

MATIJA POGORILIC

Advanced Architectural Design Portfolio

GSAPP

2025

STEAMVIEW PARK

CLIMATIC RECOMPOSITION OF A BUILDING IN PARIS

CLOUD

THE INTERSTICE

THERMAL MEMORY REVEAL

WHAT IS THE COST OF INFORMATION

ALPINE ASSEMBLY

+ written work

STEAMVIEW PARK

EXTRACTING FROM CONED TO DEMOCRATIZE ENERGY DISTRIBUTION

Toxic Land(Fills)

mentored by Nerea Calvillo (TA Aishwarya Garg)

collaboration with Martina Holmann

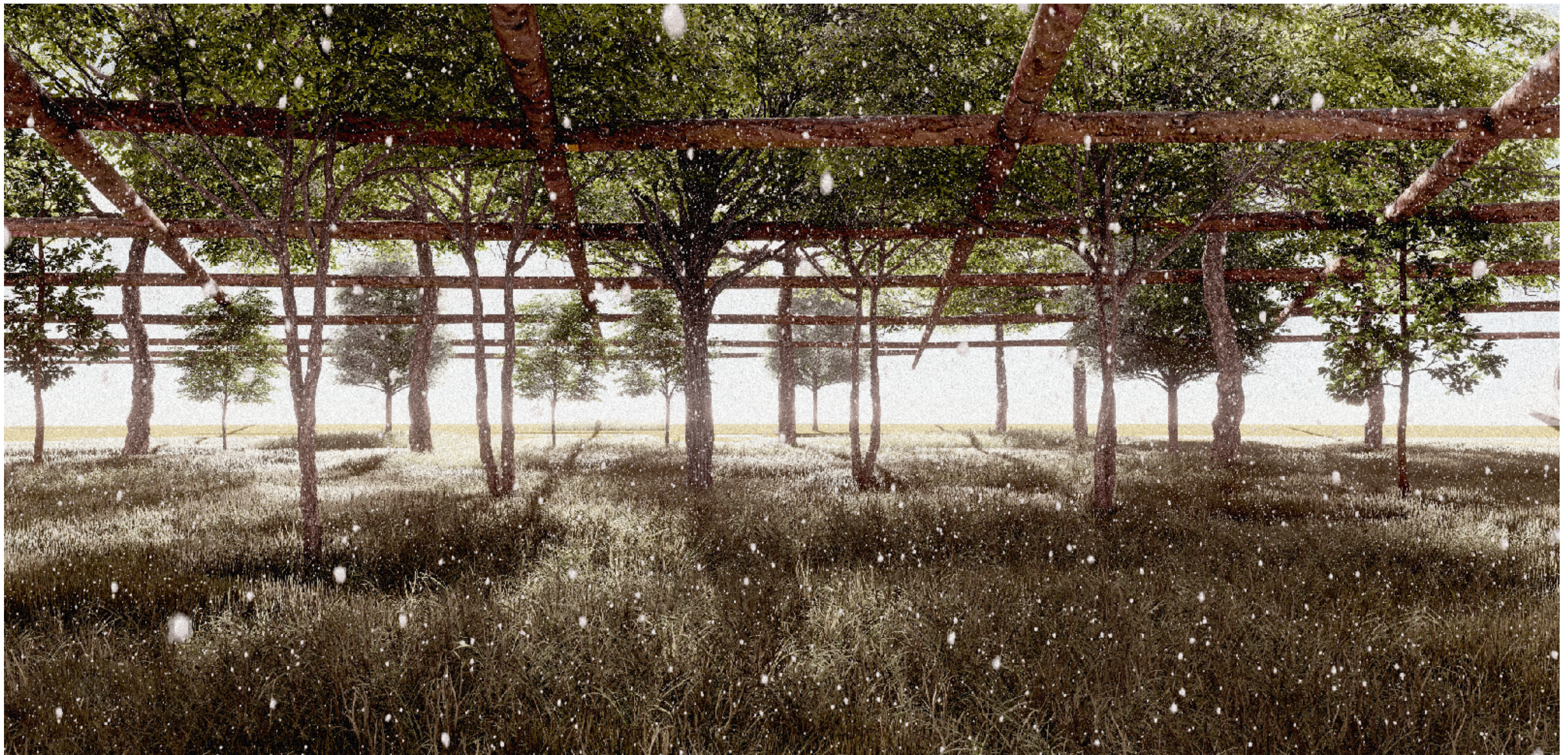
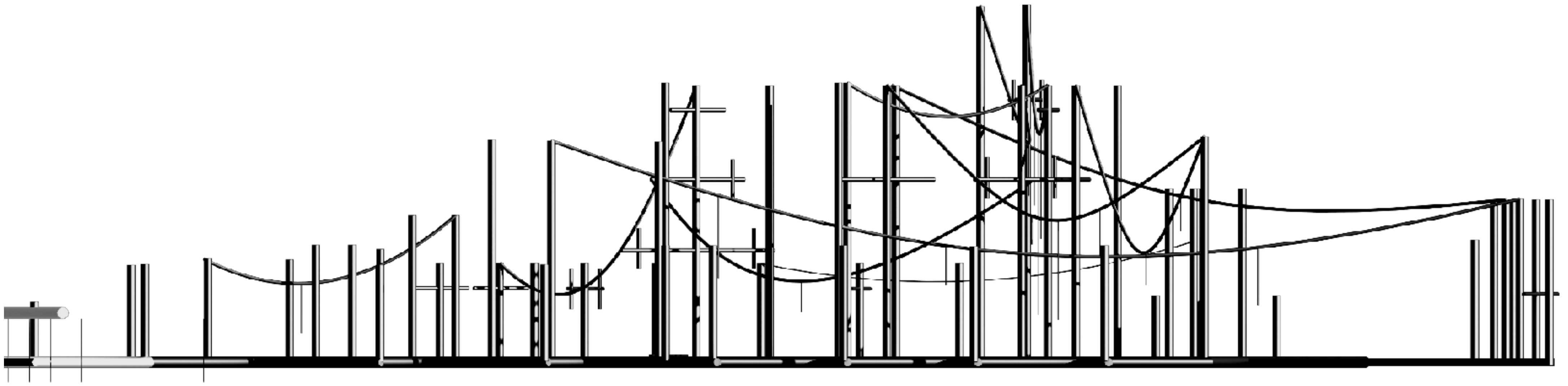


Through history, Soundview Park has been the place of dispute between Con Edison and the communities considering displacement, environmental violence, health issues, and ecosystem degradation. These disputes continue today, Manhattan has an abundant supply of steam, while in the Bronx, it is being replaced with fracked gas. How can the histories of environmental injustice be reversed?

We will challenge the rhetorics of decarbonization by reversing the tendency to fracking, requiring Con-Ed to continue using steam and bring it free to the neighborhood as an environmental reparation to prevent energy injustice. Additionally, we will anticipate climate change by creating new ecologies with steam.

The pipelines are always underground and unseen, we will bring them overground. The park will be transformed into Steamview Park, a steam-breathing machine. Communities and environmental advocacy groups, who have always collaborated to revitalize the park, will help us make the pipes by hand.

Fifty years from now, the steam habitat will destroy its own infrastructure. As climate change eventually catches up, the pipes will no longer be needed. The system will remain as a legacy of a materiality that is dying, and it will serve as a memory of the histories of environmental injustice at Soundview Park.





CLIMATIC RECOMPOSITION OF A BUILDING IN PARIS

How to live in Paris in 2100

mentored by Philippe Rahm (co-teacher Mariami Maghlakelidze, TA Pallavi Jain)



In near future, new techniques of heat protection, dispersal and cooling will have to be implemented into the built environment in order to alleviate it from the raising average global temperatures.

The building at the southern corner of an 8th arrondissement block in Paris metamorphoses through interventions recomposing what already exists on-site. The design becomes a process of subtraction as an additive method.

This is achieved through a system of six “actors” working in tandem :

Air well

Excavated in the backyard of the building, the air well opens the ground to initiate a geothermal exchange between the building and the Earth. As the pit progresses deeper, the constructed and orderly characteristics of it fade, leading to a primordial materiality of a cave

The tunnel

Connecting the pit and the cave, the tunnel channels the collected water and cooled air to further cool down the air through evaporative cooling.

The cave

A cold reservoir, one that collects cold water and cold air.

Accessible from the apartments, it allows the residents to experience the thermal phenomena first hand in a cold water pool and the surrounding cave.

Air shafts

Bored from the ground and up to the building, the internal structures of the shafts are built using rammed earth bricks extracted when digging the well and the cave. The cold air circulates through shafts from the cave to bedrooms and apartments.

