



P O R T F O L I O

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EDUCATION

Sept.2019-Jun.2024	Southeast University Bachelor of Architecture in Architecture
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Aug.2022	Granary Surveying and Mapping for Xuan'en County, Enshi Tujia and Miao Autonomous Prefecture
Oct.2020-Nov.2021	Architectural Features Research on Prisons of the South of the Lower Reaches of the Yangtze River in the Republic of China Era



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01

DOPAMINE CITY

Studio

Fieldstation Studio

Instructor

Corneel Cannaerts & Michiel Helbig

Teammate

Young Shin Jeon

Project Type

Conceptual Urban Installation

Semester

Summer 2024

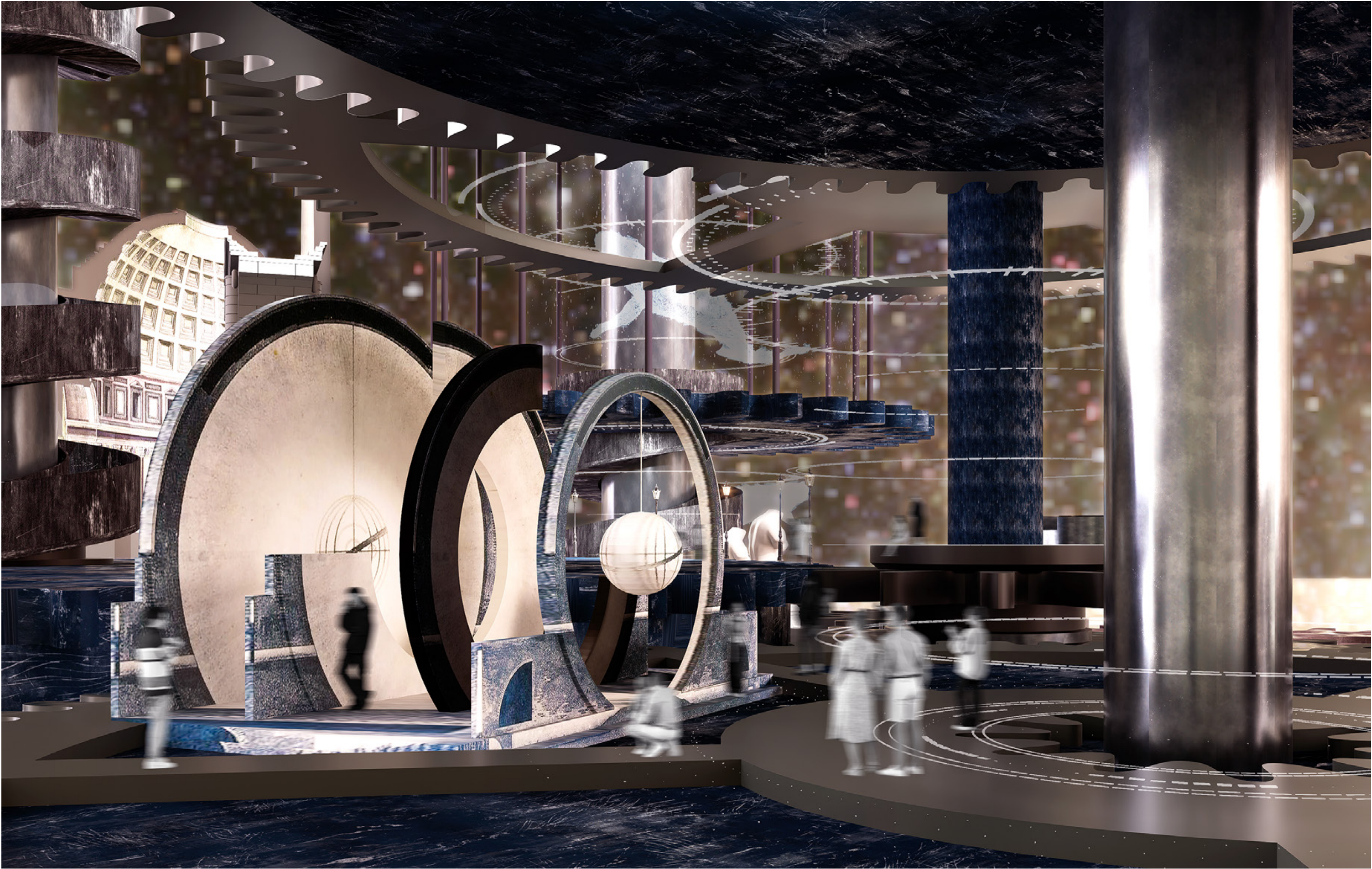
Clout images are visual representations or portrayals that hold power or influence over an object, scene, person, or concept.

Architectural images have always had value beyond their instrumental use in operations of design and construction. We can trace the lineage of paper architecture. Current architecture is influenced by the rapid consumption of clout images, leading to the construction of superficial and quickly built buildings. The deep contemplation that once accompanied architectural design has been replaced by a focus on quick stimulation of architecture that mainly function as an image.

Architectural culture is not immune for contemporary clout chasing technology driven culture, demonstrated by the recuperation of once radical and disruptive architectural images. We designed a series pop-up and consumable versions of iconic projects in architectural culture. These include iconic locations in architectural education facilities, regional landmarks, famous architects' masterpieces, and conceptual architectural drawings. It suggests that architecture no longer holds its own meaning and can exist as pop-up structures that are easily installed and leave behind images.

In Dopamine City, there is no need to spend large amounts of money to visit famous architectural sites. People can easily create clout images that include famous sites, landmarks, and conceptual images.

OVERVIEW

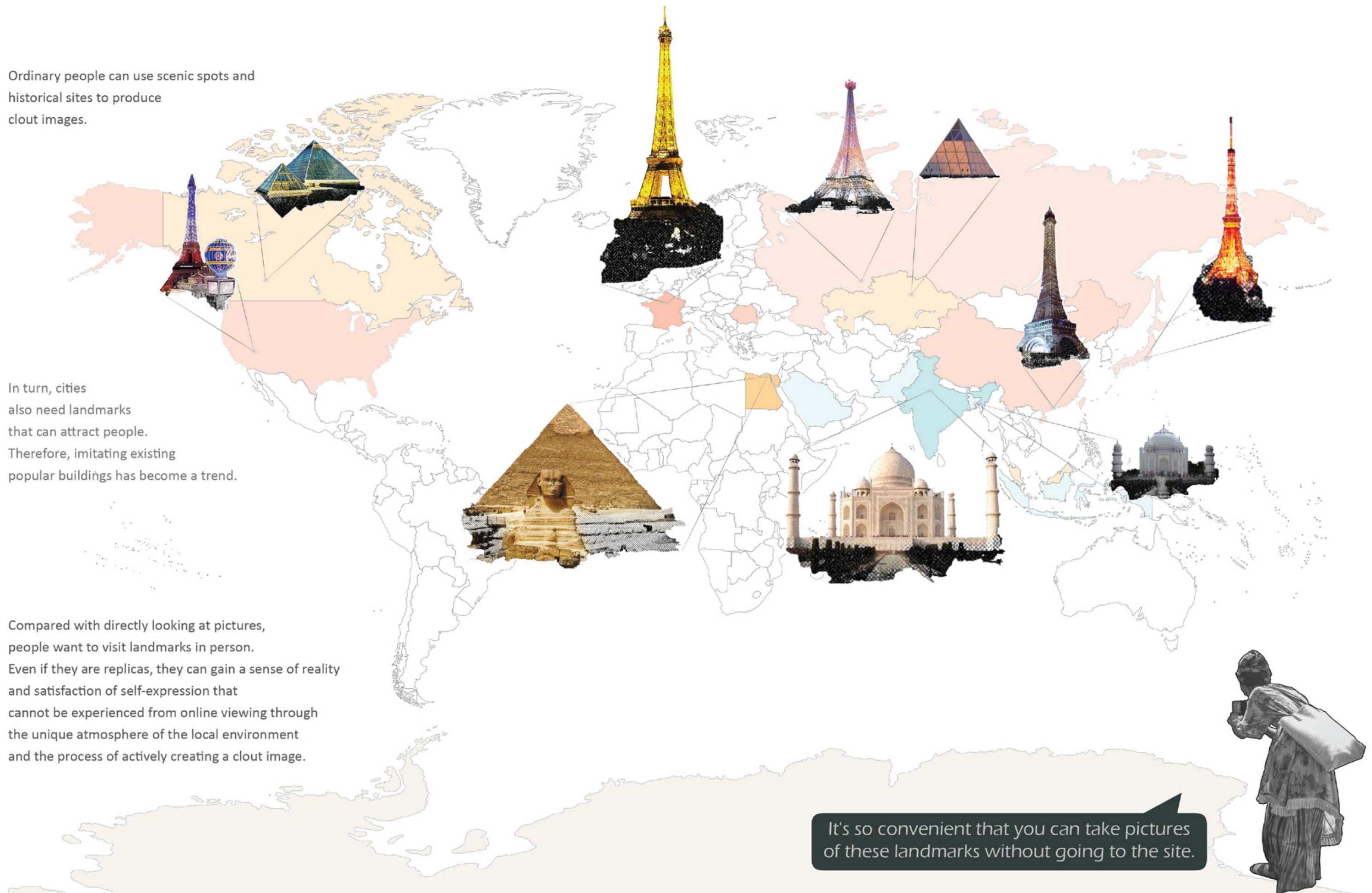


REPLICABILITY OF LANDMARKS

Ordinary people can use scenic spots and historical sites to produce clout images.

In turn, cities also need landmarks that can attract people. Therefore, imitating existing popular buildings has become a trend.

Compared with directly looking at pictures, people want to visit landmarks in person. Even if they are replicas, they can gain a sense of reality and satisfaction of self-expression that cannot be experienced from online viewing through the unique atmosphere of the local environment and the process of actively creating a clout image.



DISSEMINATION CHARACTERISTICS

Clout Image is fundamentally about capturing and retaining attention through visual impact, innovative design, and compelling content. Whether in architectural design, social media content, or brand promotion, the key to Clout Image lies in how effectively it uses uniqueness, creativity, and emotional resonance to quickly grab and maintain audience attention.

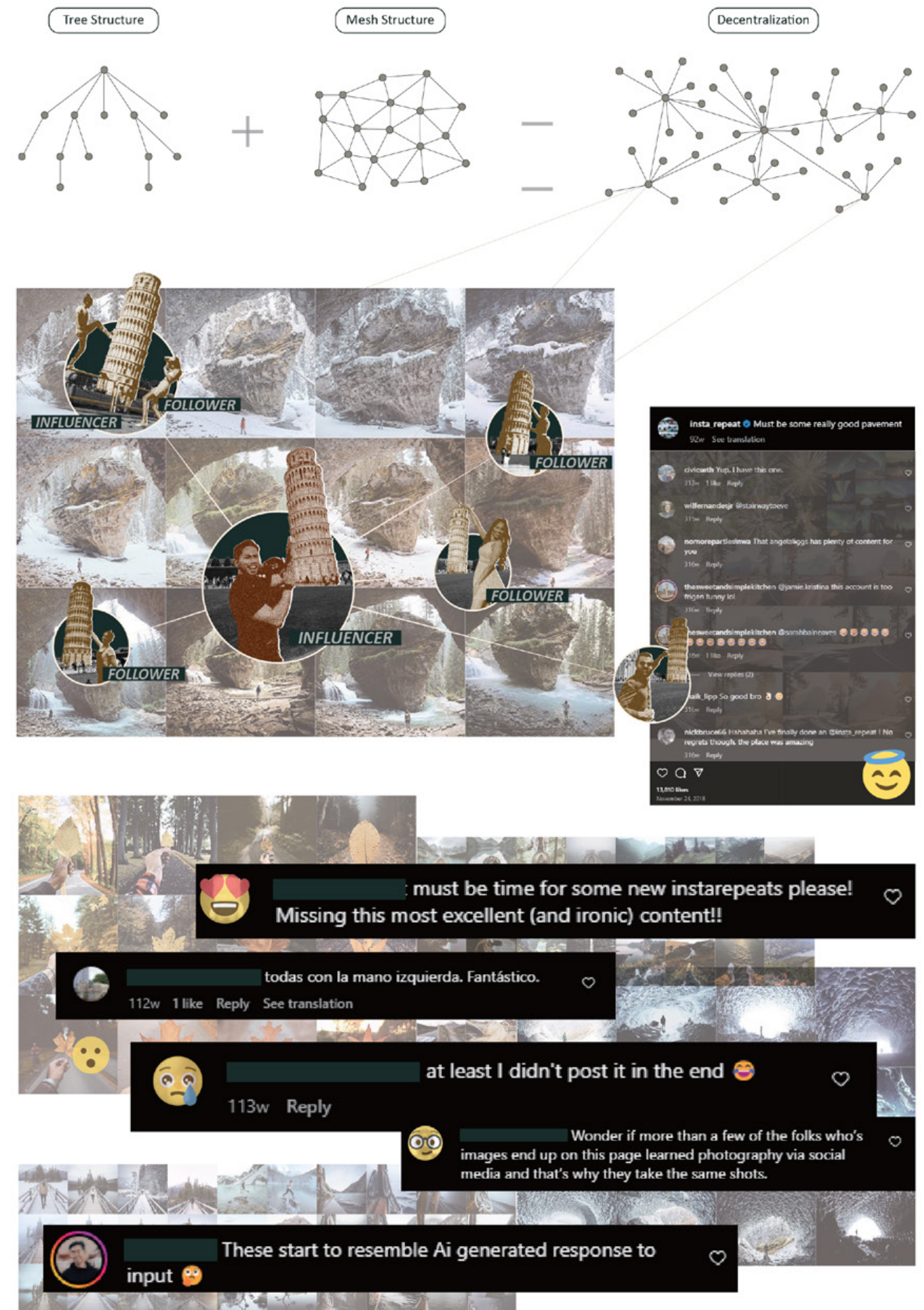
Cloud images come with metadata, which provides a detailed description of the content. Through metadata, we can gain a deeper understanding of the image, such as the time, location, and context of events, as well as the intentions behind the image and how it was created. Metadata is valuable not only to people but also to computers. This information can be input into computers and processed by algorithms, resulting in even more useful information for us.

Initially, an influencer becomes popular because their content style and themes resonate with a large audience, garnering significant attention and followers. Observing this success, other content creators realize that the audience enjoys this type of content, prompting them to mimic the same style and themes. As more creators follow suit, this content style gradually forms a trend. As audiences consume more of these similar content, their tastes and preferences are shaped and domesticated by this trend, ultimately leading to the homogenization of content across the channel or platform.



Want to Create Cloud Images?

An effective way is to IMITATE influencers or popular images.



OPTICAL ILLUSION DEVICE

Roles and Mechanisms Summary

Visual Appeal

Attracts attention through unique designs and creativity.

Cultural Symbols and Identity

Enhances emotional resonance by representing specific cultures, histories, and symbolic meanings.

Innovation and Future Visions

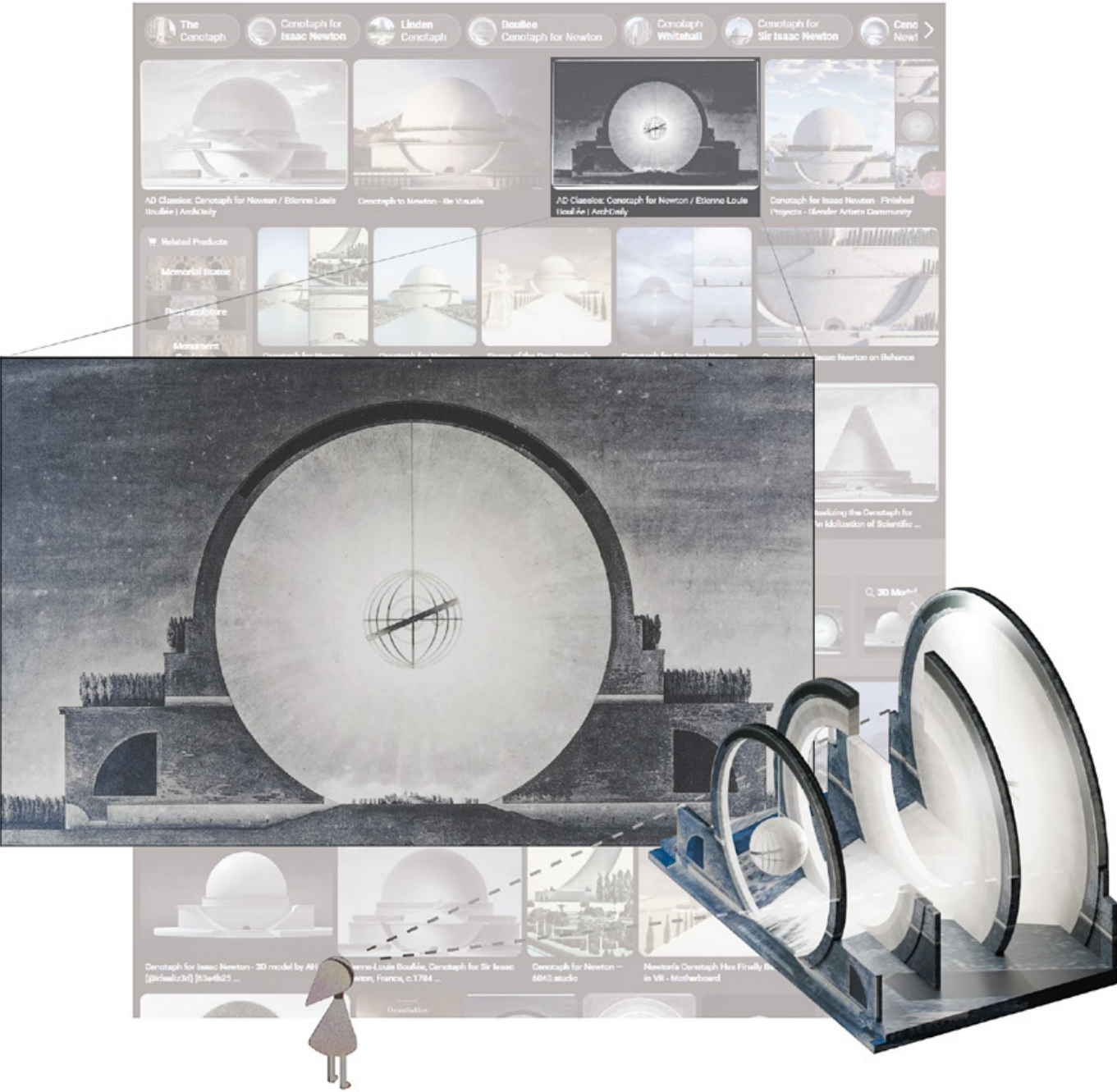
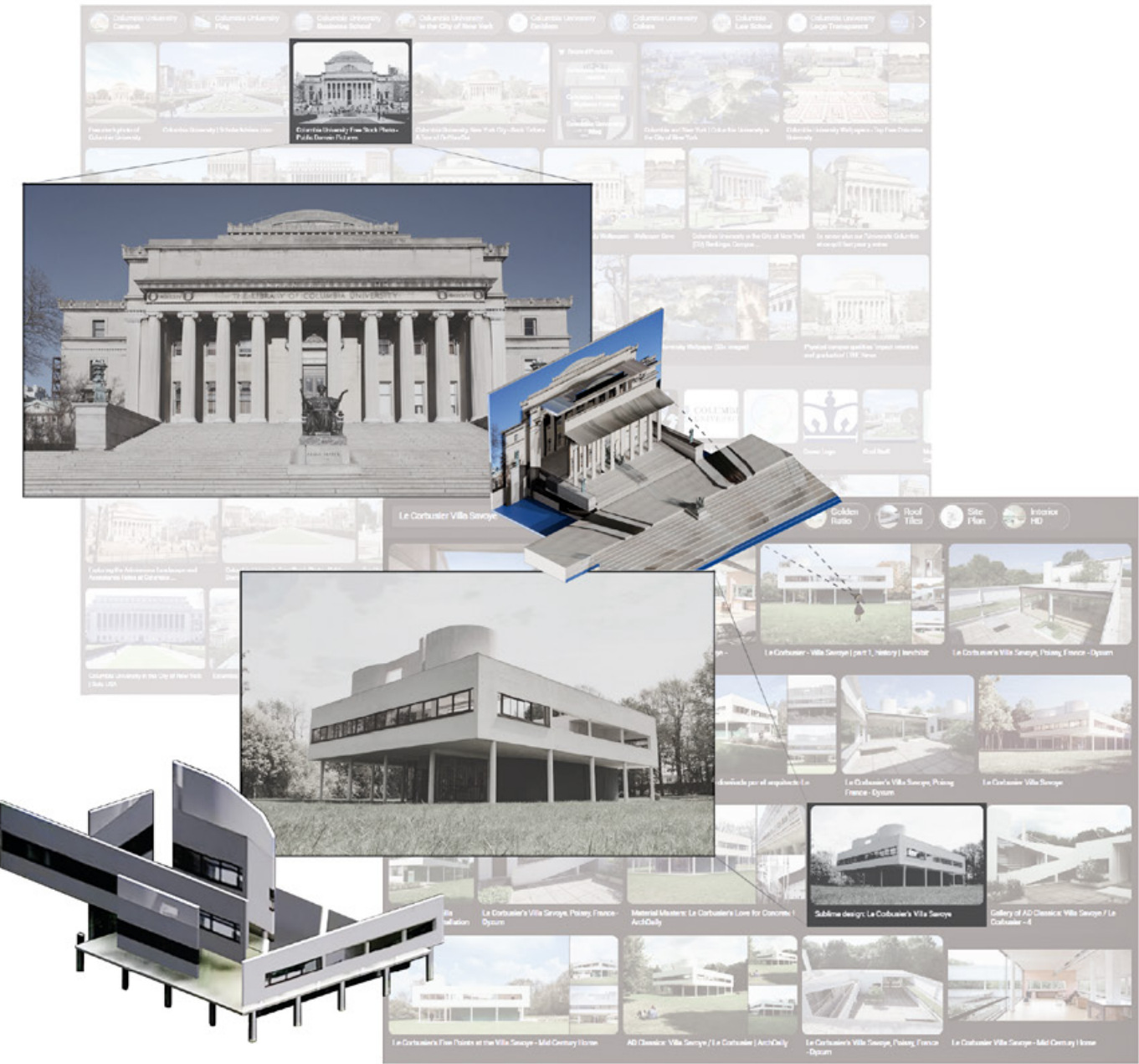
Stimulates imagination and anticipation through displays of future architecture and urban planning.

Emotion and Experience

Provides rich emotional experiences and interactive opportunities through restoration, adaptive reuse, and temporary installations.

Communication and Discourse

Rapidly spreads and stimulates extensive discussion through social media and digital platforms.



Given the replicability of iconic architecture and the fixed templates of online visual perspectives, we argue that in internet culture, spatial integrity is no longer the defining characteristic of architecture.

Thus, the most recognizable angle of a specific building can be isolated, flattened into a two-dimensional image, and projected onto an optical illusion device.

This experimental installation preserves the iconic appearance of the architecture from a specific viewpoint, while simultaneously altering the way people engage with it. It represents our critical reflection on the future of architecture within the context of clout-driven culture.

CITY INSTALLATION

Using the fictional scenario of relocating the “Church of Light” to Times Square as an example, we illustrate how a carefully crafted, site-specific concrete structure—originally defined by its gravity, craftsmanship, and material integrity—is reduced to a set of colorful plastic panels, easily customized in size, form, and interaction. This transformation challenges the seriousness and functional essence traditionally associated with architecture.

Rather than mocking the seemingly superficial and fast-paced interpretations of architecture in the digital age, our intention is to leverage the very logic of “fast consumption” to reduce the physical and psychological distance between people and buildings.



