

NARRATIVES

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MASTER OF ARCHITECTURE

PORTFOLIO OF WORK
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DATE

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SUBMISSION

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TYPEFACES

BAHNSCHRIFT
LIGHT, REGULAR, SEMIBOLD

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ACKNOWLEDGMENT

I WOULD LIKE TO THANK FRIENDS AND FAMILY WHO SUPPORTED
THIS JOURNEY FOR THE PAST THREE YEARS.

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This portfolio is a reflection on the moments where it clicked – the key concept, the right photograph, the critical idea – that made the narrative of the project fall into place. Organized by research, experimentation, and actualization, this portfolio unfolds everything from process to presentation of projects executed during the three years at GSAPP. But the ideas within the projects are ever-evolving and will continue to live on as a part of my identity as a designer.



01 RESEARCH

STUDIO: ADVANCED IV
YEAR: SPRING 2023
CRITIC: FEIFEI ZHOU, GALEN PARDEE
SITE: NEWBURGH, NY

APPLE STORY

What does an agricultural architectural intervention for multispecies care look like?

Apples have had many entanglements with history and folklore which have helped curate their image in society. Through the story of Johnny Appleseed and Richard Townsend, apples were commodified into objects used as a tool to privatize land for commercial production. The folklore continues to have influence today as it has become a tool to promote ecotourism in the Hudson Valley, providing novel yet fleeting revenue sources to small farmers under threat of urbanizations, which can be read as the folklore's original intent.

Today, the consumer demand forces commercial farms to intensify their apple orchards to produce more fruit per tree, making it more susceptible to feral effects. All the while threats of urban development making it difficult for farmers to continue on with their current conditions.

This project imagines a near future where current growing conditions are no longer sustainable and forces agricultural changes in order for Orange County to remain apple producers and destinations as apple picking agritourism. The project was presented in a narrative form, looking at the apple tree's lifetime of growth in comparison to the lifetime of a human. Existing farm infrastructure is readapted to house the various new nonhuman actors that are introduced in this re-wilding plan.

"Here's the thing about an apple: it sticks in the throat. It's a package deal: lust and understanding. Immortality and death. Sweet pulp with cyanide seeds. It's a bang on the head that births up whole sciences. A golden delicious discord, the kind of gift chucked into a wedding feast that leads to endless war. It's the fruit that keeps the gods alive. The first, worst crime, but a fortunate windfall. Blessed be the time that apple taken was."

- Richard Powers, *The Overstory* (162).

FOLKLORE

Apples have had a long history of domestication through hybridization. The genus *Malus* can be traced back to Central Asia and made its way into Europe through the Silk Road. The apples were brought into the US alongside European settlers who saw the landscape of the Northeast as "undeveloped" and remade the North American landscape using apples.

The story of Richard Townsend, a Quaker settler, epitomizes the relationship between European colonizers and their land, when he buys land from the Lenape with the condition that the Old World apple tree remain available "for the free use of all who wanted apples," and yet he privatized his land. The indigenous Lenape believed that fruit hanging from a branch could not be "owned" by an individual, nor could an individual claim private ownership of the tree from which it grew. Europeans, as they colonized the land, rewrote the rules of property and the radical idea of "public fruit" disappeared.

The story of Johnny Appleseed presents another tale of apples being used for colonizing land. In 1792 in the midst of Westward Expansion, the Ohio Company of Associates made a deal with potential settlers where anyone willing to form a permanent homestead on the wilderness beyond Ohio would be granted 100 acres of land. To prove their homesteads to be permanent, settlers were required to plant 50 apple trees and 20 peach trees in three years. Johnny Appleseed took advantage of this deal by getting ahead of settlers and cultivating orchards that he would sell when new settlers arrived, serving as a sort of land speculator. A 1948 Disney movie presented him as an unassuming missionary and a giver of life and land, but clouded in this folklore was his intention of using apple trees as a tool to privatize land.

Looking ahead to the 1920s, the trees planted by Johnny Appleseed were effectively erased during Prohibition when

apple trees that produced sour, bitter apples used for cider were chopped down by FBI agents in an effort to cut alcohol production. This was also due to the fact that due to his religion that forbade grafting Johnny planted all of his orchards from seed, meaning his apples were, for the most part, unfit for eating and primarily used for fermenting cider.

