

PORTFOLIO

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GSAPP SU25
Critic - Uriel Fogue
Use - Cosmogram

2025. 05 - 2025. 07



**KELTOPIA : HEALING THROUGH
THE POWER OF KELP AND INDIGENOUS WISDOM**

GSAPP SU25
Critic - Uriel Fogue
Use - Cosmogram
2025. 05 - 2025. 0

Long before the first footprints touched the sands of the island, the Sky Canoe sailed the stars. It was piloted by Wampanah, the Spirit-Messenger, who carried the dreams of the Earth's first people to the Sky World each night. The ocean at that time was not gentle. It roared with the breath of an ancient being called Nokomis-Wetu, the Sea Grandmother. She had no heart, only endless waves and hunger. She swallowed ships, devoured the moon's reflection, and sometimes tried to pull stars into her depths.

The Creator saw that without balance between sky and sea, the Earth would suffer. So Wamponah was sent to descend in his Sky G canoe and speak to the Sea

Grandmother. When he arrived, the sea lashed and boiled, trying to drown him. But Wamponah sang — not words, but the songs of the stars. His voice carried high and low, into the sea's deepest places.

For the first time, Nokomis-Wetu paused. She rose from the depths as a wave shaped like a great woman with a kelp hair and eyes like the moon in fog. She listened. He told her, 'The sky offers dreams. The ocean must offer peace.' Nokomis-Wetu had never dreamed before. So, Wampanoh offered her a single star from the Sky. She did not keep, but to bury in her heart.

She took the star and swallowed it. And from that night on, the sea began to sleep. She still roars at times — during storms, during sorrow — but deep within, the Ocean's Heart glows, pulsing like a quiet star.

To this day, the Shinnecock people say you can see the ocean breathe at night if you look closely — not the tides, but the soft rhythm of the star in her chest. And when someone is lost at sea, the Sky Canoe returns to guide them home, sailing low above the waves, led by Wamponah's light.



Kelp fertilizer, made from seaweed (typically sugar kelp like *saccahrina latissima*), is a popular natural product used in gardening and agriculture due to its wide range of benefits for both plants and soil. One of the key reasons it's favored by many growers is its richness in micronutrients.

Nutritious Kelp
Unlike synthetic fertilizers that often focus on just nitrogen, phosphorus, and potassium, kelp contains over 60 trace minerals, including potassium, magnesium, zinc, and iron. These nutrients play vital roles in supporting healthy plant development, even when needed in small amounts.

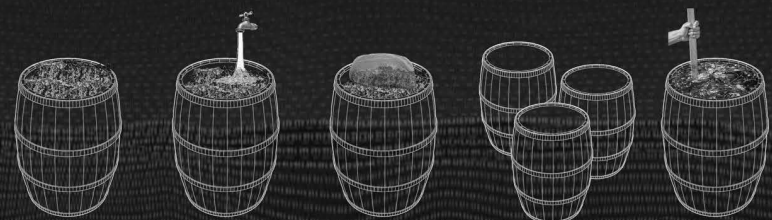
In addition to nutrients, kelp fertilizer contains natural plant growth hormones—such as cytokinins, auxins, and gibberellins—which help promote root development, stimulate cell division, and encourage flowering and fruiting. These hormones occur naturally in seaweed and can significantly boost plant vigor, leading to faster and more resilient growth.

Restore the Soil

Another benefit of kelp fertilizer is its ability to improve soil structure. It acts as a soil conditioner, enhancing the soil's ability to retain water and nutrients. This is especially helpful in sandy or poor-quality soils. Improved soil structure not only helps with

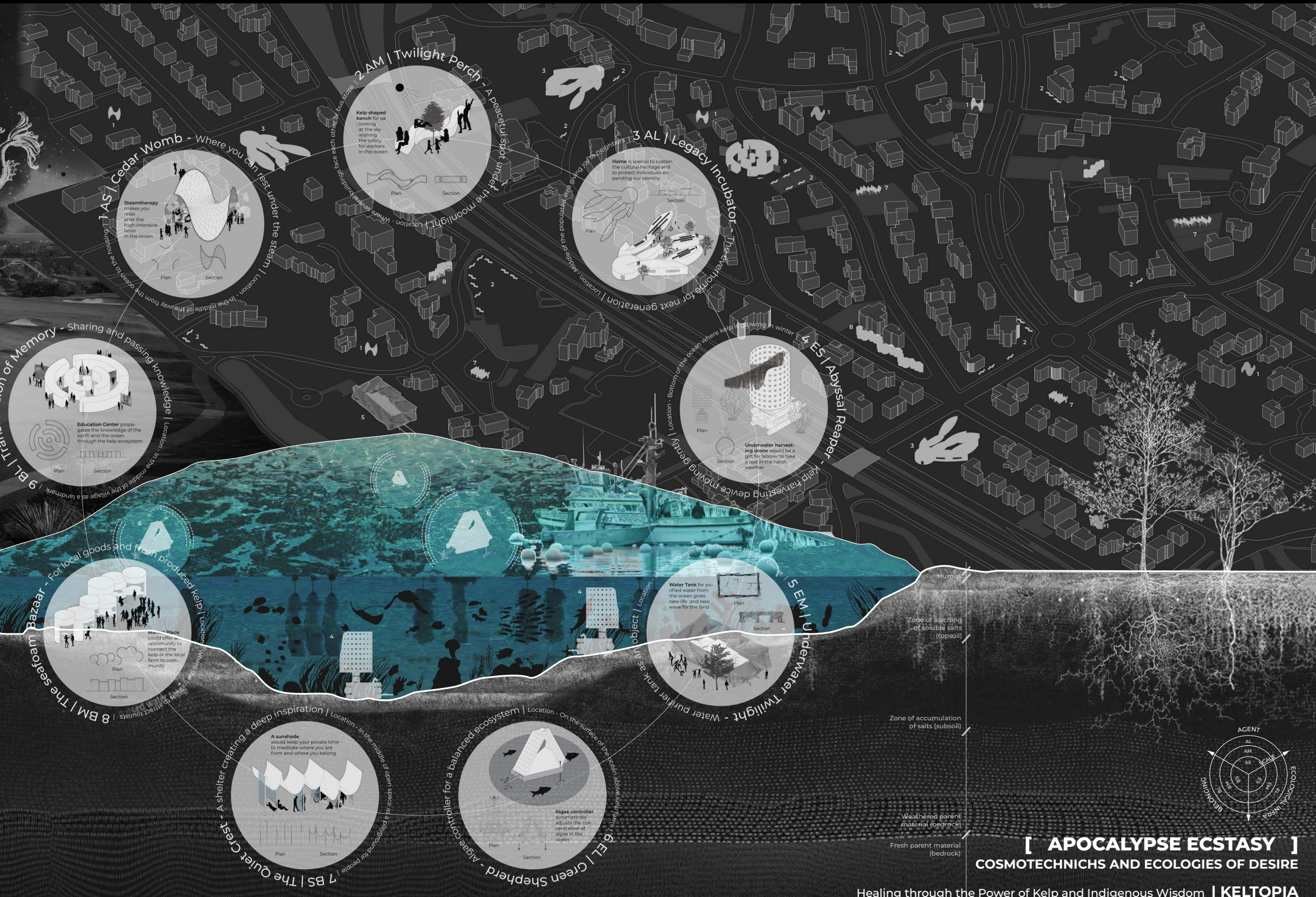
plant hydration but also promotes healthier root systems, which in turn supports better plant growth overall. Kelp also helps plants build resilience against environmental stress. It contains antioxidants and other compounds that enhance a plant's natural immunity, making it more capable of withstanding drought, extreme temperatures, pests, and diseases. For this reason, kelp is often used as a foliar spray to help plants recover from or prepare for stress.

Healing Nature by Nature
Finally, kelp fertilizer is organic and environmentally friendly. It's safe for use around people, pets, and pollinators, and it aligns with sustainable gardening and farming practices. Because it is a natural, biodegradable product, it poses no risk of chemical buildup in the soil and doesn't contribute to water pollution.



- 1 **Stuff** a barrel as full as you can with fresh seaweed after rinsing them.
- 2 **Pour** the fresh water to submerge the seaweed.
- 3 **Put** a rock on the top of it and weigh it down to keep the seaweed submerged. Don't use the air tight lid as the aerobic process (decomposition with oxygen) is less stinky than anaerobic.
- 4 **Let** the barrel sit until it is completely fermented.
- 5 **Stir** the contents from time to time (once a week or two would suffice).
 12 weeks in warmer months and 2-3 months if the weather is cold until it becomes emulsified.

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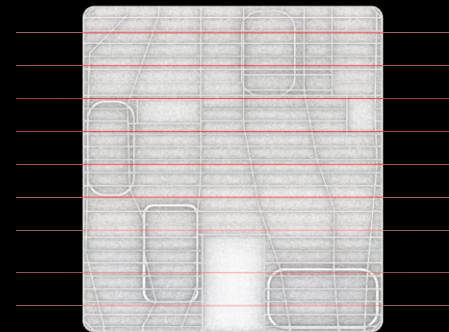
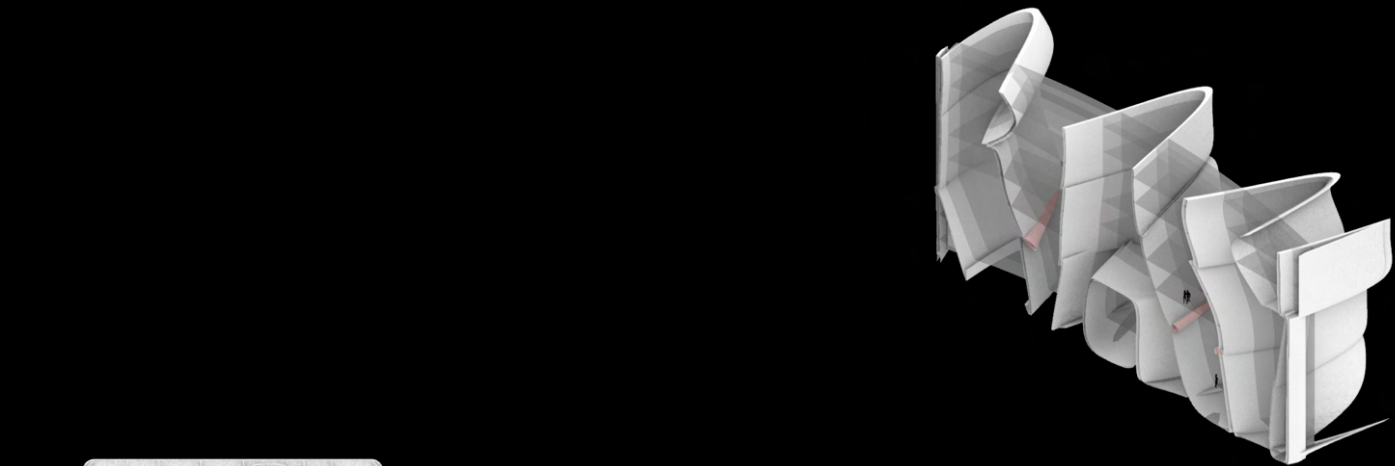
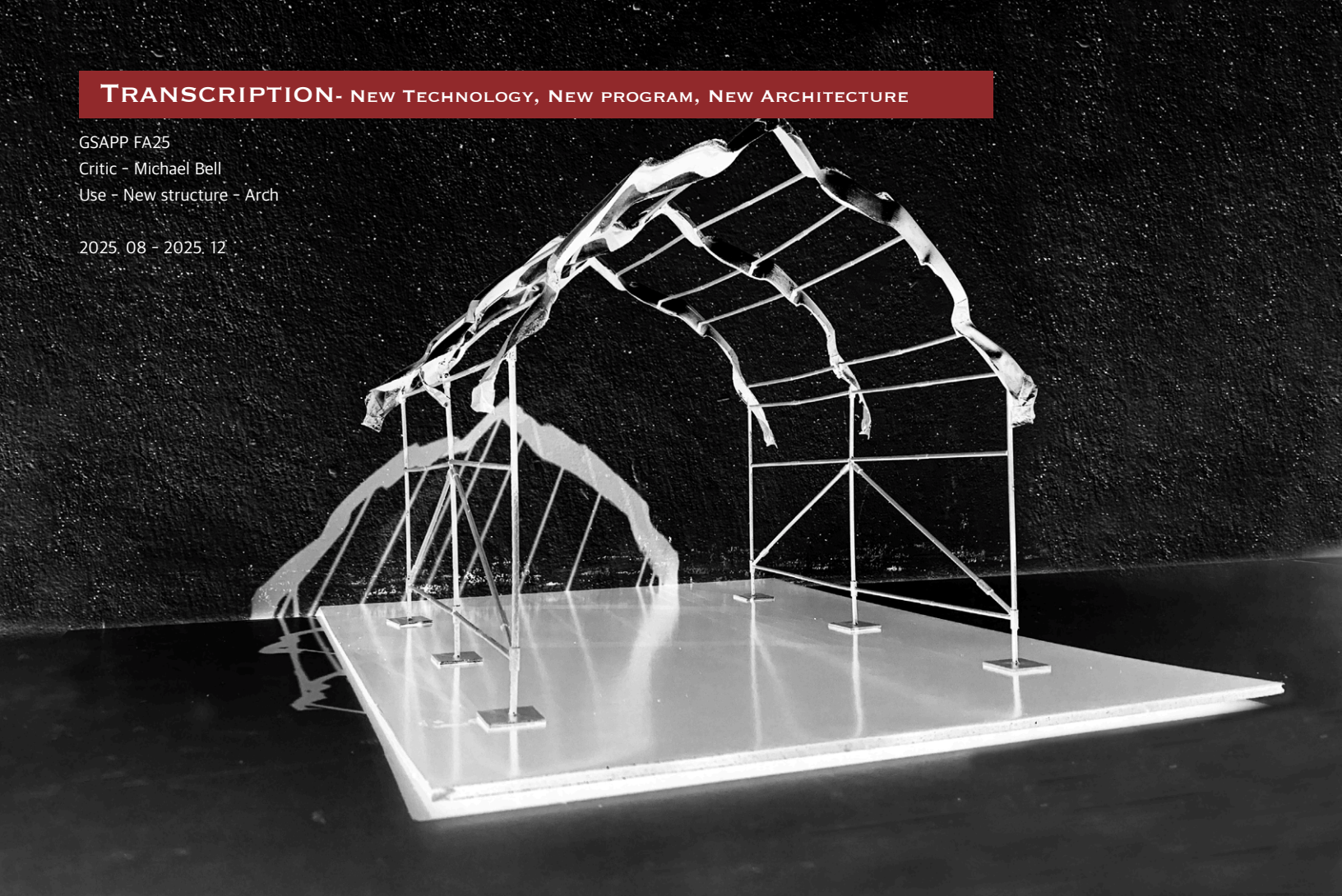
[APOCALYPSE ECSTASY]
COSMOTECHNICS AND ECOLOGIES OF DESIRE

Healing through the Power of Kelp and Indigenous Wisdom | **KELTOPIA**
The Endless End by Juyeon Park | Uriel Fogue, Sungjun Baek

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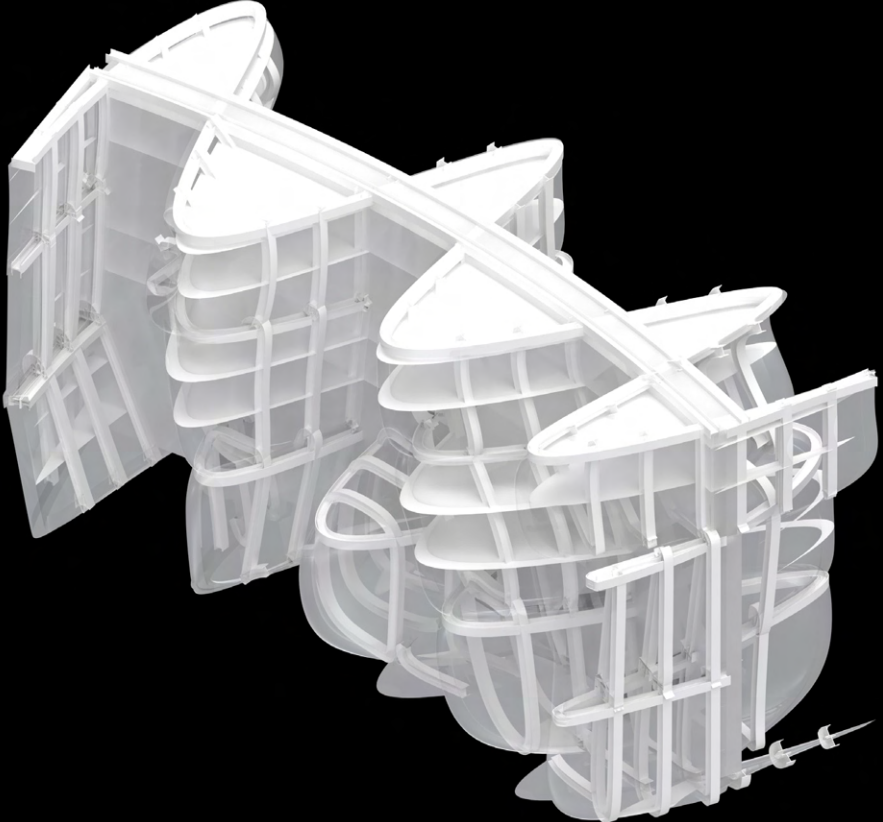
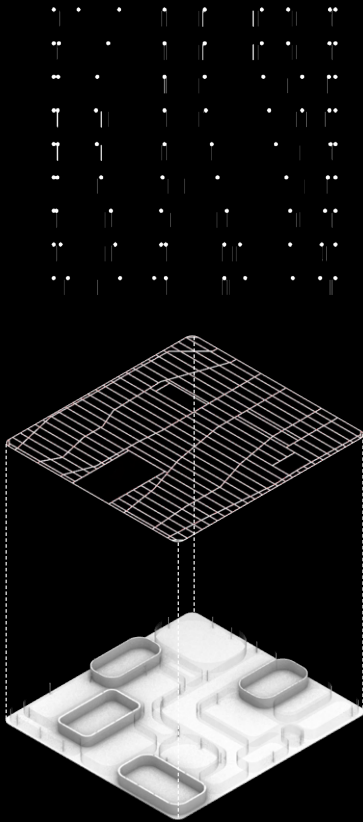
GSAPP FA25
Critic - Michael Bell
Use - New structure - Arch

2025. 08 - 2025. 12

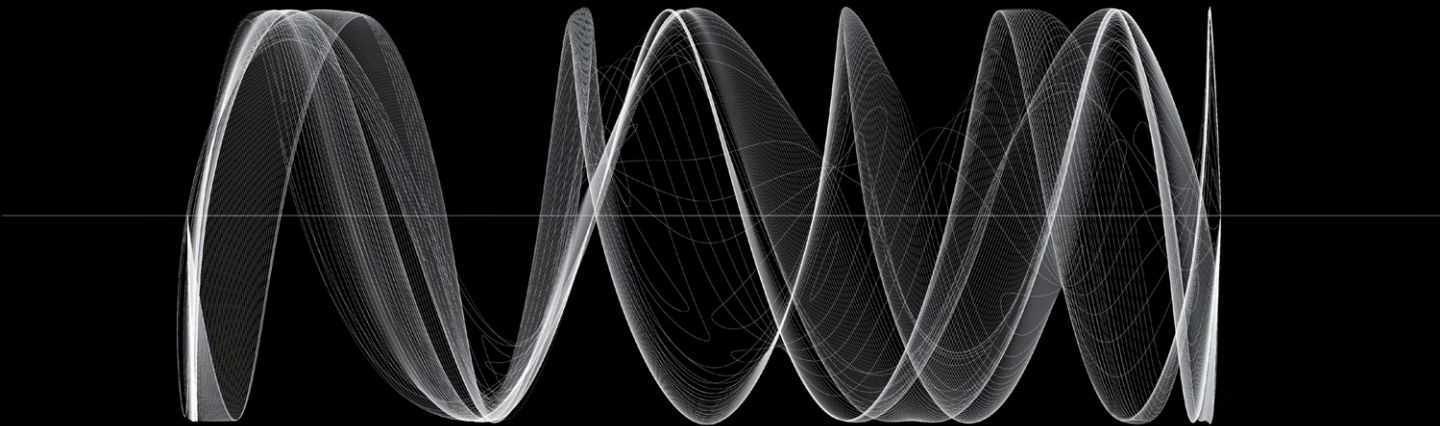


This project started from transcribing the existing building to suggest new types of design, structure or programs through the contemporary perspective of the modern era. Based on the concept that the ultimate value does not change over time, the DNA from SANAA's Toledo glass pavilion has been revitalized, and it is hidden inside the ceiling as a roof structure. Even though it's invisible, the human spirit can notice what's happening above one's head with its innate natural intuition. This belief visualizes the information that only intuition can decode from our imagination into new types of structure, especially as an arch shape, which could suggest new design applications in the architecture field in combination with technological development and intuition.

