

THE VEIL

An Exploration of Experiential Design along the Delaware River

Philadelphia, Pennsylvania

Senior Project
Grayson Blackburn
2023-2024





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Virginia Tech, Landscape Architecture
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This senior project is submitted in partial fulfillment of the requirements for the Bachelor of Landscape Architecture Degree in the College of Architecture, Arts, and Design at Virginia Polytechnic Institute and State University.



Terry Clements, Senior Project Coordinator + Program Chairperson



Shaun Rosier, Senior Project Advisor



Handwritten graffiti on the bollard includes:
- Pink and yellow abstract designs at the top.
- The words "FISH TOWN" written vertically in white on the lower part of the bollard.

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Motivation

During my time at Virginia Tech I have had an interest in experience and designing with experience in mind. A fundamental aspect of design is how it is received by the user. Landscape Architecture, being an artform of enveloping spaces is a perfect medium in which to explore deep and robust experiential design. To take the concept another step forward I ask the question, "How can a site's experience be influenced in real time by the presence of a user?". I want to utilize a deeper understanding of the concept of experience to create a landscape that will leave a lasting mark in the memories of those that visit it.

This project was in search of a clean canvas on which to experiment with a reactive landscape. Pier 60 in Philadelphia is one such clean canvas. Cleared of its industrial past and left abandoned in an area of the city slated for massive redevelopment, Pier 60 is ripe for the development of quality greenspace.

Goals

Solidify a working definition of “Experiential Design”

- Find and study relevant texts
- Establish a descriptive framework

Develop a comprehensive understanding of the site and its context

- Gather and map relevant GIS data
- Analyze site photographs
- Map inventory and analysis
- Gather and analyze historical information and mapping
-

Ensure a solid “fit” of conceptual design within the site and its context

- Iterate a programmatic concept
- Iterate a conceptual master plan
- Iterate crucial design details

Major Questions

What is Experiential Design -

I must learn to narrow down this anomalous term into an actionable framework. What are the hallmarks of experiential design within landscape architecture and what are its tenets? I believe I have begun the process of wrangling this concept through the development of the 3 Modes of Experience. The Three Modes of Experience place the collective feedback, perception, and understanding of a site accumulated by a user’s movement through, and interaction with, a design into three distinct categories.

What does it mean for a landscape to respond to a user? -

Each landscape is shaped by its patterns of use over time. Desire lines are carved by users seeking a more efficient route from a to b. Natural arbors form as plants grow around the shape of frequently passing traffic. Statues, door handles and park bench armrests patina in distinct spots due to repeated touch by human hands. The din of insects may temporarily hush as a group of humans passes through their space. What if a landscape was able to be aware of its visitors’ presence within the various spaces? How could light, sound, and form be shaped by the moments of pause and movement of a given user in real time?

What is

Experience?

1

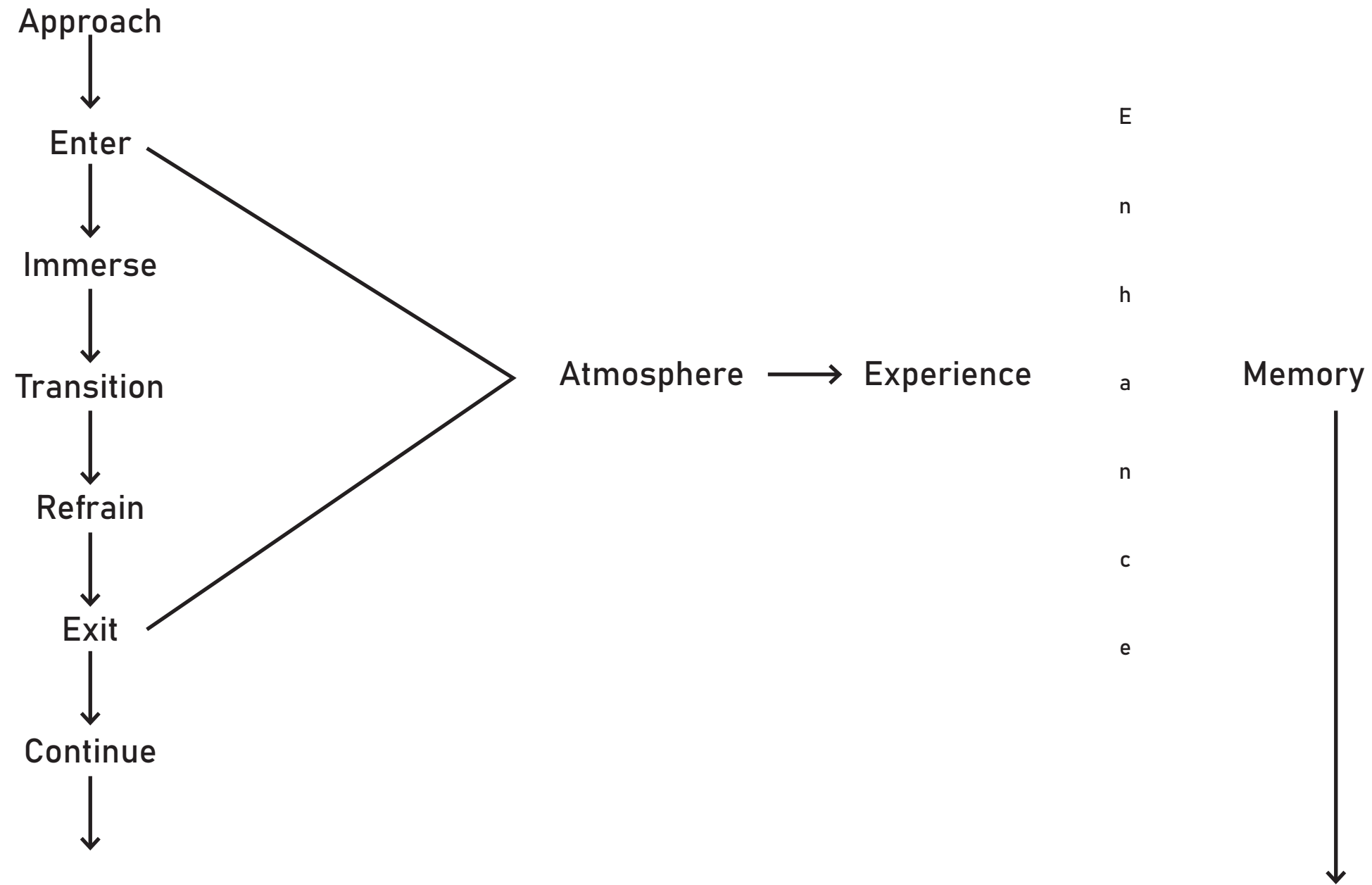


Megaliths in the Garden, teamLab, Shanghai

This project began as a search for greater understanding of “Experience” within the realm of landscape architecture. The term remains anomalous in its meaning despite its ubiquitous usage as a buzzword in this profession. Through research, I took strides towards defining Experience and associated terms Atmosphere and Experiential Design. I found Experience was heavily reliant on an individual’s personal understanding and perception of their surroundings. There is a step missing between the experience and design that creates esoteric difficulties in directly affecting one with the other. Atmosphere is a term that became the levers that one could use to influence a user’s unique experience within the landscape.

- **Experience:** an individual’s perception, interpretation and understanding of a given site or design
- **Atmosphere:** the encompassing character of a given site or design
- **Experiential Design:** the manipulation of atmosphere in order to induced a desired experience within a wide range of users

This diagram illustrates the flow of information from site to memory. As users enter the site they are enveloped in the atmosphere created by the spatial conditions of the design. This information is taken in by the user and filtered through the lens of their understanding and perception of their surroundings to establish experience. If the site's design enhances the experience it is more likely to create a lasting memory that continues with the user once they have left the site.



Atmosphere Anatomies: On Design, Weather, and Sensation -Silvia Benedito

Benedito envisions the concept of "Atmosphere" as a series of particularities in a space's microclimate and function. This outlook holds many similarities with a study on experience.

- **Atmosphere as Immersive Journey** - Alludes to the construction of space through movement, bringing attention to the body's episodic psychophysiological entanglement with its surrounding environment
- **Atmosphere as Thermal Threshold** - Addresses the boundaries between indoors and outdoors, liquid and vapor, private and public, architecture and landscape
- **Atmosphere as Program** - Focuses on the constructed microclimactic condition as a principal source of delight
- **Atmosphere as Shared Situation** - Foregrounds the civic nature of the induced meteorological events in their capacity to elicit, invite and stimulate collective delight as a community
- **Atmosphere as Spatial Contrast** - Positions the body in more radical and unexpected environments, considering discomfort as an integral aspect of spatial experience

Experiential Landscape - Kevin Thwaites & Ian Simkins

Thwaites & Simkins envision experience as feedback obtained from the movement between spaces. Each unique space has its own combination of variables summed up by the acronym CDTA.

- **CDTA** - Experiences can be conceptualized in spatial terms collectively as:
- **Center** - Experience of location
- **Direction** - Awareness of continuity and extent
- **Transition** - Where we feel a sense of change occurring
- **Area** - Wider sense of environmental coordination, a sense of being somewhere vs. somewhere else

3 Modes of Experience

The following is my conceptualization of aesthetic experience I developed over the course of this project.

The three modes of experience is a framework through which one can categorize how an individual will react to a given design decision. Experience is incredibly unique on a person to person basis but the modes throw a wide enough net to encompass a range of users into identifiable categories.

The Sensory Mode can be seen as the “default” mode. Users in this mode are taking in raw sensory data without any intent or predisposition. That data is filtered through the lens of their understanding and perception of their surroundings to establish their experience of the spaces they move through.

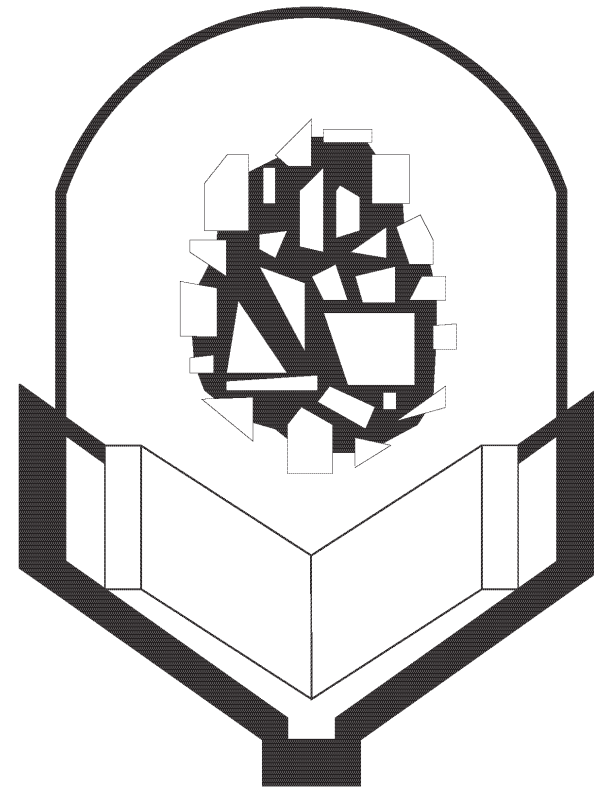
In the Illustrative Mode users are looking for meaning in their surroundings. It is in this mode which users will pick up on allusions and metaphors within the site’s design. Nods to cultural and natural history are likely to be noticed by users inhabiting the illustrative mode.

Users in the Material Mode see the hand of the designer within the landscape. These individuals are often design minded. They are able to notice and appreciate subtle details of construction and spatial arrangements.



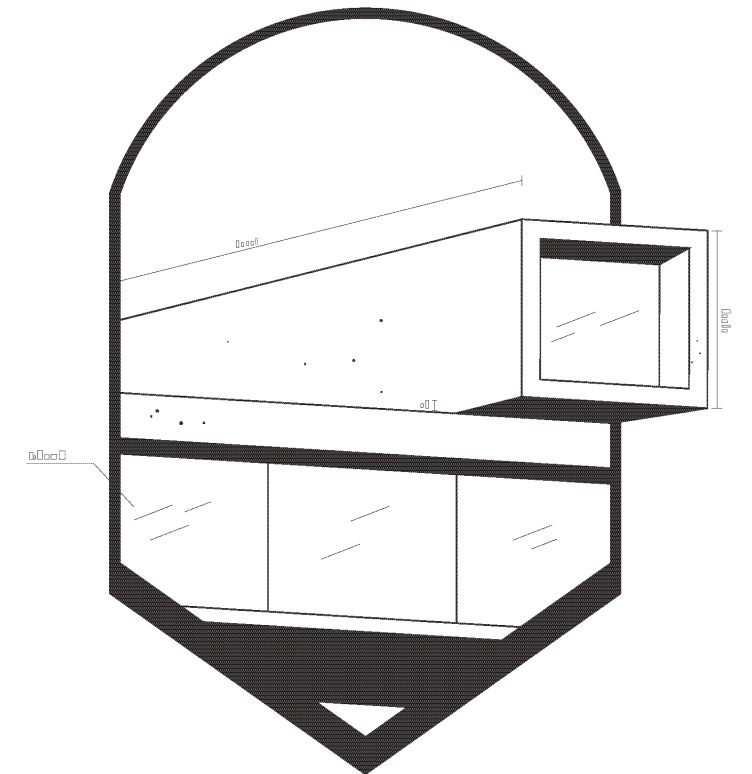
Sensory Mode

- Raw sensory data
- Conscious and unconscious observations
 - Emotion and memory recall
 - Affected by seasonality and temporality
- Modified by psychological and emotional status
 - Most generally utilized Mode



Expressive

- Story-telling mode
- Observers seek narrative and metaphor
 - Influenced by culture and education
 - Large shifts between generation
- Strengthened and deepened by time spent
 - Heavily impacted by viewing medium



Material

- Architectural/ Structural/ Design thinking
 - Influenced by culture and education
 - Analysis of materials and construction
- Initiated through sketching and photography
 - Following the “hand” of the designer

Reflections

My exploration of experience and atmosphere has instilled in me a new understanding of how users interact mentally and physically with a given design. One can design with a desired experience in mind but the ultimate outcome is dependent on the particularities of each unique user. It is their understanding and perception of their surroundings as well as their past experiences in similar spaces that ultimately color their experience of your design.

To enhance a user's experience, one can craft an atmosphere that plays to the qualities picked up in each of the three Modes of Experience. By considering the manner in which a visitor will take in information, one can design with a higher confidence that the desired impact of the created atmosphere will land.

