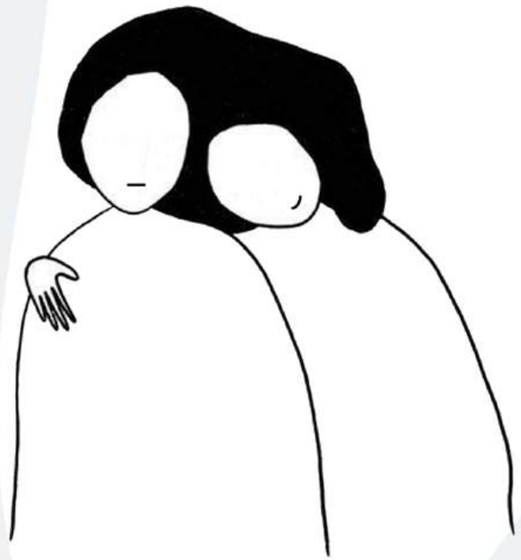


ARCHITECTURE

AS AN ACT OF CARE

" Tracing Soft Thresholds "

Janvi Chandrashekhar Patil Ms AAD 2025 jcp2237

Preface

This portfolio is a quiet journey across ecologies, communities, and inherited spaces—each project a thread woven through the act of paying attention. From the trembling salt marshes of Jamaica Bay to the desert edges of Palmdale, and finally to the intimate corners of my ancestral home, I explore architecture as a medium for care—care for the overlooked, the endangered, the displaced, and the unheard.

In the observatory and floating watchtower, I listened to the rhythms of birds and tides, designing with the urgency of preservation. In reimagining a university campus as housing for the unhoused, I asked how knowledge and shelter might coexist in dignity. And in a home marked by silence and sacrifice, I reconfigured spatial memories to confront the deep-rooted idea that a woman's ambition is selfish.

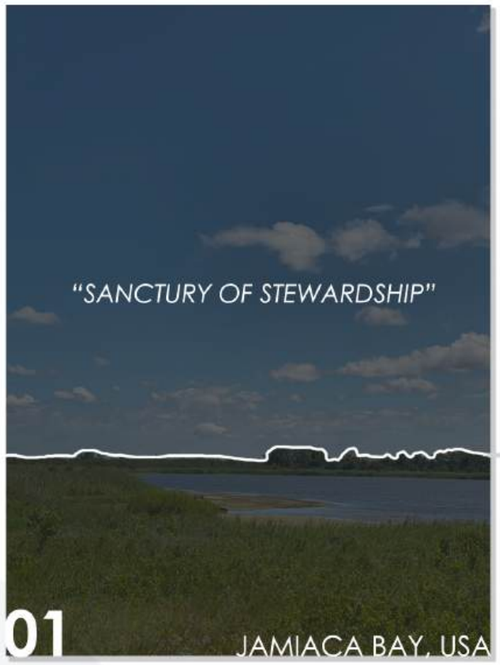
Each project begins in a place of stillness and rupture, where systems ecological, social, familial—have been fractured or forgotten. Yet it is in these thresholds, where things are coming undone or coming together, that I locate design's quiet strength.

These works are less about objects and more about relationships: between land and species, institution and body, self and structure.

Through architecture, I seek to intervene not with noise but with gentle insistence—a belief that small spatial moves can create lasting shifts. This portfolio is not just a record of design, but a reflection on how spaces might heal, witness, and hold.

Contents

Advanced Studios



SUMMER 2024

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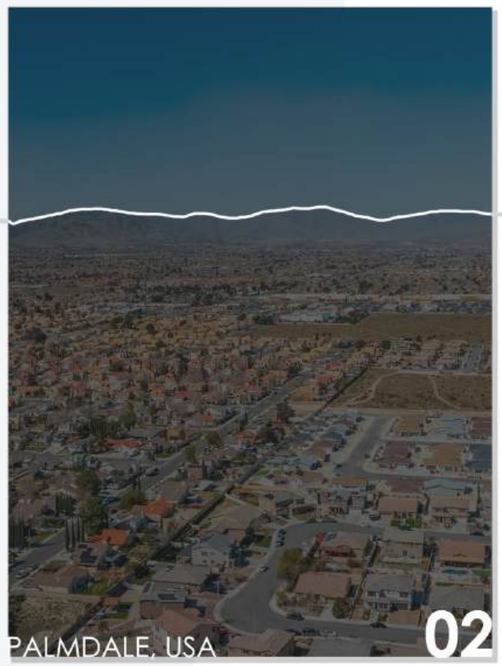

FALL 2024

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Electives

04 BETWEEN THE VISIBLE WORLDS

05 DREDGESCAPING
A SHED OF OPPORTUNITIES

06 THE MIND DEVICE

07 RETHINKING MICRO-LIVING

08 INTERPLAY OF LIGHT

01 *Sanctury Of Stewardship*

The project seeks to create an immersive, educational, and ecologically sensitive architectural intervention within Jamaica Bay—an essential habitat for diverse and endangered bird species.

Through the Bird Tower & Pier, the goal is to raise awareness of the bay's rich biodiversity, encourage community engagement, and foster stewardship toward the fragile salt marsh ecosystem.

Vignettes

Jamaica Bay's Lost Shellfish Industries

In a remarkable effort to revive Jamaica Bay, the Billion Oyster Project and a team of dedicated students have given the city's largest bay a glimmer of hope. By introducing 50,000 oysters, these unsung heroes are harnessing the power of nature to combat years of pollution and overfishing. These tiny creatures, each capable of filtering an impressive 50 gallons of water per day, have the potential to significantly improve the bay's water quality. With the help of recycled toilet porcelain as a unique attachment surface, and the support of government agencies, this innovative project is a testament to the resilience of both nature and the human spirit in the face of environmental challenges.

Restoration of oyesters population and quality of water
Jamaica Bay shores, NYC, USA
2016
https://abc7ny.com/jamaica-bay-oyster-bill-project-new-york-city/1501058/

Changing water conditions

In the once-vibrant waters of Jamaica Bay, a symphony of life now plays a sombre tune. Toxic pollution, depleted oxygen, and clouded waters has silenced the bay's once-thriving ecosystem. Oysters, clams, and crabs, the bay's natural filtration system, have vanished, their absence a haunting reminder of what has been lost. Fish that once swam in abundance have been replaced by hardier, less valuable species, while birds that once feasted on the bay's bounty have fled to more hospitable shores. The ripple effect of this biodiversity loss extends far beyond the water's edge, weakening the ecosystem, diminishing recreational opportunities, and casting a shadow over the local economy.

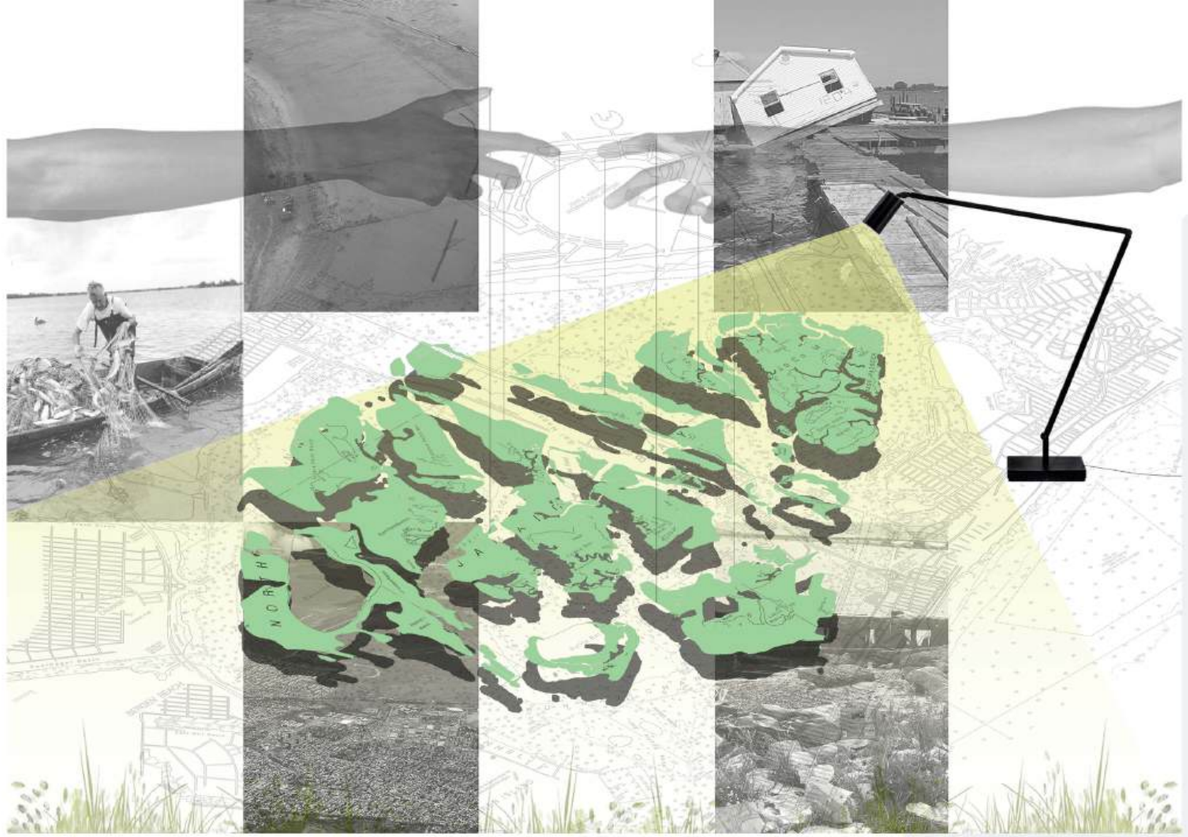
Biodiversity conservation - NYC AUDUBON
Jamaica Bay, USA
https://www.nycaudubon.org/our-work/advocacy/advocacy-accomplishments/protecting-jamaica-bay

Reduced recreational opportunities

Jamaica Bay, a once-thriving oasis of recreation, now finds itself in troubled waters. Pollution has tainted its depths, making it a risky venture for swimmers and kayakers alike. The disappearance of vibrant wet-lands and salt marshes has left fish and wildlife struggling to find a home, casting a shadow over the bay's once-renowned fishing and nature-watching scene. For the local community, the loss of Jamaica Bay as a recreational haven is a bitter pill to swallow. Businesses suffer, and residents find themselves cut off from the natural world that once brought them so much joy. Though efforts to breathe new life into the bay are underway, the road ahead is long and fraught with challenges.

'Jamaica Bay Blight' by Alison Kase
Jamaica Bay, USA
2020
https://www.rockawave.com/articles/jamaica-bay-blight/

STRATEGIES



COLLAGES

Educational Infrastructure

Develop spaces that inform and engage integrating scientific research, public observation, and visitor learning through immersive design.

Modular and Self-Sustaining Systems

The tower functions as a standalone structure or as part of a networked constellation of observatories—designed for flexibility, autonomy, and minimal footprint.

Biophilic and Responsive Materials

Use of stilted bamboo columns, wooden decks, and mesh fabric encourages airflow, visibility, and non-intrusive viewing.

Origami-Inspired Formal Logic

A foldable structural language allows spatial transformation, visibility, and access while metaphorically referencing bird wings in flight.

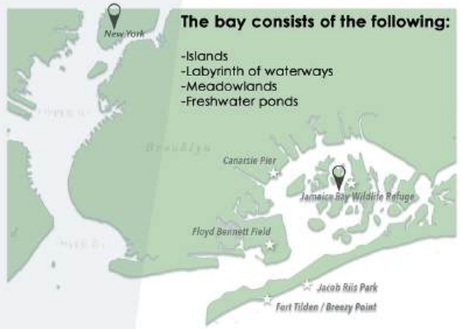
Seasonal and Programmatic Adaptability

During off-peak migratory seasons, the pier transitions into a multi-use space—supporting festivals, education, and quiet reflection.

