



Compositions.

Dongjae Ko

Columbia GSAPP
M.S. Advanced Architectural Design

2024 - 2025



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ELEMENTS

DESIGN and RESEARCH

00.	Introduction	
01.	Oystories & Cohabital Interventions Advanced Architecture Tutorial	Summer 2024
02.	Sown with the Wind, Live as a Rock Advanced Studio V	Fall 2024
03.	Sculpted Playground Design Seminar	
04.	Rewoven Layers Advanced Studio VI	Spring 2025
05.	Edible Summits: What is Food? DeCORNstruction AAD Design-Exhibition Initiative	
06.	Deep Harvest Building Science and Technology	

WRITING

07.	Fractured Histories Arguments	Summer 2024
08.	Case Study 1: Invisible Values Transscalarities: Arenas of Design Case Study 2: Utopia and Urban Planning Transscalarities: Arenas of Design	
09.	Aldo van Eyck’s Writings and Manifesto History of Architecture Theory	Fall 2024
10.	History and Transition of Prison Design in NYC Architecture and Development of New York	Spring 2025

Compositions, Accelerated and Expanded.

Architecture is closely intertwined with and deeply mirrors our social existence. We frequently perceive architecture as the tangible embodiment of ideology or as constructed spaces designed solely to serve human requirements. While it is influenced by individuals reflecting on their society and fulfilling their needs, architecture has the power to mold society and its inhabitants, enabling them to encounter new ideas, reconsider overlooked aspects, and evoke emotional responses. In this bidirectional interaction, architecture becomes a social action, potentially influencing our bodies, minds, and emotions in the context of our times.

When comprehensively considered, its boundaries become ambiguous and cannot be readily determined. Architecture serves as a medium that allows us to sense the shifts between indefinable things and provides an opportunity for deeper self-reflection or exploration beyond our boundaries and different agencies in our world. In this context, my world of architectural works focuses on issues considered in our society and proposes different perspectives and possibilities through architectural design.

'COMPOSITION' is a collection of selected works containing my thoughts and designs about architectural actions in different scales and categories toward different societal issues.

An aerial photograph of a coastal city, likely Jamaica Bay in New York, showing a dense grid of residential and commercial buildings. The city is surrounded by dark, turbulent water with white-capped waves crashing against the shore, suggesting a severe storm or hurricane. The sky is dark and filled with heavy, swirling clouds. The overall mood is one of crisis and environmental threat.

Oystories & Cohabital Interventions

Advanced Architecture Tutorial

Team & Individual Work

Columbia GSAPP Studio Summer 2024

Location: Jamaica Bay, New York

Advisor: Uriel Fogue

Sexy Apocalypse : Transformed into a Crisis Cabinet, the studio focused on a series of situated experiences covering the geographical framework of New York, where different ends of different worlds were being disputed. As a result, the Crisis Cabinet submitted a report consisting of a cosmogram that described the specificity of each situation on the one hand, and a radical intervention strategy on the other. The goal: to harness the transformative capacities of architecture to design and speculate on desirable futures. If we assume that desire is a vital driving ecological force, then, we cannot think of the end of the world as anything other than a sexy apocalypse.



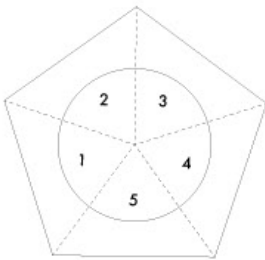
Chapter 1.
Oyster Origin

Chapter 2.
Traded for Nutrition

Chapter 3.
Economic Trade

Chapter 4.
Traded for Protection

Chapter 5.
Border Barriers



Oystories

Visioning New York From Standpoint of Oysters.

Image created by Dongjae Ko and Adnan Ksubhai

Oystories

Visioning New York From Standpoint of Oysters

Advanced Architecture Tutorial

Columbia GSAPP Summer 2024
Team Work: Dongjae Ko and Adnan Kasubhai
Main Role: Historical Research, Making Diagrams and Collages
Location: Jamaica Bay Wildlife Refuge, New York
Advisor: Uriel Fogue

Introduction

This is a cosmopolitical, layered and interconnected report. Here time is not designed with a linear context however it's connected and continued between the past and the future. Using "Oysters" as the keystone species this report delves into the various aspects of wildlife, history, and shared imaginaries of Jamaica Bay Wildlife Refuge.

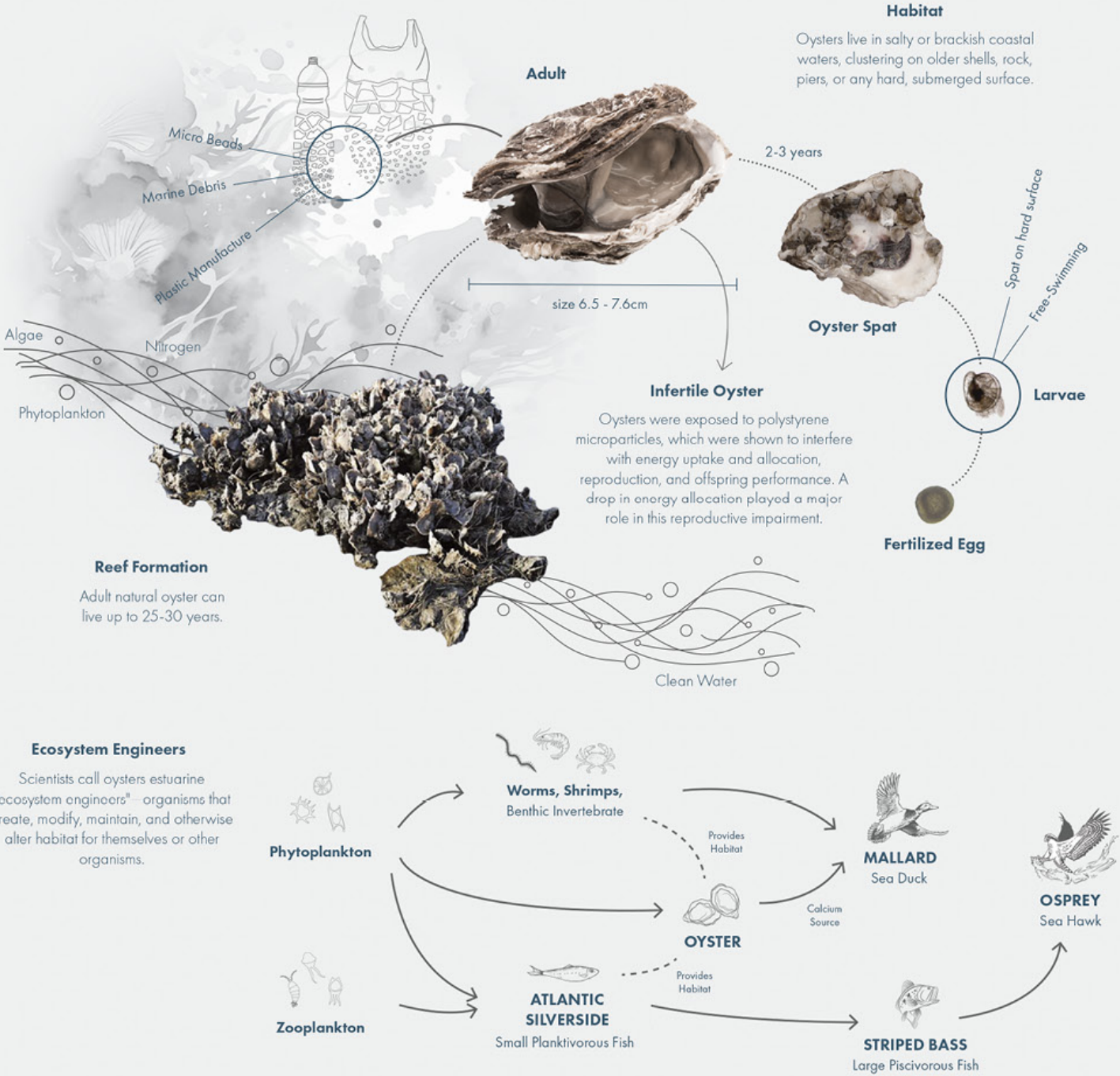
We discovered a series of connected networks with oysters over centuries of time between various actors such as the Lenape, the Colonial invasions and intriguingly the built history of New York itself, known back then as the 'Big Oyster.'

Chapter 1. Oyster Origin

Long before our time, oysters were quite similar to the ones we know today, with the main difference being their size. They feed on nitrogen and phytoplankton to build their bodies and shells, which helps prevent algal blooms in the underwater environment. Oysters are essential cleaners of the ocean. Collectively, they form oyster reefs that break tidal waves, stabilize salt marshes, and contribute to the food web, creating a significant habitat for wildlife.

Chapter 2. Traded for Nutrition

Oysters were a crucial part of the diet for the Lenapes, the first inhabitants of Jamaica Bay. Fish and crabs that lived near the reef were easily caught by the people living on land. Oysters not only provided a diverse range of food options for the Lenapes, but the decomposition of their shells also contributed to potential soil fertilization.



Chapter 3. Economic Trade

Following the establishment of Western culture in the region, oysters began to be traded for economic reasons. During this period, oyster consumption rose dramatically, benefiting the oyster industry significantly. This boom in the oyster trade laid the foundation for the development of New York City and played a crucial economic role in the movement to abolish slavery.

Chapter 4. Traded for Protection

Overfarming and excessive consumption during the industrial development era significantly affected the oyster ecosystem in Jamaica Bay. In response to these changes, sustainable and natural farming practices began to dominate the region. Oysters, instrumental in purifying the contaminated ocean waters, became inedible and infertile due to pollution.

Chapter 5. Border Barriers

Border barriers represent a world devoid of human presence. Land dwellers established national parks to create a boundary between humanity and nature, aiming to preserve the environment by protecting untouched wilderness. However, while the world appears unaffected, by creating borders and regulating human activities within these boundaries, it still experiences indirect consequences of human actions. A notable example is Hurricane Sandy in 2012, which caused the Jamaica Bay Wildlife Refuge to lose critical drinking water habitats for birds.

Cohabital Interventions

Architectural Gestures Towards Wild Life of Jamaica Bay

Advanced Architecture Tutorial

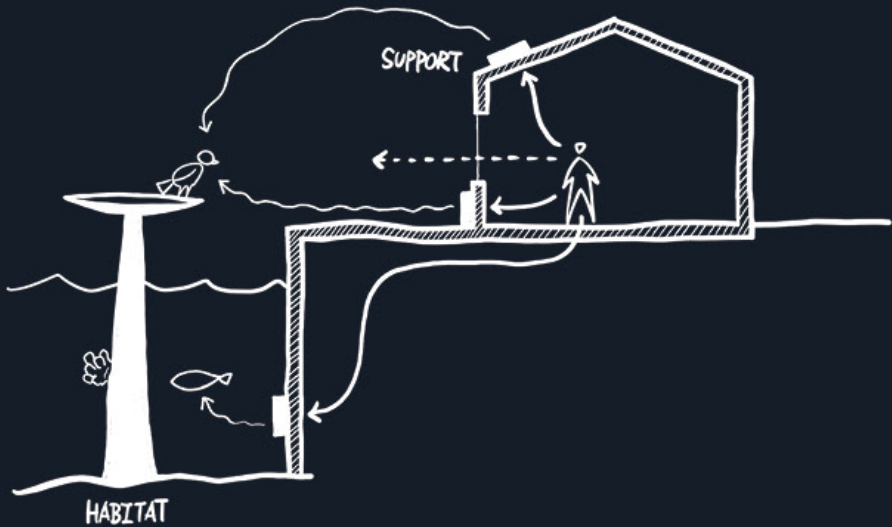
Columbia GSAPP Summer 2024

Individual Work

Location: Broad Channel, New York

Advisor: Uriel Fogue

'Mediation Prototype Concept'
inspired from
'Synanthropic Suburbia' by Sarah Gunawan



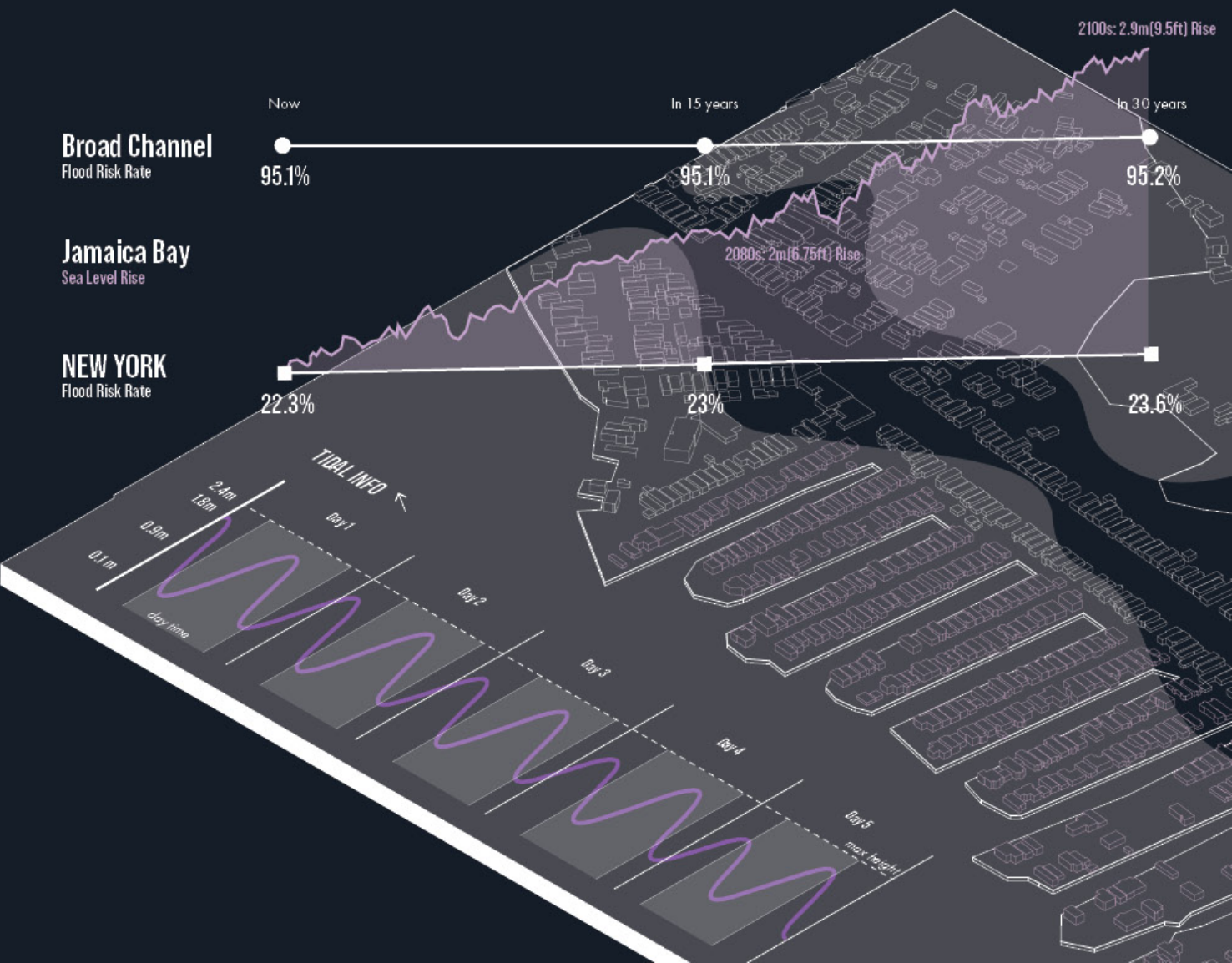
Introduction

This 'Cohabital Interventions' aims to design large and small experimental interventions based on researching wildlife species in Jamaica Bay. These interventions create homes for wildlife and artificial structures to support them, developing indirect contact zones for Broad Channel residents and the species. It suggests various prototypes aiming to co-habit with wildlife species in Jamaica Bay during a flooding crisis.

In a crisis situations, such as flooding, 'mediation devices' work as a mediator between human and wildlife animals to live as neighbors in Broad Channel community. Adding both large and small interventions, this project suggests a prototype of a housing aiming to live near with the various wildlife species of Jamaica Bay.



Morphology of Jamaica Bay Wildlife Refuge



Osprey Habitat

Ospreys require habitats with suitable perches and nesting sites. Analyzing their nest usage and behavioral patterns has informed the design of the mediation device. The chosen nesting locations are elevated enough to allow for adaptation to rising sea levels in the Broad Channel.

Roof Vegetation

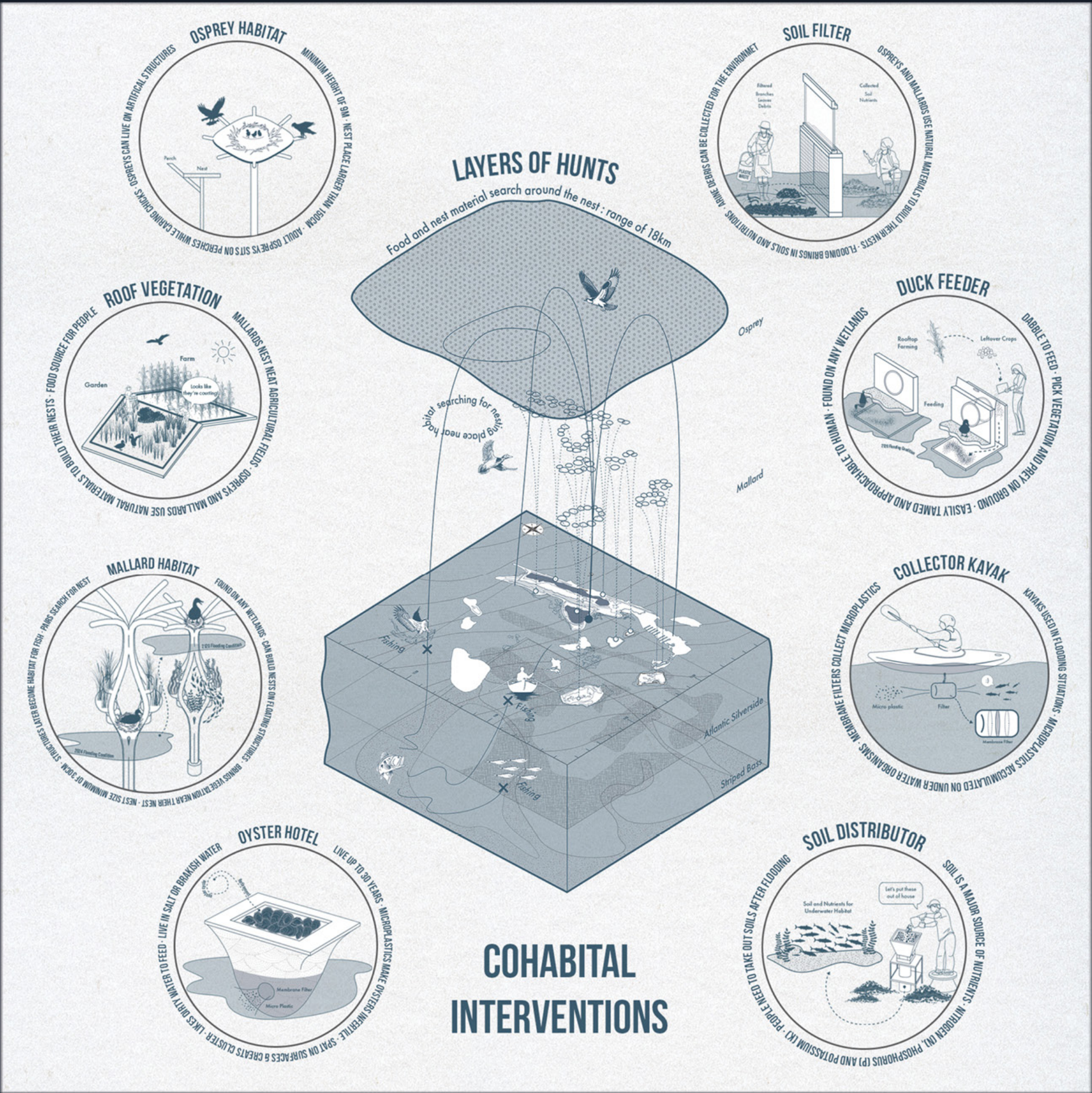
The roof of each house will need an environment where plants can live in preparation for the ground being submerged and the soil becoming less utilized in flooding situations. 'Roof Vegetation' provides food for people in flooding situations, while natural materials are used to build nests for ospreys and mallards.

Mallard Habitat

Mallards inhabit various environments, primarily wetlands, where they can build nests on fixed or floating structures. Their nesting habitats are adaptable, allowing them to respond to changes in sea level by utilizing the surrounding vegetation. Over the next several decades, the structure of mallard nests may evolve to serve as habitats for underwater ecosystems.

Oyster Hotel

The Oyster Hotel, designed to honor efforts to improve New York's water quality, serves as a retirement home for oysters, which filter harmful microplastics. Made of eco-concrete, the hotel's base is submerged in water, providing a foundation for revitalizing the ecosystem.



Soil Filter

In flooding situations, a significant amount of soil and debris can enter homes. The soil filter collects this soil and nutrients while filtering out debris. The filtered materials, such as leaves, branches, and other natural items, can be repurposed as components for bird nests.

Duck Feeder

This device is designed to provide an indirect method of feeding mallards, which are known to be easily tamed and approachable. Leftover crops from the rooftop can be thrown into the feeder, creating two ways for the ducks to consume the food based on their natural behaviors. The ducks can feed on the ground using the installed foothold, or they can dabble when the water rises, allowing the food to float.

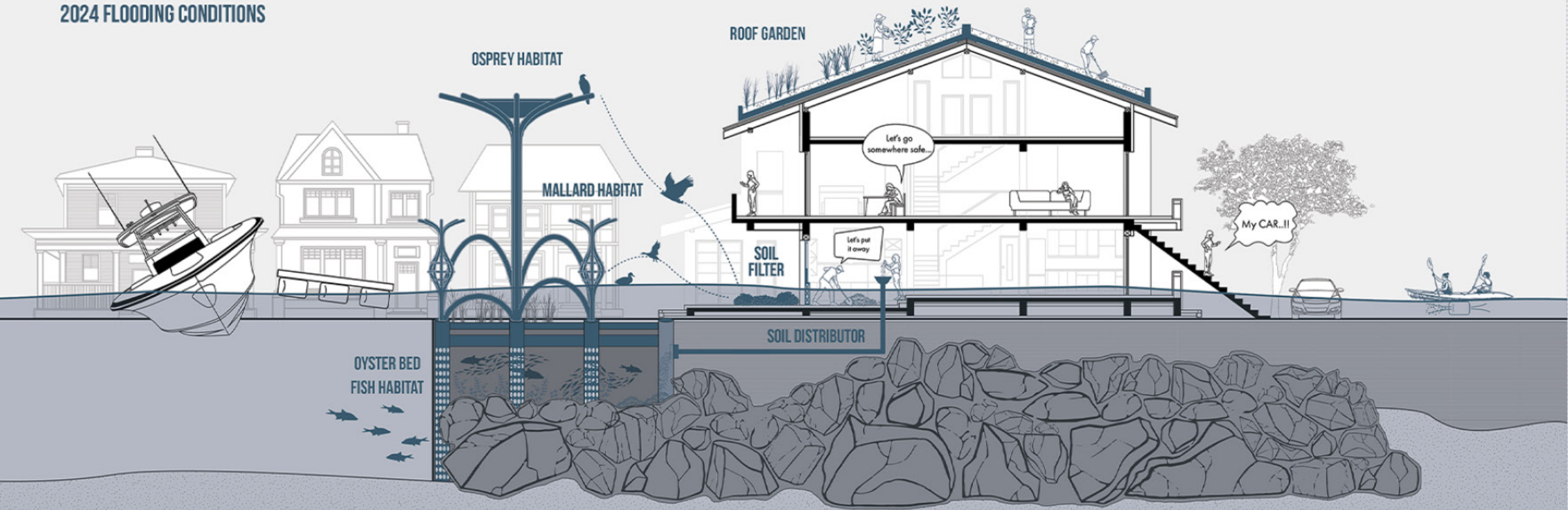
Collector Kayak

Envision kayaks as the future mode of transportation for the Broad Channel, which residents currently use during flooding in their neighborhood. By incorporating a membrane filtration system that filters out microplastics, these kayaks could help clean the underwater habitat while being used.

Soil Distributor

Residents gather and dispose of the dirt and soil, which was filtered through the Soil Filter, then use the soil distributor to return the nutrient-rich soil to the water for the benefit of fish and vegetation.