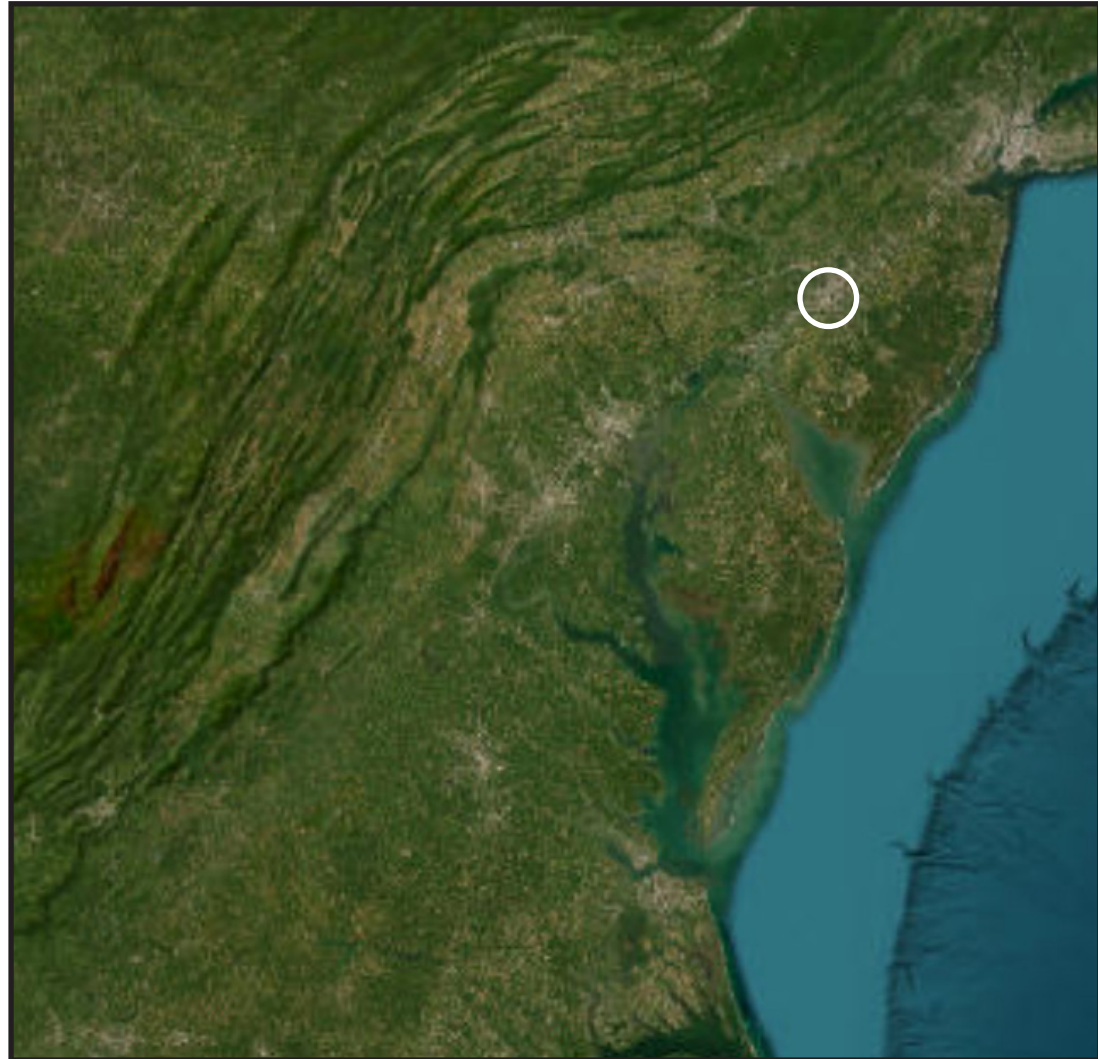


Sculptures of Dissipative Birds in the Wind, teamLab, Osaka

Pier' 60

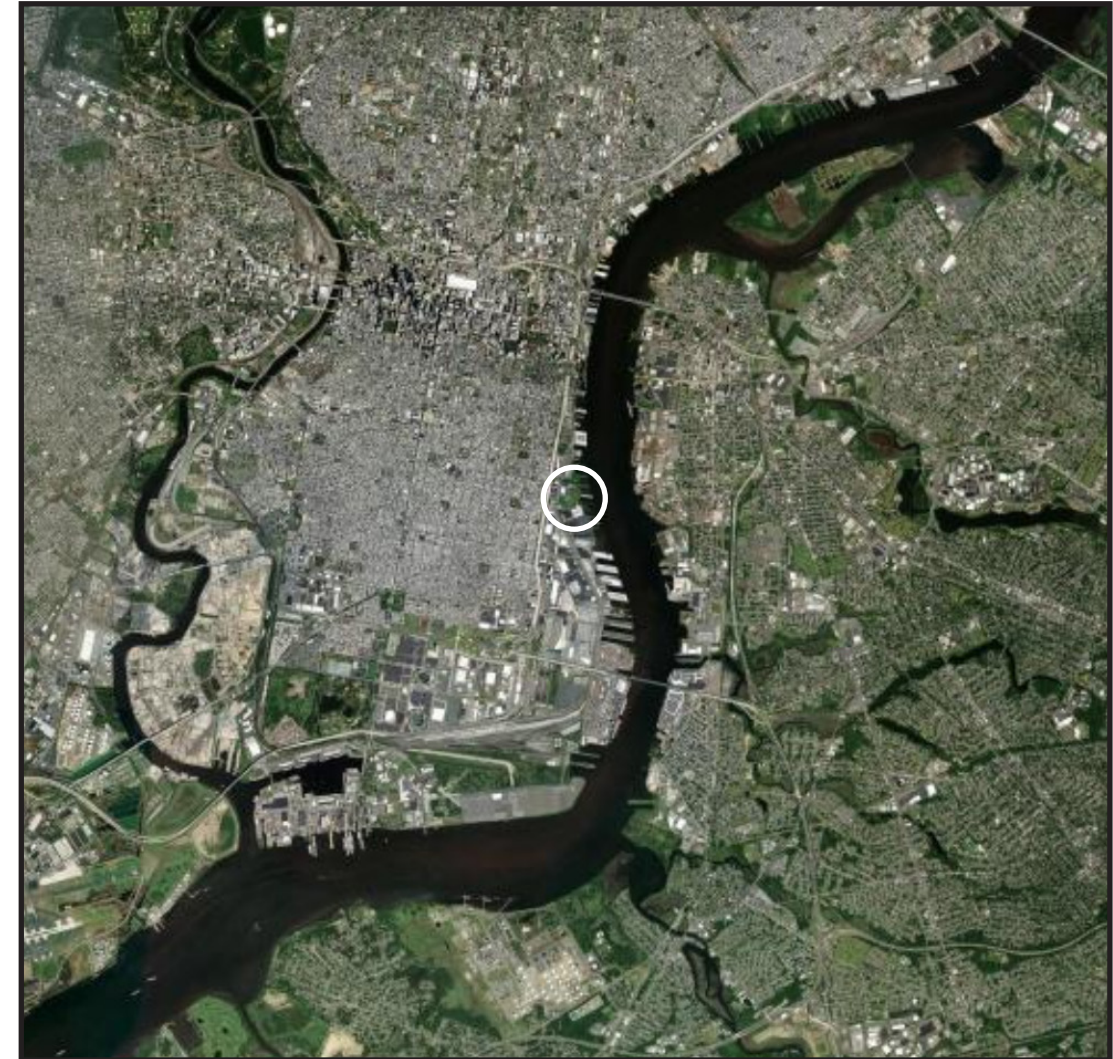
2





Pennsylvania, USA

Philadelphia lies in the heart of the post-industrial American North East. This city and its neighborhoods have been in search of their next chapter in the wake of the industrial downturn. There is a lot of aging and abandoned land in the former industrial districts that have begun to be re-imagined and remade in the last decade and a half.



Philadelphia, PA

Pier 60 lies on the Delaware River waterfront South of busy downtown Philadelphia and east of the residential district of South Philly. The waterfront has been slated for redevelopment. What is now abandoned industrial land and hulking big box stores is set to become a vibrant mixed-use commercial/residential district.



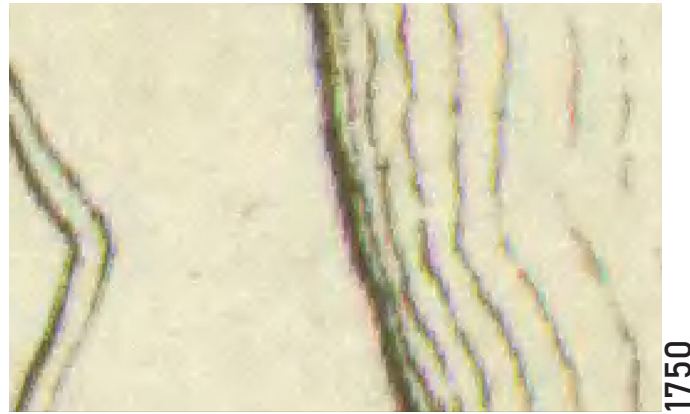
Central Delaware Waterfront

Pier 60 is cut off from the neighboring South Philly residential district by the Christopher Columbus Blvd. and I-95.



Pier 60

This site has been cleared and abandoned since the 1990's. Making this pier a clean slate for redevelopment. Unlike its neighboring piers, Pier 60 is in relatively good repair as its peers have long fallen into the river and have been grown over with opportunistic trees.



1750

The site's original marshy state.

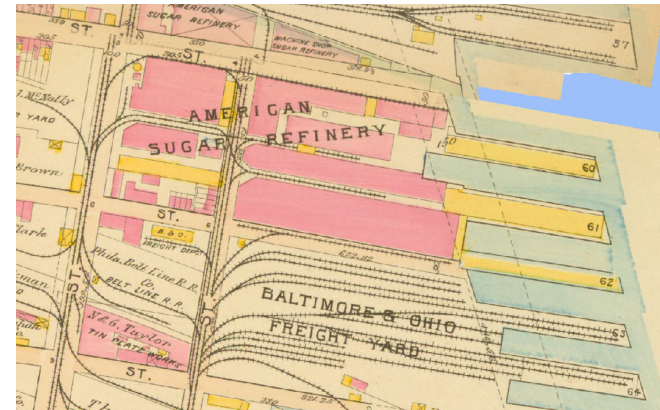
Credit: Athenaeum of Philadelphia



1862

First appearance of the Philadelphia grid.

Credit: Free Library of Philadelphia



1910

Site fully developed by the American Sugar Refinery and Baltimore & Ohio Freight co.

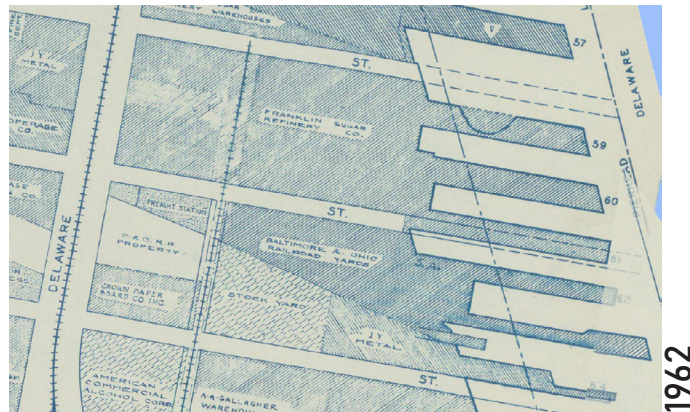
Credit: Athenaeum of Philadelphia



1930

Inactive refinery sold to Merchants Warehouse Company* in 1925.

Credit: NJ Geographic Information Network



1962

Last record of piers 59 & 61

Credit: Free Library of Philadelphia



1977

Last image of standing refinery

Credit: NJ Geographic Information Network



1992

Main refinery demolished & railway removed

Credit: NJ Geographic Information Network



1995

Site fully cleared, pier used for storage

Credit: NJ Geographic Information Network



2002

Parking lot built on western edge of site

Credit: NJ Geographic Information Network



2015

Delaware River Trail developed on the waterfront

Credit: NJ Geographic Information Network



2021

A Giant brand grocery store is developed in the north west corner of the site

Credit: NJ Geographic Information Network

Originally marshland at the river's edge, this site was developed into a sugar refinery and rail yard in the late 1800's. The refinery had a relatively short operational life span, halting production in the early 1920's. The structure stood inactive for much of the rest of the century only being demolished between the late 70's and early 90's. Following the demolition, the site stood empty for another thirty years until the present.

> Industrial-Legacy Areas ripe for renewal and transformation

In the city's 2035 masterplan, this area, the Central Delaware Waterfront, has been designated an industrial legacy area. The plan calls for the area to be redeveloped as a mixed use commercial residential district. This will bring a new population close to the waterfront and completely restructure the city's relationship with the river's edge.



Hunting Park West

This area has strong potential to better integrate with the surrounding neighborhoods by developing community-scale retail services and a range of other appropriate uses on large vacant parcels. Good transportation access can be further enhanced by expanding transit services and accommodating bike routes on roadways.



Lower Schuylkill

The area stretching along the lower Schuylkill River can serve a range of activities that benefit from proximity to the Metropolitan Center and Subcenter (Navy Yard/Sports Complex/PHL). Land close to the Center may be targeted for institutional, office, and recreational uses. Tracts close to the Subcenter can host complementary uses such as hotels, office, and transportation services. Other tracts may be dedicated utility, industry, and environmental management areas.



Philadelphia International Airport (PHL)

Plans for expansion will allow the airport to accommodate additional runways, terminals, and parking, and to enhance PHL's international competitiveness, reduce delays, and improve satisfaction with Philadelphia's international aviation gateway.



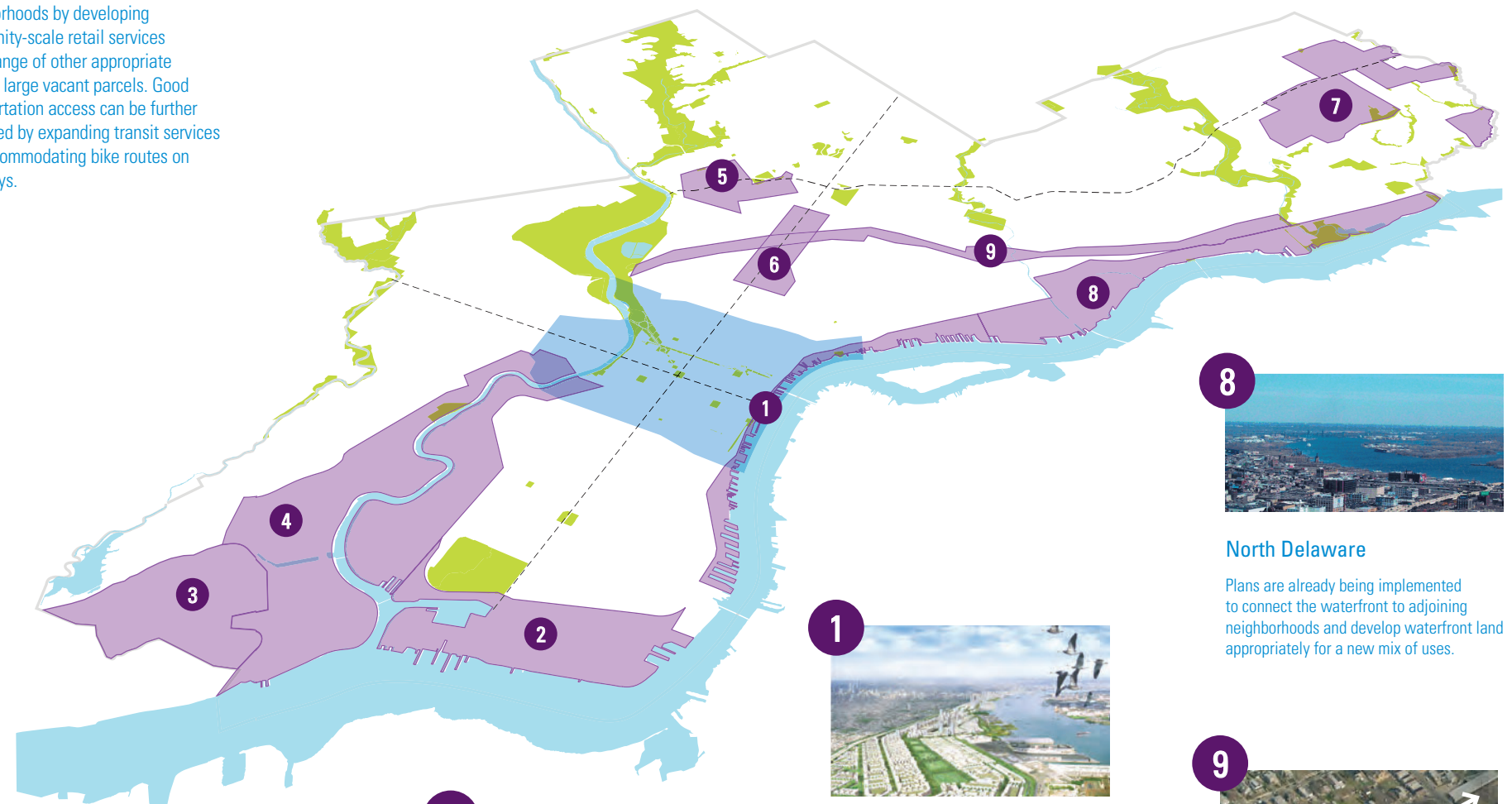
North Broad

This area offers a transportation-oriented framework for development that improves access between local, regional, and intercity transit. Opportunities exist for improved access, infill development in and around commercial and transit nodes, and improved pedestrian and bicycle access to businesses, neighborhoods, and Temple University.



