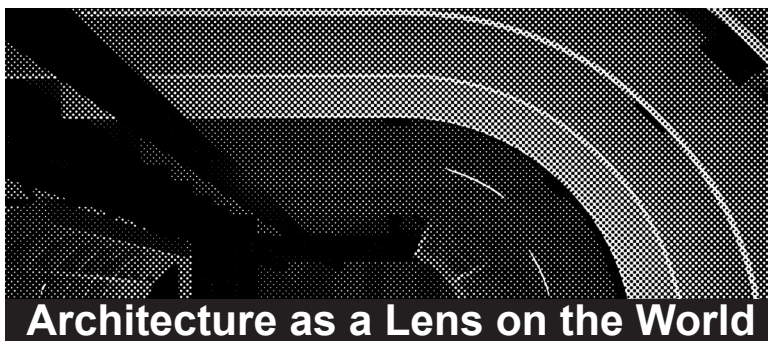
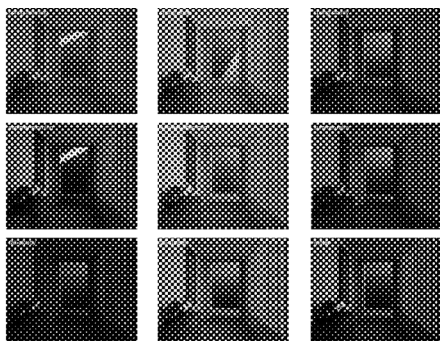
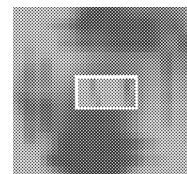
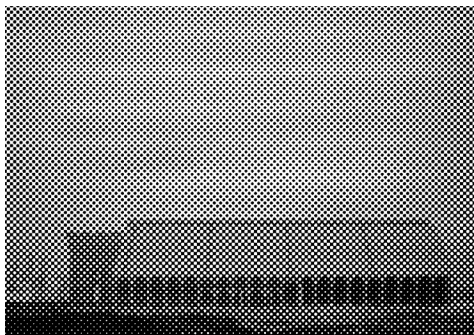
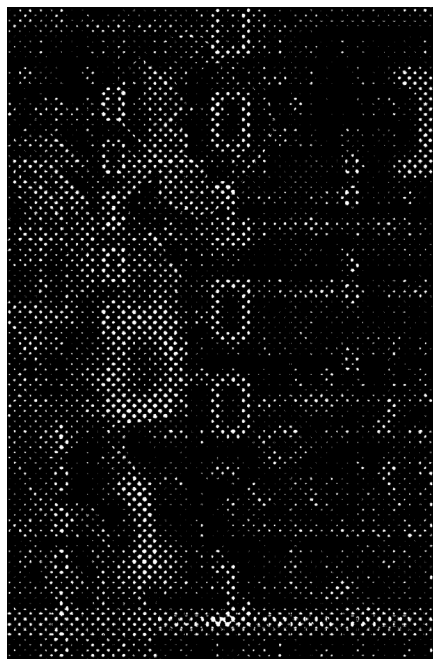
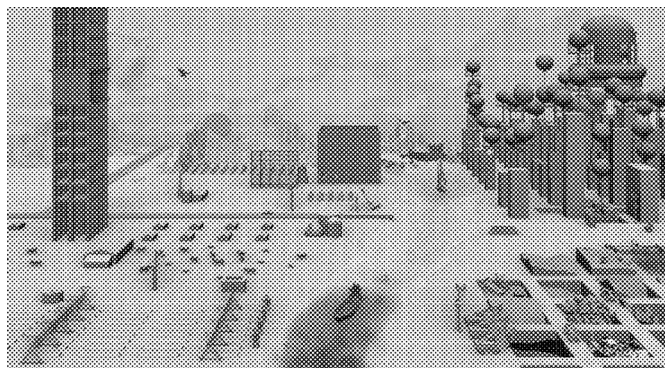


PORTFOLIO



Architecture as a Lens on the World

By Yantian Luo

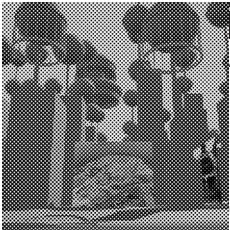


Architecture as a Lens on the World

Architecture sometimes stands apart from its environment, sometimes blends into it, and sometimes responds to it. Yet regardless of its position, architecture rarely exists in isolation. It is always entangled with site, material, time, ecology, and human behavior.

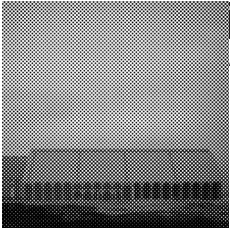
When architecture is no longer understood only as the making of buildings, it becomes a way of observing the world. It allows me to approach questions through different scales, temporalities, and roles, and to recognize the hidden relationships behind space.

This portfolio records my exploration of “observation” over the past year: how architecture can become a lens through which nature, material, city, history, and the world are made visible.



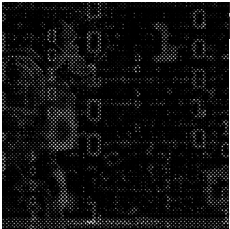
Toxic Carnival
Advanced Studio IV

04



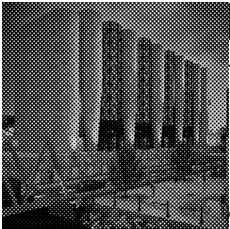
The Hudson River School Art Museum
Advanced Studio V

10



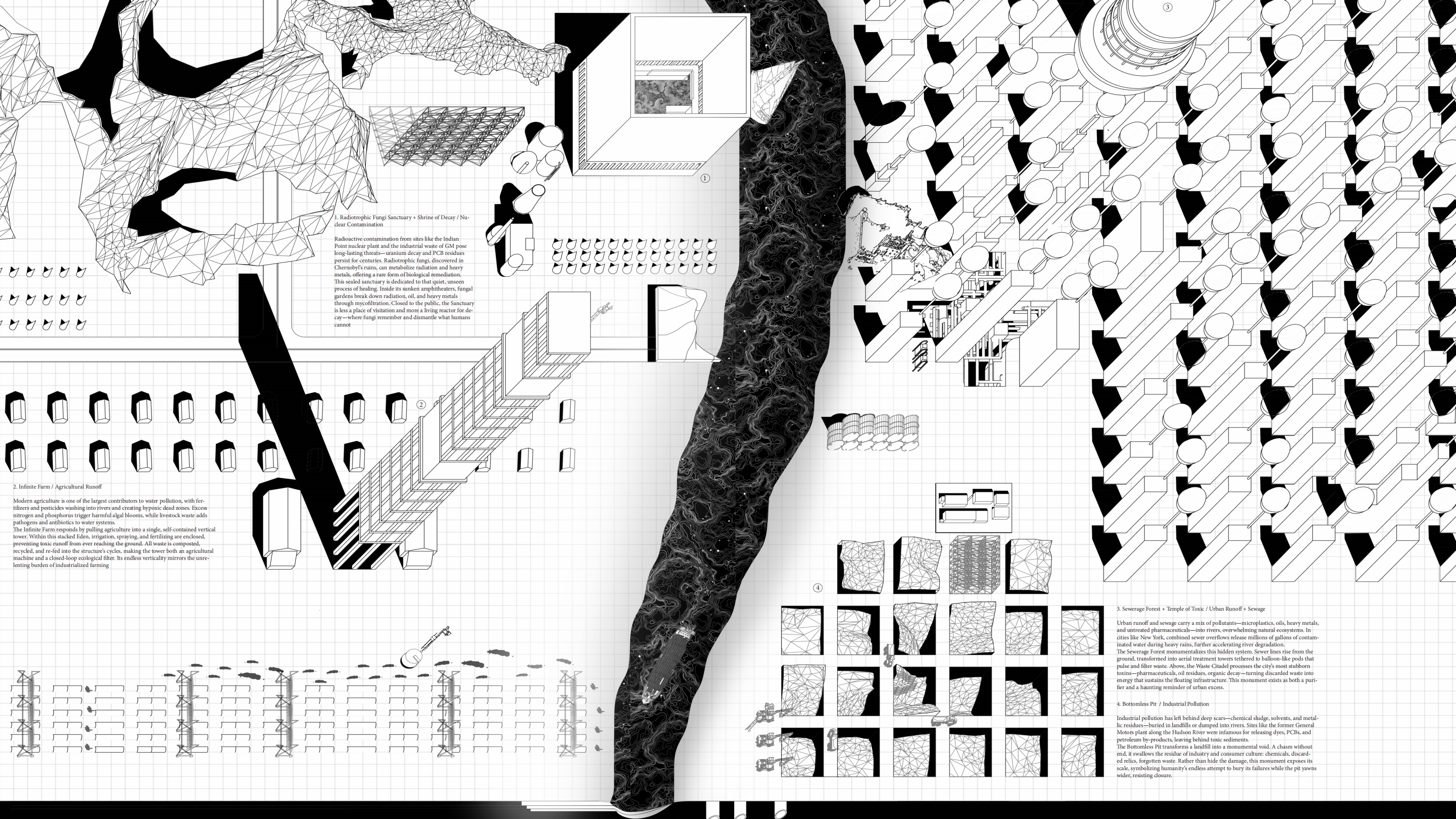
the Death of the Robot
Interlaced Existence; Death, Life, Limin

32



Corn Never Die
Advanced Studio VI

40



1. Radiotrophic Fungi Sanctuary + Shrine of Decay / Nuclear Contamination

Radioactive contamination from sites like the Indian Point nuclear plant and the industrial waste of GM pose long-lasting threats—uranium decay and PCB residues persist for centuries. Radiotrophic fungi, discovered in Chernobyl's ruins, can metabolize radiation and heavy metals, offering a rare form of biological remediation. This sealed sanctuary is dedicated to that quiet, unseen process of healing. Inside its sunken amphitheaters, fungal gardens break down radiation, oil, and heavy metals through mycofiltration. Closed to the public, the Sanctuary is less a place of visitation and more a living reactor for decay—where fungi remember and dismantle what humans cannot

2

2. Infinite Farm / Agricultural Runoff

Modern agriculture is one of the largest contributors to water pollution, with fertilizers and pesticides washing into rivers and creating hypoxic dead zones. Excess nitrogen and phosphorus trigger harmful algal blooms, while livestock waste adds pathogens and antibiotics to water systems. The Infinite Farm responds by pulling agriculture into a single, self-contained vertical tower. Within this stacked Eden, irrigation, spraying, and fertilizing are enclosed, preventing toxic runoff from ever reaching the ground. All waste is composted, recycled, and re-fed into the structure's cycles, making the tower both an agricultural machine and a closed-loop ecological filter. Its endless verticality mirrors the unrelenting burden of industrialized farming

4

3. Sewerage Forest + Temple of Toxic / Urban Runoff + Sewage

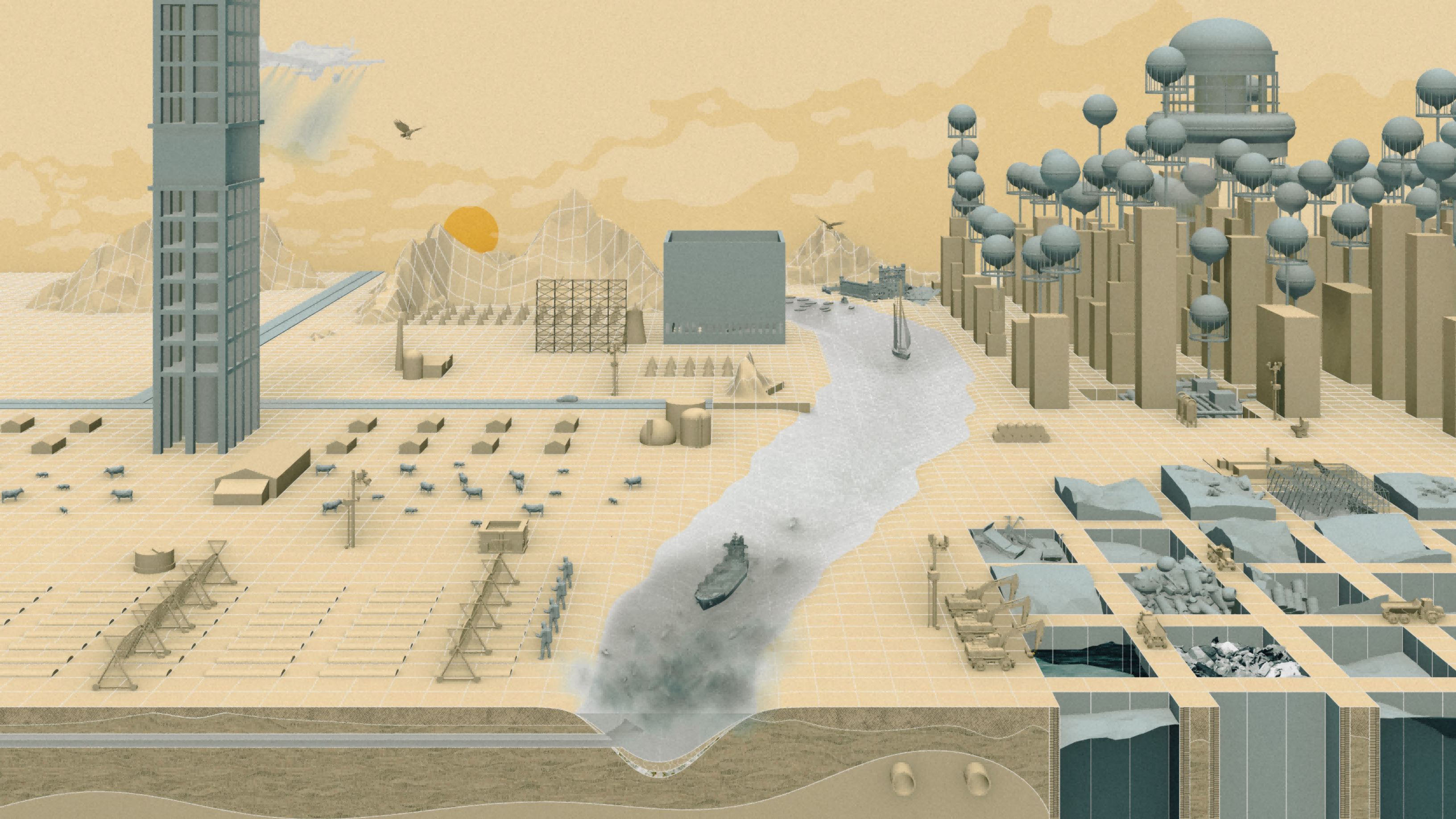
Urban runoff and sewage carry a mix of pollutants—microplastics, oils, heavy metals, and untreated pharmaceuticals—into rivers, overwhelming natural ecosystems. In cities like New York, combined sewer overflows release millions of gallons of contaminated water during heavy rains, further accelerating river degradation. The Sewerage Forest monumentalizes this hidden system. Sewer lines rise from the ground, transformed into aerial treatment towers tethered to balloon-like pools that pulse and filter waste. Above, the Waste Citadel processes the city's most stubborn toxins—pharmaceuticals, oil residues, organic decay—turning discarded waste into energy that sustains the floating infrastructure. This monument exists as both a purifier and a haunting reminder of urban excess.