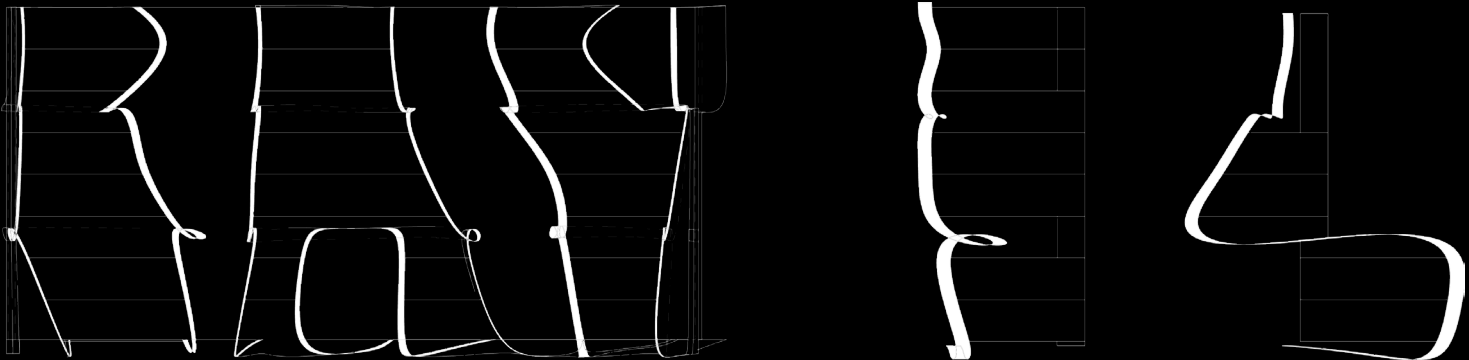
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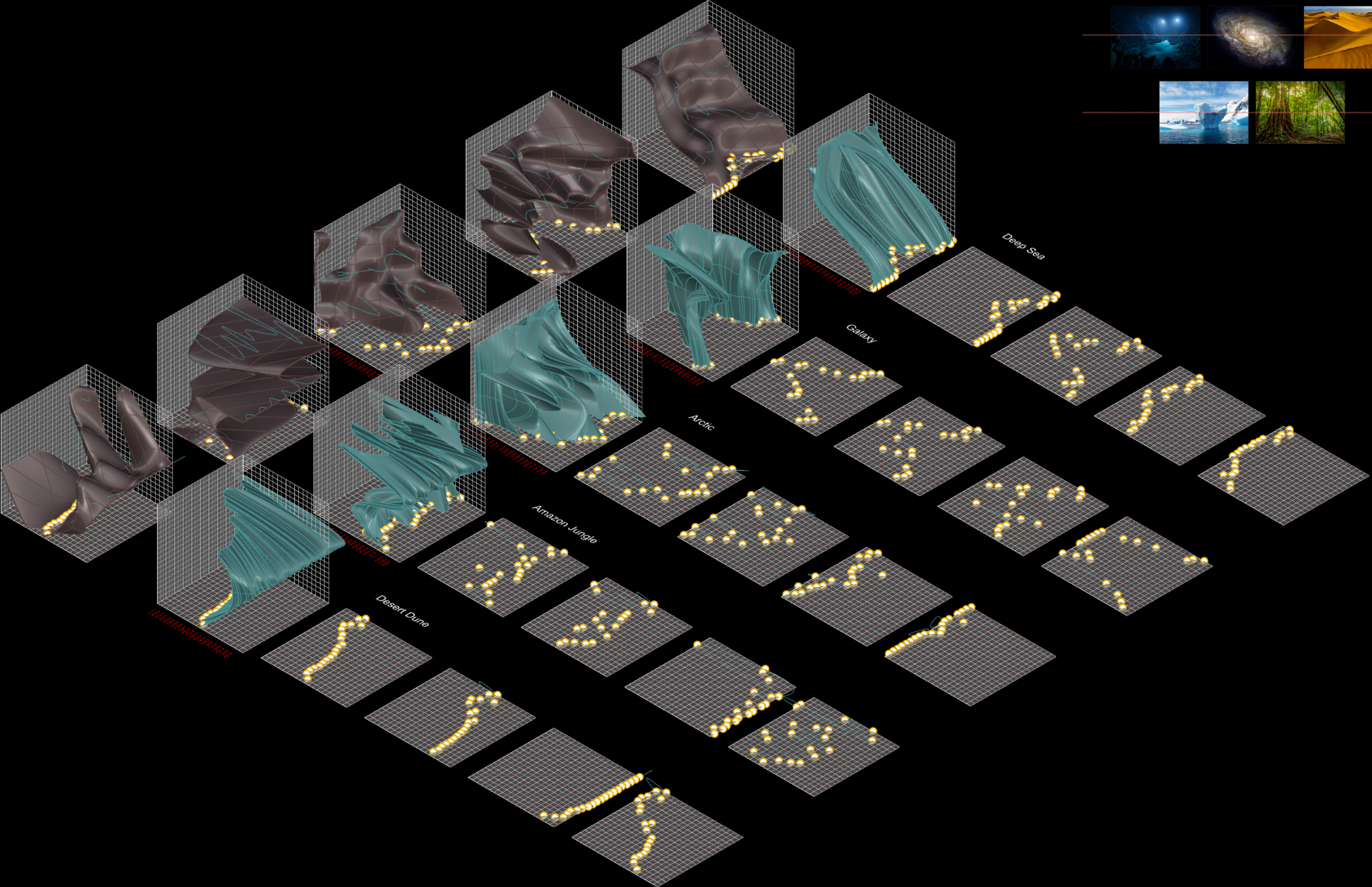


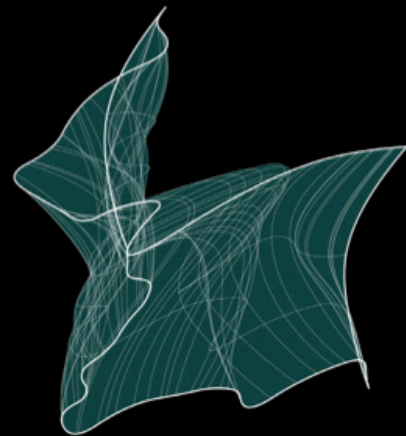
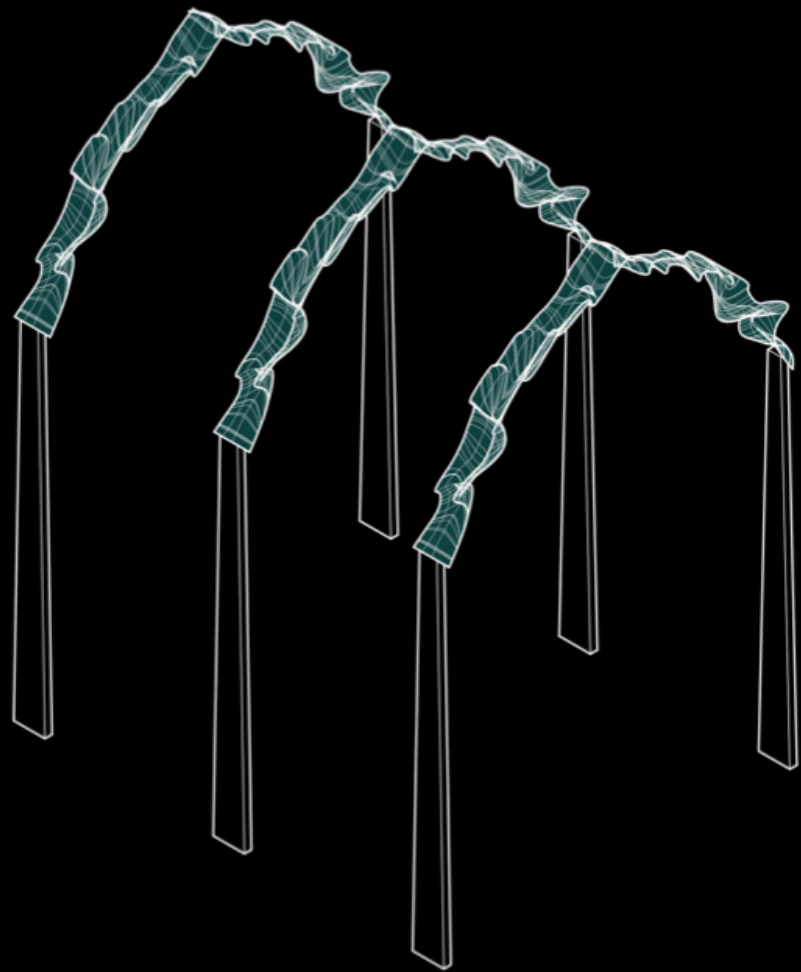
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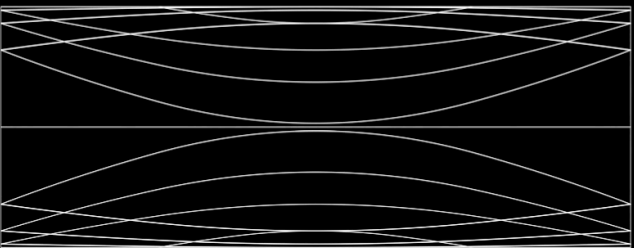
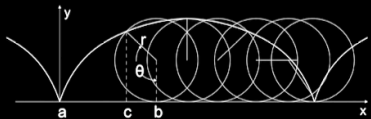
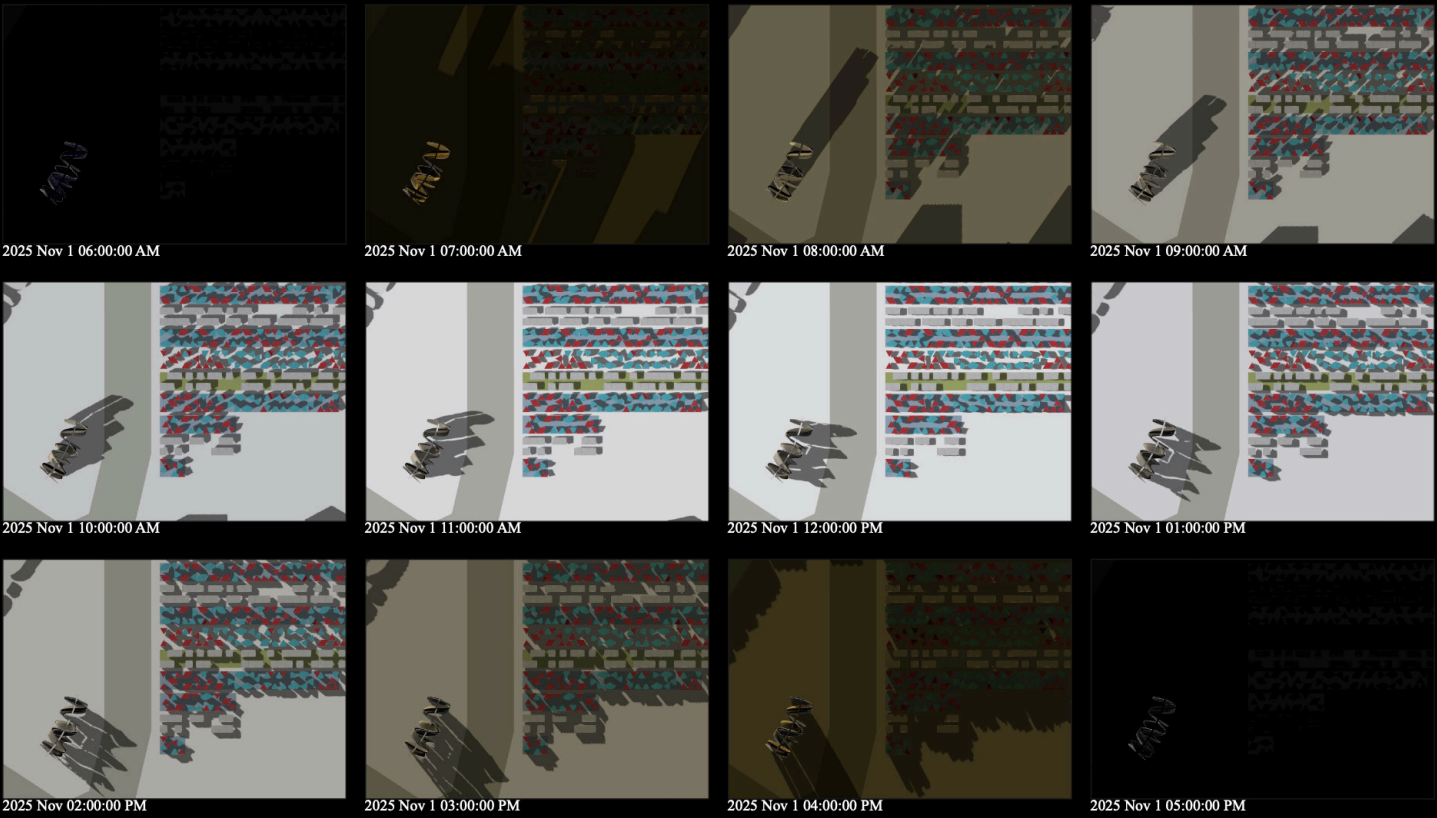
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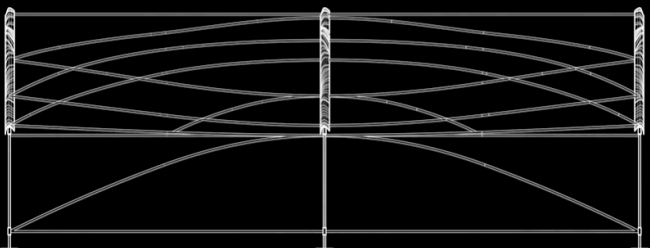