This optical illusion can be made into any size and can be used as a pop-up store to interact with people as they move around the city

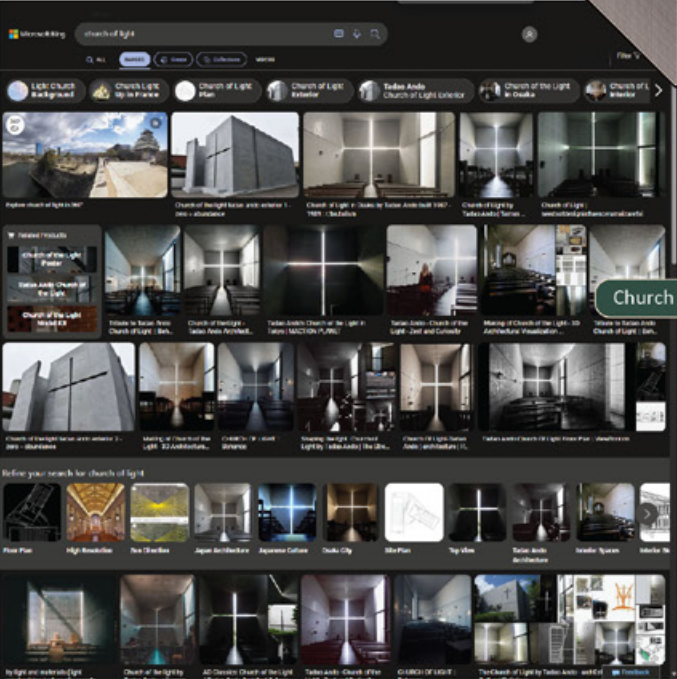


During the exhibition, these “buildings” are replaceable and can be adjusted according to the festivals of various countries.



*Project the fixed camera effect onto the staggered panels
Replicate the clout image through optical illusion*

The famous perspective image appeared when searching



Select one as the main perspective of the reconstructed version

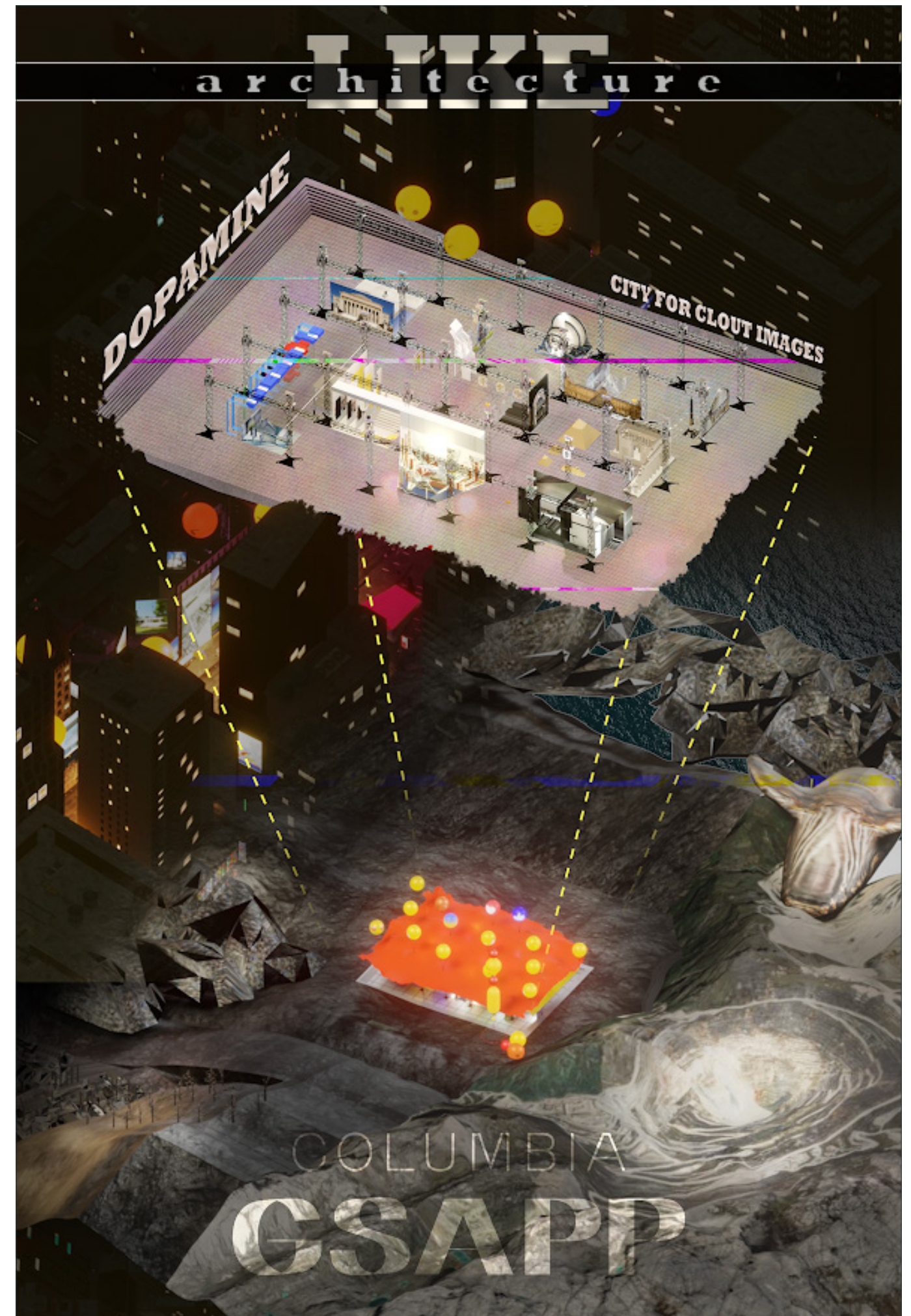
DOPAMINE CITY VERSION.1

Through our research on the relationship between clout images and architecture, we have reached several conclusions. Current architecture is being influenced by the rapid consumption of clout images, leading to the construction of superficial and quickly built buildings. The deep contemplation that once accompanied architectural design has been replaced by a focus on quick stimulation. Recently popular architectural structures such as billboards, shopping malls, museums, interiors, theme parks, and pop-up stores are built quickly and easily, expanding their presence rapidly. These constructions seem to exist solely to generate clout images. One example of these consumable buildings is pop-up stores, which last from a week to a month, consuming enormous resources for visible images and causing significant environmental issues.

This phenomenon makes it seem as if architecture has become a dopamine machine. We now live in a Dopamine City, which goes beyond Archigram's Instant City where weekly events take place for people to enjoy. In Dopamine City, architecture no longer holds intrinsic meaning and has been reduced to a mere backdrop for images.

We have planned to create pop-up and consumable versions of authoritative places in architectural culture. These include iconic locations in architectural education facilities, regional landmarks, famous architects' masterpieces, and conceptual architectural drawings. This planning suggests that architecture no longer holds its own meaning and can exist as pop-up structures that are easily installed and leave behind images. In Dopamine City, there is no need to spend large amounts of money to visit famous architectural sites. Within an hour, they can create clout images that include famous architectural sites, landmarks, and conceptual images.

Through this project, we aim to highlight that architecture has become a mere backdrop for images, transformed into a dopamine machine that changes rapidly without meaning, and that this phenomenon accompanies an incredibly fast consumption pattern driven by clout images. Additionally, we want to emphasize that this rapid consumption completely disregards environmental considerations.



DOPAMINE CITY VERSION.2

When we discuss ancient Roman architectural styles, what do we think of?

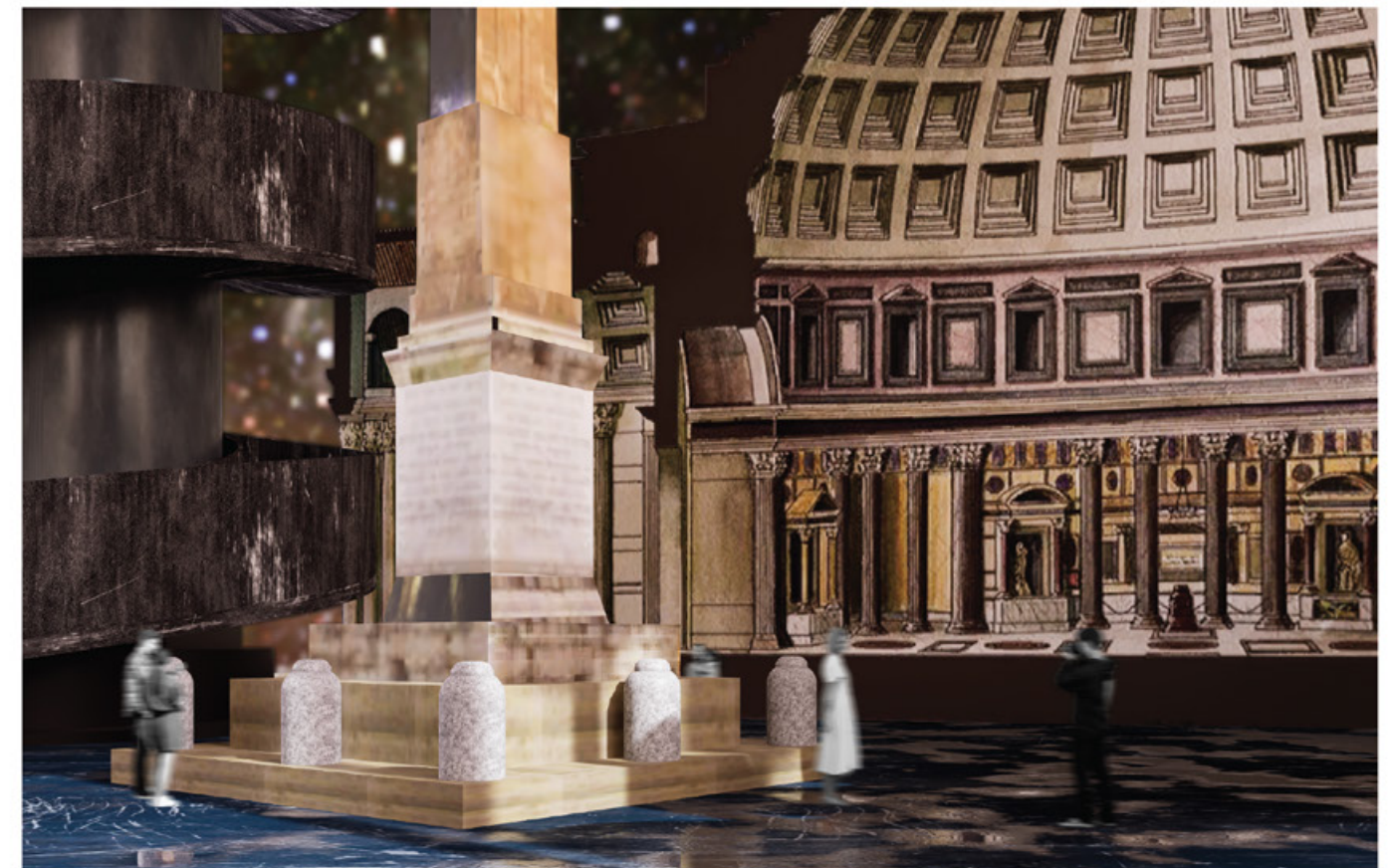
Both use the symbolic meaning of architectural symbols. The miniature park pursues a shape similar to the original, while our fragmented field emphasizes the combination and symbolism of elements, and can weaken the actual form of the building when necessary.



Features: fusion of past and present, public spaces as cultural hubs, layers of time.

What makes Rome "Roman"?

Symbols: arches, columns, domes, triumphal arches, mosaics and sculptures, etc.



ADAPTIVE ADJUSTMENT



Compositional Choices

With the popularity of mobile social media, vertical-screen images and videos are becoming more and more popular. Software suitable for different devices also forms recommended sizes. To better attract attention, many bloggers tend to adjust the image content according to the general ratio of the platform.

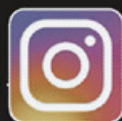


Common sizes of images on social media include 16:9, 4:3, 1:1, 3:4, 4:5, and 6:19. Each ratio is good at expressing certain contents.

The horizontal screen has a more complete picture and a stronger sense of narrative. Considering that most buildings extend horizontally, the horizontal screen allows the audience to have a general understanding of the overall environment.



Since sometimes it is impossible to show the entire picture, the vertical screen composition shows more architectural details and pursues a sense of interaction between people and buildings. The more vertical composition prevails, the less important the overall appearance of the building becomes. To some degree, we can say that the popularity of mobile media has catalyzed the fragmentation of architectural images.



02

HARLEM TABLE

Studio

Food-First Typology

Instructor

Mio Tsuneyama & Fuminori Nousaku & Sonam Sherpa

Project Type

Food Center

Site Area

393.24m²

Semester

Fall 2024

The theme of my proposal is to study the impact of small-scale, low-cost dining operations on community food culture, starting with the adverse effects of gentrification. When middle-class populations move into a neighborhood, supermarkets, convenience stores, and chain restaurants often follow, pushing out local culinary traditions. Simultaneously, rising living costs force many original residents to leave, further weakening the presence of traditional foods in the area. My proposal, Foodopia, aims to explore solutions to mitigate and even prevent the loss of these cultural food traditions.

The primary goal of this design is to make life in the neighborhood more affordable for its original residents. For those at risk of leaving Harlem—such as lower-income groups—the project seeks to reduce living costs and create economic opportunities, such as offering jobs within the food center. Specifically, this "ground-floor food center within a historic apartment" typology addresses three areas:

- Enhancing convenience and affordability in dining.
- Providing employment opportunities.
- Improving living conditions without disrupting residents

OVERVIEW



WORLDWIDE FOOD CULTURE

Cooking is a diverse and multifaceted process of preparing food that involves transforming raw ingredients into flavorful and nutritious dishes through various techniques. The art and science of cooking have evolved over centuries, influenced by cultural traditions, geographic regions, and technological advancements. Cooking not only makes food safe to consume but also enhances its taste, texture, and nutritional value. There are a variety of cooking methods, like roasting, boiling, stewing, steaming, frying, stir-frying, marinating, drying, fermenting, pickling, smoking, chilling, confitting.

Cooking not only makes food safe to consume but also enhances its taste, texture, and nutritional value. There are a variety of cooking methods, like roasting, boiling, stewing, steaming, frying, stir-frying, marinating, drying, fermenting, pickling, smoking, chilling, confitting.



Cooking is more than just a means of sustenance—it is a cultural and social activity that brings people together, reflects regional identities, and celebrates culinary traditions. Different cooking techniques not only highlight the natural qualities of ingredients but also demonstrate how diverse cultures have adapted to their environment, using local resources and tools to create unique food experiences.

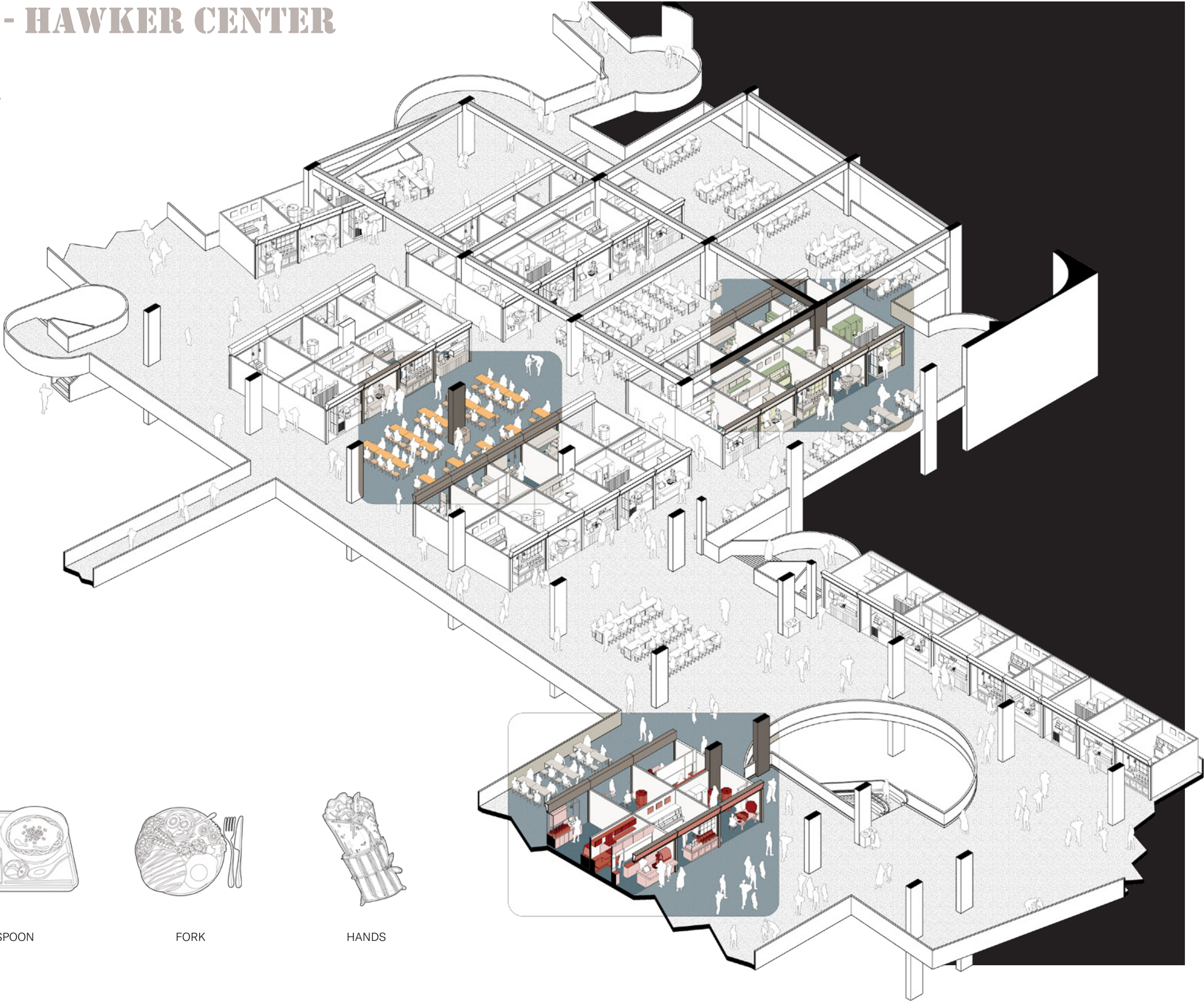
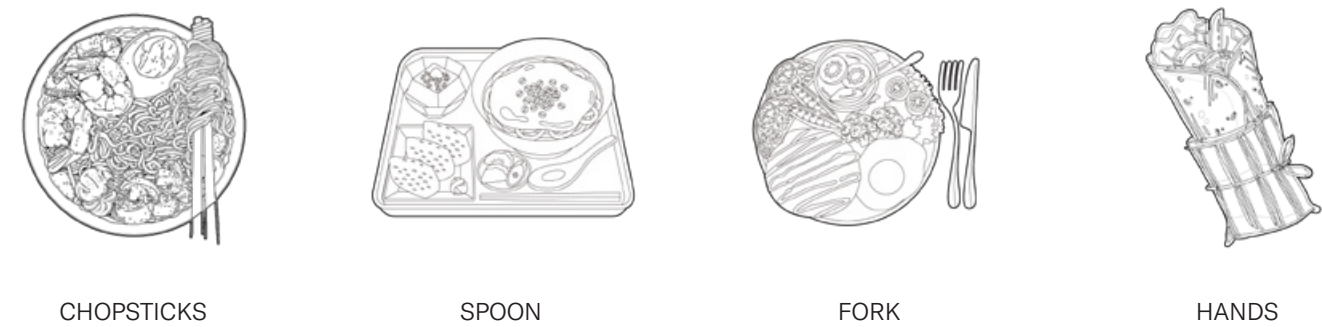
CASE STUDY - HAWKER CENTER

Dining Culture and The Eating Space

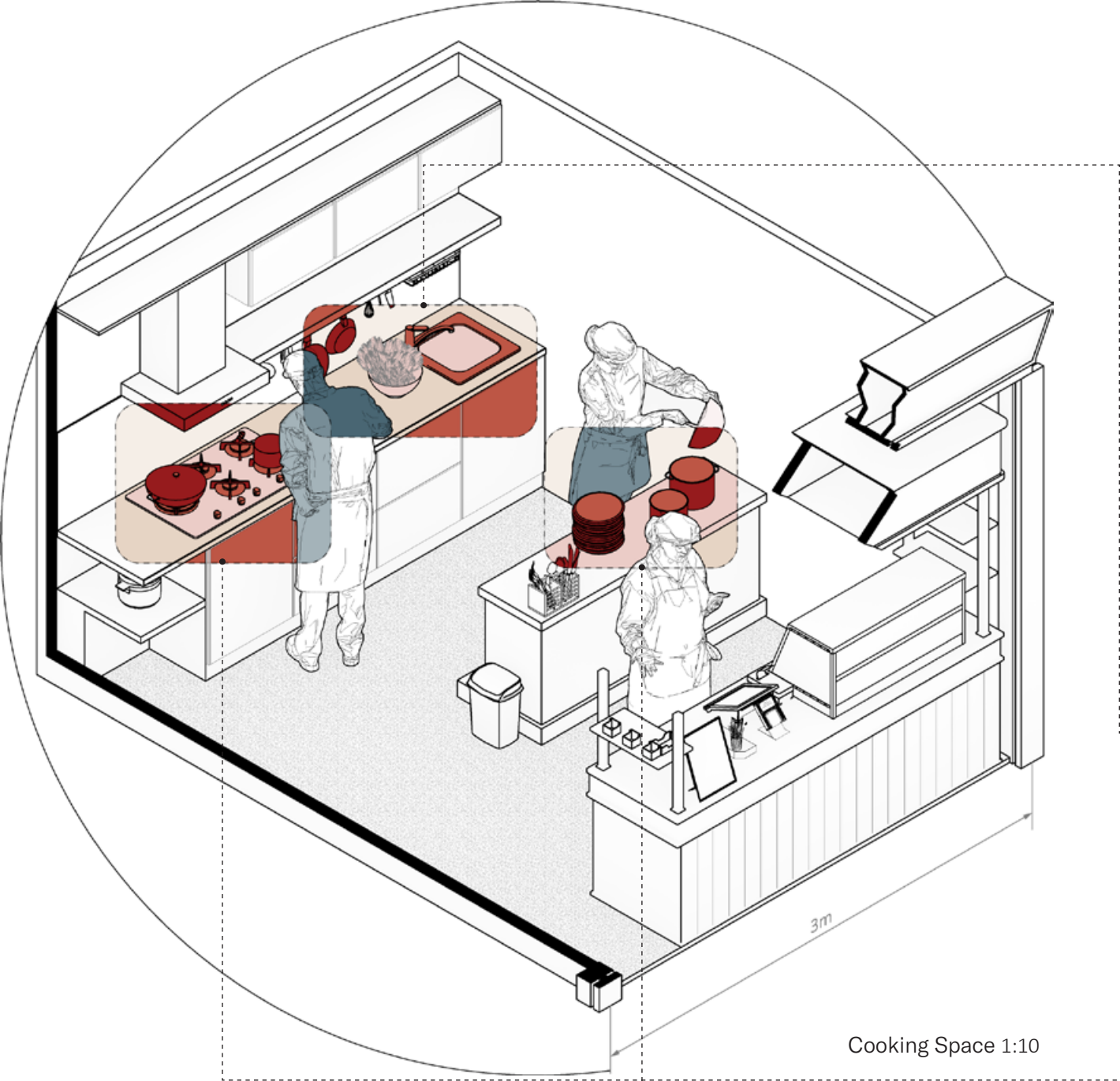
The dining area of Chinatown Hawker Centre is located on the second floor. The layout is open but simple, suitable for accommodating large crowds. As a semi-indoor space, it can provide shade and shelter from the rain, while retaining an open ventilation system to ensure air circulation. Customers can choose food from different stalls at will, and then freely find seats in the public area to eat.

- Storage
- Cooking
- Eating

How to EAT?