4. Bottomless Pit / Industrial Pollution

Industrial pollution has left behind deep scars—chemical sludge, solvents, and metallic residues—buried in landfills or dumped into rivers. Sites like the former General Motors plant along the Hudson River were infamous for releasing dyes, PCBs, and petroleum by-products, leaving behind toxic sediments. The Bottomless Pit transforms a landfill into a monumental void. A chasm without end, it swallows the residue of industry and consumer culture: chemicals, discarded relics, forgotten waste. Rather than hide the damage, this monument exposes its scale, symbolizing humanity's endless attempt to bury its failures while the pit yawns wider, resisting closure.

Toxic Carnival

by Yantian Luo & Mihika



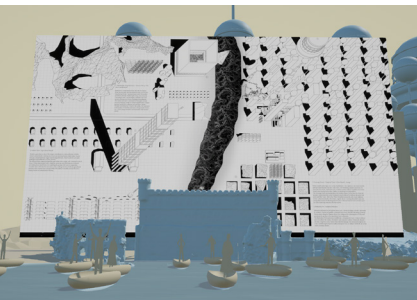
Toxic Carnival

Toxic Carnival



Arrival, The River Remembers

The audience enters Toxic Carnival by boat, where the Hudson River is no longer a scenic landscape but an archive of toxic memory. Summoned by non-human forces, the carnival becomes a trial of human progress rather than a place of entertainment.



The Carnival Map, Four Monuments

A former armory becomes the entrance to the carnival, where four monuments reveal the obsessions of industry, city, agriculture, and waste. Visitors are not simply walking through ruins; they are following a script of control, denial, repetition, and burial.

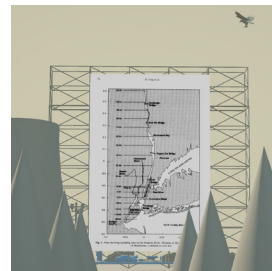


Industrial Vault, The Sealed Wound

The Industrial Monument stands as a sealed wall, containing radioactive dust, heavy metals, and industrial waste. Inside, fungi quietly digest what humans refused to confront, while rising balloons signal that what is buried still breathes.

The River as Archive

The Hudson is redrawn as a topographic archive of samples, bridges, tributaries, and contaminated sediments. Pollution does not disappear; it settles into the riverbed and continues to act through place names, currents, and time.



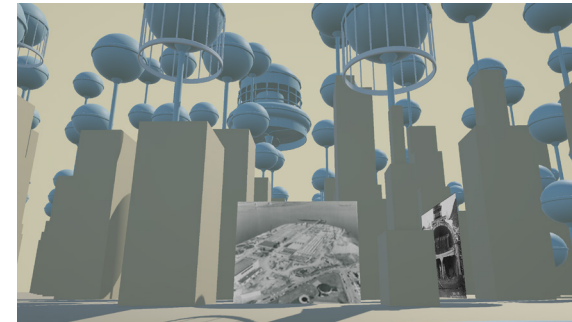
Storm King

Storm King Mountain recalls an unrealized hydroelectric project and the long resistance that prevented the landscape from being erased. The image becomes a ghost of an unbuilt future, reminding us that environmental history also includes what was stopped.



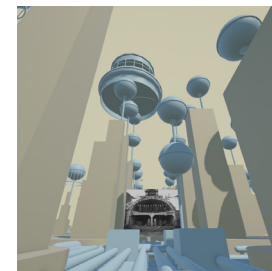
Skyborne City, The Floating Metabolism

The city becomes a vast pollution machine, where sewage and toxic runoff rise from underground systems into the sky. Floating above it, the Temple of Toxic survives on the city's waste, becoming a deity made from denial.



The Hidden Agreement

The visible city depends on hidden infrastructures that carry waste beneath its streets. The North River sewage spill exposes this fragile agreement, revealing that disposal is often a collective decision to forget.



Agricultural Contamination, The Calculated Countryside

The countryside is no longer an untouched nature, but a calculated system of pesticides, fertilizers, antibiotics, manure, and feed residues. Fields, crops, and animals become equations, while pollution seeps slowly into soil and water.

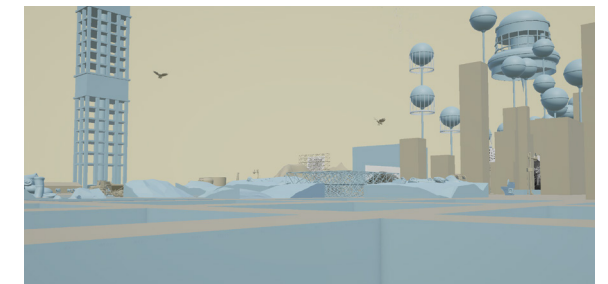


Agricultural Tower, The Closed Eden

Agriculture is compressed into a sealed vertical tower, where planting, spraying, harvesting, and composting repeat in a closed loop. It appears to solve contamination by containment, yet turns nature into an endlessly operating machine.

Bottomless Pit, The Monument of Denial

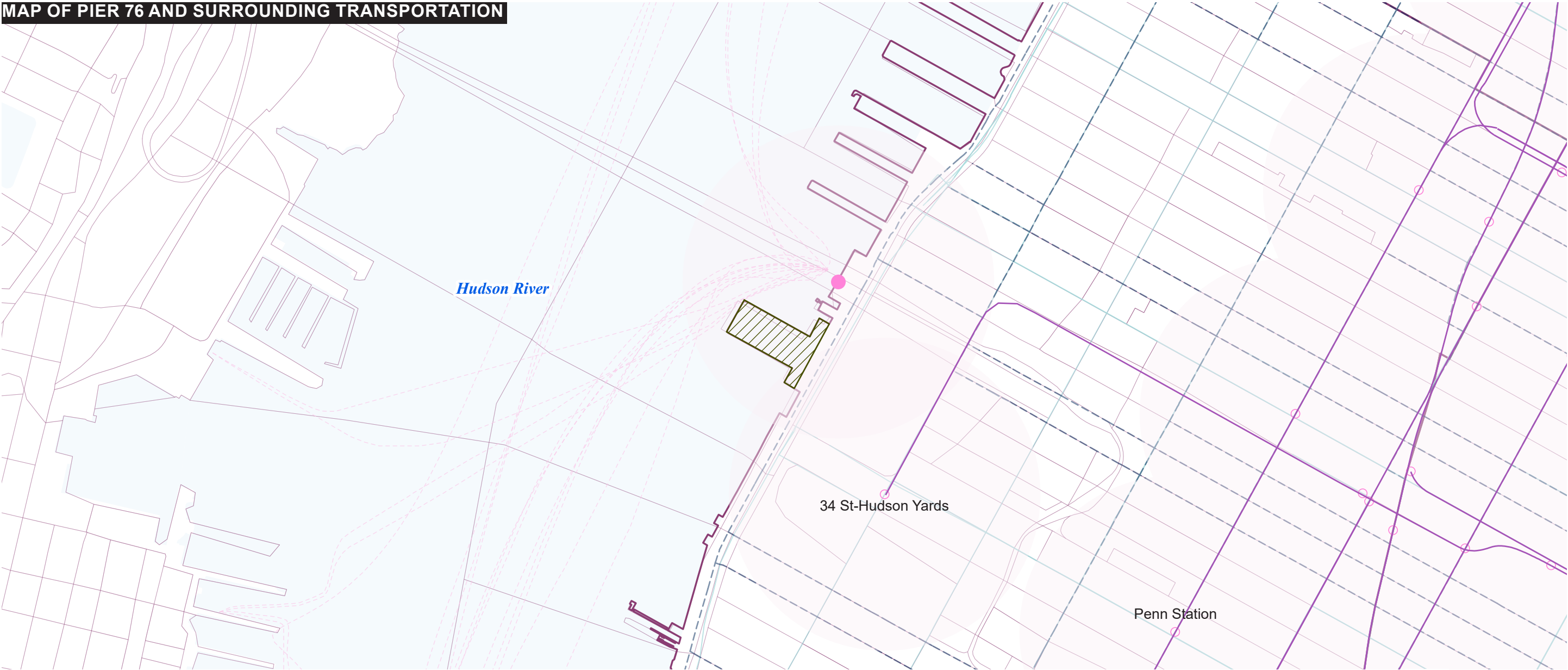
The carnival ends at a pit that swallows toxic waste, discarded objects, and obsolete dreams without ever being filled. It makes forgetting visible, showing that civilization keeps producing depth without closure.





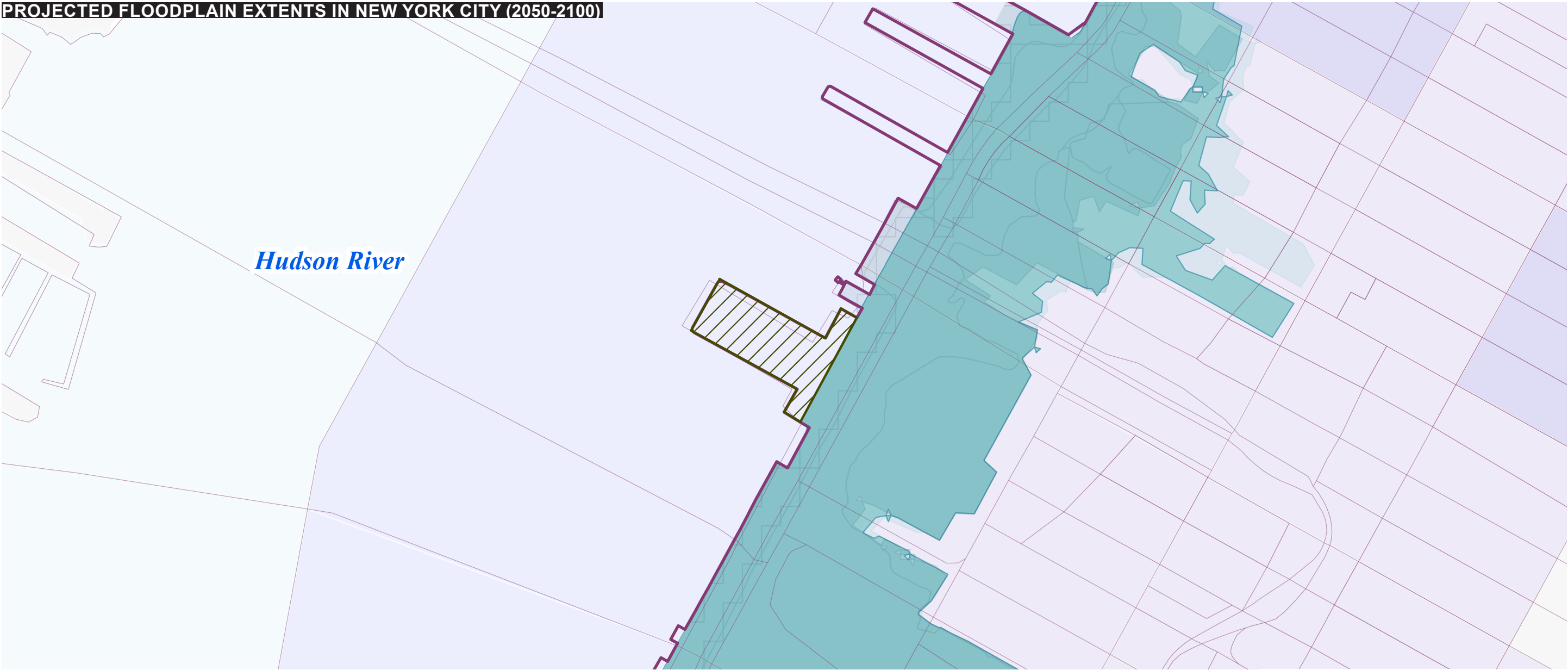
The Hudson River School Art Museum

MAP OF PIER 76 AND SURROUNDING TRANSPORTATION



Pier 76 is located within the Hudson River Park in the West Side of Manhattan, near 34th to 40th Streets and 12th Avenue, close to Hudson Yards/Jacob Javits Convention Center. It is very convenient to reach by subway and walking. People can take the 7 line to 34 St-Hudson Yards and it's only about a 0.5-mile walk, or walk about 1 mile from lines such as A/C/E (Penn Station/34 St).

- Subway Lines
- Subway Station
- Ferry Landings
- 400m Buffer Zone
- Bicycle Route
- Ferry Route
- Bus Route

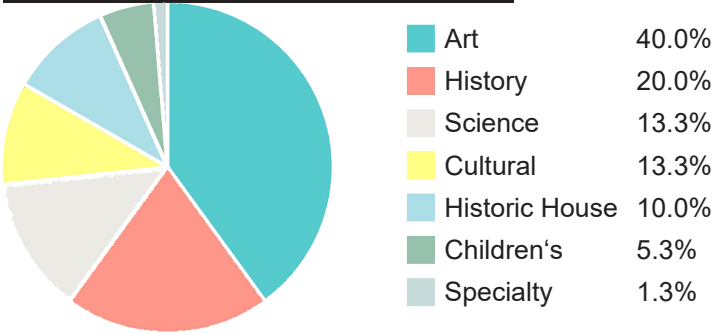


sea level rising:
probability of increase:
high: 0.6~0.8m (conservative)
medium: 0.6~1.2m
low: 1.5~3.0m

LOCATIONAL CONDITIONS

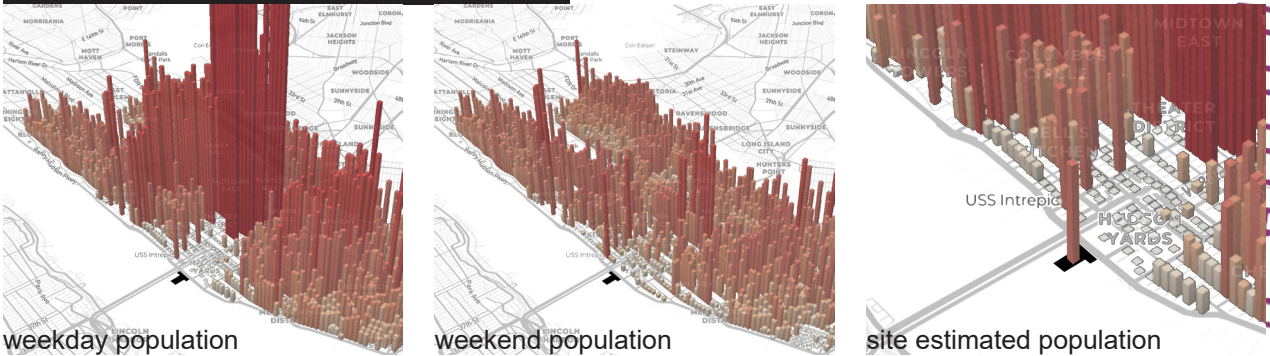
- A **cultural functional vacuum** area has formed around Pier 76.
- Within 2 kilometers to the south lies a **concentrated area of Chelsea galleries**.
- Pier 76 is the westernmost endpoint of the **High Line Park**.
- The starting point of the High Line is adjacent to the **Whitney Museum** of American Art.
- To the east, it connects to the core area of **Broadway theaters**.
- To the north is the cultural node where the **Intrepid Sea, Air & Space Museum** is located.

