

AVANTIKA MUKHOPADHYAY

ART AND DESIGN PORTFOLIO

Environmental Design | Design Installation | Painting

AVANTIKA MUKHOPADHYAY

BDes.(Hons) Environmental Design | Avantika1404@gmail.com | +971 50 709 7525



I am a graduate of OCAD University, located in Toronto, Canada, from the Environmental Design Program with a specialization in Interior Design. I currently reside in the United Arab Emirates, where I apply my skills as a Freelance designer in hopes of building an independent design practice. My approach to art and design embraces an experimental methodology, rooted in research as a foundation to explore innovative perspectives on design challenges. I seek to expand my professional experience and gain valuable knowledge in a studio environment. I would be a valuable asset to any design team as I bring a well-rounded skill set in exterior, interior architectural, and landscape design, along with expertise in design research, conceptual development, and visual presentation.

This portfolio features selected design works that showcase my academic journey and professional experience, along with a collection of paintings developed over the years.

SKILLS

- Project Management and Co-ordination (Freelance Project Execution)
- Design Research and Concept Development, Diagramming
- Hand Drafting, Presentation Drawing
- Computer-Aided Design (CAD)
- Model Making (Hand and Digital Fabrication)
- 3D Modeling, Rendering / Architectural Visualization
- Print and Digital Communication Design
- Painting (Oil, Acrylic, Watercolour, Gouache)
- Textile Design (Fabric Dyeing, Manipulation, Embroidery, Hand beading, Sewing)

EDUCATION

Bachelor of Design (Honours) | OCAD University, Toronto, ON | 2018 - 2023

Environmental Design: Interior Design Specialization

- Schematic design, design development, systems and materials documentation for new construction and renovation of small-scale residential homes, condominiums, retail and office space project types
- Developed Accessible, Universal, Diverse, and Inclusive housing prototypes of custom residences with client situations for persons with disabilities
- Designed building / landscape complex of multiple building clusters, with interior program and landscape architectural plan for large-scale social space project type; Design for Toronto's Parks and Rec., Community Centers
- **Thesis Project:** CUT - CONNECT - HEAL: The Renaturation of the Don River Valley; Exploration of Resilience through River Restoration Design
- **Activities:** GradEX 2023 Graduate Exhibition

Highschool Diploma | Stephen Lewis Secondary School, Mississauga, ON | 2014 - 2018

- Intro. to Architecture, Technological Design 2016 - 2018; Interior Design, Set Design 2015 - 2018
- **Activities:** SLSS Bi-Annual Arts Night Participant 2014 - 2018

OTHER ACTIVITIES

- 2025 - **Collection in Progress:** *Frequencies*
- 2024 - 2025 **Independent Practice:** 3D Design-Builds, Installations for Interior Spaces
- 2022 - 2024 **Oil Painting:** Oil on Canvas; Oil on Brass metal, Colored pencils on Plexiglass
- 2020 - 2021 **Mixed-Medium Painting:** Acrylic and Gouache Portrait painting, Acrylic and Watercolor Landscape painting

SOFTWARES

- 2D** • AutoCAD (Advanced AutoCAD user with 7 years of experience)
- Adobe Creative Suite - Photoshop, InDesign, Illustrator, After Effects (Intermediate Adobe Creative Suite user with 6 years of experience)
- 3D** • Rhino 3D (Intermediate Rhino 3D user with 2 years of experience)
- Sketch Up (Beginner Sketch Up user with 1 year of experience)
- Enscape (Beginner Enscape user with 1 year of experience)

EXPERIENCE

Freelance Artist | Dubai, UAE | Jan. 2024 - 2025
Concord Pacific Shipping LLC.

Project: *Urbanizing Sand:* Tracing Dubai's transformation through Thread and Tile

Project Type: Trencadis (Mosaic) and Textile Fabrication and Installation

- Assisted client with ideation and concept development for design planning and curated design renditions, construction, and 3D fabrication plans based on client feedback
- Conducted material and product research, sourced building materials and equipment, while establishing professional relationships with local printing and building materials manufacturers
- Fabricated and constructed mosaic, topographical models, and textile elements for the project, and assembled the constructed components to form the completed art piece
- Took on a Design Lead role in overseeing and communicating the design direction to the installation team, while consulting with engineers to develop detailed construction documents for the installation process
- Developed valuable time management, client management, and budget management skills for future projects
- **Skills:** Interior Design, Mapping, Topographical Modeling, Clay Forming, Mosaic, Textile Design, Experimentation, Construction and Material Knowledge, Attention to Detail, Client Communication, Budget Management

Landscape Design Intern | Dubai, UAE | Oct. 2024 - Dec. 2024
Spring Hills Landscaping

- Planning, designing, and developing outdoor spaces for residential villas and property developers across the U.A.E
- Consulted with clients, builders, engineers, and landscapers about project goals and curated designs with the senior designer based on client desire, budget, and climate parameters
- Pitched design concepts and ideation to the team for projects; worked with the senior designer for planning and design development
- Drafted site plans and design specifications; developed construction detail documents alongside the engineering team for the construction of outdoor structures and appliances
- Created presentation drawings using CAD software; 3D models and renderings of proposed design using Rhino 3D and Enscape software for visual presentation
- **Skills:** Landscape Design, Concept Development, Site Planning, 2D Drafting, 3D Modeling, Rendering, Construction and Detail Documentation, Visual Presentation, Client Communication

CONTENTS

PROFESSIONAL PROJECTS

1. **URBANIZING SAND**



URBANIZING SAND :
Textile Piece

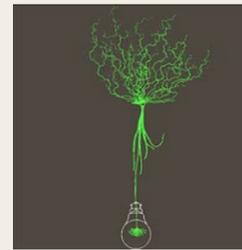


ACADEMIC PROJECTS

1. **CUT - CONNECT - HEAL**



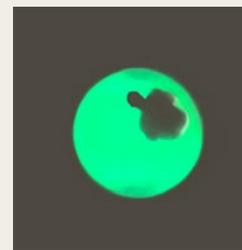
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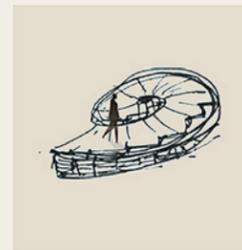
2. **HIVE PARK**



3. **ISOLATION**



4. **SHELL HOUSE**



PAINTINGS

1. *Untitled* : (Self-Portrait)



2. *Relics of the Self*



3. *The Colours of Light*



4. *'Hearts like Ours'*



URBANIZING SAND

Tracing Dubai's transformation through Thread and Tile

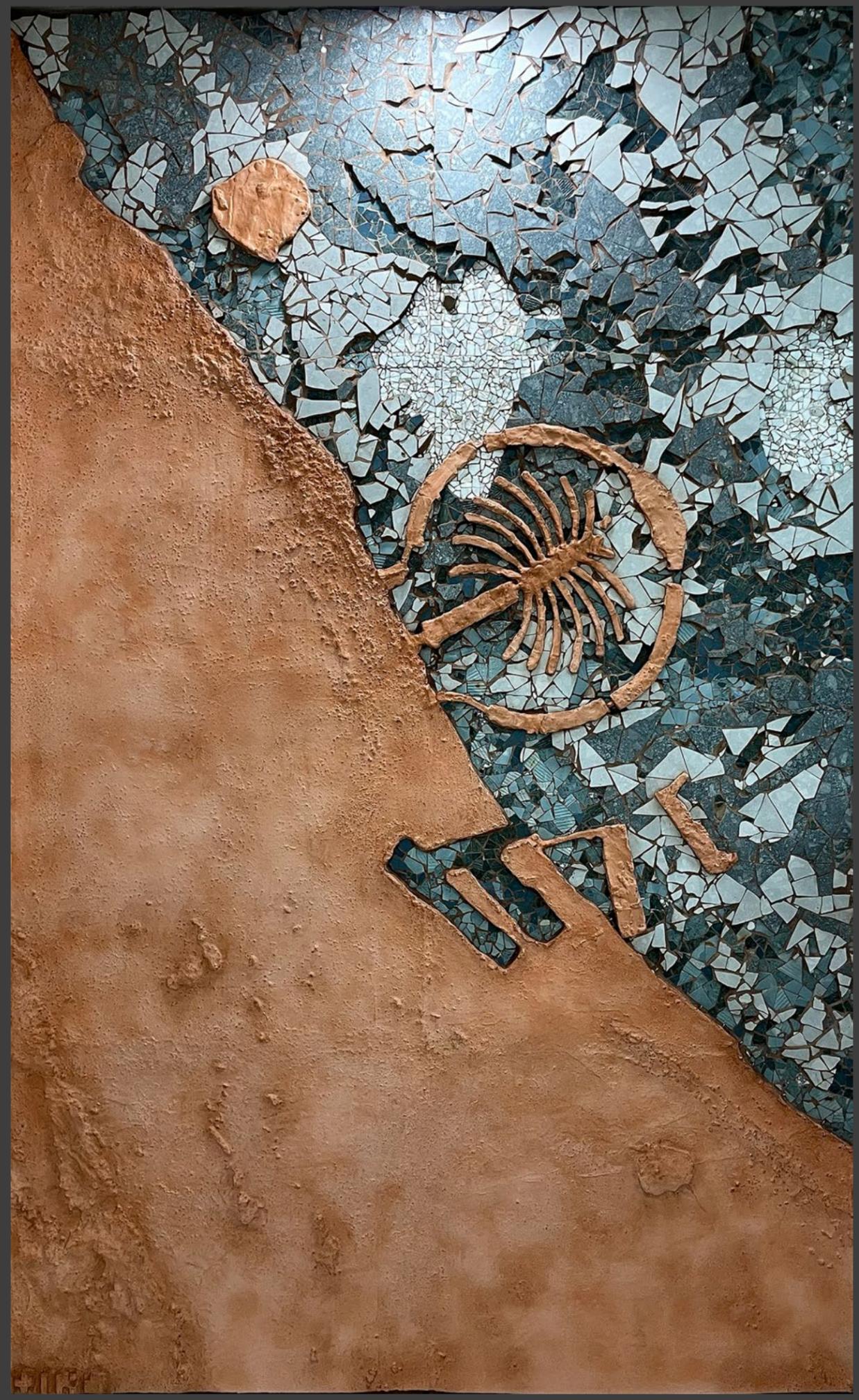
TYPOLOGY: SITE-SPECIFIC INSTALLATION, ENVIRONMENTAL ART

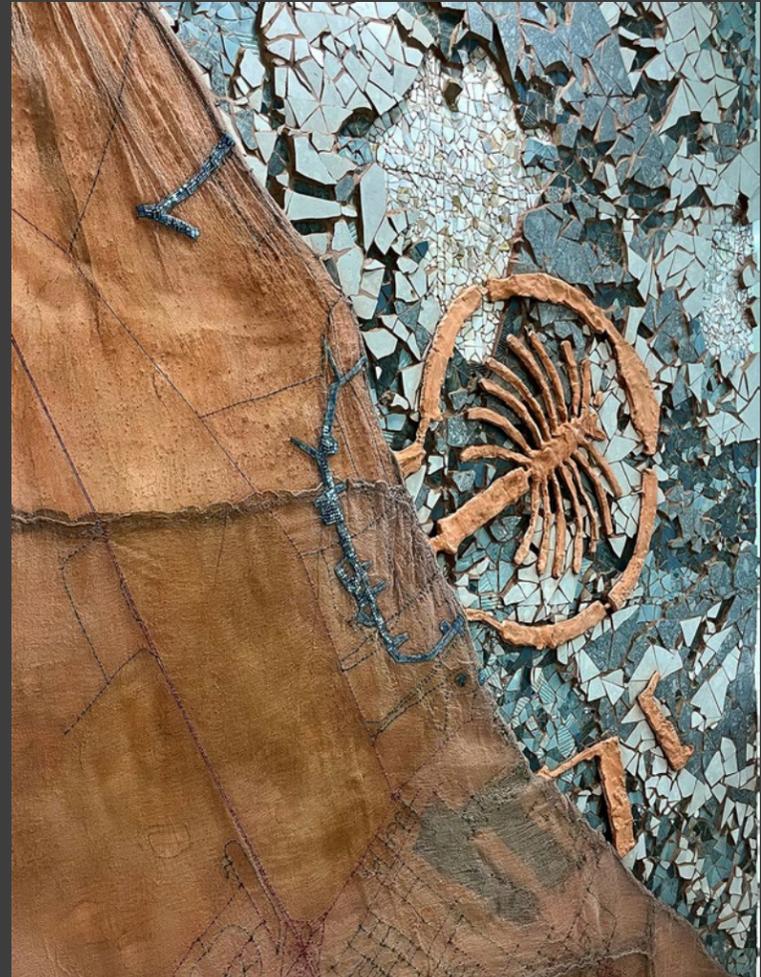
YEAR: 2024 - 2025

This design installation was developed as a contemporary interior wall feature for a UAE-based shipping company, illustrating Dubai's evolution from its historic pearling origins to the dynamic, urbanized metropolis it is today. The project explores how early settlements—shaped by pearl diving and trade—influenced the social, economic, and architectural identity of early Dubai and the Gulf, forming the foundation for the region's subsequent economic and infrastructural expansion. Conceptually, the transition between past and present is expressed through the layering of distinct design elements that converge to form a unified landscape.

The mosaic wall, informed by historic mapping and site analysis, reveals former pearl diving sites and terrains that were crucial to the formation of coastal societies and their vibrant port communities. The integrated textile element serves both as a metaphor and a visual language—representing the city's network of free-trade zones and its evolving urban fabric. Together, the project embodies Dubai's continuous transformation through interwoven material and spatial narratives.

Through this layered composition, the installation narrates the city's ongoing transformation, with each layer uncovering a phase of Dubai's ever-shifting landscape and growth, informed by its collective identity as a port city.





[FABRICATION + CONSTRUCTION]

The overall composition of the mosaic wall was divided into sections, allowing the project to be fabricated off-site and later installed on the interior wall. This approach enables the design to be disassembled and transported at a later time, if required by the client. Due to the composition of the design, the upper sections of the piece are significantly heavier than the lower sections, primarily because of the greater number of tiles used in those areas and their corresponding weight. This required the work to be installed in separate phases to mitigate excessive load and prevent structural failure of both the mosaic and the gypsum wall onto which it was mounted.

TOPOGRAPHY

The site and terrain for this project were recreated to scale by measuring and hand-modelling clay pieces onto a topographical map of the site. These pieces were then attached to styrofoam sheets coated with clay slip. Clay slip is traditionally used in pottery as a joinery material to bond separate moulded elements; however, for this project, its use enabled the modelled terrain elements to adhere to the styrofoam base, creating a lightweight model that could be easily manipulated to accommodate changes if required.

During the fabrication process of this mosaic project, it was necessary to modify the "indirect/reverse back method" of mosaic assembly due to the intricate design and large scale of the composition. The varying size and depth of the tiles made transferring the mosaic sections onto a substrate difficult, requiring an innovative approach to address a project of this complexity.

Individual sheets of the designed mosaic were required to be flipped upside down to apply a fiberglass mesh to the back of each mosaic section, and then flipped right-side up to transfer the design onto a permanent substrate later. The fiberglass mesh was used to provide even stress distribution and function as a waterproofing barrier, while reinforcing both the mosaic sheet and the MDF board to which it was permanently adhered.

The significant weight of each panel made this task challenging, and the varying depth of the tiles further complicated the flipping of the delicate mosaic work, as it was temporarily assembled using thinset mortar for flexibility. To overcome this challenge, kinetic sand was used as a stabilizing barrier that held all of the tiles in their relative positions when flipped upside down. This reduced the risk of the delicate mosaic sheets being held together with thinset from breaking apart or individual tile pieces detaching from the overall design.



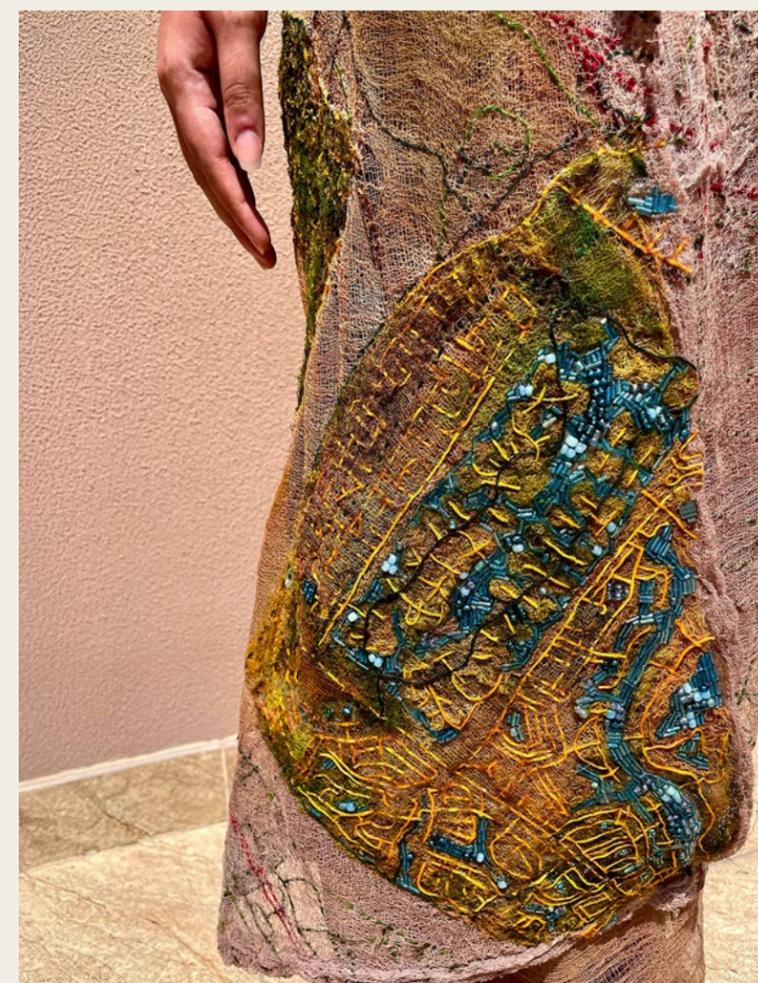
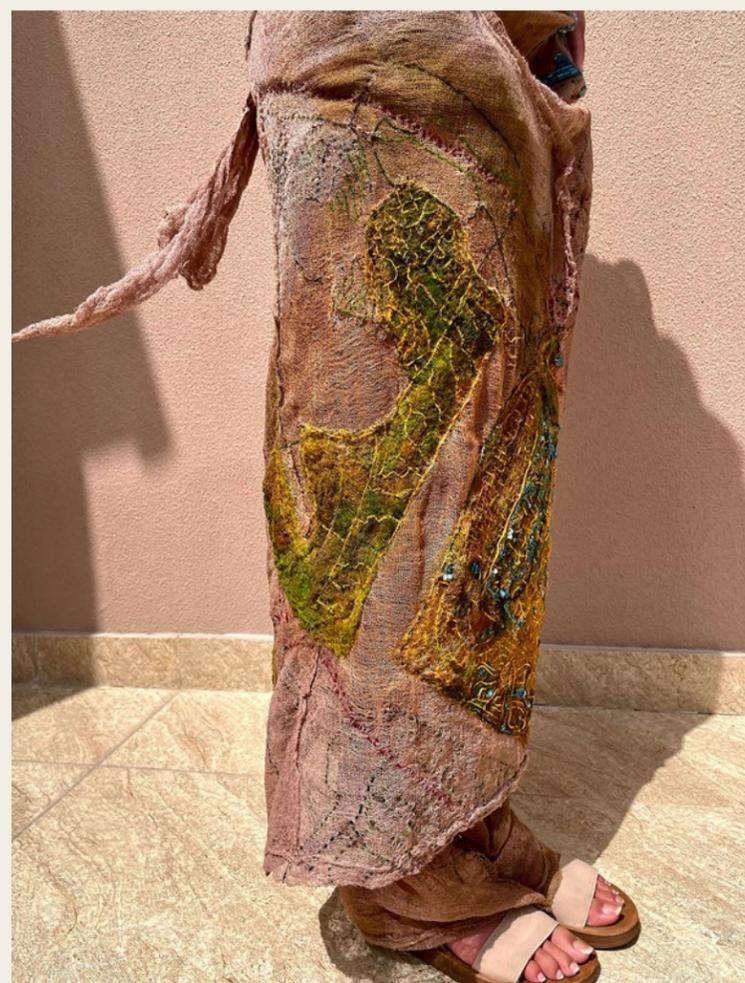
URBANIZING SAND : Textile Piece

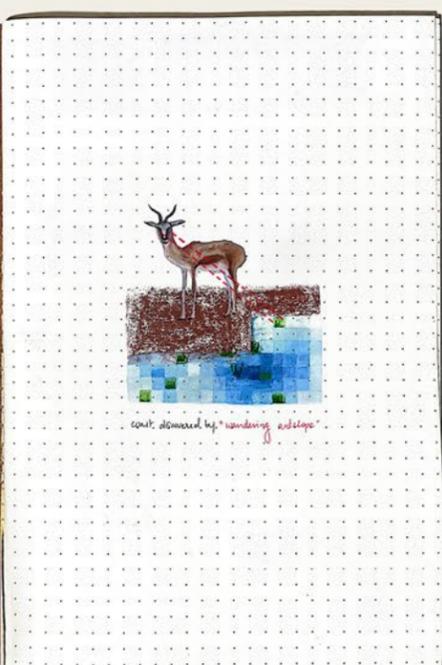
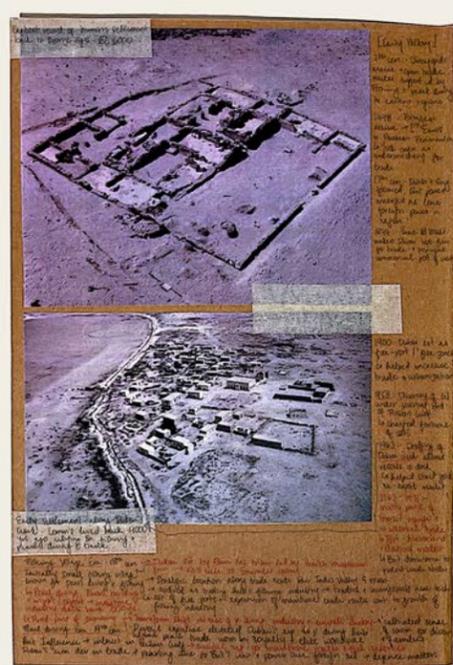
Tracing Dubai's transformation through Thread and Tile

TPOLOGY : TEXTILE INSTALLATION + WEARABLE ART, ENVIRONMENTAL TEXTILE ART
YEAR : 2024 - 2025

The integrated textile element serves both as a metaphor and a visual language—representing the city's network of free-trade zones and its evolving urban fabric. The piece functions as a trace-like layer over the existing site conditions and terrain, illustrating the urban and infrastructural development of the area. Key infrastructural features, such as highways and major roadways, are embroidered onto the cloth, connecting neighbouring communities through interwoven textile elements. Serving as a transformative component of the installation, the textile piece embodies the evolution of Dubai's landscape over time.