Far Northeast Regional Center

This regional center is well positioned to benefit from proposed expansion of transit along Roosevelt Boulevard and construction of the I-95/Pennsylvania Turnpike interchange. Improved access to highways and transit will reinforce industrial activity and promote density and new employment centers in the retail, professional office, and research and development sectors.



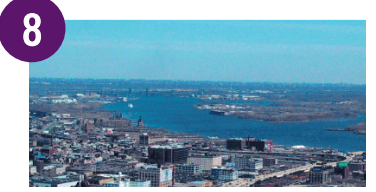
Central Delaware Waterfront

Proximity to the Metropolitan Center makes the Delaware River waterfront attractive for mixed residential and commercial projects and for new recreational and park amenities. Better access will be achieved by extending the street grid to the waterfront and by building a rapid transit line along Delaware Avenue.



Navy Yard

The process is well underway to repurpose unused buildings and construct new buildings for a mix of uses including modern business, research and development, distribution and manufacturing. Implementation of a smart energy grid and high performance building practices position the Navy Yard as a national showcase for energy efficiency and sustainability.



North Delaware

Plans are already being implemented to connect the waterfront to adjoining neighborhoods and develop waterfront land appropriately for a new mix of uses.



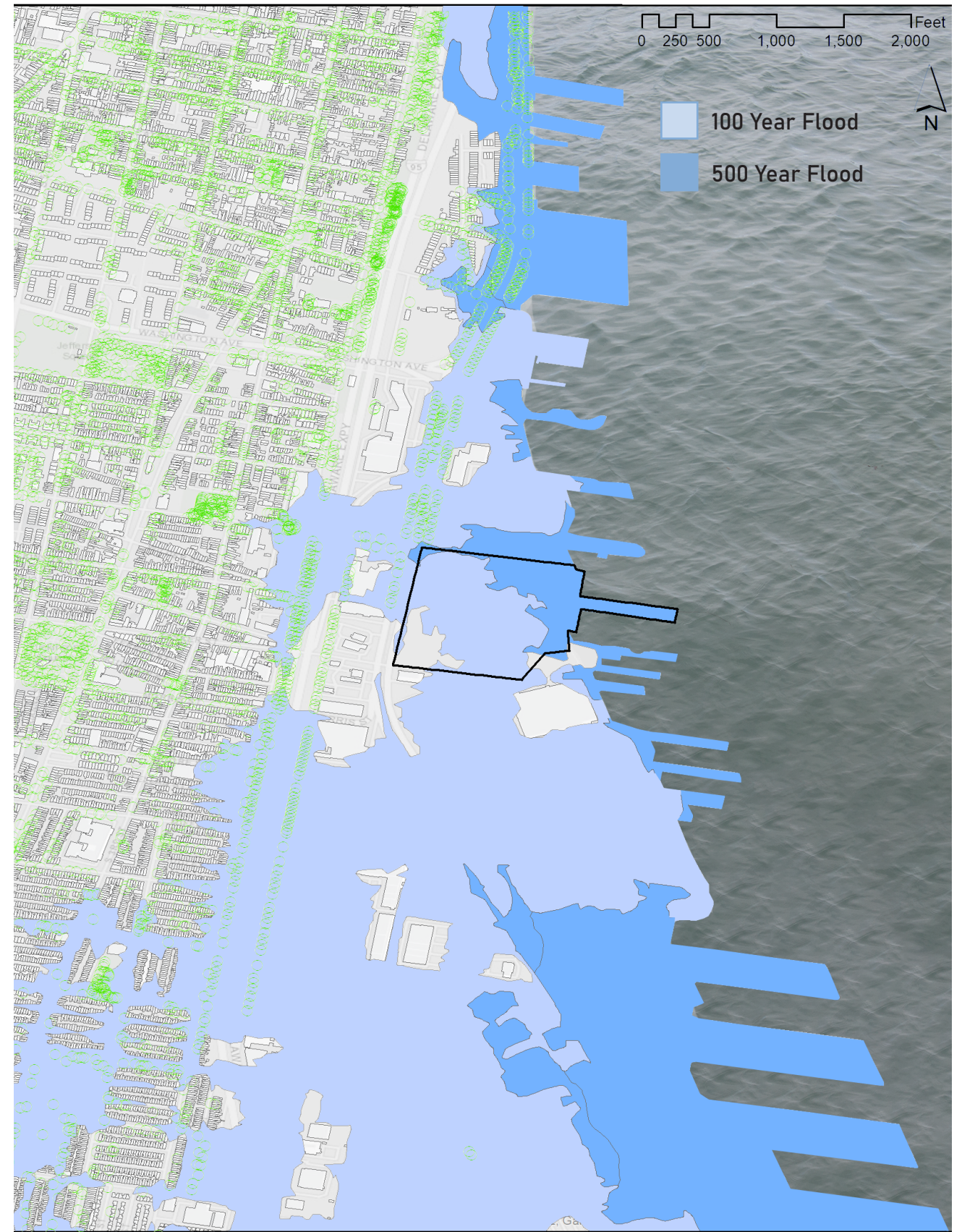
Amtrak Corridor

Amtrak's Northeast Corridor cuts across substantial portions of Philadelphia. Active industries once lined the corridor on either side, but today underutilized land offers opportunities for reinvestment as part of adjacent district revitalization, for greenspace and trails, and for improving a prominent gateway to Philadelphia.

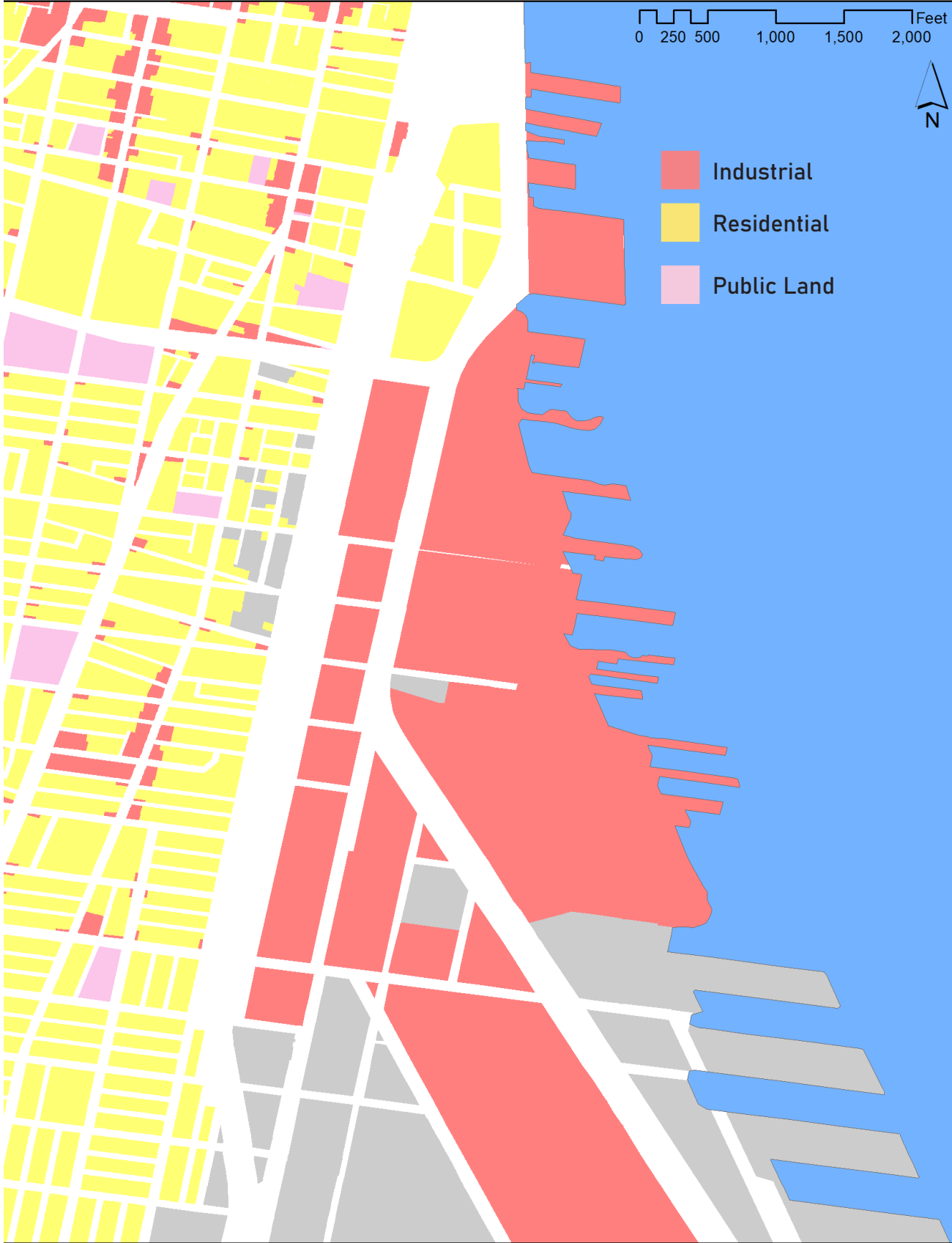
Credit: Philadelphia2035 Citywide Vision



Half Mile Walkability Map



Flooding Map



Zoning Map

The Delaware River waterfront has been divorced from the neighborhood of South Philadelphia by the Christopher Columbus Boulevard and Interstate 95. While technically within walking distance, the two major roads create an unpleasant pedestrian barrier between the people of South Philadelphia and the river. This site has the potential to host an entirely new user base for the waterfront and set a precedent for quality pedestrian access to the Delaware.

This site rests in the 100 and 500 year flood zones so any development along the waterfront will need to be resilient to the forces of high flood waters. This also poses the question of potential wetland restoration to form a spongy barrier and return some of the land's original marsh function and character.

Currently, the site is zoned for commercial use and is flanked by big box stores with their massive parking lots. This subpar land use actively diminishes the quality of experience along the waterfront. A higher density mixed-use development with quality greenspace could be the key to this areas rebirth.



This site hosts outstanding, panoramic views of the Delaware River and the Camden NJ waterfront between the Benjamin Franklin and Walt Whitman Bridges. Pier 60 is visible from many of the piers to its north and from along the Delaware River trail. This trail crosses through the site from North to South just inland from the construction hardened water's edge.

Visible to the immediate North and South of the site are the ruins of the neighboring piers that have fallen into disrepair and have been overgrown by opportunistic flora. This sets the site's own relatively good condition into contrast and hints at the area's former life as an industrial powerhouse.



West View



South View



North View



East View



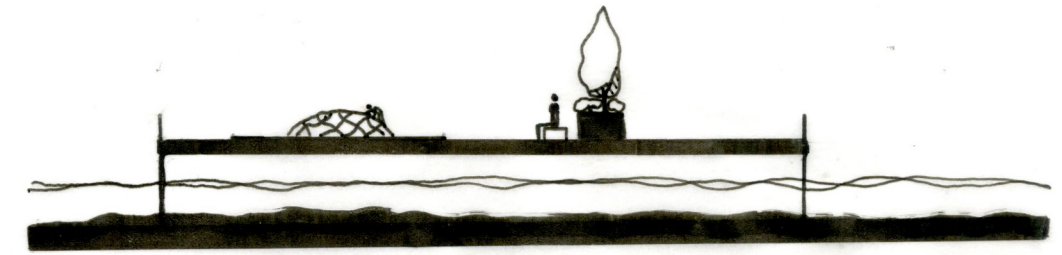
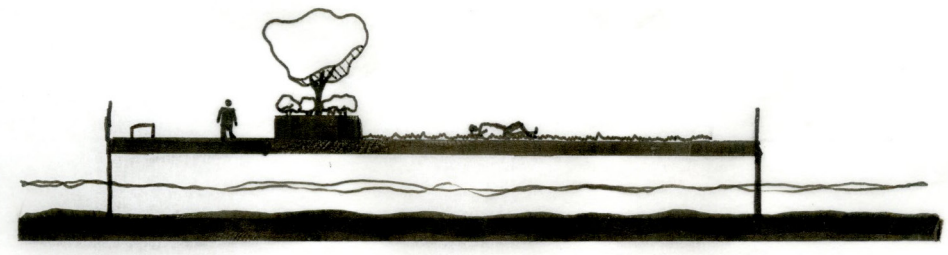
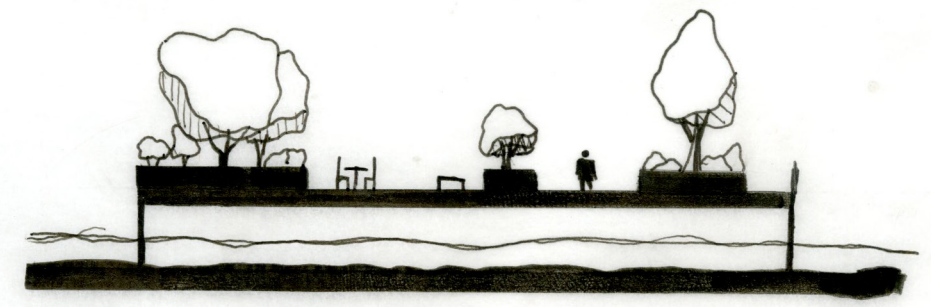
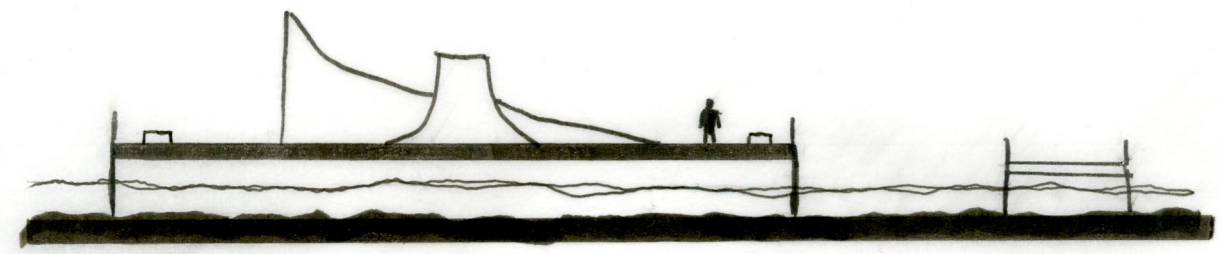
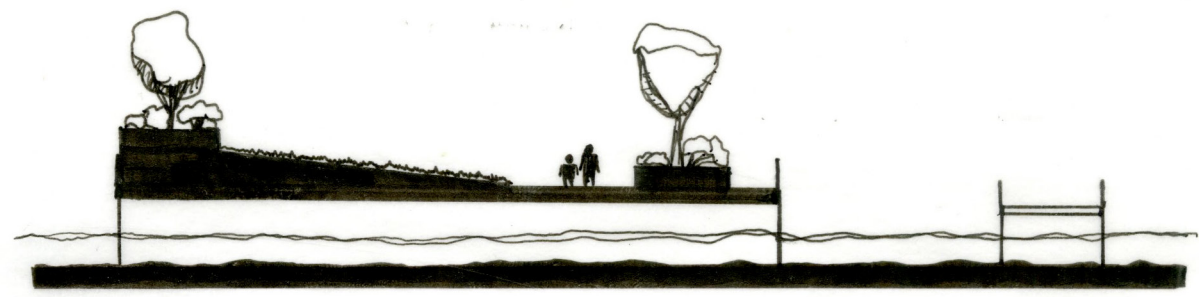
Viewshed Studies

The capture and enhancement of views out on the pier is imperative to the success of this type of project. The site looks out onto landmark bridges and crumbling historic piers to the North and South as well as industrial Camden NJ to the East.