The sleeping rooms

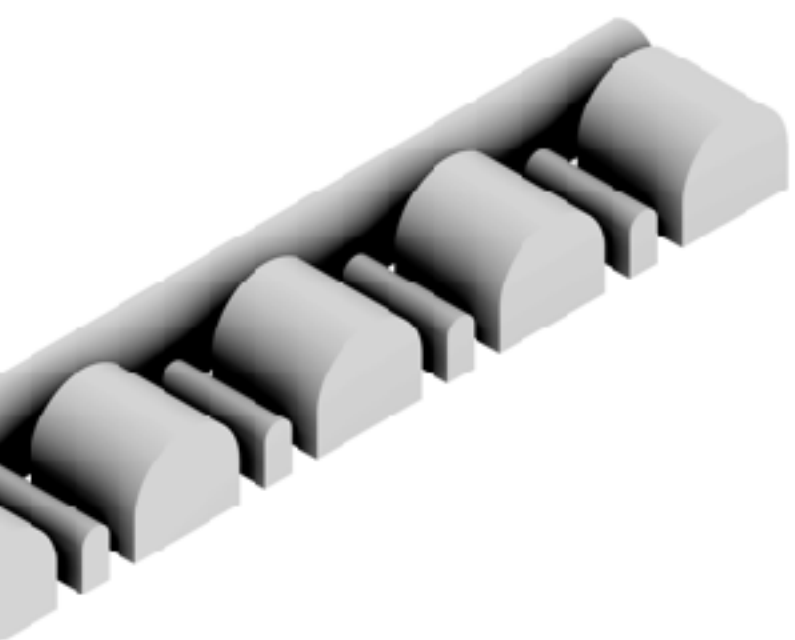
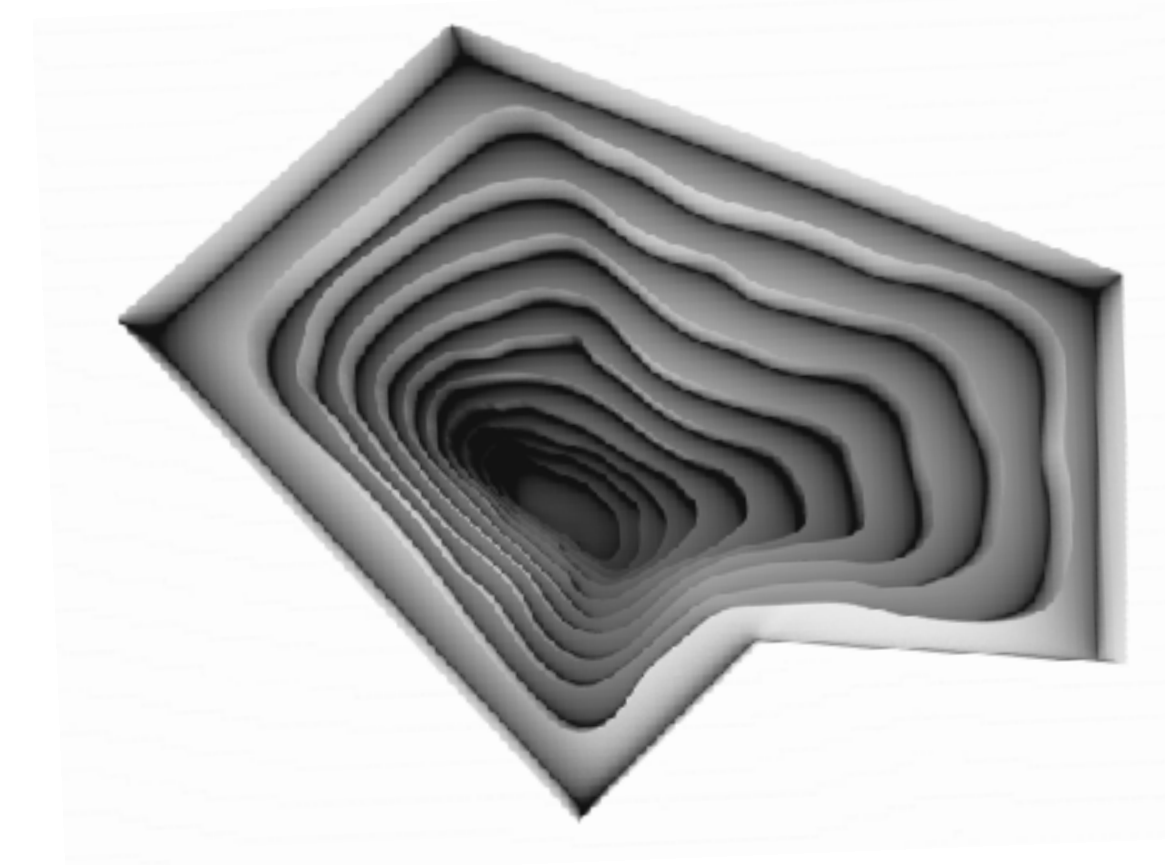
Offering the relief from the high heat, every apartment in the building has an access to an underground sleeping room through the staircase in the air shaft.

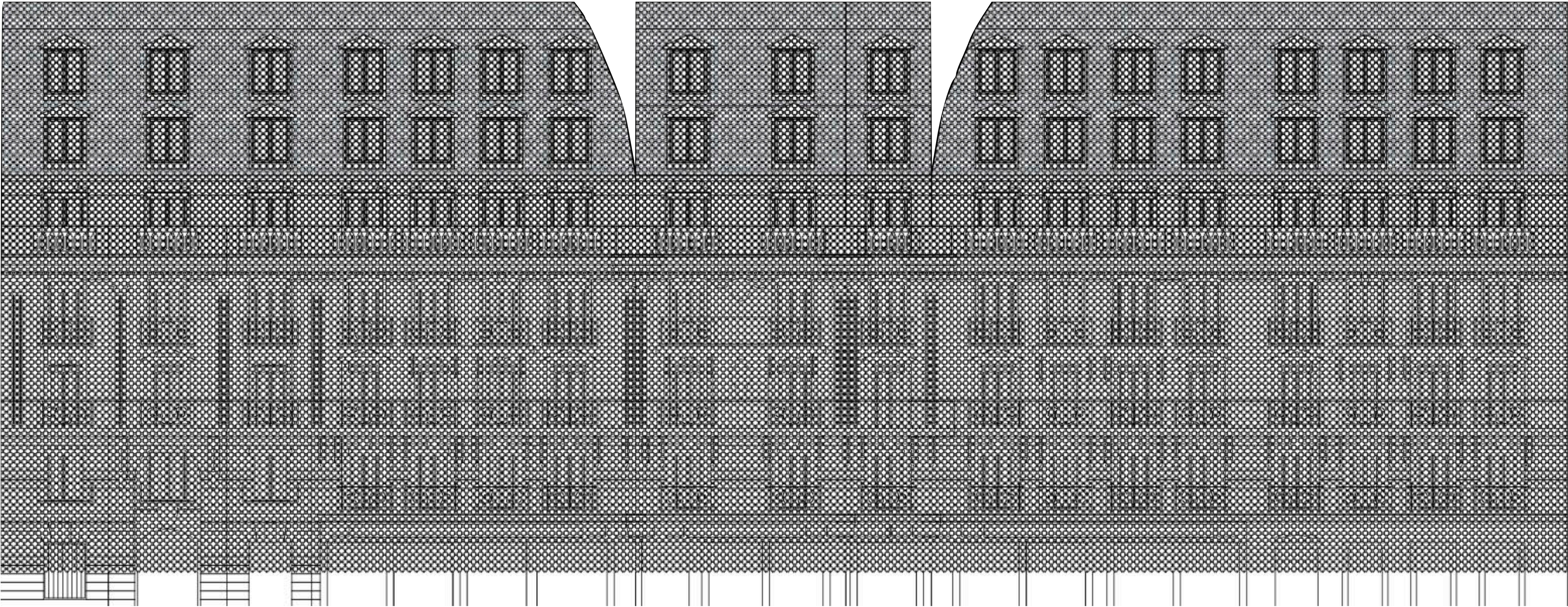
The jacket

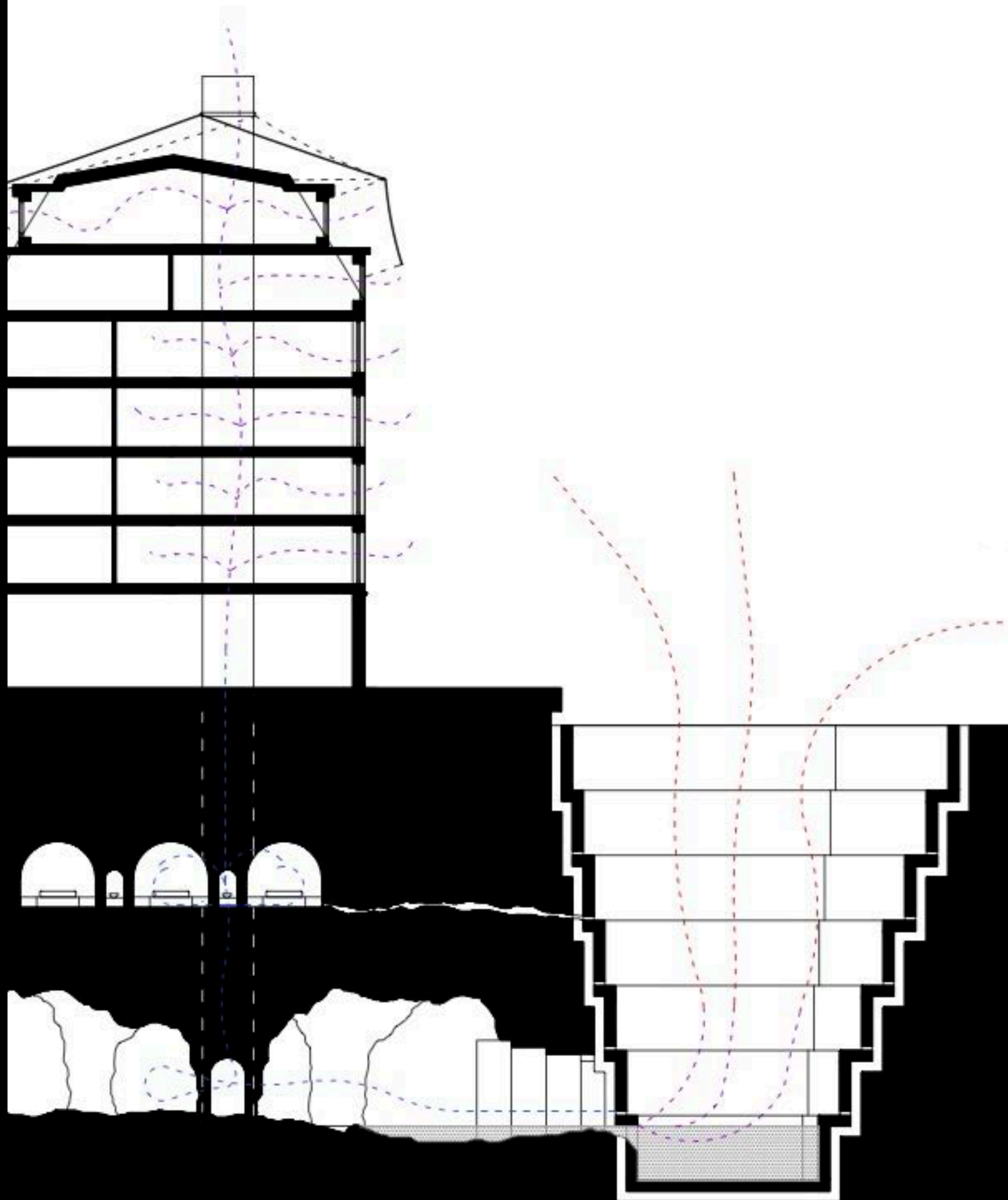
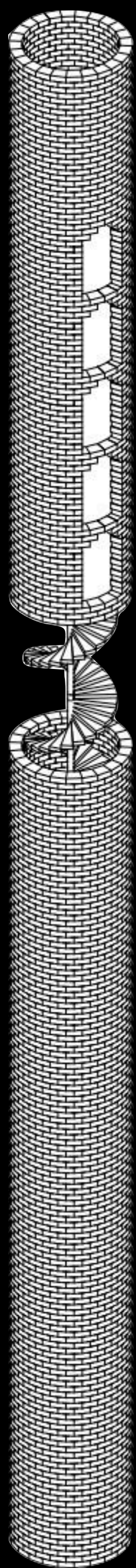
An on-site excavated earth jacket protects the building from light radiation, reflects it and raises the thermal inertia as well as capacity of the facade system.