THREATS

When varieties were reduced during prohibition, the apple trees were replanted using grafting techniques to produce more trees for edible consumption. This is the process of the domestication of apples - apple trees grown from seed do not bear fruit that is desirable to eat raw. Through hybridization or chance genetic mutation a tasty fruit can be produced that does not inherit through seeds. So the tree must be propagated with cuttings through a grafting technique. As demand for apple consumption increased, the trees that produce greater number fruit and more resilient to pests were favored for commercial fitness. The orchard evolved to monoculture and highly dense groups of apple trees that became more susceptible to feral effects of pests and diseases.

EFFECTS

Today, apple folklores have grown to promote ecotourism in the Hudson Valley where its proximity to New York attracts city dwellers looking for an escape. They promote rural idealization through physical acts of picking apple trees and other entertainments such as hay rides, family activities, and selling of apple products, all centered around the branding of the apple. Yet there is a looming threat to farming from commercial pressure of urbanization, trying to maximize on rural living to create residential neighborhoods in otherwise land full of wildlife and natural habitats.





WILDING SITE PLAN

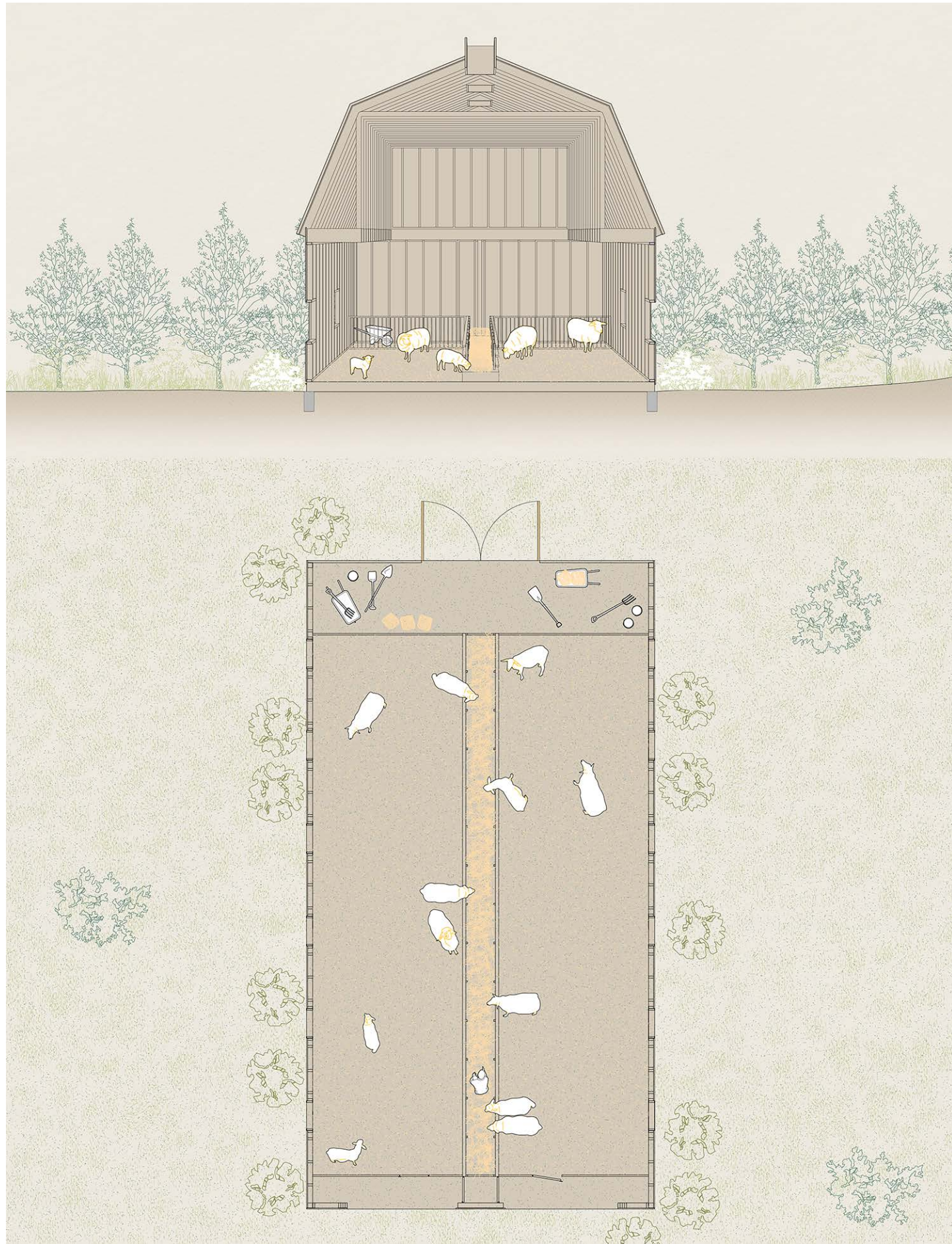
The project imagines the near future for Lawrence farms, located 6 miles north of Newburgh, NY, where current growing practices are no longer sustainable for the future. The re-wilding process required to create a holistic environment for fruit trees requires years of cultivation, resembling the lifetime of a tree and a human. The project is narrated in storybook form to recenter the apple from a privatizing tool in folklores, towards a character in need of healing.