Galaxy



Top View



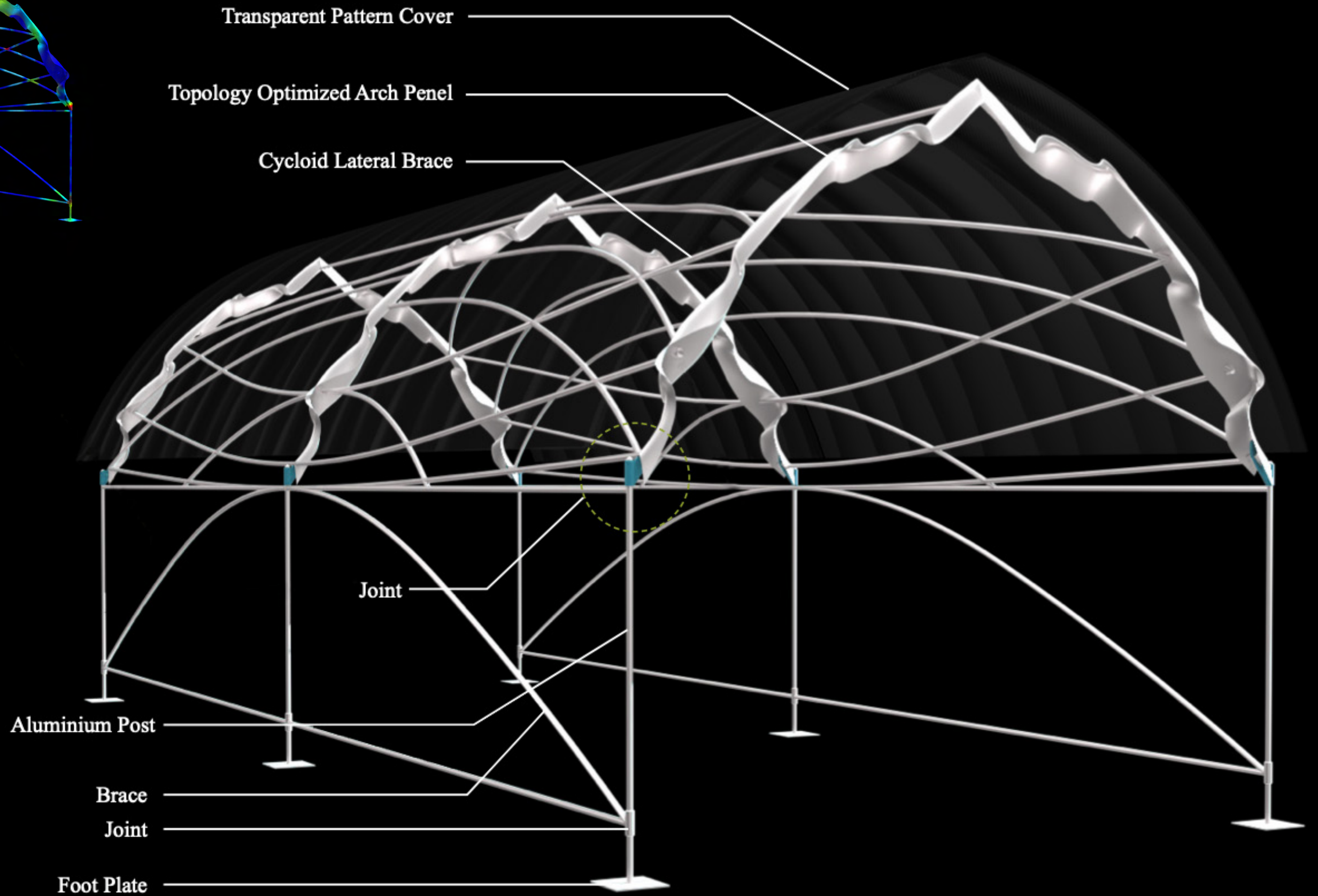
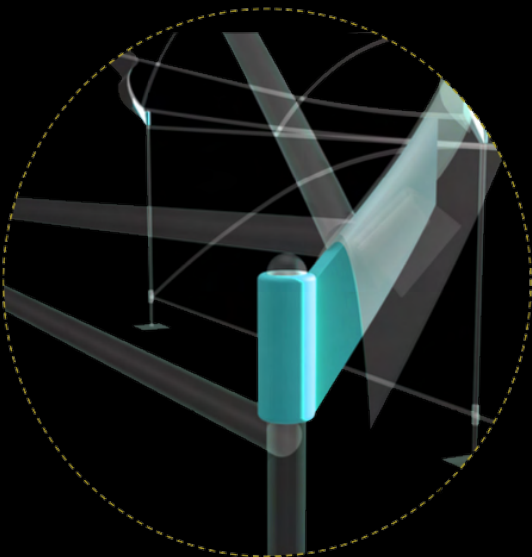
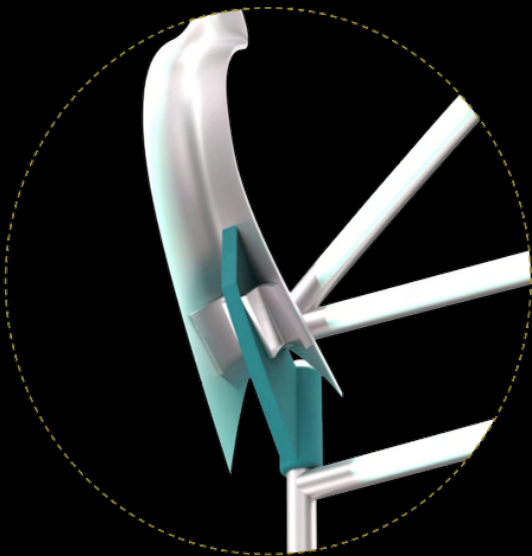
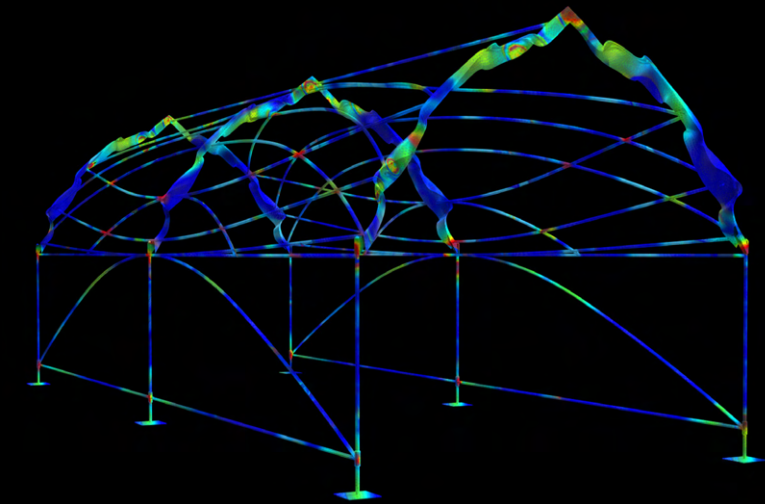
Side View

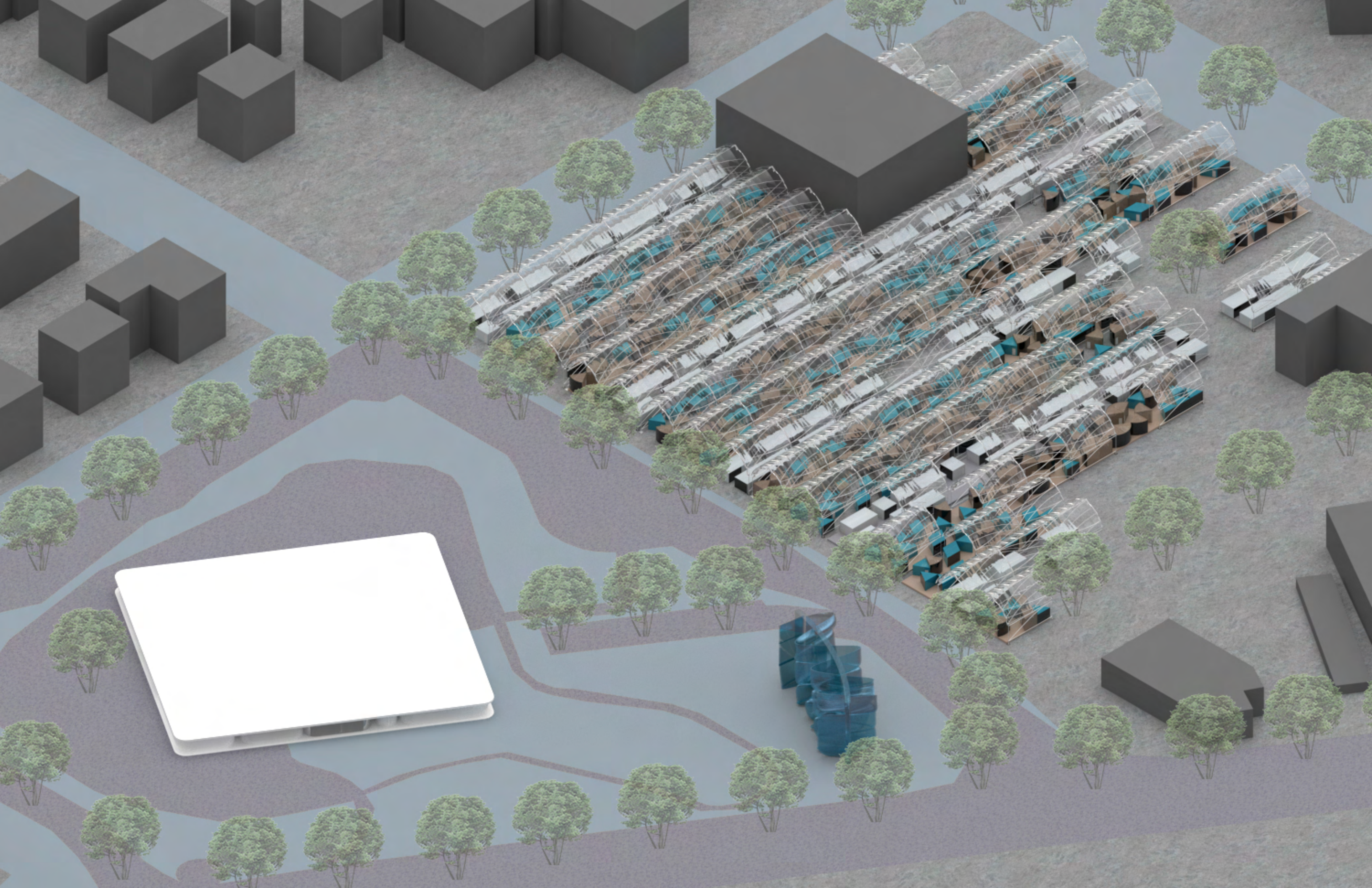


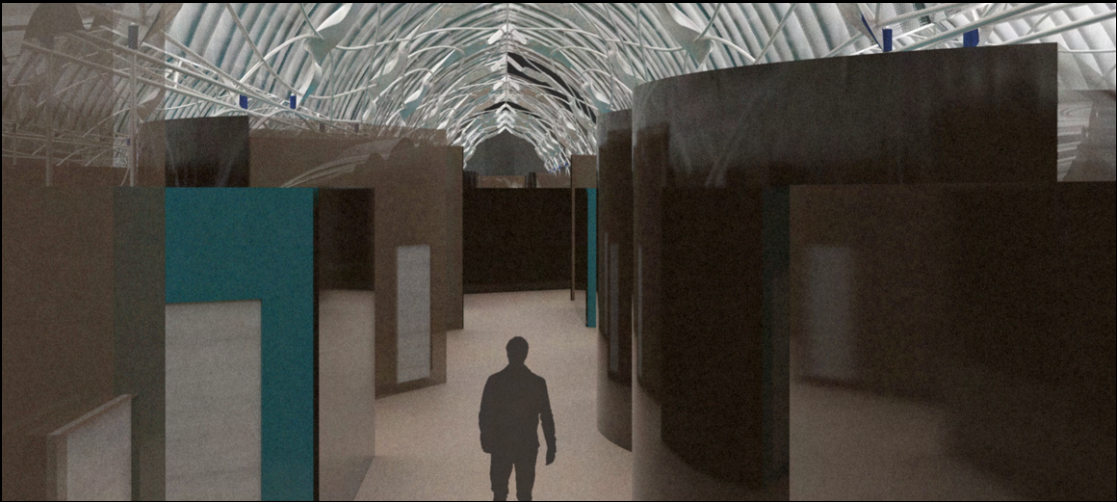
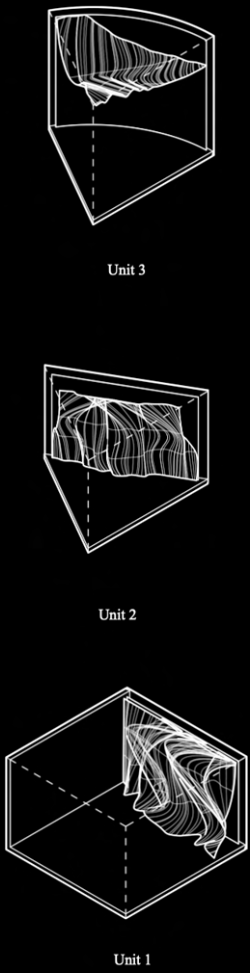
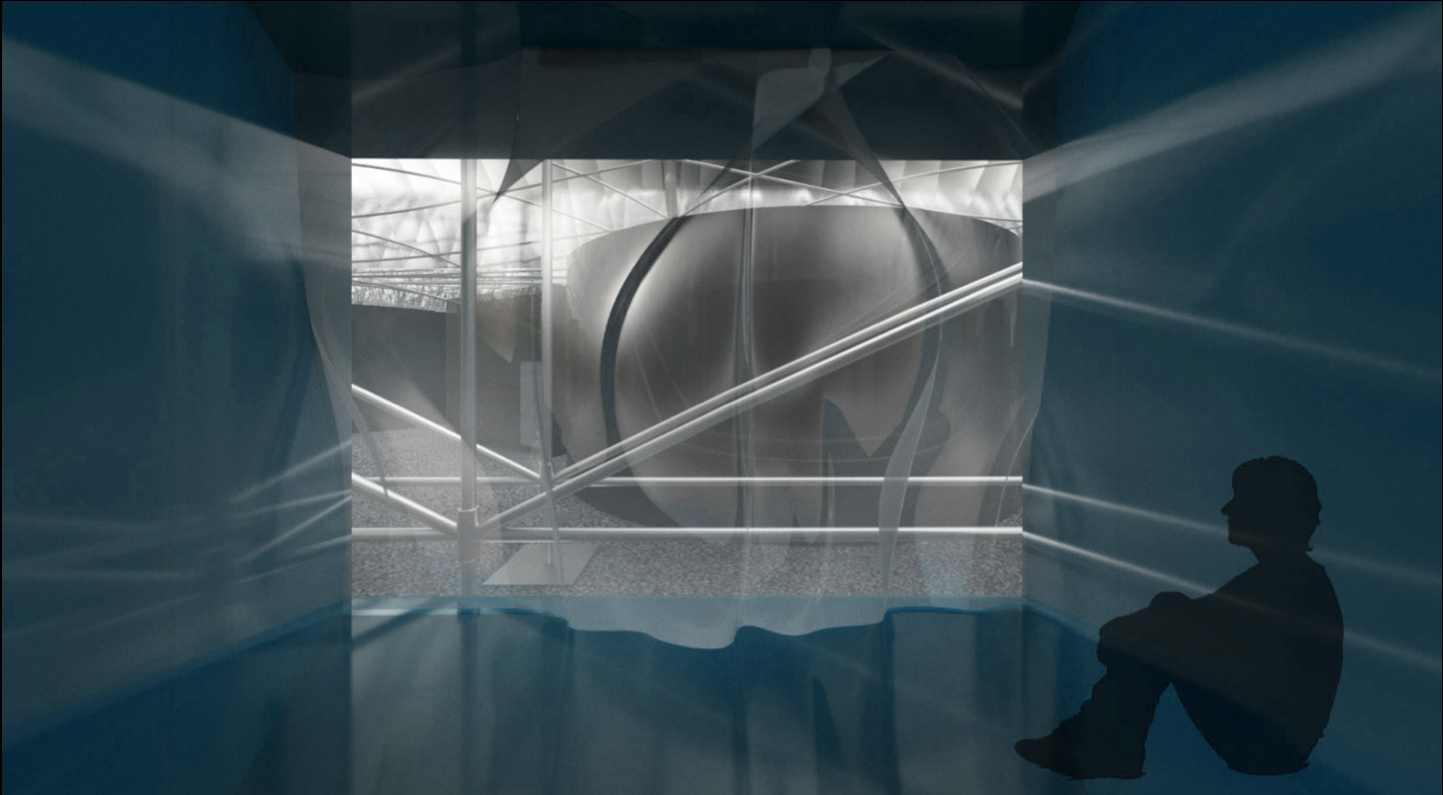
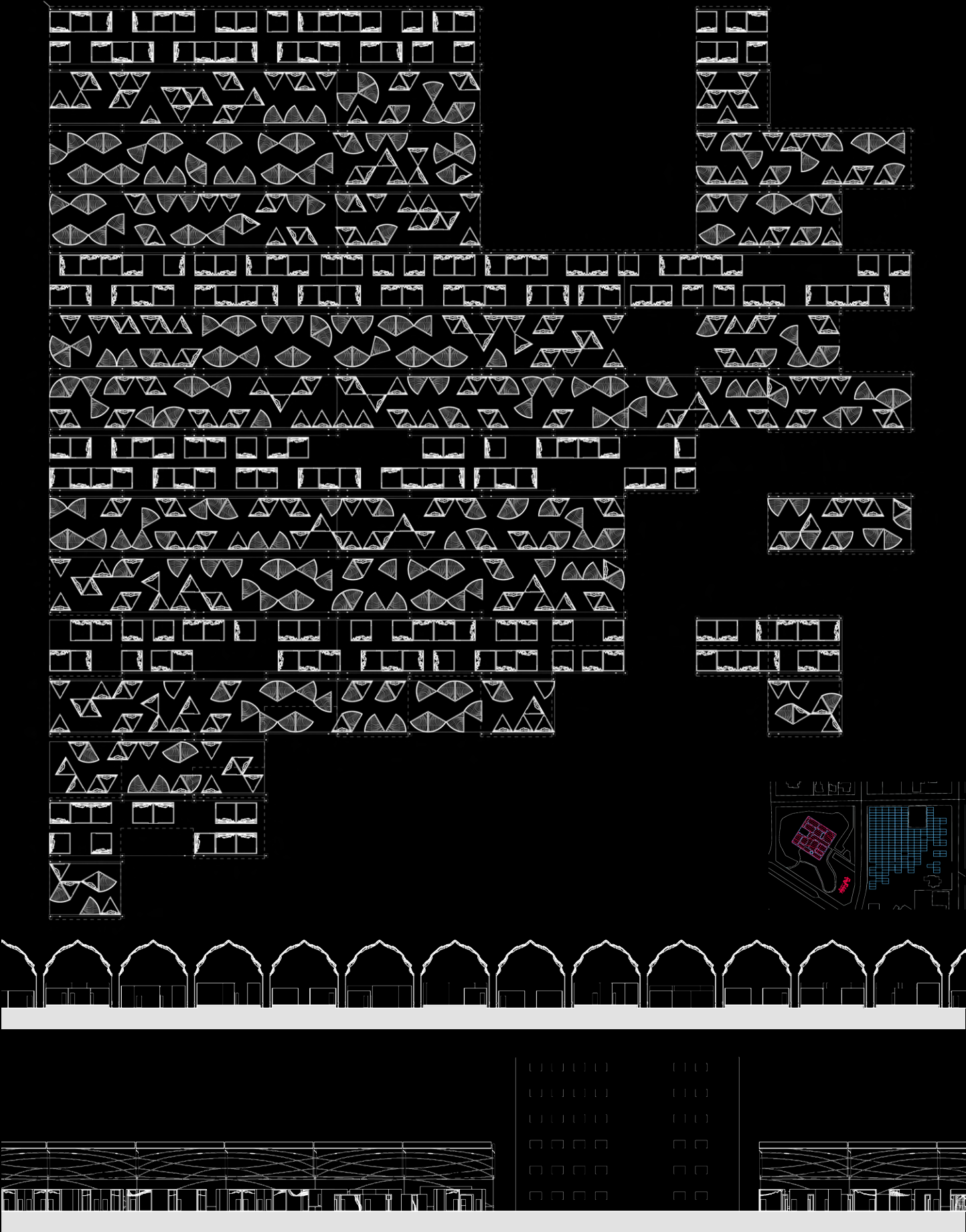
Front View