2024 FLOODING CONDITIONS

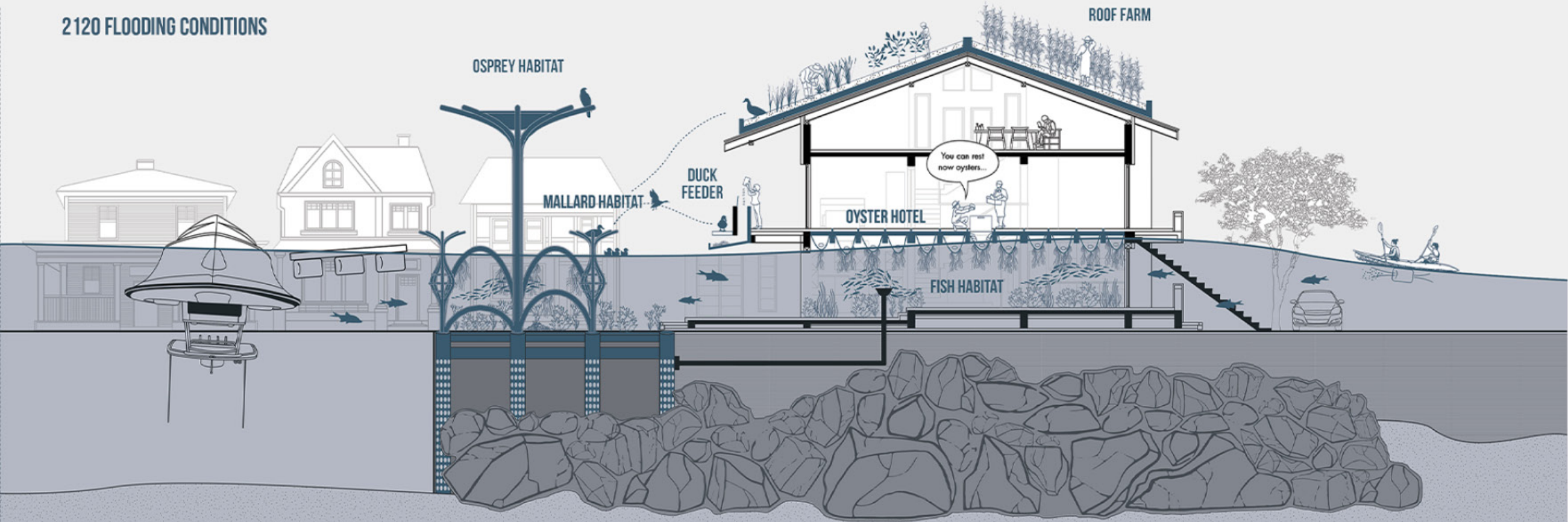


U.S. Environmental Protection Agency · Salt Marsh Ecogeomorphic Processes and Dynamics · Advancing Earth and Space Sciences · Cloud of Sea · Union of Concerned Scientists · The New York Times · Ospreys 101 · Archdaily · Research Gate · American Poultry Association ·

Flooding in Broad Channel

The indirect results of human activities, such as severe storms and flooding, still impact the wild-life ecosystem and the resident communities of Jamaica Bay, the Broad Channel. For instance, Hurricane Sandy affected the Jamaica Bay and Broad Channel community in 2012

2120 FLOODING CONDITIONS



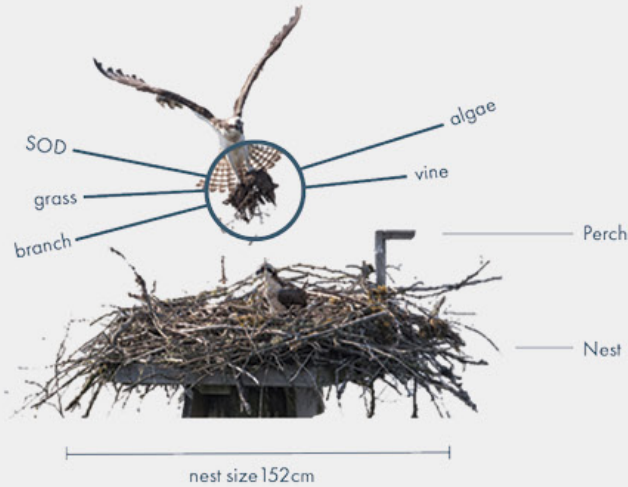
Prototypes

Broad Channel and Jamaica Bay are both confronting the crisis of flooding. If nature and humans have to coexist closely due to flooding, these interventions could be a starting point for humans and wildlife species to cohabit throughout crisis situations. Slightly unleashing the boundaries created between them.

OSPREY

Pandion haliaetus

The osprey, historically known as sea hawk, river hawk, and fish hawk, is a diurnal, fish-eating bird of prey with a cosmopolitan range. It is a large raptor, reaching more than 60 cm (24 in) in length and 180 cm (71 in) across the wings. It is brown on the upperparts and predominantly greyish on the head and underparts.



Nesting

Osprey nest on open surrounding where it is easy to approach and safe from the ground predators.



The male brings the materials for the nest and female arranges them.



25% catch rate
99% of diet

Fish

Osprey gets most of the water they need from the flesh of their prey. On hot days, however, adult ospreys drink fresh water

Hunting

They circle over shallow waters to locate fish below the surface. Once they locate a fish, they hover briefly and then dive into the water feet-first, sometimes becoming completely submerged.

Habitat

Ospreys keep to open areas and live almost any expanse of shallow, fish filled water.

MALLARD

Anas platyrhynchos

The mallard or wild duck is a dabbling duck that breeds throughout the temperate and subtropical Americas, Eurasia, and North Africa. This duck belongs to the subfamily Anatinae of the waterfowl family Anatidae. Males (drakes) have green heads, while the females (hens) have mainly brown-speckled plumage.



Nesting

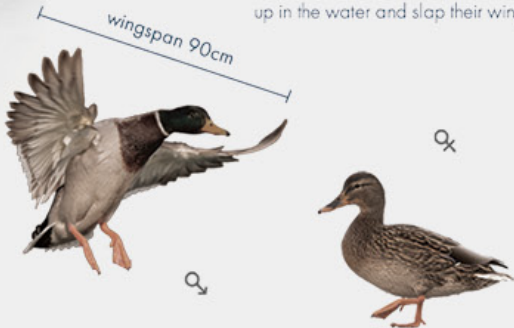
Mallards nest on dry land close to water. Pairs search for nest sites together, circling low over their habitat. Sometimes, nests are places on floating mats of vegetation.



nest size 30cm

Courting

Males court females by shaking and flicking head to side to side, raising up in the water and slap their wings.



wingspan 90cm

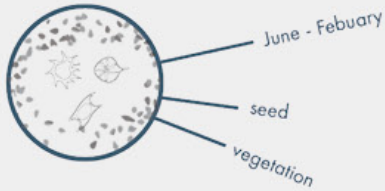
Habitat

Mallards are year-round species and found in almost any wetlands, marshes and bogs.



Dabbling

Mallards generalist foragers and eat variety. They dabble to eat seeds and aquatic vegetation, but they also pick at vegetation and prey on the shore too.

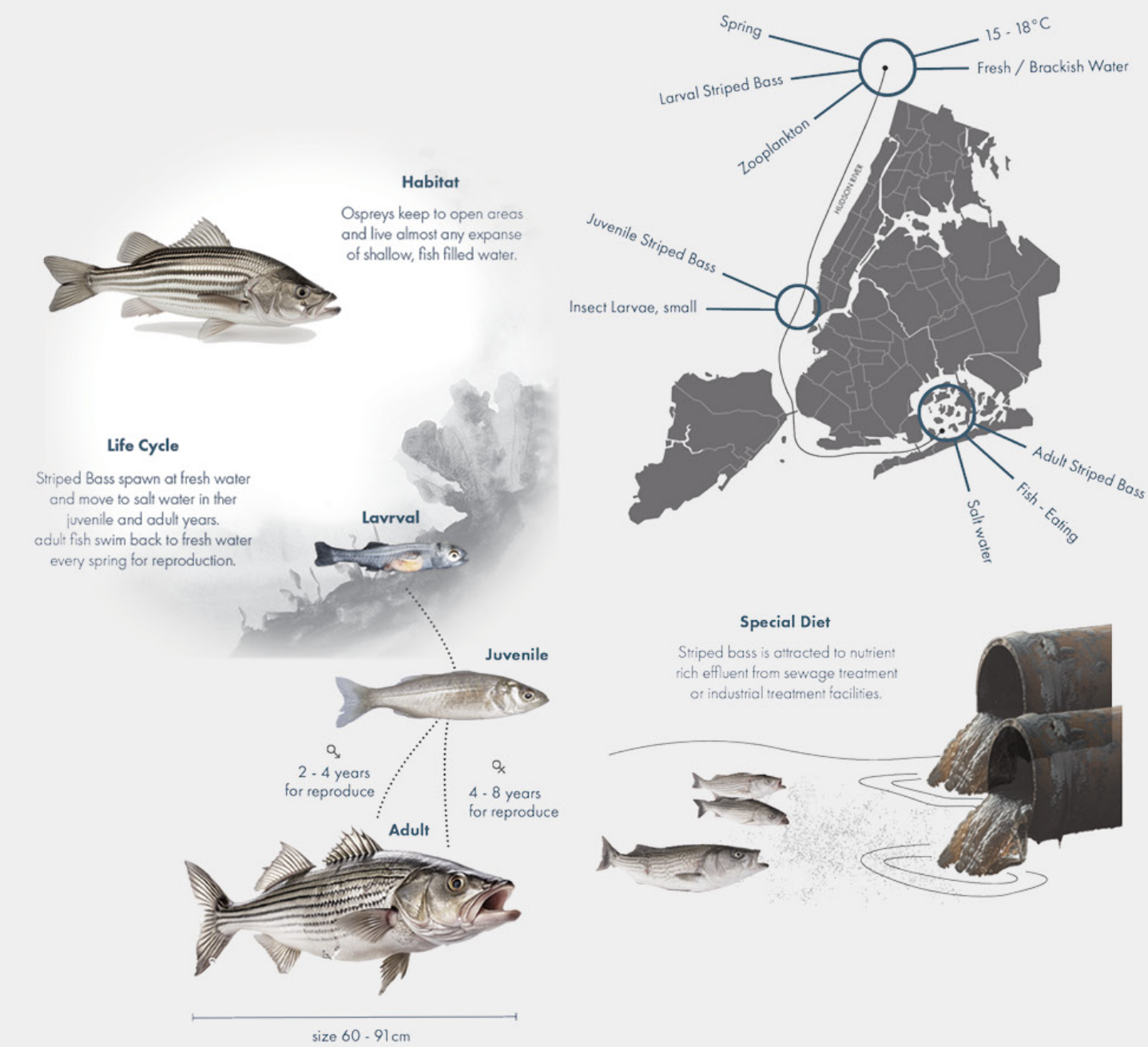


Mallards are easily tamed and approachable to human.

STRIPED BASS

Morone saxatilis

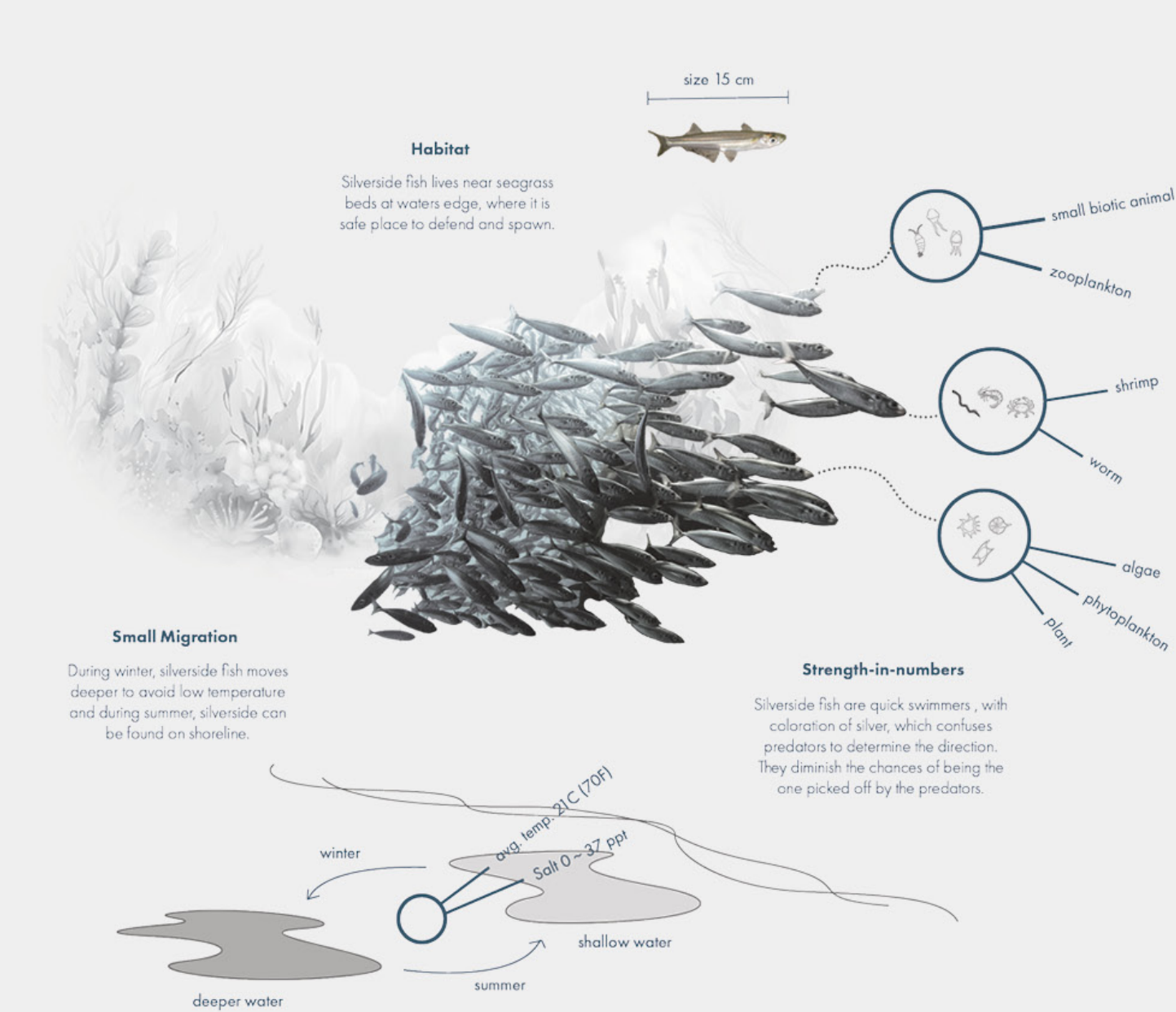
The striped bass, also called the Atlantic striped bass, striper, linesider, rock, or rockfish, is an anadromous perciform fish of the family Moronidae found primarily along the Atlantic coast of North America. It has also been widely introduced into inland recreational fisheries across the United States.



ATLANTIC SILVERSIDE

Menidia menidia

The Atlantic silverside, also known as spearing in the northeastern United States, is a small species of fish from the West Atlantic, ranging from the Gulf of St. Lawrence in Canada to northeastern Florida in the USA. It is one of the most common fish in the Chesapeake Bay and in the Barnegat Bay. It is a common subject of scientific research because of its sensitivity to environmental changes.



Sown with the Wind, Live as a Rock

Housing in Accelerating Future

Advanced Studio V

Columbia GSAPP Fall 2024

Individual Work

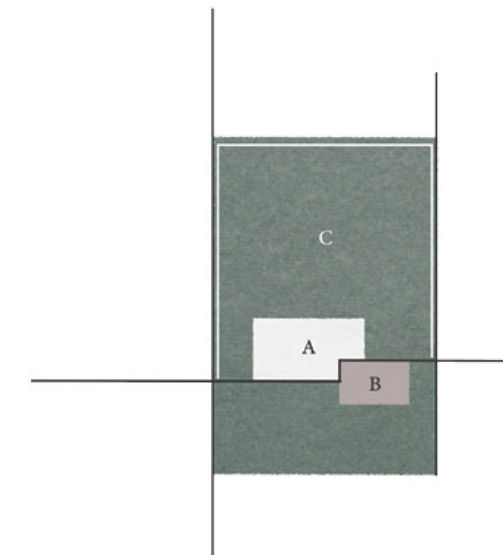
Location: Ellis County, Texas

Advisor: Lindy Roy

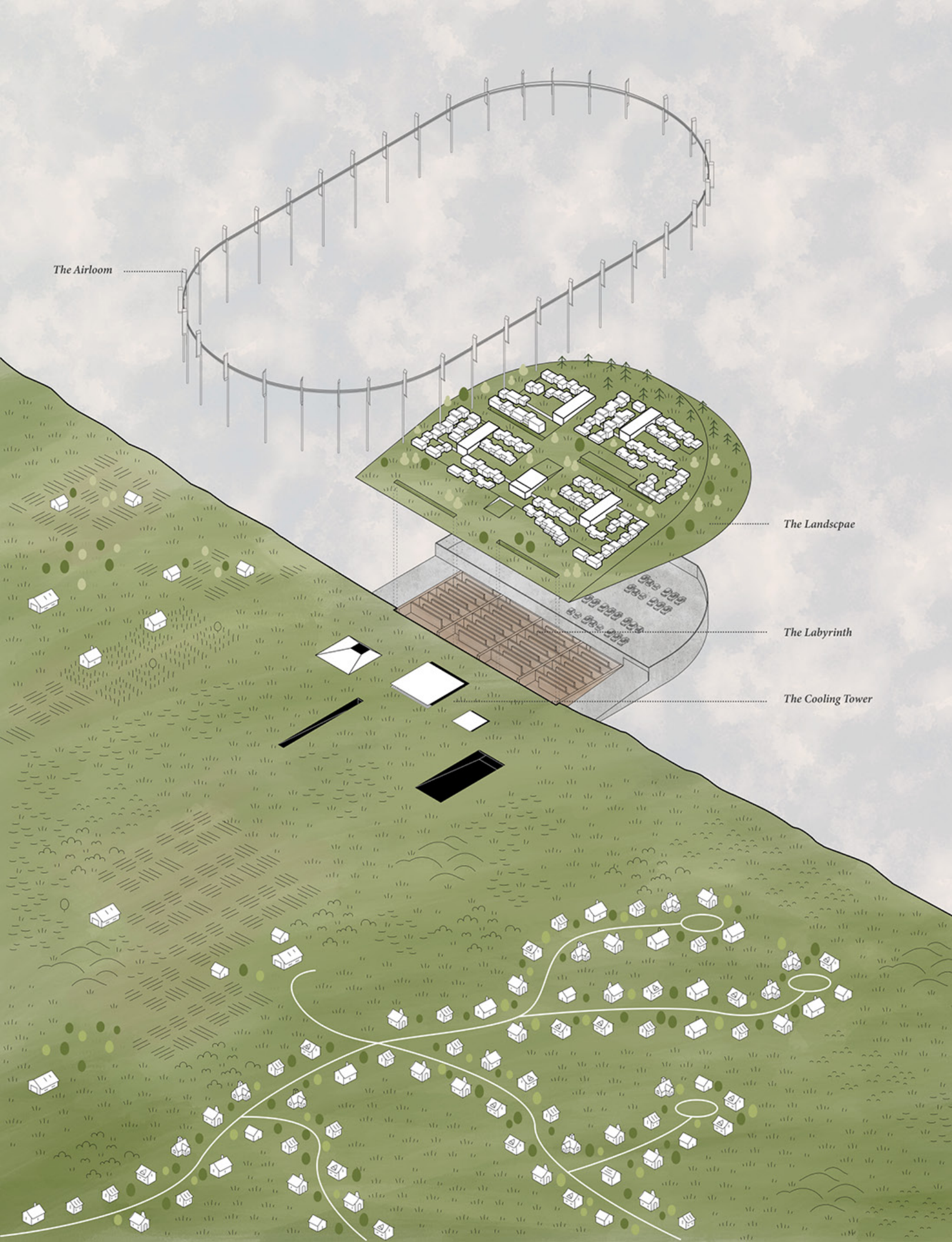
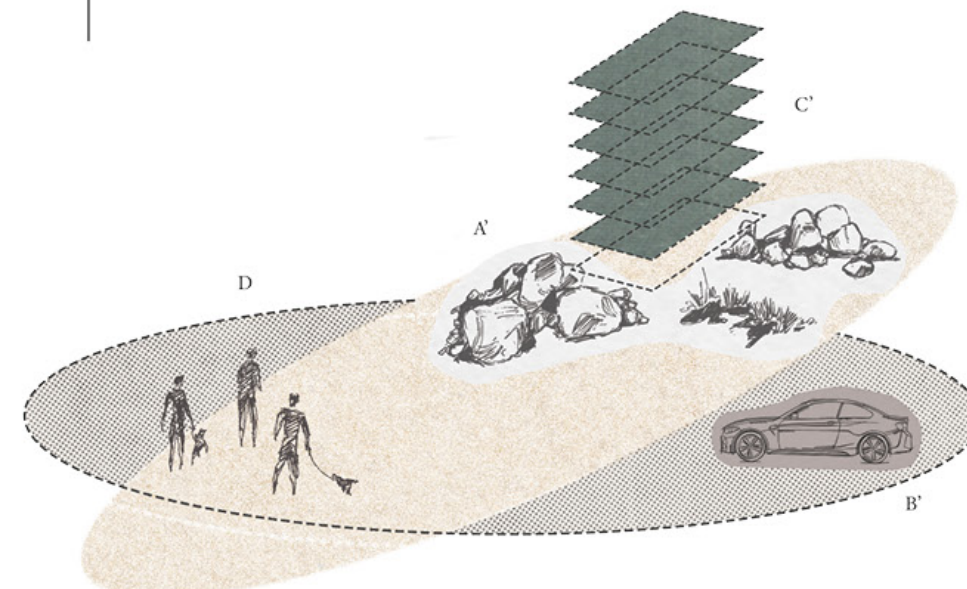
Re-Thinking Single Family Housing in Texas

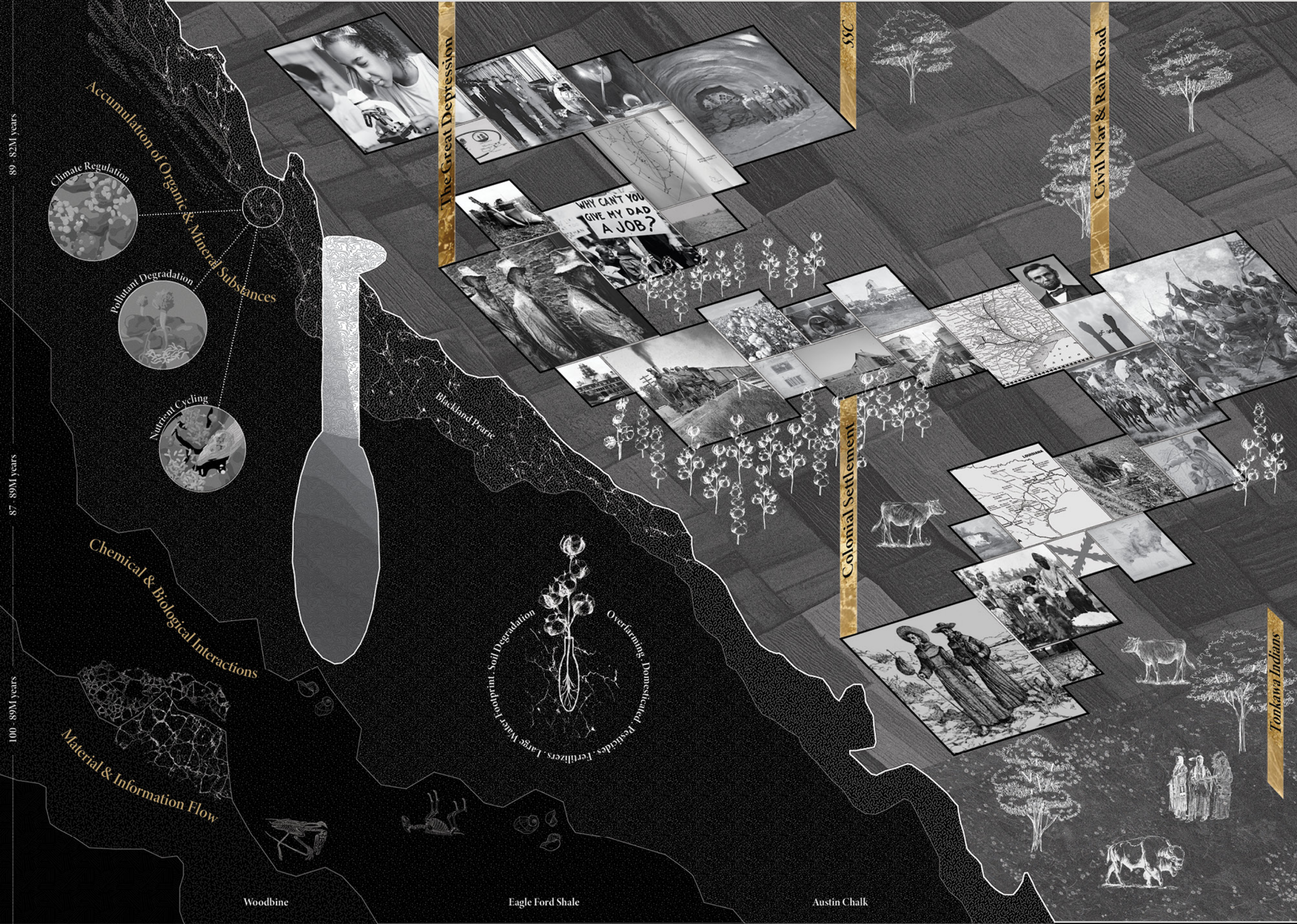
Car-based, cul-de-sacs, and individual single-family housing are advantageous regarding security and privacy but relatively lack neighborhood community.

This project aims to develop another type of living that are dense, close together to live with each other, and stand up to climate change in Texas. Individual housings, yards, and garages are shifted to more dense and shared spaces to create a community where people can live together.