RESEARCH

Timeline

- 1800s Destruction of the bay's natural ecosystem (Due to industrialization and urbanization)
- 1920s Proposal for a major seaport
- 1940s Continued urban development and pollution
- 1972 The Gateway National Recreation Area
- 1980s Environmental organizations and government agencies Efforts begin
- 1990s The Jamaica Bay Watershed Protection Plan
- 2000s Ongoing marsh restoration projects (Big Egg Marsh Restoration)
- 2012 Hurricane Sandy
- 2020s Continued efforts to protect and restore Jamaica Bay's marshlands

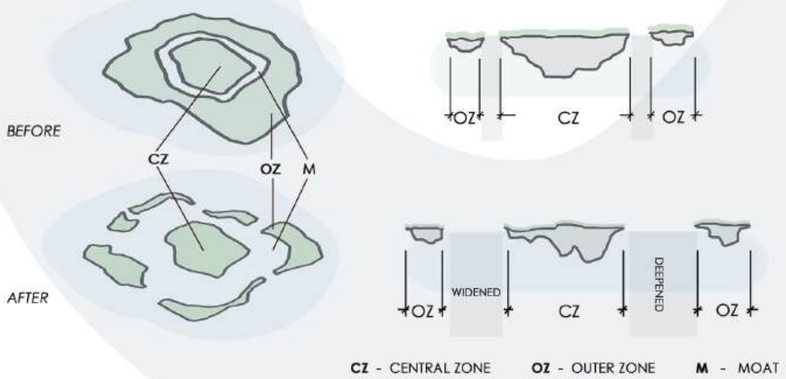


The bay consists of the following:

-Islands
-Labyrinth of waterways
-Meadowlands
-Freshwater ponds

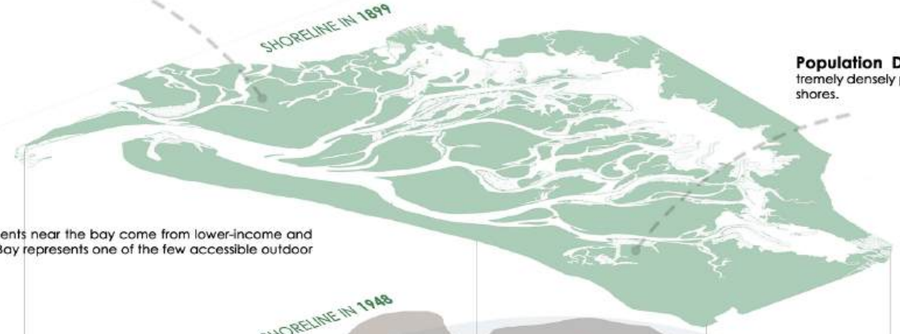
Location and it's Environmental History: Jamaica Bay is located in close proximity to New York City, surrounded by several million people in the boroughs of Brooklyn and Queens, as well as parts of Nassau County. This makes it a unique and valuable natural resource for the major metropolitan area.

The geological and human-influenced history of Jamaica Bay, describes its transformation from a coastal marshland to a partially developed area with marshes in the center and filled land on the outer edges for facilities like airports.



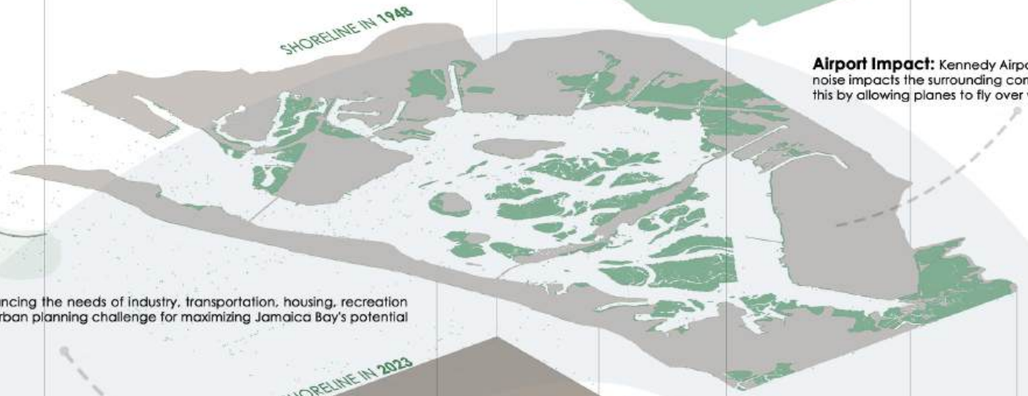
CZ - CENTRAL ZONE **OZ** - OUTER ZONE **M** - MOAT

Ecological Importance: Due to the pollution, Jamaica Bay's waters and marshlands is losing its vital breeding grounds for fish and bird species in the northeastern United States.



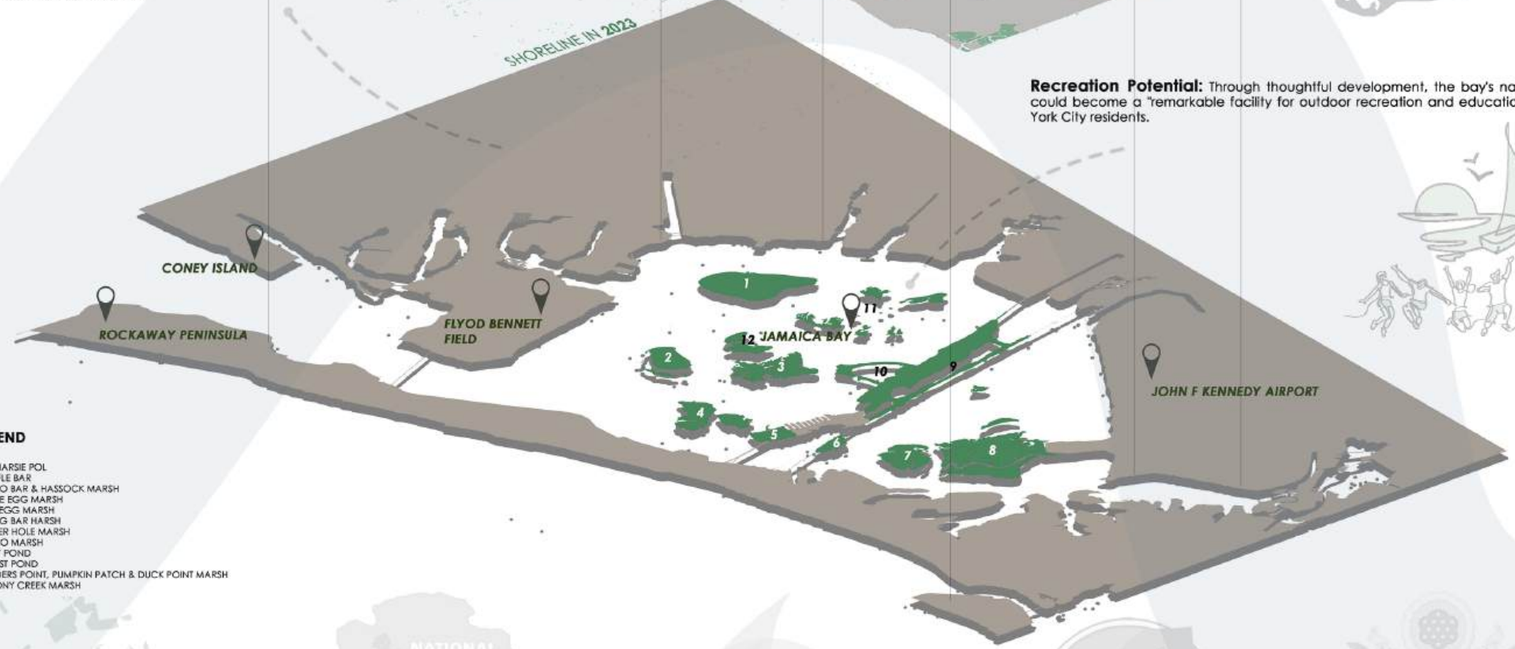
Population Density: The areas immediately surrounding Jamaica Bay are extremely densely populated, with over 2.5 million people living within 5 miles of the bay's shores.

Socioeconomic Factors: Many residents near the bay come from lower-income and minority backgrounds, for whom Jamaica Bay represents one of the few accessible outdoor recreation options nearby.



Airport Impact: Kennedy Airport's location on the northeastern shore means aircraft noise impacts the surrounding communities, but the presence of the bay helps mitigate this by allowing planes to fly over water during takeoffs and landings.

Urban Planning Challenge: Balancing the needs of industry, transportation, housing, recreation and conservation presents a complex urban planning challenge for maximizing Jamaica Bay's potential as a multifaceted resource.



Recreation Potential: Through thoughtful development, the bay's natural areas could become a "remarkable facility for outdoor recreation and education" for New York City residents.

LEGEND

1. CANARSIE POL
2. RUFFLE BAR
3. YELLO BAR & HASSOCK MARSH
4. LITTLE EGG MARSH
5. BIG EGG MARSH
6. LONG BAR HARSH
7. SILVER HOLE MARSH
8. JOCO MARSH
9. EAST POND
10. WEST POND
11. ELDERS POINT, PUMPKIN PATCH & DUCK POINT MARSH
12. STONY CREEK MARSH

Jamaica Bay's pristine beaches and coastlines are safeguarded as a **protected beach unit**, thanks to the **federal Coastal Barrier Resources Act**, which prohibits harmful development and ensures the bay's natural beauty remains untouched.

It includes the Gateway National Recreation Area's **Jamaica Bay Unit**, encompassing the vast Jamaica Bay **Wildlife Refuge**, as well as beloved parks like **Floyd Bennett Field** and **Jacob Riis Park**, all under the caring administration of the **National Park Service**.

Jamaica Bay and its precious wetlands are shielded by a comprehensive network of **federal and state laws**, including the **Clean Water Act, Rivers and Harbors Act, Freshwater Wetlands Act**, and **Tidal Wetlands Act**, ensuring the protection and restoration of these vital habitats and maintaining the bay's water quality for generations to come.

The **New York State Natural Heritage Program** and The **Nature Conservancy** have recognized the exceptional biodiversity of the Jamaica Bay and Breezy Point habitat complex, designating **Breezy Point** as a site of very high biodiversity significance and **Fountain Avenue Landfill** as a site of high biodiversity significance.

Jamaica Bay's land and water are carefully managed by both the **federal government** and the **city of New York**, ensuring responsible **stewardship** for generations to come.

JAMAICA BAY

THE RECREATIONAL RESOURCE

INTERVENTIONS

Location & Context

Situated in Jamaica Bay, a complex estuarine system between Brooklyn and Queens, the site lies within a sensitive ecological zone shaped by migratory routes, marshland
restoration, and human interface.

Site Characteristics

Shallow waters, shifting tides, and soft
sediment layers define the terrain, demanding low-impact and adaptive interventions.