Joint Section



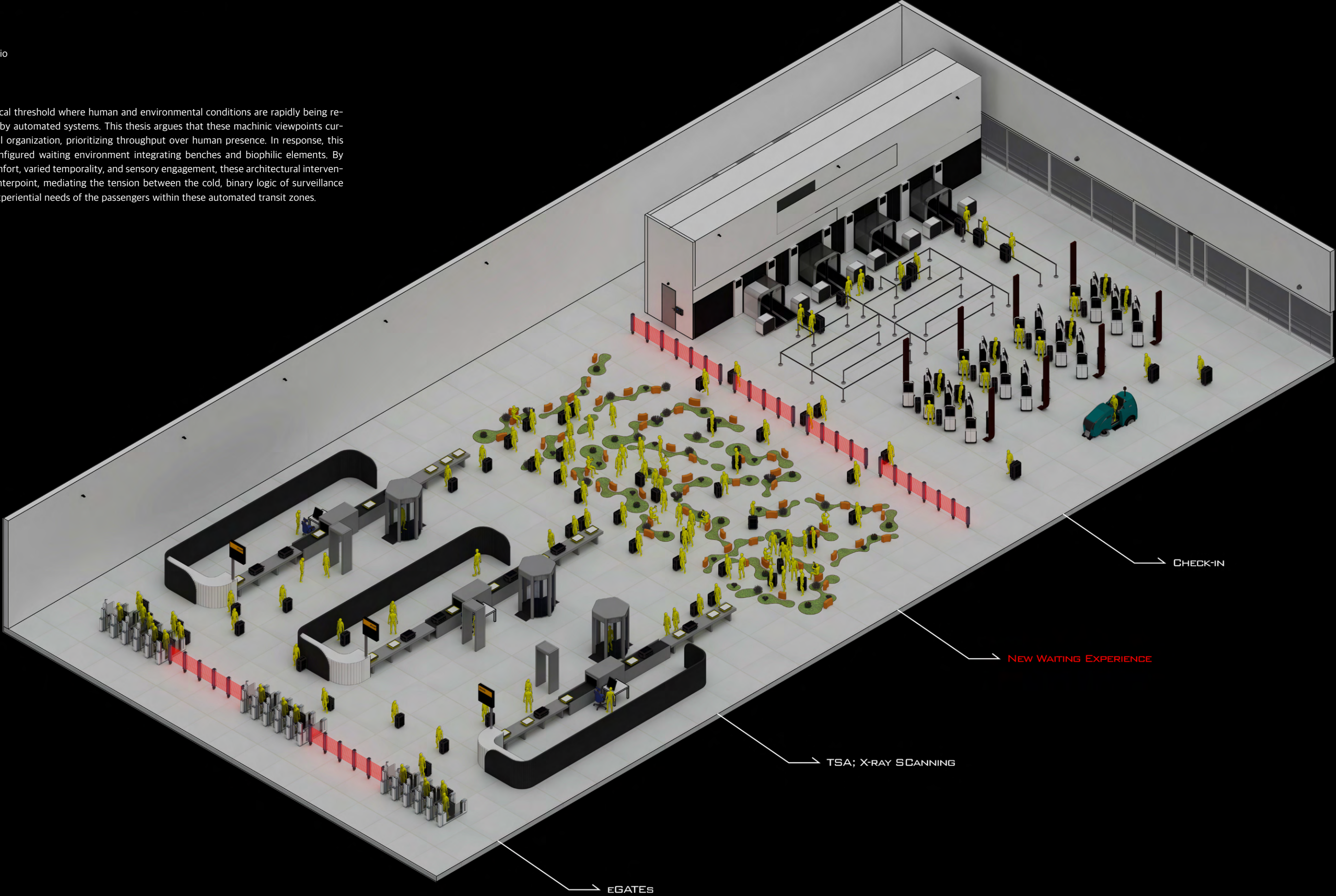


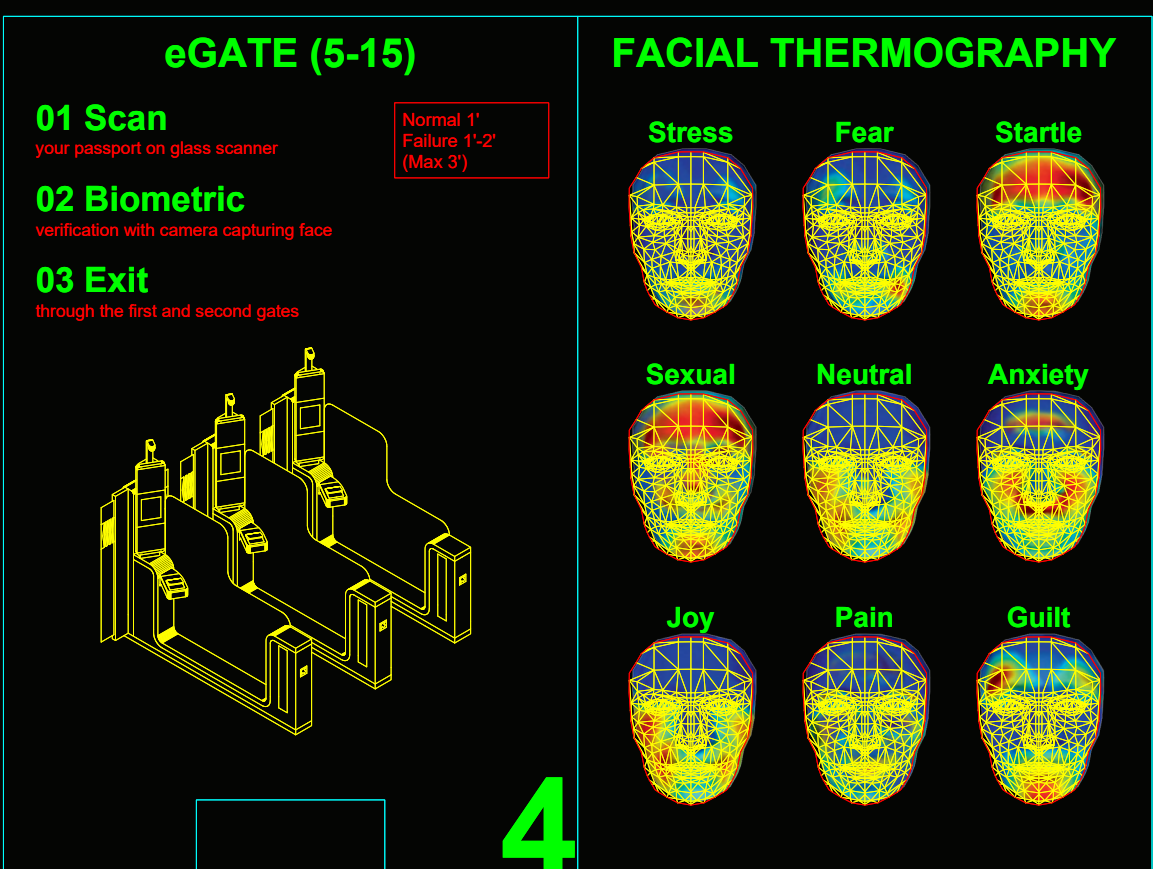
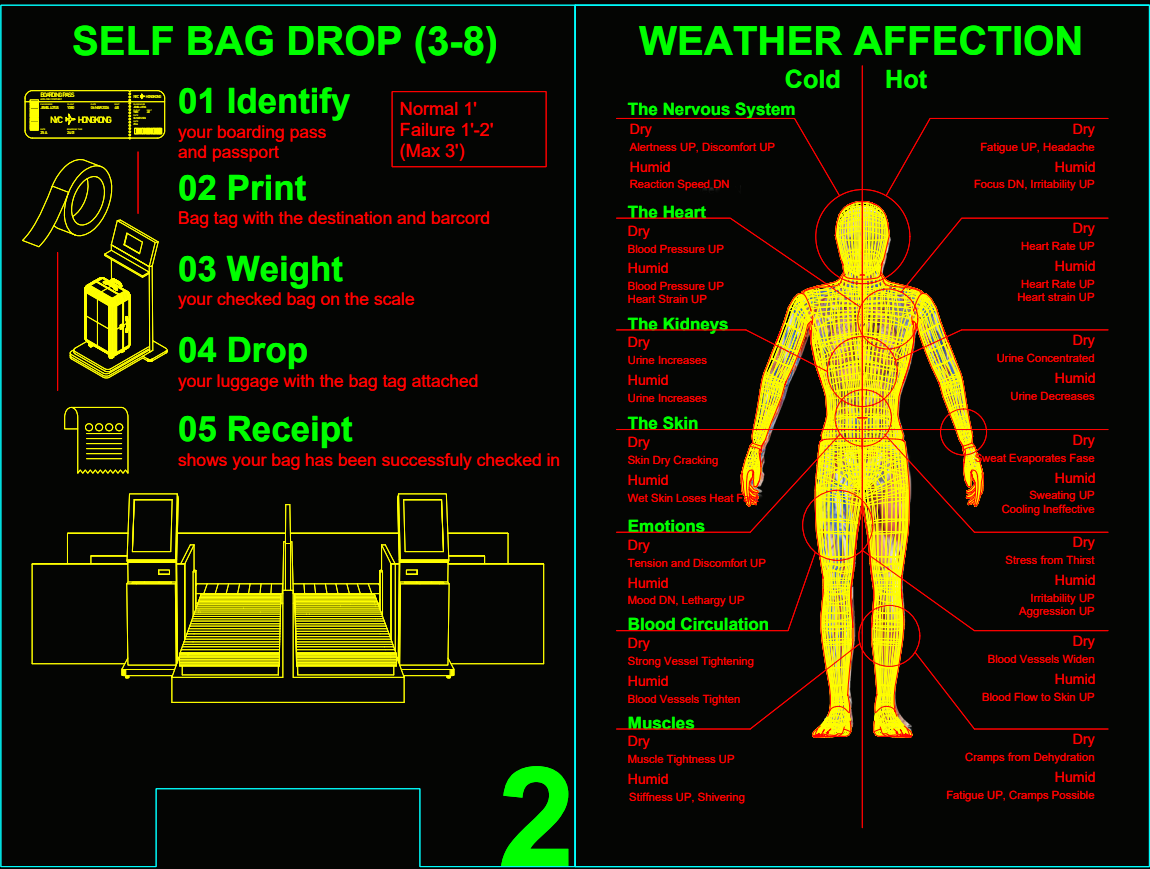
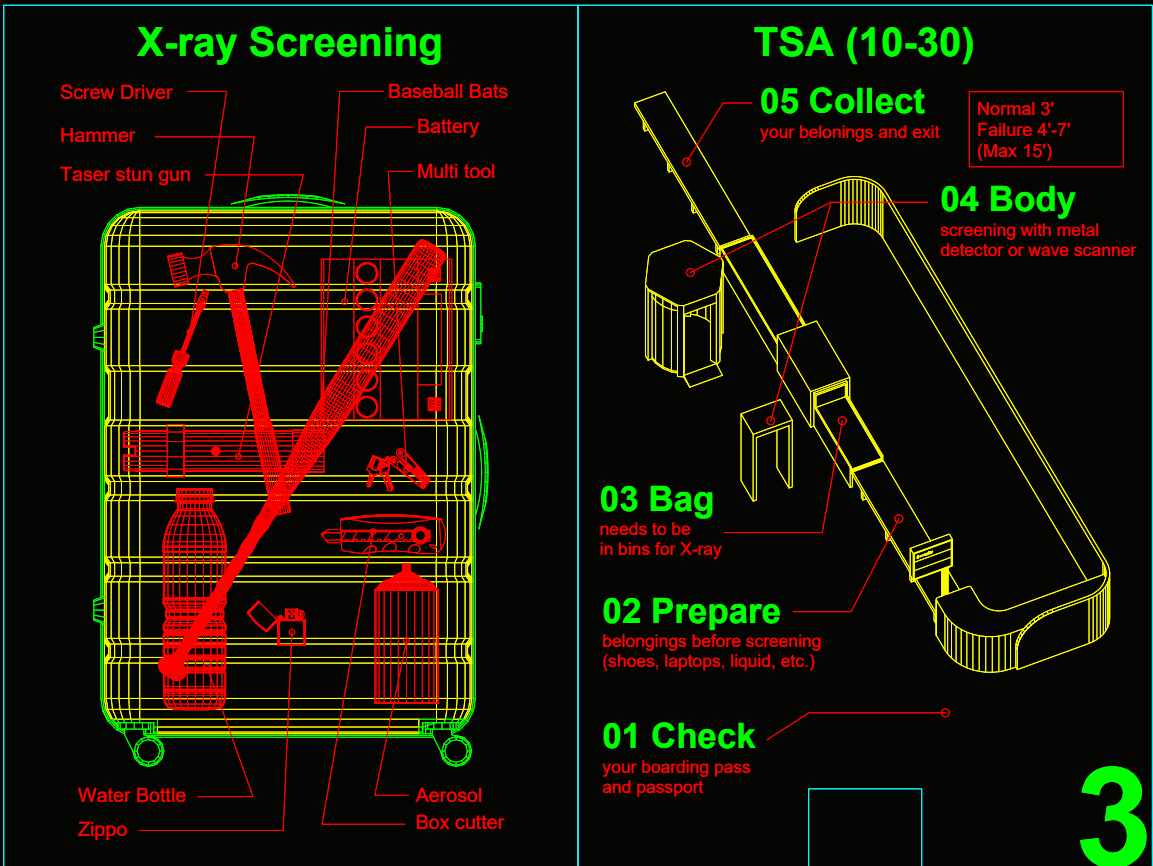
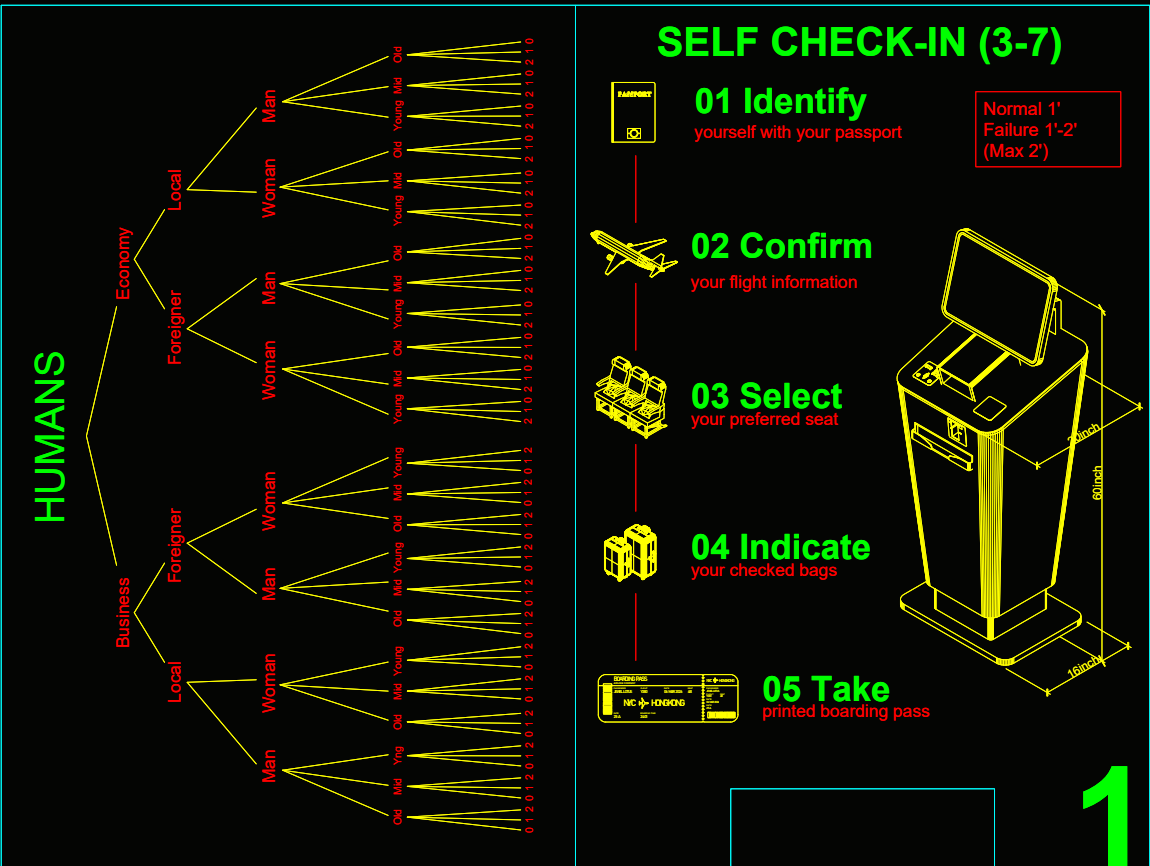


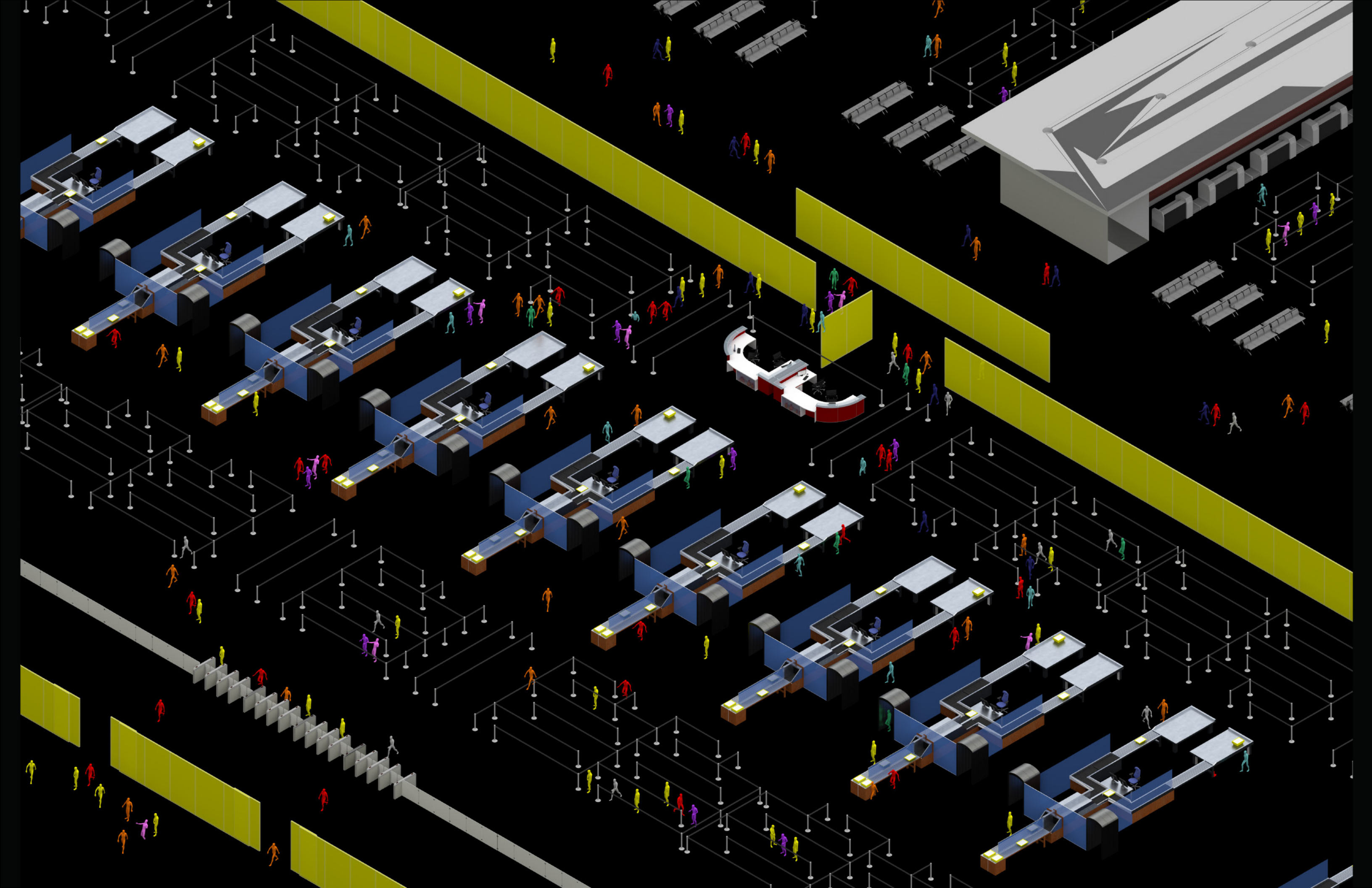
GSAPP SP26
Critic - Lydia Kallipoliti
Independent Thesis Studio

2026. 01 - 2026. 05

Airports represent a critical threshold where human and environmental conditions are rapidly being replaced and restructured by automated systems. This thesis argues that these machinic viewpoints currently dictate TSA spatial organization, prioritizing throughput over human presence. In response, this project proposes a reconfigured waiting environment integrating benches and biophilic elements. By reintroducing human comfort, varied temporality, and sensory engagement, these architectural interventions offer a critical counterpoint, mediating the tension between the cold, binary logic of surveillance systems and the lived, experiential needs of the passengers within these automated transit zones.