- A - A' Separate - Clustered
- B - B' Garage - Parking
- C - C' Separate - Shared
- D Neighborhood Community





Layers of Soil Memory

Memories as an Intelligence of Soil

Image created by Dongjae Ko

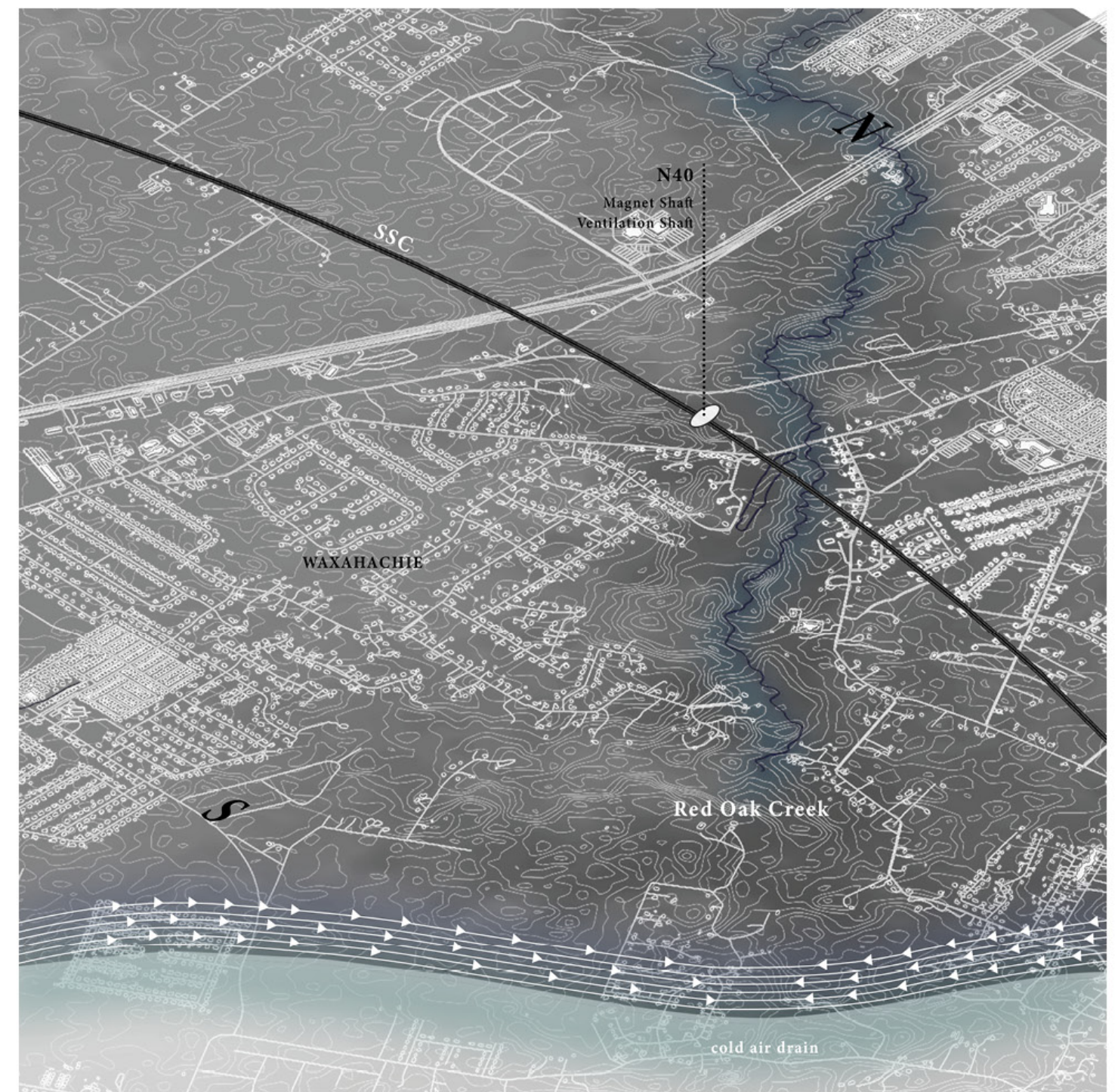
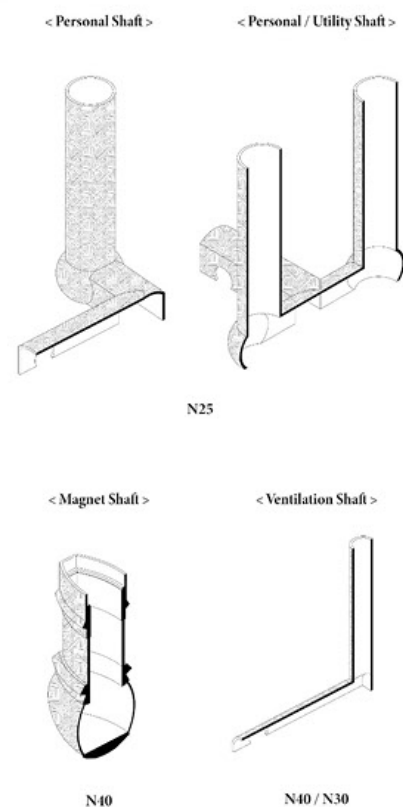
Waxahachie, Texas



The Superconducting Supercollider

The Superconducting Super Collider (SSC) was an ambitious particle accelerator project proposed in the 1980s to explore fundamental questions about the universe by studying subatomic particles at unprecedented energy levels. Planned to be the world's largest and most powerful collider, it was designed with a 54-mile underground ring located near Waxahachie, Texas.

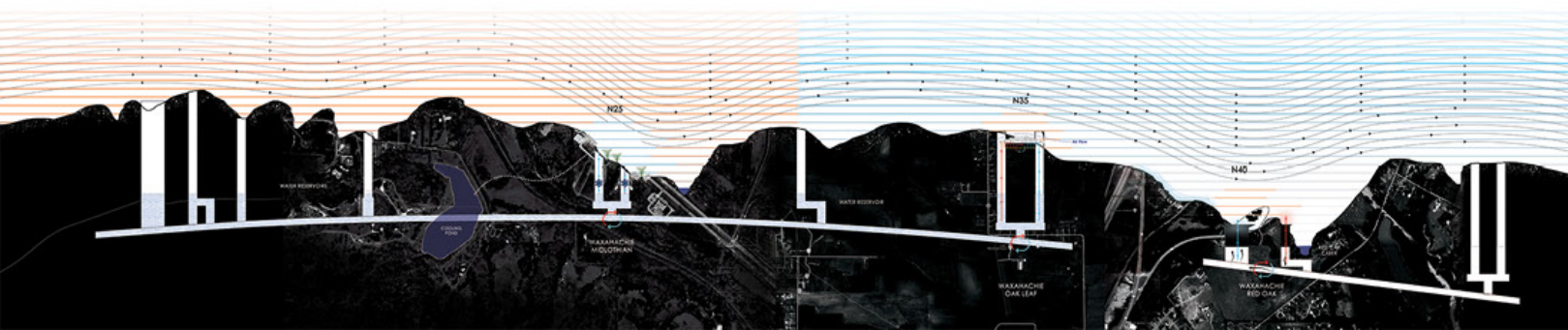
The project faced escalating costs, reaching an estimated \$12 billion, and political challenges. Ultimately, the SSC was canceled in 1993 after partial construction, leaving behind a network of tunnels and unfulfilled scientific aspirations.

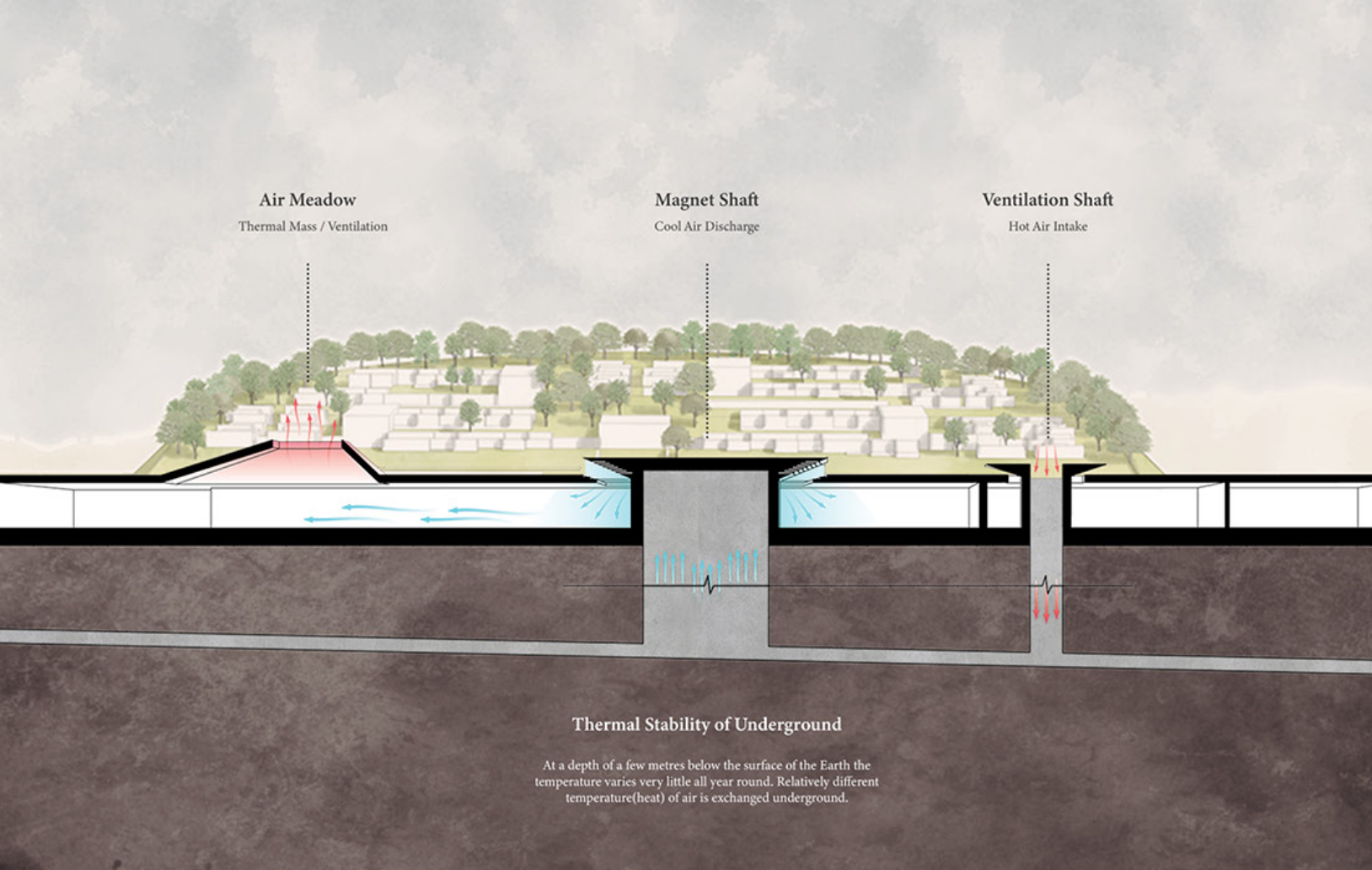


Relationship with the Land

The N40 area, situated between northern Waxahachie and Red Oak, features unique topography at comparably a low altitude. This landscape collects cold air, creating a cold pool that affects the environment. **The design strategies aim to react to this distinct landscape by creating living spaces that relate to natural elements—air and wind—while considering the tunnel and shafts.**

**Layers of Soil Memories
Rapid Climate Change
and Housing Development of Texas**

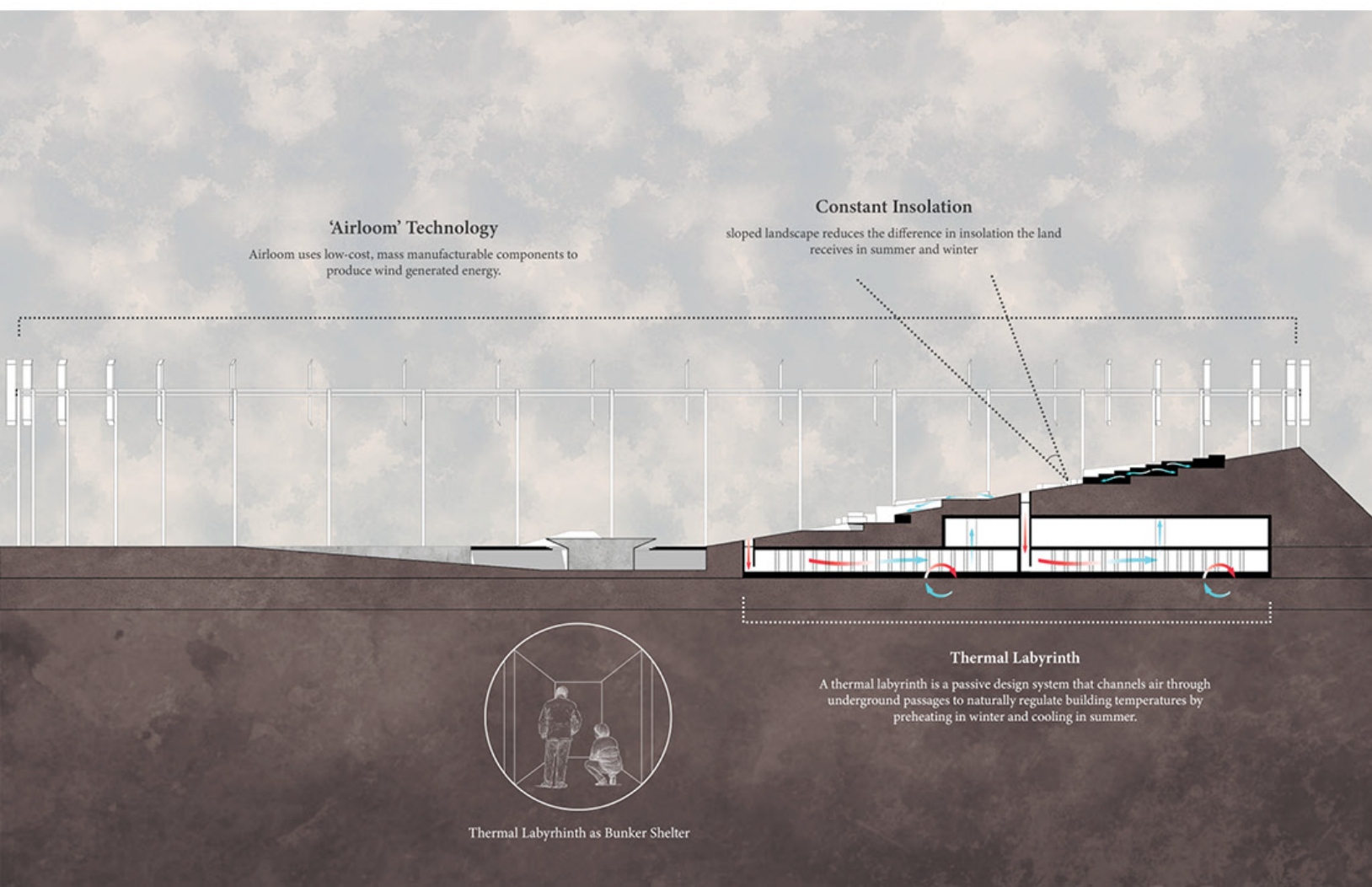
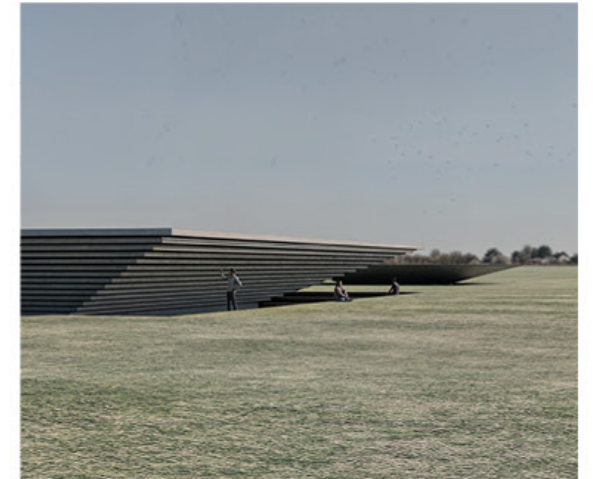




ACT 1.

Utilizing Shafts for Open Public Spaces

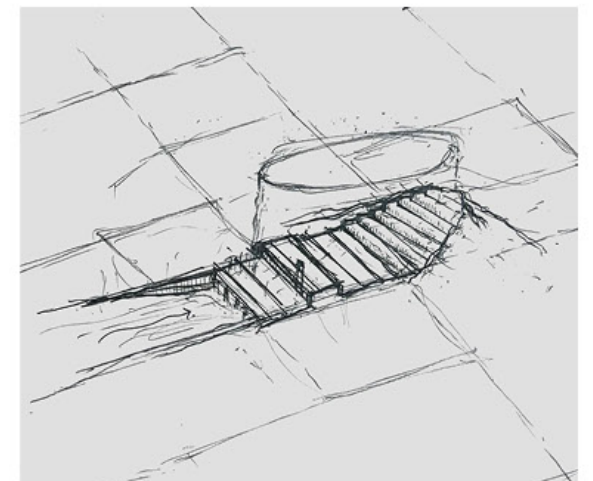
Leveraging stable underground temperatures, this system employs vertical shafts for heat exchange, drawing in cool subterranean air and propelling it upward with fans to create a cooling effect. A secondary intake system, utilizing original ventilation shafts, maintains continuous airflow through a pressure gradient. Additionally, an “air meadow” strategically heats specific areas to create low-pressure zones, allowing the cooled air to naturally diffuse across the surrounding environment. This integration of natural and engineered systems enhances comfort and energy efficiency, offering a sustainable solution for architectural and urban applications.



ACT 2.

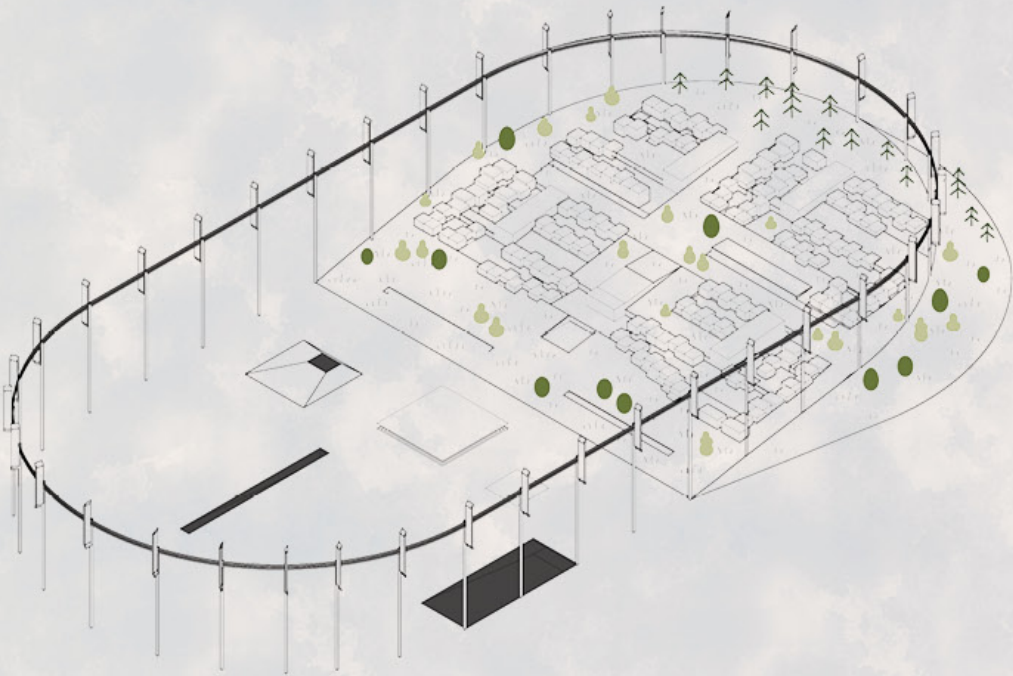
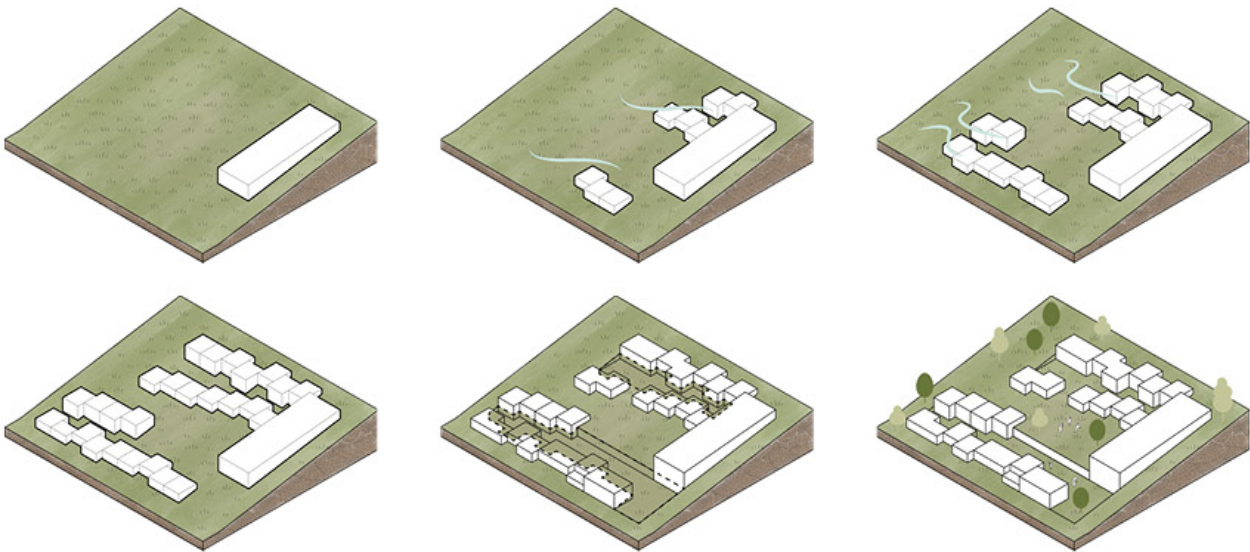
Thermal Comfort and Sustainable Strategies

Airloom Technology, employs mass-manufacturable components to harness wind energy at high altitudes, where faster wind speeds drive blades mounted on rails to generate power efficiently. The second, a Thermal Labyrinth, channels air through subterranean passages, leveraging the natural thermal properties of concrete to regulate air temperatures—cooling in summer and heating in winter—before distributing it to living spaces. Beyond its primary function, the labyrinth’s robust structure holds potential as a shelter in severe crisis situations, adding resilience to the design. Together, these strategies address the dual imperatives of reducing resource consumption and mitigating the impacts of climate change, while providing innovative solutions for sustainable and adaptable housing.



Housings Sown by Wind

The design strategy promotes dense housing arrangements, such as infill developments, fostering closer-knit communities. By shifting from individual housing with private yards and garages to shared spaces, I aim to create an environment where people can live together sustainably and collaboratively.



A Dialogue with the Wind and the Rock

*The land and soil beneath my feet,
Have been shaped through our meaningful connection,
Signifying a transformation that is both profound and respectful.*

*You, who bring a refreshing influence to my life—
Through your presence, I experience growth and renewal;
Yet, this ground I walk upon also embodies a part of me,
A reflection of my essence that is interwoven with the earth.*

*This fertile soil, cultivated from my experiences,
Creates a solid foundation for the community we share,
Providing a nurturing space where potential can thrive,
And where new opportunities can take root and flourish.*

*You, who will live on this earth,
remain steadfast and resilient, live as the rock.*





Sculpted Playground

Reinterpretation of Sonsbeek Pavilion

Design Seminar: Architecture Apropos Art

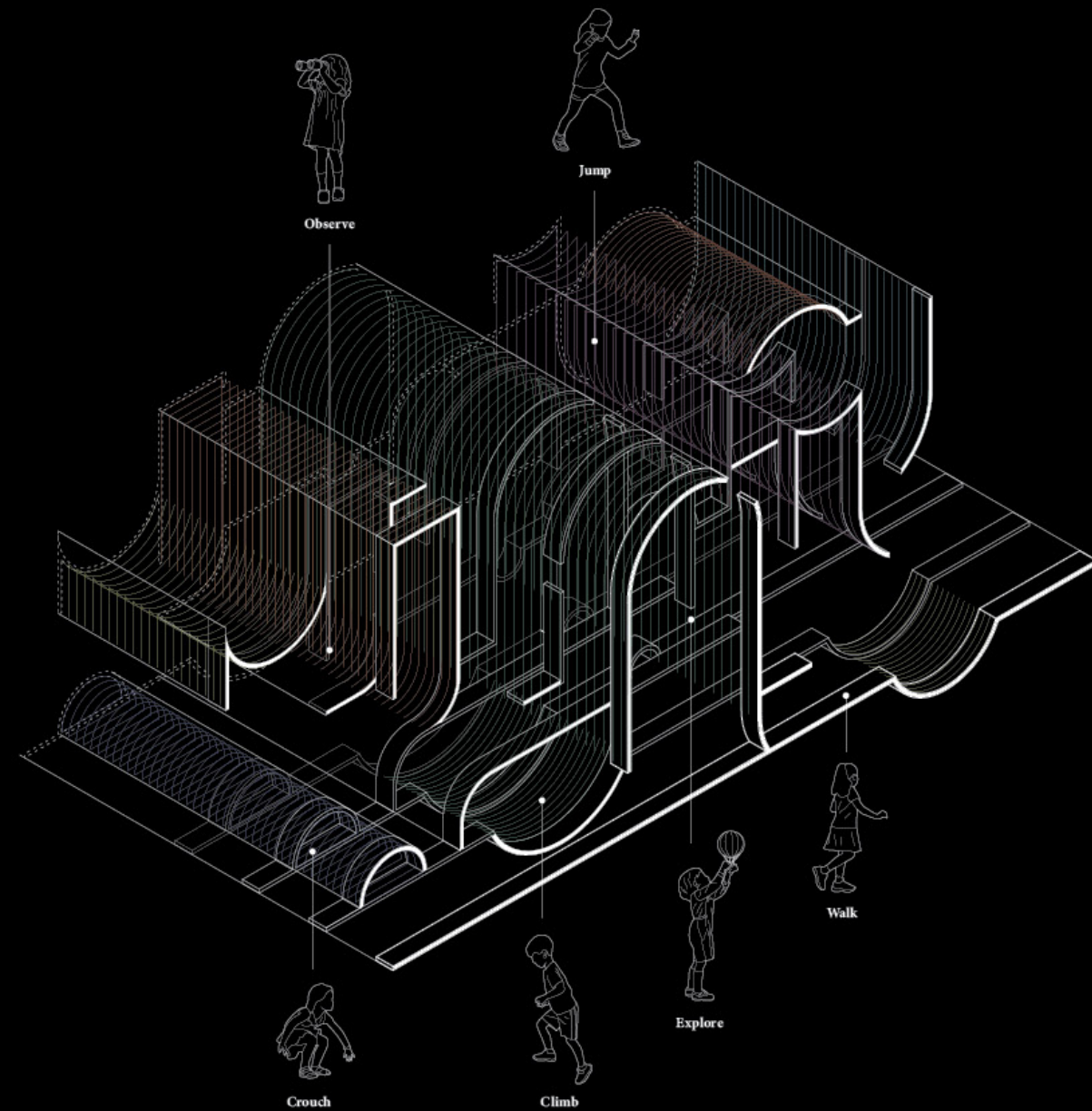
Columbia GSAPP Studio Fall 2024

Individual Work

Location: Non-Site, Theoretical Work

Advisor: Steven Holl, Dimitra Tsachrelia

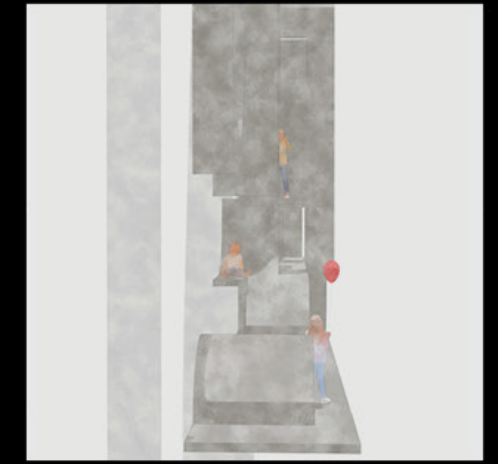
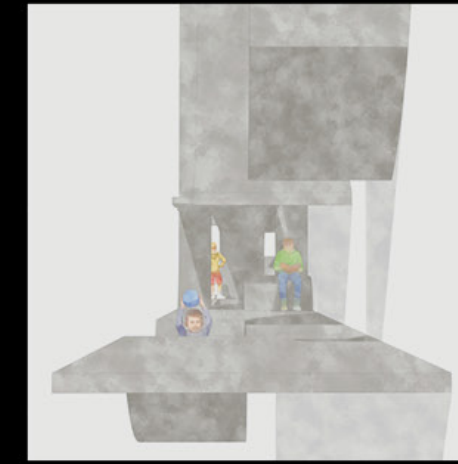
The proposal draws inspiration from Aldo Van Eyck's architectural philosophy, particularly his exploration of space and time as dynamic, subjective experiences. Van Eyck emphasized the "in-between space"—places that promote relational interactions and narrative experiences—grounded in Henri Bergson's concepts of duration. Van Eyck's work connects history, memory, and present consciousness to create spaces that engage users on a deeper psychological level. His Sonsbeek Pavilion exemplifies these principles, offering a non-linear, associative journey through art and space.