Design Response

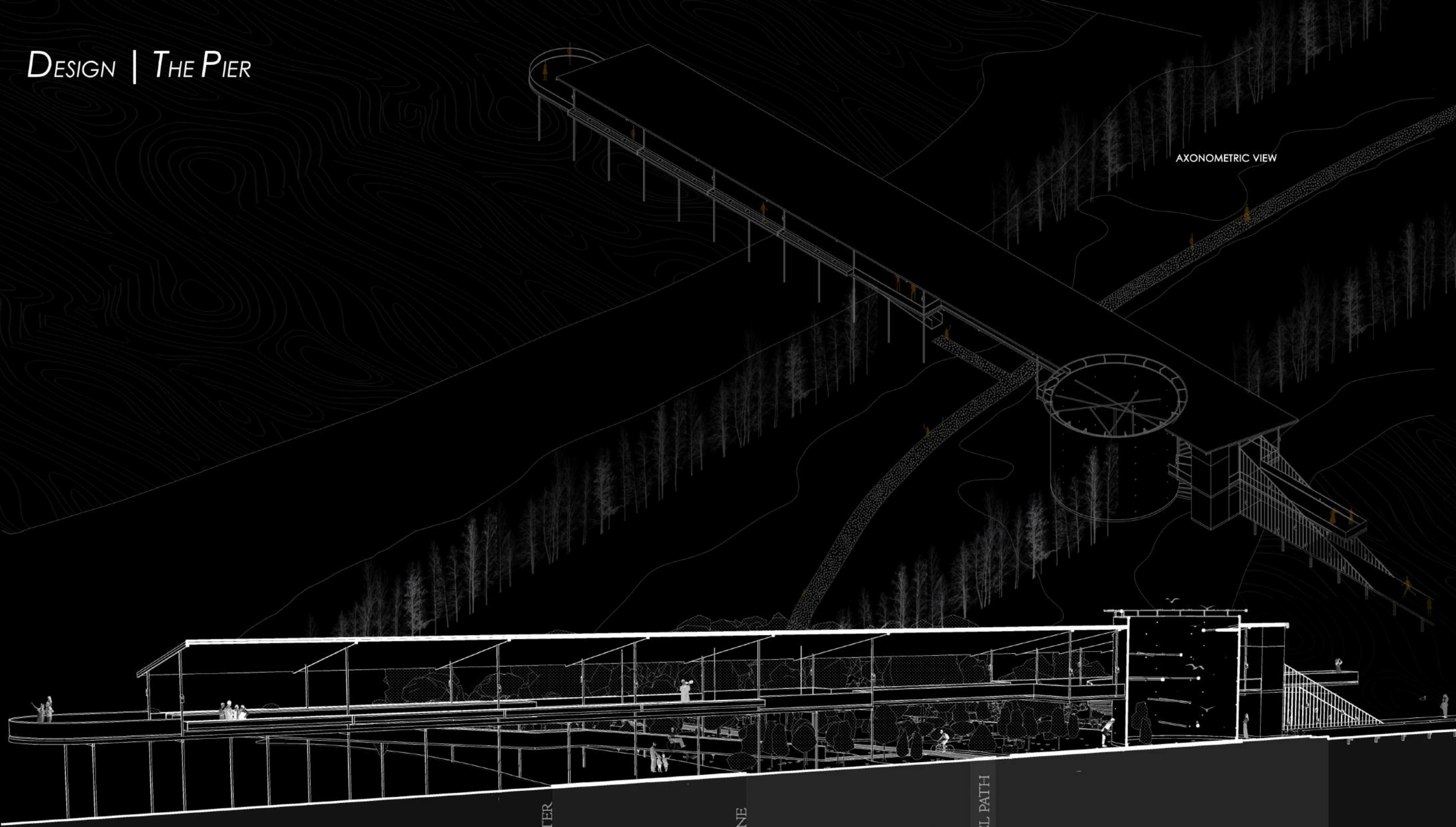
A modular, floating structure unfolds gradually from human access zones toward protected wildlife areas. Its lightweight frame and minimal footprint reduce environmental disruption.

Feasibility

The design's flexibility, seasonal adaptability, and ecological sensitivity allow it to integrate seamlessly into the bay's dynamic ecosystem.

DESIGN | THE PIER

AXONOMETRIC VIEW



AXONOMETRIC VIEW

BRAKISH BAY WATER

BEACH SHORE LINE

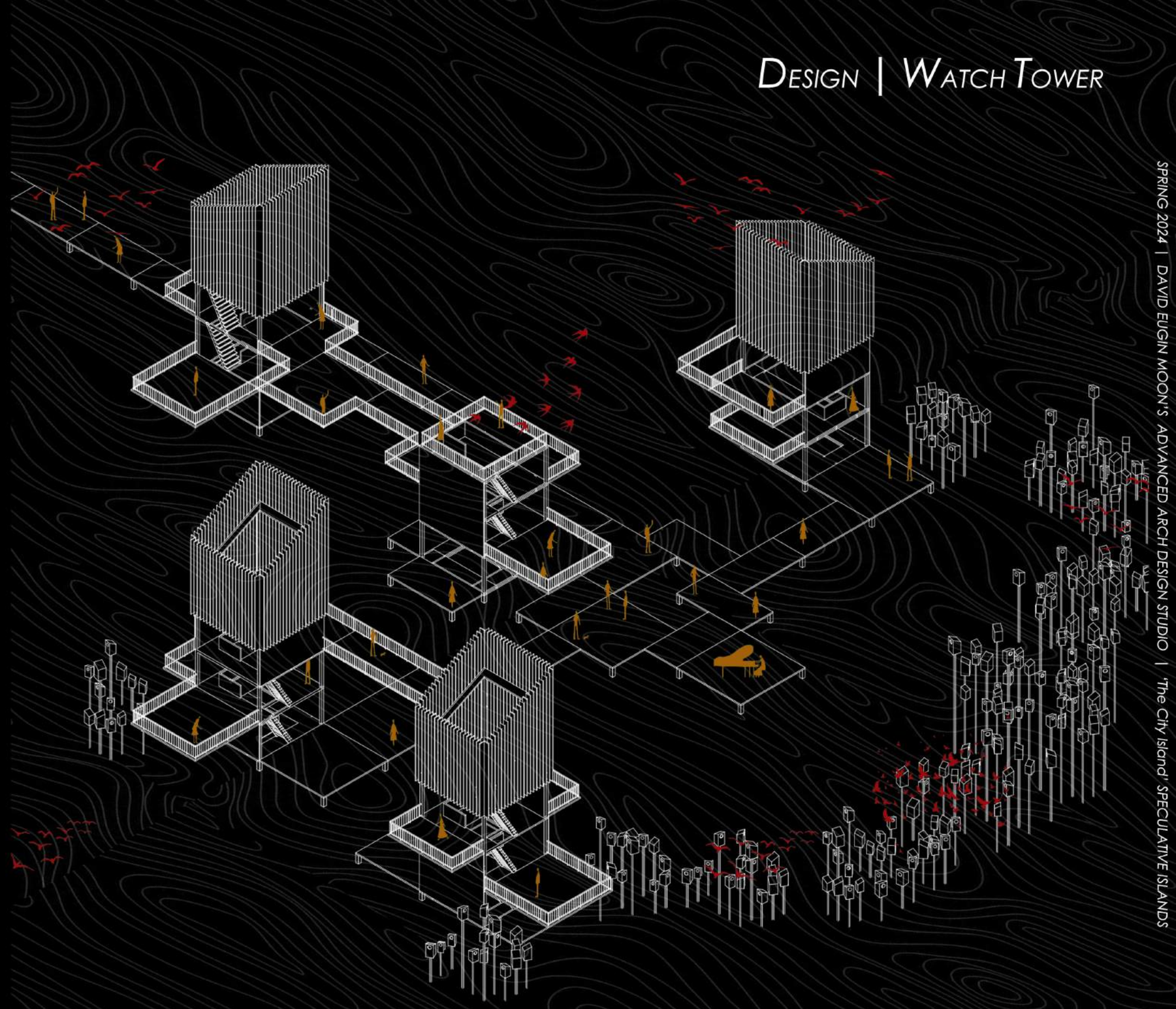
EXISTING GRAVEL PATH

FRESH POND

DESIGN | WATCH TOWER

LEGEND

1 Skylight
2 Bird climbing frame
3 Small bird house
4 Folding platform
5 Big bird house
6 Elevator
7 Buoyancy tank
8 Marine life research lifting platform



