, no retail or amenities
- * Bonus: No bonus, usually mandated as development condition

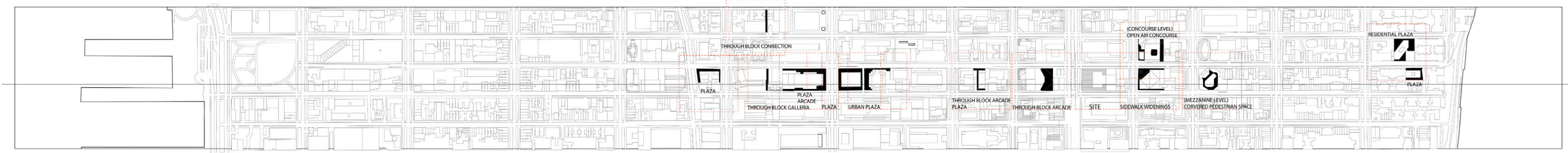
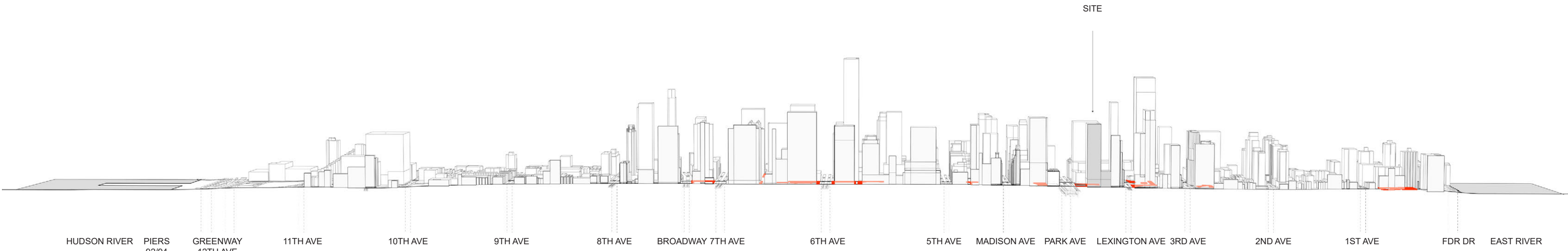


THROUGH BLOCK GALLERIA (1982)

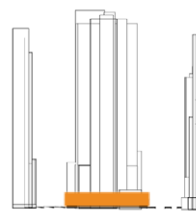
- * Type: Continuous covered public space connecting two parallel streets
- * Purpose: Provide pedestrian circulation and amenities for theater district
- * Location: At least 200 ft from wide north-south street
- * Clear path: Straight 15 ft minimum width path end-to-end
- * Width: 20 ft minimum, 30 ft average if over 150 ft long
- * Height: 20 ft minimum, 30 ft average if over 150 ft long
- * Grade: Same as street for rst 20 ft, then can change to reconcile ends
- * Amenities: Seating, landscaping, fountains, kiosks, artwork. Less than 50% of area.
- * Accessibility: Open to public 8am-7pm daily, except holidays
- * Not a lobby: Must connect with, not serve as, lobby
- * Bonus: 6 sq ft bonus area per 1 sq ft galleria, by special permit



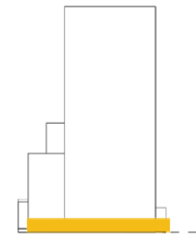
52ND STREET, NEW YORK, NY



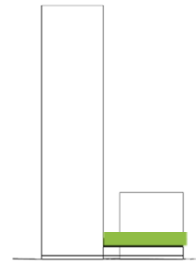
PROPOSAL



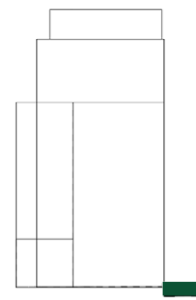
Plaza
(1961)



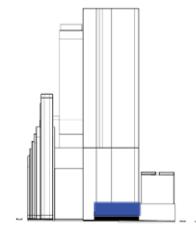
Arcade
(1961)



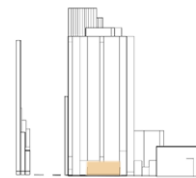
Elevated plaza
(1968)



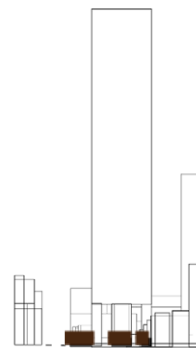
Sunken plaza
(1968)



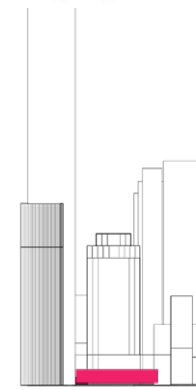
Through block arcade
(1969)



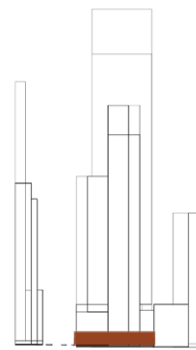
Covered Pedestrian Space
(1970)



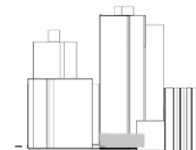
Open air concourse
(1973)



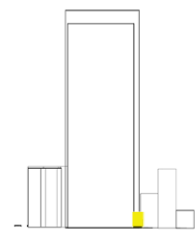
Urban Plaza
(1975)



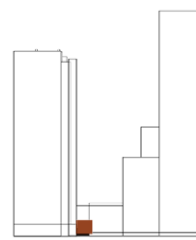
Sidewalk Widening
(1975)



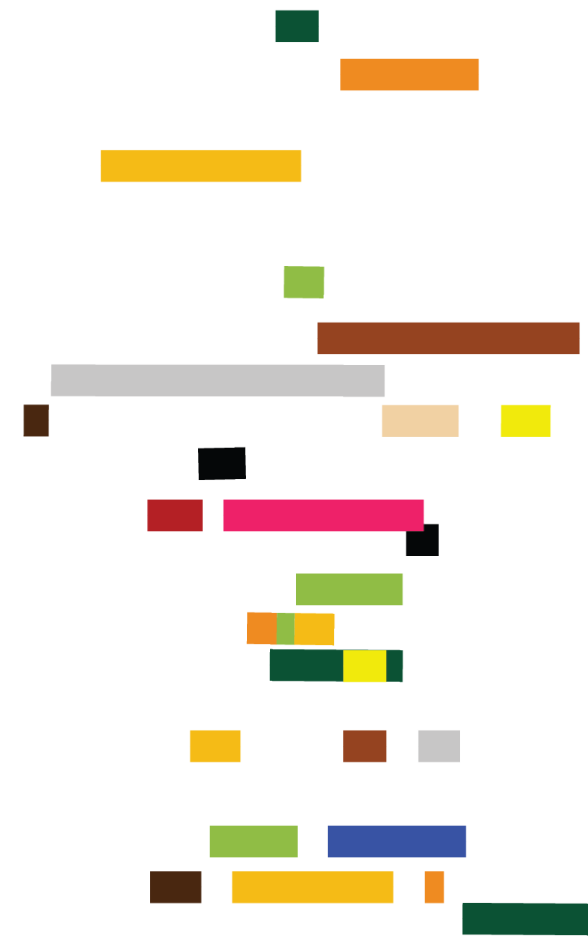
Residential plaza
(1977)



Through block connection
(1982)



Through block galleria
(1982)



III. VACANCY AND PUBLIC DEMAND

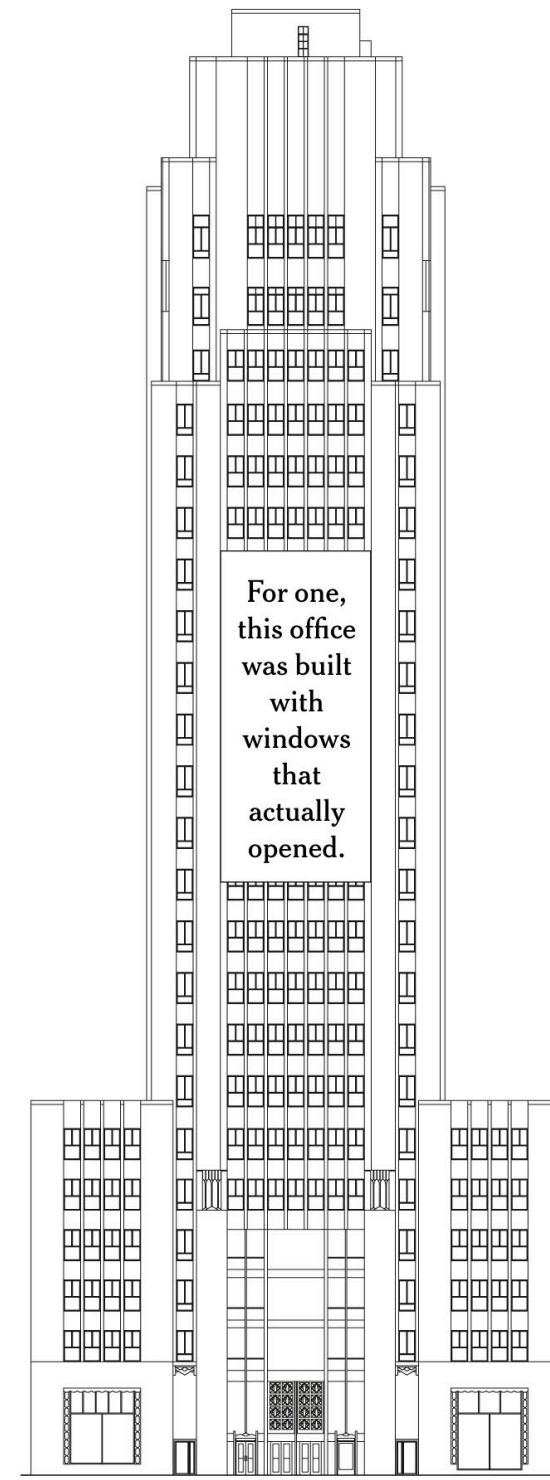
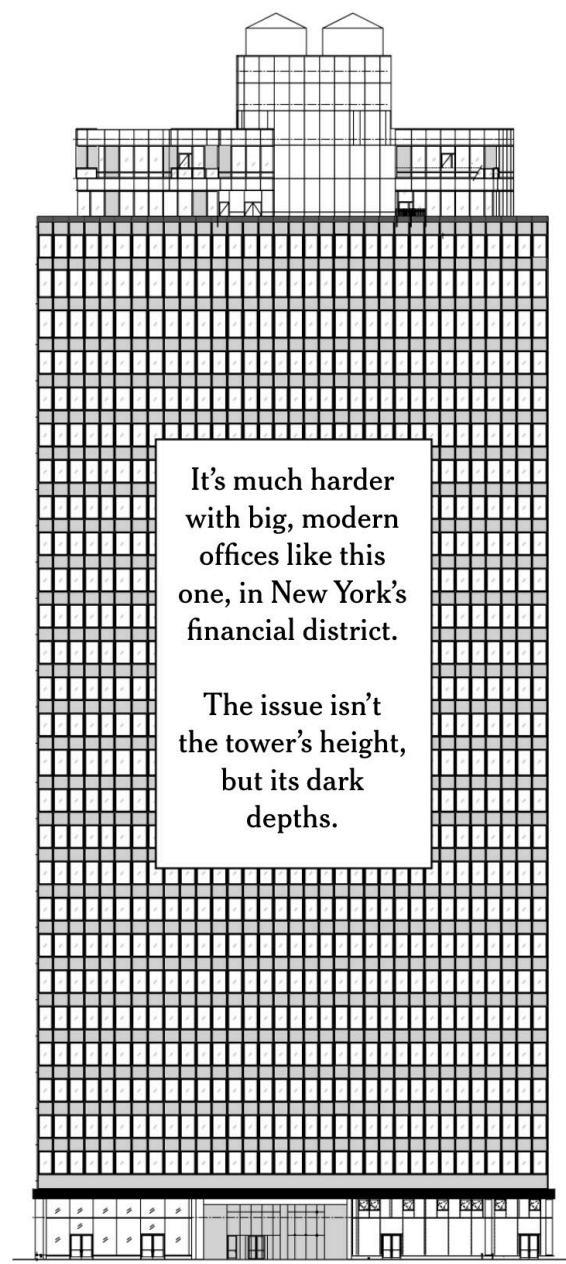
In New York City, there is a gradual conversion of office buildings into housing. However, the modern office towers built in the 1960s present unique challenges for conventional conversion due to their architectural features, such as deep floor plates and non-opening windows. Meanwhile, the development of technology and shifting work patterns have led to an increased vacancy rate in these office buildings.

Fast forward to the year 2058. Although costly renovations are intended to update aging building systems and materials to attract tenants, vacancy rates remain high, and the market has reached a low point. Even the iconic Seagram Building, known for its historically high tenancy rates, is now struggling following its fourth renovation. Two of its three largest tenants have significantly downsized, and the third tenant, a technology company, decided to relocate due to the need for greater floor-to-floor height.

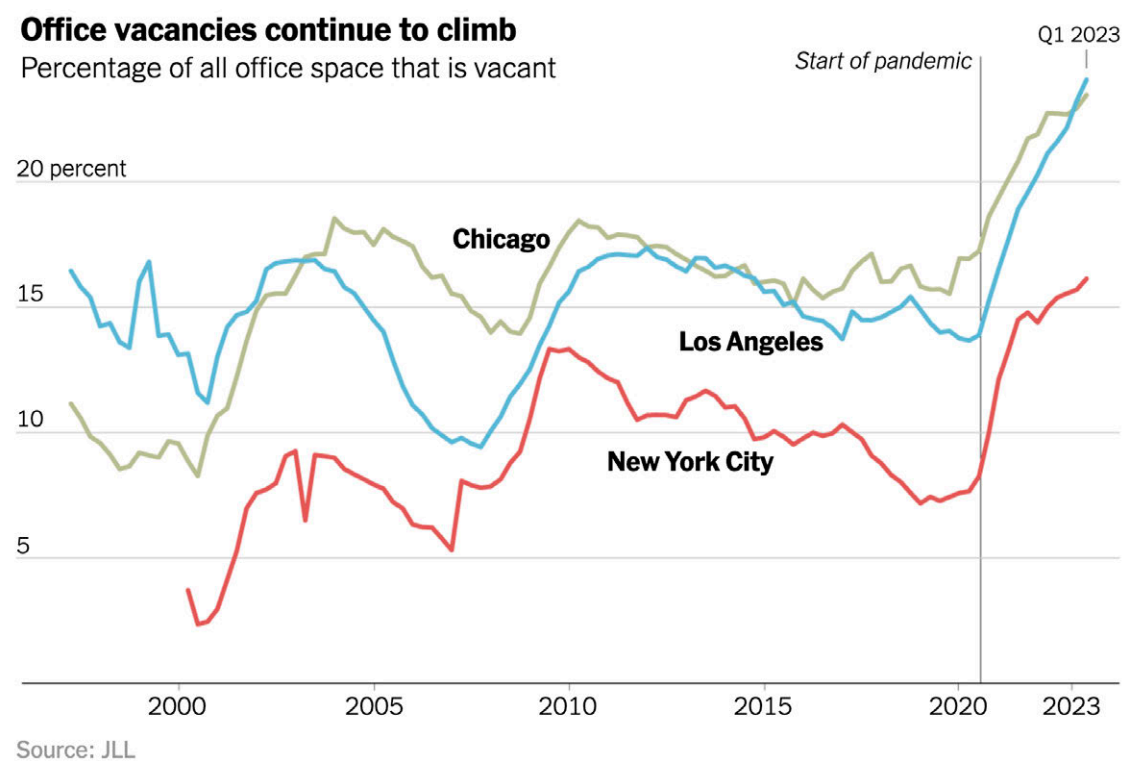
This issue is further exacerbated by New York City's high-density urban fabric, which continues to limit the availability of public space. In response to these growing challenges and the increasing demand for public space, the City of New York, in partnership with NYC Parks, the New York Public Library, and the New York Botanical Garden, has launched a new program called the **Urban Arboretum Network (UAN)**. Building upon this concept, the UAN will expand on the current street tree planting regulations and go beyond their limitations to explore innovative ways to create green spaces integrated with the built environment.

Utilizing the precedent of Privately Owned Public Spaces (POPS), the UAN's first experimental model will be located in the **Seagram Building**. It proposes utilizing the vacant space of the Seagram Building to create vertical landscaping and public spaces, as shown in the diagrams illustrating the proposed amount of vegetation, soil, and water ratio according to the planting regulations.

CHALLENGES TO THE CONVERSION OF OFFICE TOWERS



VACANCY RATE IN OFFICE TOWERS



IT IS NOW THE YEAR 2058

“RENOVATED, BUT EMPTY”



1958 The Seagram Building

1981-1983 First Renovation (Philip Johnson)
updating the building's mechanical systems, replacing
the windows, and adding a new entrance canopy

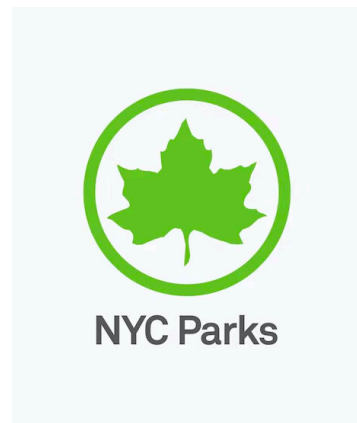
2003-2005 Second Renovation (RFR Holding Corp.)
updating the building's lobby, adding a new restaurant,
and converting the upper floors from office space to
luxury condos

2019-2022 Third Renovation (RFR Holding Corp.)
converting the building's basement parking garage into
a 35,000-square-foot gym known as the Seagram
Playground. The gym includes a basketball court,
climbing wall, and yoga studio.

2038 Fourth Renovation

2058





NYC Parks



New York Public Library



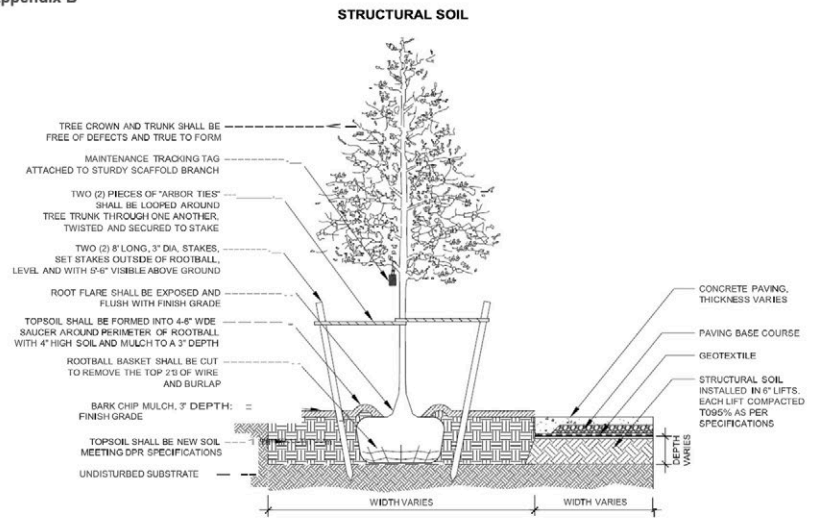
New York Botanical Garden



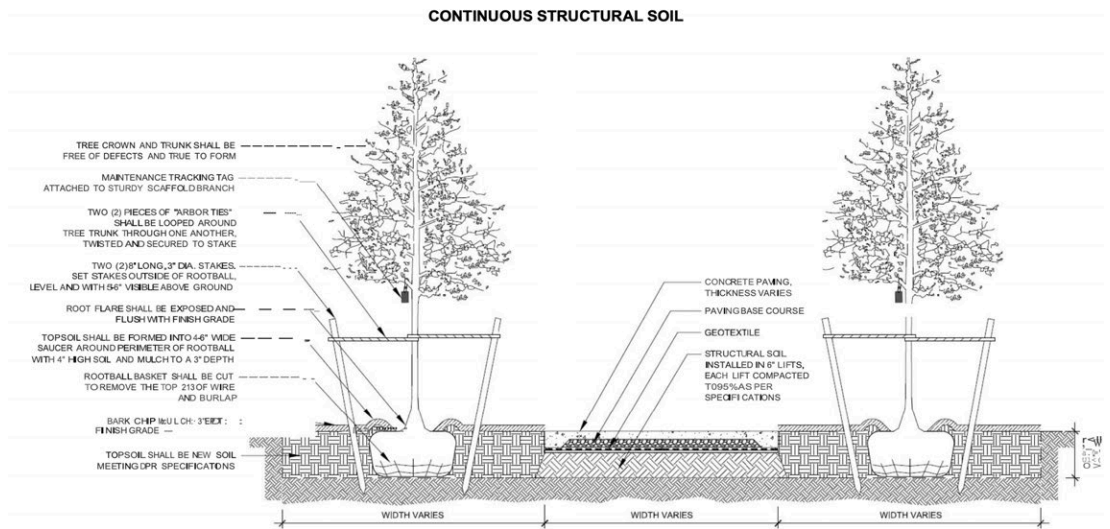
New York City Urban Arboretum Network

CURRENT STREET TREE PLANTING REGULATION

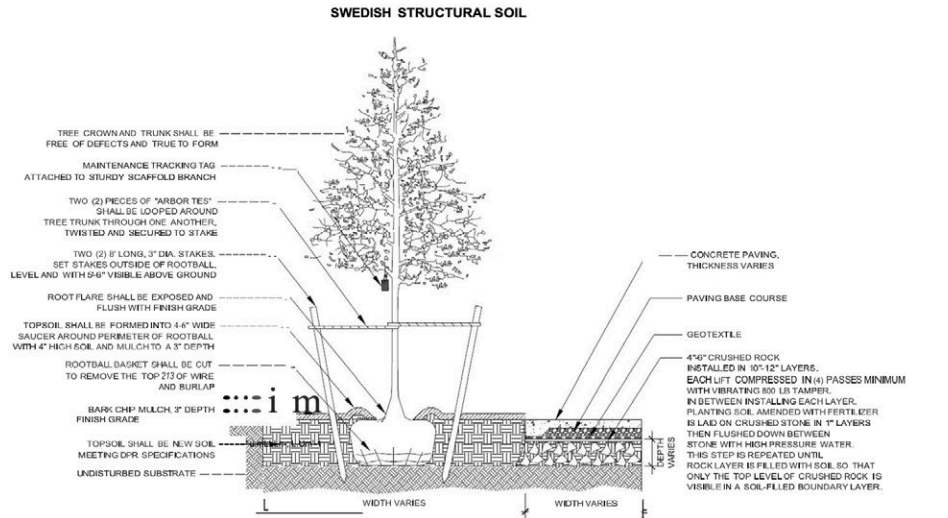
Appendix B



TREE PLANTING & STRUCTURAL SOIL DETAIL
NOT TO SCALE



TREE PLANTING & CONTINUOUS STRUCTURAL SOIL DETAIL
NOT TO SCALE

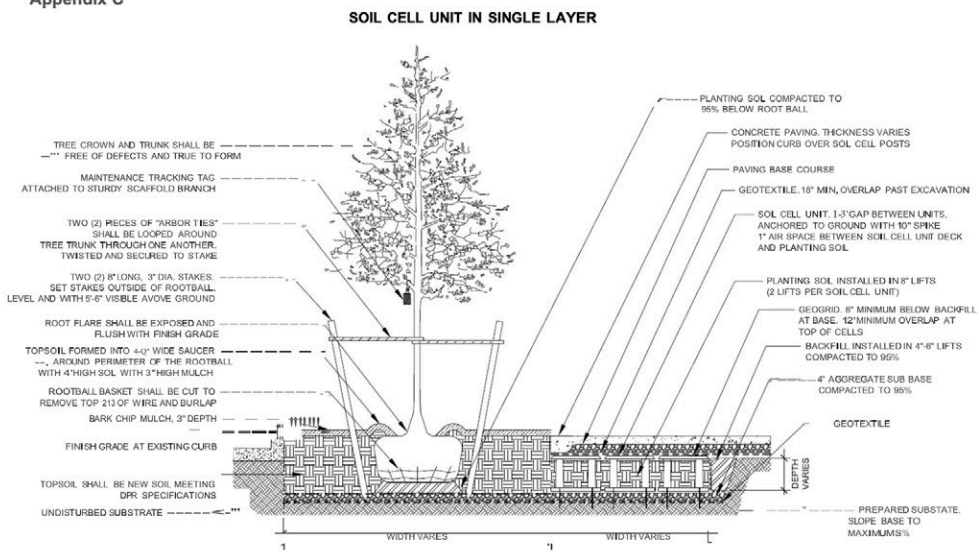


TREE PLANTING & SWEDISH STRUCTURAL SOIL DETAIL
NOT TO SCALE

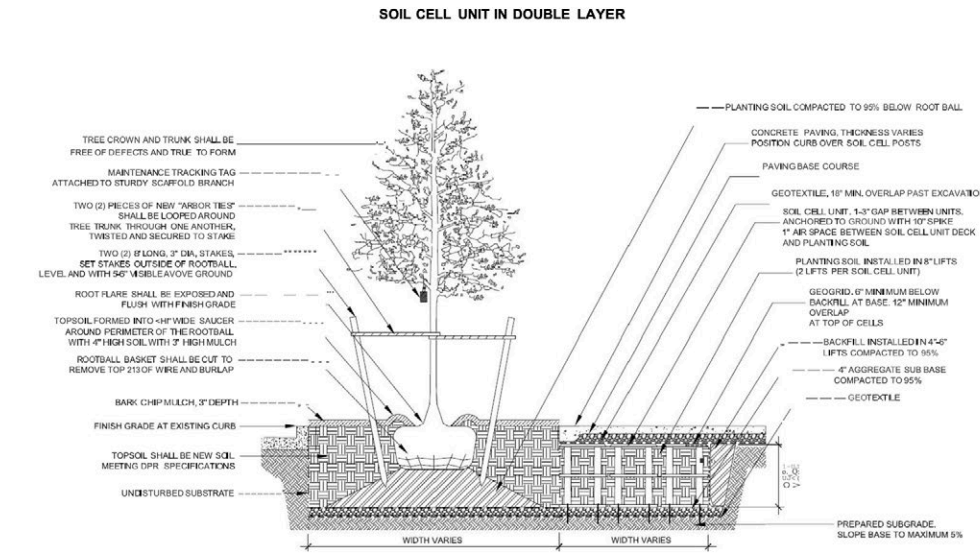
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22

Appendix C

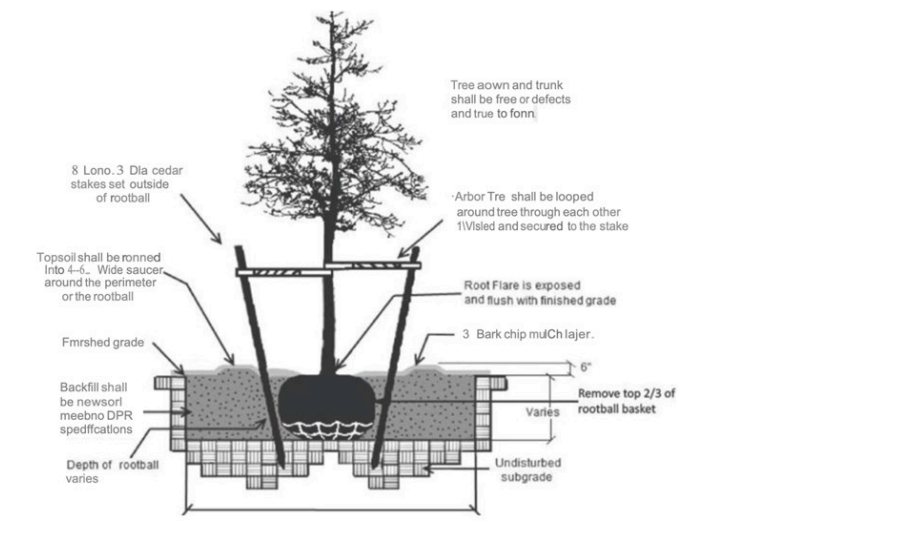


TREE PLANTING & SOIL CELL UNIT IN SINGLE LAYER DETAIL
NOT TO SCALE



TREE PLANTING & SOIL CELL UNIT IN DOUBLE LAYER DETAIL
NOT TO SCALE

Appendix F



Tree Planting & Stake Detail
NOT TO SCALE

PROPOSED EXPERIMENTAL SITE

INDIVIDUAL AND INTERIOR LANDMARK TAX LOT | BBL 1013070001
375 PARK AVENUE, 10022

Manhattan (Borough 1) | Block 1307 | Lot 1

Zoning Districts: [C5-2.5](#) [C5-3](#) [MID](#)

INTERSECTING MAP LAYERS :

[Historic District](#) Individual Landmark

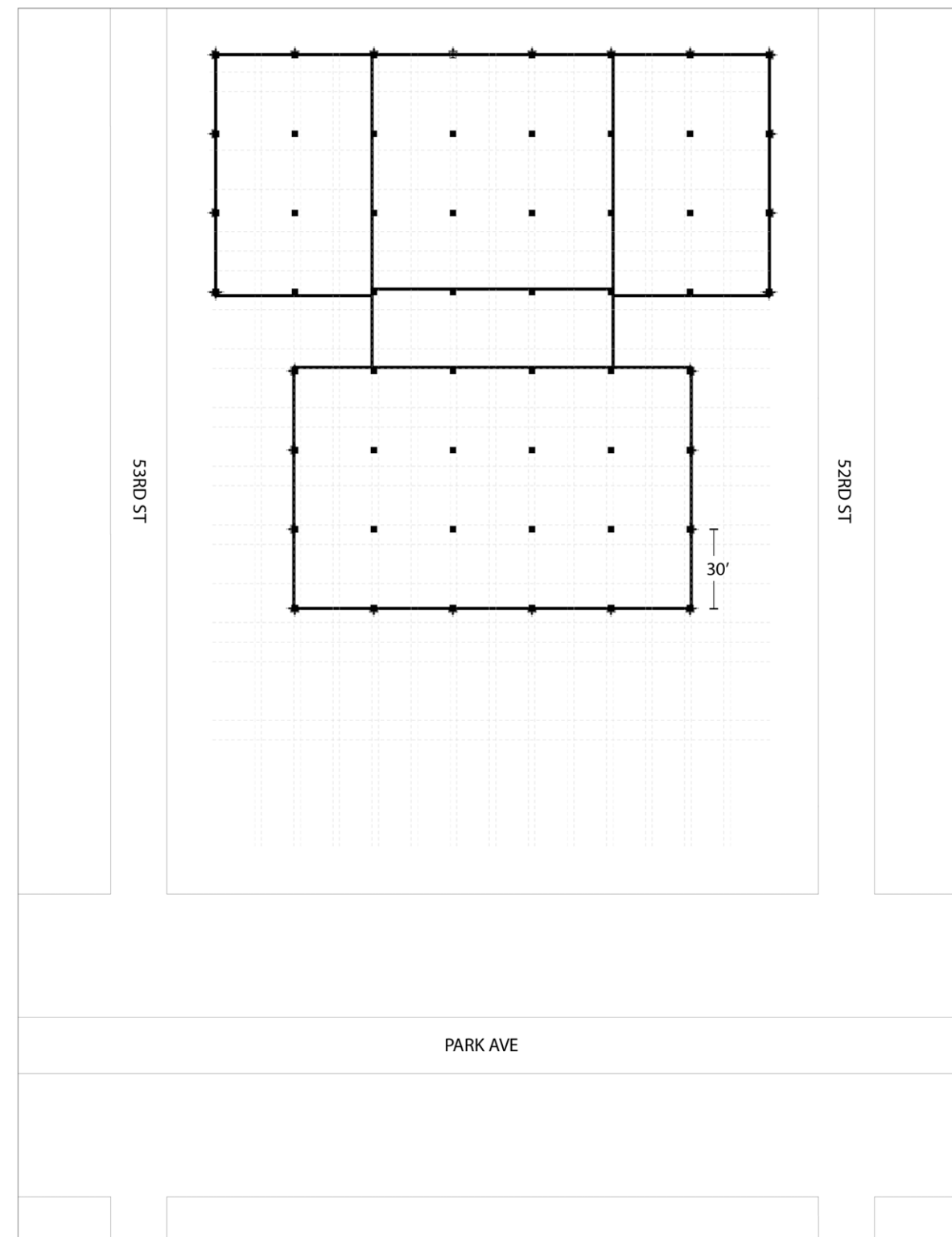
ZONING DETAILS:

[Digital Tax Map](#)

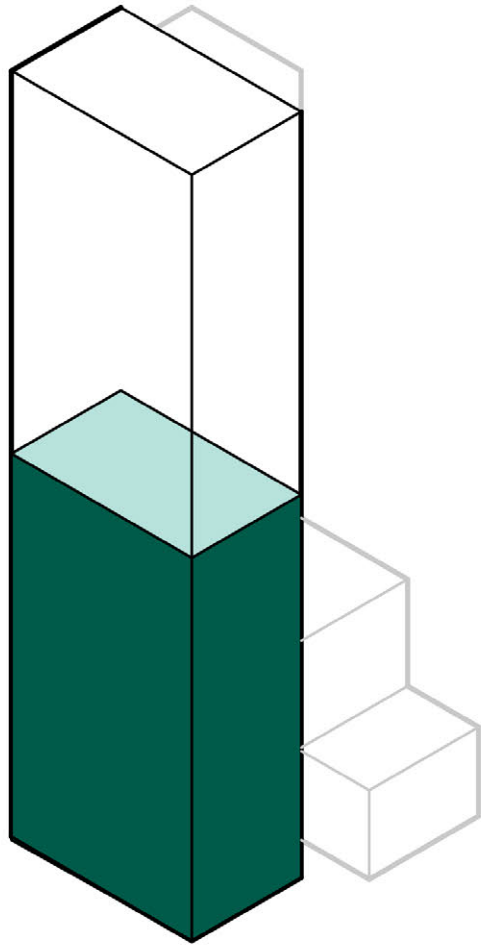
[Zoning Map: 8d \(PDF\)](#)

[Historical Zoning Maps \(PDF\)](#)

Owner	Show Owner
Land Use	Commercial & Office Buildings
Lot Area	59,950 sq ft
Lot Frontage	200.83 ft
Lot Depth	302 ft
Year Built	1958
Year s Altered	2013 , 2018
Building Class	Office Buildings - Office Only or Office with Comm – 20 Stories or More (O4)
Number of Buildings	1
Number of Floors	38
Gross Floor Area	849,014 sq ft
Total # of Units	102
Building Info	BISWEB
Property Records	View ACRIS
Housing Info	View HPD's Building, Registration & Violation Records
Community District	Manhattan Community District 5
City Council District	Council District 4
School District	02
Police Precinct	18
Fire Company	E008
Sanitation Borough	1
Sanitation District	05
Sanitation Subsection	2B

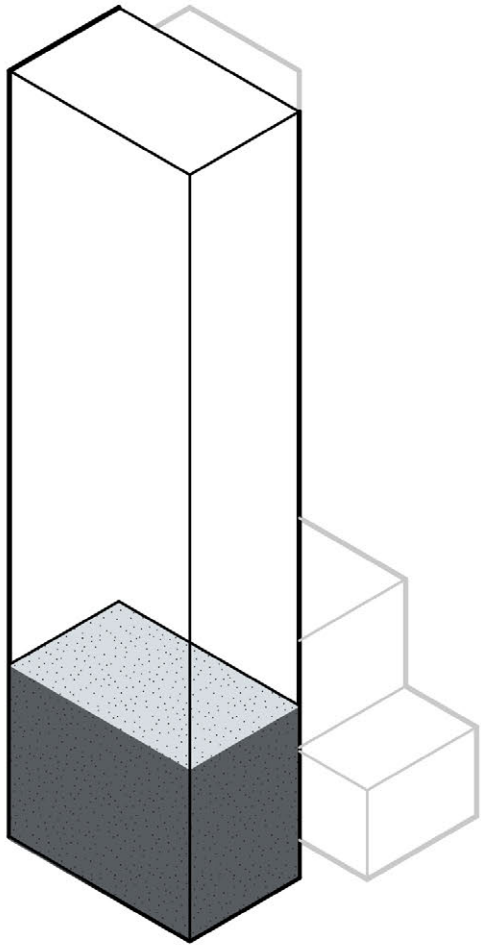


PROPOSED VEGETATION AMOUNT



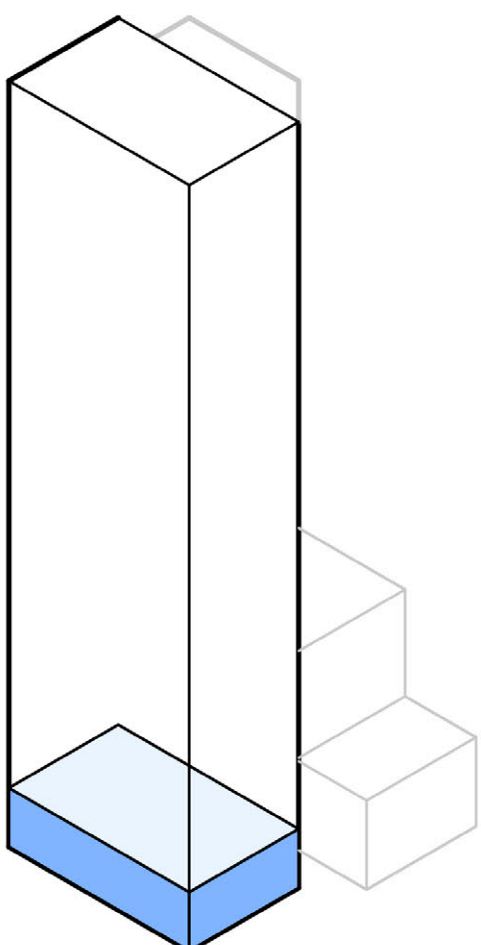
PLANTING 50 %

220,903 m³



SOIL 30 %

110,452 m³



WATER 13.5 %
(per day)

17010 L

IV. LANDSCAPE TRANSFORMATION

- i. Voids and Form
- ii. Planting Scheme
- iii. UAN Program
- iv. The Ramp

This chapter illustrates the design details and technical strategies that support the vision of the UAN.

