

Language
Landscape
Architecture

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Language Landscape Architecture

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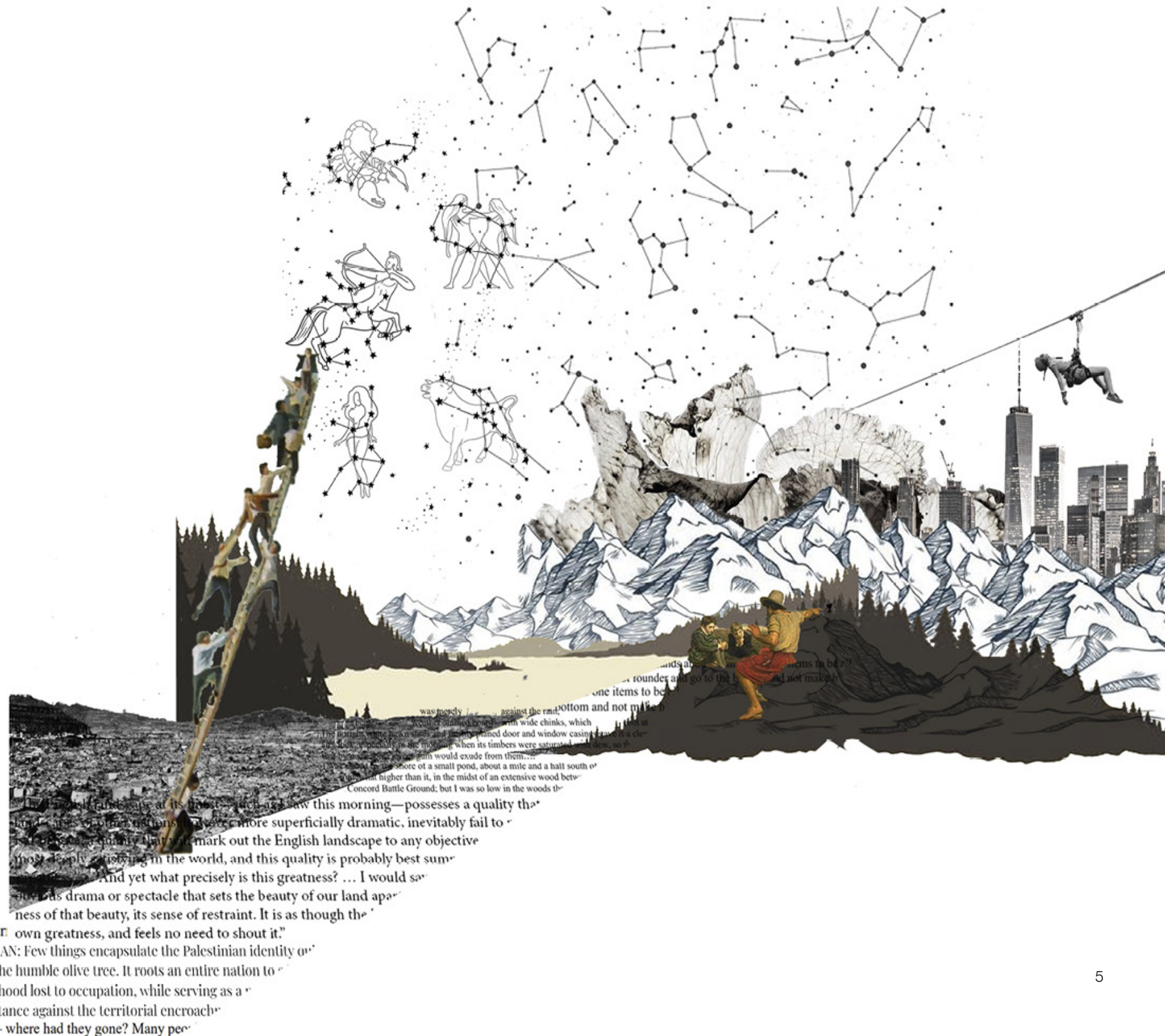
Introduction

“ *Language is not just words. It’s a culture, a tradition, a unification of a community, a whole history that creates what a community is. It’s all embodied in a language.* ”

Simply observing one’s language, or how we communicate with each other gives us a glimpse into how we perceive our world.

I.e. geographic names have been expressed in different forms throughout time. The changes reflect the developments in the language itself, changes in culture and politics, territorial adjustments and many more. It reflects a series of ways that we have been from past to now, and how we anticipate ourselves to be in the future. How we have expressed our position in relation to our surroundings - be it physical or abstract - could give us a direction as to how we wish to modify or preserve it.

This portfolio presents a series of architectural work inspired by different aspects of language relating to architecture: sometimes unconventional, often forgotten expressions of places would give an inspiring context for the intervention, and sometimes the art of storytelling will drive forward its design concept. Even the simplest terminologies made of few characters could give us a glimpse into a deeply nuanced history that we have had with our environment. Purpose is not to dwell in the nostalgia inspired by poeticism; it is to expand our horizon. My hope is that these expressions could help us discern our future relationship with the environment via architectural design, where architectural intervention could become a medium for storytelling.



01

Memorials of Forgotten Words

Summer 2022
Instructors: Kabage Karanja, Stella Mutegi
AAD Summer Studio: Anthropocene Museum 5.0
Individual Project

What is a museum anyways?

This seemingly innocuous institutions, or buildings with seemingly innocuous arts and curations... are still operating as a 'warehouse of stolen loot' as Zing Tseng calls them. In this project, I investigated the new means of sharing knowledge and connecting with the lost past. Shifting away from the multiscalar terraforming and archaeological tools that were once misused, how do we use the 'grammars of geology' to redefine our future.

Language and landscape are perhaps two most condensed but raw record of our past, present and future. Using these two as an artifact, I decided to insert an urban - landscape - architectural interventions that are curated at multiple scales to tell a story of a past, and inspiration for the future.

How does the forgotten names of places allude to the original identity of the places?

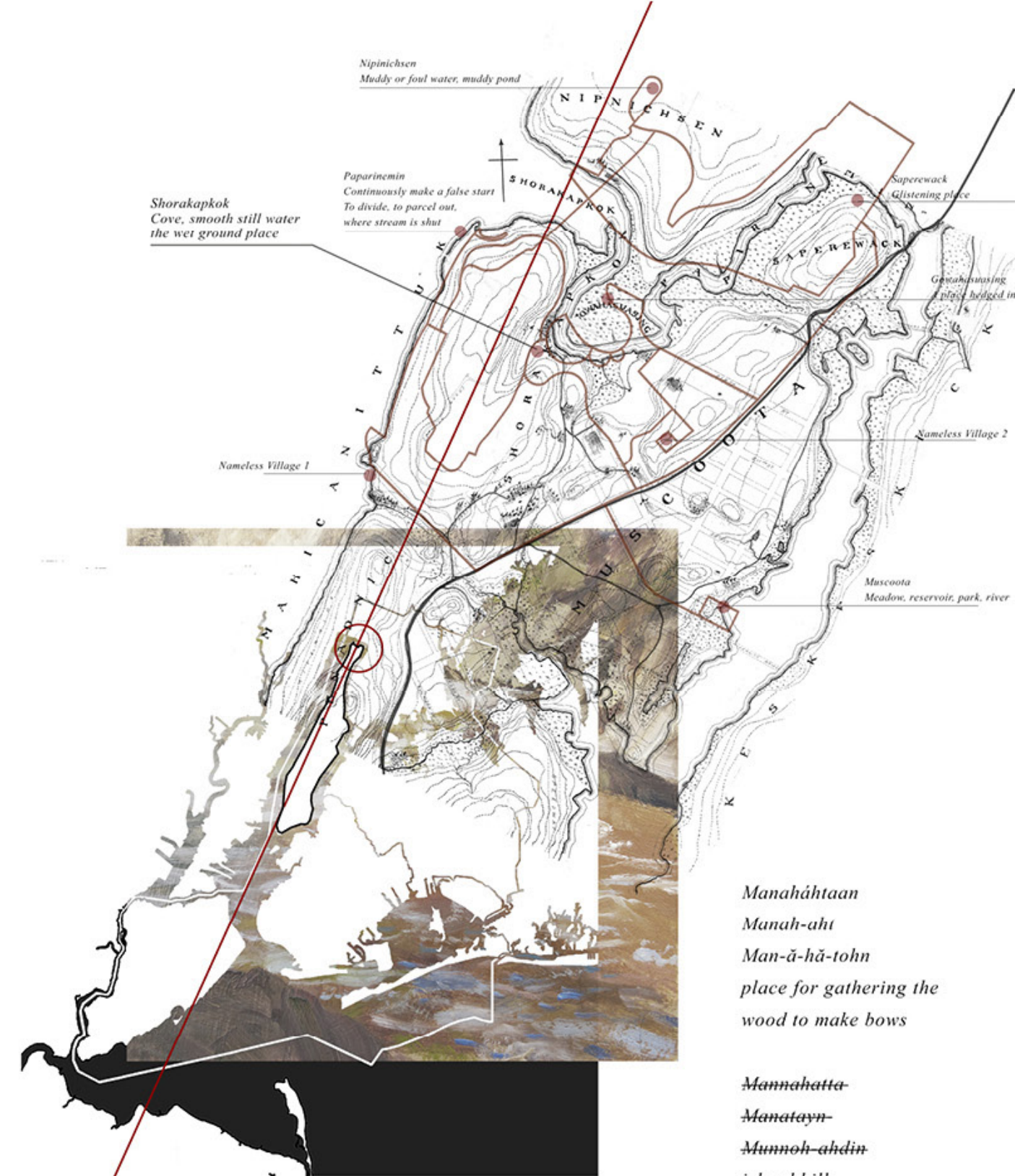
How does the current language continue to form new identities of these places?

How do place names change over time or territories? How do they adjust themselves to us, and how do we adjust ourselves to them?

How can we re-discover the lost identities of these places that were endeared by the Native Americans? What can we learn from their oral tradition?

How do we tell stories when we don't understand the same language?

How can we use architectural interventions to tell these stories? Should they be embedded into the forms and programs, or should they directly encourage the act of storytelling?



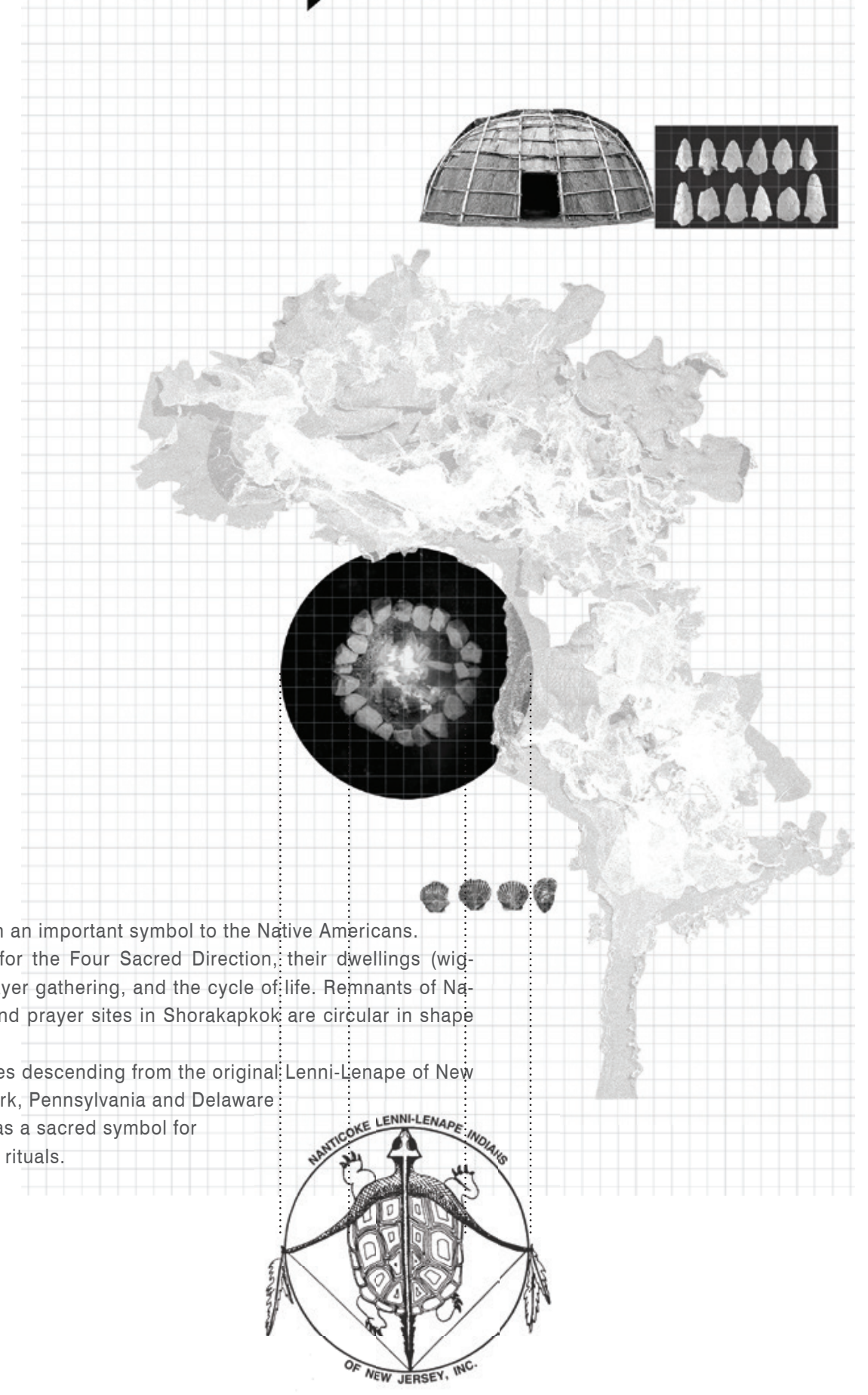
Manaháhtaan
Manah-aht
Man-ã-hã-tohn
place for gathering the wood to make bows

Mannahatta
Manatayn
Munnoh-ahdin
island-hill
island of many hills

Mannahattanink
Mannahachtanink
island or place of general intoxication



Monuments to Reverse Futures



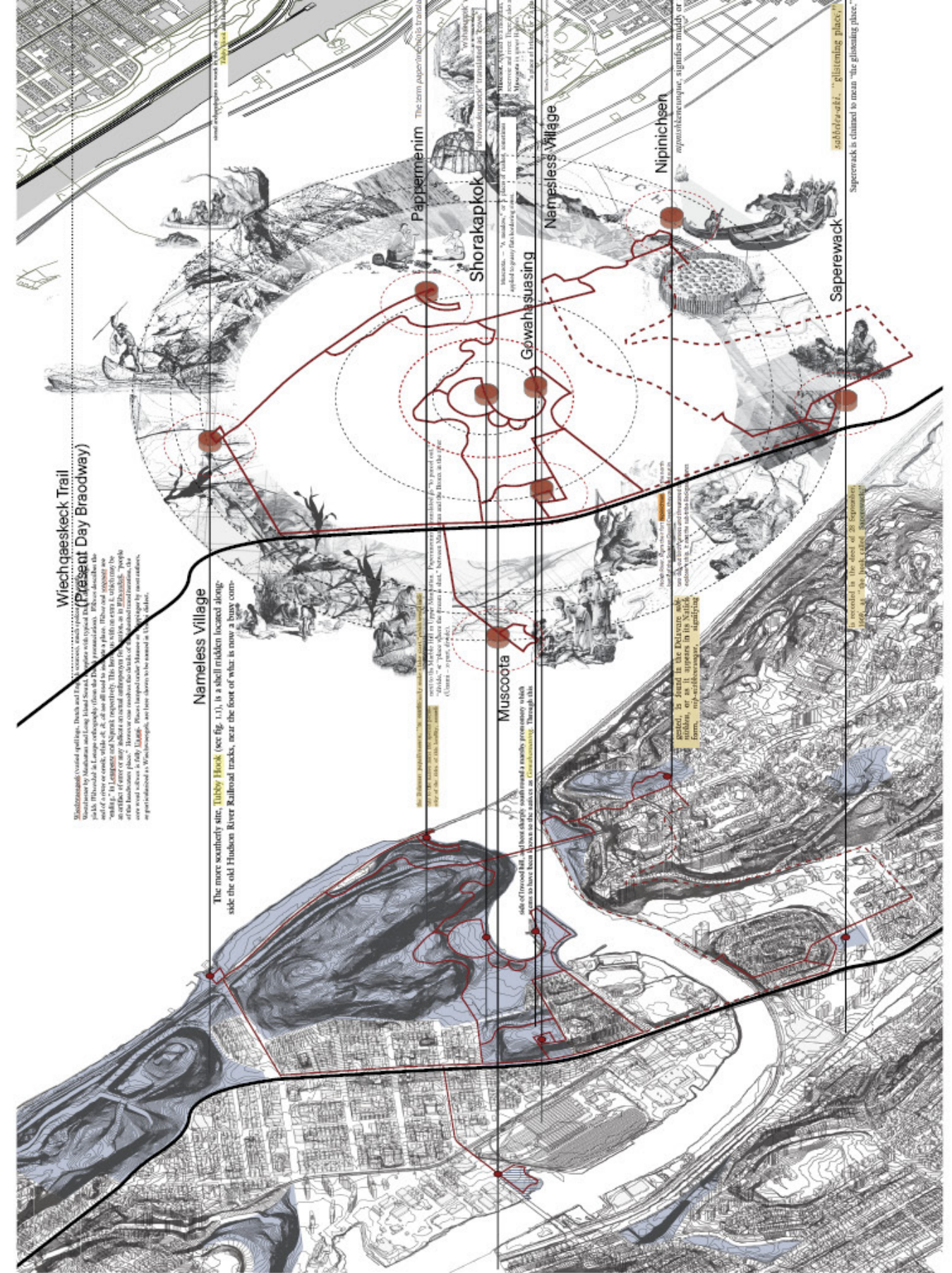
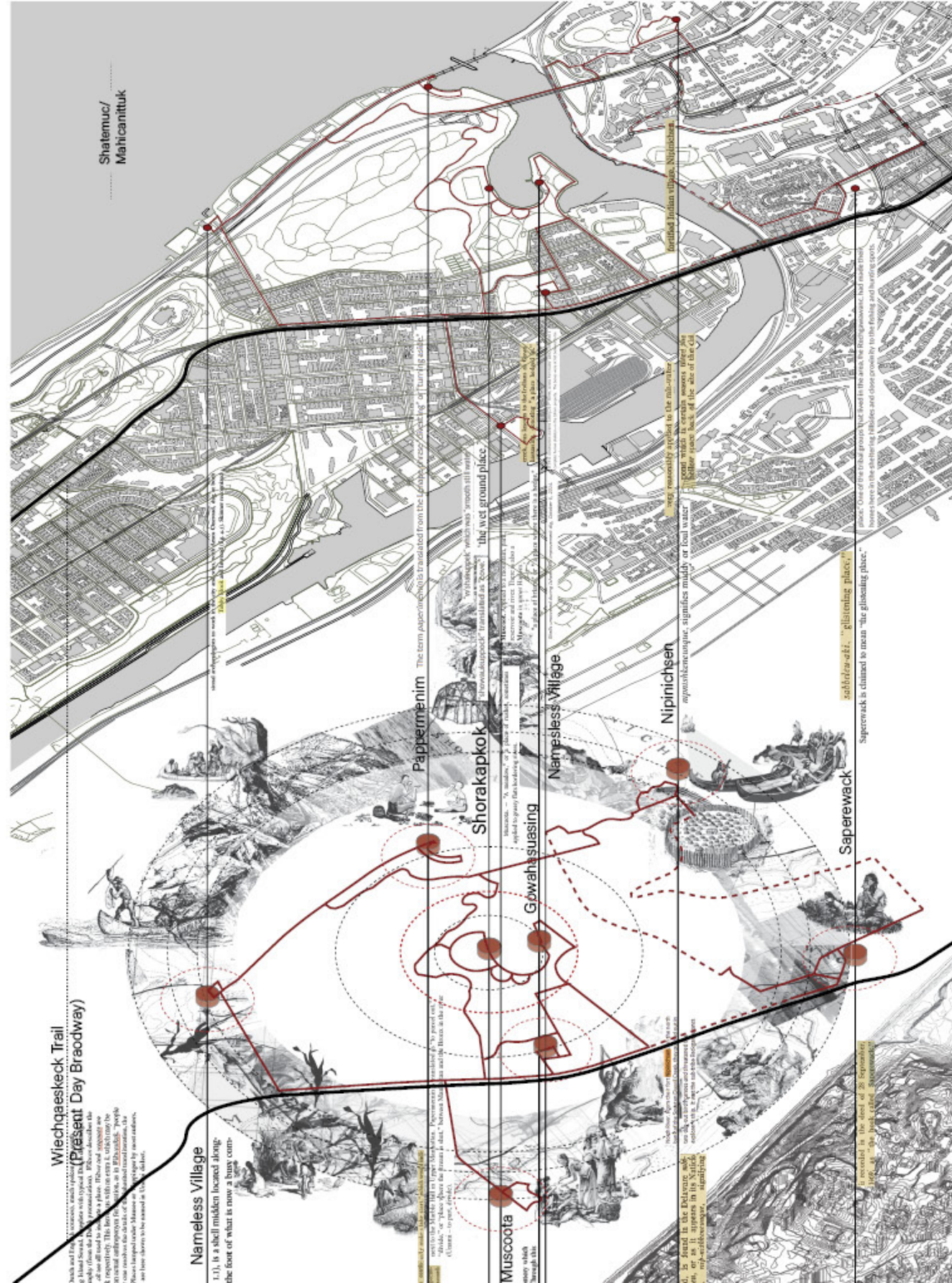
Circle has been an important symbol to the Native Americans.

It is the base for the Four Sacred Direction, their dwellings (wigwam), their prayer gathering, and the cycle of life. Remnants of Native Dwelling and prayer sites in Shorakapkok are circular in shape as well.

Remaining tribes descending from the original Lenni-Lenape of New Jersey, New York, Pennsylvania and Delaware still use circle as a sacred symbol for gatherings and rituals.

SITE PLAN (TRAIL)

Urban trail that revolves around Shorakapkok, bearer of the Inwood Cave Hills, and traveling to six other Native sites, each with distinguished character and history, and at the same time, traveling through history through the significance of their names.

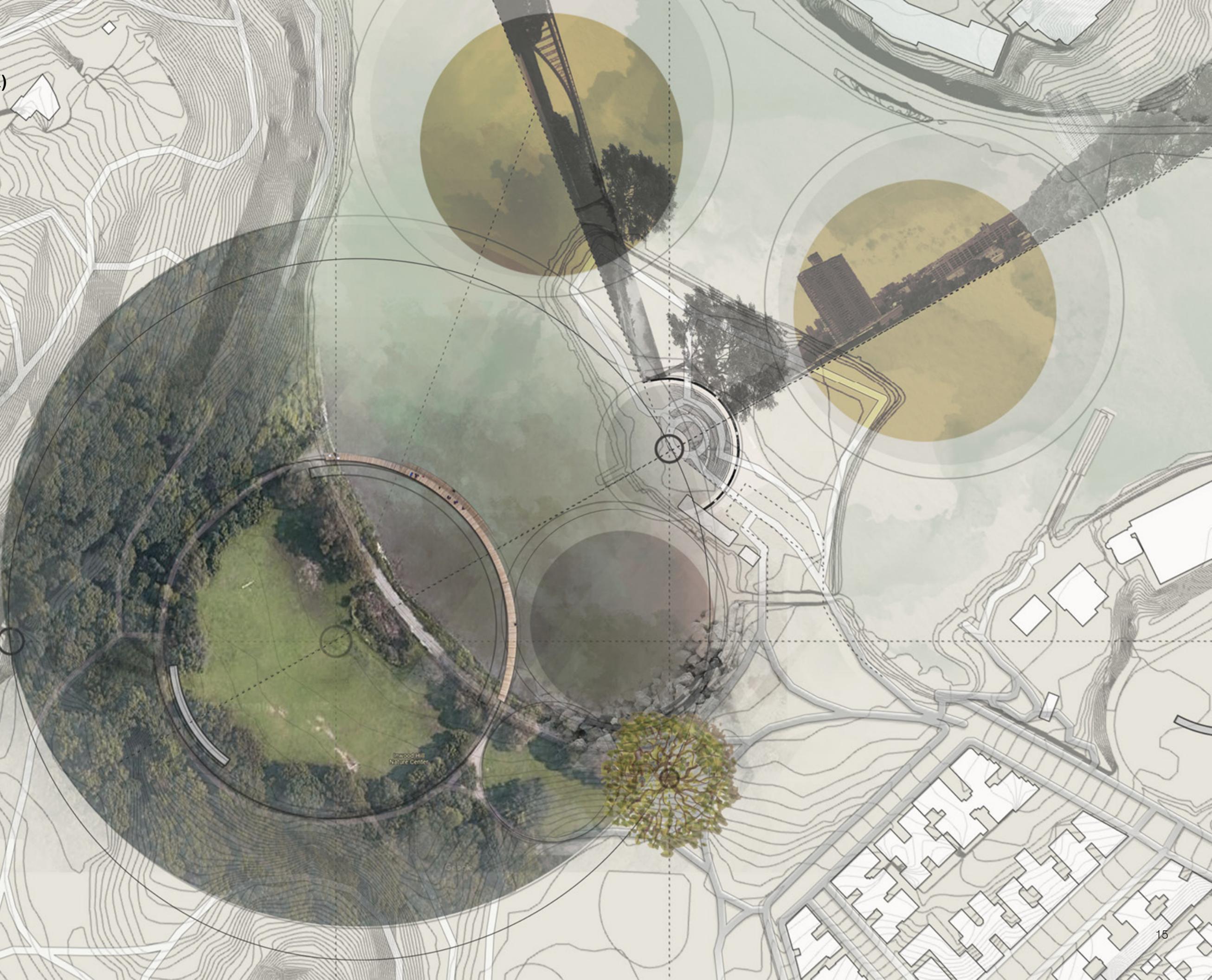


The original names of these places have been handed down, studied, modified, preserved, erased, forgotten, and revived. And their identities followed, and shifted over time. And so how do we tell the stories of their past? The strategy is to study their names, their original meanings, and their connection to the present day character. Instead of encapsulating them in a museum, their stories will be told through landscaping and architecture that relate back to their significance and the relationship they had with the First Nation.

SITE PLAN (SHORAKAPKOK)

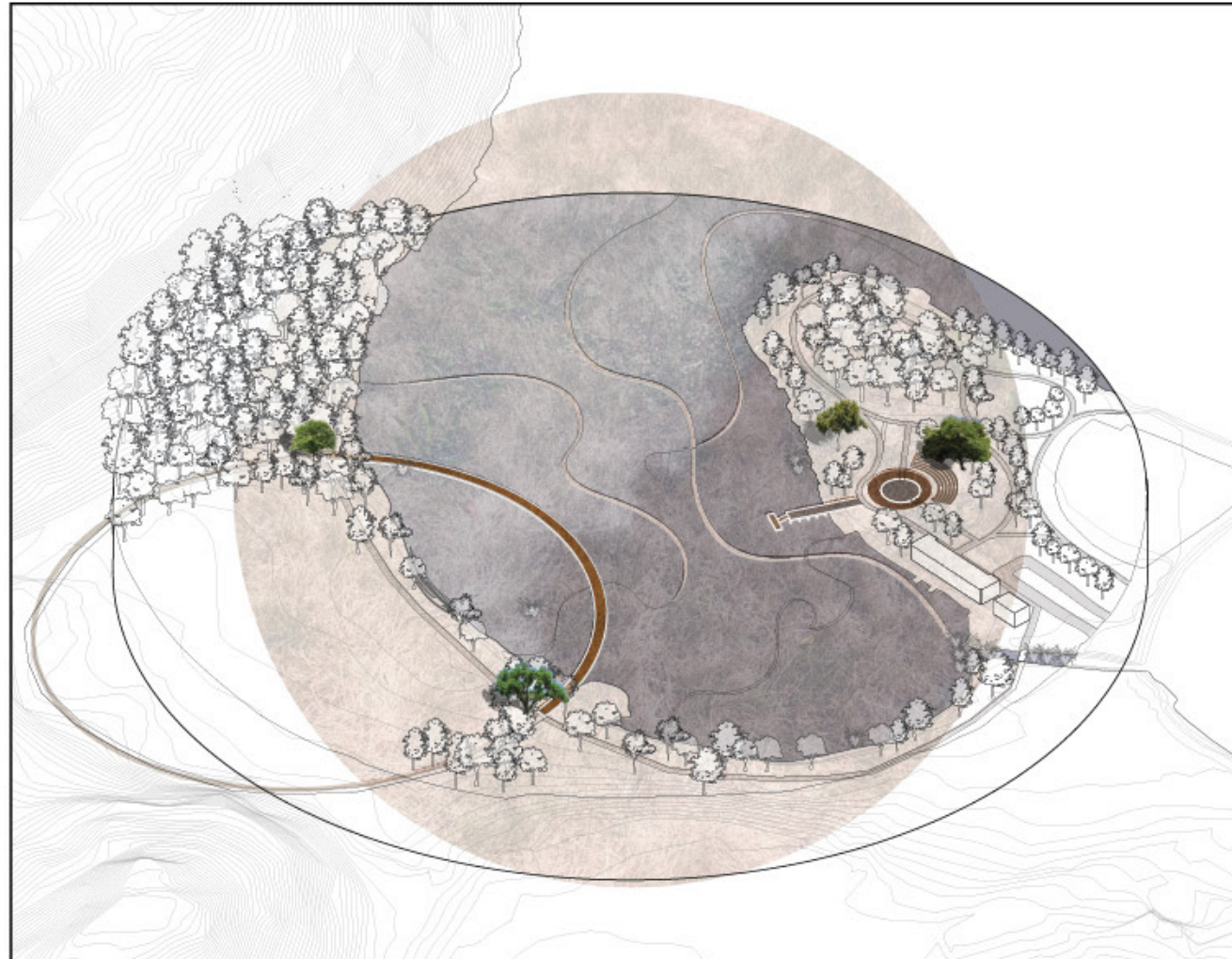
The meaning of Shorakapkok could be traced back to multiple sources. The Mohican "showauk-uppock" meaning cove, The Delaware "w'shakuppek" meaning smooth still water, another Delaware "shaphakeyeu-aki" meaning the wet ground place, Unami "shak-uppek", and of an unknown origin - "the sitting down place"

Shorakpkok will be the starting point of the journey through a web of urban trail, as the birthplace of the Inwood Hill Caves, and a beginning of the story.





INTERVENTIONS



Shorakapkok (cove, smooth still water, the wet ground place) Gowahasuasing (a place hedged in)

“w’shakuppek” which was “smooth still water”
 “showaukuppock” translated as “cove.”
 ‘the wet ground place,’

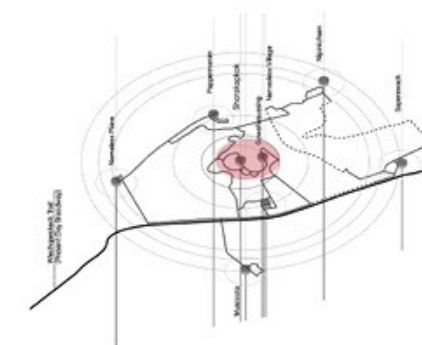
SHORAKAPKOK (Maps I, V). A name, fortunately preserved, applied to the locality under Inwood hill and to the western part of Spuyten Duyvil creek, on the bank of which, in the glen now called Cold Spring hollow, large deposits of débris, food-pits, and rock-shelters attest the long-continued native residence. The well-known Indian cave is one of the features of Shorakapkok. (See pl. II.)

Existing Condition: Inwood Hill Park, waterfront but no access to water or water activities. Casual and informal outside the recreational area (tennis, baseball, basketball). Inwood Hill Park Caves. Well preserved forest but poor grass condition near the waterfront. Amazing views though. Trails offer different experiences throughout the forest.

Annual Lenape pow-wow is held in the summer. Used to be a popular gathering site for the Native American with an abundance of oysters.

Proposal: More formal and recreational landscape with cultural values in the waterfront area comprised of various seating areas. Take advantage of the amazing views, topography and different elements of the site (water, grass, dense forest). Relate it to the original meaning of Shorakapkok - the cove, smooth still water.

Semi-circular bridge that juts across the Spuyten Duyvil Creek and sits itself between the hills of Inwood and the peninsula-island. The bridge will be able to provide the visitors with a touch of smooth still water.. and a place to sit. what it feels like to be immersed in the only environment of Manhattan that had been passed down as it is. The circular amphitheatre right across the bridge is connected to the sightline of those sitting on the bridge.