Exploration

3





Brooklyn Bridge Park, New York City

Michael Van Valkenburgh Associates Inc

Immersive Journey:

Continuous and evolving paths throughout the site.
 Varied secondary "Journeys" on each pier providing a variety of atmospheres
 The massive scale of the river and city around the park establishes an encompassing envelope

Thermal Threshold:

Visitors step out of the dense, congested, New York street into an open, airy riverfront park
 Areas of open sun and dense shade establish atmospheric transitions between spaces

Program:

Sunning on the lawns and walking along the water's edge are decompressing activities found in few other places in the cities
 Athletics facilities on the piers provide an opportunity for familiar activities in a new atmosphere

Shared Situation:

Popularity of sunbathing and picnicing on the open lawns displays an atmosphere of collective delight

Spatial Contrast:

The dichotomy between hard urban conditions and a comparably softer environment enhances the positive impact of the park's atmosphere
 The Manhattan skyline across the water and the expressway behind the site are a stark relief of the park's scale and conditions

Race St Pier, Philadelphia PA

Field Operations

Immersive Journey:

Gradually sloping walking surfaces slowly shifts a visitor's view of the pier's context
 Long vision lines create a sense of progression from one end of the pier to the other

Thermal Threshold:

Divided horizontal planes utilize elevation to create separate thermal conditions
 The elevated plane receives more wind and direct sunlight
 The lower plane rests lower to the water and is more affected by the river's condition

Program:

A lack of activity based programming places focus on a variety of moments of rest and their diverse atmospheres
 Benches along the upper walkway have a much different condition than that of the end of the lower plane

Shared Situation:

Disparate visitors congregate on the stair ramp and take in the sun and view of the river
 this gathering establishes a loose community tie through communal activity

Spatial Contrast:

Moving from a densely built urban condition to an open expanse of the pier is punctuated by a massively built gateway to the site

Case Studies

I adapted Silvia Benedito's structure for evaluating Atmosphere into a method of analyzing case studies. This format also was helpful in reviewing design iterations as a sort of self grading rubric.

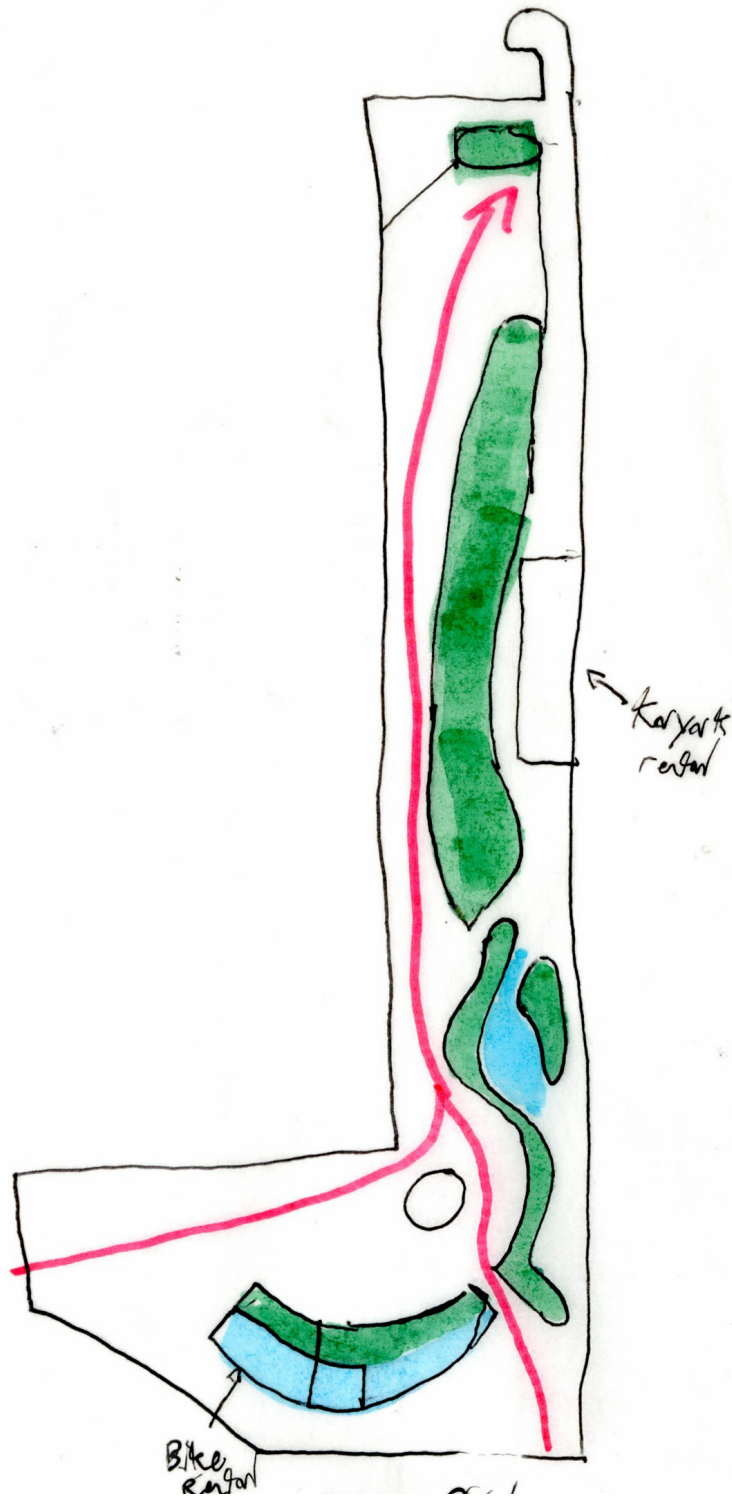


Pier Case Studies

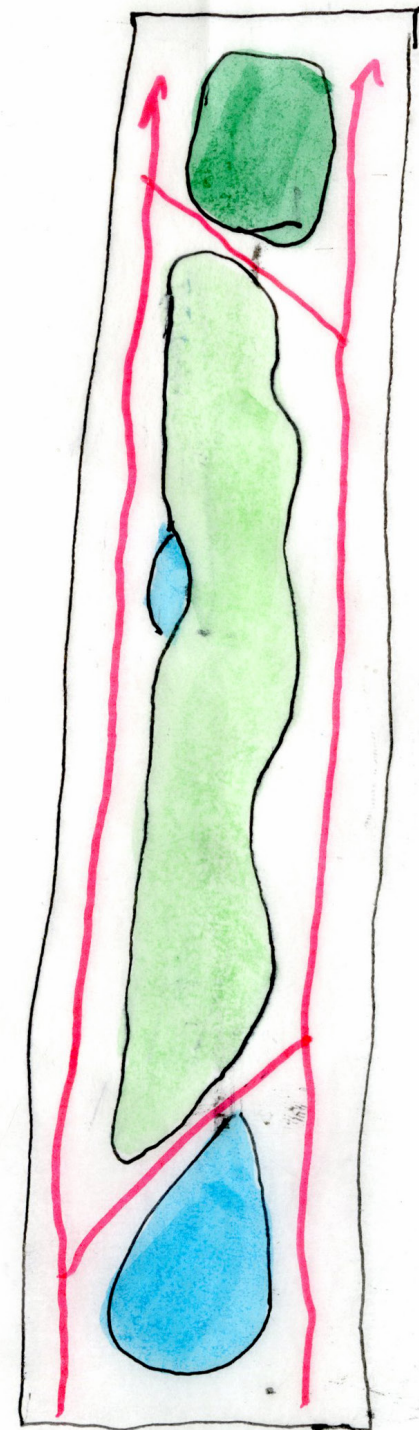
Pier restoration projects similar to The Veil have taken place across the North East US for the last 20 years, Manhattan NYC in particular has a high concentration of these reimagined pier parks. I studied the designers' use of passive, active, and planted space to understand how each of these parks function.

These parks each use a unique ratio of passive, active, and planted areas to establish their desired atmosphere within their urban context.

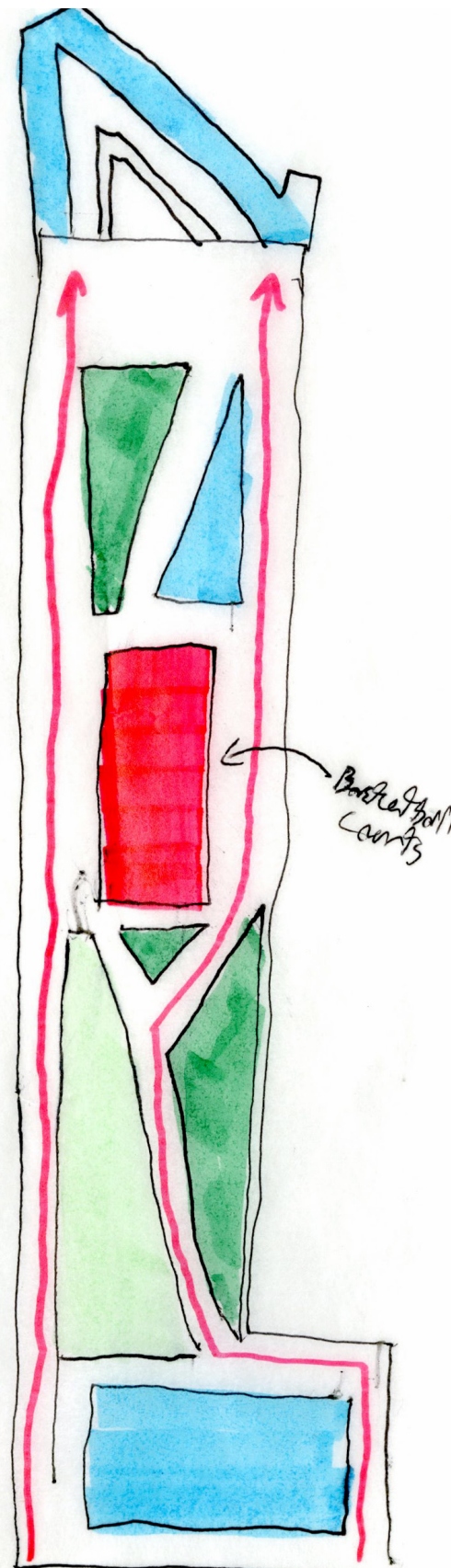
Many balance the use of hardscape and softscape to create interesting spaces and sightlines within the site and to out to the surrounding river.