IV. LANDSCAPE TRANSFORMATION

i. Voids and Form

ii. Planting Scheme

iii. UAN Program

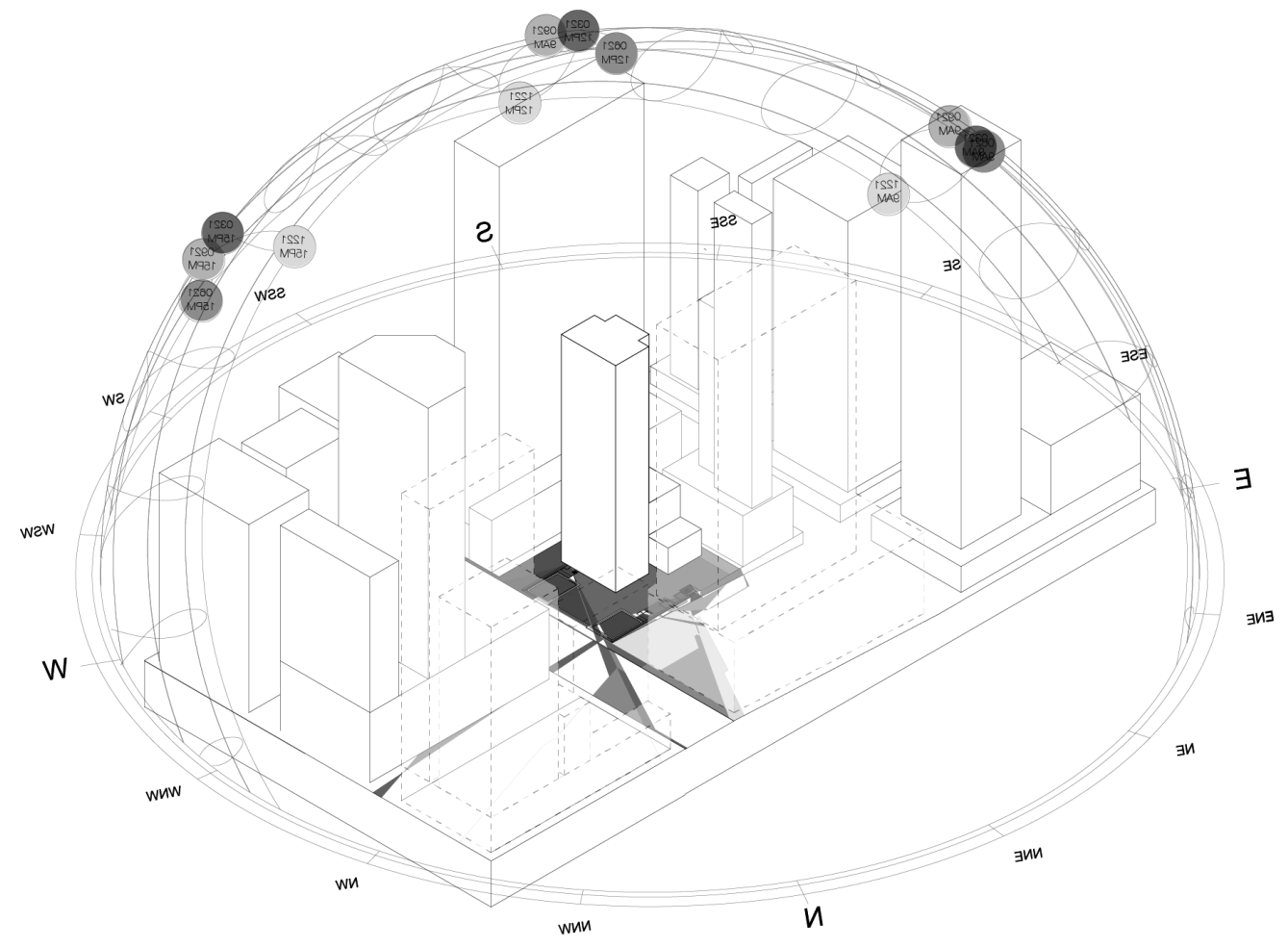
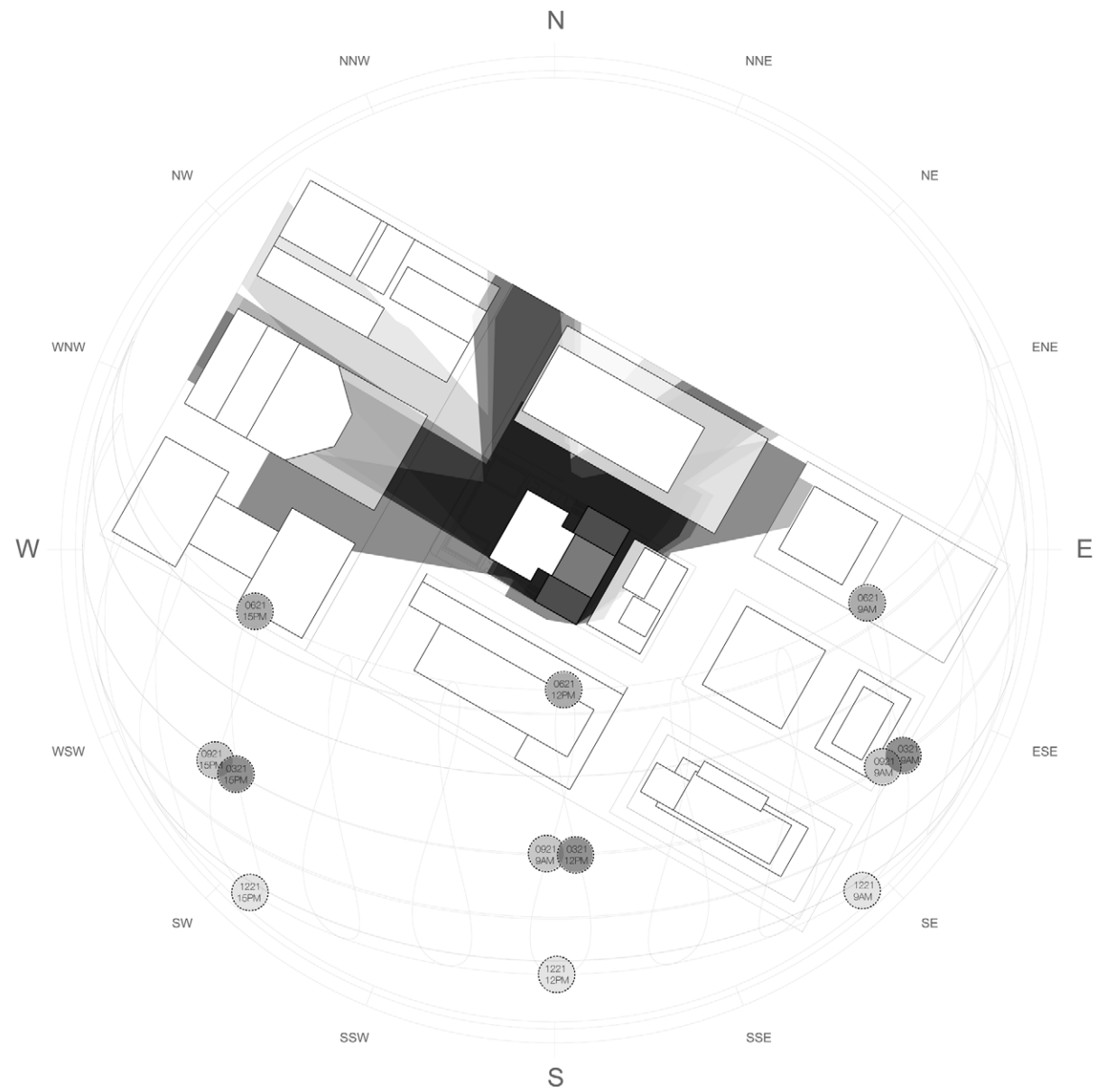
iv. The Ramp

The design process began with a site analysis, revealing the Seagram Plaza's persistent shading, prompting explorations to guide sunlight into the building's interior.

Sun studies mapped direct sun hours through the seasons, identifying areas of sunlight and shade. Examining hourly sun paths on representative days informed strategic void placement within the building. Three sun path models for high, mid, and low angles sculpted voids as proposed landscape and public spaces. Sectional drawings illustrate these sun path voids intervening in the building structure.

The voids were then transformed into modular forms based on the existing modular spaces divided by beams and columns at the Seagram Building, aiding spatial analysis and form studies. Further developing the design, it became a more organic form to provide a softer landform, particularly for vegetation growth.

SHADOW ANALYSIS



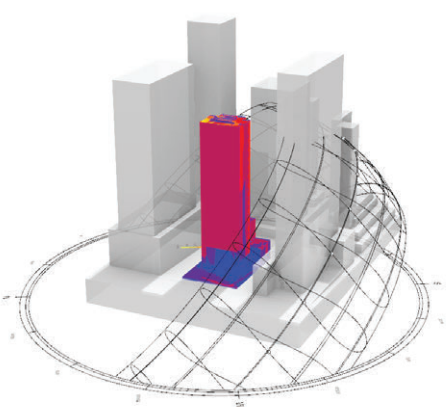
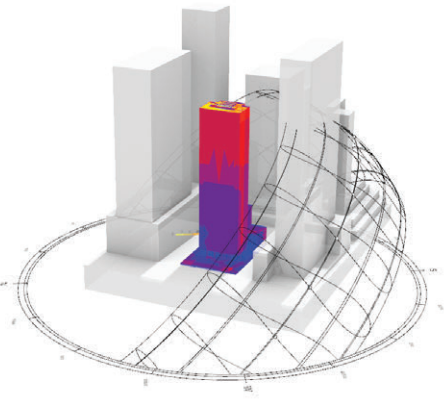
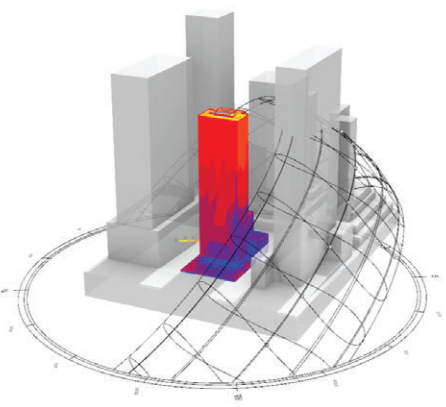
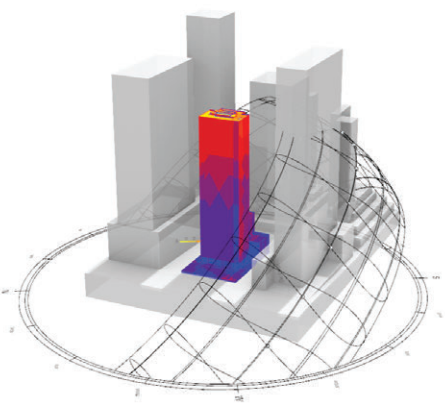
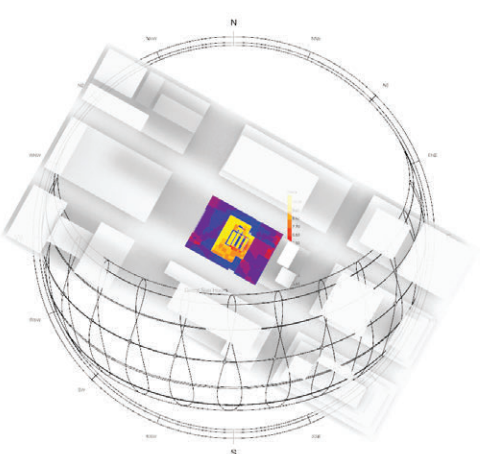
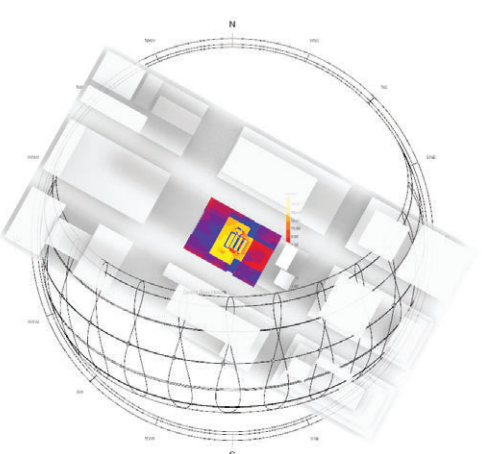
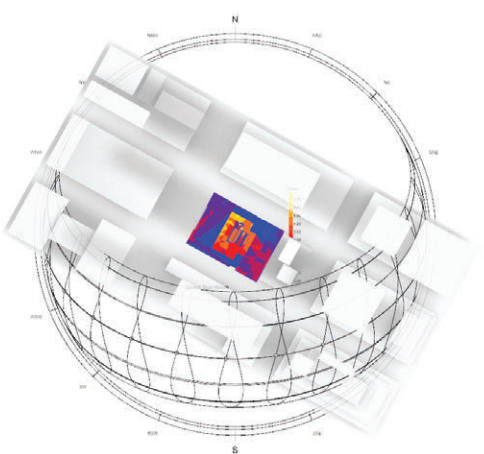
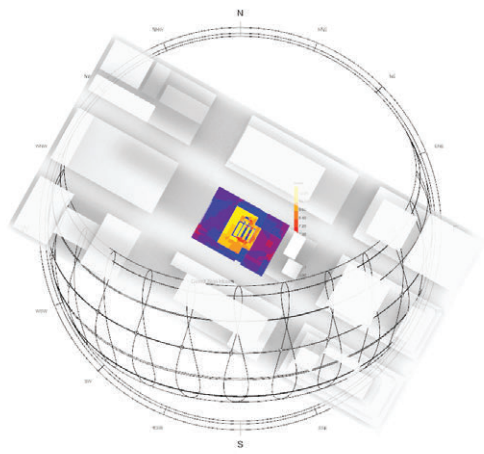
SOLAR ANALYSIS

03.21

06.21

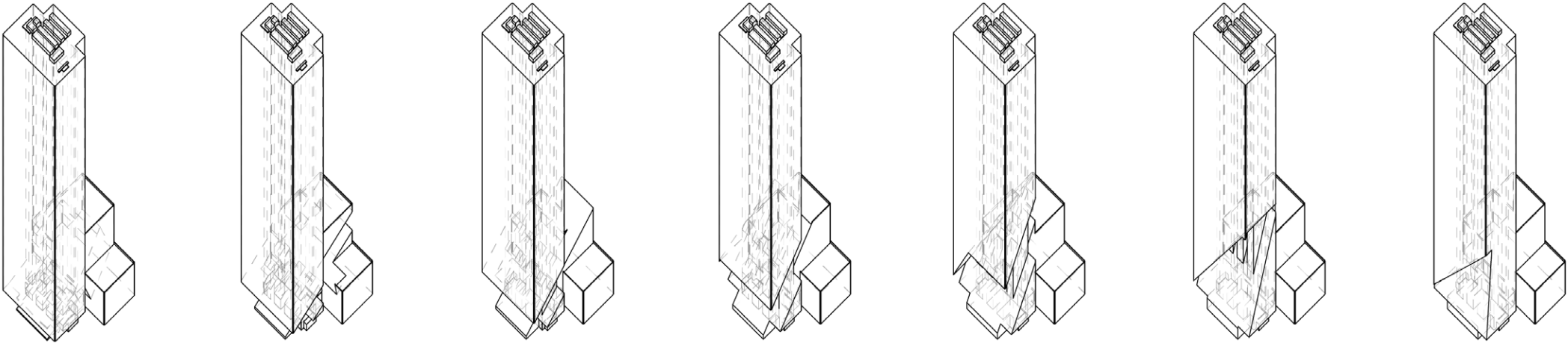
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12.21



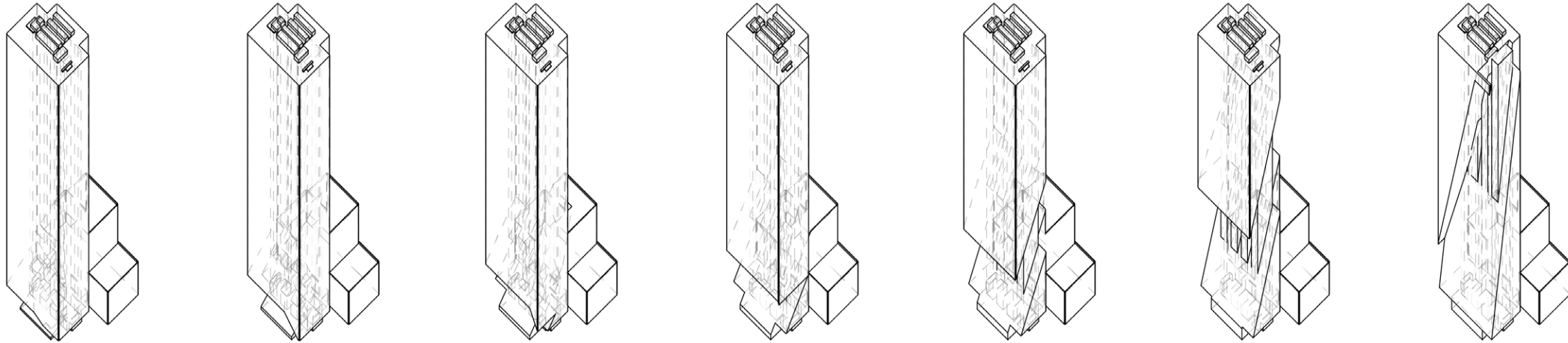
SOLAR VOIDS

03.21



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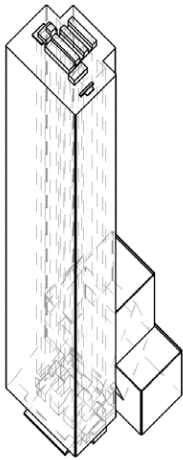
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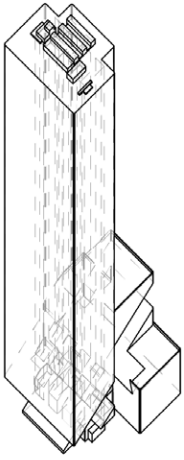
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SOLAR VOIDS

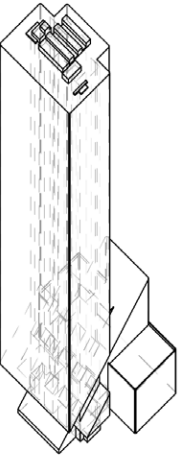
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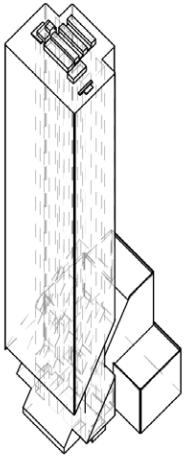
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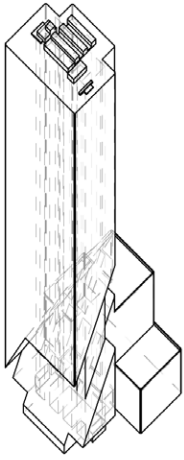
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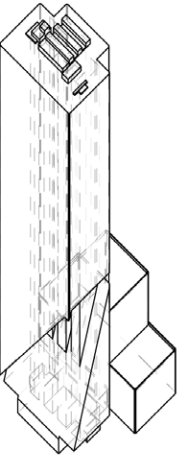
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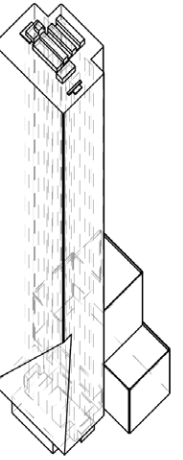
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11:00

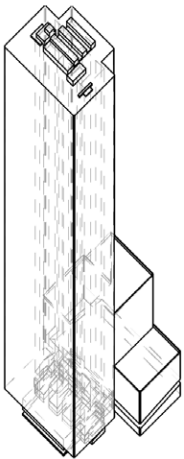


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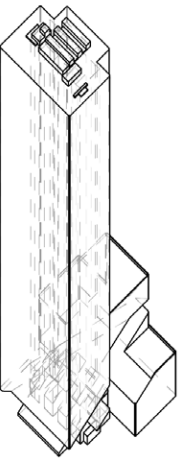


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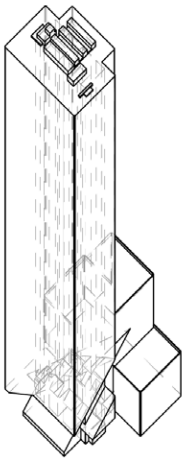
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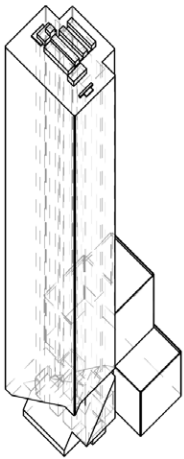
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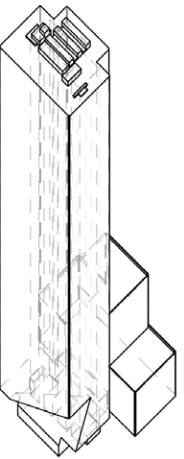
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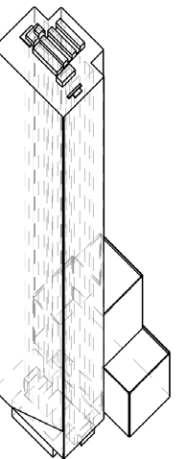
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11:00



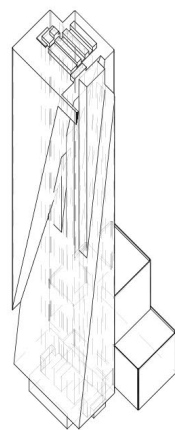
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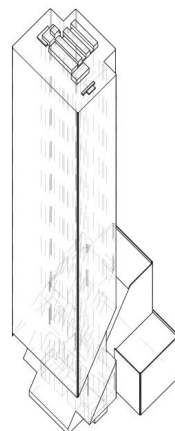
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SOLAR VOIDS

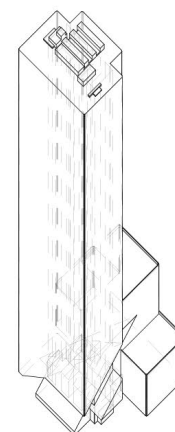
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12:00 PM
HIGH



03.21
10:00 AM
MID

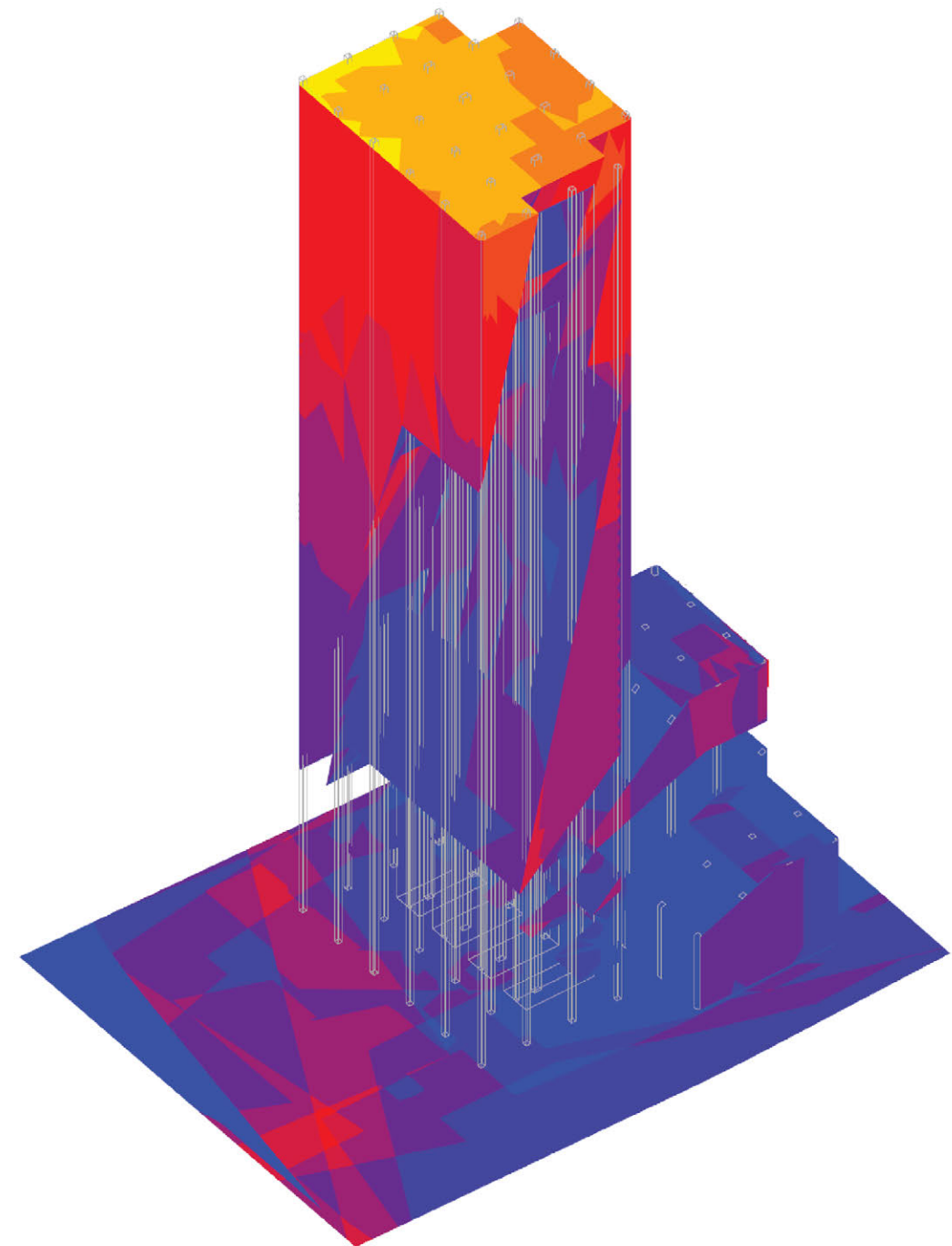
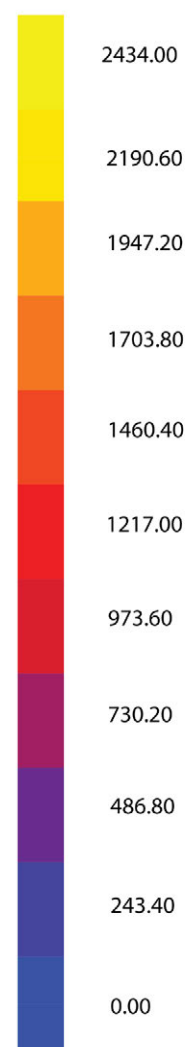


12.21
10:00 AM
LOW

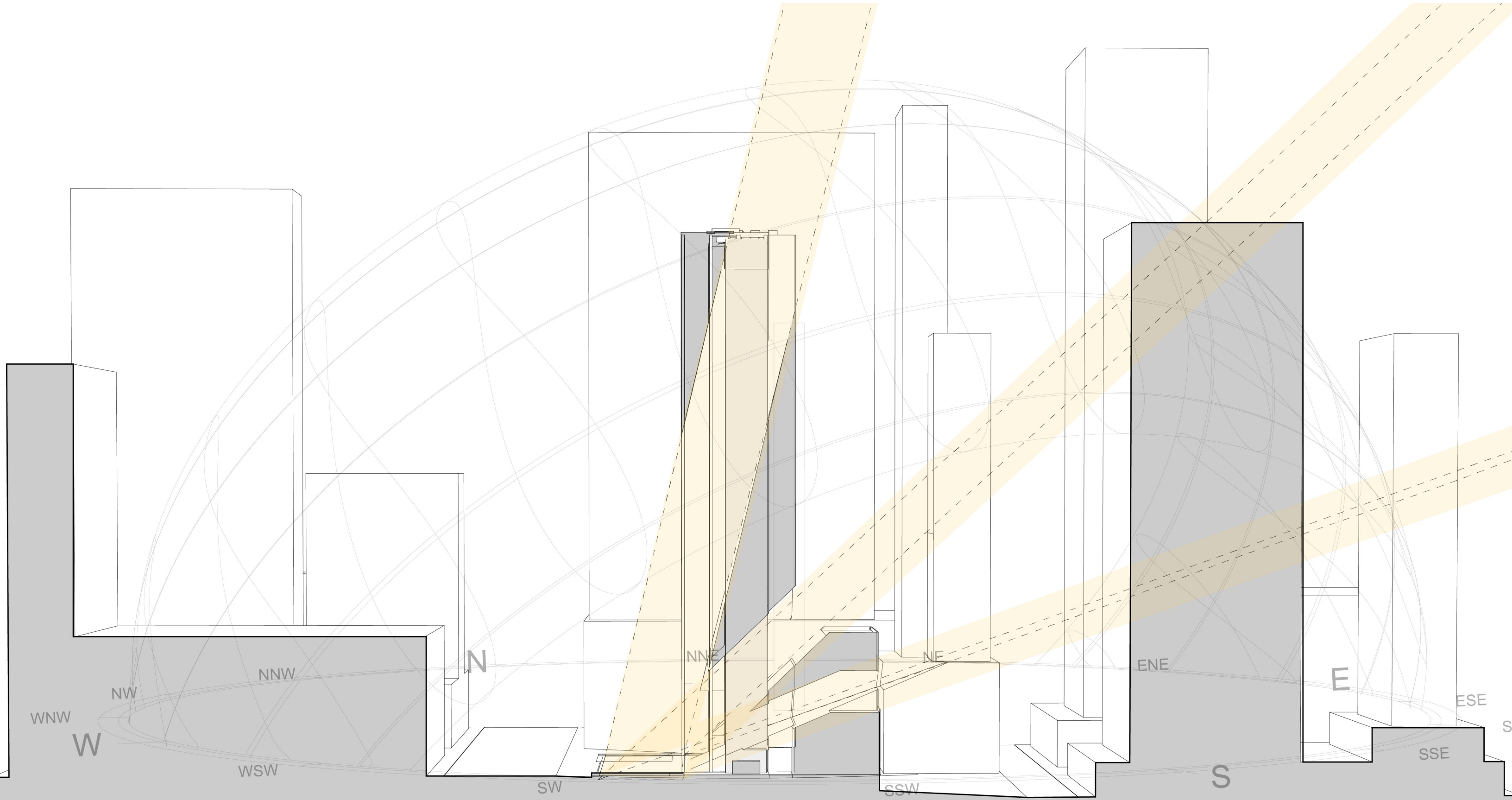


Direct Sun Hours

1:150

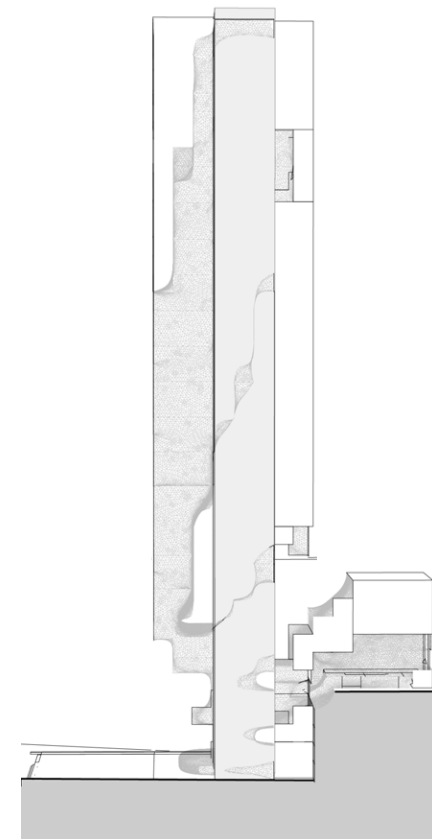
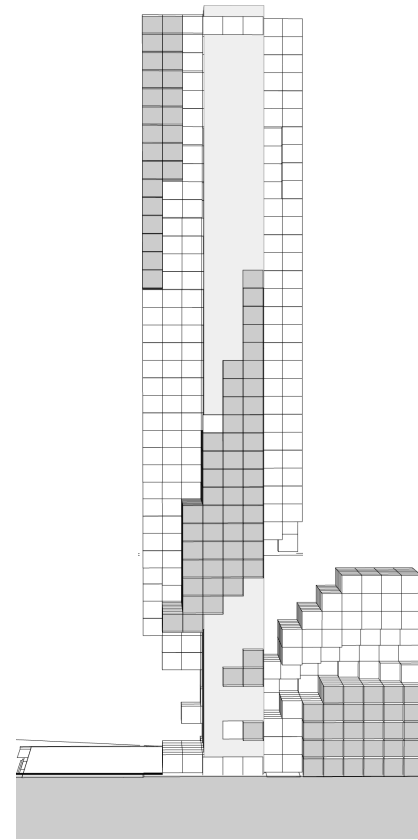
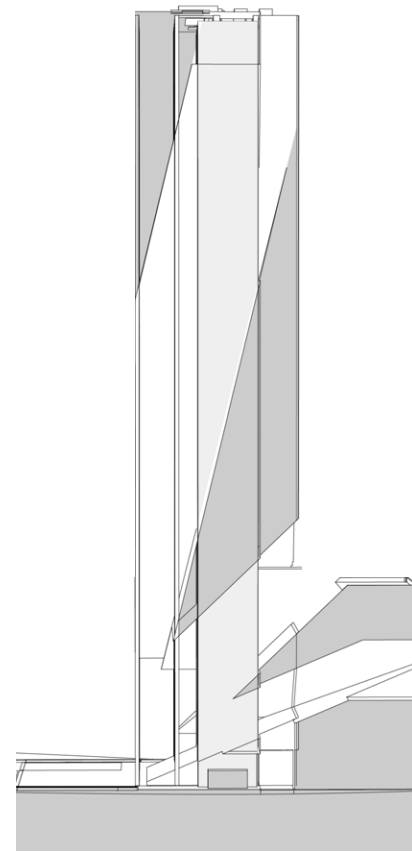


VOIDS AND THE INTERVENTION

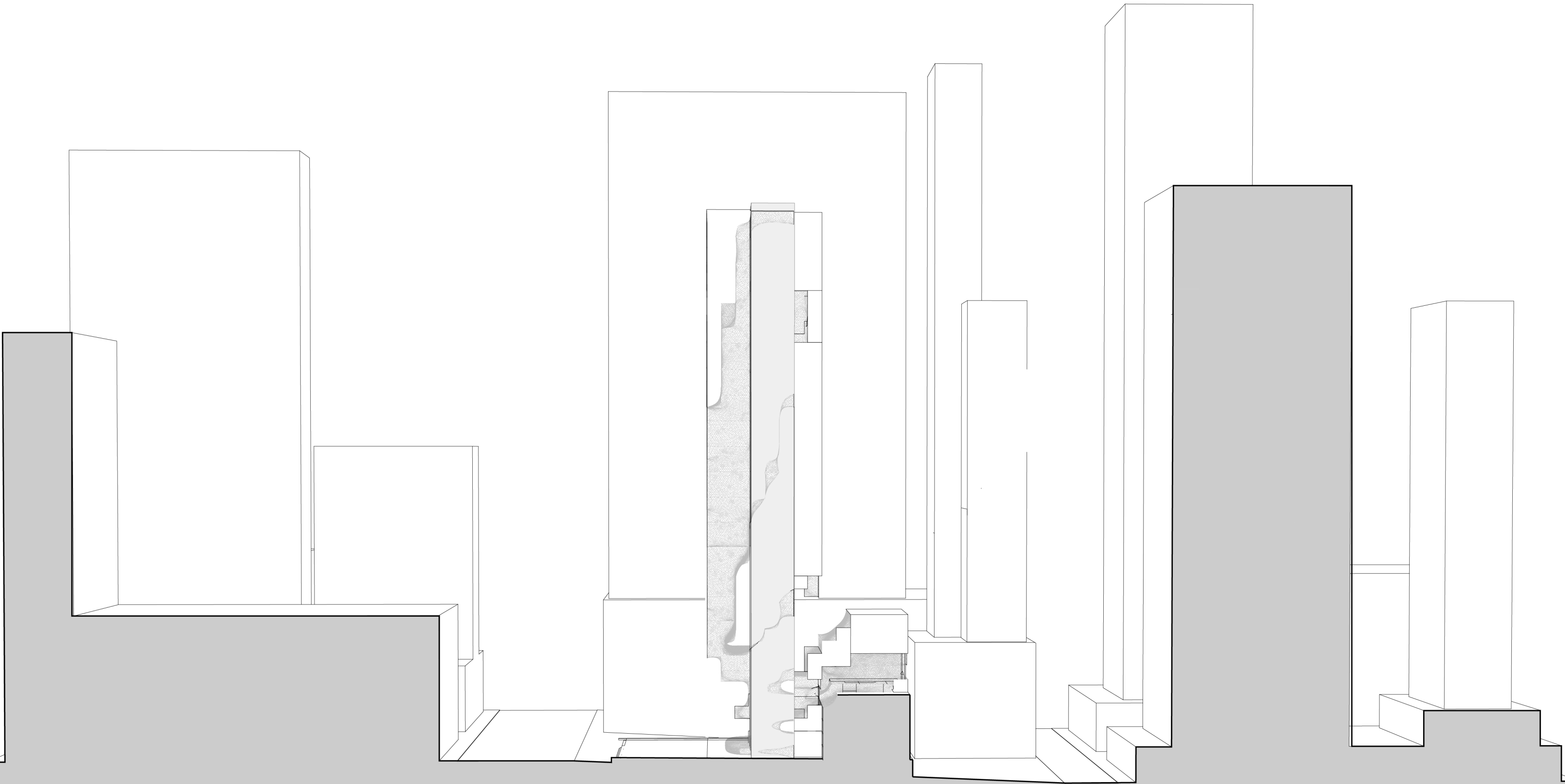


1:1500

FORM TRANSFORMATION

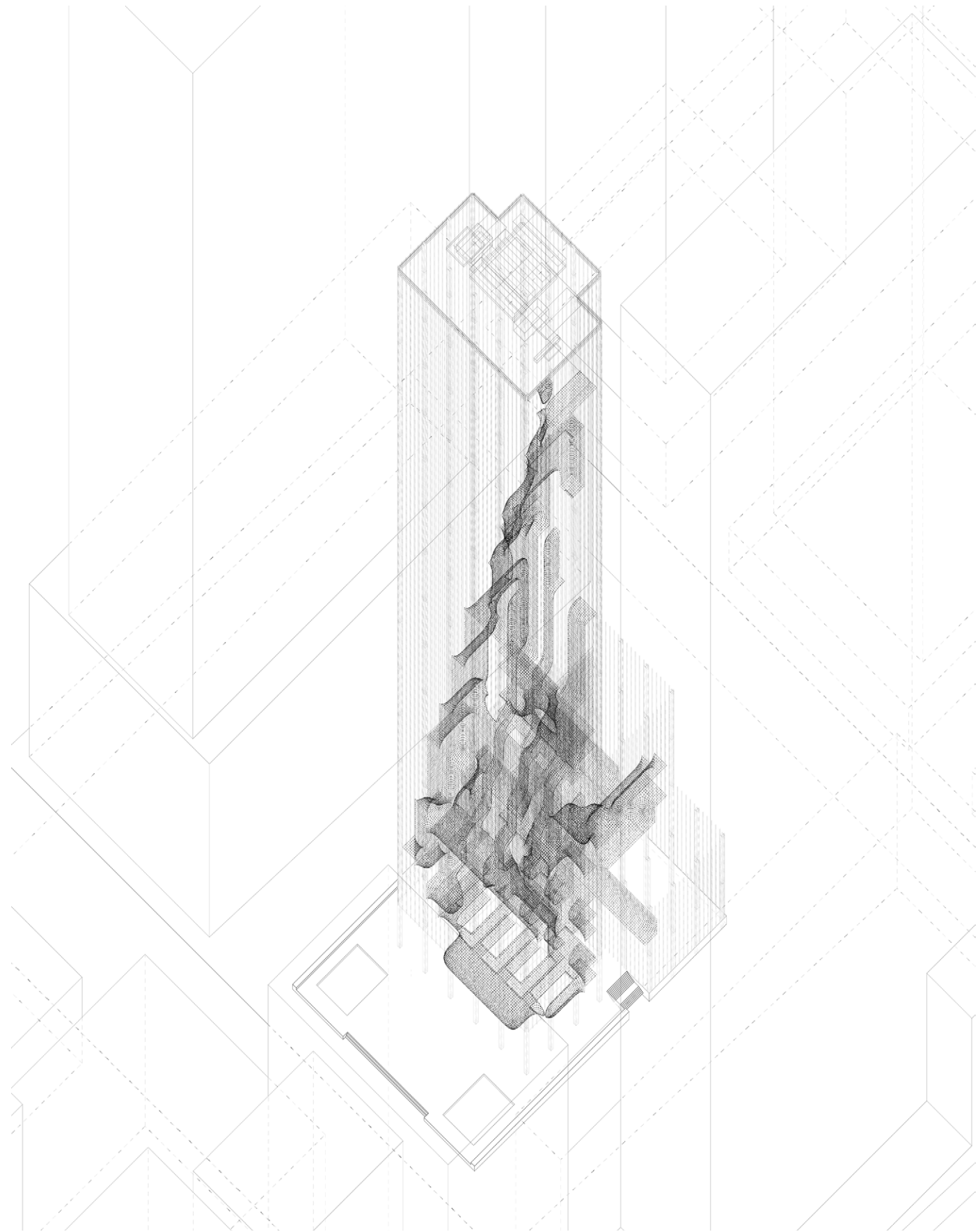
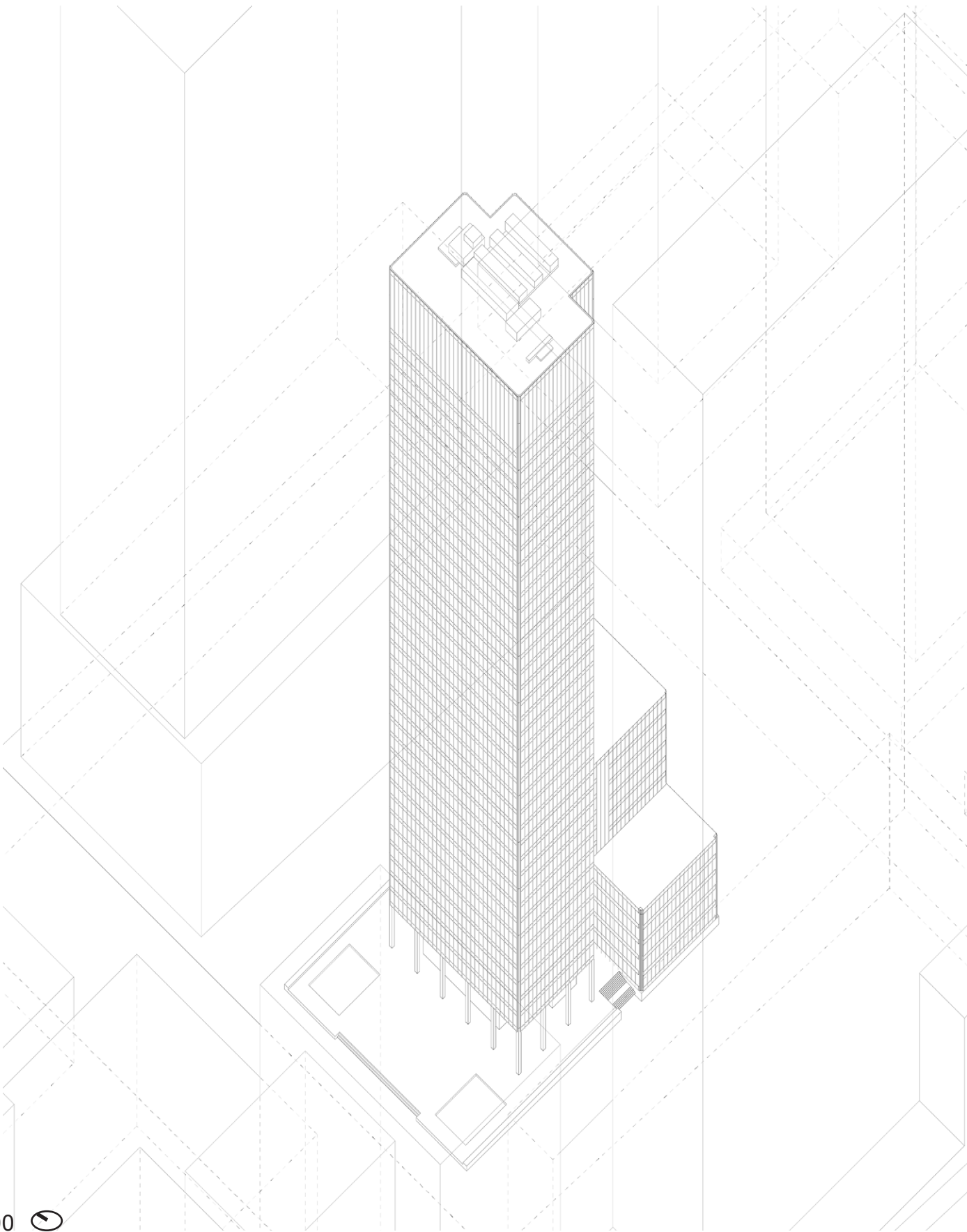