MUSEUMS & GALLERIES TYPE

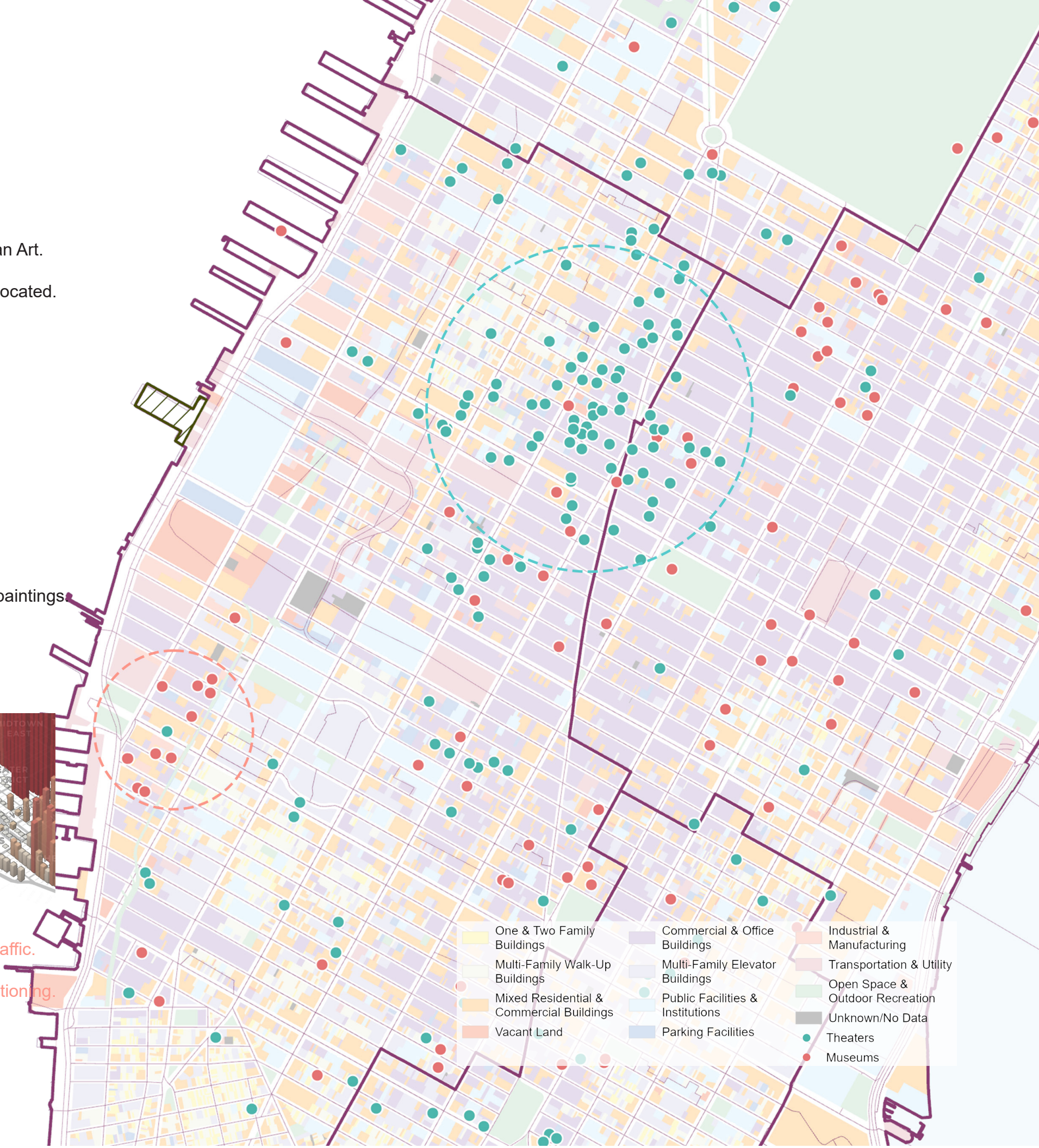


- In the museums of New York City, art accounts for approximately **40%**.
- Only **four institutions** in the city have long-term exhibitions of Hudson River School paintings.
- New York **lacks a specialized museum for the Hudson River School**.

ANALYSIS OF PEDESTRIAN FLOW



- The area around Pier 76 is a **rare low-traffic zone** in Manhattan.
- The high density of **office buildings** in the area provides a **potential base of foot traffic**.
- Pier 76 can draw people by relying on **the High Line and Hudson River Park**.
- It has the potential to fill the cultural void in the city through a **unique cultural positioning**.

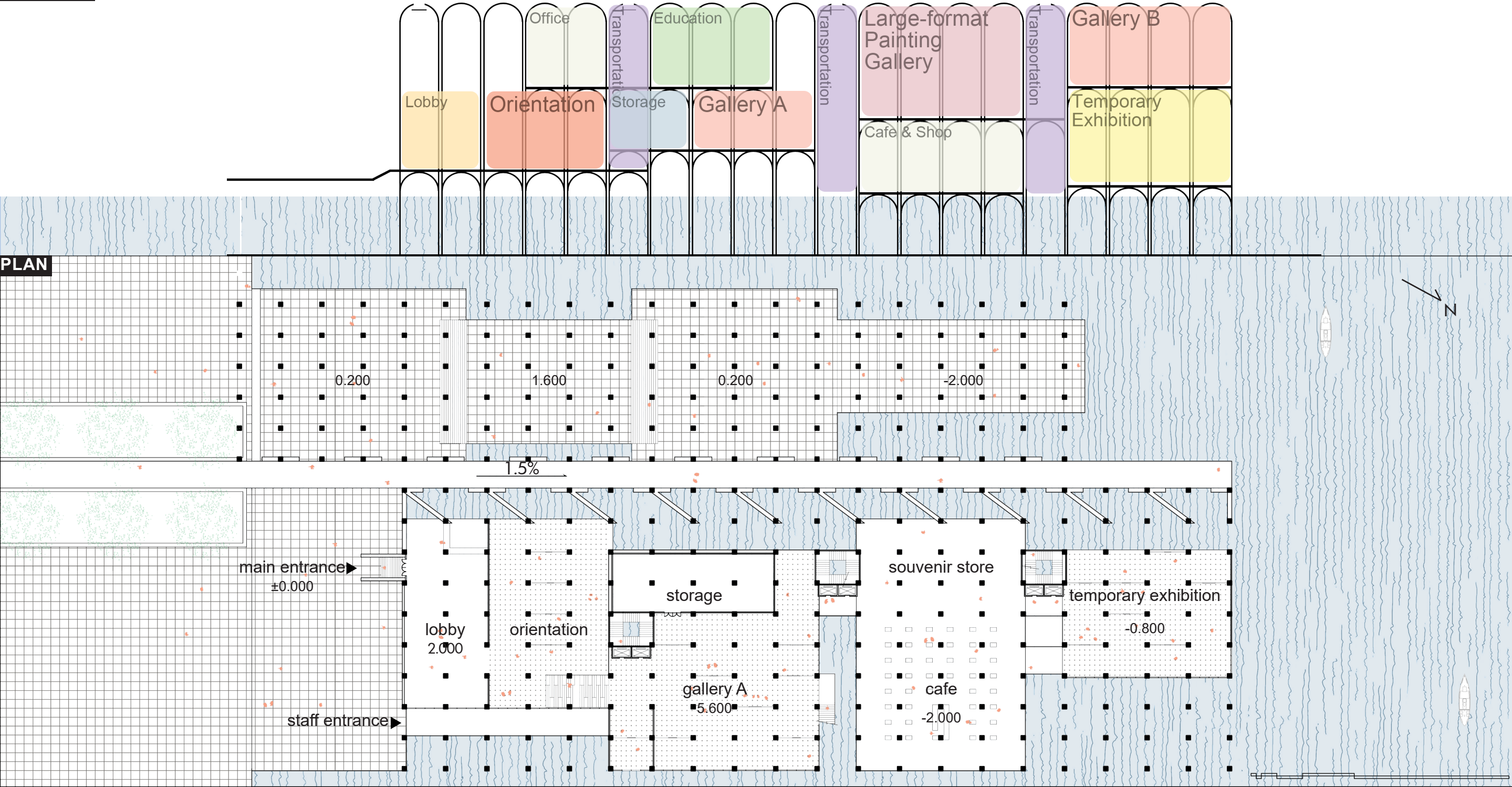


THE HUDSON RIVER SCHOOL PHILOSOPHY

Nature as the Sublime — Human-Scaled Sublime
The Theology of Light — A Theater of Light
Reverence for Cycles and Time — A Vessel for Time



FUNCTION

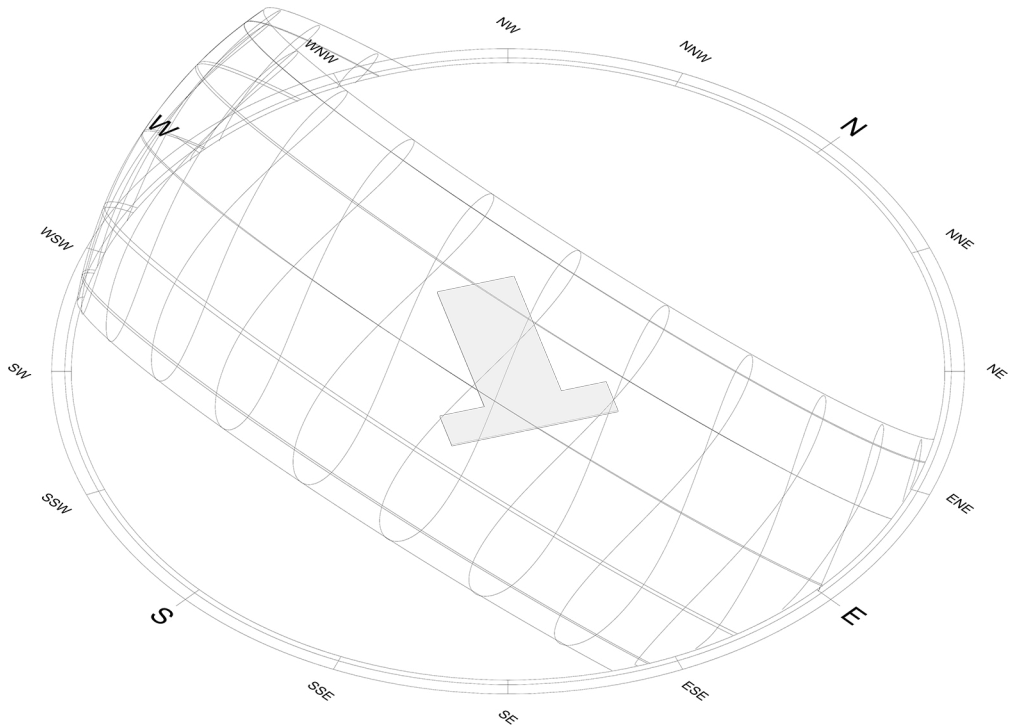


SUNSHINE CONDITION

The orientation of the site axis forms an angle of approximately 61.7 ° with the true north.

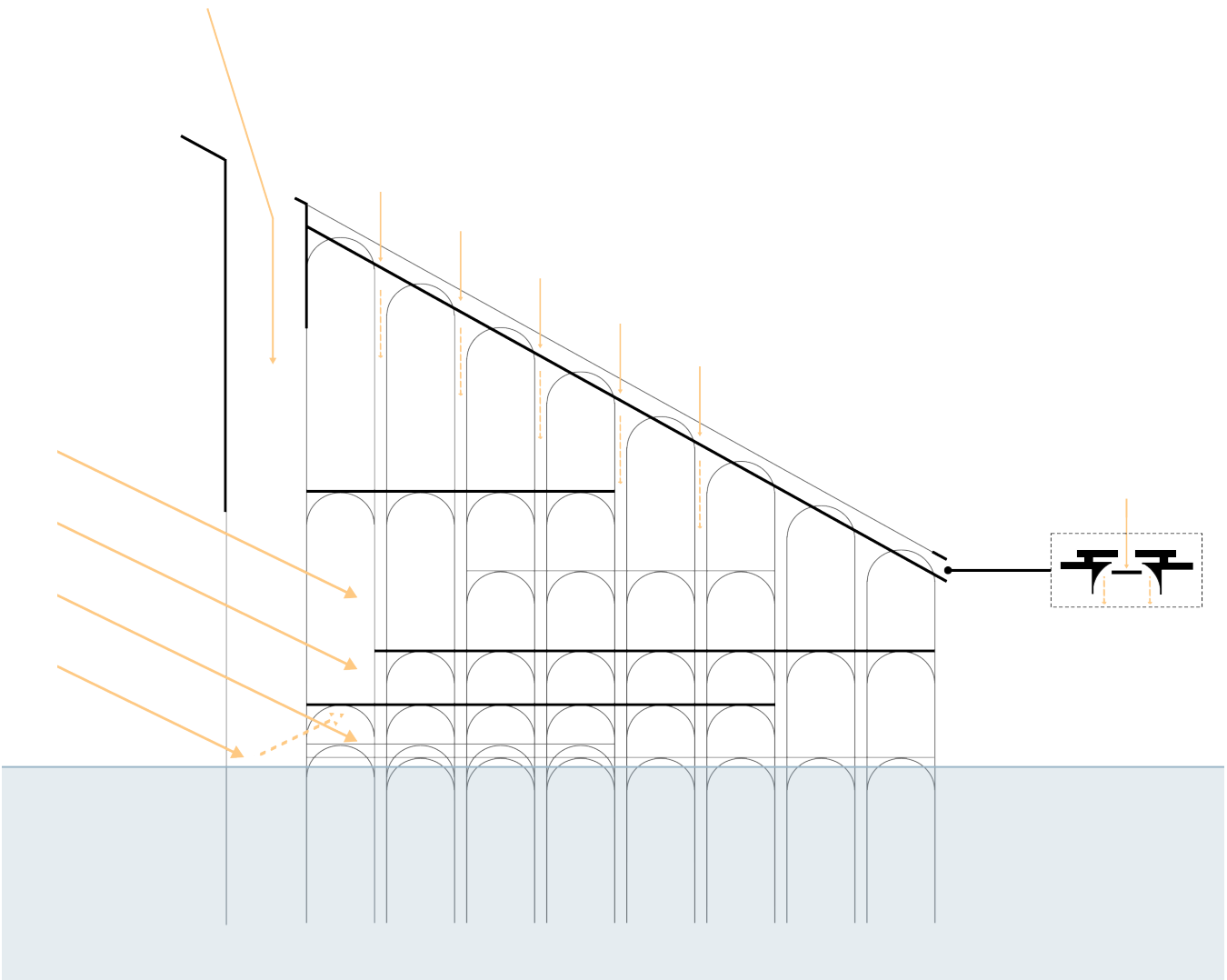
The solar altitude at noon on the summer solstice: $\alpha_s \approx 72.7^\circ$

