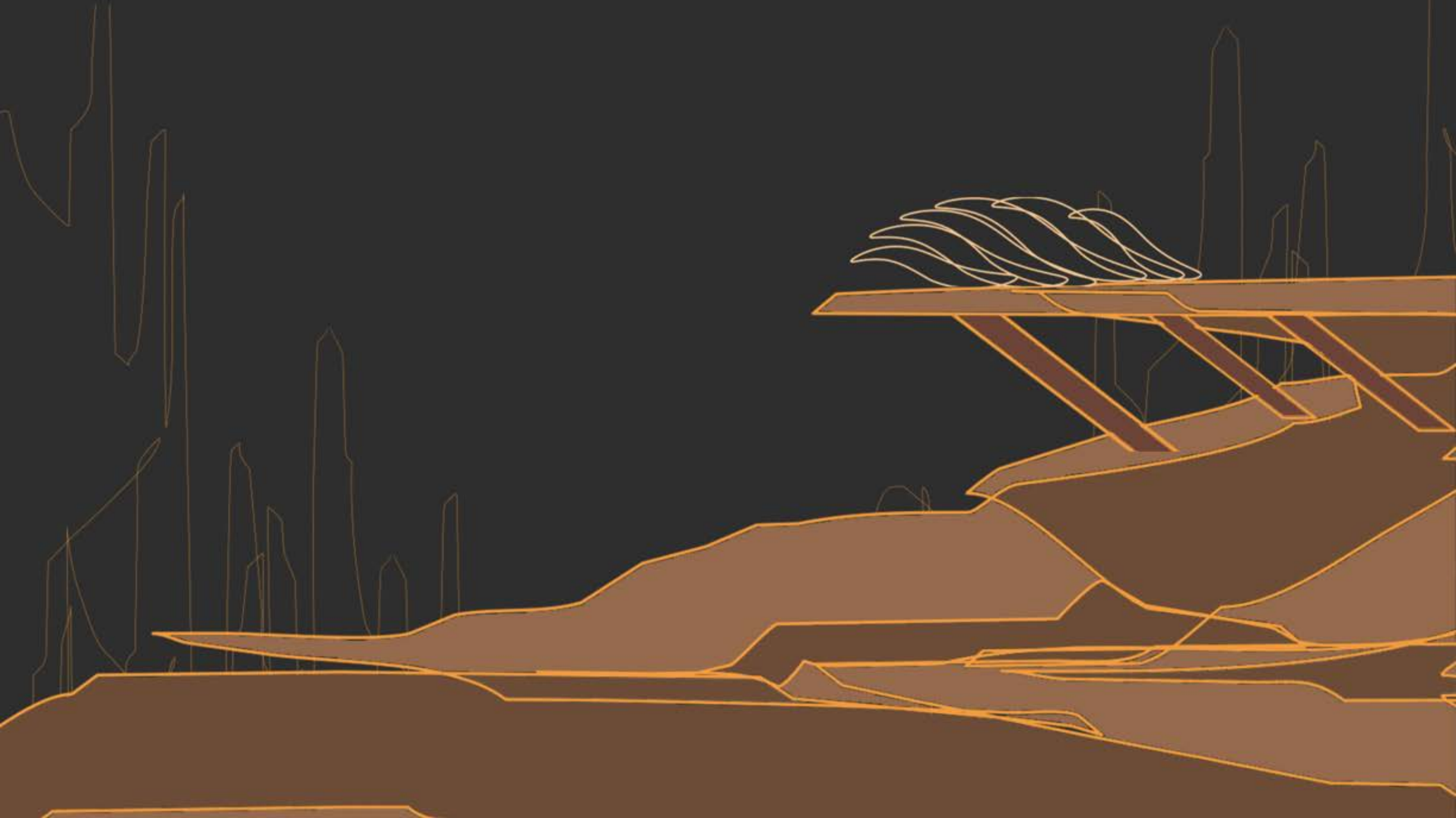


# PORTFOLIO

Matthew Kilby  
2024 Portfolio + Sustainability Research



# Matthew Kilby

+202-813-5652 · MatthewKilby9@gmail.com ·  
509 Highgate Terrace, MD, 20904

## ARCHITECTURE AND SUSTAINABILITY ANALYSIS

Motivated and results-driven Architecture School graduate seeking a challenging position within a large organization as a Architect or Sustainability Analyst. Offering a strong foundation in sustainable strategy, data analysis, and architectural design, with a proven ability to drive efficiency, deliver successful outcomes and collaborate within cross-functional teams.

## KEY COMPETENCIES

Architectural Sketching	Revit / AutoCAD / SketchUp / Rhino
Adobe Creative Programs	Microsoft Programs and PowerBI
Twinmotion/ Enscape	Familiar: JAVA,HTML, and Python

## PROFESSIONAL EXPERIENCE

**Whiting-Turner** May 2025 - August 2025  
**Practice Innovation Intern**

Worked with the Practice Innovation Group to create dashboards, presentations, and catalogs that enhanced support for operational teams across the organization. Analyzed and organized data significantly improving data accessibility, flow efficiency, and streamline decision-making.

**Quinn Evans, DC** June 2022-August 2022  
**Architectural & Sustainability Intern**

Assisted in collecting and displaying performance metric/LEED data across all QE's 2019, 2020, and 2021 projects.

Worked with the Lincoln Memorial Undercroft project team to create a marketing section cut image. Designing a diagram to present the embodied carbon data for all of Quinn Evans's Projects in 2021.

**Residential Construction** May 2020- November 2020  
**Laborer**

Read and understood the plans and documentation for a complex cistern system. Prepared job sites efficiently by clearing debris and setting up materials and tools. Use shovels or heavy equipment to move various materials.

## EDUCATION & CERTIFICATIONS

**University Of Maryland**

B.A. in Architecture  
Minor in Sustainability

**Historic Preservation Research**

Kippax Plantation Archaeological Site with  
University Of Maryland

**Sustainability Scholars Program**

Environment, Technology, and Economy

## EXTRACURRICULAR ACTIVITIES

**DEI Committee, Business Fraternity**

PSE Board Member

**Club Volleyball**

**Architecture Competition Team**

**ETE Volunteering**

**LEED Green Associate**

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## Professional

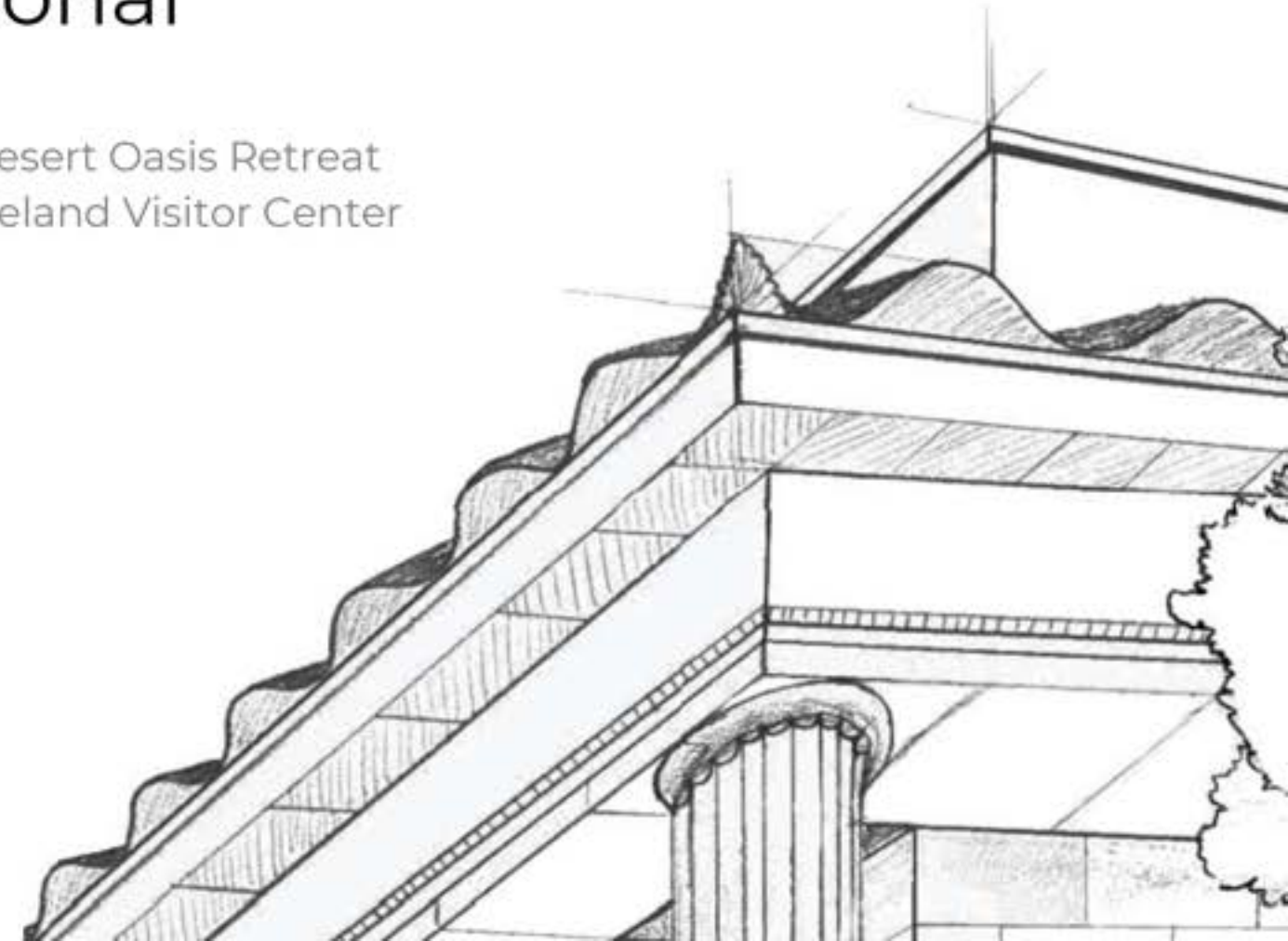
- Lincoln Memorial
- Design Diagram/LEED Data
- Embodied Carbon Data

## Academic

- Art Gallery: Climate Crisis
- Barcelona Pavilion Case Study
- Multimedia Project
- Lily Pad Bench Design

## Personal

- Desert Oasis Retreat
- Iceland Visitor Center





# Lincoln Memorial Undercroft

Internship 2022

I contributed to the Lincoln Memorial Undercroft renovation, a project focused on expanding the 750-square-foot exhibit space beneath the monument. My role involved producing a marketing section cut image, using Revit and Photoshop to highlight the relationship between the newly constructed additions and the historic spaces preserved beneath the memorial.



Professional



*The Undercroft preserves the grandeur of the large pillars that define the underlying structure. A careful interplay between raw concrete and natural wood elements establishes a balance within the space.*

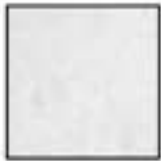


## Revit Model and Photoshop

I created a section cut in Revit and enhanced it with textures in Photoshop to emphasize both materiality and atmosphere. This approach ensured technical accuracy while delivering strong visual impact.

Beneath the memorial lies the project's central focus: 36 massive Doric columns that support the structure above. These elements not only reference classical Greek architecture but also carry symbolic meaning, representing the 36 states in the Union at the time of Lincoln's death.