PROPOSED FORM



1:1500

SEAGRAM BUILDING AND THE PROPOSED SURFACES



IV. LANDSCAPE TRANSFORMATION

i. Voids and Form

ii. **Planting Scheme**

iii. UAN Program

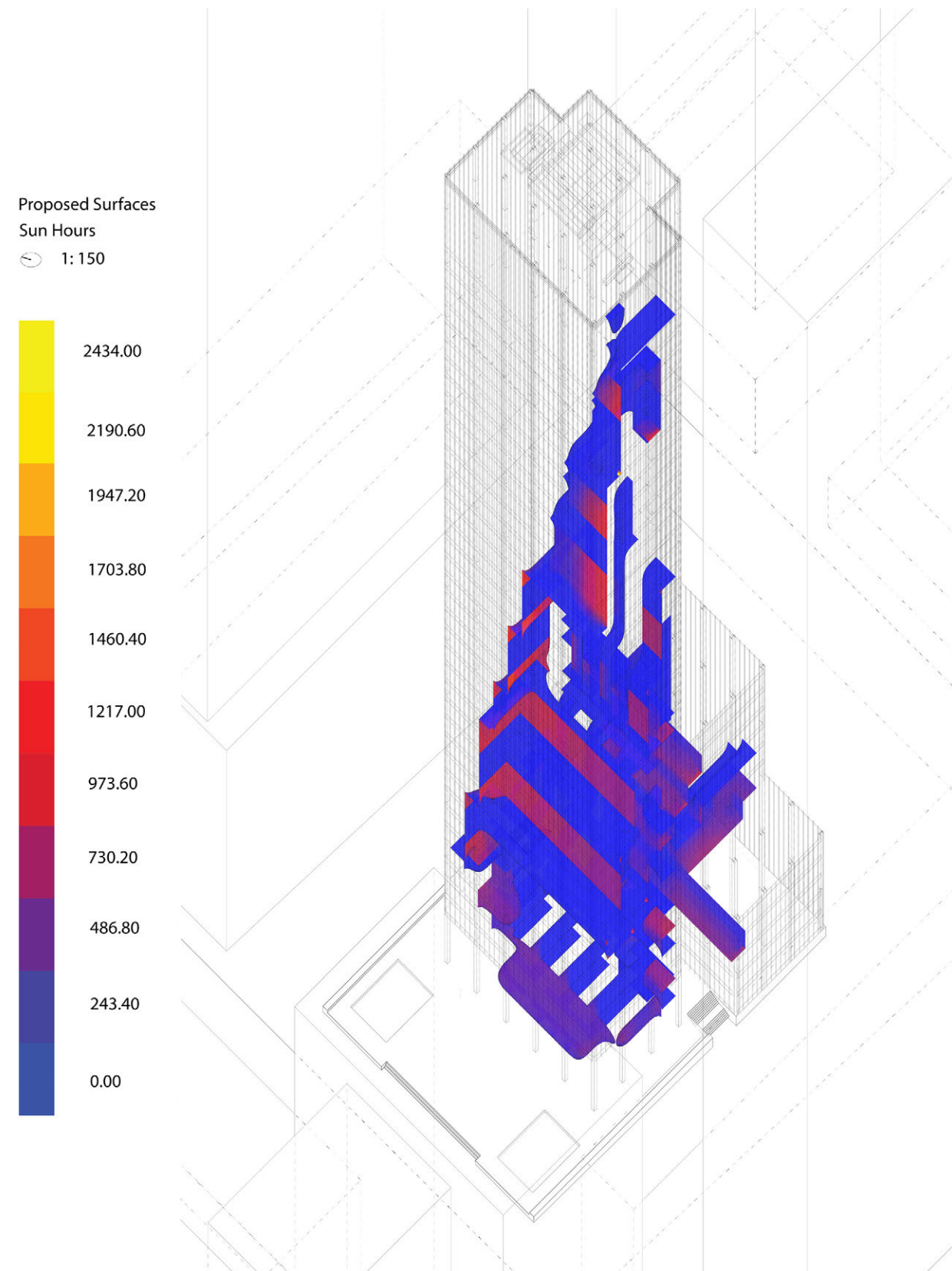
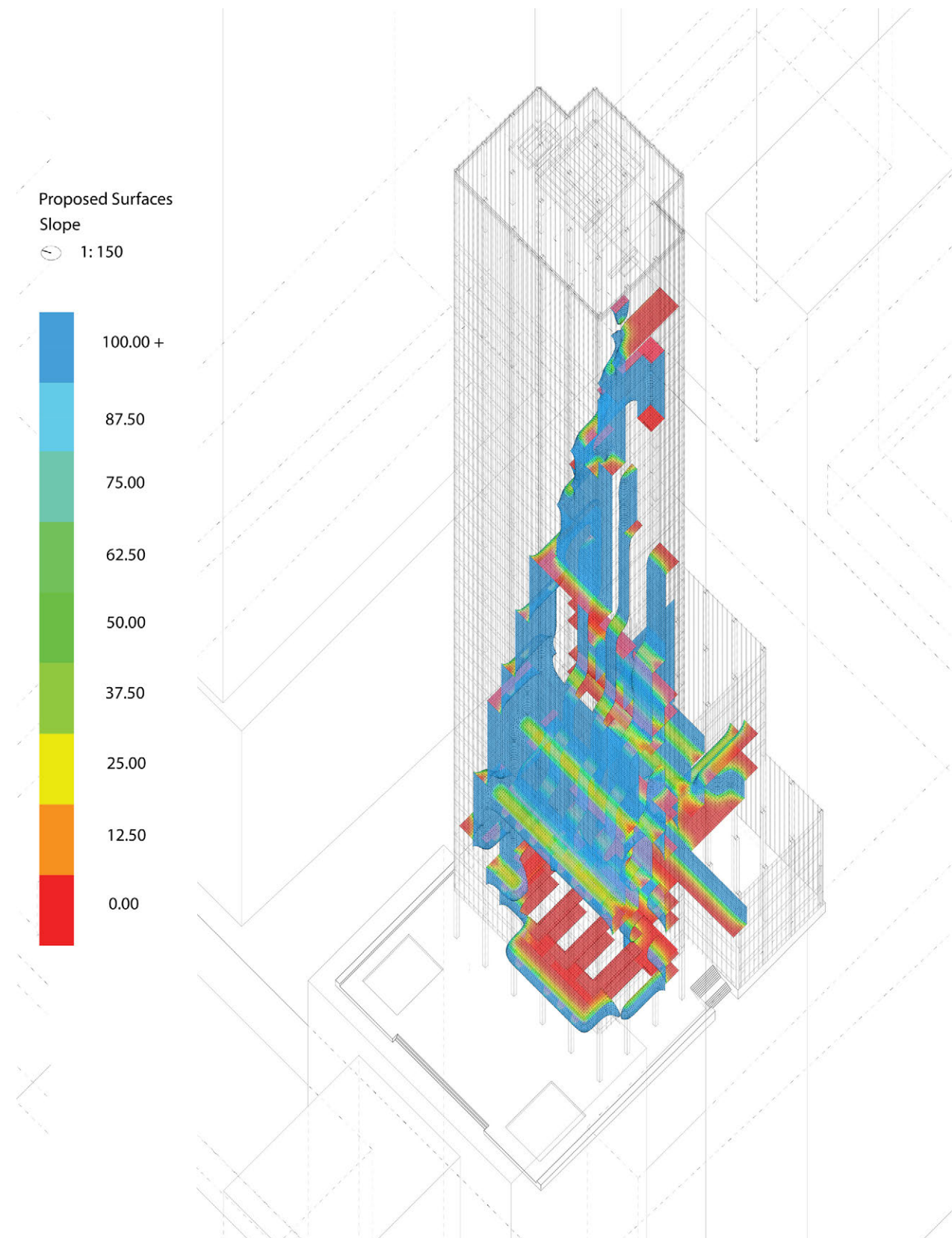
iv. The Ramp

After establishing the optimal voids and landforms, the design process progressed to the development of a comprehensive planting scheme.

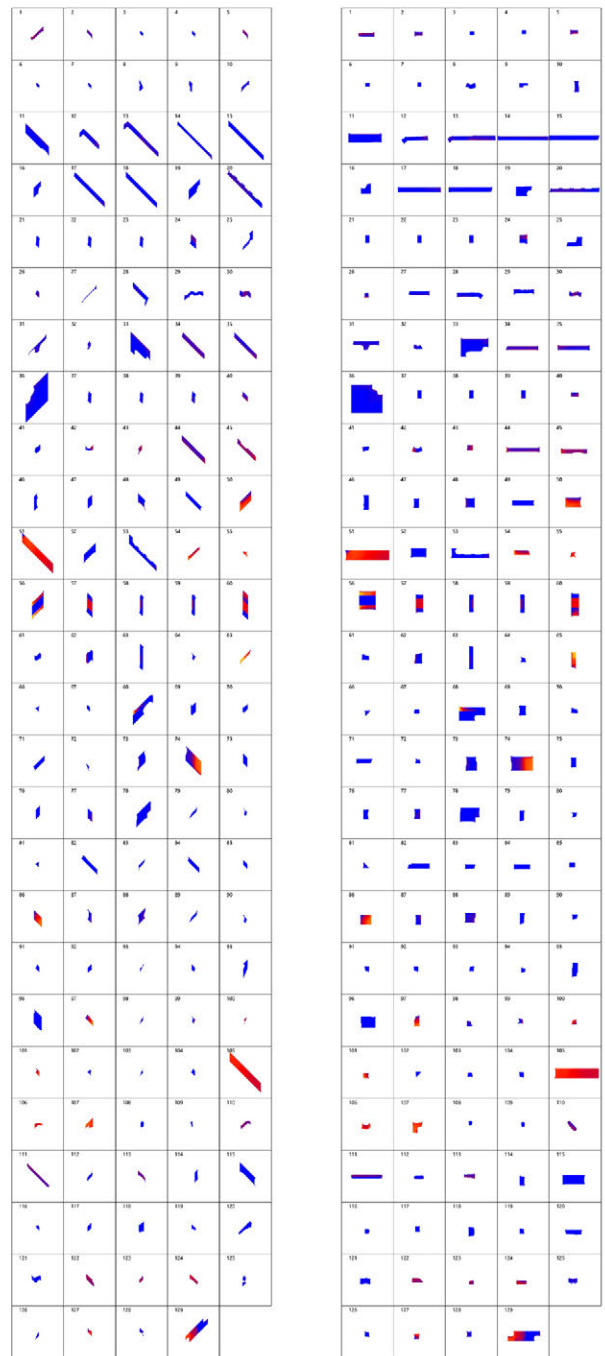
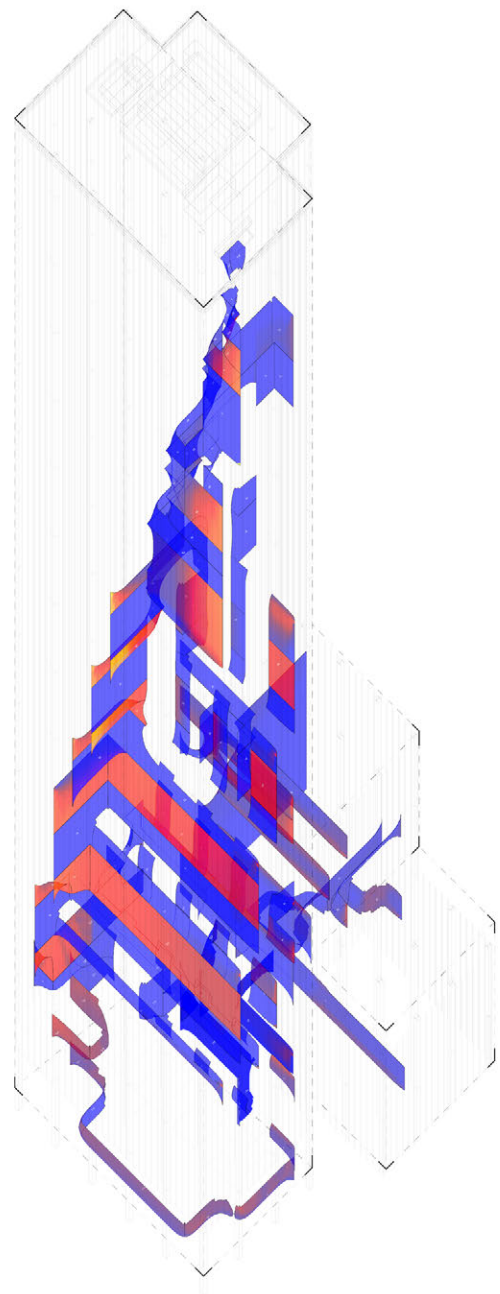
The slope analysis categorized surface properties as horizontal or vertical, while solar studies defined areas of light and shade, informing the intricate planting strategies. Rooted in these surface characteristics, a conceptual planting scheme emerged, studying vegetation species across four distinct growing conditions: horizontal outdoor, horizontal indoor, vertical outdoor, and vertical indoor. Detailed surface typology standards provide guidelines for paved surfaces, grass growing environments, shrub and tree habitats, and integrated stormwater collection systems.

The planting scheme embraced a layered approach, selecting plant varieties based on their unique root characteristics and growth habits. The roots diagram unveils the intricate web of roots supporting the lush vegetation within the transformed Seagram Building. Engineered soil mixes and specialized planting media were carefully designed to nurture root growth and development in the vertical and indoor environments. A sustainable irrigation system was envisioned to nourish the diverse array of vertical landscapes. This integrated system rainwater harvesting, connecting to the Seagram Plaza fountains in a cyclical loop, complemented by greywater recycling and smart irrigation technologies.

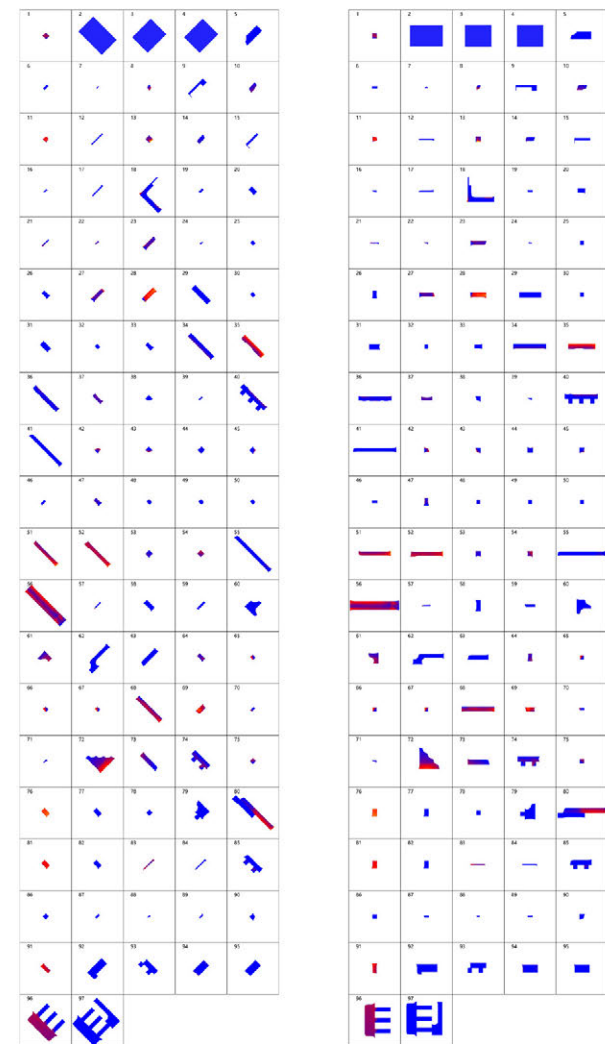
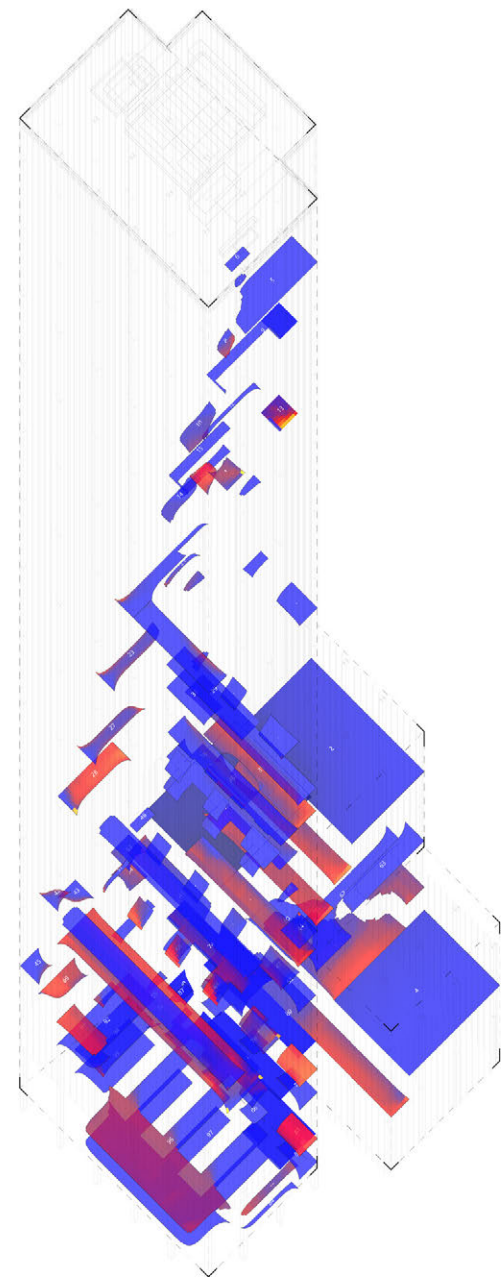
PROPOSED SURFACES & ANALYSIS



PLANTING SURFACES CATEGORY

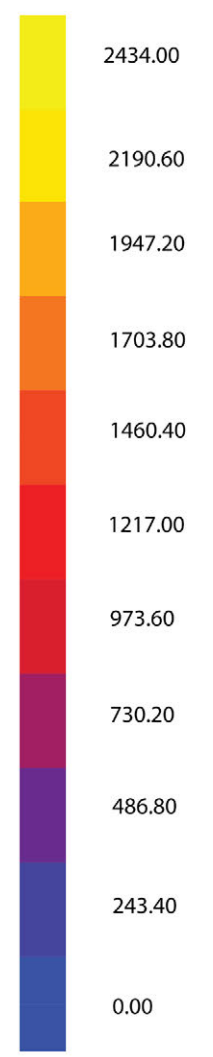


Slope 100+ | Sun Hours

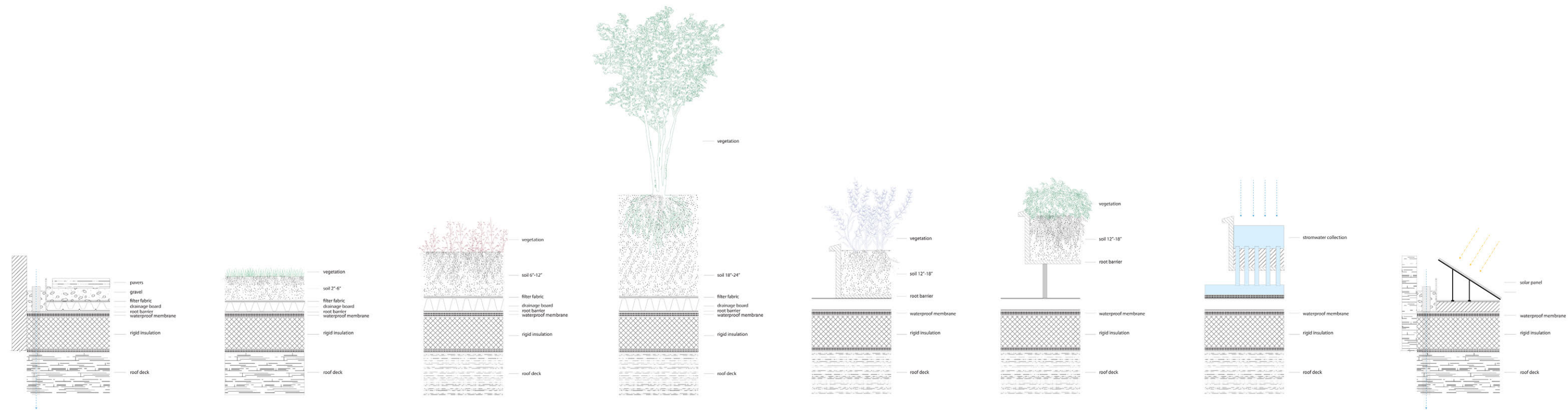


Slope 0-100 | Sun Hours

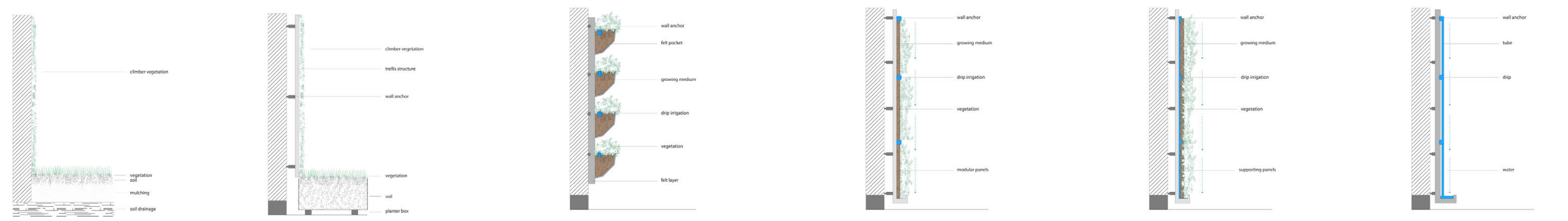
Proposed Surfaces
Sun Hours
1:150



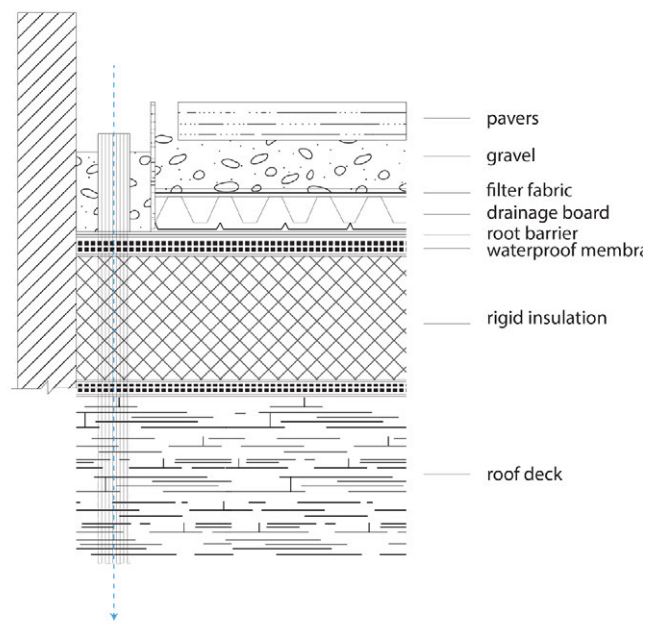
SURFACE TYPOLOGY / STANDARD



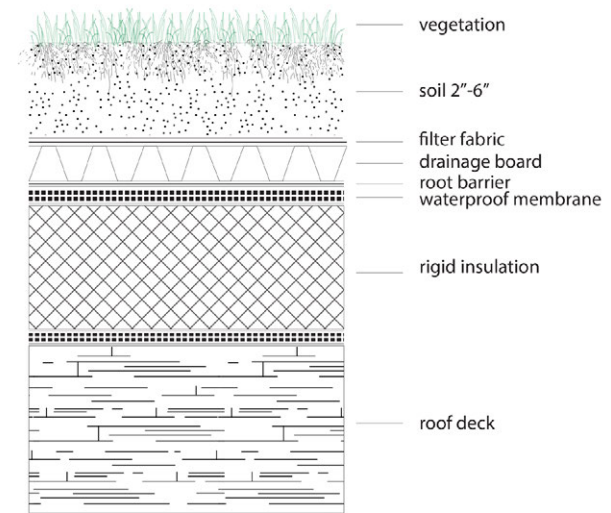
Paved surface Surface Bed 6" Surface Bed 12" Surface Bed 24" Raised Bed 18" Elevated Bed 18" Stormwater Water Collection Solar Roof



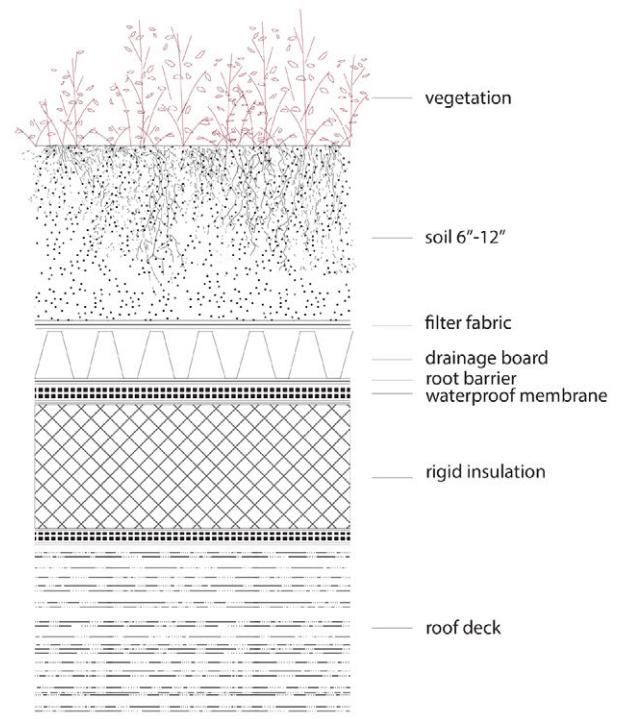
Ground Based 1 Extensive Ground Based 2 Extensive Wall Structure Based 1 Semi-Intensive Wall Structure Based 2 Intensive Wall Structure Based 3 Intensive Wall Structure Based 4 Stormwater Waterfall



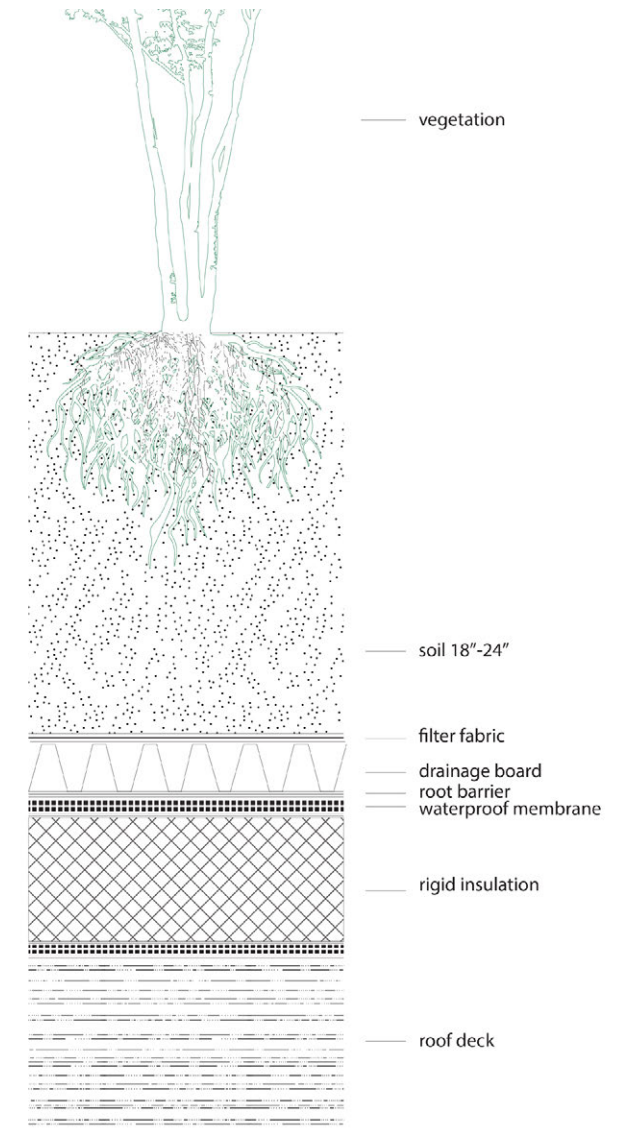
PAVED SURFACE



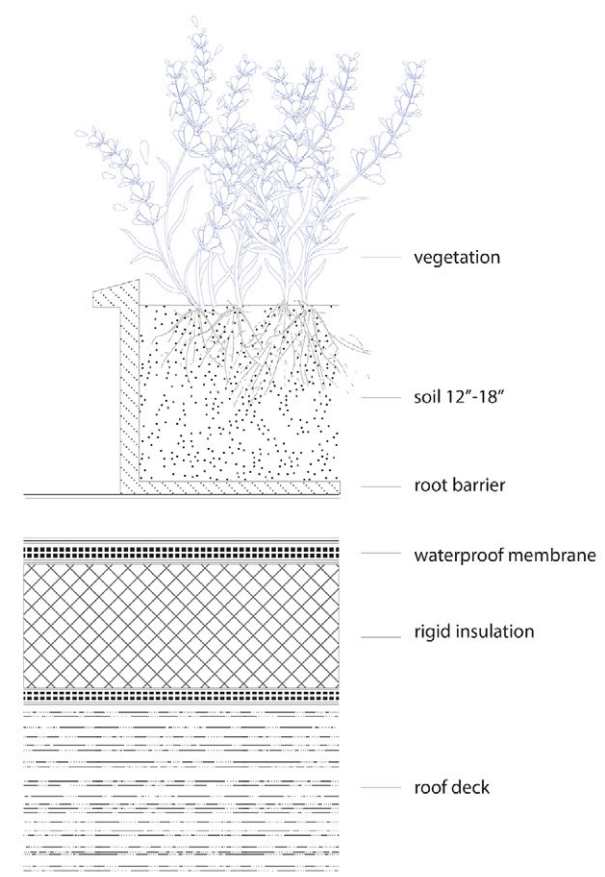
SURFACE BED 6"



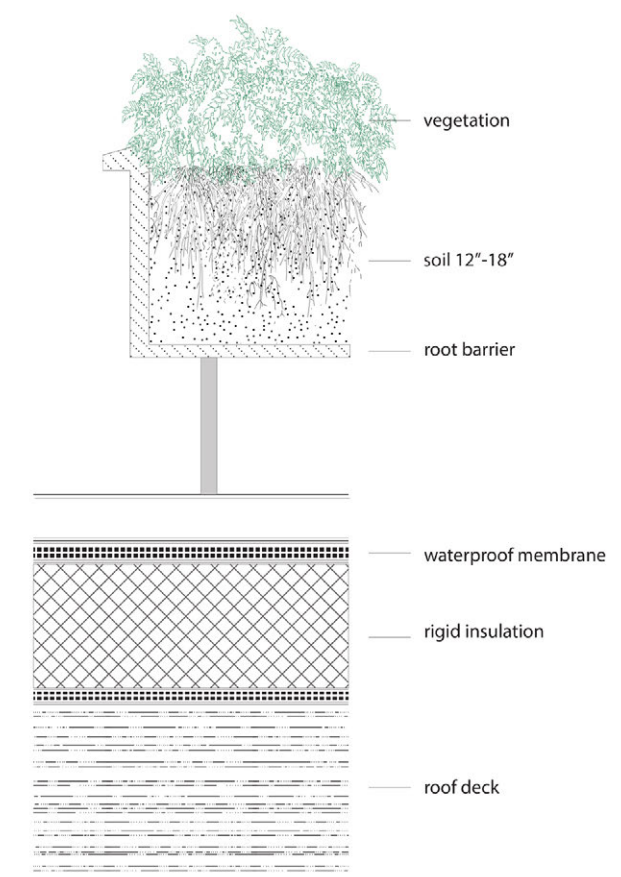
SURFACE BED 12"



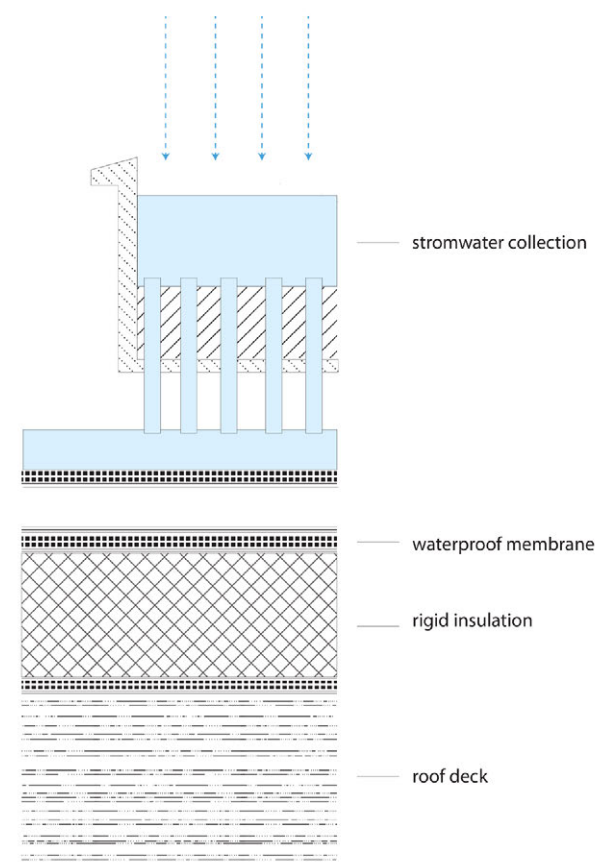
SURFACE BED 24"