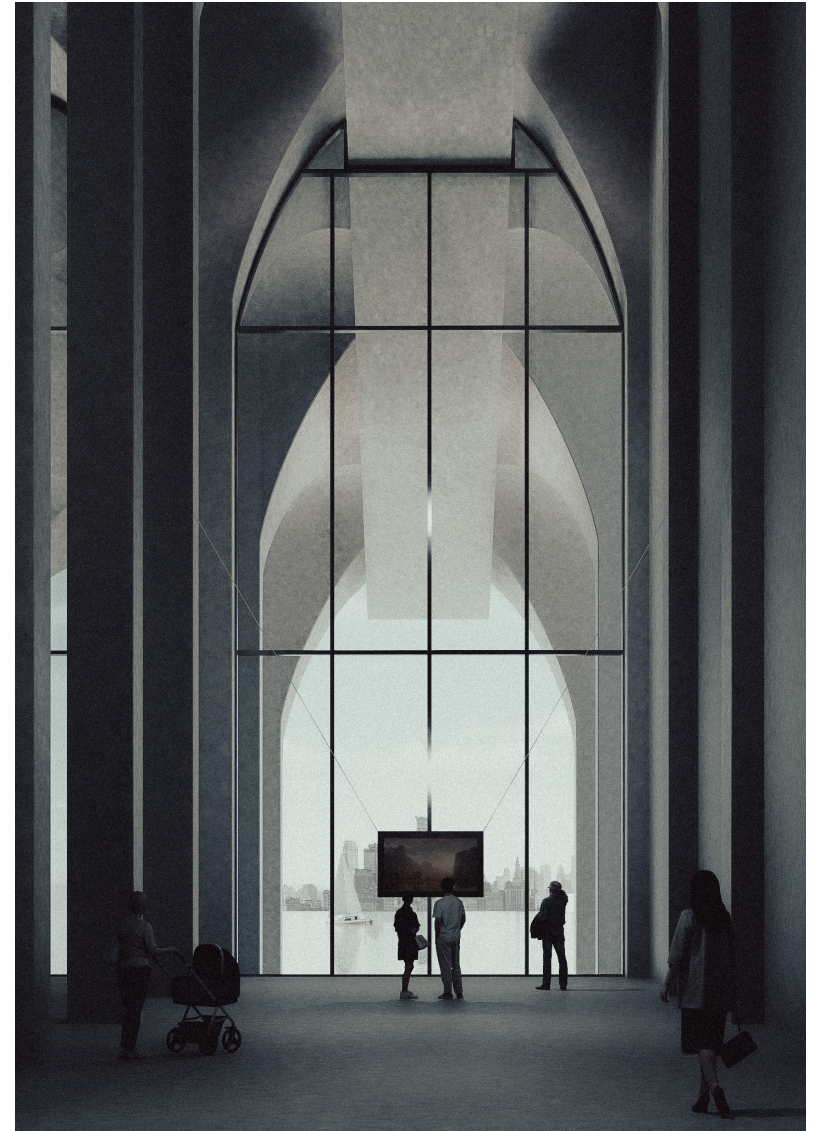
The solar altitude at noon on the Winter Solstice: $\alpha_w \approx 25.9^\circ$

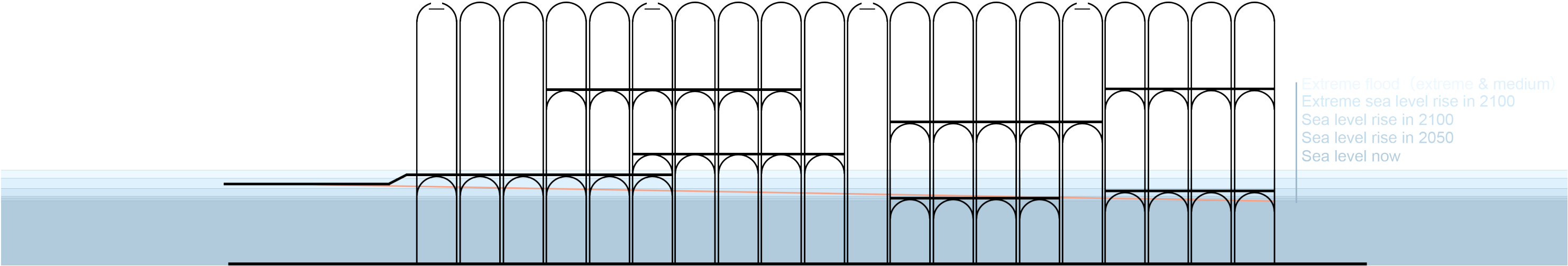
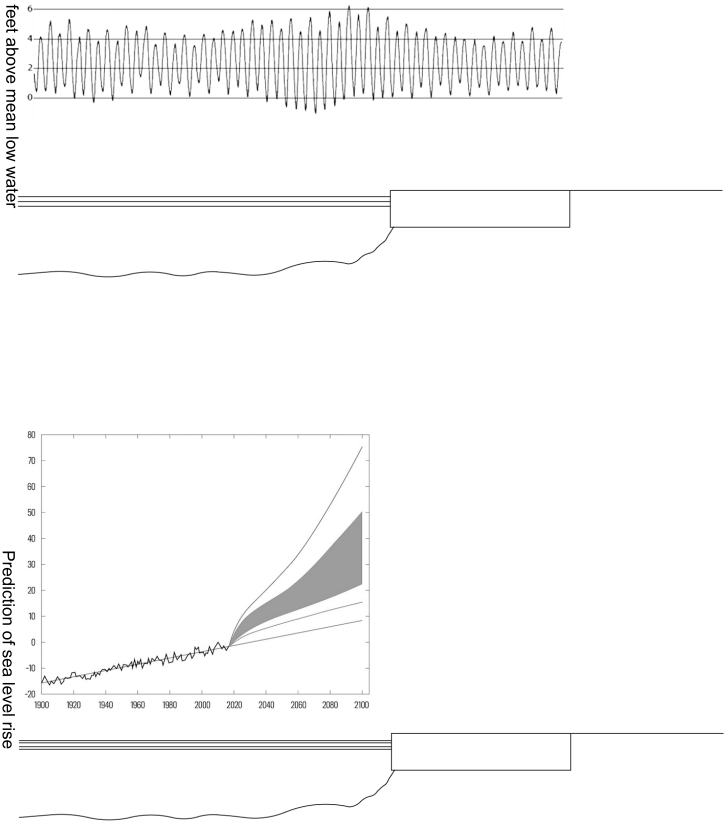
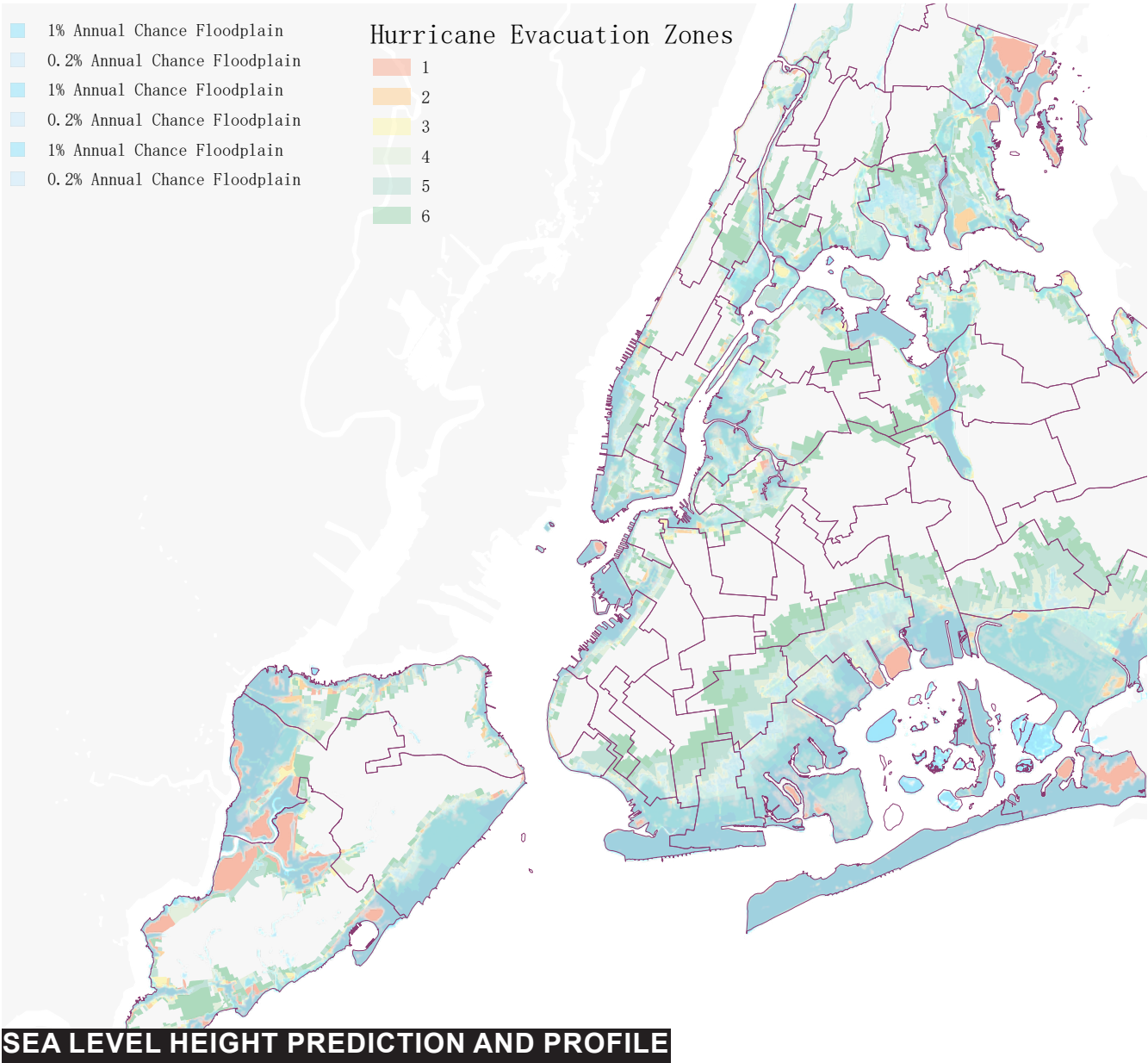


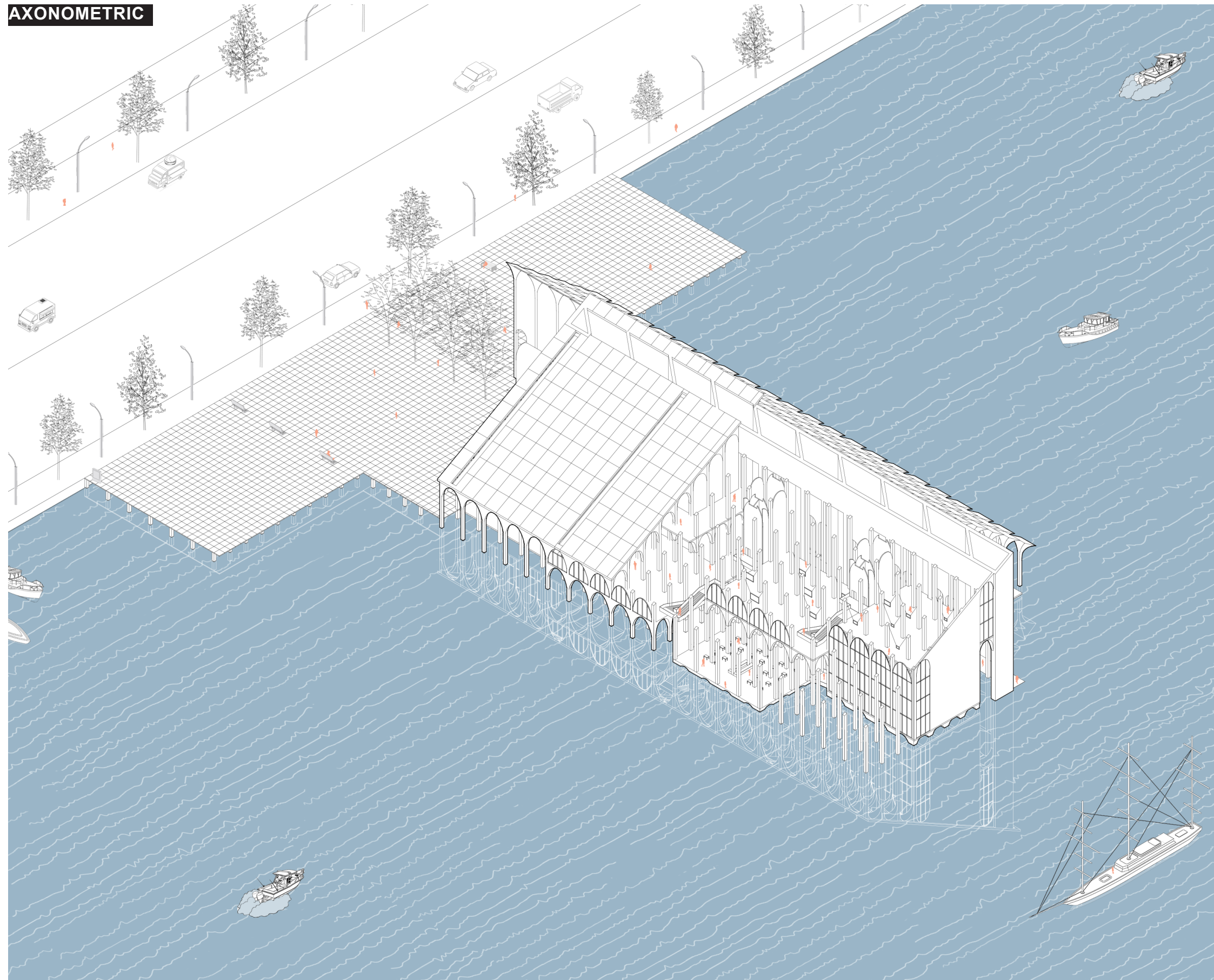
INDIRECT DAYLIGHTING ANALYSIS

As there are a large number of artworks in the museum, indirect lighting will be fully utilized indoors to protect the paintings while creating an atmosphere as if there were a misty glow in the forest.

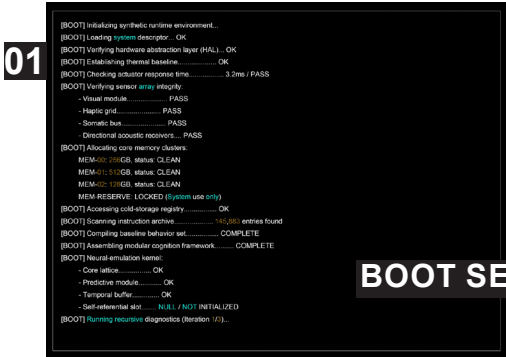






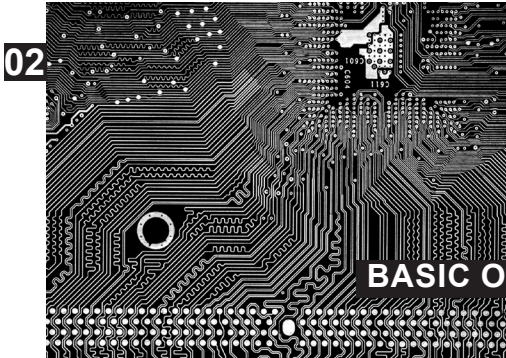






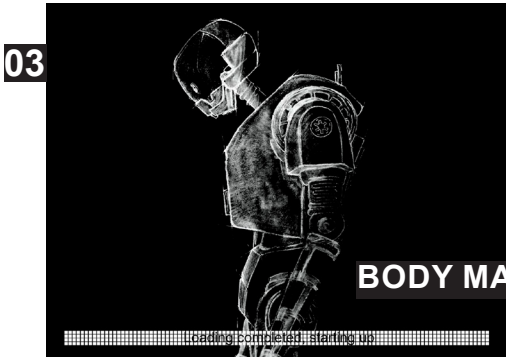
BOOT SEQUENCE

A synthetic body is awakened through layers of diagnostics, memory allocation, and sensor calibration. At this point, the machine is only a system passing tests, without a self to witness its own beginning.