AXONOMETRIC VIEW

SPRING 2024 | DAVID EUGIN MOON'S ADVANCED ARCH DESIGN STUDIO | 'The City Island' SPECULATIVE ISLANDS

VIEW FROM THE WATCH TOWER

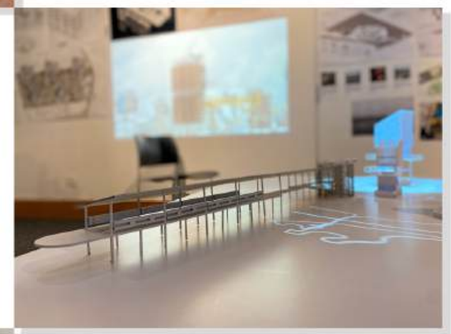
VIEW FROM THE BIRD SANCTUARY

VIEW OF THE WATCH TOWER FROM THE MARSHES

VIEW OF THE PIER

BIRD WATCHING UNITS

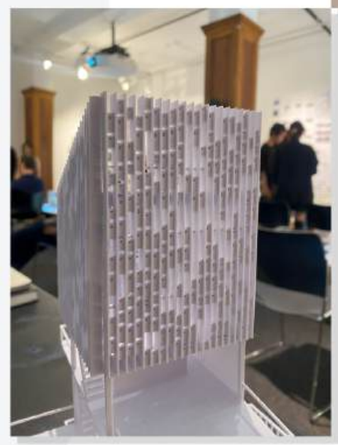
WALKING TRAIL



SUBWAY PATHS

MARSH RESTORATION

JBAY WILDLIFE REFUGE



SITE VISIT

PHYSICAL MODEL

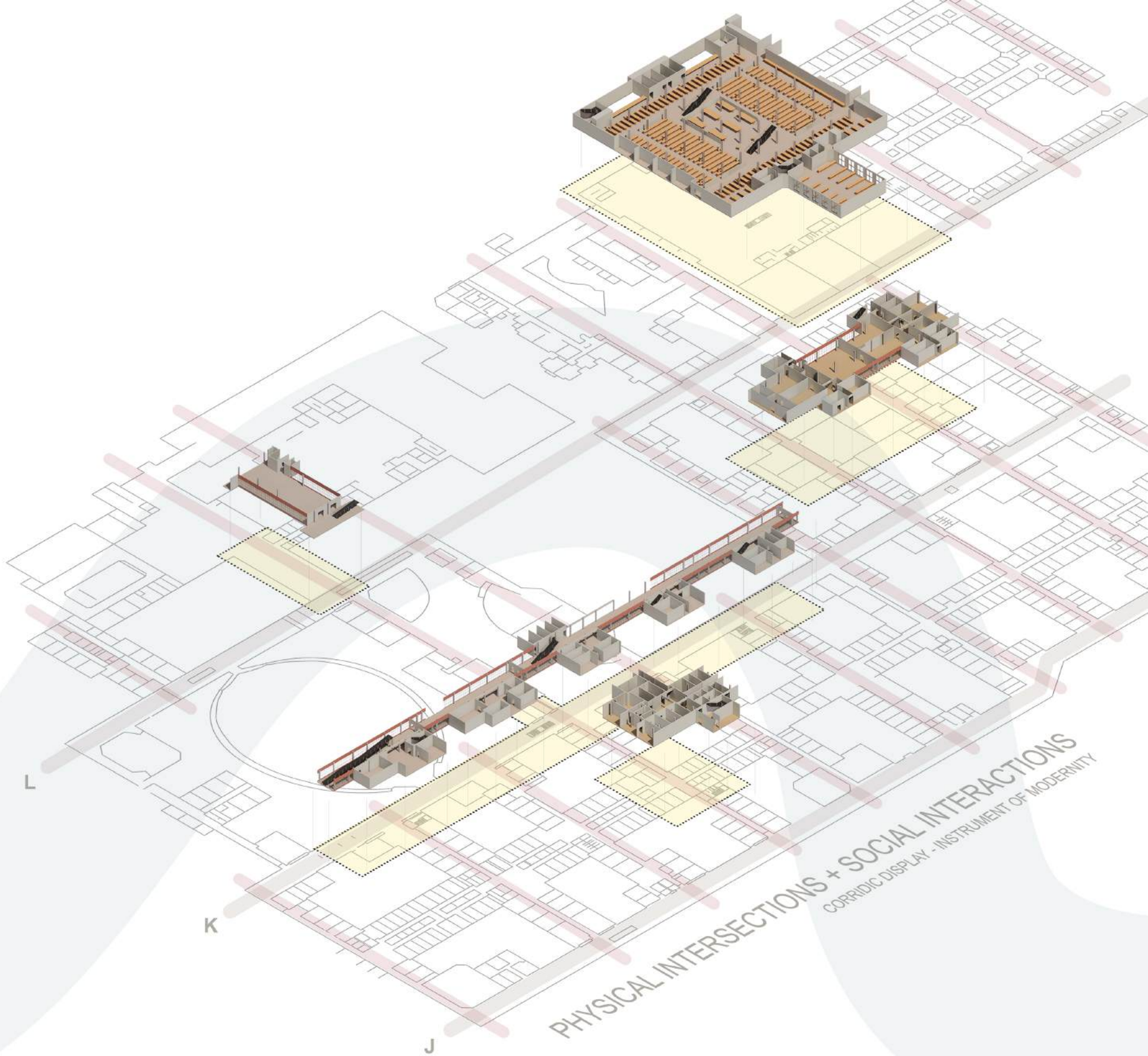
02 *The Connector*

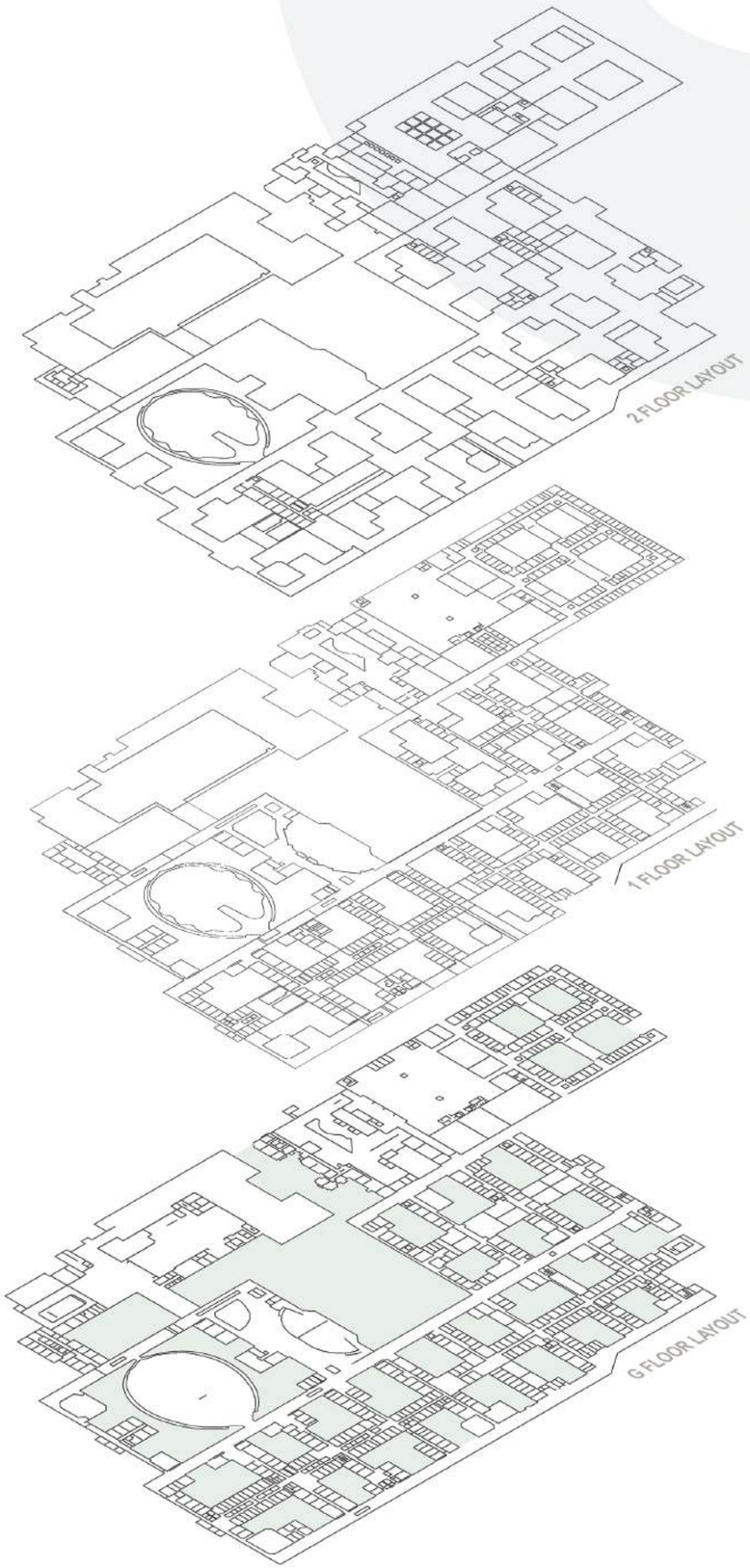
In the face of escalating housing insecurity and homelessness across American cities like LA and NYC, architecture must rise to meet not just the need for shelter, but also for dignity, belonging, and opportunity.

The Connector is a visionary housing community proposed for Palmdale, California — a city experiencing growing housing and social service demands. Designed specifically for low-income and homeless individuals, the project seeks to redefine what temporary and affordable housing can be: a space for recovery, empowerment, and social connection.

By reimagining the architectural DNA of the Free University of Berlin, particularly its mat-building typology and central street concept, The Connector envisions a new kind of urban fabric for vulnerable populations one that prioritizes communal life, personal growth, and integrated support systems within a human-centered, non-hierarchical spatial structure.

FREE UNIVERSITY OF BERLIN, GERMANY





INTERSECTIONS & INTERACTIONS

VISUAL CONNECTIVITY

Long corridors with clear views, enabling people to see and be drawn to areas of activity.

HEIRARCHY OF SPACES

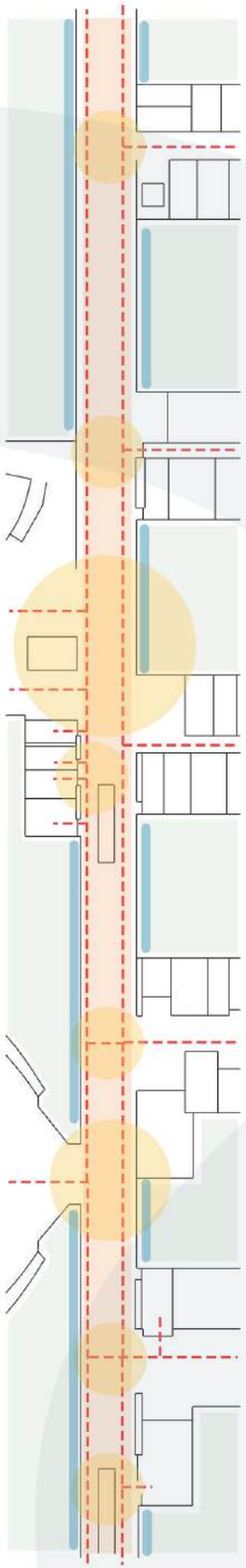
Some intersections are larger, forming major social hubs, while others are smaller, encouraging more intimate interactions.

SPATIAL RHYTHM

Alternating Expansion and Contraction: Corridors widening at intersections create a rhythm of movement and pause, influencing social dynamics.

ADAPTABILITY

The modular nature of the grid allows for spaces to be easily reconfigured. This adaptability supports changing social patterns and evolving academic needs over time.

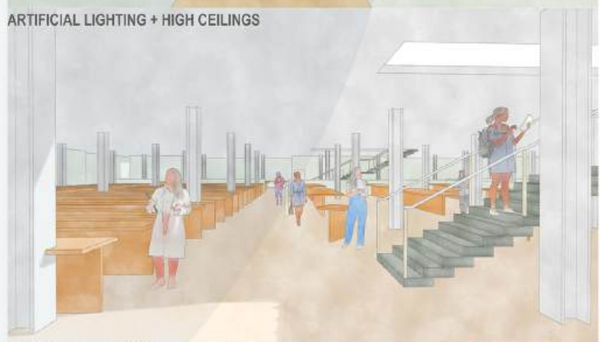


SMOOTH FLOORING - LOW TRAFFIC

TEXTURED FLOORING - HIGH TRAFFIC

INTIMATE + LOW CEILINGS

ARTIFICIAL LIGHTING + HIGH CEILINGS



VISUAL CONNECTIVITY

STRATEGIES

Mat-Building Layout

The housing units and communal functions are organized as interconnected modules across a single horizontal plane, punctuated by open courtyards and central streets. This allows for both physical accessibility and visual permeability, fostering a sense of safety and collective ownership.

Central Streets as Social Spine

Like the Free University's interior streets, The Connector's central axis acts as a linear social space — hosting shared kitchens, therapy rooms, pop-up markets, and workstations, ensuring that community interaction becomes a part of daily routines.

Therapeutic and Empowerment Spaces

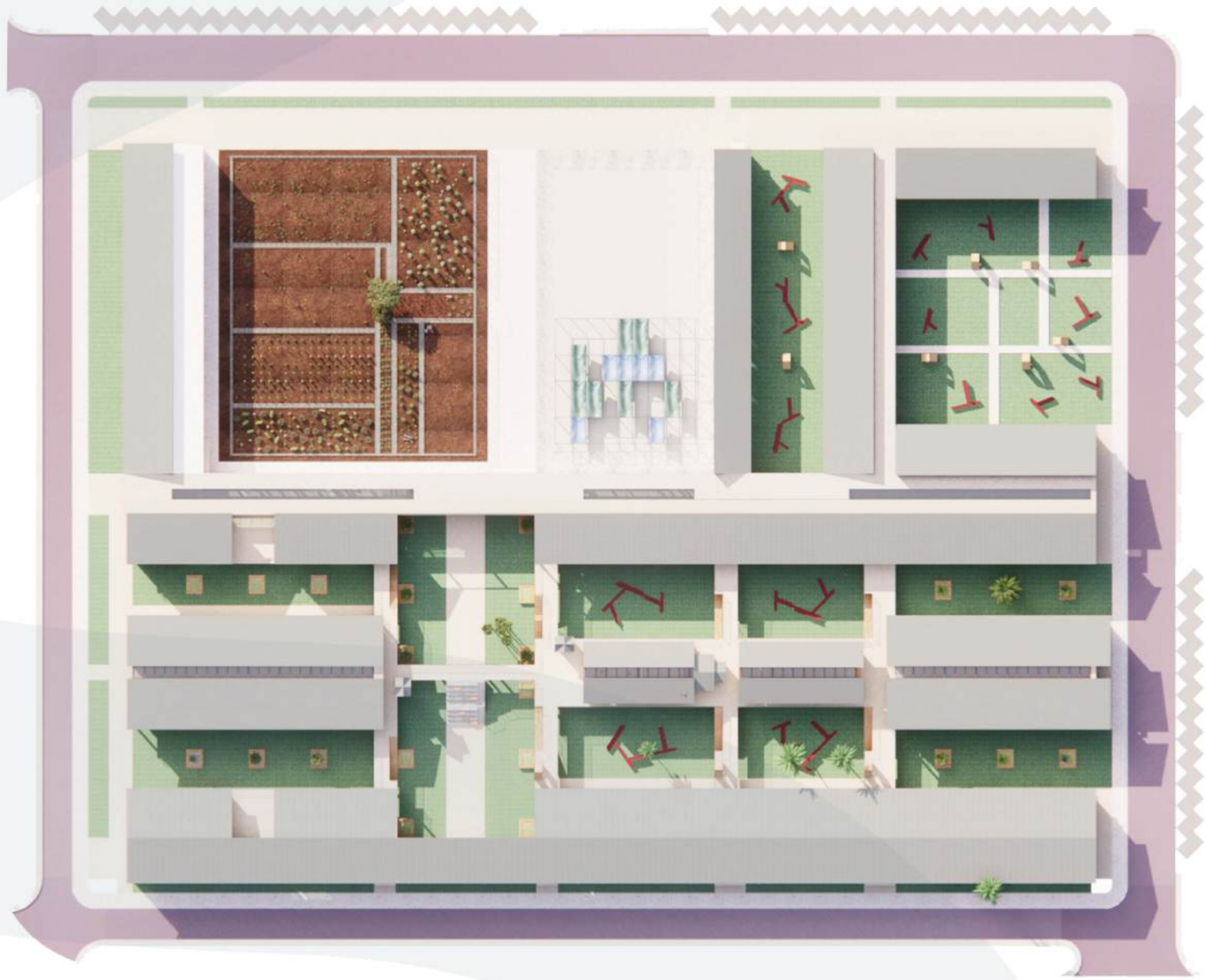
Dedicated areas include therapy rooms for abuse survivors, skill development workspaces (carpentry, sewing, digital literacy), and a sustainable community garden for food security and occupational therapy.