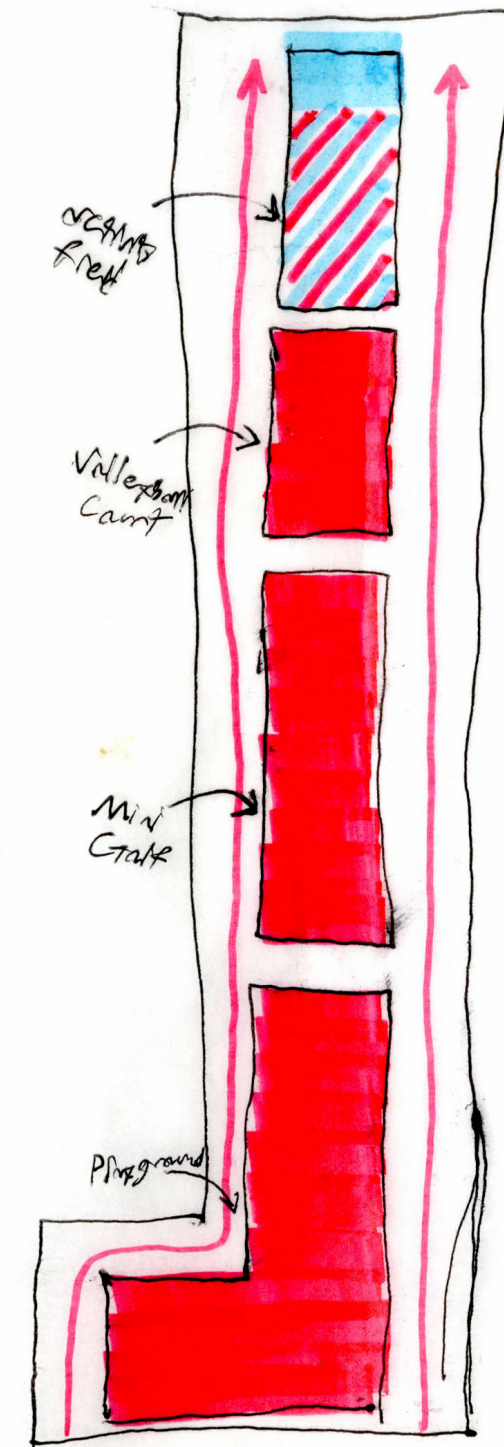
Pier 84, Manhattan



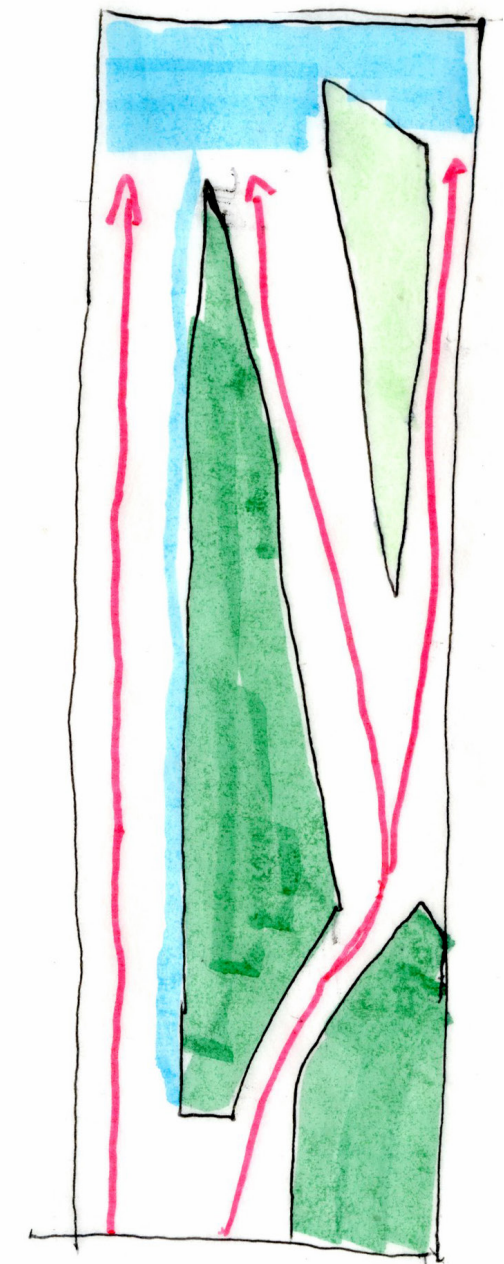
Pier 45, Manhattan



Pier 26, Manhattan



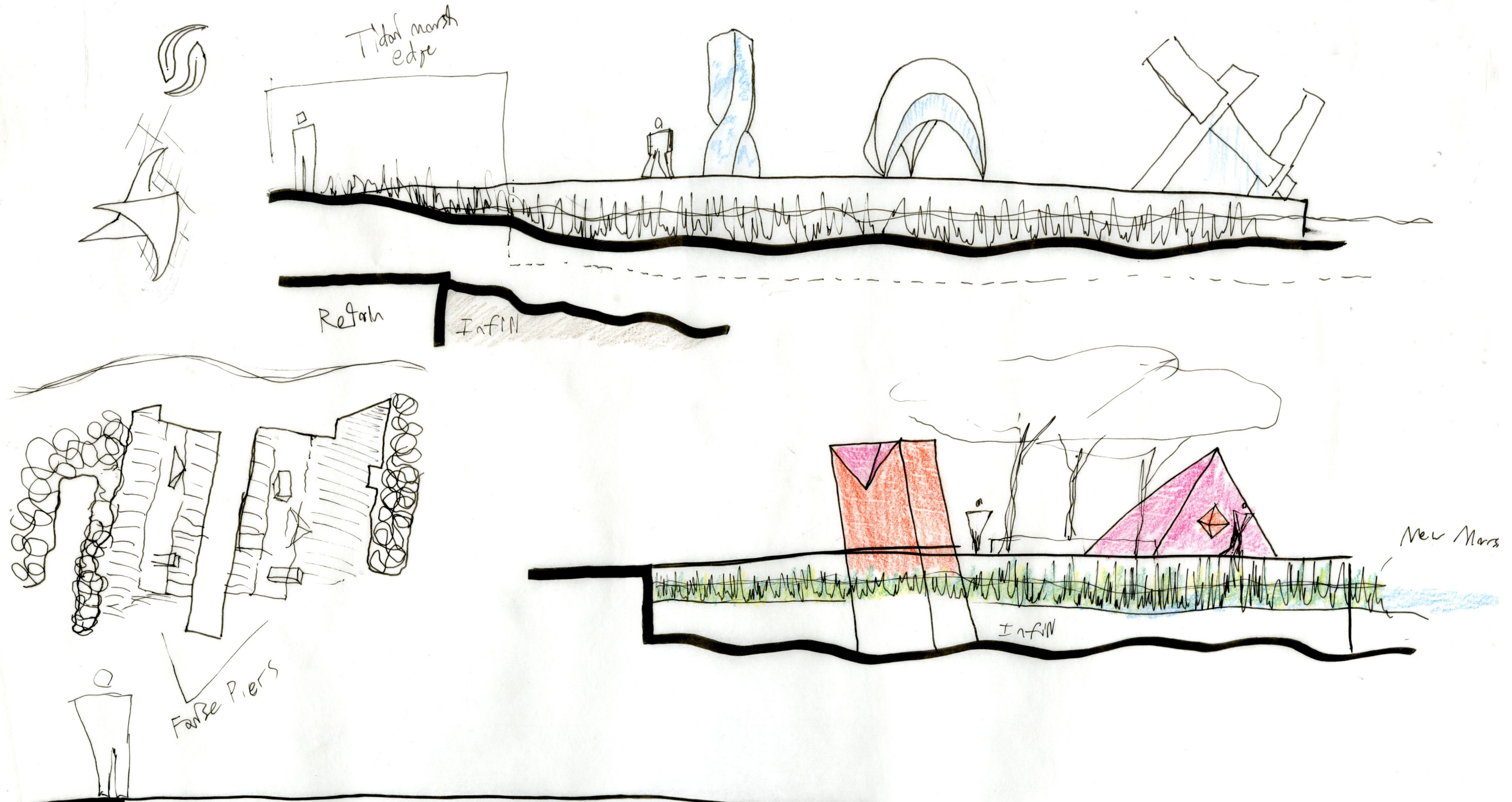
Pier 25, Manhattan



Race St. Pier, Philadelphia

Early Ideation

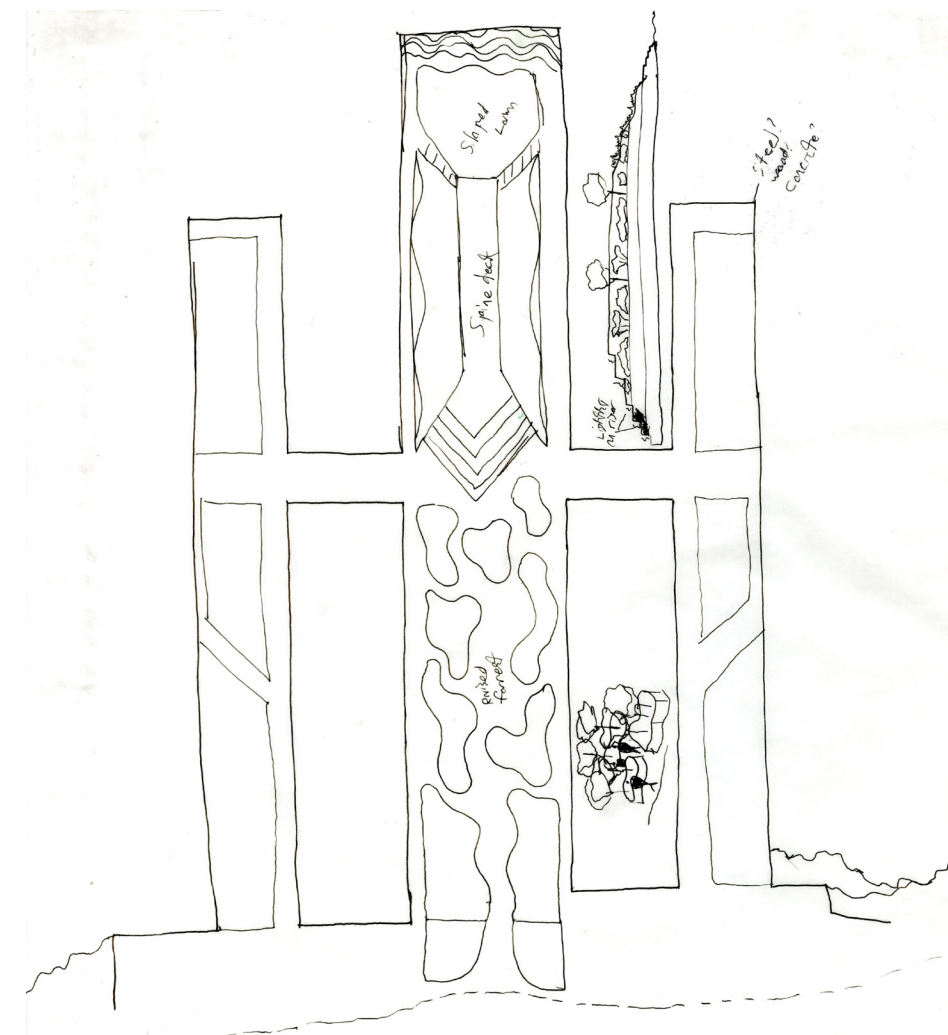
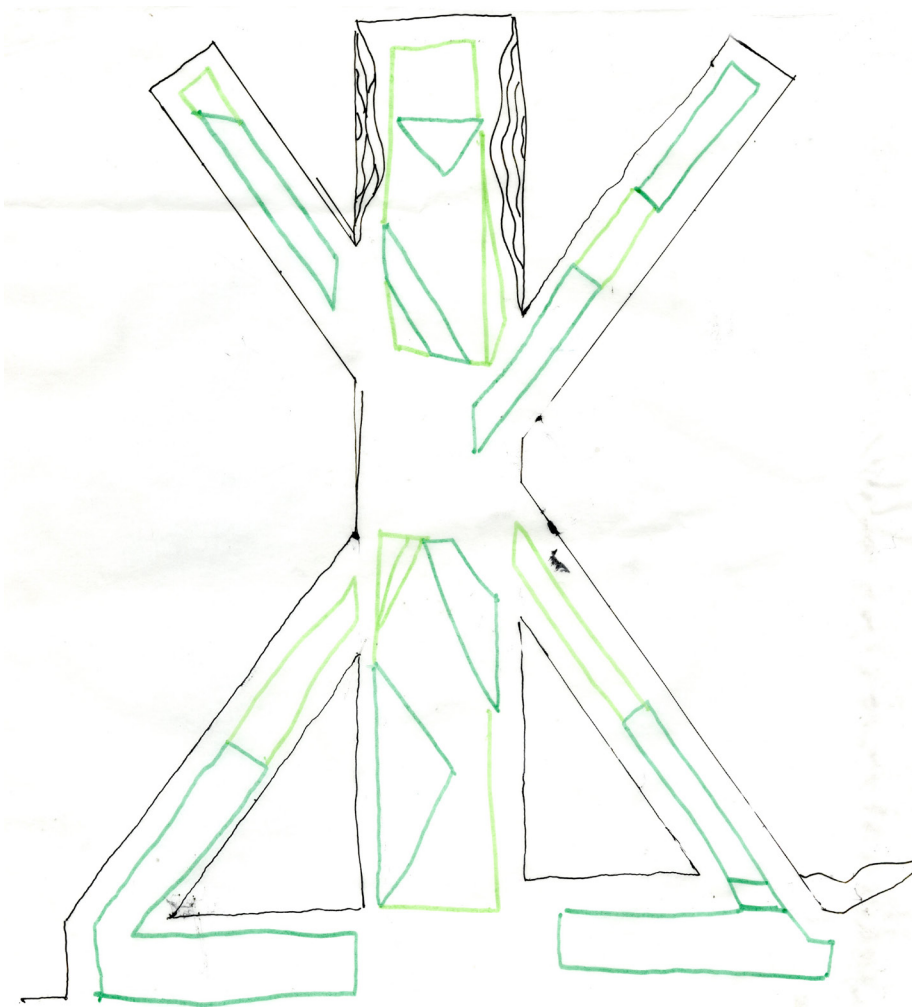
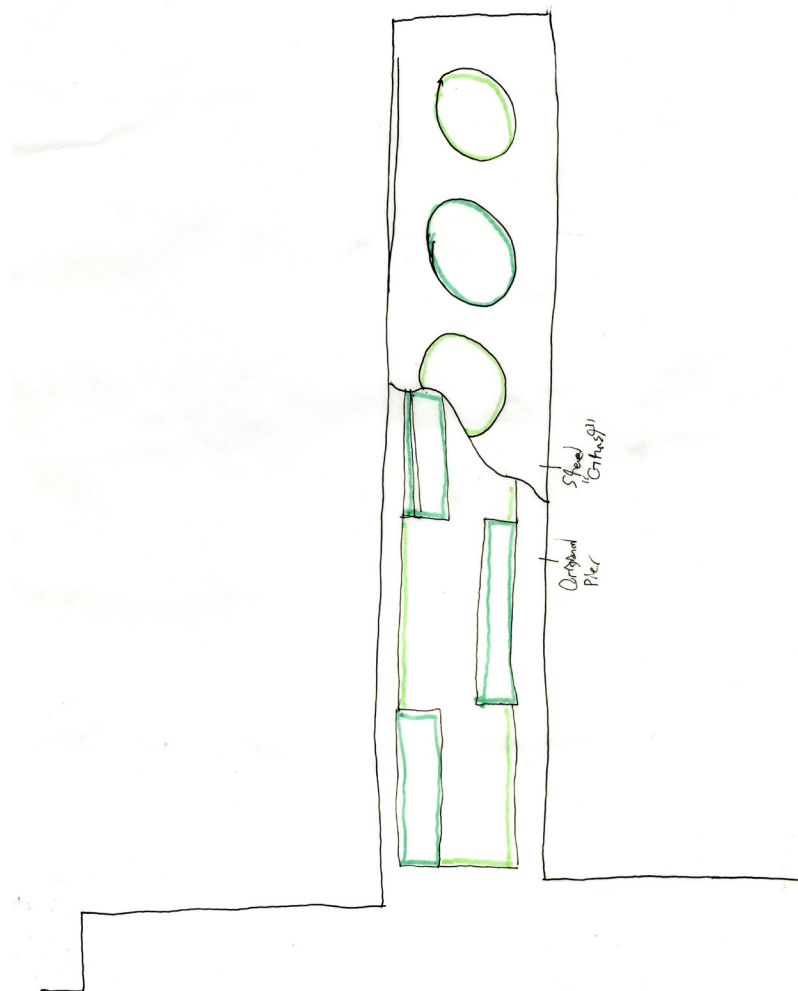
These Early iterations explored a range of ideas including bringing back the long demolished Piers 59 and 61 and utilization of a large sculpture piece along the length of the pier.



I found that the shape of structures on pier 60 should be relatively simple and clean to better serve as a canvas for projected light.

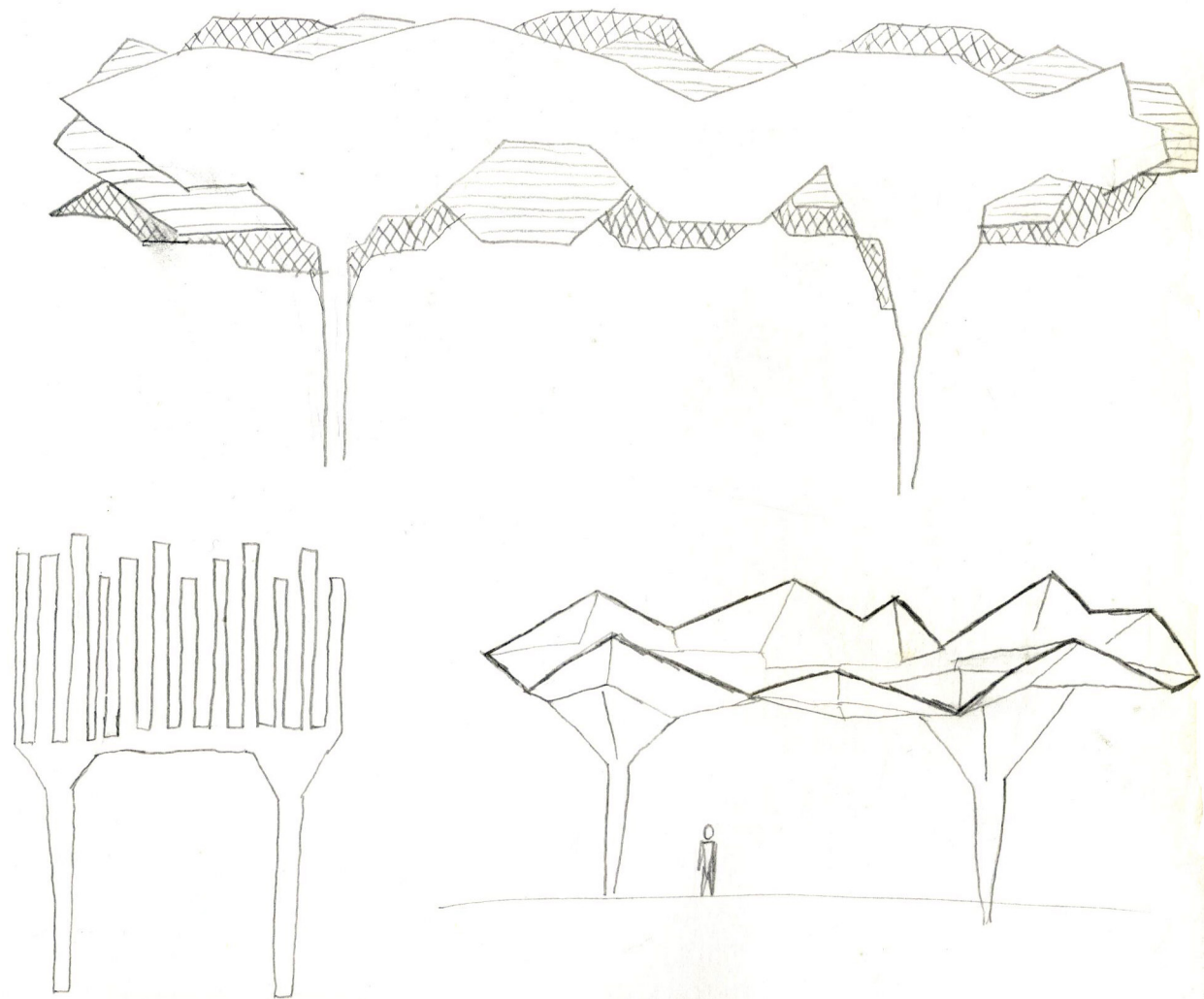
The "ghost" of the missing north and south piers is carried forward in the design as a pair of external walkways that bring users closer to the water's surface.