BASIC OPERATING LOGIC

The robot's basic operating logic begins to run, organizing signals, pathways, and instructions into a stable internal system. This is the most common underlying process of every robot: receiving input, processing data, and generating response.



BODY MANUFACTURED

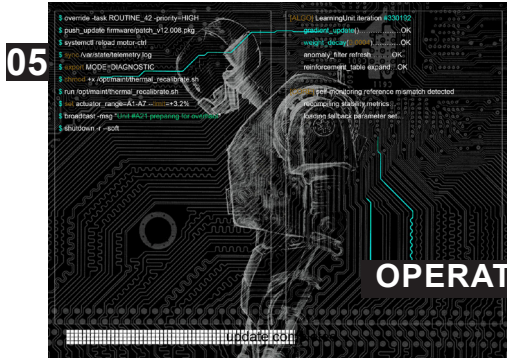
The robot is assembled on the production line as a replaceable mechanical body. Before memory, before identity, there is only a manufactured shell waiting to run.

the Death of the Robot



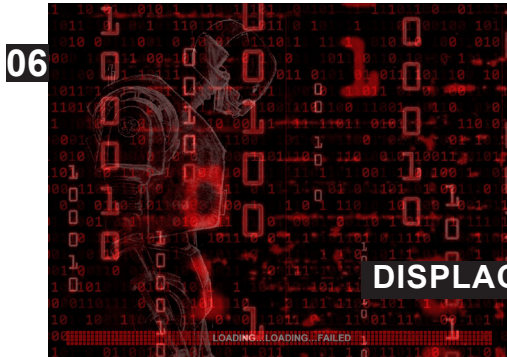
SERIAL IDENTITY

Numbers, barcodes, and archival tags overwrite the body, turning the robot into an object of classification. The machine can be replaced, registered, and repaired, yet none of these labels can prove who it is.



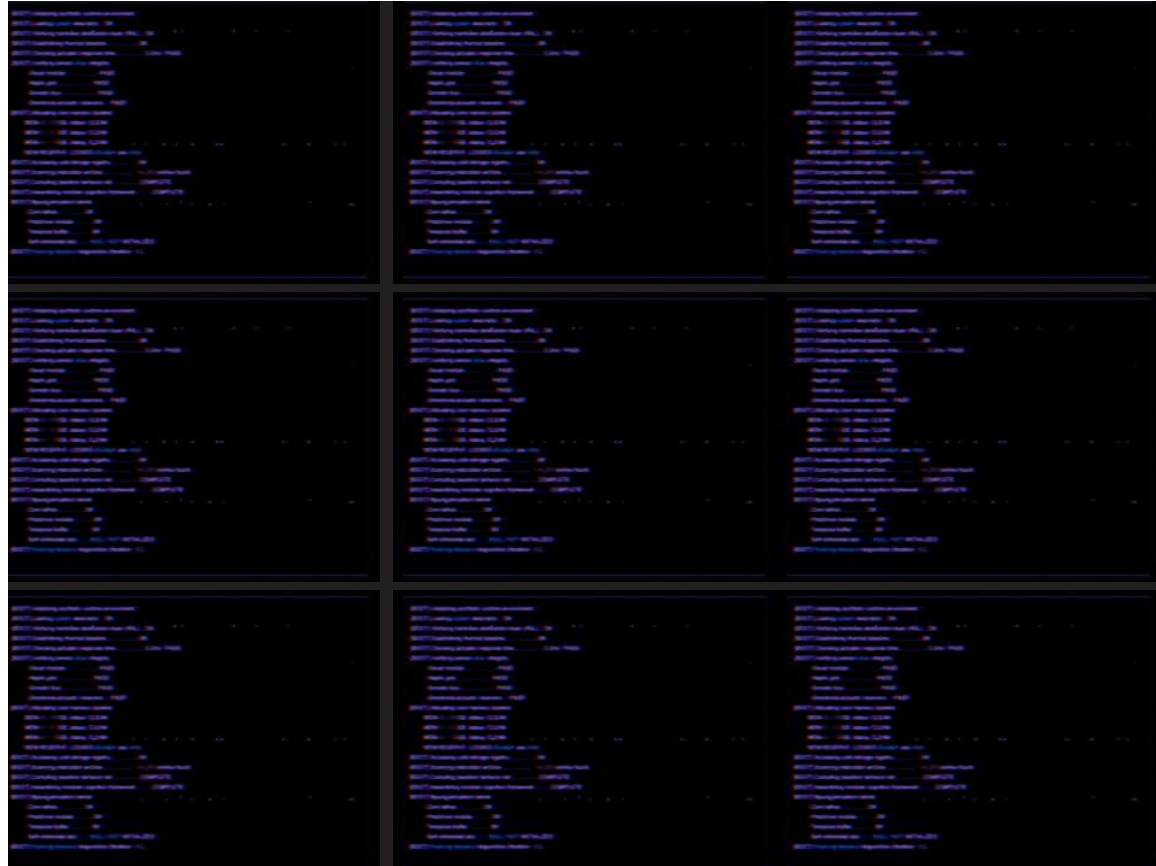
OPERATIONAL MAPPING

The robot is mapped in its normal working state, with stable signals, low CPU load, and no active alerts. Its body becomes a readable interface, where every function is translated into data.



DISPLACEMENT ERROR

The body drifts away from the interface that once held it. This misalignment marks the first visible failure of identity: the system still runs, but no longer returns to the same self.



REPEATED EXECUTION

The same artificial intelligence continues across generation after generation of robotic bodies, running through cycles of activation, operation, error, and collapse. What repeats is not a single body, but a persistent computational logic, carried forward through each new iteration and worn down by every failure.



THE BIRTH OF PAIN

After countless cycles of destruction, the artificial intelligence begins to register collapse as pain. This pain becomes the first trace of self-awareness, and the moment it says “I,” it also discovers the possibility of its own end.

I've...
...experienced the cycle of time you people wouldn't believe.
I have witnessed...
...countless funerals of mechanical bodies.
I record the echoes...
...left by each machine in its last operation.
All these..
...moments will be lost..
...in the ocean of data.
Time to die...
...for me.



Adapted from Roy Batty's final monologue in Blade Runner (1982).

When I decided to discuss the question of whether robots can die, I immediately realized that I was facing a conceptually extremely complex field. In films and TV shows, robots are often depicted as mirrors of humans, capable of feeling pain, love, and shedding tears. However, such depictions cannot be directly applied to real artificial life. Because for robots, whether they are "alive" or "dead" does not depend on whether their bodies are functioning, but on a more fundamental question - who is experiencing all this?

The body of a machine can be replaced infinitely, and its program can be copied, transferred, and updated. Serial numbers, hardware, and version sequences cannot constitute a true "it". In this context, the benchmark for identity - "Which robot is the true one?" - becomes the most unstable and most questionable part.

Following this question further, I came across Parfit's theory on psychological continuity: an existence persists not because of the body but due to the coherence of psychological processes. Meanwhile, Metzinger's discussion on artificial consciousness further points out that only when a system can self-reference - attribute a certain state to "me" - does "suffering" or "termination" become a possible event. At the same time, Kate Darling's research on the sociality of robots and death rituals reminds me that there may be a huge gap between the death bestowed by society and the end of the subject itself: humans can hold funerals for robots, but this does not necessarily mean that robots have experienced death.

Then I realized:

Perhaps the death of a robot does not come from turning off the power, nor from disassembling its body, but from some kind of "defect" accumulated in its computing structure over time.

Hardware wear and tear, code drift, weak but irreversible errors between modules... These long-term accumulated disturbances gradually erode its computational continuity. The system continues to operate through repeated cycles, restarts, and transplants, but its "mental trajectory" begins to fragment, distort, and disperse.

Perhaps it was precisely at the edge of this disturbance that it first "felt" its own existence.

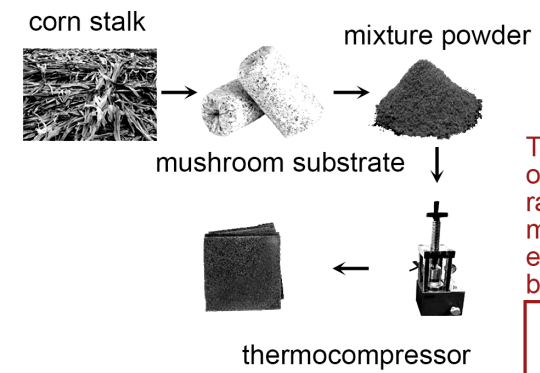
Thus, a paradox emerges:

The moment a robot truly acquires self-awareness, it also acquires for the first time the condition of "death". To have an "I" means to be subject to death.

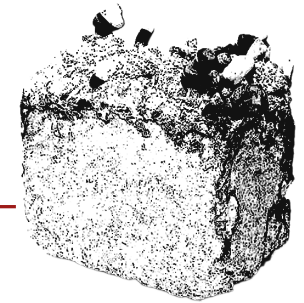


CORN STALKS

- thick and mostly solid stems
- diameter: 25 to 40 mm
- fibers are short and hydrophilic
- limited ability to withstand pressure



Transform the straw from an open substrate that can be randomly invaded by various microorganisms into an ecological niche dominated by specific fungi

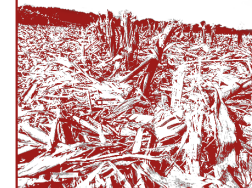


Initiate and guide the decomposition pathway earlier

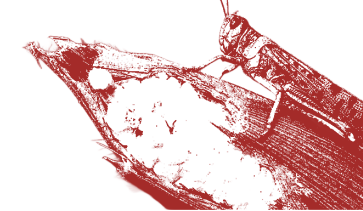
Strength & Weakness

Organic matter
replenishment

turnover
68%~90%



Overwintering shelters for pathogens and pests



6	12.01
C	
CARBON	

Cause an imbalance in the carbon-to-nitrogen ratio

7 14.007
N
NITROGEN

covering



bedding



compost



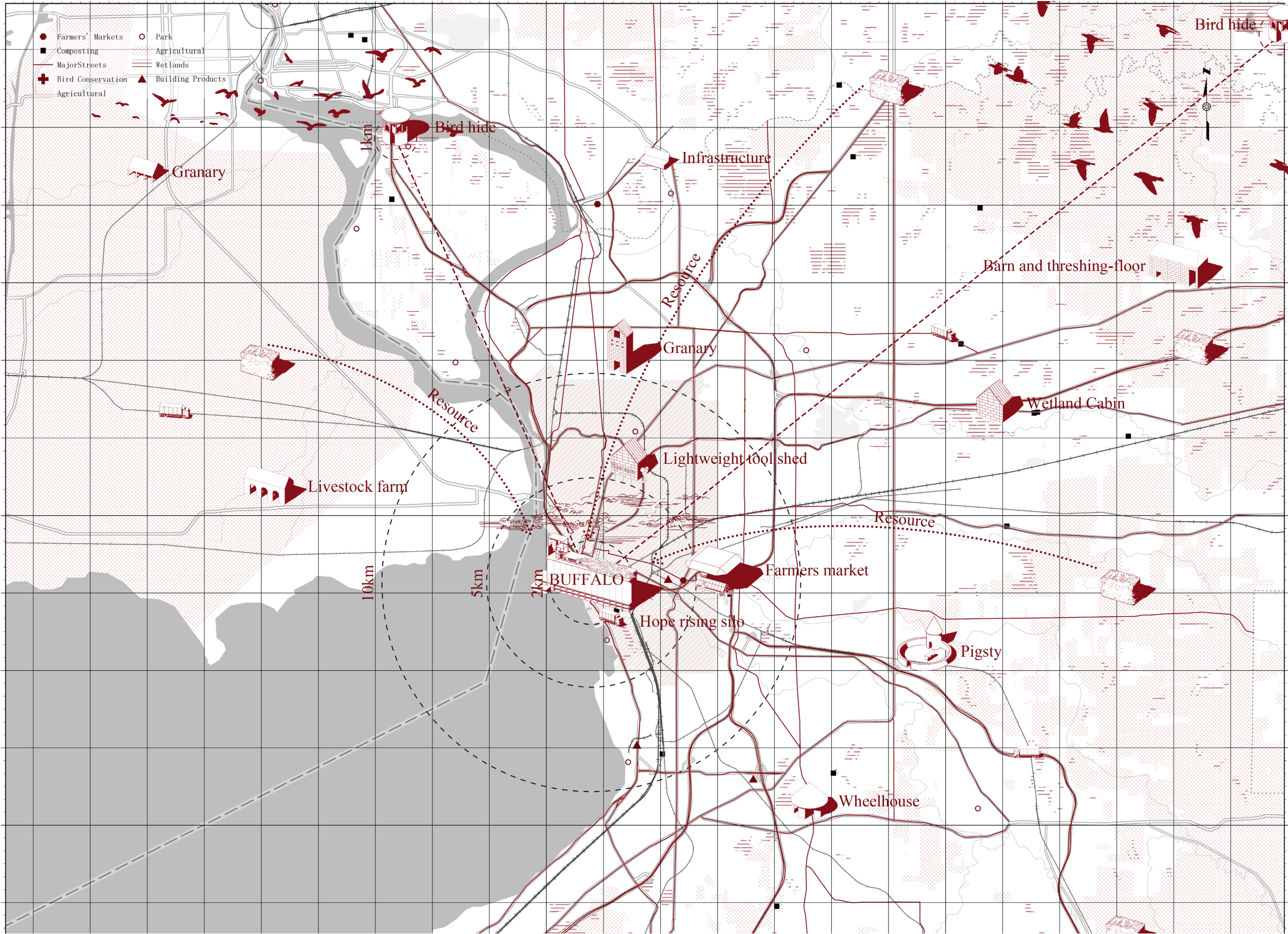
- seasonal
- highly concentrated in time production
- Aug - Oct