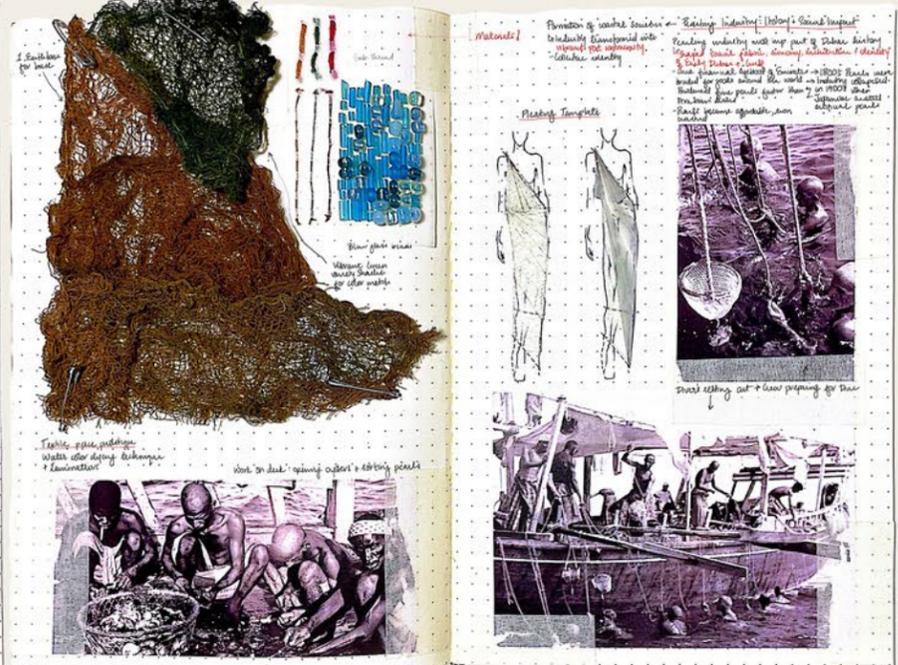
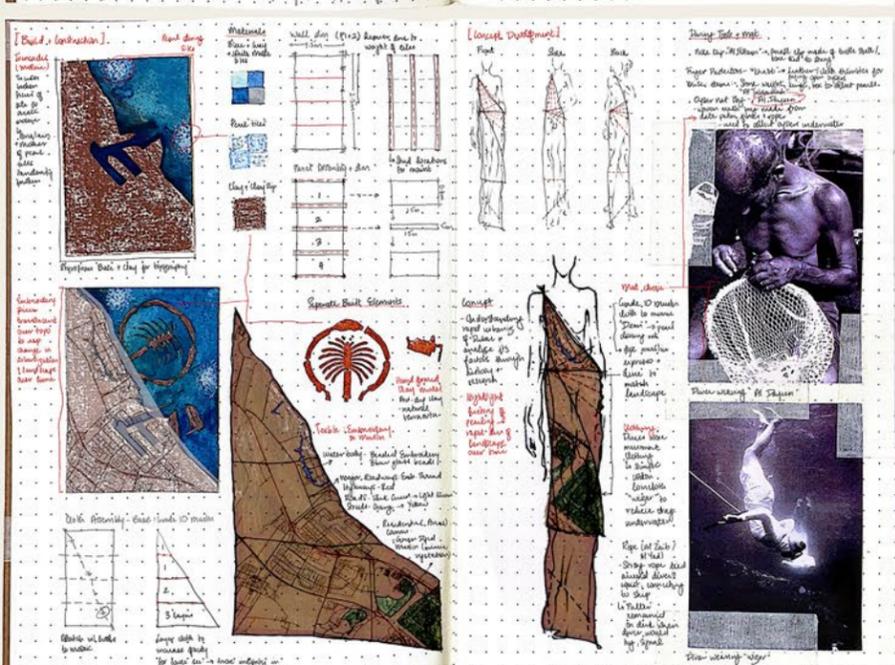
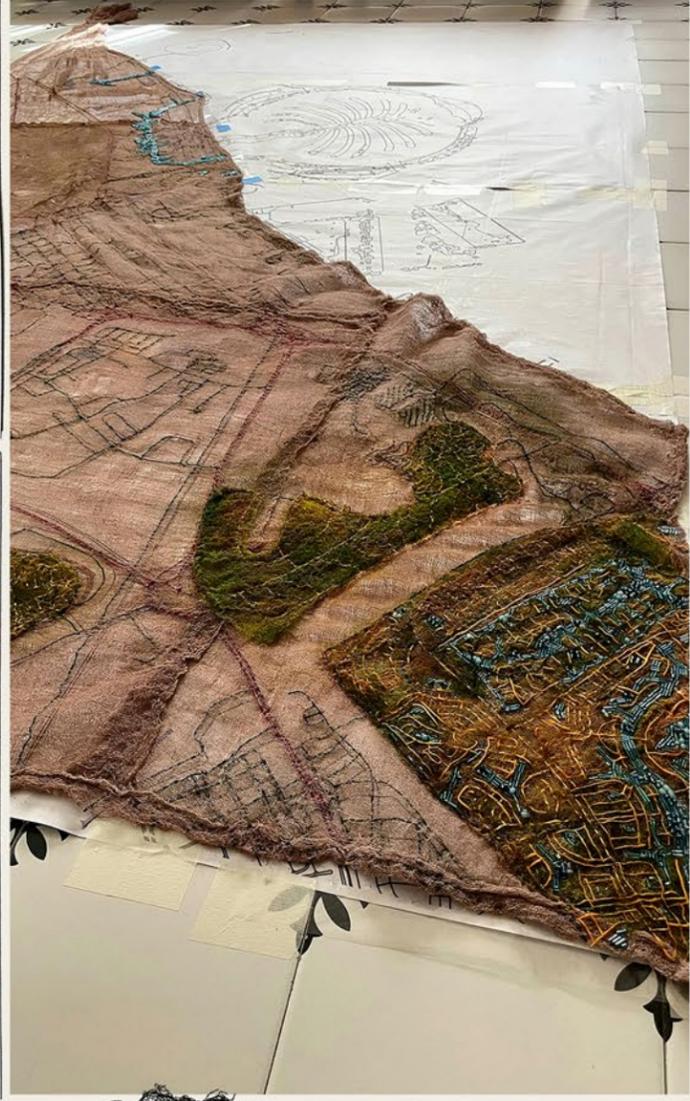
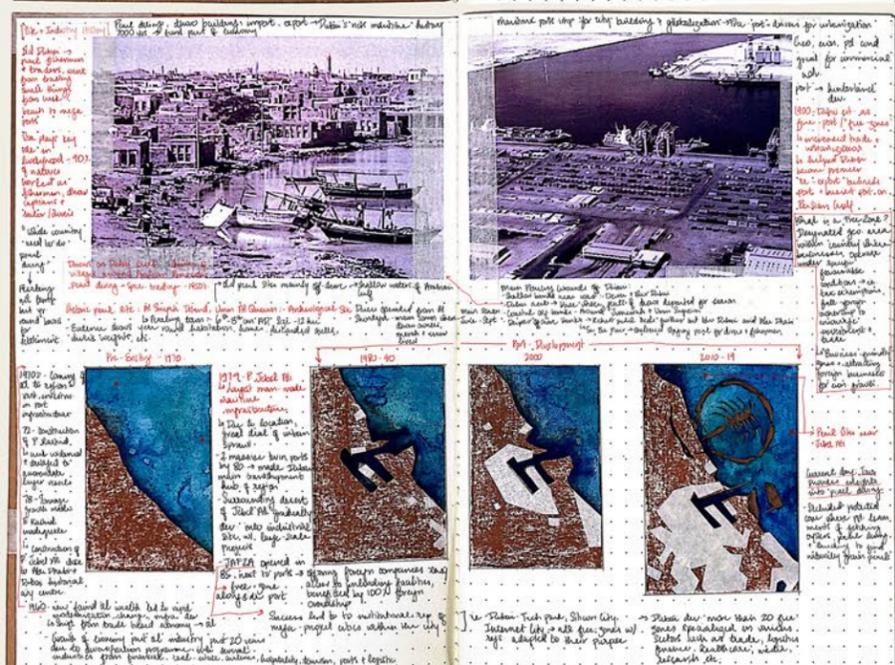




The conceptual development of this project began with the goal of showcasing the advancements in urban development on previously barren land, where such interventions were once considered impossible. The aim was to create design elements that not only highlight the contrast between past and present conditions but also visually convey the transformation over time through a 2D medium. This led to exploring architectural drawing practices, particularly the use of tracing paper to plan and implement changes. Accordingly, a transparent piece was created, analogous to tracing paper over a site plan, to reveal the infrastructural elements essential to urban growth. The textile component is intended to function as a trace or veil and can be removed and overlaid onto the permanent site context.

Although the shift from past to present conditions is remarkable, these advancements would not have been possible without human intervention—particularly the contributions of millions of immigrant workers who played a central role in development. Dubai has a long history of immigrant labor, and these workers are as integral to the city's socio-economic success as its native population. The textile piece is conceived as a wearable work of art representing both native and immigrant workers whose efforts shaped Dubai's development.

In constructing the design elements, references to materials of cultural significance to native land and coastal communities were incorporated to acknowledge their role in shaping Dubai's enduring port identity. This includes the use of mother-of-pearl tiles in the mosaic wall to reference historic pearl-diving sites. Meanwhile, the textile piece adopts a more literal approach to representing current site conditions. The textile was created by hand-dyeing muslin to evoke natural elements such as sand and vegetation. Man-made water bodies are represented with hand-beaded embroidery, while road networks connecting major communities are depicted through hand embroidery.

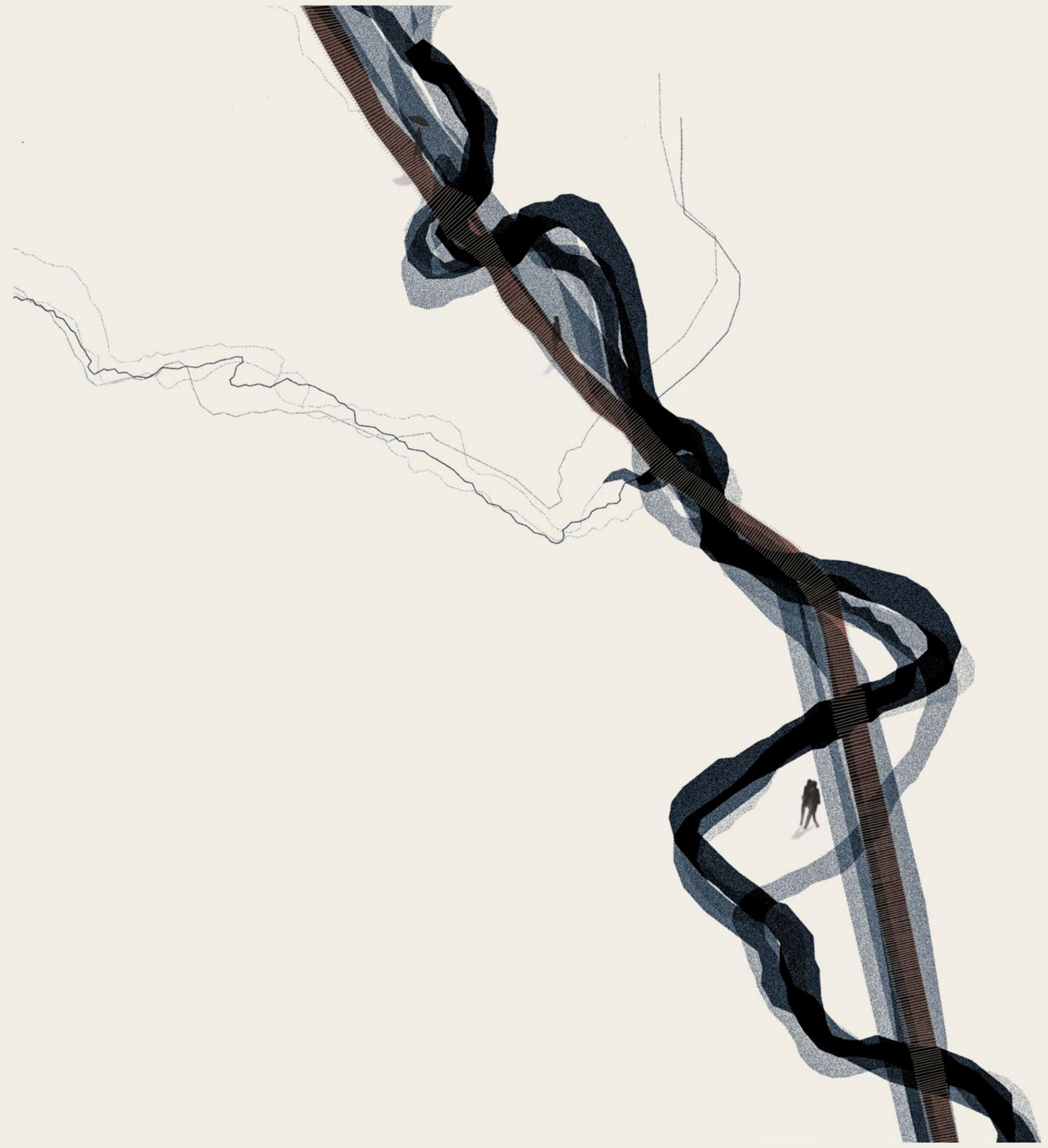


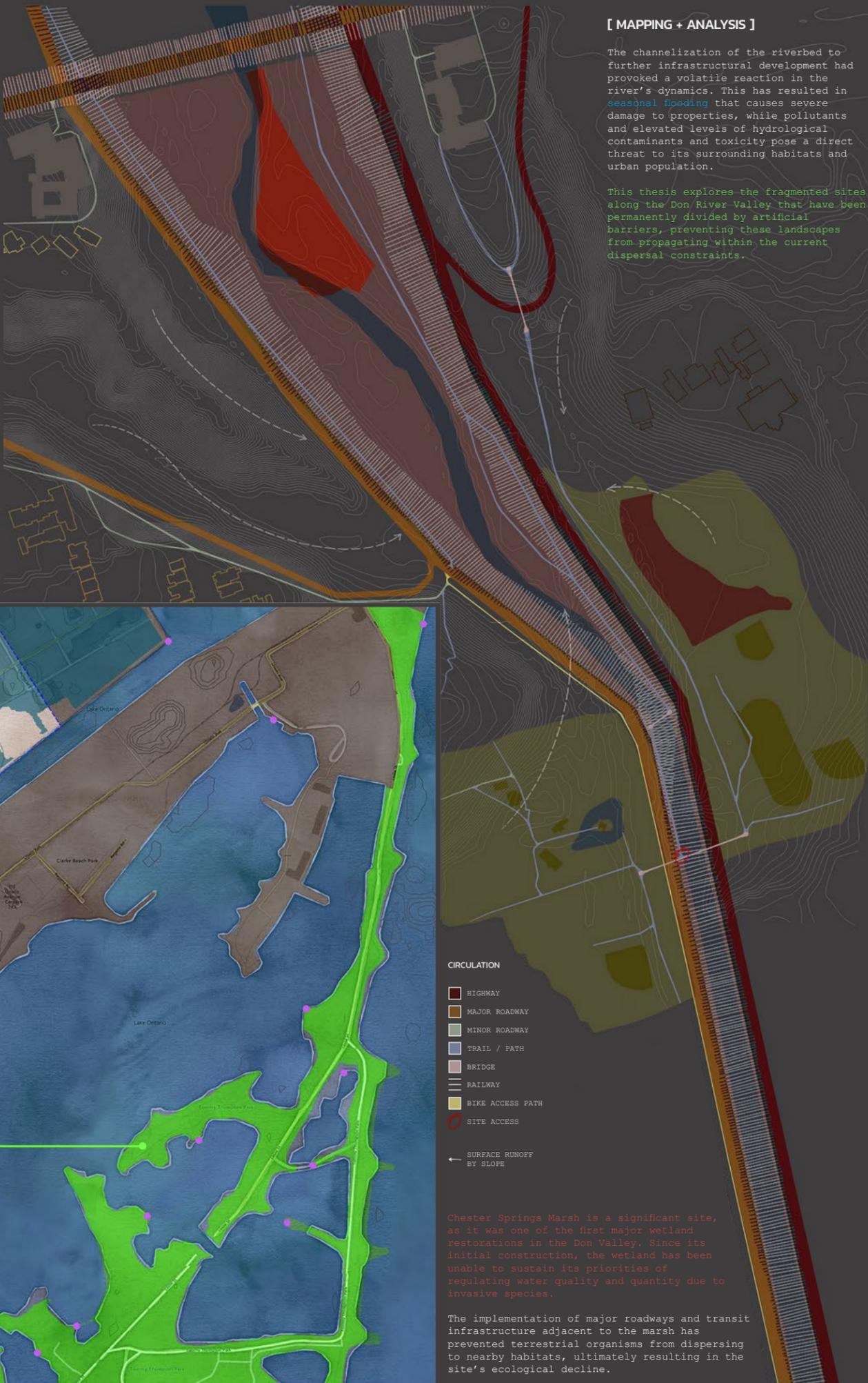
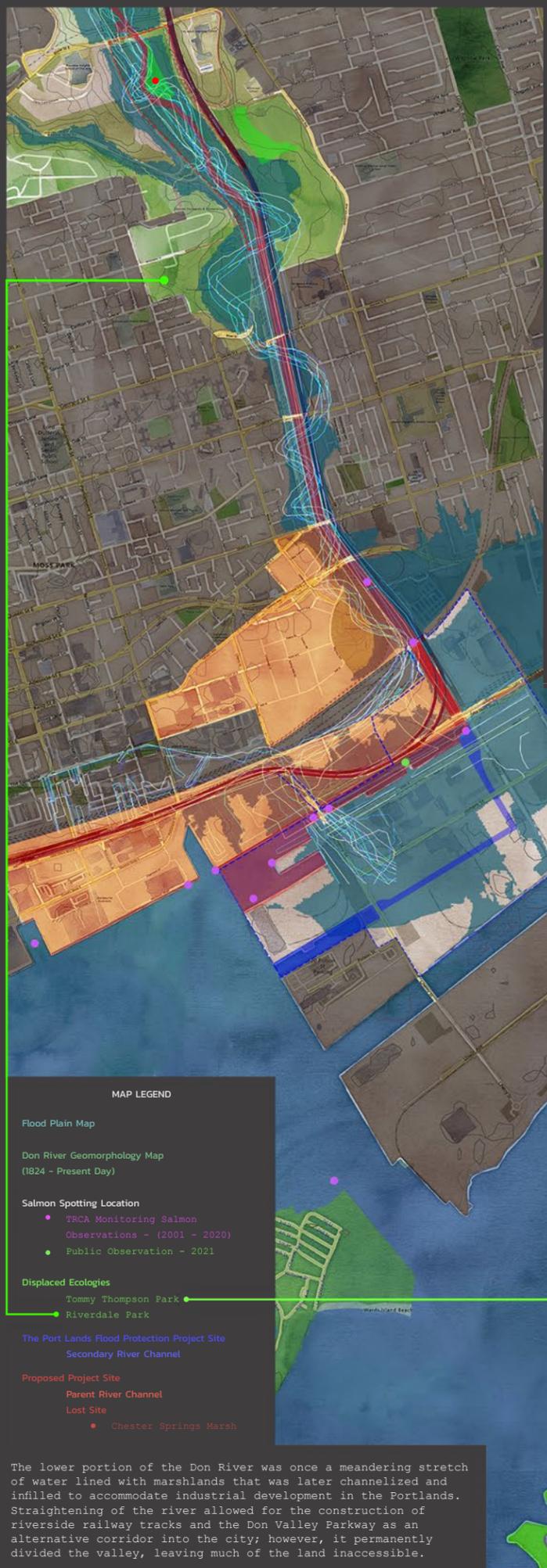
CUT - CONNECT - HEAL

The Renaturation of the Don River Valley

TYPOLOGY: ECOLOGICAL RESTORATION + LANDSCAPE URBANISM, DESIGN FOR FLOODING
YEAR: UNDERGRADUATE THESIS, 2022 - 2023

This thesis addresses the environmental issues of flooding and land contamination in the Don River Valley resulting from infrastructural misuse and industrial growth. It aims to mitigate these challenges through resilience-based design that celebrates the land's embedded knowledge and allows for its self-organization and revival of its post-industrial landscape. The result is an interdisciplinary approach to ecology, geology, and landscape urbanism that improves user accessibility within the region and encourages social engagement through recreational outlets for locals to forge a renewed relationship with these abandoned landscapes.