The large sculptural form wanted to be placed at the end of the pier to serve as the capstone of the immersive journey. From here, the feature can be seen from shore as well as the river.



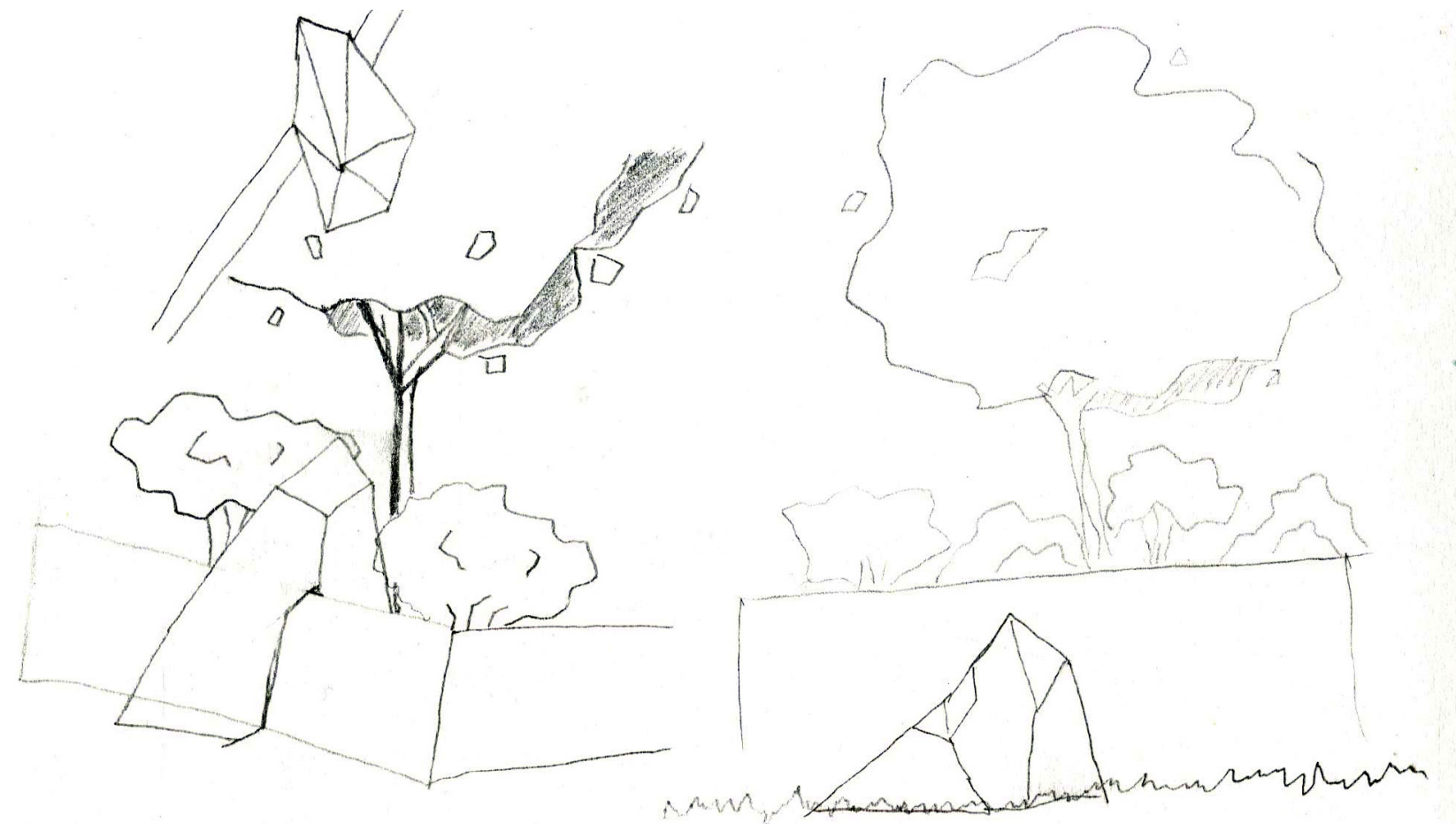
Early Shade Structure

When designing the inland portion of the site, I wanted some type of shade and shelter providing structure. These are early explorations of a form that would be interesting to be projected on from below.



Light Crystals

From early on there was an idea of geometric forms scattered throughout the landscape that produced light and patterns that responded to the presence of a user. These could be embedded in planter walls or free standing as if they predated the development and were designed around.



Landscape Reactivity: Visual

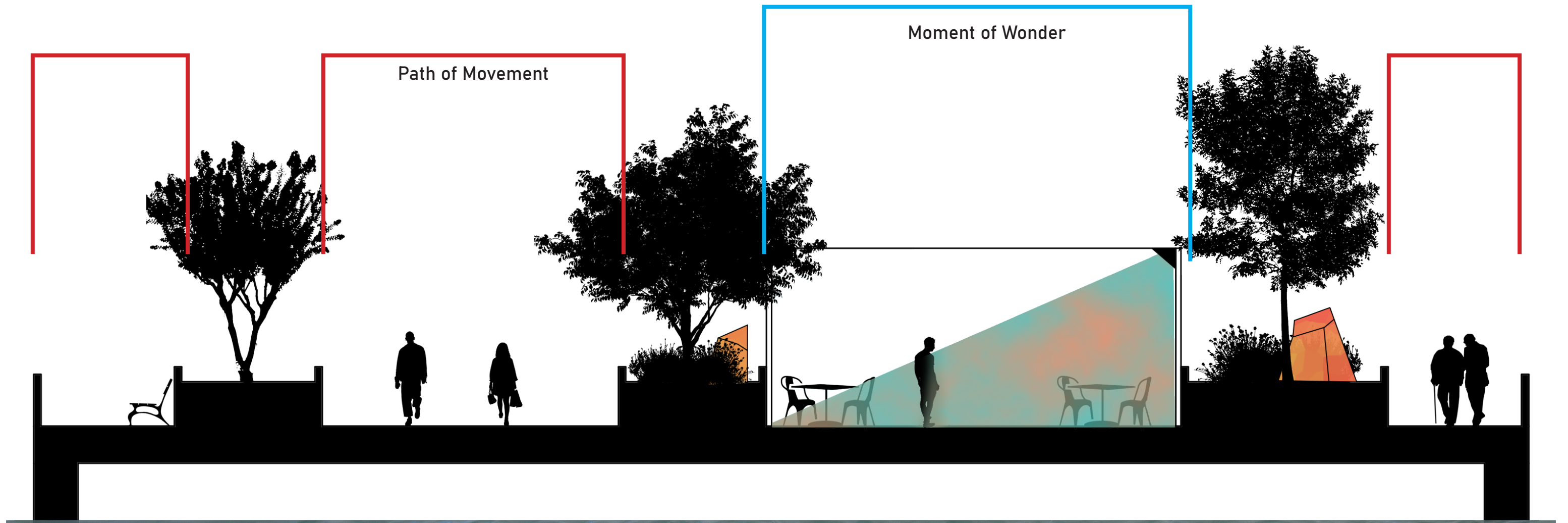
While moving through a landscape, observers are presented with a range of visual stimuli. Light, shadow, color, texture, motion ect. are taken in by the eyes and contribute to the overall experience of a place. The thoughtful use of LEDs, projectors, and motion sensors could add a new dimension to the way we experience landscape. Just as a plant shakes when we brush past, these lighting fixtures could react to the presence of a user nearby by brightening, dimming, changing patterns or imagery.



Landscape Reactivity: Audio

Having control over the sound profile of a given space can go a long way in shaping a user's experience of the landscape. Similar to the way theme parks control the soundscape, sensors within the landscape could activate audio cues to play from speakers hidden within the design. Influence over the sound within the space allows a designer greater control over the desired experience of the site.





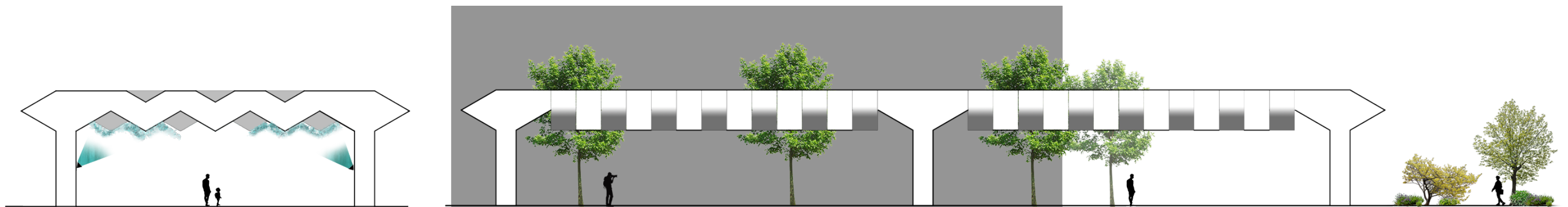
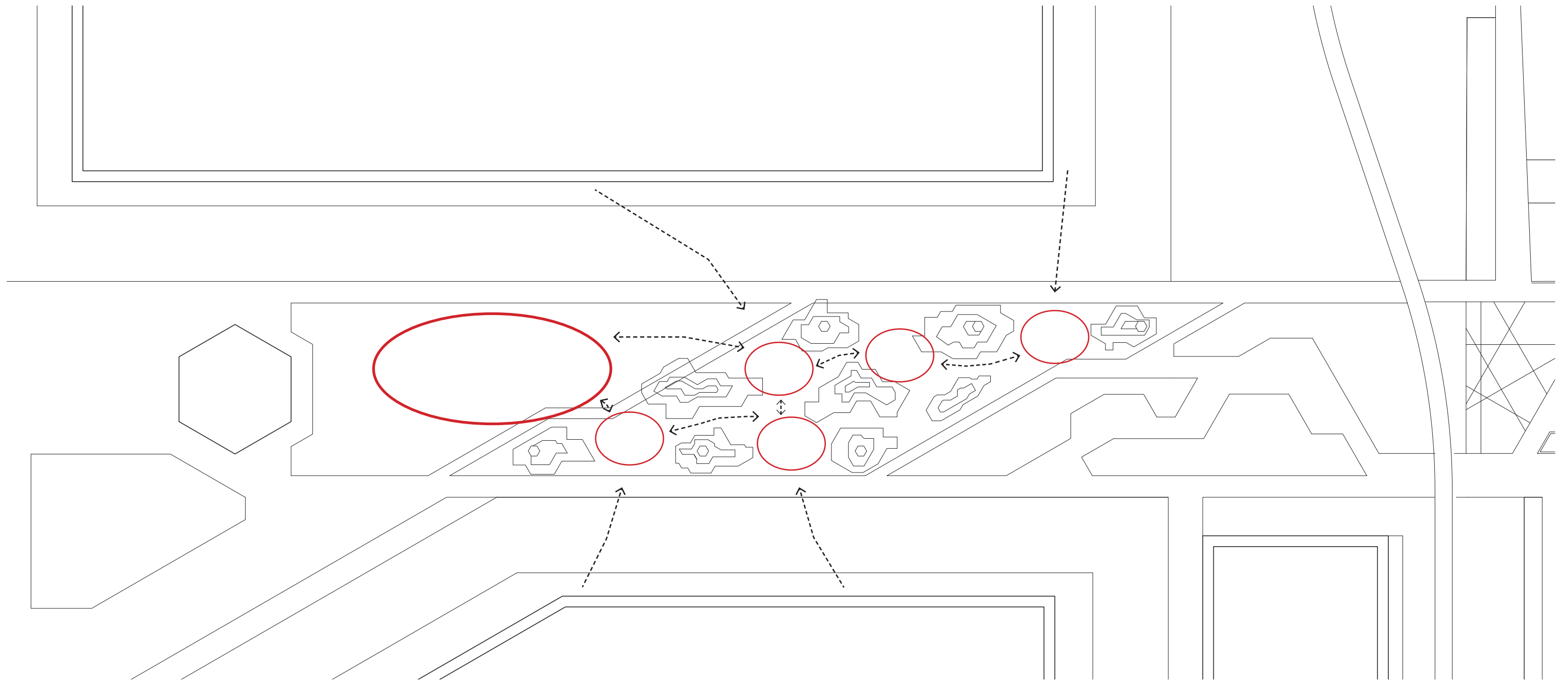
Path of Movement