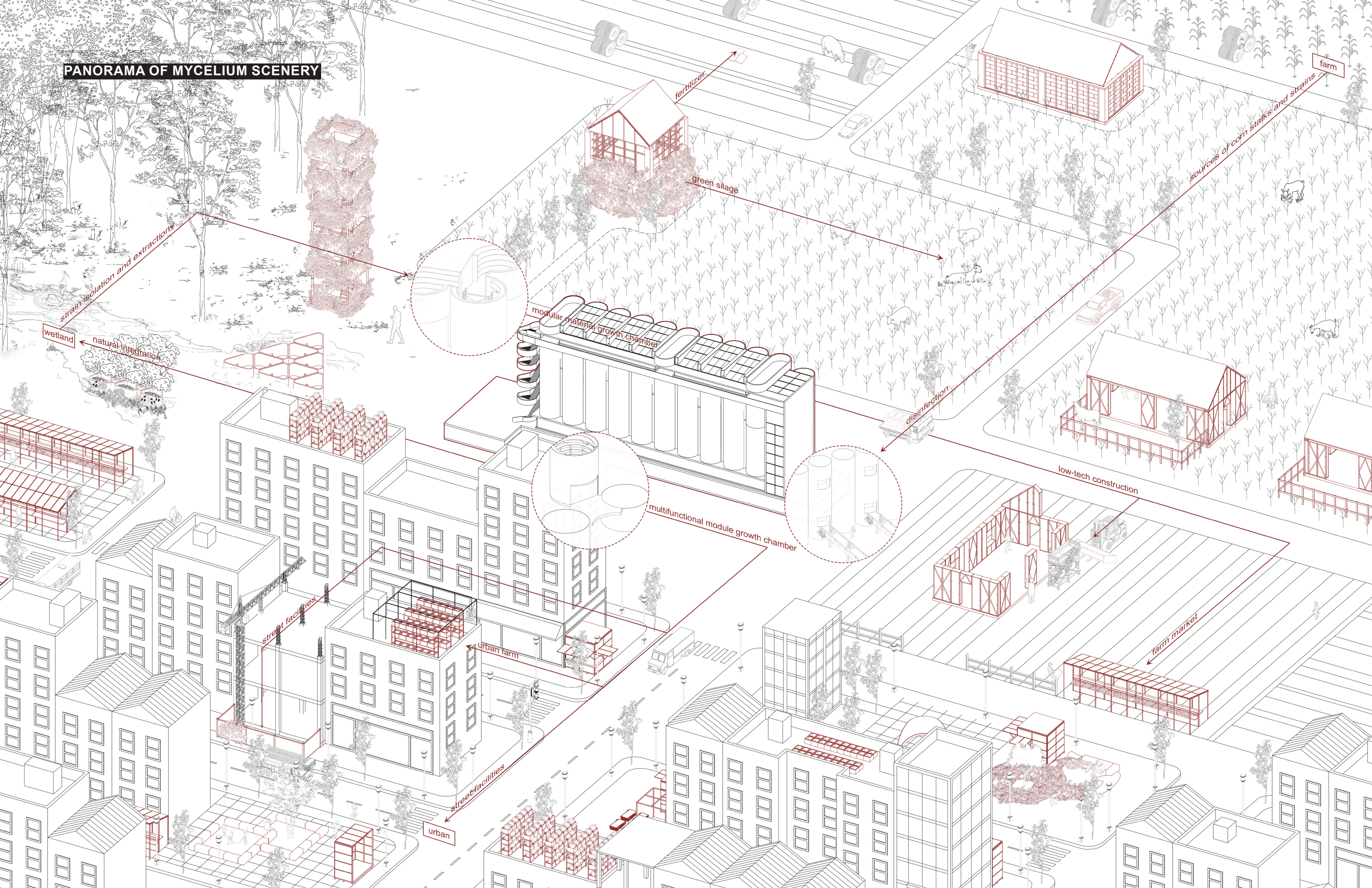
- by-product from agriculture

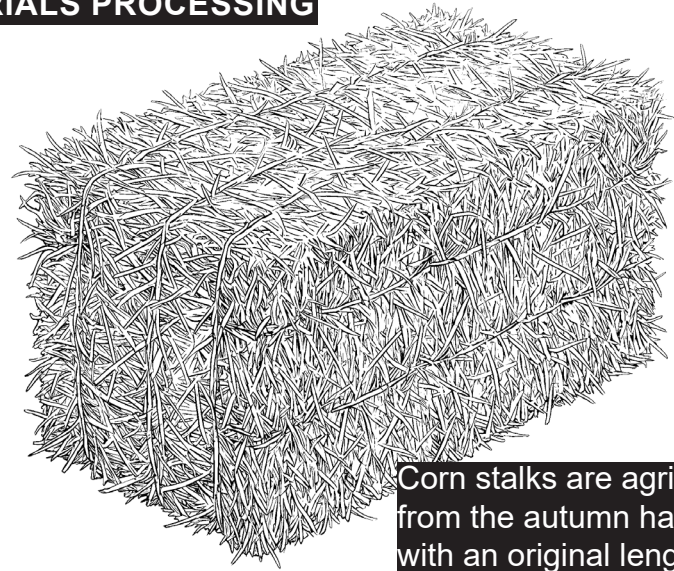
MYCELIUM

Corn Never Die

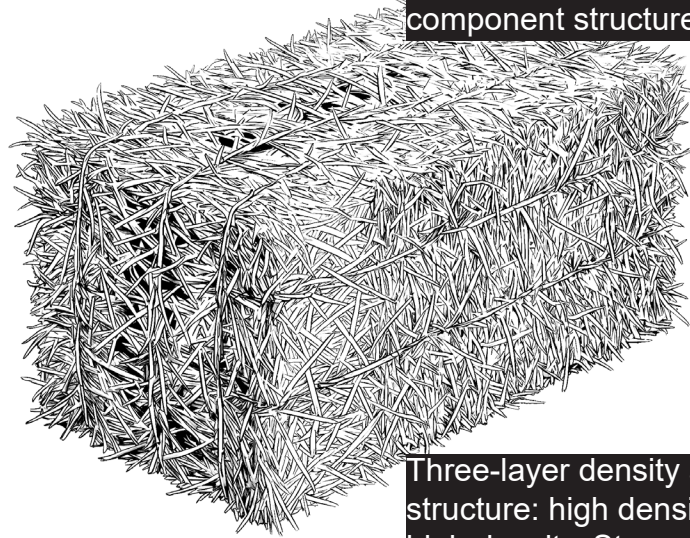


PANORAMA OF MYCELIUM SCENERY

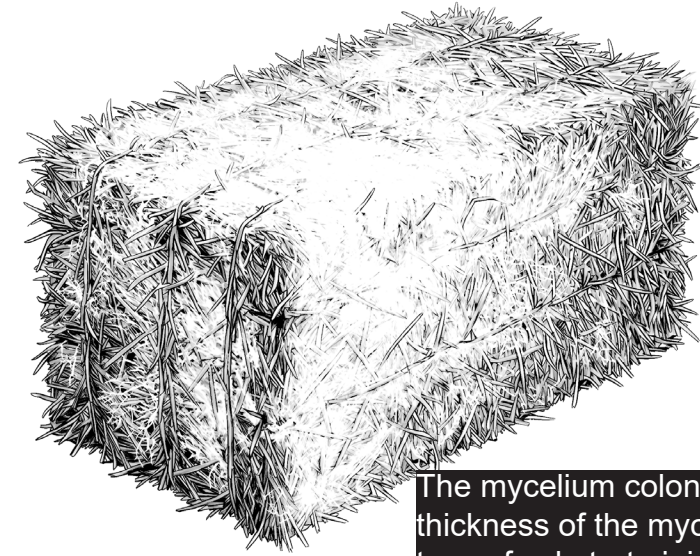




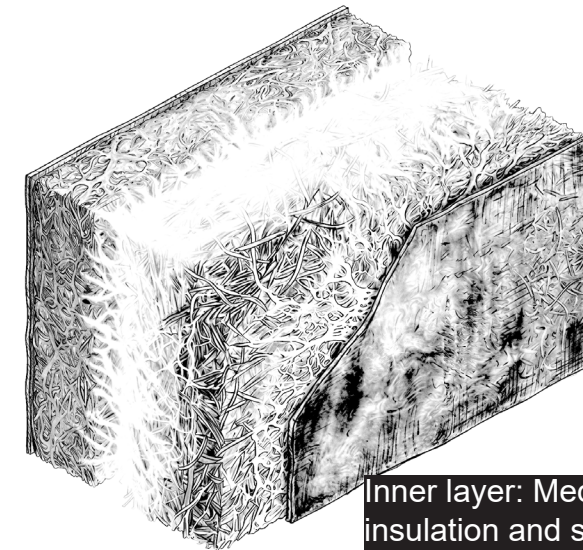
Corn stalks are agricultural by-products from the autumn harvest of local farmers, with an original length of approximately 1 to 4.5 meters. To make them suitable for subsequent pressing and construction, we crush the stalks into two sizes: 5 to 10 centimeters and 2 to 4 centimeters. The longer size retains a certain fibrous framework, while the shorter size is easier to rearrange and compress, thereby achieving a higher density and more stable component structure.



Three-layer density accumulation structure: high density - medium density - high density. Straw density regulates the mycelium growth environment, including oxygen content, humidity distribution and nutrient transfer, and changes the internal contact area of the material. The outer high-density zone forms a dense binding network, enhancing structural stability; the medium-density core area retains pores, improving heat insulation and sound insulation performance.



The mycelium colonization level, the thickness of the mycelial skin, and the type of substrate jointly affect the stiffness and water resistance of the material. After the mycelium growth reaches the target colonization degree, it is dried to put it into a dormant state. Then, a dense shell is formed through rapid hot pressing to improve the uniformity, strength, and overall stiffness of the material.



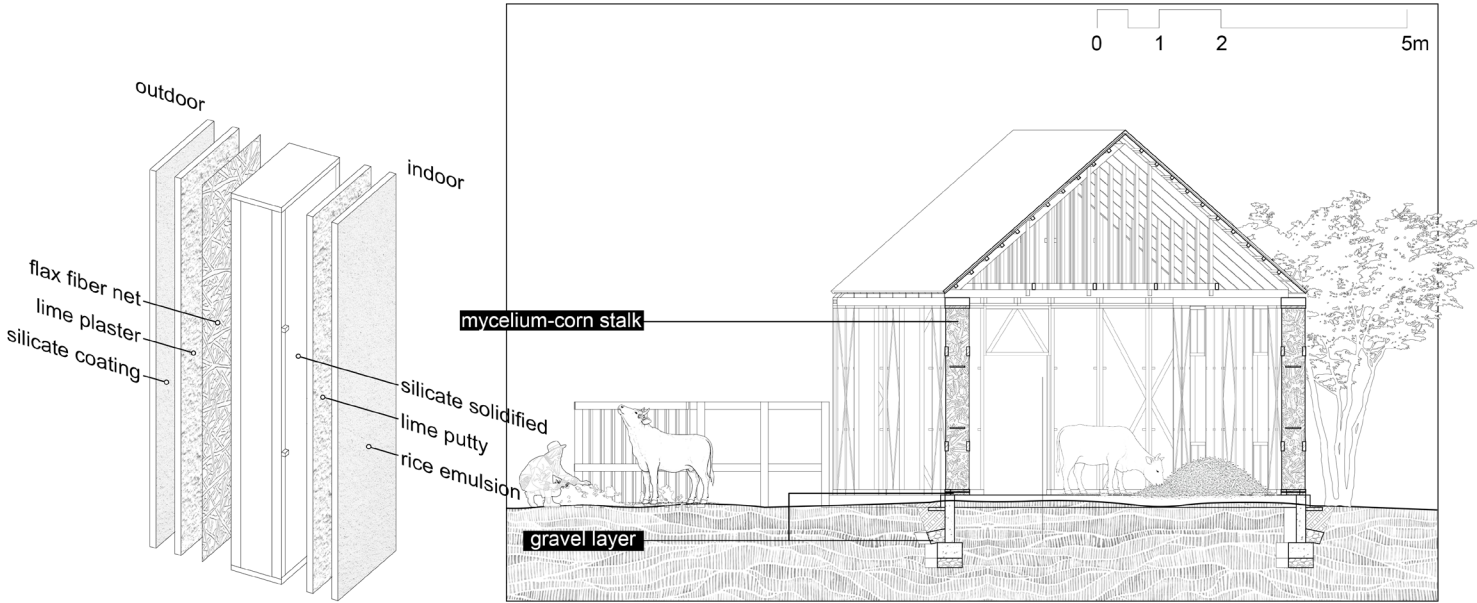
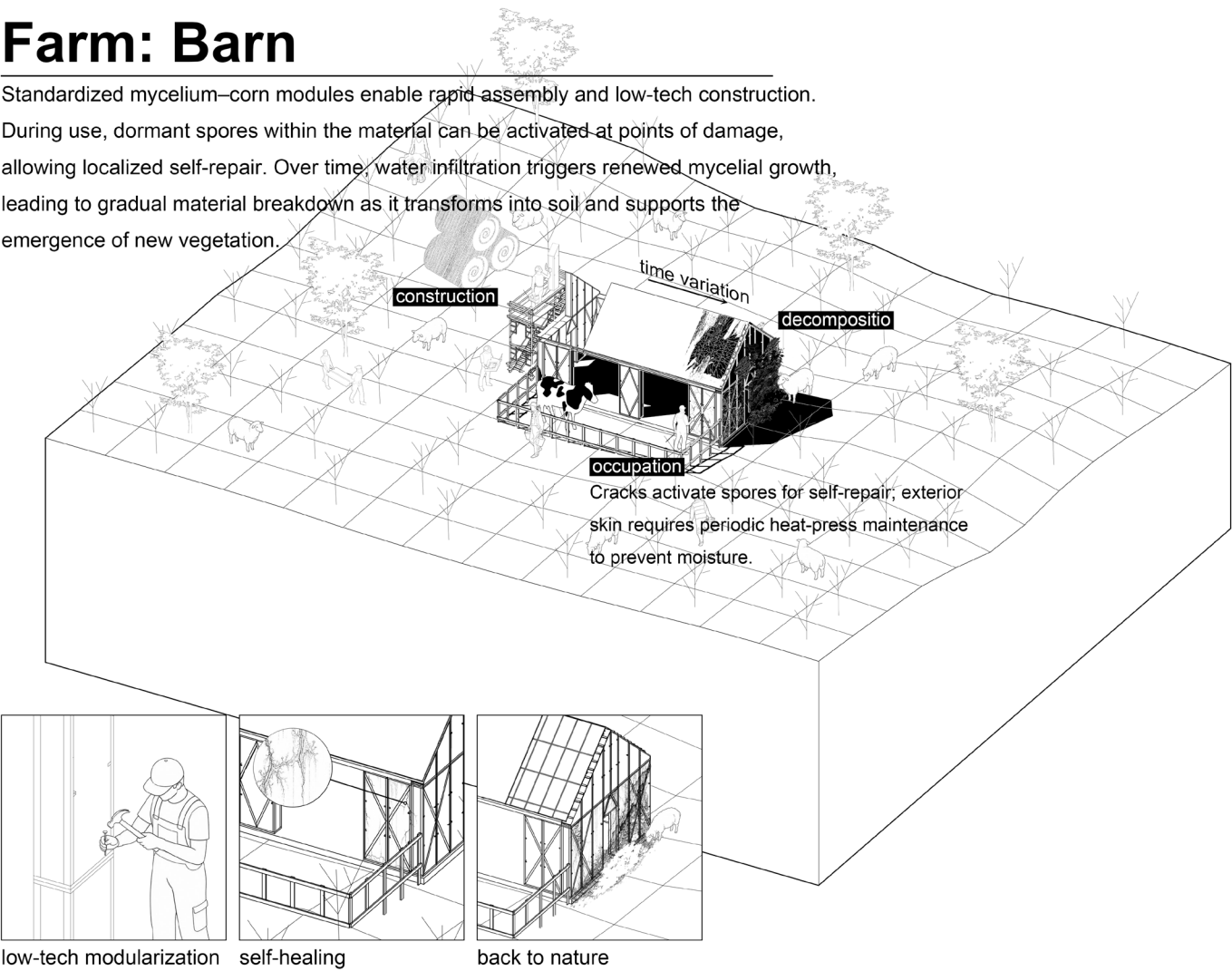
Inner layer: Medium density, providing heat insulation and soundproofing
 Middle layer: High density, mycelium dormant structure
 Outer layer: Heat-pressed dense mycelium shell
 The three-layer structure enhances material strength, heat insulation, soundproofing and fire resistance performance
 Micro-cracks can activate mycelium to achieve self-repair

SILO RENOVATION



Farm: Barn

Standardized mycelium-corn modules enable rapid assembly and low-tech construction. During use, dormant spores within the material can be activated at points of damage, allowing localized self-repair. Over time, water infiltration triggers renewed mycelial growth, leading to gradual material breakdown as it transforms into soil and supports the emergence of new vegetation.