The density of the earth tiles correlates to the local exposure to the sunlight.

Different densities can be utilized at different times of the year.





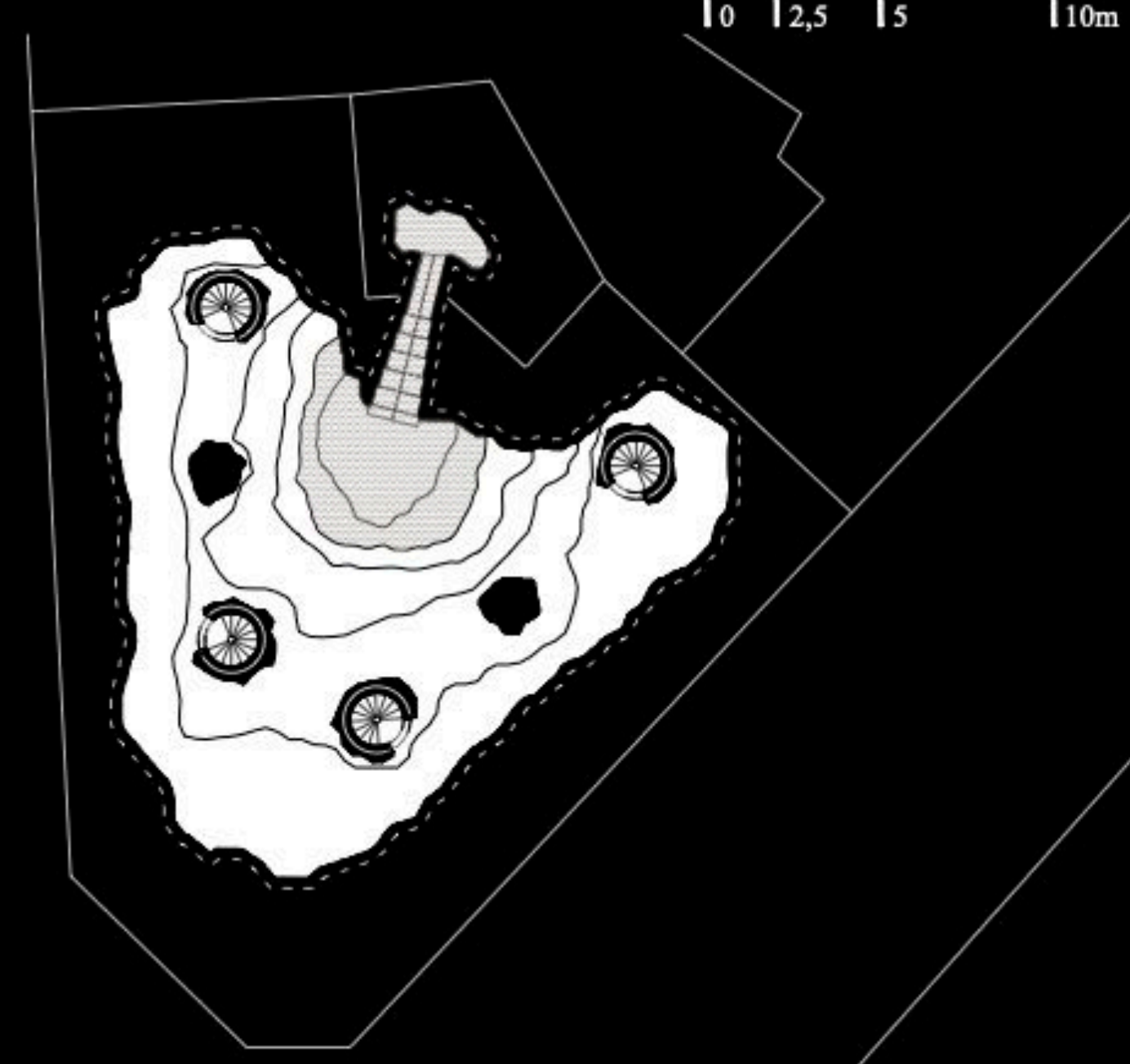
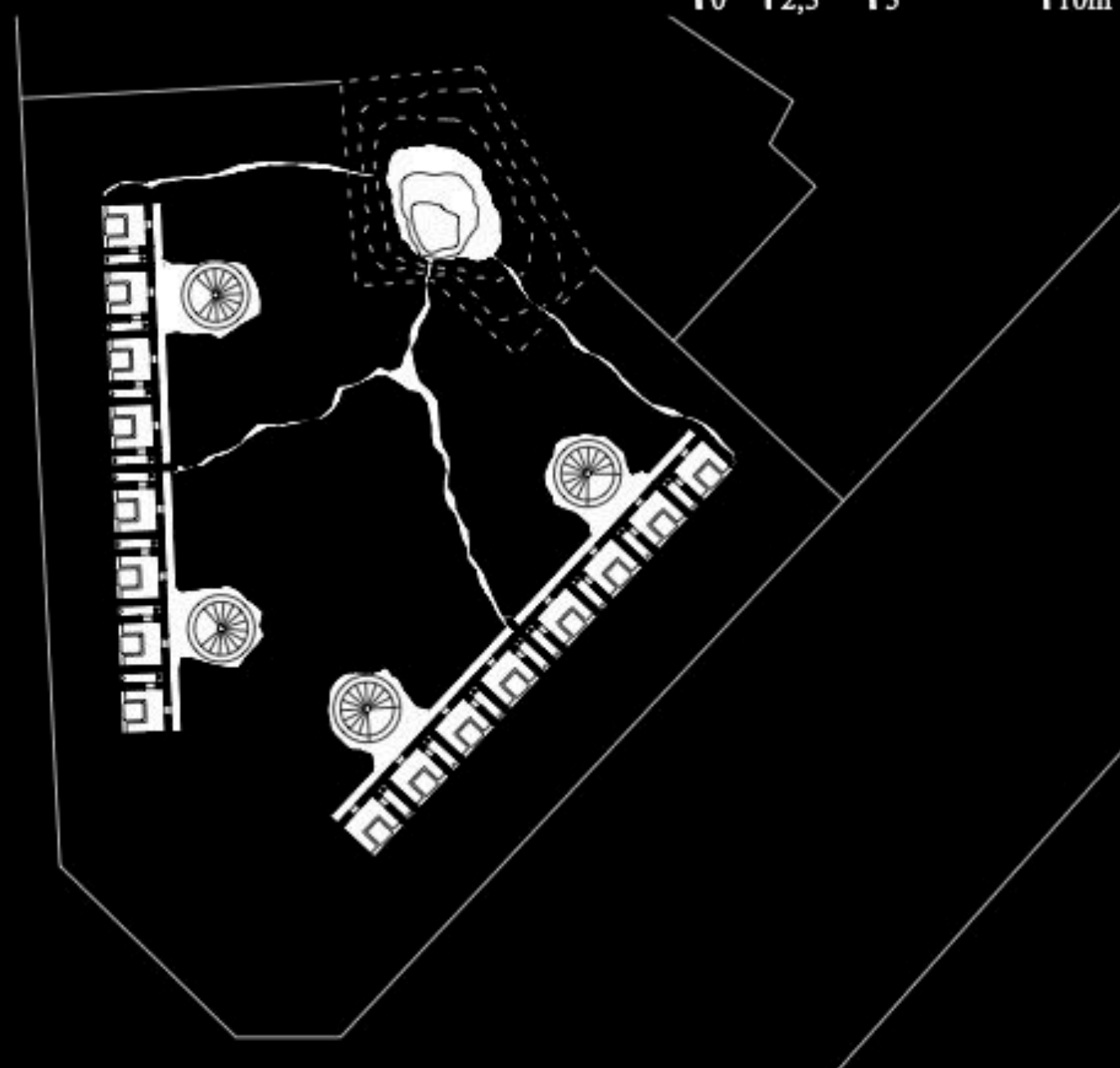


10 15 110 120m

10 12,5 15 110m

level -5

10 12,5 15 110m



gsapp CLOUD

Outside-In 2024

large student group design-build project mentored by Laurie Hawkinson and Galia Solomonoff (TA Tristan Schendel and Syed Haseeb Amjad)



The Avery plaza, flanked by the Avery, Schermerhorn and Fayewether buildings as well as St. Paul's chapel holds an immense amount of knowledge at the intersection of individual realities on top of one of the largest architectural archives in the world.