‘The Sculpted Playground’

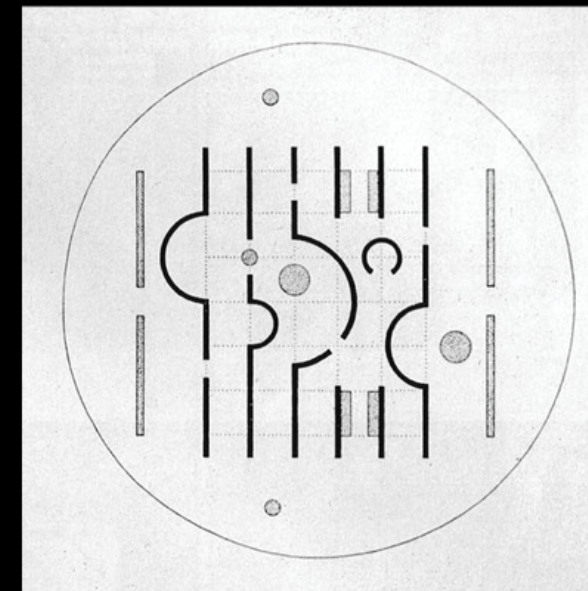
The playground-inspired environment offers varied pathways, fostering exploration and engagement, akin to a jungle gym that encourages climbing, hiding, and sitting—an architecture of participation. Sculptural elements anchor the design, inviting users to craft personal connections with the space, transforming it into a collective, lived experience.

This reinterpretation seeks to embody Van Eyck’s vision of architecture as a fluid, temporal construct that harmonizes function with its inhabitants’ emotional and psychological needs, enriching spatial experiences with meaning and identity.



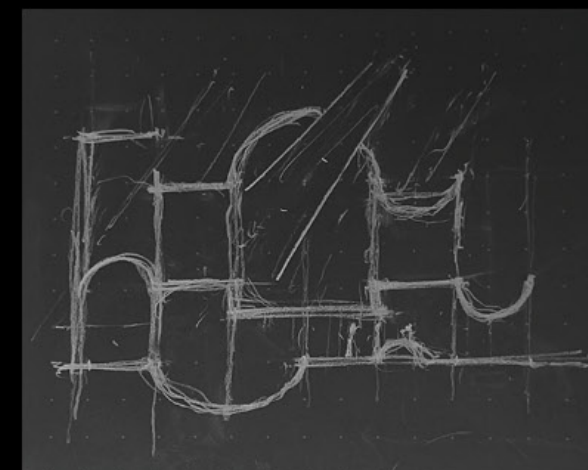
Shifting Plan to Section

Sonsbeek Pavilion Floor Plan, Netherlands, 1966, Aldo van Eyck



Personal Place Making

Visitors experience the space moving through concrete walls and interact with sculptures located in the pavilion. They will need to find their own way to the place, moving from artwork to artwork, following a strictly personal and autonomous path, forced to interpret a maze of fragments, deliberately complex and without a single established route.



‘Sculpted Space’ Sketch, Dongjae Ko

Sculpted Spaces

Reinterpreting Van Eyck’s Sonsbeek Pavilion, I propose a sectional development that shifts and extrudes its floor plan into diverse vertical volumes. This design creates a “sculpted space” where movement and interaction become integral to the spatial experience.

Rewoven Layers

Walkable Landscape and Urbanism

Advanced Studio VI

Columbia GSAPP Studio Spring 2024

Team Work: Dongjae Ko and Hyun Seung Moon

Location: Tracey Towers, Bronx, New York

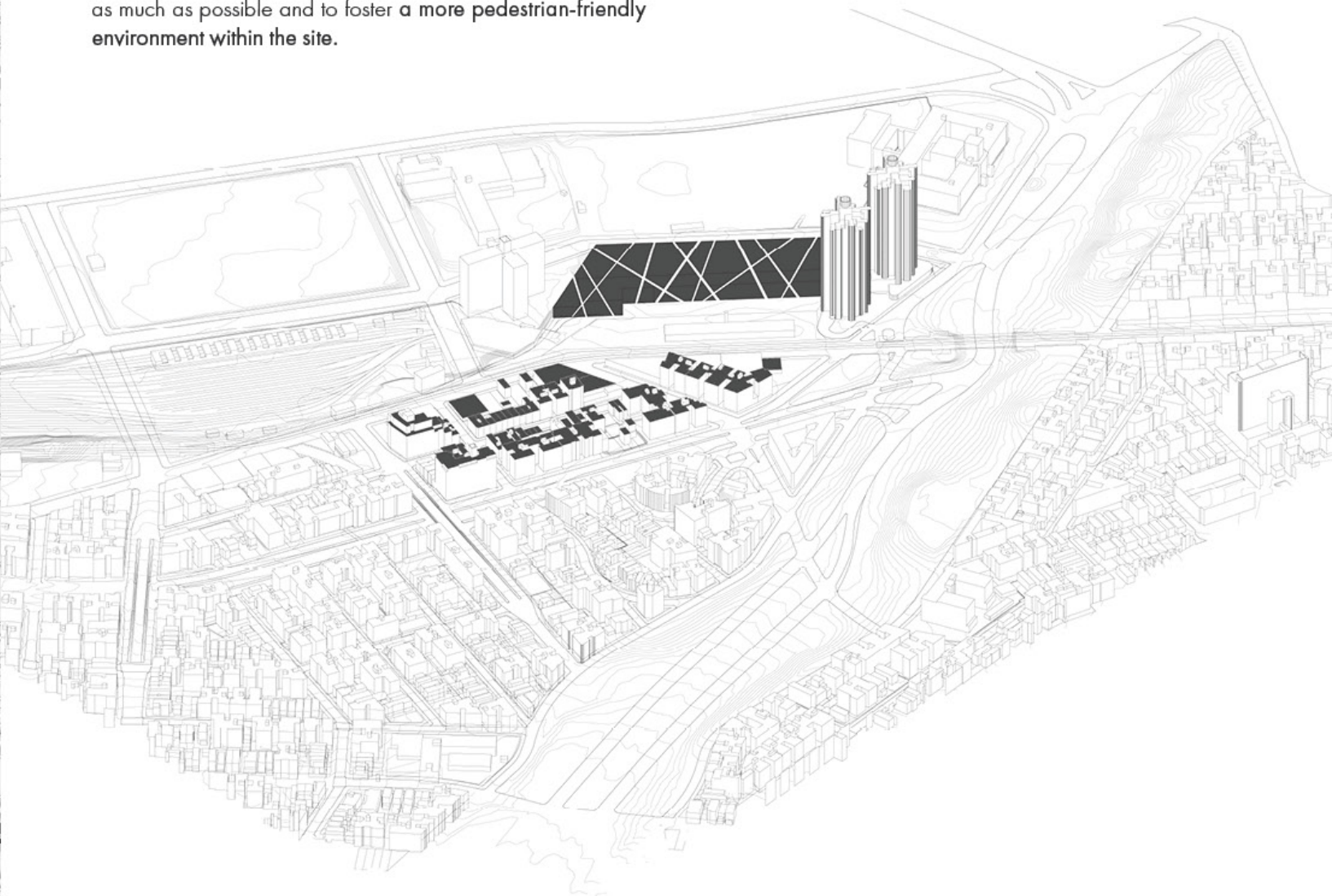
Advisor: Galia Solomonoff





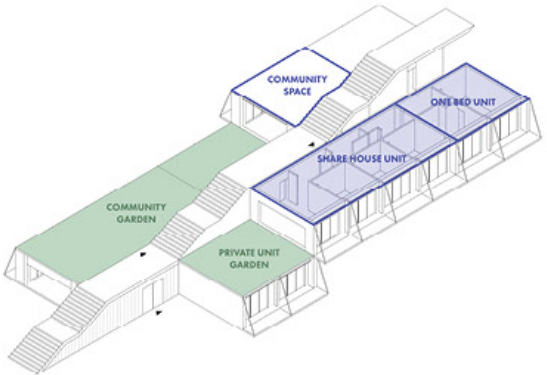
Wall and the City

In contrast to the surrounding context of the Bronx, the plinth appears as a massive wall that divides the city. This perspective originates from the city planning level, where existing infrastructures disrupt the urban fabric. The goal has been to dismantle this wall-like perception while preserving the original structure as much as possible and to foster a more pedestrian-friendly environment within the site.



Walkable Landscape in the City

This design project envisions a walkable landscape where movement through the site resembles a journey through gardens and community green spaces. By integrating urban farming and community gardens into circulation paths, residents access their homes through cultivated areas that promote local food systems and social interaction. These agricultural zones encourage ecological awareness and food sovereignty, fostering a sense of stewardship and belonging. This approach blurs the line between living and growing, transforming the urban environment into a space where nourishment, community, and movement are interconnected.





HOUSING OFFICES INDUSTRY

SHARED HOUSING
WITH GARDENS

STARTUP SUPPORT

MOBILE PLATFORM HUB
VERTICAL FARMING

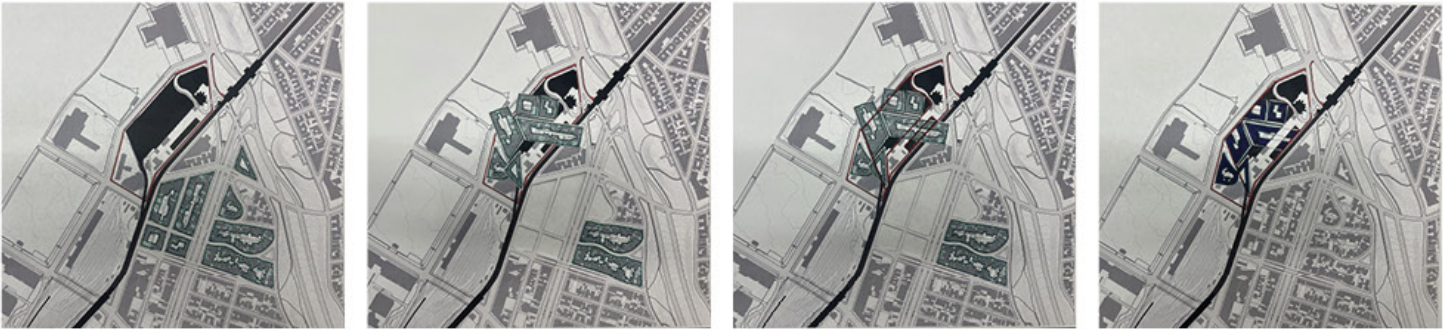
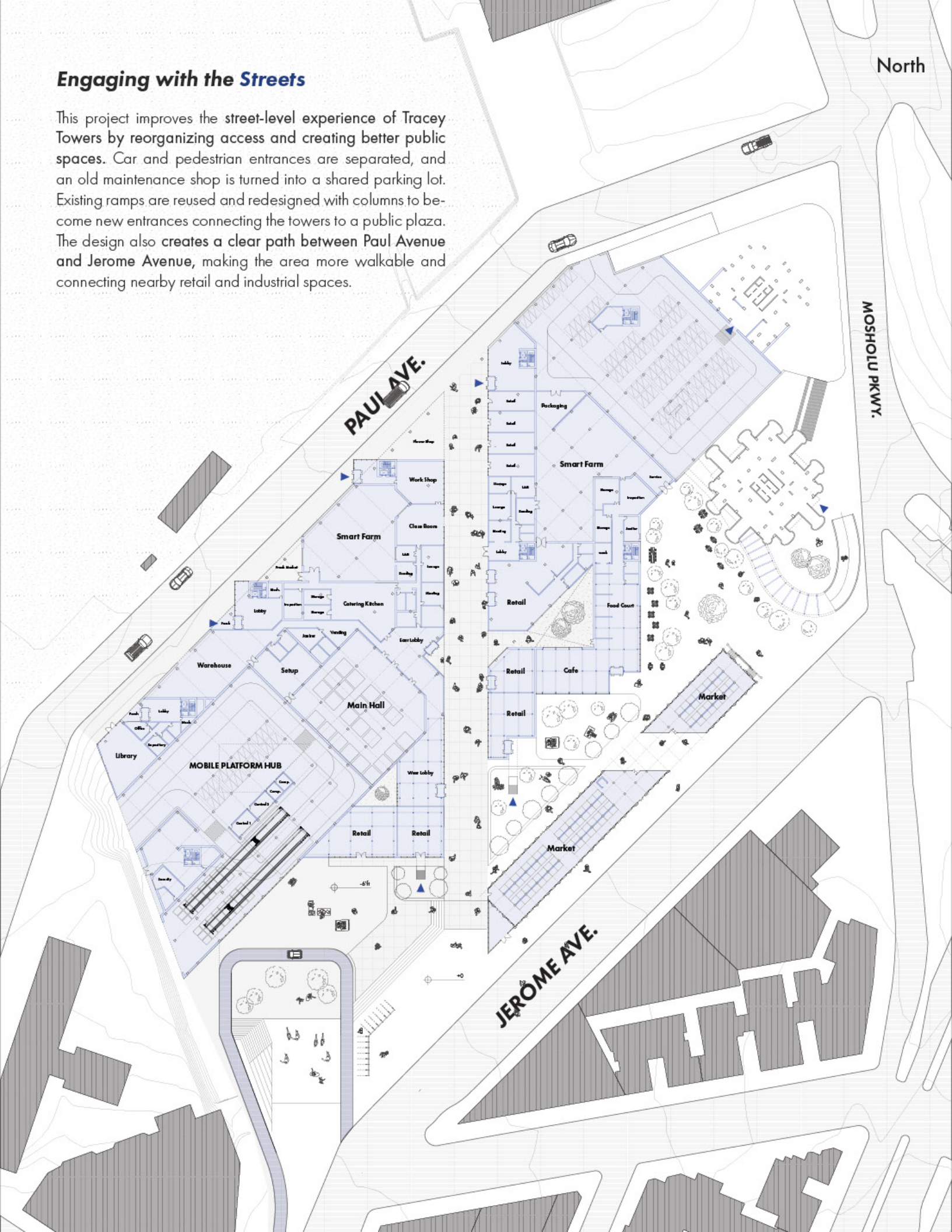
Layered Urbanism

The concept of Layered Urbanism can be embraced by engaging with the site's existing infrastructures and histories as active foundations for new urban life. The design preserves structural elements like the original plinth while overlaying new programs, forms, and ecologies that speak to present and future needs. **Landscape becomes a dynamic agent** in this transformation, shifting across levels and reweaving traces of the city's former uses into a resilient, multi-functional ground. By adapting and repurposing what already exists, the project generates a **new typology of urbanism**—one that supports local communities through accessible public spaces, productive gardens, and layered circulation paths, while also enabling growth and reinvention.

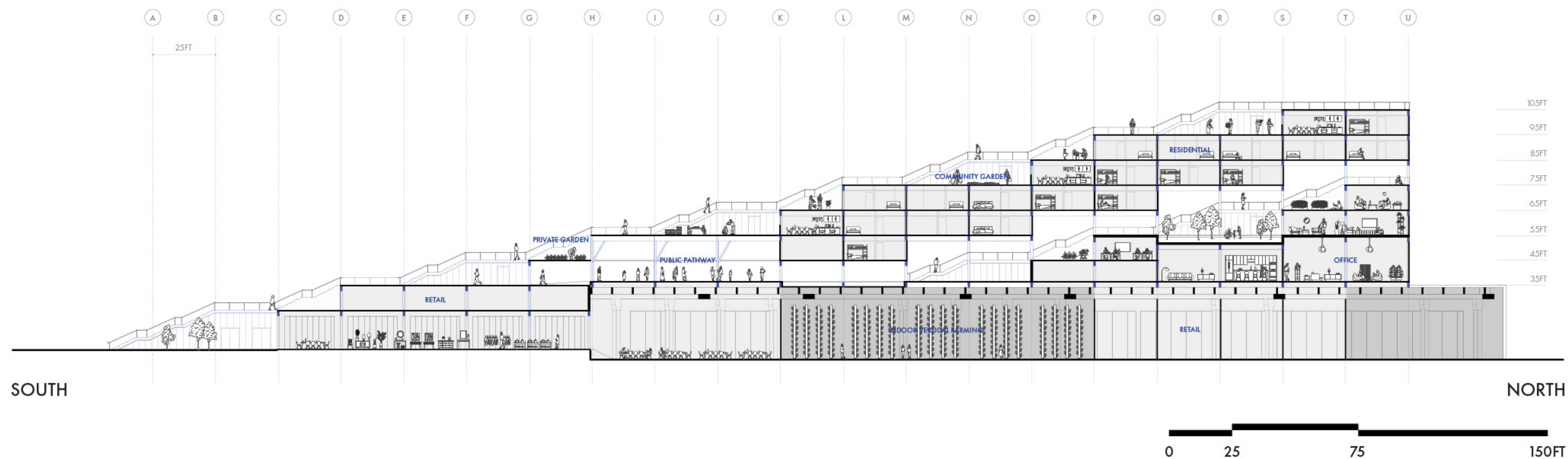
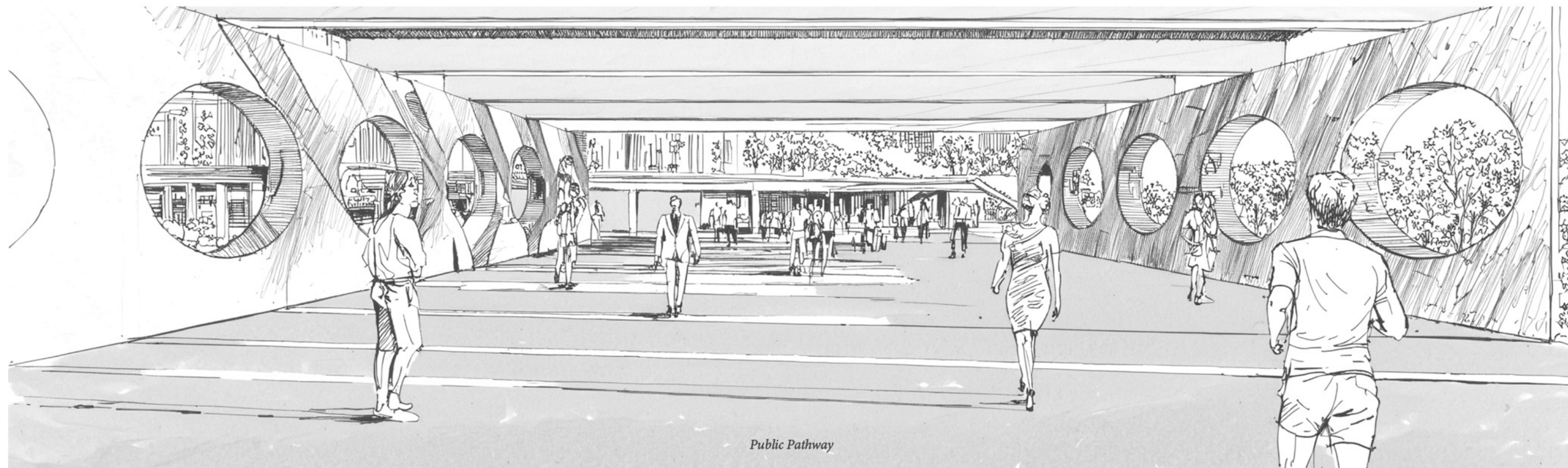


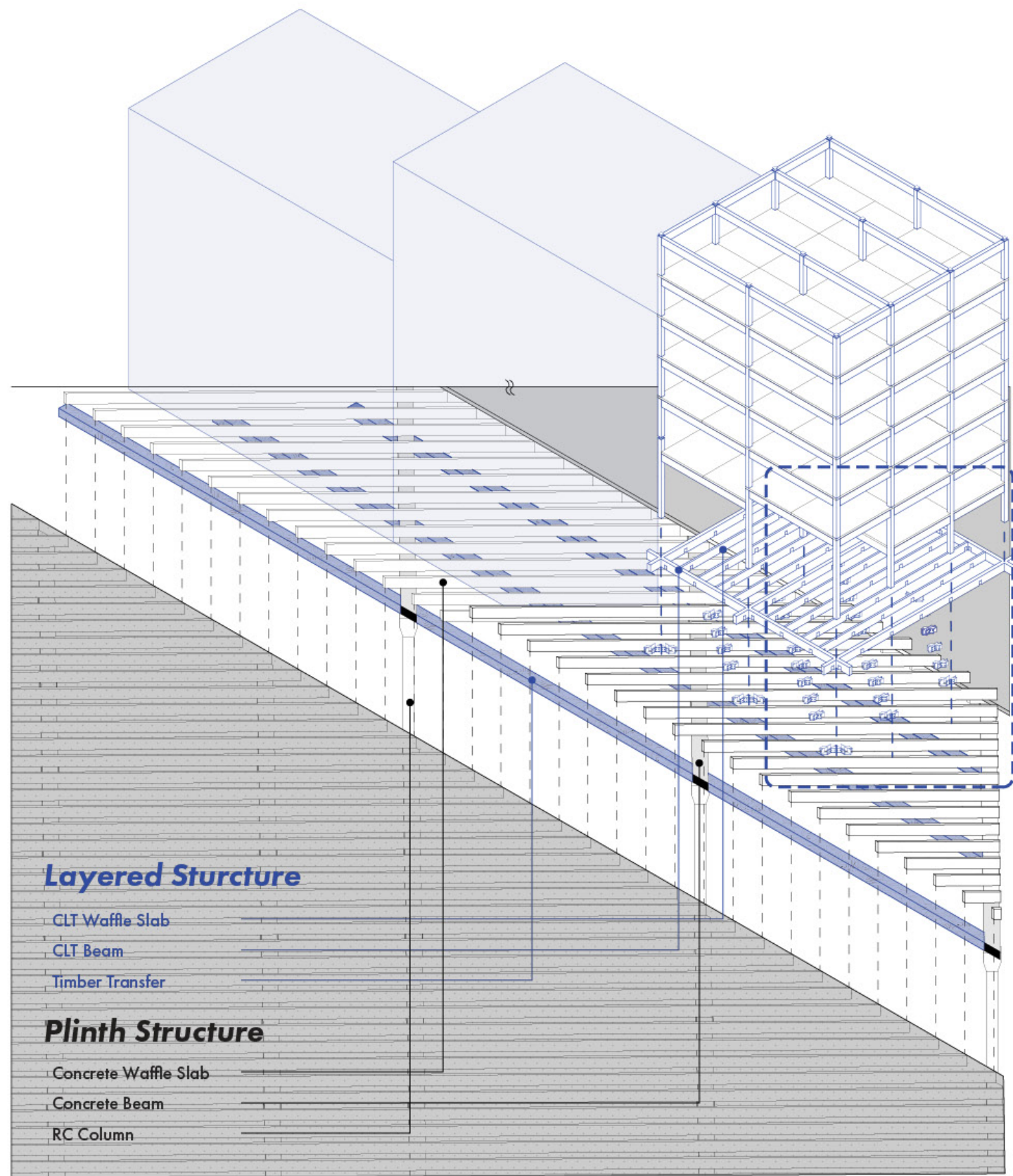
Engaging with the Streets

This project improves the street-level experience of Tracey Towers by reorganizing access and creating better public spaces. Car and pedestrian entrances are separated, and an old maintenance shop is turned into a shared parking lot. Existing ramps are reused and redesigned with columns to become new entrances connecting the towers to a public plaza. The design also creates a clear path between Paul Avenue and Jerome Avenue, making the area more walkable and connecting nearby retail and industrial spaces.