Nipinichsen (muddy or foul water)

very reasonably applied to the rain-water pond which in certain seasons filled the hollow space back of the site of the old

nipnishkeneunque, signifies muddy or foul water”

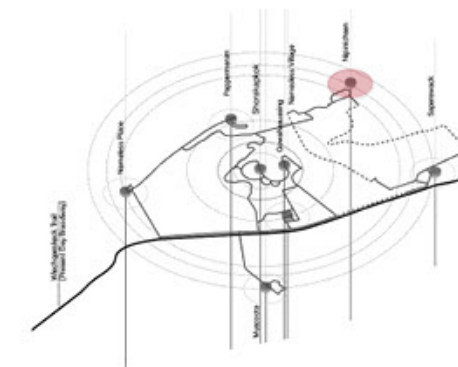
gested, is found in the Delaware *mbi-nishkeu*, or as it appears in its Natick form, *nip-nishkeneunque*, signifying

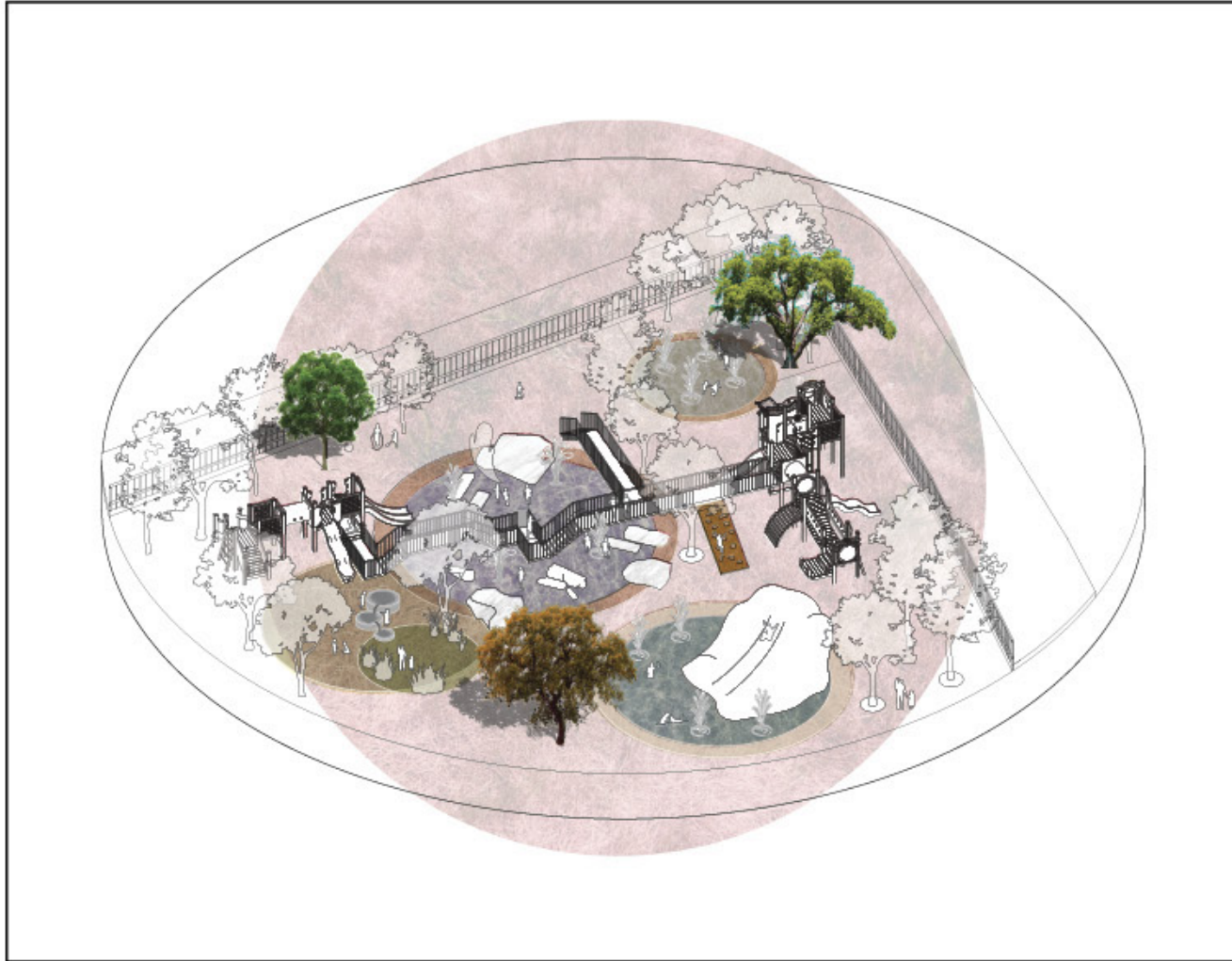
North River. From their fort **Nipinichsen**, on the north bank of the Spuyten Duyvil Creek, they pushed out in two dug-out birch canoes and threatened the explorer’s ship. It was the sub-tribe Reckgawawancs

Existing Condition: Converted to Henry Hudson Park and Henry Hudson Monument in a quite neighborhood.

Lack of program near the problematic monument. Half Moon Overlook = great scene over Inhood Hill and Hudson and the Palisades. Used to be native American fort and lookout that spotted the first Dutch ship that came to battle the Weckquaesgeek tribe of Bronx and upper Manhattan. Plaque at the entrance of HH Park mentions Nipinichsen but doesn’t explain its history.

Existing site of Henry Hudson Monument, along with the statue of Henry Hudson that is 122-feet tall, will be dismantled and turned into a trail with towers overlooking the Hudson River: the view that had been given only to the bronze figure of Henry Hudson. The lookout tower /gathering place (taking advantage of the high elevation) will provide a great view towards the Hudson and the Palisades. Perhaps a rain garden or a pond to collect the municipal sewer to and filter them (relating back to Nipinichsen’s original meaning: muddy or foul water, which was derived from the rain ponds that filled up according to seasons) before letting it down the hill. It’s a real hike to get to this place because the area is extremely





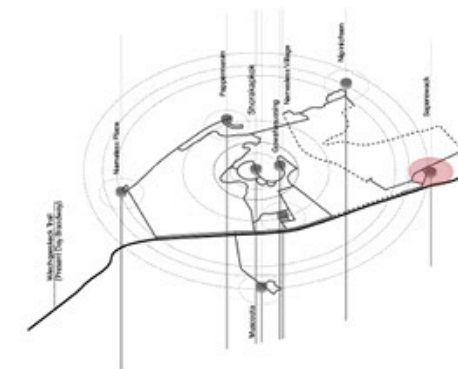
Saperewack (glistening place)

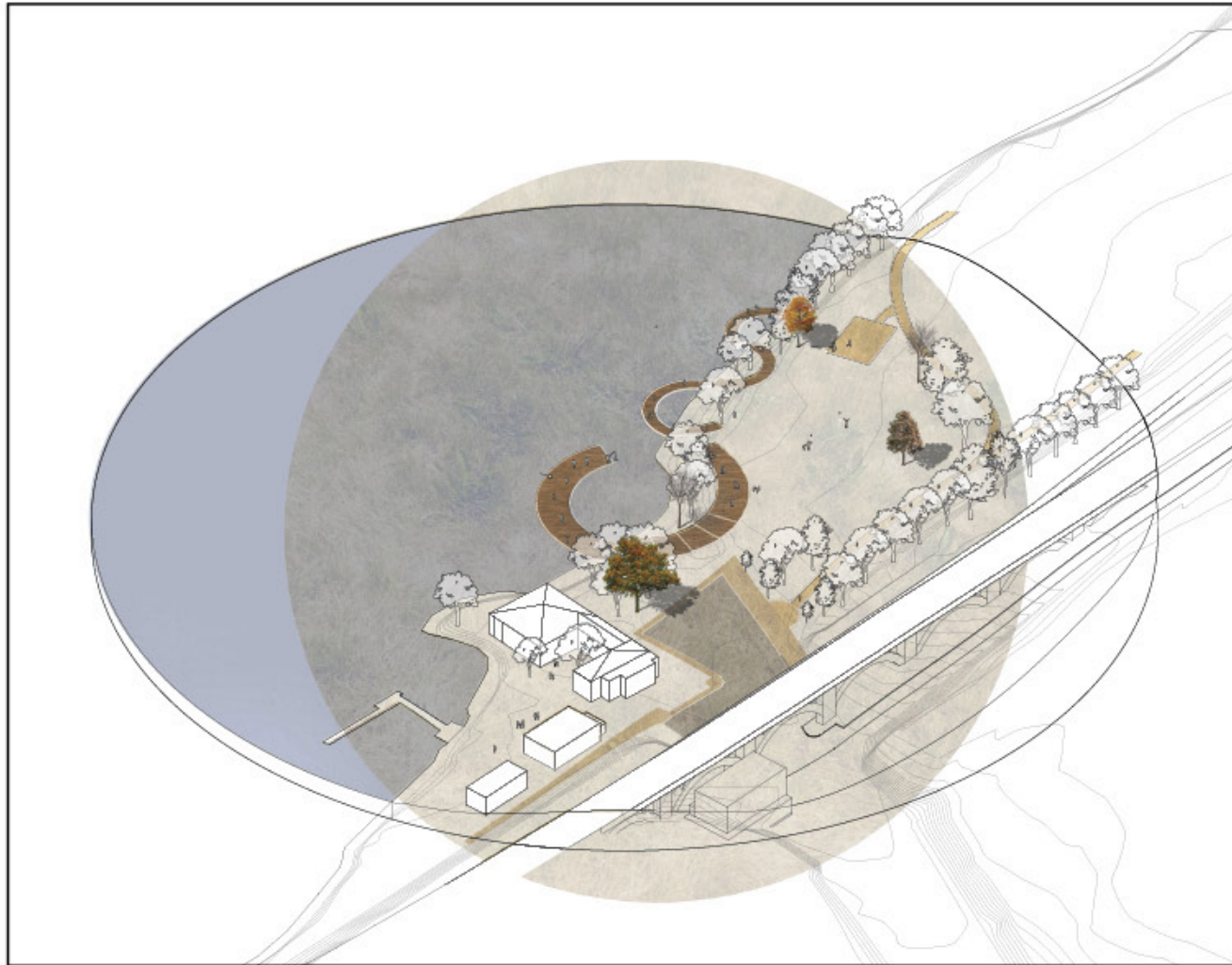
sabbeleu-aki, “glistening place,”

Saperewack is claimed to mean “the glistening place,” place.” One of the tribal groups that lived in the area, the Rechgawawanc, had made their homes here in the sheltering hillsides and close proximity to the fishing and hunting spots. is recorded in the deed of 28 September, 1669, as “the hook called Saperewack.”

Existing Condition: Present day Marble Hill. Largely residential community surrounding the public housing project next to the bustling Broadway. Marble Hill Playground made of playground, fenced soccer field, basketball courts and a parking lot. No water feature though. Mostly African American population. Kids and families are hanging out free - implies a certain degree of safety.

Proposal: The meaning of Saperewack - the “glistening place” was derived from its marble outcrop shining in the surrounding water. Intervention could include an addition to the existing playground comprising water feature and masonry interactive sculpture/sculptural landscape that could refer back to the imagery of Saperewack. These features could be turned fully into a water park when it rains.





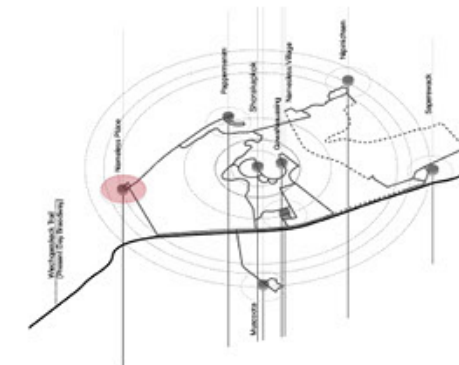
Nameless Place

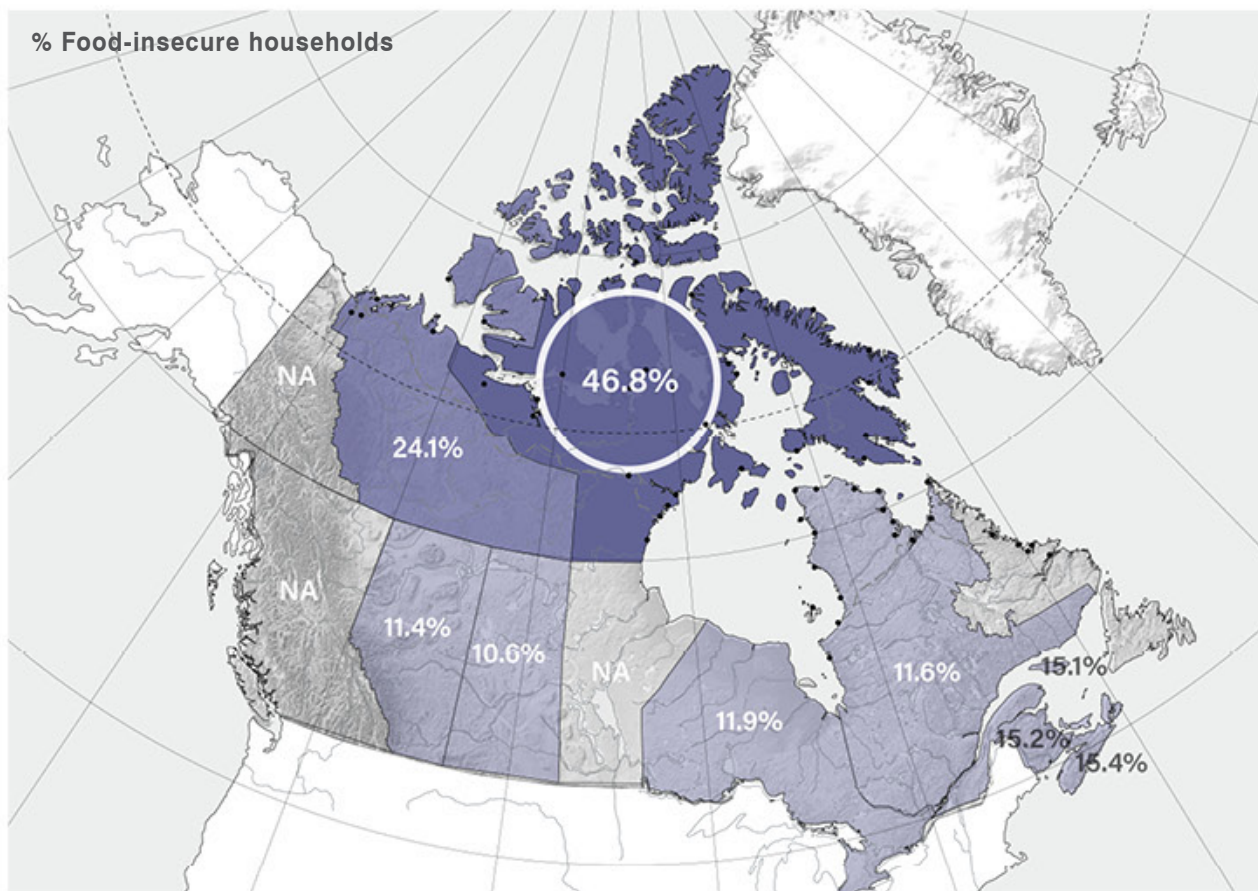
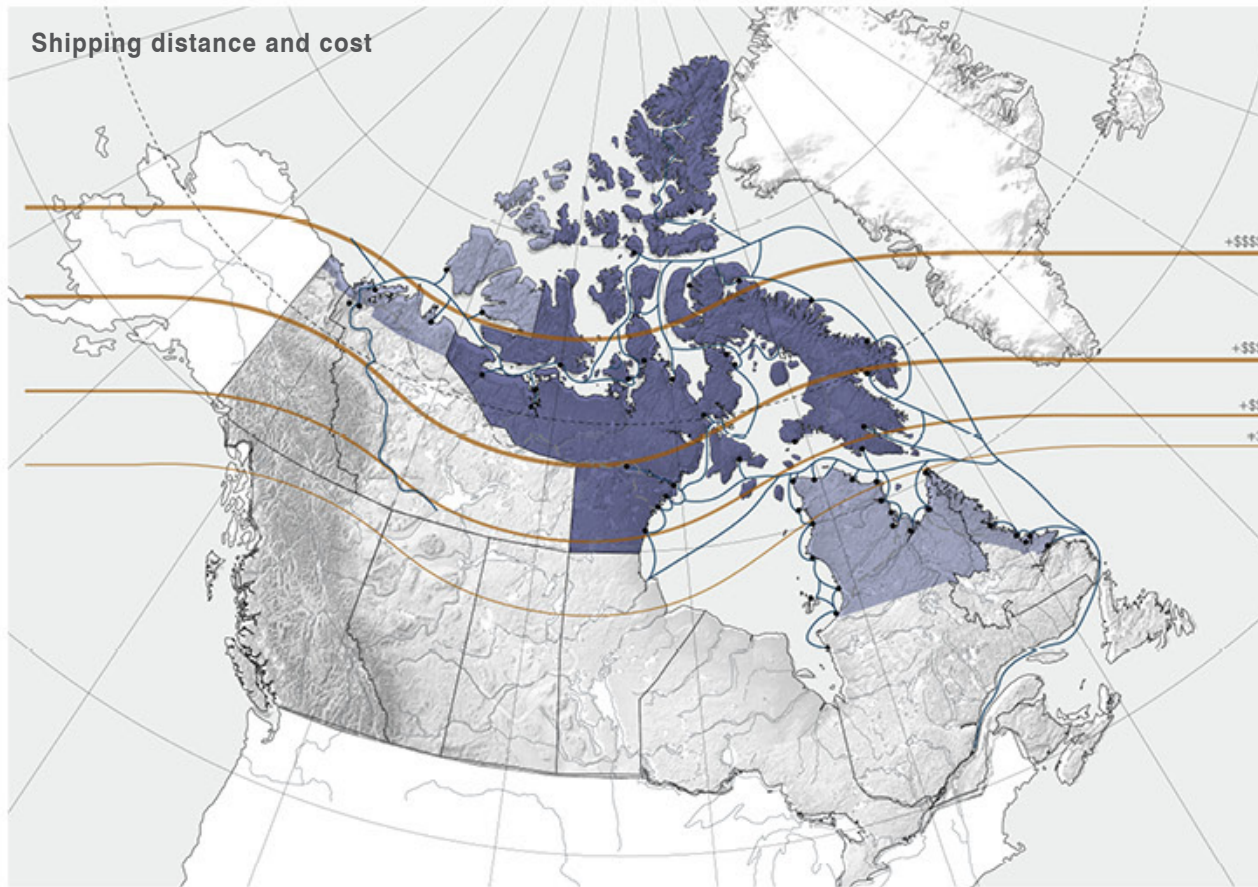
The more southerly site, **Tubby Hook** (see fig. 1.1), is a shell midden located alongside the old Hudson River Railroad tracks, near the foot of what is now a busy commercial area. In 1937, a group of

archaeologists to work in the city and who, with Amos Oneroad, dug at both **Tubby Hook** and Inwood (fig. 4.5). Skinner recognized

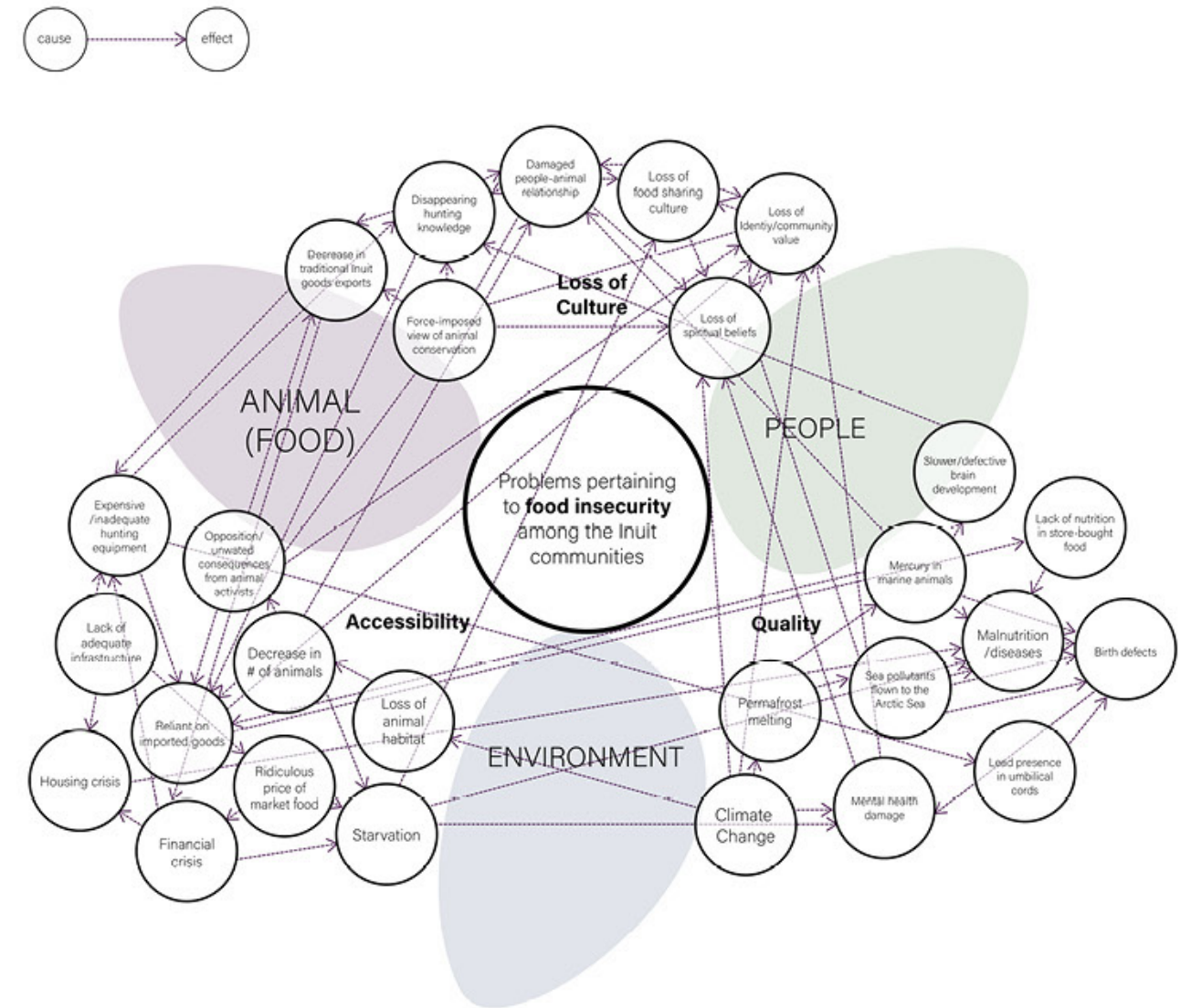
Existing Condition: The thin strip of land adjacent to the present day Tubby Hook is a former archaeological site where a large mounds of oyster shells, food pits and tools that belonged to the Native Americans were discovered. Unfortunately, there is no record of how this place was addressed. Protected from the rest of the area and possible tribal conflicts by the towering Inwood Hill, it offered a quiet gathering place for the Native dwellers. Today it is a casual riverfront area with restaurants and recreational facilities.

Proposal: Tapping into the Native American's life that was so intertwined with oyster and relating it to the ongoing project by Billion Oyster Project (restoring oyster reefs to New York Harbor in collaboration with New York City communities), the riverbanks could harness oyster beds, oyster harvesting paths and fishing docks. It could be an educational, environmental and recreational addition to the existing site.



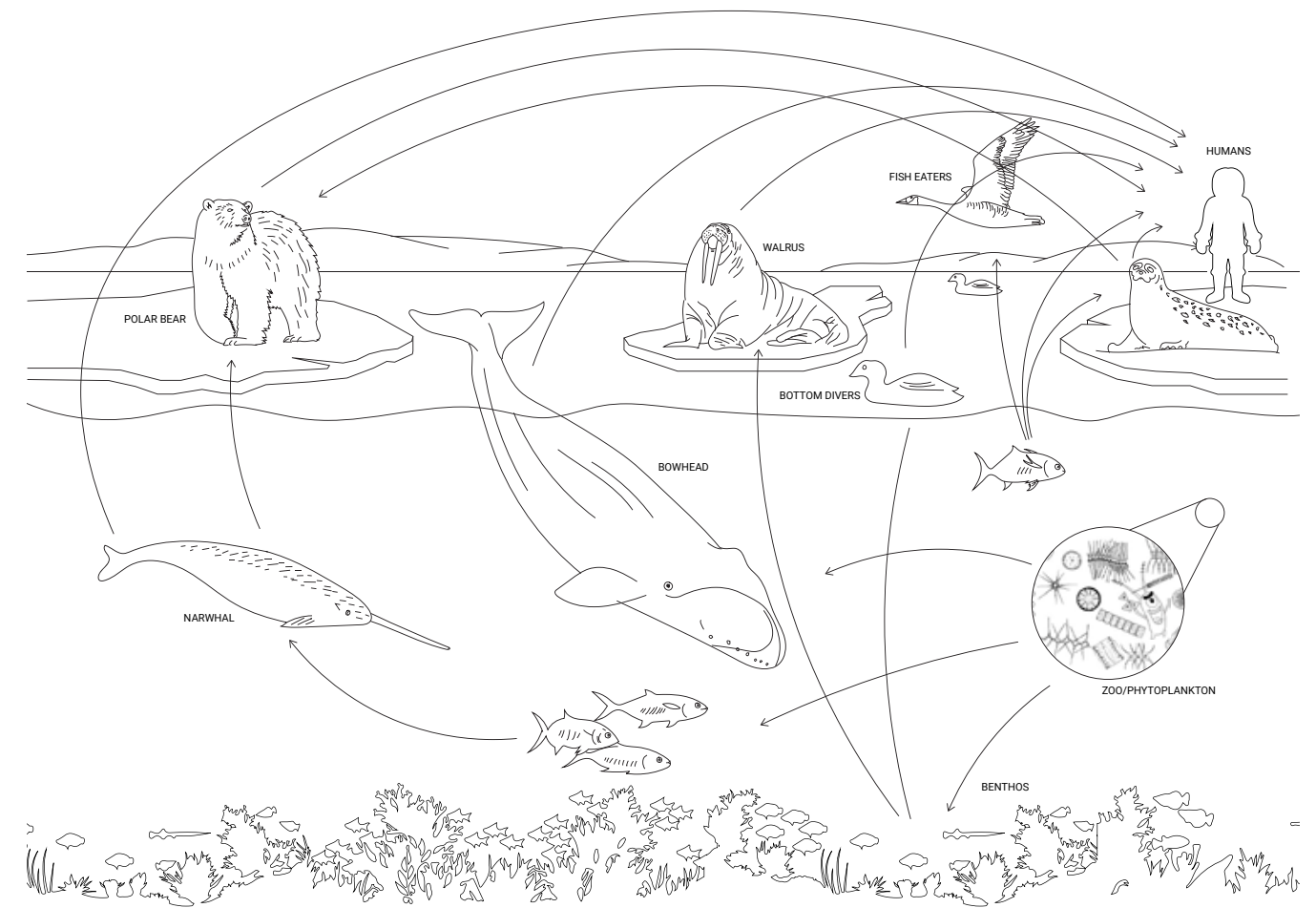


The astronomical food prices and climate change, loss of animal habitat, cultural shift and financial crisis, altogether are contributing to the high percentage of food insecure-households, especially in Nunavut, the northernmost territory of Canada.



The food insecurity problems could be largely divided into accessibility, environmental and cultural issues. The Inuits have a longstanding and traditional knowledge of hunting, spiritual relationship with the animals and an extensive community-wise non-reciprocal food sharing customs, which would lead to this web of vicious cycles as shown right here.

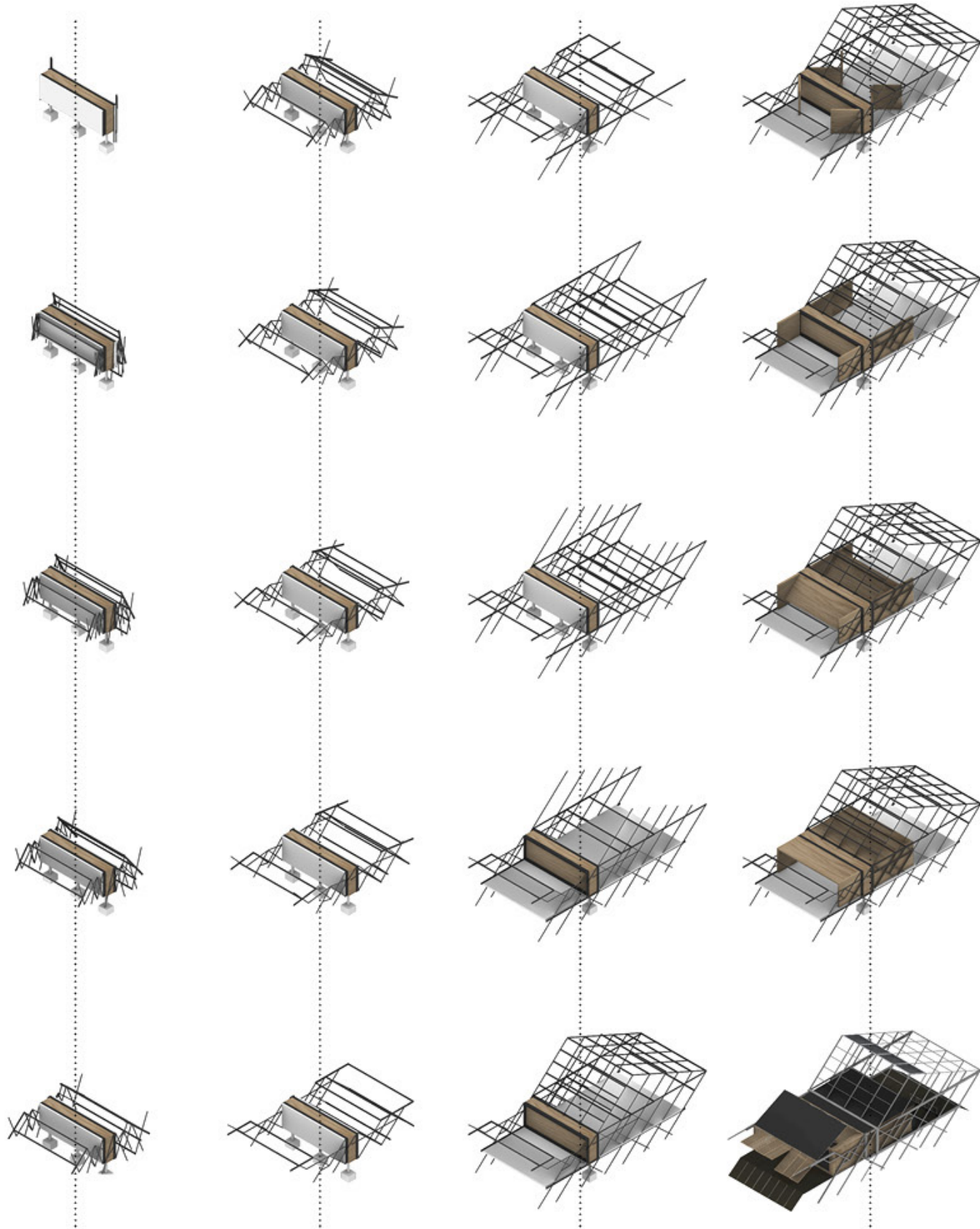
*Part 1 - Project Haven:
Deployable Modular Structure for
the Satellite Hamlets*



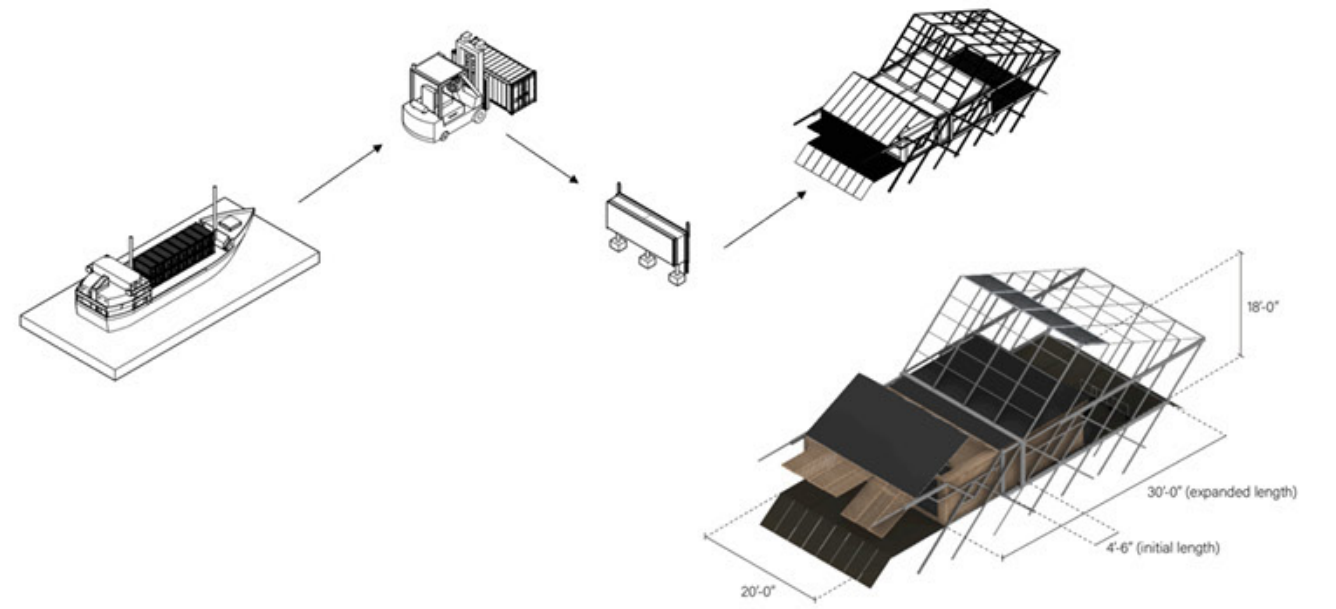
The Inuits have a longstanding and traditional knowledge of hunting, spiritual relationship with the animals and an extensive community-wise non-reciprocal food sharing customs. Food sharing custom was an extremely significant custom that is still practiced today that was developed as an essential way of surviving in the harsh climate of the arctic. Hunters, villagers - including elderly and weak have developed important bonds through food sharing custom, and it's important to note that it is non-reciprocal and all-inclusive.