The lower portion of the Don River was once a meandering stretch of water lined with marshlands that was later channelized and infilled to accommodate industrial development in the Portlands. Straightening of the river allowed for the construction of riverside railway tracks and the Don Valley Parkway as an alternative corridor into the city; however, it permanently divided the valley, leaving much of the land inaccessible.

GEOMORPHOLOGY: AN ALTERNATIVE PATH OF TRAVEL GEOMORPHOLOGY + FLUVIAL HYDRO SYSTEMS INFORM RESTORATIVE RIVER DESIGN MEASURES

Geomorphological processes alter the physical geography of land use. Influenced by biological processes and human activity, a study of how such landforms have changed in the past offers insight into modern applications that prepare for hazards.

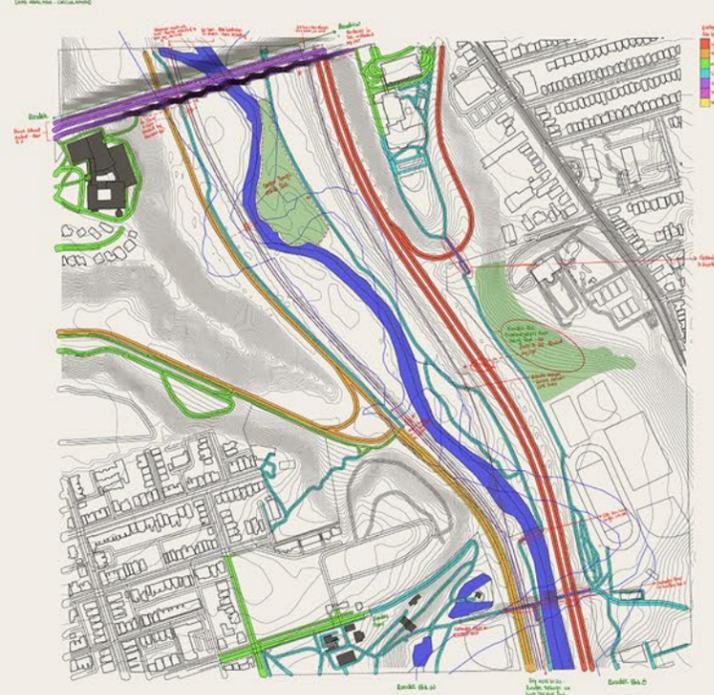
Urban planning needs to account for natural geomorphic events, as their effects can be mitigated through construction practices that best adapt to the local environment.

Fluvial hydrosystems offer a contemporary approach to river development. Sustainable river development requires restoration measures grounded in scientific understanding of river ecosystems to reverse historic deterioration.

The proposed landscape design allows the river to expand and contract during flood events rather than attempting to control it, which often results in the infrastructural devastation of nearby communities.

The design plan employs a river management technique developed by Atelier Descombes Rampini + Superpositions in the Renaturation of the River Aire in Geneva, Switzerland. The team derived an excavation pattern adjacent to the riverbed that encourages bank erosion by allowing sediment material to decompose over time. Orthogonal, diamond-shaped depressions are created to establish a channel migration zone that restores the former meander of the straightened river.

Native plantings are incorporated to restore the destroyed marsh site and establish a small-scale wetland system that absorbs heavy rainfall and surface runoff, purifies stormwater, and prevents the embankment from excessive erosion.

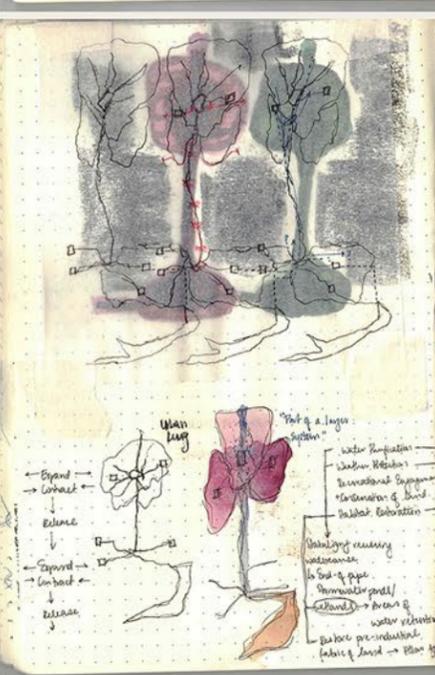
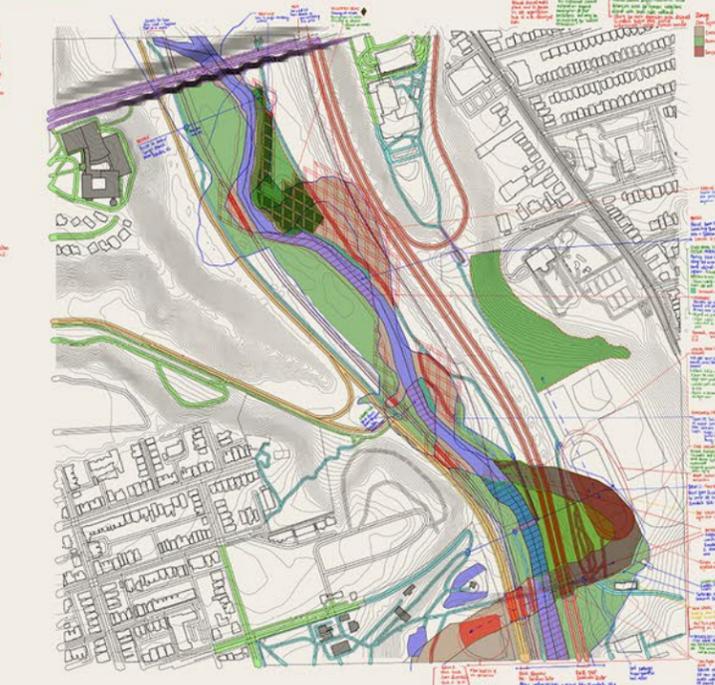
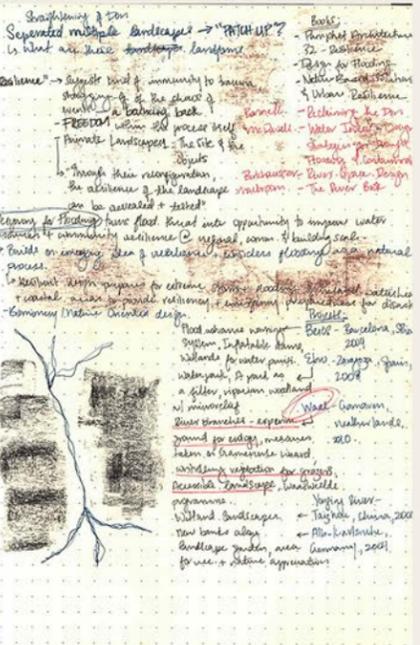
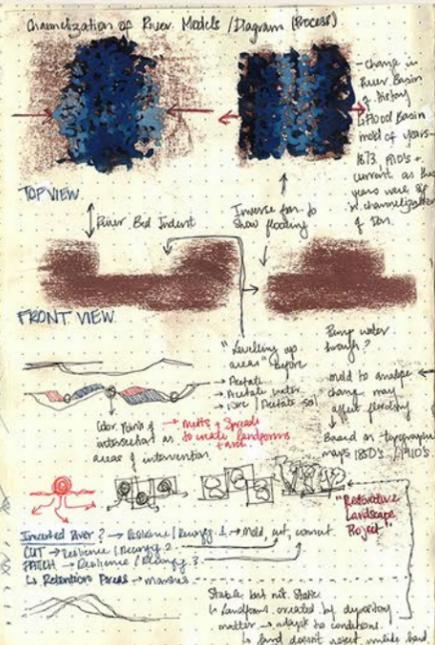
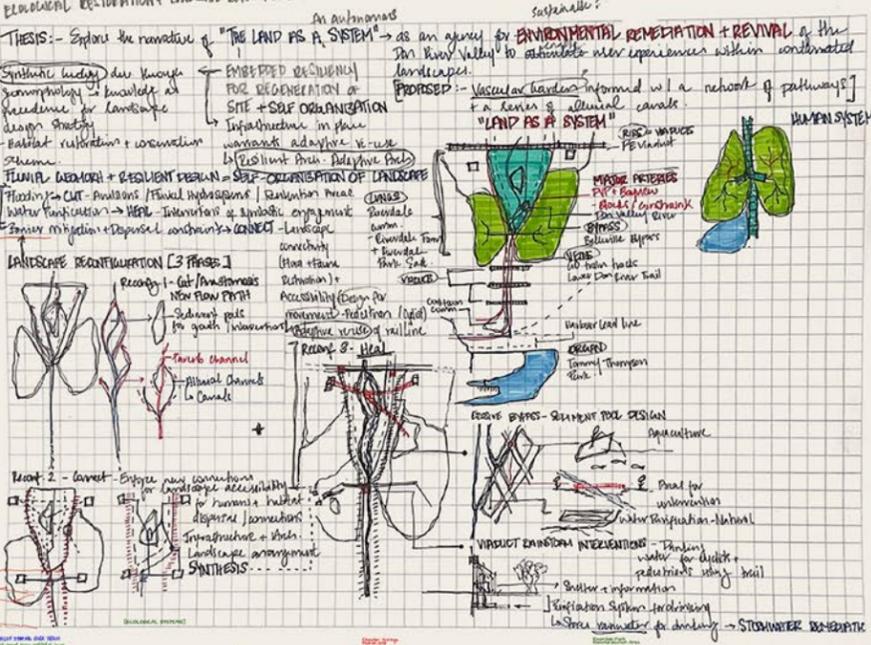
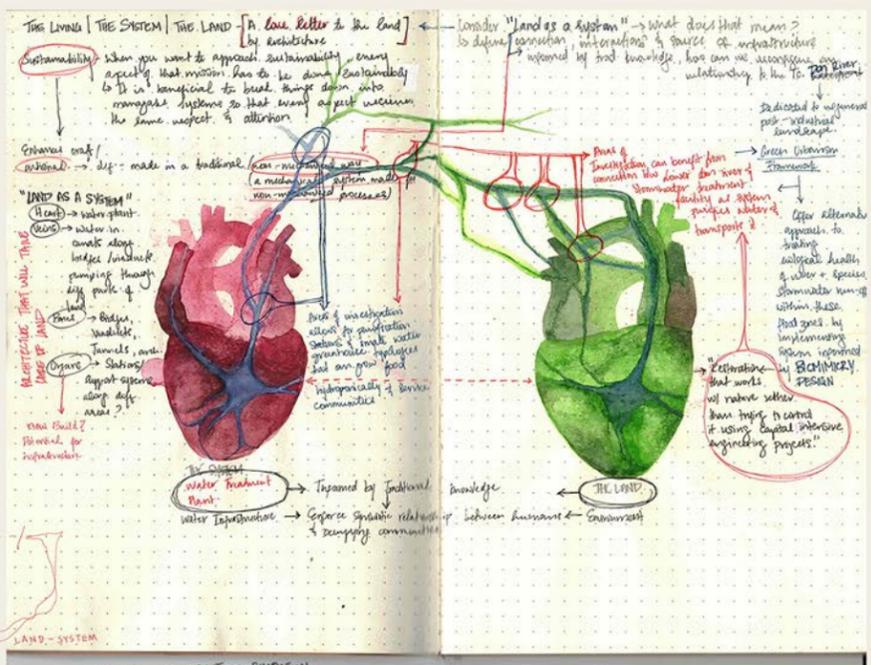


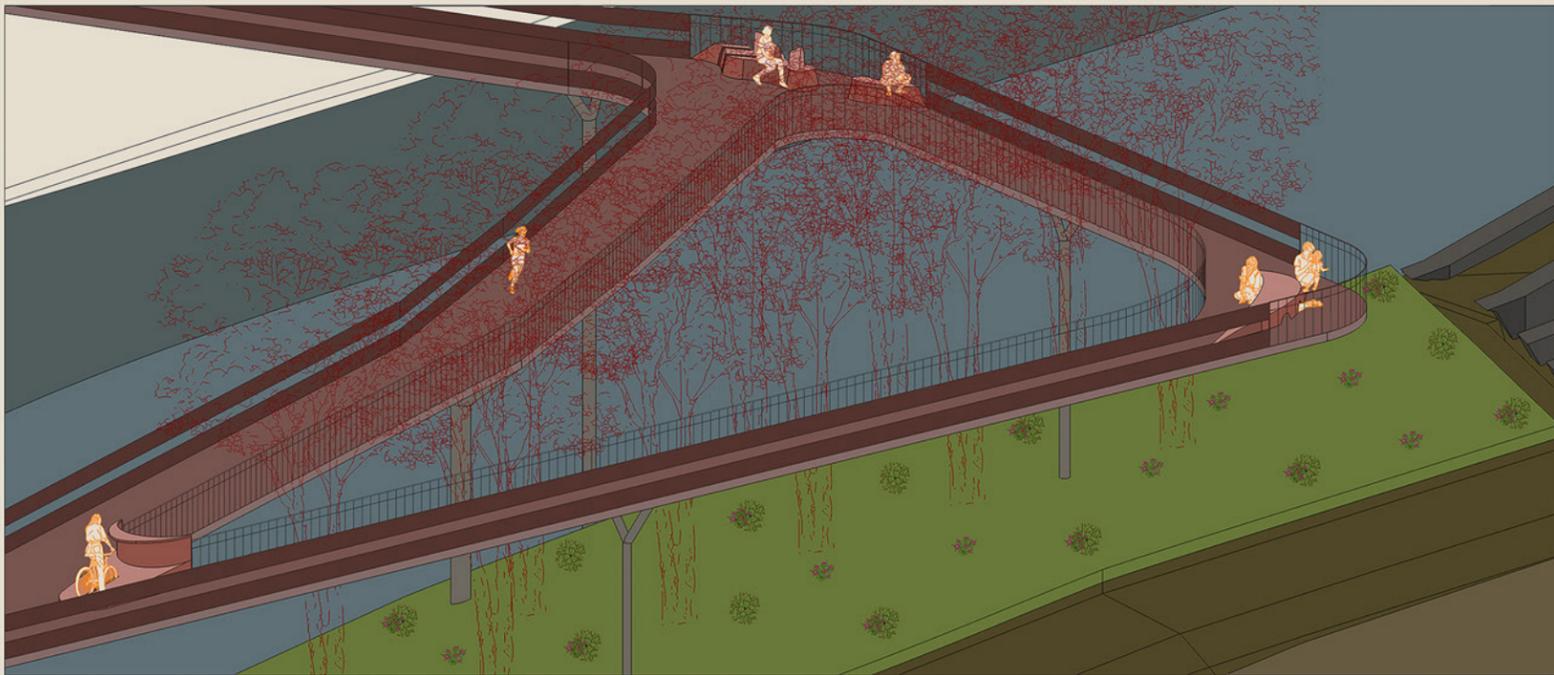
'LAND AS A SYSTEM'

The conceptual framework of the proposed design explores the narrative of the land as a system, while drawing inspiration from human anatomy to curate an environment that fosters a symbiotic relationship between the land and its inhabitants, as its principles are paralleled by the structure of natural communities.

Methods by which the human body can function require communication across various systems to actuate growth and regeneration. The role of communication is metaphorically translated in the self-organization of natural communities, as ecosystems require communication between organisms and the physical environment to thrive.

How can this be achieved?





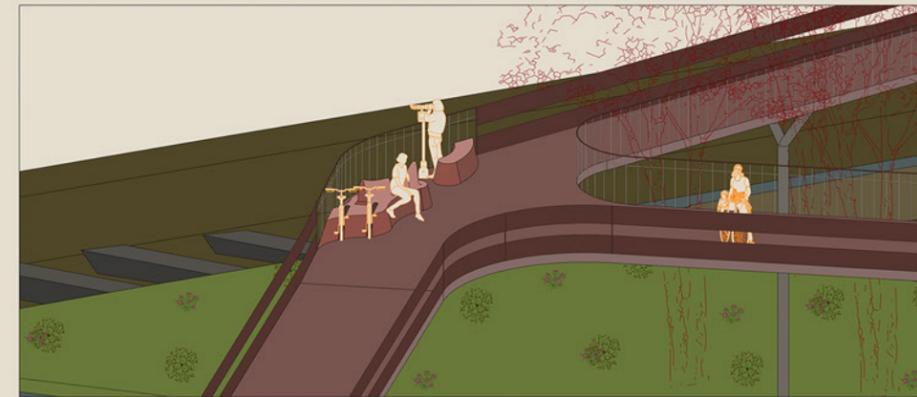
A. FISH PASS LOOKOUT POINT

The observation area directly overlooks the fish pass, allowing viewers to watch the process of fish migration as they transition down the fish ladder from the parent channel.

The wave bench has a fluid, ergonomic design for users to relax and spend time at their leisure.

The bench is designed to facilitate conversation while allowing users to alternate their seating positions according to their comfort or activity.

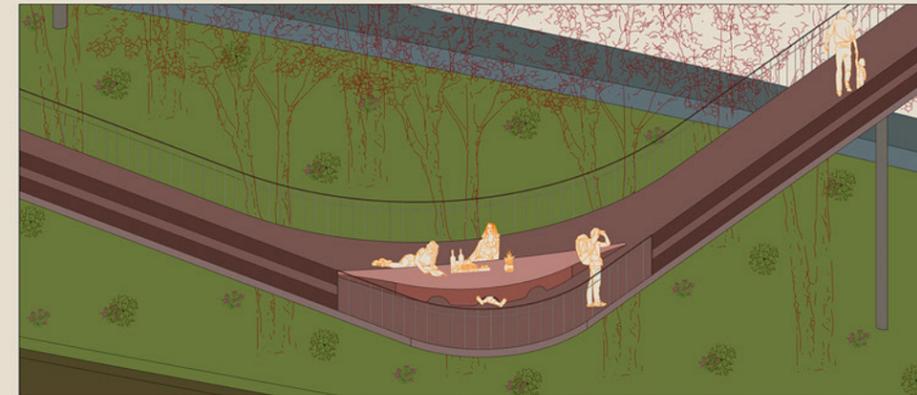
Cutouts in the bench serve as integrated bike racks, enabling bicycles to easily slide into the slots.