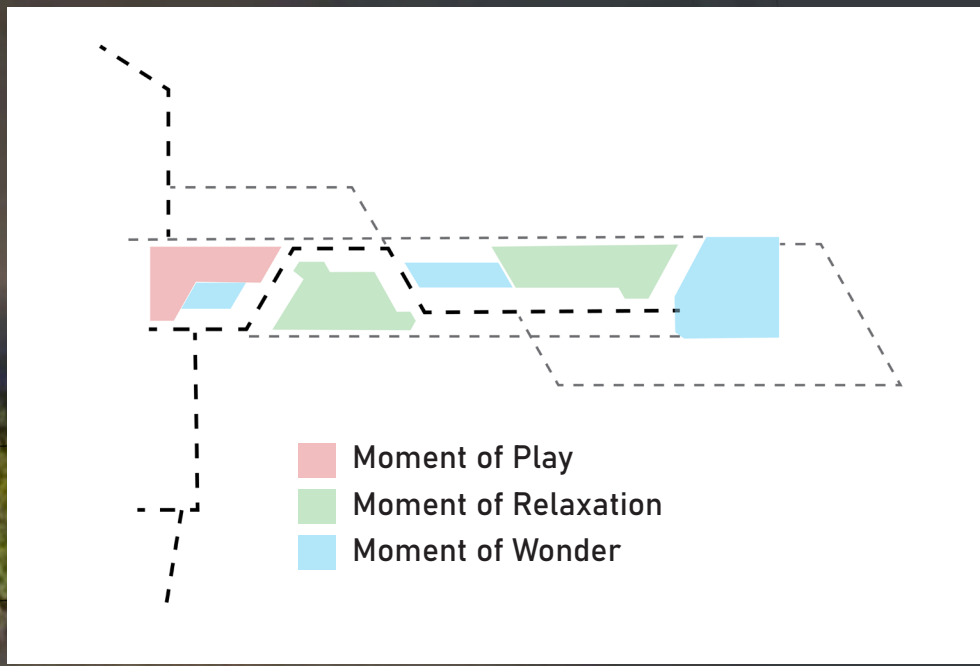
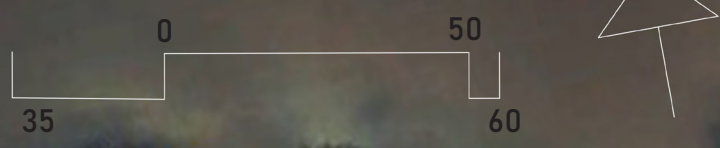
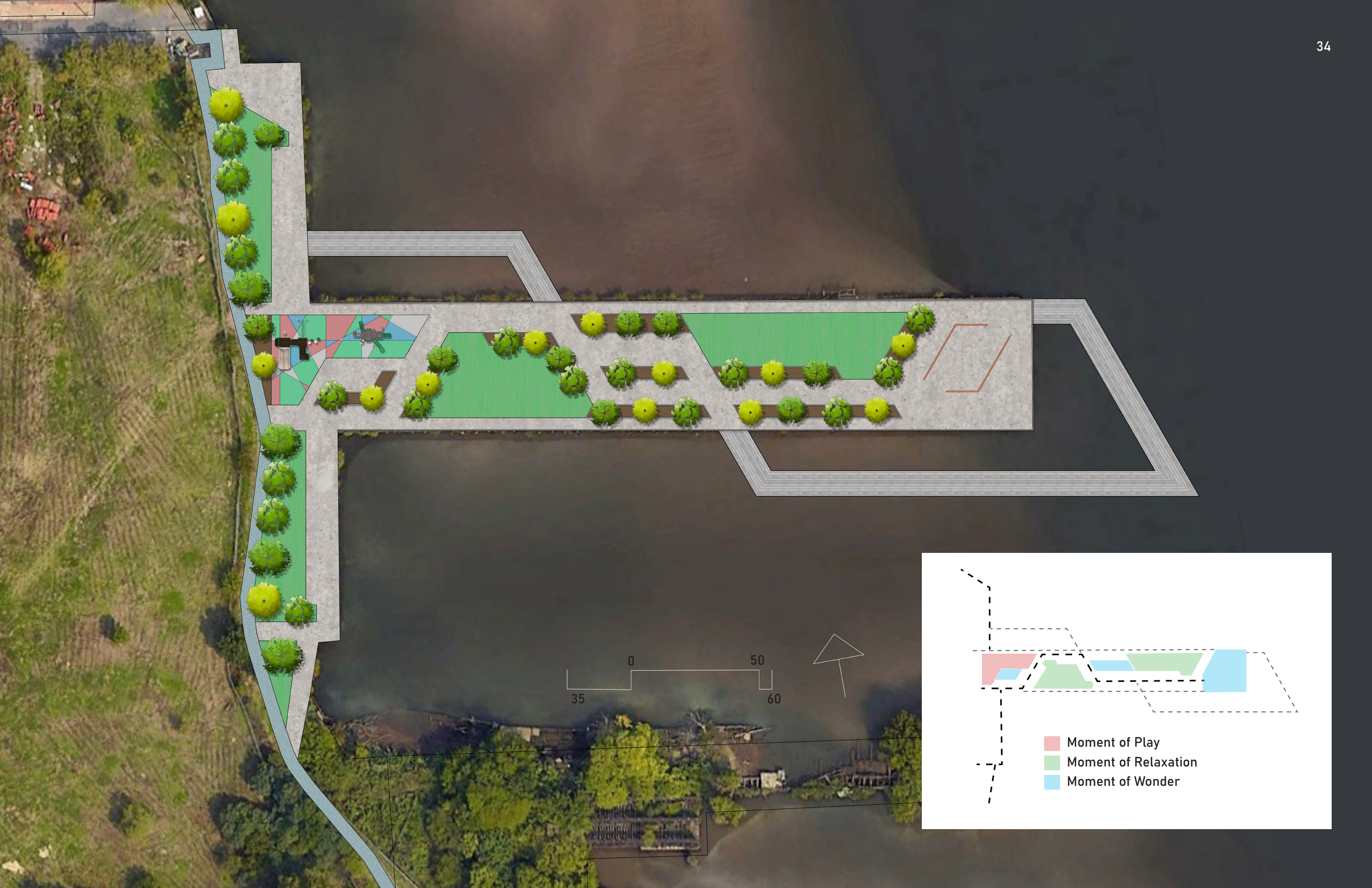
Moment of Wonder

Lighting Typologies

These sections explore a range of interactive projected lighting opportunities. Some feature stand alone lighting structures while others utilize ground and wall surfaces as a canvas to project responsive color, patterns, textures, and scenes.







Lighting Progression

As a user moves through the site, street lamps brighten in their presence and dim in their wake. Upon entering one of the special performance areas, users are dazzled with an interactive lightshow that responds to their movement and location using motion sensors and small scale LiDAR technology

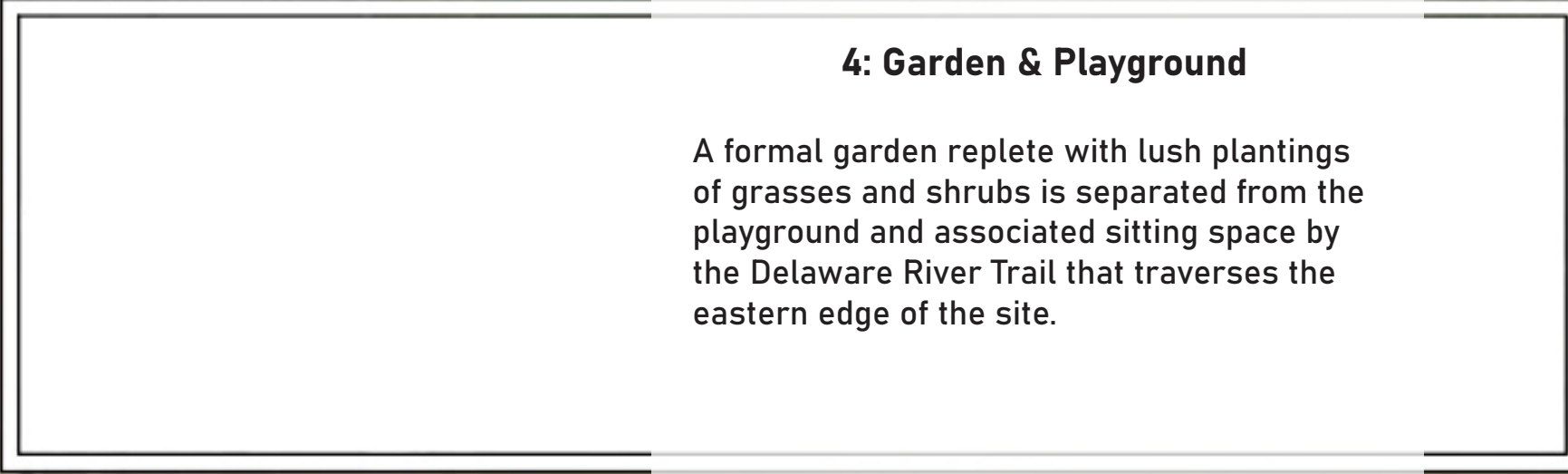
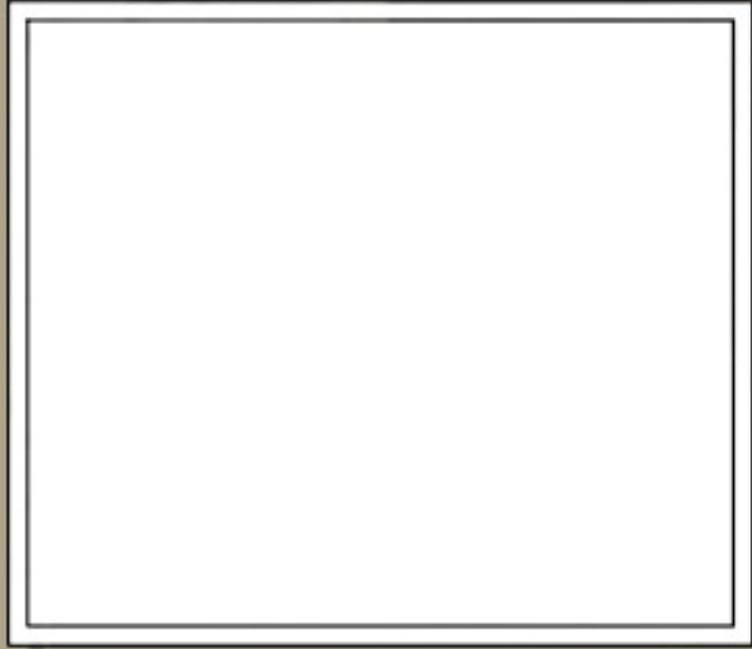




Three Veil

4





4: Garden & Playground

A formal garden replete with lush plantings of grasses and shrubs is separated from the playground and associated sitting space by the Delaware River Trail that traverses the eastern edge of the site.



1: Gateway Fountain

This stand of trees serves as a break from the busy streetscape of Christopher Columbus Blvd. A fountain welcomes individuals into a new, quality set of spaces.



2: Event Stage & Lawn

This stage and lawn, nestled between neighboring buildings, can be a grand venue for local and regional music acts. There is plenty of space for spectators to lay out blankets or set up camping chairs and enjoy the show.



3: Shade Pavilion

An extension of the event space, this pavilion features stair-stepped seating structures beneath a roof upon which any desired sky can be projected. Starry night skies will replace the light polluted gloom of the city's night sky.

Delaware River Trail



5: Lawn and River Approach

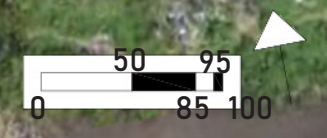
This flexible lawn space offers an opportunity for visitors to step down, closer to the river and restored marshland.

6: Projector Plaza

This space serves as a showcase for the site's reactive projections. During the day it is an ordinary resting area along the length of the pier. In the evening, this space comes alive with interactive lights being projected upon the walls and ground.

7: The Walls

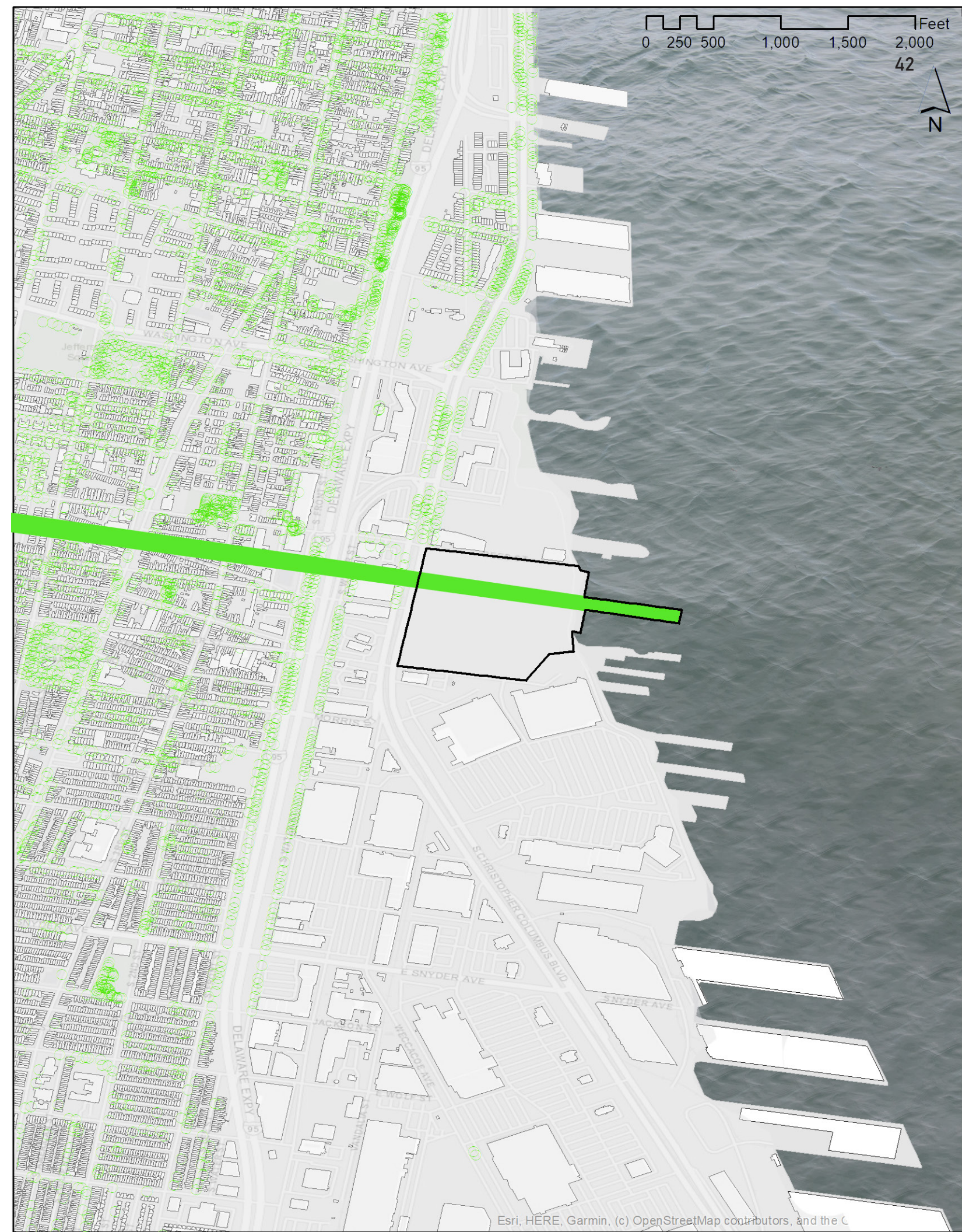
These massive copper-backed LED boards enclose a space at the end of the pier. With users are dazzled by imagery of local natural history, and culture. Upon exiting, those users are presented with the panoramic view of the city and river.