### Textures



White Granite



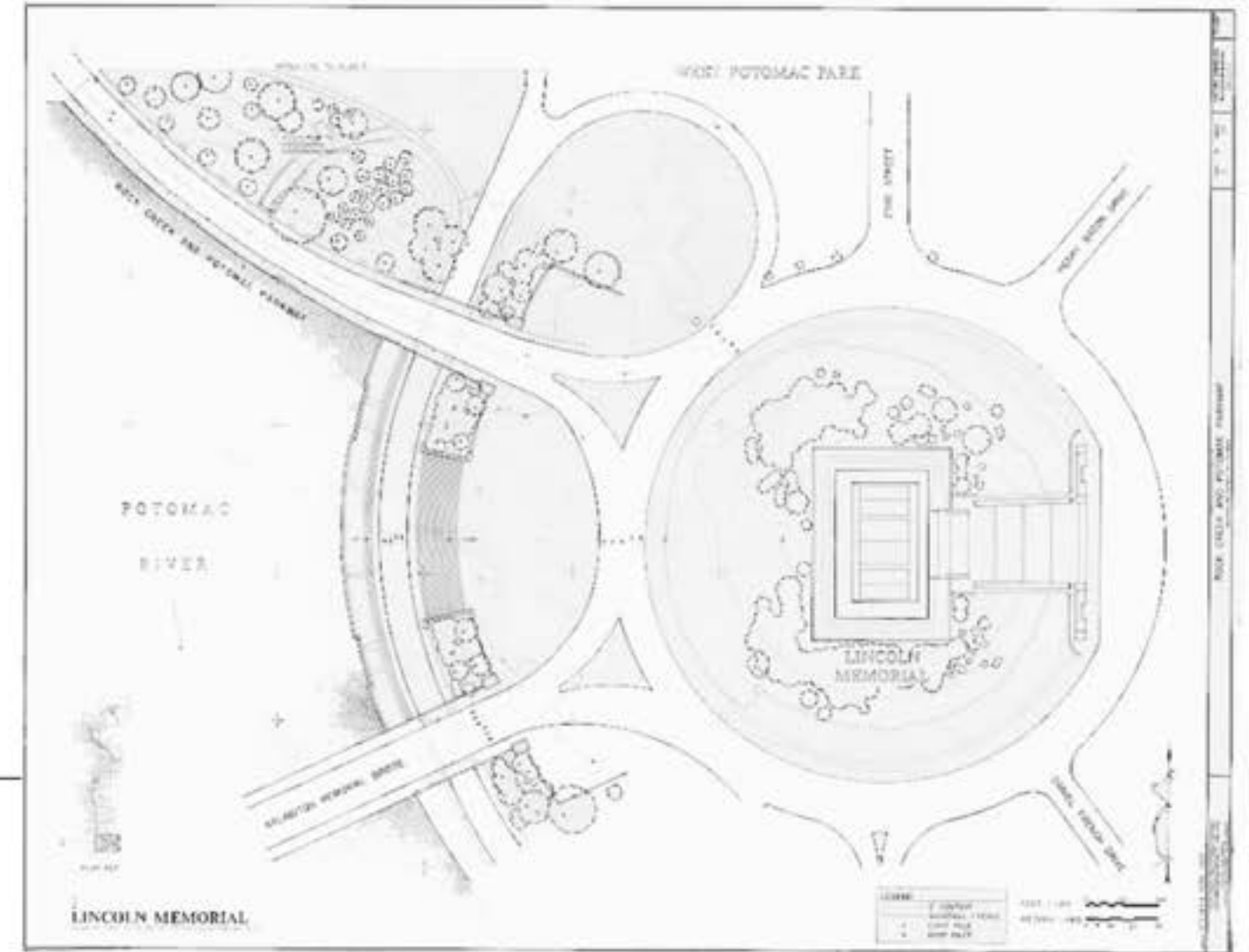
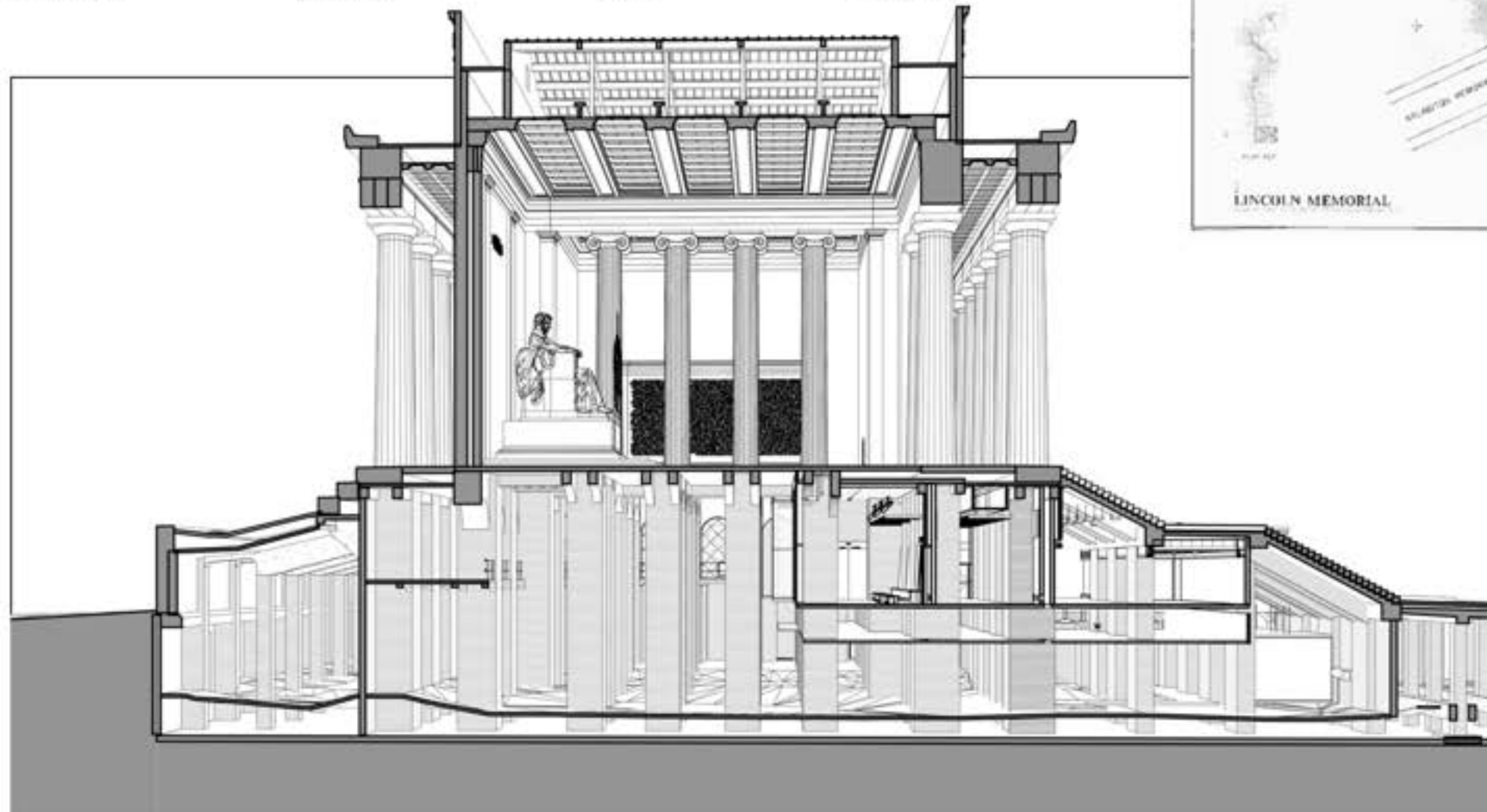
Walnut



Dirt



Concrete



### Lincoln Memorial Site Plan

*The Lincoln Memorial's location in the heart of the nation's capital, along the tranquil banks of the Potomac River, makes it not only a place of reflection on Lincoln's contributions but also a powerful symbol of the ideals upon which the United States was founded.*

# Design Diagram: LEED Data From All 2022 Projects

Internship 2022

This Project Is A Visual Representation Of How Our Choices Contribute To A Greener And More Sustainable Future.

## Narrative

I developed a design that illustrates the carbon savings achieved by Quinn Evans through the preservation of existing structures across all 2022 projects. This approach reflects the firm's commitment not only to innovation but also to reducing its carbon footprint.

By retaining and adapting buildings rather than rebuilding from scratch, significant CO<sub>2</sub> emissions are avoided. One highlighted project demonstrates this strategy by revitalizing a historic building—extending its life while underscoring a dedication to responsible, sustainable architecture.

## Embodied Carbon

DC Office | Matthew Kilby | University Of Maryland

### QE SAVES EMBODIED CARBON

By preserving existing structures we avoided **84,600** metric tons of Co2 from being released into the atmosphere.

#### ALL QE PROJECTS

Carbon Released	183 K
Carbon Neutral	
Carbon Avoided	84.6 K

#### Coppin State University College of Business

60% New Construction  
40% Existing



#### Coppin State University College Of Business

Released	2.6K
Neutral	
Avoided	1.7K

#### *Big Ideas / Sustainable Stories*

- QE saves embodied carbons by preserving existing structures.
- Saving existing buildings reduces the carbon emission that new construction has. This helps to slow climate change and work towards a cleaner style of architecture.
- Coppin State University College of Business is a prime example of how preserving existing building keeps carbon out of the atmosphere.





# PowerBI: Embodied Carbon Data

Internship 2022

In our pursuit of sustainable design, I spearheaded the creation of an interactive dashboard using Power BI, enabling users to comprehend the carbon footprint of various projects in practical and insightful terms.