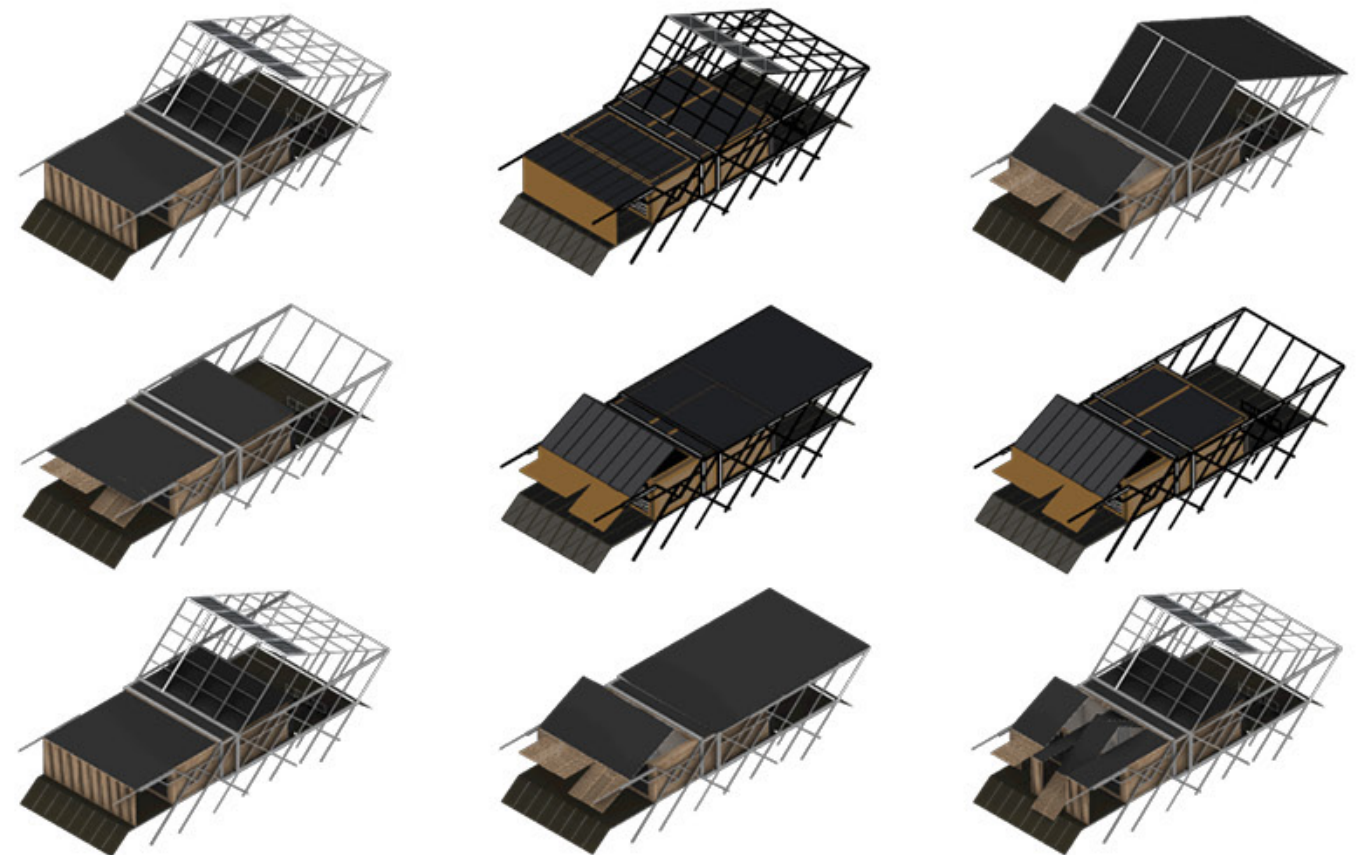
Expansion Process

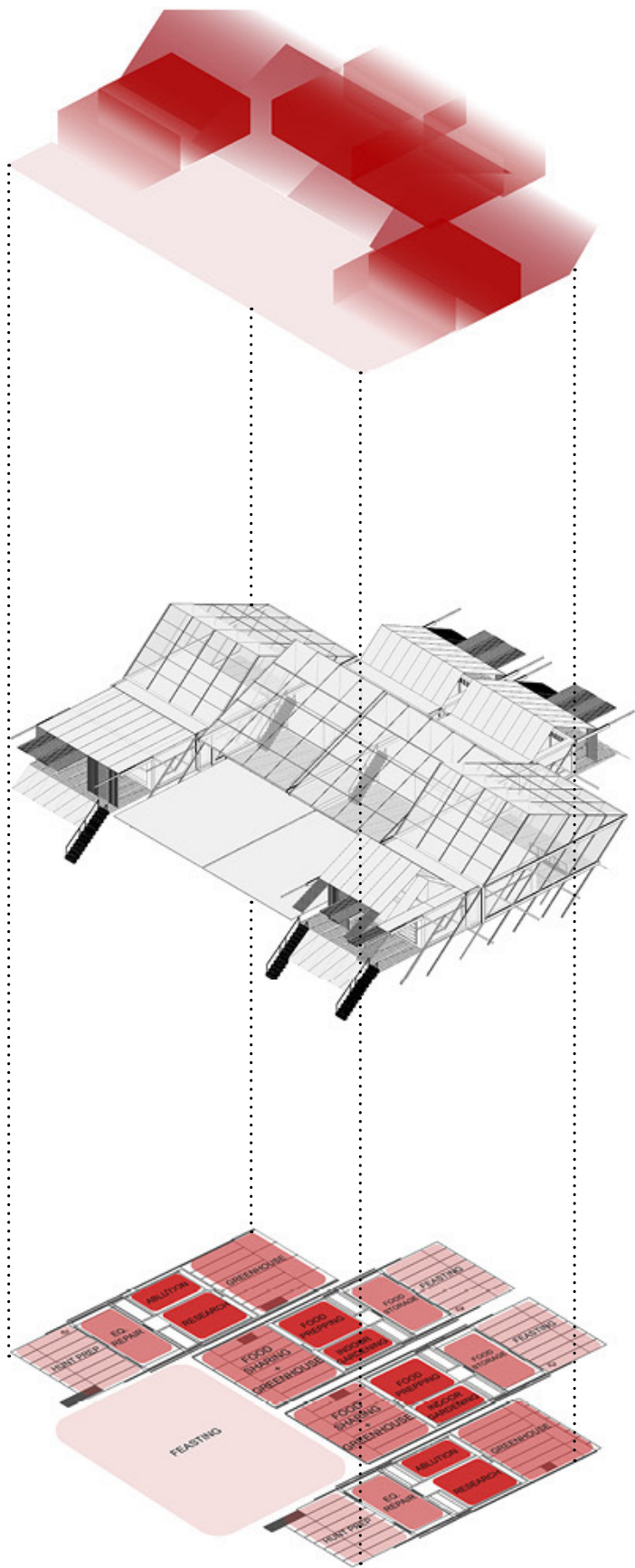


Deployment



Configuration Types

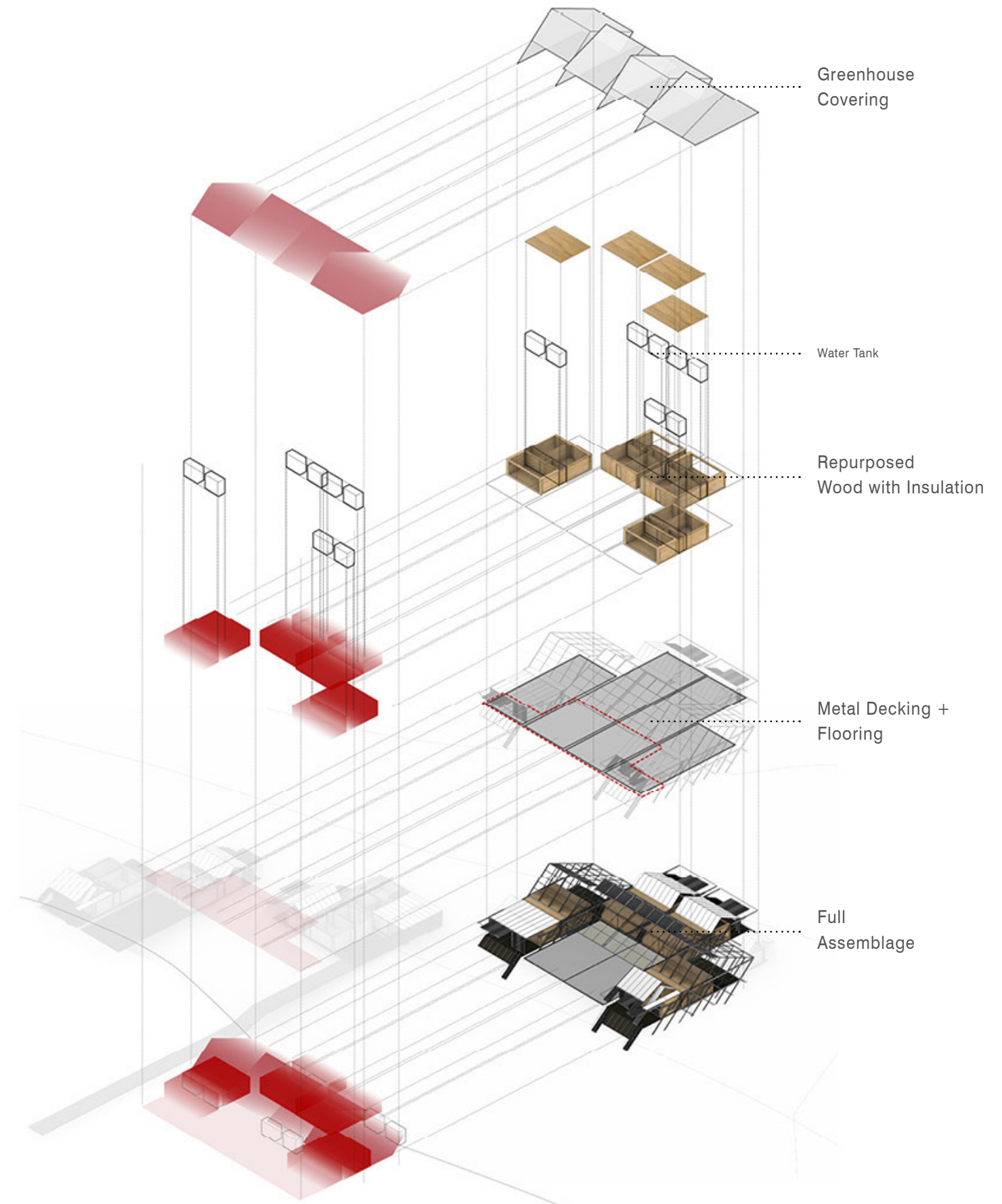




Heat Gradient Map

Physical Boundary

Program According to Thermal Condition

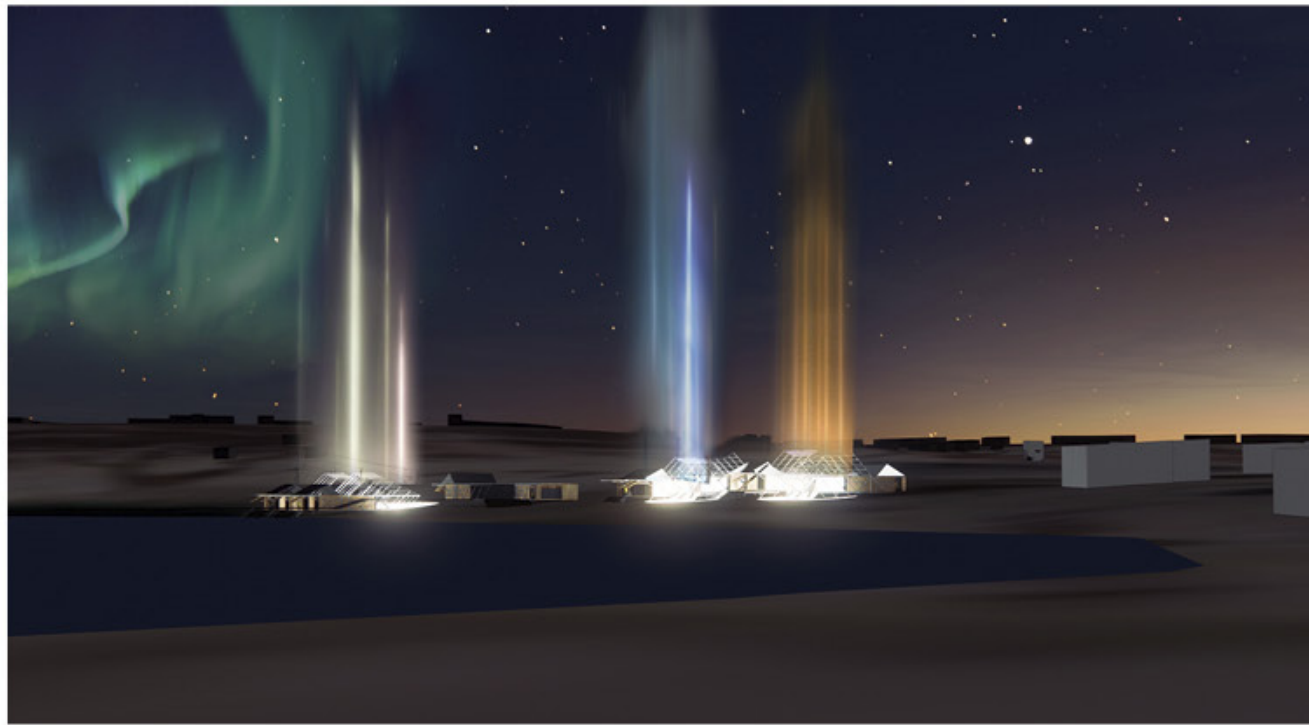


At the end, these modules will serve as a local center for food sourcing open to any residents of the hamlet.

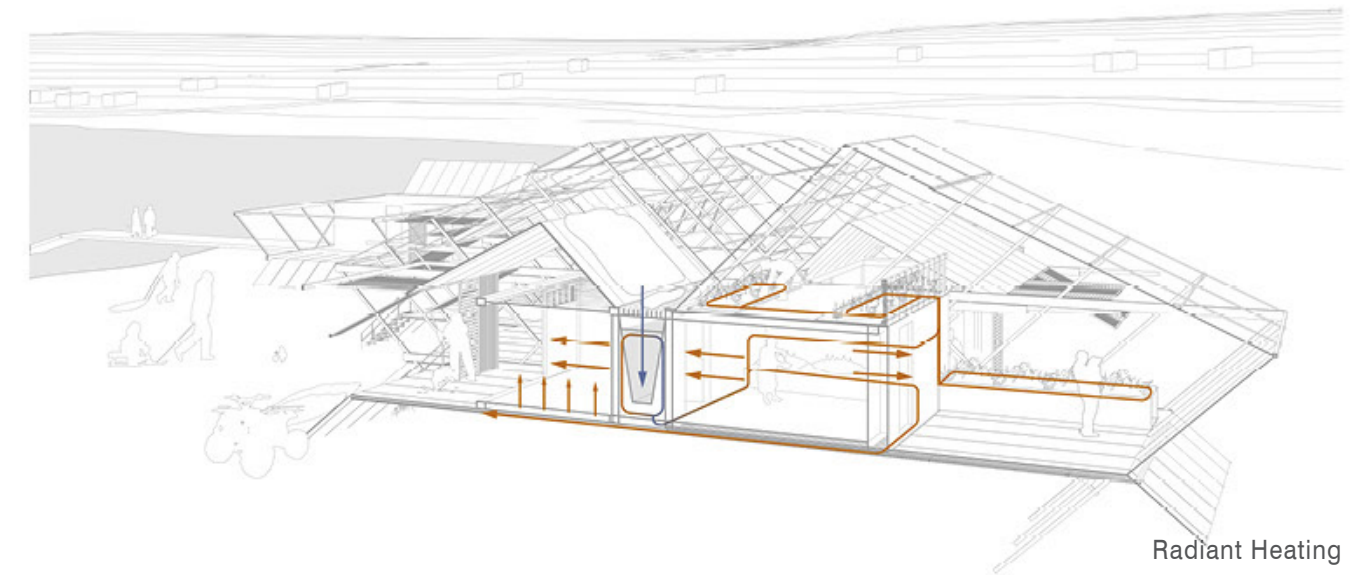
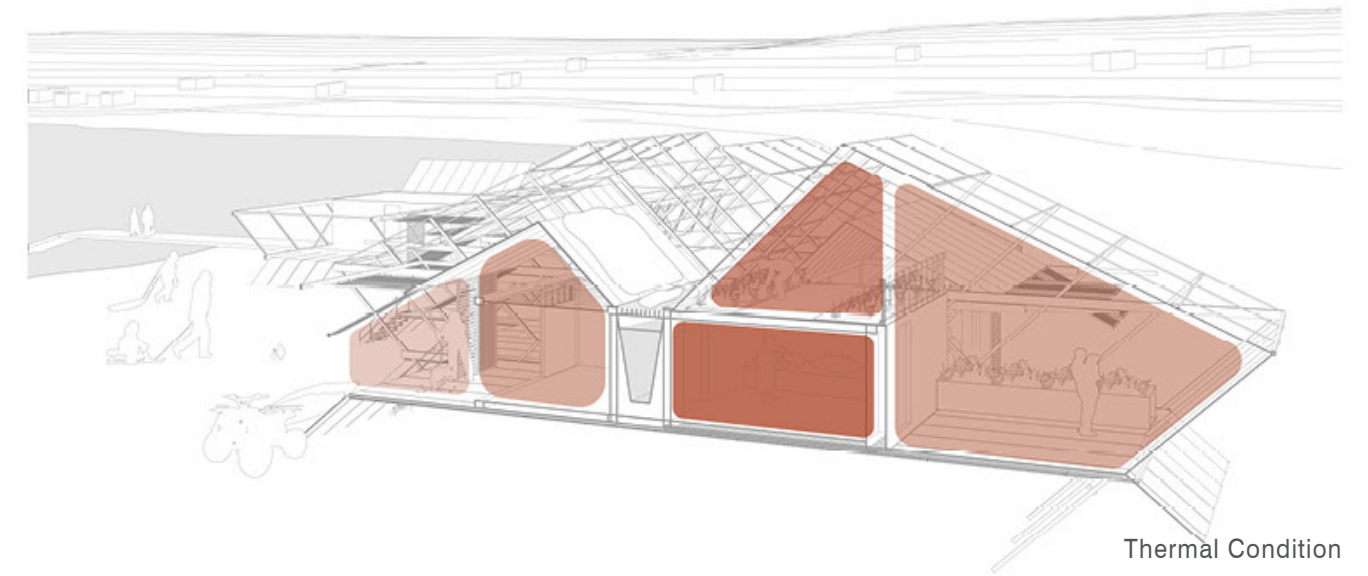
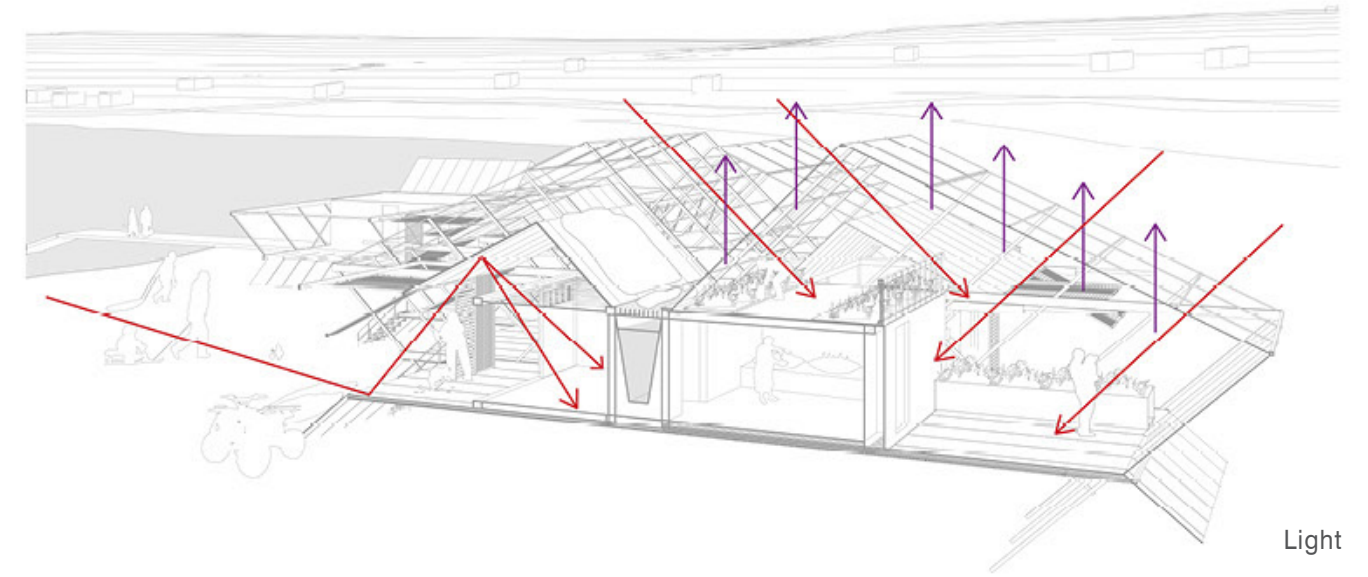




Paying respect to the invaluable food-sharing culture of the Inuit communities, garnering hope from the environments that provide the source of food and life to their culture, and discerning how to improve the worsening situation of food quality, inaccessibility and cultural loss.



And act as a beacon for the Inuit communities to provide regular and easier access to food, becoming a safe haven for the local community and regional Inuit network.

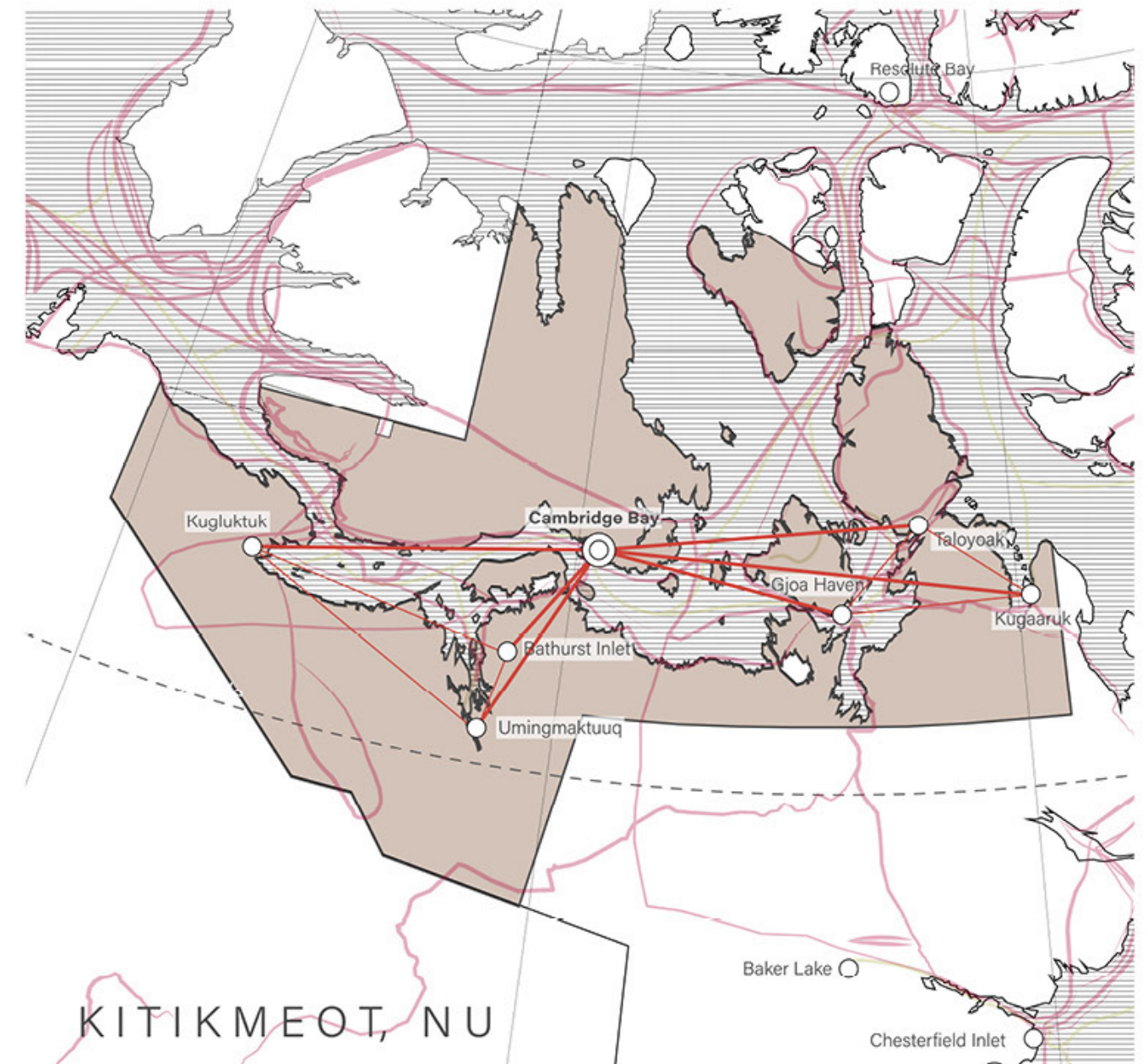


Part 2 - *Kitikmeot Food Systems and Knowledge Hub: Center of Kitikmeot Food Network*

The Hamlet of Cambridge Bay is the administrative, business, and transportation centre of the Kitikmeo Region. The Hamlet delivers services to approximately 2,000 people living within the 202 km² municipal boundary. The Mayor, council, and municipal staff provide administration, recreation, wellness, planning and land development, municipal works, and finance services. The Hamlet employs approximately 40 full-time and 12 part-time employees.

Project: The Hamlet will develop educational and training programs (curriculum, workshops, illustrated images, videos) linked to protocols for growing crops in the North, butchering country food, and promoting nutritional health in the Kitikmeot region. The Hamlet will engage with local groups, as well as Laval University and Carleton University, to ensure traditional knowledge is adequately considered in addressing food security issues. The project is expected to lead to the **development of a knowledge hub for the implementation of food programs rooted in Inuit traditions while leveraging clean technologies and academic research.**

Phase 1: Satellite Interventions in
Kugluktuk, Umingmaktuq, Bathurst Inlet, Gjoa Haven, Taloyoak, Kugaaruk



Phase 2: Central Intervention in
Cambridge Bay

Colors of the Inuit Language and Their Origin

white in NAI, which also has derivative *qasat* 'frost on ground' (*qasamat* 'qasamat' in other dialects). In WG *qasariq* and Polar Eskimo (PEsk) *qasariq* refers specifically to the white whale or beluga. In the Proto-Eskimo (PE) **qatar-* 'white or pale'

Within Inuit it is found as a basic colour word in SPI, NAI and Sigliq (WCI) *qatq-*, but further east it appears to have been replaced as a basic term, mainly by **qabus-* 'be or turn white' (Netsilik *qasq-*, West Greenlandic *qasq-*). Both stems exist in most of the languages, **qatar-* or its derivatives being 'light coloured, pale, gray' in most Inuit dialects - in itself. Most eastern Canadian Inuit dialects use both the latter and **qabus-* 'grayish' (which takes the form *siwasiq* or *siwasiq* with suffix *-siwasiq* 'resembling'). This refers more specifically to gray wolves, *siwasiq* being attested as a slang word for 'wolf' in some eastern dialects (perhaps lit. share the association with blue foxes (e.g. NAI *qimiqtat* 'black, silver fox' - in WG also referring to the narwhale). Note also the derivative **qianraq* 'dark ripple on water'. Besides *qimiq-* 'dark, black', NAI spoken in the

'black', **qirnar-* 'be black or dark (as a blue fox)'

**qadriyar* 'spotted seal' (of a pale gray)

South Baffin, Lab and Pfiak. This is the colour associated with certain types of marine mammals in the eastern dialects - *siwasiq* 'gray (of young white whale)' in ECI and Greenland. In WG *siwasiq* refers to the whale

**acur-* 'murky'

**tarar-* '(be) dark', from which Inuit **tarrat* 'shadow'

expressed by a derivative of **qisat-* 'black', *qisatq-* (the suffix *qisat-* 'a little'), and in the Baker Lake Caribou dialect by *qisatqat* from (and probably earliest) form here is **qisat-* or **qisat-*, from **qisat-* 'gall' - i.e. 'bile'. This substance may be more familiar to Arctic Inuiters used to flensing animals than the colour of green foliage, though modern, non-Inuiting Inuit today may not be so familiar with it. In fact it no longer to this matter in connection with Chukchean. The stem **qisat-* (plain or its extended derivations) is found, usually in the form *qisatq-*, as far east as

'dark'. The other stem for 'black' found in Yupik (CAY and some AAY) is *tungu-* 'be dark blue (as a ripe berry)', which in Inuit is 'bluish, dark', especially of a dark cloud or a bruise. The source is clearly **tupu* 'berry juice', the meaning of the stem as a nominal in Labrador and Greenland. We blue or green. Generally in ECI *tunguyutqat* or *tunguyutqat* is either 'blue' or 'green', though Marc-Antoine Mahieu (pers. comm.) suggests

When we get to 'green', things get more muddled. All dialects have distinct words for 'yellow' and 'green', but 'blue' and 'green' are not distinguished in large parts of the Arctic, and are, moreover, entangled with words for 'yellow'. This should not really be so according to Berlin &

widespread sense of the 'urine' word **qasq-* further west, namely (unsurprisingly) 'yellow', the sense found everywhere in the Inuit dialects

divide. The most widespread word is **kavia-*, which in all Yupik plus SPI and NAI is 'red', a derivation of which is used in the same area to refer to the (red) fox. By contrast, all the remaining Inuit dialects have derivatives

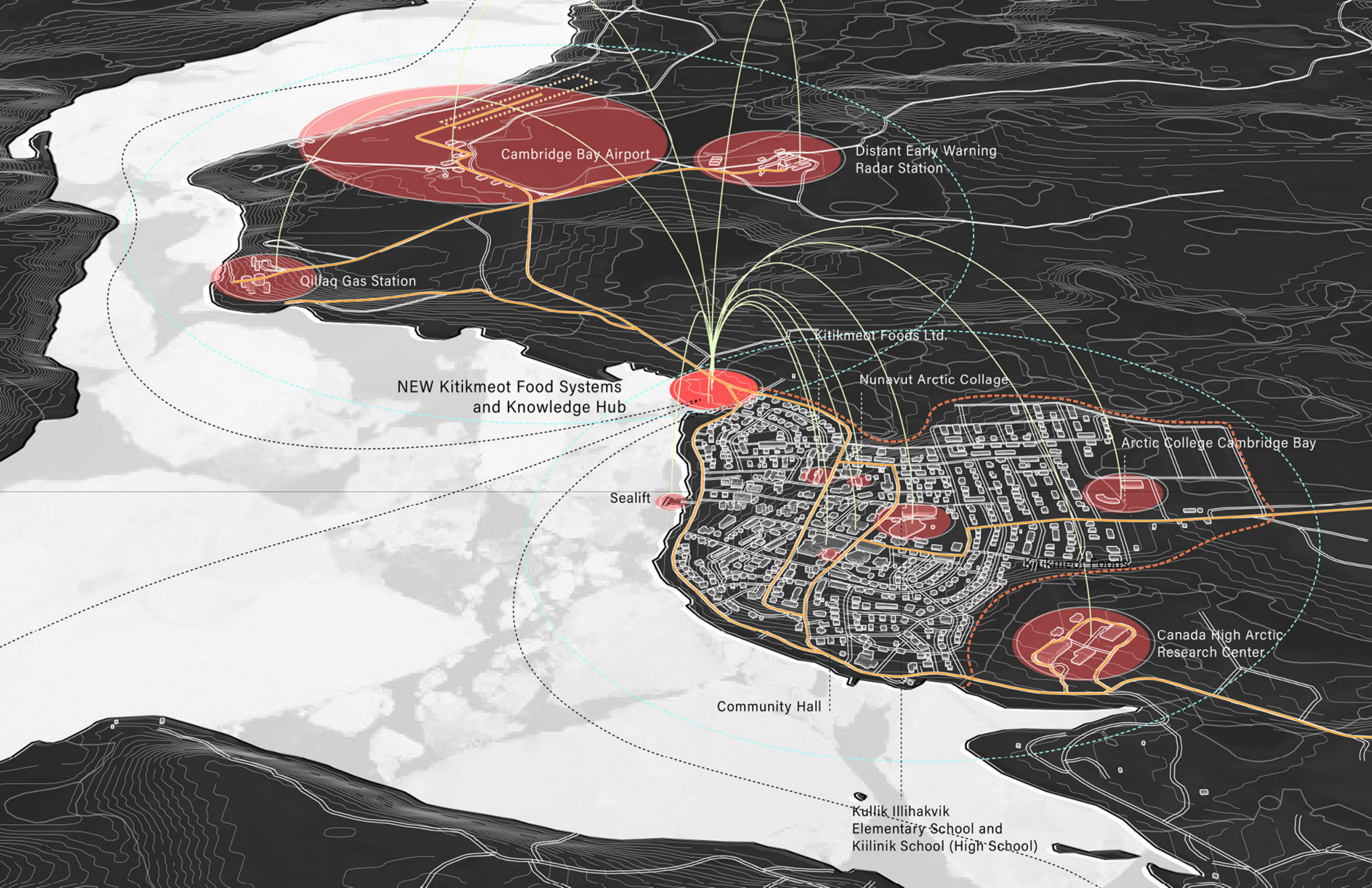
of **adur-* 'blood', e.g. Copper *asupayaq*, NB-Ai *asupaluk* or *asupaq*, WG *asappalaar-* or *asappalug-* (with suffixes meaning 'looking like'), which

In any family of Inuit language - the word "green" did not exist.



The language of colors were originated from the perception of what is salient in the arctic environment - which most of the time was linked to sources of food for the Inuit people.

Word the referred to the dark blue hue of the stormy ocean and the green hue of the Northern Lights were the same. Closest work was *sunga* - which referred to the color of bile, more brownish gold rather than green.



Cambridge Bay Airport

Distant Early Warning Radar Station

Qillaq Gas Station

NEW Kitikmeot Food Systems and Knowledge Hub

Kitikmeot Foods Ltd.