B. TREE CANOPY PICNIC TABLE

The picnic table is designed to emulate the feeling of having a picnic in the park while sitting beneath a tree.

Located above a thicket, the picnic bench is low to the ground, with cutout spaces for users to extend their legs and enjoy a picnic on the ground beneath the tree canopy.



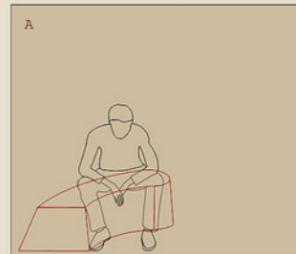
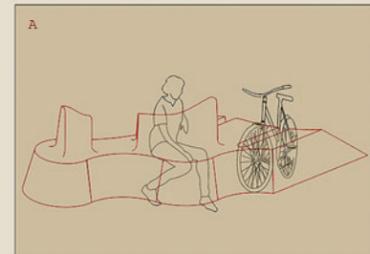
BIKE TABLE



PICNIC TABLE



WAVE BENCH



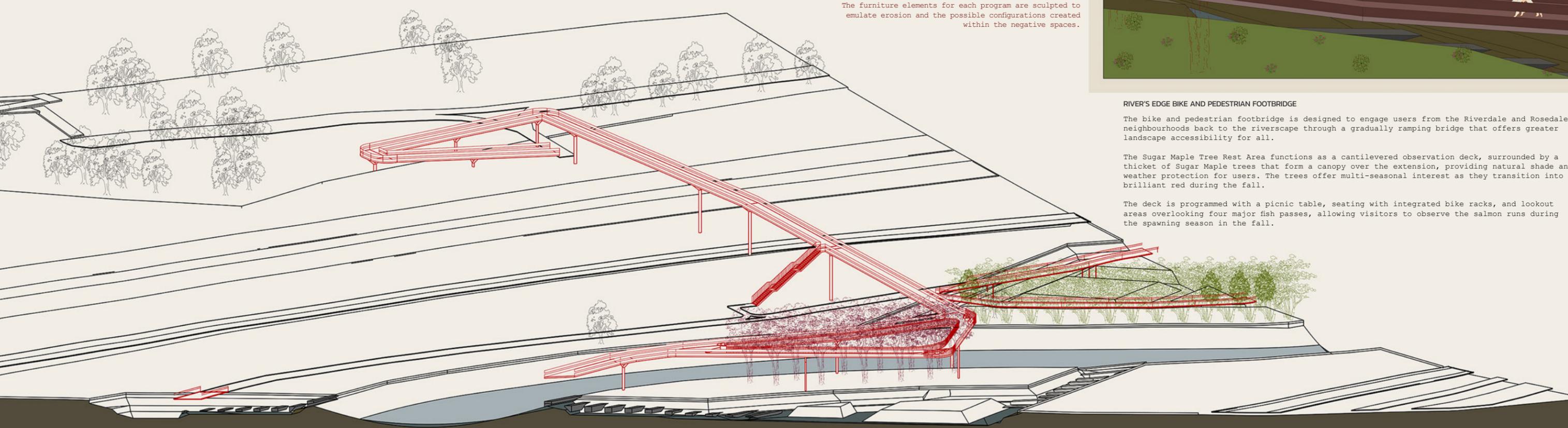
C. BIKE TABLE

The bike table enables cyclists to take a quick rest stop while remaining on their bicycles.

The bike table is designed for riders to enjoy food and drink on the go. The table features a cutout at the base that allows bicycles to easily slide in, enabling users to remain on their bikes and use them as a seat at the table.



The rest area is aligned with integrated furniture. The furniture elements for each program are sculpted to emulate erosion and the possible configurations created within the negative spaces.

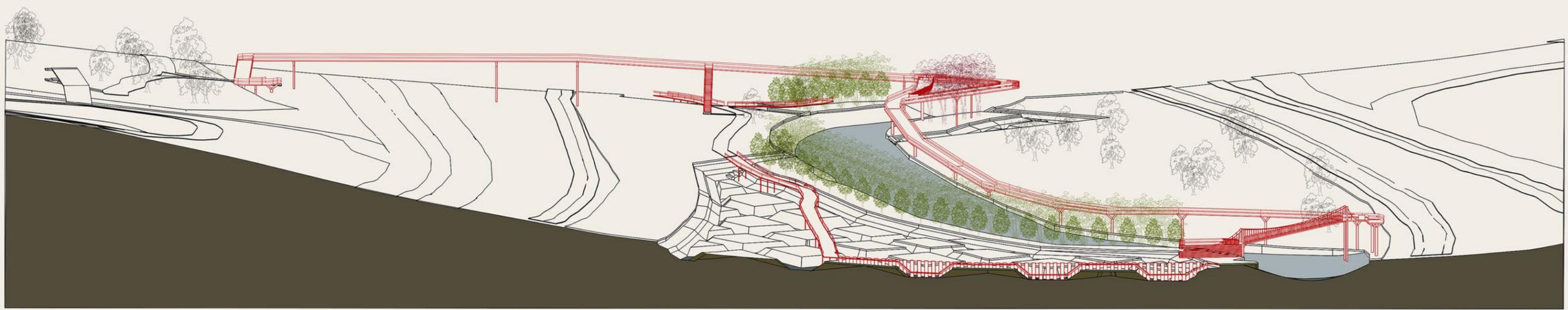


RIVER'S EDGE BIKE AND PEDESTRIAN FOOTBRIDGE

The bike and pedestrian footbridge is designed to engage users from the Riverdale and Rosedale neighbourhoods back to the riverscape through a gradually ramping bridge that offers greater landscape accessibility for all.

The Sugar Maple Tree Rest Area functions as a cantilevered observation deck, surrounded by a thicket of Sugar Maple trees that form a canopy over the extension, providing natural shade and weather protection for users. The trees offer multi-seasonal interest as they transition into a brilliant red during the fall.

The deck is programmed with a picnic table, seating with integrated bike racks, and lookout areas overlooking four major fish passes, allowing visitors to observe the salmon runs during the spawning season in the fall.



CHESTER SPRINGS MARSH FLUX BRIDGE

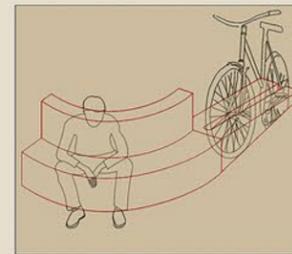
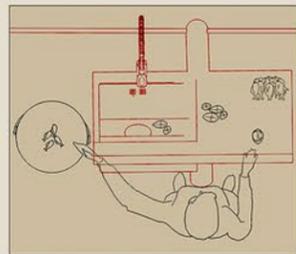
The Chester Springs Marsh Flux Bridge is an extension of the fishing boardwalk that cuts through Chester Springs Marsh. The bridge undulates to form a path across the alluvial beds and channel, connecting to the Chester Springs Marsh Birdhide and Silt Pottery Studio. The bridge allows visitors the opportunity to explore the restored marsh grounds while observing native flora and fauna.

The Flux Bridge is designed to partially flood during heavy rainfall and flood events. During such events, users are still able to utilize the bridge by stepping across the bridge studs, which create an elevated path over the water. The bridge is intended to allow visitors to experience flooding and the changing riverscape.



FISH CLEANING TABLE

The fishing boardwalk is equipped with fish cleaning tables for users to clean their catch and dispose of the remains after fishing.



RIVER CROSSING SUSPENSION BRIDGE

The suspension bridge is an extension of the bike and pedestrian footbridge that crosses over the Don River parent channel onto a thicket overlooking Chester Springs Marsh.

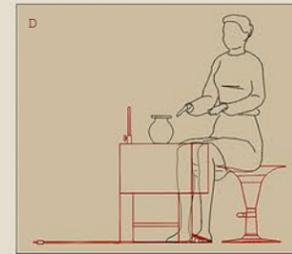
The bridge leads to a lookout point overlooking the restored marshland and alluvial channel, with a hidden birdhide and pottery studio located beneath the observation deck.



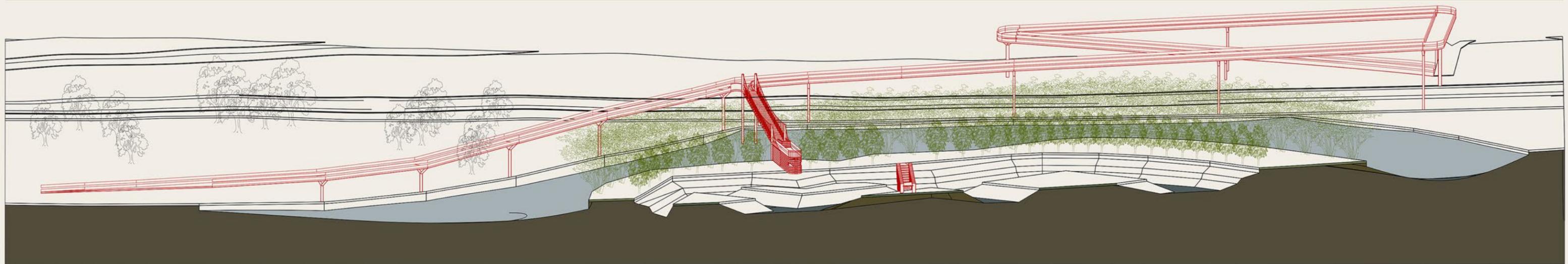
D. CHESTER SPRINGS MARSH BIRDHIDE AND SILT POTTERY STUDIO

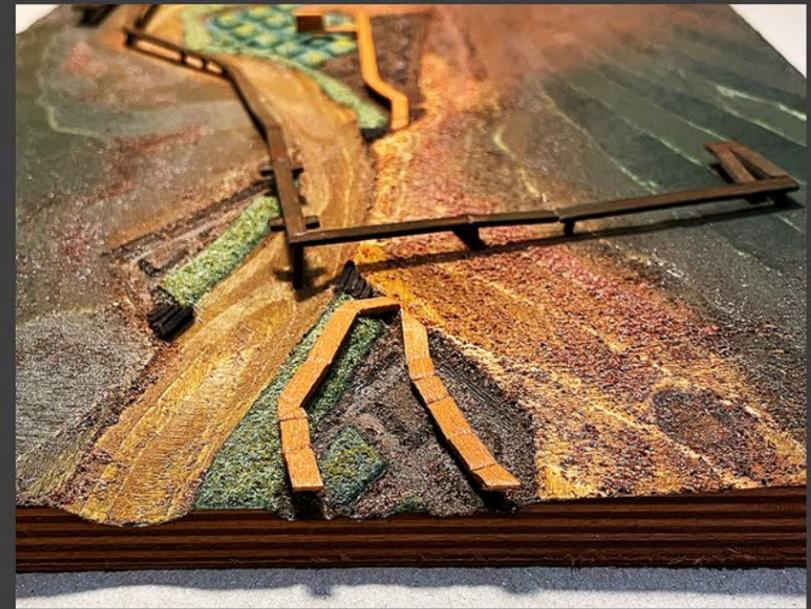
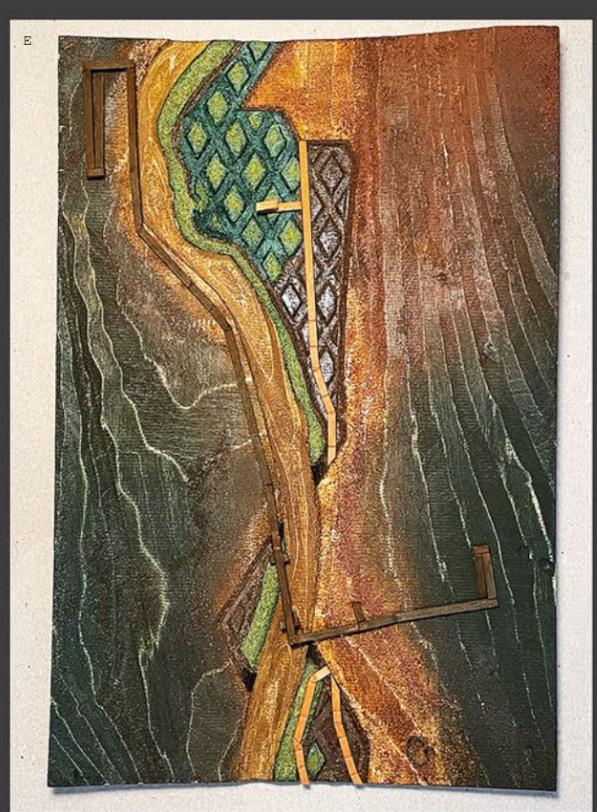
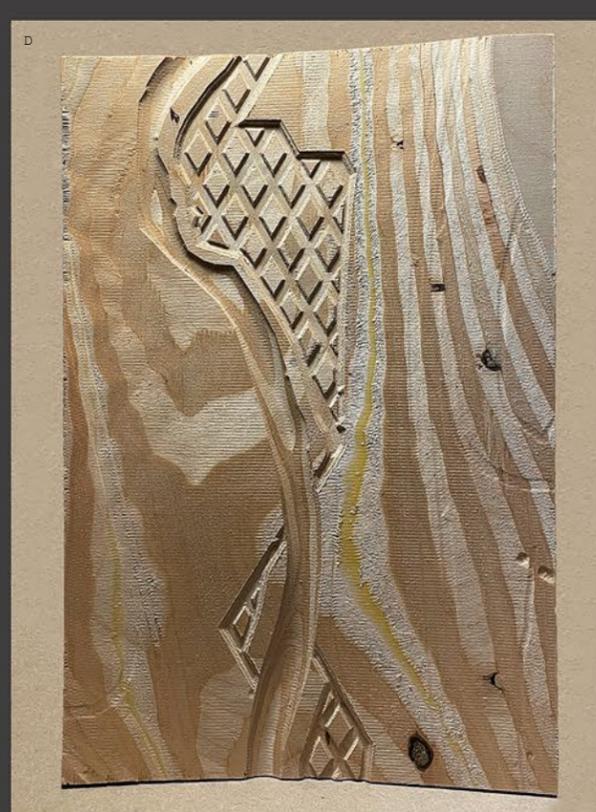
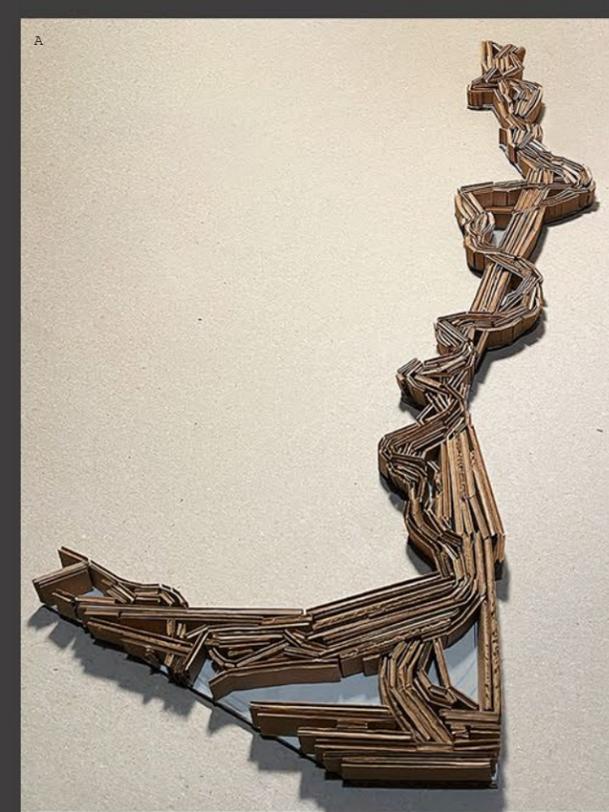
The birdhide and silt pottery studio is a hidden piece of architecture intended as a camouflaged shelter to observe birds and wildlife at close proximity. It is a community space dedicated to reclaiming the Don through ecological studies, pottery classes, and outdoor mud rooms for individuals to play with sediment and experience erosion firsthand.

The shelter is also used as a silt pottery studio for students of the Rosedale Heights School of the Arts and the City Adult Learning Center to embark on silt clay pottery making. The pottery process utilizes silt sourced from the alluvial channel as an early form of pottery making.



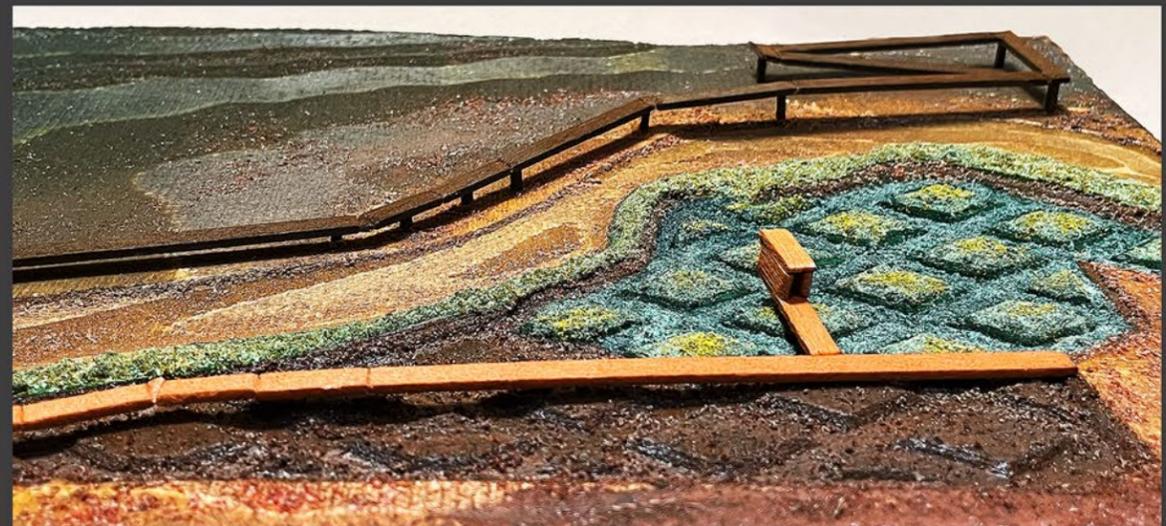
The shelter's passive design is intended to allow the space to become flooded in the event of a flood, during which the birdhide and studio are inaccessible.





[MODELS]

A + B + C. CONCEPT
D. CNC MODEL 1:500
E. DESIGN MODEL
(Bridge models are based on the first design iteration)





'THE SOURCE'

The exploration for my thesis began with the word "source" and how it could be represented in physical form. Often, the term source is defined as "the origin or mode of formation of something," while its technical definition refers to "a body or process by which energy or a particular component enters a system." The term is synonymous across multiple contexts as a starting point or provider of something. In nature, it is often associated with rivers to describe a river's beginning, or with energy sources such as the sun that power natural cycles essential for life.

"Source" in the physical world resonates with the philosophical principles of Hylozoism, which propose that all matter, in some sense, is living. The term "life" does not rely on consciousness; rather, the essence of life is intrinsic to all matter. Its conceptual applications personify architecture and the symbolic relationship between humans and the built environment. This interpretation led me to create an object/system that functions as a living thing, or as being alive, independent of human-driven systems and mechanisms.

The Source is designed as a planter lamp. The term "source" is represented by the roots of the plant, which are essential to the plant's life, and by the light source, which is crucial for sustaining the plant.

Hand-drawn sketches and diagrams illustrating the design process, including a cross-section of the mesh structure and a diagram of the plant's root system. The sketches include notes such as "The Source is designed as a planter lamp" and "The term 'source' is represented by the roots of the plant, which are essential to the plant's life, and by the light source, which is crucial for sustaining the plant." A prominent note reads "ALL MATTER HAS LIFE".



HIVE PARK

TYPOLOGY: PUBLIC PARK
YEAR: 2021

The community park is envisioned as an immersive journey through a forest, nestled within Toronto's downtown core. The project site, located in the Liberty Village neighbourhood, presents a rare opportunity to introduce green space into a mixed-use residential and office area largely defined by former industrial lands and parking lots, with limited existing parkland under the city's park provision. The park's landscape design takes inspiration from nature, as recreational elements are constructed to mimic forms created by bees. The built environment serves both a symbolic and functional purpose for visitors, since bees are a symbol of community and collaboration. The playscape is designed to encourage users to interact with the landscape by creating a space that fosters social interaction and community engagement.