KITCHEN TYPES

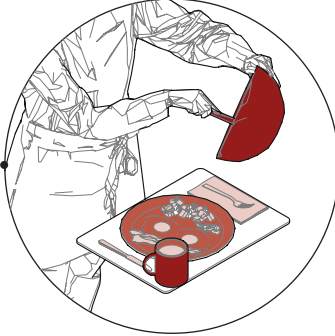
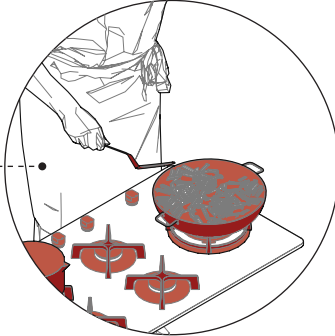
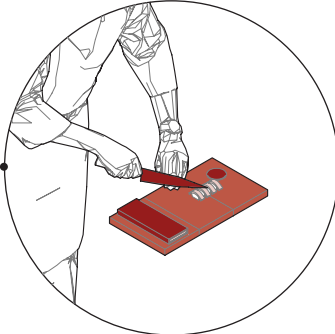


Cooking Space 1:10

1:50

Booth Interior Space

Although this Hawker Centre follows a modular design, with nearly identical stall dimensions, its flexible interior layout accommodates a wide variety of small kitchens, enabling vendors to prepare a diverse range of dishes. The left image showcases a typical multi-purpose kitchen, efficiently handling various cooking tasks within a limited space.



TYPOLGY - BROWNSTONE



GENTRIFICATION IN HARLEM

Undergoing rapid gentrification, communities like Harlem are experience rising living costs and displacement, to be specific, chain restaurants risk erasing the unique flavors and traditions that have defined this biggest African American Community for generations. This project tries to find a solution to resist the side-effect of gentrification.

Possible USERS of this Food Center can be divided into three kinds according to different Relationships between People and Food.



Customers seeking variety and safety in food options.

Because each stall focuses on one type or category of things, it is necessary to gather as many stalls as possible in a certain space. These stalls need to allow customers to see the production process to ensure safety.



Vendors looking for stable, low-risk opportunities

In order to make the stall more flexible, each kitchen should be as functional as possible. Here, the smaller size of a comprehensive kitchen is adopted, that is, 2.4*2.4 square meters.

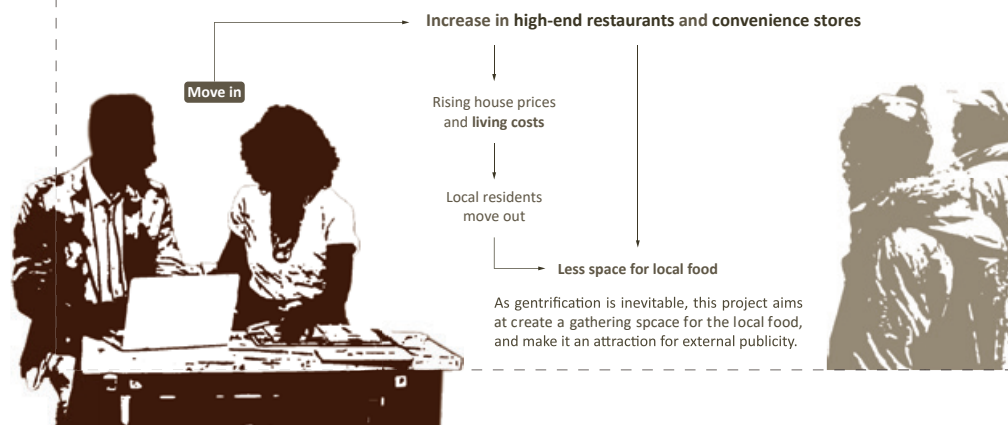


Vendors looking for stable, low-risk opportunities

The food-sharing area caters not only to restaurants but also to residents interested in exchanging culinary traditions, particularly during holidays when food-themed events can be held. This makes Foodopia a hub for local food enthusiasts. To balance the integration of the food center with the residential building, privacy has been carefully considered.

Food Gentrification in Harlem

The gentrifying neighborhoods is changing g demographics in Harlem. As a result, the cost of living has risen, reflected in the fact that healthy food which was once easily accessible has become unaffordable.



OPERATION PATTERN



Dining Space Nears Backyard



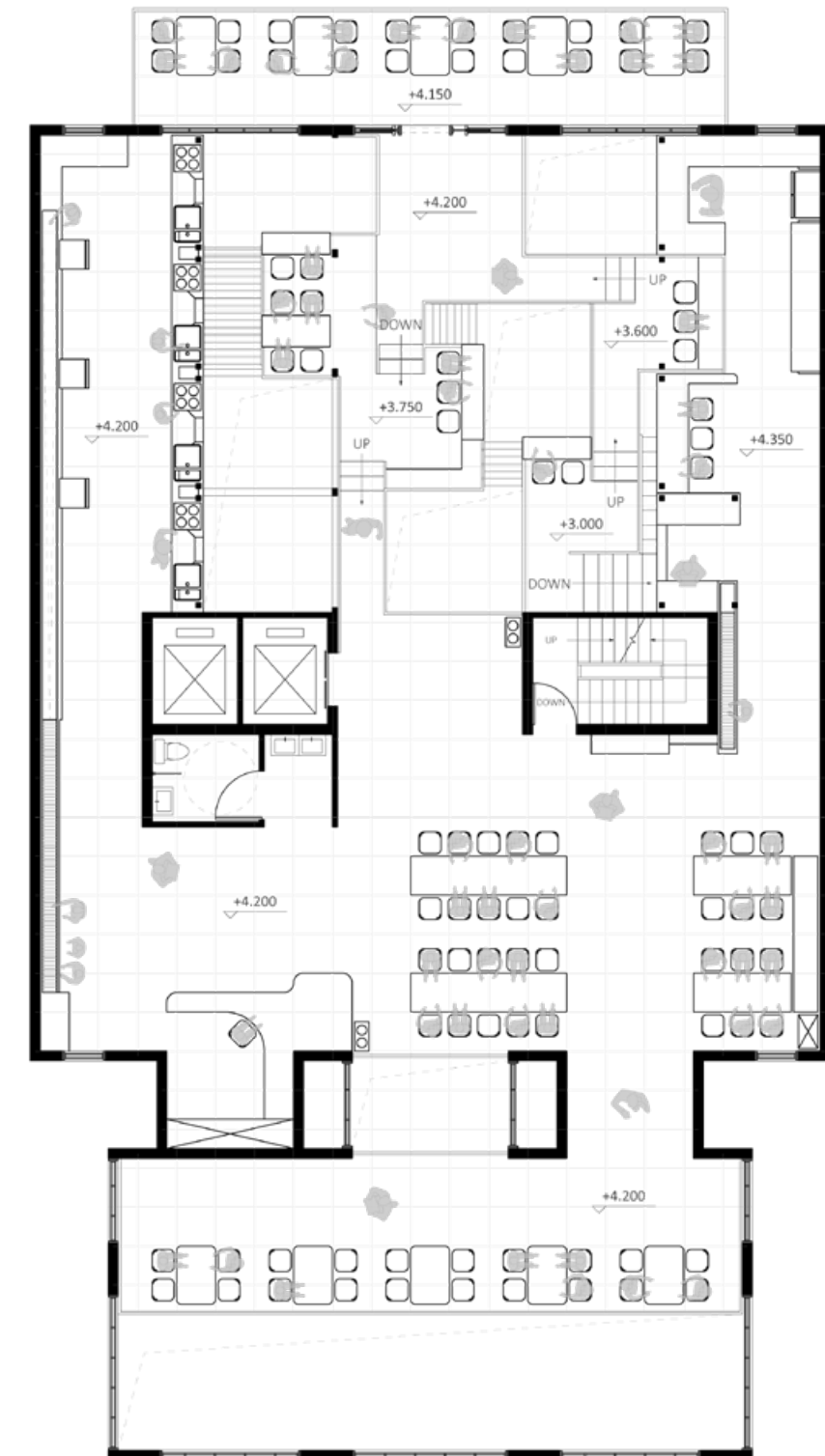
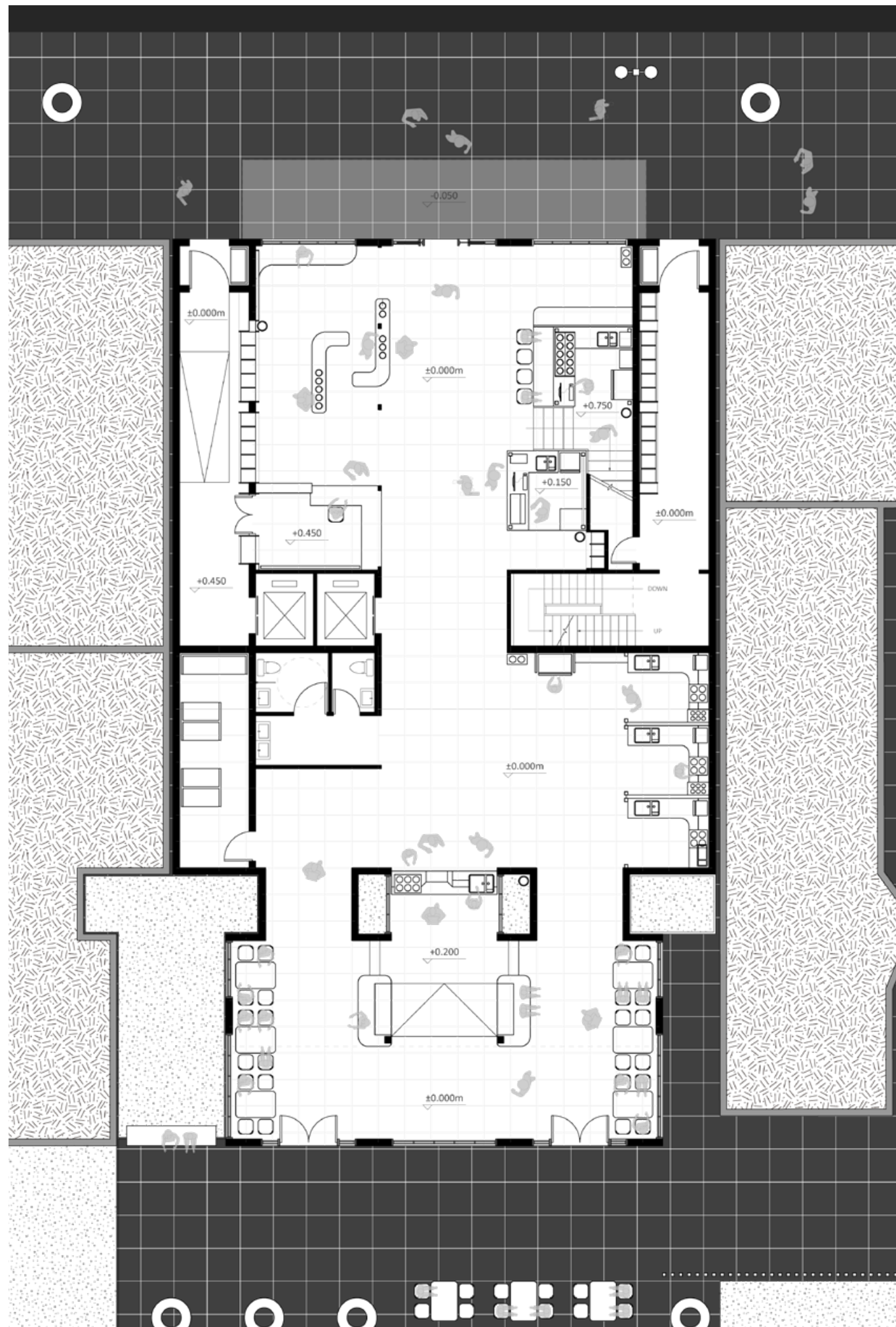
Kitchen for Teaching



Kitchen for Practice



New Product Display



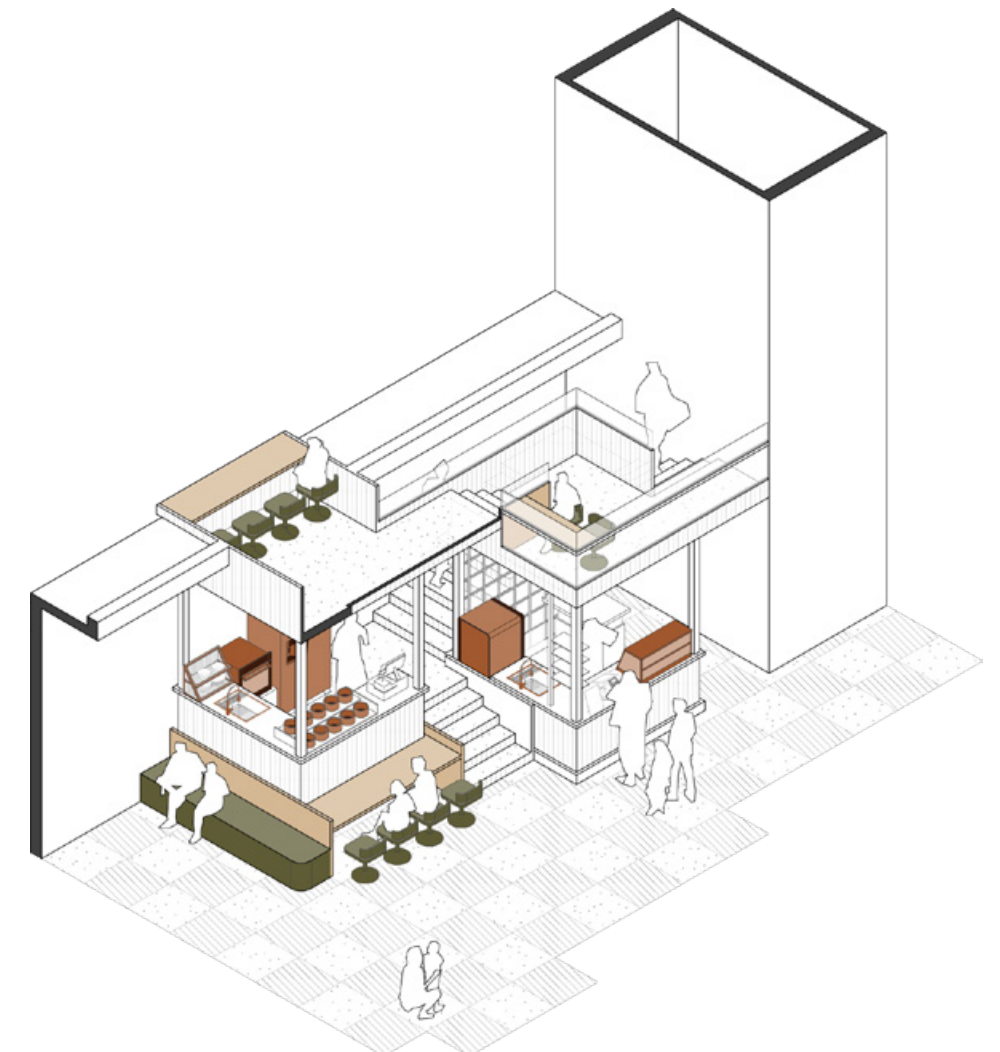
Resident and Semi-resident stalls are arranged on the first and second floor for cold and hot meals. As for the cold kitchens, they are surrounded by tables and seats, so customers can interact with the cook during preparing dishes. And for the hot kitchens, they are arranged more tightly to each other, and the cooks would use conveyer belt to send the dishes to dining area. But still, there are some floating layers enable customers to watch how they cook and monitor the food safety. In addition, the buffet kitchen is mobile and can be moved to 116th Street during holidays to hold events and attract guests.



OPEN KITCHEN

The food center operates similarly to a hawker center, serving as a shared space for multiple small-scale kitchens, each specializing in specific types of food. This ensures both flavor quality and diverse options.

Unlike traditional hawker centers, Foodopia scatters the tightly packed kitchens vertically across different floors, integrating bar-style elements where cooking spaces are surrounded by dining areas.





03

TIDAL COMMUNITY

Studio

Infrastructuring Assemblies

Instructor

Markus Miessen & Vaishnavi Chandra Kumar

Teammate

Jackie Xu

Project Type

Hybrid Civic Infrastructure

Semester

Spring 2025

Tidal Community, reimagines the urban shelter not merely as a space for survival, but as a dynamic system of co-existence rooted in dignity, autonomy, and temporal flexibility. Through fieldwork, including a case study of the Broadway Community shelter in New York City, we identified key tensions between the institutional logic of shelters and the nuanced, often understated needs of unhoused individuals. Many shelters, while offering beds and meals, fail to provide psychological safety, spatial agency, or uninterrupted access—leading some individuals to prefer the street over institutional help.

The Tidal Community proposes a transformative model: shared urban spaces that shift functions between day and night, allowing for fluid and respectful transitions. During the day, classrooms in church-affiliated schools remain dedicated to student education, while unused classrooms and idle spaces are made available for unhoused individuals to rest or participate in activities. At night, the gymnasium becomes a shelter—where tents can be set up, offering privacy and a semblance of personal control. This model prioritizes optionality, minimizes surveillance, and emphasizes coexistence over assimilation.

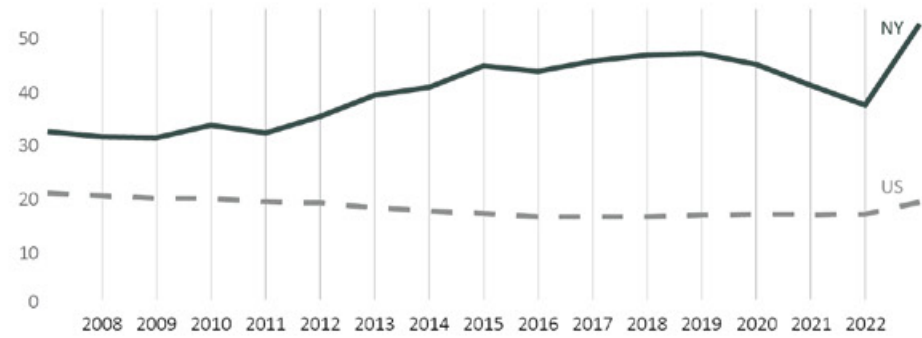
More than just a scheduling system, the Tidal Community is a spatial proposition: one that challenges rigid categorizations and reclaims urban time and space for gentler, more inclusive rhythms of use. It imagines an urban future where people are not forced to participate, labeled, or stripped of autonomy—yet are never abandoned.

OVERVIEW

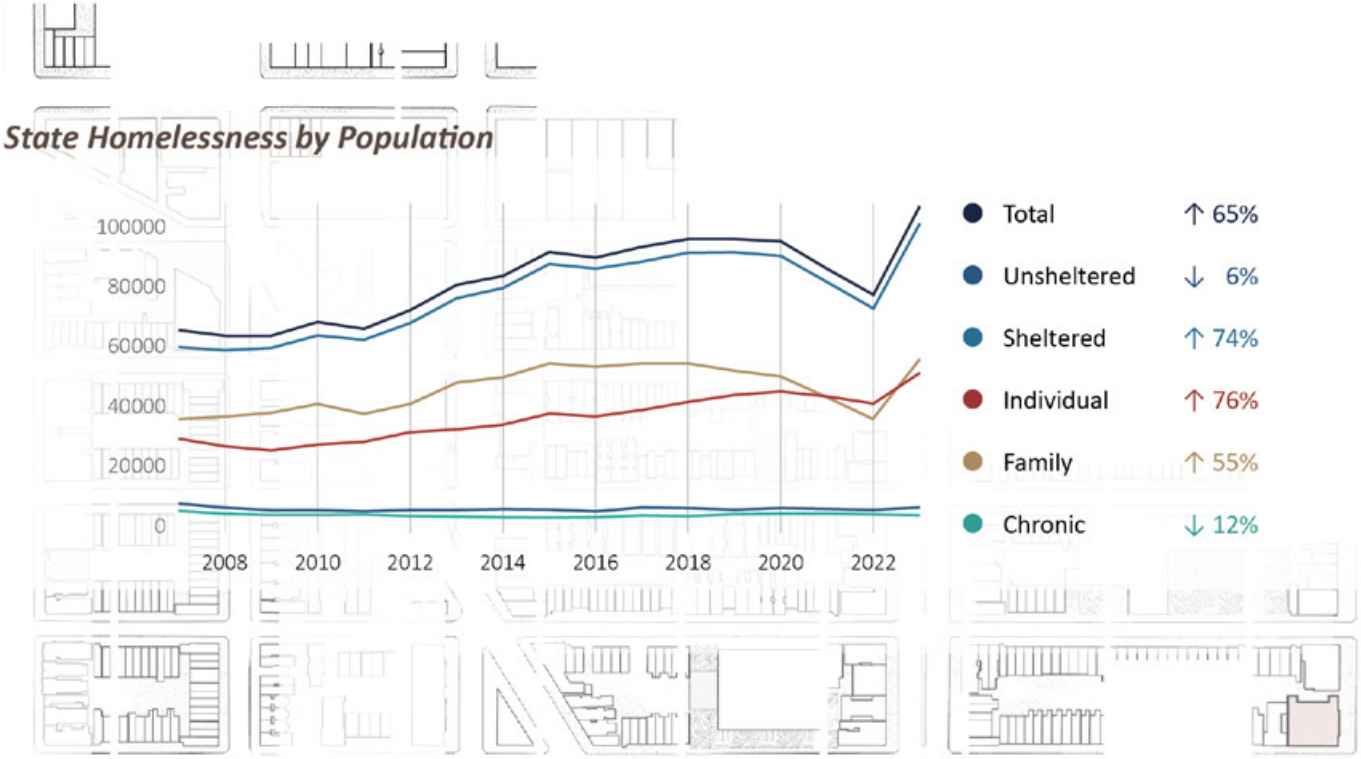
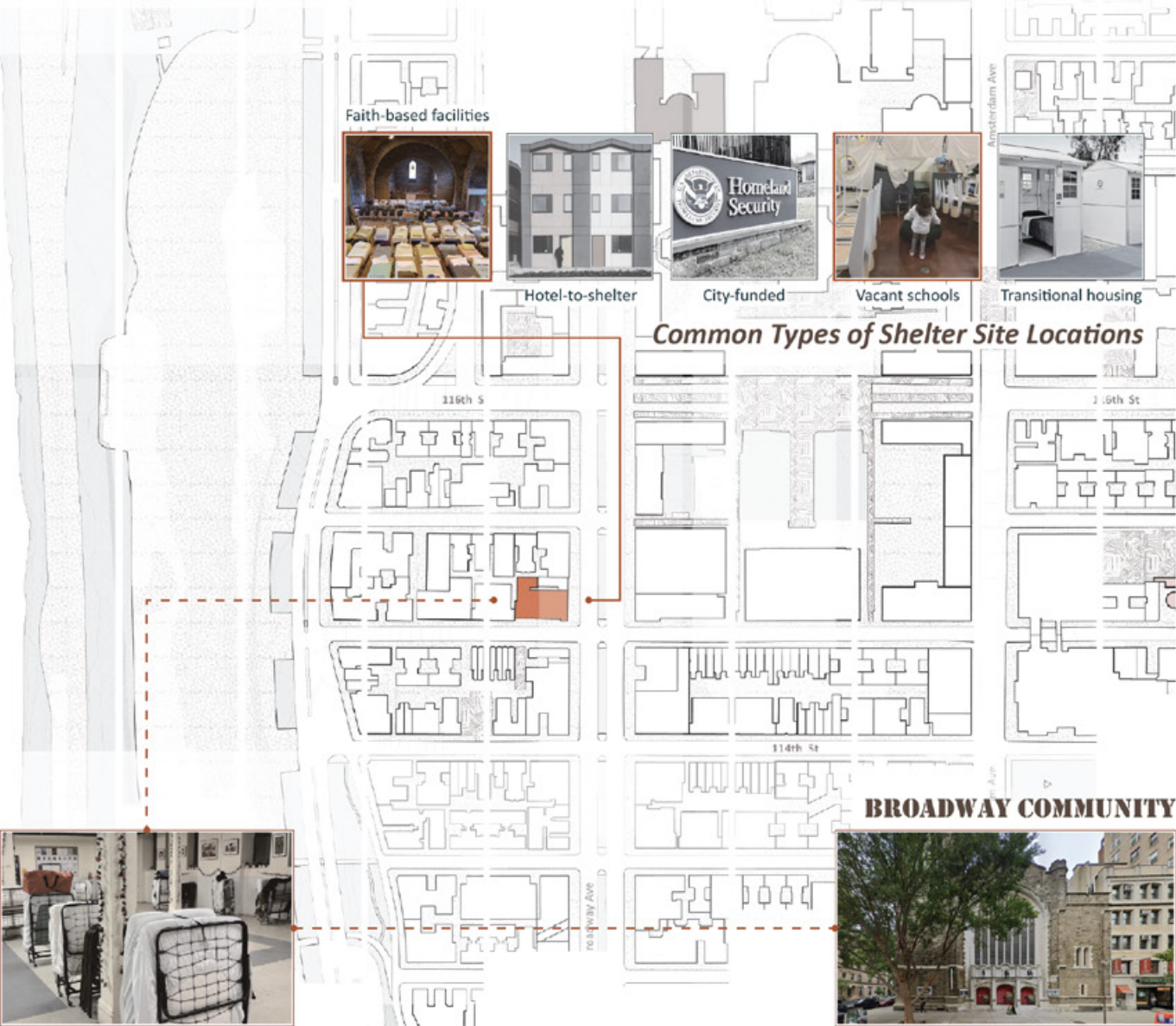