"When Heidi was born, the apple trees of Lawrence farms used their last bit of energy to bloom flowers to celebrate. However, the unpredictable weather and drought in the Hudson Valley prevented the trees from producing any more fruit. Heidi's father, who had succeeded the apple orchard for three generations, had inherited his family's stubborn dedication to the trees and farm and looked to the soil for answers. He replaced some of the apple trees with millet, buckwheat, and other green manure to renew the soil and reintroduce nutrients to the land. The soil began to flourish once again in parallel with Heidi's development, and offered the family porridge through the millet and buckwheat -- the baby's favorite food."

"The saplings grew to adolescent trees, reaching to the sky, when 4-year old Heidi began to notice new buds were disappearing each day. She began to explore deeper into the orchard, sneaking away from her parents, to try to find an answer to why her buds were seemingly evaporating. Sensing a watchful eye, Heidi turned around to see a deer who seemed equally surprised to see her, quickly running away to the protection of her home. Upon hearing of her encounter, Heidi's father decided it was time to plant protective hedgerows around the orchard to prevent any more dangerous encounters and to stop any more fruit stealing by the deer. By placing some sacrificial berry bushes at the perimeter of the orchards, the deer stayed away from the precious apple trees and from scaring Heidi."



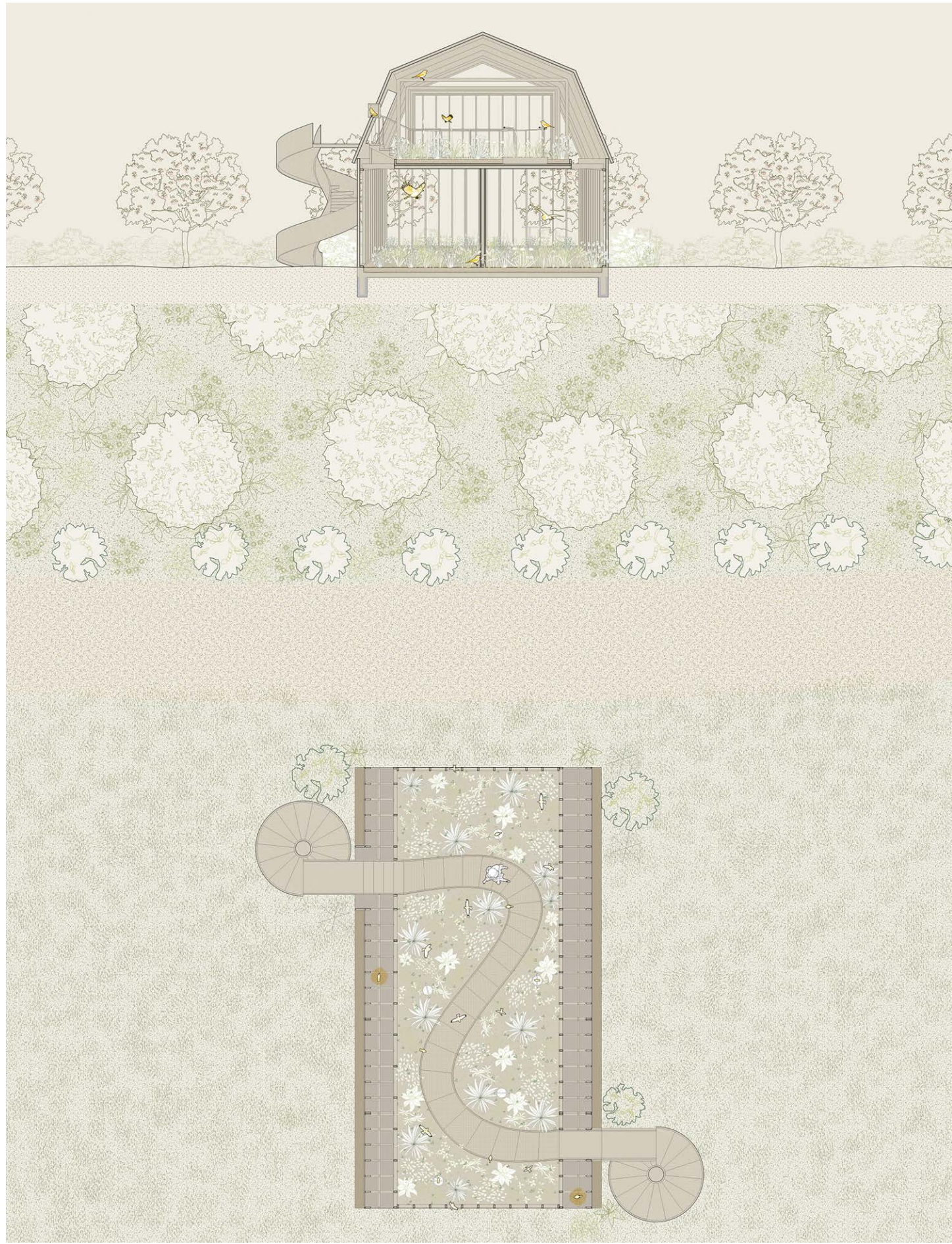
PHOTOGRAPHS TAKEN ON-SITE



RE-WILDING CHARACTERS

"The following summer, an invasive insect infestation takes over Hudson Valley. Heidi was intent in helping by catching as many bugs in her net, but the problem doesn't seem to go away. Concerned about using pesticides around Heidi, her dad looks to chicken as the natural predator of insects. Converting an old shed into a chicken coup, the family buys three dozen chickens. They roam the orchards during the day, transported by a chicken tractor, and return to the coop at night. Heidi eagerly takes on the task of checking the coop every morning for new eggs.

The introduction of Mittens [a sheep] and his flock into the orchard proves so successful that a variety of wildlife begins to thrive. Heidi becomes an avid birdwatcher keeping track of all the different species that visit the orchard. Since mechanical equipment is no longer necessary in their silvopasture, Heidi's family decides to turn the barn into an open-air aviary. Excited by the project, Heidi collects books on plants and flowers that attract native birds. Inspired by how their new barn resembles a botanical garden, they decide to build a walkway for people to enjoy being surrounded by beautiful flowers and birds. Heidi even constructs birdhouses on her own to place around the orchard to attract different owls."