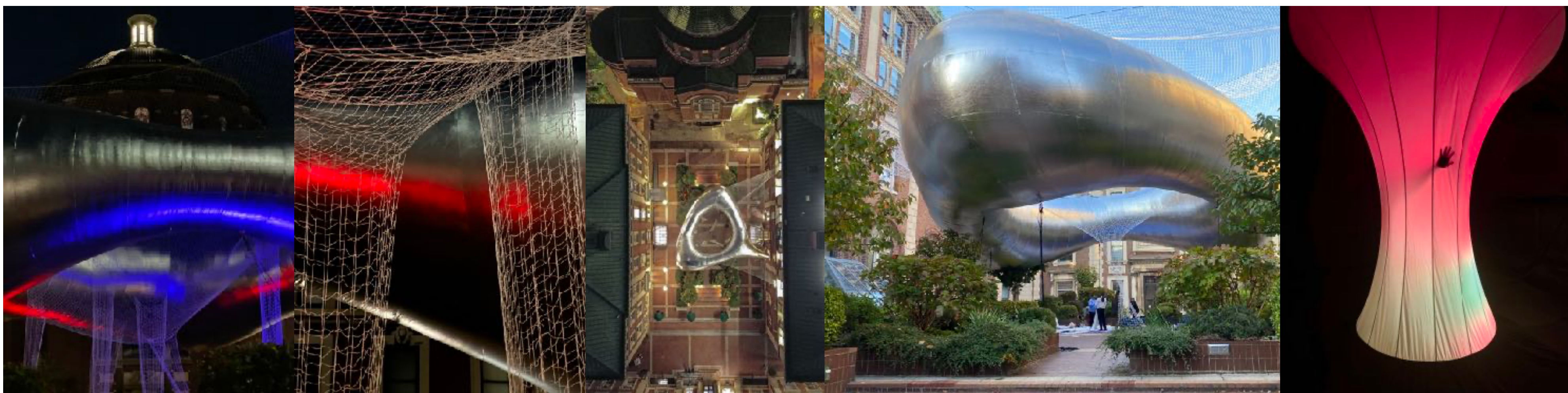
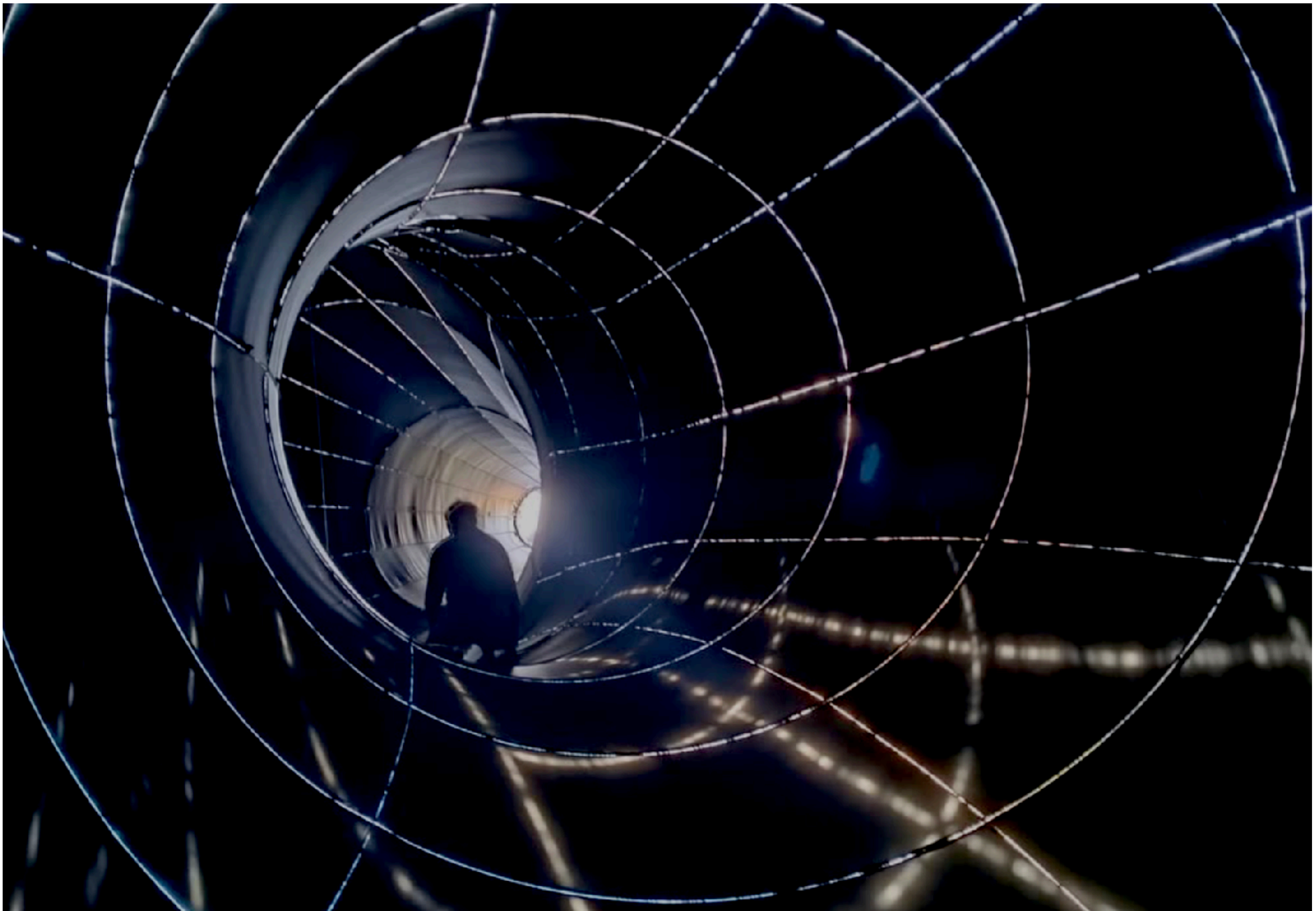
The inflated body feels as if it bursts out of the Avery Hall, which can't keep all the powerful ideas inside of it. The floating halo protruding from the fourth floor of Avery grows above the open space, breathes, shields, redirects and refracts light, creating a memory in the minds of people that experience it; a memory that exceeds the life span of the installation by a lot. It creates and localizes a space of special value.

Entering a familiarly alien object merges the feeling of outsideness and insideness, making one wonder when is this border actually crossed. Outside becomes in as much as inside becomes out, balancing between anthropomorphic and zoomorphic shapes created in a material that is expressively inorganic. The intrinsically sewn lines further demonstrate the very fact that this *thing* is very much made by common materials and a structural logic that is readable and reinterpret-able.

The net hanging over the inflatable is connecting and manifesting the forces felt as the invisible glue joining but also separating these differing but joined disciplines. This embodiment of a network in space is soft, adaptable and interactive to the users and visitors alike.

The completed installation creates an endemic climate, one that is combining physical and social aspects of Avery plaza and giving a certain form and a body to the intersected realities happening on and around it, ones that interconnect and create offspring ideas. It is enhancing and making tactile the very essence of what an area with this immense amount of *knowledge* around it can produce - the Campus.

Translation of the collective student design aspirations to an idea, from an idea to a sketch, from a sketch to a plan and finally to a constructed object has created a platform. The platform that boasts an pedagogical force, teaching the process of design-build, management, coordination and communication. From the very initiation of the project throughout the whole process, redirection, risk control and intuition has been integral to decision making needed to see this artifact come to life.



INTERSTICE

Exhibition Histories, Curating Theories
mentored by Mark Wasiuta

Nowness is characterised by an endless, vividly free flow of information; an absolute reign of know-how.

our understanding of the world we inhabit has inherently changed.
our reality is defined by influences converging around technology, environment and geopolitics.

It positions us at the intersection of various narratives on uncertainty that make our view towards the future foggy?

The Post Contemporaneity evokes the ideas of futurism but renders them in a non-technocratic vision, as it leads to the ideas of neo-neolithic architecture, future-primitivism, more-than-human symbioticism, non-human intelligence.

We inhabit a completely manufactured, thoroughly designed surrounding.

The proposal examines the shifting boundary between the natural and the synthetic, between lived reality and speculative future. It brings together works that reflect a world increasingly shaped by data, code, and emergent systems—where certainty dissolves and perception is recalibrated.

Rather than presenting a singular theme, the exhibition assembles propositions. Each work functions as a site of inquiry into how technology, environment, and the body intersect and mutate. These are not representations, but systems—constructed, felt, and inhabited.

This is an exhibition about what we become when the human is no longer a stable referent. When identity is distributed across networks, when climate becomes interface, when art and architecture responds not to forms but to feedback. In this speculative ecology, nature is a simulation, history is a hallucination, and the contemporary has already passed.

What remains is this: a spatial essay on our unformed futures.

Ali Cherri - How I Am Monument (2025)

Sandra Mujinga - Reworlding Remains (2021), Sandra Mujinga - Sentinels of Change (2021)