Clear Openings Towards the Streets Brings Clarity of Actions, Movments, and Contents of the City

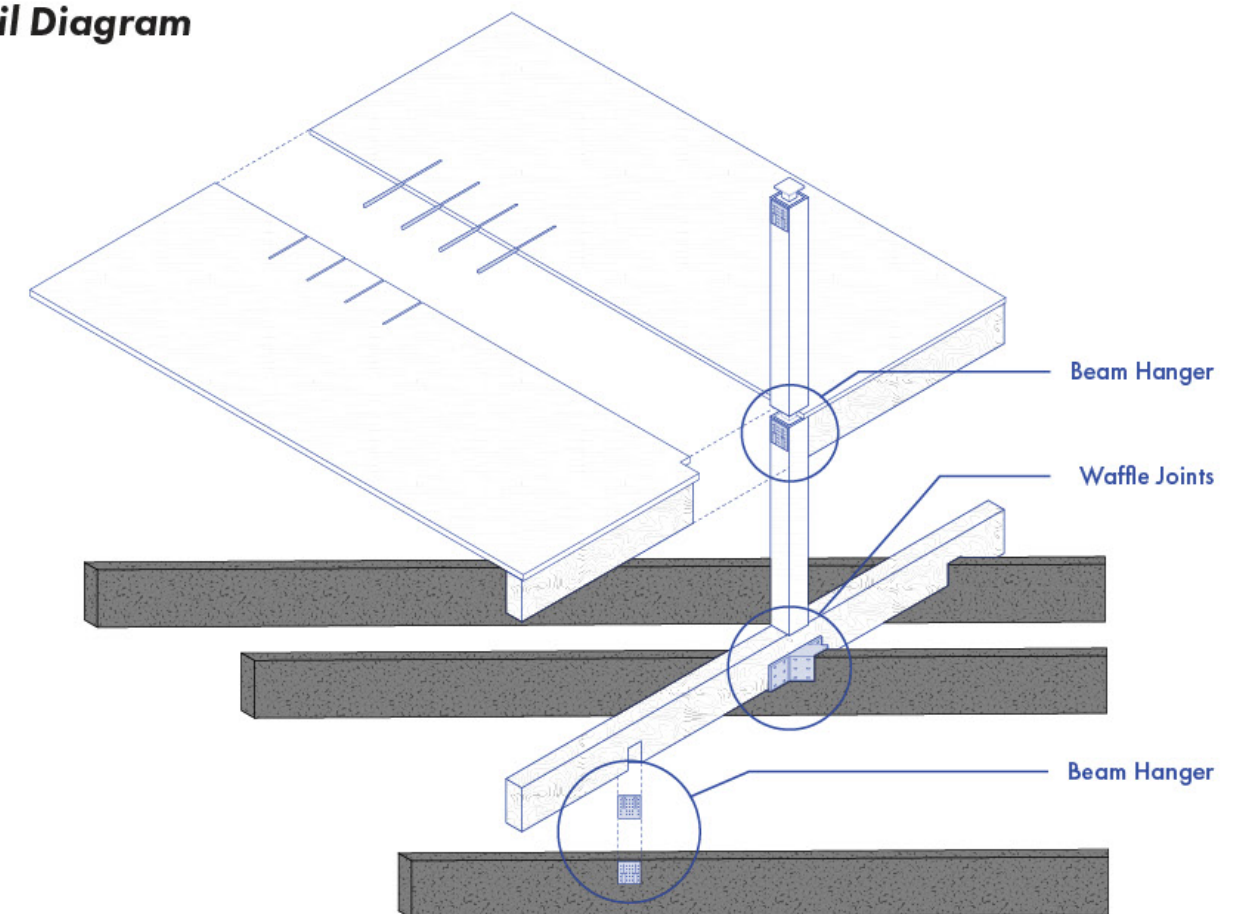


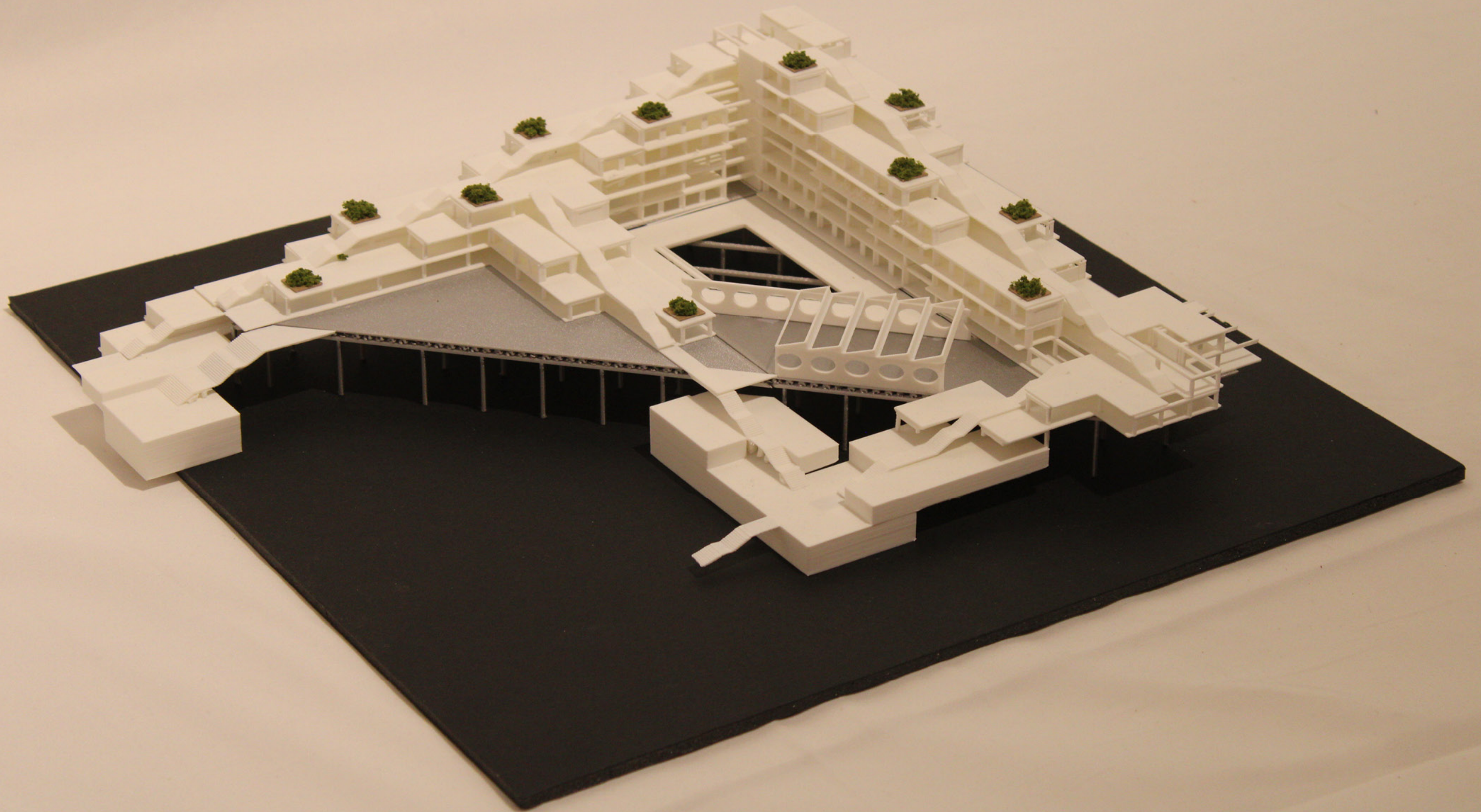


Layered Structural System

This project aims to preserve the original plinth structure of Tracey Towers by layering a new architectural system rather than demolishing it. By retaining the concrete base, the design minimizes material waste and avoids the removal of substantial mass, which would have produced carbon emissions. Instead, a lightweight cross-laminated timber (CLT) system will be installed atop the existing structure without overloading it. This approach reduces embodied carbon and allows for a sustainable, phased transformation of the site. By integrating new mass timber elements with the preserved concrete base, the design honors the site's history while enabling new public life.

Detail Diagram







The Edible Summits

The Literal and Ontological Connections
between Architecture and Food Surface

Design Exhibition and Competition

Columbia GSAPP Spring 2025

Team Work: Dongjae Ko, Sungjun Beak, Adnan Kasubhai,
Hyun seung Moon, and Pimchid Chariyacharoen

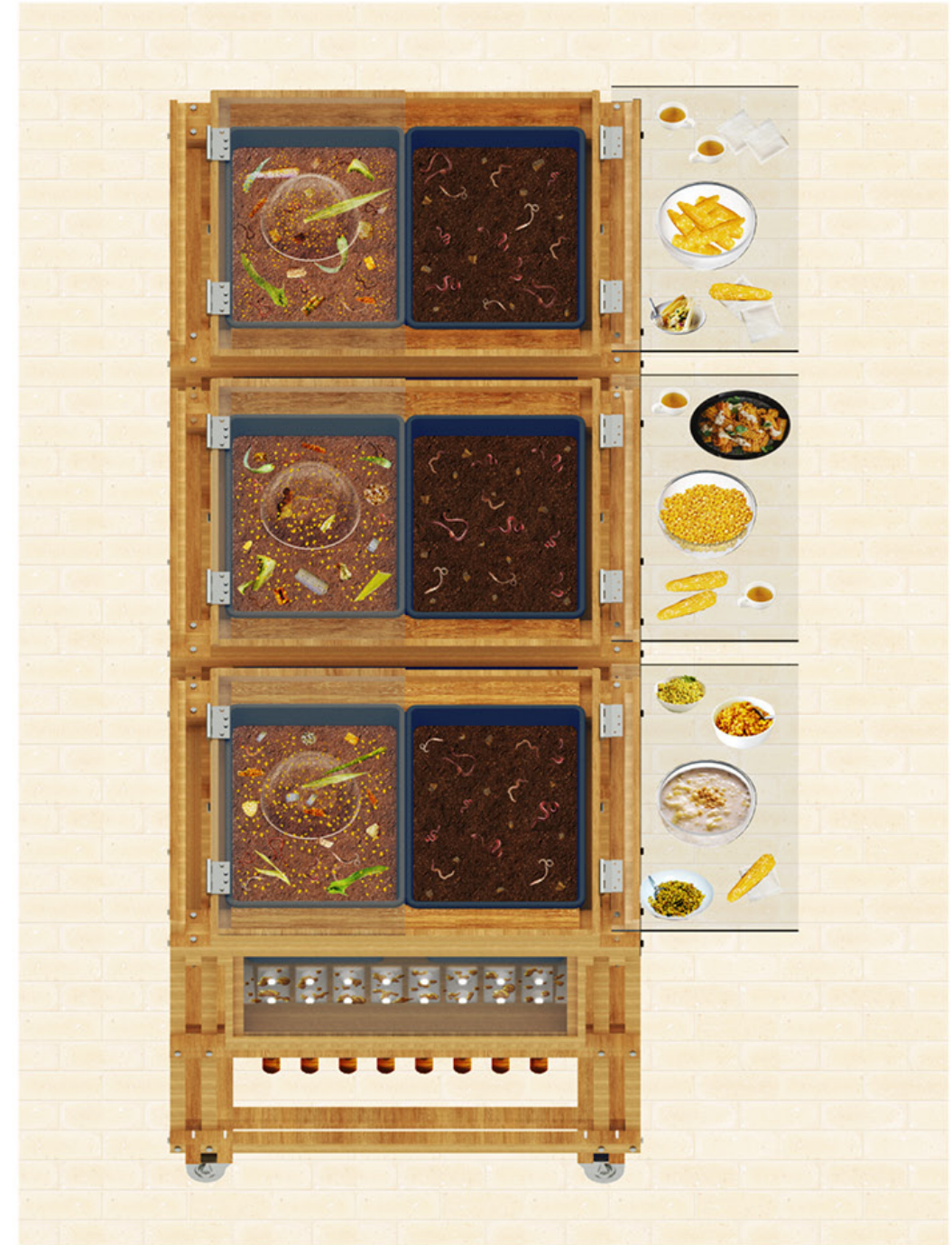
Location: Avery 100, Columbia University

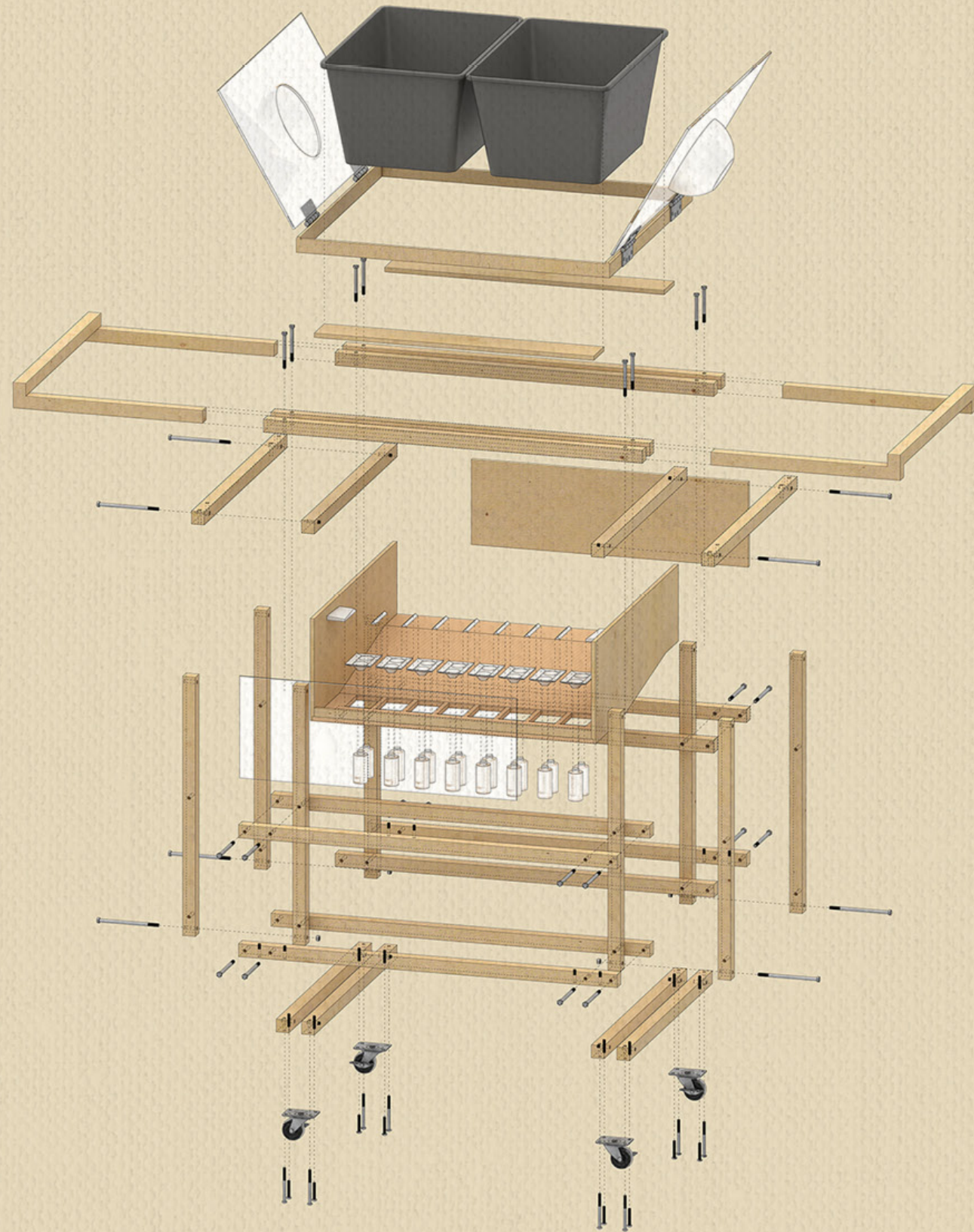
Curator: Lydia Kallipoliti & Xiaoxi Chen

What is Food?

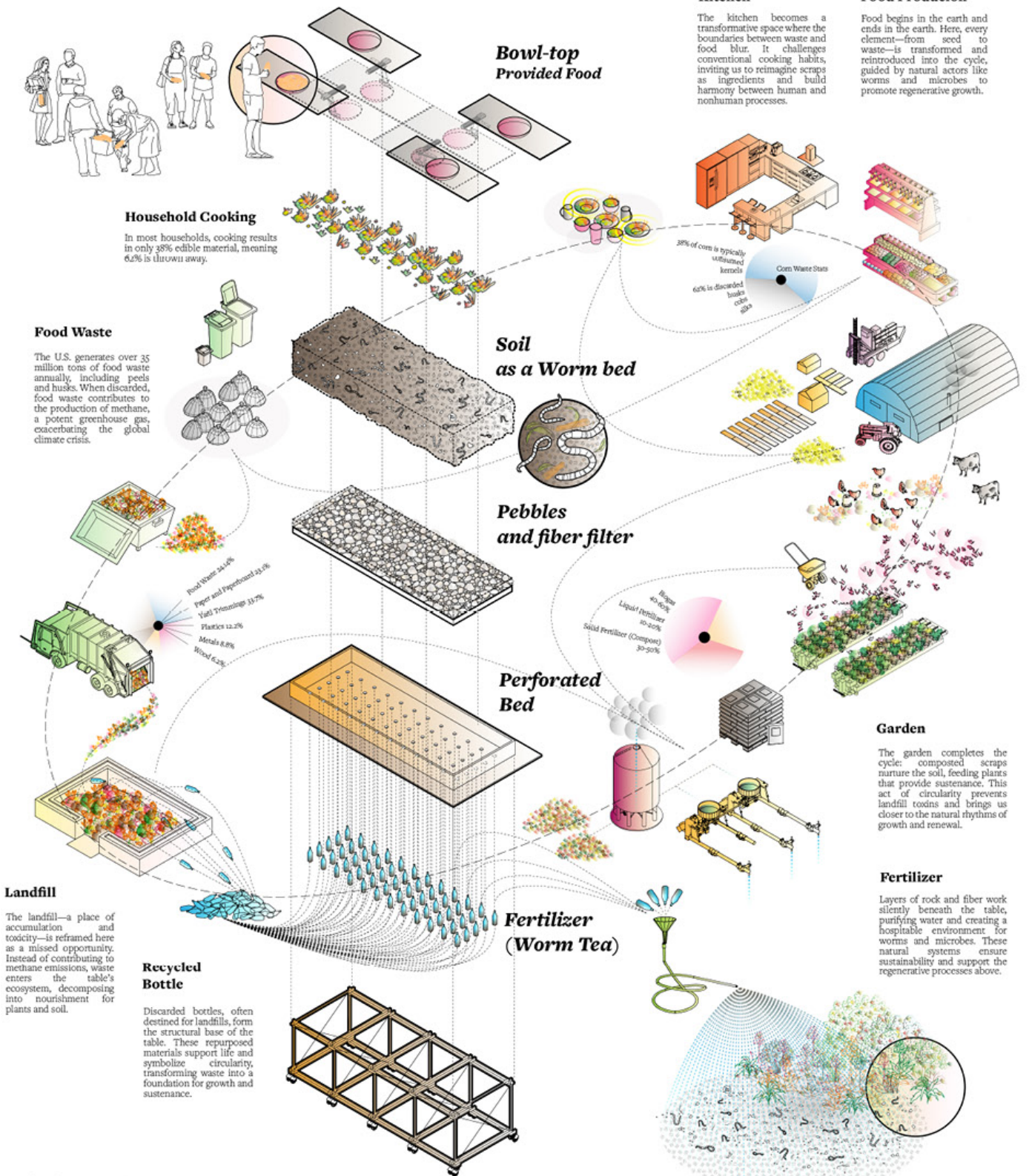
A ritual, a system, a cycle, or just consumption? deCORNstruction Project unpacks the layers of corn to explore the perception and boundaries between food and waste, from cob to husk, from rural fields to urban tables, from tiny seeds to tangled trade routes.

At the center is a dining table that acts as a living system: food is shared, scraps are fed to worms beneath, and soil is regenerated. This continuous cycle invites us to rethink what we eat, what we discard, and what might begin again.





I Remember That Waste...

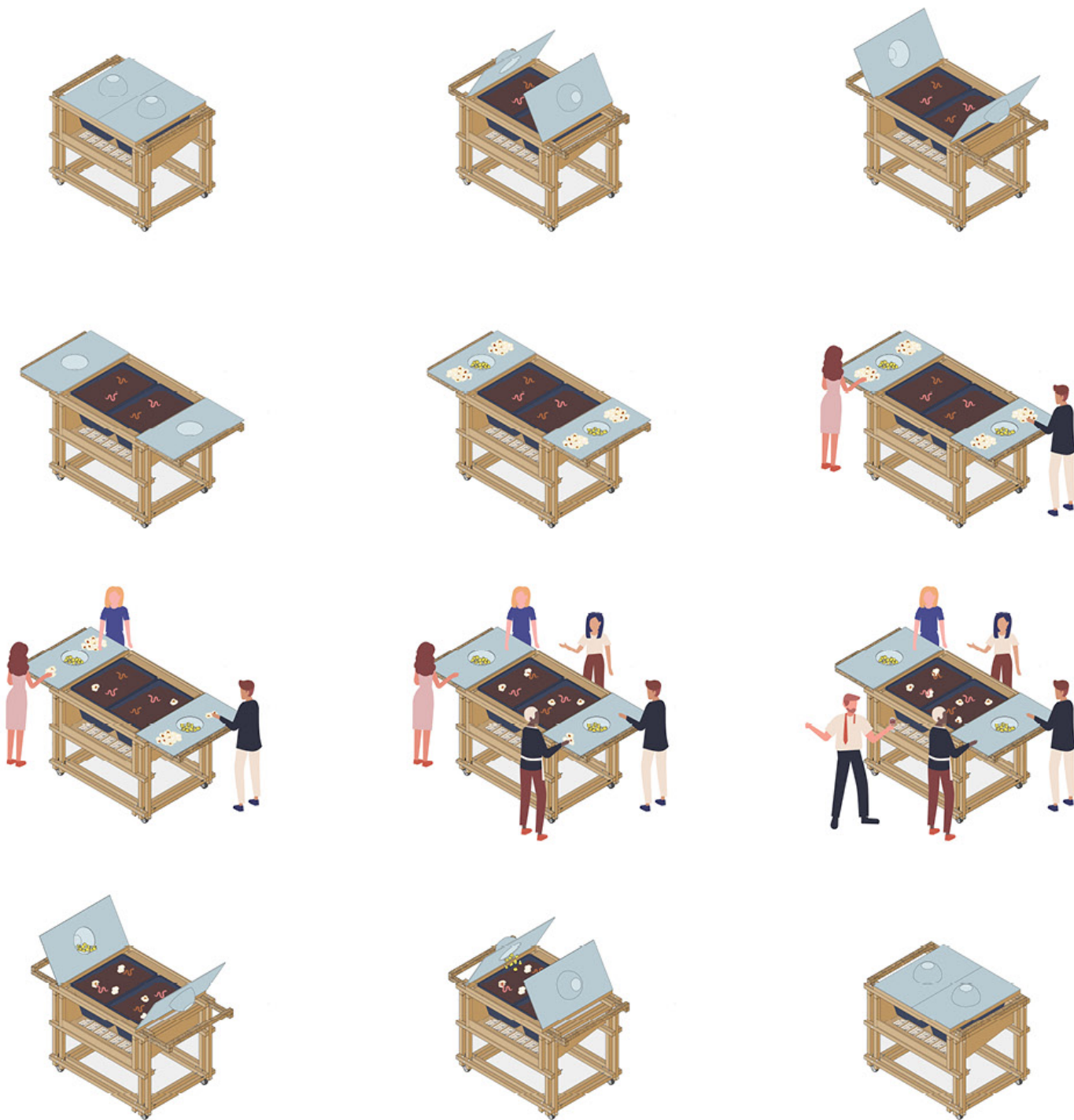


Dining Table

A multi-layered living system, the dining table features opening and extending tops that create a sense of drama and discovery. It invites diners into a shared world where humans, microbes, worms, and plants coexist and collaborate in cycles of regeneration.

"Architecture can be considered as a closed world where all these elements [air, water, energy, and labour] circulate and recirculate in different feedback loops inside structures seen in terms of truly ecological systems." — Lydia Kallipoliti

Kallipoliti, Lydia. "Reassembling." In *Cycles: The Architects Who Never Threw Anything Away*, Lisbon Architecture Triennale, 2022.



The **Unpacking** of Meanings

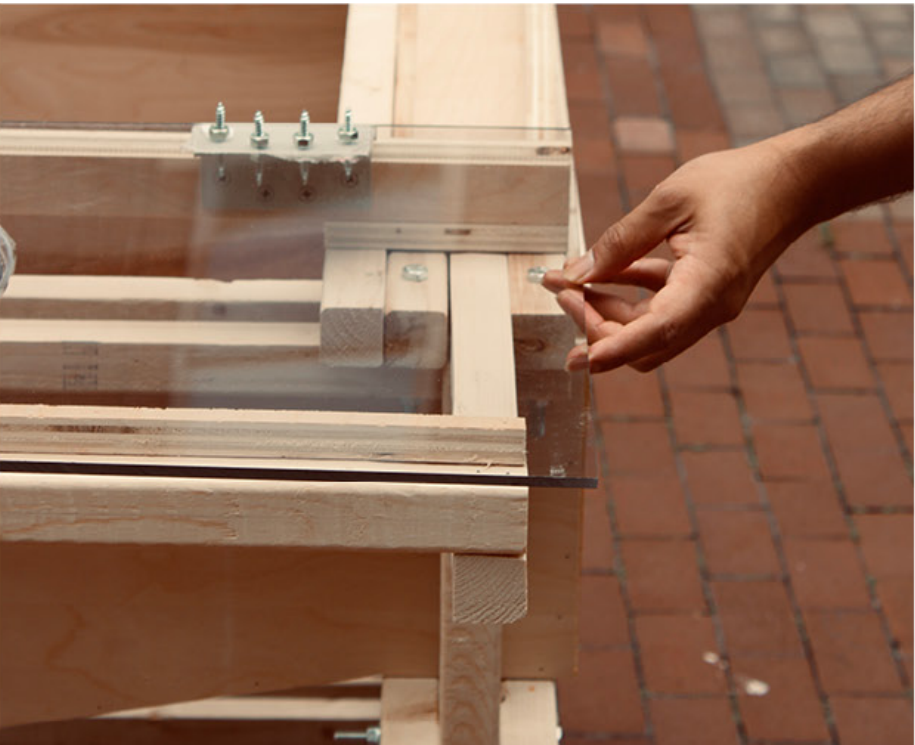
The tables exposes systems: rural and urban, edible and inedible, human and more than human. It is a living, entangled, and plural ecology. They become stations of exchange of labor, of decay and of ritual. Three units ask a question of **What is food?** **What is waste?** And who gets to decide?

The Table redefines architecture and design as active, metabolic systems rather than static forms. By integrating organic processes—such as composting, microbial digestion, and vermiculture—into architectural elements, it reveals the hidden ecol-

ogies that sustain life. The table, typically seen as inert furniture, is transformed into a living machine where food scraps are decomposed by worms and bacteria, producing castings and nutrient-rich worm tea. These materials cycle through layers of soil and mesh, forming a closed-loop system that foregrounds decomposition, filtration, and regeneration.

The design rejects permanence in favor of continual transformation, positioning architecture as a responsive ecology embedded within the cycles of waste, growth, and renewal.