Scalable and Modular Housing Units

Simple, efficient housing modules can be easily added or adapted as community needs evolve. Units are arranged to maintain dignity, privacy, and small-group social connections, avoiding institutional feel.

Landscape Integration

Natural elements like courtyards, native gardens, and shaded pathways are integrated throughout to promote healing, reduce urban heat, and create a biophilic environment conducive to emotional well-being.



THE APPROACH

Rather than a top-down delivery of services, The Connector promotes a participatory, user-centered model:

Incremental Move-In Process

Residents are gradually integrated into the community in small groups, allowing support structures to form naturally.

Resident Governance

A community council model, inspired by collective decision-making systems, allows residents to participate in the management of shared spaces and activities.

Skill-Sharing & Mentorship Programs

Workstations and studios serve as platforms for both professional training and informal, resident-led knowledge exchange.

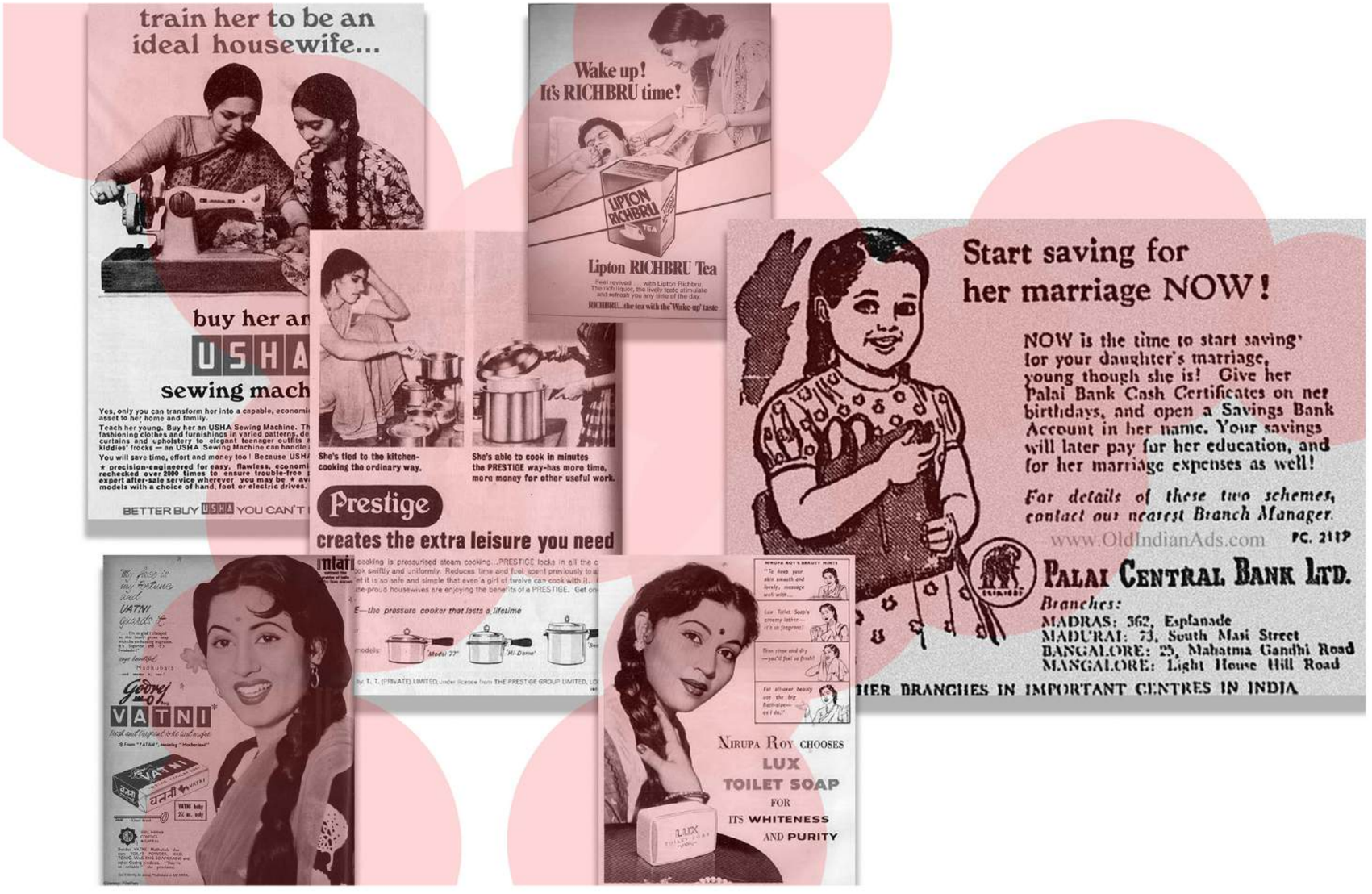
VIEW OF THE WORKSTATION NOOKS

VIEW FROM THE SKILL TRAINING CENTER

VIEW OF THE COMMUNITY GARDEN

VIEW FROM THE THERAPY CENTER

03 AM I BEING SELFISH ?



COLLAGE | *GROWING UP*

"Why do we assume gender with roles?"

This question became the spark behind this deeply personal and architectural journey. Growing up in India, I was constantly exposed to media that reduced women to domestic roles—rarely shown as professionals or individuals with ambitions beyond the home.

Yet within my own family, I witnessed a quiet evolution: my grandmother breaking norms by prioritizing education, my mother's generation gaining career options, and now, mine—empowered to pursue both higher education and a profession.

This intergenerational transition forms the narrative backbone of my project, as I revisited the past to reimagine spatial futures for women.

The project begins with introspection—remembering a childhood toy: a miniature kitchen set.

Once a symbol of conditioned domesticity, it became a metaphor for rethinking space as a site of agency.

I turned to my ancestral home in the village of Muttagi, Karnataka—both a physical and symbolic landscape of memory and transformation.

Family interviews and material studies shaped the design process. The goal: to reinterpret traditional architecture with spatial intentions that reflect freedom, visibility, and collective participation.

APPROACH

The image "Everything evolved but she remained still" captures the emotional and visual core of this approach: the juxtaposition of past and present domestic environments, with the woman as the central, unchanged figure.

While technologies, aesthetics, and materials have evolved, the expected role of the woman in the kitchen remains hauntingly static.

By revisiting memories—personal and collectivel began to unravel the visual culture that shaped my early understanding of womanhood: magazine ads, film scenes, and the everyday images of women framed as caretakers, cooks, and background figures.

These portrayals were often affectionate but limiting, romanticized but reductive.

COLLAGE | EVERYTHING EVOLVED BUT SHE REMAINED STILL

Revisiting Memories

Revisiting Memories

Revisiting Memories

Revisiting Memories

'Tell them to gather at the courtyard after the meal.'

'I don't want my daughters getting too comfortable with city life. The village needs them, not the world outside.'

'There's no need for a woman to leave the village. Everything she needs is right here in her husbands home.'

'She should learn how to mind a house before minding office papers.'

'The headmaster said she's clever with numbers.'

'The elders will sit in the main room later. Everything must be in order.'

'Lets call for a pachayat meeting in the evening.'

'We'll sit with the elders after the meal and settle it properly.'

'it wouldve been nice to live beyond these 4 walls.'

'I've spoken to her father about the marriage.'

'What does she need all that schooling for? She'll still marry one day.'

'Tomorrow, we'll need to decorate the house for the festival.'

'The village depends on us. If we falter, the others will follow.'

'The roof by the back needs fixing before the rains come.'

'Need to cook soemthing quick.'

'Tell them to gather at the courtyard after the meal.'

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'The village depends on us. If we falter, the others will follow.'

'The roof by the back needs fixing before the rains come.'

'Need to cook soemthing quick.'

"Finally, a good meal cooked by my uncle !"

"So tiring after a long day in the market"

"And I'll talk to the bank manager about the loan for the tractor."

"This year's harvest money half to temple repairs, half for fixing the kitchen roof."

"So, if you add them together you'll get the sum of them."

"Do you want some more?"

"Don't forget to add the masala, it'll taste better."

"The rotis are almost done, can you bring the curry?"

"Did you check if the dal is cooked properly?"

"I've finished sweeping this area."

"Are these banana leaves for lenough for lunch?"

"I've started writing the expenses myself."

"Yeah, no need to wait for uncle to check the books."

"Can't wait for the brinjals to grow."

"Store the harvest more carefully this year !"

"Yes, will do it".

"Has anyone seen my textbook?"

"Could you ask your uncles to give me a list of groceries he needs, I'll add them to the budget."

"Sure Aunty !"

"This year the village needs two more warehouses for storing seeds."

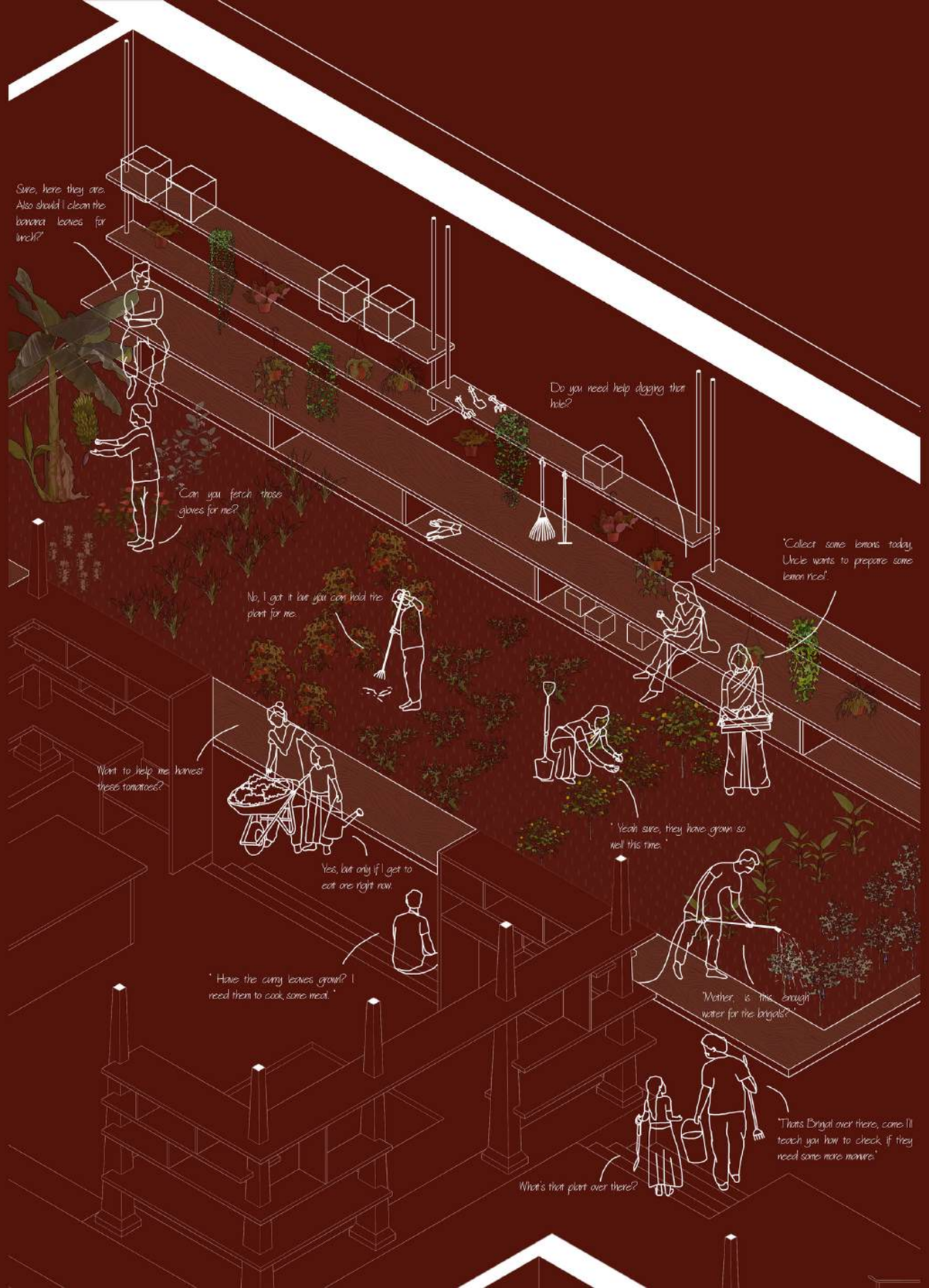
"Mother, am I doing this right?"