I Catalog of Machines in Airport

IDENTITY VERIFICATION

Self Check-in Kiosk

What They See

They use optical character strings and digital records. They read the Machine Readable Zone (MRZ) on your passport. Interpret the data via optical character recognition (OCR), and match it against the airline's booking database.

How It Works?

When you place your passport to the scanner glass, the machine flashes visible and sometimes infrared light. A high-resolution camera takes a picture of the document, specifically targeting the Machine Readable Zone (MRZ), the two lines of text at the bottom of a passport page. The kiosk uses Optical Character Recognition (OCR) algorithms to translate the visual pixel shapes of the printed letters and numbers into a digital text string. It acts as an automated terminal, prompting the airline's central server over the network and querying the booking database with that text string. If the server confirms a matching Passenger Name Record (PNR), the kiosk logic board triggers the physical printer to issue your boarding pass and luggage tag.

IDENTITY VERIFICATION

Biometric Gate

What They See

These machines use mathematical facial geometry. They scan your face using infrared or visible light, map the distances between key features (eyes, nose, jawline) to create a unique topographical vector, and compare that math against the digital face map stored on your passport's MRZ chip.

How It Works?

When you place your e-Passport on the reader, the gate emits a short-range radio frequency. The gate first reads the MRZ line (just like the kiosk) to generate a unique digital key. It uses this key to unlock the passport's microchip. It then downloads the high-resolution digital photograph of your face stored on that chip, which was cryptographically signed by your government to prove it hasn't been tampered with. As you look at the mirror, a camera array uses both visible and Near-Infrared (NIR) light to scan your face. It identifies dozens of "model points"—the exact distance between your pupils, the width of your nose, the depth of your eye sockets, and the shape of your cheekbones. The infrared sensors also check how light reflects off your skin to ensure you are a living, breathing human.

SECURITY SCREENING

Body Scanner

What They See

They see reflected millimeter-wave energy. They bounce harmless electromagnetic waves off your skin. The waves pass through clothing but bounce off dense objects (both metal and non-metal, like plastic or ceramics), allowing the machine to see a 3D topographical anomaly map of items concealed against the body.

How It Works?

These machines use active millimeter-wave technology. Two rotating antennas sweep around you, broadcasting harmless, non-ionizing electromagnetic waves. These waves easily pass through clothing but bounce back when they hit dense surfaces like human skin, metal, plastic, or ceramics. Receivers capture the exact timing and intensity of these bounced waves. The machine's computer processes the delayed reflections to create a highly accurate 3D topographical map of the subject. Software algorithms scan this map for anomalies (lumps or shapes that shouldn't be there). To protect privacy, it does not show the actual physical scan. Instead, it overlays yellow boxes onto a generic cartoon avatar to show the operator exactly where the anomaly is located on the body.

SECURITY SCREENING

Metal Detectors

What They See

These see disturbances in magnetic fields. They generate an invisible electromagnetic field across the archway. When a conductive metal object passes through, it disrupts that field, and the machine "sees" the change in electrical currents, triggering an alarm.

How It Works?

Walk-through metal detectors use Pulse Induction (PI). The archway consists coils of wire that pulse short, powerful bursts of electricity, creating an invisible, localized magnetic field. If a conductive metal object (like a belt buckle or a weapon) enters this field, the magnetic field induces tiny, temporary electrical currents (eddy currents) inside the metal object itself. These eddy currents in the metal object create their own weak, secondary magnetic field. The detector has receiver coils that "listen" for this secondary field. If the receiver detects a magnetic disturbance that exceeds a pre-set threshold, the logic board closes a circuit, triggering the audible beep and lighting up the LED indicators.

ACCESS CONTROL

Access card reader

What They See

They see encrypted digital keys. Using near-field communication (NFC) or low-frequency radio waves, they power up an employee's badge just enough to read a secure hexadecimal code, verifying it against a central clearance database.

How It Works?

Most readers use passive RFID or Near-Field Communication (NFC). The reader constantly emits a low-power radio frequency field. When an employee holds their badge near it, an antenna inside the badge harvests power from that radio field, wakes up a microchip, and transmits a secure, encrypted string of hexadecimal data back to the reader. The reader acts purely as a messenger. It sends that hexadecimal string via a secure protocol (like Wiegand or OSDP) to a central server in a secure IT closet. The server checks the database. Does this ID have permission to open this specific door at this specific time? If yes, the server sends an electrical "Grant Access" command.

ACCESS CONTROL

Door Controller

What They See

These are the muscled of the access system. They see binary electrical states. They look for simple open/closed circuit signals from the card reader and door hinges to know whether to engage or disengage the magnetic or mechanical locks.

How It Works?

Door controllers read binary electrical states. They monitor microswitches inside the door hinges (to see if the door is physically open or closed) and receive simple high-low voltage signals from the central server. When the controller receives the "Grant Access" signal from the server, it acts as a physical relay switch. It instantly cuts or applies power to the heavy magnetic lock (maglock) or electric strike in the doorframe, physically allowing the door to be pulled open.

SURVEILLANCE & SAFETY

CCTV Camera

What They See

Standard cameras see optical video frames (pixels) in the visible light spectrum. Advanced analytical cameras, however, see movement vectors, tracking the direction and speed of pixel clusters to detect untended baggage or someone walking the wrong way down a security corridor.

How It Works?

Light enters the camera lens and hits a digital sensor (CMOS or CCD). The sensor contains millions of microscopic photoreceptors that convert photons (light) into electrical charges, creating a grid of colored pixels. Standard CCTV just records this pixel data. However, advanced analytical CCTV uses computer vision to track pixel clusters. If a cluster of pixels (representing a bag) stops moving and remains stationary for 5 seconds while other pixels move around it, the algorithm flags it as "untended baggage" and alerts security.

SURVEILLANCE & SAFETY

Thermal Infrared Camera

What They See

Thermal Infrared cameras see thermal radiation (heat) in the long-wave infrared spectrum. Advanced analytical thermal cameras, however, see thermal gradients, measuring the difference in heat intensity between an object and its background to detect physiological stress, potential health anomalies, or hidden objects that mimic body heat.

How It Works?

Thermal radiation enters the camera through a specialized lens (usually made of germanium, which allows infrared light to pass) and hits a microbolometer sensor. Unlike a standard pixel sensor that reacts to light particles (photons), the microbolometer contains a grid of microscopic resistors that change electrical resistance based on the amount of heat energy they absorb. The camera converts these varying resistance levels into a temperature matrix, creating a "thermograph".

SURVEILLANCE & SAFETY

Motion Sensor

What They See

Passive Infrared (PIR) sensors see sudden shifts in ambient heat. They don't see a person's shape, but rather a warm mass moving across an invisible grid of infrared zones.

How It Works?

Passive Infrared (PIR) sensors use a pyroelectric material that generates voltage when exposed to heat (infrared radiation). A focused plastic lens covers the sensor, chopping the room into an invisible grid of "hot" and "cold" zones. The sensor doesn't see shapes; it looks for a sudden spike, then a drop, in infrared energy as a warm human body crosses from one zone into the next. This voltage change trips an electronic relay, which then triggers an alarm or turns on a camera.

BAGGAGE LOGISTICS

Barcode Scanners

What They See

They see optical contrast patterns through the barcode. Using lasers or cameras, they read the precise widths of the black-and-white lines on your bag tag, translating that optical pattern into an alphanumeric flight and destination code.

How It Works?

Automated conveyor airways use spinning mirrors to sweep laser beams across a bag, or use high-speed optical cameras. They are looking for the contrast between the black ink and white paper of a 1D barcode. A photodiode measures the intensity of the light bouncing back. The varying widths of the black bars are translated into a digital alphanumeric string. The baggage handling computer cross-references this string with the flight database and immediately triggers mechanical paddles or tilt-trays further down the conveyor belt to push the bag down the correct chute for its flight.

BAGGAGE LOGISTICS

RFID Reader

What They See

They see UHF radio frequency signatures. They blast out a radio wave that wakes up the tiny chip inside the bag tag, which then broadcasts its unique digital ID back to the reader, allowing the bag to be seen even if it is upside down or hidden.

How It Works?

Similar to access cards but on a massive scale, UHF (Ultra High Frequency) RFID airways blast powerful radio waves. The passive tags on luggage absorb this wave and backscatter their unique 96-bit Electronic Product Code (EPC). Because UHF waves penetrate fabric and plastic, the reader can capture the ID of a bag buried under other bags or flipped upside down, at incredibly high speeds. This feeds point location data to the sorting computer with near 100% accuracy, bypassing the line-of-sight limitations of barcodes.

INSPECTION SYSTEMS

CT Baggage Scanner

What They See

They see 3D density voxel maps. By taking hundreds of X-ray slices, they calculate the exact mass and density of every microscopic point inside the bag, allowing the computer to virtually strip away low-density clothing to reveal high-density objects.

How It Works?

A Computed Tomography (CT) scanner features a massive X-ray tube and a curved array of detectors that spin rapidly around the baggage as it moves on the belt. It takes hundreds of 2D X-ray "slices" of the bag from every possible angle. A powerful computer stitches these slices together into a 3D grid of voxels (3D pixels). Because the machine calculates the exact mass and density of every voxel, algorithms can automatically flag highly dense areas (like explosives or dense metals). The operator can also use a touchscreen to digitally rotate the bag and virtually strip away low-density clothing to see the dense objects inside clearly.

INSPECTION SYSTEMS

Dual Energy X-ray

What They See

These shoot a single beam of X-rays through the bag, but use two layers of detectors separated by a copper wall. The first layer captures low-energy X-rays, the copper filter blocks medium and high-energy X-rays, and the second layer captures the high-energy X-rays. Different elements on the periodic table absorb high and low-energy X-rays at different rates. By calculating this ratio, the computer determines the Effective Atomic Number (EAN) of the objects in the bag. It translates this data into colors for the operator: low atomic numbers (organics, plastics, explosives) are tinted orange; medium numbers (aluminum, glass) are green; high numbers (steel, copper) are blue.

Material Type	EAN (Effective Atomic Number)	Color	Typical Examples
Organic	~5.0	Orange	Food, Paper, Textiles, Plastics
Low Density Inorganic	~10.0	Yellow	Aluminum, Glass, Ceramics
Medium Density Inorganic	~15.0	Green	Steel, Copper, Lead, Concrete
High Density Inorganic	~20.0	Blue	Gold, Silver, Uranium, Lead

CONNECTIVITY & DOCKING

Automated Jet Bridges

What They See

They use laser reflections and spatial proximity. Advanced bridges use LiDAR or lasers mounted on the canopy to scan the shape of the incoming aircraft. They match this reflection against a known database of aircraft shapes to automatically align and dock with the aircraft door without scratching the fuselage.

How It Works?

Instead of a human using a joystick, automated bridges use LiDAR (Light Detection and Ranging) and structural sensors. The first laser emits a series of X-rays, which are reflected off the fuselage. The bridge's computer calculates the exact distance and measures exactly how long it takes for the light to bounce back to build a precise 3D map. By calculating this ratio, the computer determines the Effective Atomic Number (EAN) of the objects in the bag. It translates this data into colors for the operator: low atomic numbers (organics, plastics, explosives) are tinted orange; medium numbers (aluminum, glass) are green; high numbers (steel, copper) are blue.

AUTONOMOUS VEHICLES

Autonomous Tugs

What They See

They see LiDAR point clouds and GPS coordinates. They map their surroundings in real-time by bouncing millions of light pulses off the tarmac, creating a 3D map that allows them to see and avoid ground crew, other vehicles, and aircraft while navigating to the baggage hall.

How It Works?

These driverless vehicles use a sensor fusion array. Spinning LiDAR units on the roof create a 360-degree point cloud of the tarmac. High-definition cameras look for lane markings, creating a 2D map. GPS (Real-Time Kinematic GPS) pinpoints its location down to the centimeter. Ultrasonic (How It Works Data). The onboard computer feeds this data into a 3D AM (Simultaneous Localization and Mapping) algorithm. It dynamically plots a safe path across the busy tarmac, controlling the electronic steering and braking actuators to dodge baggage carts, ground crew, and taxiing aircraft while delivering carts to the baggage hall.