02 RESEARCH

STUDIO: ADVANCED V
YEAR: FALL 2023
CRITIC: NAHYUN HWANG
COLLABORATOR: MICHAEL WEN

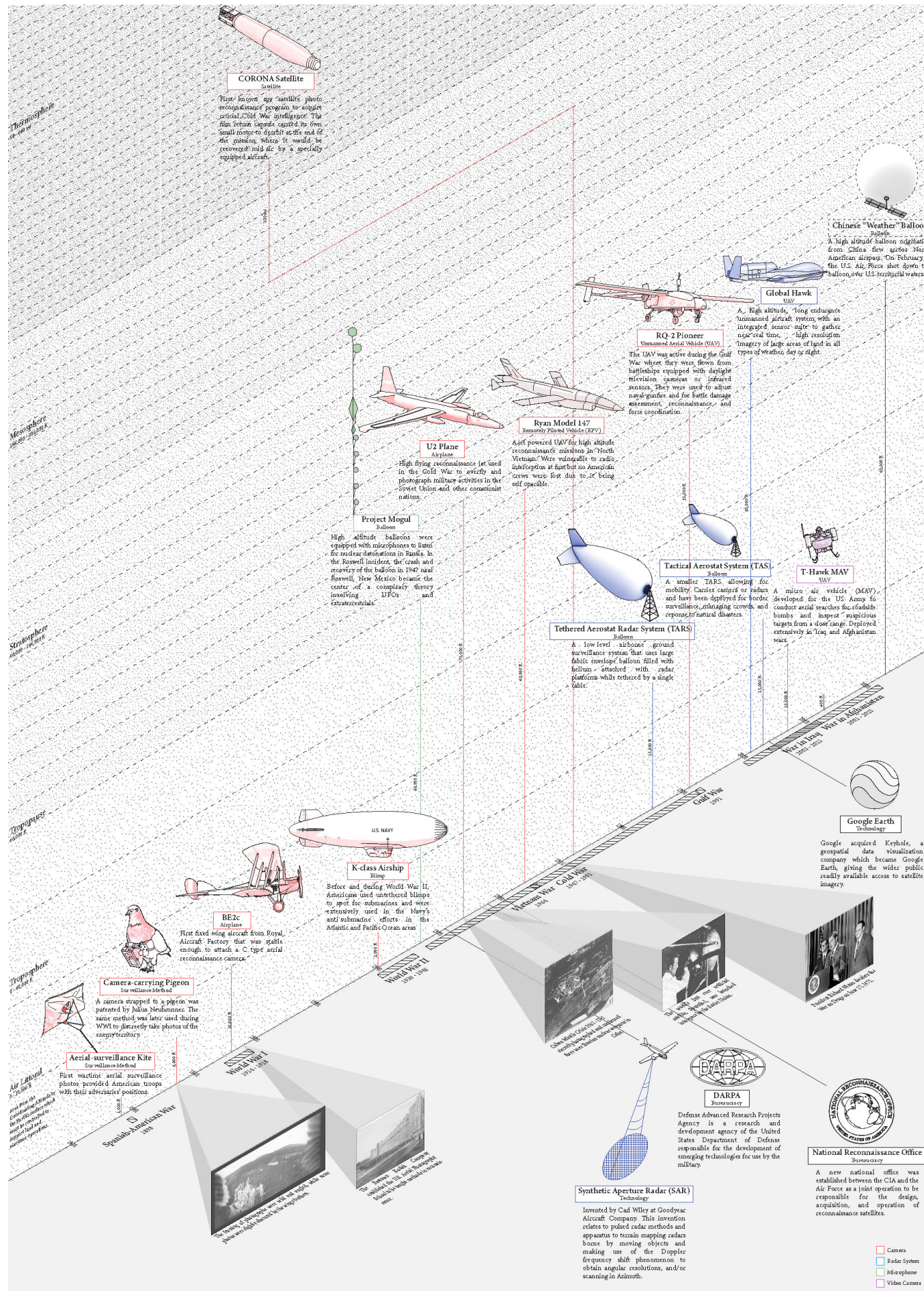
How can helium and its relation to the surveillance technology heal wounds in the postnational state?

A survey of aerial surveillance technology reveals its relation to warfare and provides new ways to spy from above. We were particularly interested in “lighter-than-air” aircrafts such as balloons, blimps, and dirigibles that are filled with gasses that are lighter than air to allow them to rise in the air. In these vehicles, air is not the only medium in which the surveillance occurs, but also the material that fuels its movement. The Tethered Aerostat Radar System, or TARS, is an example of a military balloon filled with helium that occupies the US-Mexico border to detect drug-trafficking aircrafts.