DATA ANALYSIS

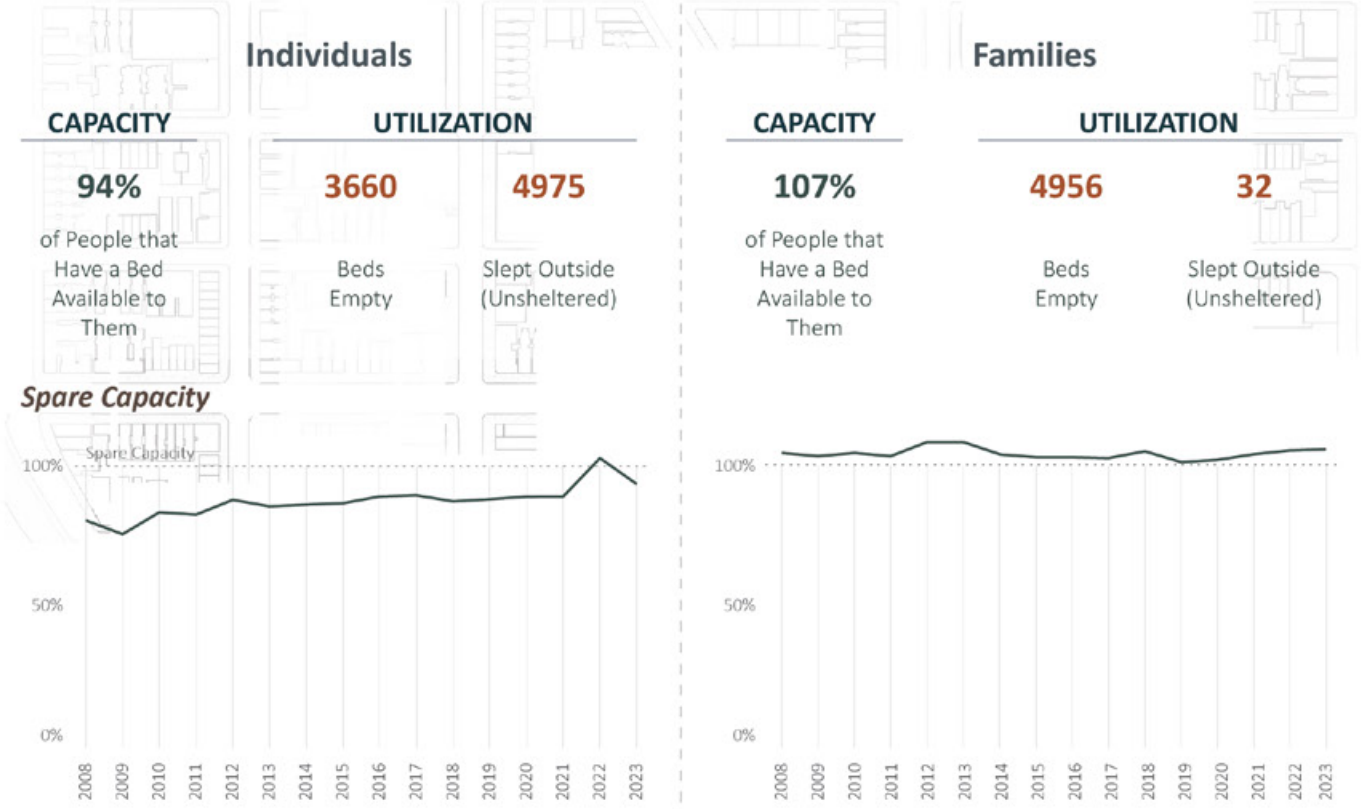
Homeless Populations Rates of Homelessness: State Compared with United States



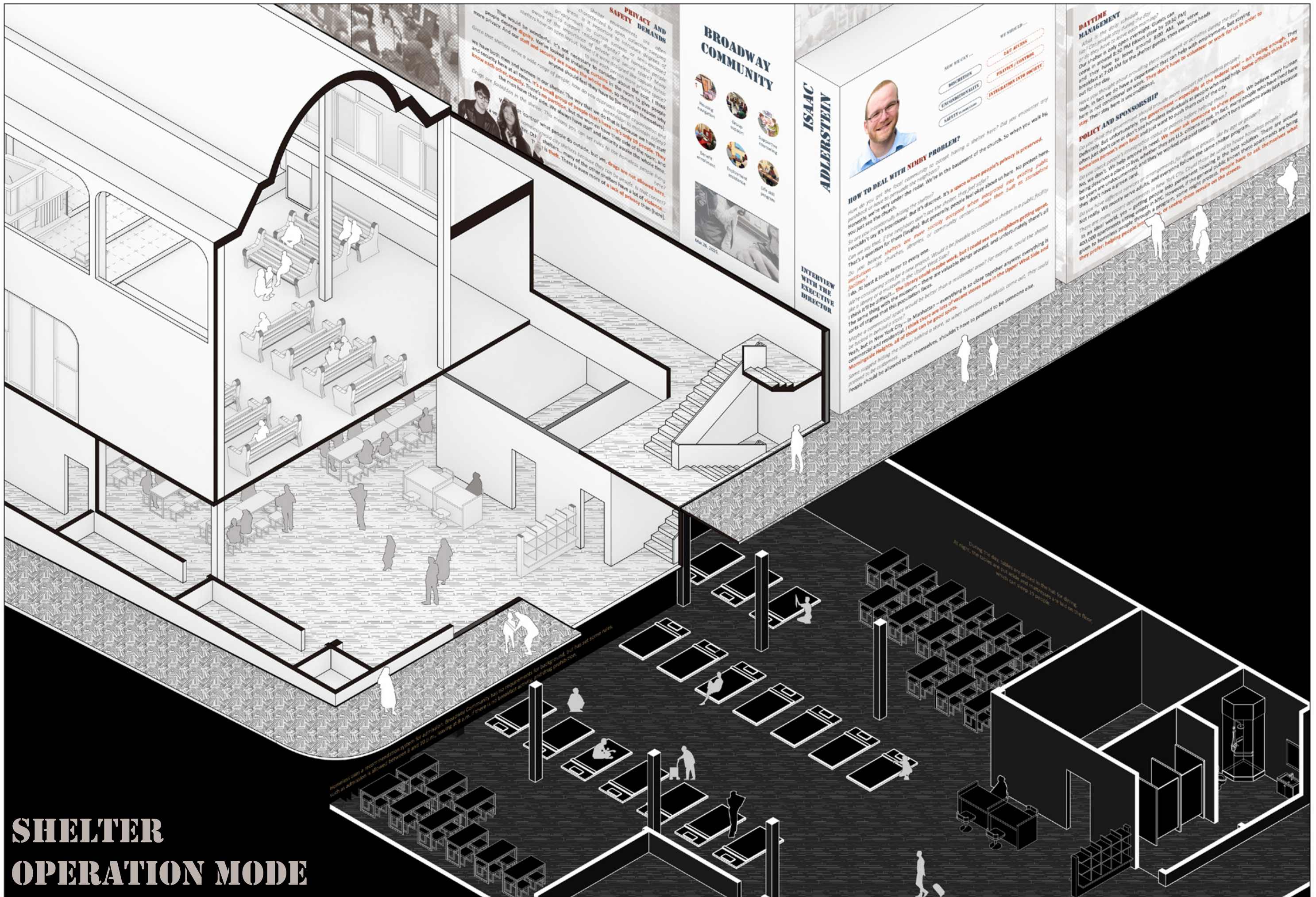
The proportion of unhoused individuals in New York City significantly exceeds the national average. According to data from Coalition for the Homeless, in January 2025, approximately 120,513 individuals slept in New York City shelters each night. Thousands more remained unsheltered in public spaces—though no reliable estimate exists due to known methodological flaws in the annual HOPE survey.



Shelter Bed Capacity and Utilization



For families, the shelter system in New York provides sufficient bed capacity and is generally able to accommodate those in need. For individuals, while there is theoretically adequate shelter capacity, nearly 5,000 people still sleep on the streets, and approximately 3,600 beds remain unused. This disparity suggests systemic issues related to resource allocation, public outreach, or the accessibility and acceptability of shelter facilities.



SHELTER OPERATION MODE

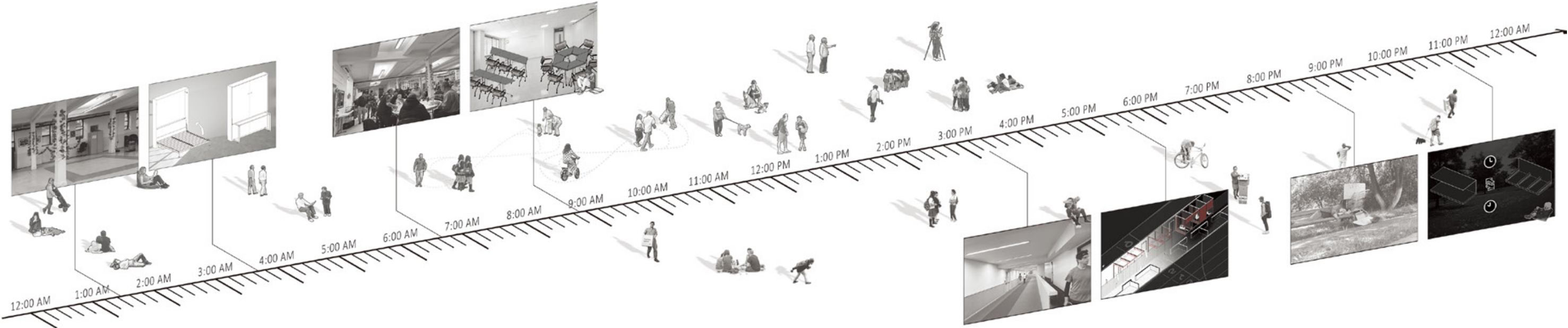
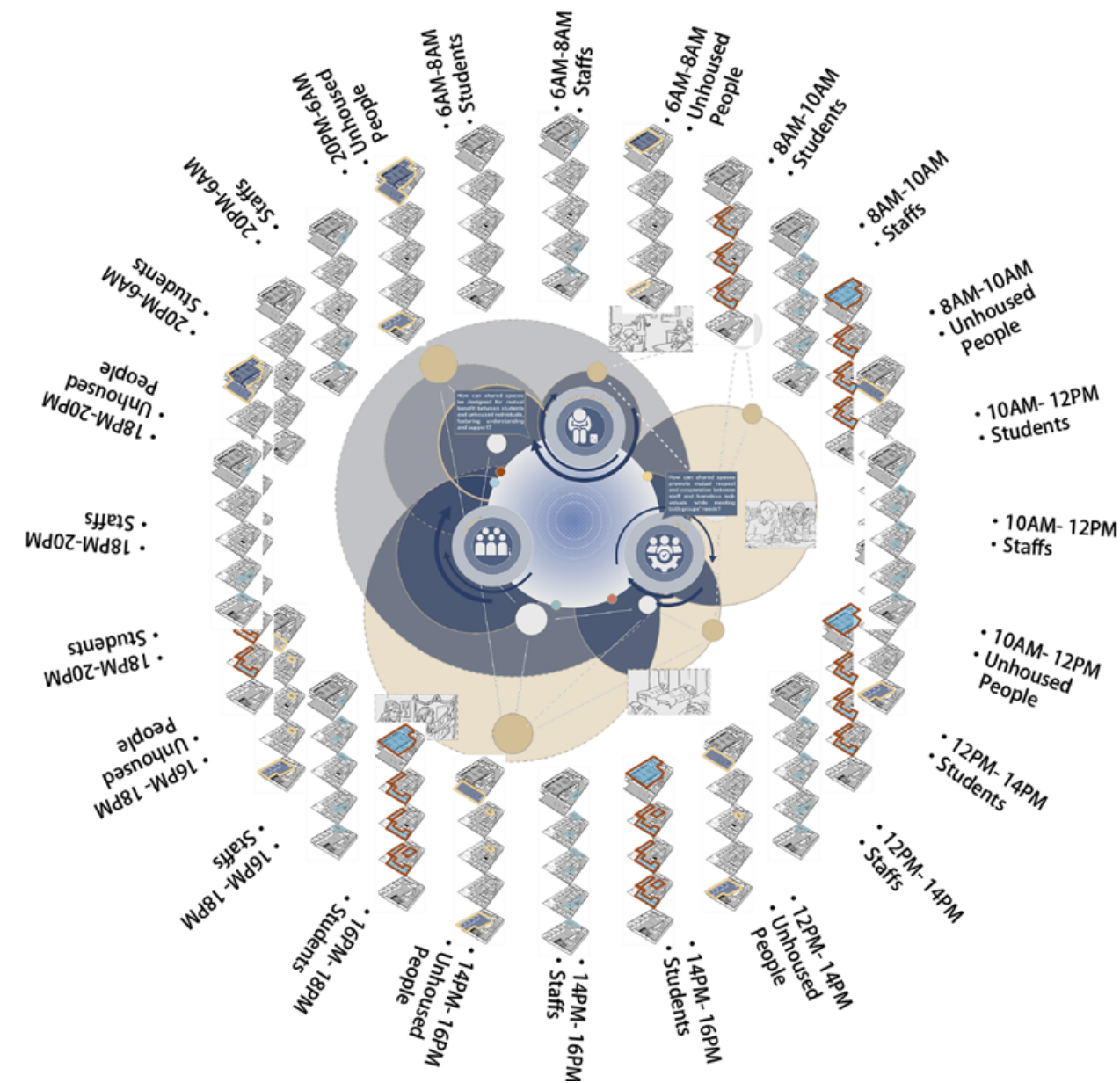
CONCEPT OF TIDAL COMMUNITY

In the city, this kind of judgment often plays out in subtle ways. When someone is sitting by the library entrance, are they just resting, or are they “occupying” the space? Who has the assumed right to be there, and who must constantly prove they are harmless? These are not just personal judgments—they reflect a structural distribution of spatial power.

We’ve observed that many marginalized groups adopt two recurring strategies when claiming their spatial rights. One is a nomadic strategy: they enter spaces that don’t yet “belong” to them, asserting visibility through movement and presence, hoping to gain recognition and access. The other is a settler strategy: once they secure a foothold, they shift toward a defensive posture—seeking stability, setting boundaries, and protecting their space. Either way, they’re negotiating existence within the urban order—a process of spatial renegotiation.

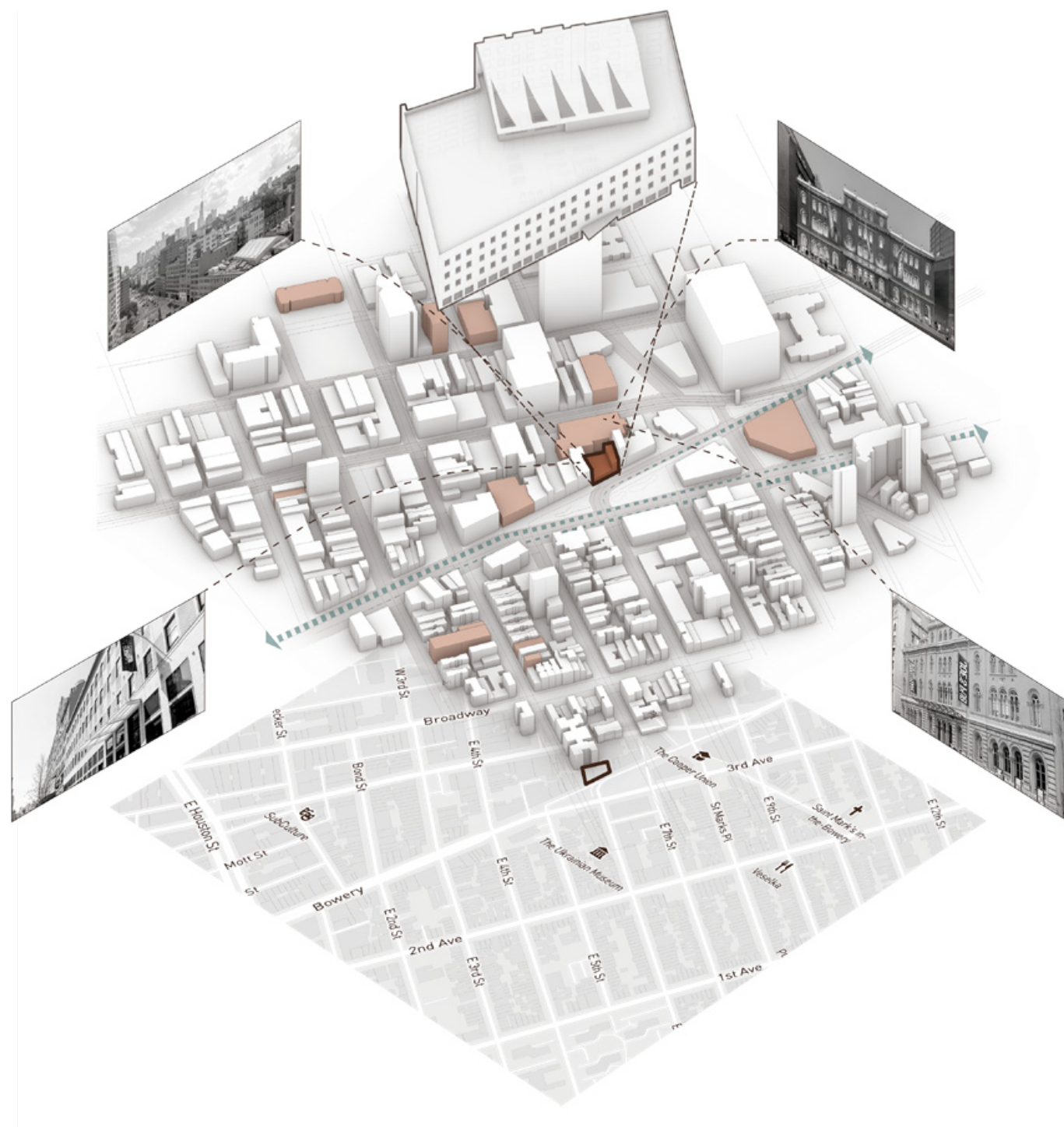
However, unhoused individuals often fall outside of both these models. Especially those who quietly sit on sidewalks, by subway stairs, or outside libraries—not as a group, but as individuals. They don’t actively challenge the rules of space, nor do they appear to be “claiming” anything. It seems like they’re simply trying to live without causing disruption. But this, too, creates a spatial paradox: When a person attempts to establish a private zone within public space, they inevitably enter spatial politics. Even without intending to, their presence begins to blur the boundaries of what is considered “public.” They may not be aggressive—but they disturb the sense of order, and that ambiguity often gets read as unsafe, abnormal, or undesirable.

Tidal Community, reimagines the urban shelter not merely as a space for survival, but as a dynamic system of co-existence rooted in dignity, autonomy, and temporal flexibility. Through fieldwork, including a case study of the Broadway Community shelter in New York City, we identified key tensions between the institutional logic of shelters and the nuanced, often understated needs of unhoused individuals. Many shelters, while offering beds and meals, fail to provide psychological safety, spatial agency, or uninterrupted access—leading some individuals to prefer the street over institutional help.