## Summary Of Panel Functions

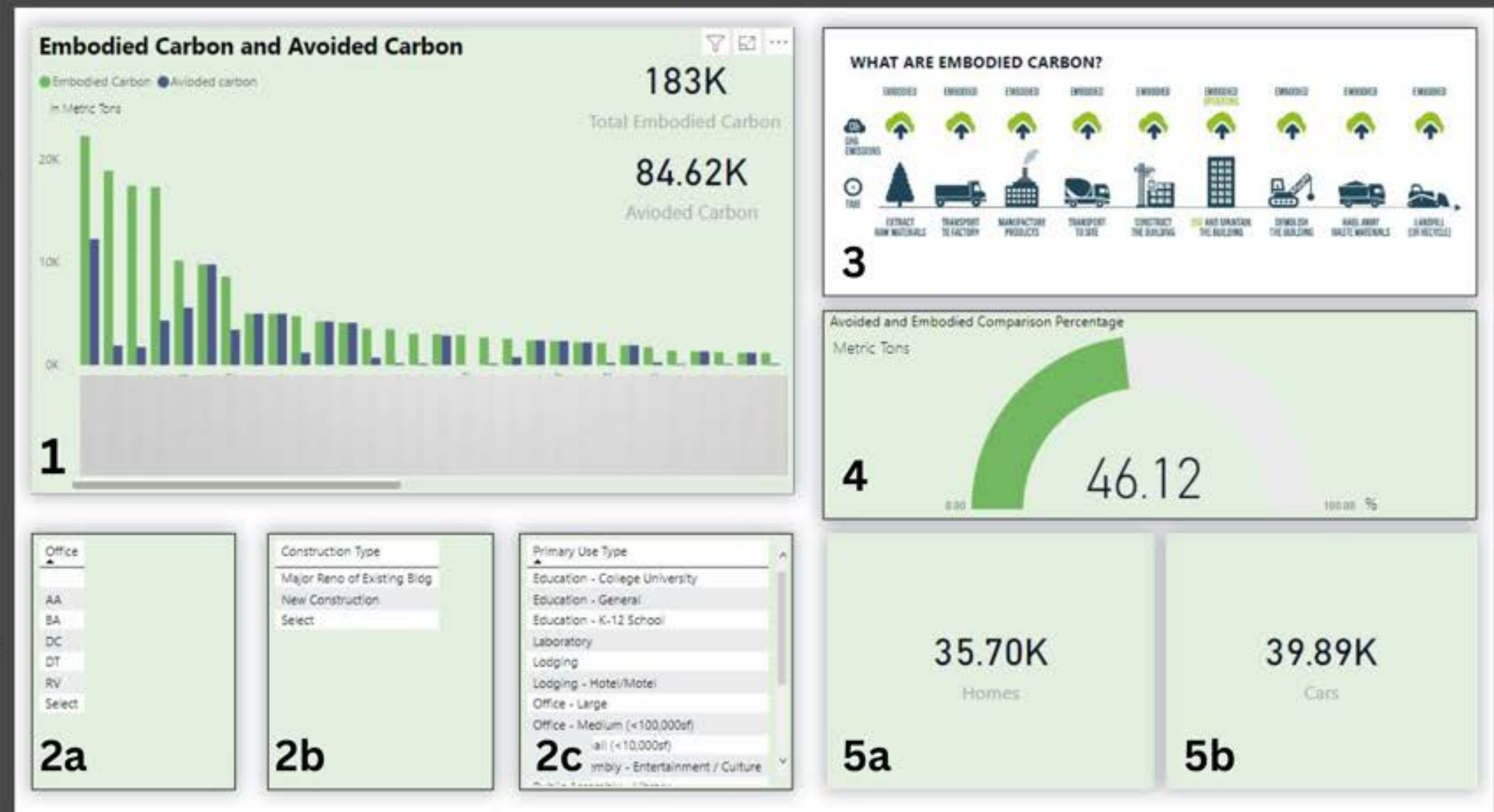
Display 1: Visualizes total emissions and carbon savings for each project.

Displays 2a-2c: Offer customizable filters by office, construction type, and building use.

Display 3: Defines embodied carbon as the total carbon footprint from construction through demolition.

Display 4: Highlights the percentage of avoided emissions, underscoring sustainability impact.

Displays 5a-5b: Translate emissions data into relatable equivalents, such as the annual impact of homes or cars.



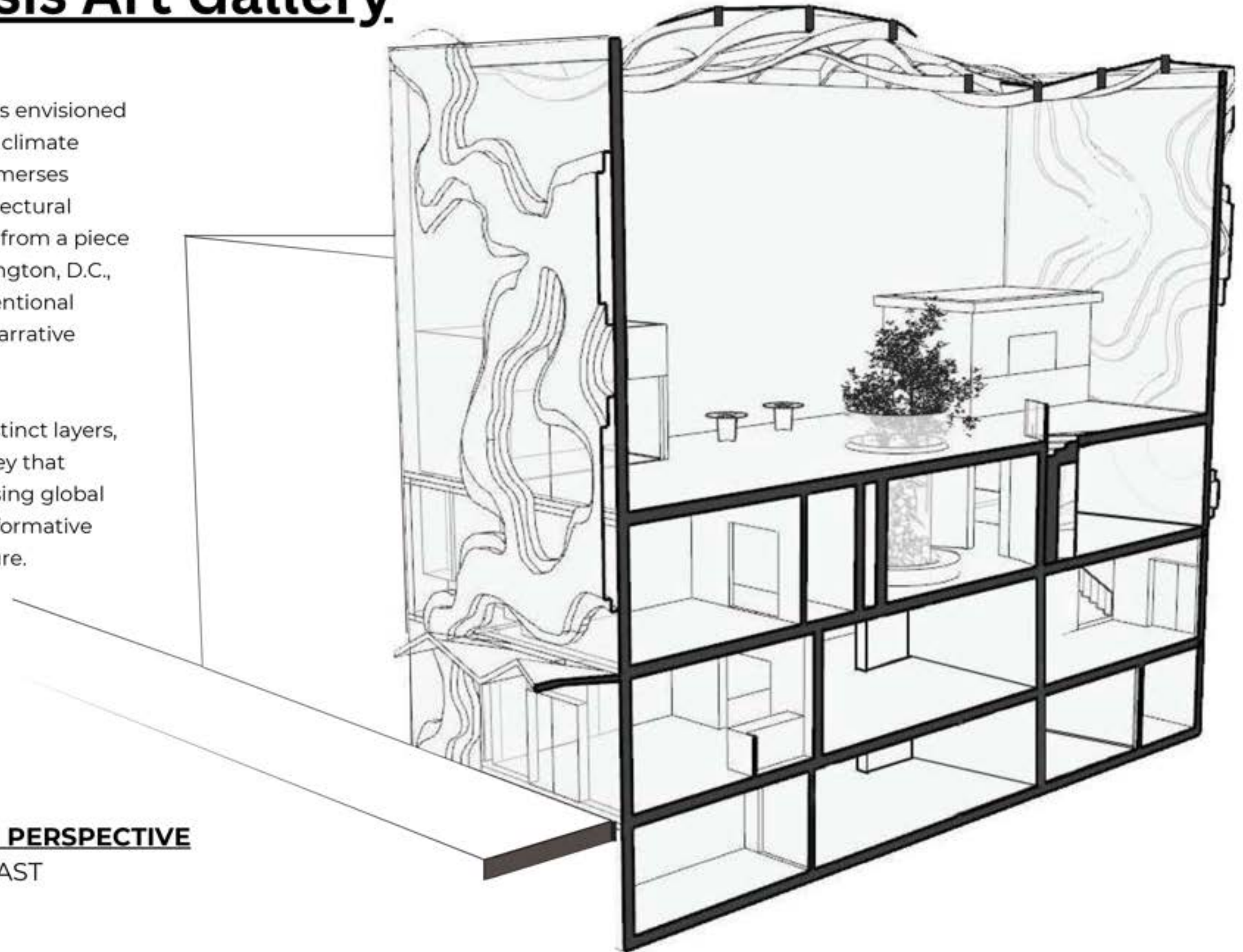
# Climate Crisis Art Gallery.

Studio 2023

The Climate Crisis Art Gallery was envisioned as a space that not only exhibits climate change-inspired art but also immerses visitors in a contemporary architectural experience. Drawing inspiration from a piece at the Renwick Gallery in Washington, D.C., the design moves beyond conventional gallery aesthetics to serve as a narrative environment.

The building unfolds in three distinct layers, guiding visitors through a journey that represents the stages of addressing global warming: the present, the transformative process, and the envisioned future.

**SECTION PERSPECTIVE**  
NORTHEAST

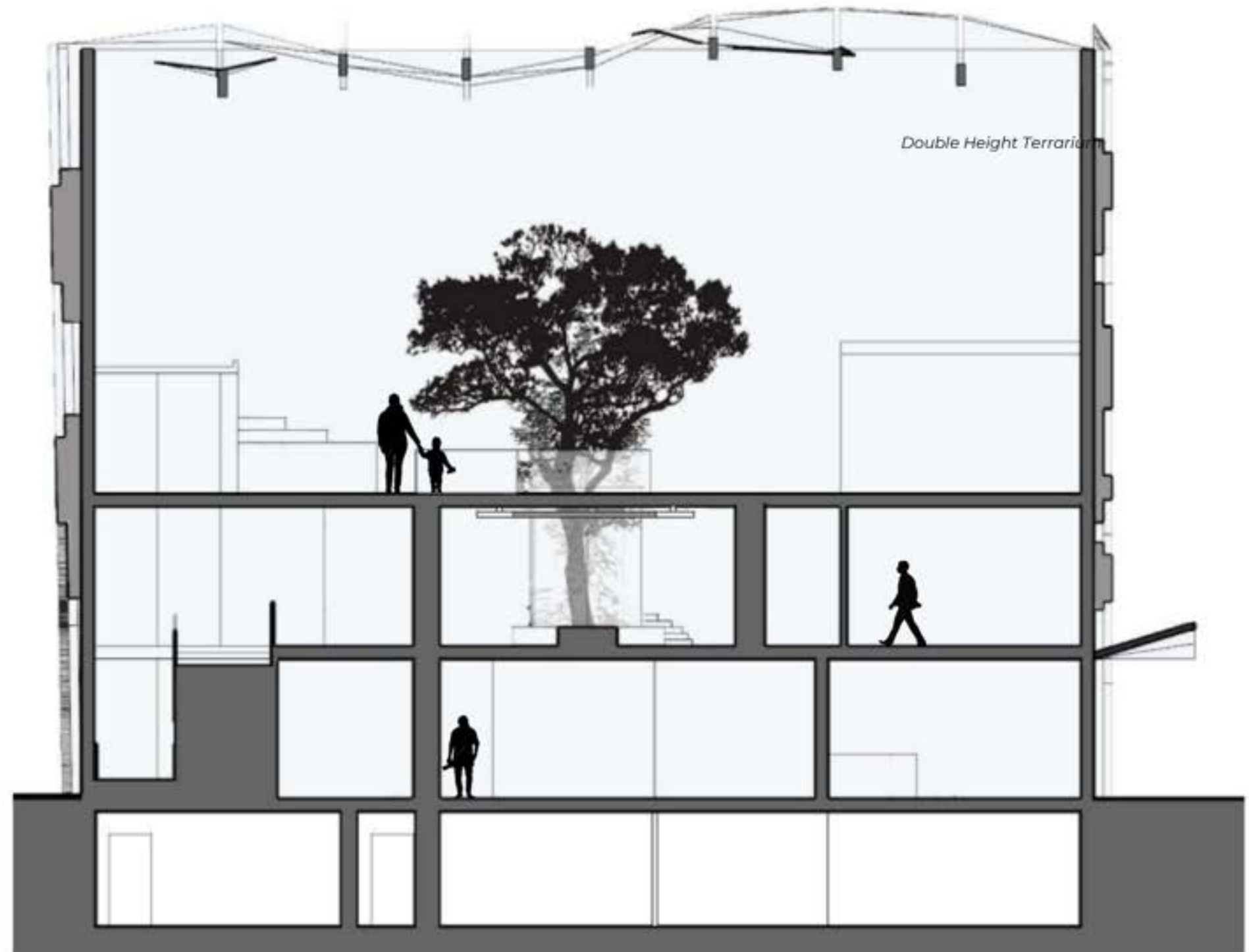




# Climate Crisis Art Gallery.

Studio 2023

A central terrarium that extends into the top atrium space, symbolizing the heart of the building adding a non-anthropocentric touch to the structure. This design choice reinforces the gallery's commitment to embodying environmental values and elevating the dialogue around climate change through artistic expression.