"Sure, also I need some help in distributing these books to the children in the village."

"Can you pass the sewing machine from the shelf please, I need to complete the clothes order."

"I've made some tea for all of you! please have them."

"Ugh, these boxes are quite heavy !"


Sure, here they are. Also should I clean the banana leaves for lunch?"
"Can you fetch those gloves for me?
Do you need help digging that hole?
No, I got it but you can hold the plant for me.
"Collect some lemons today, Uncle wants to prepare some lemon rice!".
Want to help me harvest these tomatoes?
Yes, but only if I get to eat one right now.
" Yeah sure, they have grown so well this time. "
" Have the curry leaves grown? I need them to cook some meat. "
"Mother, is this enough water for the brinjals?"
"Thats Brinjal over there, come I'll teach you how to check if they need some more manure."
What's that plant over there?

04 *Between The Visible Worlds*

In the ever-evolving landscape of contemporary design and architecture, an interesting yet notable dichotomy has emerged. On the one hand, we see a growing recognition of the intricate, often unseen microbial world through *'We Are Soil'* by *Orkan Telhan + elii* making us wonder how can site-specific bio-art installations in urban green spaces catalyse public discourse on the ecological significance of microbial communities, and to what extent can such artistic interventions shift paradigms in urban ecology and environmental stewardship?

On the other, there's a push towards creating spaces of unparalleled comfort through the invisible action of architecture in the film *'Hypercomfort'* by *Stephanie Bru* & *Alexandre Theriot* that gets us thinking how does the tension between aesthetic design and hidden mechanical systems in architecture challenge our understanding of spatial well-being? this essay examines two distinct projects that exemplify these approaches.

In the former project, spearheaded by an innovative team of artist-scientist, delves into the realm of urban microbial ecology. This work challenges our anthropocentric view of cities, inviting us to consider the vast, invisible ecosystem that thrives beneath our feet. As Uriel Fogue director at Elii mentioned in the presentation 'Sexy Apocalypse: Embracing The End', ''A body of bodies'' by bringing attention to the crucial role of microbes in soil health, nutrient cycling, and even climate regulation, the project underscores the need for a more holistic approach to urban planning and development. 'Microbial fruits of Istanbul' installation displays microbial cultures collected from various gardens in Istanbul, dating back over 1,500 years. It aims to develop an "oral-culture" by distributing a fermentation kit that allows visitors to create and experience place-specific microbial fruits, learning about the heritage of Istanbul's gardens in relation to ecological and socio-political realities. A robotic speaking parrot delivers the histories of these microbial fruits, inviting visitors to consume and engage with the place-based narratives shaped by climate change. However, the path from artistic intervention to practical application is not without its hurdles.

In contrast, the latter architectural duo Bru and Theriot explore the concept of "hyper-comfort" in their work. Their approach prioritizes invisible technological systems that regulate environmental factors such as temperature, acoustics, and lighting. According to them not showing it or minimally shown mechanical services/ systems is 'almost shameful part of architecture' and this leads it to have a double edge gesture where one is to admit even a basic mechanical unit has its own beauty and the other being a social gesture to no longer hiding elements which is an ecological one too. The goal is to create spaces that optimize human comfort and well-being, potentially enhancing productivity and reducing stress. The economic implications of this pursuit of hyper-comfort are substantial. Advancements in comfort technologies could drive innovation and create new markets. However, this approach raises important questions about the nature of architectural design. In our quest for perfect environmental control, do we risk creating spaces that are visually and tactilely monotonous? How do we balance technological sophistication with the human need for sensory stimulation and aesthetic pleasure?

Both projects, despite their different focuses, share a common thread: they seek to illuminate aspects of our environment that often go unnoticed or underappreciated.

The former, employs various artistic interventions to make the invisible visible. These include interactive installations, public art projects, or educational programs that combine scientific data with creative expression. The goal is to foster a sense of wonder and curiosity about the

unseen world, encouraging people to see their urban environments as complex, living ecosystems. Future research could focus on developing metrics to evaluate the long-term impact of such projects on community engagement and environmental awareness.

But Bru and Theriot's hyper-comfort approach, on the other hand, relies heavily on advanced technologies. Smart sensors, building automation systems, and innovative materials to create environments that adapt to human needs. The empirical basis for this work draws from research in human physiology, psychology, and ergonomics.

However, the subjective nature of comfort presents a significant challenge. What constitutes "true comfort" may vary widely among individuals and cultures. How do invisible comfort systems interact with visible design elements? What are the psychological effects of spending extended periods in hyper-controlled environments?

Considering these two approaches, they represent different facets of a broader conversation about our relationship with the environment. The 'We are soil' project encourages us to expand our perspective and to see ourselves as part of a vast, interconnected ecosystem. Bru and Theriot's work, in contrast, focuses inward on the human experience within built spaces. By prioritizing comfort and well-being, they raise important questions about the purpose of architecture. Is the ultimate goal to create spaces that are perfectly attuned to our physical needs? Or is there value in the imperfect, in spaces that challenge and stimulate us?

In 'We are soil' project could lead to more sustainable urban planning practices, with green spaces designed not just for human recreation but also to support diverse microbial communities. The hyper-comfort approach, if widely adopted, could revolutionize how we think about indoor environments. Workplaces, homes, and public spaces could become more adaptable and responsive to individual needs. This could lead to improvements in productivity, mental health, and overall quality of life. However, we must be cautious about potential unintended consequences, such as increased energy consumption or a disconnection from natural environmental cues.

In conclusion, these projects represent two distinct yet complementary approaches to enhancing our understanding and experience of the built environment. By exploring both the visible and invisible aspects of our world, they offer valuable insights into the challenges and opportunities of creating sustainable spaces.

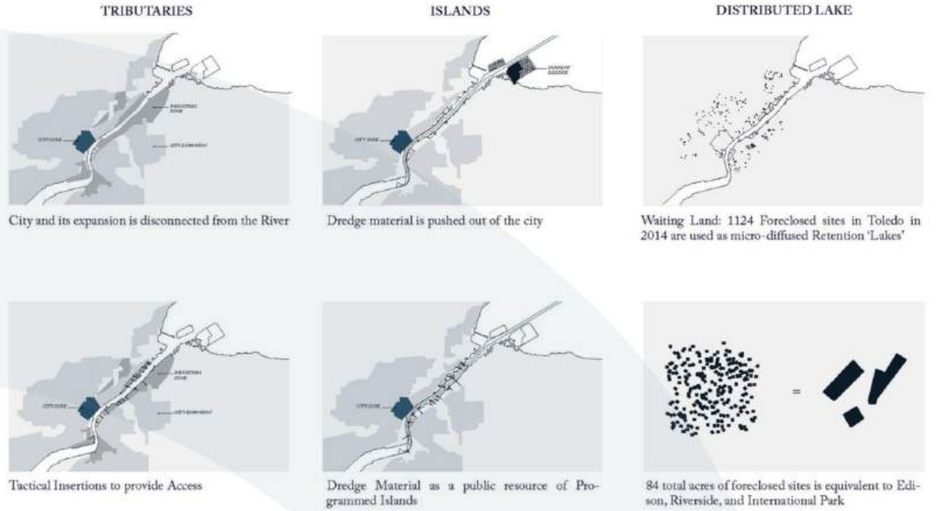
As we move forward, the key lies in finding a balance. How can we as architects create environments that respect and nurture the invisible microbial world while also providing for human comfort and well-being? These are the questions that will shape the future of design and architecture, as we strive to create built environments that are truly in harmony with both human needs and the broader ecosystem.

05 *Dredgescaping: A Shed Of Opportunities*

Dredgescaping Toledo is an innovative urban design project in 2014 that reimagines sediment management in the Erie River. The project transforms dredged material into a dynamic landscape that creates new public spaces and ecological habitats. Developed by The Open Workshop design team presents a multifaceted approach to urban water management in Toledo, Ohio.

Toledo's environmental history is deeply intertwined with its watershed. The Great Black Swamp, a vast wetland that once covered much of Northwest Ohio, was drained in the 19th century for agriculture and development. This dramatic landscape alteration, combined with industrial growth, led to significant environmental challenges, including water pollution and habitat loss in the Maumee River and Lake Erie.

The proposal introduces a Soft Shed System that integrates the entire drainage area that affects the river Erie, area dedicated to manage dredged material, the public space & infrastructure into a flexible, resilient system using tributaries, islands, and lakes. This system manages waterfront access and dredge material through various innovative methods:



1. Creation of Islands by using Geotube Pontoons – it involves filling large geotextile tubes with dredged sediment. Once dewatered, these sediment-filled tubes become the foundation for new landforms in the lake.
2. Public Platforms – The islands created from dredged material suggesting repurposed sediment is being used to create walkways, viewing areas, or recreational spaces directly on the lake.

Urban water management is addressed by transforming foreclosed properties into water retention sites to reduce sewer system pressure, and larger areas are used for phytoremediation of stormwater and dredge material.

The project operates across multiple scales. At the microbial scale, the dredged material serves as a substrate that is rich in organic matter where it's physical and chemical properties of the sediment (such as particle size, porosity, and nutrient content) create microhabitats that support diverse microbial populations. These microorganisms play crucial roles in nutrient cycling, contaminant degradation, and soil formation, contributing to the overall health of the newly created ecosystems. The project harnesses these microbial processes to enhance phytoremediation efforts and improve water quality.

At the local scale, the project focuses on repurposing dredge material for habitat creation in Toledo, creating jobs in dredge material processing and new recreational areas, and reconnecting Toledo residents with their waterfront.

On a regional scale, the project aims to improve water quality in Lake Erie, addressing issues like harmful algal blooms that have plagued the western basin. It also seeks to boost Great Lakes shipping and tourism and change perceptions of industrial landscapes in the Rust Belt.

Globally, it serves as a model for sustainable port management and ecosystem restoration, redefining the relationship between cities and their waste materials.

In conclusion, Dredgescaping Toledo represents a forward-thinking approach to urban water management that operates across multiple scales, from microbial to global.

06 *The Mind Device*

HABIT

Gratitude Journaling:

Spend 15-20 minutes each day before bedtime writing down three things I'm grateful for.