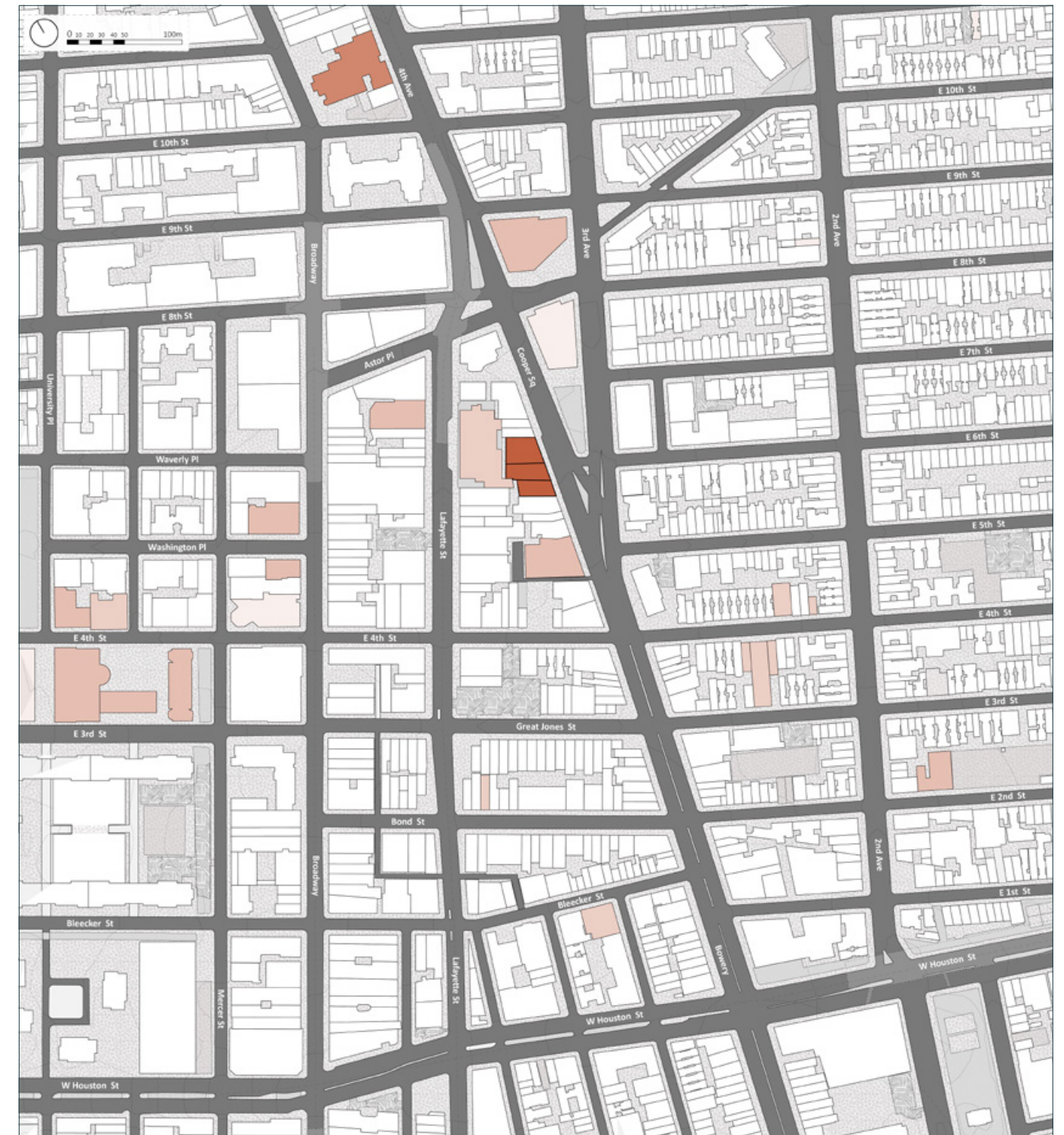


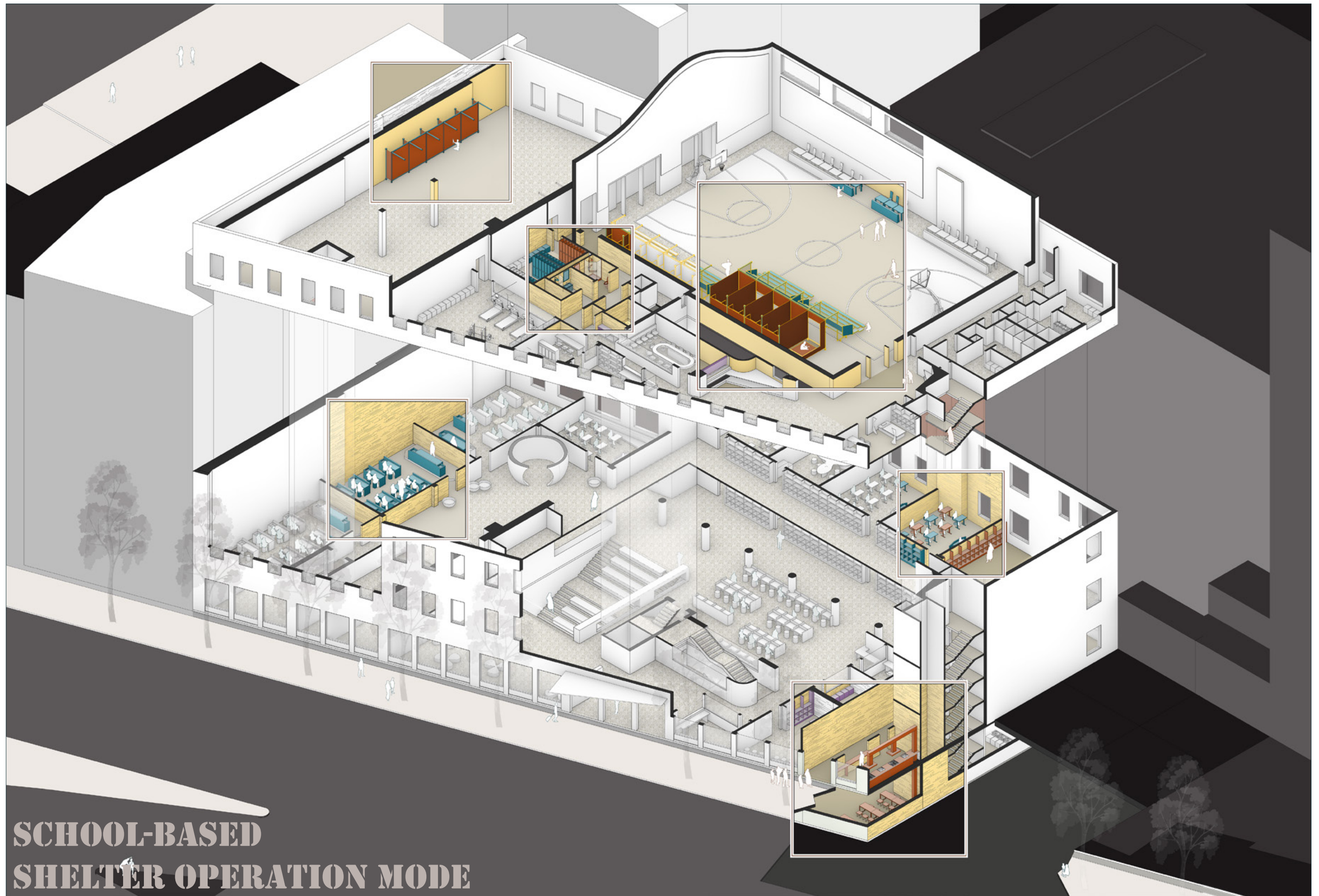
SITE ANALYSIS

If unhoused individuals are to regain social presence, they must not remain passive recipients. In Tidal Community, their presence can generate quiet forms of value. For example, in the high school–shelter model, students gain civic experience and empathy, while the school fulfills its social mission as a church-affiliated institution.



To evaluate the feasibility of having unhoused individuals and students coexist within the same building, we selected the high school campus of Grace Church School at 46 Cooper Square as our pilot site. It is not only a church-affiliated institution, but also located in a block surrounded by public buildings—effectively avoiding the NIMBY concerns often raised in residential areas.



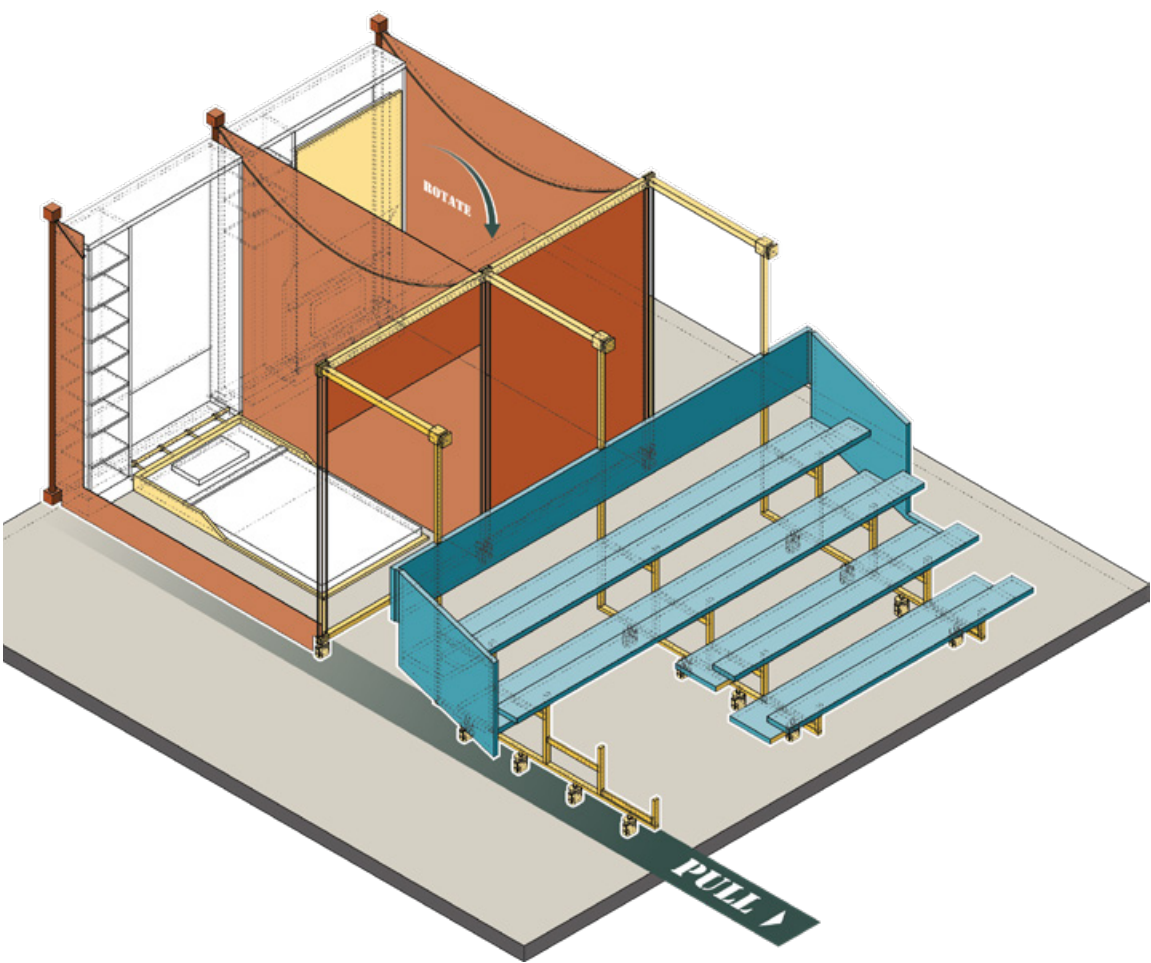


MODE SWITCHING

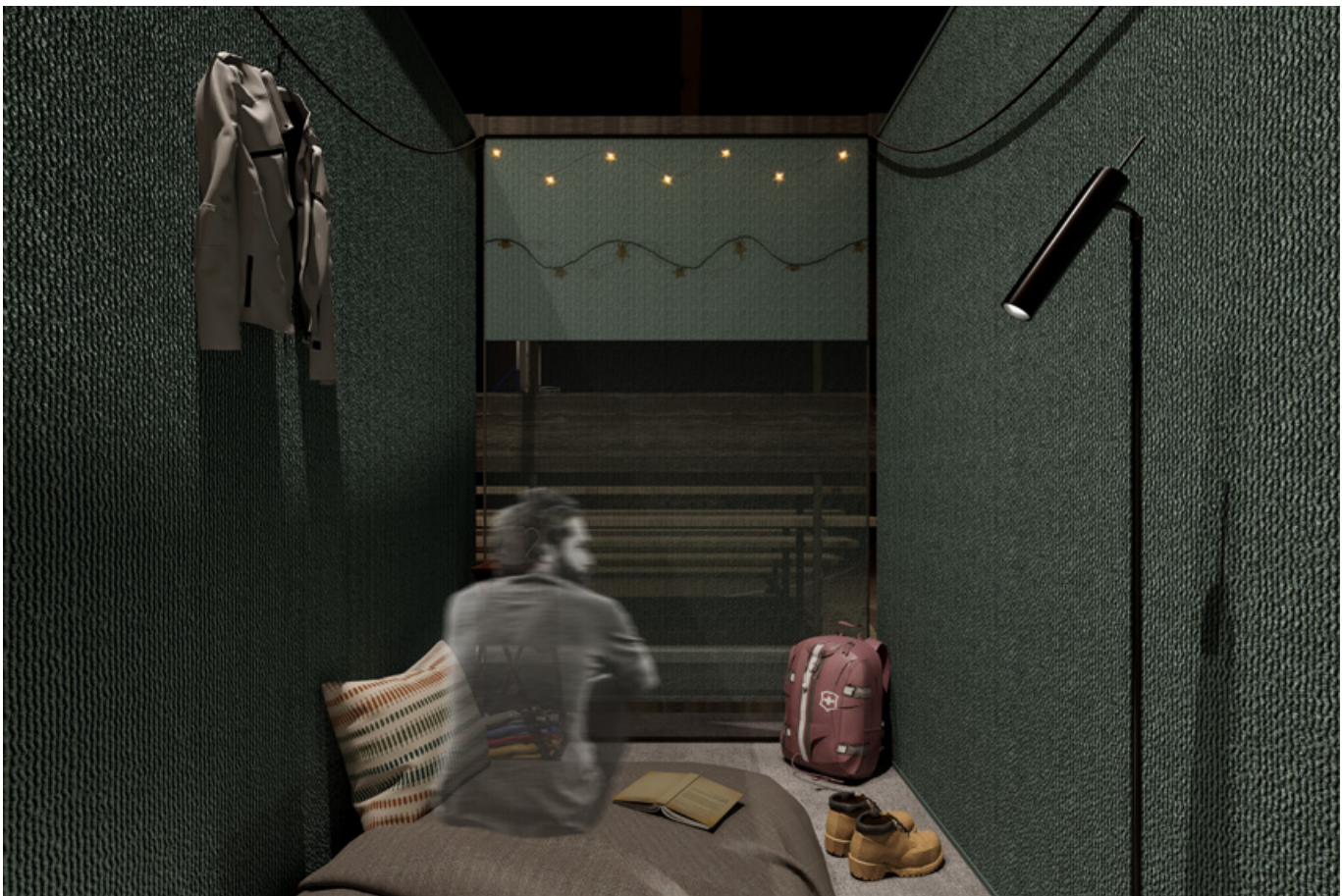
The gym is the primary site for micro-interventions, and the clearest zone of day–night transformation. The stadium-style seating has been redesigned as a pull-out system, allowing the space to shift manually every 12 hours.

As the benches are extended, a rollable canvas unfurls from the back, creating a temporary partition between the beds. In the daytime, the beds are rotated back into the wall, and the bleachers are pushed away to restore the open gym space. After the space is cleared between 7 and 8 PM, shelter residents assist in resetting the gym for overnight use—completing the transition from a sports facility to a sleeping environment.

Beside the gymnasium, classrooms are also divided into two categories: student-exclusive and hybrid use. During regular school hours, classrooms remain dedicated to students and faculty to maintain a focused learning environment. However, from 3:30 to 6:00 PM, selected classrooms serve as hybrid spaces for shared programs between unhoused individuals and students. Similarly, unhoused individuals have access to their own dedicated areas—such as soup kitchens and dining rooms—where they can gather without disruption.



Day Time: Gymnasium



Night Time: Dormitory

04

BIRTH OF ARCHITECTURAL SUBLIME INTUITION, INTENTION, AND THE TEST OF TIME

Course

*Structural Daring and the Sublime
in Pre-modern Architecture*

Instructor

Rory O'Neill

Semester

Fall 2024

The word Sublime is often associated with mystery, fear, and power. In the context of our modern people, when we speak of sublime architecture, the first images coming out are often of religion, sacrifice or regime, such as Gothic Cathedrals built in the Medieval.

Gothic cathedrals are distinctive because of their strong sense of verticality. Its structural elements, like the pointed arch, flying buttress, and rib vault, are all carefully designed, telling us that people in the Middle Ages were intentionally seeking to create sublime spaces by using daring structures. They knew vastness in different dimensions had different efficiency in creating the sublime. Later in the 18th century, Edmund Burke concluded in his speech *On the Sublime and the Beautiful*, that depth is greater than Height, and Height is greater than Length.

In the Gothic Style, all static elements seem to grow from the vertical direction. Columns arose from the ground, while decorations descended from the sky. The designers also control the length-to-width ratio of the building. They know that tall and slender spaces give a more sublime feeling, but also know that taller is not necessarily better. To find a balance between structural height, span and construction cost, some cathedrals are designed to be thirty meters rather than fifty meters tall.

The pursuit of noble technology is not achieved overnight. So, what motivated people to develop such techniques? Did people first realize that they wanted a sublime spiritual space, or did they realize they had such a need after creating such a sublime space? Here comes the classic debate topic.

1. Which came first, the chicken or the egg?

Given that Gothic architecture is consciously sublime, we can trace its development back to see what efforts people in more ancient times made for the sublime.

Romanesque architecture is generally considered the predecessor of Gothic architecture, however, from the perspective of the development of sublime consciousness, ancient Roman architecture is the one closer to the later stage.

From the 10th century to the 12th century, the European continent suffered from frequent wars and turbulent society. Therefore, safety and solemnity became the main goals of architectural design. The Romans valued the defensive nature of buildings. Rather than using architecture to show their power, they appreciated its functions more as it could protect themselves as well as relics, manuscripts and other religious treasures. In many cases, they preferred the buildings that meet specific needs and are built to last. Even though they pursue eternity, they believe that “eternity” is a kind of order and stability and not necessarily an exaggerated expression on a physical scale. But the worship of the sublime still exists, or we can say, some of their practices happened to meet the standards. For instance, the thick walls, though perhaps a helpless move, made the building lose its daring structure, while also unconsciously creating a sublime of darkness.

On the contrary, the ancient Romans were much more unrestrained in their pursuit of the sublime. From the 1st to 4th centuries, the invention and widespread use of Roman concrete made larger spans and more complex structures possible. The increasingly mature technology encouraged architects to try daring forms such as domes and arches. Fortunately, those ambitious architects encountered the most suitable era. The cultural inclusiveness and unification of ancient Rome gave designers an open-minded atmosphere and rich resources. Splendid architecture served as a tool to demonstrate imperial authority, combining structural daring and sublime sense to express the greatness of the empire through scale and technology. The huge dome of the Pantheon reflects the ancient Romans’ attempt at extraordinary scale. And the oculus in the center even strengthens the sense of cosmic order and mysterious power. The circle is the most sacred shape, and the sphere has added an infinite feeling. Even though there is no clear record of the word “sublime”, the design intention of “standing inside the sphere and looking up into the sky through the only window above in the center” is enough to infer that, the ancient Romans had this kind of spiritual pursuit subconsciously.

Comparing Ancient Roman architecture and Romanesque architecture, I found that the essence of the conscious and unconscious question is to discuss whether the sublime exists in architecture as a spiritual

pursuit or spiritual need. That is, in the cycle of structural daring to create a sublime experience, it is easier to create a daring structure in an open era, and sublime at that time is often intentional. In the turbulent and feudal era, the technology of the predecessors is used to strengthen the sublime. The clergy, emperor and royal nobles need sublime space to strengthen control, while ordinary classes need sublime space to block the pressure of real life temporarily. So, the sublime space has assumed a more spiritual role, no matter whether people realize it or not.

What about the older and more mysterious time? Take the ancient Egyptian civilization as an example. Did people realize that they were creating such a sublime miracle? Let’s turn our attention to the Hypostyle Hall in Karnak Temple, which I think is even more sublime than the pyramids.

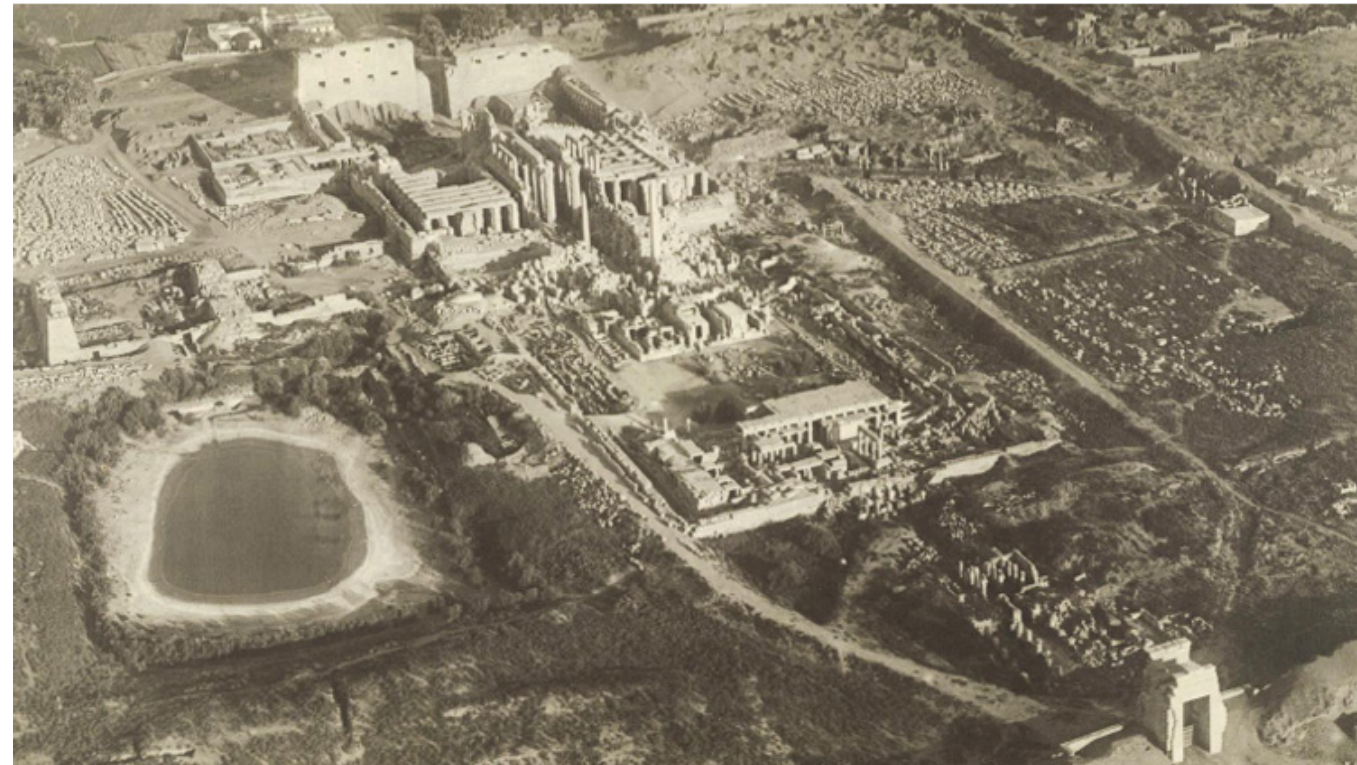


Fig.1 Aerial view of the ruins of Karnak Temple

By Cornell University Library - originally posted to Flickr as Temple Complex at Karnak, CC BY 2.0,
<https://commons.wikimedia.org/w/index.php?curid=7252716>

2. What did Karnak Temple Strive For: Eternal Presence or Sublime Experience?

As one of the oldest huge-scale buildings on earth, the Karnak Temple is a rare example that can give people a strong impression without knowing its history. The feature made the Karnak Temple stand out from all other ancient relics embodied a subtle sense of dislocation between the sublime and the eternal.

I believe that most ancient buildings have survived to this day because they were built with a focus on lasting beyond time. Emperors and gods wanting eternal life need to consolidate their status through eternal buildings. But “eternity” itself is a feeling that is difficult to be shared by outsiders, especially those separated by thousands of years. People’s feelings about eternity should come from experiences. The starry sky in the wildness is not eternal, but for those who have sat in the vast grassland overnight, that night became a kind of lonely eternity.

Sublime is different. The sublime comes from the huge scale, dynamic changes, and the contrast of light and shadow. The sublime is standing on the tip of the known iceberg, imagining the hidden whole iceberg under the sea, revealing excitement in solemnity and fear in exploration. The sublime is a universal emotional catalyst that does not require a specific identity or cultural background. This emotional resonance across time and culture may even be stronger because we don’t understand it. Ambiguous things are always more sublime.

Perhaps the pharaoh sat in the Karnak Temple, where the axial layout and grand colonnades made him feel connected to the gods and part of the “eternal existence”. As tourists, what we feel is more likely the grandeur and shock. For believers of its dynasty, the original goal of building the Karnak Temple was to reach eternal existence, but it turned out to be an unintended consequence that for later generations giving them a more sublime experience.

3. What Defines the Sublime in Karnak's Hypostyle Hall: Stability or Danger?

The structural elements in Karnak's Hypostyle Hall were different from other daring structures. There are 61 peripheral columns on each side and 12 central columns in the middle. Each of the central Columns is 21 meters high, 3.5 meters in diameter, and is arranged at intervals of 5-6 meters. The peripheral columns are about 10 meters high, 2.1-2.5 meters in diameter with 3-4 meters intervals.

Compared with other daring structures, columns in Hypostyle Hall are relatively thick. The central columns have a height-to-width ratio of about 6:1, and the peripheral columns have a height-to-width ratio of nearly 4:1-5:1. Even the Doric columns, which represented the power of mature males in ancient Rome had a ratio of 7:1-8:1, much thinner than the columns in the Hypostyle Hall.



Fig.2 The Hypostyle Hall from the perspective of human eyes

By Cornell University Library - originally posted to Flickr as Temple Complex at Karnak, CC BY 2.0, <https://commons.wikimedia.org/w/index.php?curid=7252716>

Why did ancient Egyptians choose such strong columns in the Hypostyle Hall, was it because of technical limitations? No. The obelisks built at the same time as the Great Hypostyle Hall or even earlier have a height-to-width ratio of 10:1 to 12:1. Their height is usually more than 20 meters, and the height of Hatshepsut's obelisk in the same temple has reached more than 30 meters. It can be concluded that the ancient Egyptians deliberately chose thicker columns to visually enhance the sense of weight and stability.