AUTONOMOUS VEHICLES

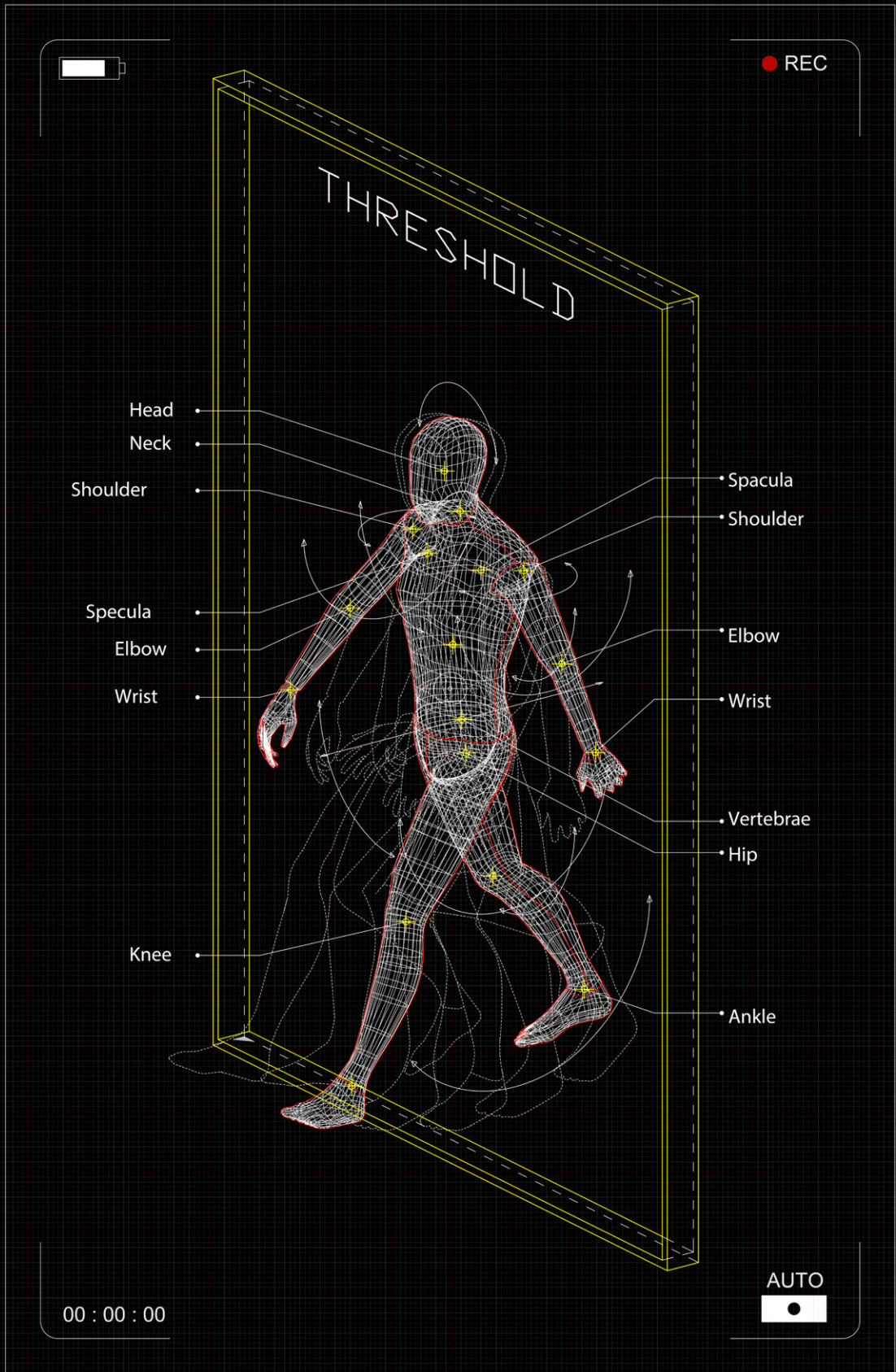
Cleaning Robots

What They See

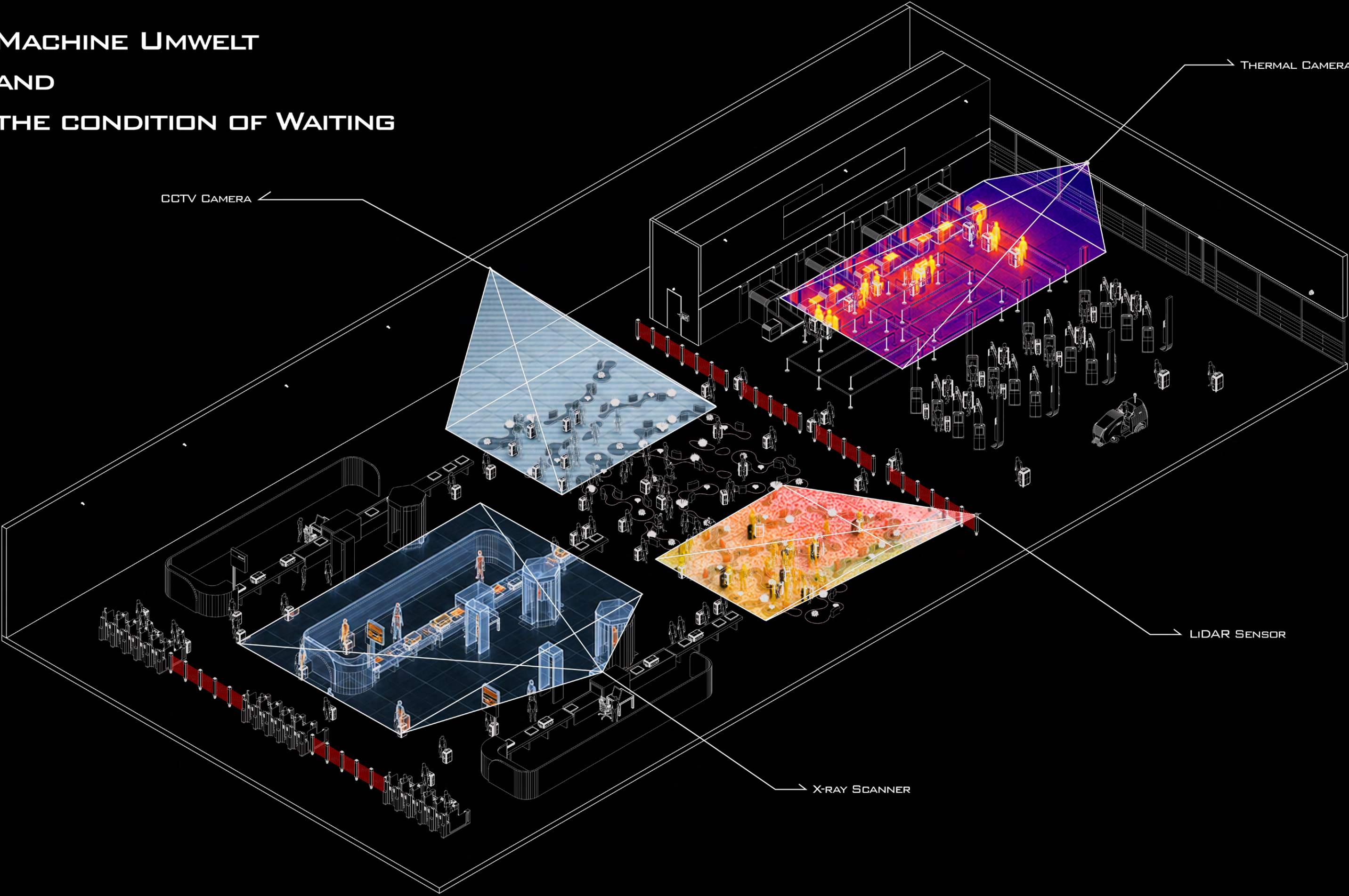
They see 2D boundary lines and obstacle proximity. Using a combination of ultrasonic sensors (sonar) and simple bump sensors, they map the terminal floor, seeing walls and benches as "no-go" zones while systematically covering the open floor space.

How It Works?

Commercial floor scrubbers use 2D LiDAR scanners low to the ground to map walls and pillars. They supplement this with ultrasonic sensors and bump sensors, which bounce sound waves to detect transparent obstacles like glass walls which laser light might pass through, and physical bump sensors on the bumper. The robot generates a 2D map of the terminal. Using its algorithms, it calculates the most efficient back-and-forth moving pattern to scrub the floor. If the sensor or LiDAR detects a dynamic obstacle (like a passenger walking by or a stray piece of luggage), it pauses or calculates a detour route around the object before resuming its cleaning path.



MACHINE UMWELT
AND
THE CONDITION OF WAITING



GSAPP FA26
Critic – Ethan Bourdeau
Architectural Acoustic Ecology

2025. 09 – 2025. 12

Arctic Experience

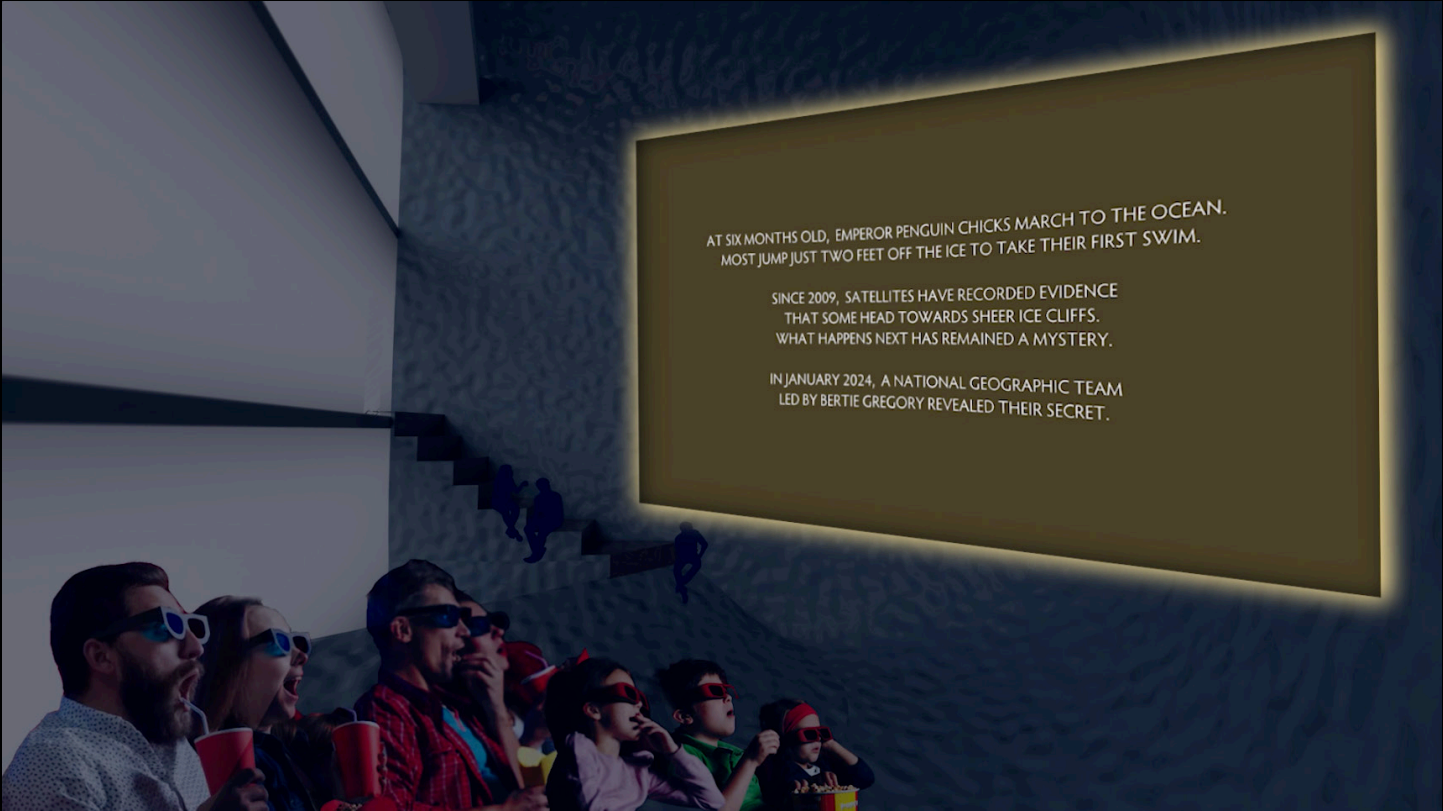
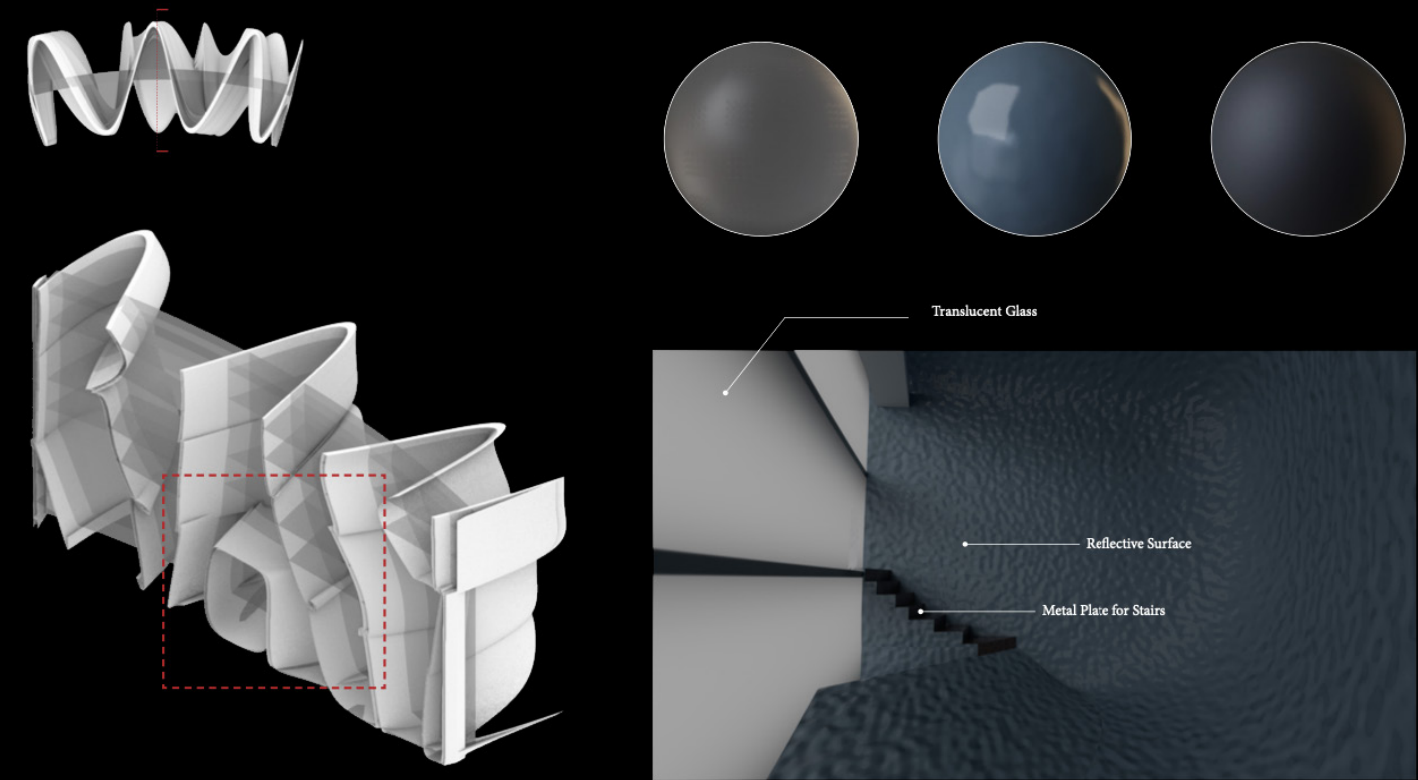
First Penguin

AAD26 Lotus Park/
Instructor – Ethan P. Bourdeau

FA25 Final Review

Lotus Park

I Spatial Analysis for Arctic Experience



– **High Reverberation**

Reflective Surfaces (Glowing and hard surface)

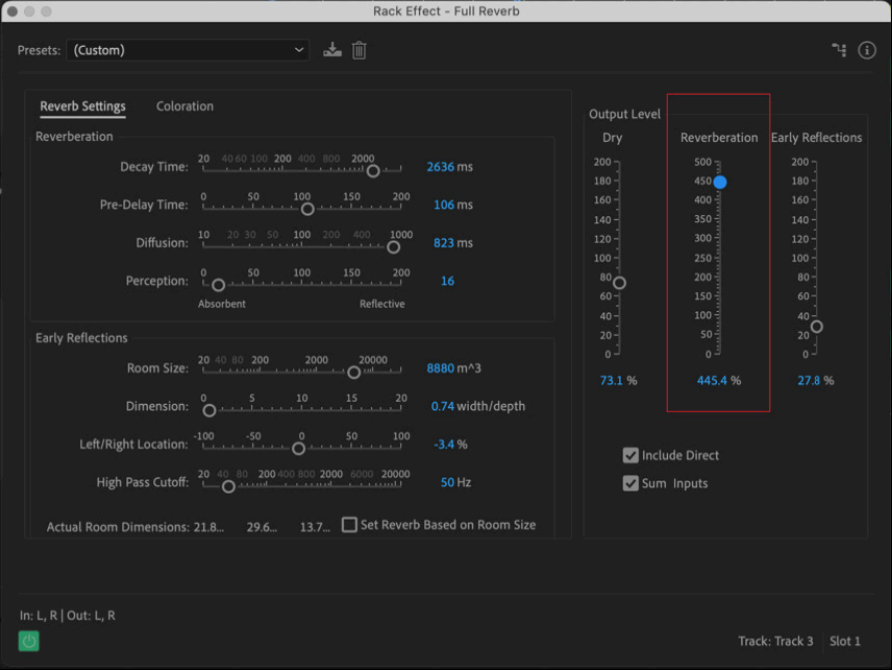
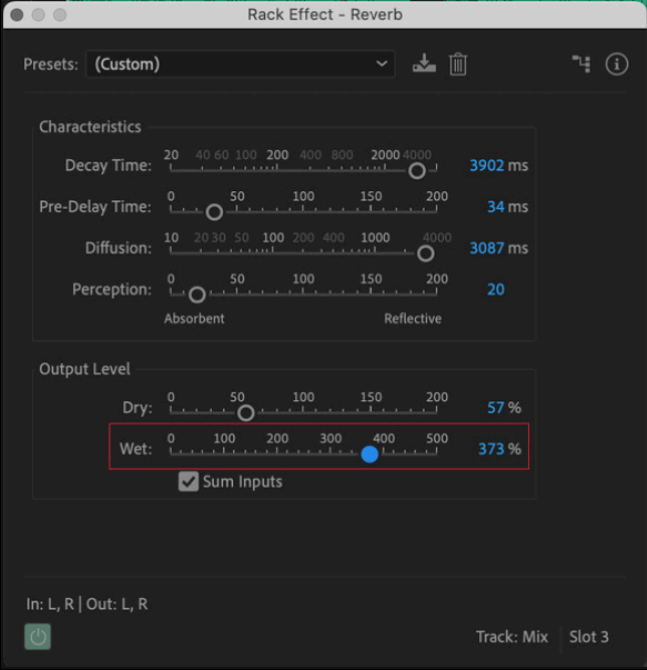
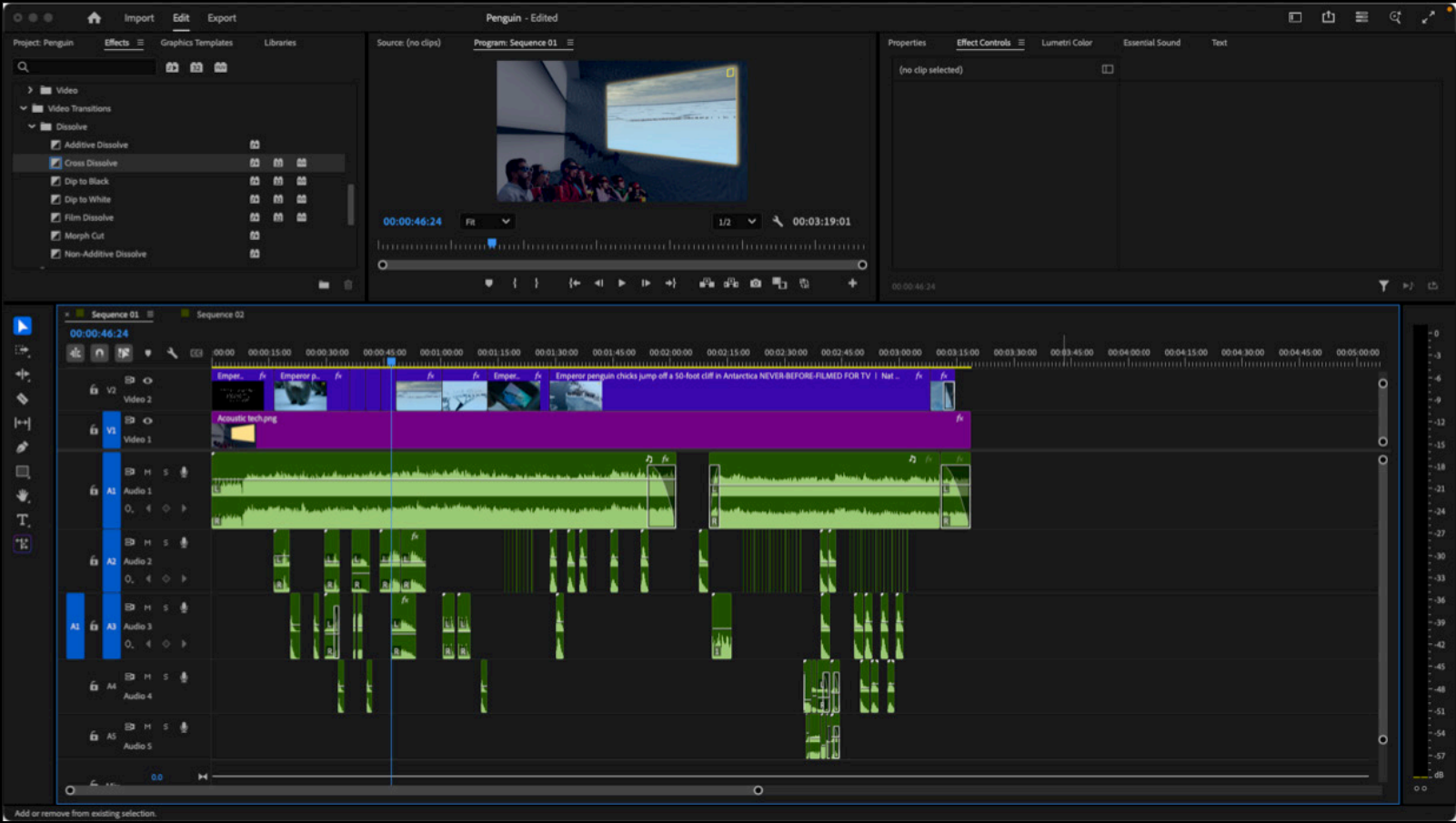
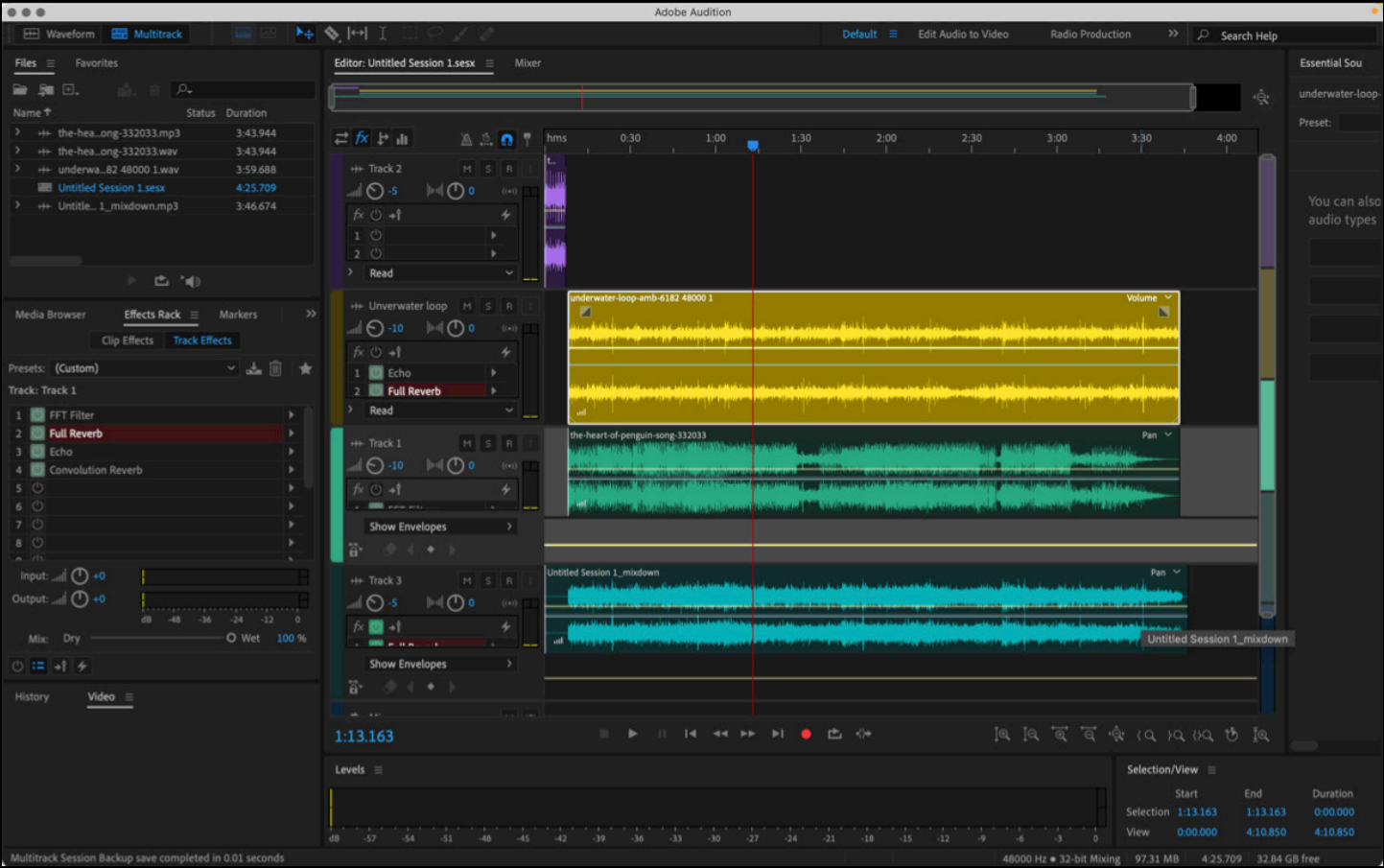
– **Low Light**