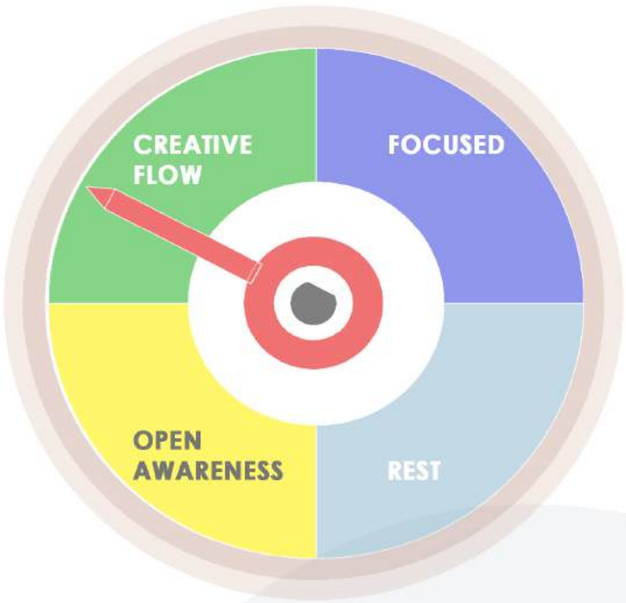
ATTTENTIONAL ARTIFACT INFORMED BY THE PRACTICE

Central Dial: A touch-sensitive interface with different "positions" representing states like Focused, Open Awareness, Rest, and Creative Flow.

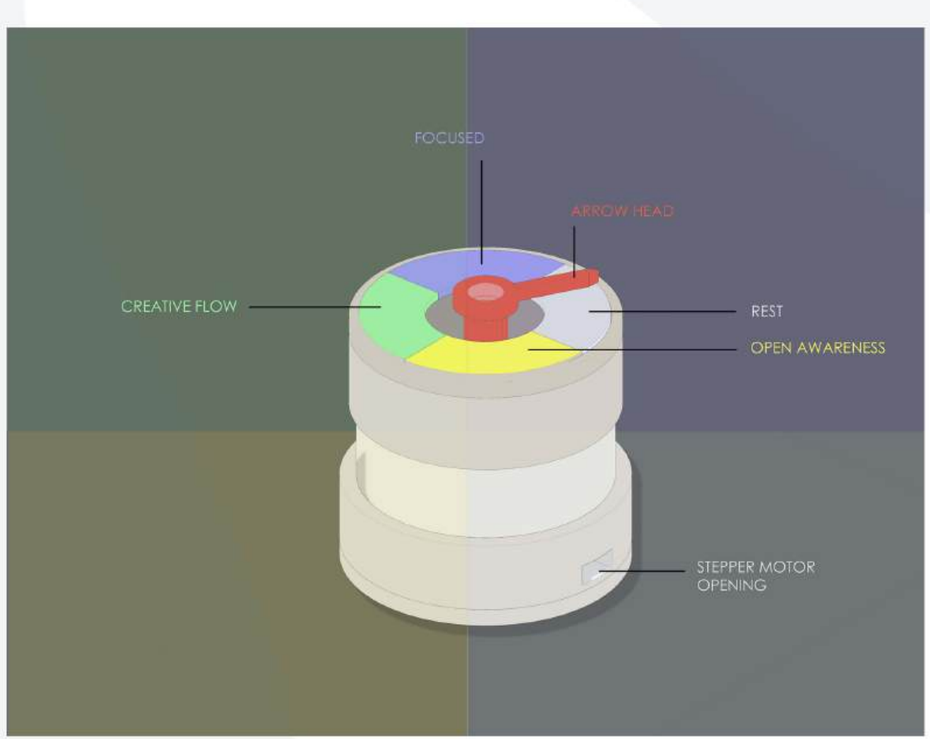
Precise control via a stepper motor that allows the dial to be positioned in small, incremental steps.

Haptic feedback from the motor to provide tactile response as the user interacts with the dial.

Ambient components like lighting, sound, and scent diffusion that are synced to the dial's position to support the corresponding attentional state.



ATTENTIONAL DIAL PROTOTYPE



Precise Control:

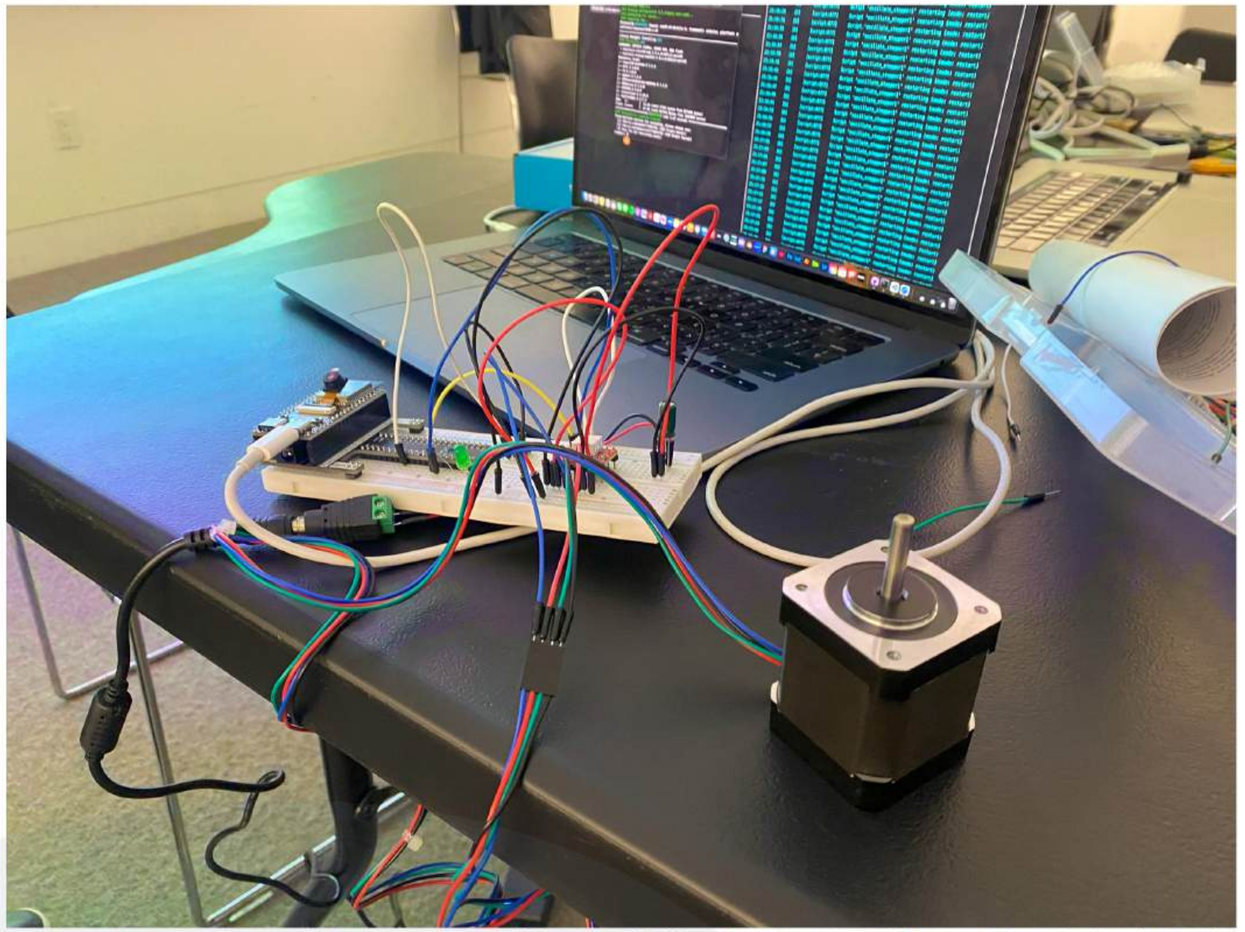
This integration of light as the main sensory element can help users enter a state of flow and enhance their overall journaling experience. By using customizable lighting, users can create a personalized environment that best suits their needs and preferences.

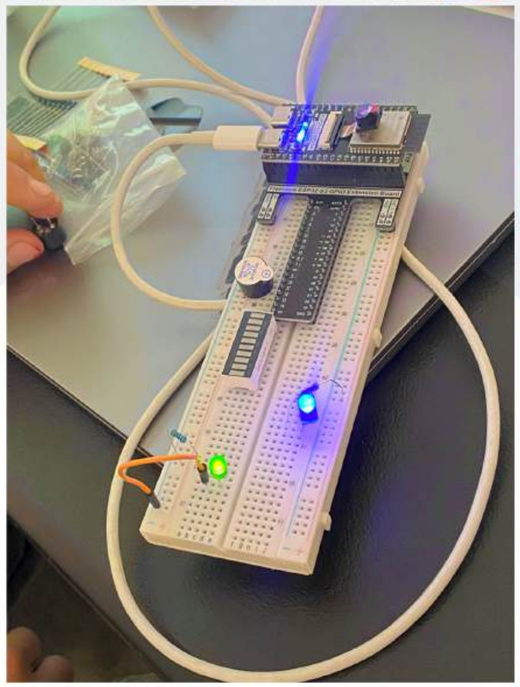
Haptic Feedback:

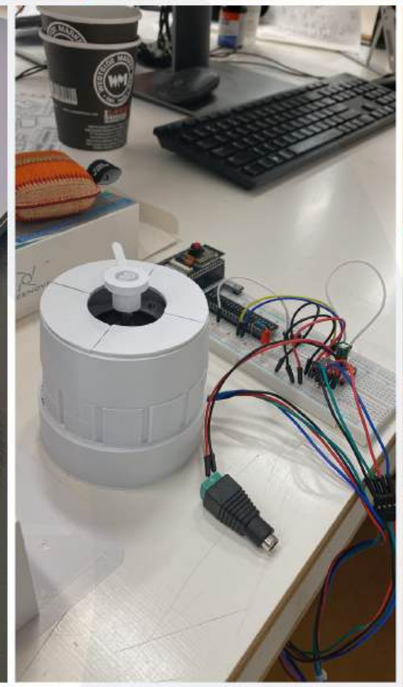
One of the key features of using a stepper motor is the ability to provide tactile feedback to the user.
The motor can be programmed to offer varying levels of resistance as the user turns the dial.