Opening Mechanism

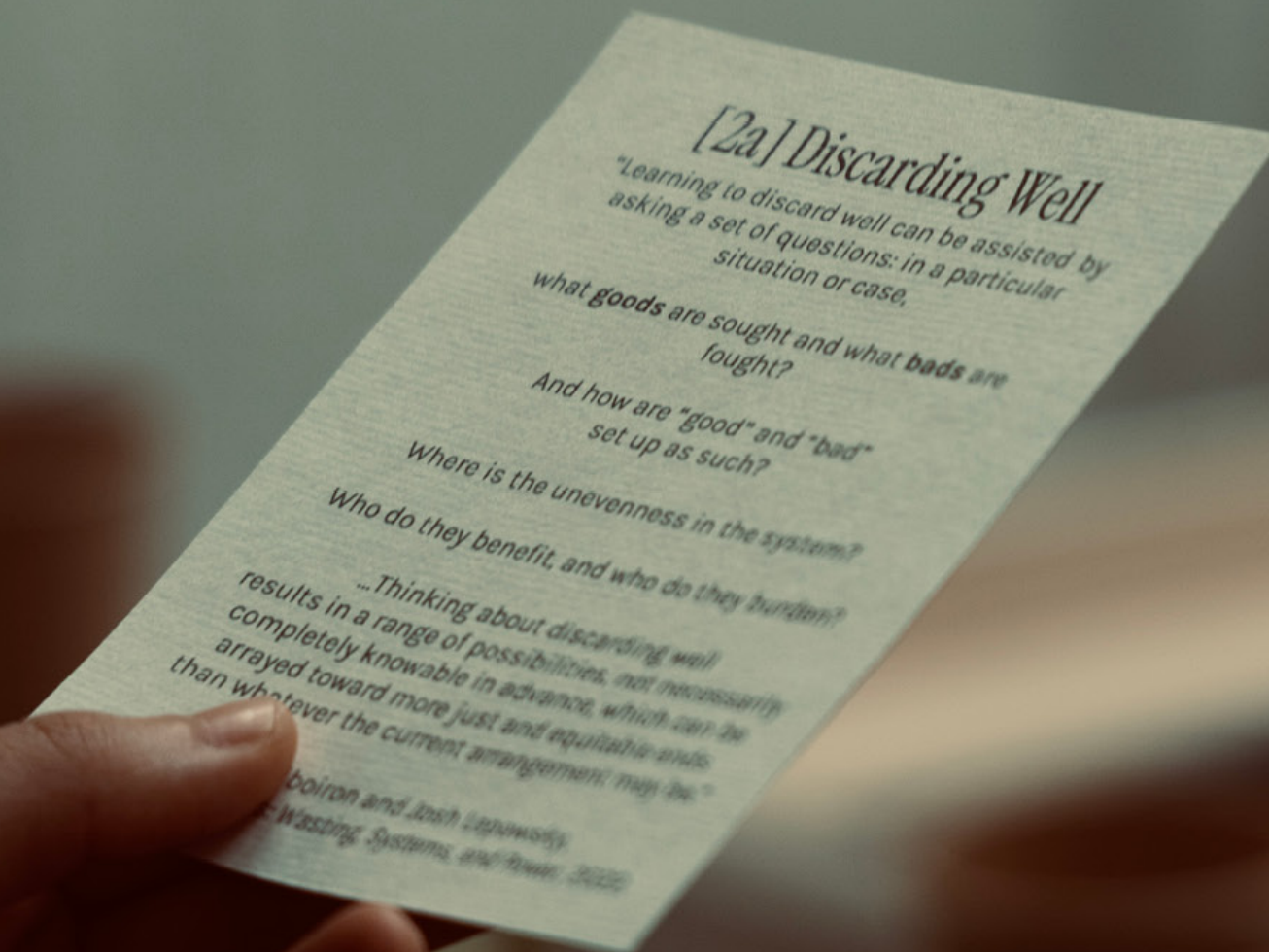


Collector Bottles



Table Strucuture





“Edibility is not a universal truth.
It is a cultural fiction.

*A banana peel—refuse in one culture, delicacy in another.
A corn husk discarded in a fast kitchen, revered in a slow one.*

This is not just performance.
It is *recontextualization*.

From the gut, to the city, to the ecology.”

challenging the cultural,
and transscalar boundaries of
food and waste.



to waste, to food, to cycle.



Deep Harvest

Emerging Future and Underground Farming

Building Science and Technology

Columbia GSAPP Spring 2025

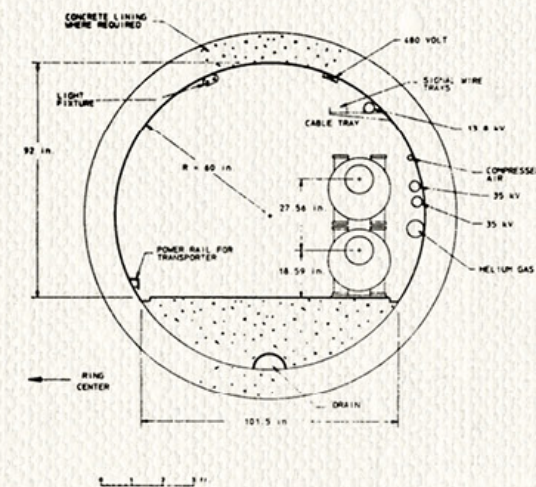
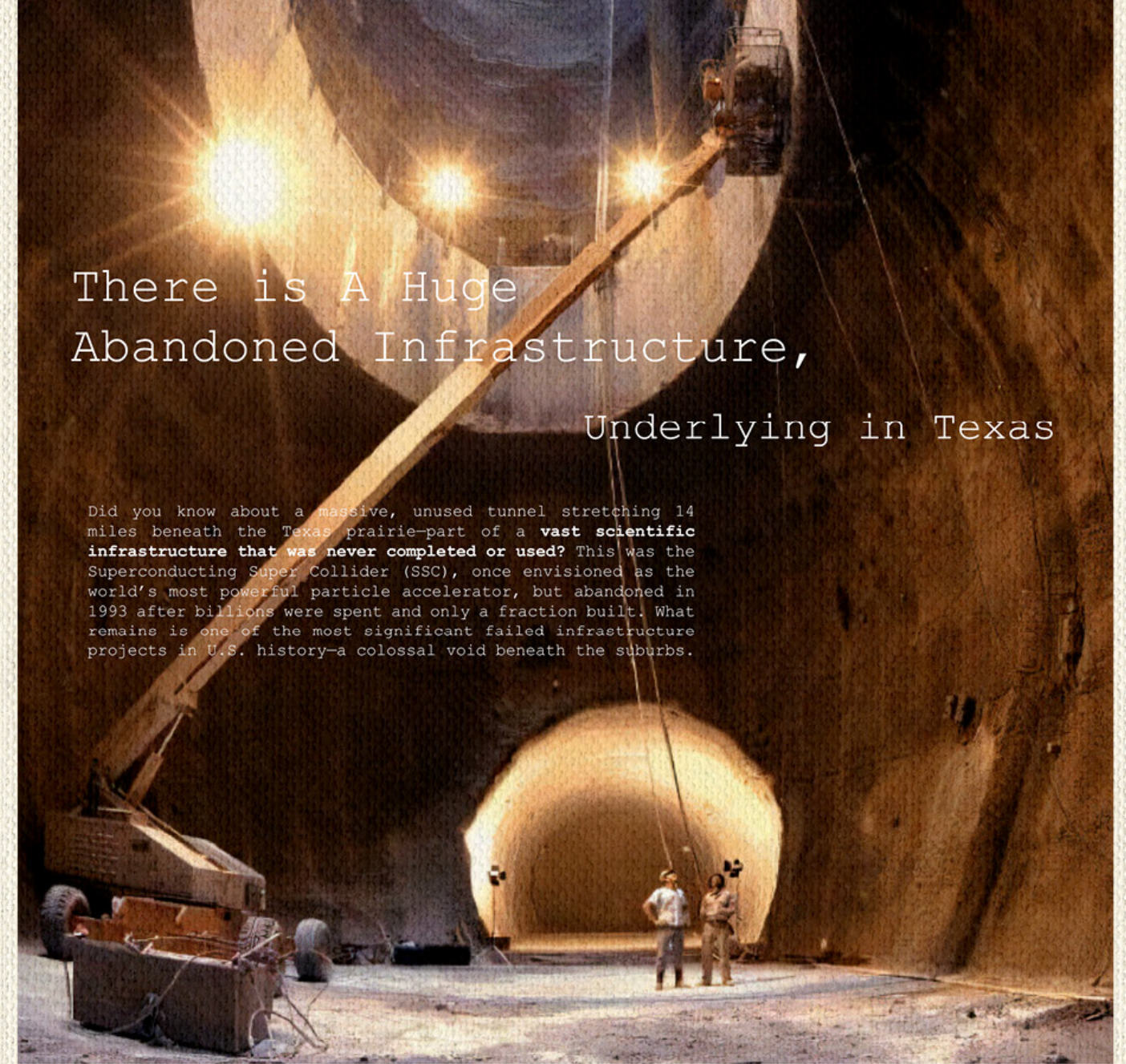
Individual Work

Location: Ellis County, Texas

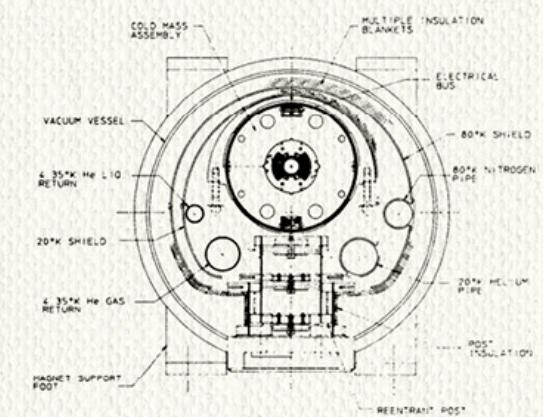
Advisor: Sean Gallagher

There is A Huge Abandoned Infrastructure, Underlying in Texas

Did you know about a massive, unused tunnel stretching 14 miles beneath the Texas prairie—part of a **vast scientific infrastructure that was never completed or used**? This was the Superconducting Super Collider (SSC), once envisioned as the world's most powerful particle accelerator, but abandoned in 1993 after billions were spent and only a fraction built. What remains is one of the most significant failed infrastructure projects in U.S. history—a colossal void beneath the suburbs.



Collider Tunnel Cross



Collider Cross Section

Ellis County, Texas



Supercollider's new Future.

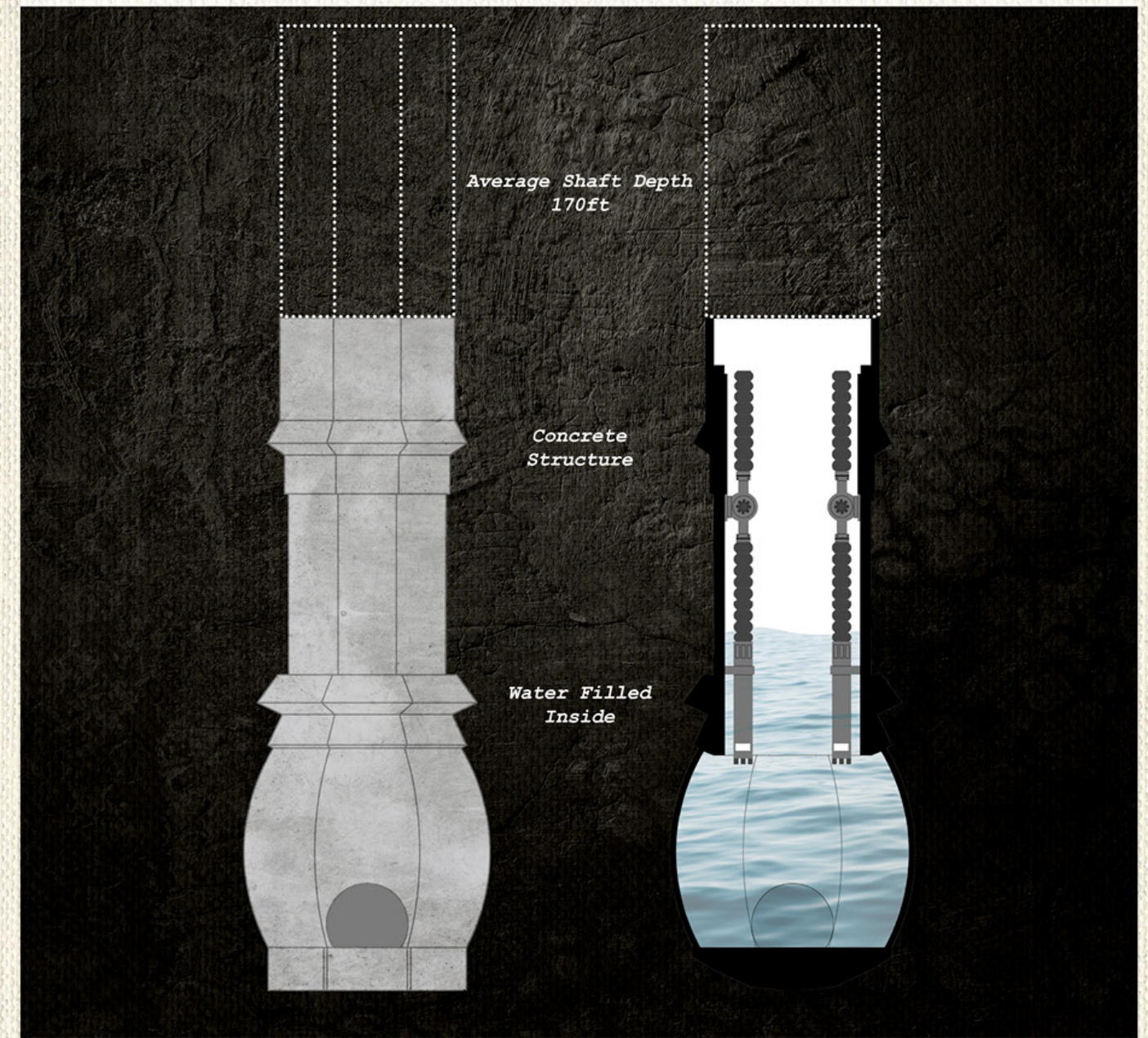
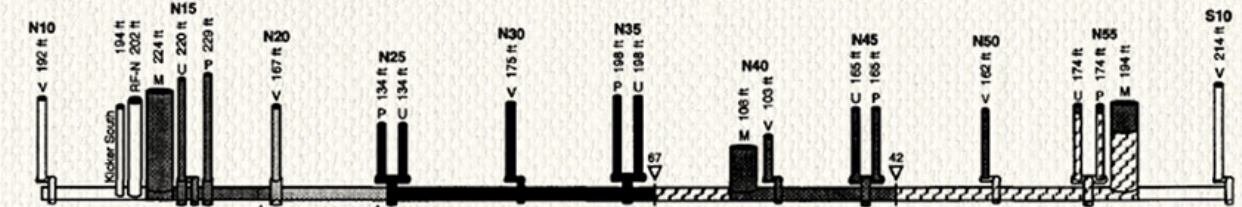
But what if this dormant structure could serve a new purpose? By reimagining it through the lens of emerging industries like underground farming, data centers, or climate-controlled storage, we have a rare opportunity to **reuse this forgotten megastructure, transforming failure into innovation adaptively.**

This project investigates the **integration of underground farming technologies** within the dormant infrastructure of the Superconducting Supercollider (SSC) site in Texas, aiming to transform these post-industrial voids into productive ecological systems.

By reactivating these subterranean spaces for food production, the proposal envisions **a new model of suburban-urban development that fosters local food resilience and promotes sustainable land use.** The research anticipates the emergence of future communities centered around these underground farms, redefining urbanism through adaptive reuse and regenerative agriculture.

A ton of water, resting deep underground, fills the massive shafts that rise to the surface.

This hidden reservoir is an untapped asset in a drought-prone region where water scarcity defines the future. We're not just looking at abandoned infrastructure—we're selling possibility. In the middle of Texas, where the ground bakes and the air dries, there's water down there. **The question now is simple: what do we do with it?**



GREEN FORGE UNDERGROUND FARMING

42,000-48,000 USD/sq.m
Cost per Sq.m

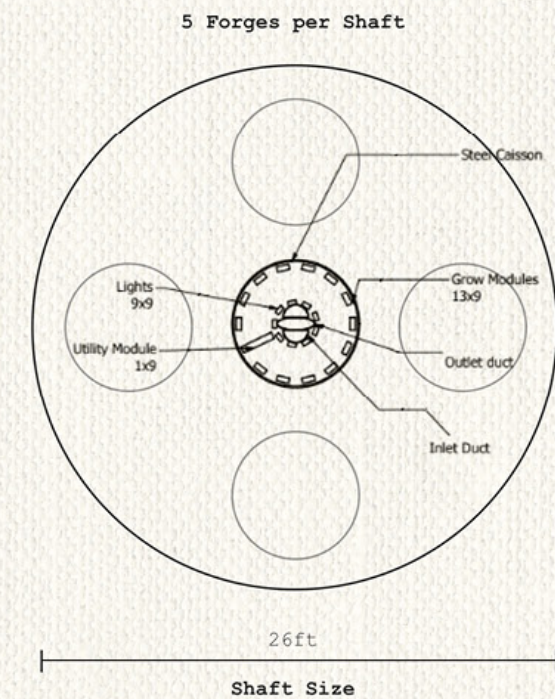
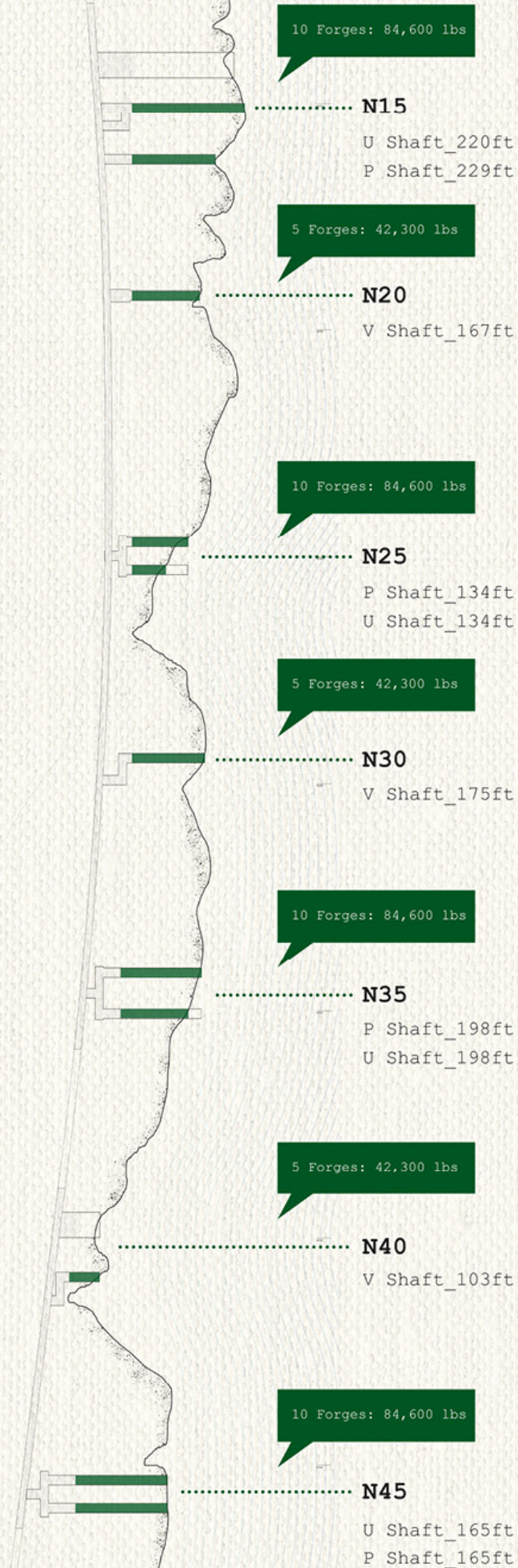
250-300lbs/sq.m/year
Lettuce Yield

\$ 3,704,143 USD
Construction Cost
For 40 Forges

\$ 3,972,634 USD
Investment Needed
For 40 Forges

Scaling UP

By harnessing the vertical depth of the SSC shafts, we can scale farming downward, layer by layer—transforming each shaft into a stacked ecosystem of climate-controlled agriculture. This isn't just symbolic reuse; it's a high-yield engine. With the right systems, one shaft could produce more food than acres of traditional farmland—multiplying output while minimizing land use, water waste, and exposure to extreme weather.



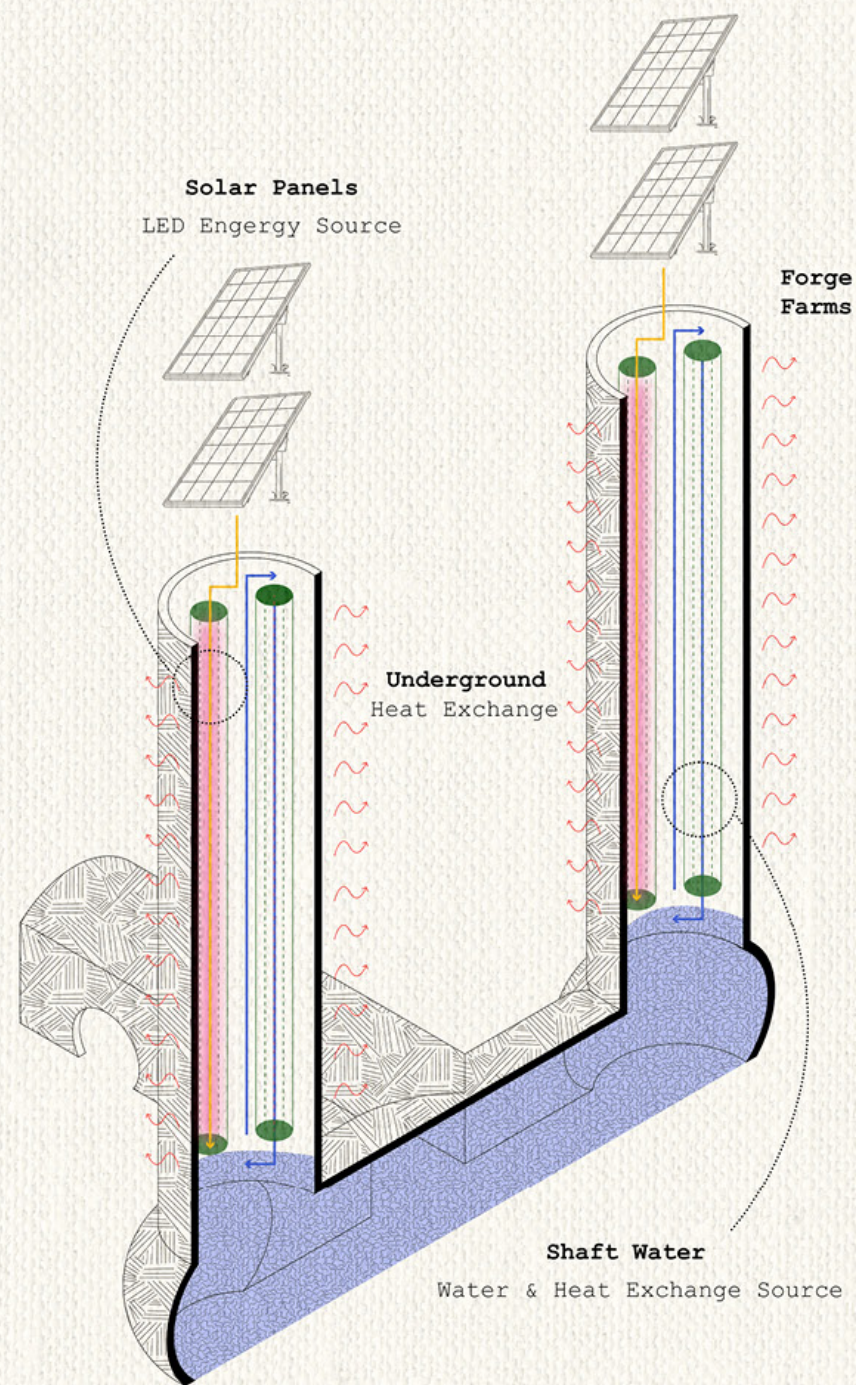
Lettuce Yield per Year (100ft)
500-600 lbs /sq.m

Farm Size per Forge
14.1 sq.m (151.7 sqft)

Shaft Using
11

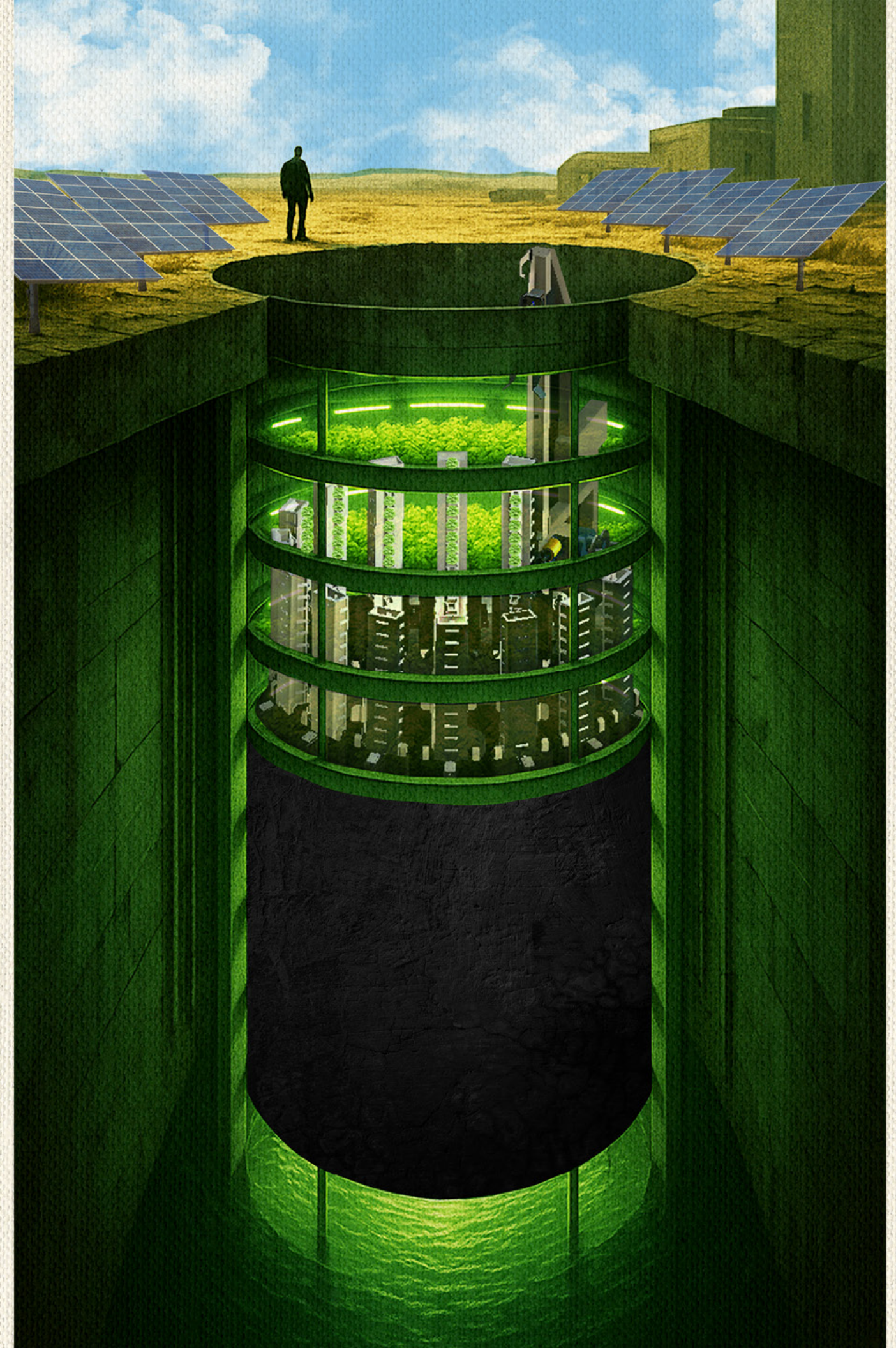
Total Number of Forges
55

Total Lettuce Produced per Year
 $600 \times 14.1 \times 55 = 465,300 \text{ lbs}$



Advantage of Underground

GreenForges' underground farming systems offer significant energy efficiency advantages over traditional vertical farms. By situating farms underground, they capitalize on the earth's stable temperatures, reducing the need for extensive heating and cooling. This approach can lead to energy savings of approximately 30-40% compared to conventional vertical farming methods.