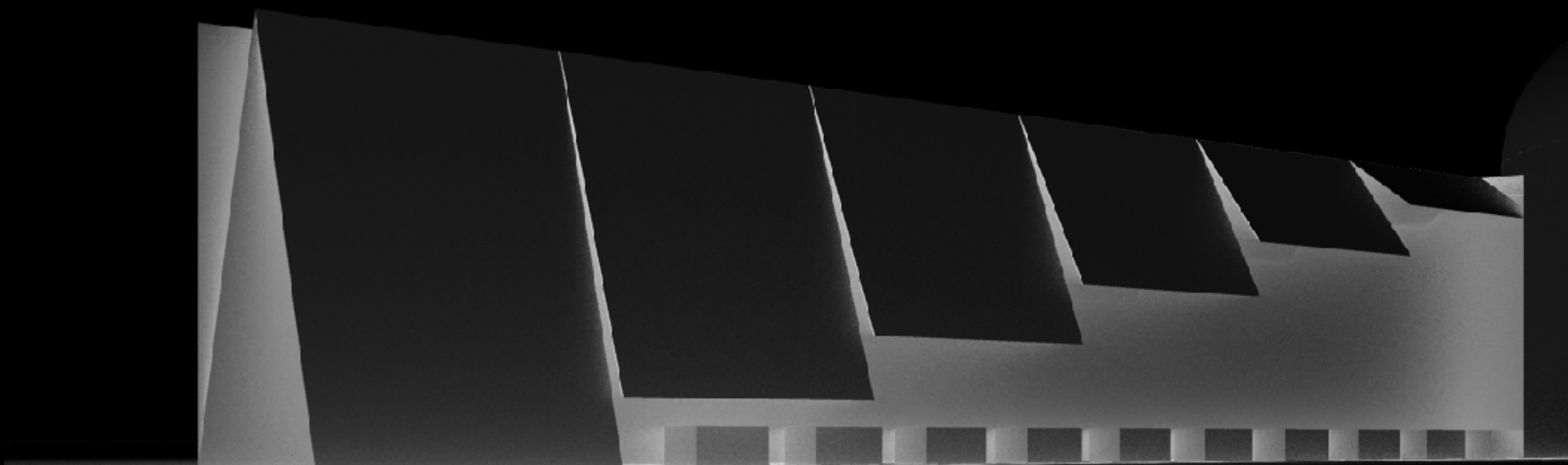
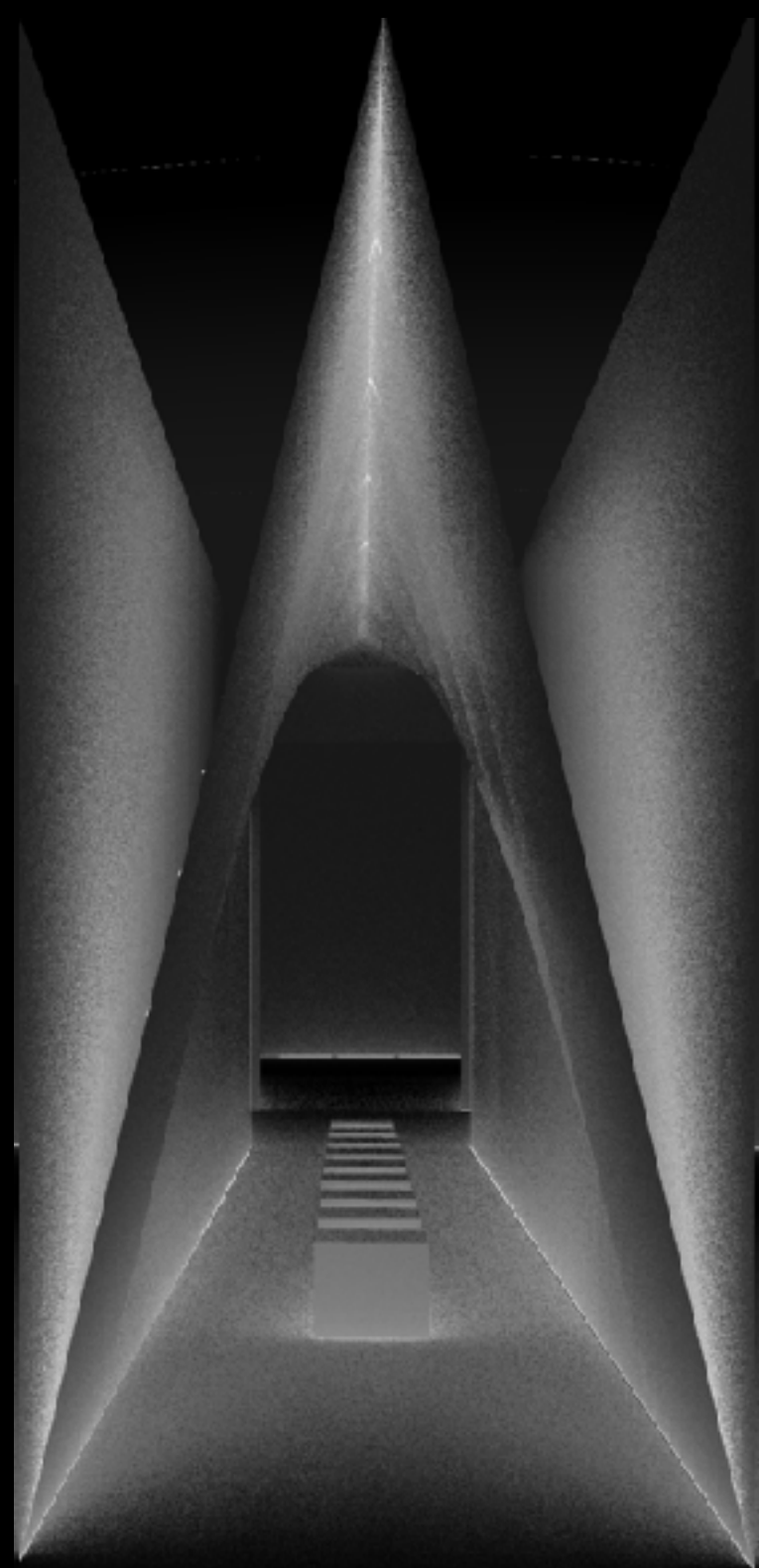
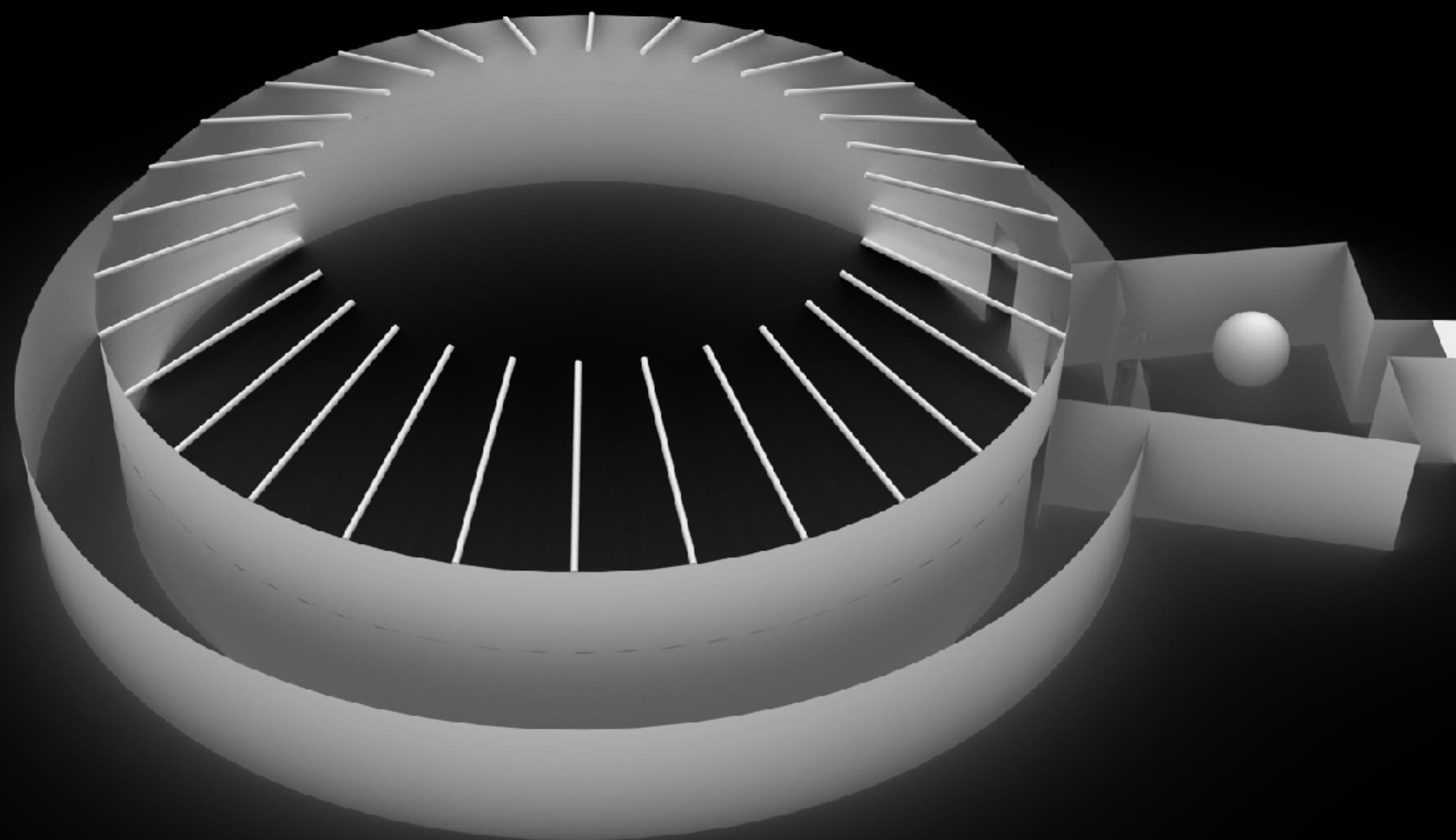
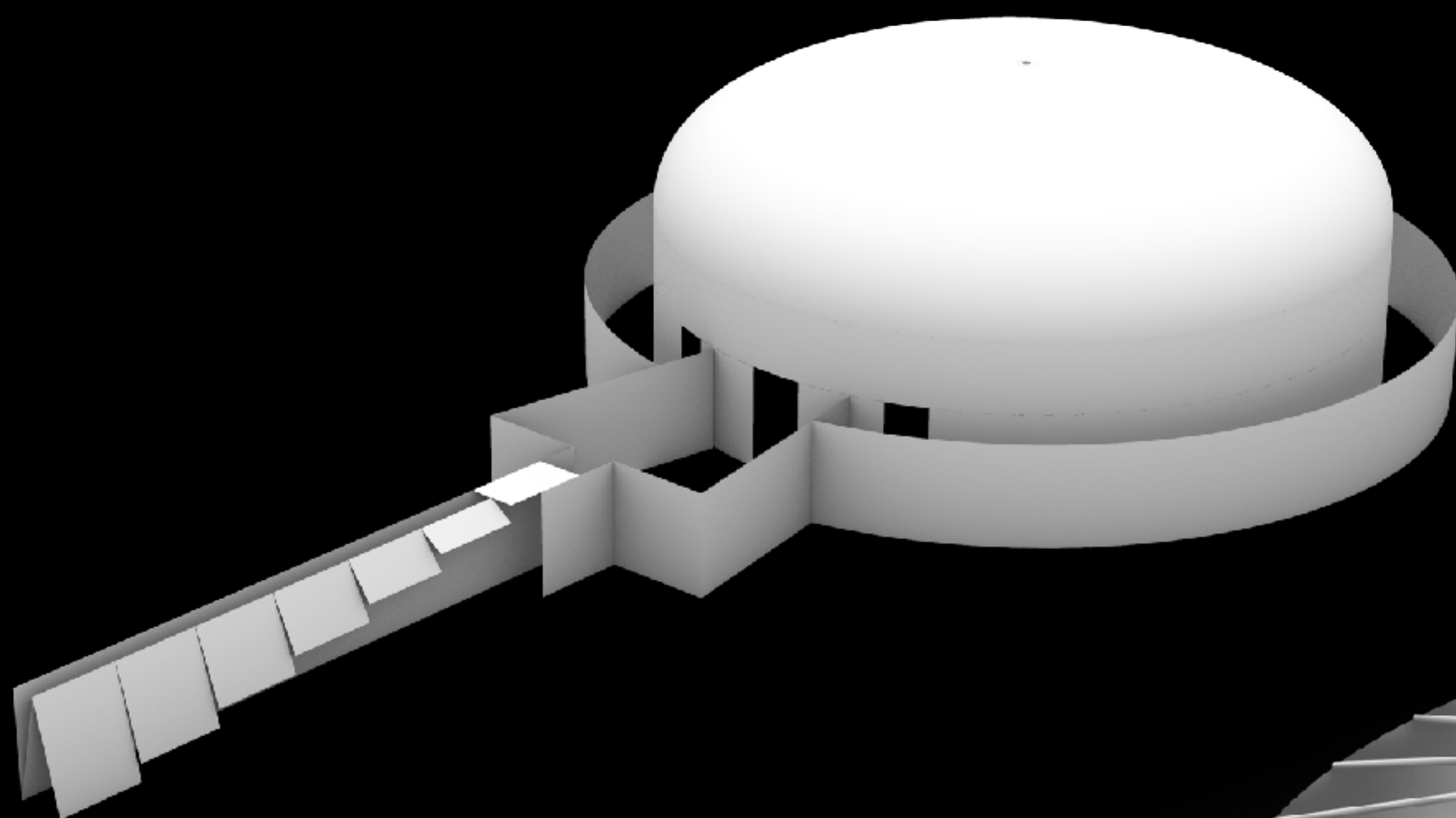
Olaffur Eliasson - Open (2024)