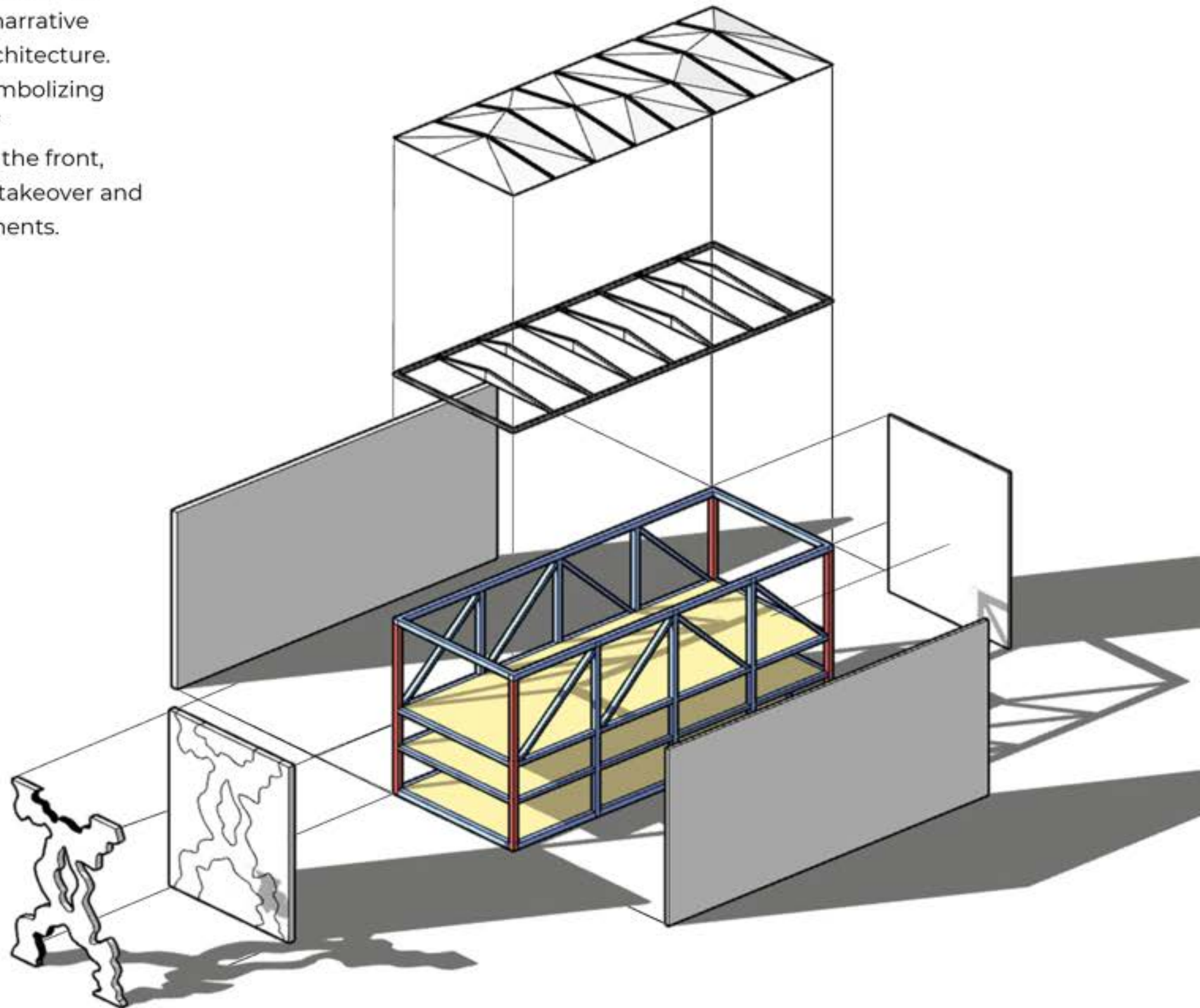
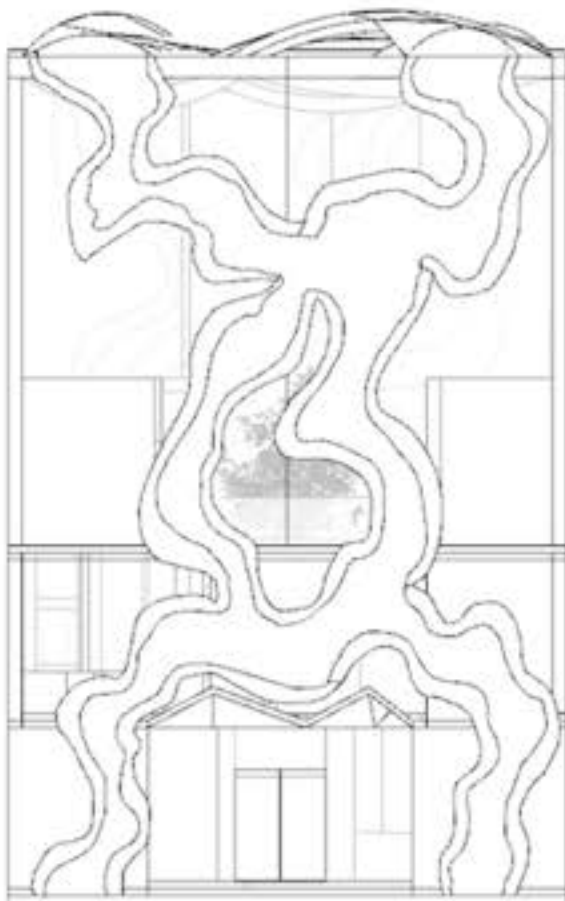


## **Process**

Inspired by a piece at the Renwick Gallery, I envisioned the Climate Crisis Art Gallery as more than an exhibition space—it is a narrative structure that tells the story of climate change through architecture. The design reflects the idea of nature reclaiming space, symbolizing the resilience and power of the natural world in the face of environmental challenges. An organic form weaves across the front, roof, and rear of the building, suggesting nature's gradual takeover and blurring the boundary between built and natural environments.