Fractured Histories

Suneil Sanzgiri’s Decolonial Aesthetics in Memory and Technology

Arguments 2024

Individual Work
Advisor: Alex Kim

The interplay between technology, memory, and decolonization presents a multifaceted challenge in contemporary discourse. Suneil Sanzgiri’s lecture, rich with insights into the complexities of creating a fractured world tied to decolonization, prompts two critical examinations of these themes. First, as high-tech innovations surge forward, the potential for these technologies to be monopolized by capitalists poses a threat of a new form of colonization that could echo the exploitative patterns of the past. Sanzgiri uses those types of technologies, primarily films, images, and installations, to contest colonialism by creating his own visualized identities through the perspectives of his people. Furthermore, the notion that humans selectively remember and beautify history raises questions about the reliability of memory in shaping our understanding of the world. He spent years thinking about questions of identity, liberation, and the movement of people across space and time, which led him to collect research data regarding anti-colonial solidarity across continents. From Goa to Angola, he tried to create brief links between the liberating movements and the memory of his father. This essay dives into Sanzgiri’s work, reflecting on the intricate process of decolonization exemplified in regions like Goa. Also, it closely examines the risks and implications of relying on memory and technology that could generate another form of colonization. By engaging with Sanzgiri’s perspectives and exploring the role of technologies and memories in crafting a multi-dimensional narrative, I aim to explore how Sanzgiri confronts these limitations of technologies and memories through his works and lectures to build up a fractured world.

The narrative of technological progress and modernization is often contentious in the context of colonization and decolonization. Advanced technology has historically been used as a tool of invasion and control, perpetuating oppression. For example, film and other technologies were employed to shape perceptions and reinforce colonial narratives, justifying domination and undermining the autonomy of indigenous peoples. Today, advanced technologies like surveillance systems and AI are often praised for their potential to drive progress, but they are also used to monitor, control, and exploit marginalized communities. The neutrality of technology itself is often overlooked, as its impacts on vulnerable populations.

The critical idea to be delivered is how and by whom technology is used. The issues are believed to lie not in the technology itself but in the intentions and actions of those who wield it. We can employ technological tools for both oppressive and liberating purposes. Suneil Sanzgiri’s perspective on decolonization offers a nuanced view of technology’s potential. He argues that decolonization is not about reverting to a pre-modern era but about using technology to reveal and create alternative worlds. In order to achieve this, he tried to form a new way of how the people of Goa see by using the technology of imagination triggered by images and perceiving everything as fragments and possibilities. This approach emphasizes the importance of leveraging technological advancements to challenge and dismantle colonial structures rather than perpetuating them. For example, digital media and the internet have provided platforms for marginalized voices to share their stories and perspectives,

challenging dominant narratives and fostering global solidarity. Technology can facilitate the preservation and dissemination of indigenous knowledge, offering tools for cultural resurgence and resistance against erasure. As Sanzgiri suggests, the goal of decolonization should be to harness technology to envision and build alternative worlds, breaking free from the oppressive legacies of the past and constantly reexamining them to learn from the contradiction of colonization and building from it through ongoing history. This process requires a conscious and ethical approach to technology, ensuring that it serves the interests of justice and equity rather than perpetuating cycles of domination and exploitation.

In our quest to use technology to reveal and create alternative worlds, we must remain vigilant against the risk of perpetuating new forms of colonialism. The intention to present a new perspective can inadvertently lead to an error, the imposition of a singular narrative, which is antithetical to the contemporary commitment to diversity and multiplicity. When using technology to showcase another world, it is essential to avoid letting “our perspective” dominate, leading to another form of colonization. Suneil Sanzgiri’s work exemplifies the creation of new images of Goa through his father’s memories. However, this process is fraught with challenges. Human memory is inherently fragile, susceptible to manipulation, and shaped by personal and cultural perspectives. A one-dimensional narrative can easily devolve into a new form of ideological dominance in a world that values diversity. A pertinent example from Sanzgiri’s work is the conflict in Angola, where two ideological factions that fought for independence soon turned against each other upon gaining power. This underscores the danger of a homogenized perspective, which can lead to internal strife and new forms of oppression. To prevent the omission and alteration of existing ‘histories,’ adopting inclusive and multi-faceted methodologies is imperative. It is also essential to see which subjects have political power in reality beyond just diversity of ideology and perspectives. I found no evidence to undermine the factors that could lead to errors regarding ‘fractured world making’ as presented in Sanzgiri’s videos or lectures. Nevertheless, I observed him express his views confidently in response to questions from both students

and faculty during his lecture. This made me reflect on the extensive research he has conducted and his assurance in his work. When applied ethically, cutting-edge technology, big data, and advanced analytics can bolster his decolonization initiatives by illuminating systemic inequalities and guiding policy changes. By aggregating and analyzing data from a variety of sources, we can develop a more holistic and nuanced understanding of social issues, ultimately paving the way for more equitable solutions.

Suneil Sanzgiri’s concept of a ‘fractured world’ highlights the fragmented and multifaceted nature of historical narratives necessary for decolonization. He constructs these fragmented worlds using film, images, and installations to disrupt monolithic colonial narratives and emphasize colonized peoples’ diverse experiences and perspectives. Sanzgiri’s work reveals how memories and histories are inherently fragmented and shaped by personal and cultural lenses, challenging the homogenization of these narratives. Through his art, Sanzgiri underscores that decolonization requires embracing and using these fractures to construct a more nuanced and inclusive understanding of the past and present. This approach not only contests colonial legacies but also prevents the emergence of new forms of ideological dominance by continually questioning and reexamining the diversity of voices and experiences. In doing so, Sanzgiri’s fractured worlds offer a powerful tool for creating a more equitable and just future.

Invisible Values

Transformation of 530 Dwellings by Lacaton & Vassal

A consequence of the rapid population growth following World War II necessitated the construction of buildings designed to focus on accommodating as many people as possible, which resulted in a living environment that was tight and uncomfortable. Decades later, as part of a comprehensive renewal plan for housing, 530 out of the 4,000 living units in social housing in Bordeaux were transformed. The 'Transformation of 530 dwellings' project, a unique reconstruction initiative for social housing, is not just about combating the declining population due to these outdated living conditions but also about improving the quality of life for the residents, making their homes more comfortable and spacious.

Extending this case to diverse scales, we can understand that buildings are not the only elements valued in architectural behavior in real-life practices. On a territorial scale, the project's strategic approach to construction, including prefabricated elements and quick assembly, has significantly reduced the environmental impact. By minimizing the project's carbon footprint, this project sets a positive example for future architectural practices that align with the principles of sustainable urban development. If scaled down to a bodily size, the values could be focused on the residents' lives. In interviews with the project residents, people praise them for being connected to the city and its neighbors, unlike before. While housing in the past simply felt valuable in building a space where people could eat and sleep, current housing emphasizes creating an environment where people can connect with the city and the environment created by people. It is not only the size of a room that brings quality and comfort to

the residents' lives, but also the relationships. As a subject living in a city, it is necessary to discover what humans continue pursuing. Depending on the scale, region, and time, the value of the housing buildings can vary, and it is interpreted as architectural design to find a solution that can be reflected in reality to fulfill the value. This is a process of compromising what an architect values based on the world he interprets and what can be realized.

The project also addresses the impact of capitalism on real estate, particularly in the context of undertaking projects with limited budgets, such as social housing. Maintaining a balance between housing supply and space quality is a challenging endeavor. From the perspective of real estate development, increasing the number of units in the same floor area ratio can be advantageous in having the capacity to accommodate more demand. For instance, in Korea, apartments are the most popular type of housing. Developers try to deploy as many residential units in an apartment as possible because they want to run expensive and lucrative businesses. As a result, it is difficult for existing people to maintain homes that have increased in value after reconstruction, and apartments are listed on the housing subscription list or sold. The original people who lived in it disappeared, frequently becoming a playground for the rich who purchase real estate for investment purposes. Is this what we think of as a sustainable living environment? It's essential to consider the underlying values that architects and society strive for. What is the value that transcends mere monetary gain?

Transscalarities 2024

Individual Work

Advisor: Nicolay Duque-Robayo



Utopia and Urban Planning

EPCOT by Walt Disney

EPCOT, Experimental Prototype Community of Tomorrow, is a master plan of Walt Disney’s futuristic community in the mid-20th century. The project was not established fully onsite due to Walt Disney’s death in 1966, and the development of the master plan had to stop after that. EPCOT was envisioned as a utopian city to showcase innovation, urban planning, and technological advancements. This work of Walt Disney emphasizes a utopian community in reaction to modern urban life. Also, it focuses not on the city itself but on the community and how the community and the urban environment can be operated by technology.

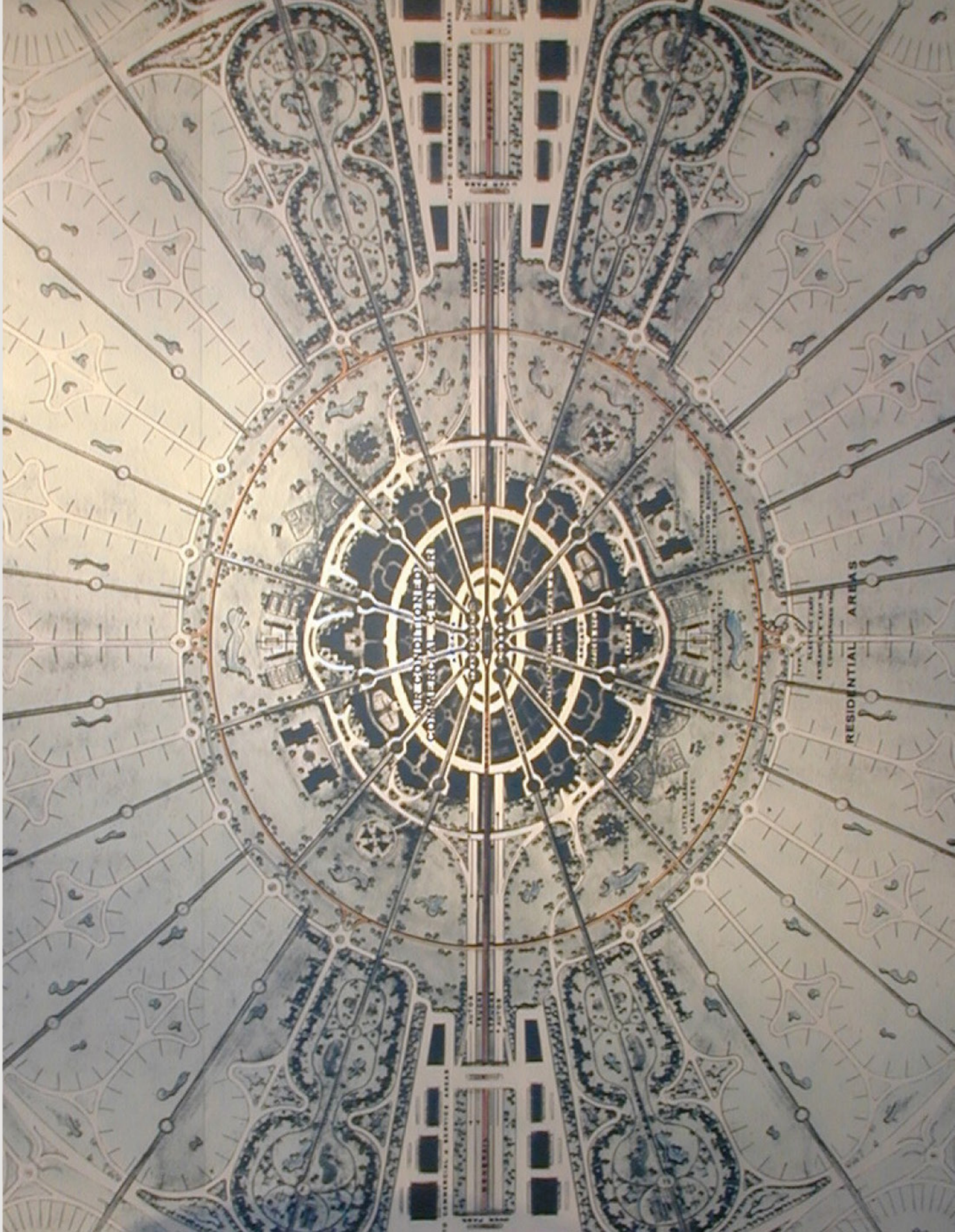
Instead of a fully functioning city, the concept evolved into EPCOT Center, a theme park that opened in 1982 at Walt Disney World Resort in Florida. The park retained some elements of the original vision but was fundamentally different in scope and purpose. While the park integrated some innovative technologies, these were primarily for demonstration and attraction purposes rather than practical, everyday use in a community setting. EPCOT Center was divided into two main sections. First was the ‘Future World,’ which showcased technological innovation and scientific exploration and inspired visitors with the potential of these advancements. It consisted of various pavilions, each dedicated to different aspects of science, technology, and industry. Also, there was the ‘World Showcase’. This area featured pavilions representing other countries, showcasing their nations’ culture, architecture, and cuisine. The aim was to promote global understanding and cultural exchange. Over the years, EPCOT Center has undergone several changes and updates to keep up with technological advancements and evolving visitor interests.

EPCOT Center, now simply known as EPCOT, successfully transformed Walt Disney’s original utopian vision into a theme park that balances education, innovation, and entertainment.

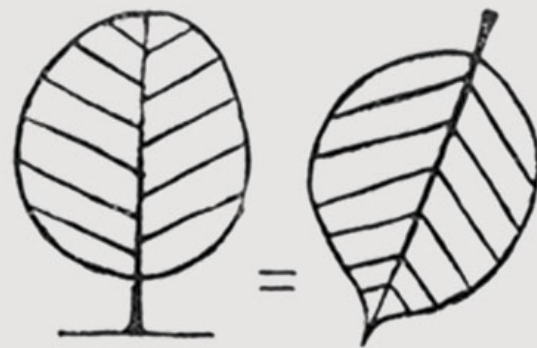
The transition of EPCOT from a utopian city to a theme park highlights the challenges of realizing utopian visions. Idealistic designs face practical difficulties like regulatory barriers, logistical challenges, and technological limitations. Overcoming financial constraints is crucial for large-scale projects requiring sustained investment and economic stability. Success also depends on community participation and acceptance to meet real-world needs. Planning a utopia involves people, technology, environment, law, politics, and ideals. Not everyone shares the same vision of utopia, raising whether a single vision can satisfy everyone. While technology has solved many problems, it has also created new issues that need addressing.

Moreover, we need to consider whether the process of urban planning and urban design is imagining a utopia. Utopia sounds romantic, but realistic urban life is quite different from it. Walt Disney’s EPCOT project started as an ambitious vision for a futuristic city, but it evolved into a theme park that partially reflected the original goals. The journey from utopian dream to practical implementation underscores the complexities and challenges of realizing idealistic urban concepts in the real world. It also serves as a cautionary tale, reminding us of the need for a balanced approach in urban planning that considers both the ideal and the practical, the visionary and the realistic.

Transscalarities 2024
Individual Work
Advisor: Nicolay Duque-Robayo



Aldo van Eyck's Writings and Manifesto



tree is
leaf and leaf
is tree - house is
city and city is house
- a tree is a tree but it
is also a huge leaf - a
leaf is a leaf, but it is
also a tiny tree - a city
is not a city unless it
is also a huge house -
a house is a house
only if it is also
a tiny city

History of Architecture Theory

Individual Work

Columbia GSAPP Fall 2024

Advisor: Mark Wigley

Introduction

This paper explores the complex ideas behind 20th-century architecture, focusing on the structuralist approach of Aldo van Eyck—one of the key figures in this movement. Emerging in Europe during the early to mid-20th century, structuralism aimed to change how modern architecture and society were understood. A crucial part of van Eyck's philosophy is his work, *The Child, the City, and the Artist*. This influential book examines the connections between children, urban spaces, and art. It includes a collection of essays, personal thoughts, and drawings that highlight van Eyck's human-centered vision for architecture and city planning.

In this work, van Eyck critiques the often cold and impersonal nature of modern urban design. He strongly advocates for buildings and spaces that encourage human interaction and reflect cultural identity, calling for environments that celebrate the dynamic and rich nature of community life. He describes the city as a living organism that supports its people, much like a well-designed playground that encourages a child's creativity and growth.

Van Eyck's manifesto highlights the importance of "in-between spaces." These areas connect public and private places, indoor and outdoor spaces, and individual and shared experiences in urban life. He argues that these transitional spaces are crucial for fostering social connections and improving the quality of human interactions.

By drawing parallels between the playful, adaptable environments that children thrive in and the broader requirements of urban existence, van Eyck advocates for architecture that is not only dynamic and participatory but also profoundly sensitive to its inhabitants' behaviors and needs. His critique of modernism's often sterile and functionalist approach positions architecture as a vital medium for cultural expression and social engagement, emphasizing the need for spaces that resonate with the complexities of human experience.

van Eyck’s Manifesto

The manifesto qualifies as a theory because it provides a conceptual framework for understanding and critiquing architectural and urban practices. It is not merely a set of abstract concepts but a means to critically engage with the world, helping us make sense of our surroundings, behaviors, and structures that shape our experiences. It offers a set of principles—such as the importance of in-between spaces and participatory design—that can guide architects in their work. Moreover, it engages with broader philosophical and cultural questions about the nature of space, creativity, and human interaction.

Aldo van Eyck was one of the most active participants in Team 10, which aimed not only to theorize but also to build and realize the present utopia. For Team 10, ‘to build’ has a special meaning in that the architect’s responsibility towards the individual or groups he builds for and towards the cohesion and convenience of the collective structure to which they belong is taken as an absolute responsibility. No abstract Master Plan stands between him and what he has to do, only the ‘human facts’ and the logistics of the situation. Therefore, developing the idea of understanding human beings was essential to Aldo van Eyck’s works.

Van Eyck’s theory is situated in the post-World War II era when cities underwent large-scale reconstruction. After the war, there was a need for a lot of housing supply in Europe, and the functionalist urban planning principles of C.I.A.M. (Congrès Internationaux d’Architecture Moderne) dominated architectural discourse, focusing on efficiency, zoning, and rational design. Millions of people were displaced, and entire cities lay in ruins. The need for housing was acute, leading to a reliance on the modernist principles of standardization and prefabrication to produce housing quickly and affordably. C.I.A.M.’s zoning principles were widely adopted in post-war urban planning, with cities often being rebuilt in ways that separated residential, commercial, and industrial functions. This approach aimed to bring order and efficiency but usually led to disconnected and alienating urban environments. Van Eyck’s manifesto emerged as a

critique of these modernist ideals. It responded to the alienation and loss of social cohesion many felt in the urban environments shaped by modernism.

Aldo van Eyck fundamentally challenges the modernist assumption that functionalist design alone inherently creates better living environments. Functionalism, with its emphasis on zoning, efficiency, and the compartmentalization of urban functions, often results in alienating spaces that neglect the complexity of human social interaction. For van Eyck, these designs prioritize order and utility at the expense of cultural identity, community, and relational experiences, which he believed were critical to urban life.

He perceived the profound disconnection wrought by modernist urbanism as a crucial concern that called for a thorough reevaluation of city and space design. He contended that modernism’s inflexible zoning principles not only isolated individuals from one another but also disrupted the natural, organic relationships between people and their environments. By compartmentalizing urban areas into distinct zones designated for living, working, and recreation, modernist planning effectively drained cities of their vibrancy and diminished their human scale.

In his critique of modernism’s reductive tendencies, van Eyck championed an architectural approach that embraced cultural specificity, acknowledged social dynamics, and recognized the interconnectedness of human experience. His body of work illustrates that urban disconnection can be remedied by placing a premium on adaptability, inclusivity, and the creation of spaces that encourage genuine interactions among individuals. This perspective offers a compelling counter-narrative to the sterile and lifeless settings often produced by functionalist urbanism. He views the alienation fostered by these sterile, disconnected environments as a significant challenge, asserting that fostering social cohesion and cultural expression requires intentional effort and thoughtful design.

The book *The Child, the City, and the Artist* targets archi-

tects, urban planners, and policymakers who played a crucial role in shaping the post-war urban landscape. It also engages intellectuals and cultural thinkers, encouraging them to reassess the significance of art and architecture in society. By placing children and artists at the heart of the discussion, van Eyck appeals to those who prioritize creativity, imagination, and social responsibility. His goal is to move beyond the rigid, functionalist frameworks of modernism and promote an architecture that is socially responsive and inclusive. He argues for reimagining the city as a space that supports individual creativity and collective well-being.



Aldo van Eyck and C.I.A.M. Members

Van Eyck’s writing language is poetic and philosophical, seamlessly blending abstract reflections with concrete examples. He frequently employs metaphors, such as likening cities to living organisms or playgrounds, to elucidate his ideas. His tone is reflective and critical, aiming to inspire a deeper engagement with architectural design. For instance, one of Van Eyck’s quotes illustrates the relationship between a house and a city using the imagery of a leaf and a tree, presented poetically. He offers a way to understand the relational structure between the part and the whole from a relative perspective that is fluid and subject to change rather than a fixed and definitive stance—thus challenging the conventional view of the whole as merely the sum of its parts.

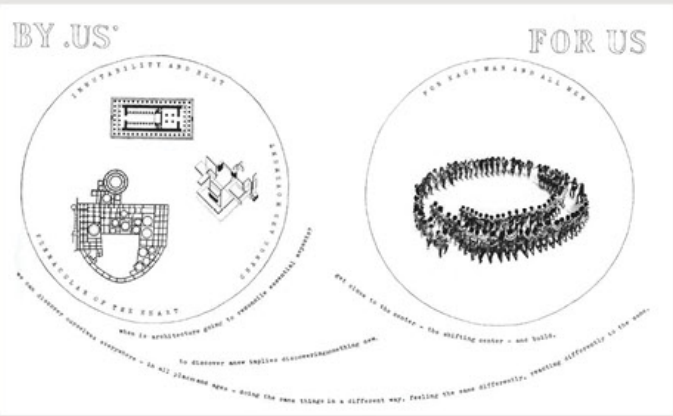
This poetic metaphor conveys his belief that architecture and urbanism must embrace a relational philosophy, where individual elements contribute to the greater whole. Just as a leaf is part of a tree and connected to the forest, so is a house part of a city and connected to its broader urban and social ecosystem. This duality is central to van Eyck’s vision of architecture as a living, adaptive system. In van Eyck’s design philosophy, houses and cities are not isolated entities but interdependent parts of a continuous, organic structure.

Through the poetic metaphor of house and city, leaf and tree, van Eyck articulates a vision of intimate and expansive architecture, individual and collective. It emphasizes the importance of understanding architecture as part of a more extensive system, where each element plays a vital role in fostering human connection and enriching the environment. This poetic approach continues to resonate as a profound critique of reductive, mechanistic views of architecture and urbanism, inspiring designs that celebrate the complexity and beauty of human life. His Amsterdam playgrounds exemplify this poetic principle, transforming fragmented urban spaces into meaningful social nodes. These playgrounds were not standalone designs but were intended to weave into the urban fabric, creating connections between neighborhoods, families, and children.

The book’s graphic layout and images reinforce van Eyck’s ideas. Diagrams, sketches, and photographs of his playground designs and other projects illustrate his concepts visually. The visualization of his writings invites exploration, mirroring his architectural philosophy’s participatory and relational nature. His thoughts and ideas are summarised in the three versions of the ‘Otterlo Circles.’ This text talks about bringing together different cultures and experiences to challenge Eurocentrism in architecture. It goes beyond simply mixing different styles and instead focuses on the shared human values that can help create a new kind of architecture. Influenced by thinkers like James Joyce and Henri Bergson, it considers time in a way that connects the past with our present day. This approach reveals important lessons from history that should influence how we shape our current environment. The Otterlo Circles play a key role in this discussion, blending classical styles, local building traditions, and modern design ideas. This combination encourages a fresh look at architectural theory within its historical context, suggesting a closer relationship between the two. The diagram representing these circles serves as a visual idea, showing that we can rethink and better understand history to enrich our current conversations about architecture.