Nunavut Arctic Collage

Arctic College Cambridge Bay

Sealift

Canada High Arctic Research Center

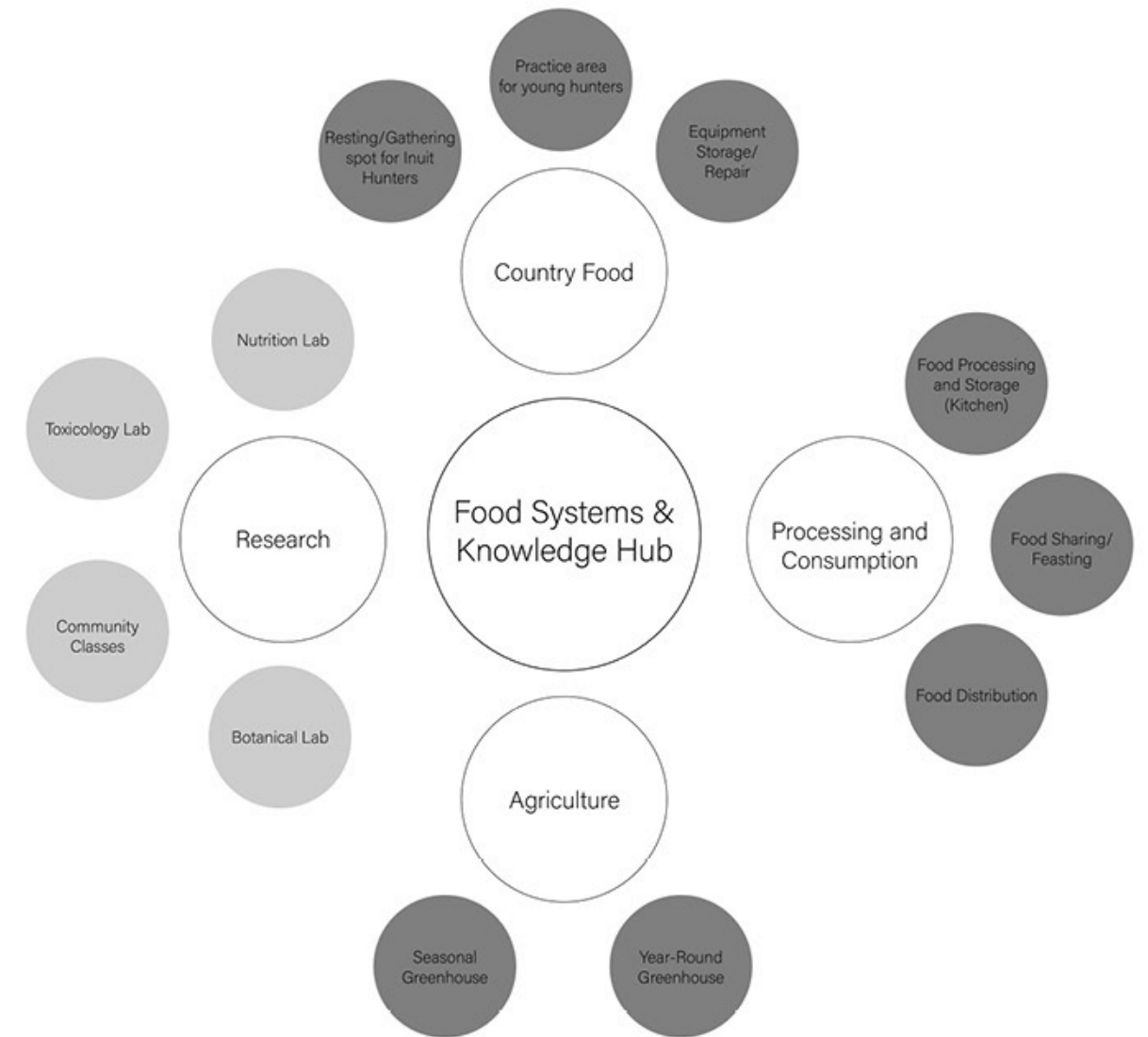
Community Hall

Kullik Illihakvik Elementary School and Kiilinik School (High School)

SITE PLAN (CAMBRIDGE BAY)

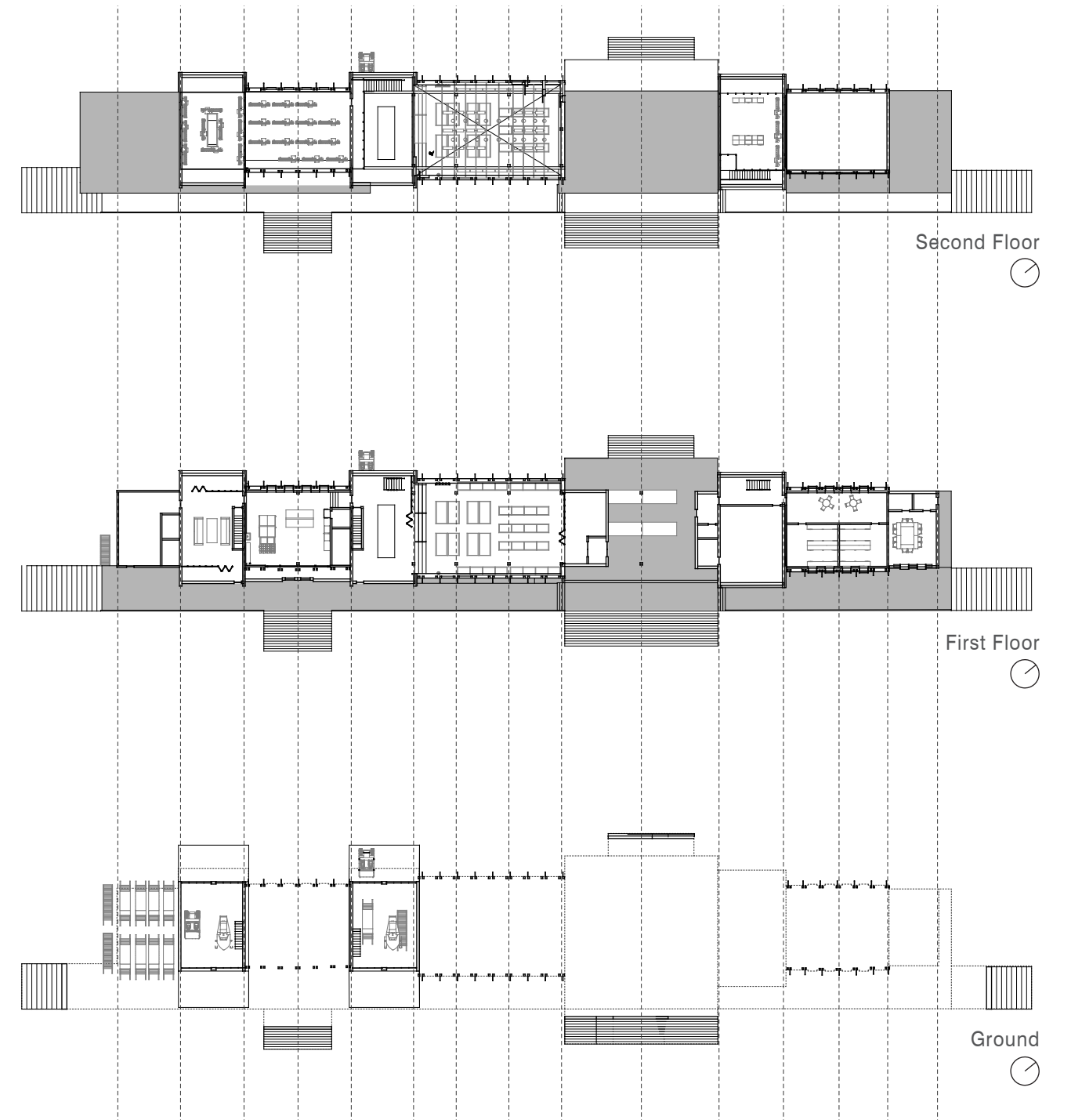


PROGRAMS

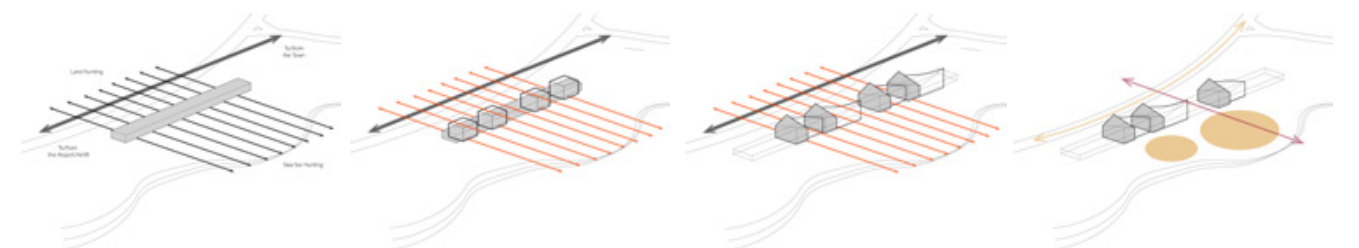




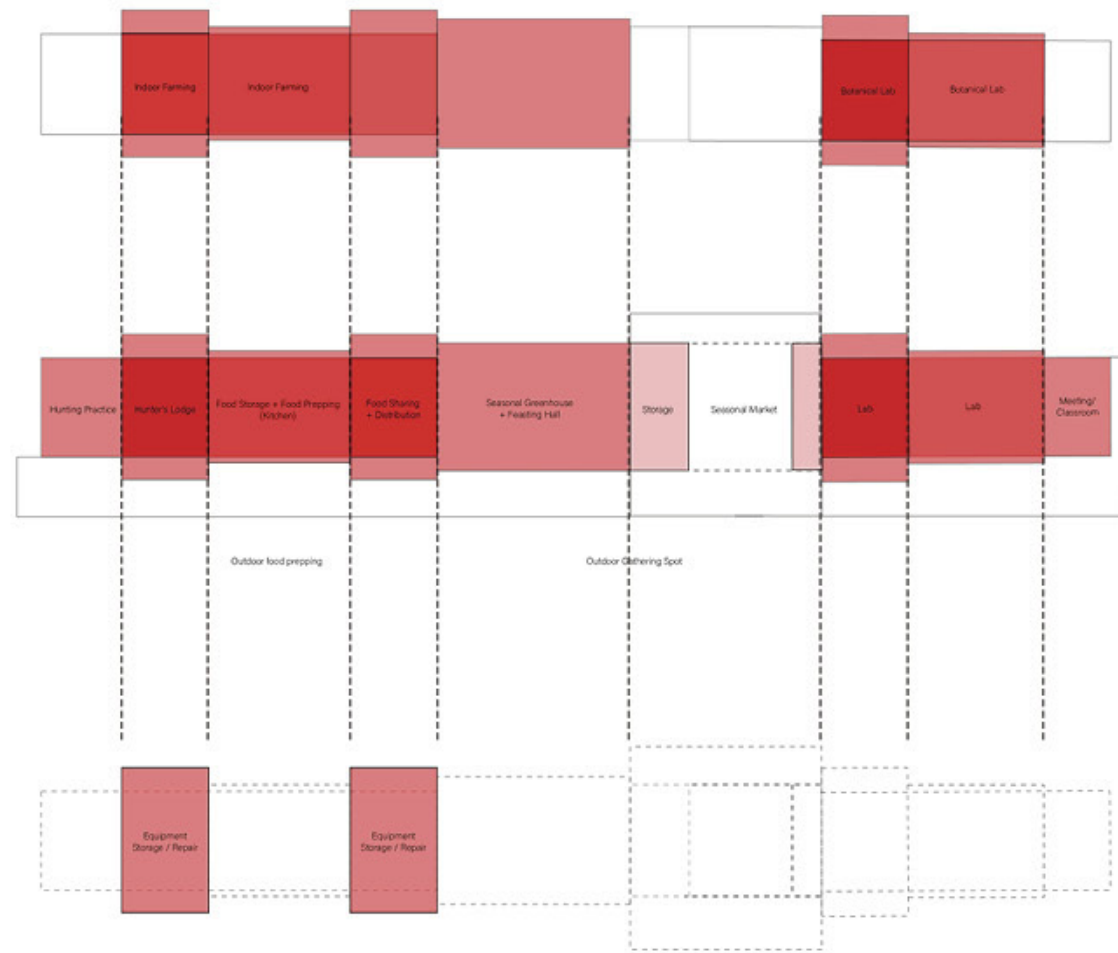
Plans



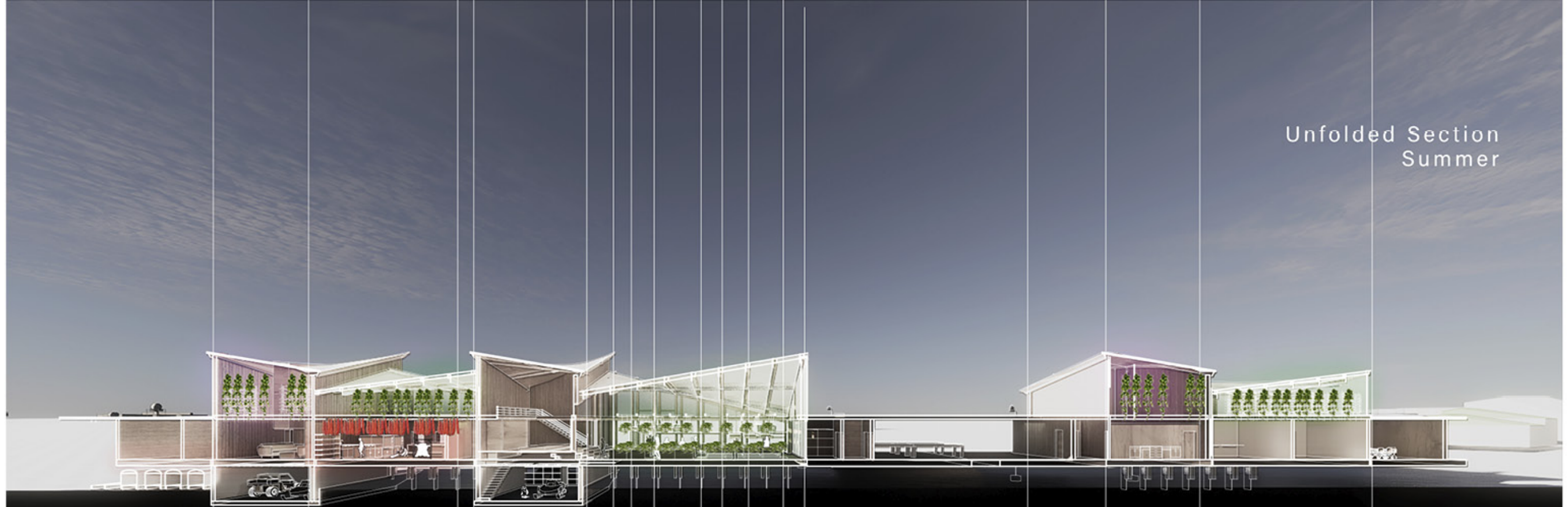
How can we create an opportunity to capture the colors of the Arctic - the color of its environment and the color of the food and express in a spectrum using architectural intervention?



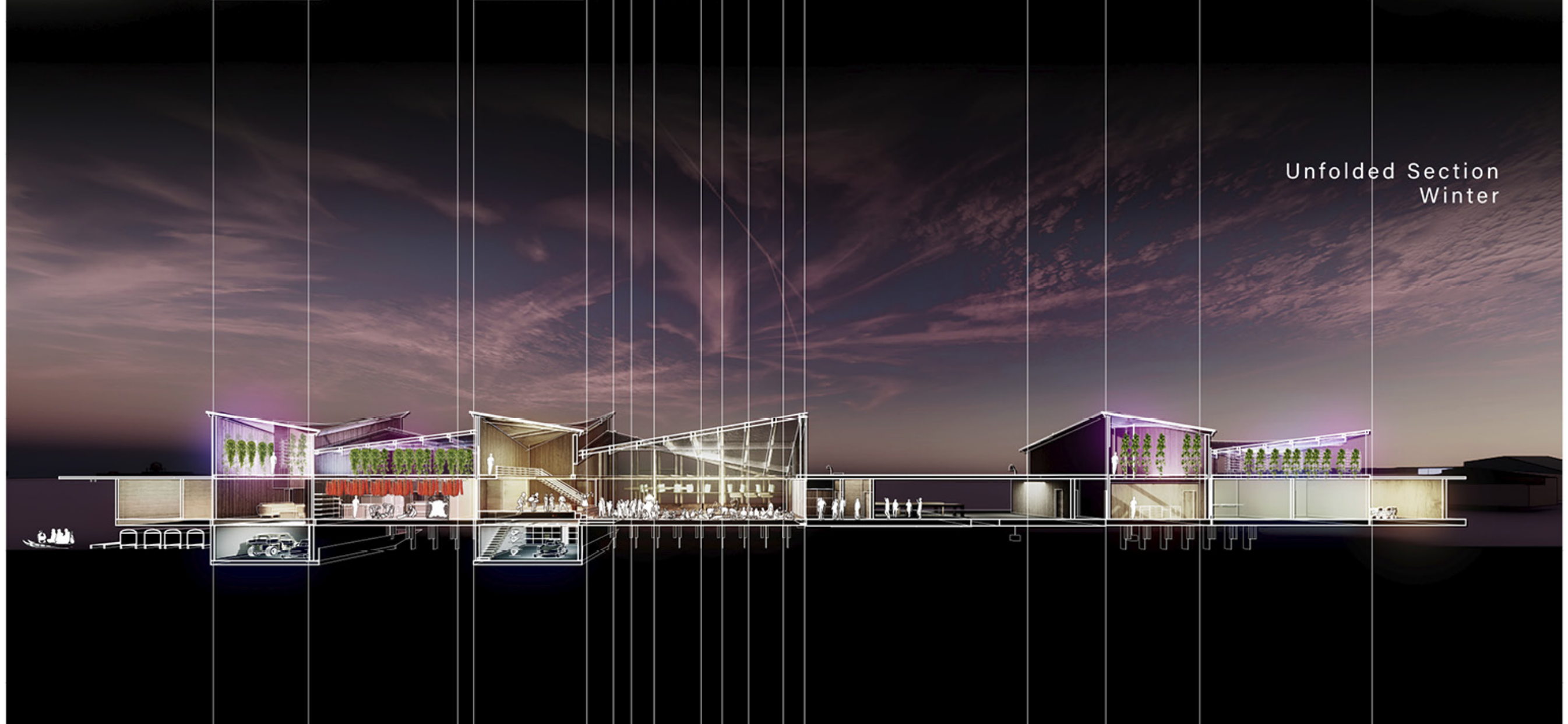
Thermal Condition

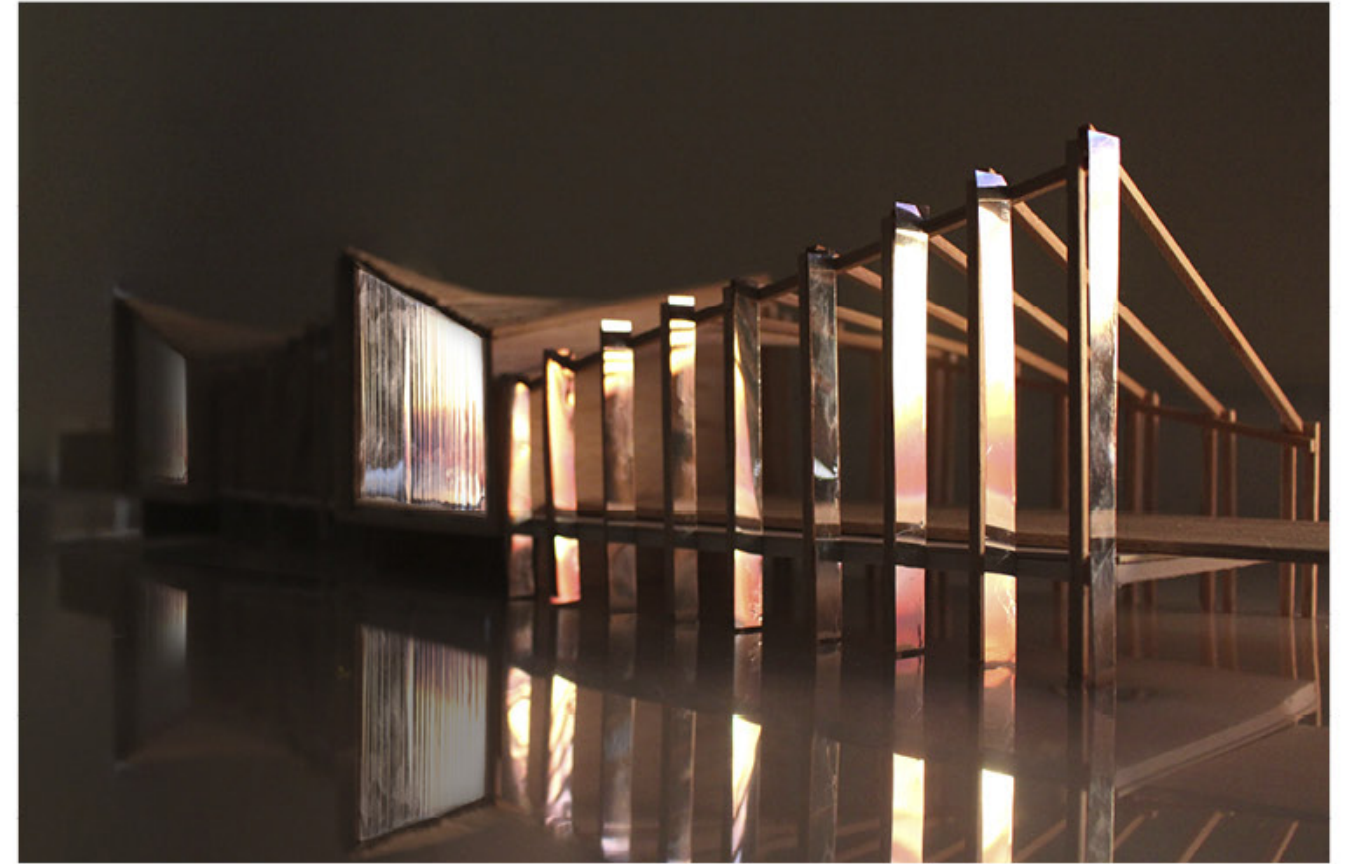


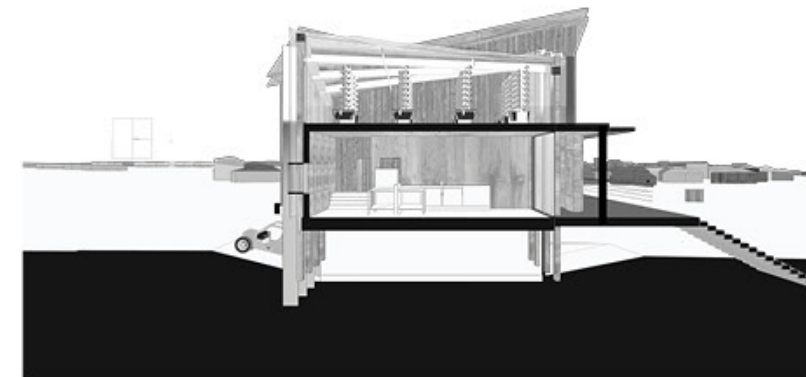
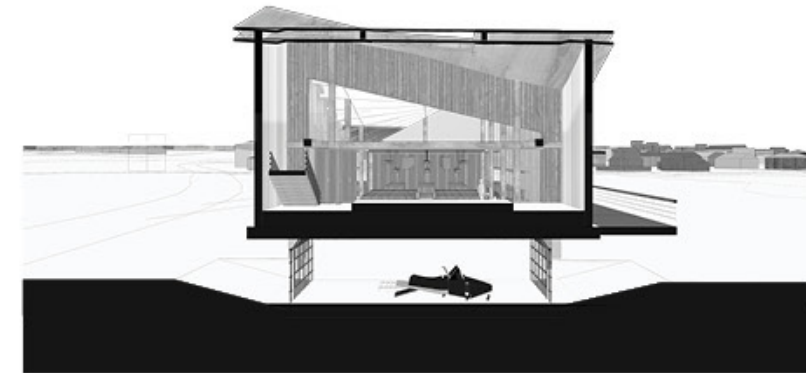
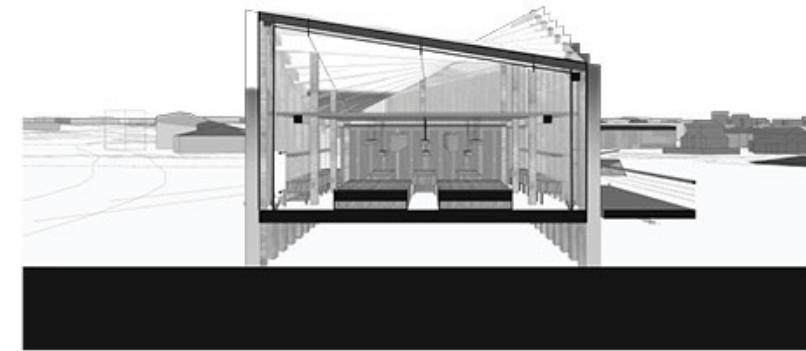
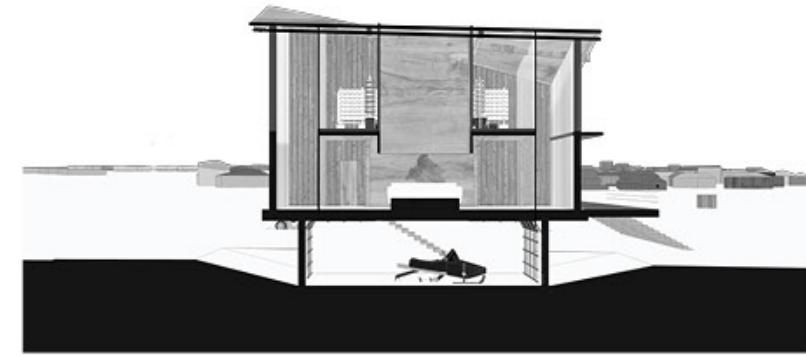
Unfolded Section
Summer



Unfolded Section
Winter









03

Hacking the Steam

Strategies for Repurposing Geothermal Steam Power / Waste and Mitigating Barriers in Olkaria

Spring 2023

Instructors: Mireia Luzarraga, Alejandro Muiño, Andrea Molina

Advanced VI Studio: Capitalocene Eenergetic Landscapes

Collaborators: Carley Pasqualotto, Yifei Yuan

Our project focuses on the controversy of the Geothermal Power Plants in Olkaria, Kenya and a design that hacks the geothermal energy to give back to the community and promote environmental justice.

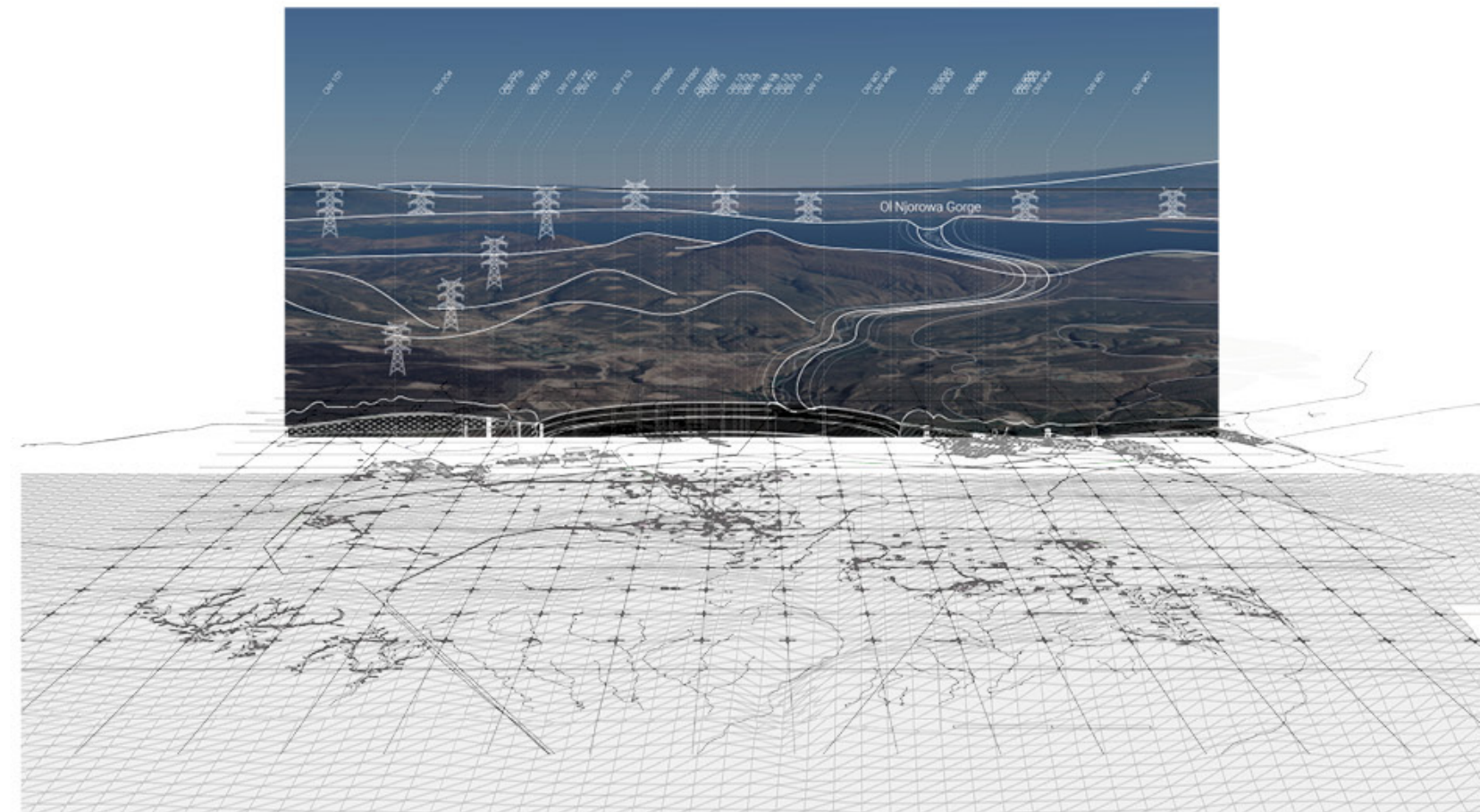
In the Eastern Region of Africa resides the Great Rift Valley, a 2,000-mile-long volcanic trench that is slowly drifting the continent apart. It holds one of Africa's biggest concentrations of wildlife, consisting of over 900 species of biodiverse migratory birds and animal species.