## **Elevation**

North





**Original Sketches & Renders:**

Perspective Interiors

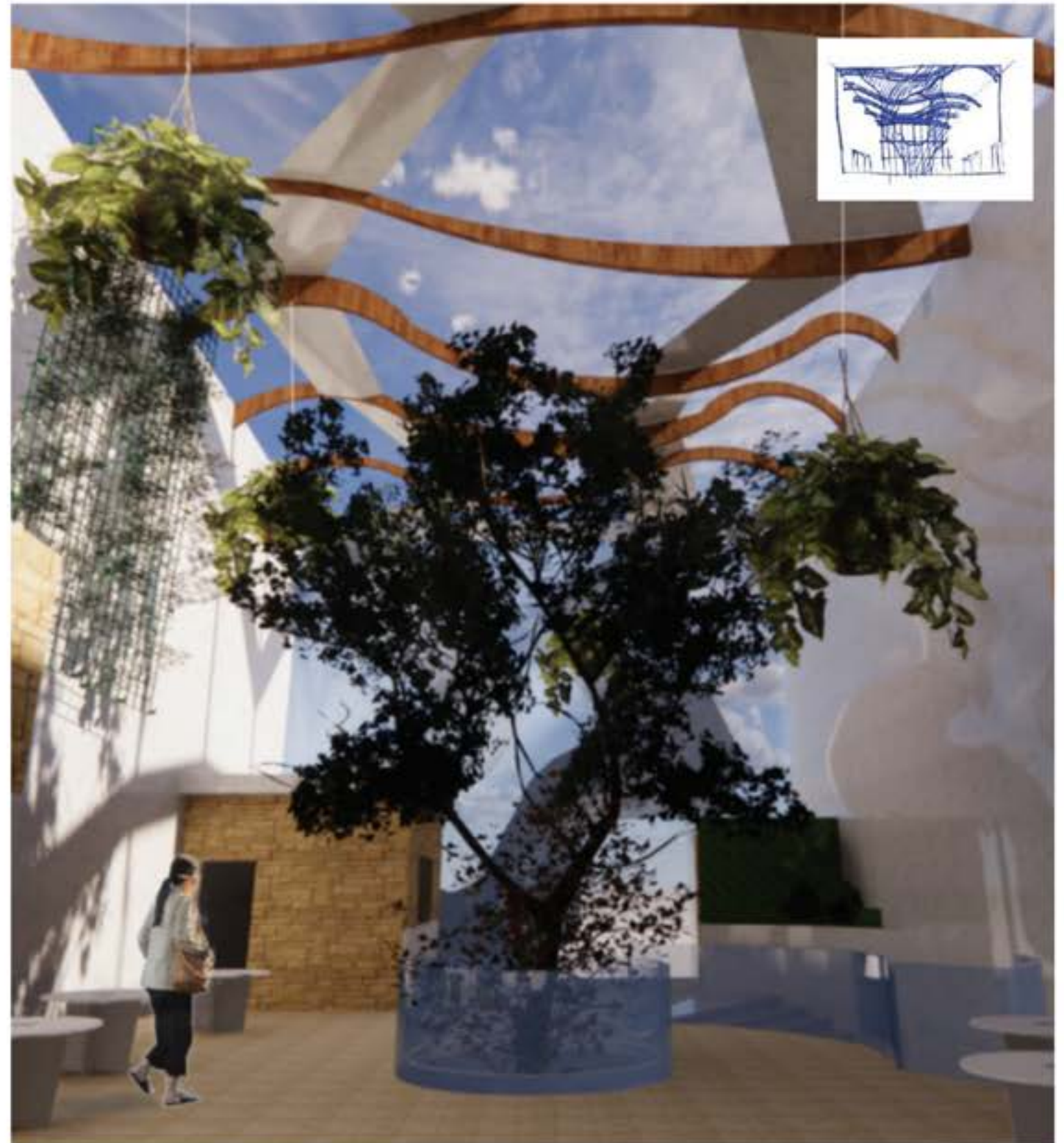
Atrium Space



Double Height Terrarium



Atrium Space

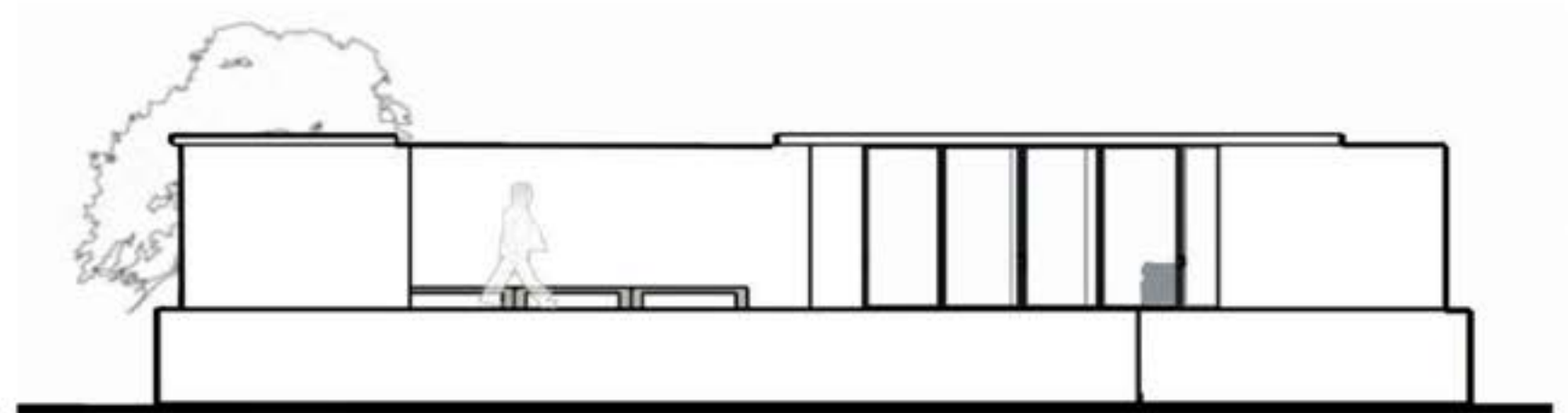




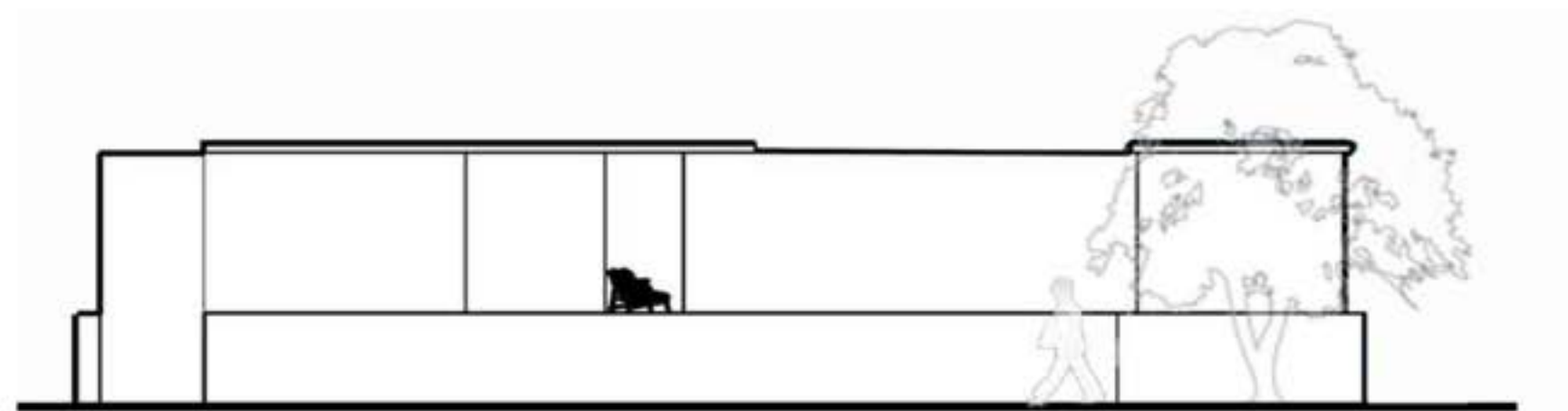
# Barcelona Pavilion Case Study

Studio 2023

This project focused on studying and remodeling the Barcelona Pavilion, originally designed by Ludwig Mies van der Rohe for the 1929 International Exhibition. Defined by its modern design, precise geometry, and integration of water features, the pavilion uses reflective pools to distinguish between public and private spaces. As part of the analysis, I created a multimedia watercolor painting that emphasized the building's tranquil atmosphere and drew attention to the central water feature, reinforcing its role as the focal point of the design.



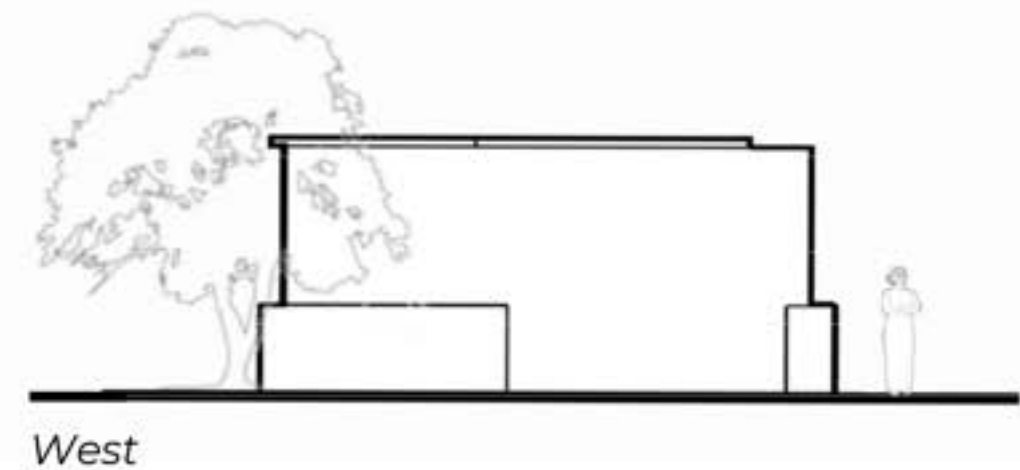
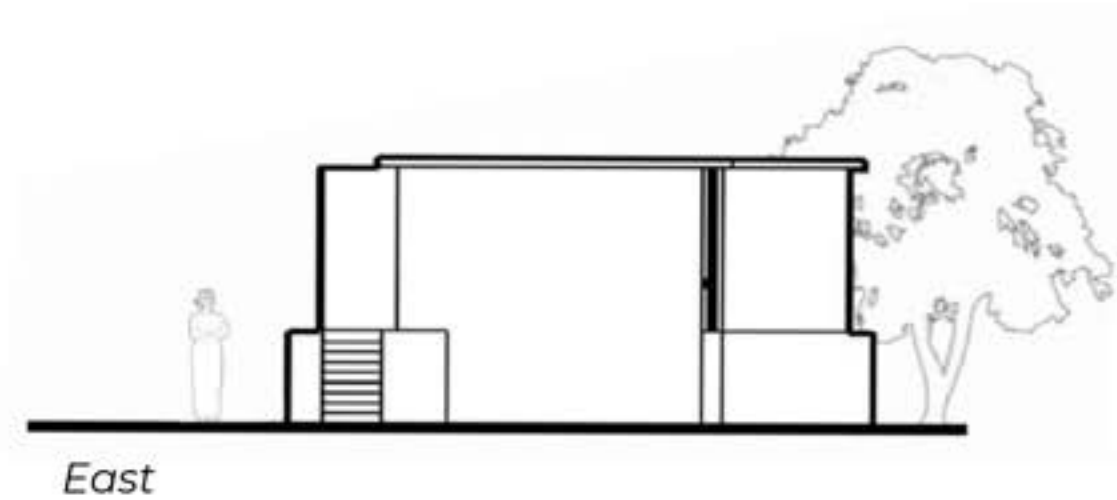
*North*



*South*

## Case Study

Analyzing the Barcelona Pavilion through its elevations highlights Ludwig Mies van der Rohe's mastery of minimalism and spatial fluidity. The horizontal planes and flat roof establish a strong sense of openness, while expansive glass walls dissolve boundaries between inside and outside. This transparency invites the surrounding landscape into the architecture, creating uninterrupted sightlines and reinforcing the pavilion's atmosphere of calm and reflection.



The stone and marble walls, arranged with meticulous precision, articulate the pavilion's spatial organization while directing circulation, creating a dynamic dialogue between solid forms and open voids. The elevation design reinforces the pavilion's role as a place of reflection and calm, with its serene water features serving as the central element that defines the experience of the space.



# Source Image Multimedia

Summer 2024

This project synthesizes elements from four distinct architectural works into a singular composition. The environment draws inspiration from SHIM SUTCLIFFE's Cabin Retreat, while Audrey Ala's collage from USF's Design Process Studio contributes sharp lines and vibrant colors. Zaha Hadid's Parc de la Villette 3 introduces fluidity and contemporary expression, contrasted by the historical texture of Claudio Schneider's Hochosterwitz.

The resulting fusion reflects my interest in integrating natural and modern design, creating a visually rich narrative that balances innovation with tradition.



CLAUDIO SCHNEIDER  
HOCHOSTERWITZ



Zaha Hadid. Parc  
de la Villette  
Project



COMPOSITIONAL COLLAGE  
AUDREY ALA



SHIM SUTCLIFFE  
CABIN





CLAUDIO SCHNEIDER  
HOCHOSTERWITZ



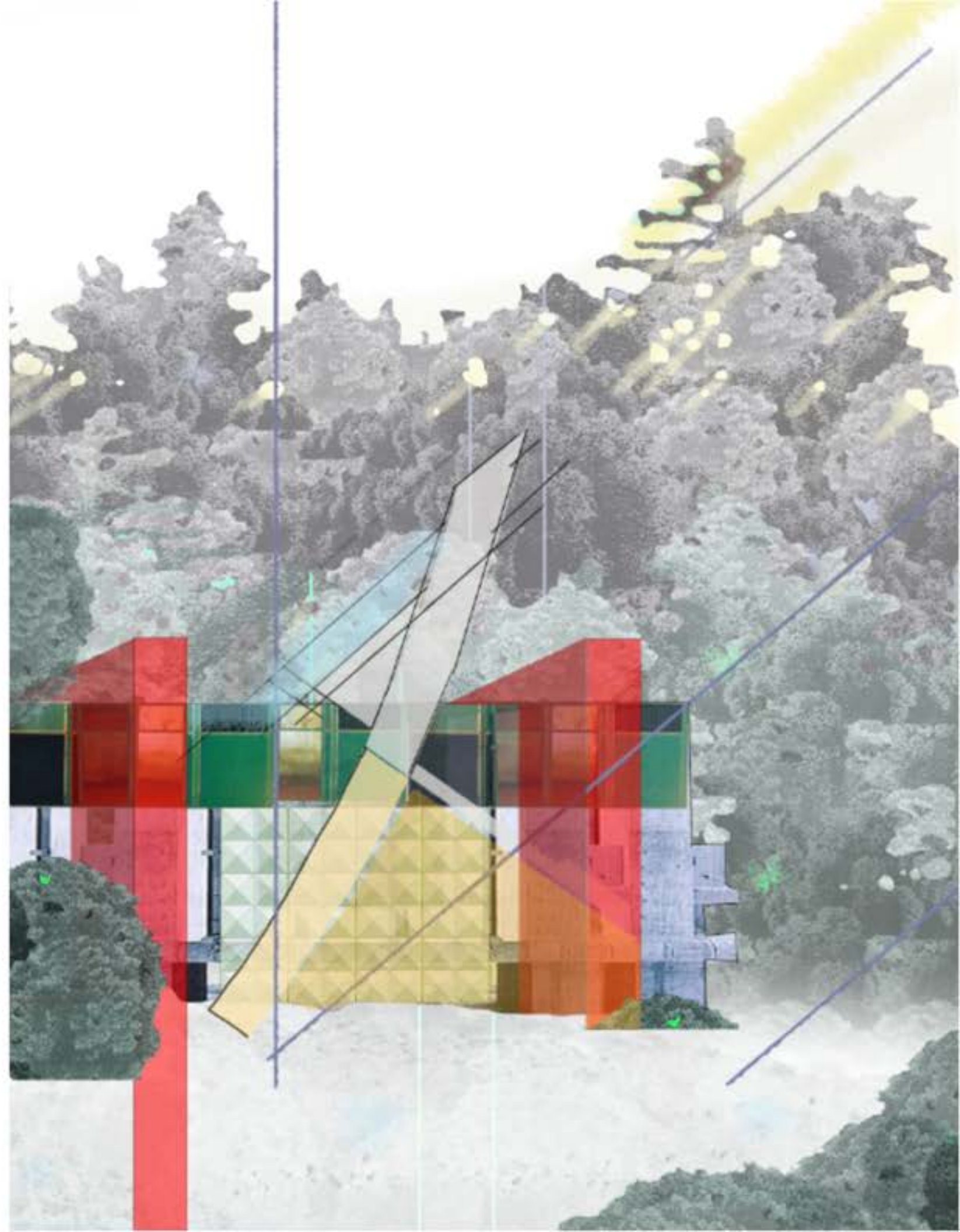
Zaha Hadid. Parc de la  
Villette Project