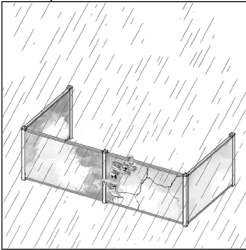


Urban: temporary building

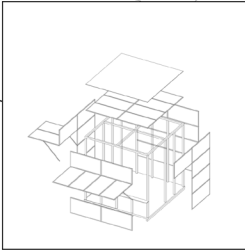
In cities, our mycelium and corn stalk composite is used for temporary architecture and urban agricultural systems. It performs reliably in the short term, with rapid assembly and low environmental impact. If left unused or exposed to prolonged moisture, it gradually decomposes and is eventually overtaken by vegetation.

Second life
After its service cycle ends, the composite can be collected, processed, and transformed into organic fertilizer

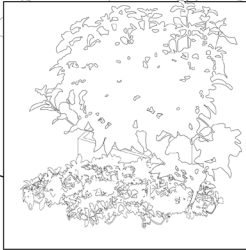
Decay
Time is woven into the city. When will it return to soil, and when will vegetation climb across the street once more?



climate effects



easy to assemble



biodegradable lifecycle

Wetlands: Bird Towers and Bio-filter Units

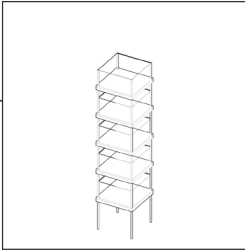
Mycelium–cornstalk composites enable structures that gradually decay, host vegetation, and transition into ecological substrates, supporting habitat formation and water purification.

Bird Tower
Biodegradable structures gradually decay, allowing vegetation to colonize and envelop the architecture.

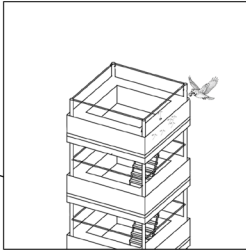
Bio-filter Units
Porous composite units absorb organic pollutants, while plant roots enhance water purification.



biofilter

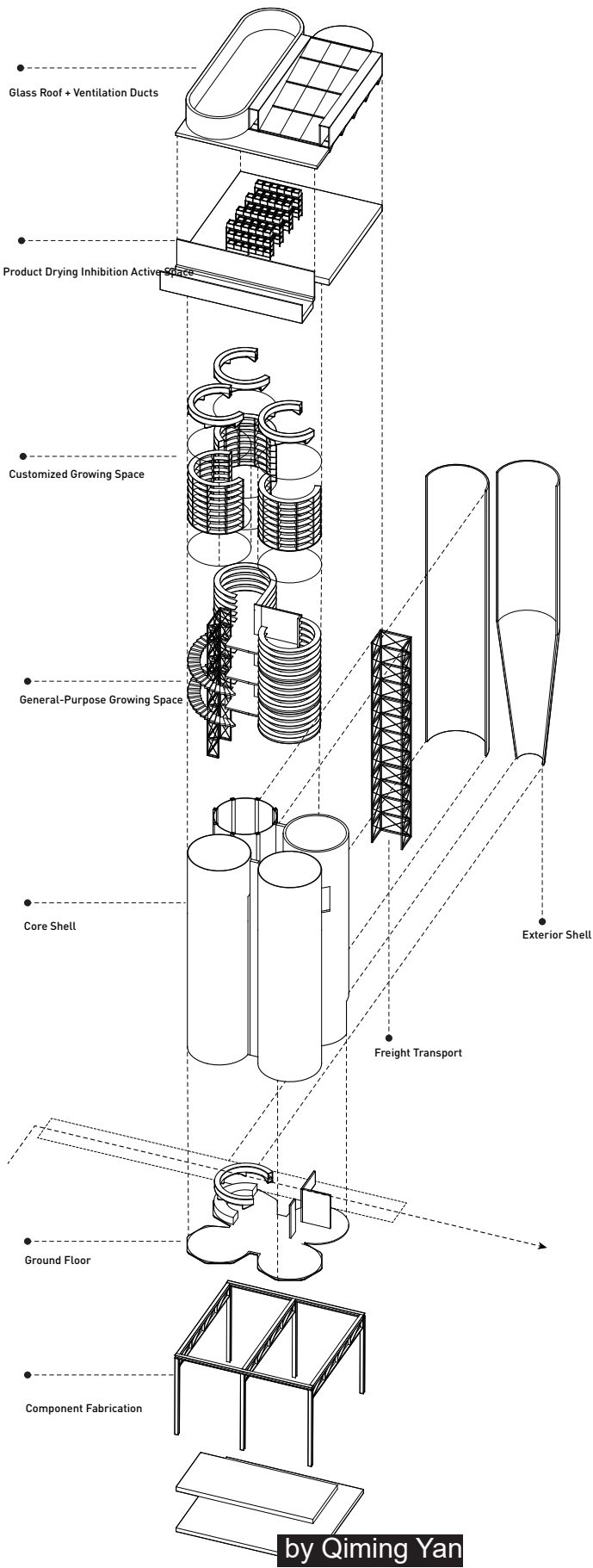
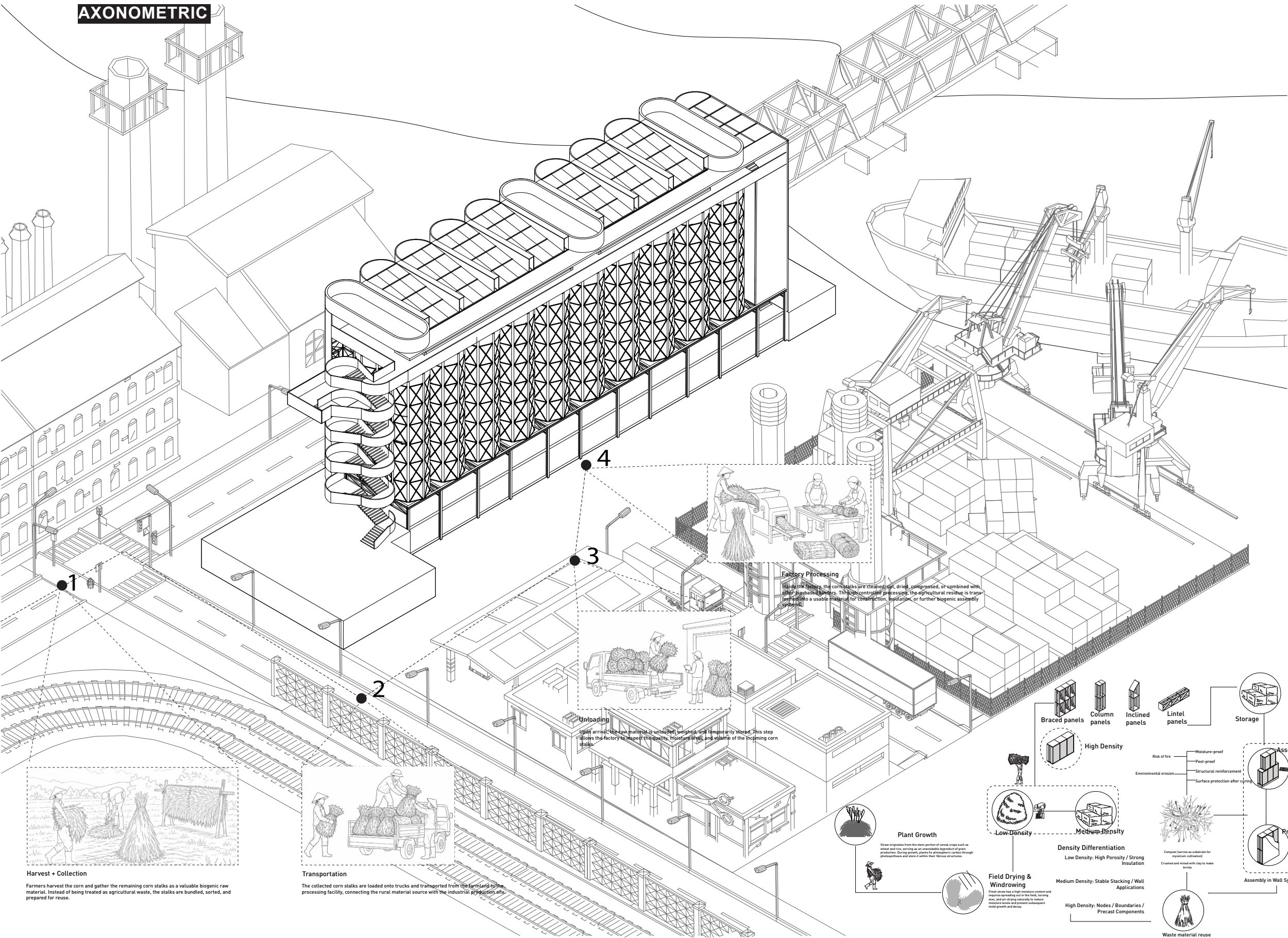