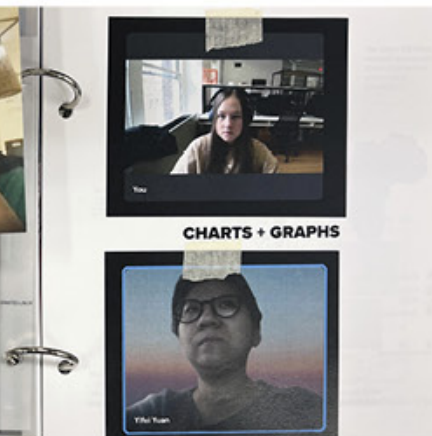
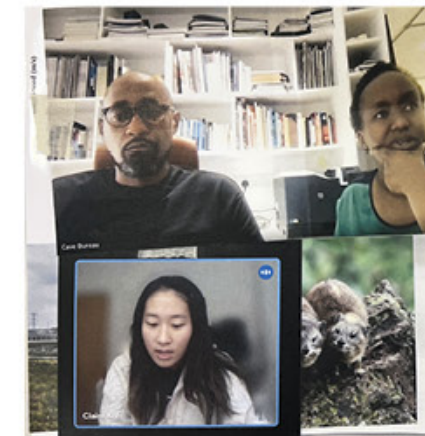
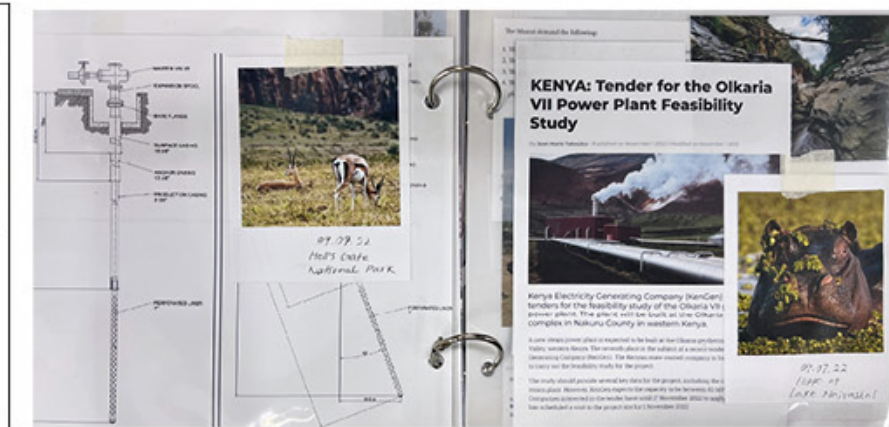
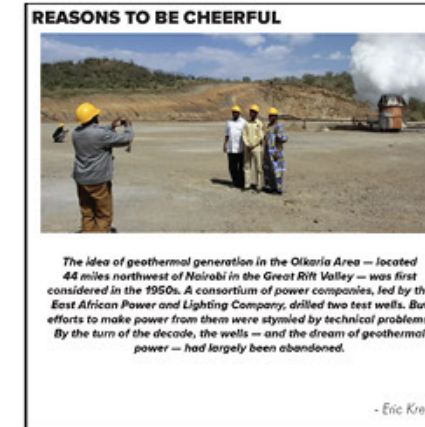
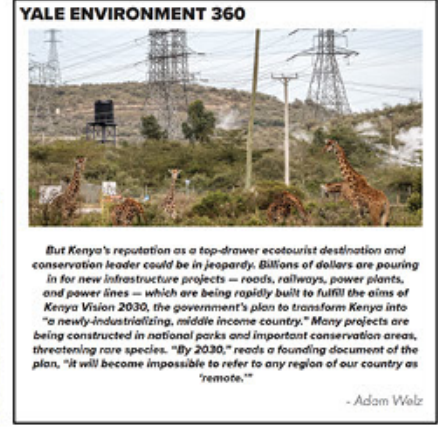
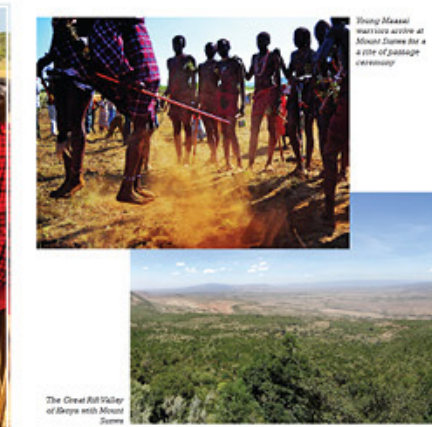
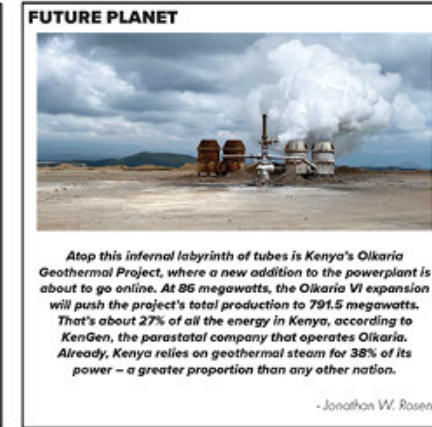
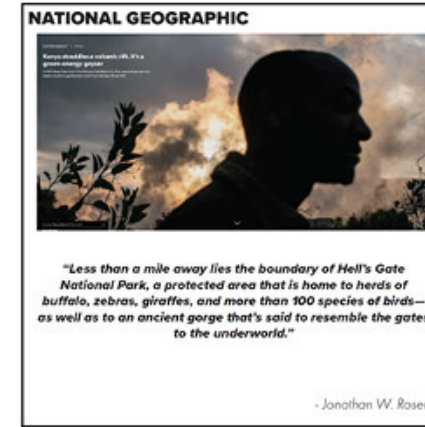
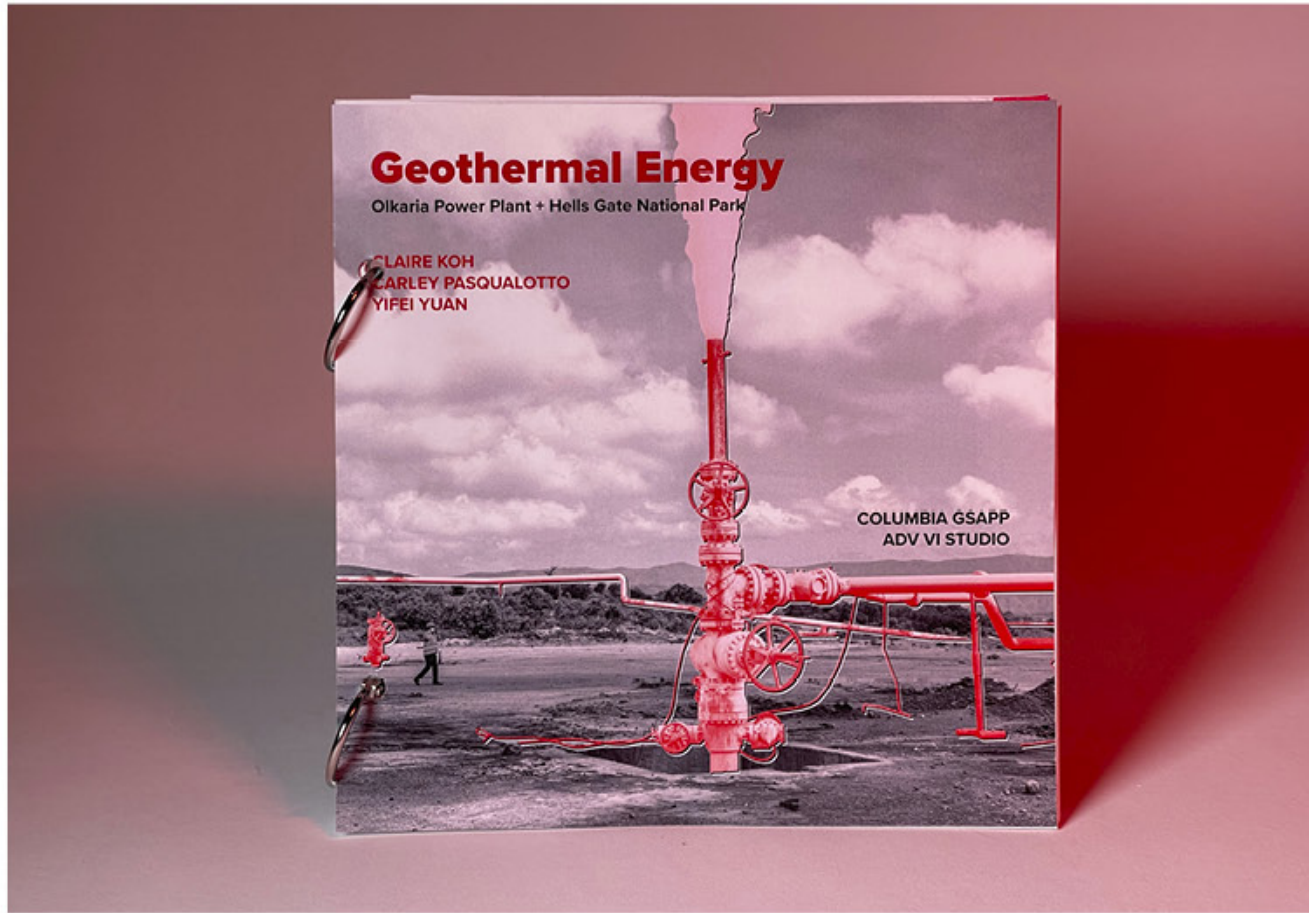
Within this region resides Hell's Gate National Park, situated in Olkaria, Kenya, a small town that is two hours west of the capital of Nairobi.

Established in 1984, this park is home to over 103 species of migratory birds, some both endangered and extinct, and numerous varieties of wildlife. However in this region, this continental drift is creating co-

pious amounts of geothermal energy right below the soil of Olkaria and is being exploited by the government, irregardless of the proximity of conservation efforts and has led to habitat fragmentation, mass clearances of indigenous communities, and demolition of renowned landscapes. What was once known for its thriving landscapes, The Hell's Gate National Park has now been turned into an industrial park, becoming more known for its geothermal capacities than valiant ecosystems that reside within its boundaries.

Although KenGen, a government enterprise that owns and operates 70% of Kenya's power plants, has a responsibility to counteract and mitigate the negative impacts caused to the environment, little has been done since the construction of the first geothermal power plant.





Olkaria VI Power Plant
(Projected Site)

Olkaria II Power Plant

Analyses

“RENEWABLE”, “SUSTAINABLE”, “RESILIENT” are the words you would use to describe geothermal energy. But to what degree are these true?

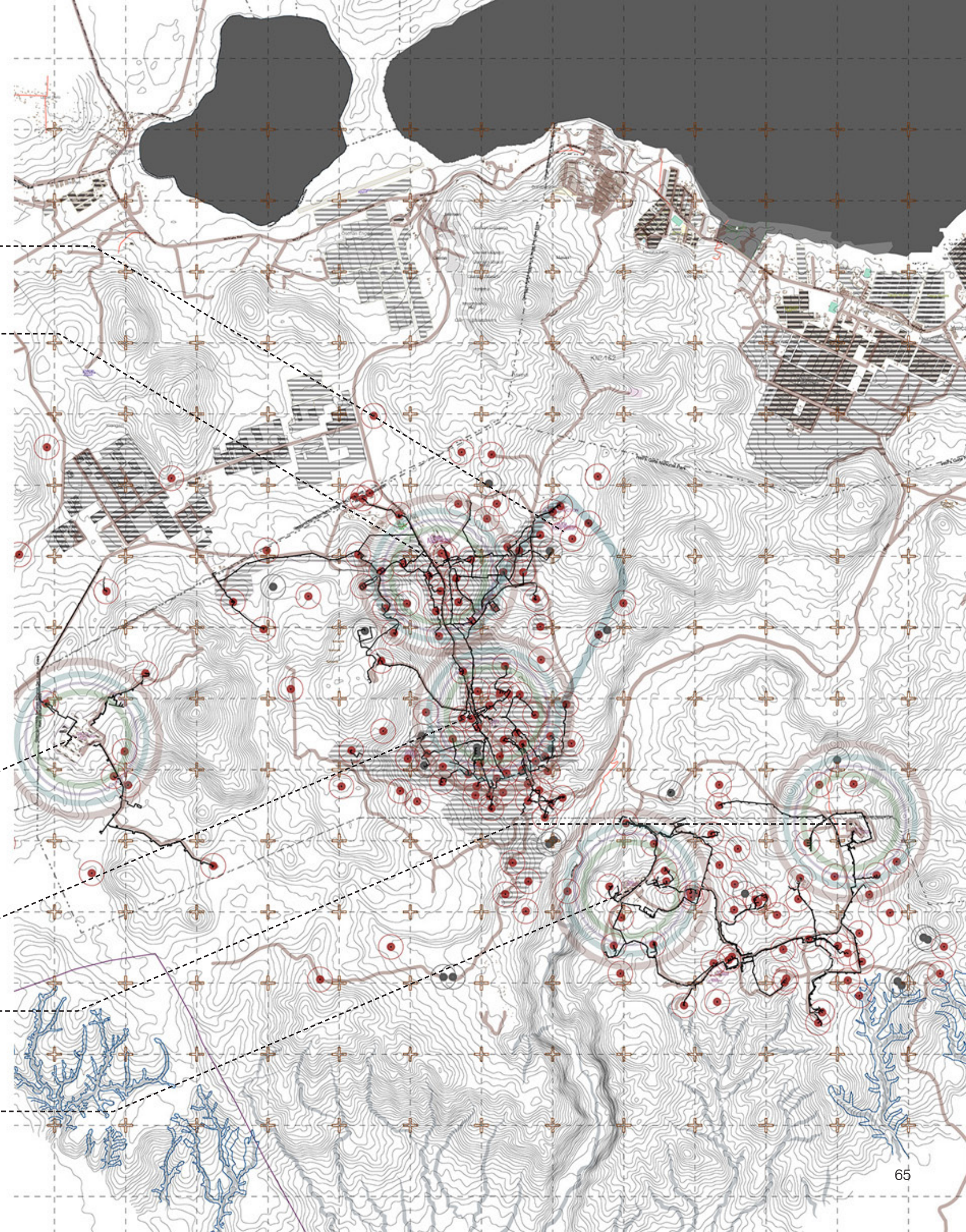
WELLHEADS ●

Olkaria III Power Plant

Olkaria I Power Plant

Olkaria V Power Plant

Olkaria IV Power Plant



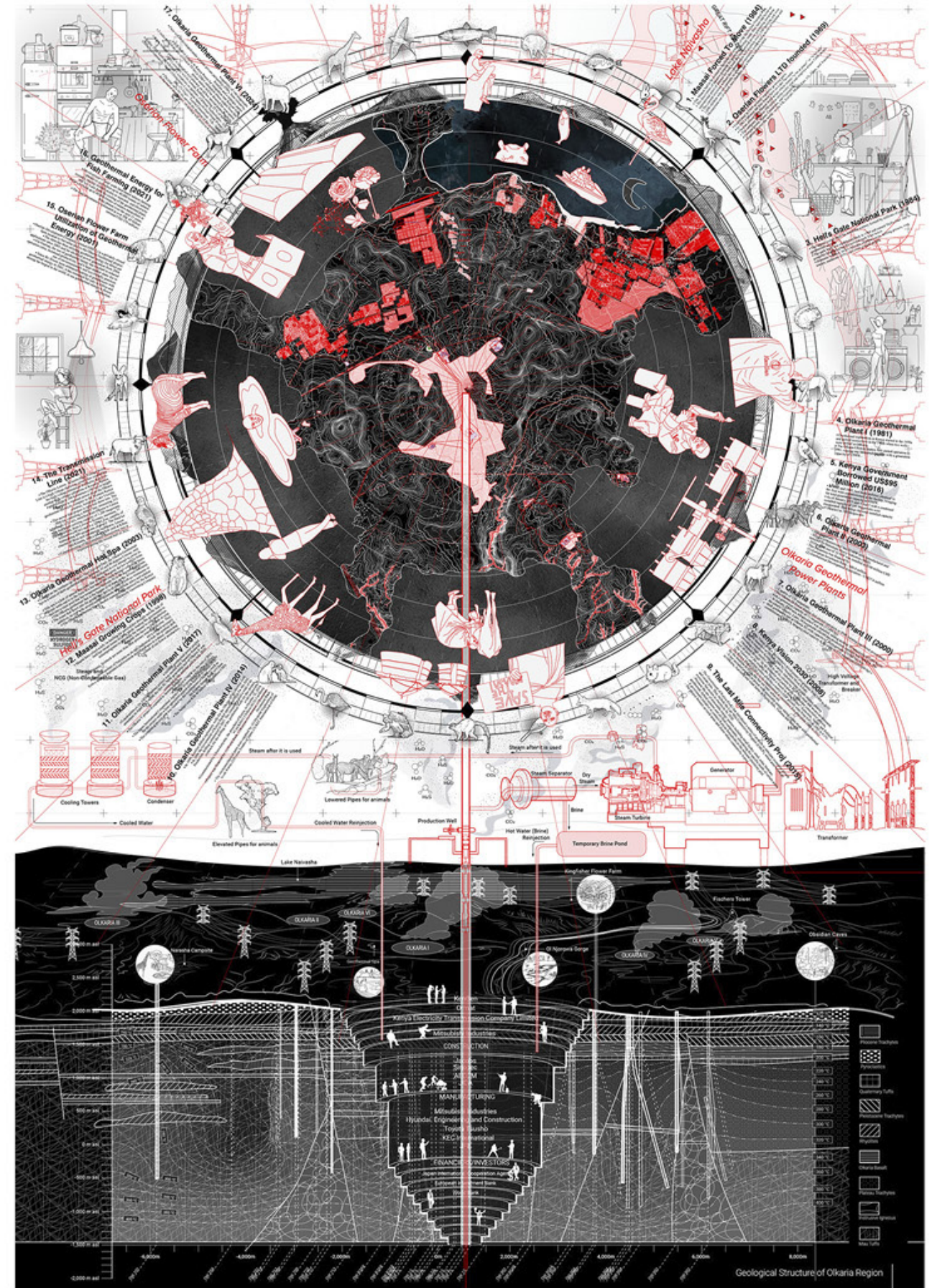
COSMOGRAM

Vast landscapes of vegetation for nearby ecosystems have been cleared to make way for geothermal pipes. Native East African pastoral communities, such as the Maasai, that have thrived in this region for many years have been displaced by KenGen to make way for power plants, forcing the Maasai community to leave their pastoral beliefs behind for survival. Lake Naivasha, the main freshwater source in Olkaria is now a cesspit for the pollution of geothermal brine waste. The Oserian Flower Farm which was once a proud family owned business has now partnered with KenGen to use the geothermal steam to produce over 380 million roses that could not be economically viable without the steam.

Experts say that The Great Rift Valley is capable of producing up to 10,000 MW of energy, enough to power 7.5 million homes, where The Olkaria Geothermal Power Plant will harness 1/5th of that energy and is on track to become the largest geothermal power plant to date.

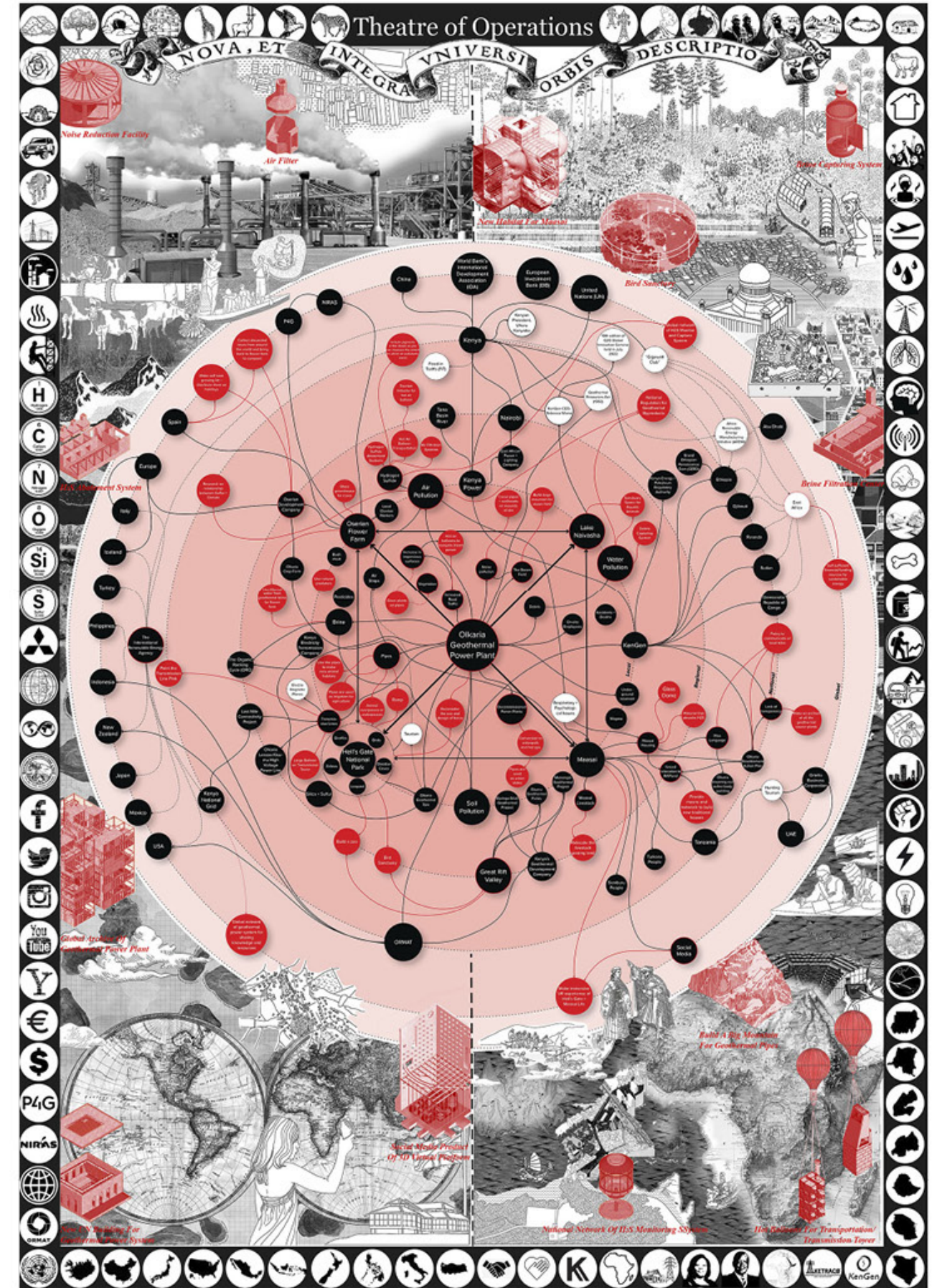
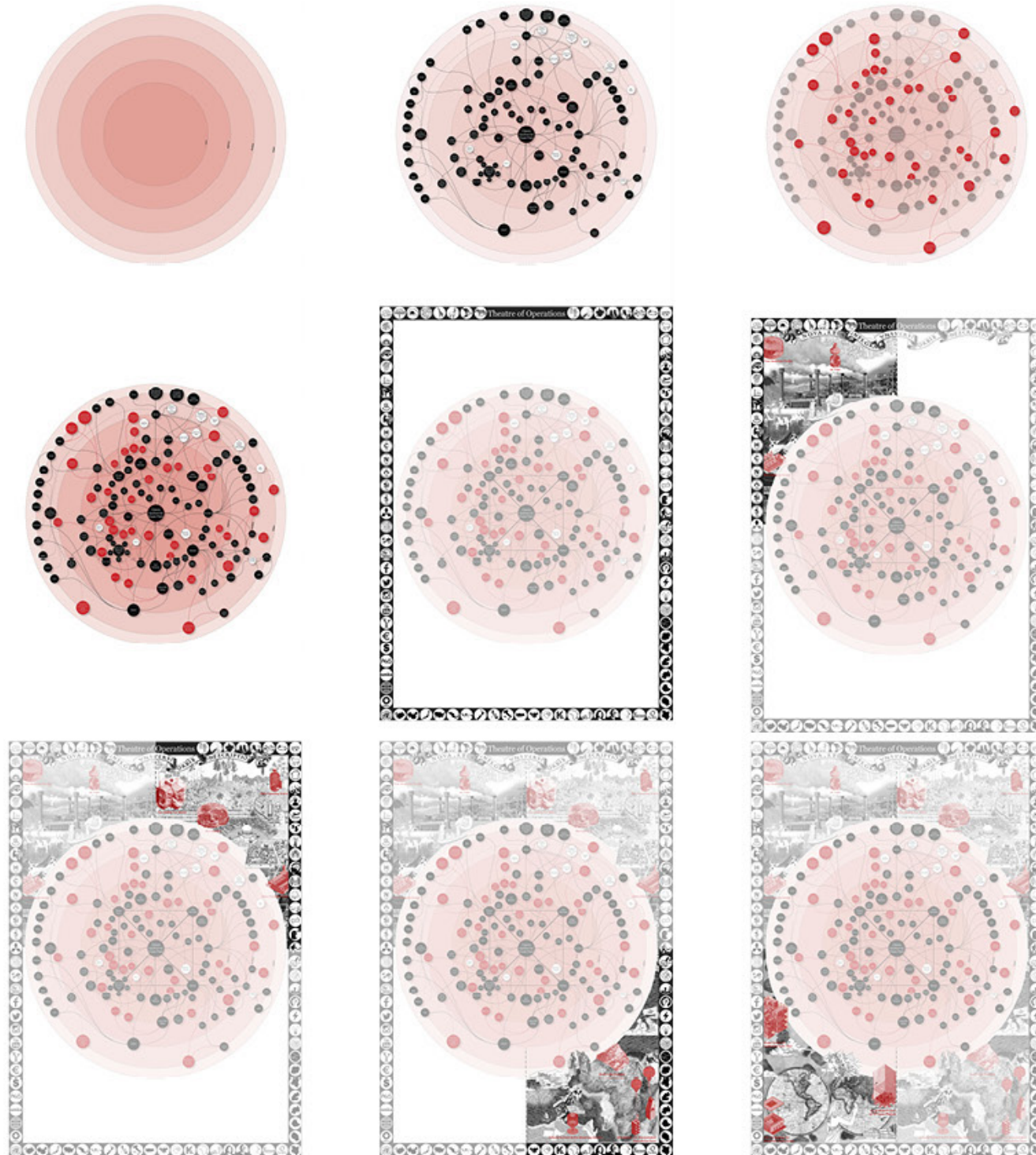
Financial Investors

such as The World Bank, The European Bank, Japan International Cooperation Agency, and numerous others plan to exploit The Great Rift Valley of its geothermal resources with the hope of no ramifications. In order to expand electrical services and power its rapidly growing economy, KenGen is determined to meet their projected goals for geothermal expansion by continuing to drill for wells and deploy pipes despite the fragility of the environment.



THEATRE OF OPERATION

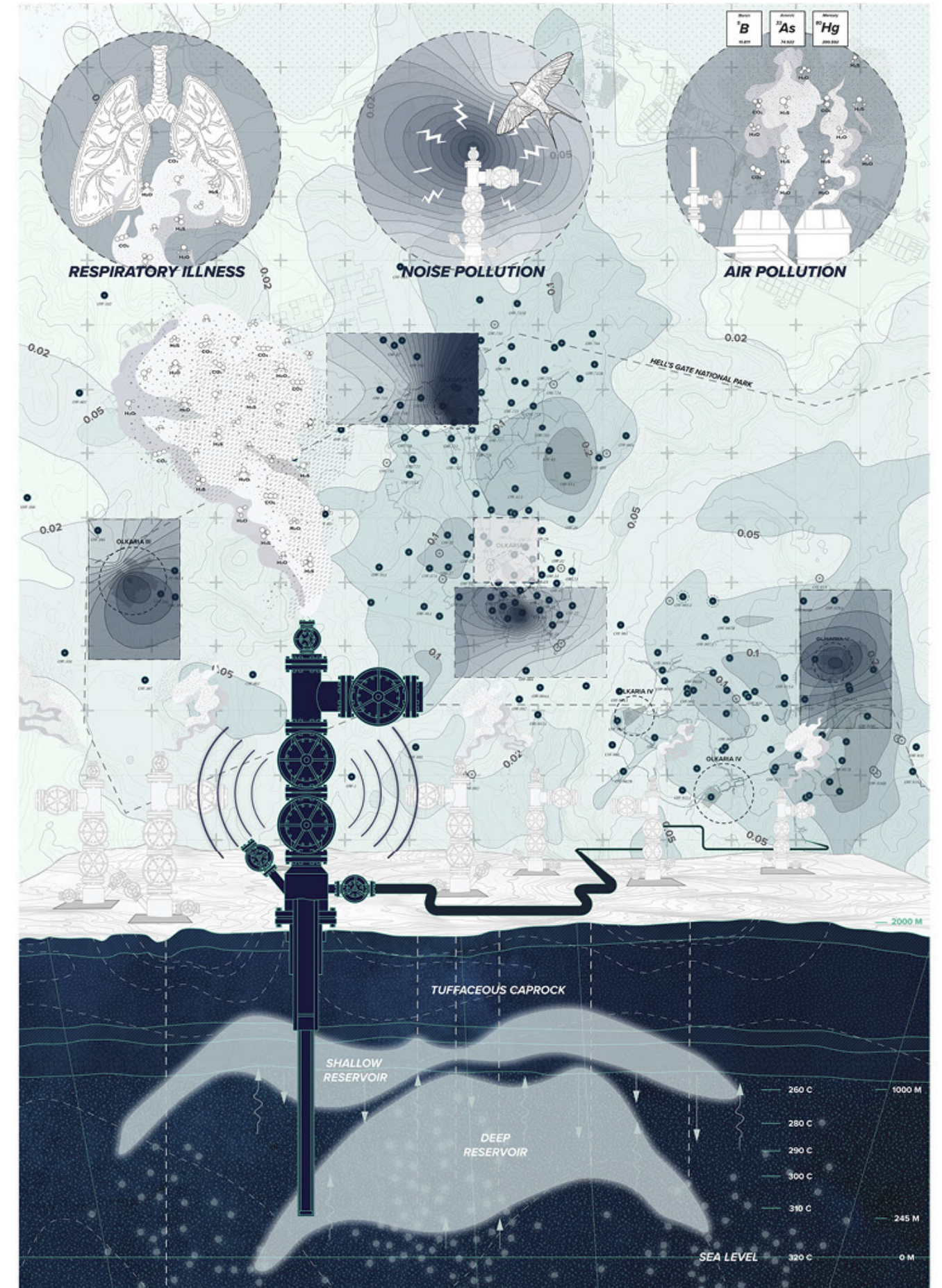
Looking at the ramifications of the Olkaria Geothermal Power Plant on a scalar level; local, regional, ational, and global, we started to have conversations about our design and how it could impact these different scales, especially as the potential for geothermal energy expands. After much consideration, we decided to intervene at the major source of the problem, the geothermal steam.



TIME AND LOCATION DRAWING

Since geothermal potential was found in the 1950s, over 300 wells have been drilled to date both inside and around Hell's Gate National Park to harness the geothermal energy underground. These wells are left open to the air for monitoring, allowing steam with traces of hydrogen sulfide, carbon dioxide, boron, arsenic, mercury, and more to linger in the air. At certain ranges, these traces are dangerous to local wildlife and the community. Residents of Olkaria and fieldworkers of KenGen often complain of respiratory illnesses due to the air pollution from the geothermal steam.

What is described to be a deafening 24-hour noise, these wells also produce immense amounts of noise pollution which seeps out and disturbs animal habitats and migratory patterns.



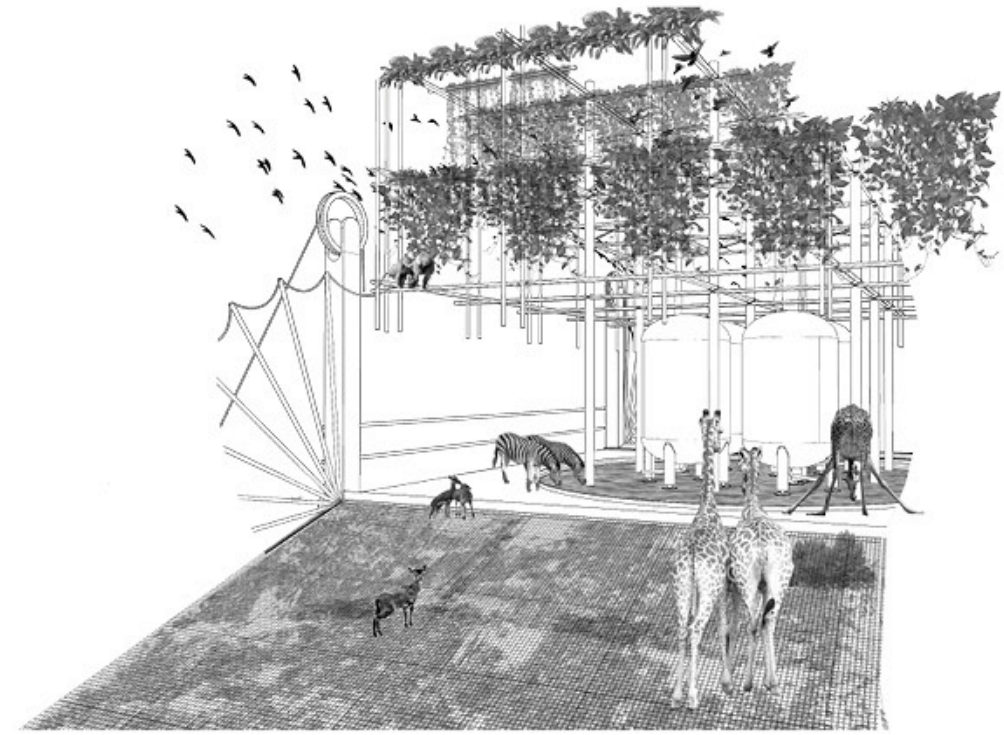
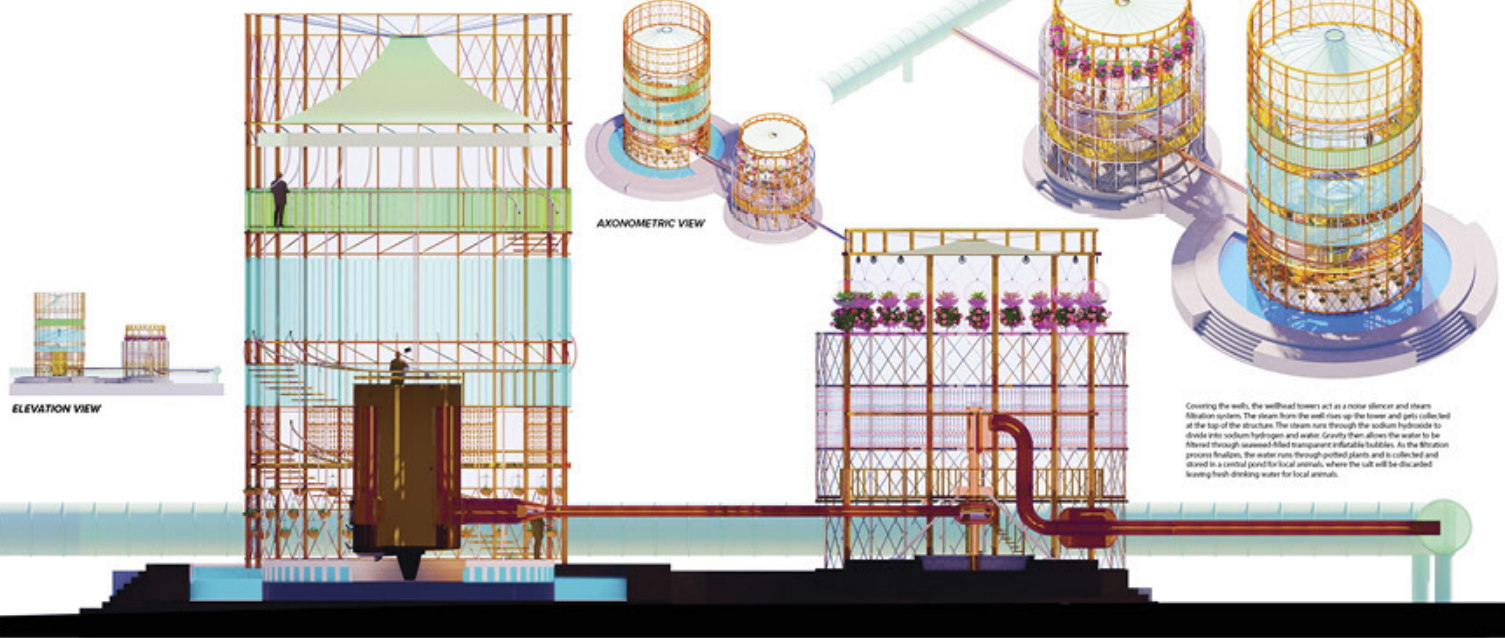
On the right side you can see how these abstract relationships and programs can translate to the physical forms. This is a small part of the Olkaria development located near Well 907A showing potential placement and configurations of the intervention in relation to their surroundings.