COMPOSITIONAL  
COLLAGE AUDREY ALA



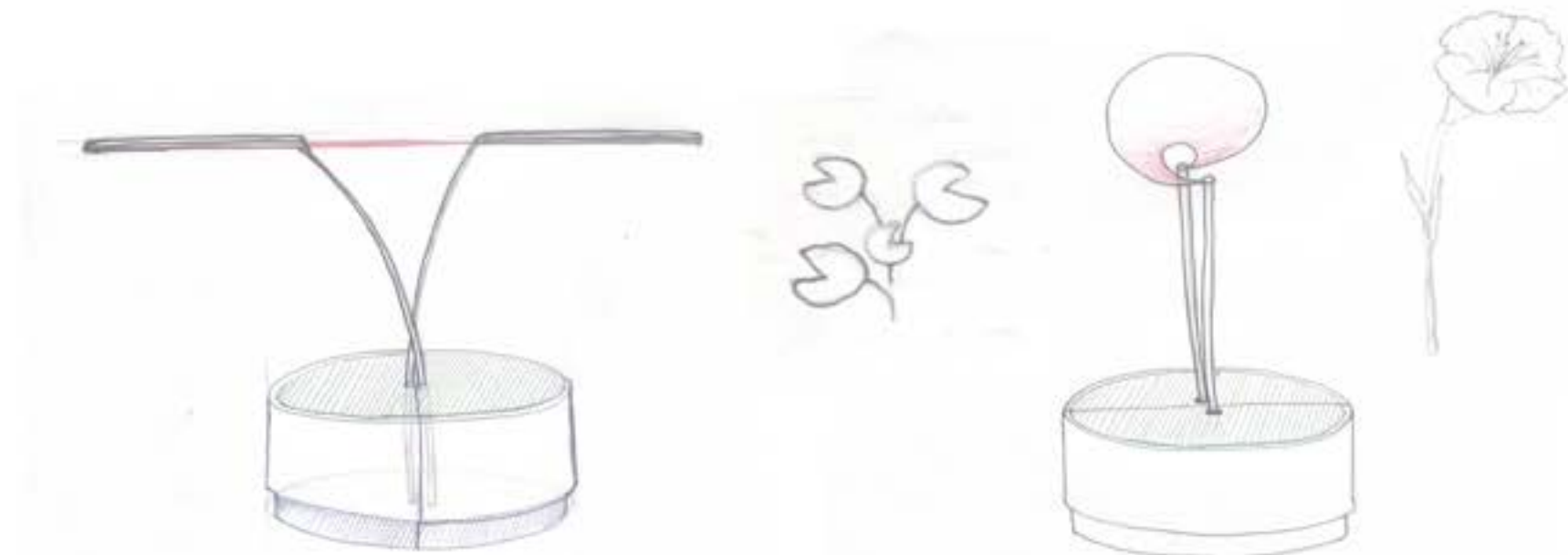
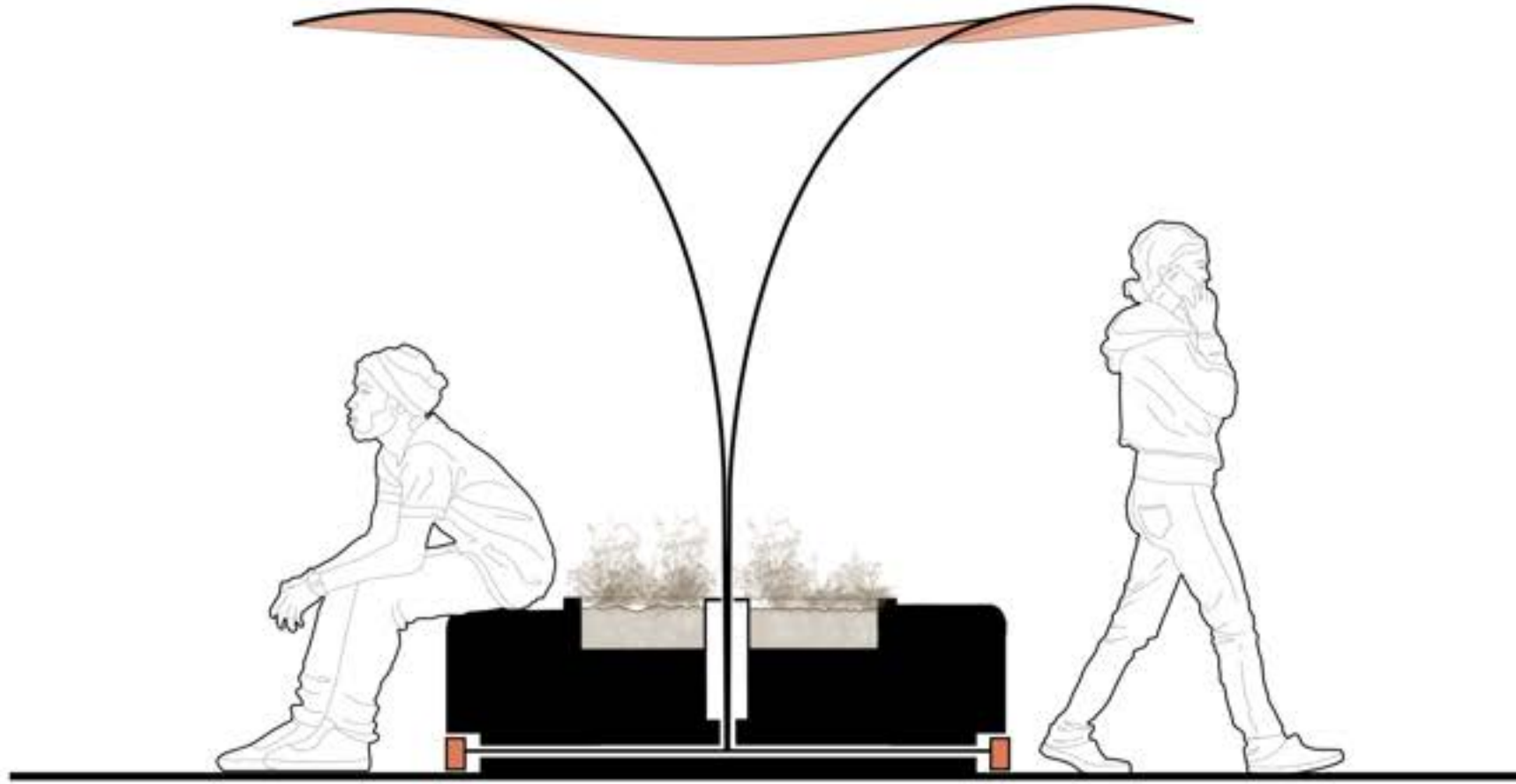
SHIM SUTCLIFFE CABIN