SITE MODEL 1/8" = 1'-0"

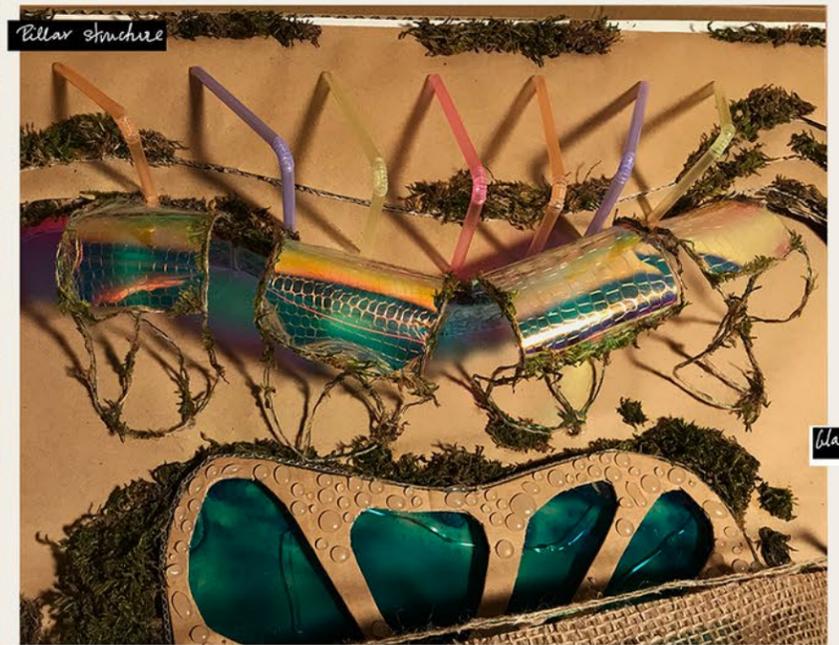


Transitional Elements



Canopy Structure -> mimics wings

Pillar Structure



Glass shelter for winter months



DESIGNING AN INTERACTIVE PLAYSCAPE

The community park adopts an interactive design to create an engaging and responsive environment through creative structures that influence how visitors experience their surroundings, fostering play, learning, and connection through built elements. The playscape utilizes biomimetic forms found in nature to mirror the journey of bees, while remaining situated in the middle of the city. The main design component was inspired by a wasp's nest, which informed the thematic elements of the parkscape and prompted further research into Hymenopteran architecture and the symbiotic relationship between bees and the natural world. The result is a dynamic experience that connects children to the natural environment through play and social interaction, while also providing areas of quiet contemplation for users seeking retreat.

Landscape at Night

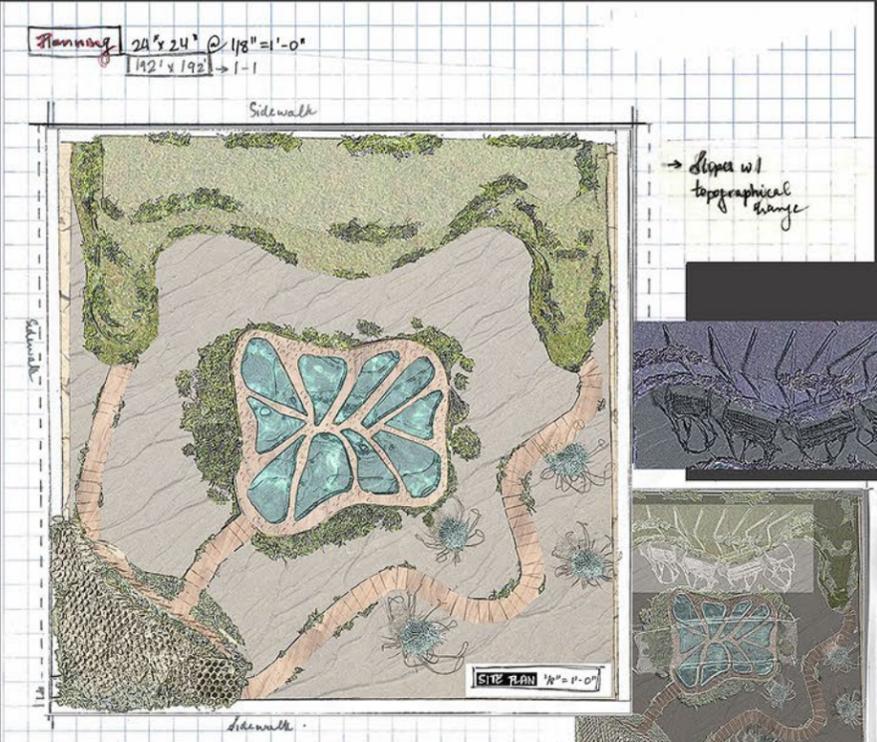


Found during construction!
(No Bees were harmed in the making)

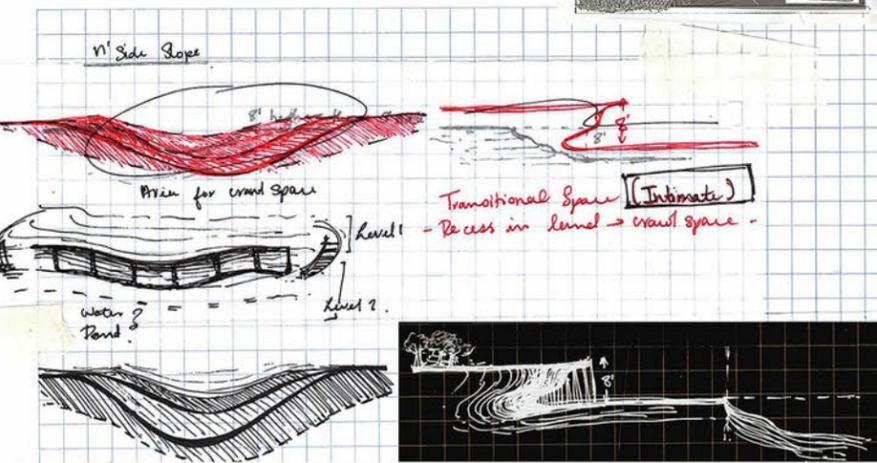
Landscape illuminated @ night to reflect canopy structure & depict monument



PROCESS PLANNING



→ Slopes w/ topographical change

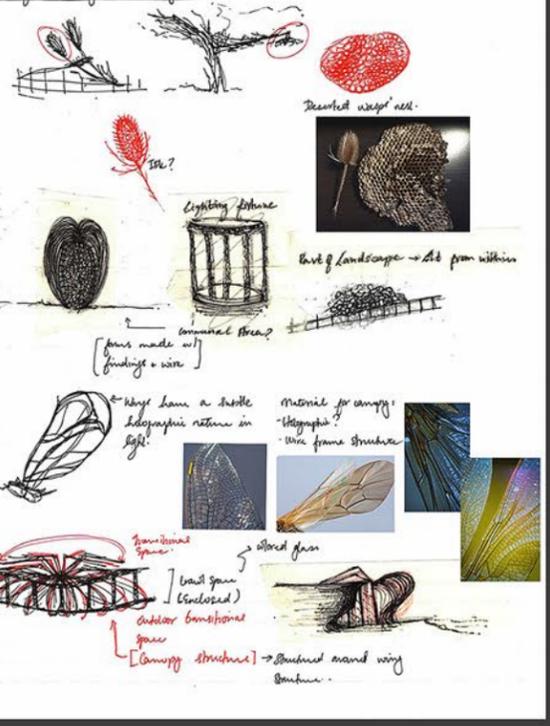


"Interactive Design: process-oriented guide to creating dynamic spaces & objects capable of performing a range of pragmatic & humanistic functions."
↳ Physical interactions are made possible by creative fusion of embedded computation (intelligence) w/ a physical, tangible counterpart (aesthetics).
uses technical aspects of isometric + kinetic + dynamic spaces as well as biology, psychology, psychology & environmental implications

Design process inspired by works of IRIS VAN HEEREN



Forms found during walk in forest



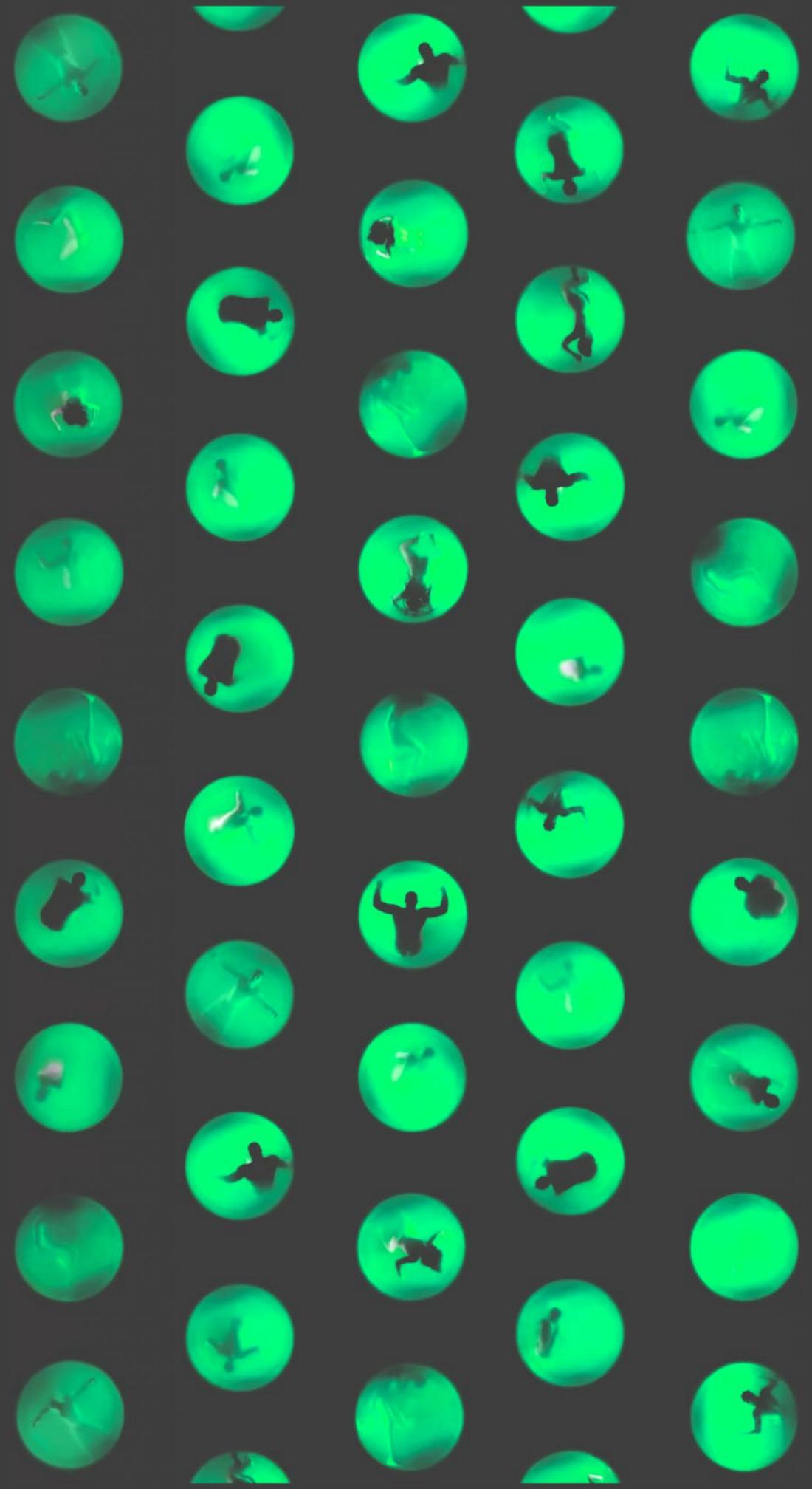
[MODEL-MAKING]

The model-making process for this landscape design project was highly interactive, as it involved foraging through a nearby forest for naturally occurring objects with distinctive forms. Landscape planning was secondary in the design process, as programmatic elements were designed based on the found objects. These natural forms were adapted into parkscape elements that create unique modes of interaction between users and the landscape, while encouraging abstract play by engaging children's imagination and fostering social interaction.

ISOLATION

TYPOLOGY: RESIDENTIAL BUILDING: Interior Design / Renovation
YEAR: 2021

37 Bulwer Street is home to a 33-year-old single father working as a healthcare frontliner, his 2-year-old son, and his elderly mother with mobility challenges. The home is designed with an emphasis on mental health and wellness for individuals struggling with Post-Traumatic Stress Disorder during the COVID-19 pandemic, along with accessible design provisions to accommodate the needs of persons with mobility impairments. The remodeling of the space is developed using the principles of phenomenology in architecture and spatial modality through the incorporation of sensory technologies and material processes. The home adopts an ontological focus on isolation as a consciously perceived phenomenon that allows the individual to disengage from the external stresses of their surrounding environment.



Isolation Island // To be Isolated

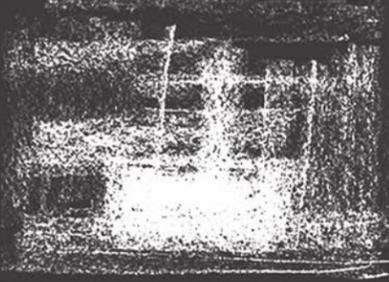


Site Plan

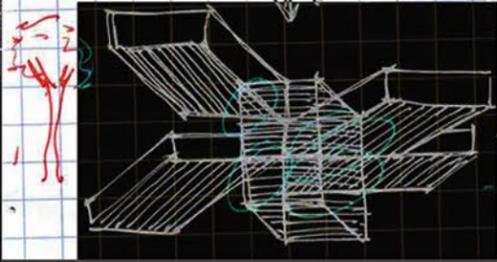
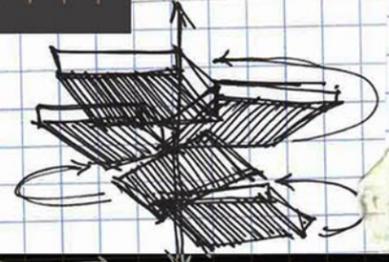
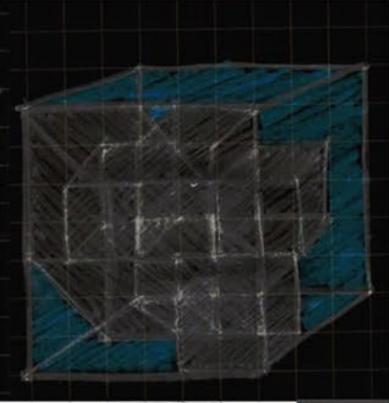
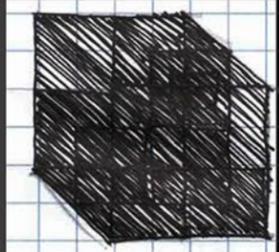
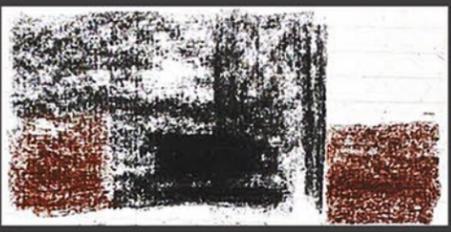
PHENOMENOLOGY IN ARCHITECTURE

Demonstrated in architecture as the manipulation of space, material, light & shadow to create a memorable encounter through impact on human senses. → integration of sensory perception as a function of built form.

Manipulation of light & Form

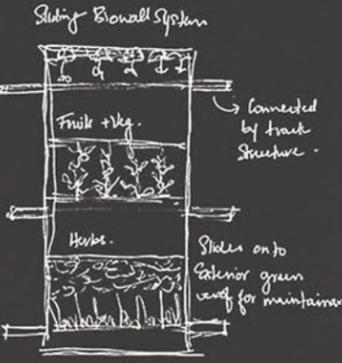
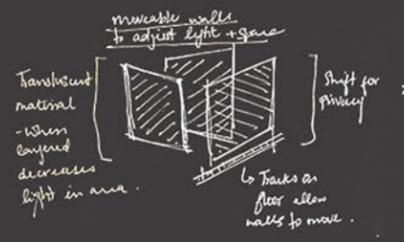
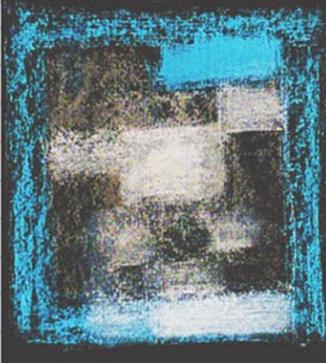


Density of material in lower levels (Basement)

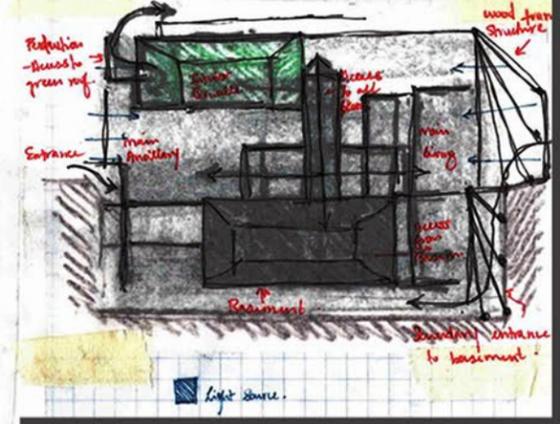
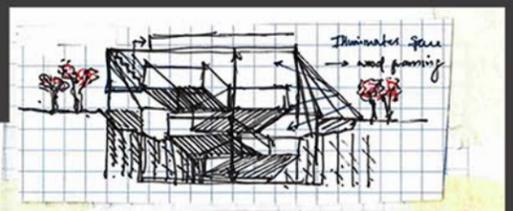


Structure leads back to interior
- Vistas accessible, rooms lead back inside

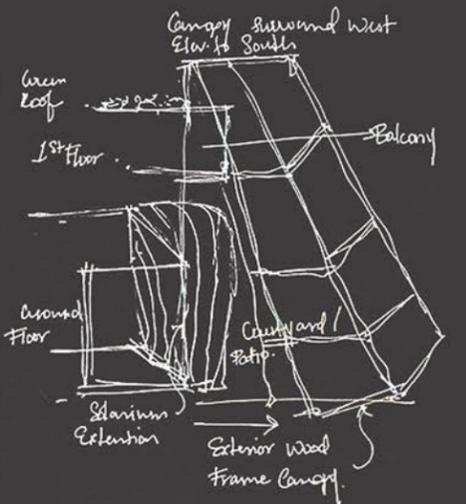
Depth of material moving outward mod. get translucent.