Soft, cold and indirect due to the snow reflectance

– **Thermal Regulation**

Cold feeling materials (Stone, Metal)





The acoustics of snow

Before getting to the heart of the subject, a few acoustic considerations allow us to better understand what we are dealing with.

Many of us know that snow is a very good **sound absorber**. The snowy landscape is often silent, on the one hand because in winter the fauna is quite inactive; but also because all the sounds are very quickly deadened. The acoustics of a snowy place are very close to ... a recording studio. That's good because that's where the post-production of a film takes place.

Snow is the source of a wide variety of sound textures. Melted, frozen or thick, it is sometimes sticky, crispy or crunchy. When the snow is powdery, footsteps sounds are greatly reduced at the source. The highs are filtered out and the bass remains, hence that characteristic muffled crunch:



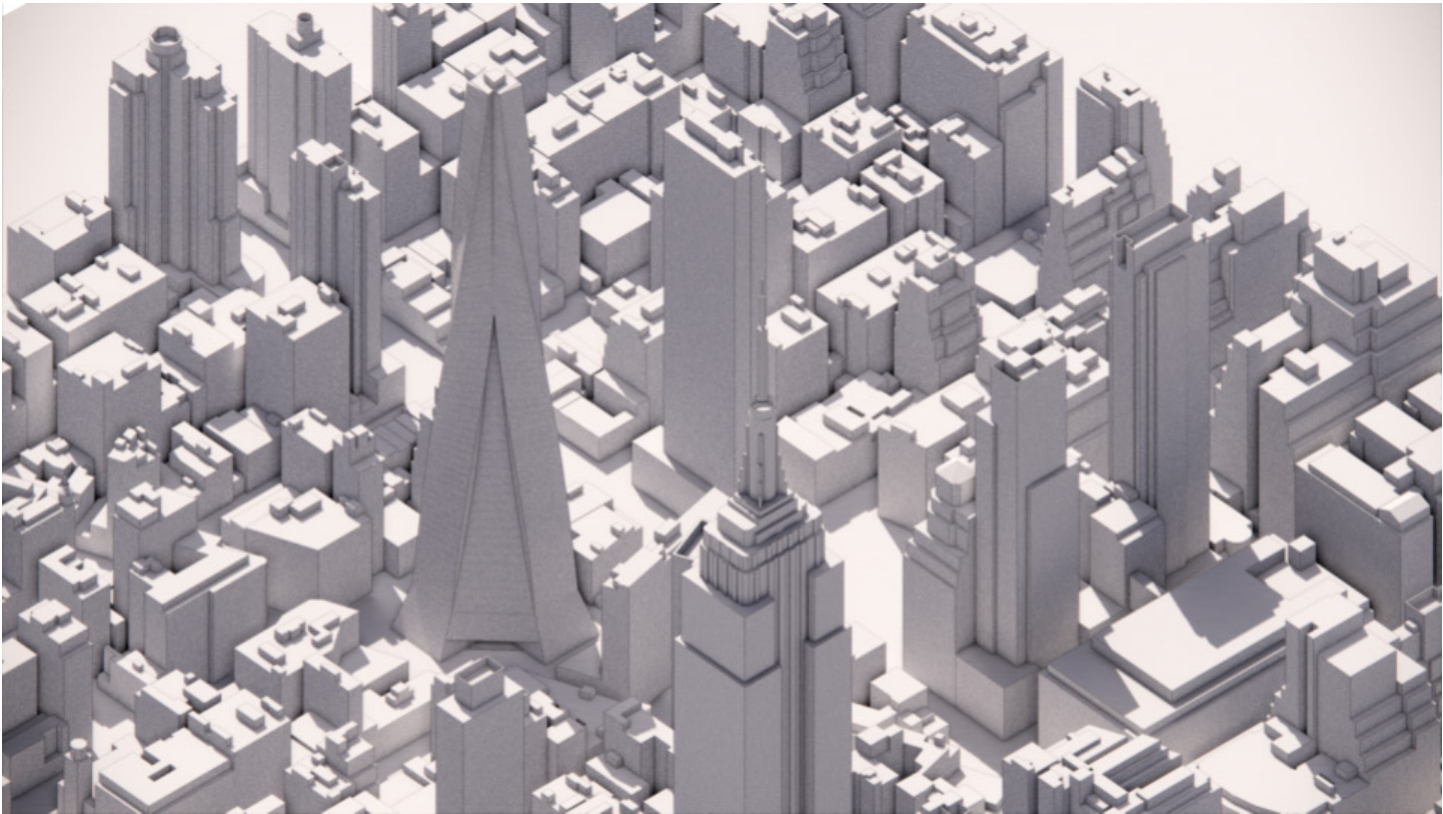
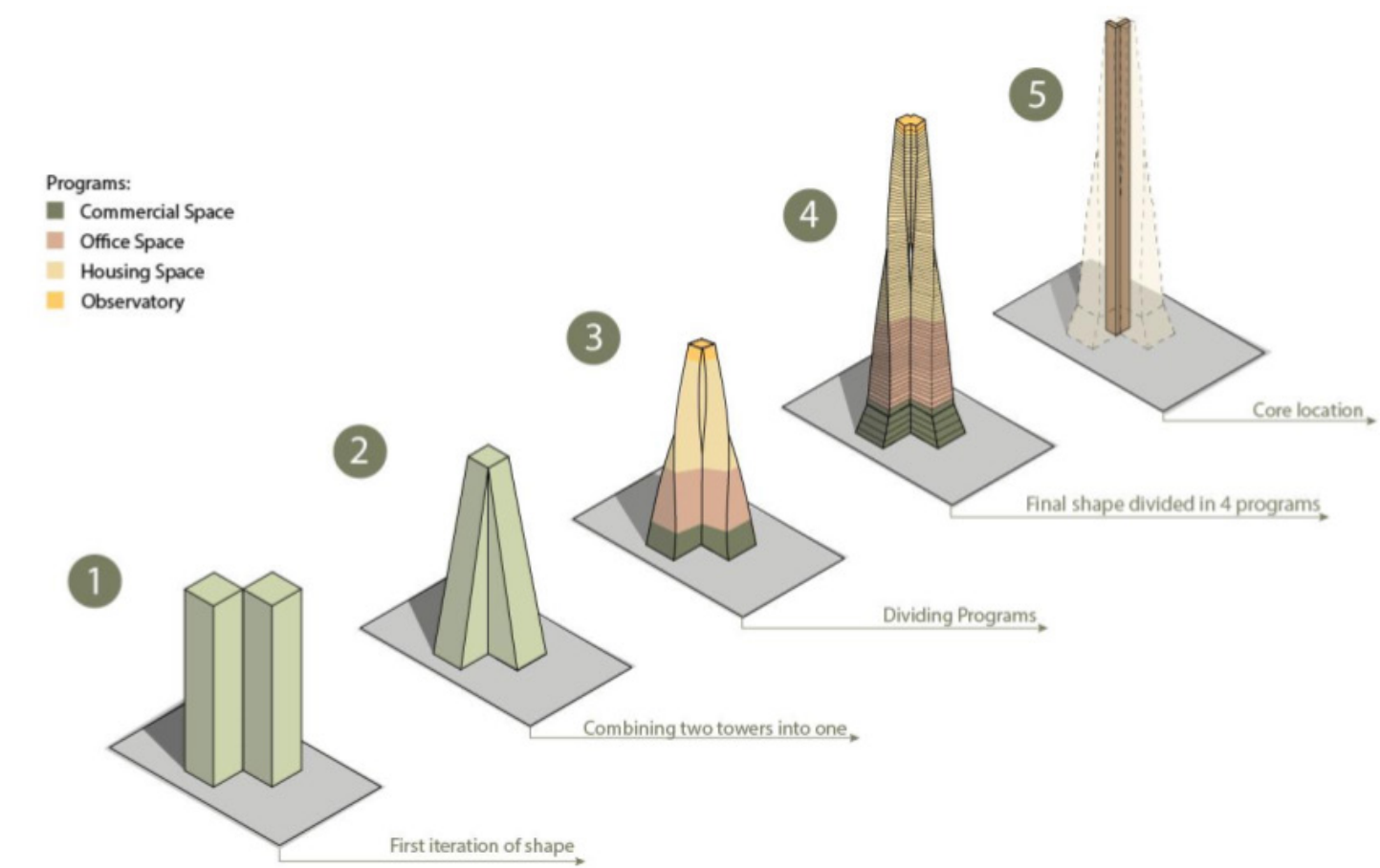
<https://www.youtube.com/watch?v=ylokNfgYAbw>