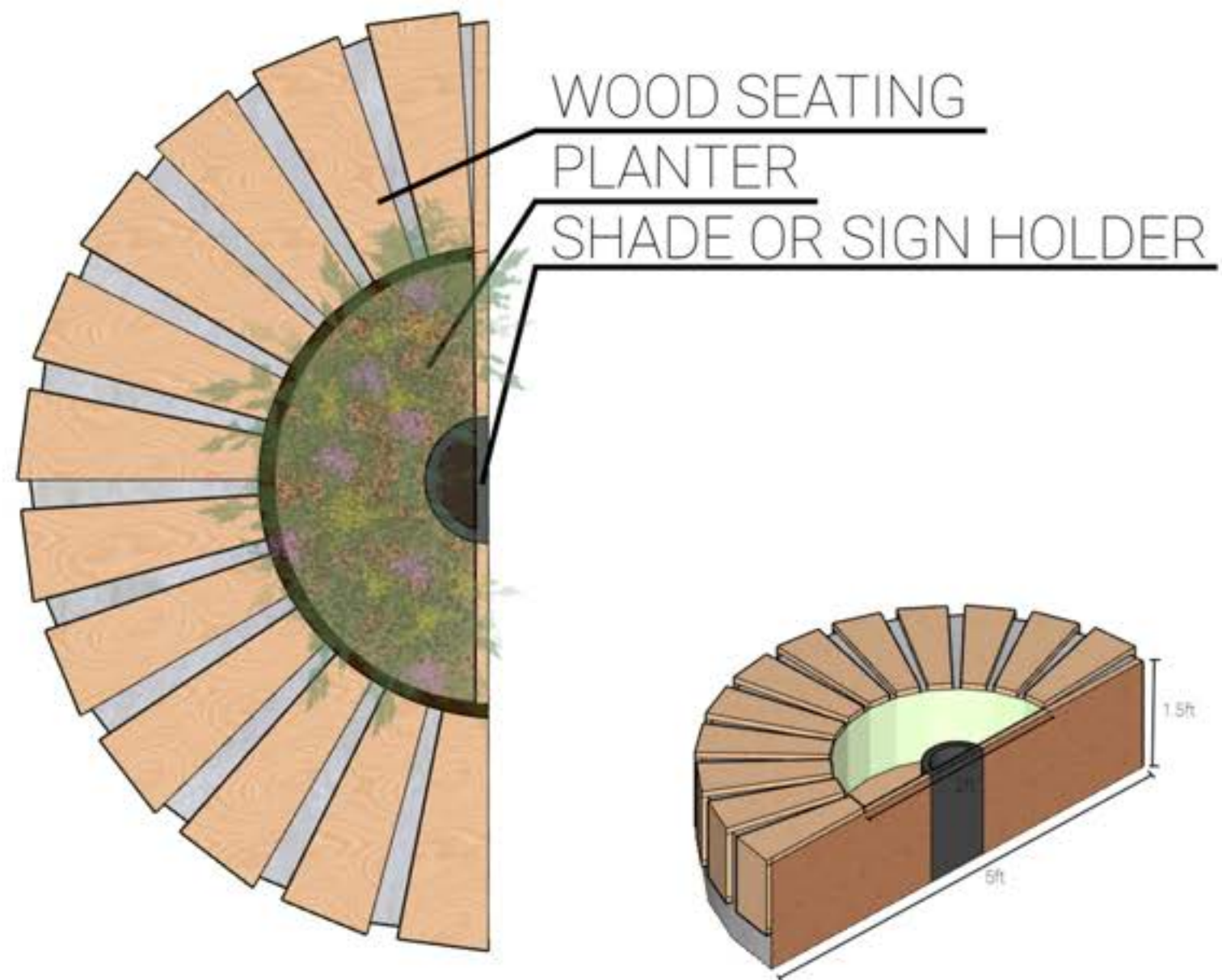
# LILY PAD Bench Design

2023



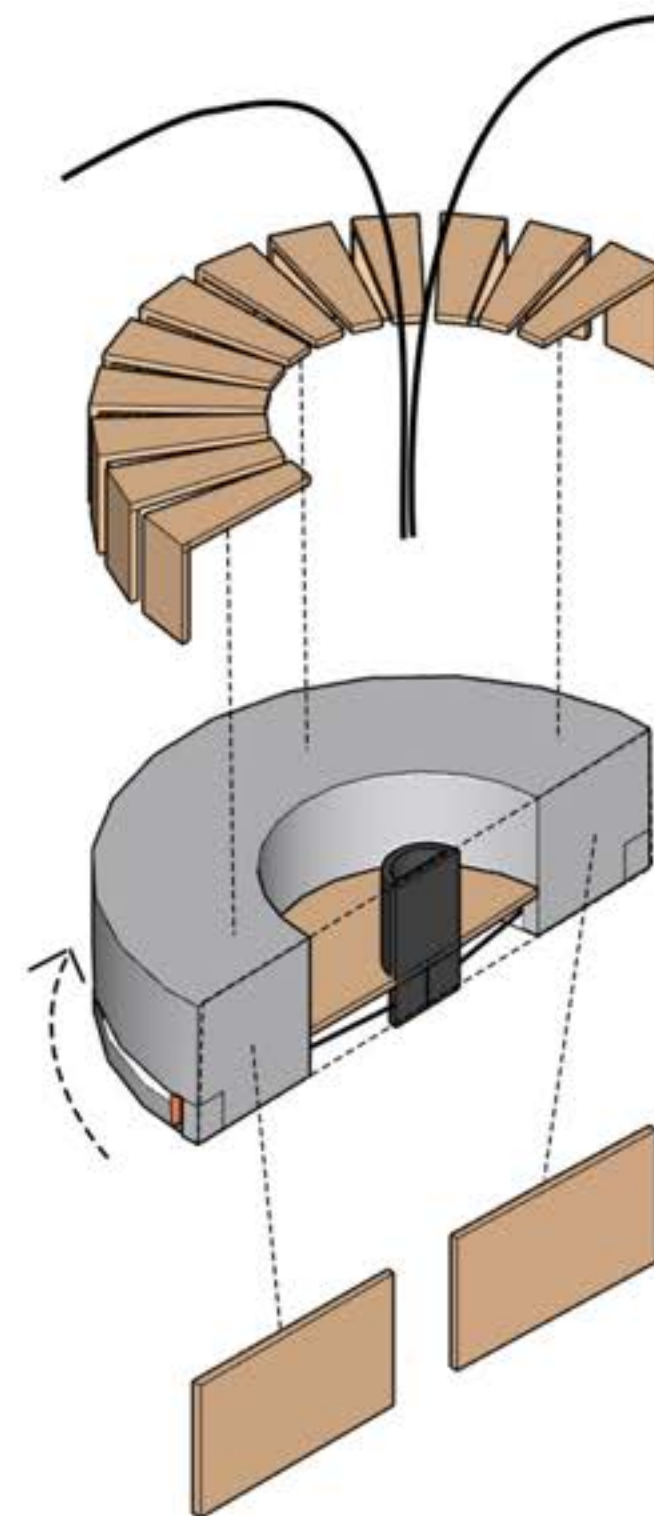
As part of a planning initiative for the Takoma-Langley Park Crossroads, we collaborated with local residents and businesses to improve the public space. Noting the need for outdoor seating and a more family-friendly atmosphere, I designed the Lily Pad Bench—a biophilic-inspired installation that brings organic form and social function into a busy commercial setting.

# LILY PADS



TOP

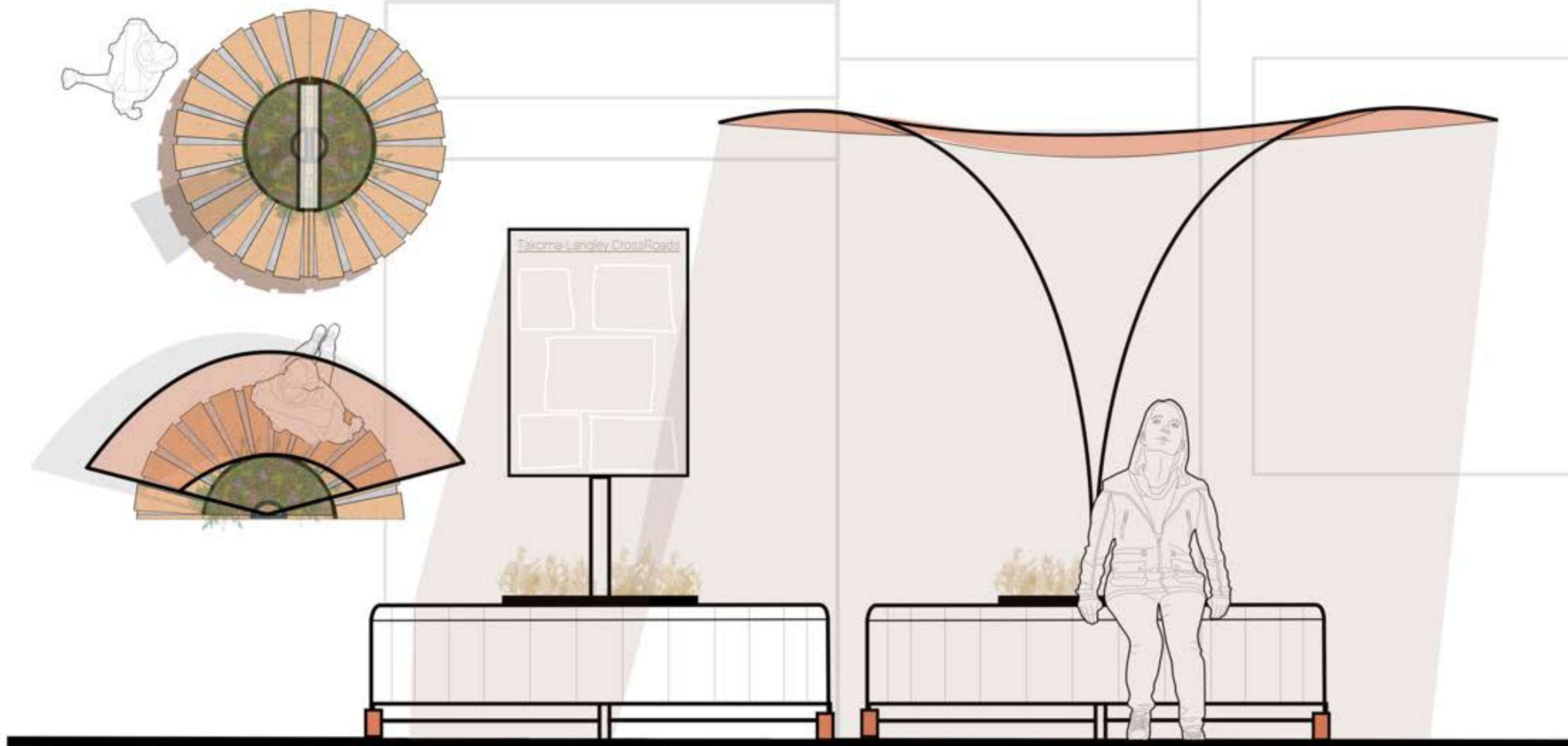
ISOMETRIC



EXPLODED ISOMETRIC



# LIGHTING



# Desert Oasis Retreat

2023

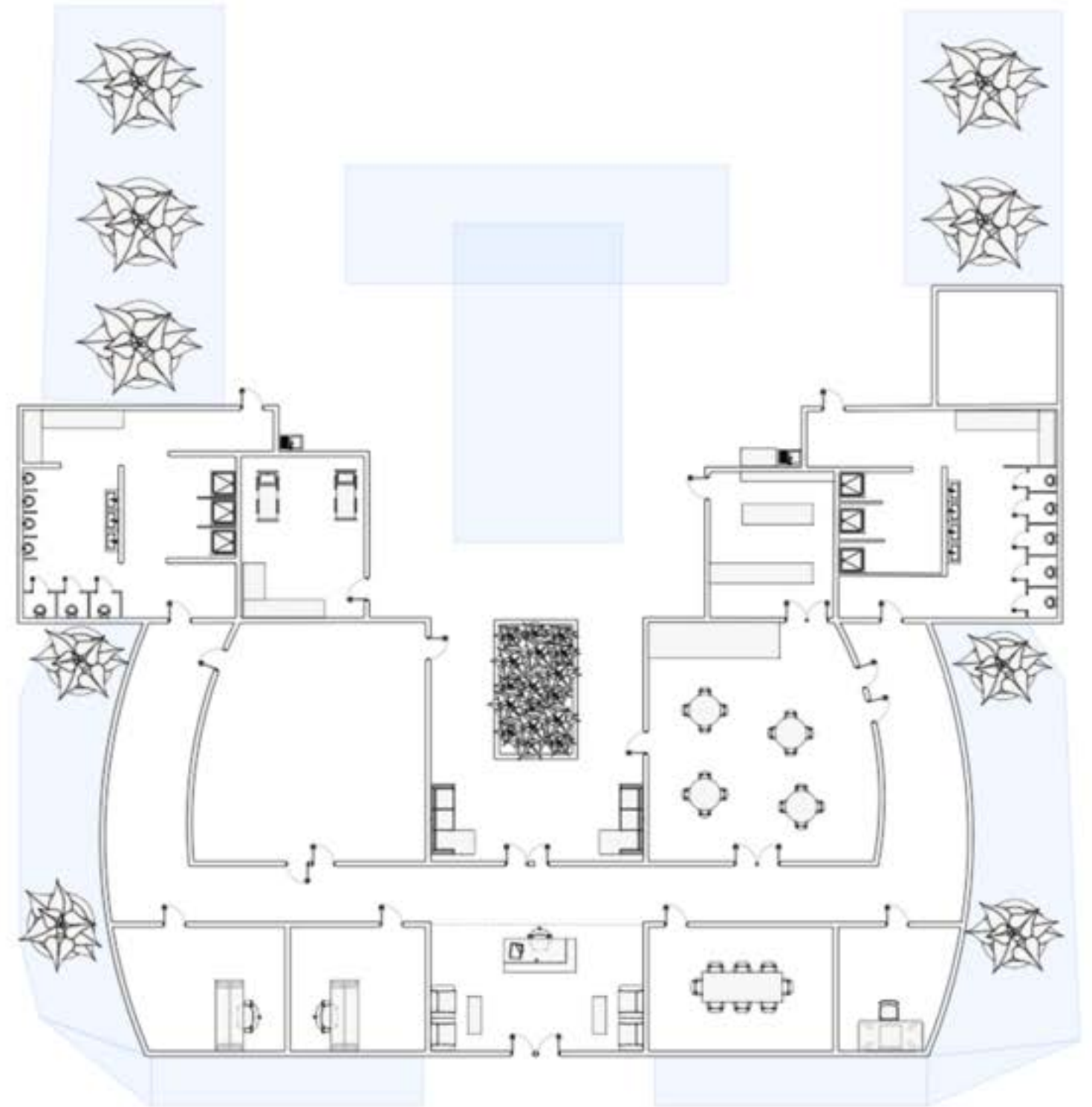


## Process

The goal of this project was to design a floor plan for a desert oasis that harmonizes with its natural surroundings. The layout was carefully arranged to encircle and protect the lush central landscape. The building's exterior is crafted from dark desert-sand concrete, grounding it within the environment, while the interiors adopt a Japandi-Mediterranean style, combining simplicity and tranquility for a serene spatial experience.