Sections



Structural + Systems



[STUDY MODEL]

- A + D. EAST ELEVATION
- B. NORTH ELEVATION
- C. WEST ELEVATION
- E. SOUTH ELEVATION

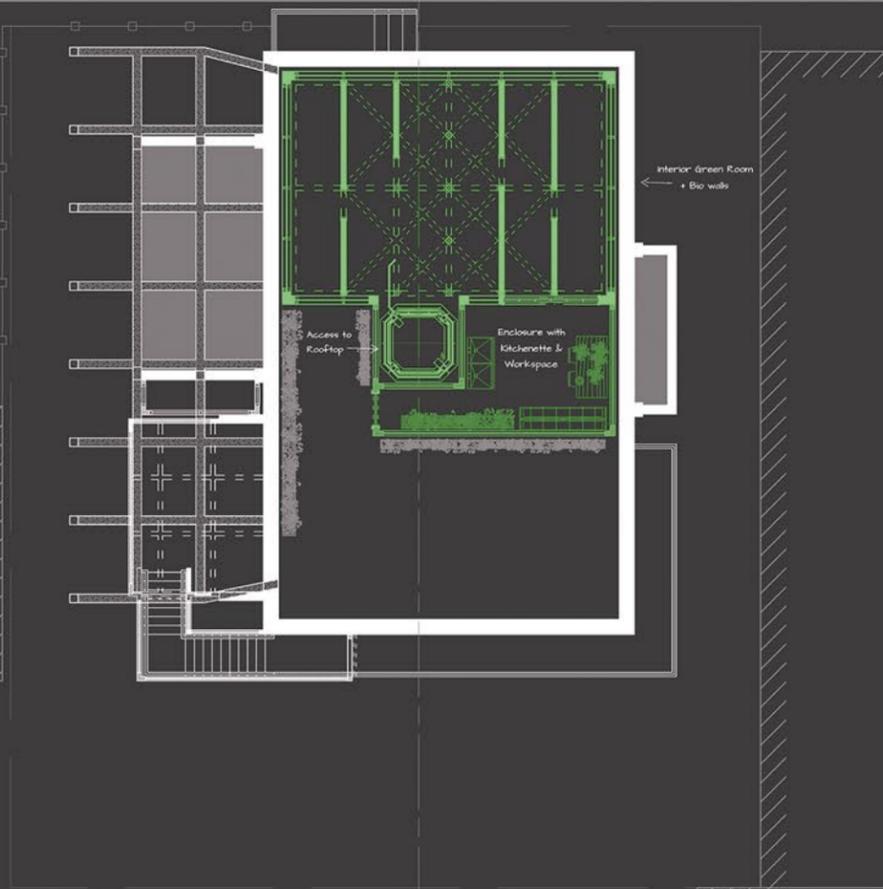
Legend: Solid, Void, Bronze paneling

SITE PLAN

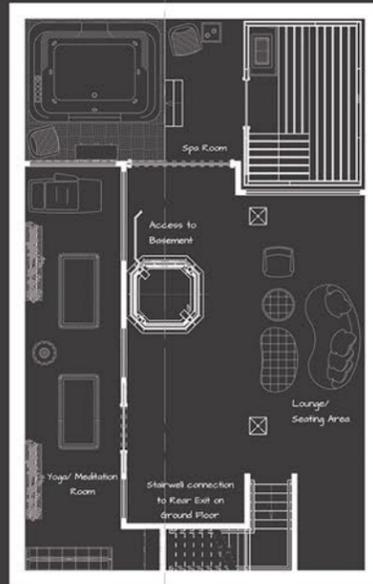
BASEMENT PLAN

GROUND FLOOR PLAN

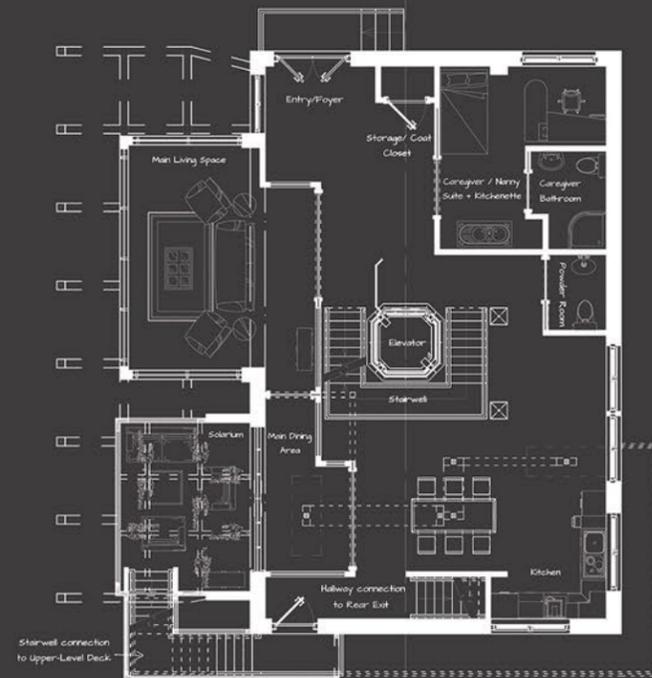
FIRST FLOOR PLAN



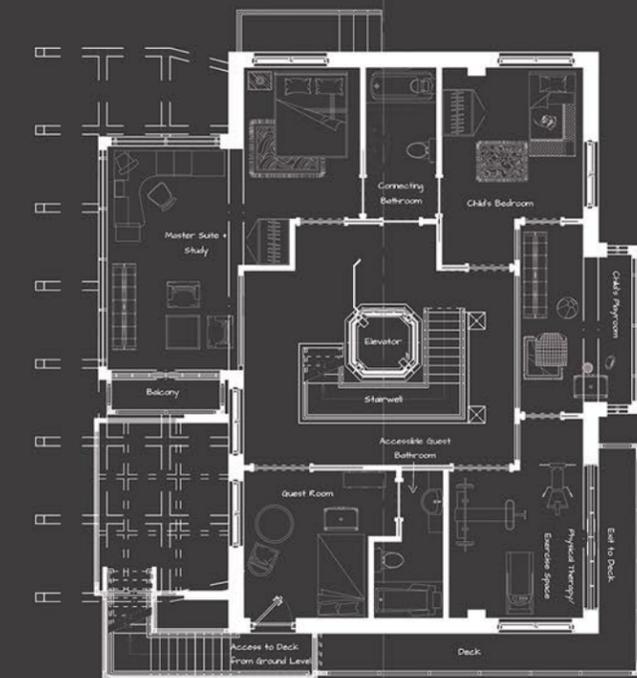
S1



S1



S1



S1

LONGITUDINAL SECTION

INTERIOR GREEN ROOF
Bioluminescent Glass Panels with Interior Bio Walls

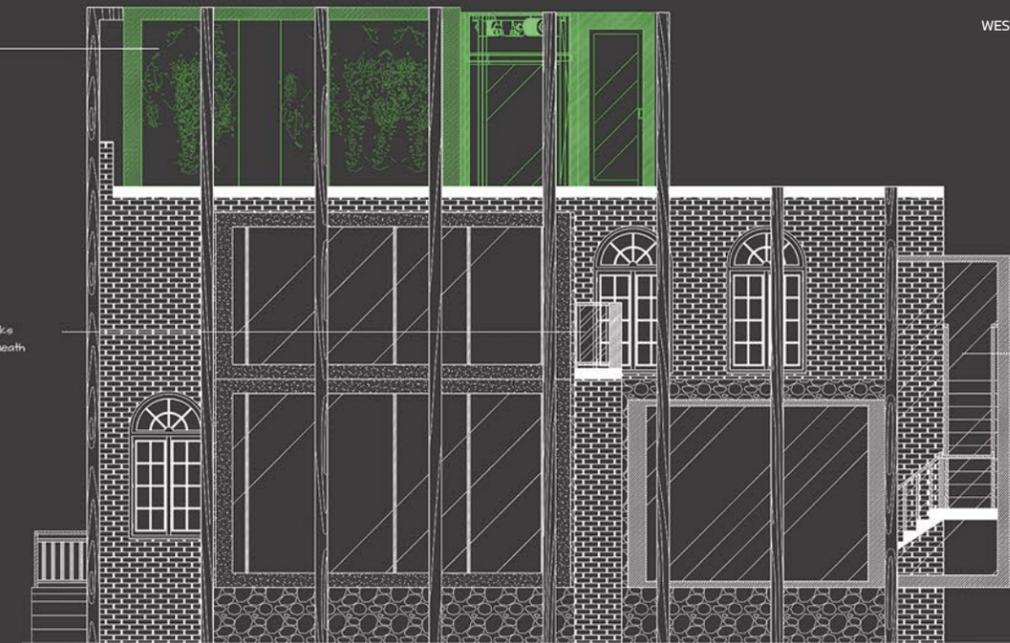
WEST ELEVATION

Enclosure to exterior stairwell ends
Entrance to exterior deck on First Floor

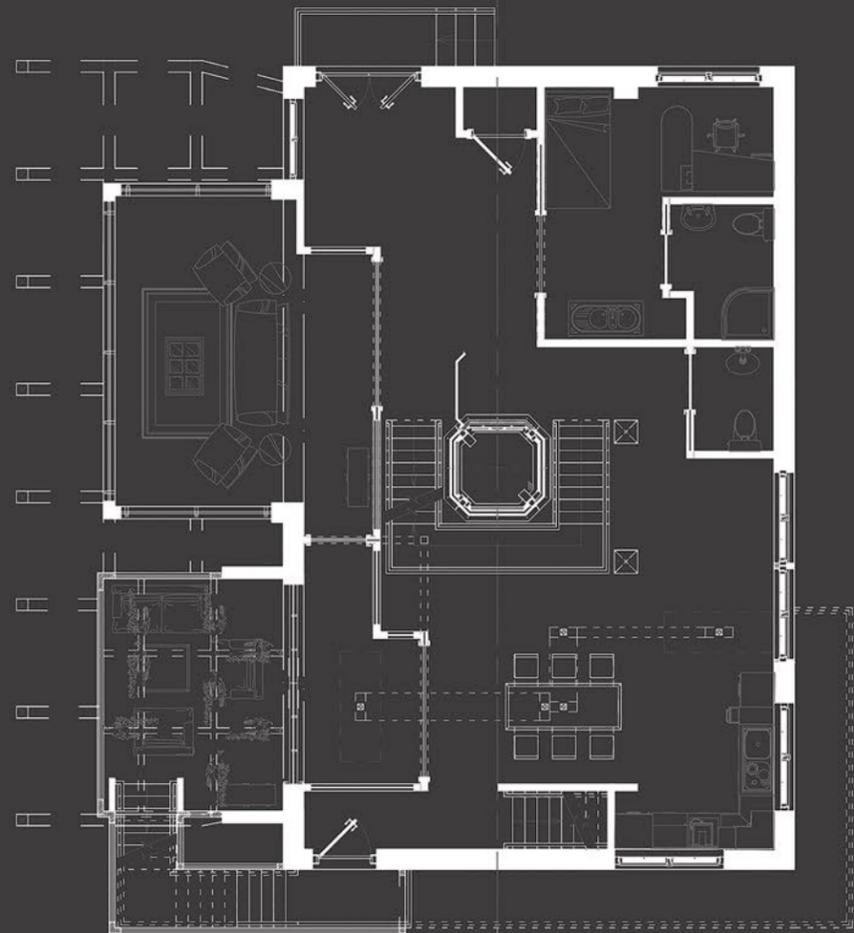


GLASS ELEVATOR
Connection across all floors

MASTER SUITE BALCONY
Master Suite Balcony overlooks Ground Floor Solarium underneath



EXTERIOR ENCLOSED STAIRWELL
Access to Deck Area on First Floor from Ground Floor Solarium



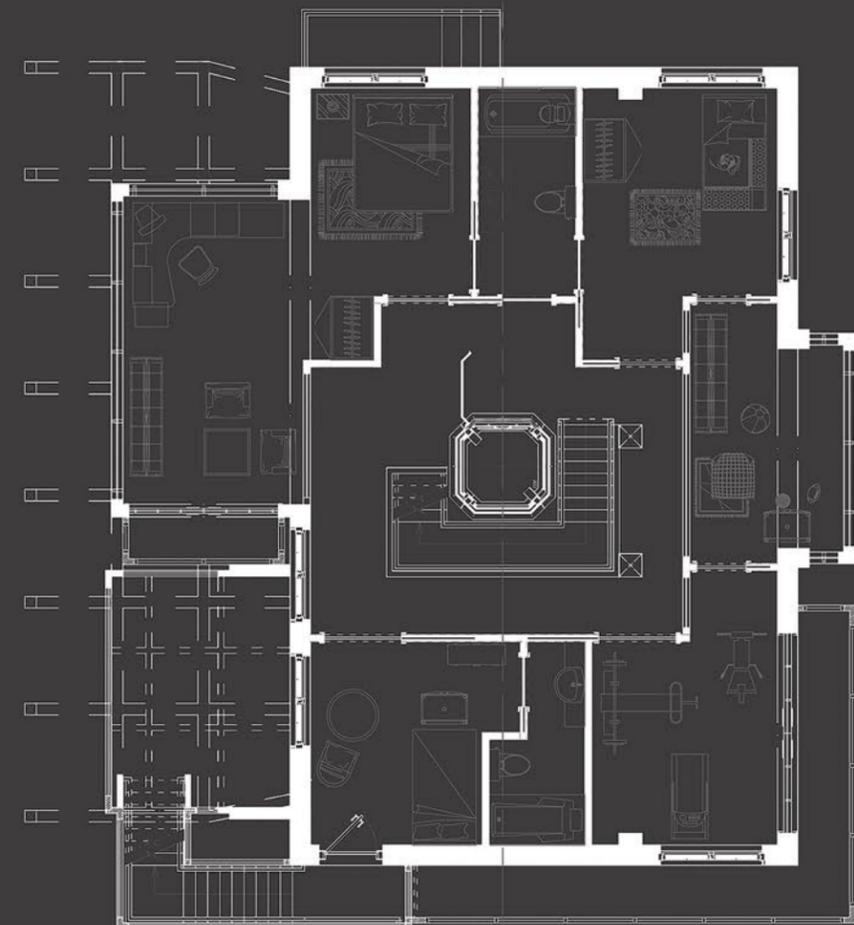
Concrete is used as a medium in its various forms throughout the interior spaces, inspired by Brutalist interior architecture. The home is designed to evoke the appearance of a concrete bunker-style building, as it is a space isolated from the external world. The material alludes to the psychological nature of a retreat from the external stresses of the surrounding environment, creating a secluded atmosphere where individuals can find refuge.



The modular kitchen island / dining unit is furnished with backlit green onyx stone to complement the bioluminescent green room located on the rooftop. The dining unit is showcased in different arrangements according to its intended function.



Backlit Green Onyx Stone



The original brick facade is re-utilized in the interior partition wall along with glass blocks to blend the interior-exterior spaces.



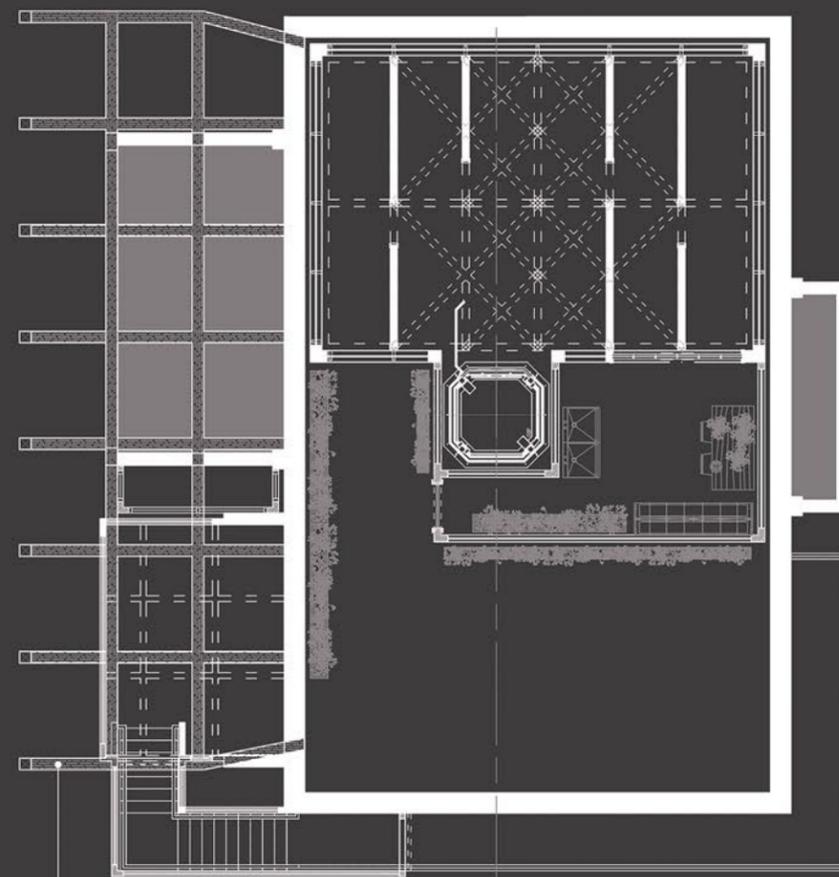
MODULAR DINING UNIT
The modular dining unit is a multifunctional kitchen surface that can be used as a kitchen island, breakfast nook, or dining table, depending on the functional needs of the client within the home.

The modular design is intended to adapt to the flow of the kitchen and dining area, allowing for increased transitional space for residents to carry out various activities or entertain guests without making the space feel overcrowded.

Floor tracks for dining unit to glide across



ROOF PLAN

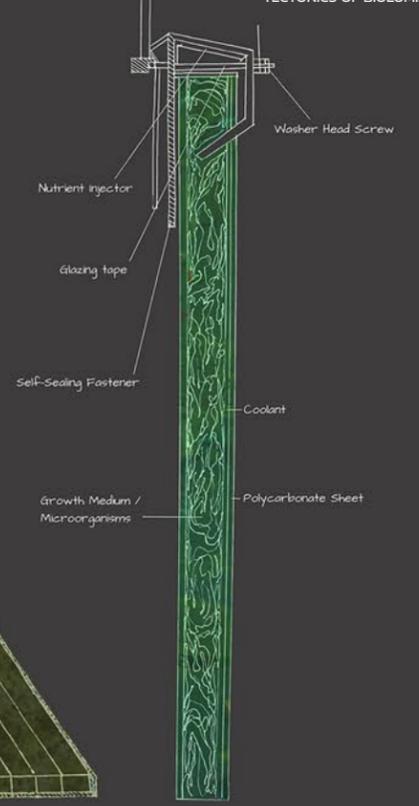


A modular track system, from which walls can attach and detach, is integrated into the panel's roof structure. To control light emission, the walls can fold into one another

The growth medium contains green fluorescent protein, which is activated during the emission of bioluminescent cool light

The bioluminescent green room is located on the rooftop of the Bulwer home. The green room is powered and controlled by modular bio-walls that harvest bacteria from the air as a growth medium to generate bioluminescent panels.

The panels provide an inexhaustible lighting resource by emitting "cool light" during the night. This form of lighting is a cost-effective solution and helps reduce visual light pollution, which can be overwhelming for individuals experiencing symptoms of PTSD.

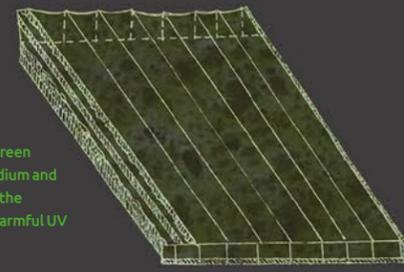


The light emitted can be controlled by a heat filtration system inside the thermal brick walls behind the interior green room

Cool light emitted from the bioluminescent panels is visible at night

POLYCARBONATE SKIN

The Polycarbonate skin protects the green fluorescent protein of the growth medium and other microorganisms housed behind the bioluminescent panel from the sun's harmful UV rays during the daytime

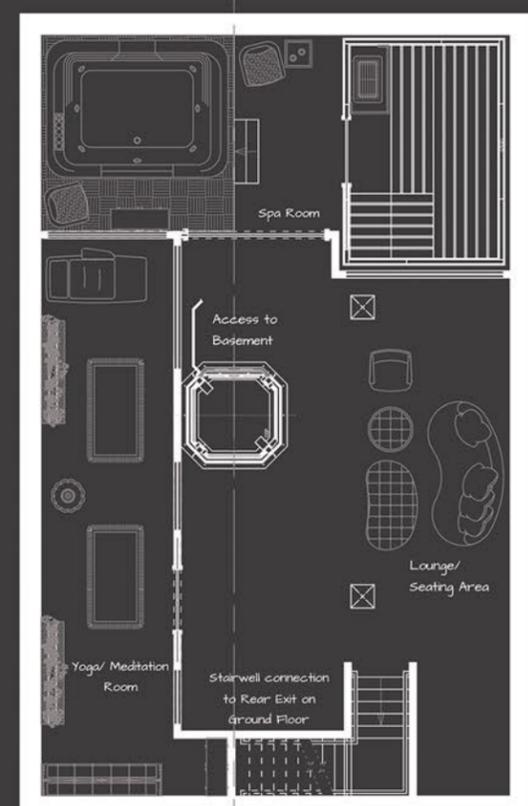


RENDERS

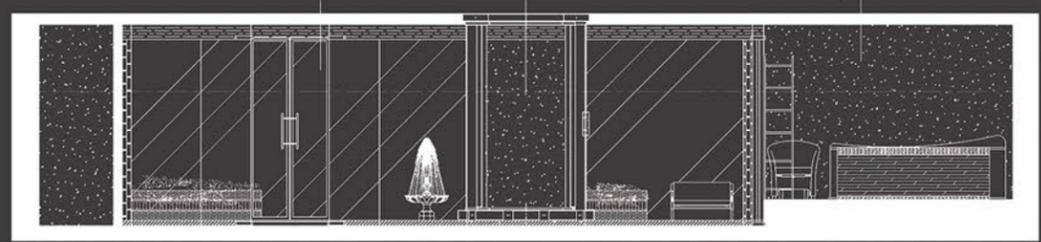
The exposed wood joist system encapsulates the west facade, serving as a transitional area to the south end of the building. The exposed joist system also acts as additional structural support for the west facade, as the majority of the ground and first levels of the home are composed of exterior glass walls.

The concept for the basement is inspired by the Therme Vals in the Graubünden Canton, Switzerland, designed by architect Peter Zumthor. The space creates a therapeutic atmosphere by reconfiguring the home's interior elements. A modelled circulation path manipulates the use of light and shadow on the basement floor, creating a physical and psychological retreat aligned with therapeutic activities for the primary client.