EXPLODED OBLIQUE VIEW

Well Head Silencer / Water Condenser / Water Filtration

Ollaria Geothermal Steam Pipe Hecking Train

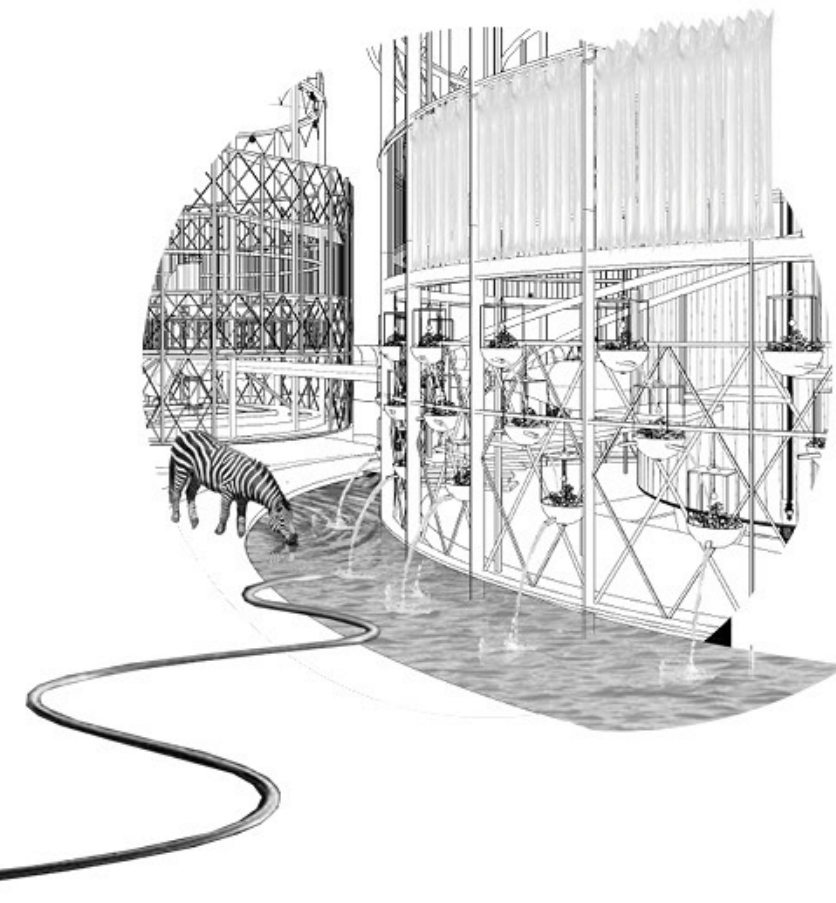
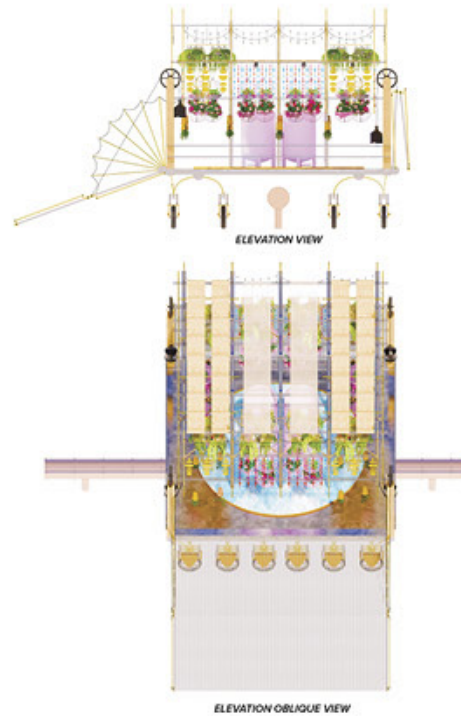
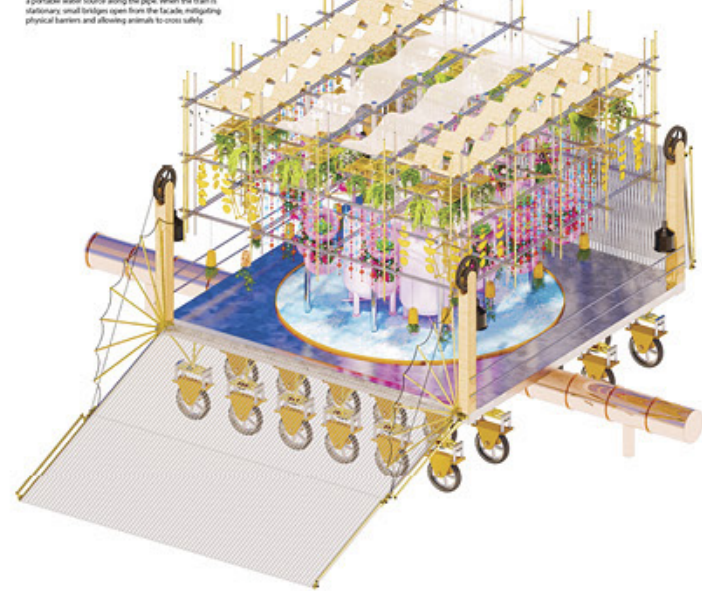


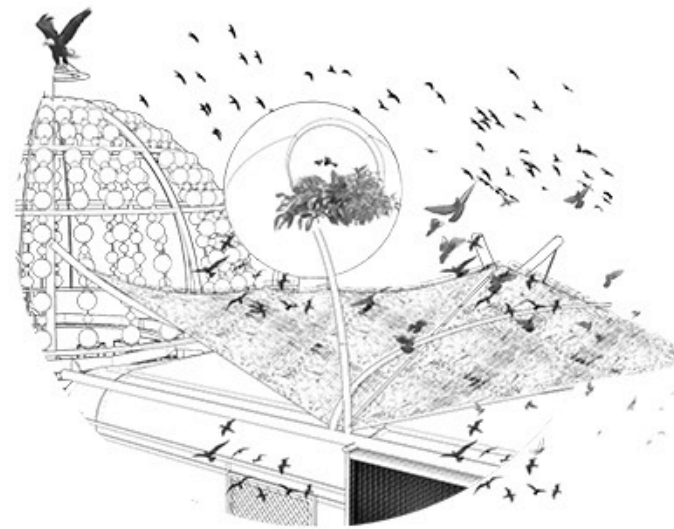
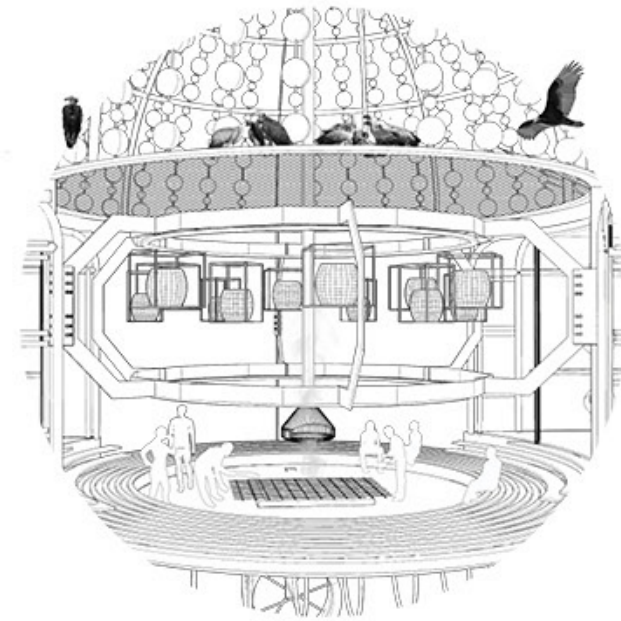
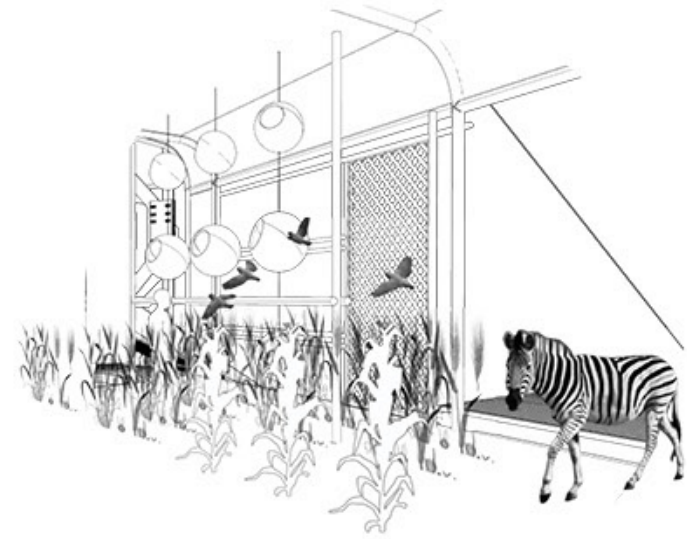
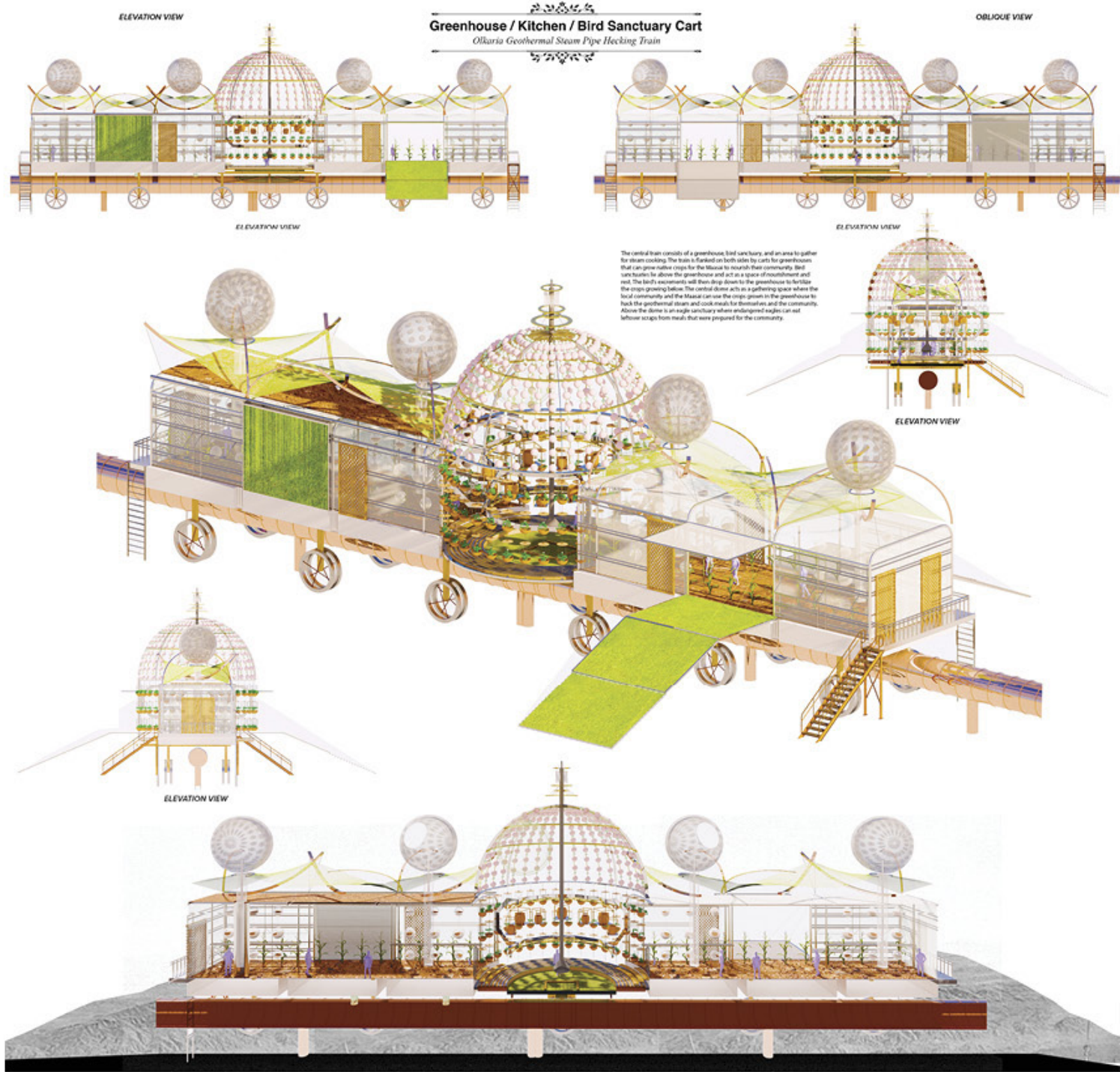
- Terrace Structure
- Plants
- Structure
- Ornamentation
- Drinking Pond & Storage
- Plants
- Ramp
- Wheels

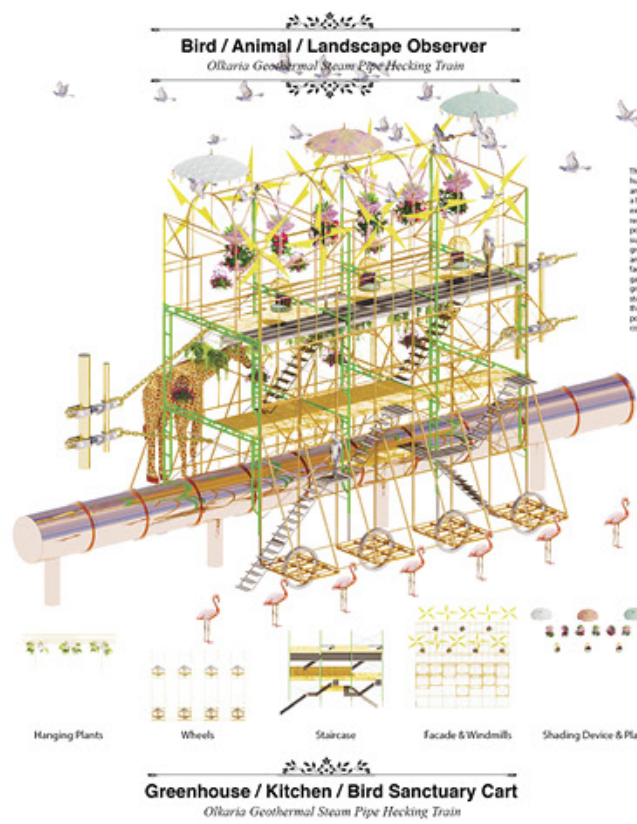
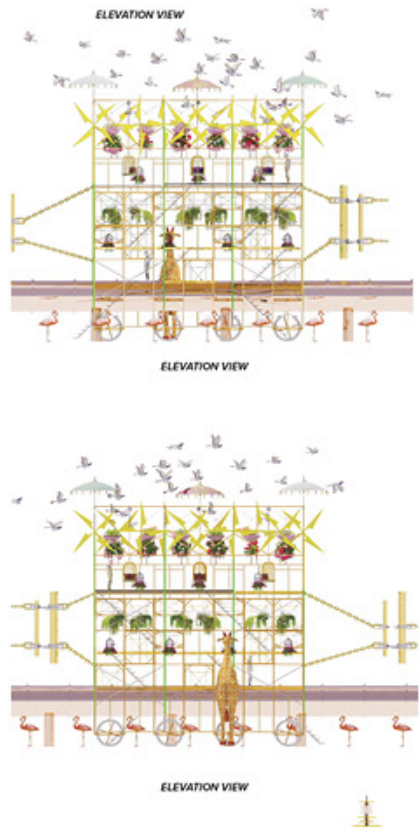
Water Station / Pond / Animal & Bird Playground

Ollaria Geothermal Steam Pipe Hecking Train

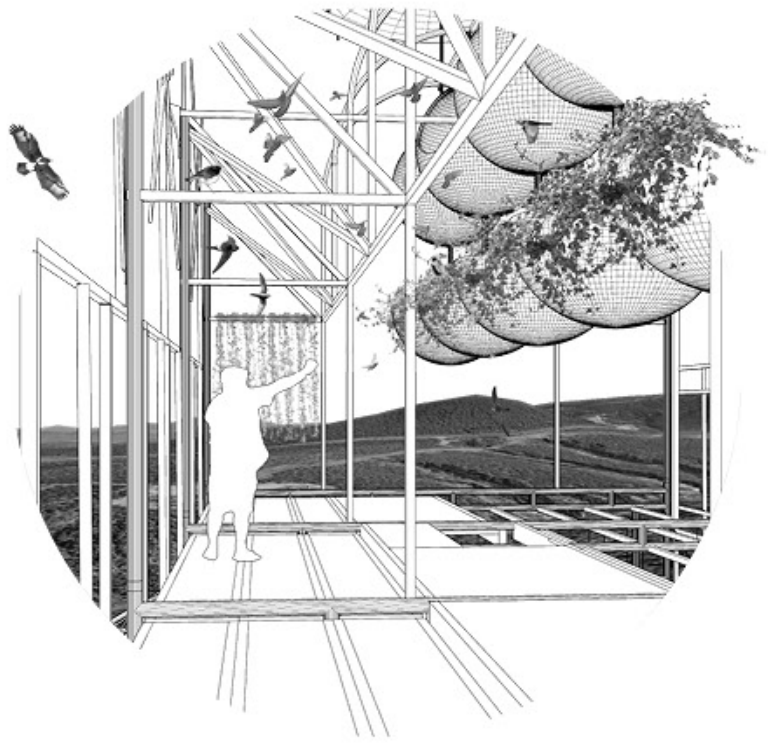
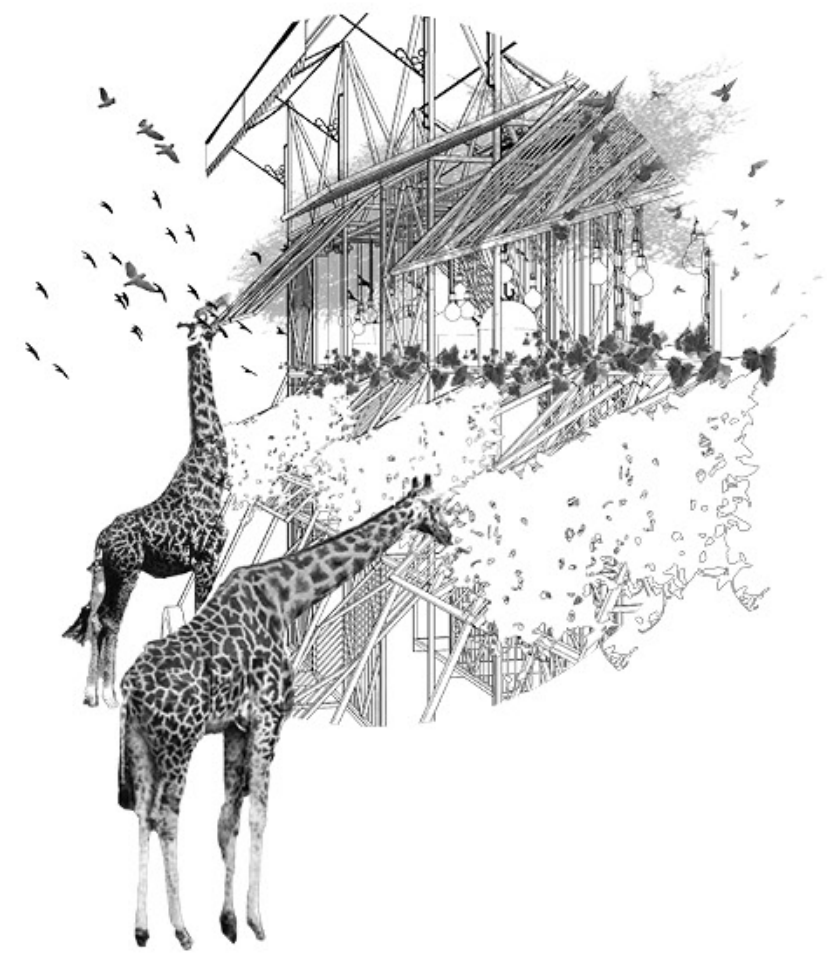
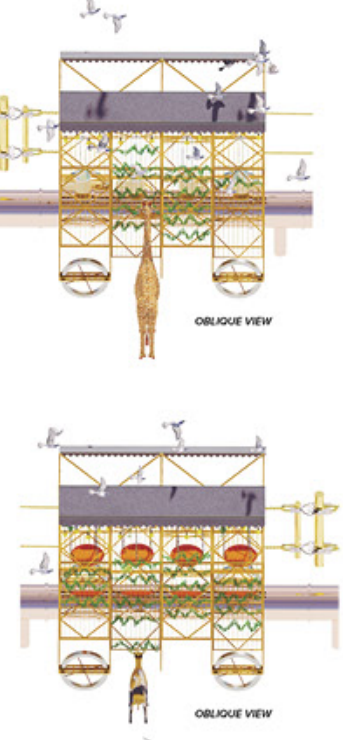
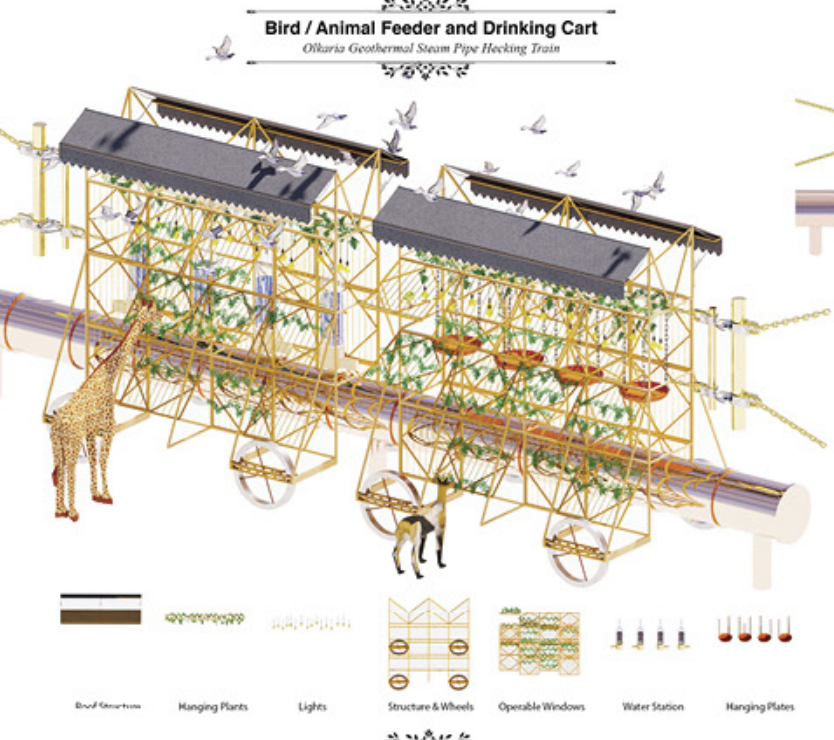
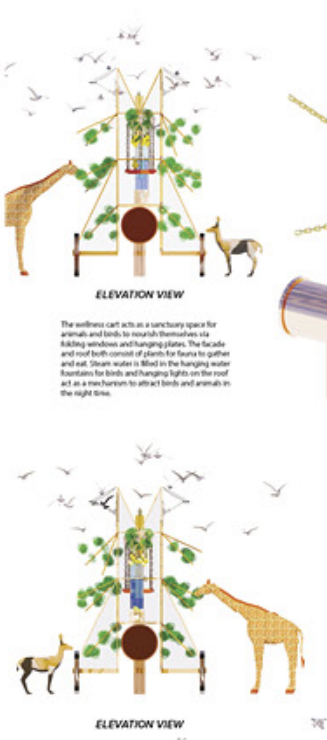
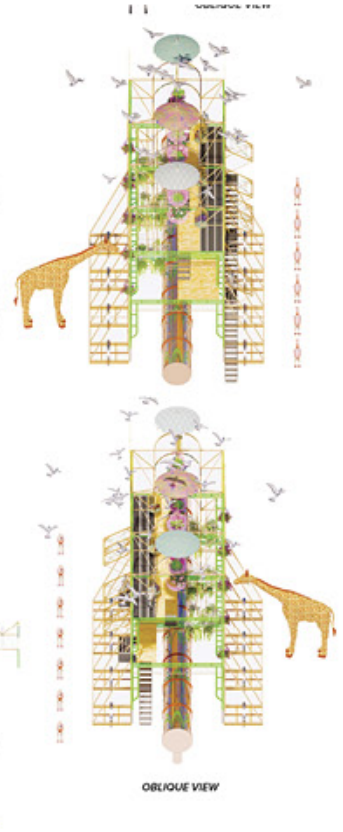
The portable water station stores the filtered water from the wellhead tower and carries it to be used among the other tools. It is a moving cart water tank, functioning as a water playground and feeding area for land animals, a shading device for birds, and a portable water source along the pipe. When the train is stationary, small bridges open from the facade, mitigating physical barriers and allowing animals to cross safely.

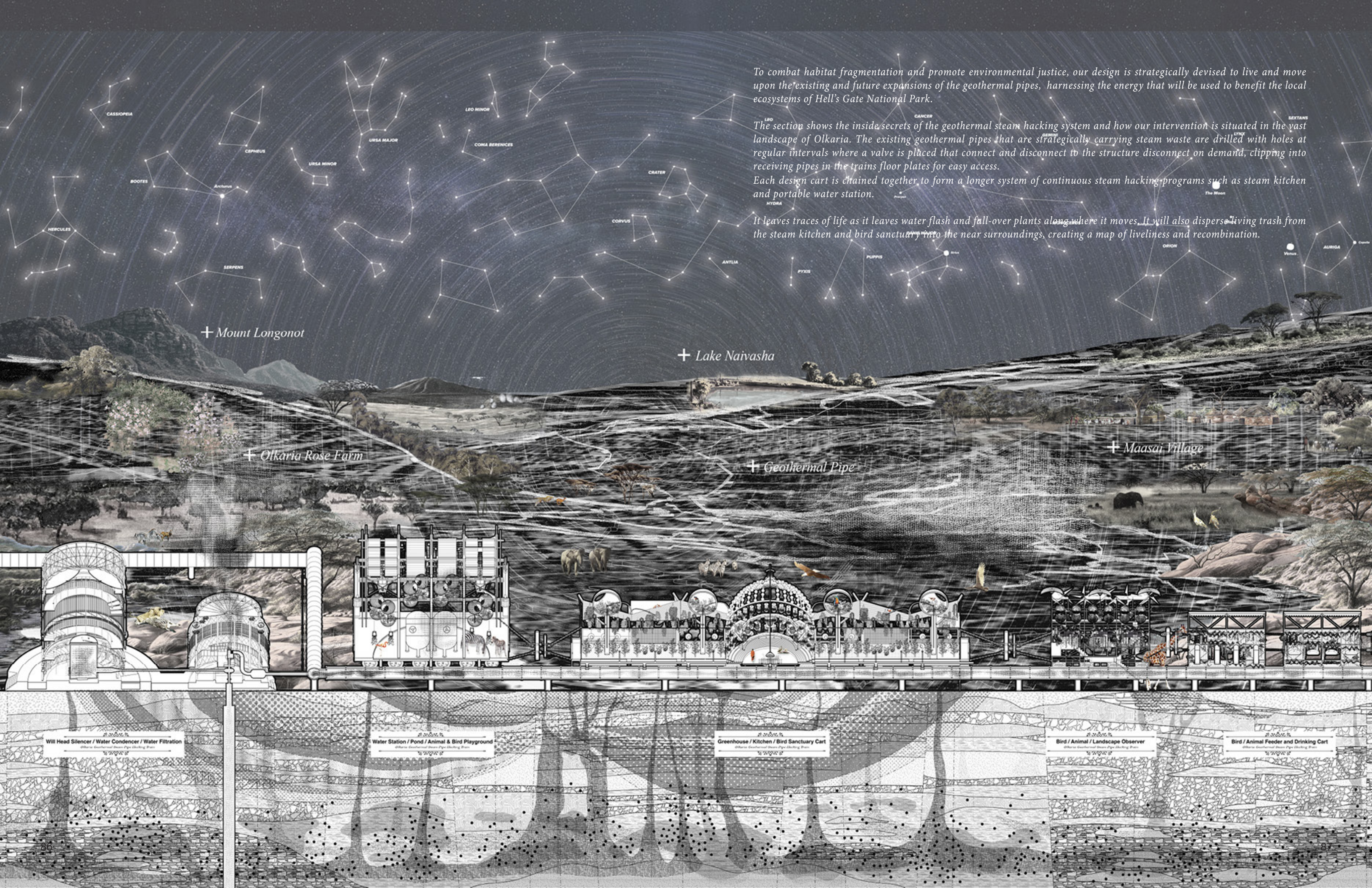






The observation train allows humans to observe the vast land and species of Orlana for hunting a high vantage point. Made from existing scaffolding structures recycled from the geothermal power plants, the structure supports hanging plants growing in the cart for local animals and people to eat. The facade and roof acts as a vertical garden, allowing local flora to grow by locking the geothermal steam. Windmills on the top of the structure help to filter air pollution and check temperature conditions in Orlana.





To combat habitat fragmentation and promote environmental justice, our design is strategically devised to live and move upon the existing and future expansions of the geothermal pipes, harnessing the energy that will be used to benefit the local ecosystems of Hell's Gate National Park.

The section shows the inside secrets of the geothermal steam hacking system and how our intervention is situated in the vast landscape of Olkaria. The existing geothermal pipes that are strategically carrying steam waste are drilled with holes at regular intervals where a valve is placed that connect and disconnect to the structure disconnect on demand, clipping into receiving pipes in the trains floor plates for easy access. Each design cart is chained together to form a longer system of continuous steam hacking programs such as steam kitchen and portable water station.

It leaves traces of life as it leaves water flash and fall-over plants along where it moves. It will also disperse living trash from the steam kitchen and bird sanctuary into the near surroundings, creating a map of liveliness and recombination.

+ Mount Longonot

+ Lake Naivasha

+ Olkaria Rose Farm

+ Geothermal Pipe

+ Maasai Village

Will Head Silencer / Water Condenser / Water Filtration
©Haru Geothermal Steam Pipe Hacking Team

Water Station / Pond / Animal & Bird Playground
©Haru Geothermal Steam Pipe Hacking Team

Greenhouse / Kitchen / Bird Sanctuary Cart
©Haru Geothermal Steam Pipe Hacking Team

Bird / Animal / Landscape Observer
©Haru Geothermal Steam Pipe Hacking Team

Bird / Animal Feeder and Drinking Cart
©Haru Geothermal Steam Pipe Hacking Team

Rendered Perspectives

A story: throughout the day in Olkaria



As the wells have excreted steam throughout the night, the wellhead towers have been able to convert enough steam into potable water to be consumed by the local ecosystems residing in the environment and stored at the water station for activities that will happen throughout the day



As the water station departs from its basecamp, it begins its path along the pipes, stopping every so often to ensure local birds and animals have enough fresh water and allow animals to traverse safely across the industrial pipes.



The greenhouse strategically hacks the steam to remain set at a temperature of 82 degrees Fahrenheit, ensuring the local crops, such as baby corn, pak choy, courgettes, and more are ready to be eaten during the gathering ceremony for the local Maasai Tribe. Ruppell's vultures know this time of day as they await in the bird sanctuary for their scraps they will receive from composted meals from the community.



After nourishing themselves, local community members plan to travel down the landscape to depart back to their homes, where they observe the vast Olkaria landscapes, interacting with local fauna who are feeding off of the facade.



As the local animals begin their nightly rituals, the wellness cart travels around the valley to ensure the environment and its ecosystems are well nourished, looking forward to interacting with these interventions the very next day.”

04

Jazz Balls

Spring 2023

Instructors: Kabage Karanja, Stella Mutegi

ARCH 4854 If Buildings Could Talk

Collaborators: Jiyeon Hwang

The Jazz Balls interactive art/sound installation playfully depicts Harlem Jazz history. It will introduce future generations to Harlem's glorified tradition in a fun and educational way.

The artwork will be installed at a playground in Riverside Park in Morningside Heights. It aims to introduce the children and visitors of Morningside Heights to the jazz history of neighboring Harlem in a playful manner. It will evoke interest in one of the most significant roots of Harlem that have been overshadowed by the other mainstream reputation of the neighborhood. The installation is made of ten sound modules that are installed along a railing of an appropriate height for children to interact. Each module will be made of a plushie ball and a rope, with electronic parts secured along the top of the speaker and along the rope. The visual side of the installation is inspired by musical notes

- the foam balls on a cord. They are arranged in a way that hints at the tempo and the pitch of the sound module.

Each ball contains a unique sound of different chords, tempos and instruments used in a common jazz progression. Children can activate the installation by pulling the plushie ball at the end of the rope, which will play the individual sounds from the speaker. The accumulation of children playing could create the sound of an improvised jazz session.

Children could play these modules individually to familiarize themselves with the musical progression, or basic drum beats, or history of jazz. They could also stack them together to create their own unique piece of jazz. The installation is accompanied by a brochure that describes the installation, a brief jazz history of Harlem and several notable figures.



finals 3/4 interactive sound installation 🎧

come to 112th and
Riverside Park to play 🎧



Billie Holiday



Louis Armstrong



Duke Ellington

“ *The workwork aims to introduce the children and visitors of Morningside Heights to the jazz history of neighboring Harlem in a playful manner. It will evoke interest in one of the most significant roots of Harlem that have been overshadowed by the other mainstream reputation of the neighborhood.* ”

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Each ball contains a unique sound of different chords, tempos and instruments used in a common jazz progression. Children can activate the installation by pulling the plushie ball at the end of the rope, which will play the individual sounds from the speaker. The accumulation of children playing could create the sound of an improvised jazz session. There will be four modules containing general beats made of piano, drums(x2), and double bass, three modules containing pieces performed by the famous musicians of Harlem (La Vie En Rose by Louis Armstrong, Strange Fruit by Billie Holiday and Take the A Train by Duke Ellington) and three modules containing sounds of a specific drum (hi-hat, tom, snare) for interactive purpose.