GSAPP SU26
Critic - Joseph Brennan
RE-THINKING BIM

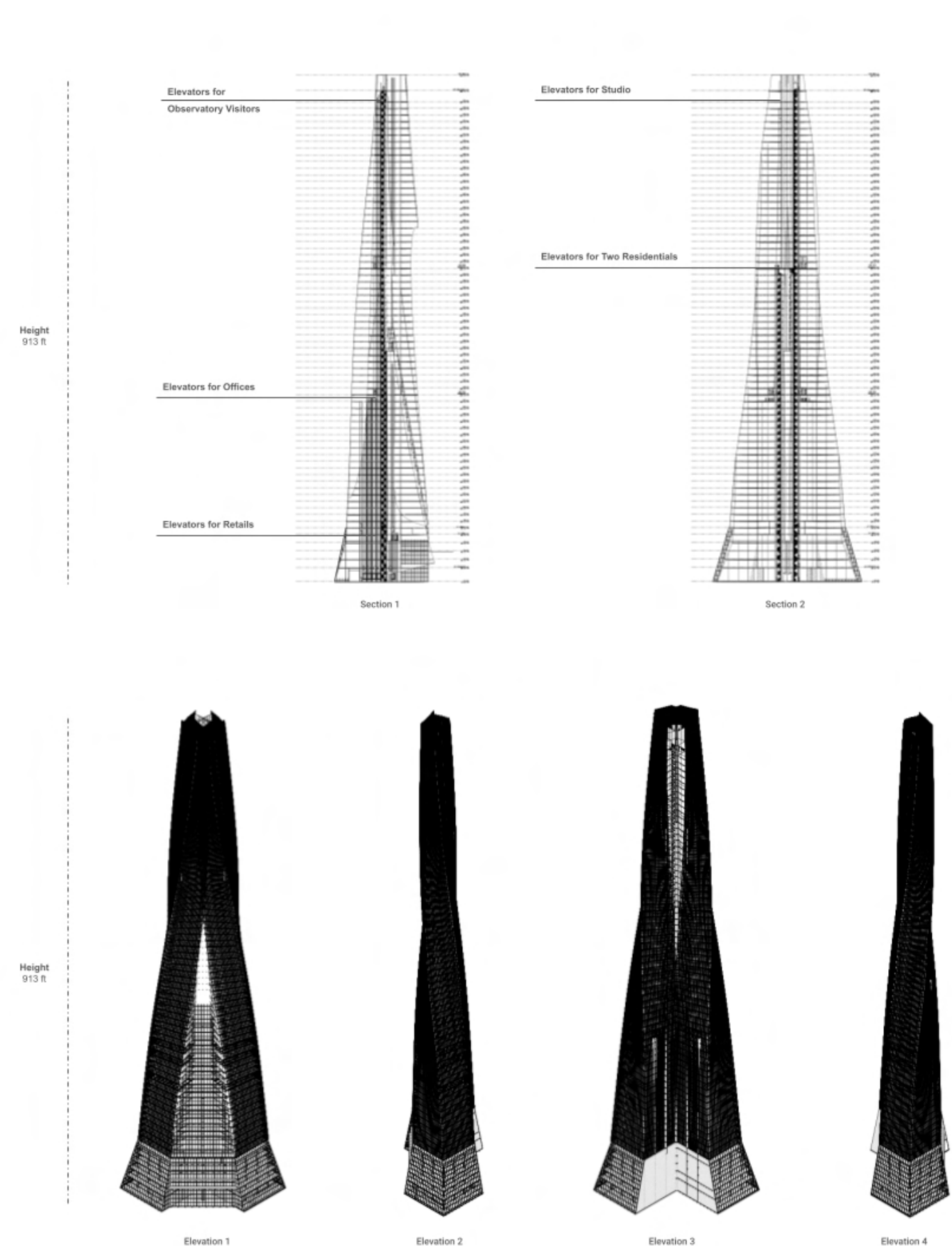
2026. 01 - 2026. 05



I Massing Diagram



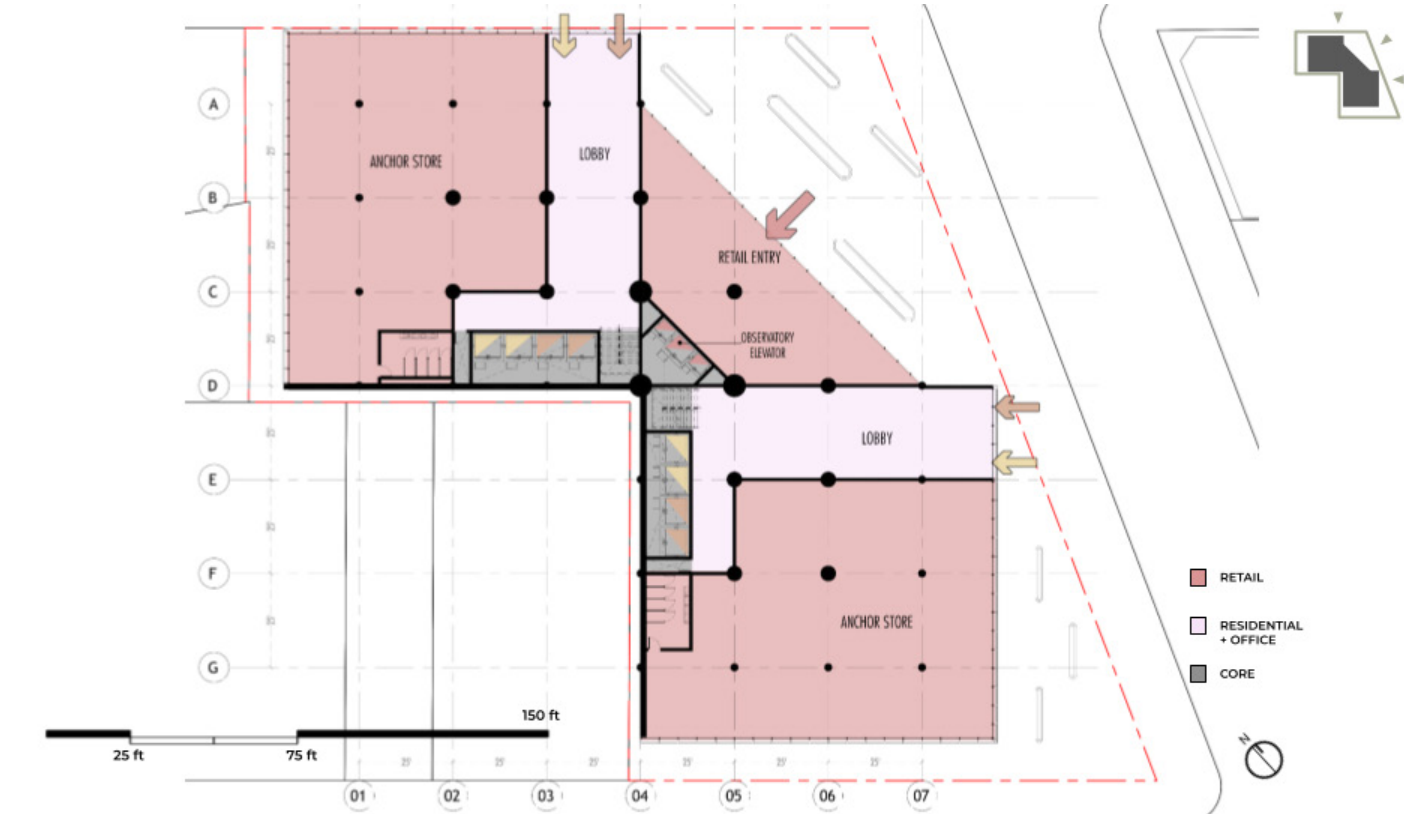
I Sections and Axono



I Ground Floor Plan



I First Commercial Floor Plan with Circulation Analysis



I Typical Plans

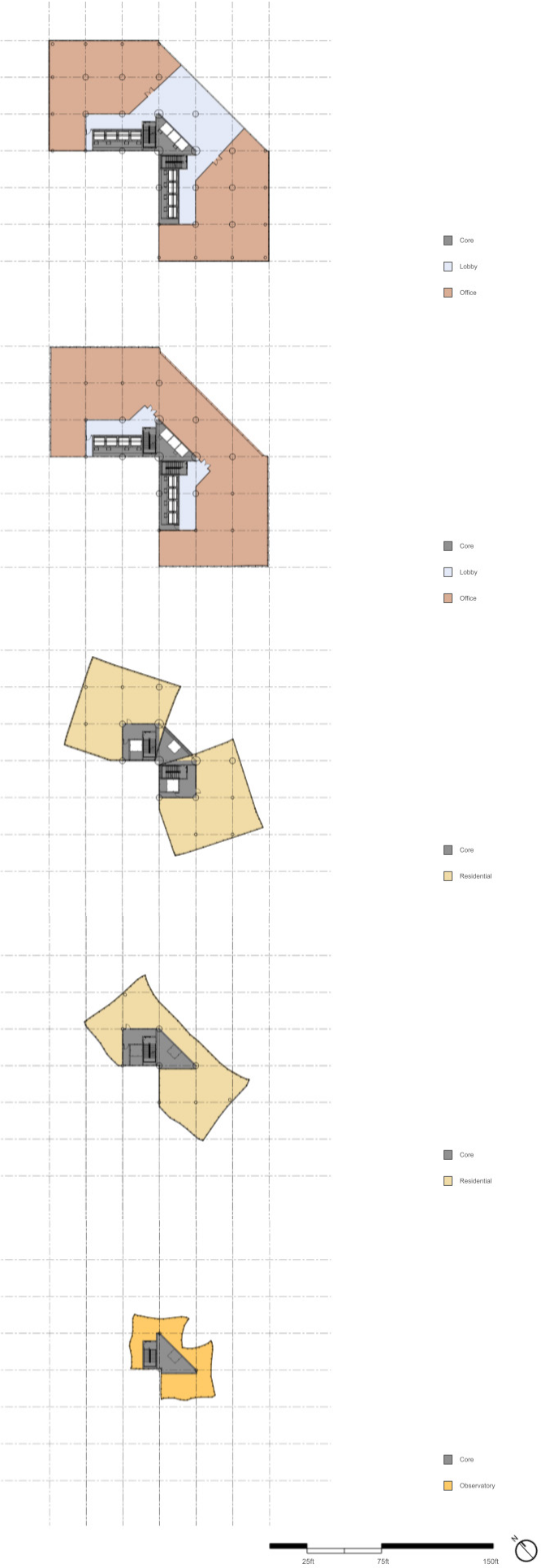
L6 - Two Offices

L7 - One Office

L28 - Two Residentials

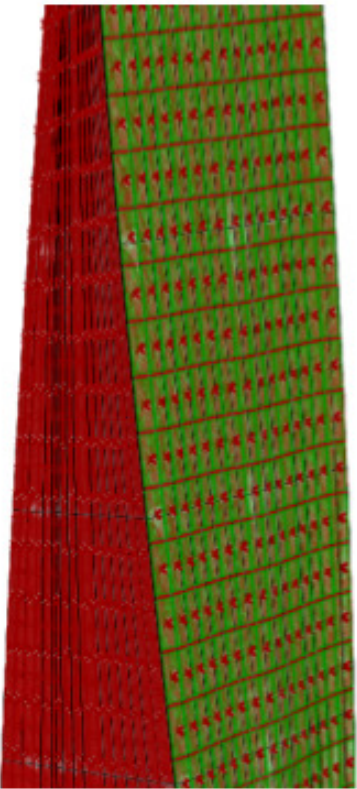
L47 - One Residential

L77 - Observatory

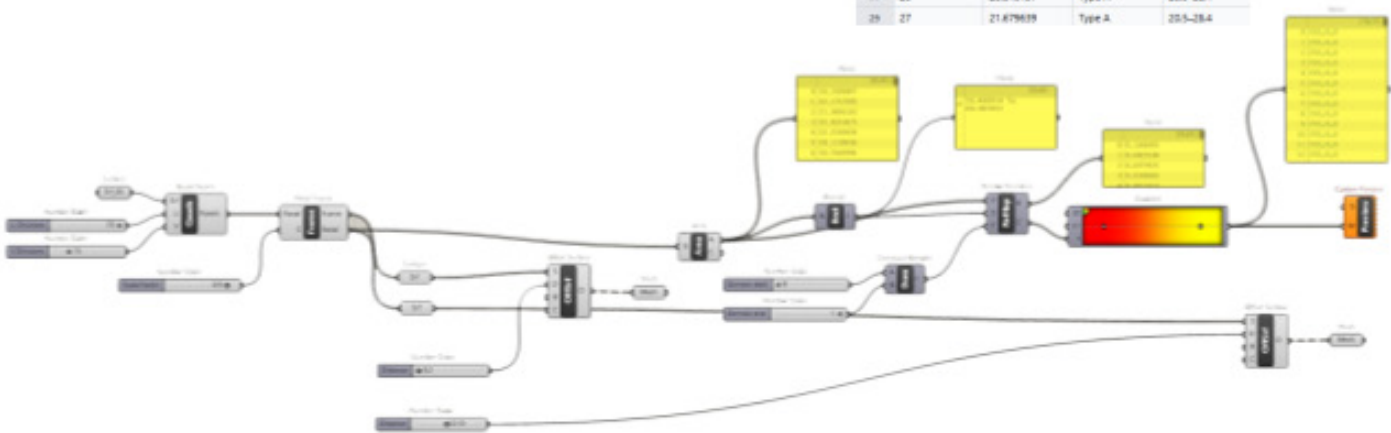


Facade system - rationalization

Zone A (top, narrow) - smallest panels, highest repetition
Zone B (mid) - standard panels, most common type
Zone C (base transition) - largest panels, fewest unique types

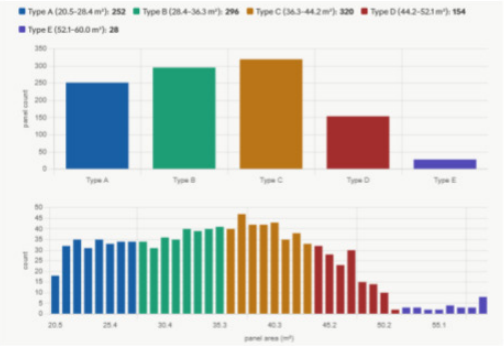
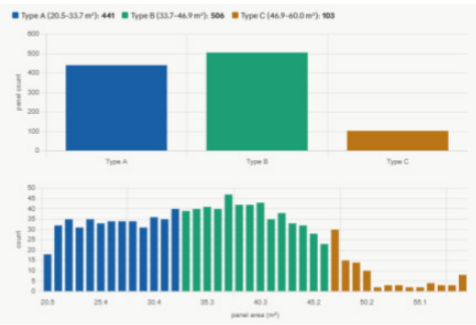


	A	B	C	D
1	panel_index	area_m2	type_family	type_range_m2
2	0	26.208047	Type A	20.5-28.4
3	1	22.171595	Type A	20.5-28.4
4	2	21.888103	Type A	20.5-28.4
5	3	22.851815	Type A	20.5-28.4
6	4	22.534938	Type A	20.5-28.4
7	5	24.110836	Type A	20.5-28.4
8	6	26.544996	Type A	20.5-28.4
9	7	24.166247	Type A	20.5-28.4
10	8	21.857451	Type A	20.5-28.4
11	9	21.186329	Type A	20.5-28.4
12	10	21.197688	Type A	20.5-28.4
13	11	21.457305	Type A	20.5-28.4
14	12	22.168729	Type A	20.5-28.4
15	13	23.001128	Type A	20.5-28.4
16	14	24.639798	Type A	20.5-28.4
17	15	30.864974	Type B	28.4-36.3
18	16	22.001117	Type A	20.5-28.4
19	17	21.580944	Type A	20.5-28.4
20	18	21.618752	Type A	20.5-28.4
21	19	22.32473	Type A	20.5-28.4
22	20	24.796123	Type A	20.5-28.4
23	21	29.325203	Type B	28.4-36.3
24	22	24.799987	Type A	20.5-28.4
25	23	21.415296	Type A	20.5-28.4
26	24	20.488914	Type A	20.5-28.4
27	25	20.565544	Type A	20.5-28.4
28	26	20.840137	Type A	20.5-28.4
29	27	21.679639	Type A	20.5-28.4



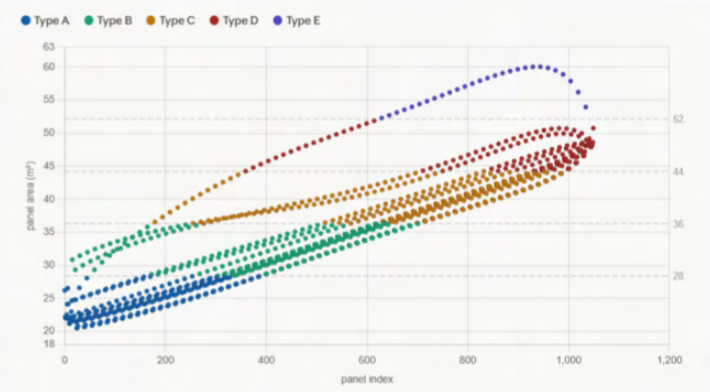
Facade system - rationalization

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Finalized type families.



Facade system - rationalization

- Range spans 39.5 m² (20.5 → 60.0)
dividing into 5 gives ~8 m² per family, which sits within standard precast fabrication tolerance bands. Tighter than 4 (too coarse for a tapered tower), looser than 6+ (diminishing returns on repetition savings).
- Cost logic,
each unique mold in precast costs roughly \$15,000–25,000 to fabricate. At 5 types across 1,050 panels you get ~210 panels per mold on average, enough repetition to fully amortize the mold cost. At 6+ types that drops below 130 panels/mold which starts losing economic justification.
- Zone alignment
The tower has 3 natural zones (base transition, mid shaft, top taper). 5 families maps cleanly: 1 type for base, 2 for mid, 2 for top, matching the geometric logic of the taper without forcing artificial boundaries.
- Industry precedent
most rationalized high-rise precast facades use 4–6 panel types. The Shard (London) used 11,000 panels across 5 glass types. One Canada Square uses 4 precast types. 5 is the industry sweet spot.





Facade system - Double skin curtain wall system

The double skin curtain wall system works through an active 200mm cavity between the outer DGU and inner single-glazed layer, using buoyancy-driven stack effect to regulate airflow,

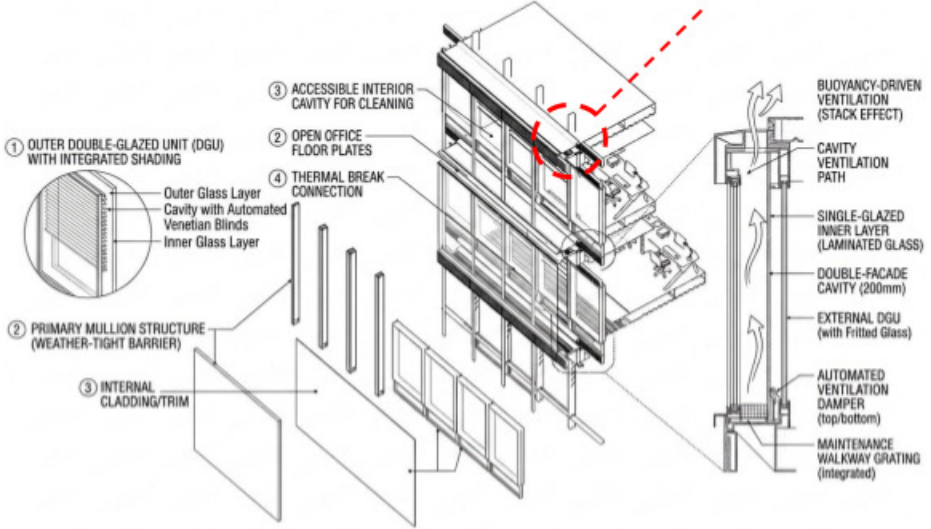
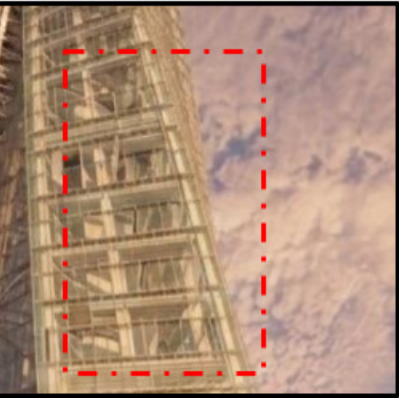
Exhausting heat in summer and buffering cold in winter.

This moves the facade beyond passive insulation into a dynamic climate regulation system. ETH Zürich's Architecture and Building Systems lab is currently investigating how deep reinforcement learning can control these cavity dampers and blind systems in real time, optimizing simultaneously for occupant comfort and energy efficiency.

Reinforcement Learning Control of Diverse Climatisation Systems for Energy Efficient Buildings



Detail A





THE ATTRACTIVE INTERDEPENDENCE

GSAPP SU25
Critic – Lydia Kallipoliti
Argument

2025. 05 – 2025. 08

New Medium with Transparency

In an age marked by overwhelming human intervention and control over natural systems, the role of design must evolve beyond function and aesthetics—it must respond critically to the epoch we inhabit: the Anthropocene. The traditional booklet, a linear and opaque method of information delivery, is no longer sufficient to address or reflect this complexity. This project reimagines the concept of the booklet through transparent materials and light—elements that served as both metaphorical and physical tools for decoding a deeper understanding of form, knowledge, and coexistence. By employing acrylic and light, the new “booklet” transcends its conventional boundaries, inviting users to reframe perception, navigate knowledge through interaction, and question their position within a shared environment.

The physical model consists of a set of laser-cut acrylic panels, each etched with fragments of text and curves. The content is not only readable in a traditional sense; additionally, the viewer can engage with the object, overlap each piece, and use a directed light source to emphasize the mood that the text contains. This interaction invites viewers to slow down and contemplate—not only what they see, but how they see it. Through this process, the booklet ceases to be a passive object and becomes an environmental condition, where space, light, and body converge in meaning-making. This dynamic interaction reflects our changing relationship to knowledge in the post-digital age, and metaphorically, our relationship with nature: layered, interdependent, and often requiring a shift in perspective to truly understand.

Architectural Discourse over the Control

Behnaz Farahi is an interdisciplinary designer and educator at MIT. Her work explores the relationship between the human body and its environment, often using interactive technologies and wearable devices. She said, “The aim is to develop a secret language for transmitting information between multiple women.”, creating AI-controlled robotic masks to resist patriarchal oppression. The core idea of Farahi’s work is that technology can be used not as a tool of control, but as a means of secret communication between women. What’s important here is that design can resist surveillance and gendered power structures in a quiet yet effective way. These kinds of interfaces are intentionally designed to remain invisible or undecipherable, showing how architecture itself can shift the weight of power over the entities.

As humans, we constantly struggle to decode the countless layers of information embedded within the Earth—from the microscale of cellular structures to the vast macroscale of the universe. Why is this so difficult? Perhaps because nature, unlike us, operates on its own terms—efficiently, silently, and without the need for recognition. In the Anthropocene, nature continues to deliver vital messages, but we have become too distracted or too dominant to notice. These messages are not openly revealed; they are hidden—intended only for those who seek them. Creatures that overlook the value of one another’s presence miss out on this shared wisdom, which is the very key to understanding the secret of life itself.

The design of this booklet resists any monopoly—whether over knowledge, resources, or rights—by using light as a medium through which messages can be revealed. It offers an alternative to systems of control, reminding us of the value of interdependence over dominance. Rather than focusing on protection through isolation and ownership, it encourages a return to mutual recognition. In this way, a respectful practice of interdependence—one that invites each other’s presence into our daily routines—becomes a powerful counterforce to dominant systems of control. By intentionally recognizing and integrating the existence of others—whether human, non-human, or environmental—we begin to decode the intricate balance that sustains life on Earth. This approach challenges the isolating tendencies of individualism and ownership, offering instead a framework rooted in mutual care, reciprocity, and shared responsibility. Through this act of respect and relational awareness, we are not only prompted to see differently, but also to live differently—to protect what we share, rather than dominate what we fear to lose.

A new design ethic—centered on interdependence—calls for a fundamental rethinking of our attitude toward the Earth. This planet is not merely a passive container of resources to be exploited, nor an empty canvas onto which we may impose our desires. Rather, it is a living being, embedded within systems far more complex than human-centered narratives allow. Within a framework of reciprocity, this ethic urges designers to reorient their perception of architecture—not as an instrument of dominance, but as an act of respect. It is through mutual recognition and care that we might begin to slow the accelerating ecological and social crises of our time. Perhaps mutual respect is not only a value, but a necessary tool for restoring balance in the face of impending collapse.