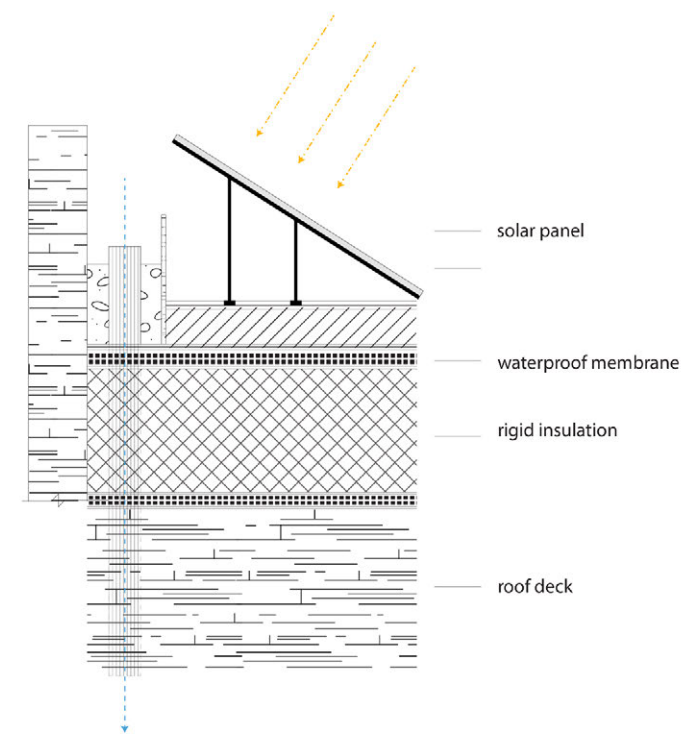
RAISED BED 18"



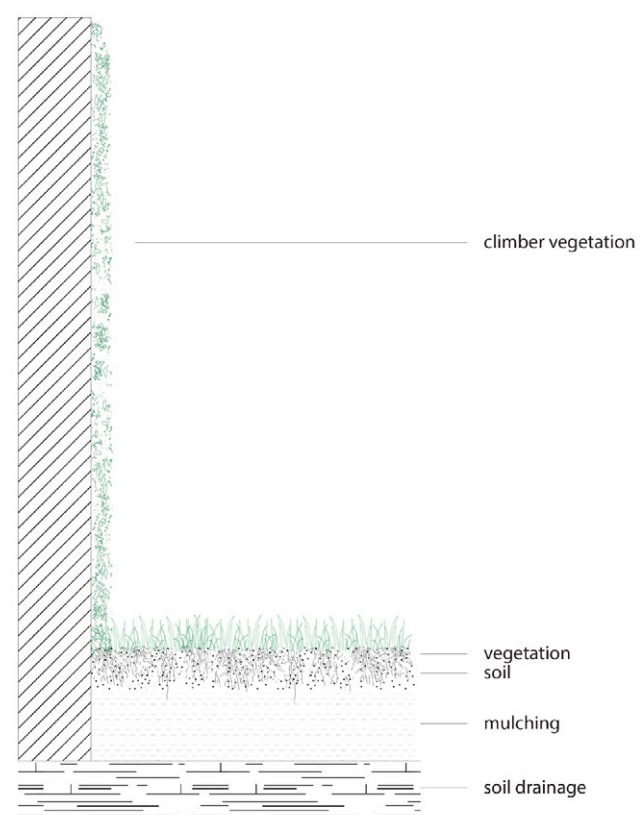
ELEVATED BED 18"



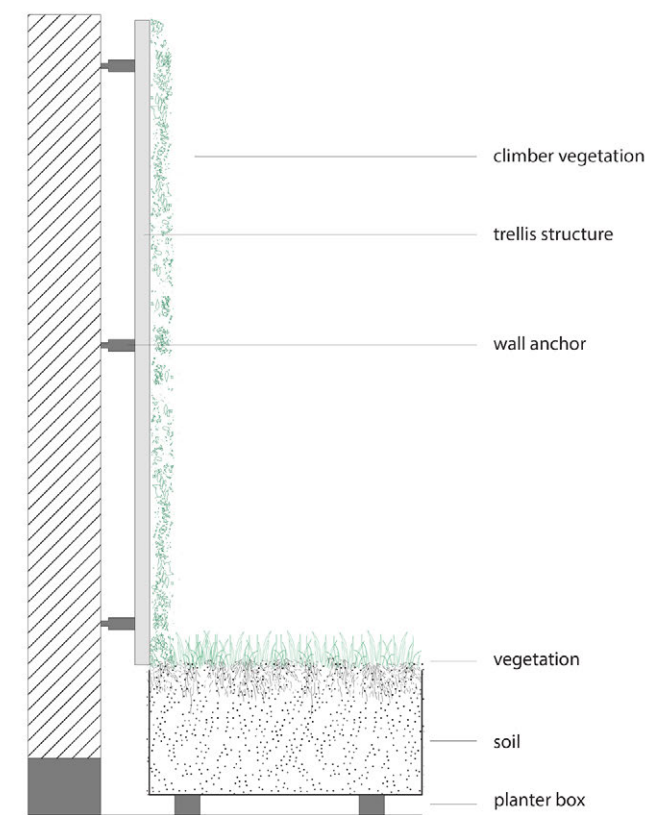
STORMWATER COLLECTION



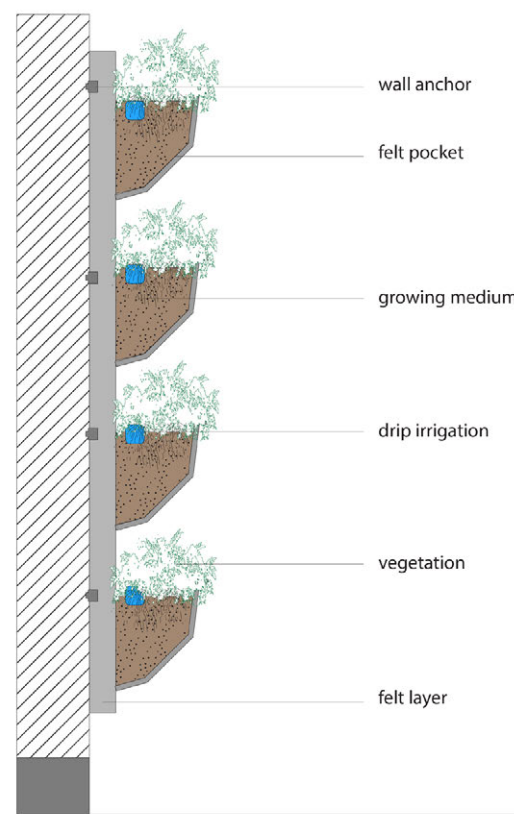
SOLAR ROOF



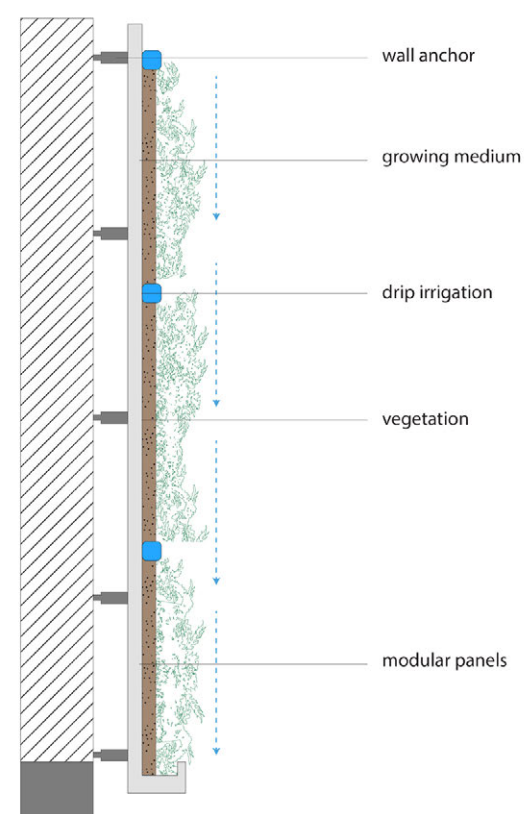
**GROUND BASED 1
EXTENSIVE**



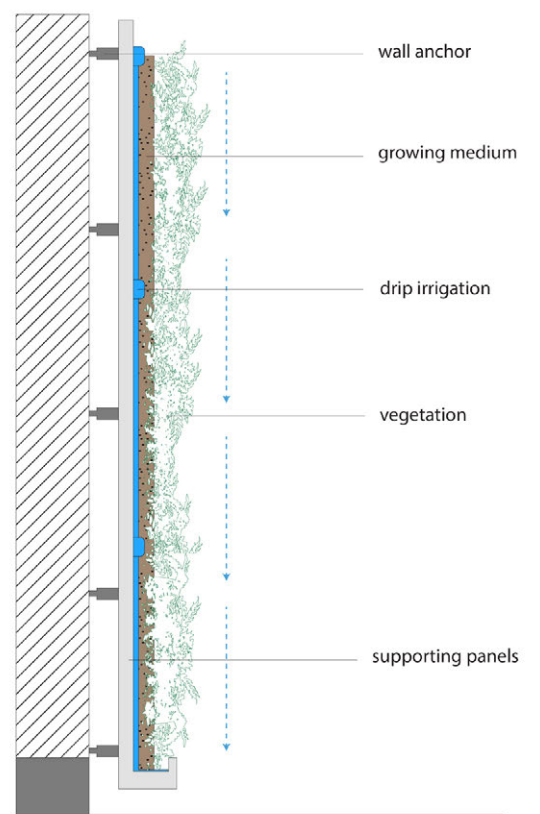
**GROUND BASED 2
EXTENSIVE**



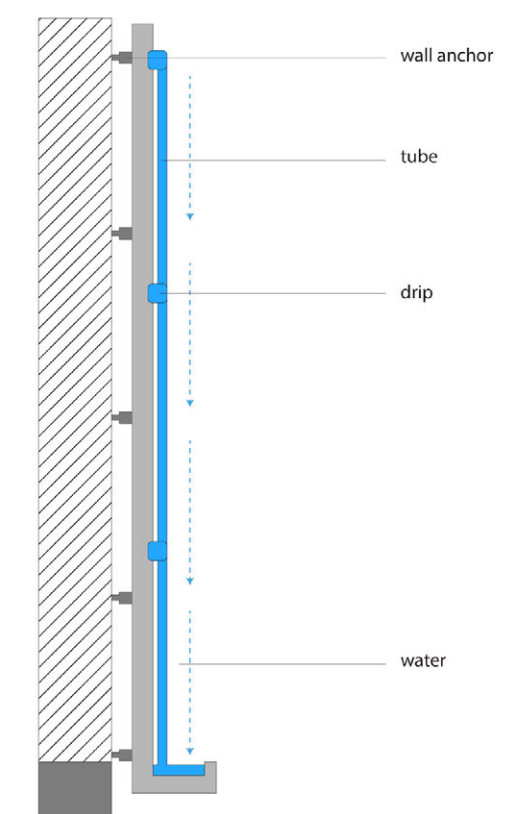
**WALL STRUCTURE BASED 1
SEMI-INTENSIVE**



**WALL STRUCTURE BASED 2
INTENSIVE**

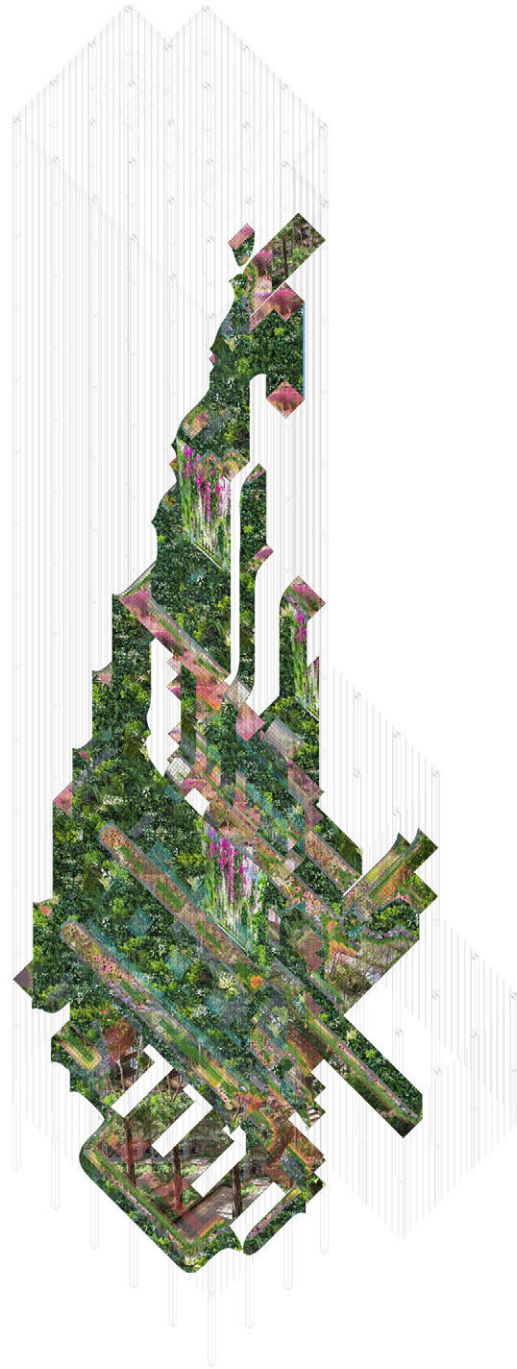


**WALL STRUCTURE BASED 3
INTENSIVE**



**WALL STRUCTURE BASED 4
STROMWATER WATERFALL**

PLANTING SCHEME



HORIZONTAL OUTDOOR



Plant	Light	Humidity	Maintenance
Little bluestem (Schizachyrium scoparium)	Full sun to part shade	Low	Low - Water occasionally during prolonged dry periods.
Prairie dropseed (Sporobolus heterolepis)	Full sun to part shade	Low	Low - Water occasionally during prolonged dry periods.
Tufted hairgrass (Deschampsia cespitosa)	Full sun to part shade	Moderate	Low - Water occasionally during prolonged dry periods.
Pennsylvania sedge (Carex pennsylvanica)	Shade to part shade	Moderate	Low - Water moderately during dry periods.
Black-eyed Susan (Rudbeckia fulgida)	Full sun	Low	Low - Water occasionally during prolonged dry periods.
Purple coneflower (Echinacea purpurea)	Full sun	Low	Low - Water occasionally during prolonged dry periods.
Asters (Symphyotrichum spp.)	Full sun to part shade	Low	Low - Water occasionally during prolonged dry periods.
Milkweeds (Asclepias spp.)	Full sun	Low	Low - Water occasionally during prolonged dry periods.
Blazing stars (Liatris spicata)	Full sun	Low	Low - Water occasionally during prolonged dry periods.
Goldenrods (Solidago spp.)	Full sun to part shade	Low	Low - Water occasionally during prolonged dry periods.
Cardinal flower (Lobelia cardinalis)	Full sun to part shade	Moderate	Moderate - Water regularly, especially during hot and dry periods.
Great blue lobelia (Lobelia siphilitica)	Full sun to part shade	Moderate	Moderate - Water regularly, especially during hot and dry periods.
Wild ginger (Asarum canadense)	Part shade to shade	Moderate	Low - Water moderately during dry periods.
Wild strawberry (Fragaria virginiana)	Part shade to full sun	Moderate	Low - Water moderately during dry periods.
Creeping phlox (Phlox subulata)	Full sun to part shade	Low	Low - Water occasionally during prolonged dry periods.
Foamflower (Tiarella cordifolia)	Part shade to shade	Moderate	Low - Water moderately during dry periods.
Wild violets (Viola spp.)	Part shade to shade	Moderate	Low - Water moderately during dry periods.
Partridgeberry (Mitchella repens)	Part shade to full shade	Moderate	Low - Water moderately during dry periods.
Bunchberry (Cornus canadensis)	Part shade to full shade	Moderate	Low - Water moderately during dry periods.
Creeping juniper (Juniperus horizontalis)	Full sun to part shade	Low	Low - Water occasionally during prolonged dry periods.

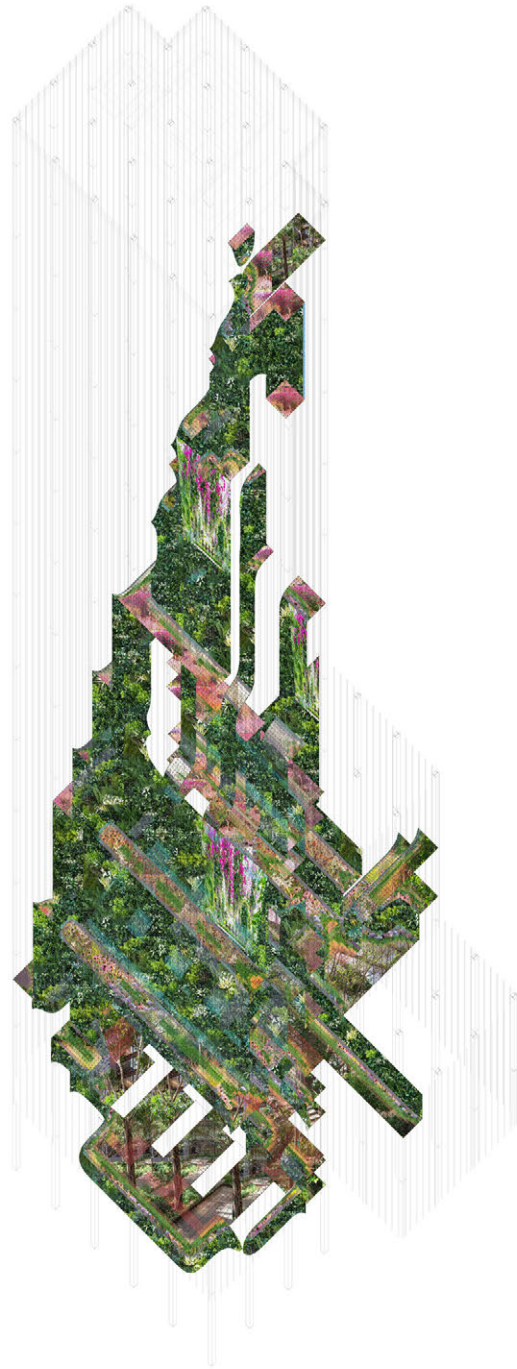
HORIZONTAL INDOOR



Plant	Light	Humidity	Maintenance
Echeveria	Full sun to bright indirect light	Low	Low - Water moderately during dry periods. Prefers well-draining soil.
Croton	Bright indirect light	Moderate	Moderate - Water regularly when the top inch of soil dries out. May require occasional misting to increase humidity.
Calathea	Medium to low indirect light	Moderate to high	Moderate - Water regularly when the top inch of soil dries out. Prefers consistently moist soil and high humidity.
Prayer plant	Medium to low indirect light	Moderate to high	Moderate - Water regularly when the top inch of soil dries out. Prefers consistently moist soil and high humidity.
Chinese evergreen	Medium to low indirect light	Moderate	Low - Water moderately when the top inch of soil dries out. Tolerates lower humidity levels.
Philodendron	Varies depending on the variety (mostly medium to low indirect light)	Moderate	Some require more frequent watering and higher humidity than others.
Dwarf mondo grass	Part shade to full shade	Moderate	Low - Water occasionally during dry periods. Prefers well-draining soil.
Dwarf pampas grass	Full sun	Low	Low - Water occasionally during dry periods. May require repotting every few years to control growth.
Dwarf fountain grass	Full sun to part shade	Low	Low - Water occasionally during dry periods. Cut back dead foliage in late winter or early spring.
Creeping Jenny	Full sun to part shade	Moderate	Low - Water moderately during dry periods. Can be invasive in some areas.
Creeping fig	Bright indirect light to full shade	Moderate	Moderate - Water regularly when the top inch of soil dries out. Prune occasionally to control growth.
Creeping thyme	Full sun to part shade	Low	Low - Water occasionally during dry periods. Prefers well-draining soil.
Baby's tears	Medium to low indirect light	High	Moderate - Requires consistently moist soil and high humidity.
Irish moss (continued);	High	Requires consistently moist soil and high humidity.	Difficult to maintain indoors in drier climates.



PLANTING SCHEME



VERTICAL OUTDOOR

Plant	Light	Humidity	Maintenance
 Virginia creeper (Parthenocissus quinquefolia)	Full sun to part shade	Moderate	Moderate - Needs support to climb. Prune occasionally to control size.
 Trumpet honeysuckle (Lonicera sempervirens)	Full sun to part shade	Moderate	Moderate - Prune occasionally to control size and remove invasive suckers.
 Passionflower (Passiflora spp.)	Full sun to part shade	Moderate	Moderate to high - Some varieties are fast-growing and require frequent pruning and support.
 Grape vines (Vitis spp.)	Full sun	Moderate	High - Requires regular pruning, trellising, and potential pest/disease control.
 Virginia's bower (Clematis virginiana)	Full sun to part shade	Moderate	Moderate - Needs support to climb.
 Lady Banks' rose (Rosa banksiae)	Full sun	Moderate	Moderate - Needs strong support for its vigorous growth.
 John Cabot rose (Rosa 'John Cabot')	Full sun to part shade	Moderate	Moderate - Prune in late winter to encourage spring blooms.
 New Dawn rose (Rosa 'New Dawn')	Full sun to part shade	Moderate	Moderate - Prune in late winter to encourage spring blooms.
 Climbing Hydrangea	Part shade to shade	Moderate	Moderate - Needs support to climb.
 Boston ivy (Parthenocissus tricuspidata)	Full sun to shade	Moderate	Moderate - Needs support to climb. Prune occasionally to control size.
 Silver lace vine (Polygonum aubertii)	Full sun to part shade	Moderate	Low - Fast-growing vine that may need to be replanted annually.
 Clematis (Clematis spp.)	Varies depending on the species (mostly full sun to part shade)	Moderate	Varies depending on the species.
 Coral honeysuckle (Lonicera sempervirens var. minor)	Full sun to part shade	Moderate	Moderate - Prune occasionally to control size.
 Wintercreeper (Euonymus fortunei)	Full sun to shade	Moderate	Low - Slow-growing and versatile. Prune occasionally for desired shape.
 Apple (Malus domestica)	Full sun (ideally 6-8 hours per day)	Moderate	High (regular pruning, pest/disease control, potential fruit thinning)
 Pear (Pyrus communis)	Full sun (ideally 6-8 hours per day)	Moderate	High (similar to apple trees)
 Plum (Prunus domestica)	Full sun (ideally 6-8 hours per day)	Moderate	High (regular pruning, pest/disease control, potential fruit thinning)
 Peach (Prunus persica)	Full sun (ideally 8-10 hours per day)	Moderate	High (similar to other fruit trees)

VERTICAL INDOOR

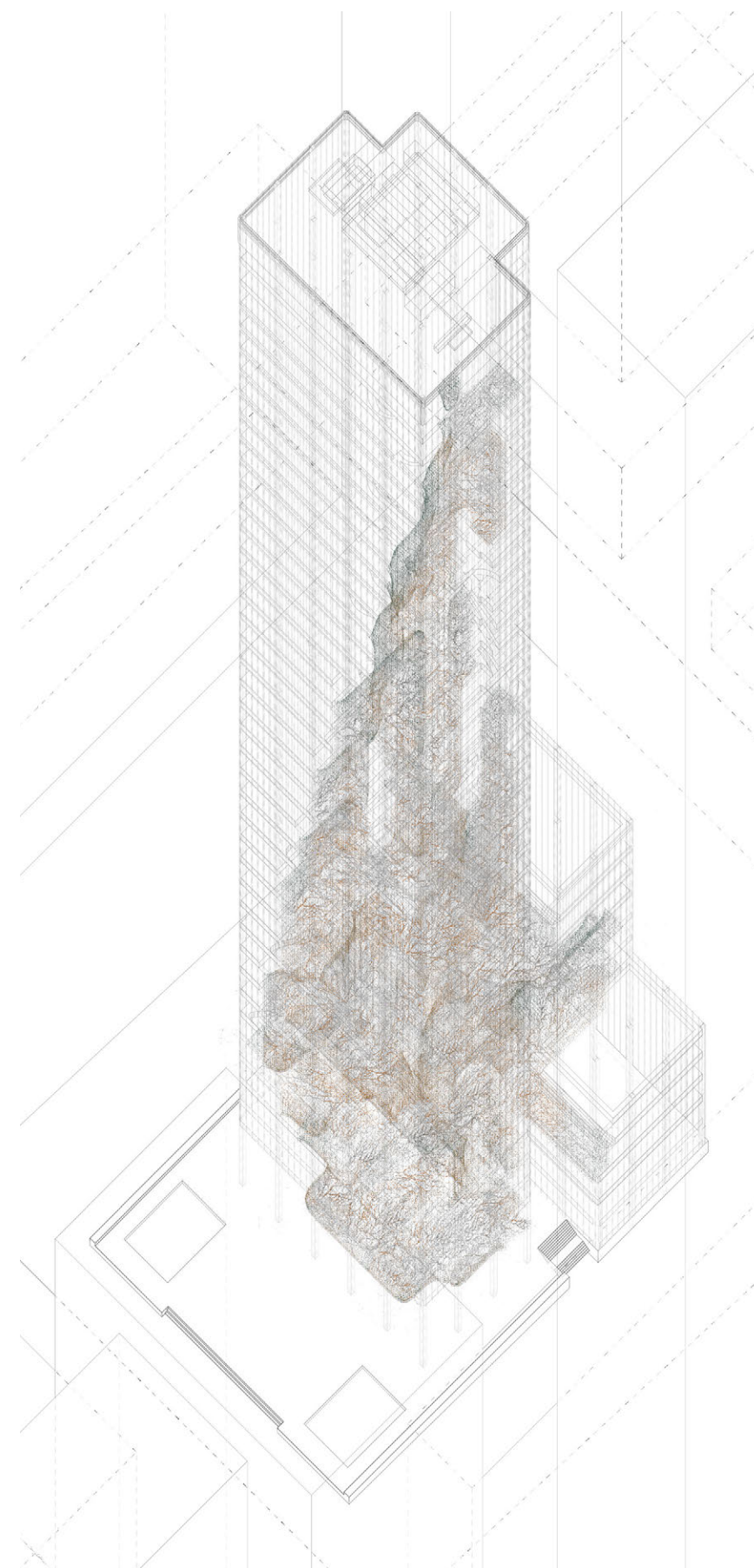
Plant	Light	Humidity	Maintenance
 Maidenhair Fern (Adiantum sp.)	Bright, indirect light	High	Moderate - Requires consistent moisture, well-draining soil, and misting regularly.
 Money Tree (Pachira aquatica)	Medium to bright, indirect light	Moderate	Low - Water moderately and allow soil to dry slightly between waterings.
 Aglaonema Maria Christina	Low to medium, indirect light	Moderate	Low - Water moderately and allow soil to dry slightly between waterings.
 Green Peperomia Caperata (Peperomia caperata)	Low to medium, indirect light	Moderate	Low - Water sparingly and allow soil to dry completely between waterings.
 Aglaonema Silver Queen	Low to medium, indirect light	Moderate	Low - Water moderately and allow soil to dry slightly between waterings.
 Peperomia Sandersii	Low to medium, indirect light	Moderate	Low - Water sparingly and allow soil to dry completely between waterings.
 Calathea Lancifolia	Medium, indirect light	High	Moderate - Requires consistent moisture, well-draining soil, and increased humidity.
 Philodendron Selloum (Philodendron bipinnatifidum)	Medium to bright, indirect light	Moderate	Low - Water moderately and allow soil to dry slightly between waterings.
 Rabbit Foot Fern (Davallia fejeensis)	Medium, indirect light	High	Moderate - Requires consistent moisture, well-draining soil, and misting regularly.
 Philodendron Sweet Heart (Philodendron scandens)	Medium to bright, indirect light	Moderate	Low - Water moderately and allow soil to dry slightly between waterings. Provide support for climbing.
 Autumn Fern (Dryopteris erythrosora)	Medium, indirect light	Moderate	Moderate - Requires consistent moisture, well-draining soil, and misting occasionally.
 Velvet-leaf Philodendron (Philodendron micans)	Medium to bright, indirect light	Moderate	Low - Water moderately and allow soil to dry slightly between waterings.
 Ficus Benjamina	Medium to bright, indirect light	Moderate	Low to moderate - Water moderately and allow soil to dry slightly between waterings.
 Creeping Fig (Ficus pumila)	Medium to bright, indirect light	Moderate	Low - Water moderately and allow soil to dry slightly between waterings.
 Staghorn Fern (Platycerium superbum)	Medium, indirect light	Moderate to high	Moderate - Requires well-draining mount, occasional soaking, and misting.



PLANTING SCHEME

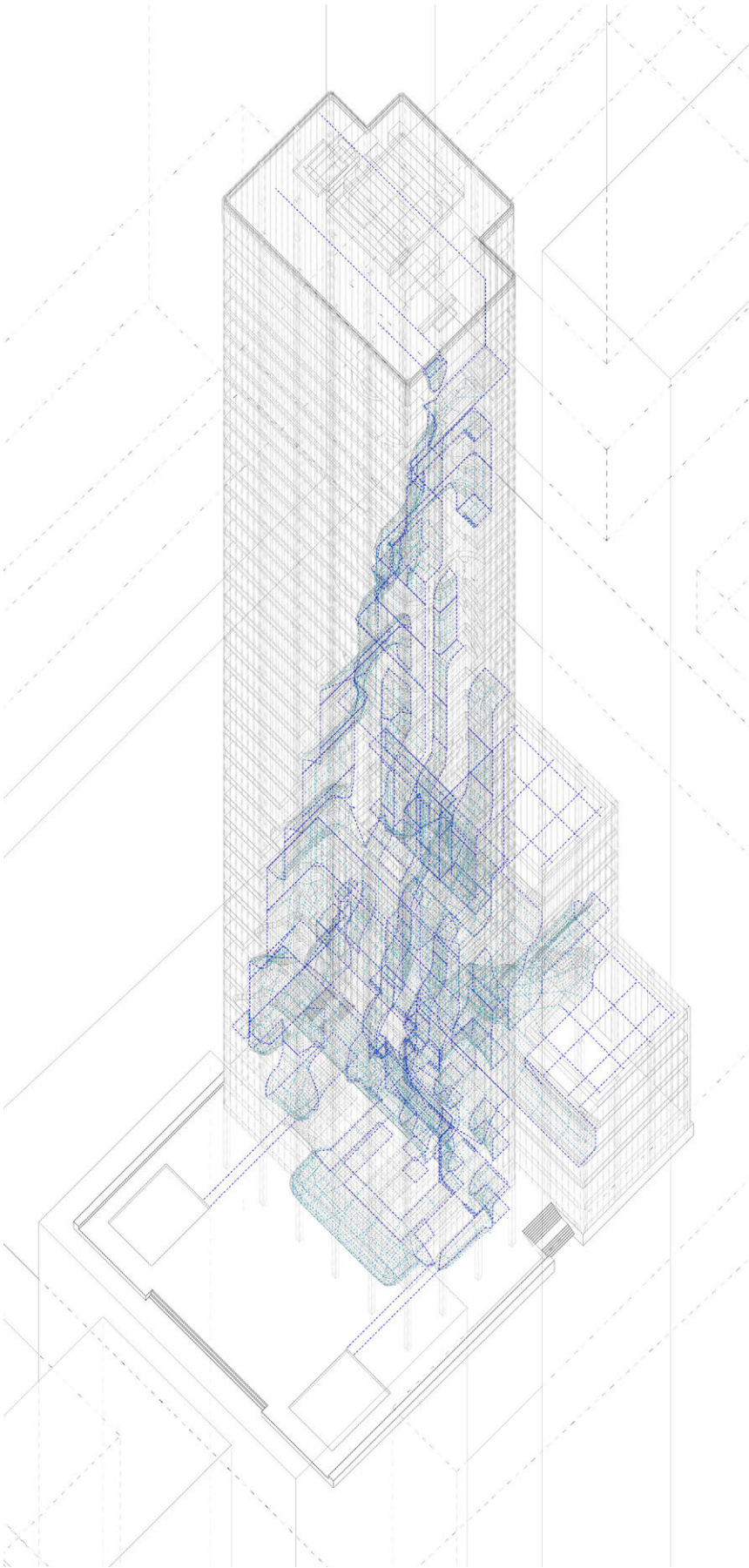


ROOTS NETWORK



IRRIGATION SYSTEM

Water Collection & Main Distribution Sub Distribution



IV. LANDSCAPE TRANSFORMATION

i. Voids and Form

ii. Planting Scheme

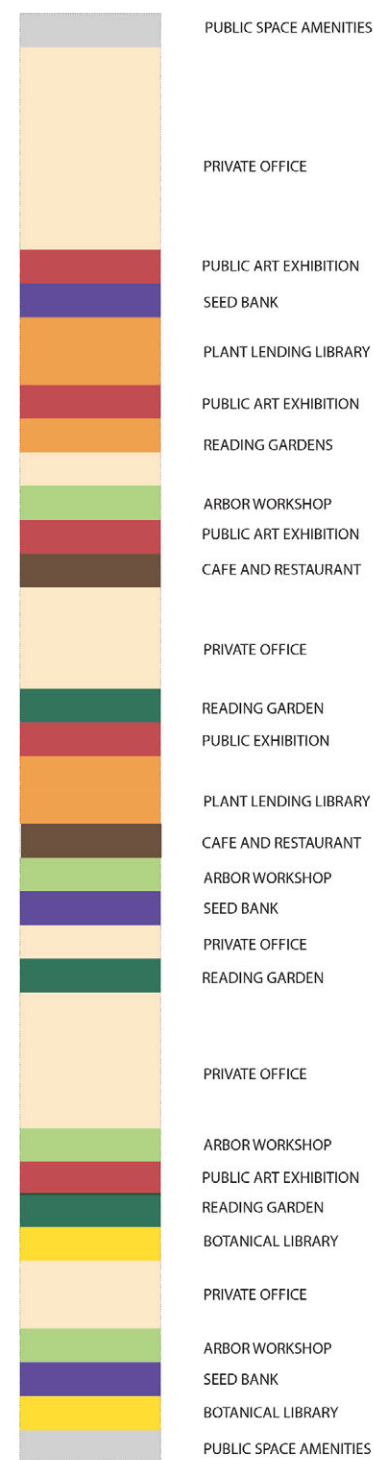
iii. UAN Program

iv. The Rmap

Transitioning from the physical design elements, the UAN's programmatic and cultural aspects breathe life into the vibrant spaces. The major programs encompass the botanical library, plant library, and seed bank. In addition to these core services, UAN promotes public participation by inviting the public to participate in the management of community ecosystems through planting workshops and botanical research activities.

The library system stands as a central repository of knowledge and resources related to urban flora, horticulture, and sustainable landscaping practices. Its extensive collection of books, journals, and digital resources caters to both the public and researchers, fostering a shared appreciation for the natural world.

PROPOSED PROGRAM



UAN PROGAM LIST

Primary Programs:

Botanical Library

Books, digital media, and indoor botanical gardens
Main program, with shelves as railing along the ramp
Size: 80,000 sq.ft. (multiple floors)

Seed Bank

Lending seeds for urban gardening and planting
Seed Shelves integrated as railing along the ramp
Size: 20,000 sq.ft. (multiple floors)

Plant Lending Library

Lending program for potted plants
Shelves integrated as railing along the ramp
Size: 40,000 sq.ft. (multiple floors)

Supporting Programs:

Arbor Workshop

Botany education, community planting, horticulture, ecology,
sustainability programs ntegrated throughout the building
Size: 40,000 sq.ft. (distributed across various floors)

Public Exhibition

Rotating art and installation exhibition spaces
Size: 15,000 sq.ft. (distributed across various floors)

Reading Gardens

Indoor and outdoor reading areas
Dispersed across various floors
Size: 45,000 sq.ft. (indoor and outdoor areas)

Cafe and Restaurant

Bar and lounge area
Restaurant/cafe spaces on multiple levels
Size: 20,000 sq.ft. (various floors)

Amenities:

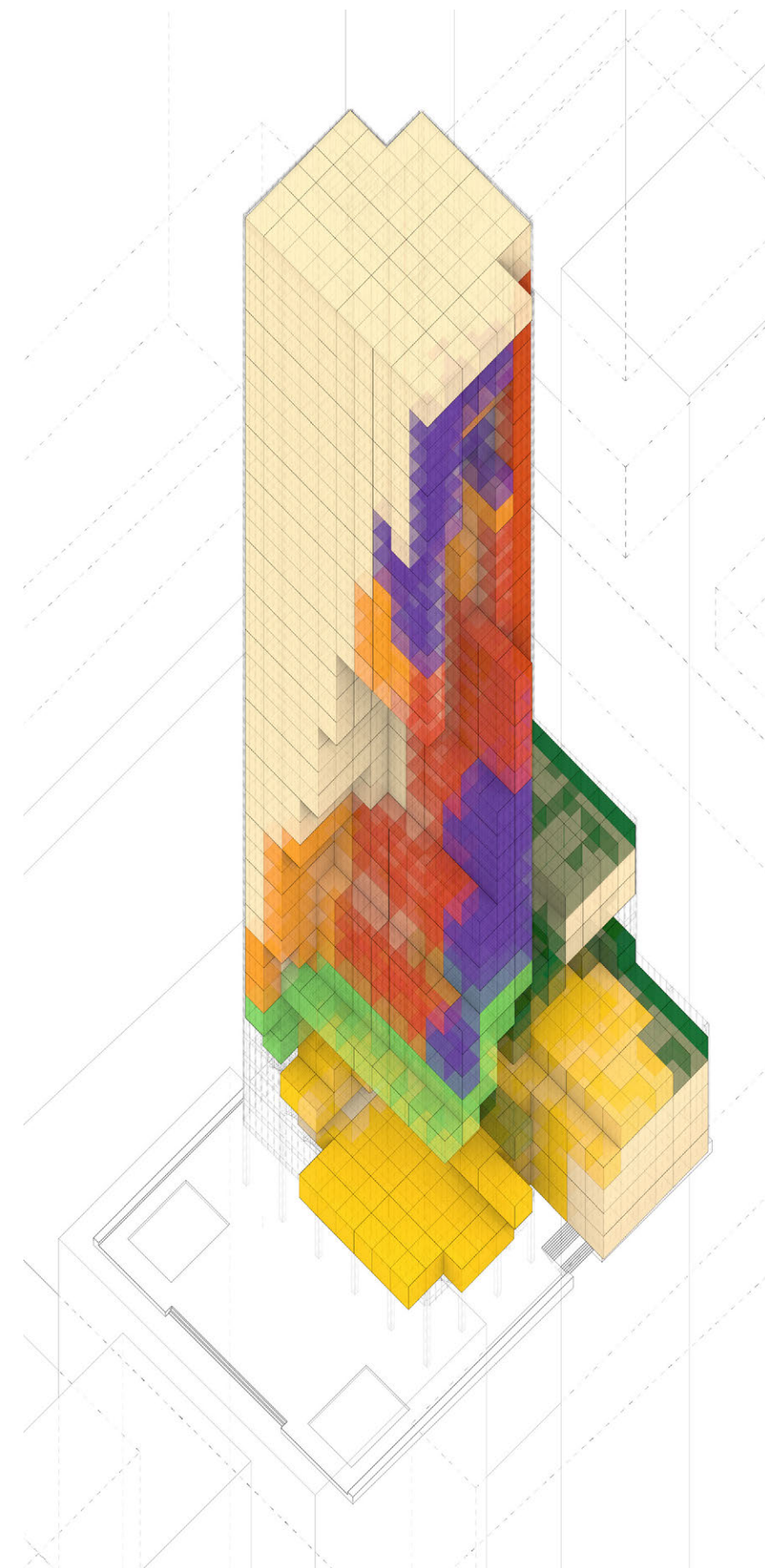
Public Space Amenities

Restrooms, parking lots, bike racks, charging stations,
storage rooms
Size: 60,000 sq.ft. (various floors)

Private Spaces:

Private Office

Exisiting Office spaces
Present on multiple floors
Size: 200,000 sq.ft.