What really accounts for the sublime sense is the tight arrangement of these columns. In a hall of a certain volume, the thicker the columns, the thinner the gaps. Thus, the slender thing switched to the space for humans. Walking into these pillars array is like walking into a forest, but instead of a fir forest, it's a forest of elephant legs. The tapered bottom of the hypostyle hall column and the base together make the column look more like an elephant's foot. Imagine you are standing at the feet of a giant elephant. Wouldn't it feel like there is no way to escape? Even if you know it won't move, you're still worried about being crushed by it. In other words, Hypostyle Hall is sublime for its mentally oppressive, not structurally dangerous.

There is another point that needs some observation: although the top of the central column has been enlarged by the Papyrus Capital, the enlarged part does not have direct contact with the upper beam, which means that the Papyrus Capital is a hanging ornament rather than a supporting structure.

4. How Has Time Shaped Perceptions of Karnak's Hypostyle Hall: Original or Ruin?

The columns in Hypostyle Hall are not initially to standstill separately. In a restoration diagram, there ought to be a roof on the top, so the hall is an integral space with light pouring in only through the clerestory. To some degree, I think the ruined open-air Hypostyle Hall is even more sublime than the imagined intact version. Without a canopy, the Columns lead the visitors' eyesight upward to the sky and then arises the Infinite.

I began to think that, time has brought new technologies while taking away the integrity of these monuments, so how has the sense of the sublime changed as time passed by? When visiting Stonehenge, why do I feel it is a mystery but not sublime? I think it has something to do with the degree to which "time" is expressed in the remains.

There are few traces of fine artificial carving on the surface of Stonehenge. You may be there and see it has been eroded by wind and rain, but you might not come up with too much about its experience. Whether it was arranged in a special formation, and no matter when it was built, it would have been eroded to the same extent, just as stones anywhere else. Although people know that Stonehenge has a long history and a miraculous origin, it is difficult for them to recall how ancient this masterpiece is and how "impossible" it is at first glance.

The traces of human intervention in the Karnak Hypostyle Hall are much more obvious. The reliefs and hieroglyphs on the columns convey the religious, political and cultural significance of ancient Egypt. Despite the sublime being related to the overall feeling, many details stacked together still can have a strong enough presence to remind people of how prosperous a civilization once existed here. Then people began to imagine how the ancients completed such a huge project in an era without modern machinery. The more "incredible" something is, the more directly the viewer can feel the potential and power of human beings.

After understanding that the sublime is a direct sensory impact, we can summarize the sublime in architecture and find that the strength of the sublime changes over time. The sublime can derive from the designer's intention through structure and form, or it can be shaped by history, nature and the viewer's interpretation.



Fig.3 Column shaft, capital and beam on the top

By René Houdry - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=83565824>

Faced with ancient monuments that have been eroded, should we protect them from further erosion, or let time accumulate traces of history? Faced with modern technology, do architects still need to design "sublime", or should we rely more on the value given to architecture by time, nature and history? Whenever thinking of this kind of question, I cannot come up with an answer. Just let it go, and future generations will have their own interpretations.

05

SEED BOMBS

Course

Seed Bombs: technologies in ecological design

Instructor

Emily Bauer

Teammate

Qian Chen

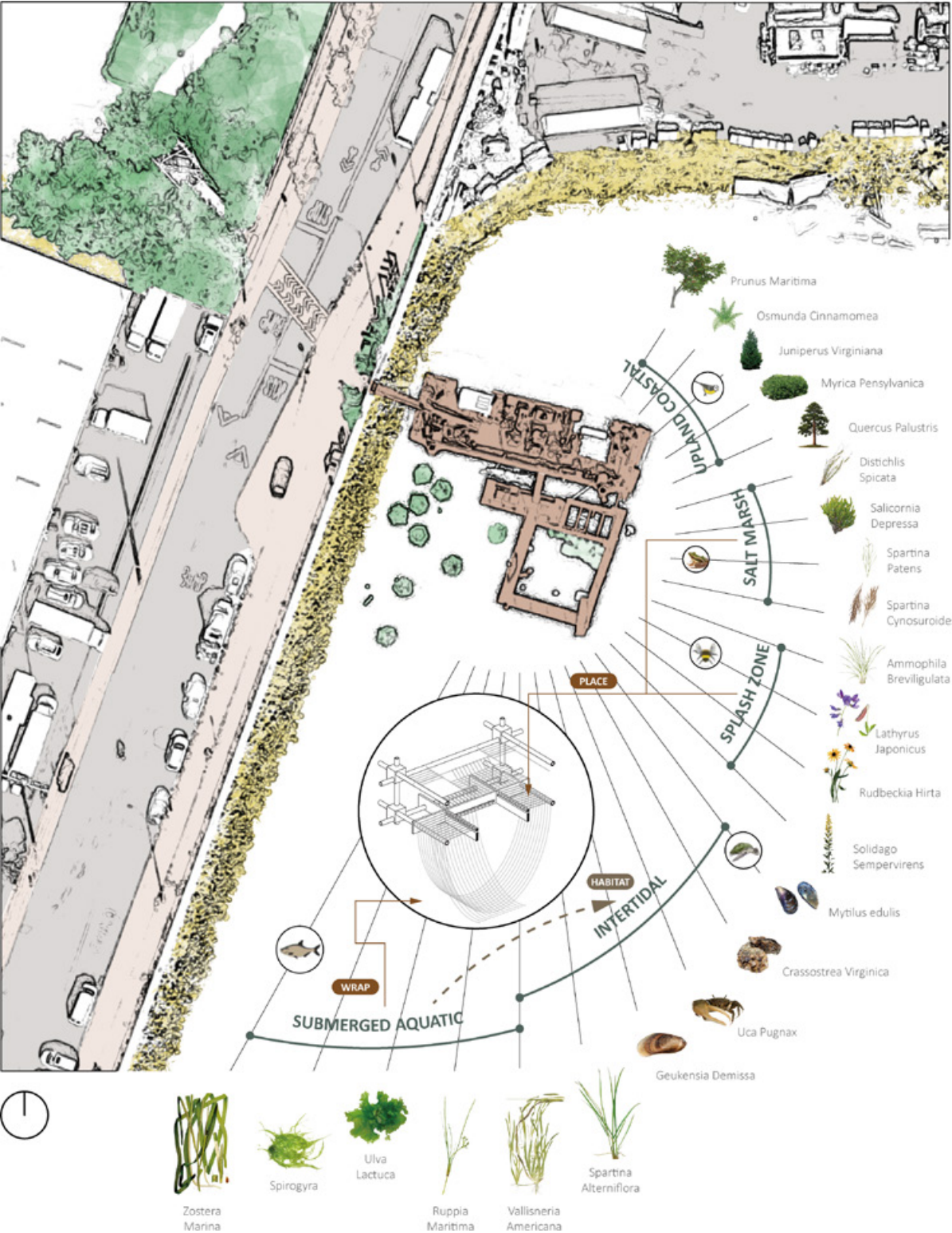
Semester

Fall 2024

“Nine-Palace Floater” is an ecologically driven floating installation designed for tidal environments, aiming to restore coastal biodiversity through the cultivation of native salt-tolerant vegetation. Constructed entirely from biodegradable materials—including bamboo, logs, and marine ropes—the project emphasizes circularity and low-tech environmental stewardship, avoiding synthetic or polluting components. The installation adopts a modular “nine-palace” grid, enabling flexible assembly and scaling across different coastal sites. Each unit serves as a micro-ecological patch, filled with planting substrates that support species like saltgrass, glasswort, and Japanese sweet flag. These plants were chosen not only for their tolerance to salinity but also for their ecological roles in sediment stabilization, water filtration, and habitat creation for aquatic life.

The design was developed through iterative prototyping and field feedback. Initially, plants were placed on elevated layers, but were later repositioned closer to the water surface to ensure better access to moisture and nutrients. A central fishing net within the grid can potentially support shellfish or small fish, expanding the installation’s ecological function into aquaculture. By integrating ecological insight with material frugality and spatial adaptability, Nine-Palace Floater proposes a speculative yet applicable model for habitat-oriented architectural interventions. It offers a platform that not only supports native species recovery but also challenges the boundaries between architectural infrastructure and living systems, pointing toward a resilient, cohabitative approach to coastal design.

ECOLOGICAL PALETTE



SUBMERGED AQUATIC

CROP TYPE	GROWTH TECHNIQUE	AGRICULTURAL INFOEMATION
Zostera marina	Shallow water, clean water, suitable salinity, adequate light, seeding transplants.	Habitat restoration, carbon sequestration, water filtration, coastal protection.
Spirogyra	Freshwater, photosynthesis, high nutrients, clean water, warm environment.	Freshwater algae, biofuel potential, nutrient-rich, aquaculture.
Ulva lactuca	Saltwater, sunlight, high nutrients, fast growth, attachment to rocks.	Seaweed farming, edible, biofuel, water purification.
Ruppia maritima	Brackish water, shallow depth, rhizome spread, high salinity tolerance.	Aquaculture, habitat restoration, saline tolerance, water filtration.
Vallisneria americana	Freshwater, rooted in sediment, moderate nutrients, flowing water, sunlight.	Freshwater restoration, oxygenation, fish habitat, erosion control.



INTERTIDAL

CROP TYPE	GROWTH TECHNIQUE	AGRICULTURAL INFOEMATION
Spartina alterniflora	Salt marsh, tidal flooding, rhizome spread, salt tolerance.	Salt marsh, erosion control, biofuel, habitat restoration.
Geukensia demissa	Salt marsh, attachment to roots, filter feeding, tidal influence.	Filter feeder, water filtration, aquaculture potential, habitat restoration.
Uca pugnax	Mudflats, burrowing, tidal zones, detritus feeding.	Tidal flats, ecosystem engineer, detritus recycling, aquaculture relevance.
Crassostrea virginica	Brackish water, attachment to substrate, filter feeding, reef formation.	Oyster farming, water filtration, reef building, aquaculture.
Mytilus edulis	Intertidal zone, attachment to rocks, filter feeding, cold water.	Mussel farming, filter feeder, water purification, aquaculture.



SPLASH ZONE

CROP TYPE	GROWTH TECHNIQUE	AGRICULTURAL INFOEMATION
Solidago sempervirens	Coastal dunes, salt-tolerant, sunlight, perennial growth.	Salt-tolerant, ornamental, erosion control, pollinator-friendly.
Rudbeckia hirta	Well-drained soil, full sun, drought-resistant, self-seeding.	Ornamental, drought-tolerant, attracts pollinators, easy to grow.
Lathyrus japonicus	Coastal sand, salt-tolerant, sprawling vines, nitrogen-fixing.	Coastal plant, nitrogen-fixing, erosion control, ornamental.
Ammophila breviligulata	Sand dunes, deep roots, wind-resistant, dune stabilization.	Dune stabilization, erosion control, deep roots, coastal resilience.



SALT MARSH

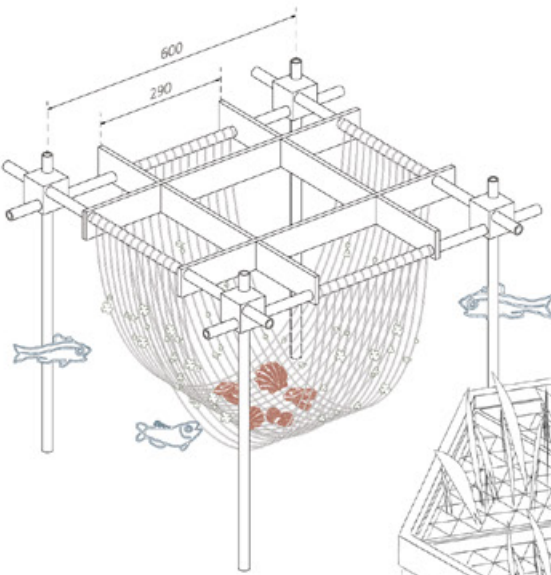
CROP TYPE	GROWTH TECHNIQUE	AGRICULTURAL INFOEMATION
Spartina alterniflora	Salt marsh, tidal flooding, rhizome spread, salt-tolerant.	Salt marsh, erosion control, biofuel potential, habitat restoration.
Salicornia depressa	Salt marsh, halophytic, succulent, tidal zones.	Halophyte, salt-tolerant crop, edible, biofuel potential.
Distichlis spicata	Salt-tolerant, rhizome spread, drought-resistant, coastal marsh.	Salt-tolerant, erosion control, forage crop, drought-resistant.



UPLAND COASTAL

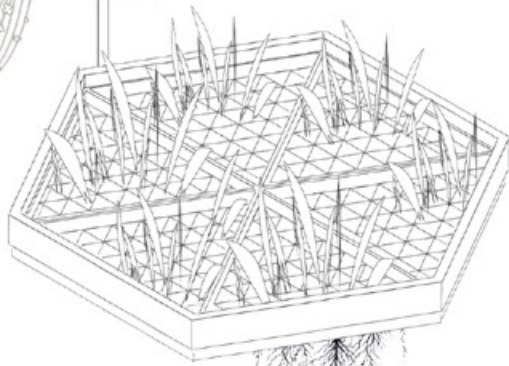
CROP TYPE	GROWTH TECHNIQUE	AGRICULTURAL INFOEMATION
Quercus palustris	Wet soils, deep roots, full sun, flood-tolerant.	Timber, wet soils, ornamental, flood-tolerant.
Osmunda cinnamomea	Moist soil, shade-tolerant, rhizome spread, forested wetlands.	Moist soils, fern industry, shade-loving, ornamental.
Myrica pensylvanica	Sandy soil, salt-tolerant, nitrogen-fixing, coastal areas.	Sandy soils, nitrogen-fixing, wax production, erosion control.
Juniperus virginiana	Dry soils, drought-resistant, full sun, shallow roots.	Drought-tolerant, windbreaks, essential oils, timber.
Prunus maritima	Sandy soils, salt-tolerant, full sun, coastal dunes.	Sandy soils, fruit production, coastal resilience, erosion control.

SCALABILITY DIAGRAM



Function 1: Aquaculture

The lower part of the device is a net, which can create a suitable environment to absorb algae and cultivate shellfish, such as clams.



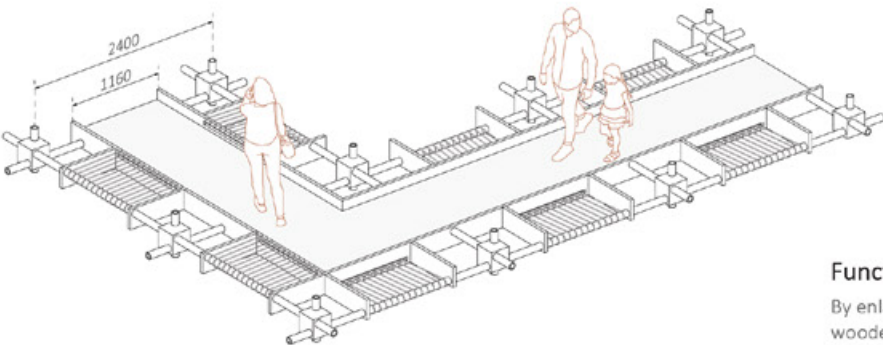
Function 2: BlueCity in RETI Center

Our device has the same function of hold aquatic plants with RETI's floating island. And we even have more layers and zones than the existing one.

The original size of our floating device is about 660x660mm², and the core unit is 600x600mm².

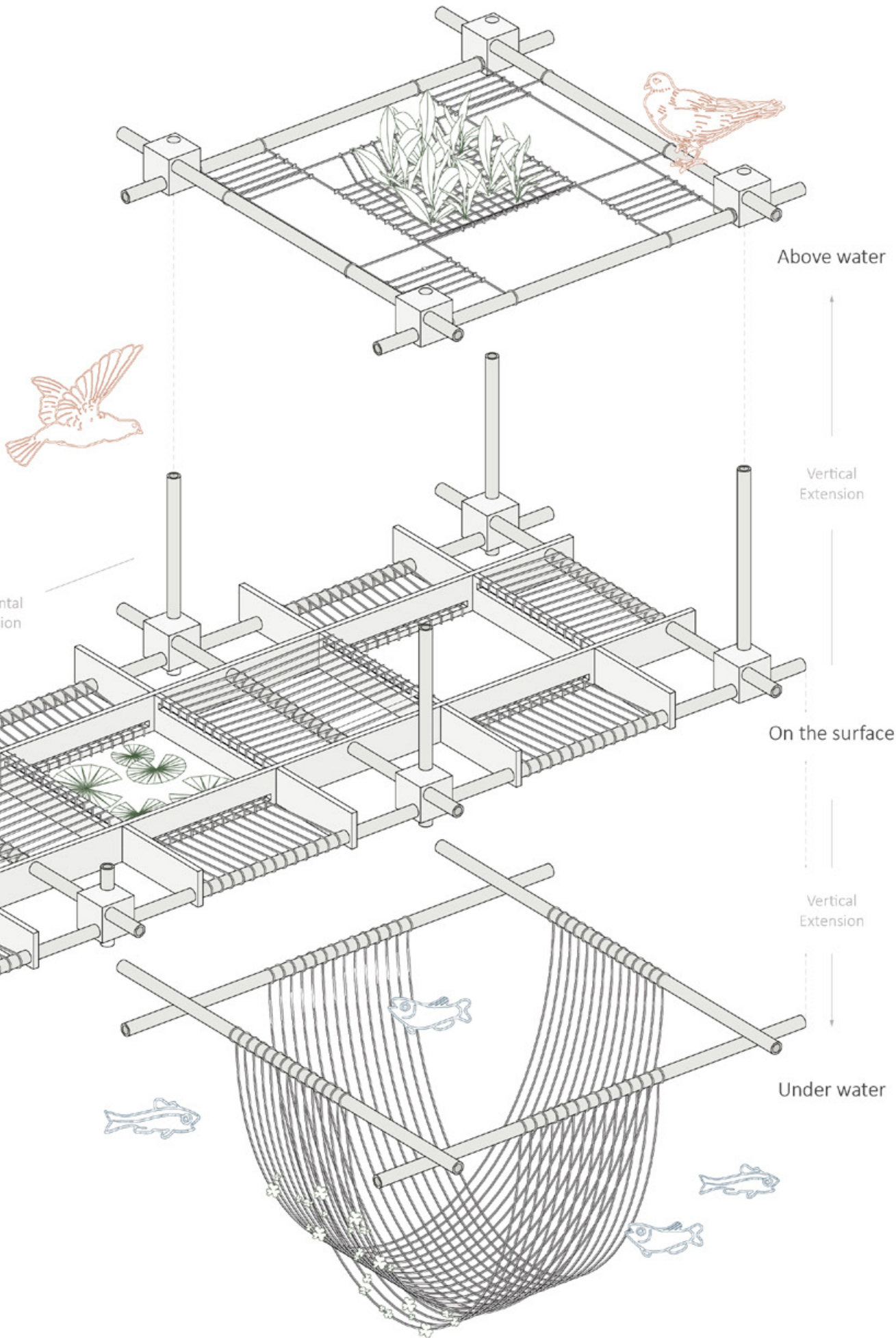
To make it more stable, we can use the joints to connect several units together. So it can extend on the water surface to wherever we want. This device can also extend in vertical ways. By using short bamboos, we can add layers above water to attract insects and birds, while by using ropes, it can get deeper under water to absorb algae and attract fish.

Also, we can enlarge the scale of this floating island, so it can become a floating path for walking. Due to the inherently buoyant, we can use less support material to keep it on the water.



Function 3: Floating Park

By enlarging this device and covering the middle part with wooden boards, we can get a water walkway.



MODEL IMAGES



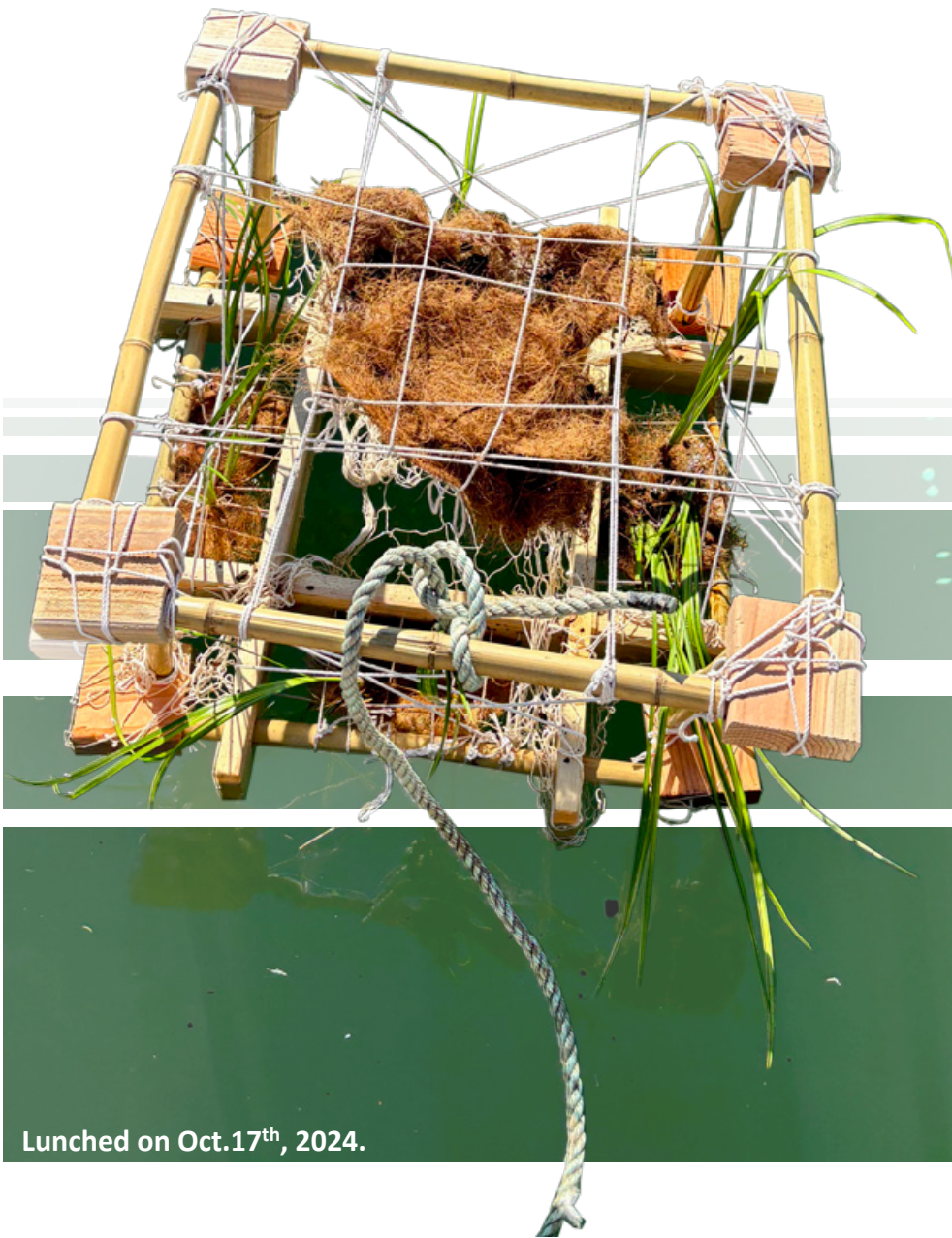
The plants we planted on the installation were native plants that tolerated seawater, such as saltgrass, glasswort, seashore saltgrass, saltmarsh cordgrass, and seaside plantain.

The plants in the photo were used as a reference when we took the photos a weeks before the launchday in the workshop in advance. When actually went into the water, we used Japanese sweet flag Calamus as an ornamental plant.

This model is made of logs, bamboo sticks, marine ropes, and fishing nets. And there is no non-degradable polluting raw materials such as plastic contained in it.



LAUNCHED FLOAT



Lunched on Oct.17th, 2024.

a. Tie the mooring line to the device.



b. Move to the dock.



c. Put it into water.

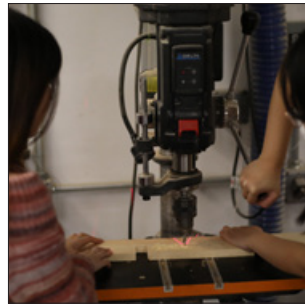


After hearing our teachers' feedback,
we changed the position of the plants on the pier.
d. Tie it to the dock in place.