Pierre Huyghe - Camata, 2024

Pierre Huyghe - Mind's Eye (Annlee), 2024

plastiglomerate samples

Anthropocene work group - sediment samples from the Crawford Lake site



THERMAL REVEAL

Masterclass 2025
mentored by Krzysztof Wodiczko



WHAT IS THE COST OF INFORMATION

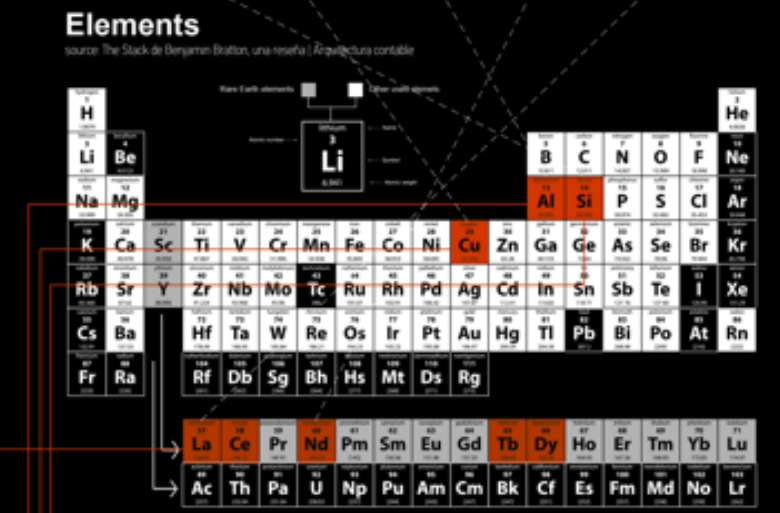
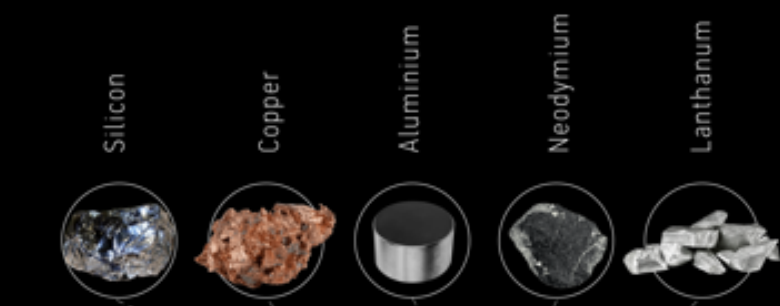
Constructing Ecologies in the Anthropocene
mentored by Tommy Schaperkotter
collaboration with Nikoletta Zakynthinou - Xanthi

CARBON x AI TRAINING

THIS TITLE WAS PRODUCED BY CHATGPT AND EMITTED 4.32 GRAMS OF CO₂ IN THE ATMOSPHERE

1 query 139 queries 92,593 queries

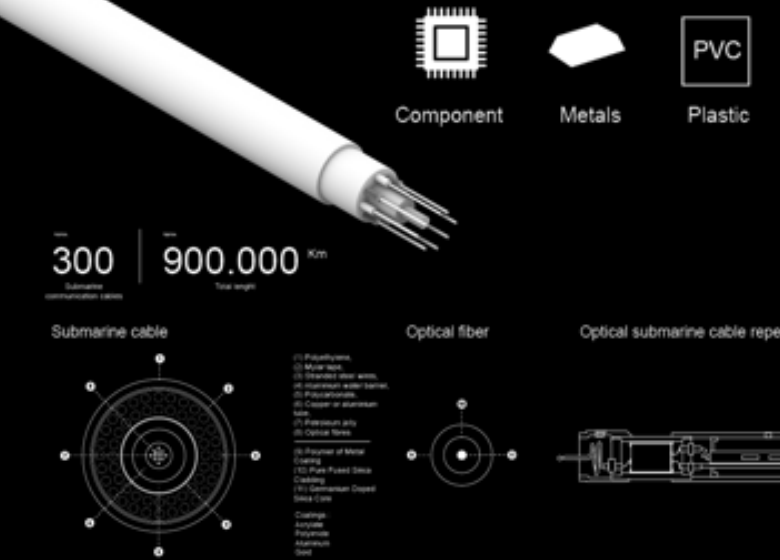
SCALES OF x10 IN CARBON EMISSIONS



MATERIALS FOR ONE NVIDIA H100 GPU:

Material	Approximate %	Weight (grams)
14 Silicon (GPU die)	~0.5%	~10-15g
29 Copper	~25-35%	~500-800g
13 Aluminum/Alloys	~15-20%	~300-500g
Plastic/Fiberglass	~10-15%	~200-300g
57 - 66 Rare Earth/Precious Metals	~1-2%	~20-50g
Other Electronics	~20-25%	~400-600g