UAN LIBRARY SYSTEM

Dewey Decimal Classification 500s -700s

579-636 - Selection for Seed Bank

- * 581 - Seeds - descriptive botany
- * 631 - Seeds - nursery production
- * 635 - Seeds - ornamental plants

580 - Plants (Botany)

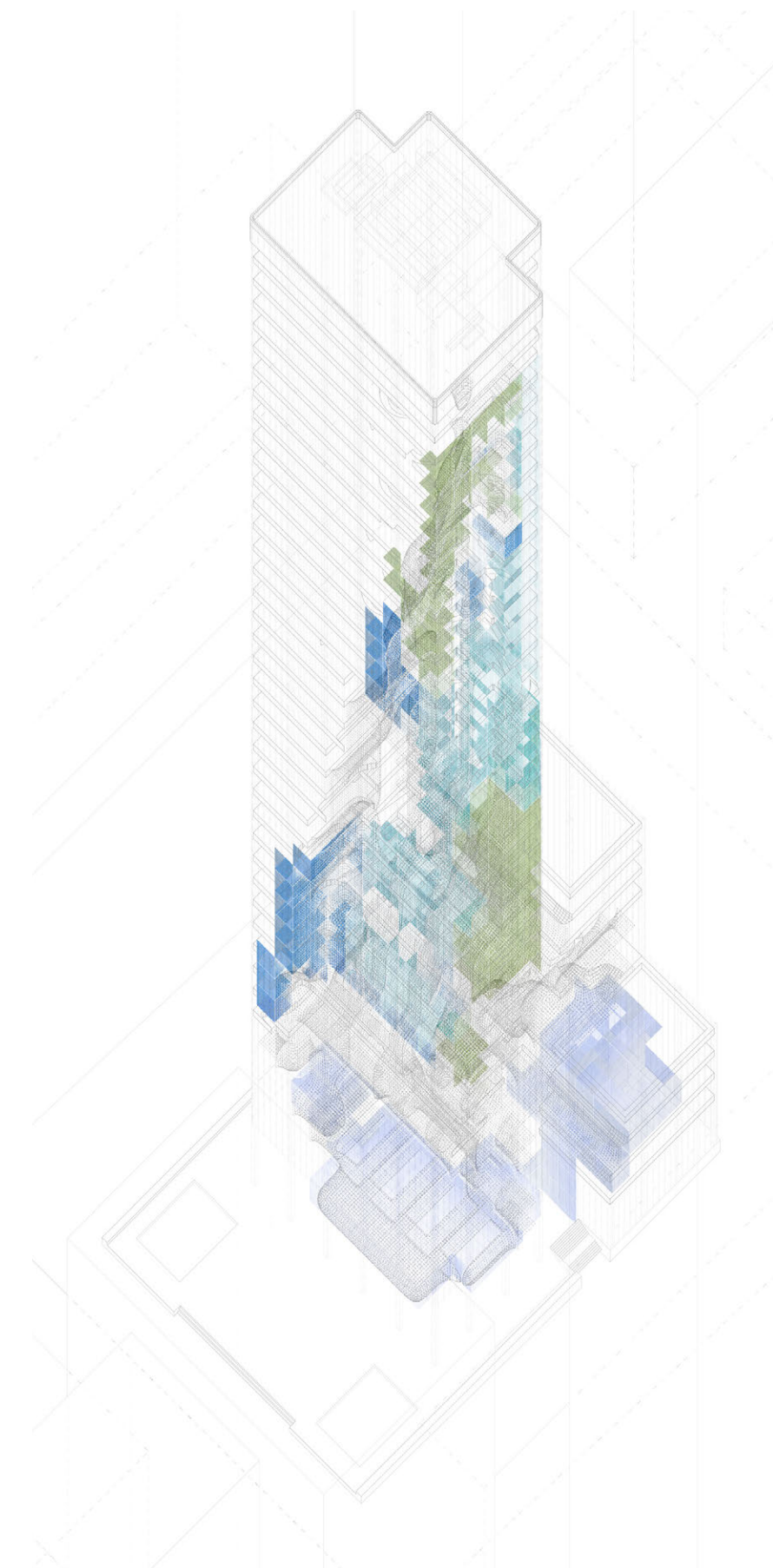
- * 581 - Specific in natural history of plants
- * 582 - Plants noted for specific vegetative characteristics and flowers
- * 583 - Dicotyledons
- * 584 - Monocotyledons
- * 585 - Gymnosperms (Pinophyta)
- * 586 - Seedless plants
- * 587 - Vascular seedless plants
- * 588 - Bryophyta
- * 589 - Thallobionta and Prokaryotae

630 - Agriculture

- * 635 - Garden crops (Horticulture)
- * 635.9 - Gardening
- * 635.95 - Garden structures and facilities
- * 635.96 - Landscaping

710 - Civic & Landscape Art

- * 712 - Landscape architecture
- * 712.2 - Public parks and grounds
- * 712.5 - Plants as design elements
- * 712.6 - Water as design element
- * 712.7 - Structures in landscape design



IV. LANDSCAPE TRANSFORMATION

i. Voids and Form

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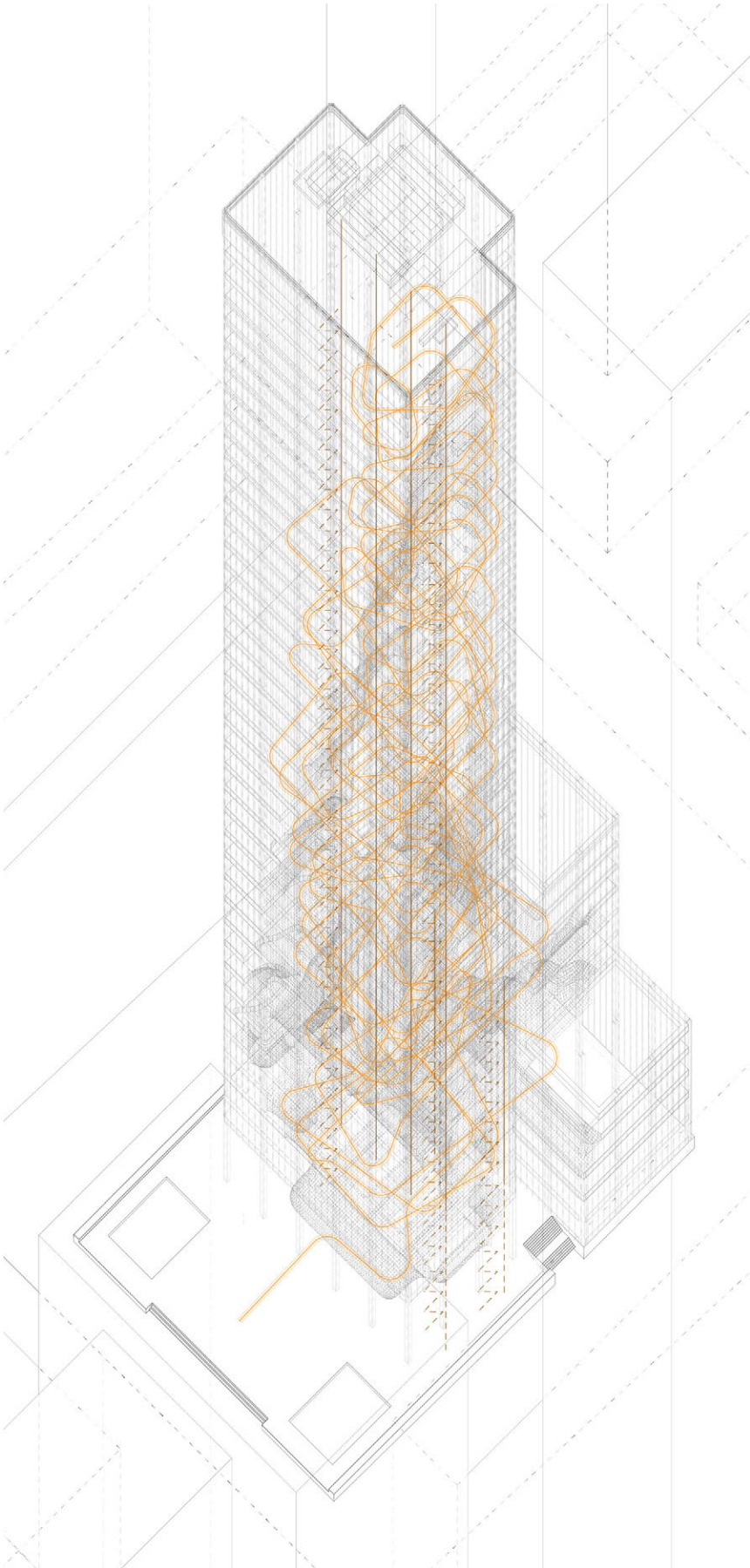
iv. The Ramp

Accessibility and seamless circulation are crucial components of the design, ensuring that these diverse programs and spaces are interconnected. Weaving through the sculpted solar voids, a continuous accessible ramp serves as the primary means of vertical circulation, connecting the various levels and programmatic elements in a unified experience.

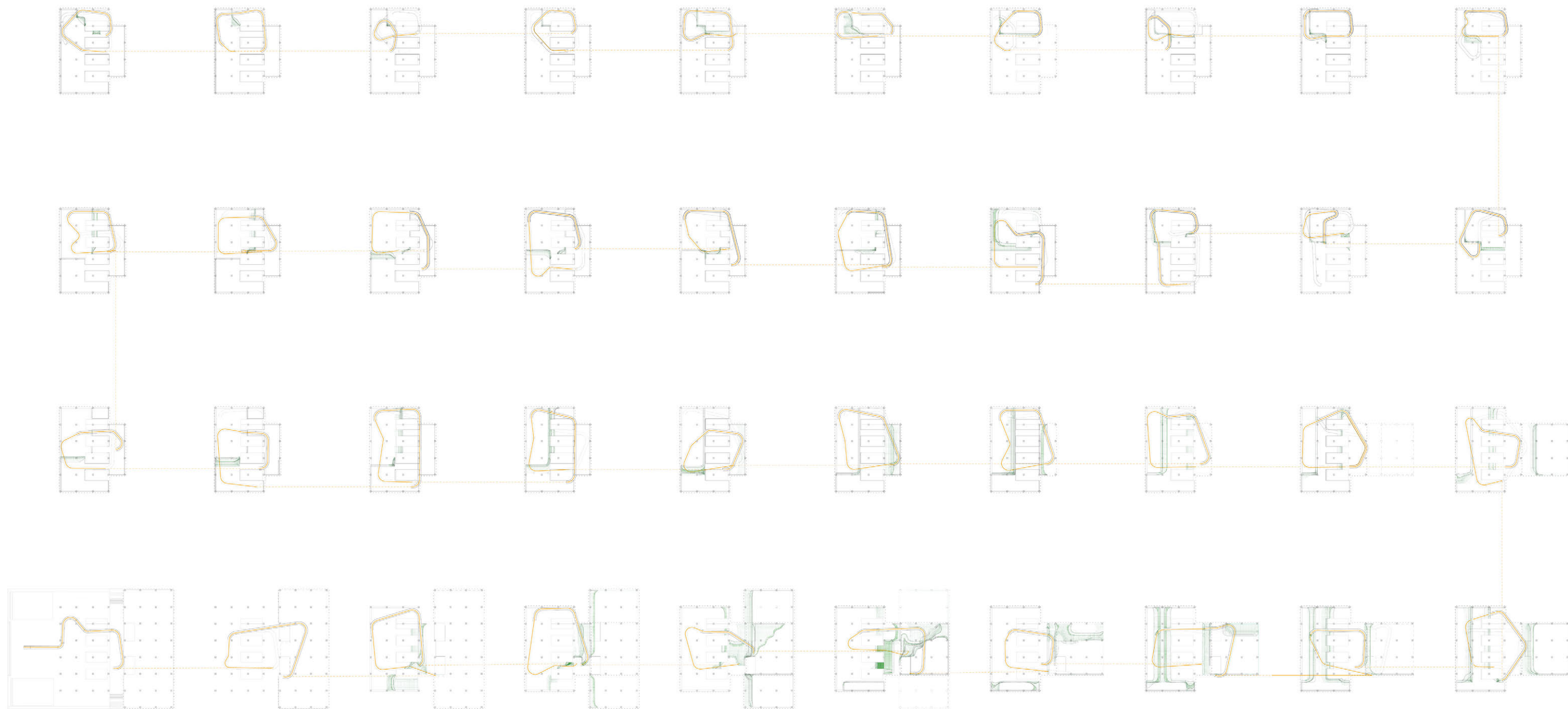
The circulation serial plans provide a understanding of the ramp's progression and its intricate relationship with the different levels. At the ground floor, the ramp extends into the iconic Seagram Plaza, creating a seamless transition between the street and the building's interior, inviting visitors to explore. As visitors ascend through the indoor nature spaces, they are immersed in a curated showcase of diverse plant species, fostering an educational and sensory experience. The ramp also connects to existing lower-level rooftops, enabling a fluid transition between indoor and outdoor environments. On the upper floors, the ramp blurs the boundaries between private office spaces and public areas. Along its path, public spaces emerge as extensions of the office environment, offering informal meeting areas, collaborative workspaces, and tranquil meditation gardens.

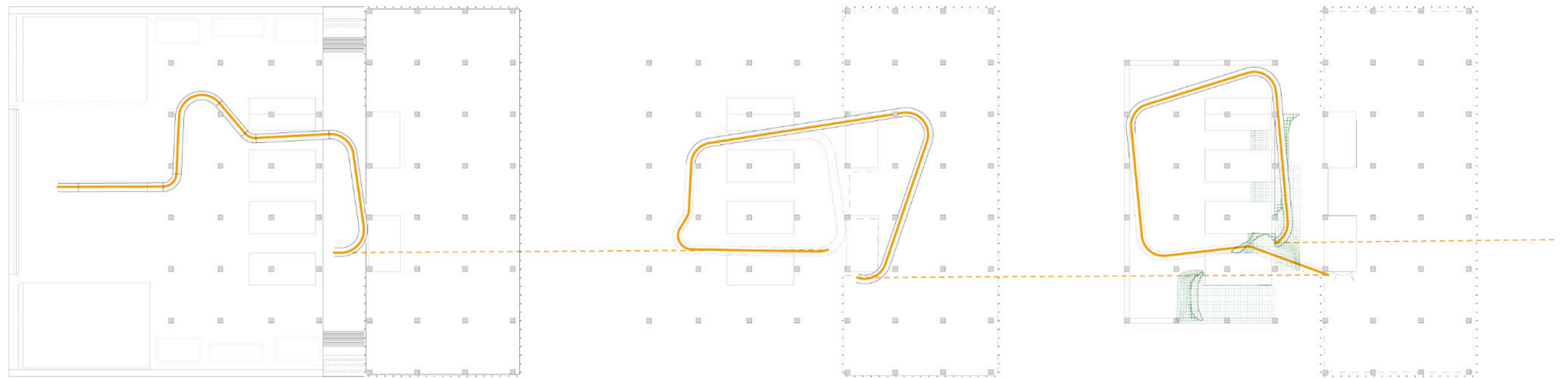
Eight distinct ramp typologies thread through these new urban hiking experiences, each offering a unique programmatic narrative.

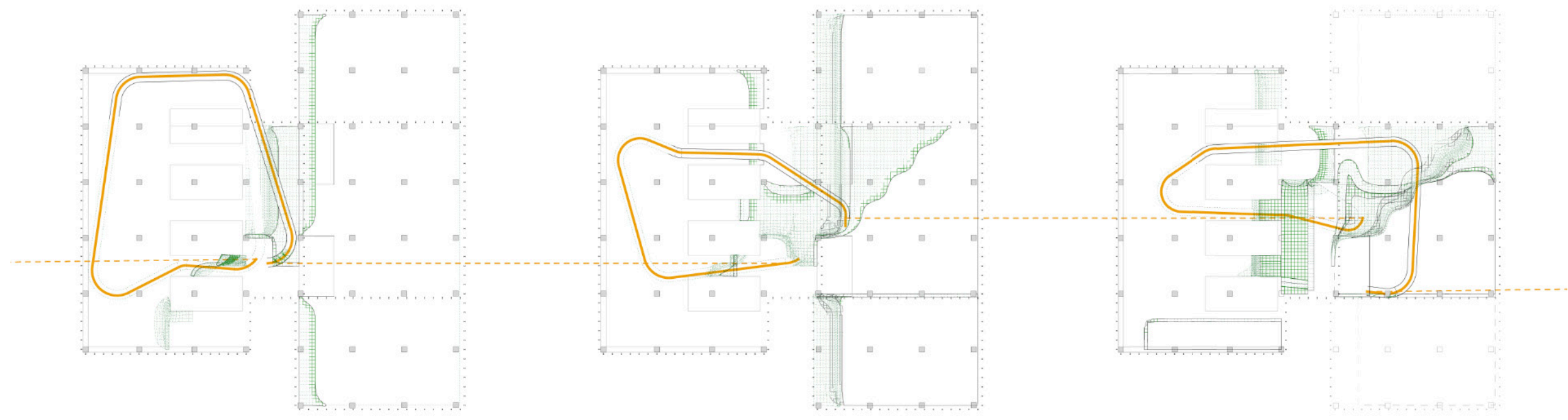
CIRCULATION

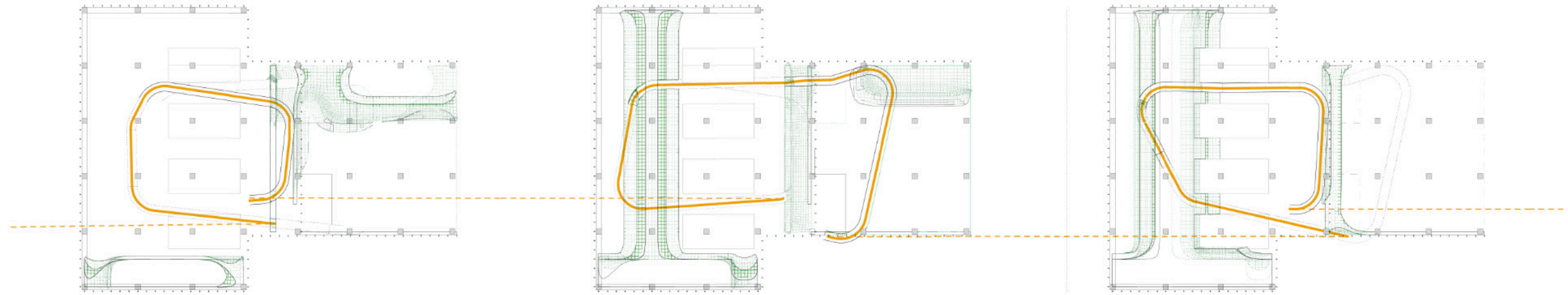


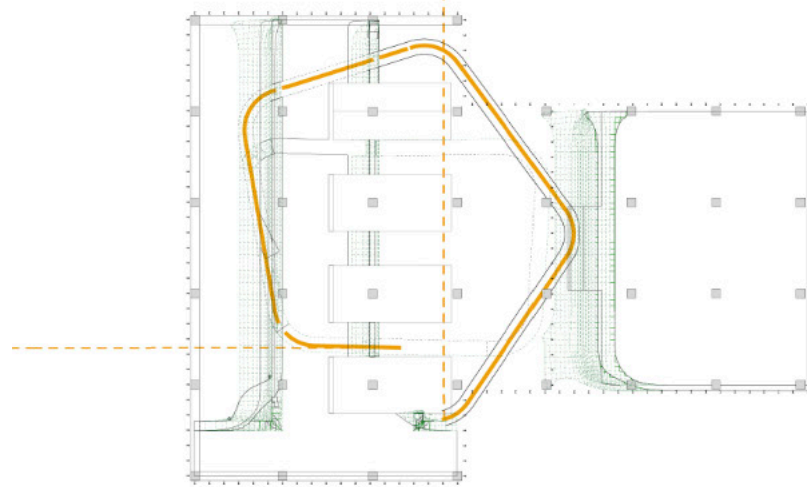
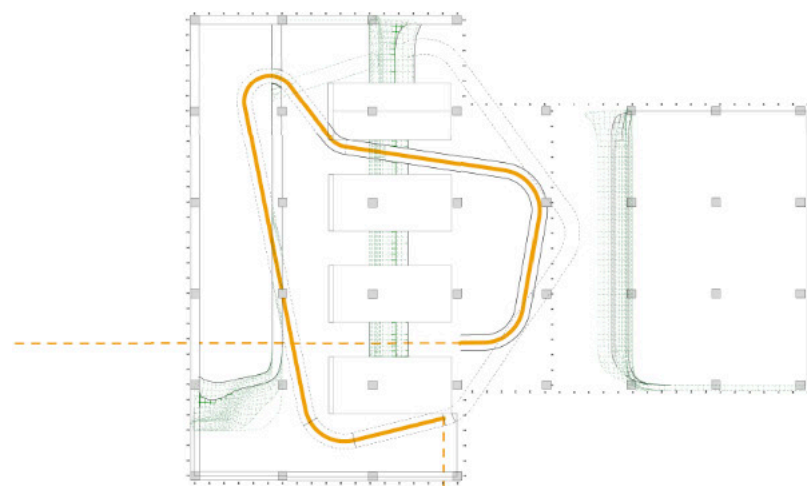
RAMP SYSTEM