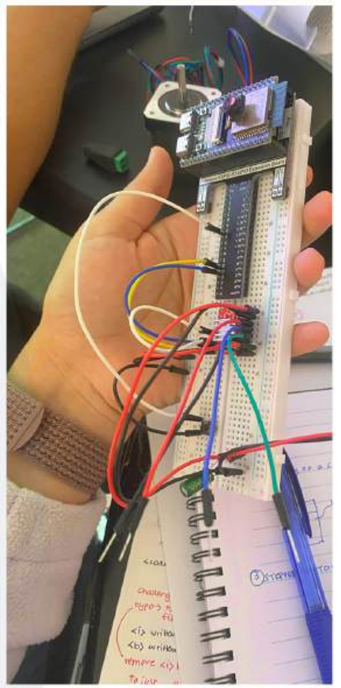
DEVICE CONTROL INTERFACE [CODE]

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Stepper Control</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            text-align: center;
            margin-top: 50px;
        }
        button {
            padding: 10px 20px;
            font-size: 18px;
            margin: 10px;
            cursor: pointer;
        }
        h1 {
            color: #333;
        }
        .status {
            margin-top: 20px;
            font-size: 20px;
            color: green;
        }
    </style>
</head>
<body>

    <h1>THE MIND DIAL</h1>
    <h3>CONTROL YOUR MIND BY CONTROLLING YOUR ATTENTION</h3>
    <div>
        <button onclick="controlStepper(1)">HIGH FOCUS</button>
        <button onclick="controlStepper(2)">OPEN AWARENESS</button>
        <button onclick="controlStepper(3)">CREATIVE FLOW</button>
        <button onclick="controlStepper(4)">REST</button>
    </div>

    <div class="status" id="status"></div>

    <script>
        const baseURL = "http://10.206.80.19"; // Replace with your Arduino IP address

        function controlStepper(state) {
            fetch(`${baseURL}/MINDDIAL?state=${state}`, {
                method: 'GET',
                headers: {
                    'Accept': 'text/plain',
                }
            })
            .then(response => {
                if (response.ok) {
                    return response.text();
                } else {
                    throw new Error('Failed to communicate with Arduino');
                }
            })
            .then(data => {
                document.getElementById("status").innerText = data;
            })
            .catch(error => {
                document.getElementById("status").innerText = "Error connecting to Arduino.";
                console.error('Error:', error);
            });
        }
    </script>

</body>
</html>
```









07 *Rethinking Micro Living*

INTRODUCTION

Urban dwellers face limited space & inefficient layouts.

Climate control in small apartments relies too heavily on energy-consuming HVAC systems.

Static furniture arrangements don't maximize comfort or adaptability.

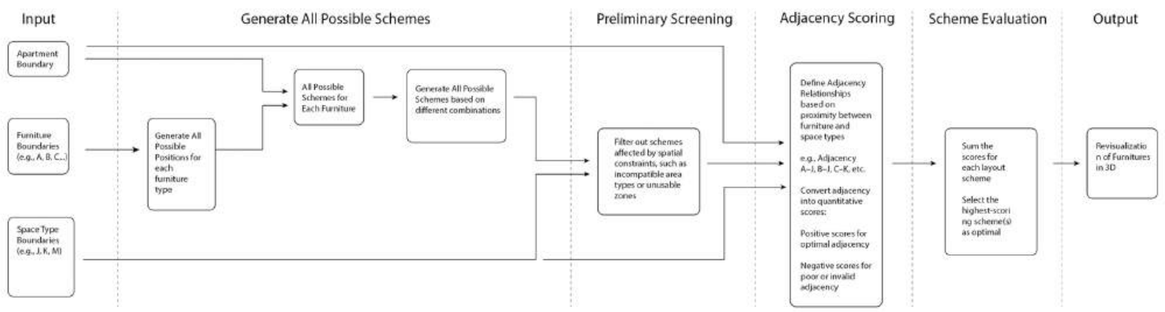
Non-architect users struggle to design their own spaces effectively.

People often receive empty apartments and don't know how to arrange furniture efficiently.

Describing layout needs in words is easier than using complex design software.

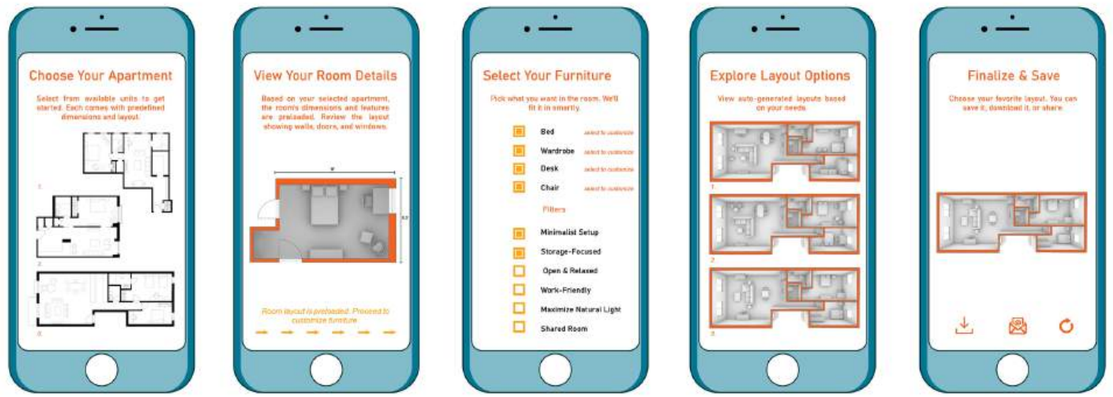
Current solutions require either professional help or manual design skills, limiting accessibility.

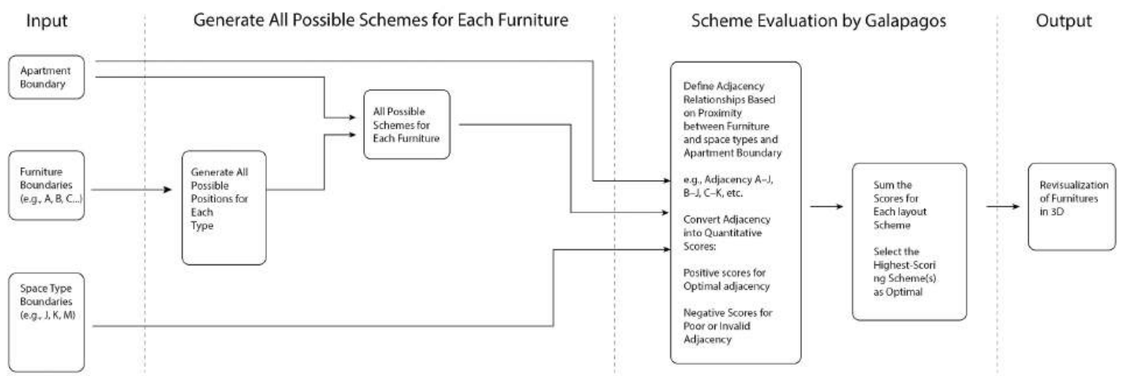
METHODOLOGY



Method 1: Full Permutation and Rule-Based Scoring

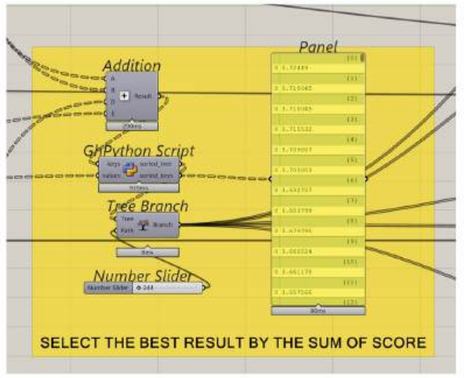
THE 'MICRO LIVING' APP USER INTERFACE



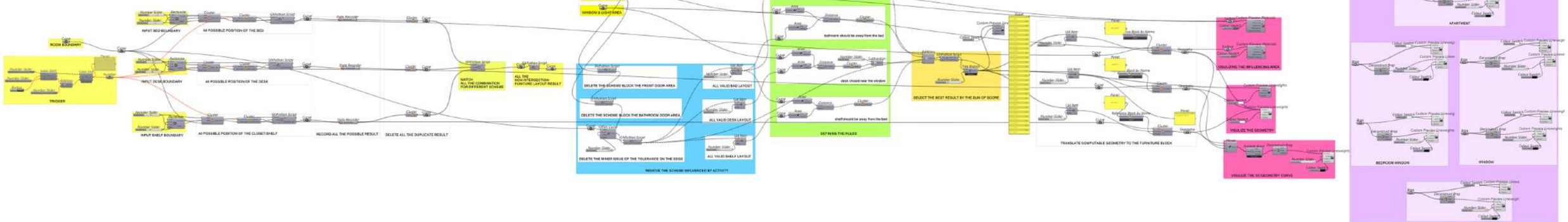


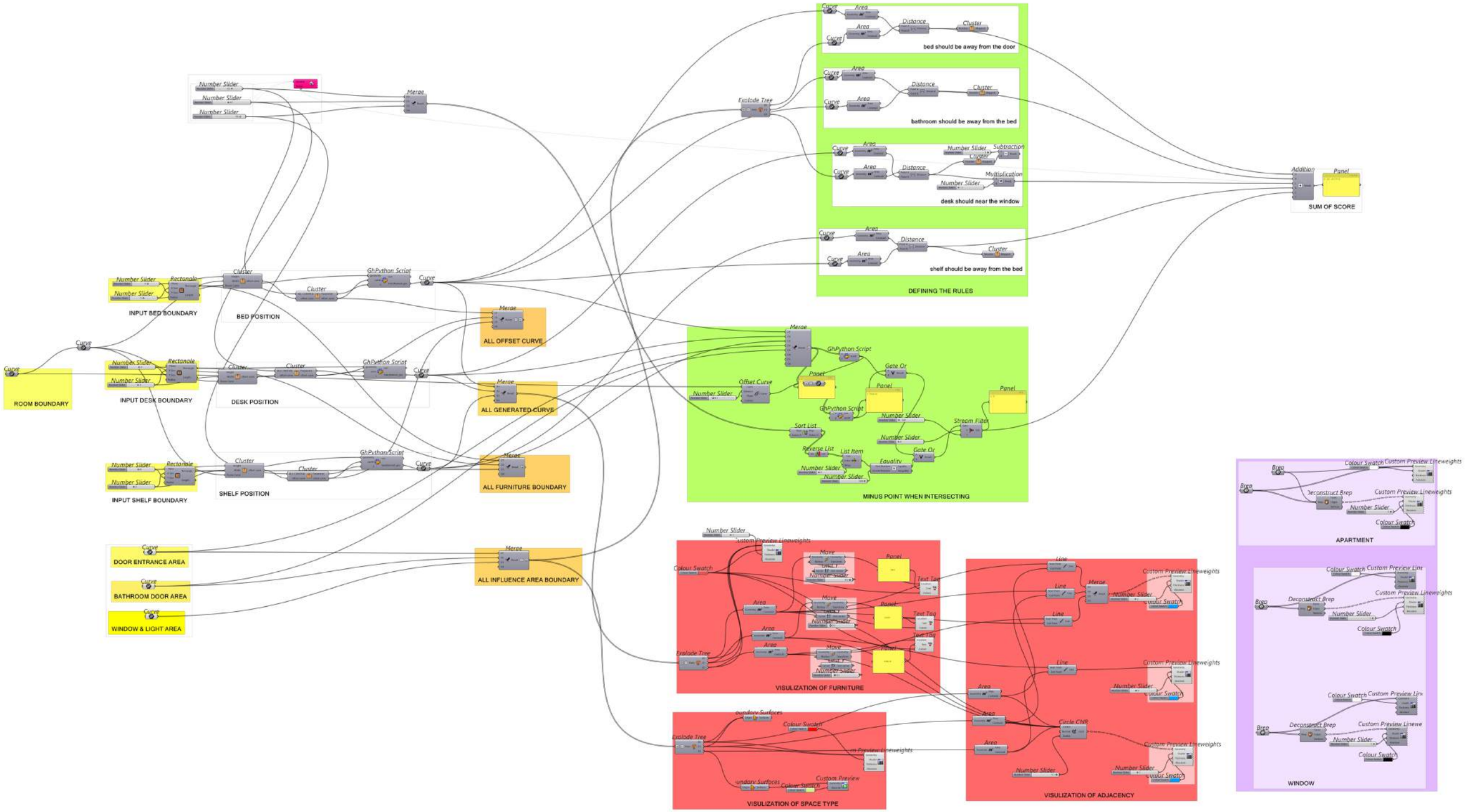
Method 2: Evolutionary Optimization via Galapagos

Process of Optimization via Galapagos



Process of Full Permutation and Rule-Based Scoring




ROOM BOUNDARY
INPUT BED BOUNDARY
BED POSITION
INPUT DESK BOUNDARY
DESK POSITION
INPUT SHELF BOUNDARY
SHELF POSITION
DOOR ENTRANCE AREA
BATHROOM DOOR AREA
WINDOW & LIGHT AREA
ALL OFFSET CURVE
ALL GENERATED CURVE
ALL FURNITURE BOUNDARY
ALL INFLUENCE AREA BOUNDARY
bed should be away from the door
bathroom should be away from the bed
desk should near the window
shelf should be away from the bed
DEFINING THE RULES
SUM OF SCORE
MINUS POINT WHEN INTERSECTING
VISULIZATION OF FURNITURE
VISULIZATION OF SPACE TYPE
VISULIZATION OF ADJACENCY
APARTMENT
WINDOW

08 *Interplay Of Light*