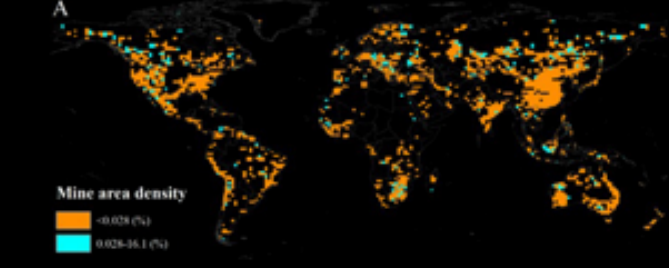
OPTICAL & COPPER CABLE: COMPONENTS AND MATERIALS



MAP OF PROCESSING FACILITIES AND MINES



MAP OF MINE AREA DENSITY



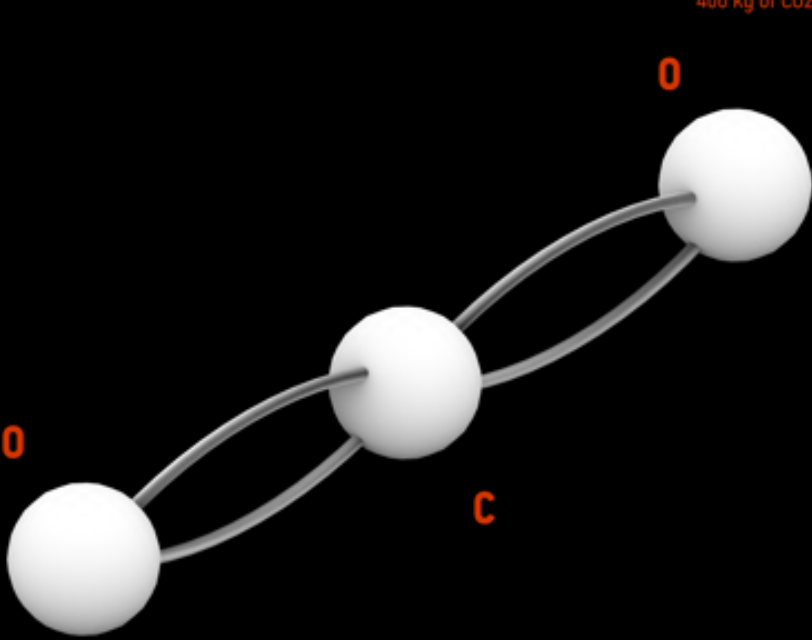
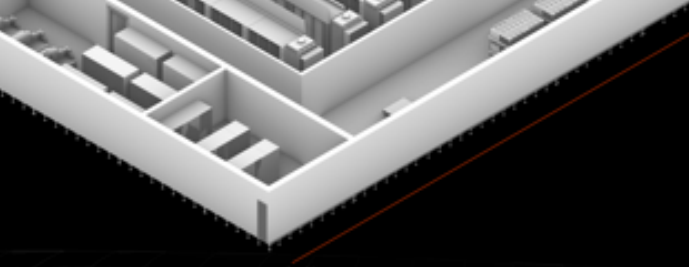
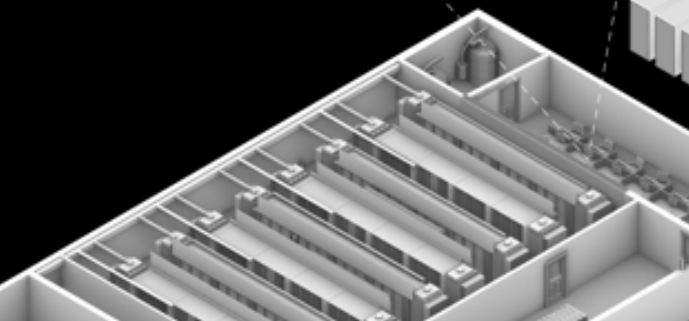
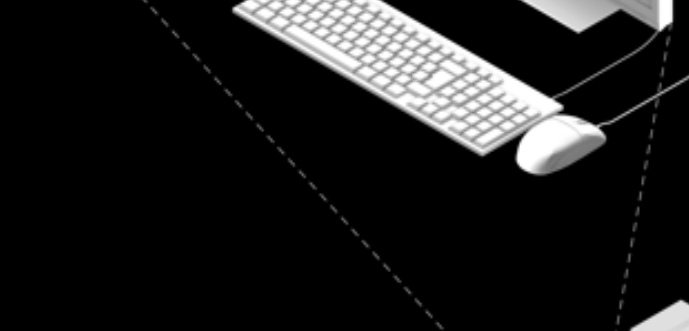
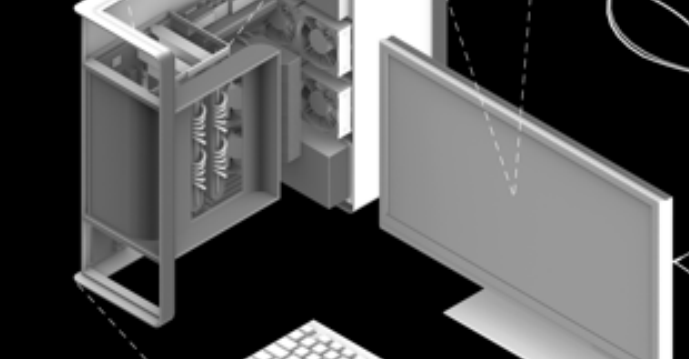
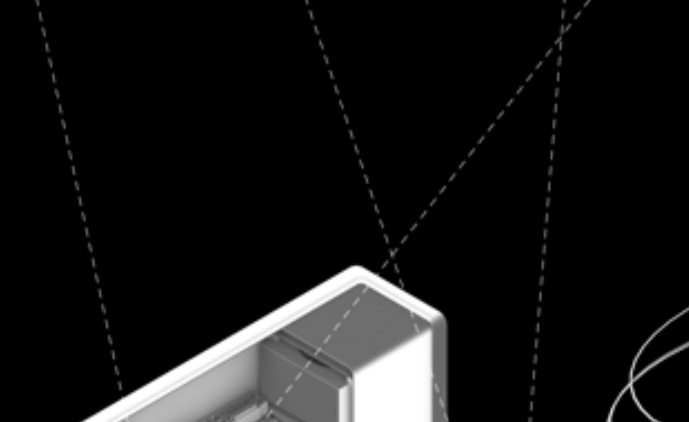
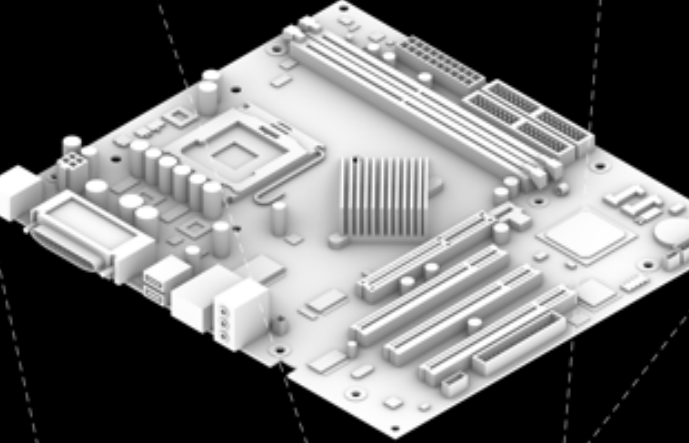
MAP OF AI TRAINING - ENERGY SOURCE - CARBON INTENSITY



Training ChatGPT might use as much water as manufacturing 370 BMWs or 320 Teslas. And that's only the beginning. Operational energy demands for data centers suggest that by 2027, ChatGPT's electricity consumption could rival that of entire nations like Sweden, Argentina, or the Netherlands.

Driving 1 kilometer in a car emits ~120 grams of CO₂.
A Google search emits ~0.2 grams of CO₂.

An early estimate suggested that ChatGPT generates 8.4 tons of CO₂ annually—double an average person's output.
1 query = Each message you send to ChatGPT produces approximately 4.32 grams of CO₂.
15 queries = watching one hour of videos
16 queries = Boiling an electric kettle: ~70 g CO₂ (on a coal-powered grid)
20-50 queries is the equivalent of consuming 500ml of water
139 queries = doing laundry at 86 degrees Fahrenheit
92,593 queries = 400kg of CO₂ round-trip flight from San Francisco to Seattle
77 queries = 30,000+ GPUs to keep the generative AI tool running



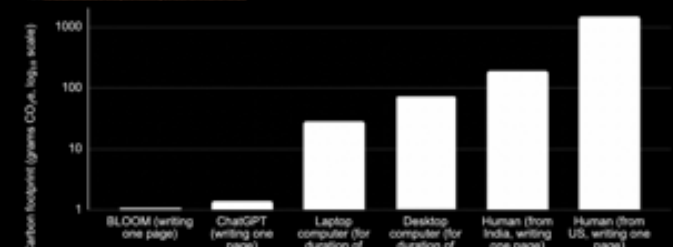
CHATGPT USER INTERFACE

Daily (December 2024):
50 - 55 million unique visits
Monthly:
> 1.6 billion unique visits
Yearly:
> 22 billion unique visits

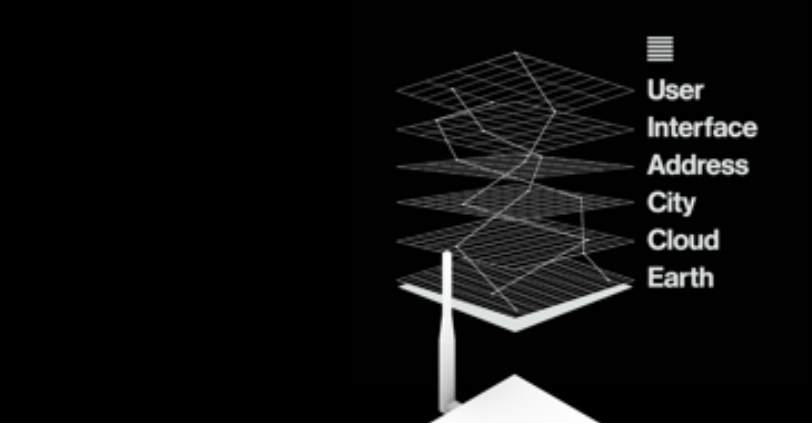
-CO₂ EMISSIONS

Daily (December 2024):
> 11,000 - 16,000 metric tons
Monthly:
> 0.3 - 0.5 million metric tons
Yearly:
> 4 - 6 million metric tons

Carbon footprint (grams CO₂e) for Text Writing



1 GPU (NVIDIA A100s or NVIDIA H100s)



1 Server
8 GPU-s

1 Data Center (148,000 m²)

>1,000,000 Servers
>8,000,000 GPU-s

CHAT GPT ACCESS REGULATIONS

APPROVED

RESTRICTED

BANNED / BLOCKED

ALPINE ASSEMBLY

Hotspots 2025

mentored by Mark Wasiuta (TA Ammar H Rassai)



The Matterhorn / Cervino - the iconic, immutable, and cinematic —is a crucible of "the alpine": a landscape at once natural and hyperreal, both geological and ideological.

This peak, endlessly and perpetually reproduced, becomes a stage where fantasies of purity, power, and spectacle are projected. *Its slopes carry the sediment of ideology*— where Ruskin's sublime, Mussolini's nationalist elevation, and Disney's commodified wonder converge.

This project interrogates and recomposes the choreography of alpine experience, how the mountain is not merely seen but sensed, performed, and controlled. Vision is guided. Movement is framed. The body becomes an instrument tuned to the spectacle.

The visitor enters. A step-by-step, point-of-view journey unfolds, comic book-like—each panel revealing structure, detail, and illusion. The building and mountain collapse into one choreographed fiction.

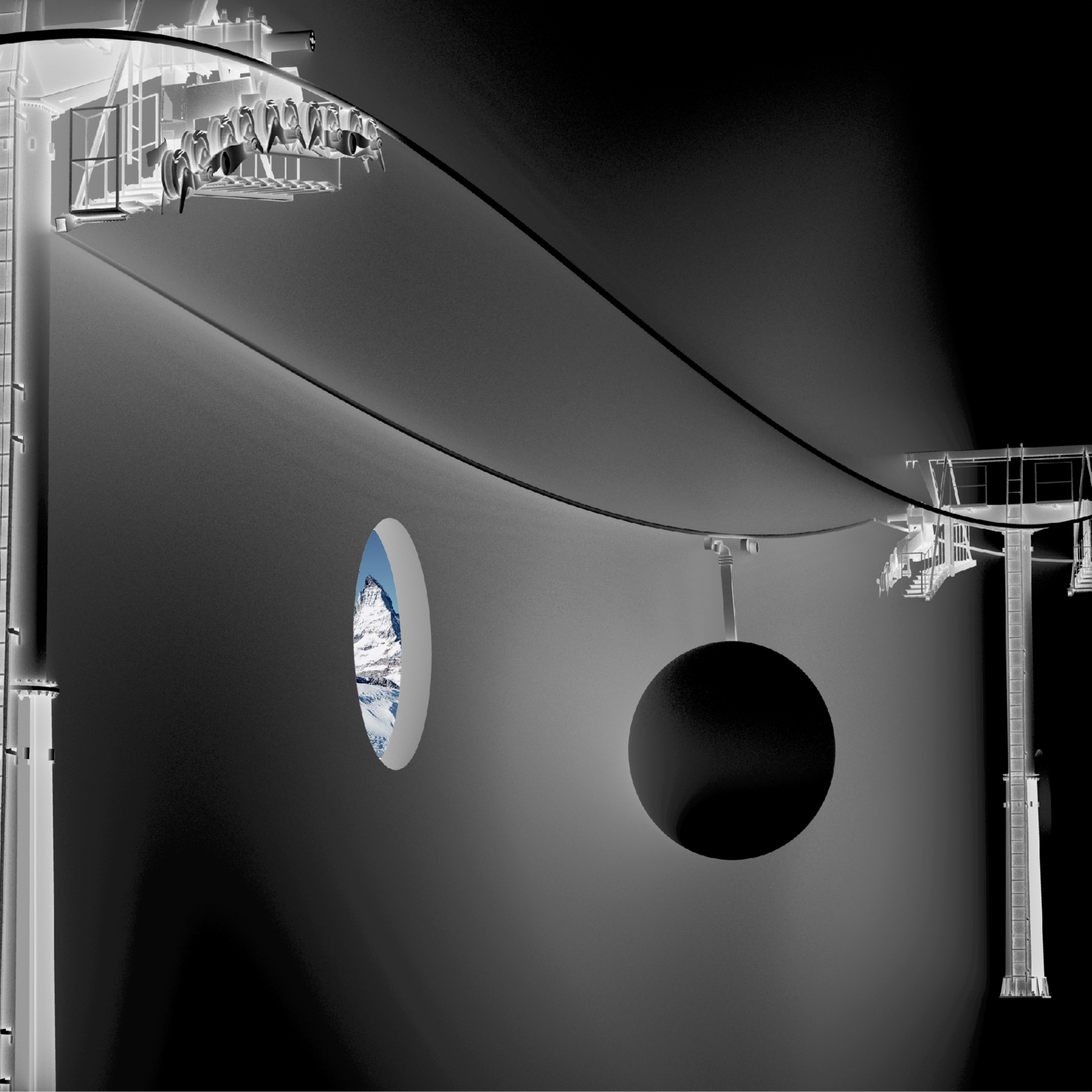
The Matterhorn was never just a mountain. It is a monument of control, a vertical ideology, an assembly of illusion.