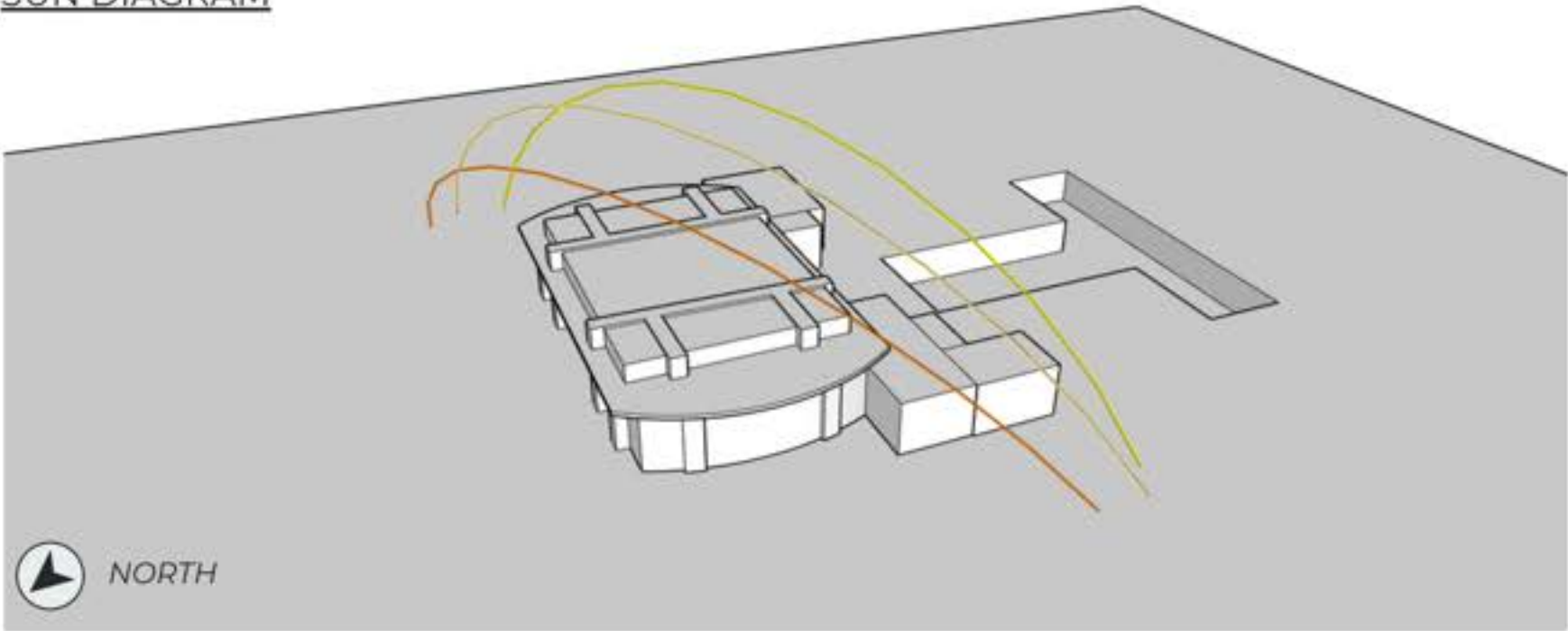
## FLOOR PLAN



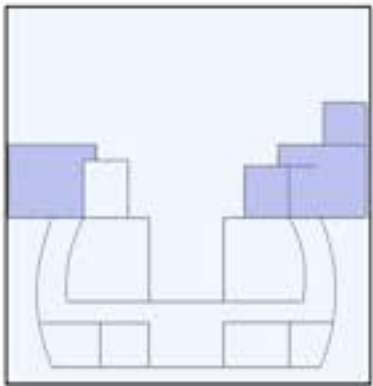
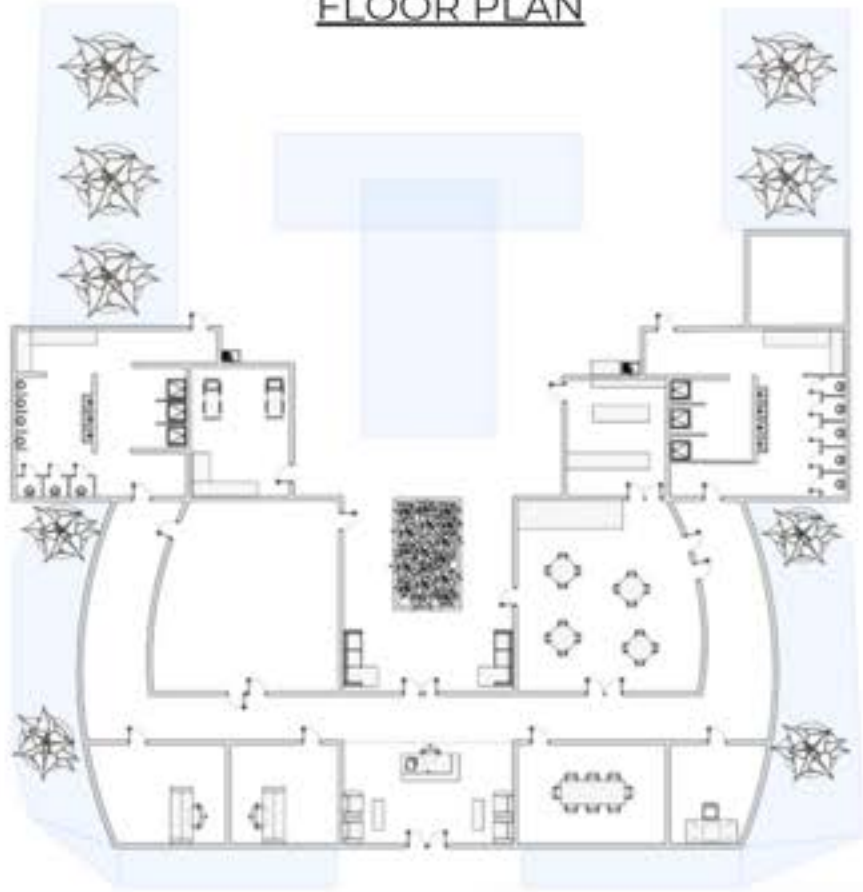


**Diagrams**

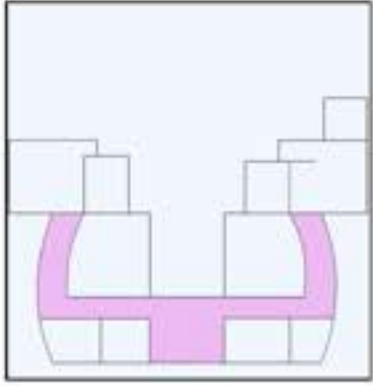
SUN DIAGRAM



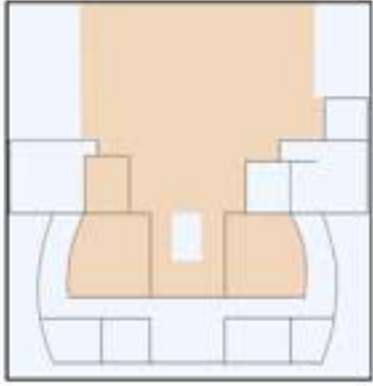
FLOOR PLAN



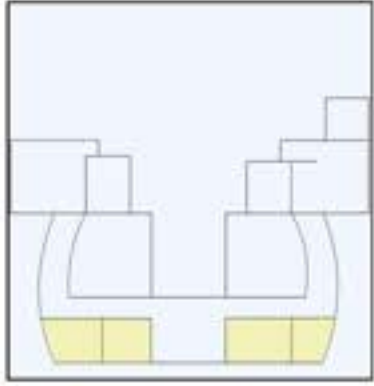
PRIVATE



PUBLIC



CLIENT AREAS



EMPLOYEE AREAS

The sun path diagram illustrates the building's interaction with natural sunlight, informing strategies for shading and thermal control in the desert environment. Complementary zoning diagrams define the organization of private, public, client, and employee areas, strategically arranged to balance privacy, accessibility, and workflow efficiency. Together, these diagrams ensure the design delivers both functional performance and occupant comfort in a challenging climate.

# Iceland Visitor Center

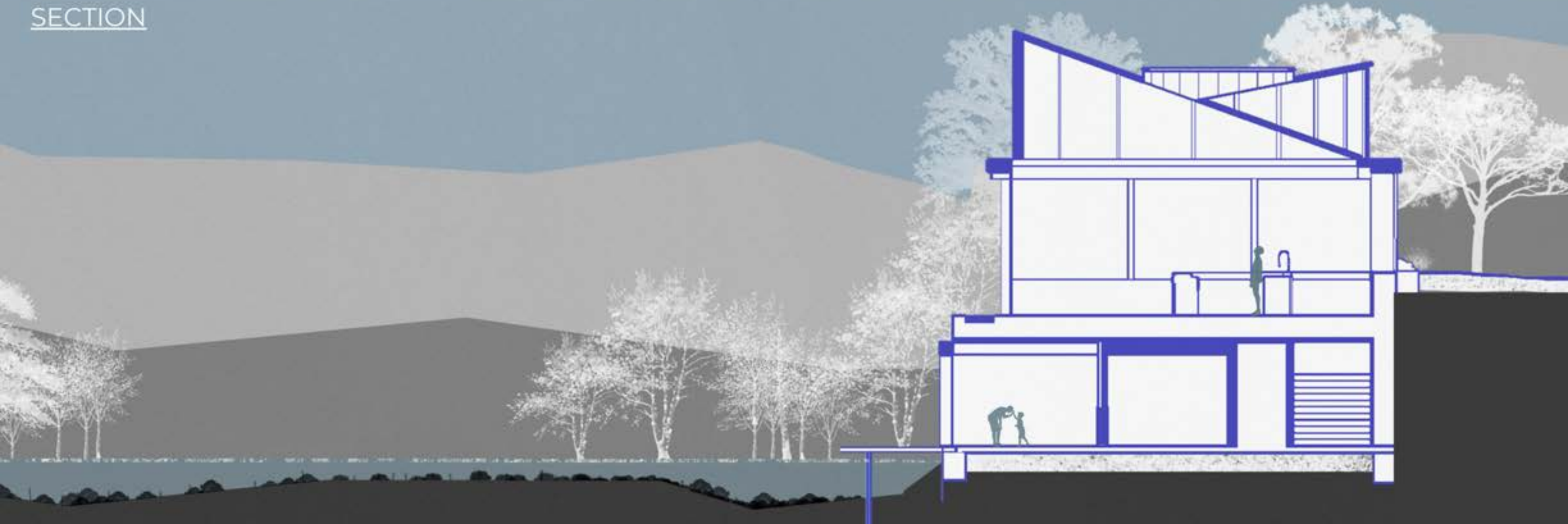
2023

A visitor center functions as a gateway to its surroundings, providing practical amenities while fostering a meaningful connection to local culture and landscape. In Iceland, where nature is central to both lifestyle and heritage, such centers must embody the country's profound respect for the environment.

Key features include the use of sustainable materials, energy-efficient systems, and designs that harmonize with the rugged terrain. Icelandic culture emphasizes a balance between human presence and nature, a principle reflected in architecture, traditions, and folklore alike.



## SECTION







## Core Concepts



Education



Environment



Culture



Community



Economy



Energy

## Sunlight Diagram



The design employs passive solar strategies, including angled rooflines and carefully positioned windows, to maximize daylight and heat gain while minimizing energy use. This approach is especially critical in a location where winter daylight lasts as little as three hours and summer extends up to eighteen hours. By responding to these extremes, the building maintains a warm, naturally illuminated interior that integrates seamlessly with its surroundings throughout the year.