BASEMENT FLOOR PLAN



BASEMENT SECTION BLOCK WEST FACING



Yoga/ Meditation Room

Low natural light provided by glass elevator which is accessible on all floors

Spa Room

FEATURED PRODUCTS

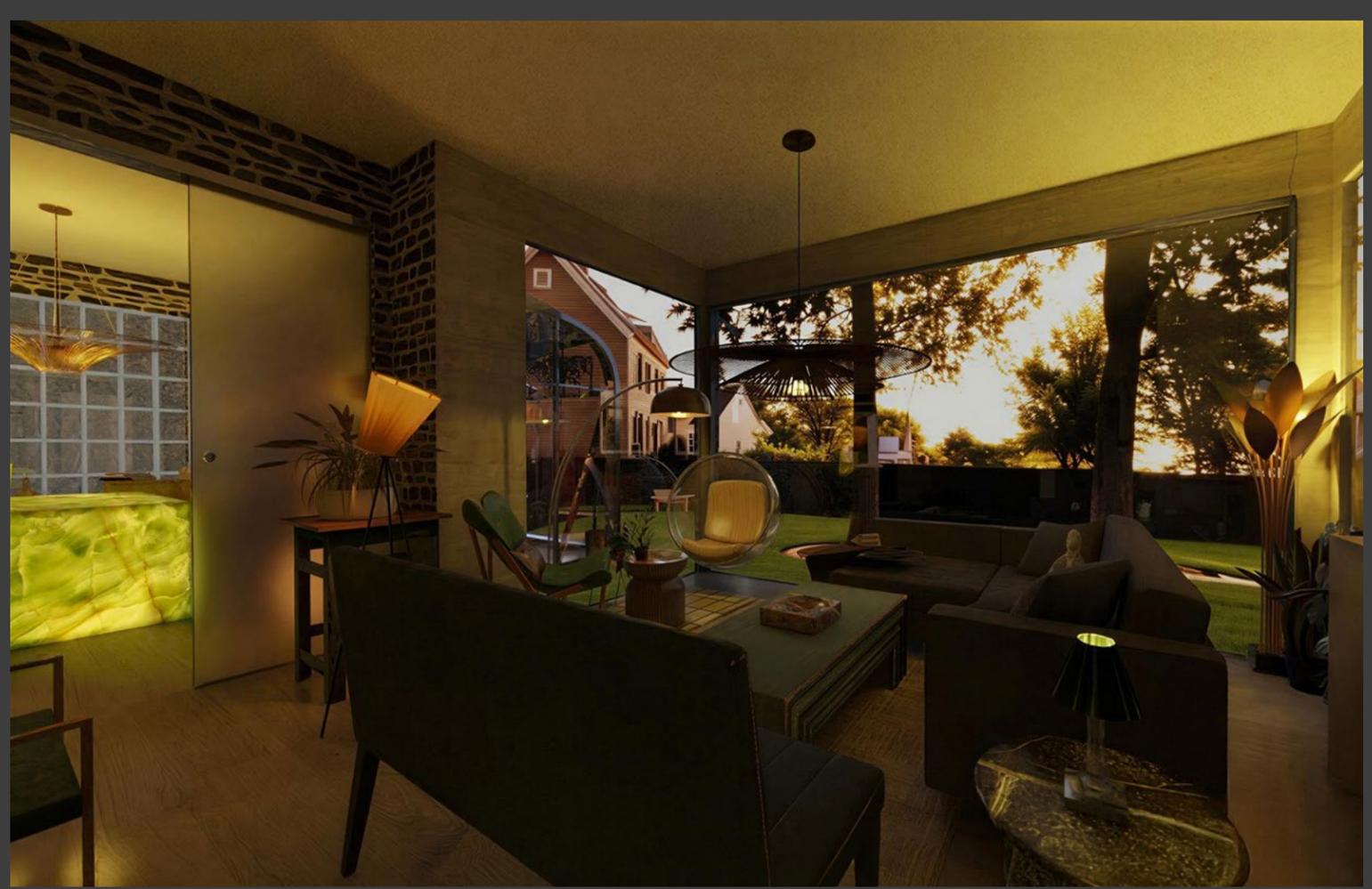
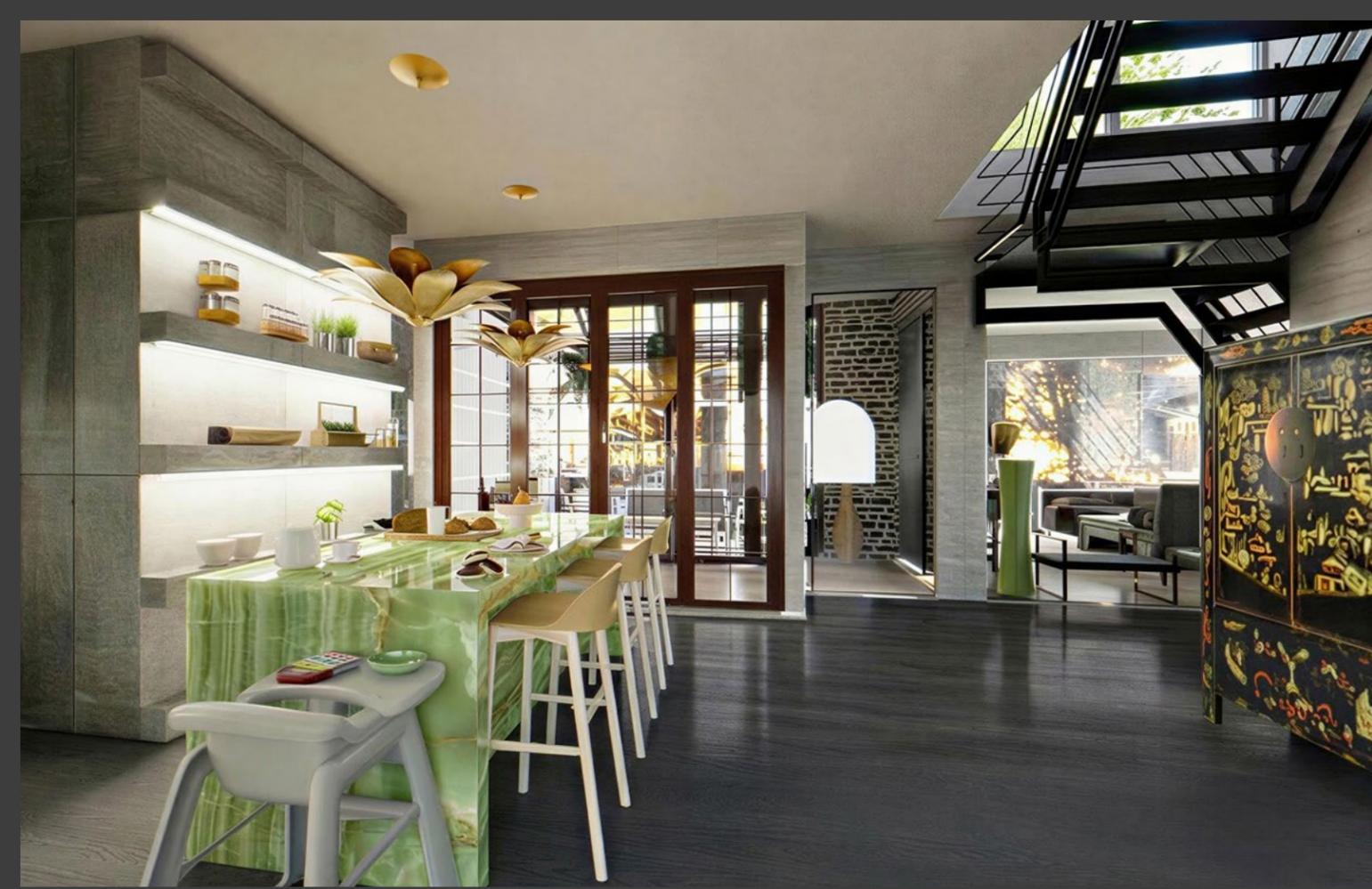
DUCHATEAU - The Palais Collection - Fontainebleau 36" x 36"



EUROVERRE - Nubio Clear Glass Block 6" x 6" x 4"

INDIA TUBE COLLECTION - Full Body Porcelain Tile in Camden 260





SHELL HOUSE

TPOLOGY: RESIDENTIAL BUILDING: Tiny House
YEAR: 2020

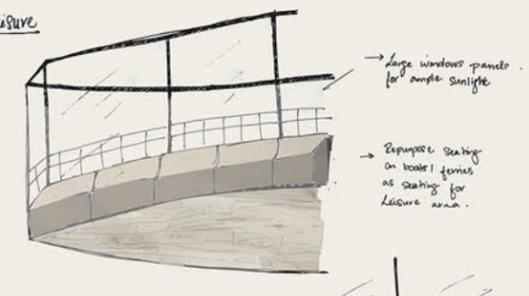
The Shell House is a tiny home situated by the beach on Ward's Island in Toronto. The structural system of the dwelling is designed to mimic the anatomy of a sundial shell, creating a unique circulation throughout the home and transitional spaces that offer unobstructed views of the lake.



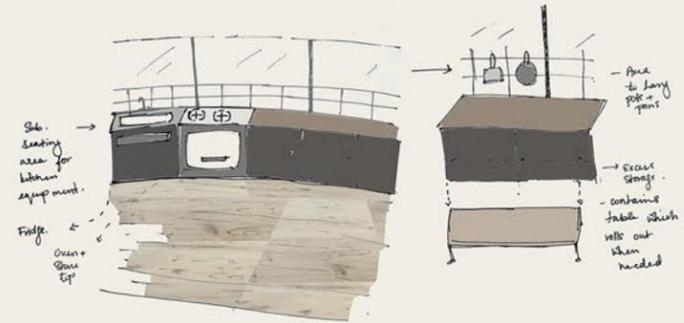


A house on Ward's Island repurposed a gangway (a movable platform or bridge used as a passageway for boarding or leaving a ship) as an accessible ramp to the home's porch

Leisure



Kitchen + Dining



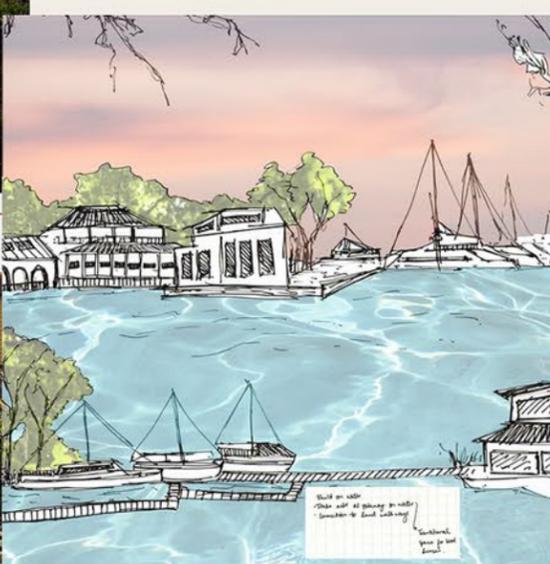
Bedroom + Workspace



The site study and program sketches were developed during a visit to Ward's Island. The island's unique characteristics and architectural language served as the inspiration for my tiny home design.

Locals often travel by bicycle on the island, as the roads are inaccessible to vehicles.

Many residents live on their boats or have converted waterborne vessels into homes and community restaurants, giving the Toronto neighborhood its distinctive architectural character.



Systems & Materials

Roof Panel - Power → Photovoltaic
↳ Flexible solar panels
- Roof shades angled @ 45° to accommodate for panel angle.

Glass Panels → Heat
↳ Heated glass
- Resistance heater → transparent, electrically conductive coating heated to float glass. Heat flow is subject to electric current.
- Stimulated by electrodes, thin oxide coating over inner face of vacuum creates by argon radiated heat

Structure - walls
↳ Insulated panels on wall shade.
Redwood → naturally waterproof
↳ untreated lasts for 80 years
↳ cheaper alternative → cedar, however not as water resistant.

Water System → Rainwater System
↳ system collect rainwater & store water for household use

Location
- heavy rainfall
- situated near lake access
↳ heavily polluted

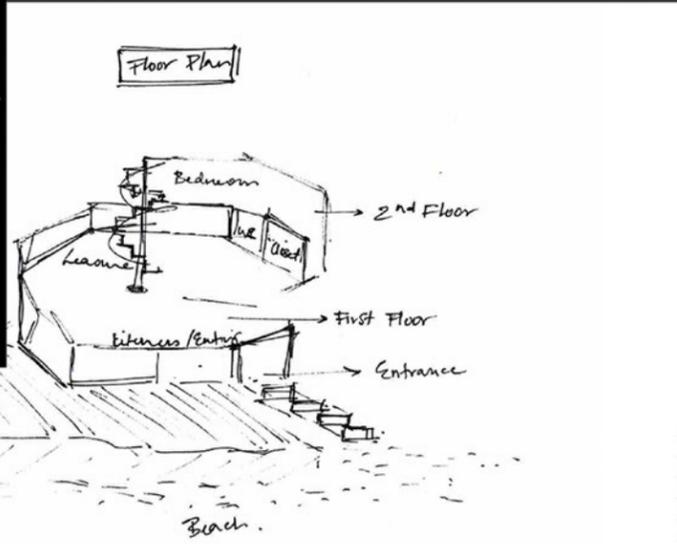
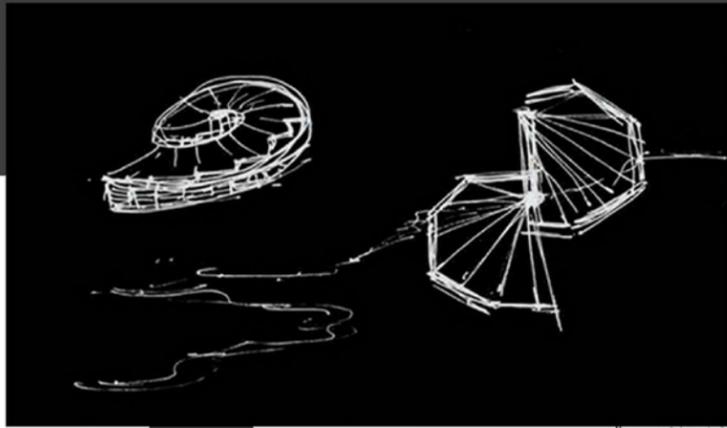
Observed voltage → 330V
Air condensation
Snow removal → 600W/m²
Surface temp: 20°C → 6°C

Diagram 1: 0.1" thickness, 2' x 1' size, Voltage - 160 watts

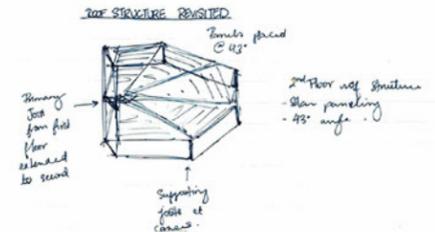
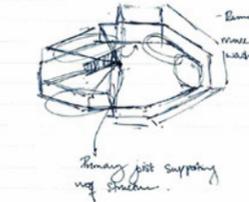
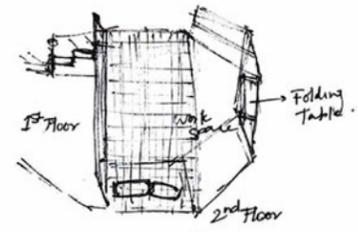
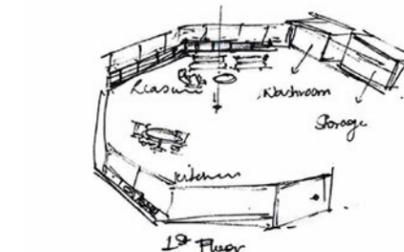
Diagram 2: Electrodes, Exterior, Interior

Diagram 3: rain gutter guard, roof anchor, main hole cover

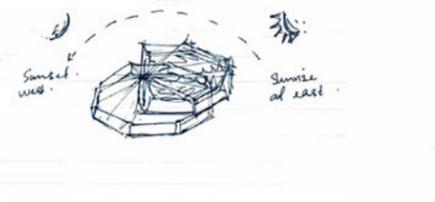
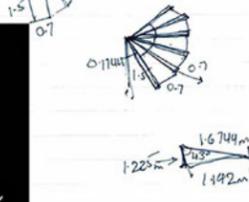




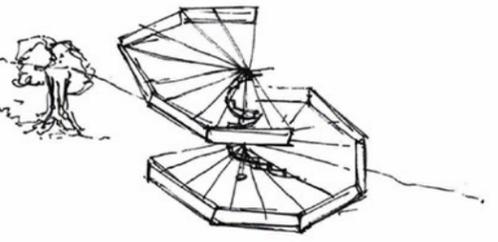
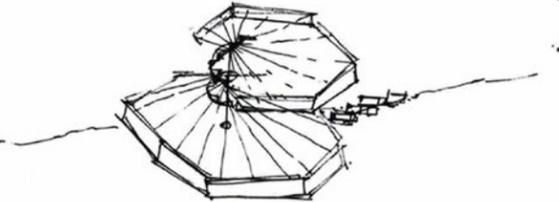
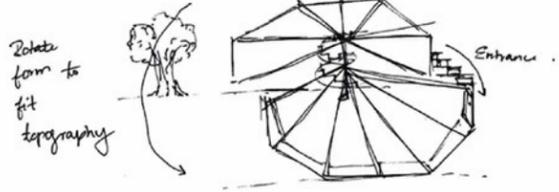
waves



Star Panels - Flexible
walkway 160watts
Thickness - 0.1 inches

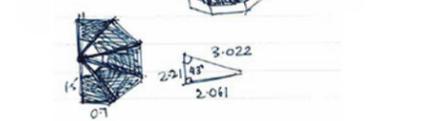
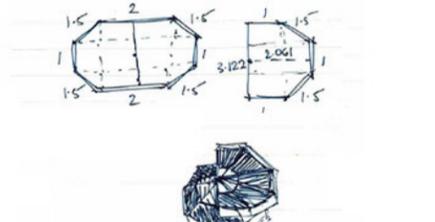
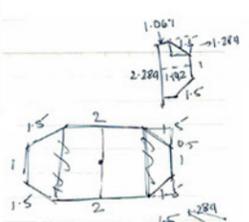


Roof Structure
Constructed using repurposed sails
→ Removable during summer months.
Attached to spiral staircase