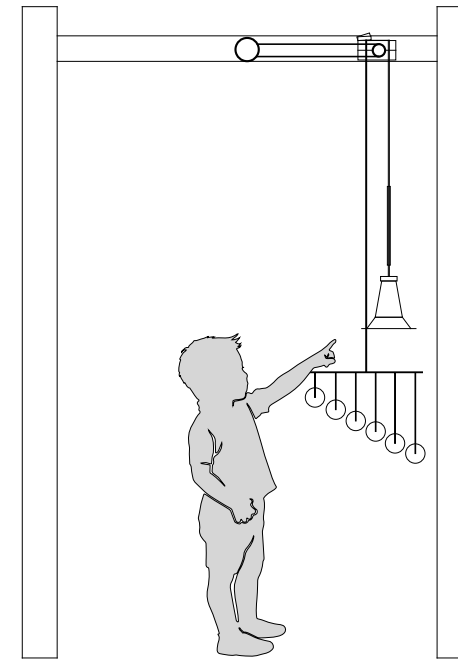
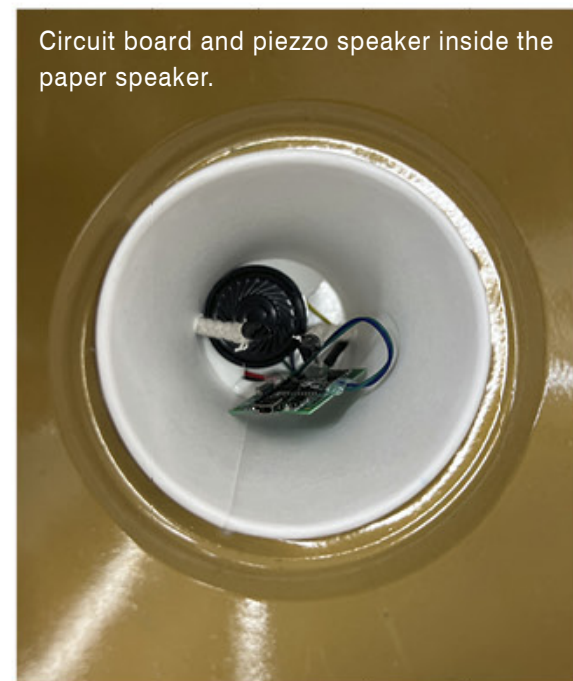
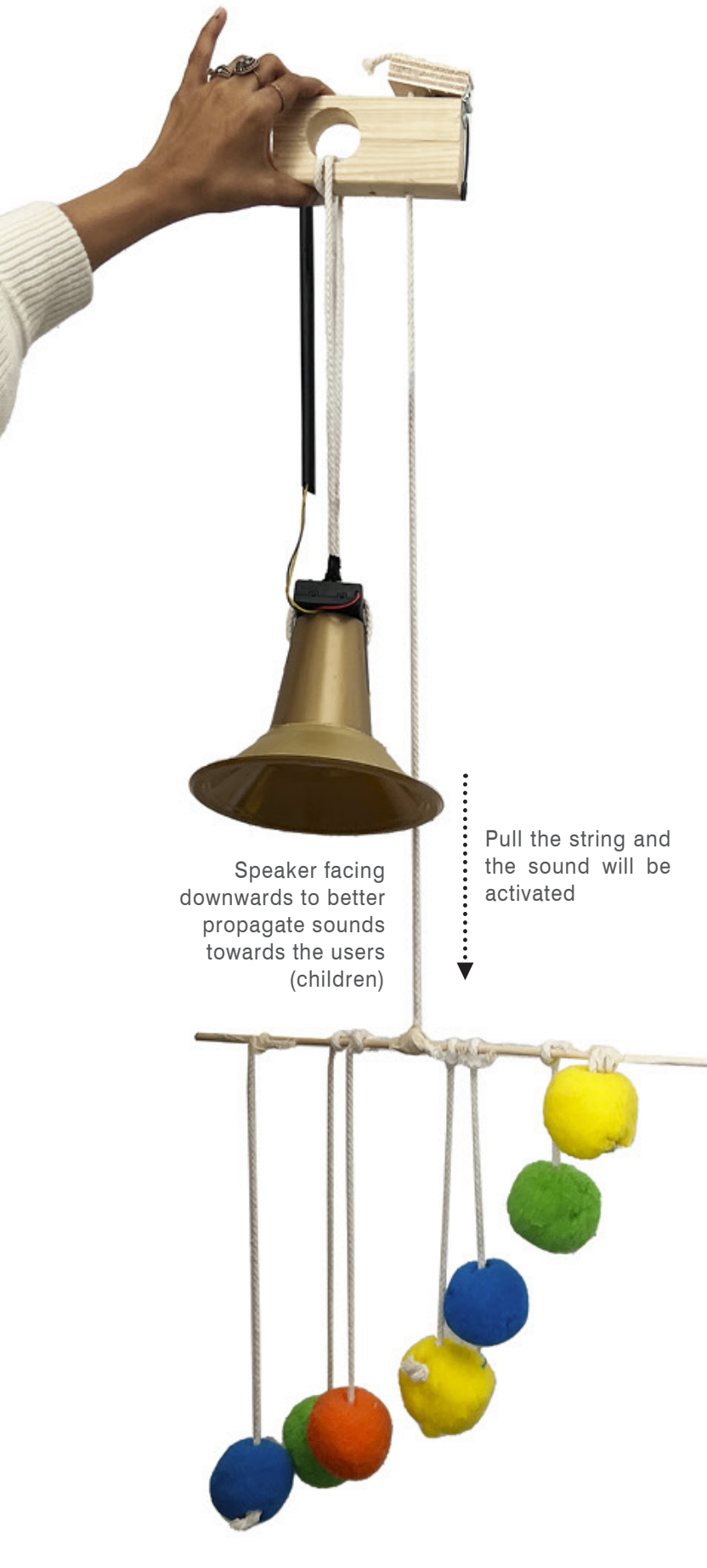
Children could play these modules individually to familiarize themselves with the musical progression, or basic drum beats, or history of jazz. They could also stack them together to create their own unique piece of jazz. The electronic parts are made of a circuit board wires, push button and a piezo speaker. Since the piezo speaker may not be loud enough to adequately deliver the sound to the visitors, we made special speakers out of paper plate and cups that face down towards the users (children). The installation is accompanied by a brochure that describes the installation, a brief jazz history of Harlem and several notable figures.

JAZZ BALLS

WELCOME TO WORLD FAMOUS
RIVERSIDE THEATER
 CLAIRE KOH, JIYOUN HWANG, YILIN ZHANG, RENWEN YU

JAZZ BALLS

BACKGROUND AND BEAT	JAZZ OF HARLEM	SOUND EFFECT
Background Beat 1: Excerpt from : Lick No. 1 - Left Hand Variations Blues Piano Lesson #11 Title: Walking Bass (I- VI- ii- V) - Two Chord/Bar Artist: David Magyel	Jazz of Harlem 1: La Vie En Rose - played by Louis Armstrong	
Background Beat 2: Excerpt from : Dynamic Jazz Beat/ Backing Track 120 BPM (royalty free) Artist: Jim Dooley	Jazz of Harlem 2: Take the A Train - piano solo by Duke Ellington	
Background Beat 3: Excerpt from : Lick No. 1 - Left Hand Variations Blues Piano Lesson #11 Title: Walking Bass (I- VI- ii- V) - Two Chord/Bar Artist: David Magyel	Jazz of Harlem 3: Strange Fruit - By Billie Holiday	
Background Beat 4: Excerpt from : John Goldsby - Solo Double Bass Performance of "Sweet and Lovely" Title: Sweet and Lovely Artist: John Goldsby	Sound Effect 1: Hi-Hat Sound Effect 2: Tom Sound Effect 3: Snare	



What will be the most effective way to communicate with the children, to tell them stories about the history of Harlem?

There will be four modules containing general beats made of piano, drums(x2), and double bass, three modules containing pieces performed by the famous musicians of Harlem (La Vie En Rose by Louis Armstrong, Strange Fruit by Billie Holiday and Take the A Train by Duke Ellington) and three modules containing sounds of a specific drum (hi-hat, tom, snare) for interactive purpose.

SOUND EFFECTS
(Hi-Hat, Snare, Toms)

JAZZ OF HARLEM

BACKGROUND BEATS





05

“Chiaro” + “oscuro”: Light and Shadow and Distortion and Manipulation

Spring 2023
Instructor: Nitzan Bartov
ARCH 4980 Virtual Architecture
Collaborator: Szymon Gałeczki

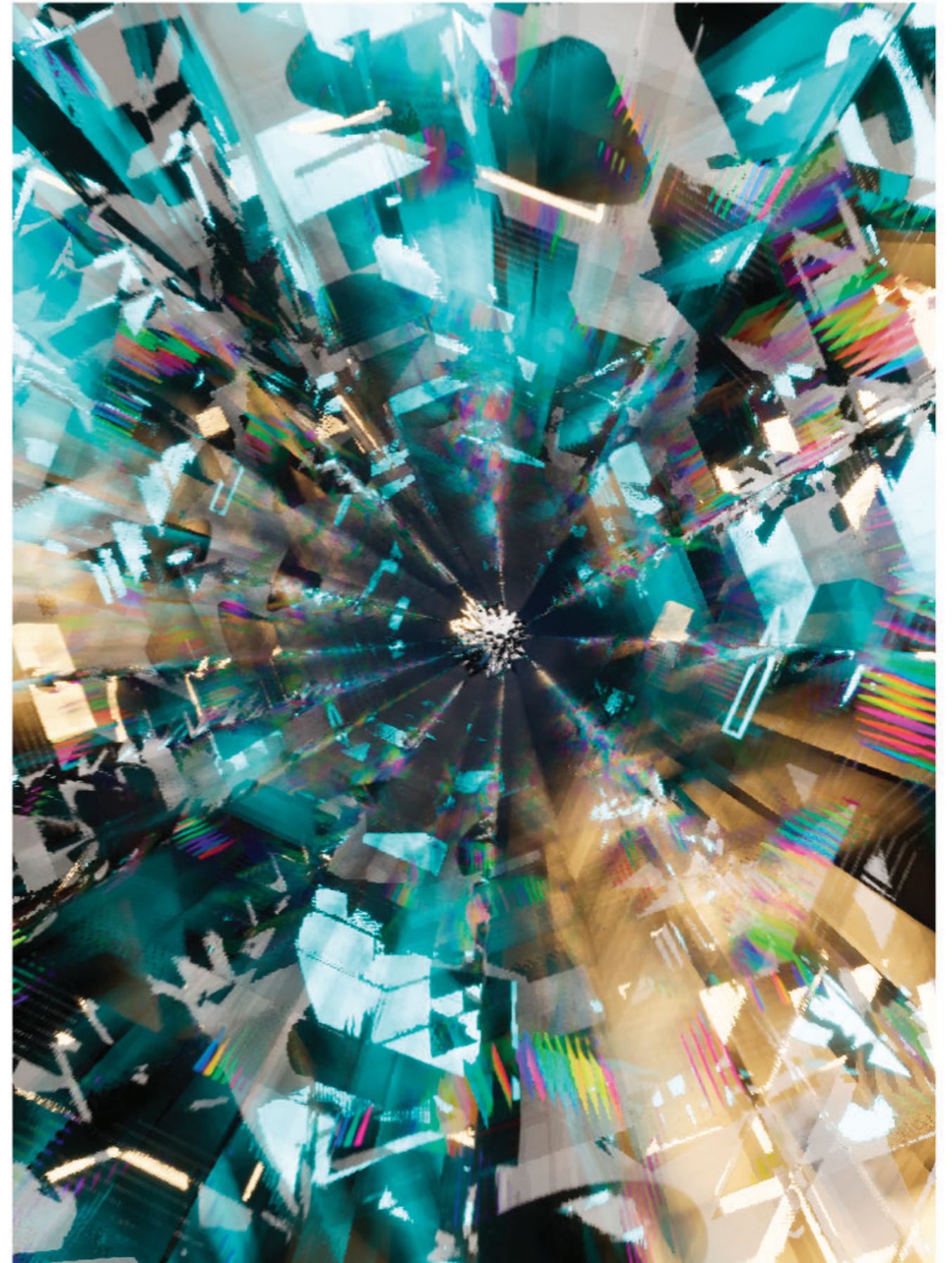
We were inspired by Carlo Scarpa’s geometries and his play on light and shadows in his architecture. You begin your journey in shadow with light bouncing and fragmenting off the stepping geometries of the walls, floors and ceiling. You think the light will guide you through the maze but you are unsure of where to move next. You hit the surrounding walls and enter dead corridors. When you finally think you figured out the space the floors collapse and you fall through the kaleidoscope - a transition space between light and shadow. Here you will experience a change in perception - perception of light, perception of

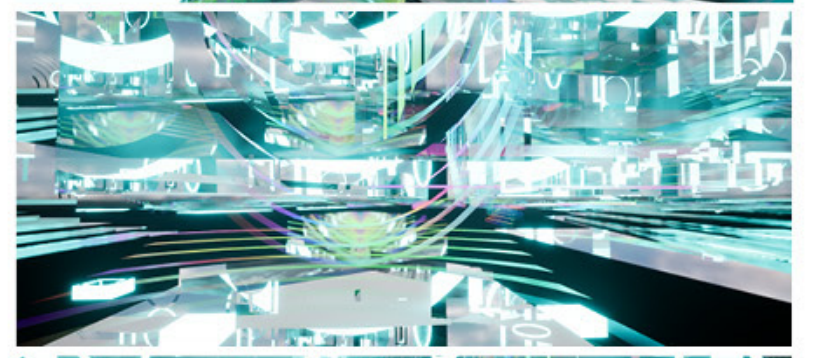
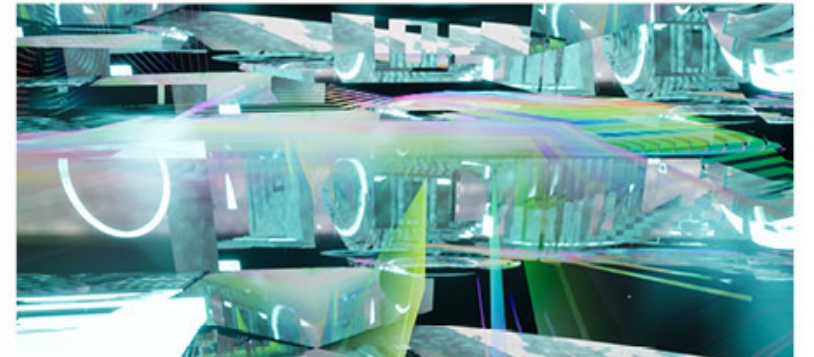
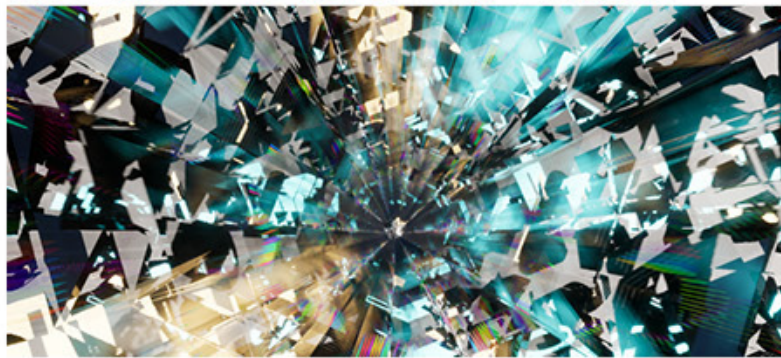
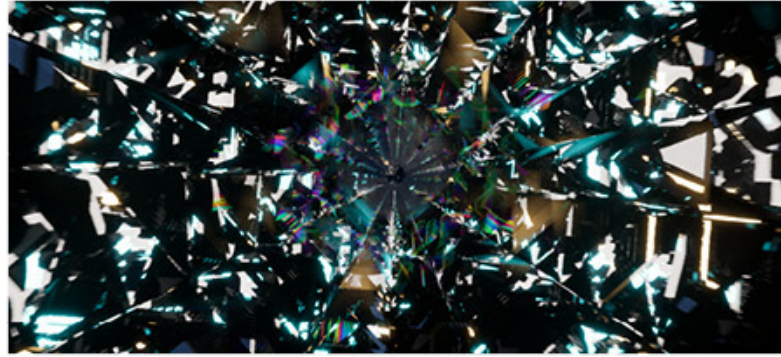
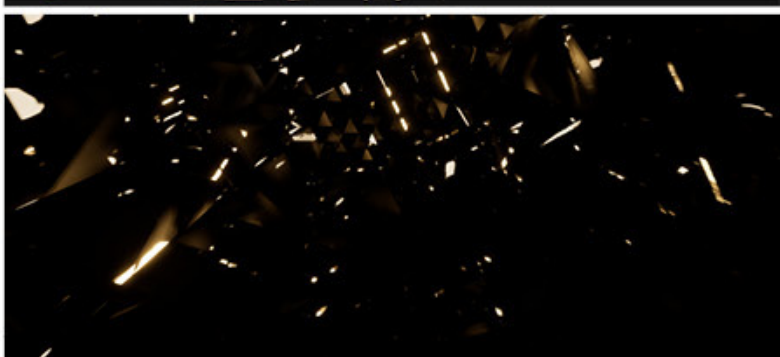
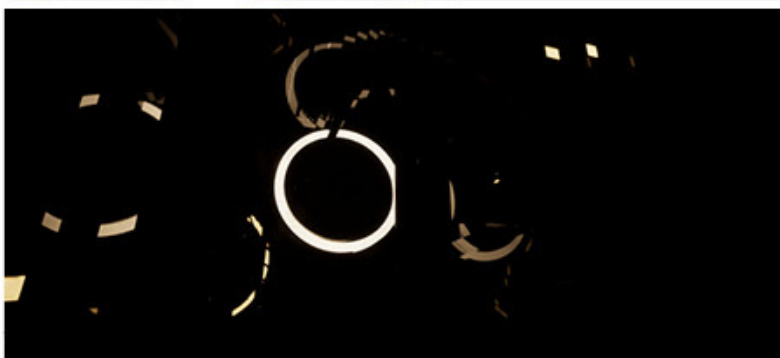
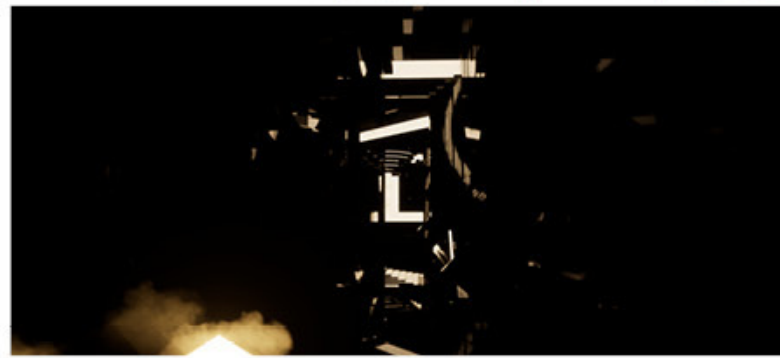
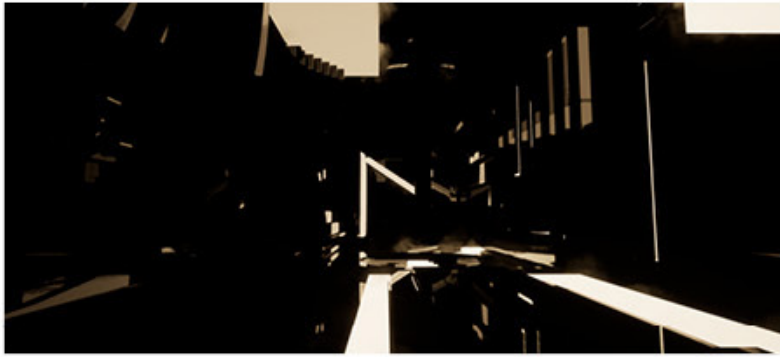
location, perception of being. At the end of the kaleidoscope you fall through the floor and your reality shatters into pieces. In the light maze the lights will disorient you - you must now follow the colors and shadows forming at the edges of the object to understand what is where.

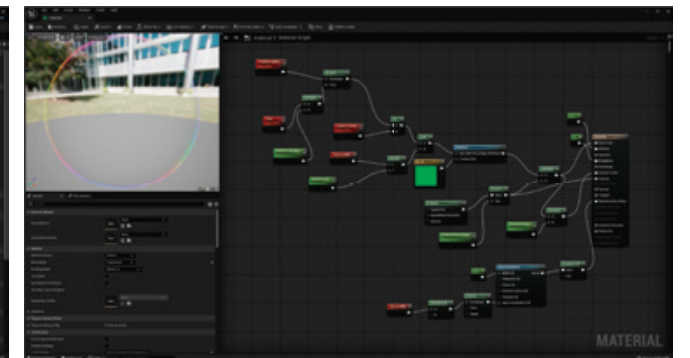
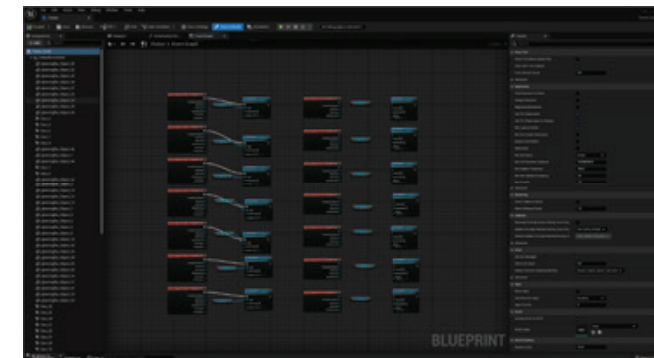
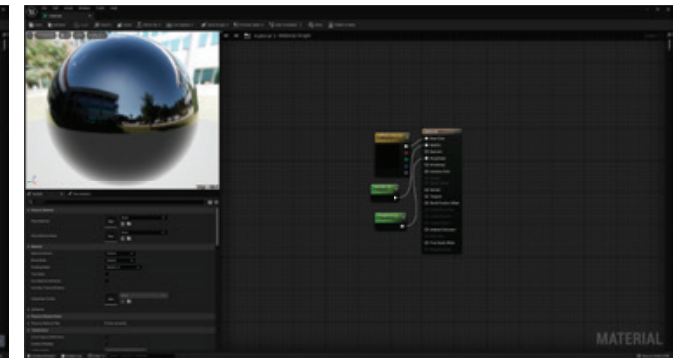
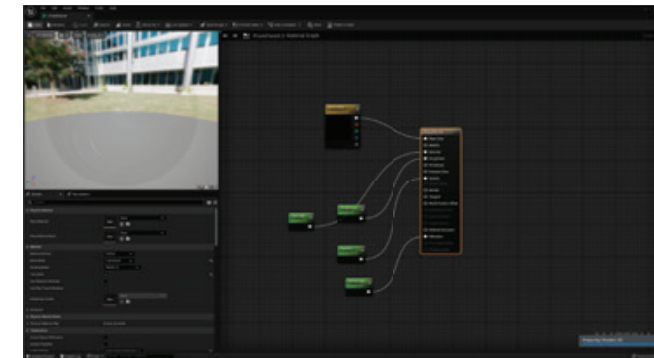
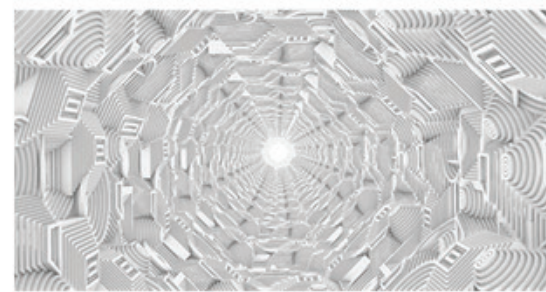
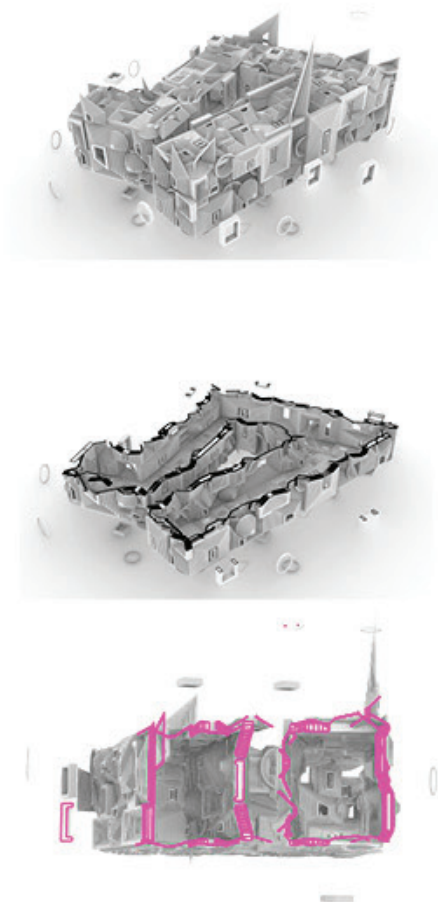
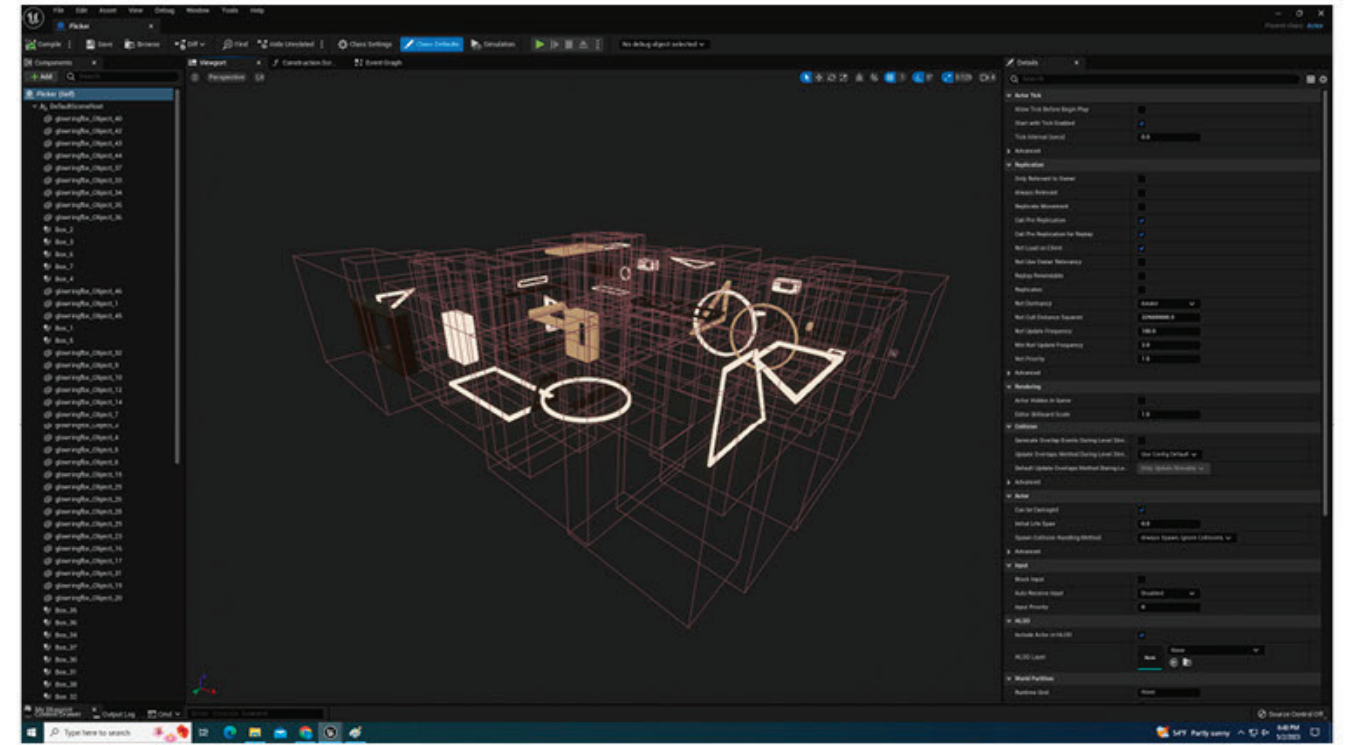
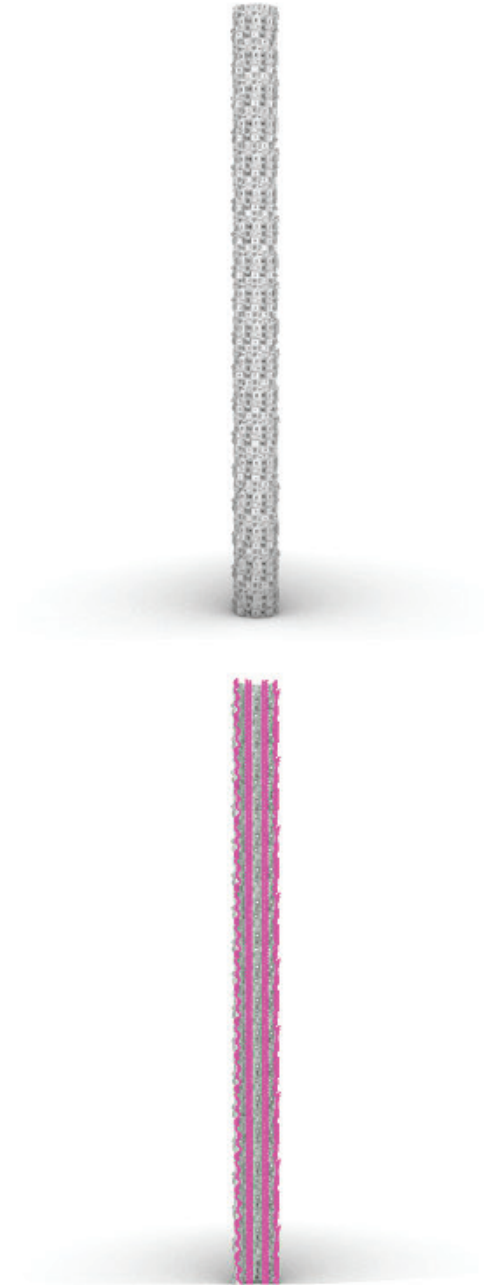
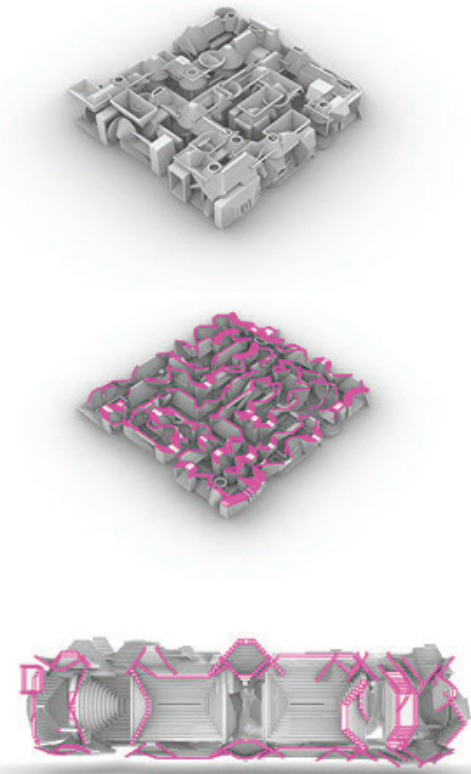
This project was created by Simon Gałeczki and Claire Koh for the Virtual Architecture course at Columbia University. We used Rhino 7 to create the level design and then exported the 3d model to Unreal Engine. In unreal we experimented with material properties and animating objects such as flickering lights.



Scan for the full video





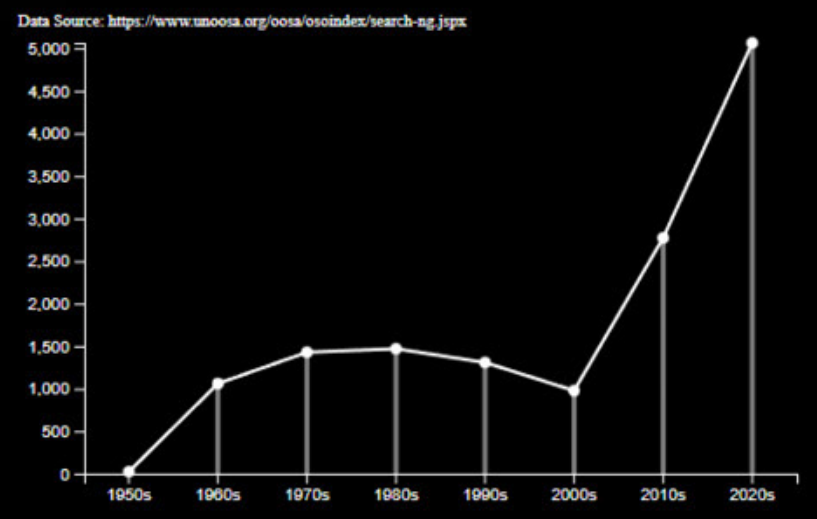


SPACE ANTHROPOCENE 2.0

Historical and Cultural Survey of the Human Activities in Earth's Orbit and Beyond Through the Lens of Data Visualization

We have launched an abundance of rockets and thousands more satellites into orbit since the 1950s, when the space era first began. Since the launch of Sputnik, the first artificial satellite to orbit Earth, by the U.S.S.R. on October 4, 1957, humans have been exploring the space. This took place during the Cold War, a time when the Soviet Union and the United States were at odds politically. There are still plenty, and as we launch more, the probability of collision grows. Thousands of defunct satellites as well as fragments from all the rockets we've ever fired are in orbit around our planet. Any human-made item in orbit around the Earth that is no longer usable is known as orbital trash. Non-operational spacecraft, abandoned launch vehicle stages, mission-related junk, and fragmentation debris are examples of this debris. Fortunately, space trash doesn't currently represent a serious threat to our explorations. Its greatest threat is to other satellites that are in orbit.

To avoid being hit, damaged, or destroyed by all this approaching space junk, these satellites must maneuver out of the path. Every year, hundreds of collision avoidance maneuvers are carried out across all satellites. If there is too much space debris in orbit, the Earth's orbit may become unstable due to a chain reaction whereby more and more objects hit and produce fresh space debris. This condition is known as the Kessler Syndrome. Although this scenario would be severe, some experts are concerned that a variation of it might become an issue in the future. In addition to the debris we've left in Earth's orbit, there are other items on the lunar surface and other planets. Space Anthropocene 2.0 has displayed the objects and detritus left in space to investigate these explorations and see how it has altered over time. Data from NASA and the UN were used to collect and evaluate events between 1957 and 2022.