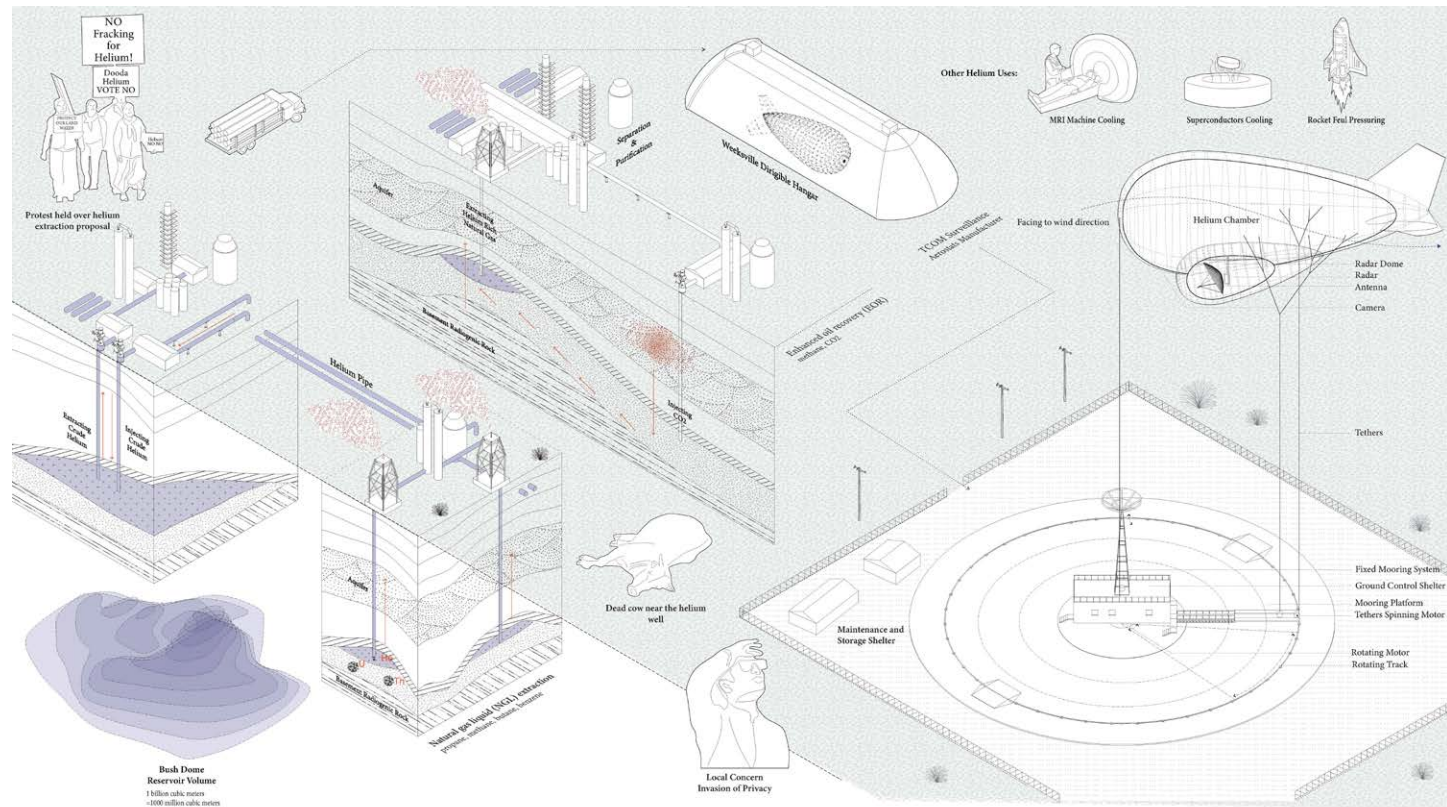
Helium is the primary gas used to fill balloons and the development of the helium market in the US was tied to its usage in aerial surveillance, claimed “a mineral resource pertaining to the national defense” (Helium Act of 1925). It is found from radioactive decay of uranium and thorium in the Earth’s crust within pockets of natural gas, but this process takes many millenia making helium a non-renewable resource. Helium is only found in certain locations in the world and the US has been the primary source since its discovery. While helium supplies are being depleted, there are potential fields that have yet to be tapped such as in the land of the Navajo people in the Southwest US. But due to the environmental impacts it could cause, the residents successfully protested against the Navajo Oil and Gas Company from extraction.

The design project looked into the speculative future of the postnational state where the nation-state is dismantled and its functional and institutional representation of the border is disassembled. The three landscapes illustrated in the project show how helium becomes the form for reunification of the border wall cities and is economically valued to offer recuperation for marginalized indigenous communities in the Southwest affected by the violence of the past.