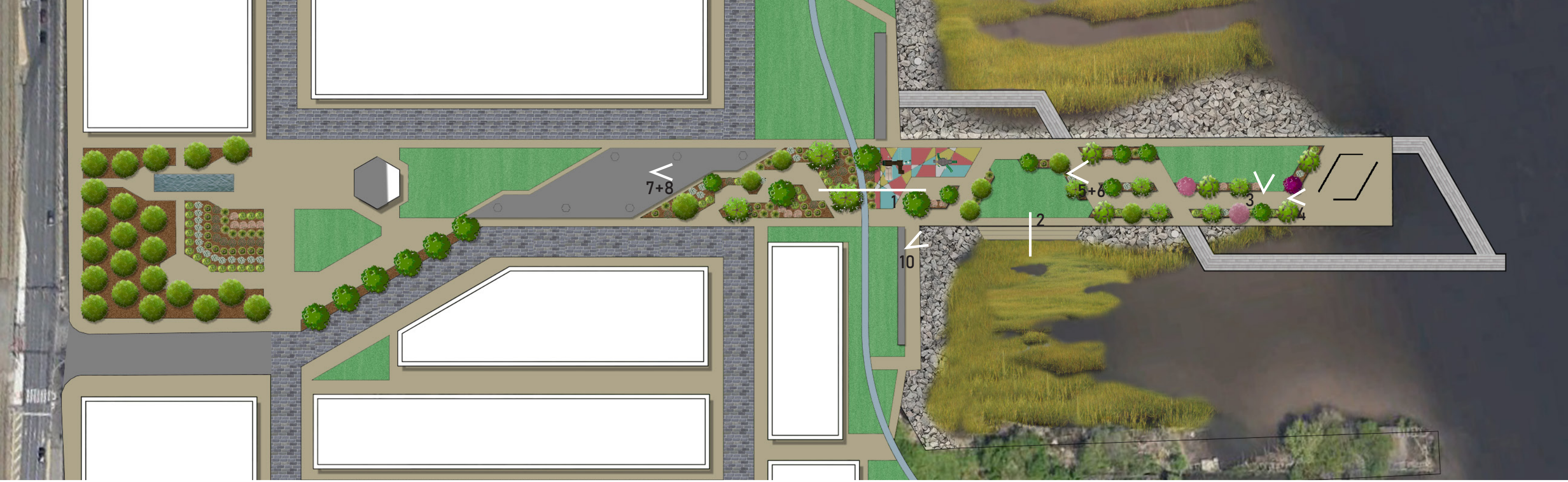


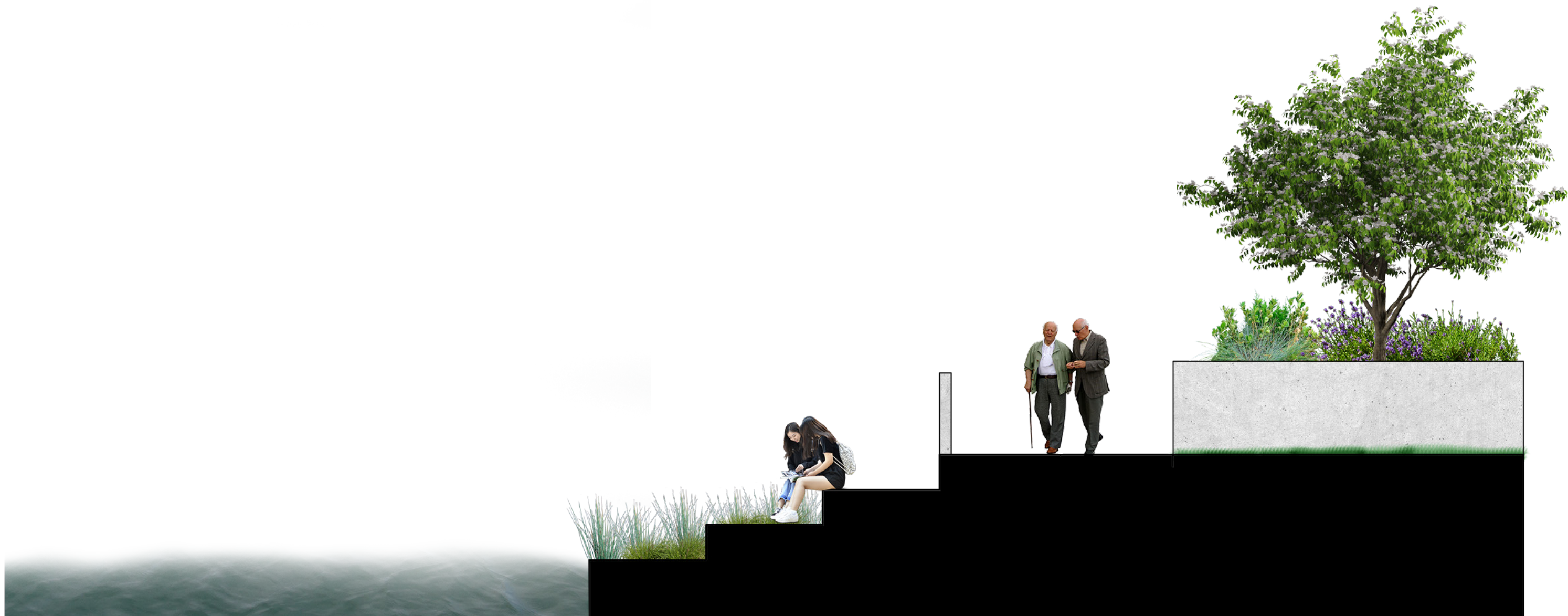


Site Masterplan: The Veil

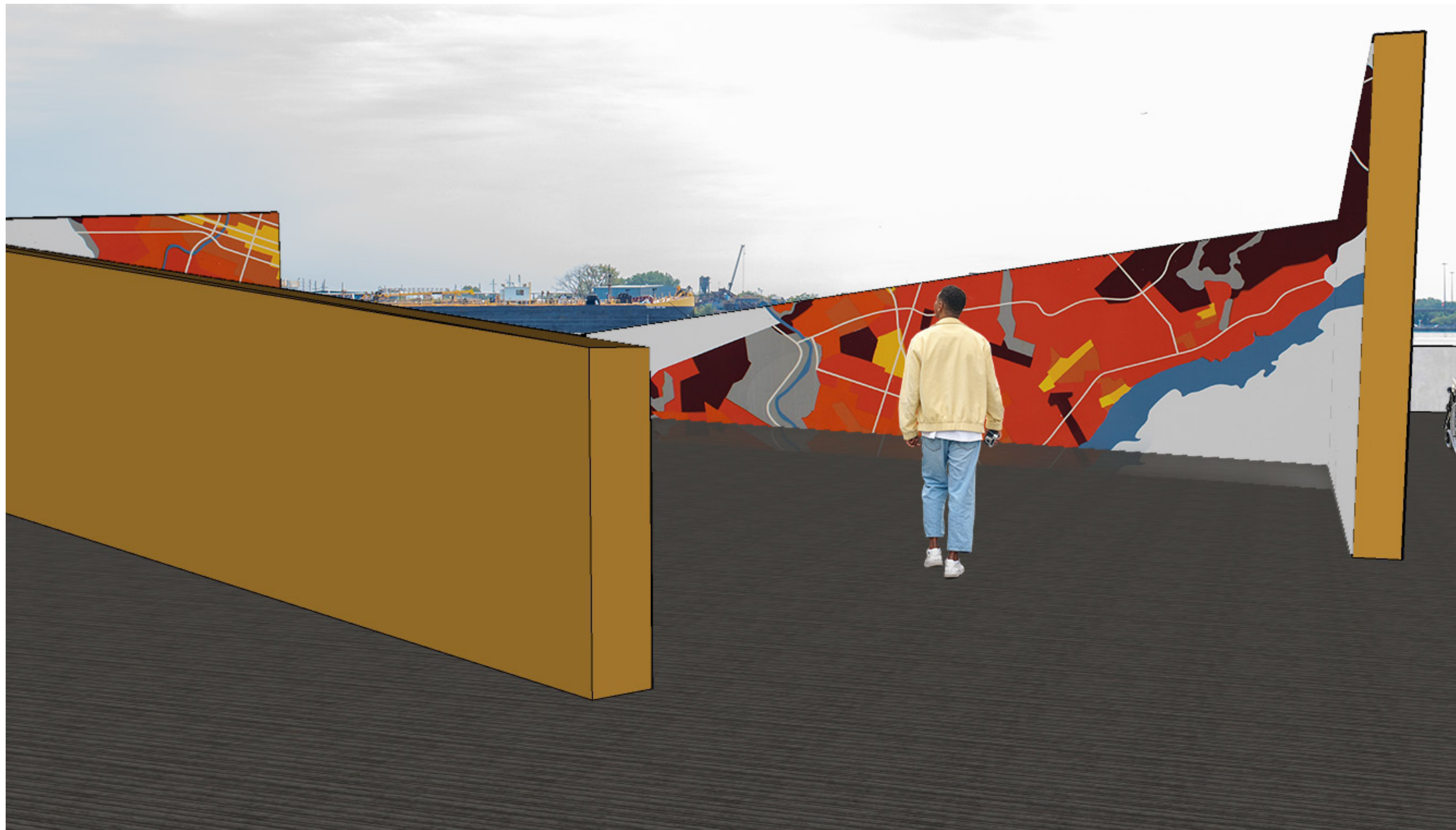
This design considers the abandoned site a canvas on which to experiment with reactive landscape architecture. During the day, the landscape performs like any other quality greenspace. In the evenings, the lights come on and a veil of something “else” is placed over top of the landscape. Street lights brighten in the presence of users and certain spaces respond to visitors with an interactive light show based on local nature, history, and culture. This master plan seeks to both draw users to the waterfront and pull the qualities of the waterfront inland for all to enjoy.





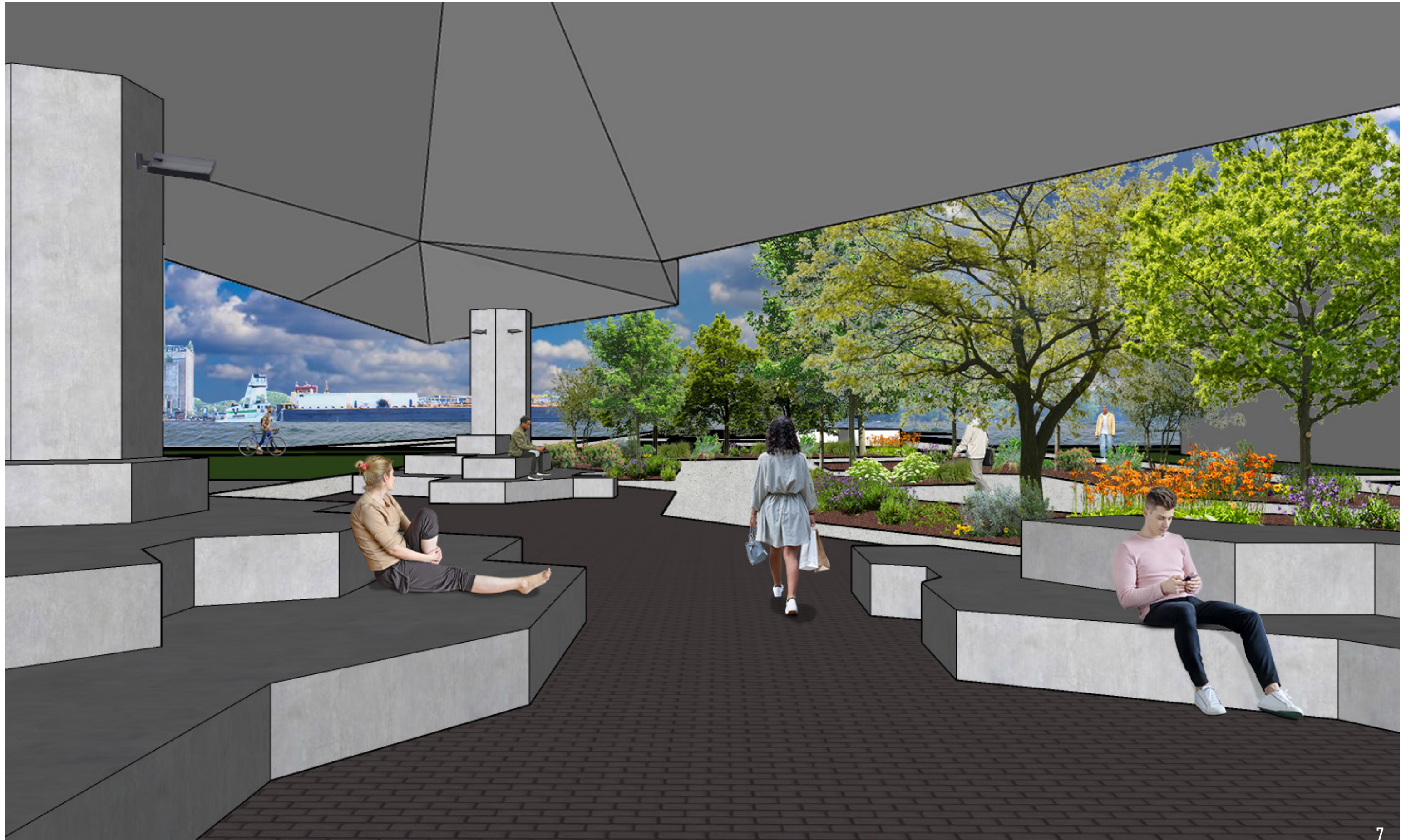


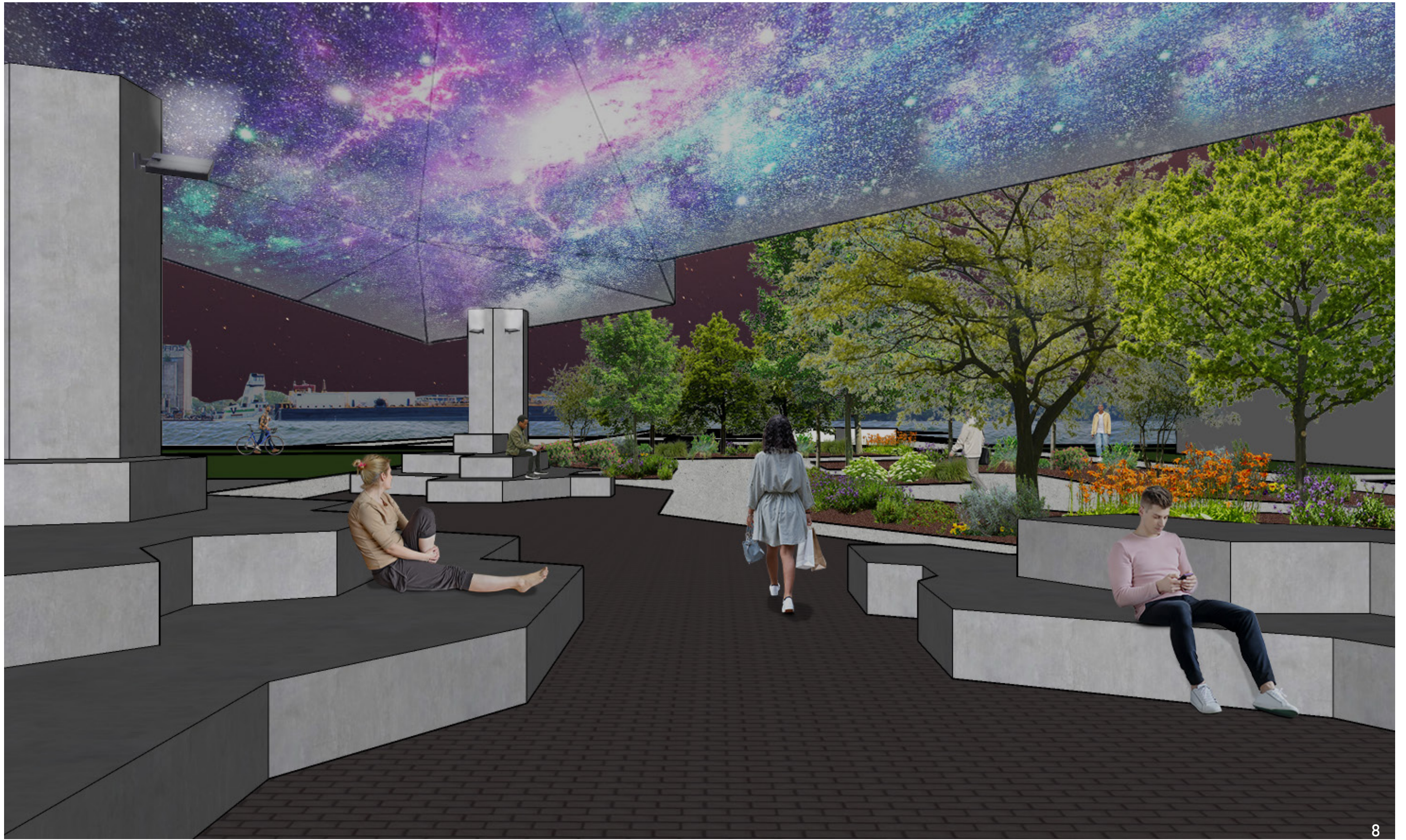














Conclusions

Experience is an anomalous concept with a unique meaning for each individual. This mysterious process is ever changing and evolving as an individual's understanding and perception of a design or landscape changes. This project tackles experiential design through manipulating a space's atmosphere through the use of reactive light and sound. As a user interacts with the landscape, the landscape shifts to respond in kind creating a new paradigm for experience.

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