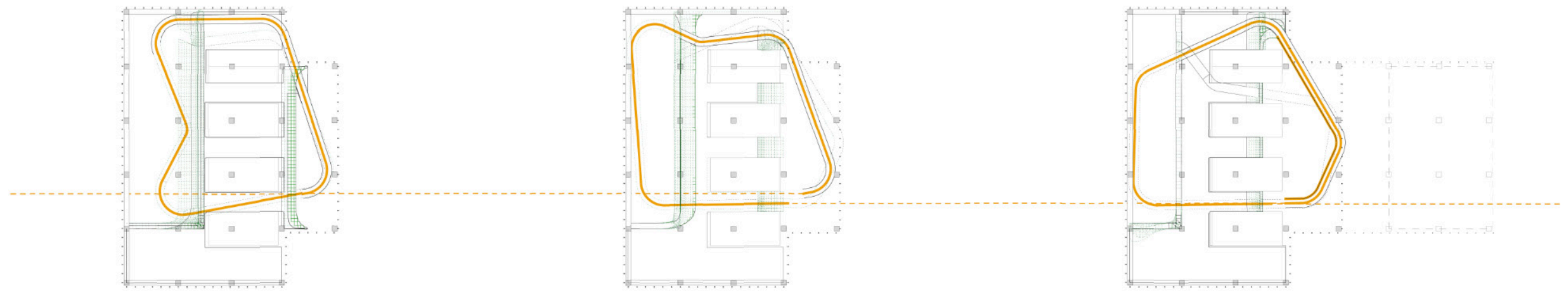


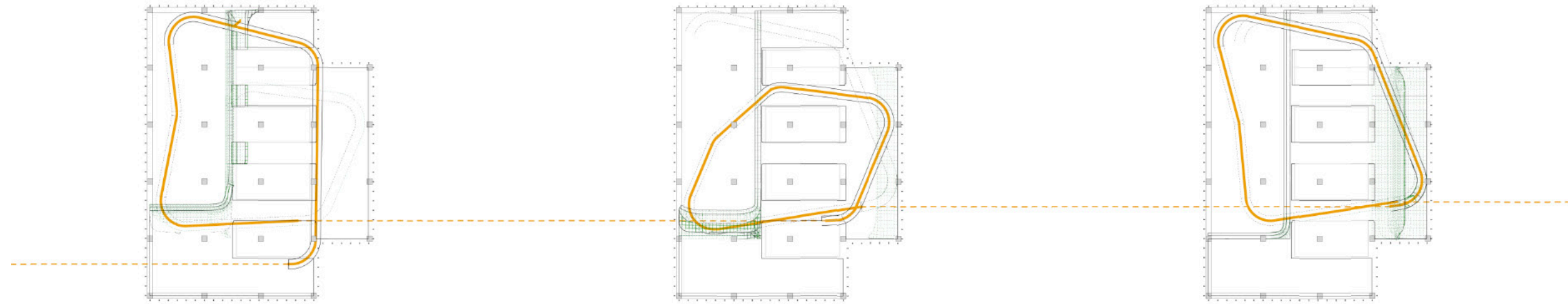


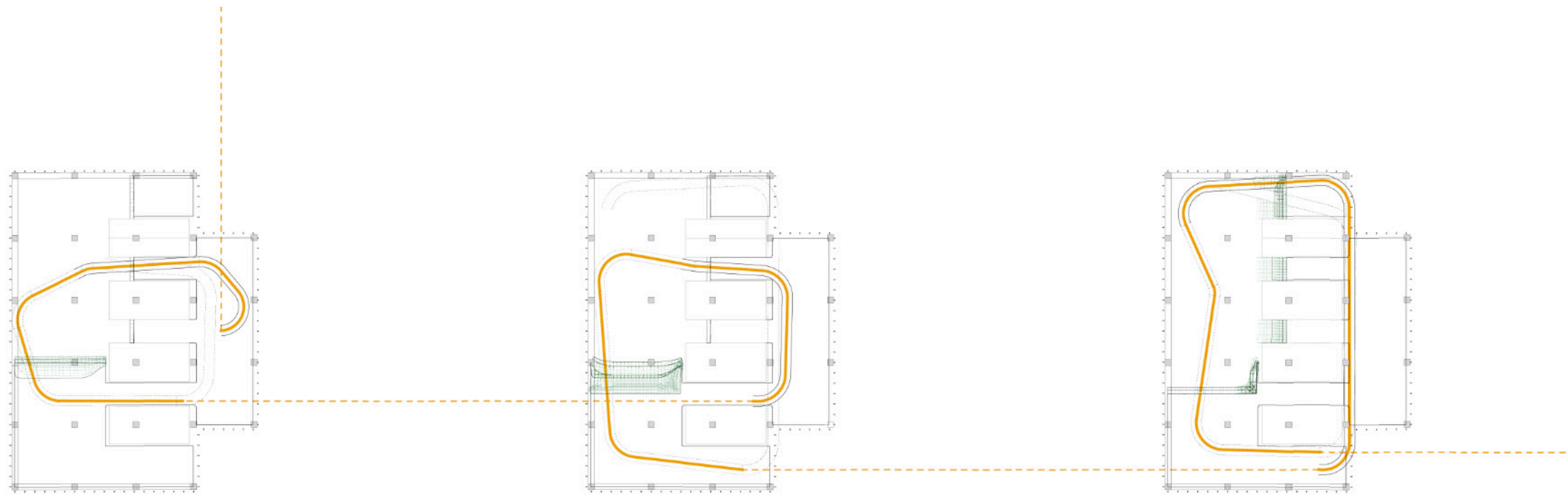


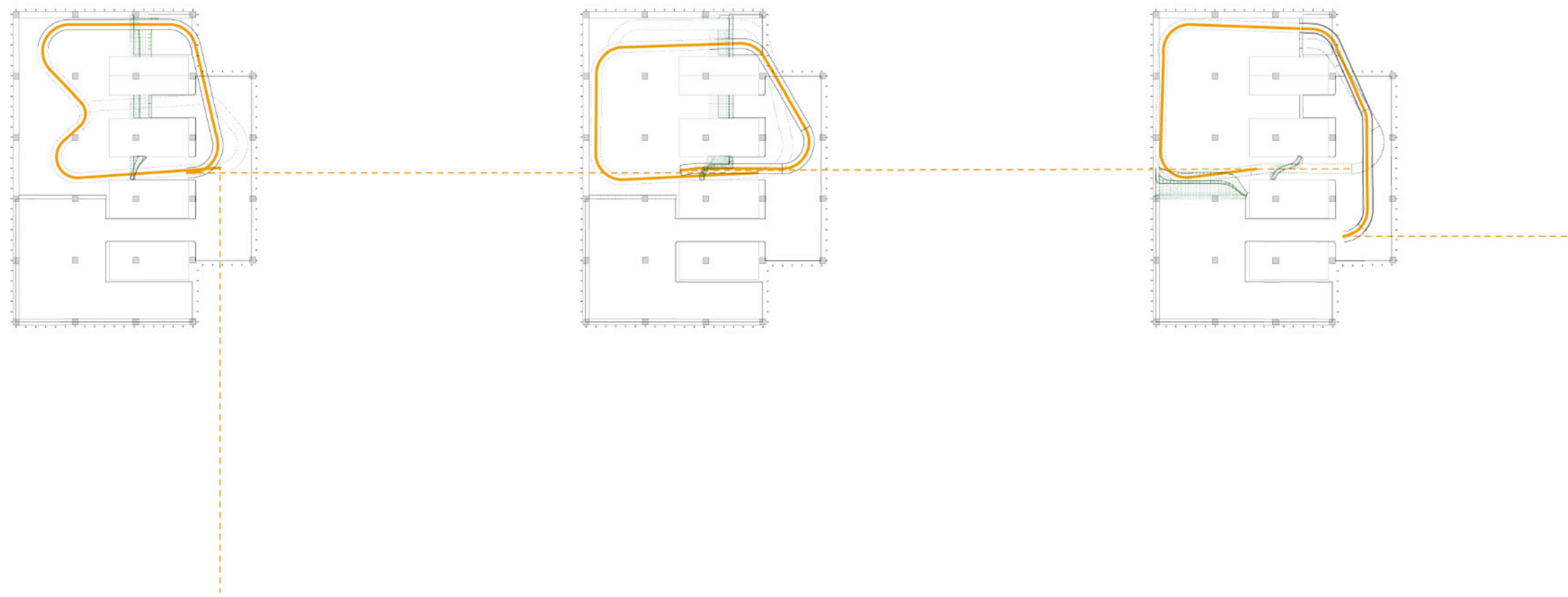


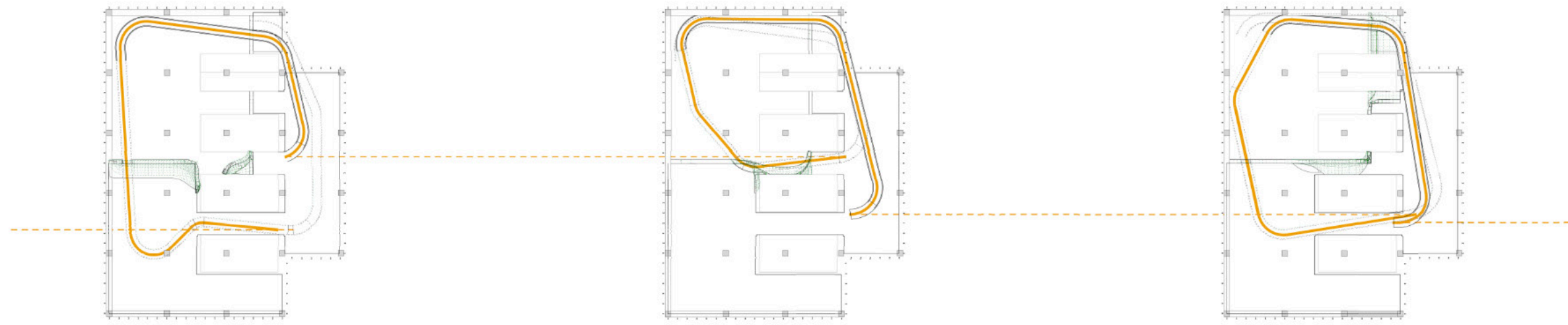




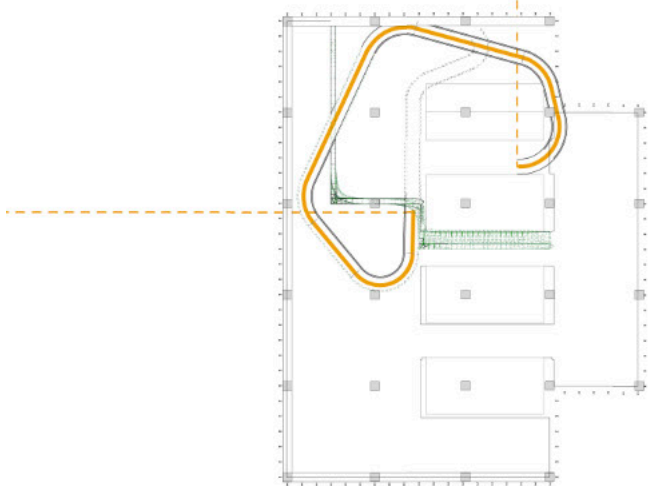


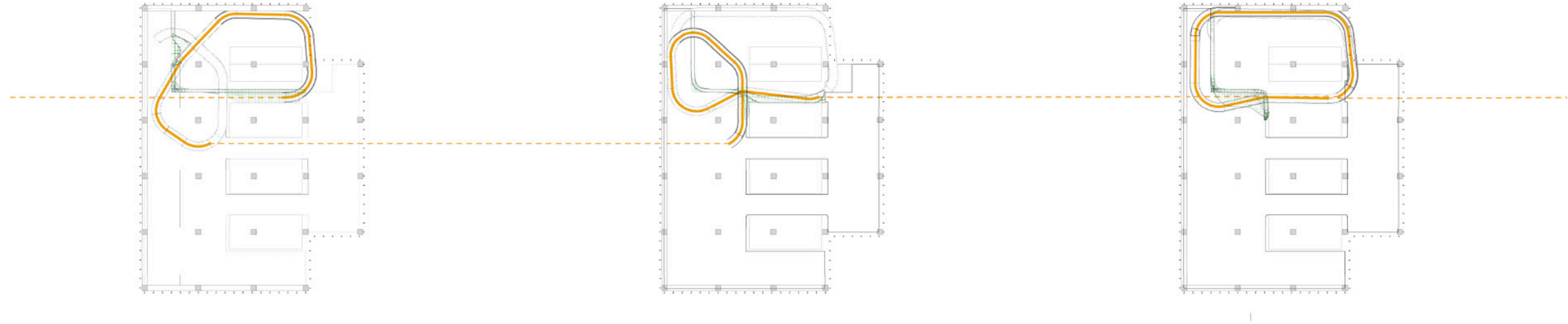


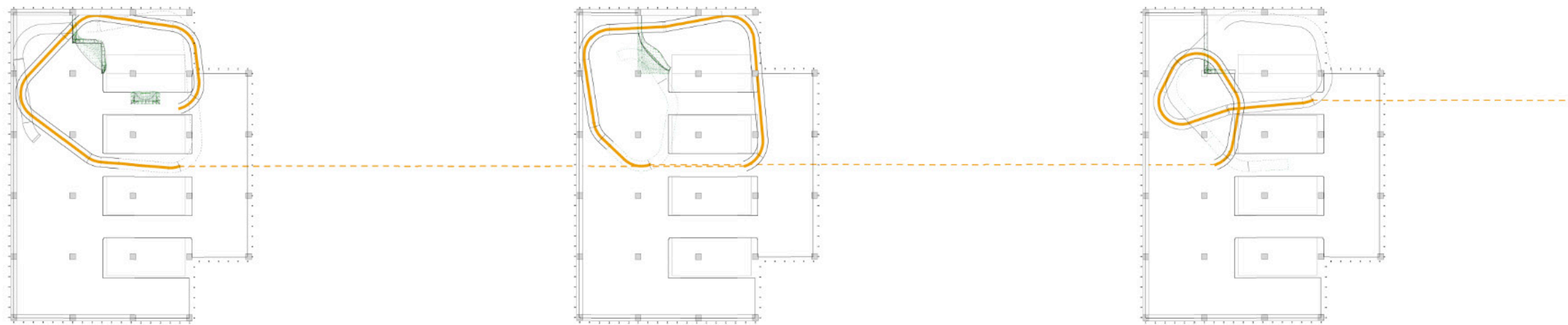






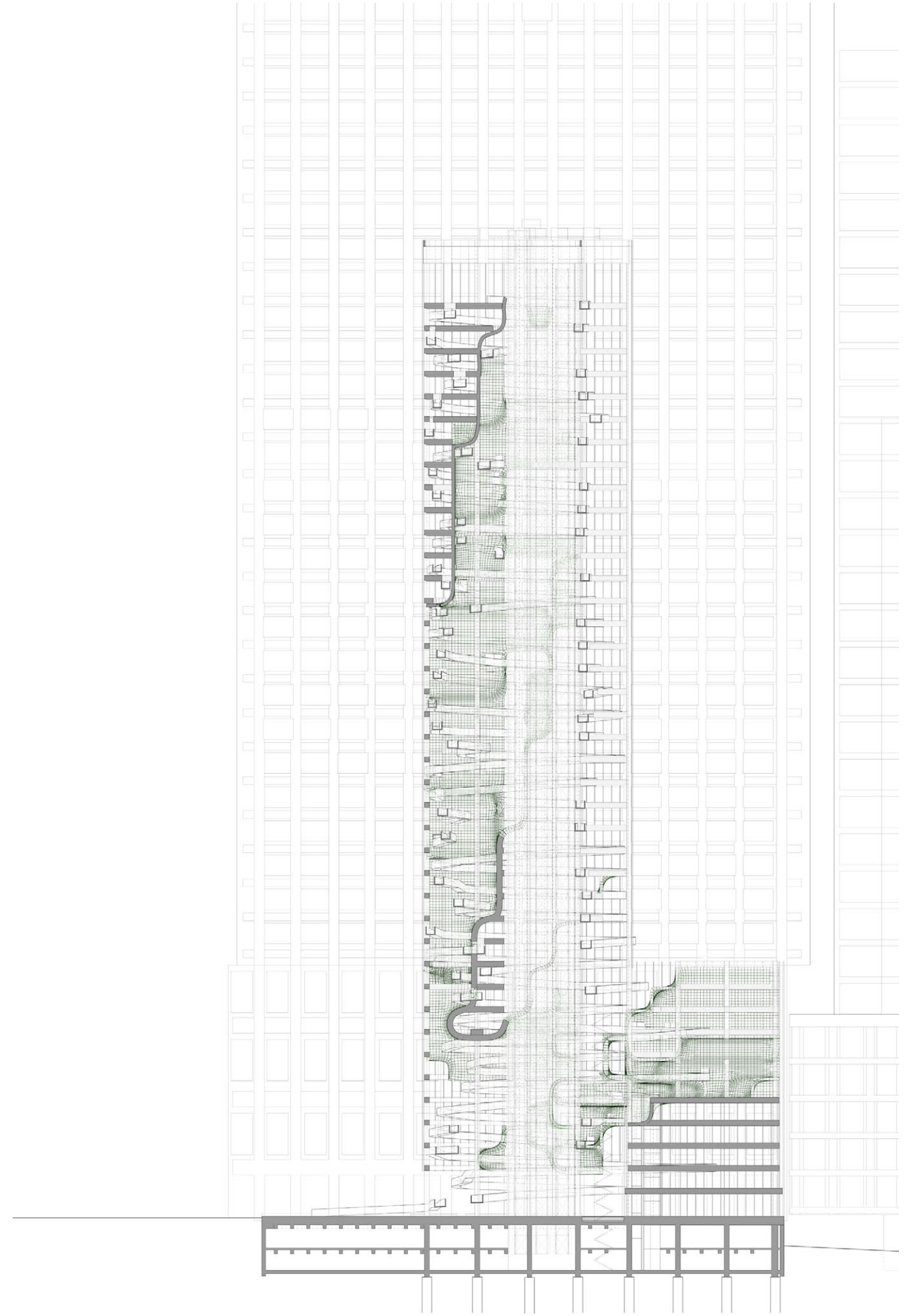




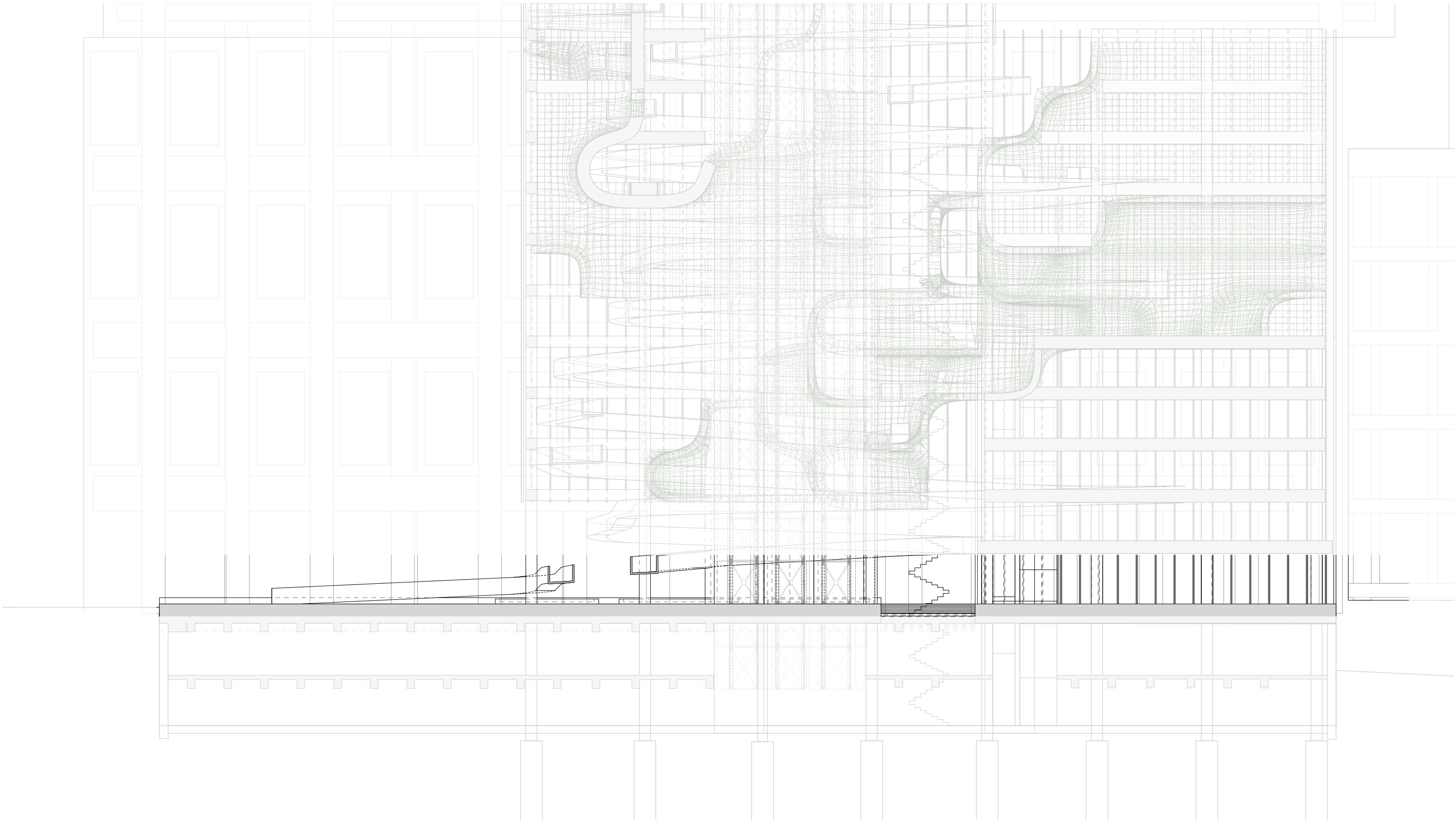


BUILDING SECTION

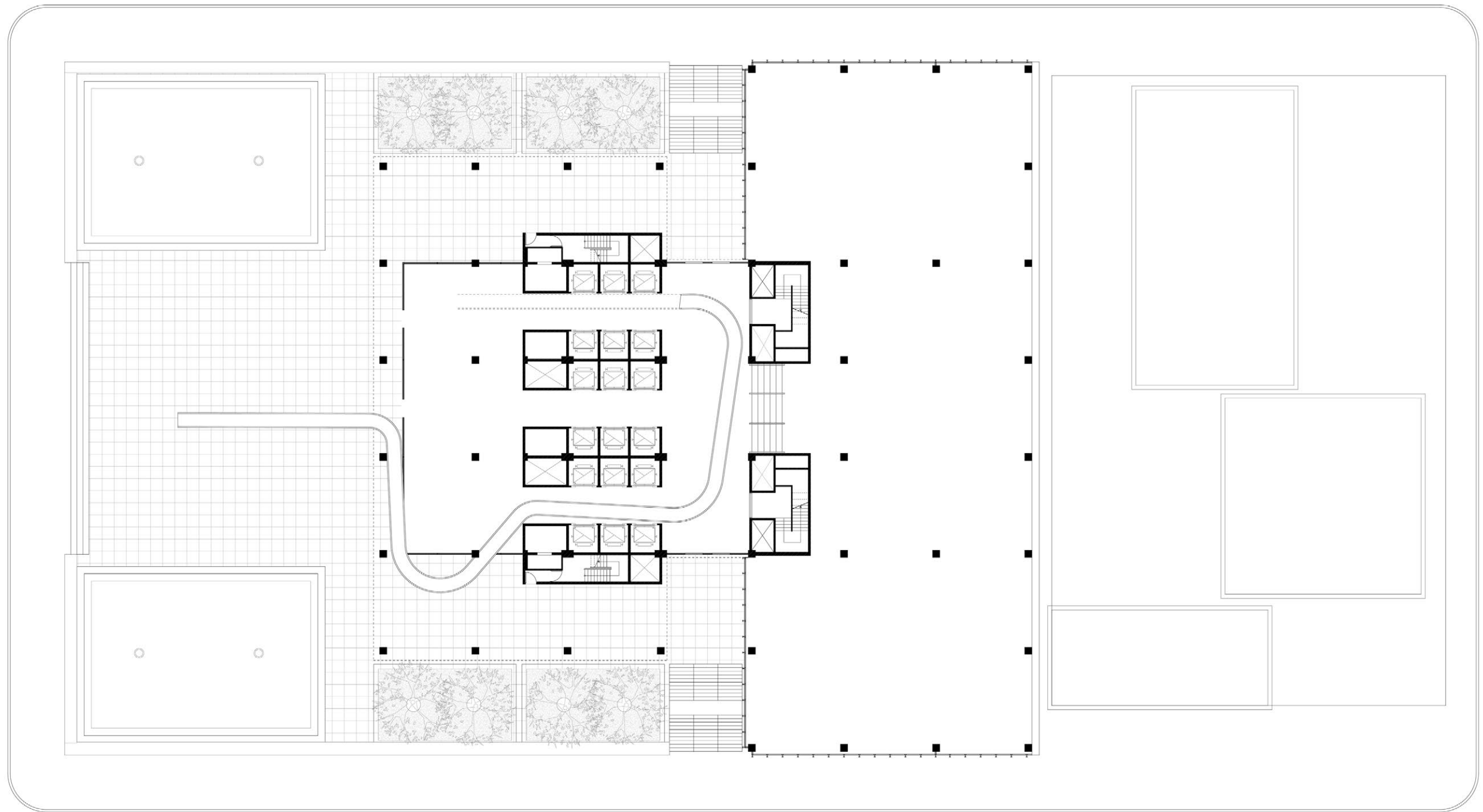
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GROUND FLOOR



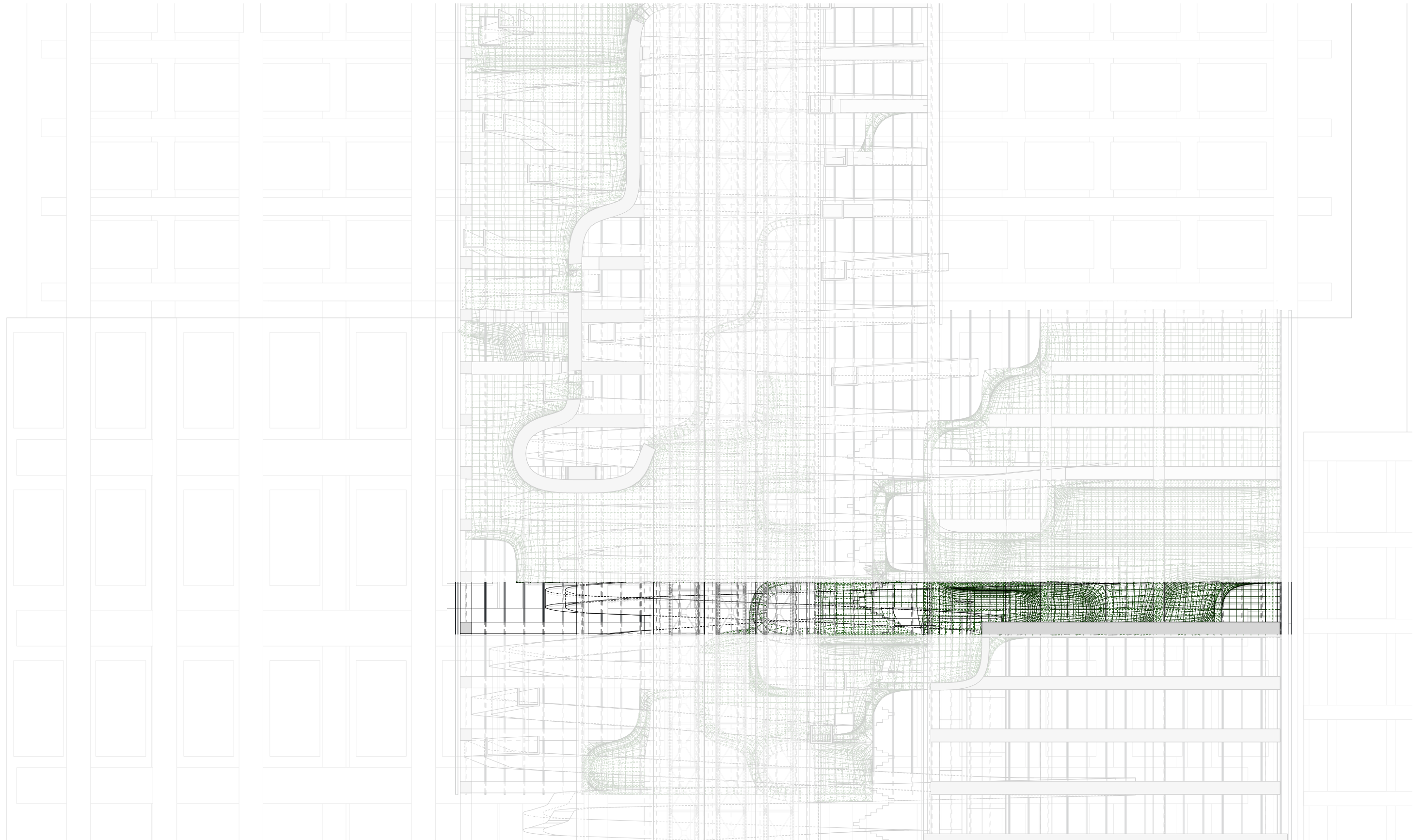
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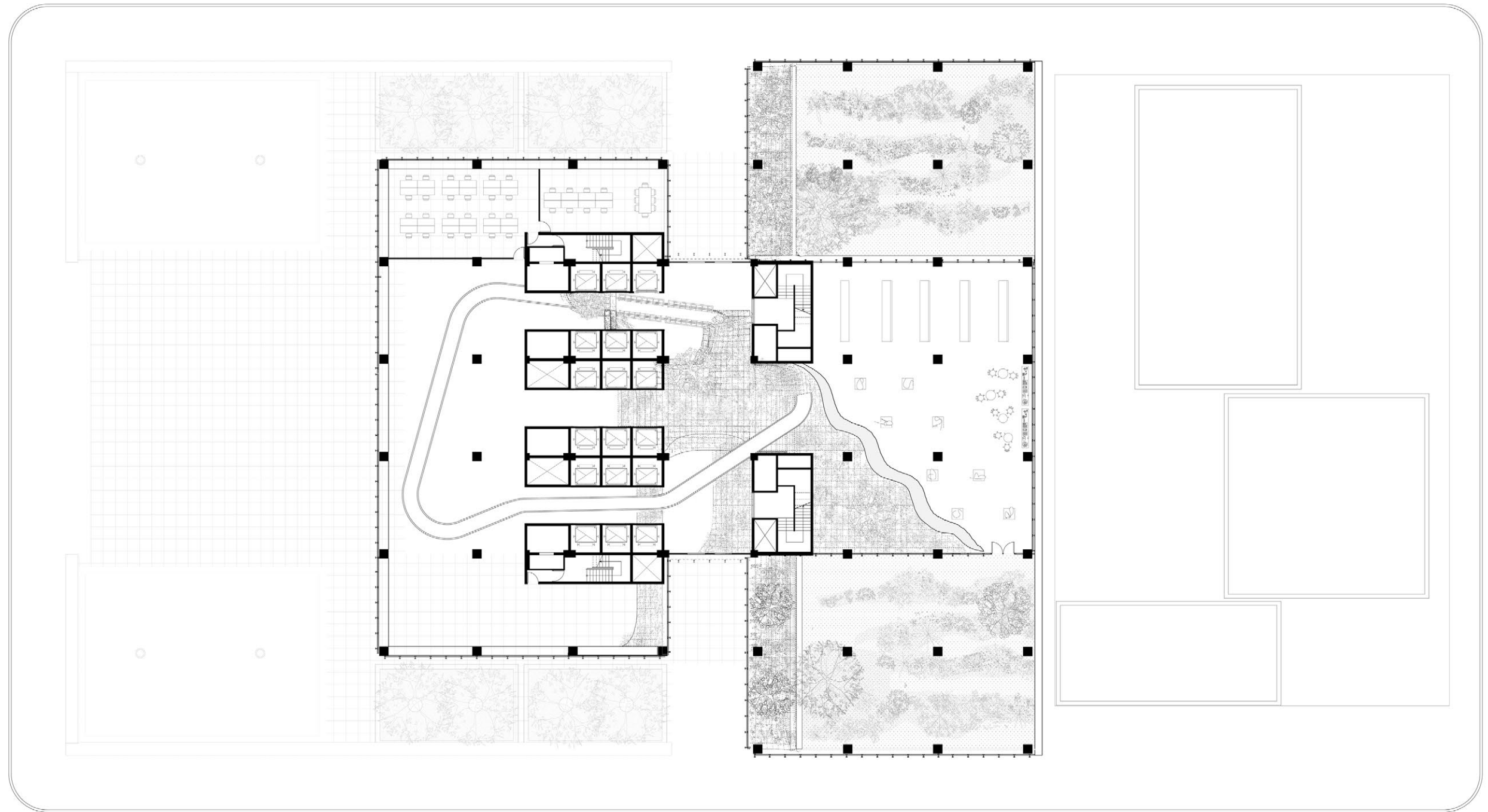
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LOWER FLOOR & ROOFTOPS



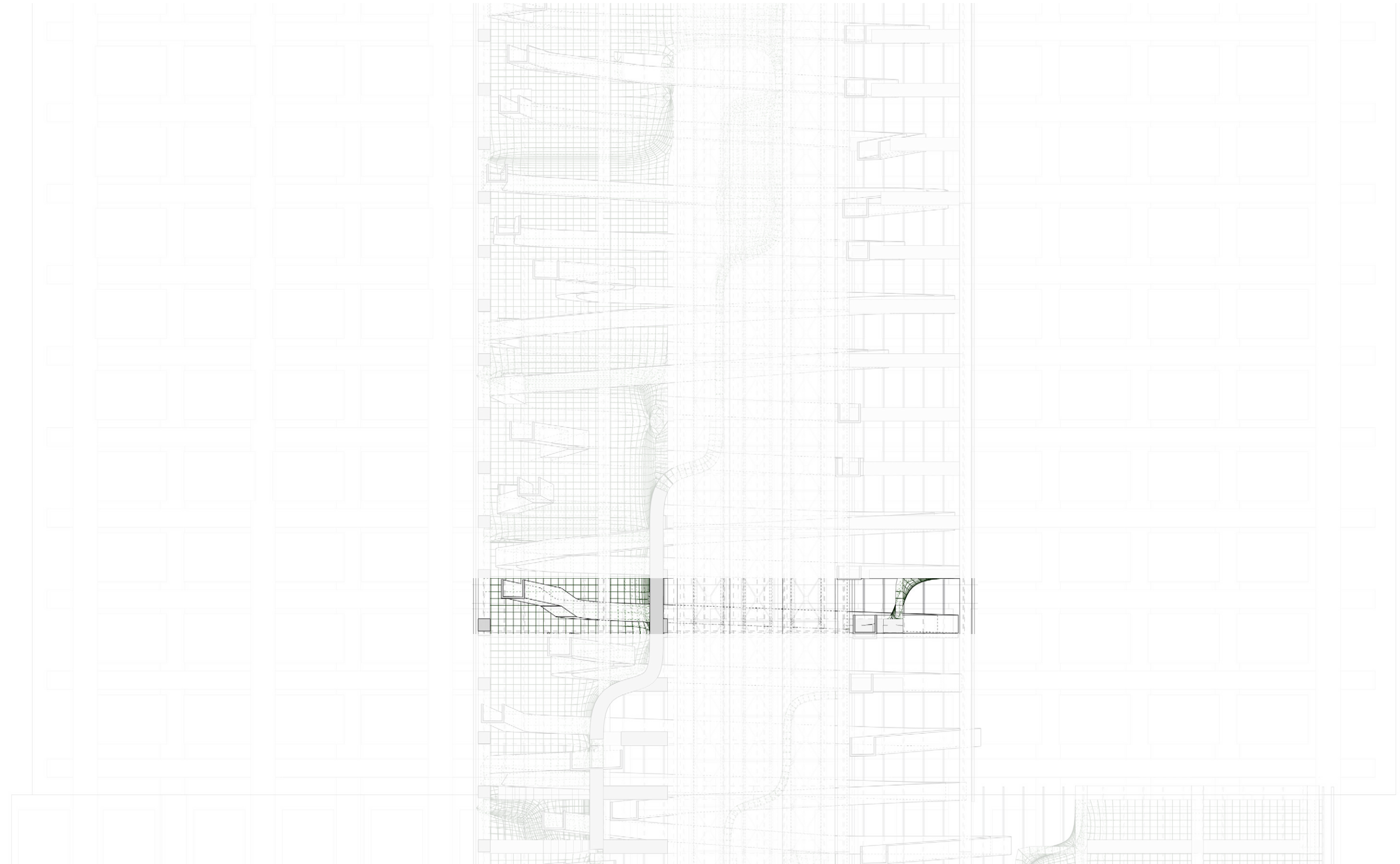
LOWER FLOOR & ROOFTOPS



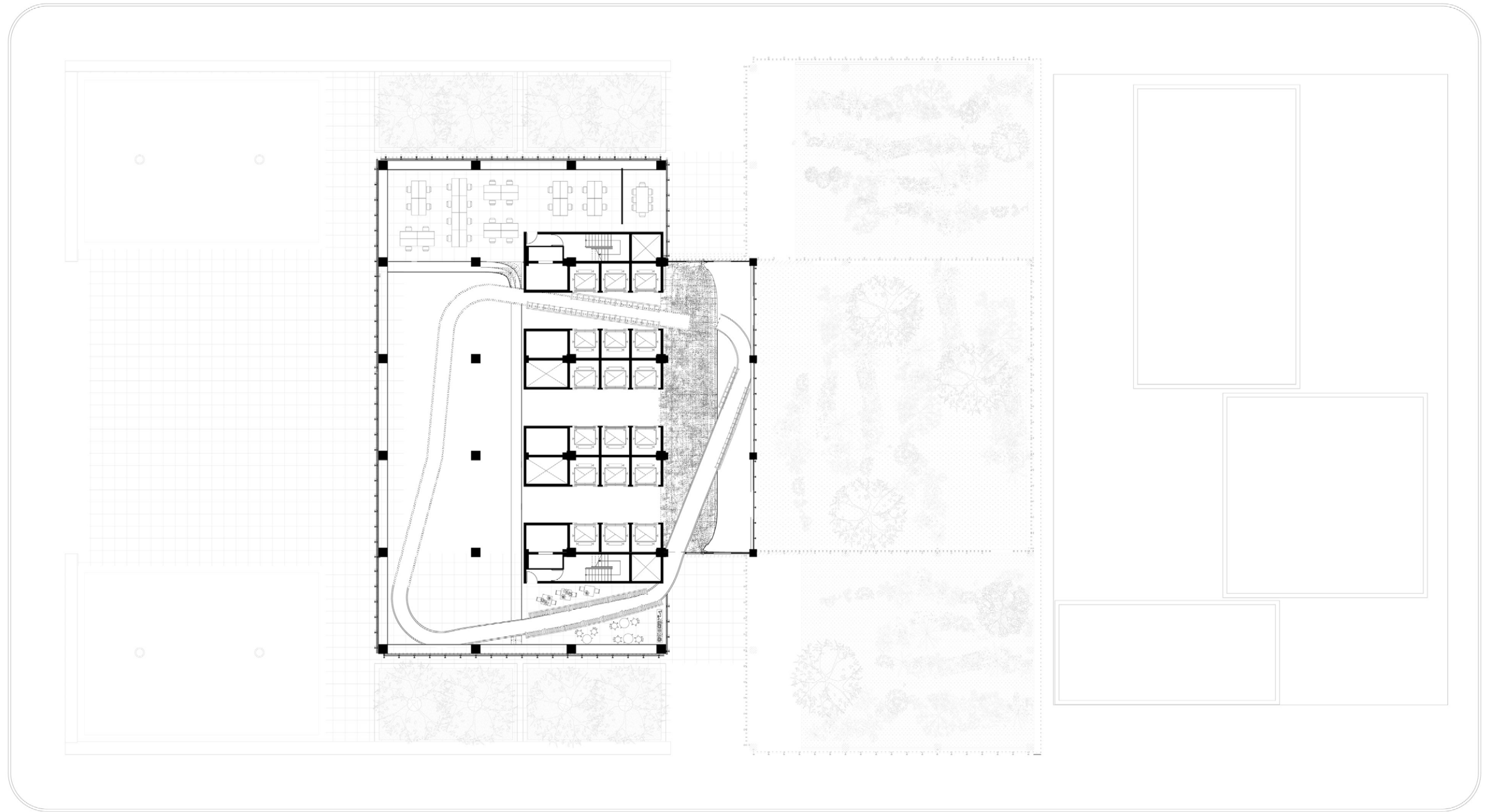
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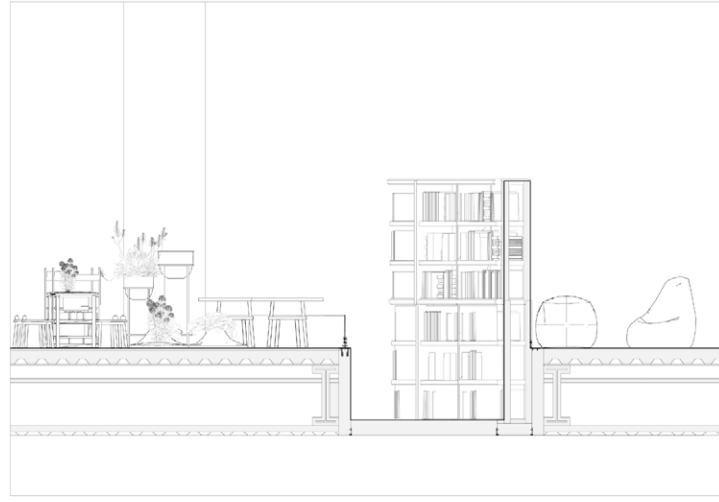
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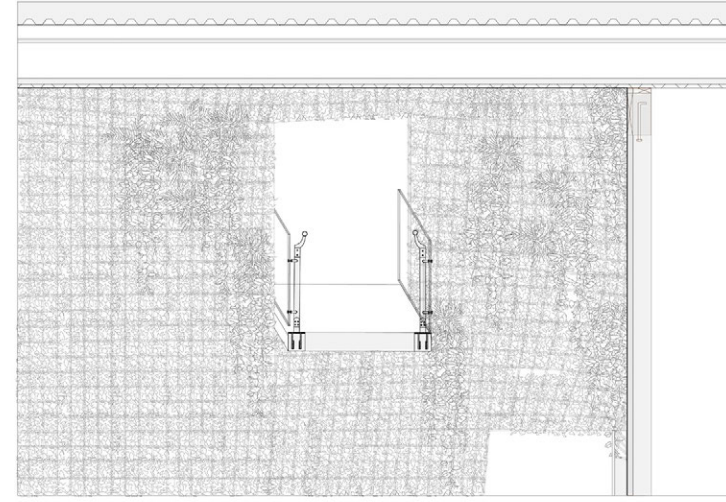
UPPER FLOOR