Aldo van Eyck Writings (2006)

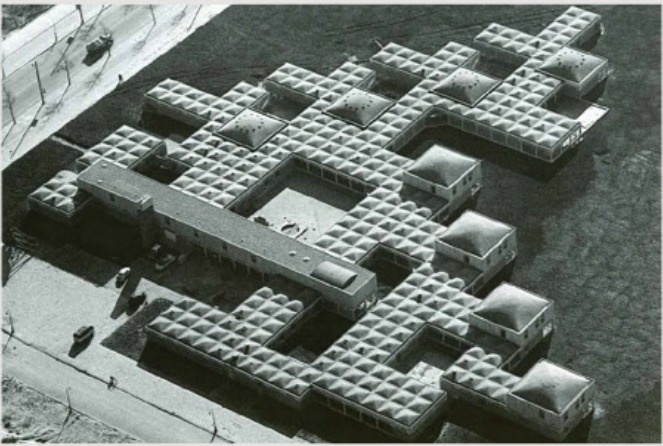


Otterlo Circles (1959-1962)

Orphanage in Amsterdam

Van Eyck’s Orphanage in Amsterdam (1955–1960) is a physical manifestation of his structuralist ideas and manifesto. The building exemplifies his commitment to creating spaces that foster community, social interaction, and adaptability. The Orphanage consists of a series of interconnected courtyards, pathways, and low-scale pavilions, each carefully designed to encourage exploration and interaction among children and staff. The layout of the Orphanage reflects van Eyck’s concept of in-between spaces, with seamless transitions between indoor and outdoor areas. These transitional spaces, such as covered walkways and open courtyards, serve as zones of interaction where children can play and socialize. The design emphasizes flexibility, allowing the space to adapt to different activities and needs. Materiality and scale are also central to the orphanage’s design. Van Eyck used simple, tactile materials that resonate with human scale, creating an environment that feels welcoming and accessible. The arrangement of spaces prioritizes human movement and interaction, reinforcing his belief that architecture should support the rhythms of daily life. The orphanage challenges the modernist emphasis on functionalism by integrating cultural and social dimensions into its design. It reflects van Eyck’s argument that architecture must go beyond utility to create environments that nurture the human spirit and foster a sense of belonging. Through its thoughtful layout and attention to detail, the Orphanage is a testament to van Eyck’s vision of architecture as a relational and participatory medium. By addressing the needs of its users thoughtfully and imagina-

tively, the orphanage demonstrates how van Eyck’s ideas can influence architectural practice. Its design prioritizes exploration, interaction, and a sense of community, assuming that these qualities are essential for the well-being of its users.



Amsterdam Orphanage (1955-1960)

Sonsbeek Pavilion

The Sonsbeek Pavilion, constructed in 1966 for the Sonsbeek Sculpture Exhibition in Arnhem, Netherlands, is a significant embodiment of Aldo van Eyck’s structuralist architectural principles. This open-air pavilion facilitates the display of sculptures and illustrates van Eyck’s conviction regarding the relational qualities inherent in architecture. The Pavilion exemplifies the synergy between structure, art, and nature, fostering a unique experiential engagement for its visitors.

The architectural layout of the Pavilion is characterized by a modular grid composed of walls, columns, and open spaces, effectively dissolving the delineations by separating indoor and outdoor environments. This spatial organization is emblematic of van Eyck’s notion of in-between spaces designed to mediate interactions and promote engagement. The Pavilion does not impose a prescribed path for movement; instead, it invites visitors to navigate the space intuitively, emphasizing participation and discovery. This design strategy enables individuals to interpret and experience the Pavilion in a uniquely personal manner, reinforcing the idea that architectural spaces can evoke diverse

meanings and interactions. Moreover, the pavilion’s materiality and structural composition further accentuate its relational characteristics. The repetitive yet flexible use of concrete walls and columns engenders a rhythmic coherence that harmoniously integrates with the surrounding landscape. Strategic openings within the structure frame vistas of both the exhibited sculptures and the natural environment, thereby blurring the boundaries between art, architecture, and the adjacent parkland. By seamlessly incorporating elements, van Eyck illustrates his commitment to an architectural practice that facilitates dialogue among individuals, artistic expressions, and the broader ecological context.

The Pavilion is a testament to adaptability, echoing van Eyck’s theoretical perspectives on the significance of flexible spatial configurations. Its open design invites a multitude of arrangements for sculptures, allowing for diverse interpretations and interactions with the space. This characteristic transforms the Pavilion into a dynamic and evolving environment, where the visitor experience is continually reshaped. Rather than serving as a mere static exhibition venue, it champions an architectural philosophy that embraces adaptability, challenging the rigid frameworks often associated with modernist paradigms. By doing so, it advocates for a practice that not only accommodates changing needs but also responds to the unique variations of its context, creating a rich tapestry of possibilities for both artists and audiences alike. Furthermore, the Sonsbeek Pavilion is a critical commentary on modernist design’s monolithic tendencies by prioritizing human scale and intimacy. In contrast to the grandiose structures typically associated with modernist exhibitions, the Pavilion is approachable and entwined with its natural setting. This characteristic embodies van Eyck’s perspective that architecture should facilitate relationships rather than dominate the landscape.



Sonsbeek Pavilion (1966)

The pavilion integrally encapsulates Aldo van Eyck's structuralist manifesto by transforming the act of art display into a participatory and relational experience. It challenges conventional paradigms of exhibition spaces by emphasizing interaction, adaptability, and the seamless integration of architecture within its environmental context. Through meticulous design considerations, the Pavilion transcends its role as merely a showcase for sculptures, instead serving as a manifestation of van Eyck's vision for a relational and human-centered architectural practice.

Place and occasion are space and time that have been assimilated into the consciousness, relating to other spaces and times. The in-between space becomes an architectural device that can establish a relation between spaces, promoting a narrative experience of buildings or cities. Van Eyck proposes a heterogeneous space, broken up into corners designated for different occasions, providing an in-between space—places that activate the associative mechanisms of consciousness, not space, but the perception of it. So, Aldo van Eyck, starting from a critique of functionalism for producing a loss in human terms, highlights the potential of this new sensitivity to establish architecture as something valuable beyond its mere function. For Van Eyck, architecture happens inside consciousness, in a time that becomes an occasion when developed in a place, a space that becomes a place in which to build identity. So, the references hidden in his buildings are designed as triggers for association.

Aldo van Eyck's contributions to architectural theory significantly shaped structuralism in architecture during the mid-20th century

and laid a foundation for future architectural ideologies. Structuralism in architecture emerged as a response to modernist abstraction, focusing on the underlying structures of human experience and cultural systems. Van Eyck's theories were instrumental in shaping this movement. His designs demonstrated how built forms could embody and facilitate social patterns, emphasizing the interplay between individual and collective identities.

His ideas flourished particularly in Europe, with a strong presence in the Netherlands, though their global impact was more nuanced. His theories resonated with broader critiques of modernism emerging worldwide, including in the United States, Japan, and the Global South. However, the extent to which his concepts were adopted and adapted varied significantly from region to region. In the U.S., van Eyck's work inspired architects like Louis Kahn and Charles Moore, who explored alternative modernisms. Nonetheless, his emphasis on small-scale, community-centric design often conflicted with the prevailing trend toward monumental and corporate architecture in mid-20th-century America. Van Eyck's relational approach also parallels the Japanese Metabolist movement, which aimed to develop adaptable, human-centered urban environments. Architects such as Kisho Kurokawa and Kenzo Tange engaged with structuralist ideas, interpreting them within the context of Japan's rapid urbanization and technological advancements. Van Eyck's anthropological sensitivity and respect for vernacular traditions influenced local architects in regions like India and Africa. However, economic challenges and varying cultural priorities often led to significant reinterpretations of his ideas.

The extent to which van Eyck's manifesto "worked" for the citizens of Amsterdam depends on perspective. On one hand, his designs enriched urban life, providing spaces that fostered community, creativity, and inclusivity. His playgrounds, in particular, were beloved by generations of children and remain a testament to his commitment to designing for people rather than abstract ideals. These playgrounds were not merely functional spaces for children; they embodied his belief in the interrelation between architecture and human interaction. Van Eyck's designs

were minimal yet profoundly thoughtful, comprising simple geometric structures such as climbing frames, sandpits, and stepping stones. The intent was to foster imaginative play and social interaction without dictating behavior, allowing children to explore and invent their games. Similarly, buildings like the Municipal Orphanage demonstrated how architecture could respond to its users' psychological and social needs.



Amsterdam Playground and Playscapes

On the other hand, the broader adoption of his principles could have been improved. While his playgrounds were initially celebrated, they were only sometimes universally maintained or replicated. Urban development trends in the late 20th century often prioritized economic efficiency and large-scale infrastructure projects over the intimate, human-scale interventions van Eyck advocated. This shift highlights a tension between his idealism and the pragmatic realities of urban governance and development. Moreover, some critics argue that van Eyck's work, while visionary, was constrained by its context. His focus on small-scale, localized interventions may have limited his ability to address systemic issues such as housing shortages and urban inequality. For example, while the playgrounds provided valuable communal spaces, they did not address more profound structural challenges facing postwar Amsterdam, such as the need for affordable housing or the integration of immigrant communities. His work encourages us to think critically about the boundaries of humanist architecture. While the idea of designing for univer-

sal human needs is admirable, it can sometimes miss the wide variety of lived experiences out there. Take van Eyck's designs, for example—they're praised for being inclusive, but they were influenced by a particular cultural and historical moment that might not work for everyone. This makes us wonder how adaptable his ideas really are in different and fast-changing urban settings.

Despite these limitations, van Eyck's theories remain relevant in contemporary architectural discourse. His emphasis on space's relational aspects resonates with current debates on participatory design, sustainability, and the role of public spaces in fostering social cohesion. In an era marked by growing urbanization and environmental challenges, his human-centered approach offers a valuable counterpoint to technocratic and profit-driven models of development. His architectural theory resonates with us and is a cornerstone in today's architectural conversations. His strong focus on human-centered design, relational spaces, and cultural sensitivity speaks volumes, especially when we consider pressing issues such as sustainability, social equity, and urbanism.

When I reflect on sustainability, I appreciate how van Eyck’s innovative approach to adaptable and context-sensitive design anticipated the concerns we face today. His buildings seem to be more than just structures; they blend seamlessly into their environments, creating a sense of harmony that not only supports human well-being but also respects ecological balance.

As for social equity, I’m inspired by van Eyck’s dedication to fostering community connections and inclusivity. This perspective is refreshing compared to the often isolating aspects of modernist and neoliberal architectural trends. His designs remind me of the power that thoughtful architecture holds in bridging social divides and making spaces accessible for everyone. In today’s rapidly urbanizing world, I find van Eyck’s insights into relational space and human interaction incredibly relevant. His vision helps us think about cities that are more than just livable; they should be resilient and capable of adapting to the complexities of modern life. It feels like a call to action for all of us engaged in shaping the built environment.

In conclusion, Aldo van Eyck’s manifesto is framed by the interconnected metaphors of childhood, creativity, and artistic expression. By positioning children and artists at the center of his theoretical framework, van Eyck emphasizes architecture and urbanism’s relational and imaginative qualities. These figures—the child and the artist—symbolize humanity’s creative potential and are practical lenses for understanding how environments can foster community, interaction, and individuality.

Van Eyck viewed children as the epitome of uninhibited creativity and relational engagement. Children’s ability to adapt and interact with their surroundings inspired his architectural focus on flexibility and playfulness. In his playgrounds in post-war Amsterdam, for example, van Eyck designed environments that were not prescriptive but open-ended, allowing children to explore, invent, and reinterpret the space. This framing device of the child underscores van Eyck’s belief that architecture should be adaptable and support dynamic human interactions. The playgrounds became prototypes for his larger urban vision, where the princi-

ples of play, imagination, and human connection informed the design of public spaces and cities.

As another framing device, the artist represents the ideal of creativity and cultural expression within van Eyck’s theory. In his Sonsbeek Pavilion, integrating art, architecture, and nature reflects this framing. The Pavilion was not merely a functional space for exhibiting sculptures but an environment that encouraged interaction between visitors, artwork, and the surrounding landscape. This relational quality mirrors how an artist perceives and creates—not in isolation but through dialogue with the world. By emphasizing the artist’s role, van Eyck situates architecture as a cultural practice deeply embedded in its context and responsive to the needs of its users.

Van Eyck’s writings powerfully critique modernist architecture and call for rethinking the role of design in fostering human connection and cultural identity. By centering his theory on children and their need for imaginative, interactive spaces, he provides a compelling vision of architecture as a mediator of social life. His manifesto challenges architects to embrace complexity, adaptability, and cultural specificity, making it a timeless contribution to architectural theory.

The Child, the City and the Artist

Amsterdam Orphanage

Playgrounds

TEAM 10

The Otterlo Circles

Sonsbeek Pavilion

FORUM



History and Transition of Prison Design in NYC

Architecture and Development of New York City

Individual Work

Columbia GSAPP Spring 2025

Advisor: Andrew Dolkart

Introduction

The design of prisons reveals much more than just practical structure or institutional goals; it reflects changing societal beliefs about justice, punishment, morality, and community. In New York City—a city famous for its mesmerizing skyline and complex urban environment—the history of prison design tells an often-neglected story that traces the city’s evolving relationship with confinement, control, and social exclusion. From the simple Bridewell prison of the 18th century to the large, remote penal colony of Rikers Island, and more recently, to the development of borough-based jails aimed at promoting transparency and reform, the way prisons are built in New York reveals deep-seated views on race, class, social order, and the urban poor.

This paper explores the architectural and ideological changes in prison design and the history of incarceration in New York City over the past few centuries. Rather than focusing on just one prison or facility, the study examines a history of carceral spaces—from the early city jails located in the heart of the city, to the fortress-like prisons of the 19th century that aimed at moral rehabilitation, and extending to the industrial prison complexes of the

20th century that reflect the era of mass incarceration. Finally, it looks at new, 21st-century designs focusing on humane, community-oriented detention. Each type of building is considered within its historical context to understand how design has been used to express and enforce values related to discipline, social deviance, and state power.

This research aims to understand how the built environment of incarceration in New York City has mirrored and shaped legal, political, and cultural transformations. It draws on architectural history, urban studies, and theories of punishment and reform.

Collective History of Incarceration in New York

One of the challenges of researching prison architecture and incarceration lies in the limited accessibility of information. As high-security detention facilities, these institutions impose strict restrictions on architectural plans and operational details to thwart escape attempts and prevent targeted attacks. Such limitations effectively minimize the risks of external coordination with in-

mates, which includes reducing public access, disclosing surveillance specifics, and revealing guard placements and prisoner transport routes. The inherent difficulty in accessing the prison from the outside means that internal affairs often proceed in secrecy, regardless of the circumstances. Even in the face of inhumane occurrences, information typically remains concealed due to the spatial and systemic disconnection from the outside world. Consequently, collective memories serve as a vital resource for investigation, as exploring fragmented narratives and historical accounts through oral traditions can provide a broader understanding of how we perceive prisons, their spaces, cultures, and systems.

The history of incarceration in New York City is not merely a chronology of buildings or criminal codes—it is a mirror of urban society’s deepest anxieties, prejudices, and ideologies about race, labor, order, and the limits of belonging. Across four centuries, the city’s carceral practices evolved alongside the growth of its population and the hardening of its social hierarchies, transforming from colonial punishments into a complex urban system of racialized confinement.

Incarceration in New York has roots in the colonial legal system, where jails were used selectively to discipline the working poor and enslaved Africans. By the early 1700s, New York City had one of the largest enslaved populations in the North, with Black people comprising over 20% of the city’s population. In this context, incarceration served to reinforce social control. Enslaved people were often confined in publicly funded jails before corporal punishment or execution, and the city operated special “Negro jails” or holding cells for enslaved Africans accused of infractions. These early carceral facilities were not institutions for long-term punishment but rather staging grounds for public spectacles of violence, such as whipping, branding, or hanging, particularly after events like the 1741 “Negro Plot” uprising, in which more than 100 Black New Yorkers were arrested, tortured, or executed.

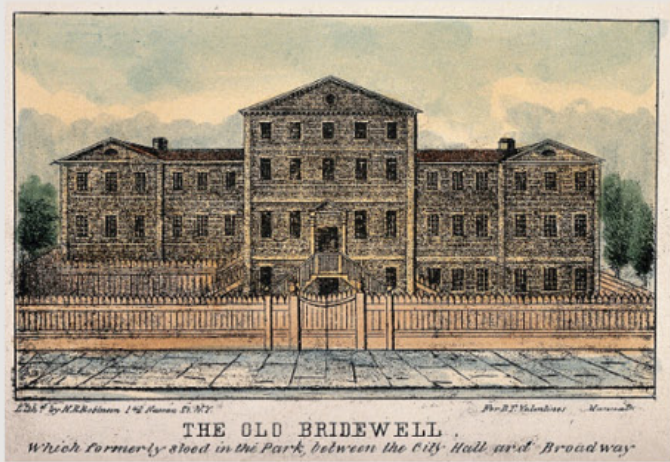
The architecture of incarceration is anything but neutral; it embodies a society’s conception of justice, punishment, and the role

of the “other” within the civic framework. In New York City, a densely populated urban landscape rich in history, the design of prisons reflects an evolving philosophy of punishment shaped by colonial dominion, moral reform, industrial efficiency, and, more recently, the cautious aspirations of rehabilitation and transparency.

As the city grew in the 18th century, its first formal detention facility—the Bridewell Prison (1768)—was constructed in City Hall Park. Intended to detain the poor, vagrants, and “deviants,” the Bridewell reflected a colonial urban strategy that equated poverty with criminality. In those times, confinement was typically short-term and oriented toward public humiliation, corporal punishment, or labor. The Bridewell exemplified this ethos. Built of stone and sparsely equipped, the structure prioritized durability and containment over comfort or reform. Its civic location—directly adjacent to the city’s political center—positioned punishment in full public view, reinforcing incarceration as a moral spectacle. Sanitation was poor, ventilation was minimal, and the building’s open holding areas lacked privacy or classification between different types of detainees. In this sense, the architecture reflected a society that saw imprisonment as a brief, disciplinary interlude rather than a long-term rehabilitative process. During the Revolutionary War, it was used by the British to house American prisoners, many of whom died due to appalling conditions. The building was later replaced by ‘The Tombs’ in 1838, while some of the dressed stone blocks were used to construct The Tombs.



City Hall, site of the “Negro Plot” trials of 1741, The “Negro Plot Trials”: An Account by Douglas O. Linder (2009)



The Old Bridewell, H.R. Robinson / Ratzer map of New York City, 1776, Culture Now

In the 19th century, incarceration in New York began to transform under the influence of moral reform ideologies, particularly those stemming from Quaker and evangelical Christian movements. This new philosophy emphasized solitude and penitence, reflected architecturally in institutions like The Tombs (1838), built in the Egyptian Revival style, symbolizing permanence and authority. This marked a shift toward penal reform, influenced by Enlightenment ideals and the burgeoning penitentiary movement. Architecture became central to this vision, and nowhere is this more vividly illustrated than in The Tombs, officially called the Halls of Justice. Designed in the Egyptian Revival style, The Tombs conveyed a sense of permanence, severity, and civic

grandeur. It was conceived to house both courts and a jail, with solitary confinement cells reflecting the popular Auburn system, which prescribed silence and reflection through spatial isolation.

Despite its imposing façade, ‘The Tombs’ quickly descended into overcrowding and unsanitary conditions. Its foundation, constructed on marshland, resulted in structural instability and damp interiors. While the architecture was intended to symbolize moral order, the experience within its walls was marked by disease, abuse, and disorder. This stark contradiction between aspiration and reality underscores a fundamental tension in carceral design: the desire for rehabilitation contrasted with the systemic neglect that often accompanies incarceration.



The Tombs Building, 1893, Mechanical Curator Collection

In the mid-19th century, New York embraced a new carceral geography: the purposeful isolation of marginalized populations. During this period, new incarceration sites were deliberately built in liminal spaces: Blackwell’s Island (now Roosevelt Island) became home to the city’s main penitentiary, as well as workhouses, asylums, and charity hospitals. This physically isolated prisoners from the city and from the mainland. These locations embodied a geographic strategy of removing undesirable populations from the civic core and displacing them to spatial margins. Urban incarceration was thus embedded in both the architectural and social fabric of the city, shaping perceptions of criminality as tied to poverty, foreignness, and mental illness. Architecturally, the penitentiary on Blackwell’s Island reflected this logic. Facilities featured long corridors and centralized surveillance, influenced by the panopticon ideal, though rarely execut-

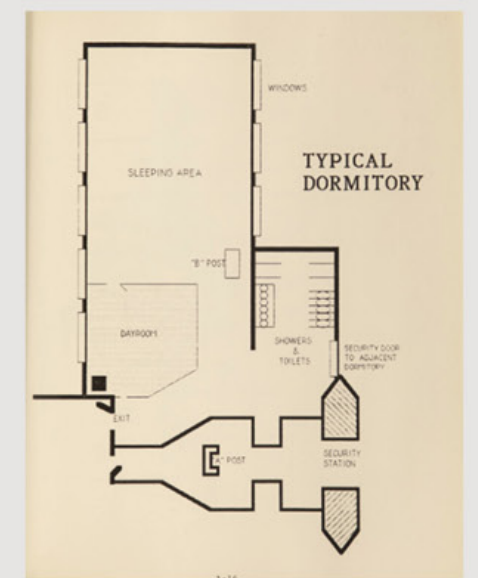
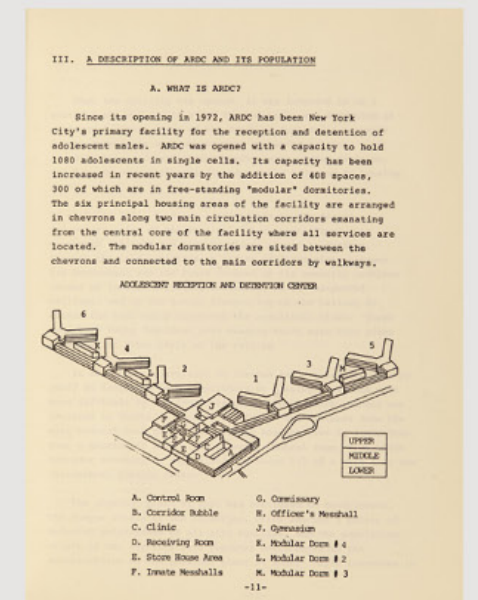
ed to perfection. The cell blocks were regimented, the grounds enclosed, and inmate labor was embedded into the architecture—prisoners quarried the island’s stone and maintained its infrastructure. This integration of labor and confinement mirrored the industrializing economy outside, linking productivity to penance. The institution’s placement outside the city’s visible bounds also meant that abuses were more easily hidden, contributing to a tradition of spatial secrecy that would persist into the 20th century.

The 20th century witnessed a consolidation of incarceration into a technical and administrative process, increasingly removed from public view. The city’s growing population, urban density, and perceived disorder prompted officials to seek scalable, centralized carceral infrastructure. Enter Rikers Island, officially opened in 1932, though acquired by the city decades earlier. Located in the East River, Rikers represented a new model of penal modernism—industrial, isolating, and expansive. The island was gradually expanded through landfill and construction to become the city’s largest jail complex. Its architectural design featured low-rise, warehouse-like buildings that emphasized containment over rehabilitation. The facilities constructed on Rikers—such as the Anna M. Kross Center, Robert N. Davoren Center, and the Otis Bantum Correctional Center—employed linear floor plans, tight surveillance, and restricted communal areas. Natural light was minimized, movement was regulated, and the architectural goal was control, not care.

The island itself, reachable only by a narrow bridge from Queens, was an intentional barrier, separating incarcerated people from the city physically, socially, and symbolically. The introduction of the Vernon C. Bain Correctional Center, a floating jail barge in the 1990s, further illustrates the city’s improvisational and punitive response to rising inmate populations, particularly under policies like the Rockefeller Drug Laws, which imposed harsh sentences for nonviolent drug offenses and disproportionately targeted communities of color.

The rise of Rikers coincided with the era of “broken windows”

policing, in which minor infractions led to incarceration, and pre-trial detention became routine for those unable to pay bail. This resulted in Rikers housing thousands of legally innocent individuals, turning it into both a logistical hub and symbolic epicenter of New York’s carceral state. By the early 21st century, Rikers had become a national symbol of carceral crisis. Investigative journalism, lawsuits, and federal monitor reports exposed widespread abuse, medical neglect, and deaths in custody. The story of Kalief Browder, a teenager held for three years without trial, galvanized public outcry and revealed the profound injustice embedded in New York’s bail and detention systems.



Robert N. Davoren Center and Typical Dormitory of Otis Bantum Correctional Center, A Study of Violence and Its Causes in the New York City Adolescent Reception and Detention Center.

In 2019, following decades of activism, New York City passed a plan to close Rikers Island by 2027 and replace it with a system of smaller, borough-based jails designed to prioritize rehabilitation and proximity to communities. Yet, the decision has sparked debate: some view it as a step toward reform, while others argue it is a rebranding of incarceration, not its abolition. As the city embarks on this new phase, it must confront the deeper historical structures—racial capitalism, spatial segregation, and punitive governance—that have shaped its carceral geography since the 1700s.

From colonial slavery to the age of mass incarceration, New York City’s penal system has evolved through cycles of exclusion, reform, and expansion. Its prisons were never just about law—they were about social control, racial discipline, and spatial governance. Understanding this collective history allows us to critique existing institutions and reimagine a radically different future where the city no longer builds its power through confinement.

Architecture has shaped more than just space—it has shaped lives. Poor ventilation, harsh lighting, and isolation have been shown to increase anxiety, aggression, and mental health deterioration among inmates. Staff working in poorly designed facilities report higher rates of burnout and safety concerns. Conversely, access to natural elements, privacy, and social interaction can reduce disciplinary incidents and support rehabilitation. Design is not merely a secondary aspect of incarceration but integral to it. Throughout history, the floor plans, façades, and locations of jails have significantly influenced the carceral experience. Architecture has served to police and punish, but has sometimes provided a semblance of care.

The architecture and urbanism of New York City’s jails reflect the changing ideologies of punishment and control over the past four centuries. From the public spectacle of the Bridewell to Blackwell’s Island’s panoptic isolation, from Rikers’s bureaucratic expanse to the optimistic glass-and-light designs of the borough-based jails, these structures embody the city’s evolving

approach to incarceration. Grasping their spatial and material histories is crucial for envisioning a future that addresses the need for housing incarceration and fundamentally reevaluates it.

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