The Indoor ski hill, “the wall” grows from the 1930s Breuil base station, building upon the inherited infrastructure, making it become a built-in *spolium*. A choreographed experience of a mountain connects the top (Plan Maison) to the bottom station with a series of cable-tents attached to the chairlift carrier pillars.

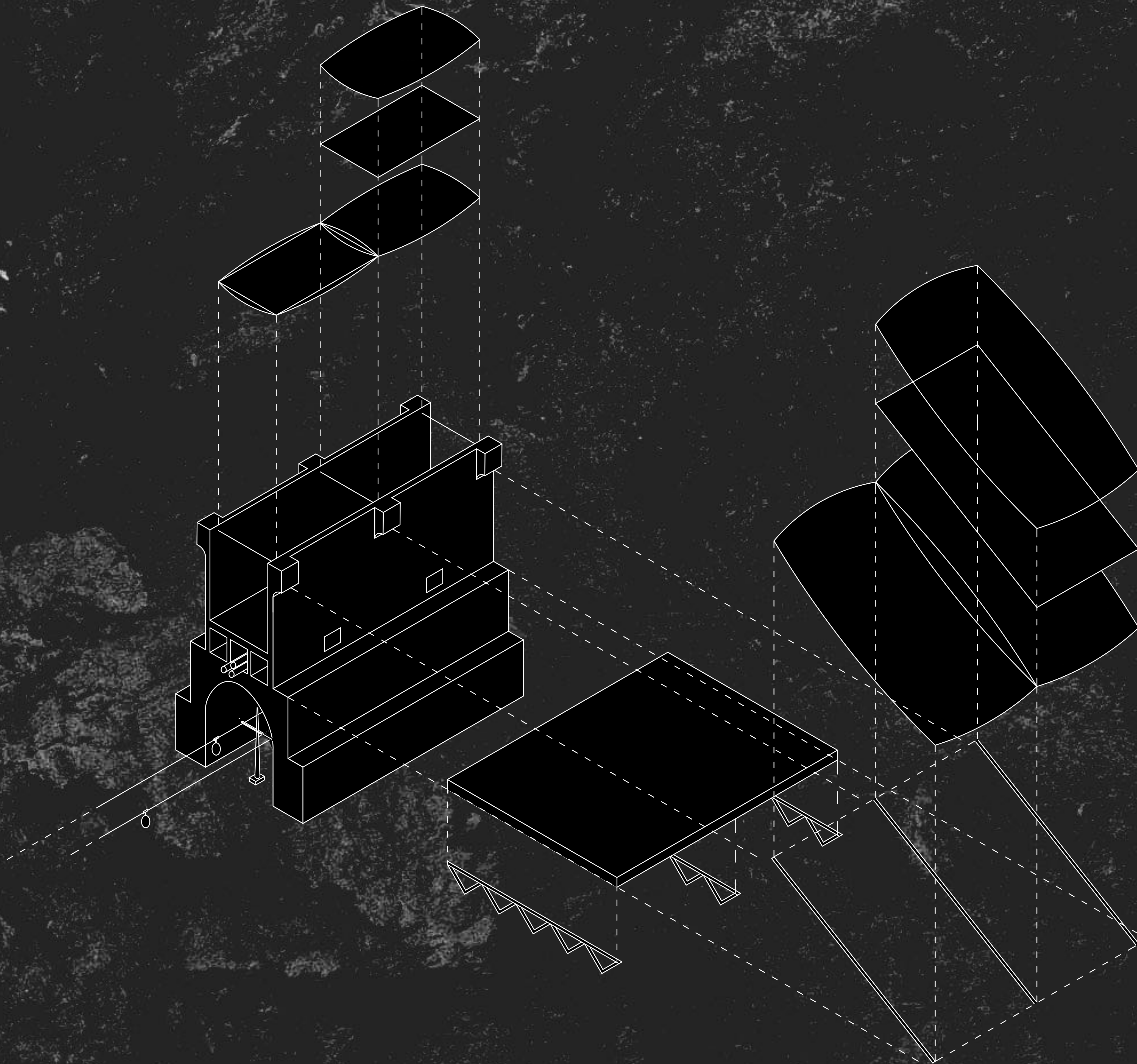
Potential kinetic energy reservoirs (avalanches) are managed as the energy is recovered through weight based passive battery systems connected to pulley cannons monitoring the avalanches from the watchtowers.

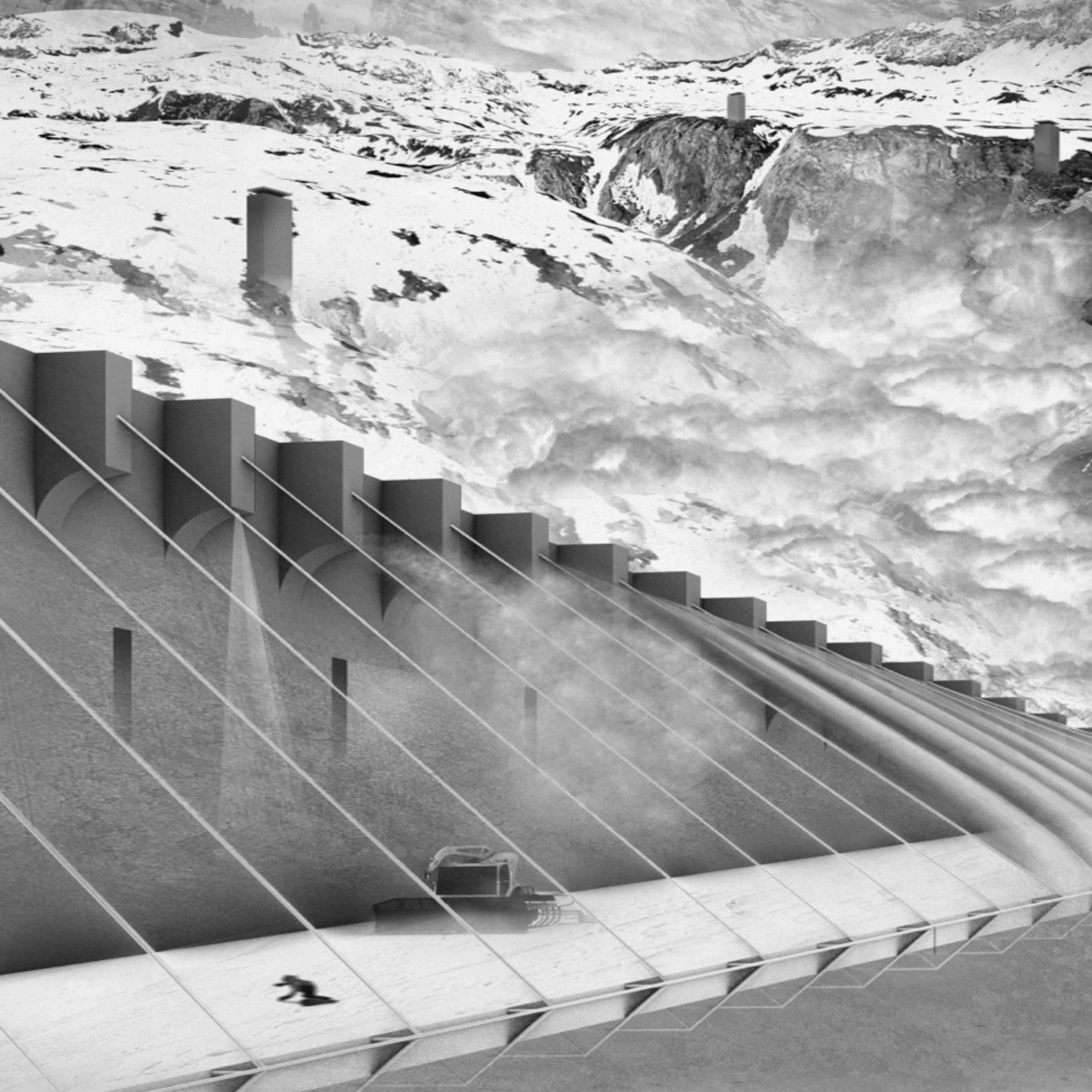
Cable cars are *re-lensed*, offering a new way of seeing and understanding the mountain and its snow coverage (or the lack thereof).

Descent through one of the conditioned slopes cantilevered from the base wall transports the visitor to an artificially natural, idealized landscape while being reminded of the artifice of the idea of a mountain as one rushes through camera - obscura visions of the peak. Interior slope materializes both the physical and the visual phenomena of *the alpine*.









+ writing

On Autonomy : a response to Non-Refferential Architecture (History of Architecture Theory - Mark Wigley)

[link](#)

For and Against : a compilation of assignment texts written for a class by Bernard Tschumi

[link](#)