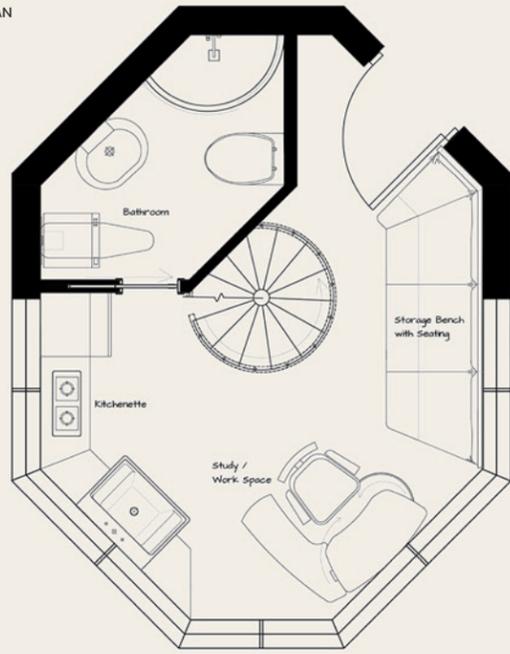


East Elevation

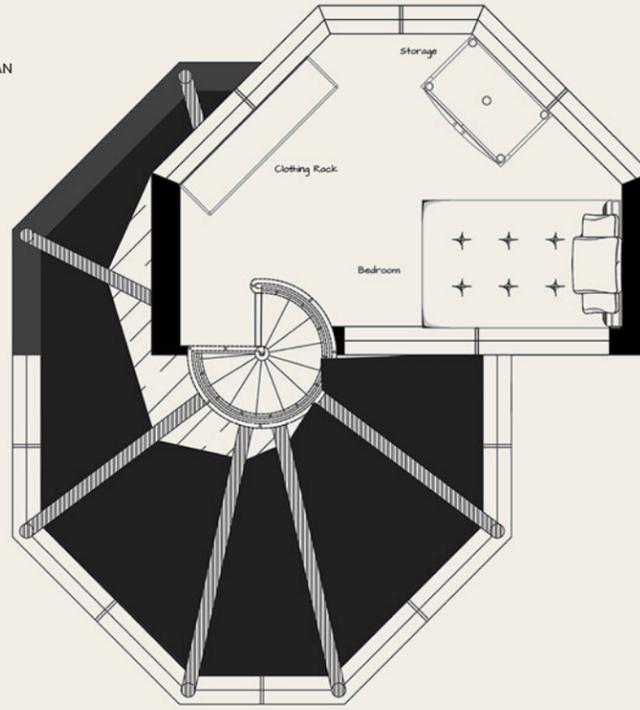
West Elevation



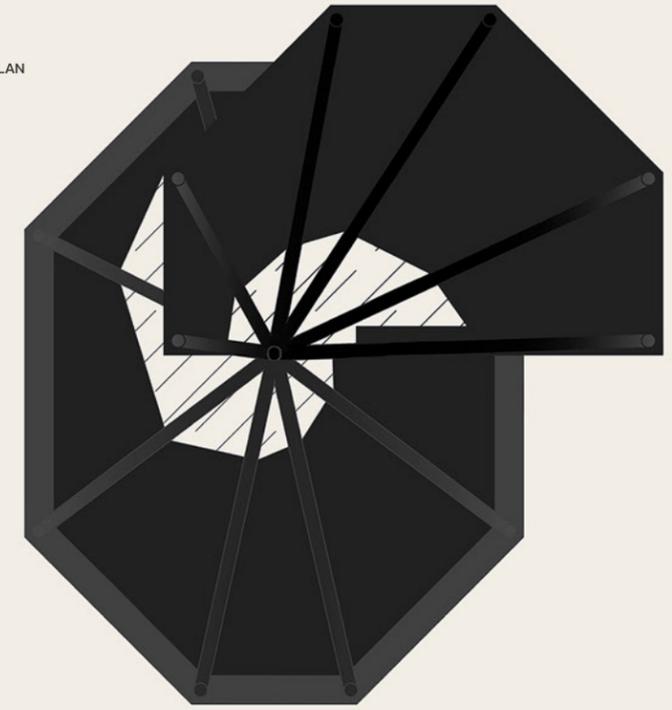
GROUND FLOOR PLAN



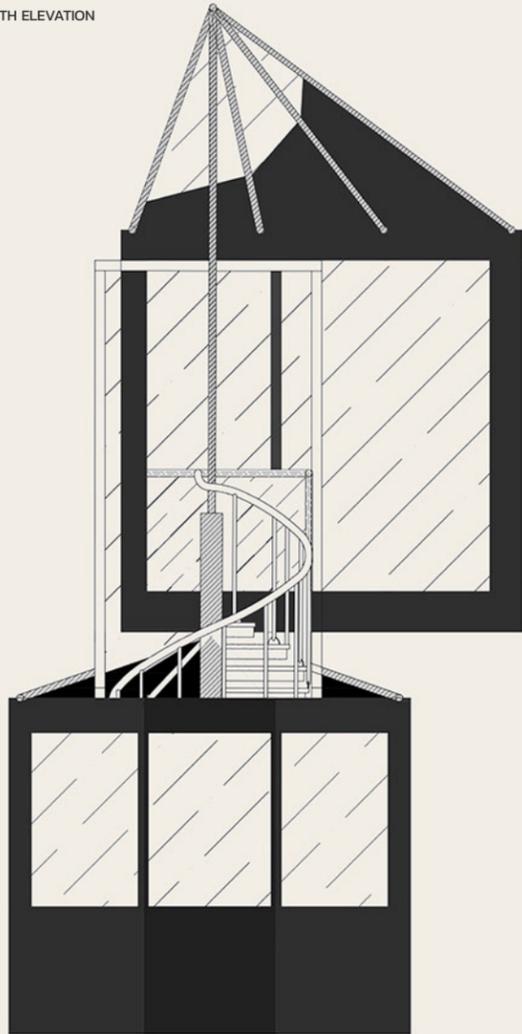
FIRST FLOOR PLAN



ROOF PLAN



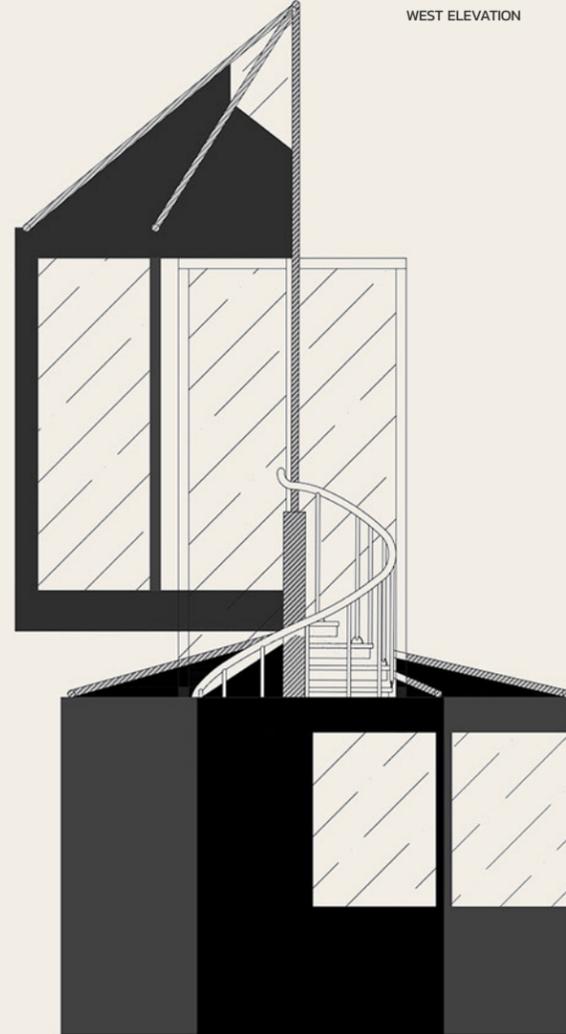
NORTH ELEVATION



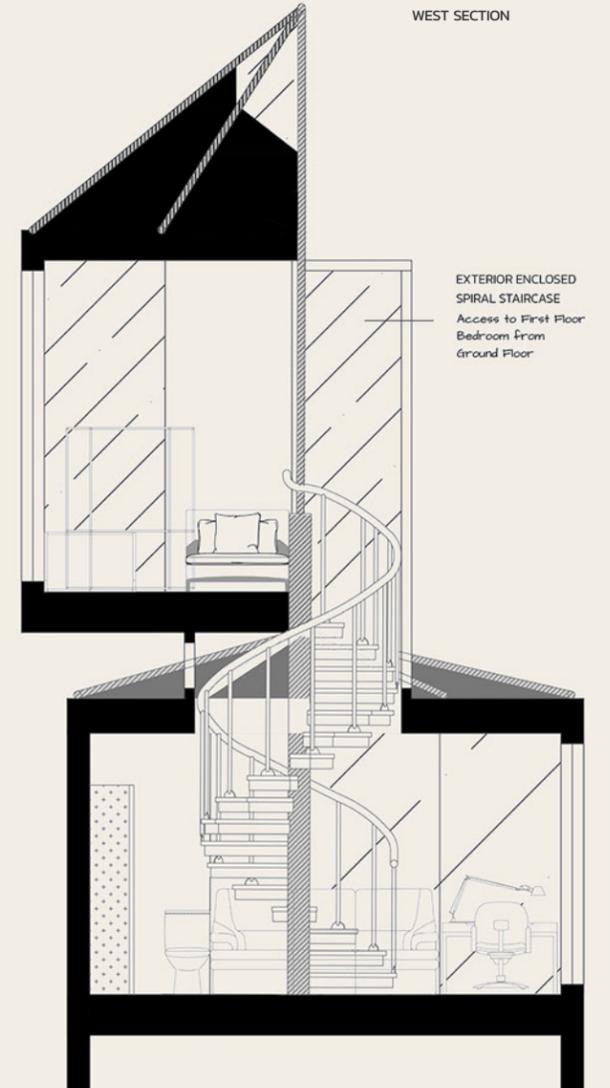
EAST ELEVATION

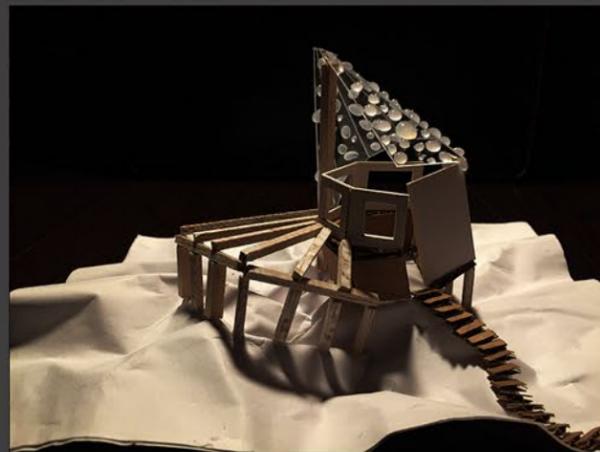


WEST ELEVATION



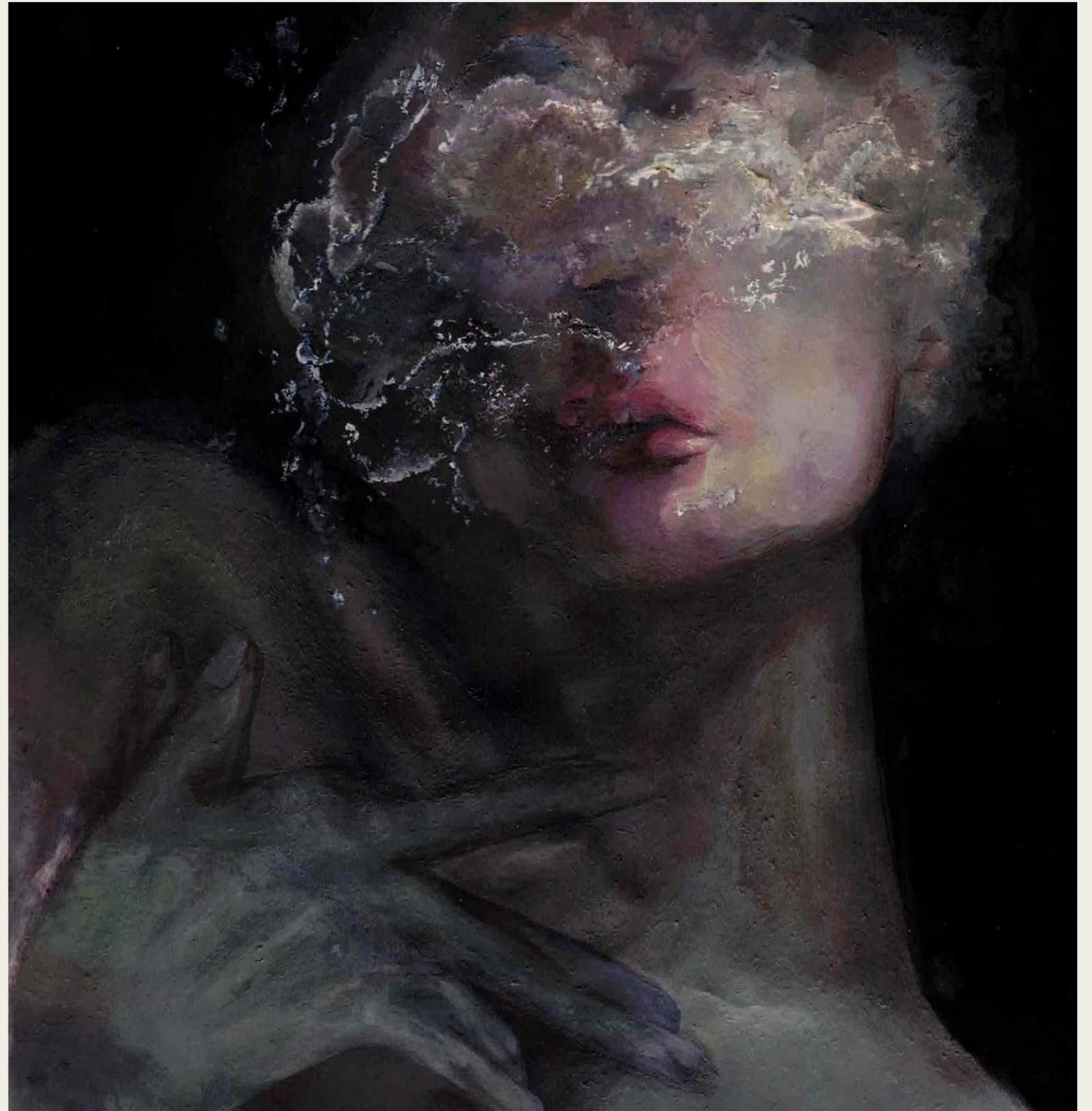
WEST SECTION





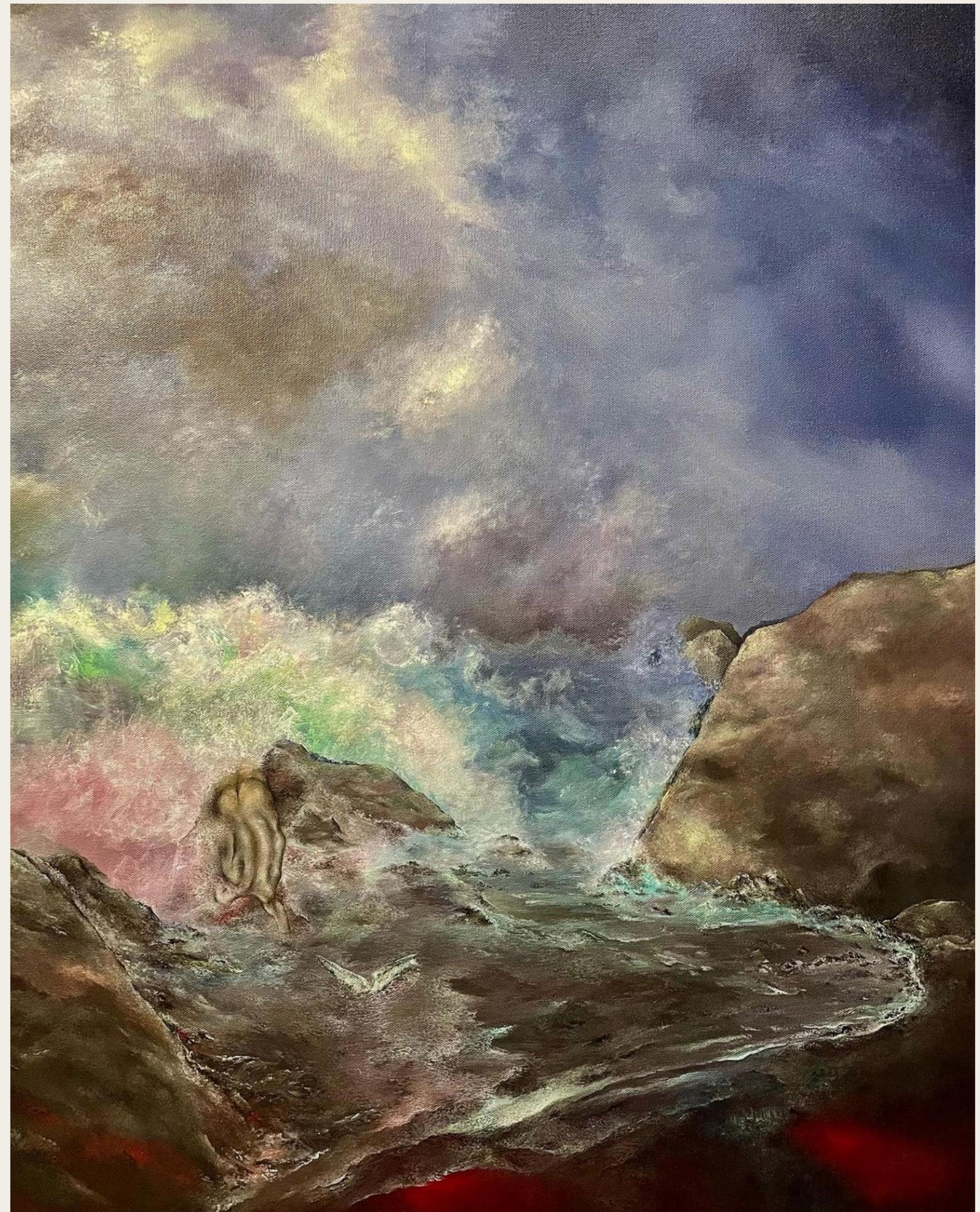
Untitled : (Self-Portrait)

MEDIUM: Acrylic and Gouache on Paper
YEAR: 2020



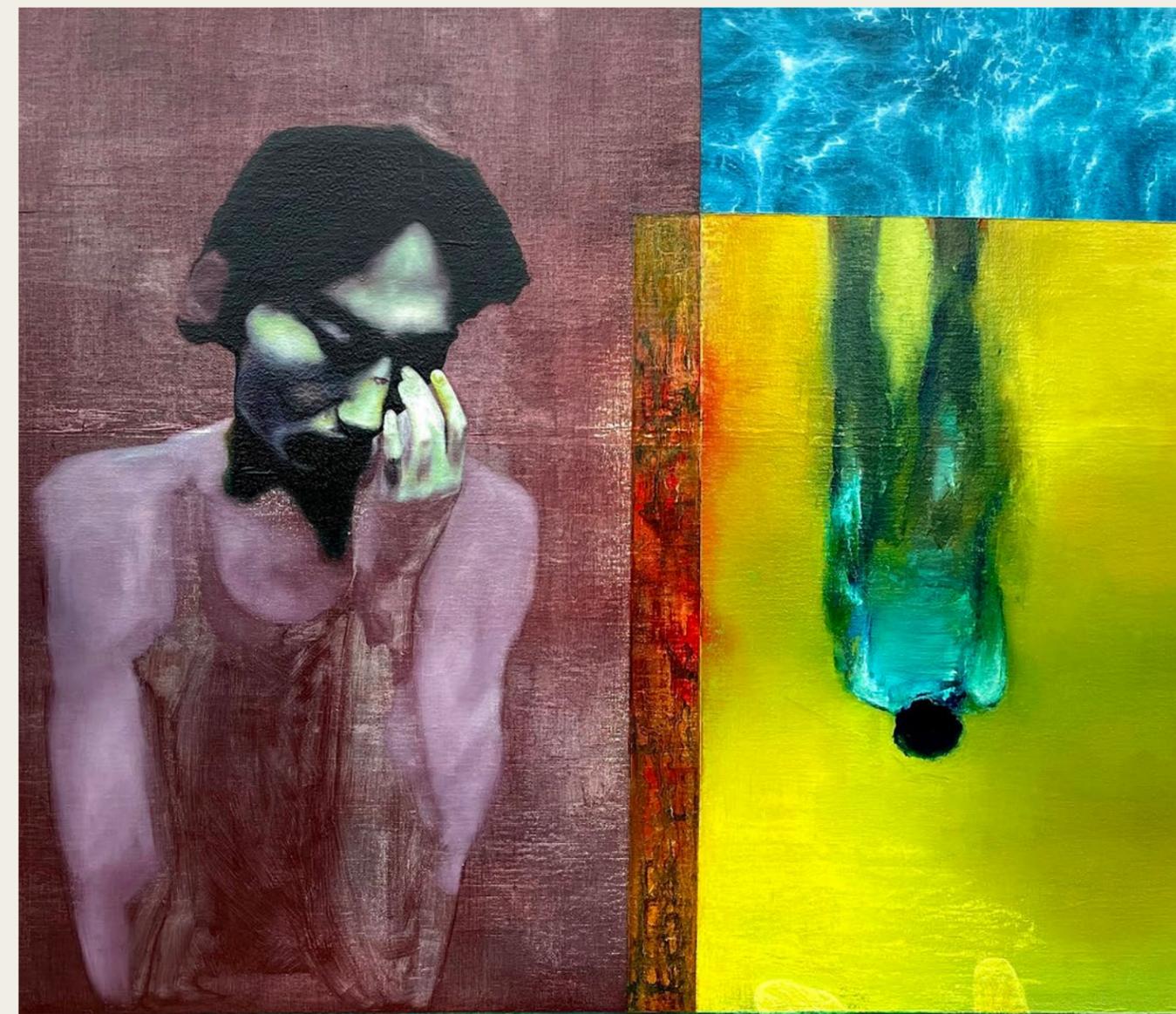
Relics of the Self

MEDIUM: Acrylic, Watercolor and Gouache on Canvas
YEAR: 2021



The Colours of Light

MEDIUM: Oil on Canvas
YEAR: 2023



'Hearts like Ours'

MEDIUM: Oil on Brass metal, Colored pencils on Plexiglass
YEAR: 2024