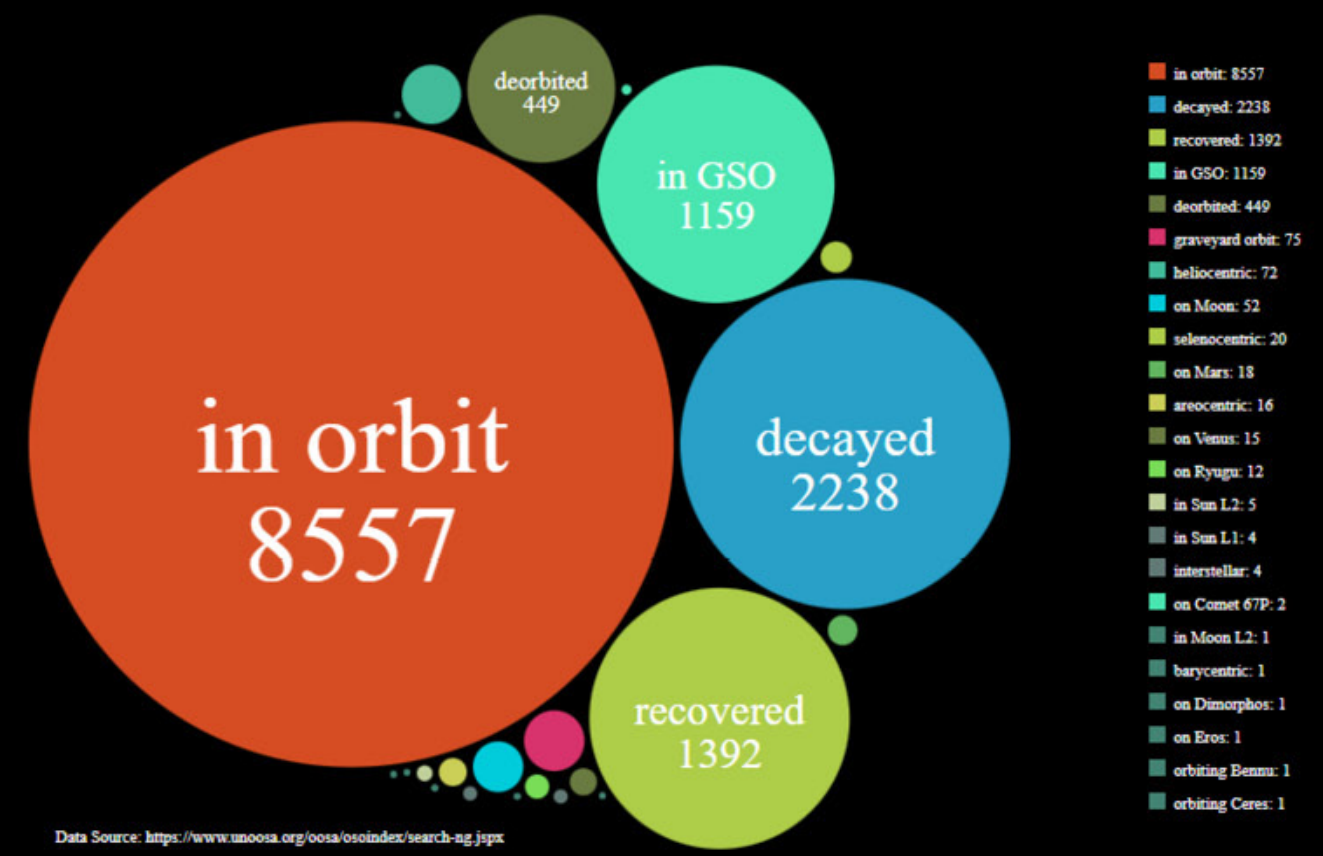


Number of Space Objects Launched Per Decade

An official Register of Objects Launched into Outer Space has been kept up to date by the UN since 1962. As international space law developed, space object registration transformed from being a mechanism to assisting the United Nations Committee on the Peaceful Uses of Outer Space in its discussions on the political, legal, and technical issues relating to outer space. Now, it serves to identify which States have international responsibility and liability for space objects. 8,261 distinct satellites are circling the Earth, up 11.84% from April 2021, according to UNOOSA's Index of Objects Launched into Outer Space. There were 12, 293 objects launched into space at the end of January 2022. It has been estimated that an additional 58,000 will be launched by 2030.

Data Source: <https://www.unoosa.org/oosa/osoindex/search-ng.jsp>

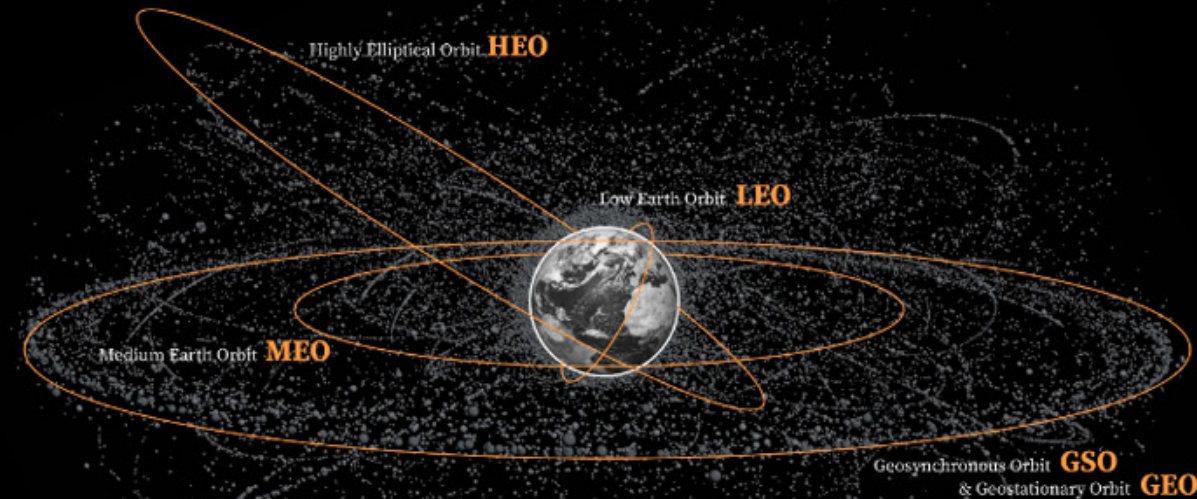
Status of Space Objects



Data Source: <https://www.unoosa.org/oosa/osoindex/search-ng.jsp>

Only 4852 satellites in orbit are active; rest is inactive.

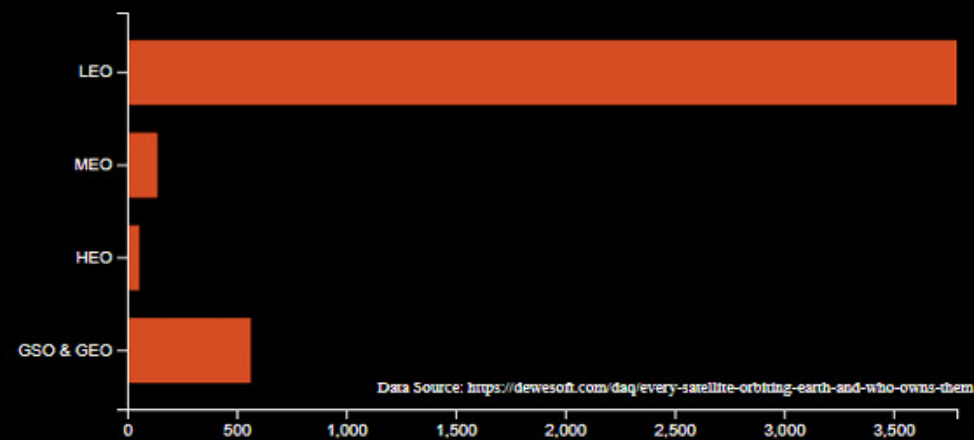
As of the end of December 2021, just 4,852 of the 8,261 satellites circling the Earth were active, according to UNOOSA data, which were corroborated by the Union of Concerned Scientists (UCS), which keeps track of the functioning satellites. According to UCS, as of the first of January 2021, there were 6,542 satellites in orbit, 3,372 of which were operational and 3,170 idle.



Number of Active Satellites Per Orbit Type

Low Earth Orbit (LEO) LEO is commonly used for communication and remote sensing satellite systems, as well as the International Space Station (ISS) and Hubble Space Telescope. **Medium Earth Orbit (MEO)** is commonly used for navigation systems, including the U.S. Global Positioning System (GPS). **Geosynchronous Orbit (GSO) & Geostationary Orbit (GEO)** GSO objects maintain a constant position over a specific longitude because their orbital speed coincides with the rotation of the Earth. A subset of GSO is GEO. While GEO objects only orbit Earth's equator and, from the ground, appear in a fixed position in the sky, its rotation equals that of the planet. For communication and Earth observation, GSO and GEO are utilized. **Highly Elliptical Orbit (HEO)** An HEO is oblong, with one end nearer the Earth and other more distant. Satellites in HEO are suited for communications, satellite radio, remote sensing and other applications.

Data Source: <https://dewesoft.com/daq/every-satellite-orbiting-earth-and-who-owns-them>



07

Between: "Revolution" and "Metamorphosis"

Fall 2022
Instructor: Mark Wigley, Alexandra Tell
ARCH 4980 Virtual Architecture
Individual Project

This is an essay that goes into detail about the analysis of Giancarlo de Carlo's statement about participatory architecture, with a focus on the usage of his language. It is implied that there's an intrinsic difference between the 'modern' architecture' and participatory architecture - one may be a failed 'revolution'

and the other one would be a pre-mediated 'metamorphosis'. I am 200% sure that you will never fully read this essay but I figured this would be a nice way to wrap up my portfolio whose central theme has been a relationship between architecture and language and storytelling.



Claire Koh
Mark Wigley
Histories of Theories
December 21, 2022
Giancarlo de Carlo - Architecture's Public (Il pubblico dell'architettura)

Introduction & Context

Giancarlo de Carlo's Architecture's Public, originally named Il pubblico dell'architettura, is the title of a lecture that he delivered at an international colloquium in Liege in 1969 themed: "L'architecte n'a plus d'audience: quel est l'avenir du domaine bâti?" (Architecture no longer has an audience. What is the future of the built domain?). It was later published in 1970 in an architecture and urbanism magazine Parametro in both Italian and English, which was later edited by Peter Blundell Jones, Doina Petrescu and Jeremy Till and included in their own publication Architecture and Participation (2005). For this essay, I will be using the translation published by Blundell, Petrescu and Till but I will also be referring to the original transcript for certain aspects of the analysis such as graphic layouts and rhetorical devices.

Left) The first page of the original publication

Right) The first page of the Edition by Blundell, Petrescu and Till

As the title Architecture's Public suggests, the lecture pertains to the community surrounding the field of architecture. Although the word 'public' is not often used as a conjunction to another word as in the case of Architecture's Public, if one is to consider the synonyms of the word they could understand it as the community of architecture, people of architecture, or society of architecture. Therefore from the very beginning, it can be assumed that de Carlo is concerned with the social roles of architecture in relation to the people involved in it. Its big, boldfaced letters, which appear as if to relay the significance and the urgency of the matter concerning the community of architecture, work quite well in contrast to the body paragraphs that consist of tiny texts which appear to hint, perhaps, at the density and the meticulousness of the content.

The assumption the reader is led to believe is indeed correct. This highly critical and political piece by de Carlo makes an effective delivery of an architectural theory of participation – a call for a new design objective and method that promote designing and building with the end users in a constant feedback loop. Participatory architecture, or "process planning" – although quite nascent at the time of de Carlo's speech – was believed by him to have the potential to produce architecture that is "macroscopic and complex," a "balanced and stimulating physical environment," and "matrix of an open and self-generating formal organisation" in the rapidly degenerating practice of architecture by rethinking the fundamentals of its purpose.

Audience

Consequently the theory is intended for architects, including the faculty, critics, institutions and practitioners who make up the field and practice of architecture. This is consistent with the original audience of the Liege conference of 1969 as well as the organizers which included APIAW: Association pour le progrès intellectuel et artistique de la Wallonie (Association for the Intellectual and Artistic Progress of Wallonia) and Université de Liege (University of Liege). But to be more specific, it is intended for architects, educators, institutions and practitioners actively or passively partaking in the proliferation of failed modernist tradition and authoritarian planning.

It is interesting to note however, that the audience, which includes the organizers of the event, also appears to be the primary target of de Carlo's ferocious yet rational arguments. It is unclear whether the APIAW and the University of Liege are considered a part of the antagonists in de Carlo's mind, but the absence of specification and his generalization of all architectural institutions as one like-minded entity may indicate that neither of them are exempt from his polemics, further confirming the degree of his radical perspective that allowed him to attack even those who had extended their warm welcome and laid the platform for him to deliver his message. In the following quotes, it becomes evident that he is directly targeting his audience. In this particular quote he criti-

cizes the academics for being dull and deceptive:

"...the academic body made an admirable pirouette, changing its previous routine without moving the axis of rotation. By accepting the most innocuous elements of a new language - and possibly by introducing a few new personages chosen from among the most innocuous proponents of these innocuities - it was possible to continue defending something of the old position...there was nothing either in the faculty or in architectural practice that could nourish a courageous exploration." 2

Here, he describes them as selfish, irresponsible and opportunistic at best:

"...all the stupidity and indolence of the academic bodies...The rapidity with which the professors ran for the lifeboats, leaving the students in the sinking ship, is only equaled by the shrewdness of their return to power on the bridge to resume the voyage for destinations so unknown as to be none of their business." 3

In the following quote de Carlo criticizes both the academics and the practice:

"On the one hand there is Business, obtuse, repetitive and uncritical; on the other the Academy is regrouping its forces, presumptuous, pompous, and full of phoney ambitions." 4

Mission

The relentless criticism towards the institution and practice of architecture is the foundation for de Carlo's goal of the lecture: to reverse both their activity and passivity that allow the continuation of authoritarian planning which produces sterile and exclusive environments that prevent future developments and impede effective transformations of both physical and social context. The larger goal of the lecture calls for a reestablishment and prioritization of the objective of architectural design and a development of an appropriate method suitable for this objective. This change in the fundamental purpose of architectural design – the "metamorphosis" – according to de Carlo, is the only thing that would bring about new characteristics in the practice of architecture and new behavior patterns in the authors in the field whose modus operandi was flawed from its conception. The message is intended to spark a change in the practice and academics to fully understand the role of architecture in its social context – that architecture signifies itself as an agent of transformation of the society. Consequently the role of an architect becomes to reevaluate and reconfigure the potential of physical space among the social conflicts that arise with human activities. Therefore to evoke any meaningful changes, one must carefully analyze how it is going to interact with the society, or more specifically – their users.

The logic behind Architecture's Public follows a careful analysis of historical events that are used to describe the ways in which things should have been and the ways in which things must be in the future. De Carlo's claim could be considered as a reaction to a series of historical events and a call for action, therefore situated within the boundaries of architectural theory.

Argument

The premise of his argument is that architecture is inevitably entangled in the social fabric on which it is placed, and therefore it must attend to its social context, and to the people

that comprise the social context without excluding anyone. The political nature of the premise and the liberal, perhaps socialist perspective of de Carlo's argument consequently divides the society into two – the oppressors, and the oppressed. An architect has a potential to exist in a fluidity between these two but historically they have sided with the oppressors – the clients: the imposer of authoritarian planning and sponsor for the architects. Together they caused the sufferings of the users, buildings, and the fellow architects alike. And now, architects must make a conscious effort to include those overlooked by the power structure – the users – to "produce a balanced and stimulating physical environment"

5 that is responsive to the diverse human activities of the social fabric and ultimately, to "recover architecture's historical legitimacy, or indeed, restore its credibility."6

Now that the premise has been established we can analyze the arguments made in Architecture's Public and how they conclude with the proposal for participatory design and planning. Roughly the first half of the content

is dedicated to historical and theoretical analyses accompanied by fierce criticism and the latter is dedicated to definition and process of participatory design. Arguments usually follow a general pattern of describing a certain trend of situation first, then presenting the cause right after. This allows the listeners to become aware of the severity of the situation that needs to be resolved and then redirect their frustration towards the root of the problems, without losing a grip of logical flow – which could be common when participating in a discussion of a spoken form. This leads them to experience a great relief at the end when finally offered a possible solution for the aforementioned problems.

According to de Carlo, architectural institutions and professions were flawed from the very conception when it was born out of ambiguity. It's been used to address the work of "head-bricklayer", to that of "God" or an "ambiguous coupling of art and technology. The ambiguity and the lack of definition gave rise to the various, often arbitrary or superficial types and movements of architecture.

Precisely because of this ambiguity, architects have been able to side with the empowered and concern themselves only with the delivery and methodology of their work, without considering their ultimate mission. The power structure gave the architects a comfort of lack of social commitment that "retarded the scientific transformation of the architectural discipline and interrupted its contacts with social transformation." 7 In the process, the end users without any power were taken out of the equation. Modern architecture has failed, despite its revolutionary spirit, and has only exacerbated this problem. In the cases of CIAM Frankfurt Congress of 1929 and CIAM Hoddesdon Congress of 1951, architects' effort to solve the most pressing social issues such as housing shortage and urban decay resulted in marginalizing the end users even more so, having been blinded by their own 'ingenuity' of inventing the most efficient organization of space set forth by precisely everyone but the end-users. Without having any say in the process, the end users were given the cheapest standardized living blocks, chased to the periphery of the city while the officials were renovating the city centers where their homes once stood. Architecture grew further apart from reality as it became more accustomed to the standards set out by the power structures, and the field was not able to reverse this because it lacked a coherent objective. The trend continues today. De Carlo rejects about almost every ideology or style associated with modern or postmodern architecture that isn't concerned with tangible social issues. He says that universal solution, science fictions, inaptitude of academia, making of 'heroes', figurative arts and formal or fantastical approaches have all contributed to the degradation of the profession. Architecture is now presented as something immaculate dissociated from its use; a potential space rather than a real space. Architects can't be trusted alone and users must be included in the equation to reclaim their lost objective and evoke a truly meaningful social change. There needs to be a metamorphosis to develop new practice of architecture: architecture that could start a symbiotic relationship with the society: a participatory design where the traditionally excluded end users are included from the very beginning of the design process to reimagine a new society. It is not a mere "stylistic renewal" of design method, according to de Carlo, but is a change in the "ideological position" respecting the social issues. Participatory design includes three phases in a cyclic relationship: discovery of needs, formulation of hypotheses, and the actual use – all planned and analyzed through an empirical approach. Discovery of needs includes exposing and acknowledging the user's rights to express 7 themselves. Approach should be taken to account the seemingly disorderly, therefore diverse and rich character of the user group, through their direct participation.

Formulation of the hypotheses include continual interaction between the needs and configuration, where both are perfected to an equilibrium. Disorder and instability are embraced; they would open up further chances for the reality to expand continuously in the future, inserting the architecture into a constant feedback loop. Once again, the process is carried out through a constant participation of the user group. Architect's job is to "expand the sequence of hypotheses, enlarging the image beyond the margins of the framework"8; their job is to expand the possible ways in which user, architecture, and society can all engage with each other.

Planning doesn't stop at the stage of use. The relationship between the architectural object and the users creates another feedback loop where each of them responds to the other through varying needs and stimulations.

Design continues to be adjusted in this stage, through incremental development.

The product of participatory design is thus regenerative and resistant to decay. The users will now consider the building as a sign of their autonomy, the result of their efforts and a reflection of their needs and character and will defend them. It is imbued with the diversity of the society, and helps break away from the imaginary 'average' man that restrict both the architecture and the movement of the people. In this cyclic loop – the chain reactions – the building isn't permanently frozen but "continues both to modify and to be modified by the user; integrating itself in this way with nature and producing history, becoming itself, through the use that is made of it, part of nature and history."9

It is important to note that the 'users' in de Carlo's narrative doesn't refer to any kinds of end users in architectural design, but specifically to those who are ignored by the traditional top-down planning methods, which includes the poor, and the socially and economically marginalized. And this particular designation emerges as a response to architects' longstanding affair with the ruling class, and also as a response to modern architecture, whose original convictions included high ideals and egalitarian spirits but failed nonetheless to provide the society with any substantial changes.

When the field of architecture remains inseparable from the society, and the objective of an architect is to better the society, one cannot discount the marginalized who, paradoxically, make up a significant portion of any societies. According to de Carlo they are the "bearers of new values which already exist potentially, manifested sporadically in the margins not already controlled by institutional power."10 But ultimately at the end, it is implied that the participatory design method could also be used more generally to reestablish a more sound and inspiring design methods for the future.

Language

Since the text was delivered as a speech in its original form, it is important to approach its analysis by addressing its tone and rhetorical devices used to engage with the audience. It is also important to note the characteristics of language – perhaps influenced by the Italian culture and language that tends to be direct and painfully honest at times – that aided the effective delivery of de Carlo's message.

The general tone can be defined as a series of qualities that seem contradictory but work well in conjunction. It is grave, as can be seen in his descriptions of the widespread social violence, but it also humorous, as can be seen in the sharp and relentless mockery present all throughout his speech. Following quotes are just a few examples of de Carlo's sarcastic criticisms.

"...according to the dogmas established at Frankfurt, that it is a good idea to define spatial limits in order to cook omelettes faster."11

"The rapidity with which the professors ran for the lifeboats, leaving the students in the sinking ship, is only equaled by the shrewdness of their return to power on the bridge to resume the voyage for destinations so unknown to be none of their business."12

"The two examples of Frankfurt and Hoddesdon are taken from the history of the best architectural movement..."13

"At the Congress of Hoddesdon of 1951 the architects thought they had invented the problem of the rehabilitation of urban centres."14

It is urgent but composed – although the lecture may sound like a call for action against the imminent threat that the field of architecture is facing, de Carlo acknowledges that it is "improbable that a radical renewal of behaviour and characteristics in architecture will occur quickly" and carefully lists incremental and quite pragmatic solution to the problem. It is remorseful but hopeful. The criticism he turns to the field of architecture borders a lamentation. He is regretful about the course that the field has come and is heading, but hopeful about the prospects of participatory design methods. It is consistent with de Carlo's description of the 1960s as a "new period of obscure forebodings and intense hopes". To summarize, his tone could be seen as passionate and direct, but sound and controlled at the same time.

The following set of paragraphs will look at the rhetorical devices used in de Carlo's lecture. The first is the usage of rhetorical questions that engage the audience and problematize certain situations. At the very beginning

of the lecture de Carlo describes the situations revolving around the university protests of 1960's and asks a series of rhetorical questions about the cause of these events, to stress the cause which was the incompetence of architectural institution. Another rhetorical question comes later in the lecture, when de Carlo first presents the idea of end users in a way to reenact the architectural history that has forgotten the users from its design process and finally come to a conclusion that users are indeed a part of architecture.

"What is architecture's public? The architects themselves? The clients who commission the buildings? The people – all the people who use architecture?"¹⁵

Second one is repetition: throughout the lecture, de Carlo makes an effective use of repetition to emphasize and criticize what he thought of as nonsensical behaviors of the antagonists. Most often

these have a very sarcastic and mocking tone. In the following quote shows an instance where he repeatedly use the word 'innocuous' to emphasize the indolence of the academia.

"By accepting the most innocuous elements of a new language – and possibly by introducing a few new personages chosen from among the most innocuous proponents of these innocuities – it was possible to continue defending something of the old position."¹⁶

And here, he uses the word 'why' to emphasize the absence of sound reasoning behind the CIAM Frankfurt Congress of 1929 and their effort to design the "Minimum Housing."

"Nevertheless, those 'whys' so nonchalantly forgotten at Frankfurt still have trouble coming to the surface. But we have a right to ask 'why' housing should be as cheap as possible and not, for example, rather expensive: 'why' instead of making every effort to reduce it to minimum levels of floor area, space, of thicknesses, of materials, etc., we should not try to make dwellings spacious, protected, insulated, comfortable..."¹⁷

Similarly in the following case he uses the word "centre" to emphasize CIAM and its contemporary planners' uncontrolled obsession over the concept of urban renewal and arbitrary transformations of the core of these urban settings.

"At Hoddesdon, as at Frankfurt, but to tell the truth in a weary tone, numerous proposals were made: to concentrate the most important administrative activities in the centre, to place the most attractive leisure activities near the centre, to pedestrianise the centre, to construct huge car parks in the centre, to preserve the historic character of the centre, to concentrate tertiary activities in the centre, to make parks in the centre, etc, etc."¹⁸

"...to transform urban centres into management centres, commercial centres, recreational centres, or simply historic centres, destined – with mournful rhetoric – to preserve the patrimony of values, together with the privileges of environmental wellbeing, of the ruling classes."¹⁹

De Carlo also makes an effective use of allusion throughout the lecture, helping the readers situate themselves in the context of his narrative. In the following case, he alludes to the quotes of the modernist 'heroes' to negate them and emphasize the failed legacy of modernist architecture, and their irrelevance in the present situation:

"Function no longer automatically generates form, 'less' has ceased to be 'more' and there is little probability that 'more' will again become 'less': utility and beauty are no longer two halves of the same apple."²⁰

"...having urbanized masses of farmers to generate manpower for industry without providing for their settlement in the city, now found itself in a tight spot, caught in the web of its own contradictions. The alarm expressed itself in the slogan 'more housing or less production' (and in the architects' more strident echo 'architecture or revolution')."²¹

He makes two more historical allusions to help the audience understand his arguments:

CIAM Frankfurt Congress of 1929 devoted to 'Minimum Housing' and CIAM Hoddesdon Congress of 1951 on the 'Heart of the City'. He writes them off as an exemplary failure of modern architecture that had lost sight of the motivation and consequences of the design. Why he chose these two specific examples, out of the vast ocean of other failures of modern architecture, remains a question, although perhaps it was done intentionally to show his hostility towards CIAM: the organizer of both events, and the main antagonist of the anti-modernist arc in his narrative. According to de Carlo, during the former of the two examples, "the architects of the Congress offered a series of brilliant solutions, competing to see who could most reduce not only the square metres and cubic metres per person, but everything superfluous to an abstract calculation of essential physiological behavior... lost track of the most important reasons for their cultural commitment... an abuse perpetrated first on the poor, and then on the not-so-poor"²² During the latter "The unconsciousness – or rather congenital irresponsibility

– of architecture about motivations and consequences, had contributed decisively to the expansion of social iniquity in its most ferocious and shameful aspect: the segregation of classes in physical space."²³

Overall de Carlo's lecture makes a well-balanced use of pathos, ethos and logos. He establishes the ethos of the argument by siding himself against the authoritarian regime, the antagonist that he describes as the evil of the society. Pathos comes from his passionate and remorseful description of the 'disaster' caused by this authoritarian regime and imposed on the users of architecture. Logos is established throughout the critical but careful analysis of architectural history and theory that locates the inconsistency between the roles and actions of the practitioners.

In general, de Carlo's language could be marked as highly political and hypercritical among many other, that often expresses itself in extreme or exaggerated terms and phrases. He is not shy of using words such as "idiocy," "disaster," "obtuse," "presumptuous", "pompous", "phoney", "stupidity", "shameful", "indolence", "monstrous", "terroristic", "to be exposed and eradicated" when describing the antagonists of his narrative. At the beginning of the lecture, when contextualizing the narrative in the midst of university revolts in 1960 he terms these protests as: "the most important event since the end of the Second World War," surely a very subjective and extreme description. But there is one instance when the radicality of de Carlo's narrative comes to a brief stop: when he describes his proposal for changes in objectives and methods or architectural design as a 'metamorphosis':

"A real metamorphosis is necessary to develop new characteristics in the practice of architecture and new behaviour patterns in its authors: therefore all barriers between builders and users must be abolished."²⁴

The word 'metamorphosis', which evokes a more gentle and gradual image than the language that de Carlo has used up to that point, is unexpected considering the urgency and gravity with which he describes the threats of the contemporary society. It is also quite contrary to the words "abolished" that he used to describe a component of this said metamorphosis. It is almost as if the term was meant to replace the word 'revolution' which could have had an even more extreme political connotation than de Carlo might have wanted, or made an unwanted allusion to the failed modernist 'revolution' that he had so condemned previously.

Theme

This brings us now to the central theme of de Carlo's lecture: transformation. What we could take away from the analyses so far is that there are different nuances associated with different types of 'transformation'. And so reviewing his lecture and itemizing his main claims through the theme of transformation can give us a better insight into his position and what he hopes to achieve through participatory design.

Throughout the lecture, words such as transformation, change, renewal and regeneration are used repeatedly with a very positive connotation (except for the case of 'urban renewal' which de Carlo calls a "brutal operation"), whereas to 'preserve,' to 'inherit,' 'conservative', 'predictable', 'pre-established', 'order', 'unalterable' are understandably used with negative connotations to describe the authoritarian practice and unflinching institutions such as the following:

"But in the framework of authoritarian planning, these devices are immediately blocked at the point at which they contradict a structural and formal order which is by definition pre-established and unalterable."²⁵

But de Carlo doesn't consider all transformations equally meaningful. There appears to be two types of transformation according to him. One is metamorphosis, as mentioned before, and it refers to a type of change that stems from within. Let us revisit the part where he mentions 'metamorphosis'. In the original transcript it is written as "mutazione", and in the original translation it is written as "mutation". The cause of both metamorphosis and mutation is rooted in the most fundamental building blocks of an organism – the DNA. These building blocks work as a seed of change, and the change happens over time, or becomes apparent over time. In the case of participatory design, an architect's decision to assume a "clear ideological position" of organizing the physical environment to reflect the subversion of power structure, that had been dominating and at the same time impairing the field, becomes its new building block. The metamorphosis begins with this new building block and takes form as a participatory design, where "all barriers between builders and users...[are] abolished."

²⁶ It will then progress into the cycle of planning, hypotheses and use, through which the built environment "renews itself continually, constantly reinventing images of a reality in transformation."²⁷ With this kind of change

in mentality, architectural practice will finally have transformed into something truly new with the appropriate method for its social purpose – a “radical expressive renewal.”

The other type of transformation is the one caused by an external factor – the one he calls a “stylistic renewal,” and it tends to be superficial. It consists of a transformation of the methods of delivery but with the core values of the operation still left intact. According to de Carlo this cannot bring about any sustainable changes, no matter how massive or revolutionary they are. Even worse, they could exacerbate the existing social problems. They are meant to suppress the outcries of the society rather than working with them, sort of like a band-aid solution, as “expressed itself in the slogan ‘more housing or less production’ (and in the architects’ more strident echo ‘architecture or revolution’). CIAM Frankfurt Congress of 1929 and Hoddesdon Congress of 1951 are both examples of such a transformation, just one instance of the social ideals of modern architecture having devolved into “architecture as pure technology or pure fantasy; of architect as an industrious functionary of the land registry office or as an inspired creator of monuments.”²⁸ The cause of this “disaster”? Because “Modern Movement has preserved substantial defects of the amorphous condition from which it emerged. For example, it preserved the ambiguity of role assumed when it became a bourgeois profession ... the amorphous matrix in which it was generated: the deliberate programmatic attitude of an elite.”²⁹

We are now given another opportunity to infer why de Carlo chose the word “metamorphosis” instead of, for example, “revolution.” De Carlo seems to intentionally avoid using the word “revolution” in his lecture. There are only two instances that he uses them:

“We must not forget that when the sacred programme of specialization began to succeed in a world shaken by the tremors of the industrial revolution.”³⁰

“The alarm expressed itself in the slogan ‘more housing or less production’ (an in the architects’ more strident echo ‘architecture or revolution’).”³¹

The first case presents ‘revolution’ used in a quite neutral term, but the second one points to an instance where ‘revolution’ refers to a class-based uprising and something to be avoided. Perhaps the industrial ‘revolution’ is something not too desirable to de Carlo either for it was a harbinger of Modern Movement. It can be assumed de Carlo did not want to be associated with either of these instances. Besides the word ‘revolution’, which most often refers to a sudden, radical or complete change caused by an external factor, was certainly not an ideal choice for de Carlo who knows better than anyone else that an external change without involving the core tends to roly-poly back to its original state despite how radical the change is. Instead he acknowledge that a meaningful change will take time and incremental solutions should be introduced by changing ones very core values, thus arriving at a conclusion of a ‘metamorphosis’.

Conclusion

At the end, Architecture’s Public by Giancarlo de Carlo becomes an architectural theory, a call for an action, a persuasive rhetoric that are founded on the liberal agenda. Argument follows a fluent line of logic, and the specific language, tone and the rhetorical devices used in his lecture are very much consistent with his message and contributes greatly to an effective delivery. Aided by a relentless criticism and renouncements, it analyzes the architectural history and theory through the lens of social justice and condemns the illegitimacy of architectural practice and institutions that are founded upon the very lack of objectives and structures that have led to authoritarian planning. It calls for a reestablishment of a purpose within the profession and a subsequent change in the method of approach to the design, to include the users from the very beginning stage of planning, through which architecture could finally become an agency for a meaningful and lasting transformation in the society.

1 Peter Blundell-Jones, Doina Petrescu, and Jeremy Till, *Architecture and Participation* (London: Routledge, 2012), 22.

2 Peter Blundell-Jones, Doina Petrescu, and Jeremy Till, *Architecture and Participation*, 3-4.

3 *Ibid.*, 12.

8 *Ibid.*, 20.

7 *Ibid.*, 6.

5 *Ibid.*, 22.

6 *Ibid.*, 14.

4 *Ibid.*, 11.

9 *Ibid.*, 21.

10 *Ibid.*, 28.

11 *Ibid.*, 9.

12 *Ibid.*, 12.

13 *Ibid.*, 11.

14 *Ibid.*, 10.

15 *Ibid.*, 6.

16 *Ibid.*, 4.

17 *Ibid.*, 9.

18 *Ibid.*, 10.

19 *Ibid.*, 10.

20 *Ibid.*, 11.

21 *Ibid.*, 8.

22 *Ibid.*, 10-11.

23 *Ibid.*, 11.

24 *Ibid.*, 13.

25 *Ibid.*, 21.

26 *Ibid.*, 13.

27 *Ibid.*, 18.

28 *Ibid.*, 11.

29 *Ibid.*, 6-7.

30 *Ibid.*, 5.

31 *Ibid.*, 8.

Bibliography

Blundell, J.P., Petrescu, D., & Till, J. “Architecture’s Public.” *Architecture and Participation*, Routledge, London, 2005, pp. 3-22.

De Carlo, Giancarlo. “Il pubblico dell’architettura.” *Parametro*, 1970, pp. 4-12.

Language
Landscape
Architecture