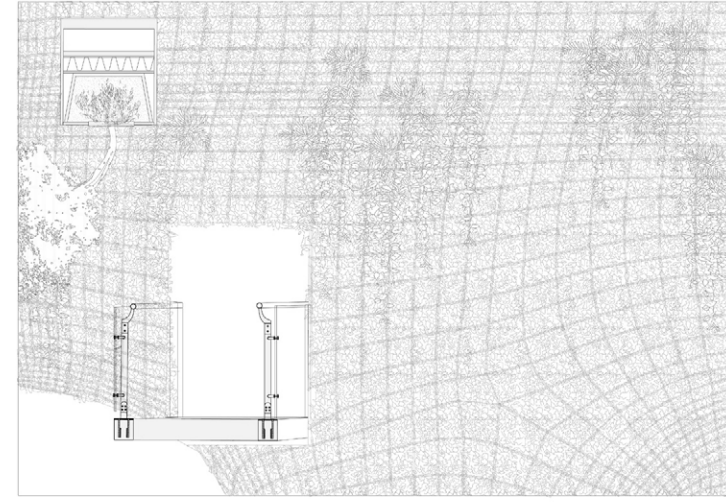
RAMP TYPOLOGY



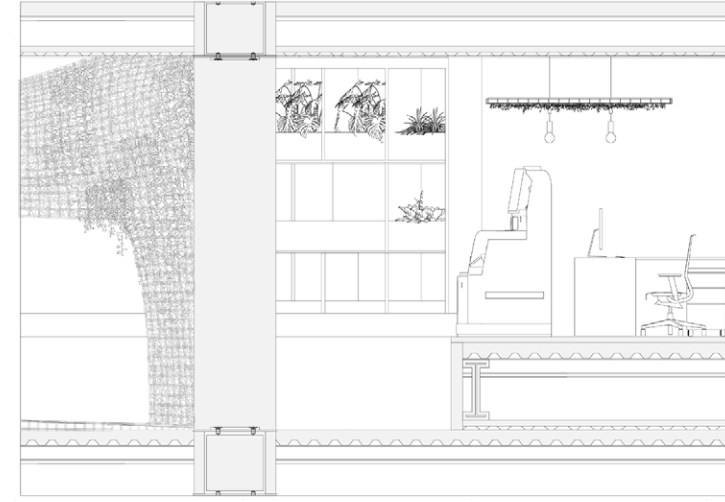
Bookshelf Rail 1:25



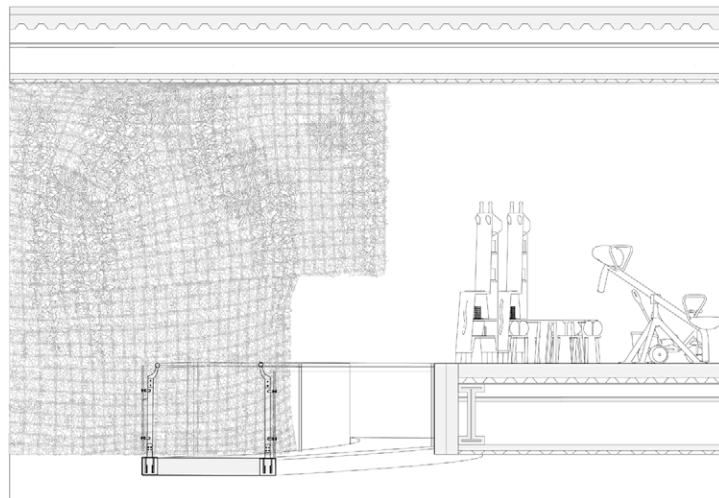
Semi-Floorplate 1:25



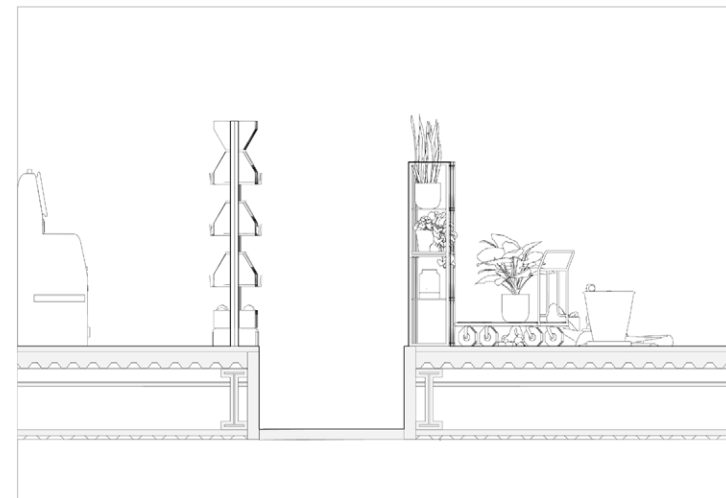
Bridge Type 1:25



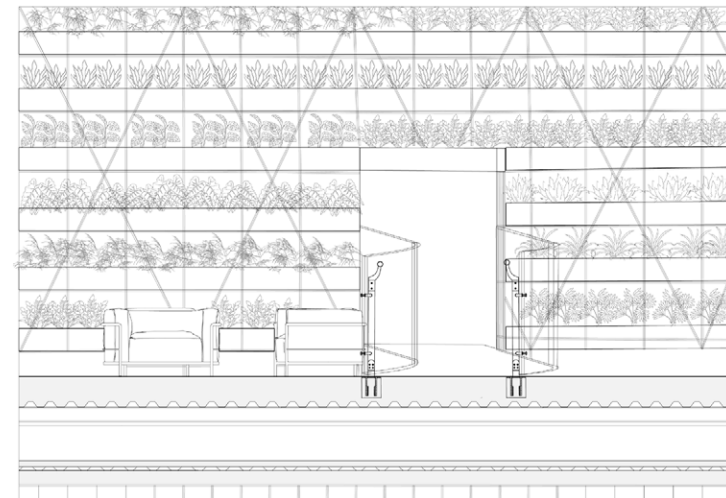
Plant Library Rail 1:25



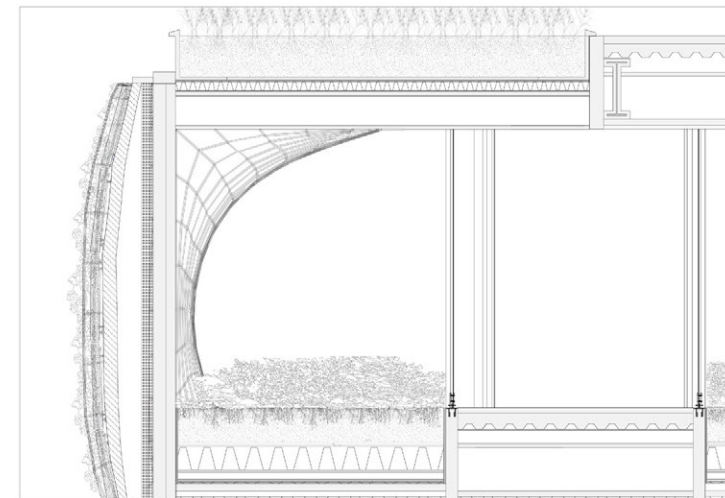
Half-Floorplate 1:25



Seed Bank Rail 1:25



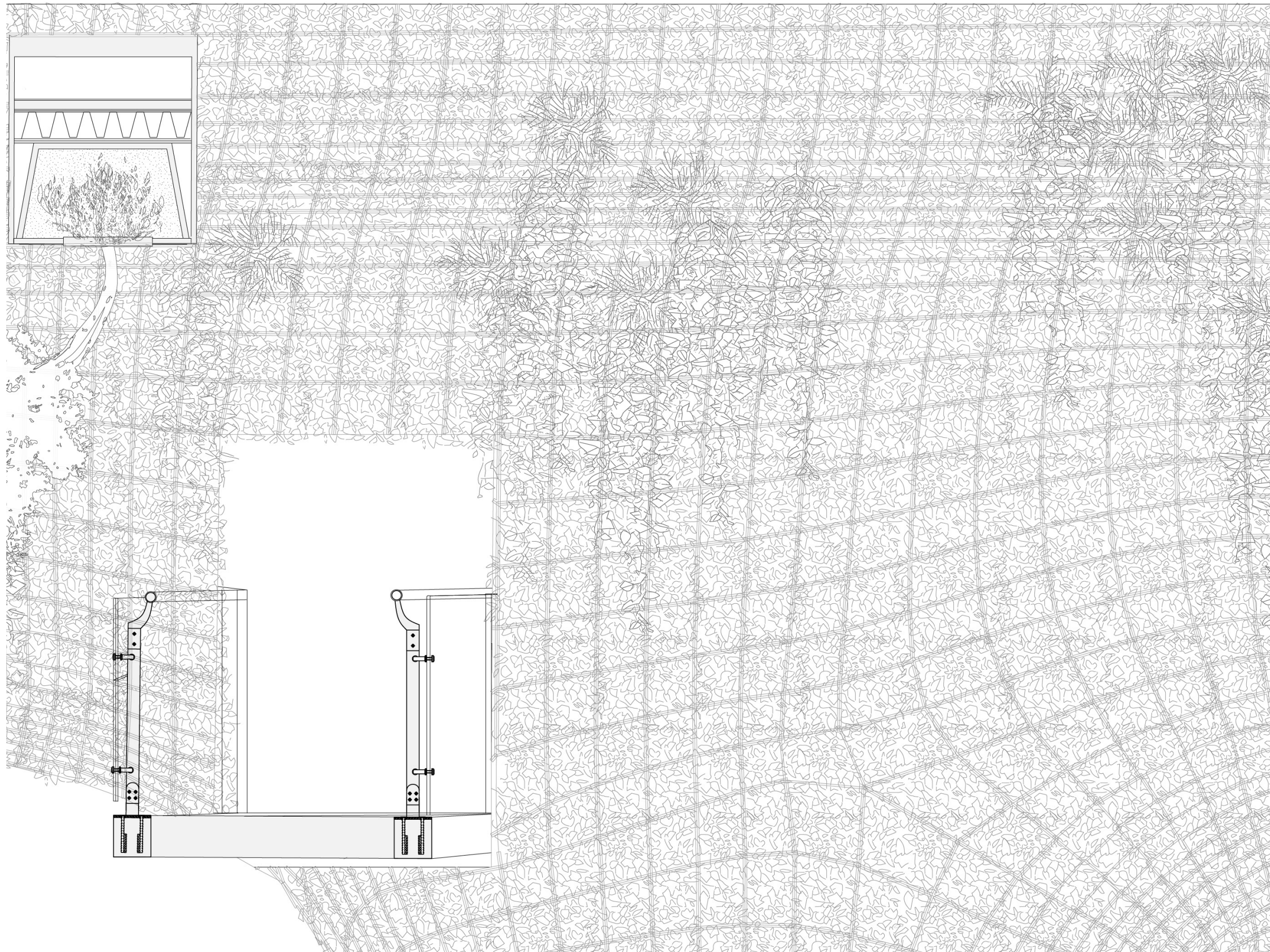
On-Floorplate 1:25

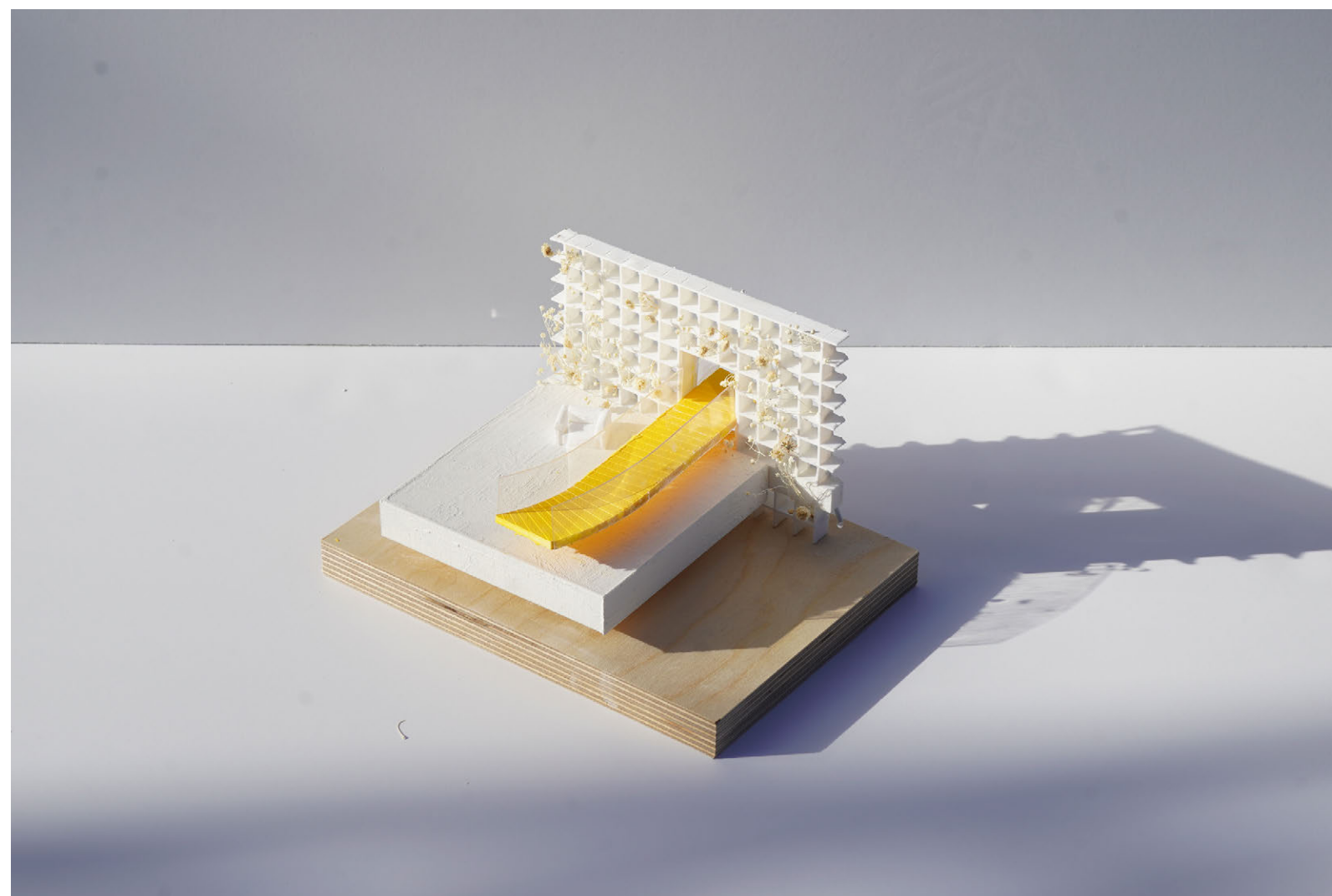


Add-on 1:25

BRIDGE TYPE

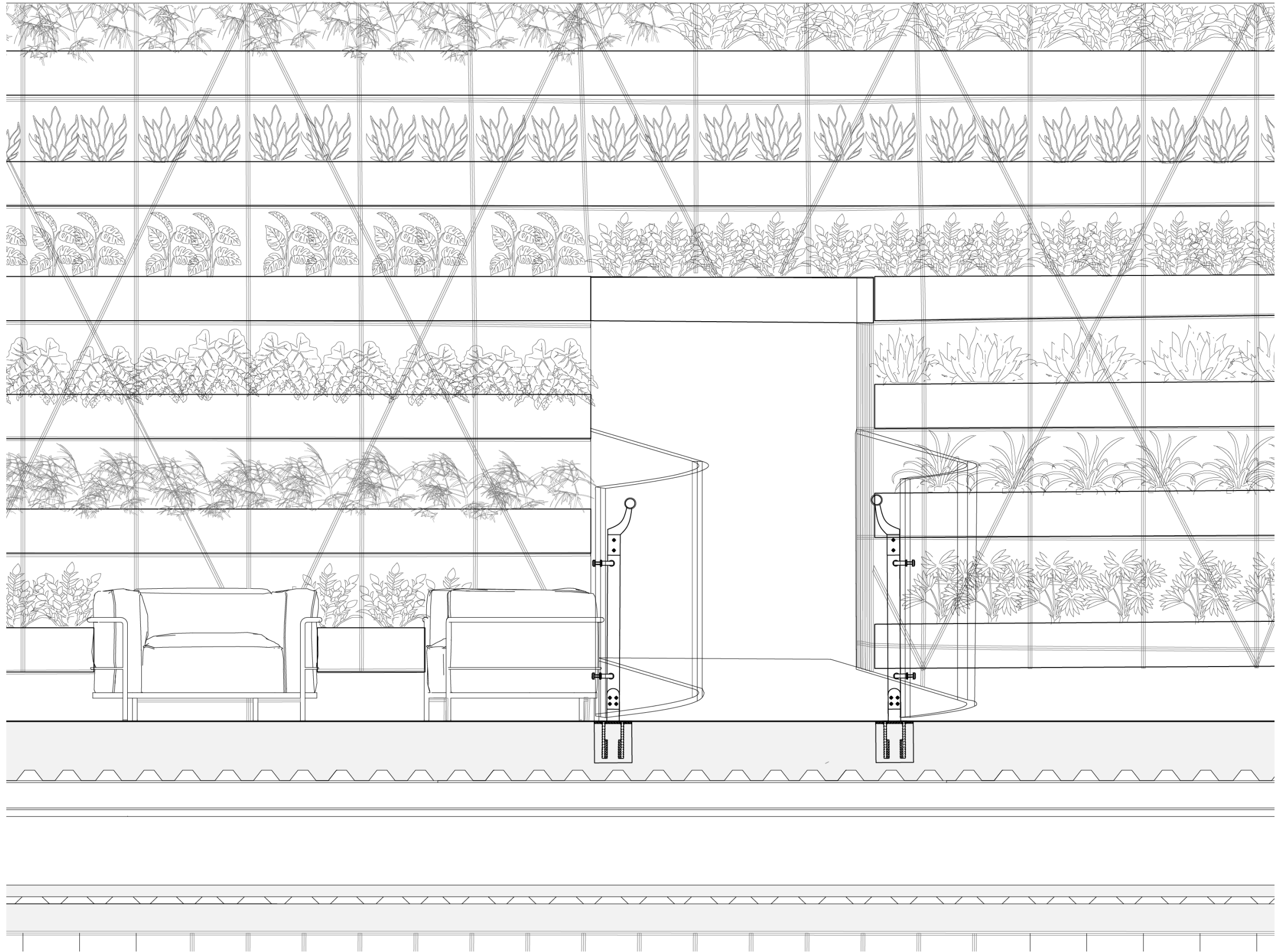
A detached bridge-type ramp winds through a wall of lush vegetation, immersing visitors in an immersive walking experience.

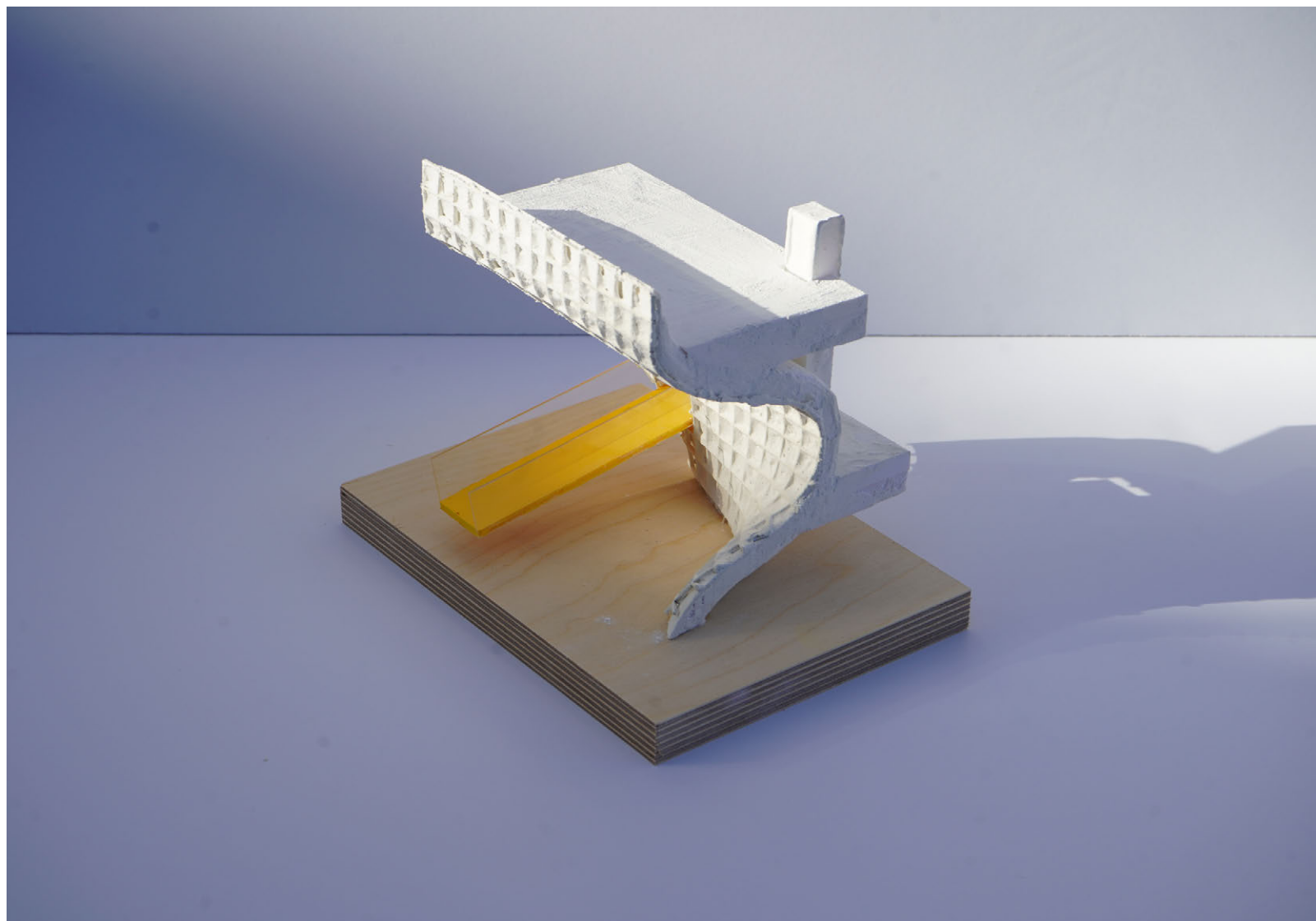




ON-FLOORPLATE

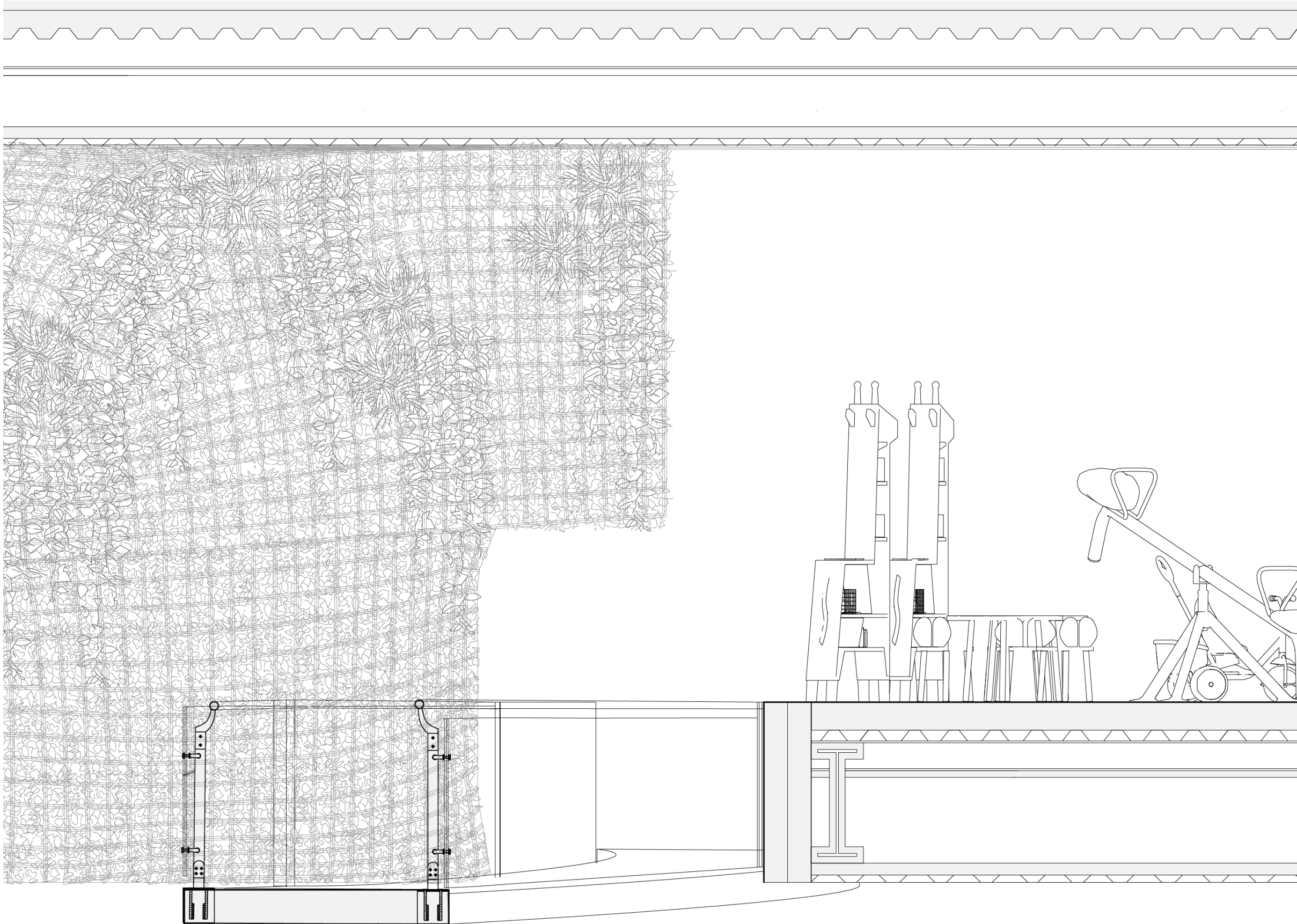
The ramp seamlessly integrates with the existing floorplate structure, becoming an organic extension of the built environment.

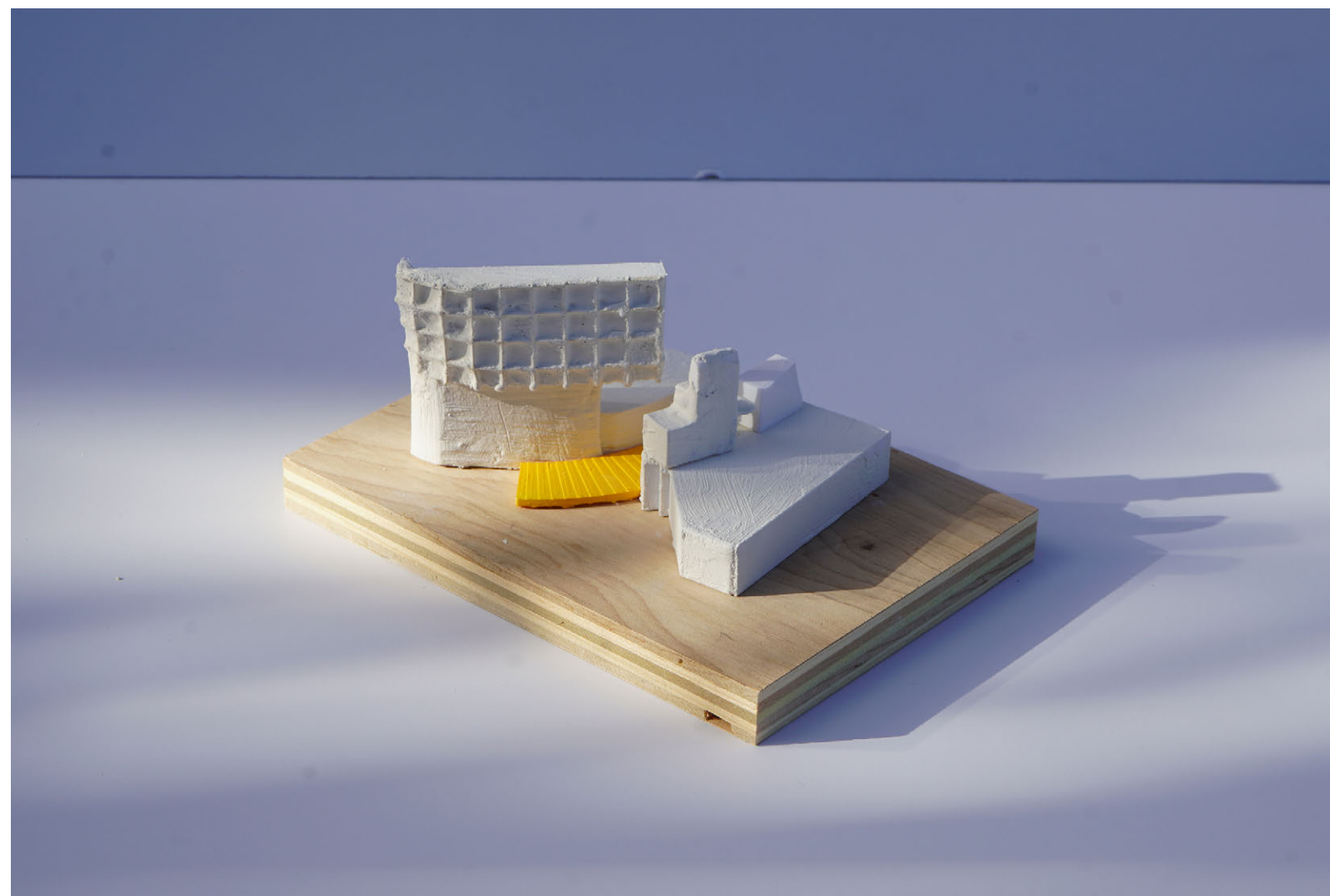




HALF-ATTACHED

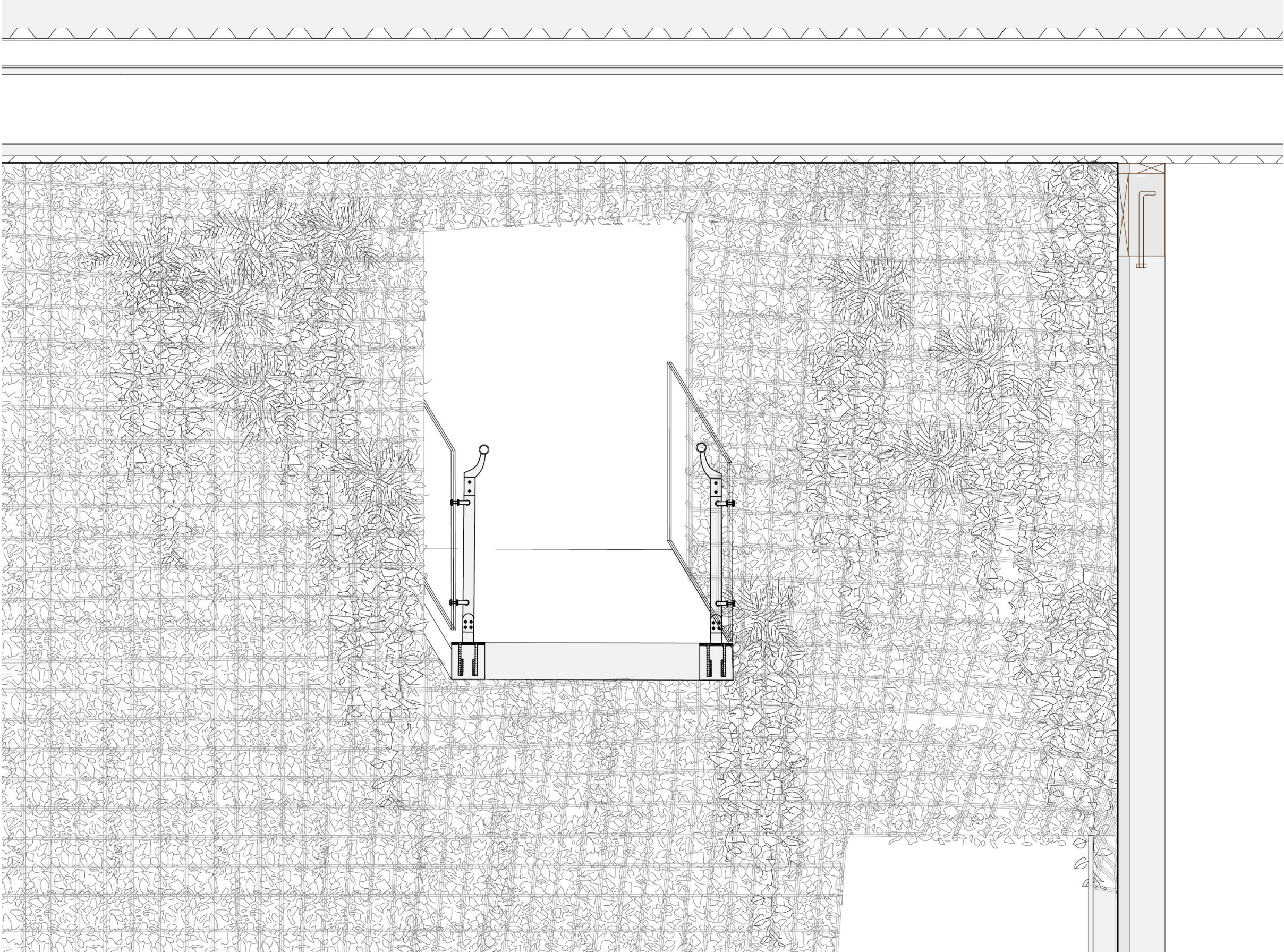
Partially attached to the floorplates, this ramp typology creates strategic connections to programmatic areas, fostering a cohesive flow.

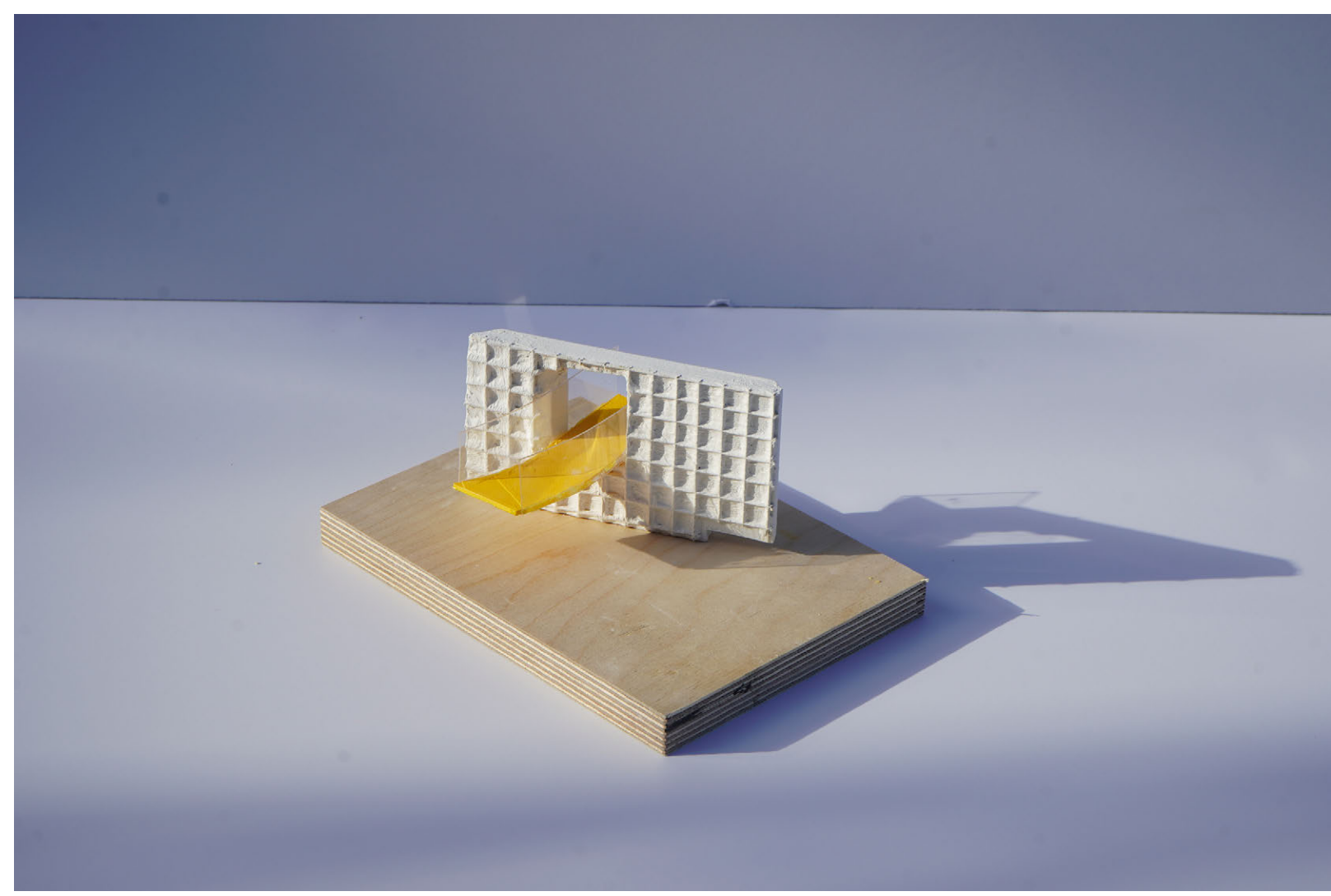




SEMI-ATTACHED

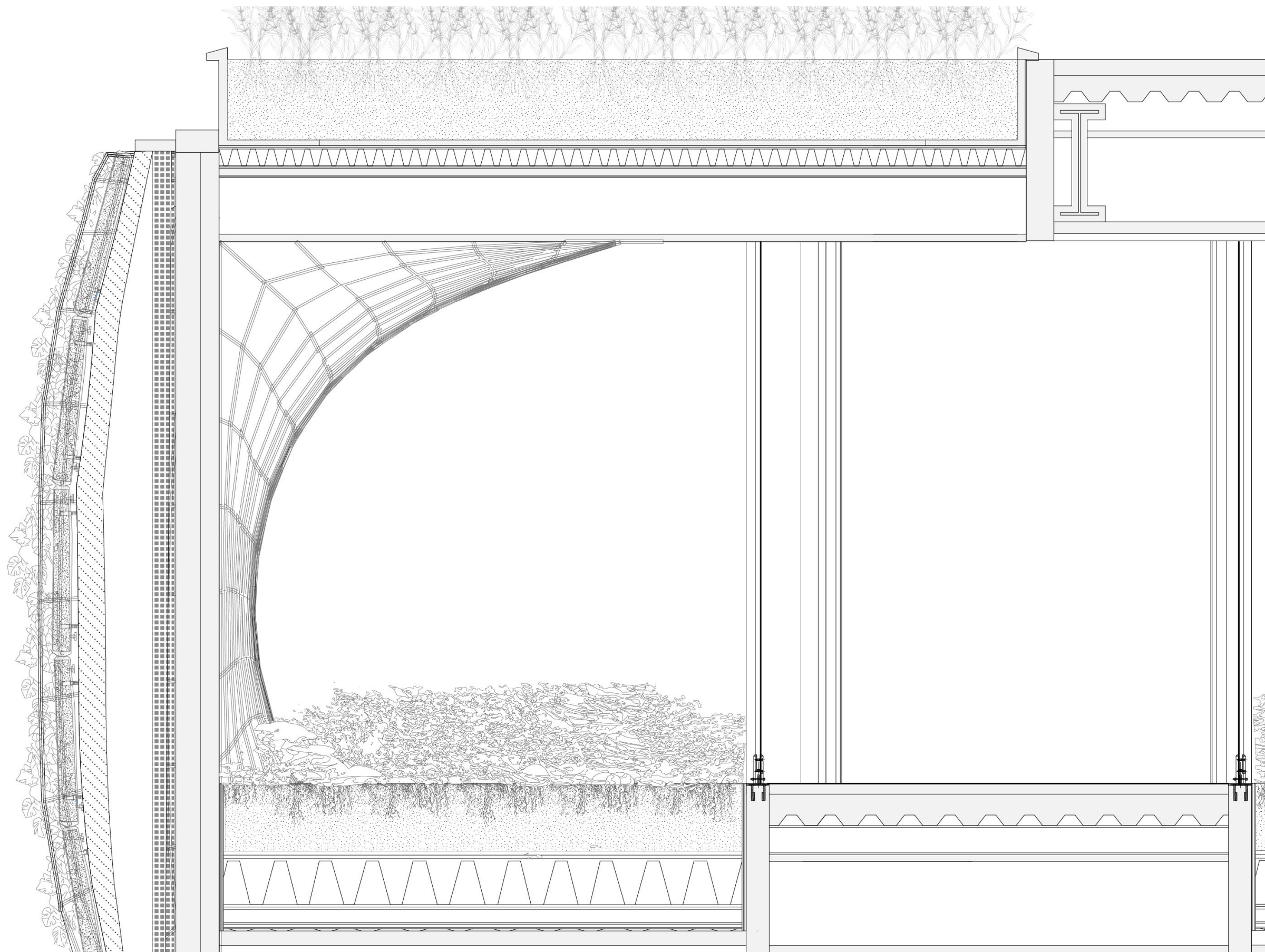
Supported by a combination of floor plates and plant walls, this typology offers a harmonious blend of built and natural elements.

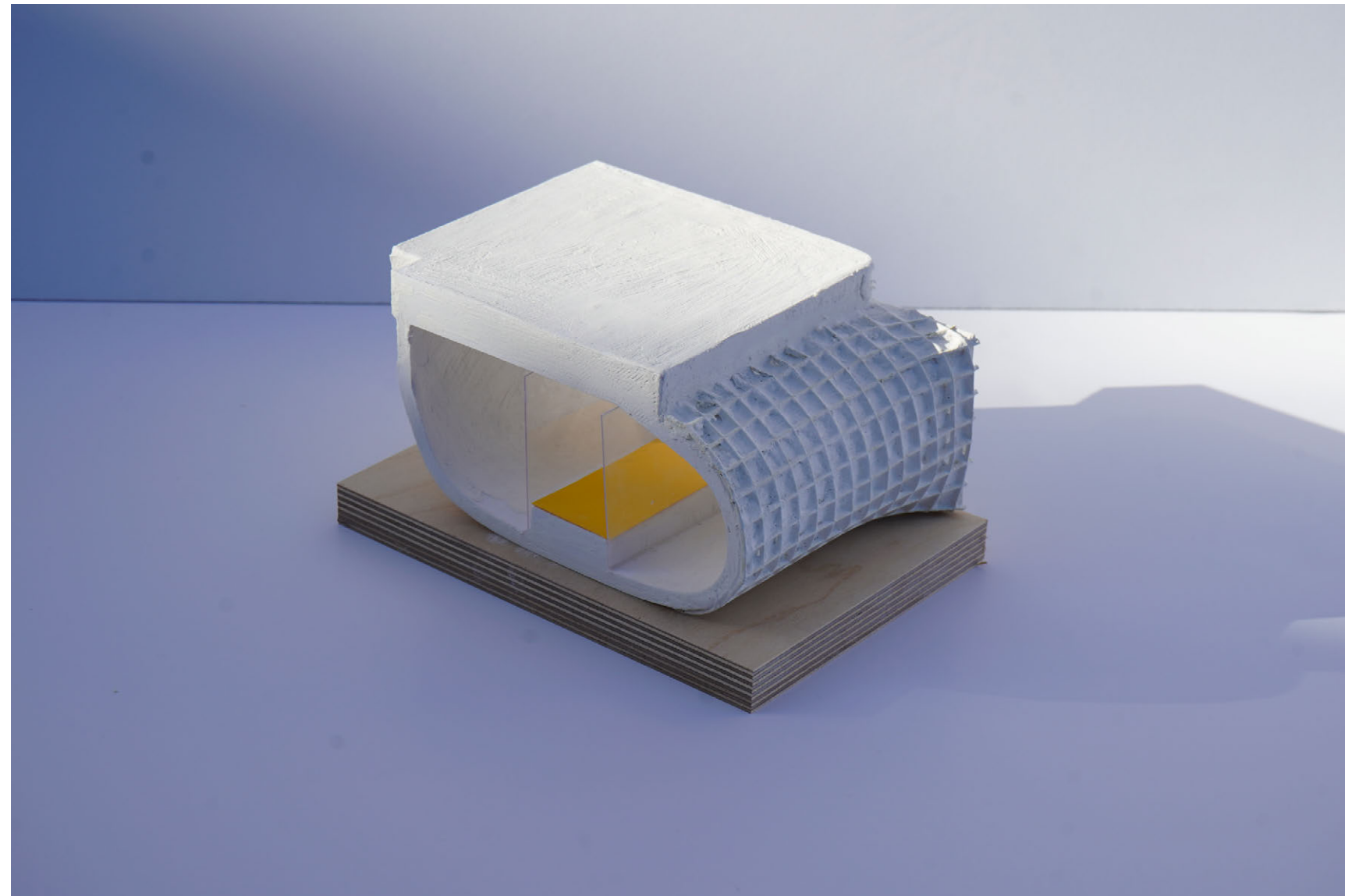




ADD-ON

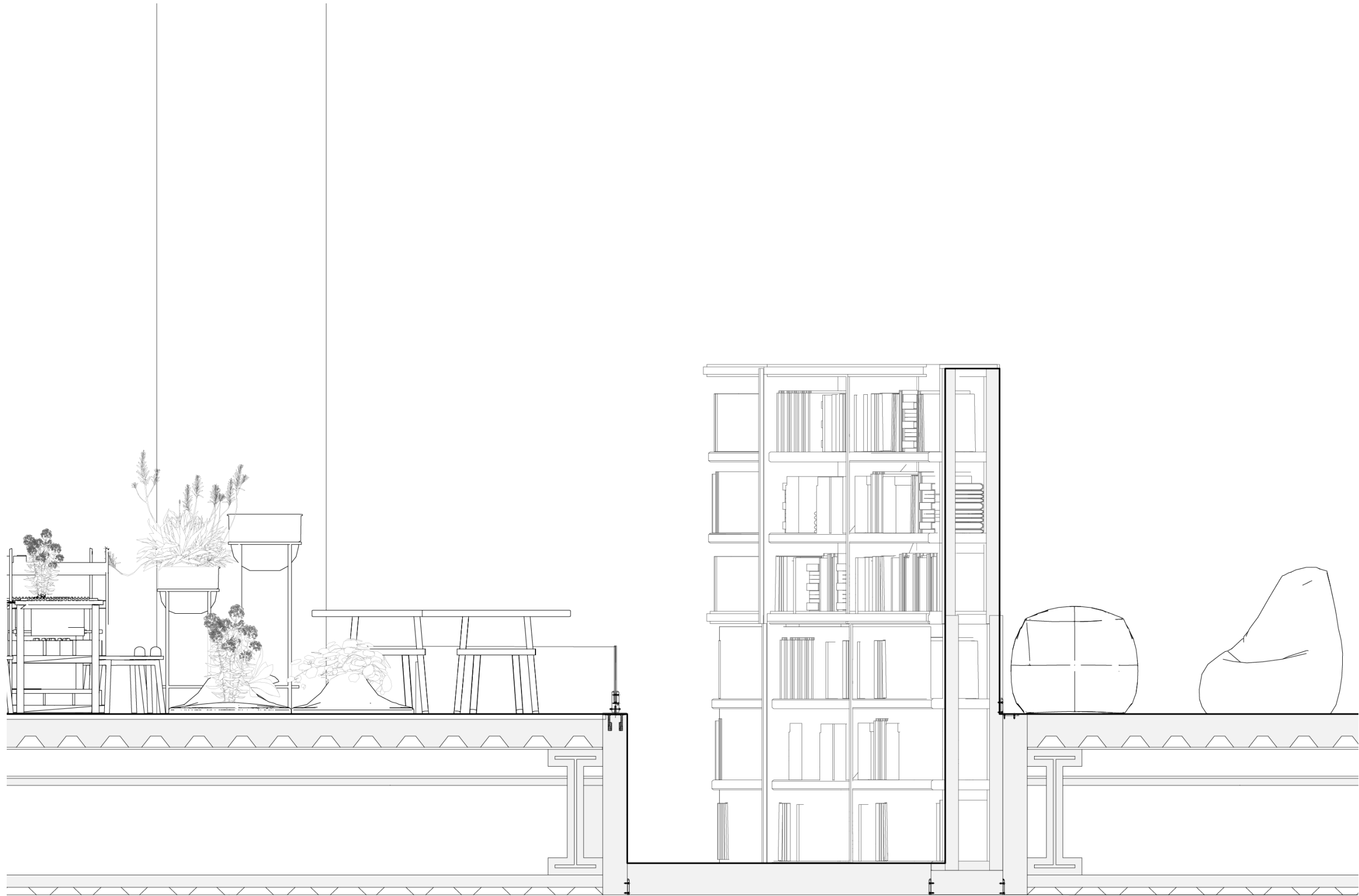
In areas where additional soil depth is required, this typology extends from existing plates.