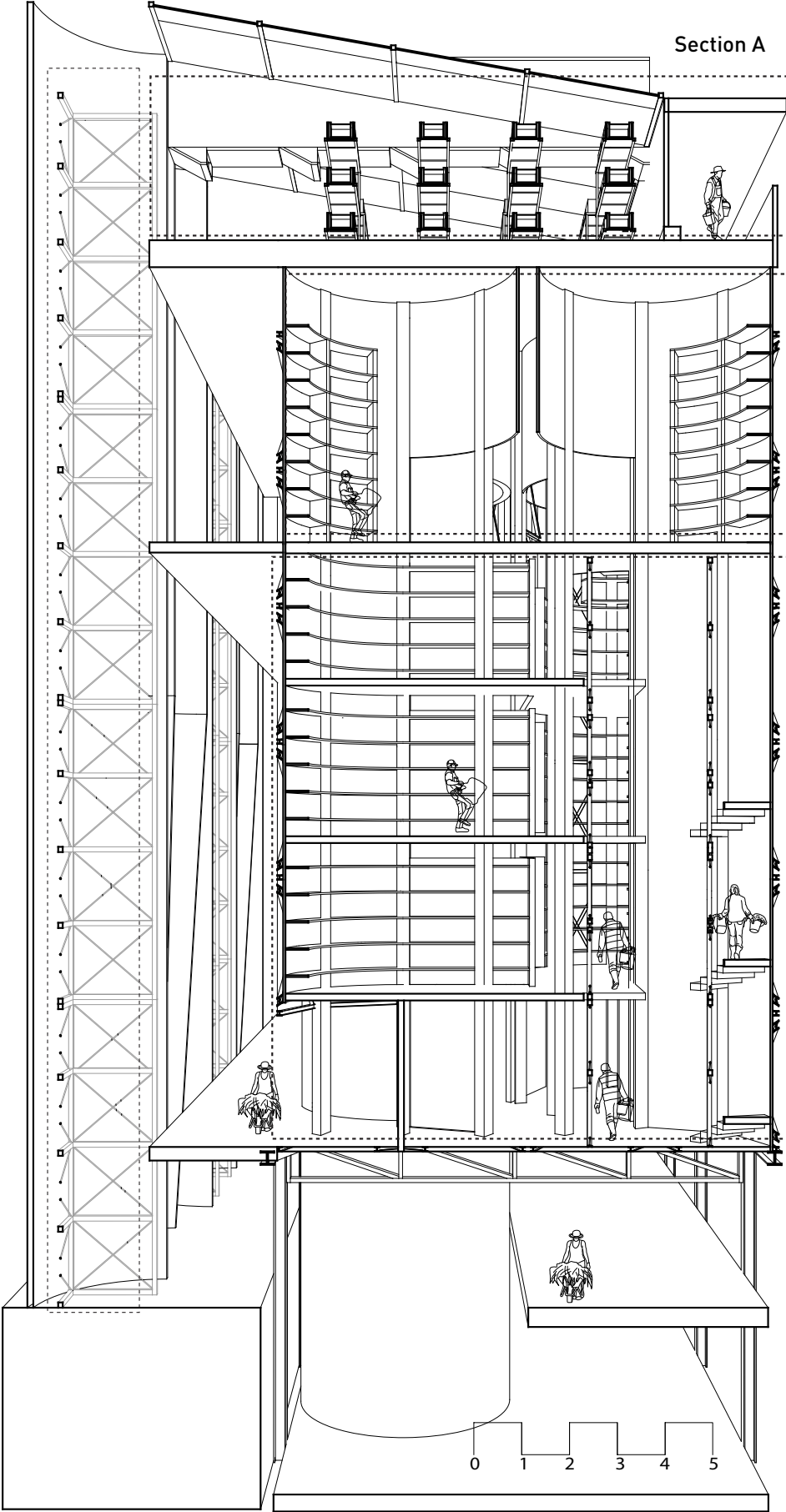
lightweight



biological participation

AXONOMETRIC



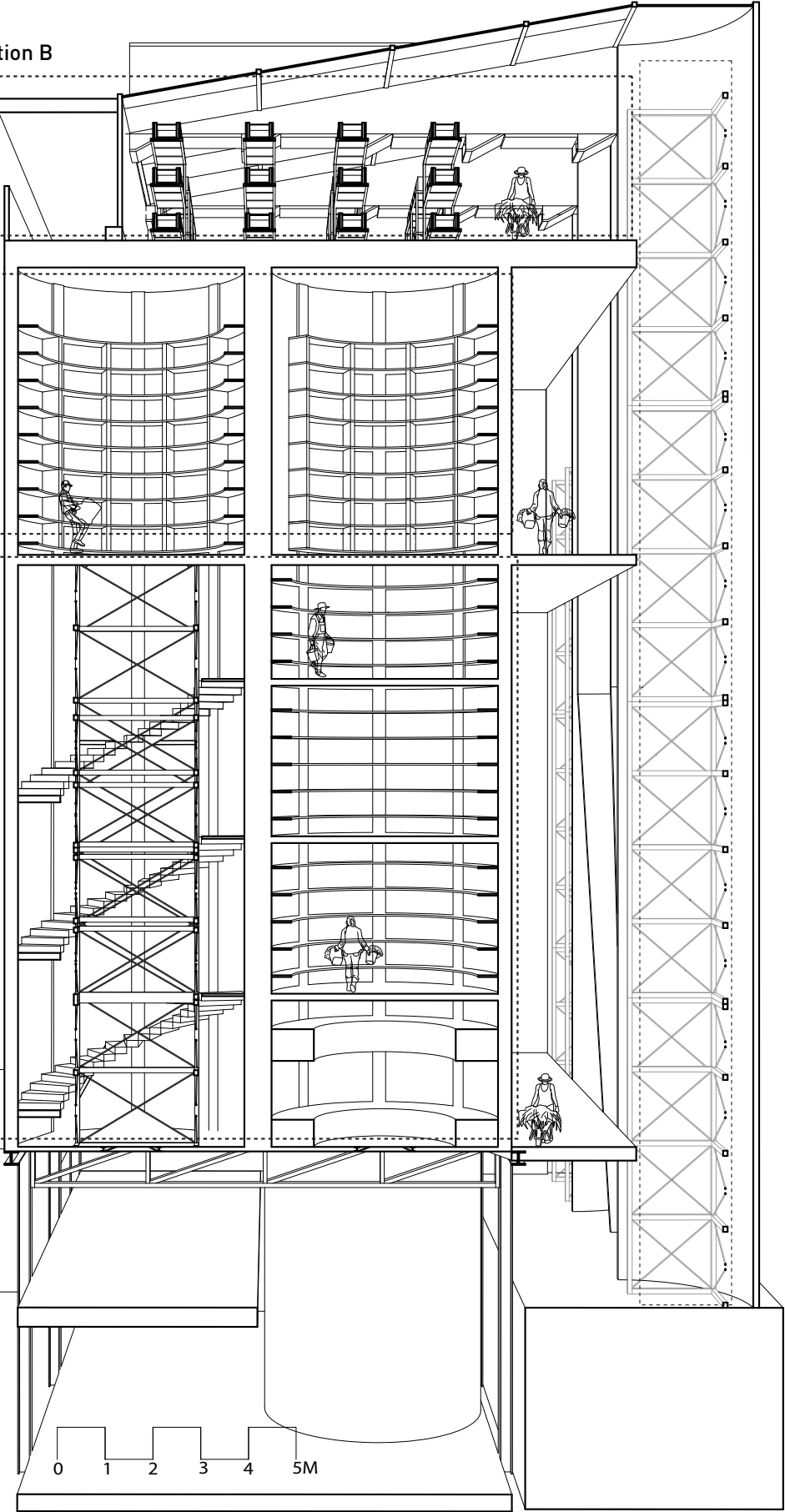


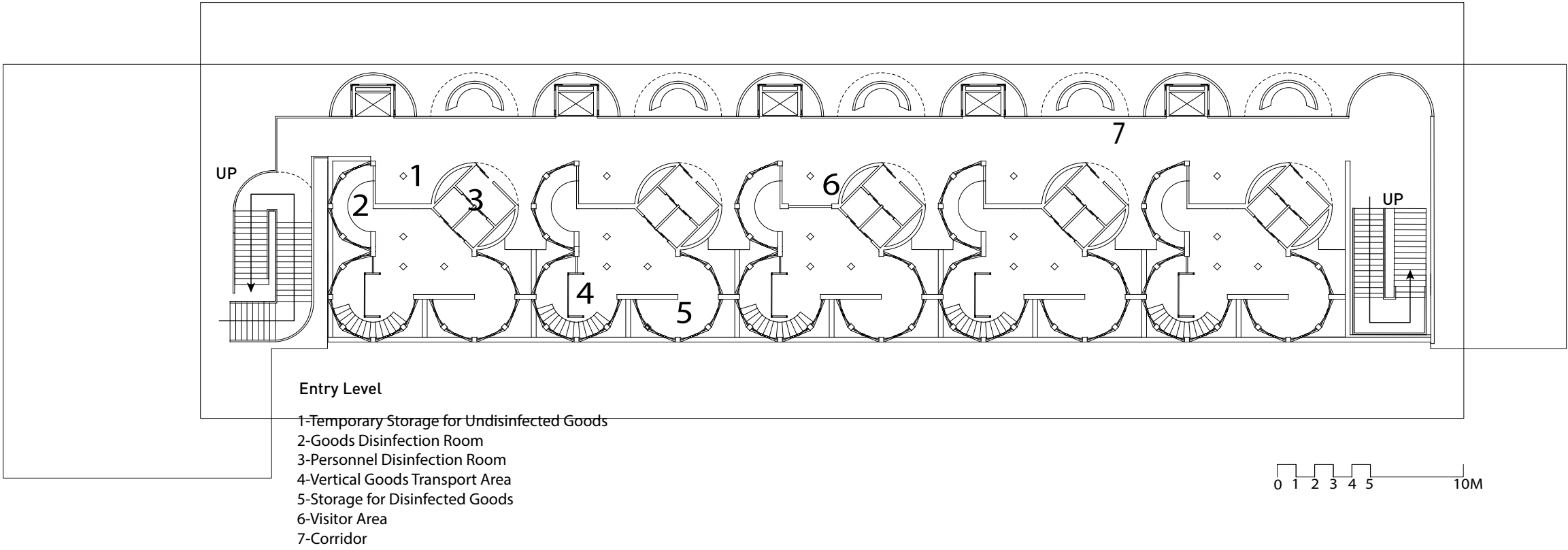
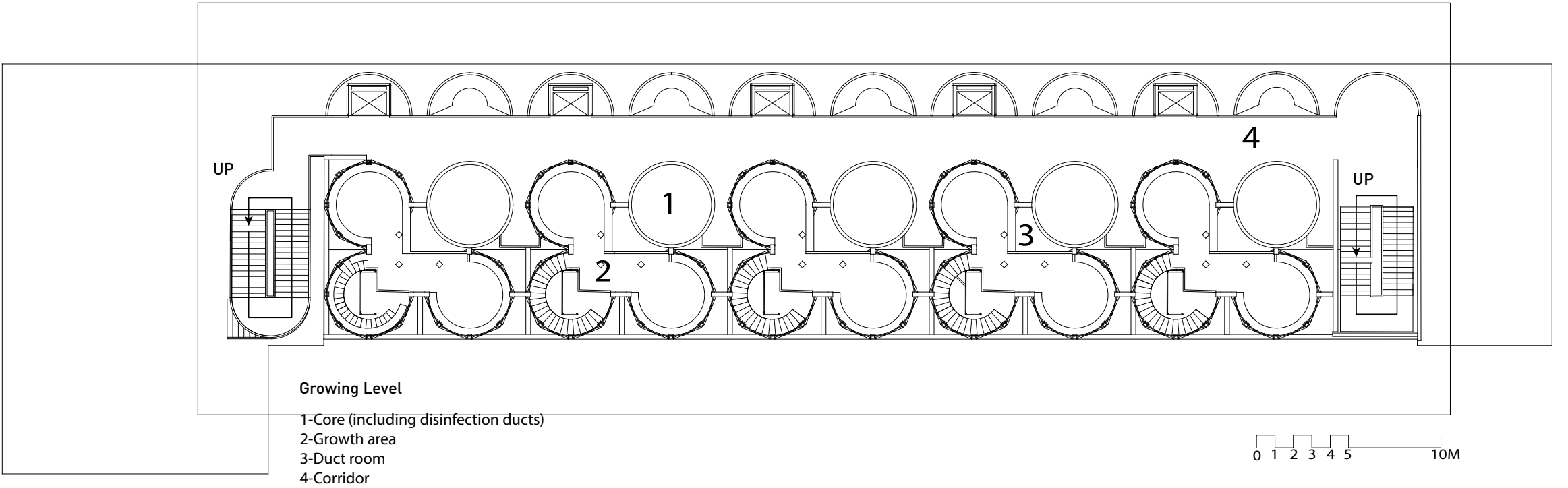
High temperature—
CO₂ levels similar to
ambient conditions

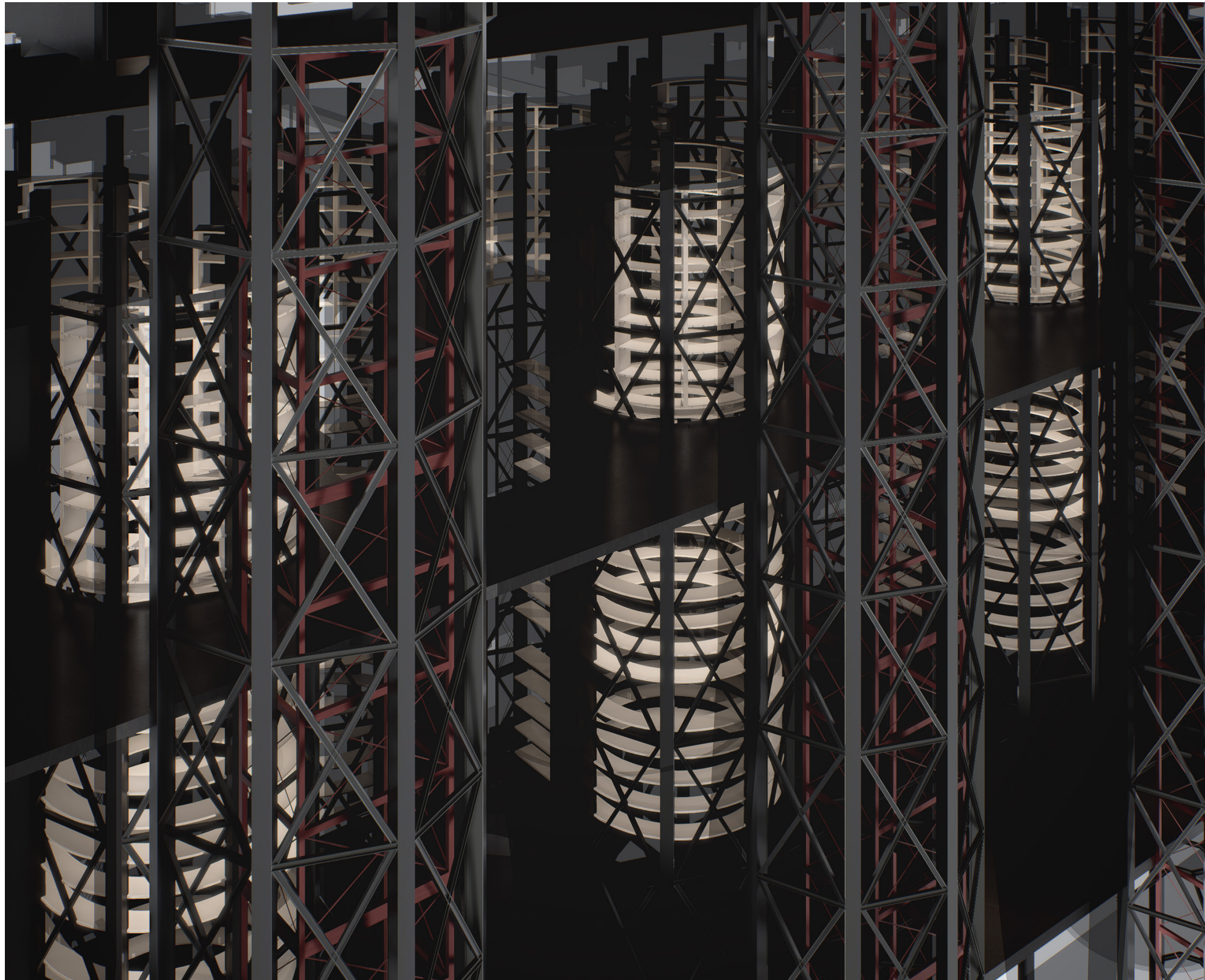
Sealed—adjustable

Sealed—high CO₂ levels

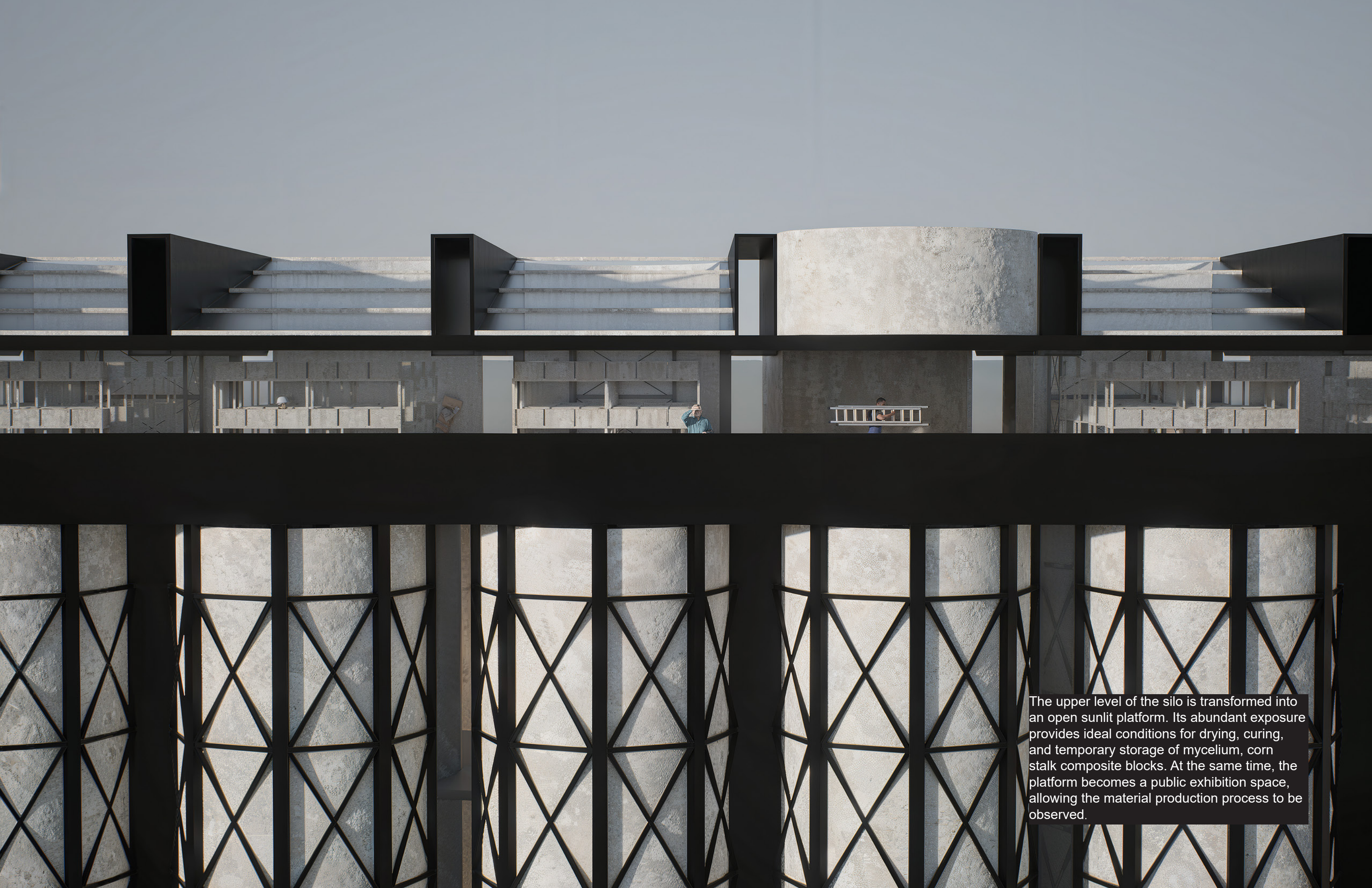
Section B







The structural strategy places a new steel reinforcement system outside the existing silo walls. By using external bracing, tensioning, and vertical support, the intervention minimizes damage to the original concrete shells while preserving the continuity of the silo cylinders. The steel frame works both as reinforcement and as a new spatial infrastructure, providing structural interfaces for floors, circulation, equipment platforms, and production units. In this way, the silo is transformed from a fixed storage vessel into an adaptable framework for future occupation and industrial reuse.



The upper level of the silo is transformed into an open sunlit platform. Its abundant exposure provides ideal conditions for drying, curing, and temporary storage of mycelium, corn stalk composite blocks. At the same time, the platform becomes a public exhibition space, allowing the material production process to be observed.