FABRICATION PROCESS

Component Making

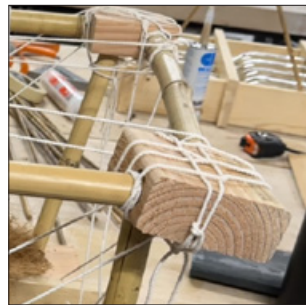
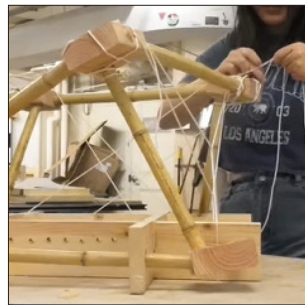
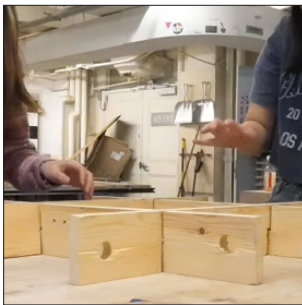


Cut four boards, slote them so they can spell together. Then punch holes on each board.

Sawn out 8 long and 4 short bamboo sticks.

Make 8 joints, with 3 holes on each of them.

Frame Assembling



Put the boards together.

Put the sticks through the hole and connect it.

Strengthen with ropes.

The nodes we envisioned are ones that allow these components to fit together seamlessly. But due to the precision of the equipment and our lack of skills, the sizes of all the slots and holes became larger.

We reinforced the connections between the planks by adding wood chips, but the connections at the joints could only be reinforced with ropes, which made the joint design look a bit redundant.

Accessories Adding



We bought three different types of ropes for the device. The first two would dissolve in the seawater after a certain period of time (for example, after half a year), so we had to buy new ones. We actually considered whether we could design the device to absorb seaweed and then sink it to the seafloor. But in the end, we still wanted to emphasize its function as a habitat and aquaculture.

Connect bamboo to the planks with ropes.

Hang up fishing net.

Plants Placing



Place "soil" to hold plants' roots.

Plant saline-tolerant plants.

When placing the plants, we initially placed them on the upper layer. After being reminded by the RETI teachers, we realized the importance of stable water sources and nutrients, and quickly moved the plants to the surface layer.

06

THE SAKURA LABYRINTH

Course

Some Structures (Adv Structural Design)

Instructor

Hermona Tamrat

Teammate

Sherry Aine Te

Semester

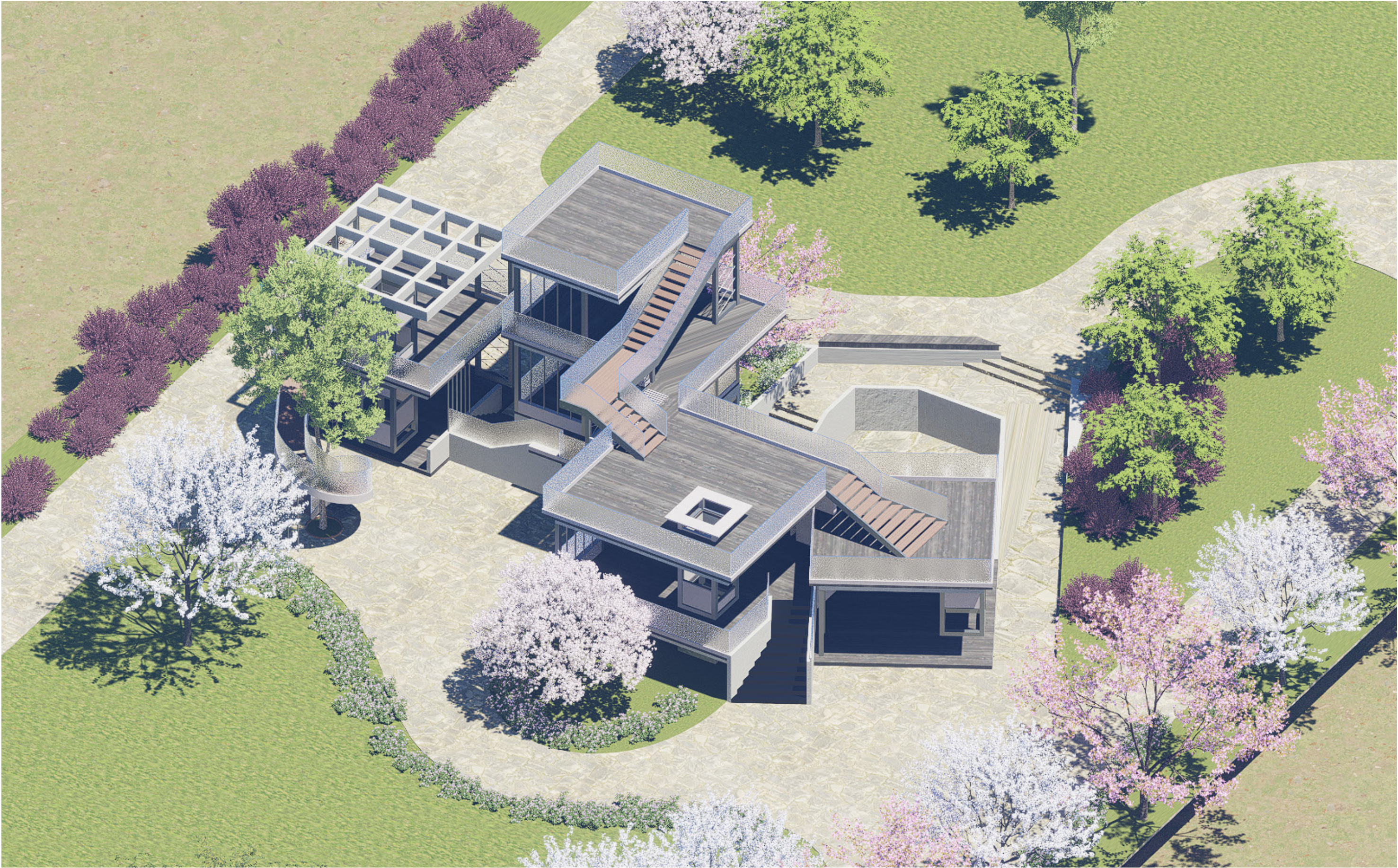
Spring 2025

The Sakura Labyrinth is a structural pavilion project situated in Sakura Park, developed through an integration of spatial programming and structural analysis. Inspired by the porous, multi-programmed logics of treehouses and labyrinths, the design distributes four lightweight pavilions across a shared open landscape, encouraging layered movement and engagement. The system employs a regular 4 ft × 4 ft grid and incorporates steel columns, concrete waffle slabs, and timber cladding to balance modularity, durability, and spatial permeability.

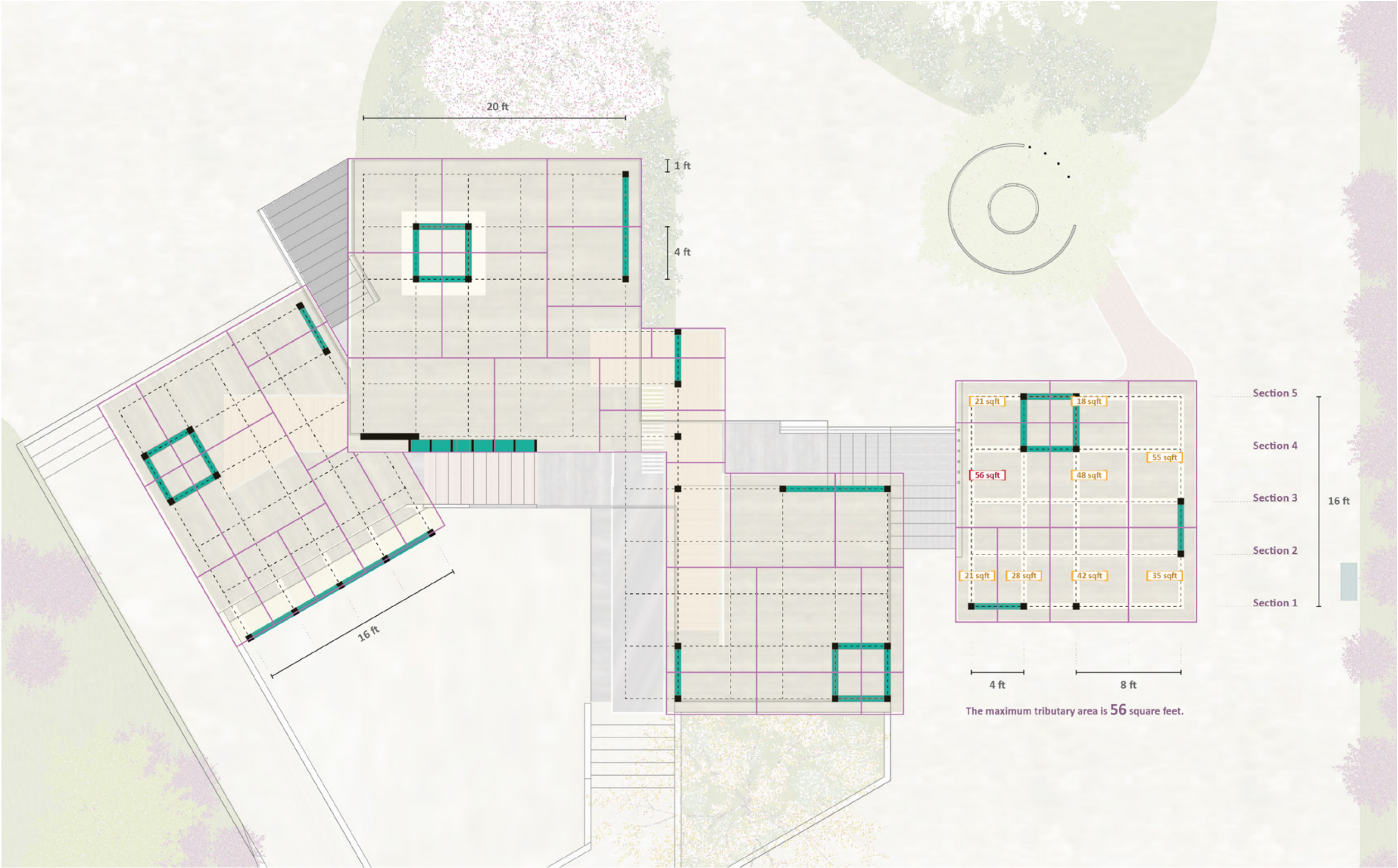
Each pavilion responds to varying structural demands, from tall columns supporting staircases to waffle slabs designed for distributed load performance. Wind and live load analyses were conducted based on ASCE 7 standards to ensure structural safety while maintaining the project's visual lightness. Developed within an academic context, the design process emphasized the translation of engineering principles into spatial opportunities, using structural logic not only to support but also to articulate form.

The modular approach allows the system to scale or adapt to different park conditions, offering a framework for collective use and ecological coexistence. Through careful calibration of form and force, The Sakura Labyrinth transforms structural precision into a participatory, contemplative spatial experience.

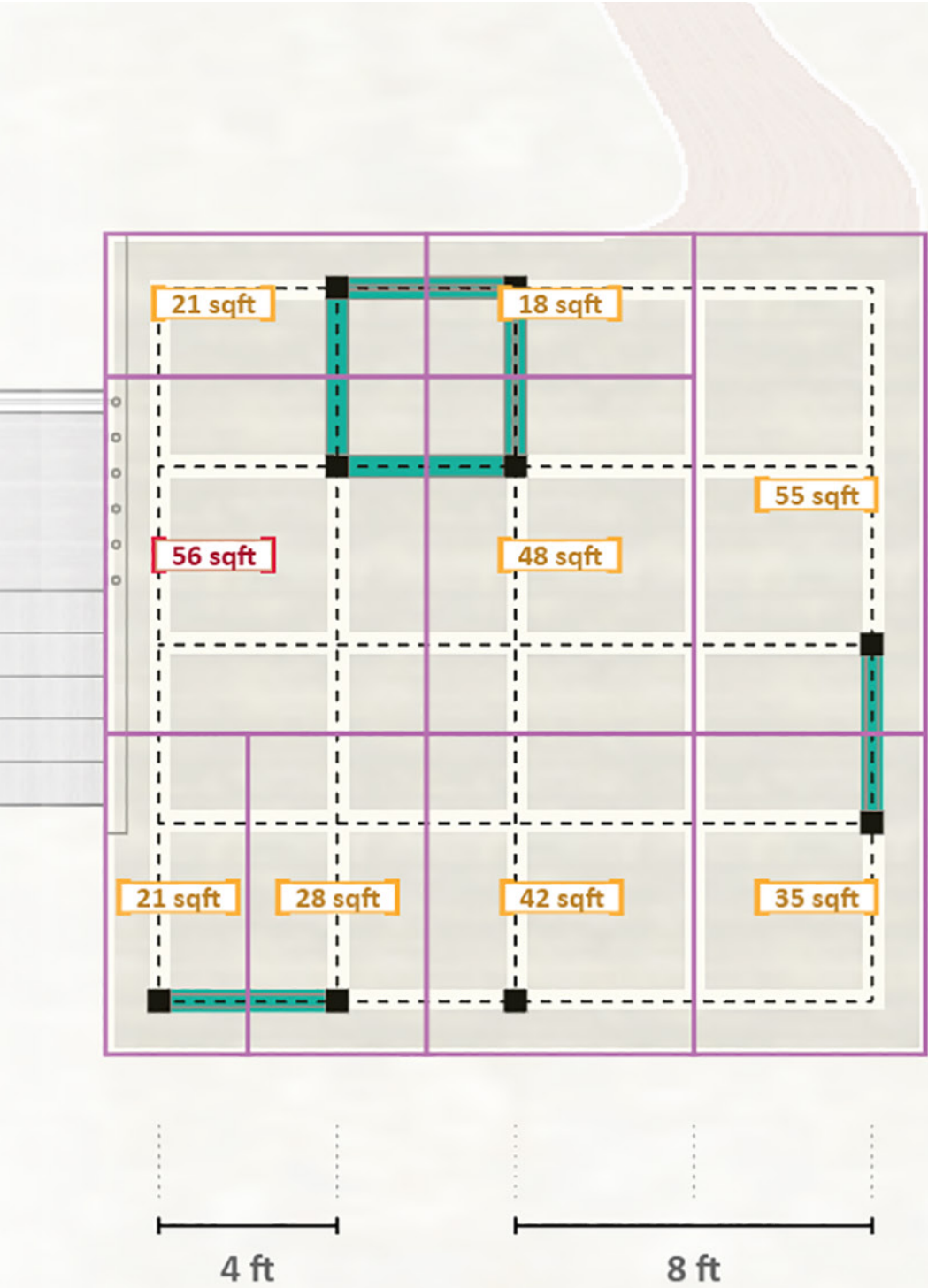
OVERVIEW



STRUCTURAL MEMBERS



TRIBUTARY AREA & COLUMN SIZE



The maximum tributary area is 56 square feet.

Section 5

Section 4

Section 3

Section 2

Section 1

Essential Parameter

Grid Spacing	4 ft x 4 ft
Top Slab Thickness	0.3 ft
Rib Depth below Slab	1.2 ft
Rib Width	0.5 ft
Column Length	8.4 ft
Concrete Density	156 lb/ft3

Load Calculation

Top Slab Load = 0.3 ft x 156 lb/ft3 = 46.8 lb/ft2

Total Rib Length / sq.ft = 2 x 4 ft / (4 ft x 4 ft) = 0.5 /ft

Rib Concrete Load = 0.5 x 0.6 x 156 = 46.8 lb/ft2

Dead Load = 93.6 x 2 = 187.2 lb/sq.ft

Live Load = 100 lb/sq.ft

According to ASCE 7 [LRFD]

Total Load = 1.2 DL + 1.6 LL = 384 lb/sq.ft

Table 4-4 (continued)
Available Strength in
Axial Compression, kips
Square HSS

$F_y = 46 \text{ ksi}$

Shape	HSS2 1/2 x 2 1/2 x								HSS2 1/4 x 2 1/4 x	
	5/16	1/4	3/16	1/8	1/4	3/16	1/8	1/4	5/16	1/4
$t_{design}, \text{in.}$	0.291	0.233	0.174	0.116	0.233	0.174	0.116	0.233	0.291	0.233
W_{lb}/ft	8.40	7.08	5.57	3.90	8.40	7.08	5.57	3.90	8.40	7.08
Design	P_n/Ω_c		$\phi_c P_n$		P_n/Ω_c		$\phi_c P_n$		P_n/Ω_c	
	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
0	64.8	97.4	54.3	81.7	42.4	63.8	29.5	44.4	47.9	72.0
1	64.0	96.2	53.7	80.7	42.0	63.1	29.2	43.9	47.2	71.0
2	61.7	92.7	51.9	77.9	40.6	61.0	28.3	42.6	45.2	67.9
3	57.9	87.0	48.9	73.5	38.4	57.8	26.9	40.4	41.9	63.0
4	53.1	79.7	45.0	67.7	35.6	53.5	25.0	37.6	37.8	56.7
5	47.4	71.3	40.5	60.9	32.2	48.4	22.8	34.2	33.0	49.6
6	41.3	62.1	35.6	53.5	28.5	42.9	20.3	30.5	28.0	42.1
7	35.1	52.8	30.6	46.0	24.7	37.2	17.7	26.7	23.1	34.7
8	29.1	43.8	25.6	38.5	21.0	31.5	15.2	22.8	18.4	27.7
9	23.5	35.3	21.0	31.5	17.4	26.1	12.7	19.1	14.6	21.9
10	19.0	28.6	17.0	25.5	14.1	21.2	10.4	15.7	11.8	17.7
11	15.7	23.6	14.0	21.1	11.7	17.5	8.61	12.9	9.76	14.7
12	13.2	19.9	11.8	17.7	9.81	14.7	7.24	10.9	8.20	12.3
13	11.3	16.9	10.1	15.1	8.36	12.6	6.17	9.27	6.99	10.5
14	9.71	14.6	8.67	13.0	7.21	10.8	5.32	7.99	6.06	9.06
15			7.55	11.4	6.28	9.44	4.63	6.96		
16							4.07	6.12		

Load for the Largest Tributary Area
56 sq.ft x 374 lb/sq.ft = 21504 lbs < 21.6 kips

Column Length: 8.4 ft

According to the Table 4-4, the minimum size of Square HSS in this pavilion section is:

2.25 in x 2.25 in
(1/4 thickness)

Compared with recommended size, our [5 in x 5 in] columns are much larger. So theoretically they could be smaller for aesthetic purposes.

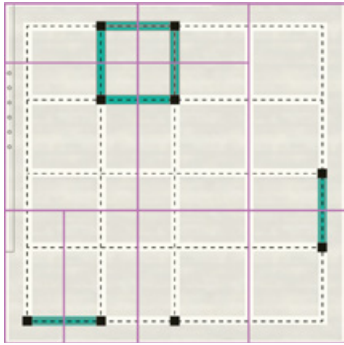
Load for the High Columns: 36 sq.ft x 272 lb/sq.ft = 9792 lbs < 10 kips

Column Length: 20 ft

According to the Table 4-4, the minimum size of Square HSS in this pavilion section is:

3.5 in x 3.5 in
(1/8 thickness)

LATERAL SYSTEM CALCULATION



Pavilion 1

Essential Parameter

A_proj 110 sq.ft (each side)
[(10ft+10ft)*4ft] + [(2.5ft*4ft)*4bays]
Column surface area + railing area (from one side)

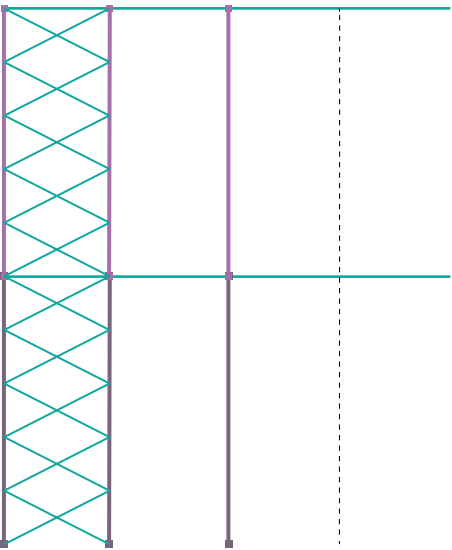
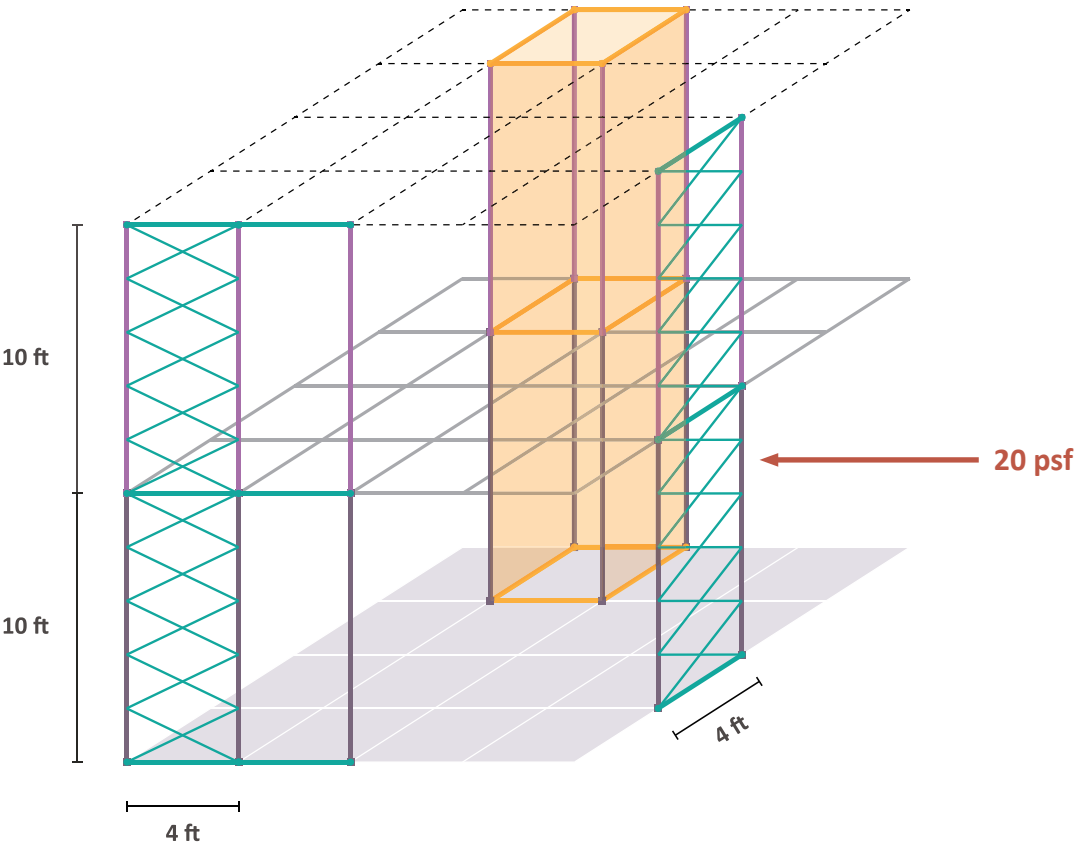
Wind Pressure 20 psf

Wind Load Calculation $wl = 110 \text{ sq.ft} \times 20 \text{ psf} = 2200 \text{ lb} = 2.2 \text{ kips}$

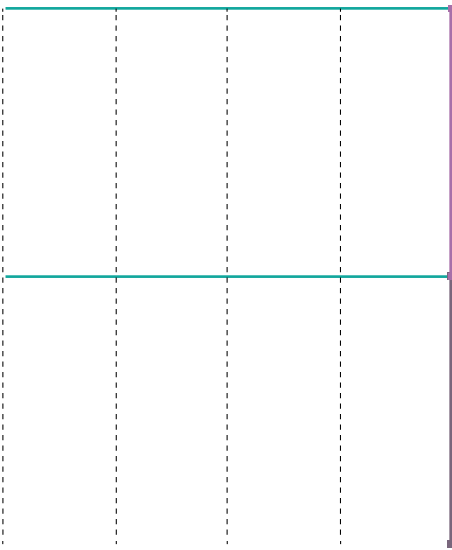
Lateral Forces

Overturning moment = $20\text{ft} \times 16\text{ft} \times 20\text{psf} \times 10\text{ft} = 64,000 \text{ lb-ft} = 64\text{k-ft}$
 $64\text{k-ft} = \text{required self weight of structure} \times 8\text{ft}$