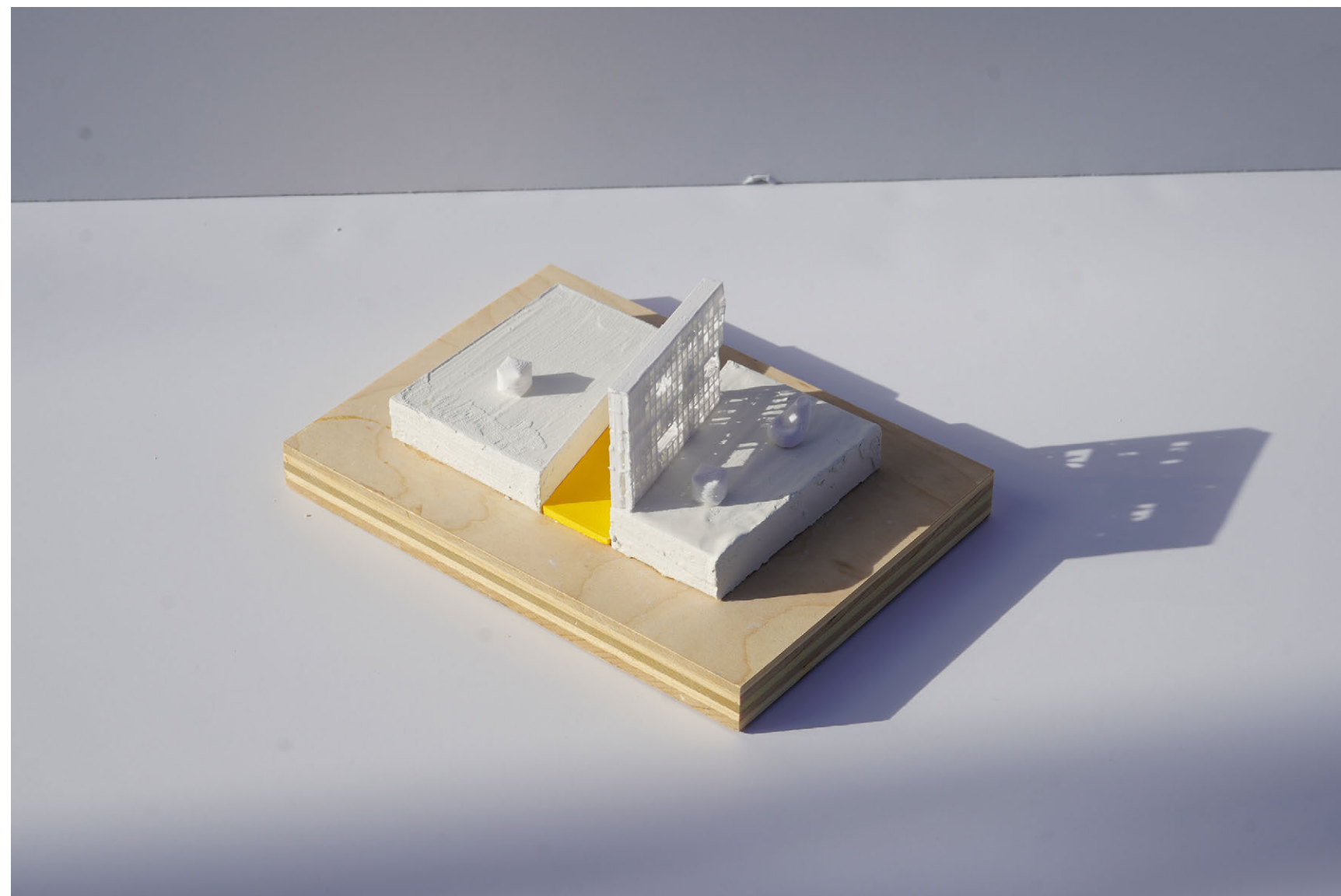




BOOKSHELF RAIL

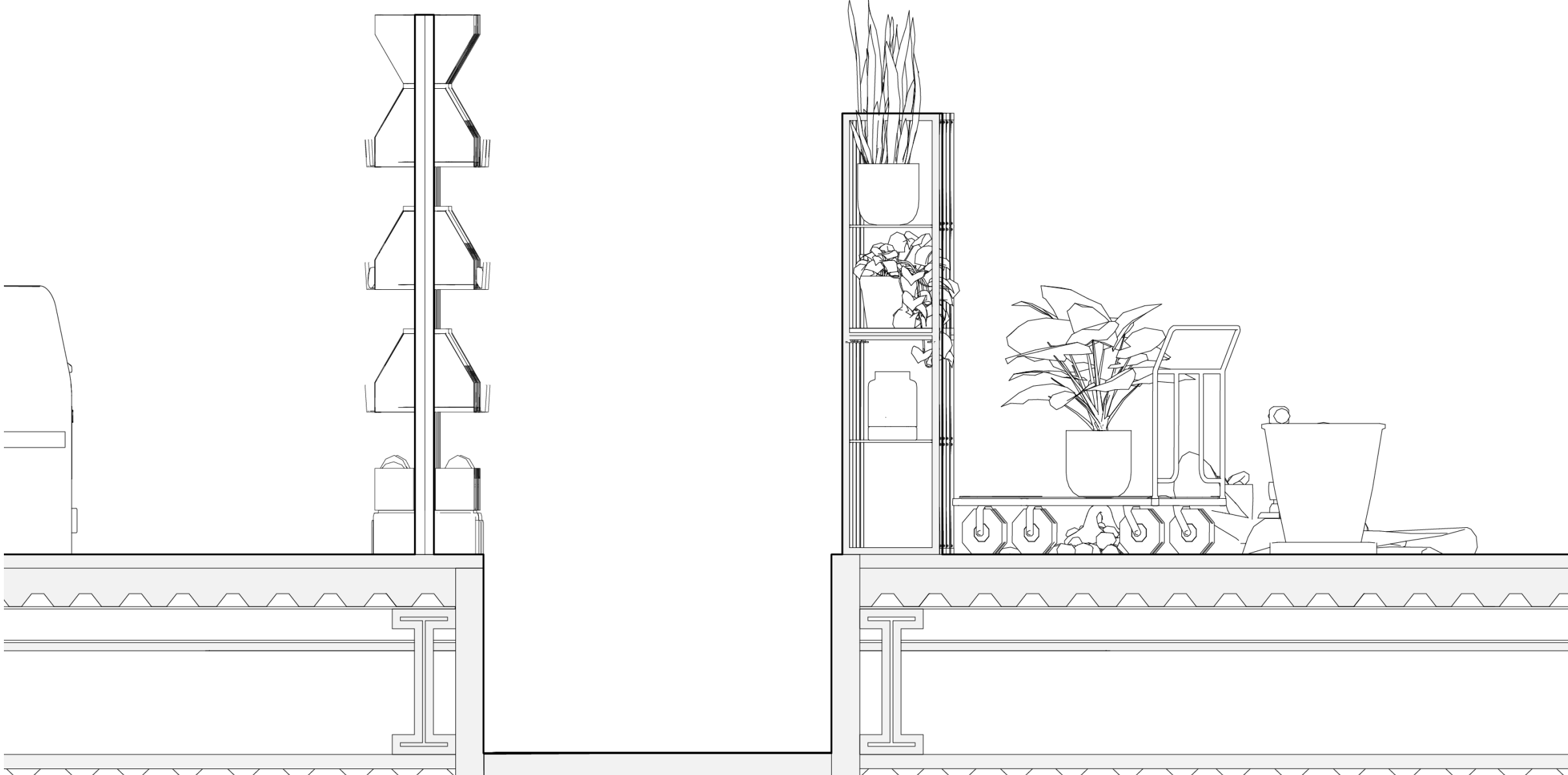
Along the ramp's path, the railing transforms into an interactive bookshelf, housing the botanical library's collection and inviting visitors to immerse themselves in a world of knowledge.

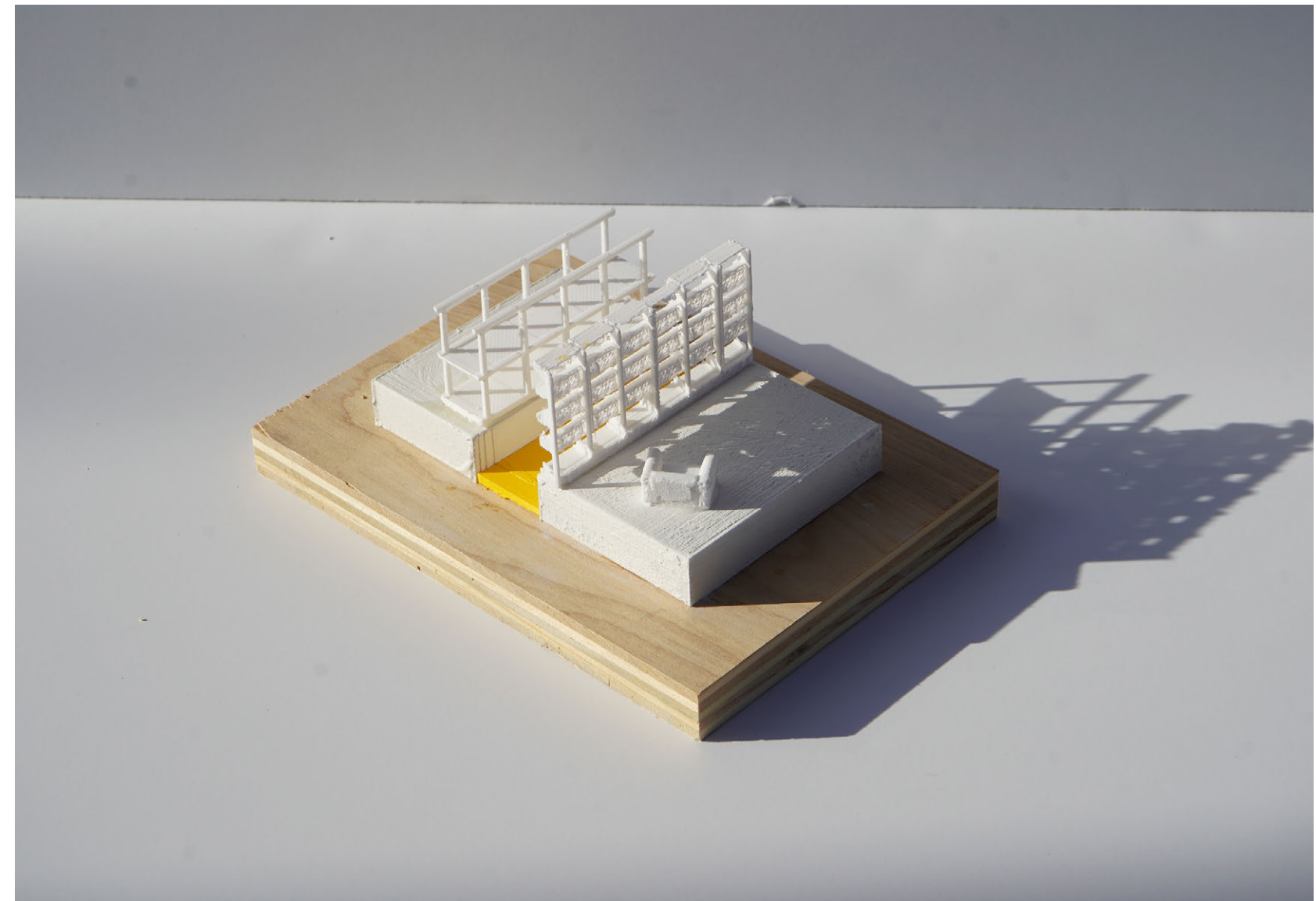




SEED BANK RAIL

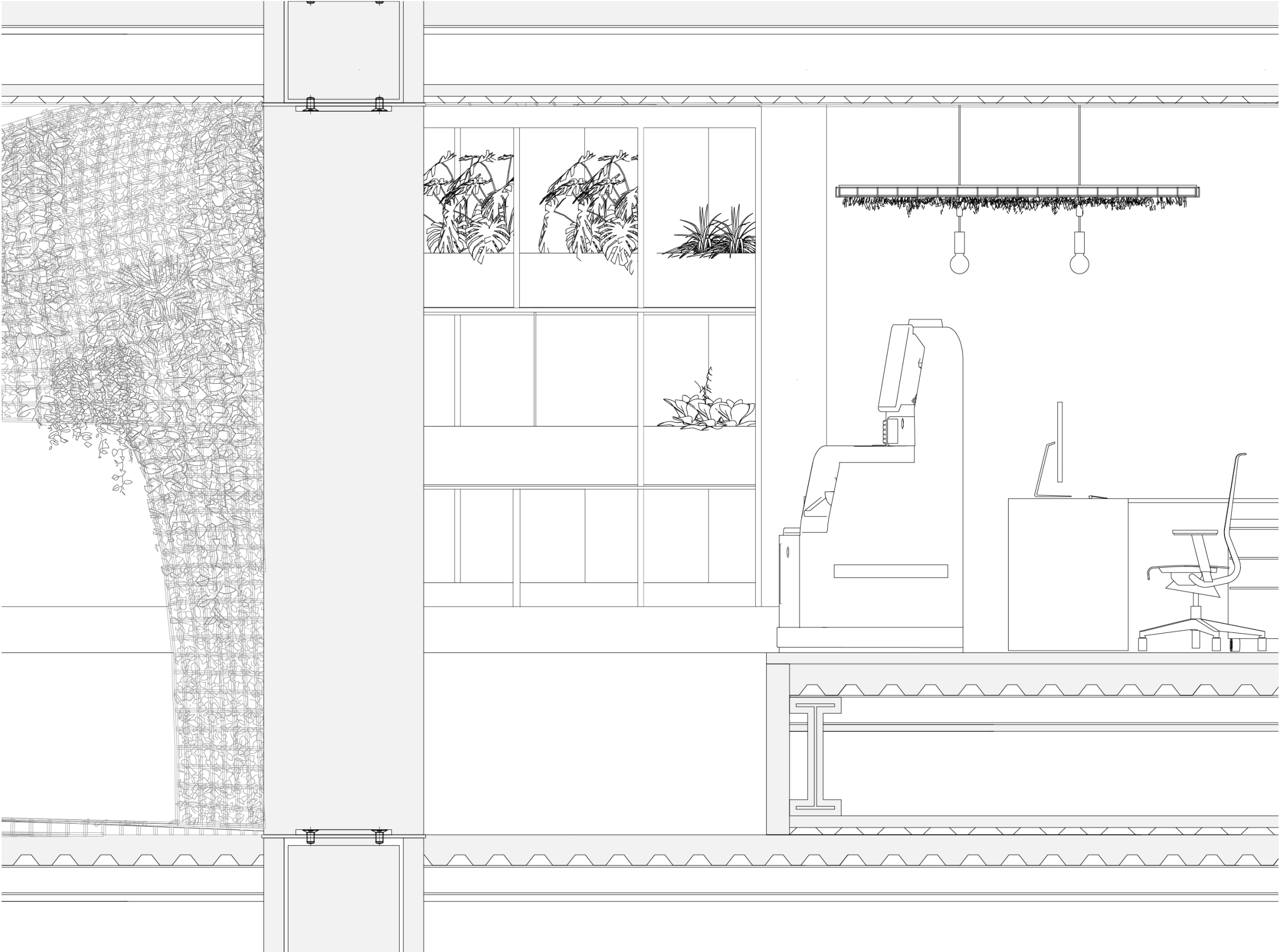
For the program Seed bank, strategically placed compartments line the railing, showcasing a curated seed bank collection.

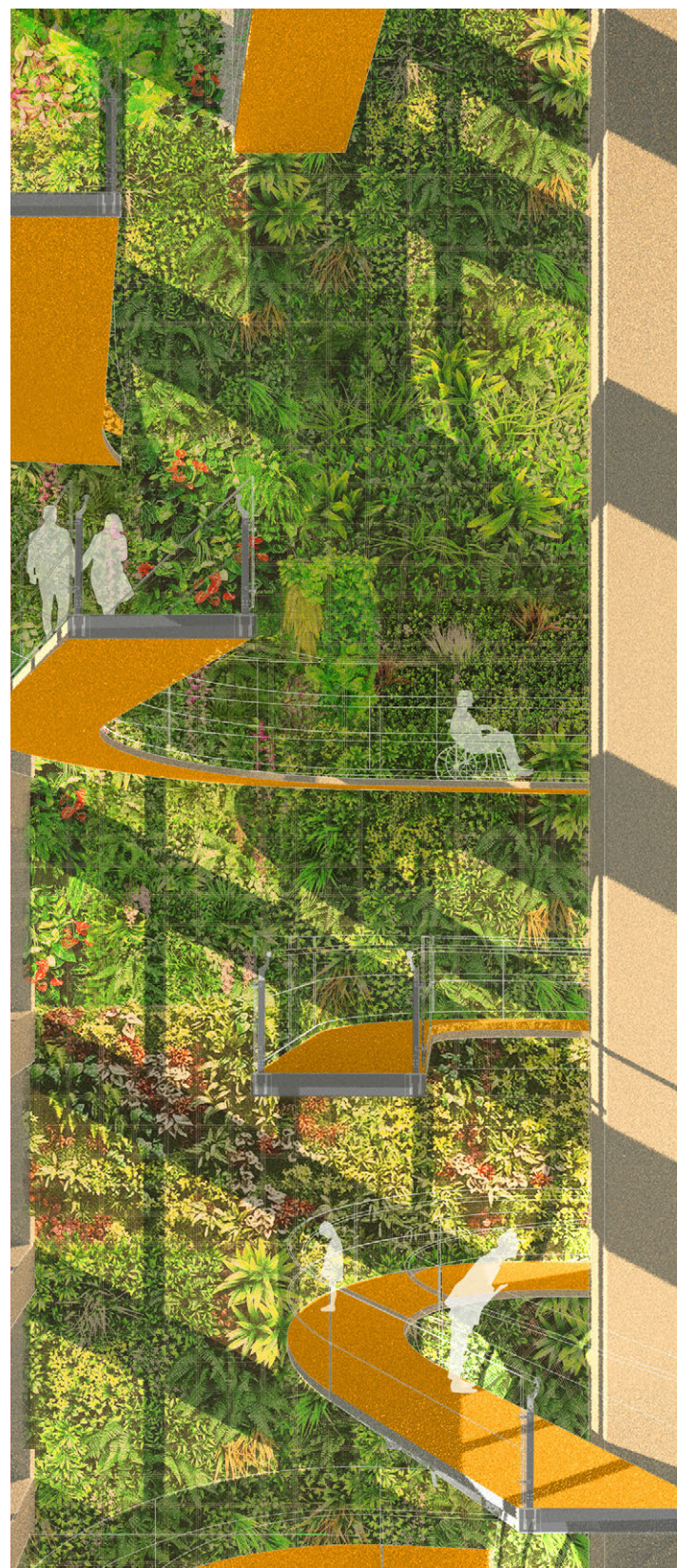
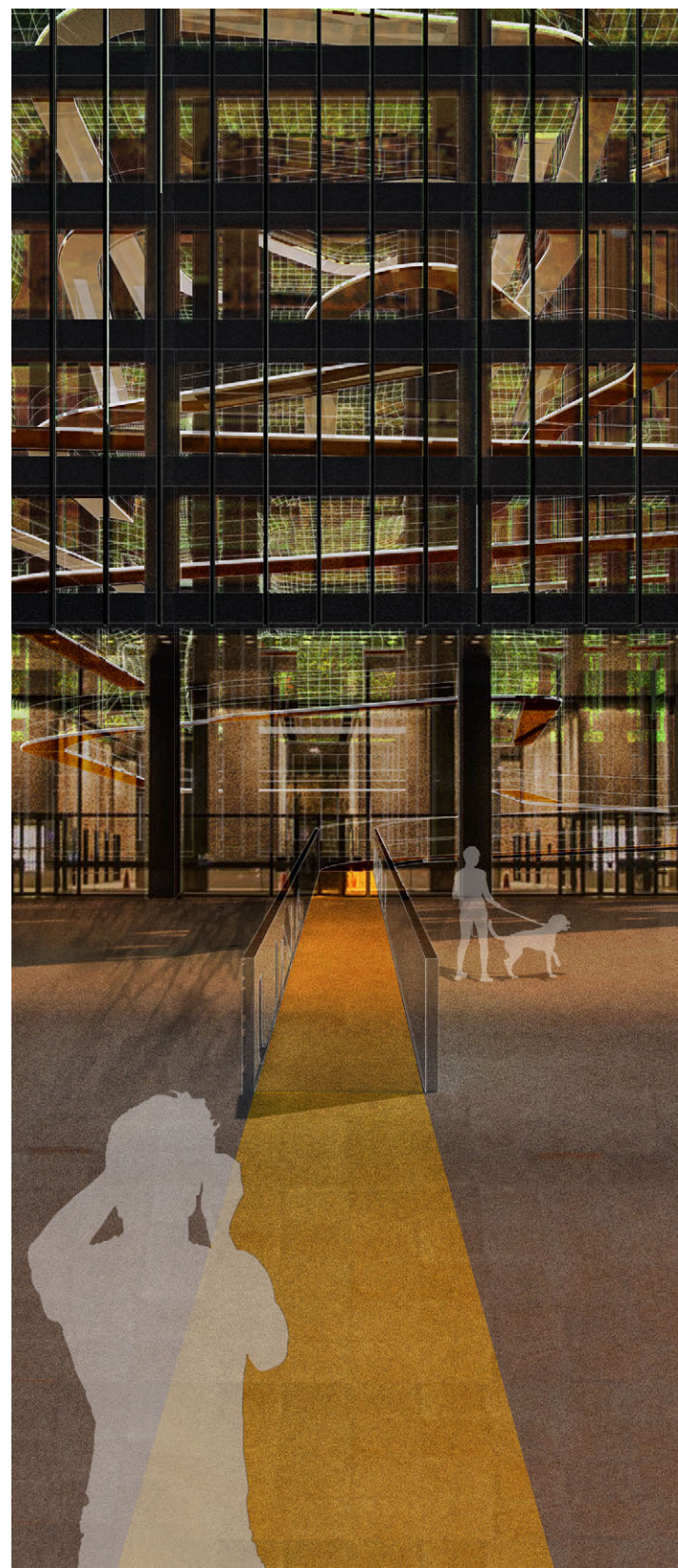


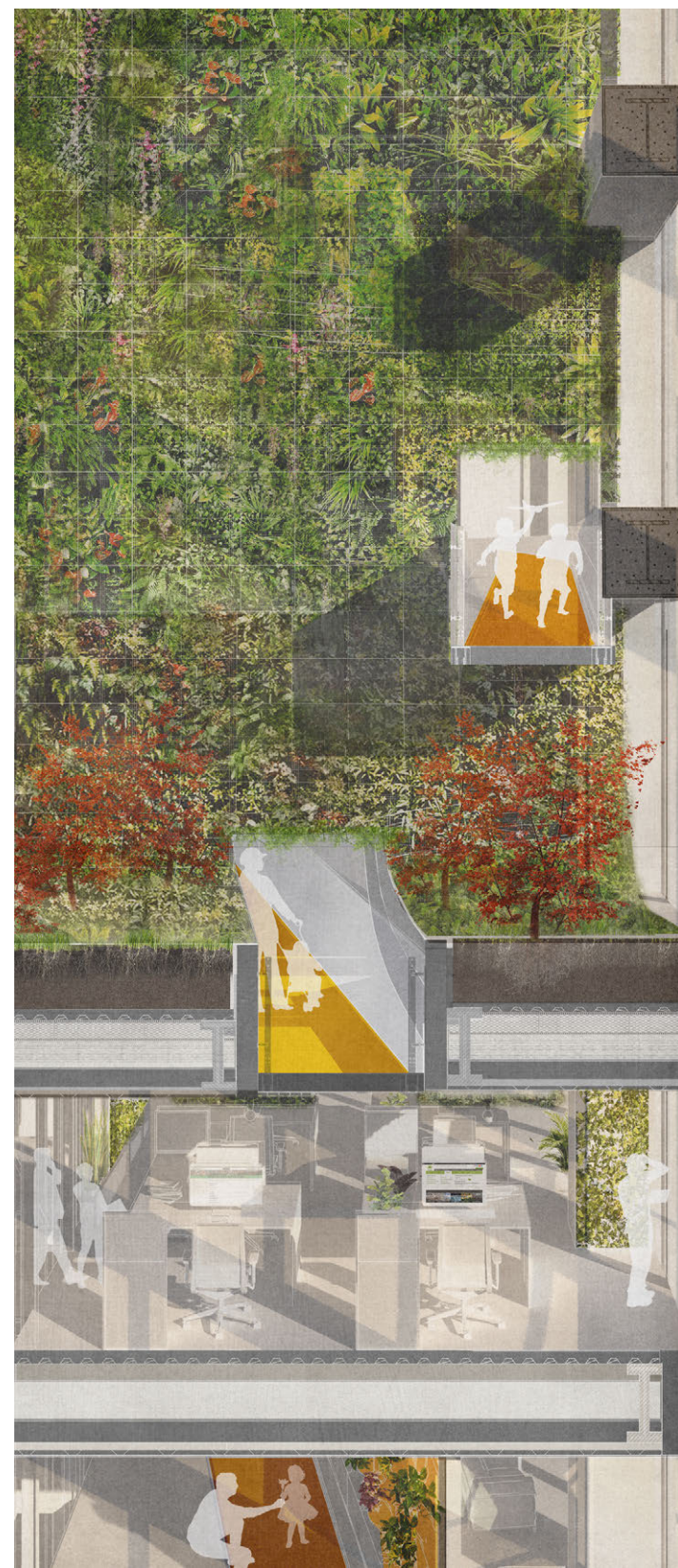


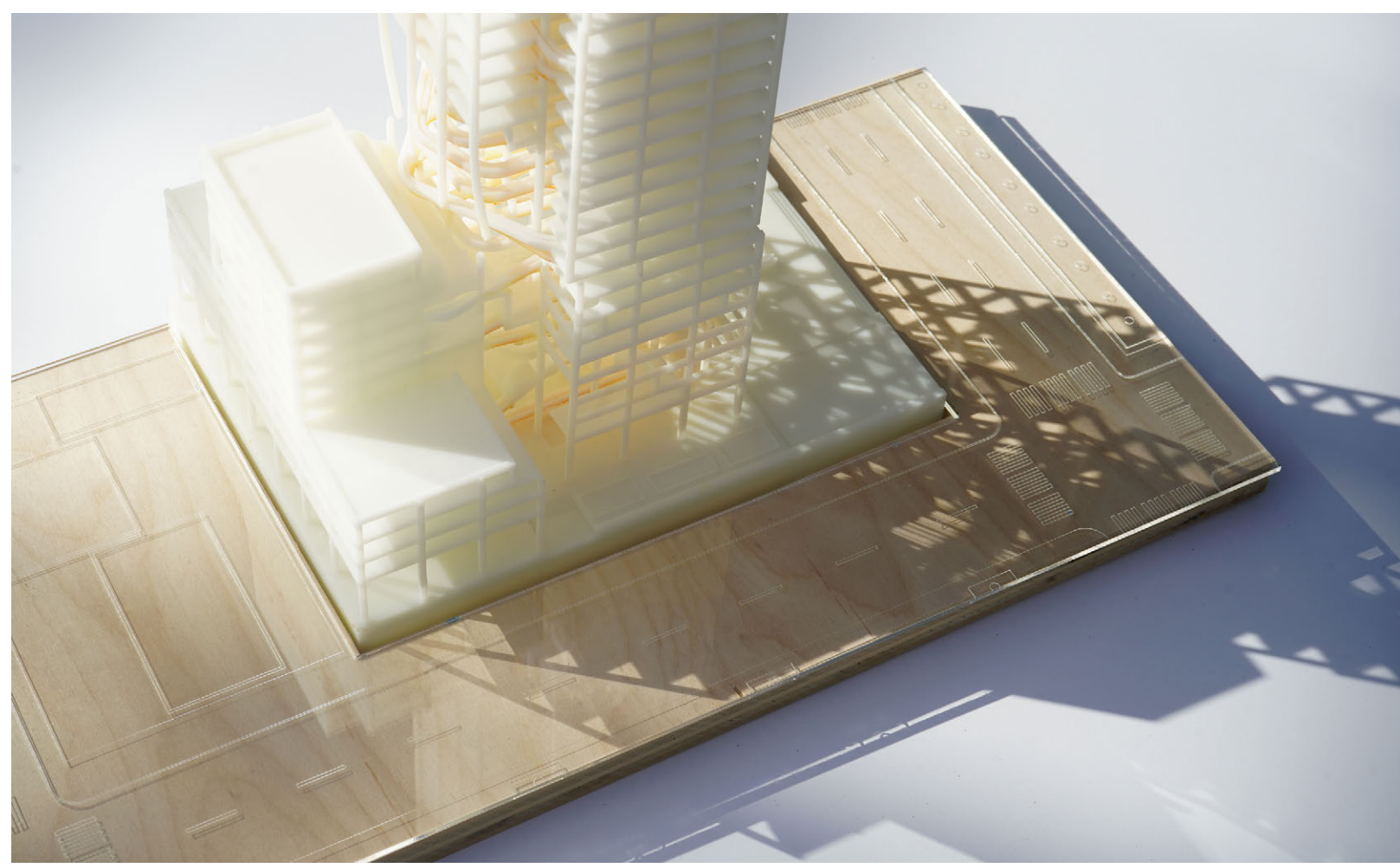
PLANT LIBRARY RAIL

Shelves along the railing display a rotating selection of potted plants, allowing visitors to engage with the plant lending program and discover new species to explore.

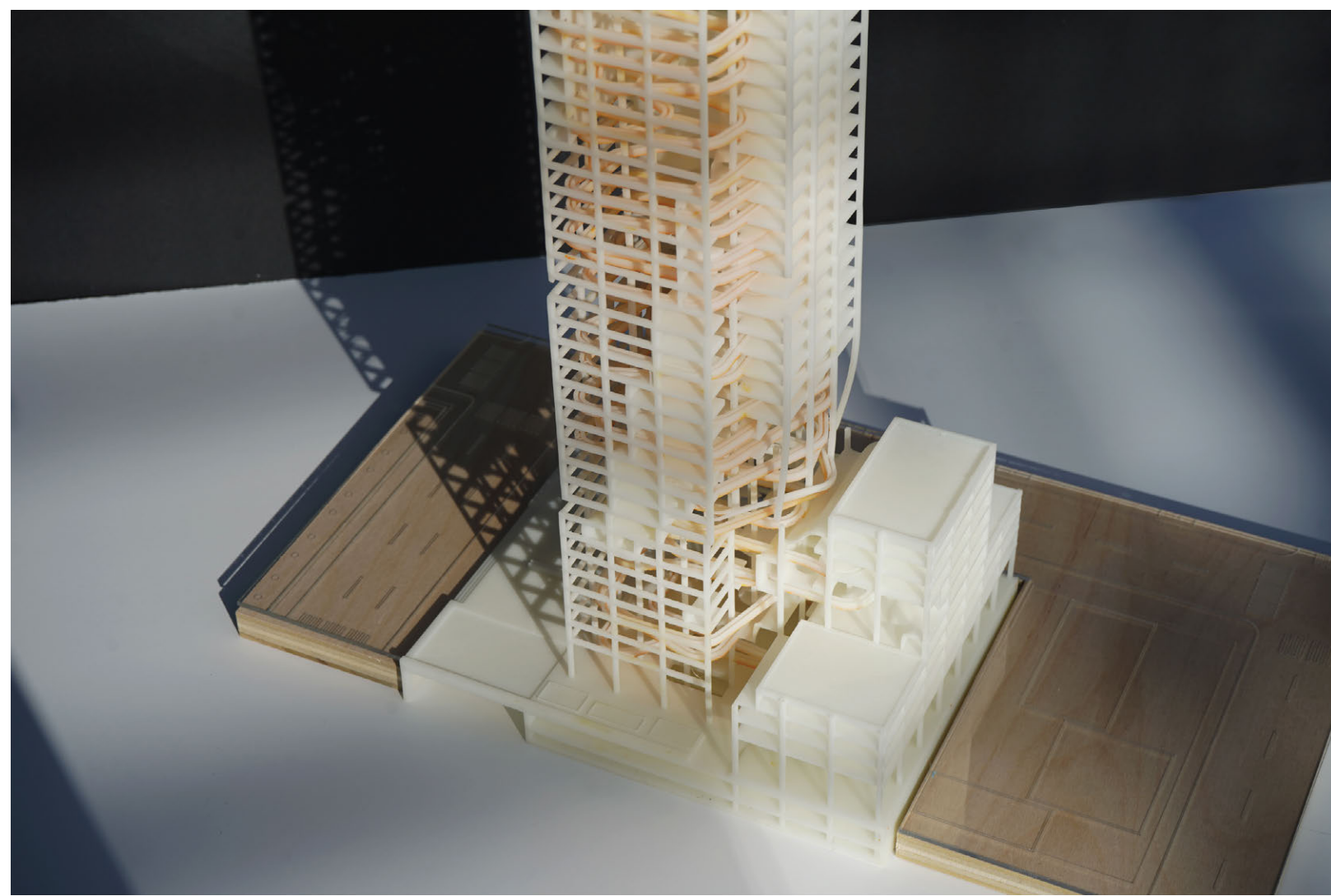


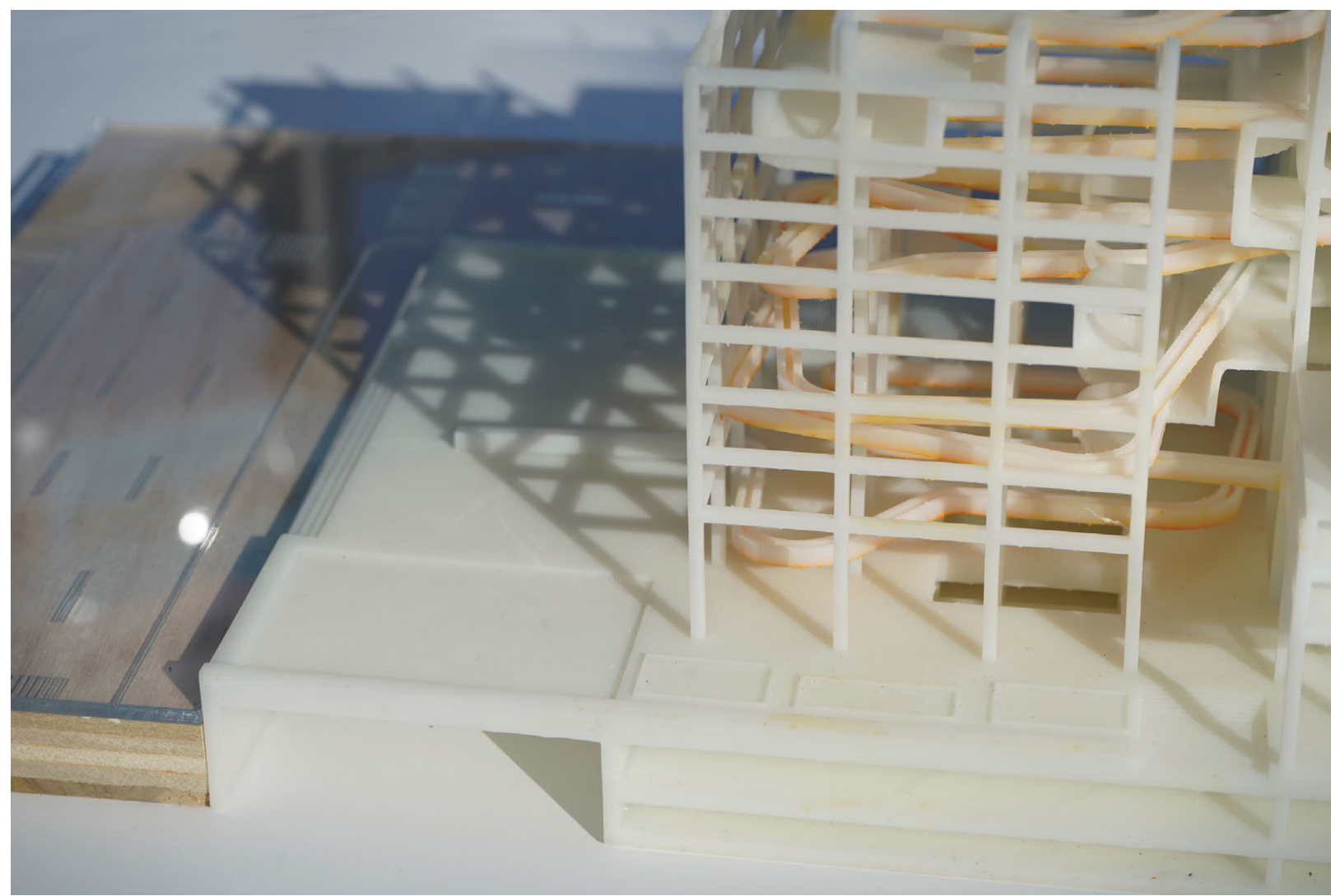


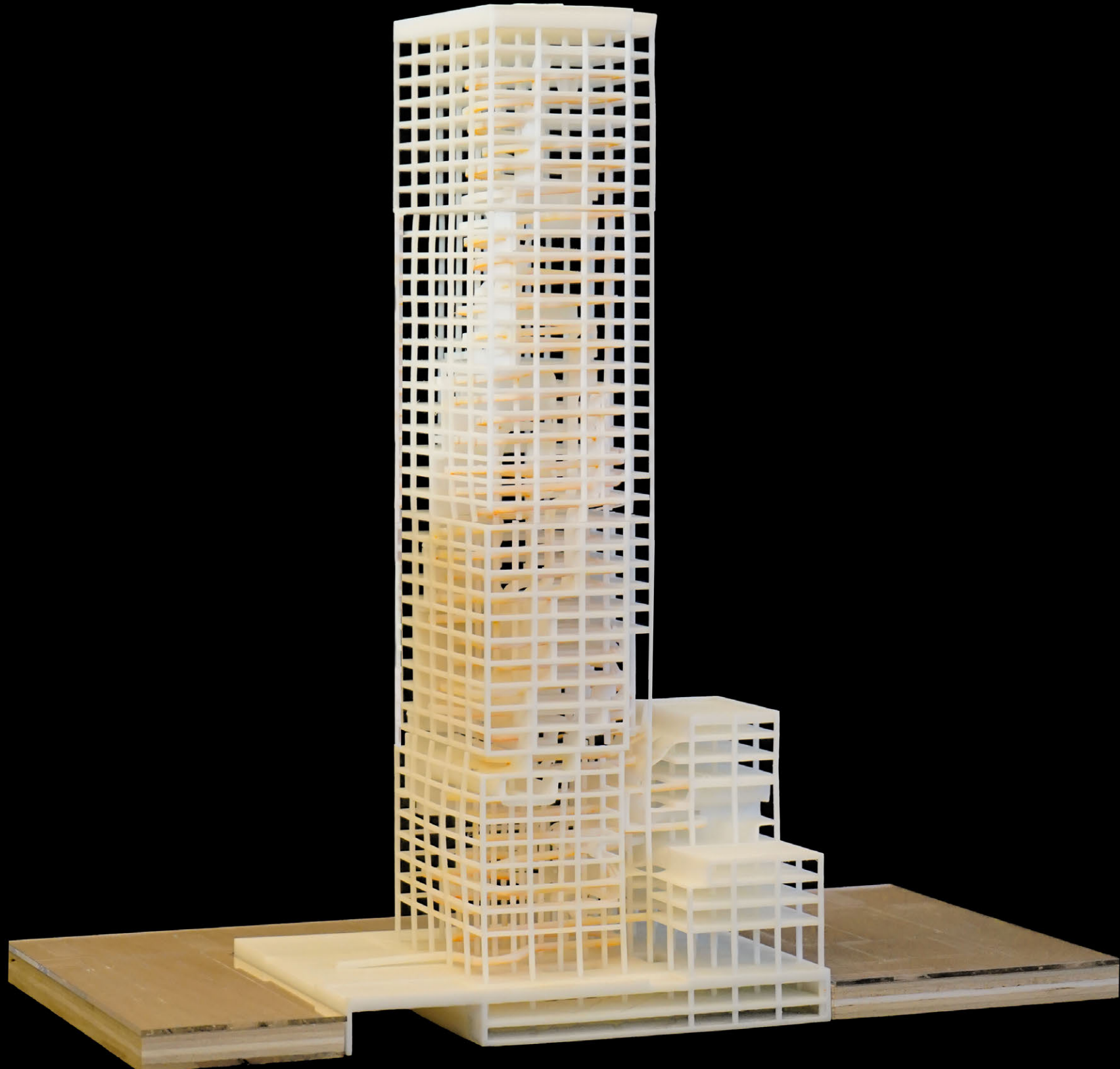












Vertical Publics envisions transforming vacant office towers into public spaces that integrate landscape and architecture through the Urban Arboretum Network (UAN). By elevating the public realm vertically within these towers, the UAN introduces innovative spatial typologies that reimagine traditional urban public spaces. As a community-driven program, the UAN encourages public engagement with urban landscape through education and maintenance practices.

Through this exploration, the thesis underscores the transformative potential of design in addressing contemporary urban challenges, such as vacant office spaces and the limited public green space, while contributing to a deeper connection between human and nature.

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