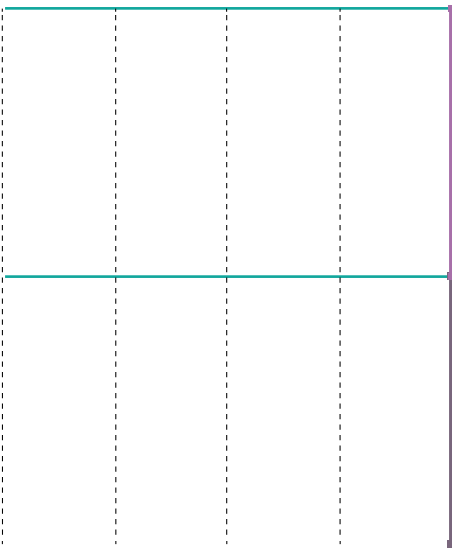
Required self weight of structure = $64\text{k-ft} / 8\text{ft} = 8\text{k}$



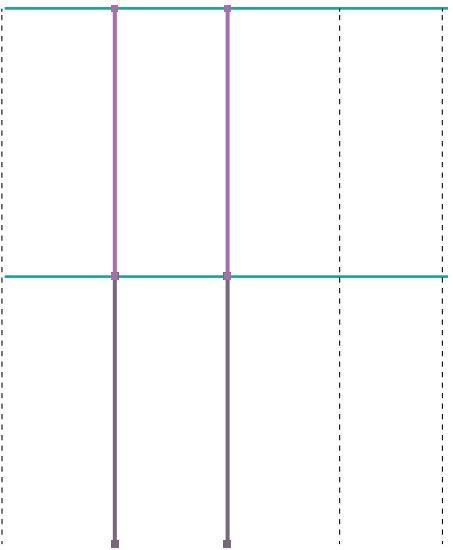
Section 1



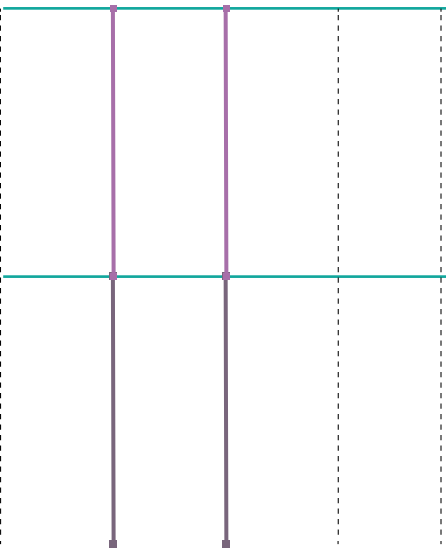
Section 2



Section 3



Section 4



Section 5



07

OLYMPIANS RECLAIMED

Course

Virtual Architecture

Instructor

Nitzan Bartov

Teammate

Cathy Dong & Qian Chen

Semester

Spring 2025

Olympians Reclamation is an interactive mythology game that reimagines the learning of Greek legends through embodied play, spatial exploration, and sensory engagement. Set within a glowing nighttime landscape, the project transforms the traditional retelling of the Twelve Olympians into a sequence of performative encounters. Guided by a small robot, players traverse illuminated paths, ascend spiraling ramps, and discover glowing eggs—each containing a dormant god.

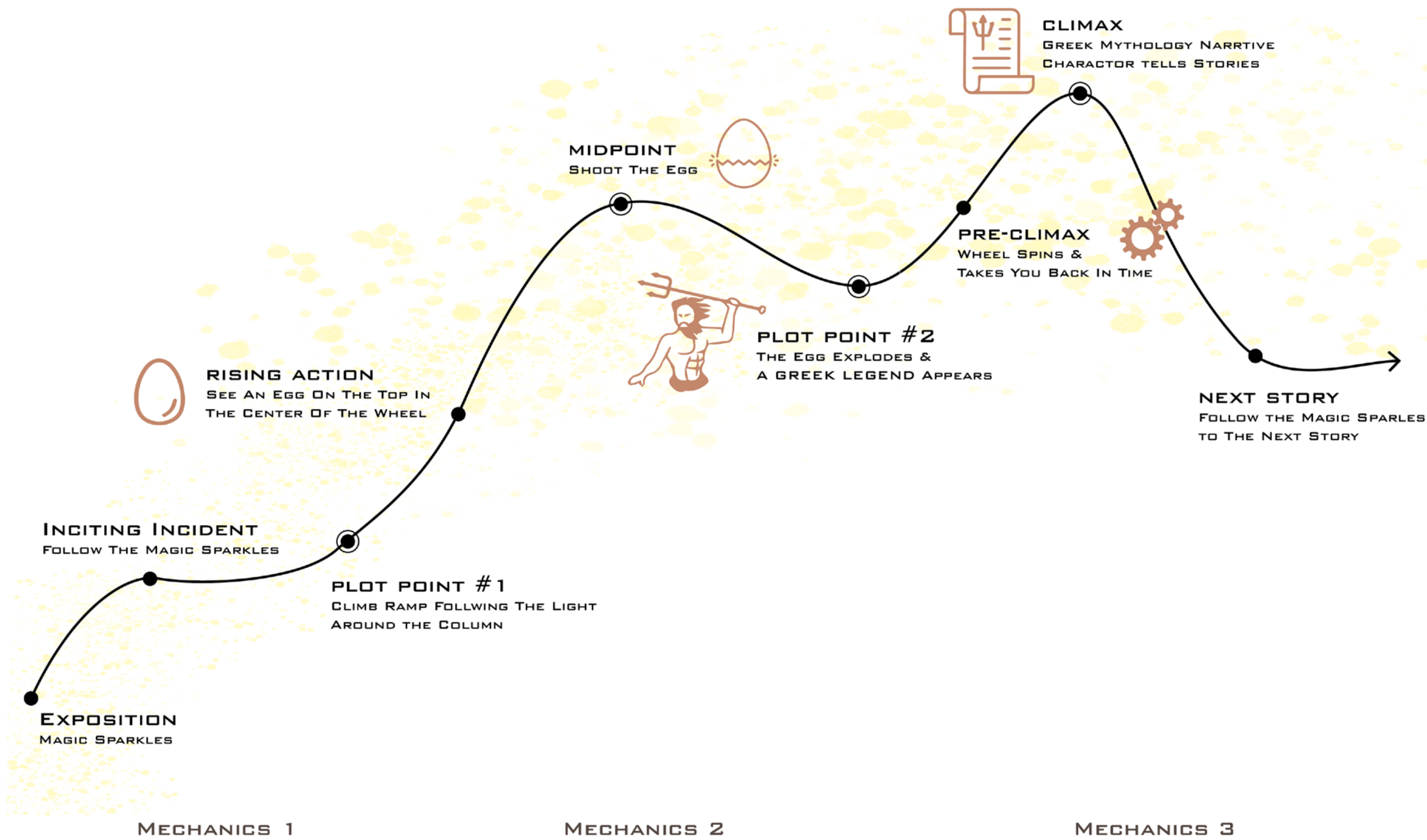
Gameplay combines narrative and action: shooting an egg triggers its cracking and releases an Olympian in a flourish of light, sound, and motion. Each encounter unfolds a mythological episode through animation and spatial transformation, gradually revealing a constellation of twelve divine symbols across the world. Drawing inspiration from smash rooms and magical gesture-based cinema, the game emphasizes tactile discovery over passive observation.

Beyond its entertainment value, Olympians Reclamation serves as a spatial learning tool, leveraging environmental design and interactive mechanics to deepen mythological understanding. The architectural landscape—comprised of twelve elevated pillars and winding pathways—functions as both game board and scenographic stage. This hybrid of myth, design, and gamified interaction invites players to reclaim ancient narratives through physical immersion and playful ritual.

OVERVIEW



KEY GAME PLOT



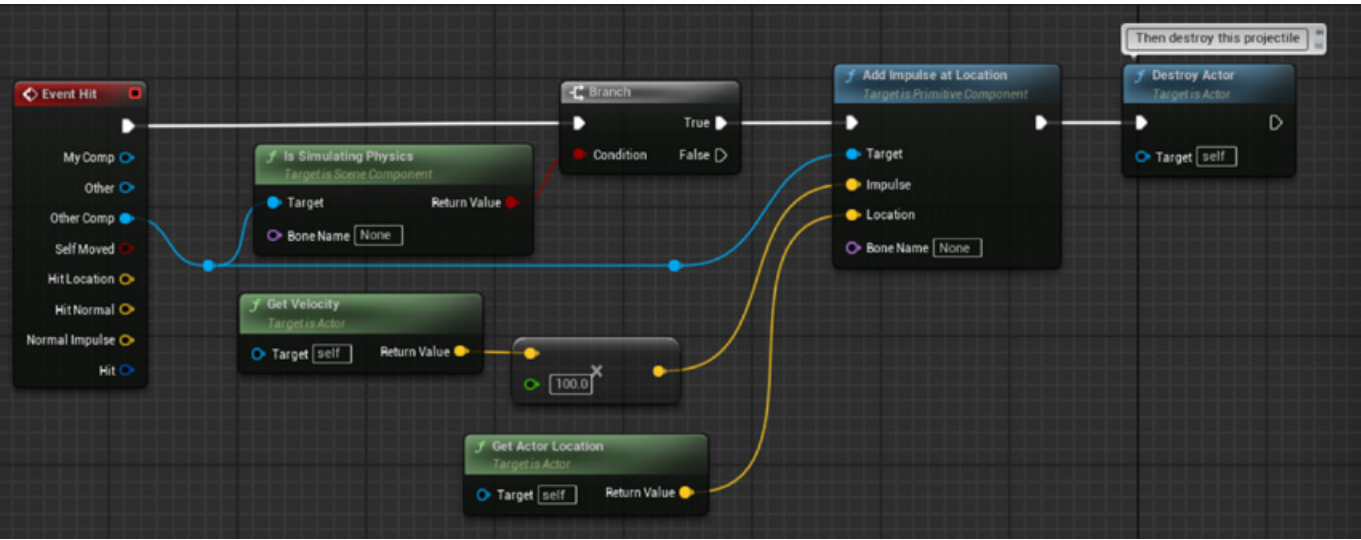
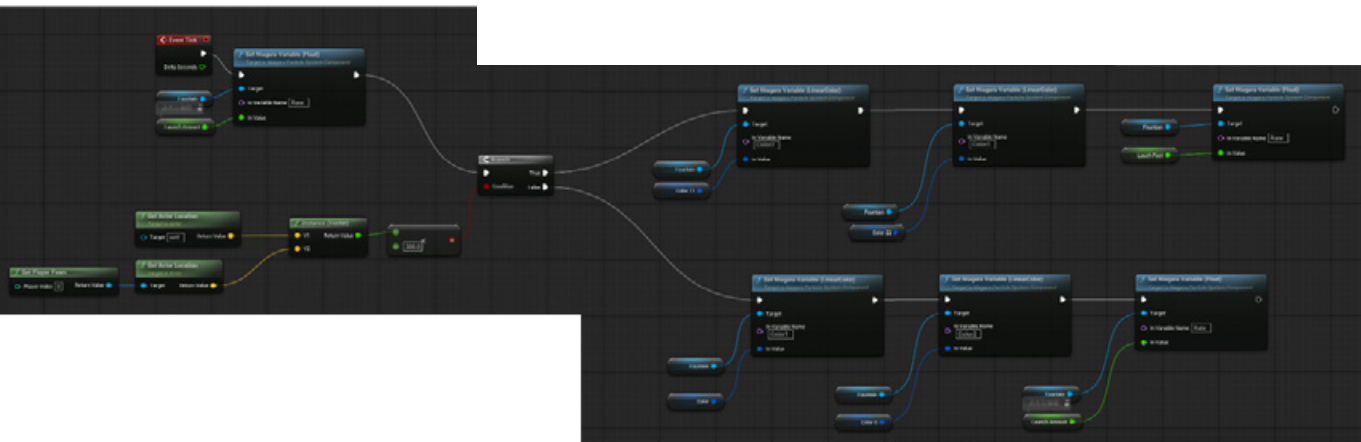
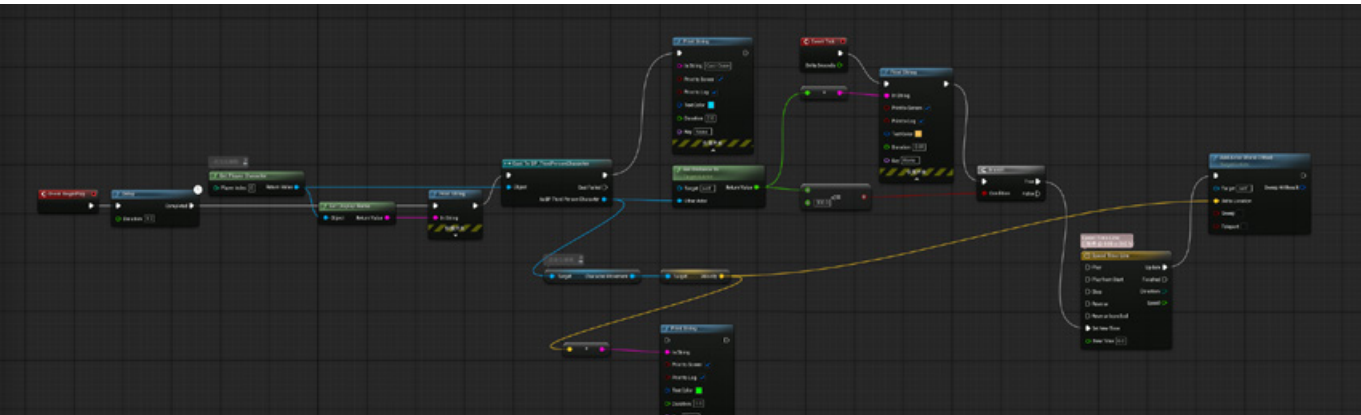
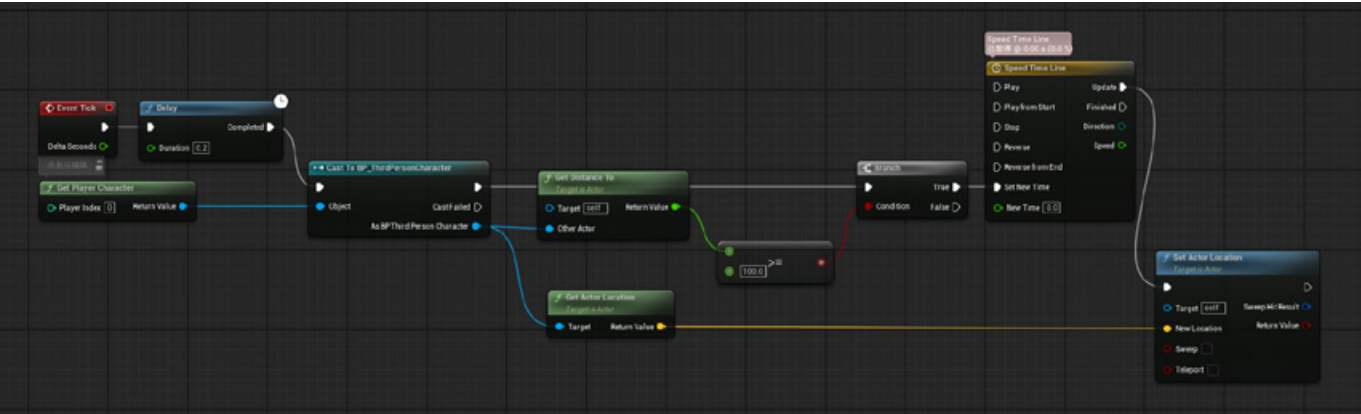
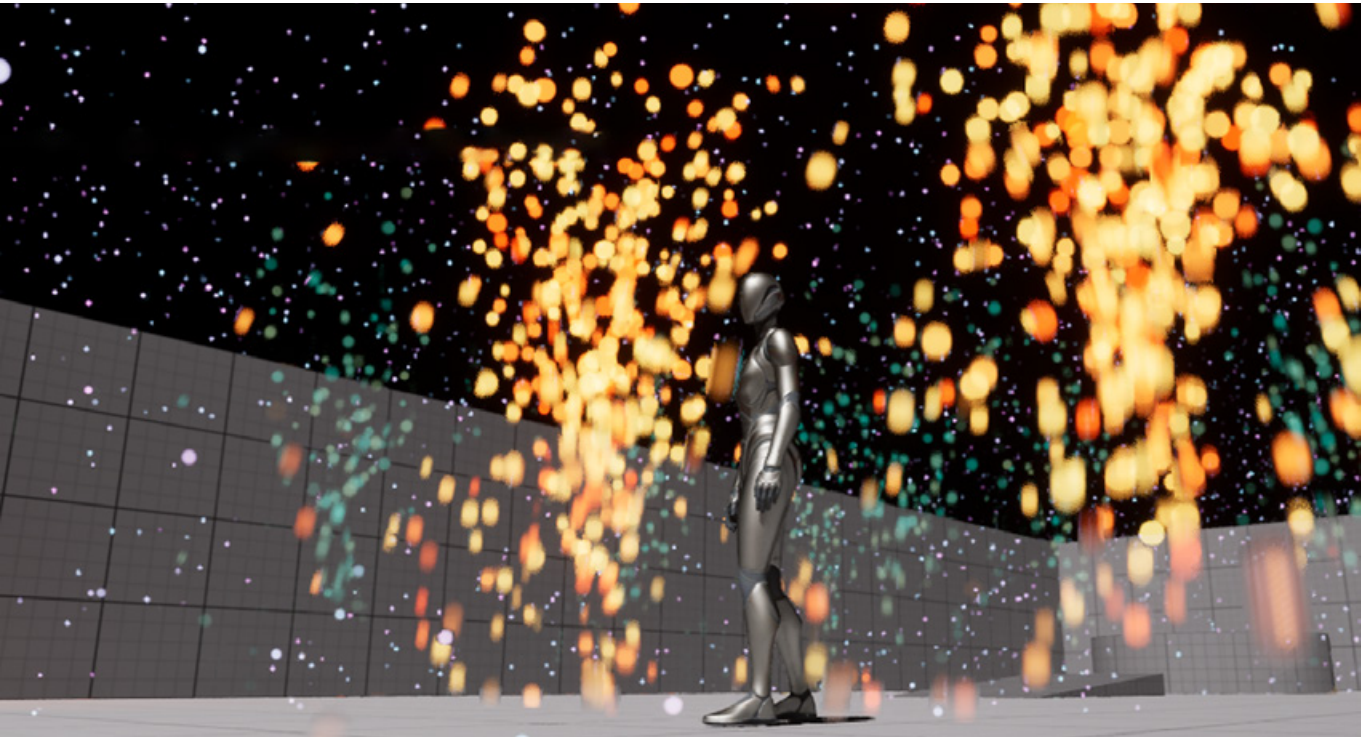
BLUE PRINT - SMASH & TORCH

The world map has twelve pillars, each representing a different Greek god or goddess. As each myth is completed, the associated sign lights up. Players are free to explore the world, but the robot always guides the next journey. The goal is to light up all twelve signs, discovering all Olympians.

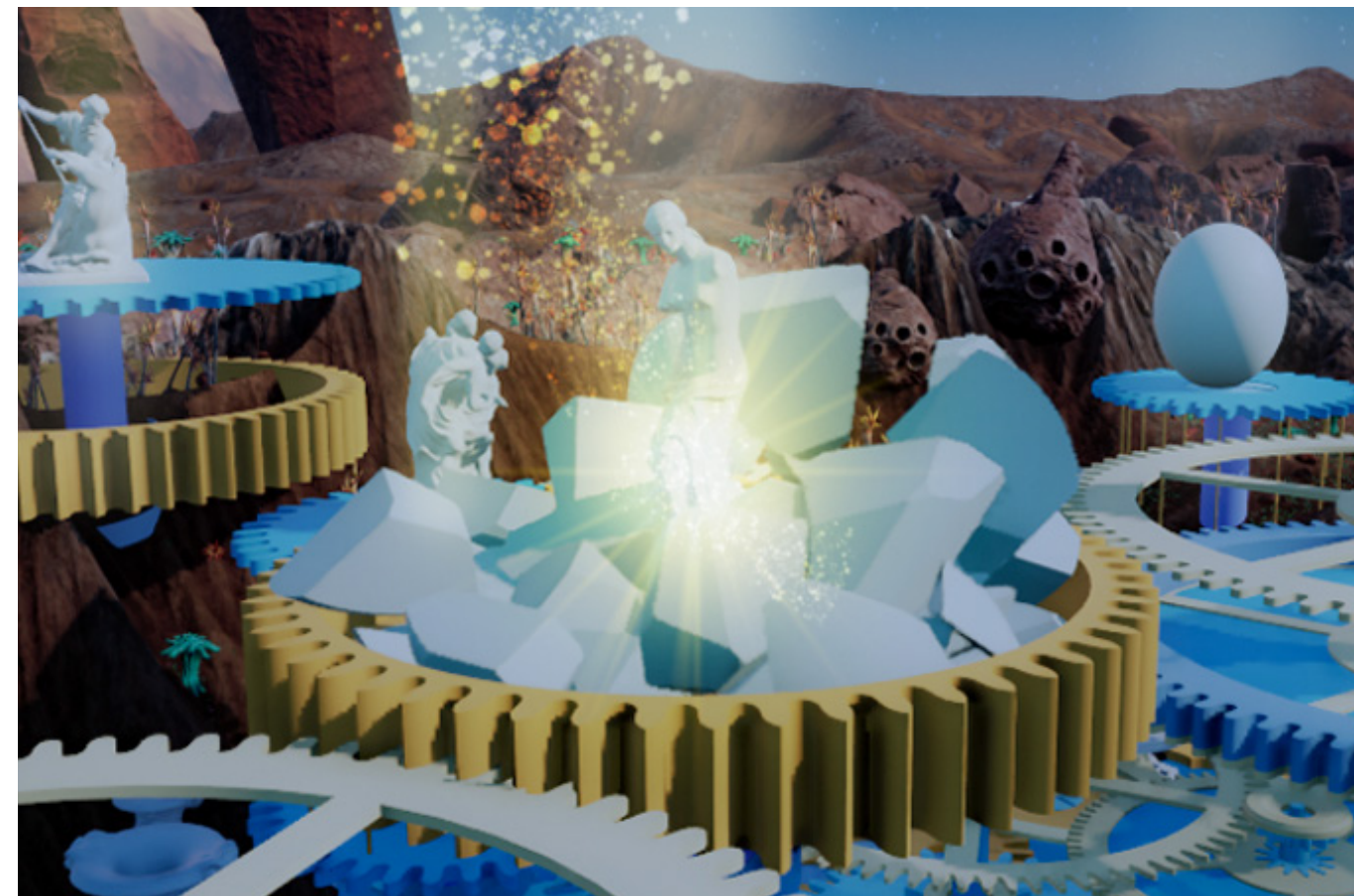
The open landscape was designed to support movement and curiosity, with visual cues leading attention through space. The world is set at night, which allows glowing effects, like sparkles, plants, and platform lighting, to stand out. The ramp structure spirals around the central pillar, gradually elevating the player as they follow the robot upward through light and sound cues.

At the top, the actor finds the egg and the gun. This is the moment of confrontation. Shooting the egg triggers visible cracks and starts the transformation sequence.

Once fully cracked, the egg releases a Greek Olympian. This emergence is accompanied by particle effects, lighting changes, and sound to make it more dramatic and immersive.



WORLD BUILDING



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