POSTNATIONAL HELIUM



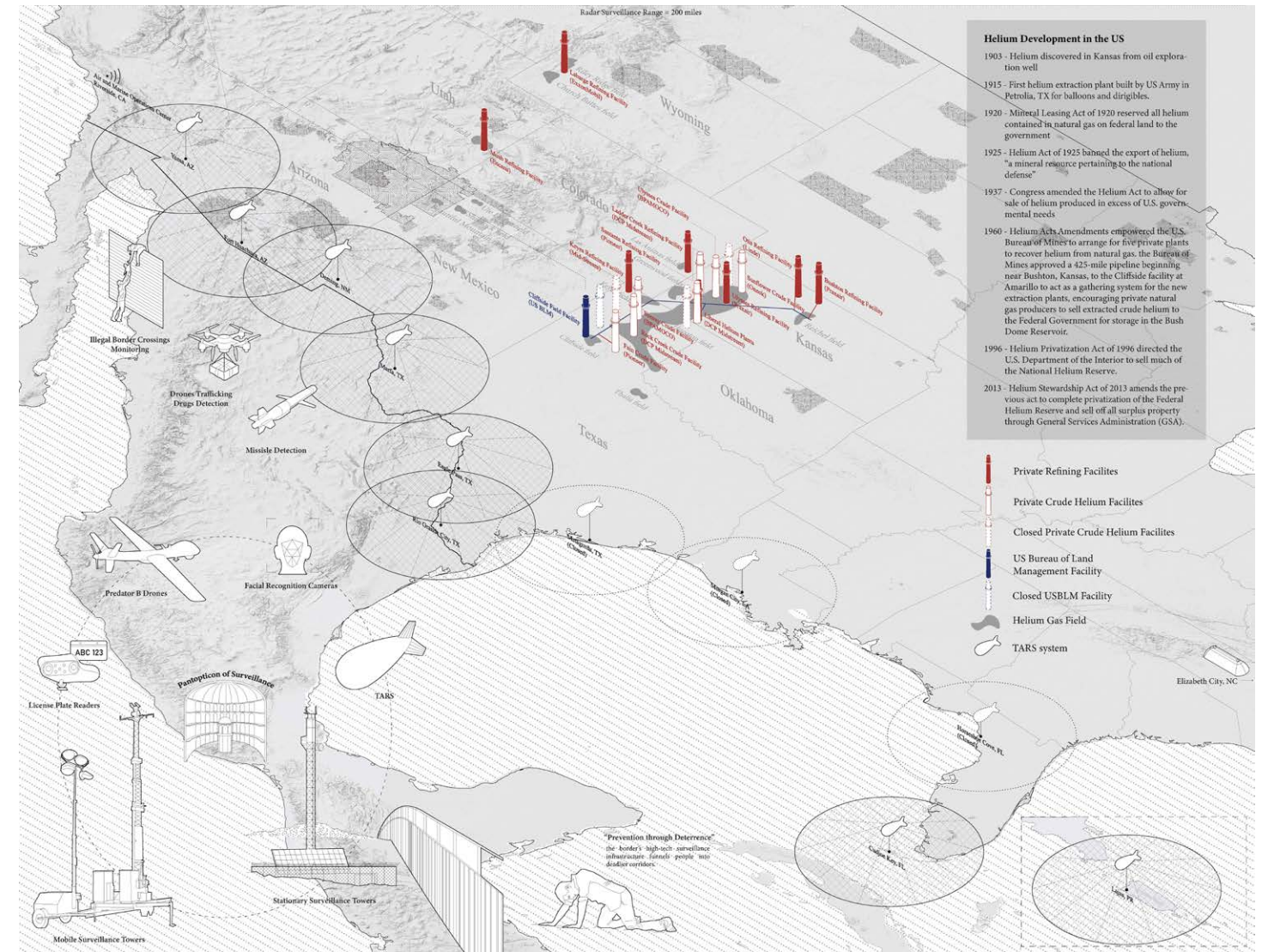
The development of aerial surveillance in the US was tied to warfare where government funding allowed for advancement in technology as a way to spy discreetly but also to show power as a nation-state. Around World War II, blimps became a key player in the war, using gasses lighter than air to float airships in the sky. It began with using hydrogen but due to its volatile nature, the discovery of helium changed the nature of floating surveillance. These technologies that were used to spy on enemy territory began to be used domestically in the US starting with the War on Drugs in 1971. One particular surveillance equipment was the Tethered Aerostat Radar System (TARS) which are helium-filled fabric balloons that can detect low-flying aircrafts often used for drug trafficking. They were placed across the US-Mexico border and their existence in the sky became a constant reminder of being watched.



HELIUM + TARS BALLOON DETAILS

Helium is the second-most abundant element in the universe but due to it being lighter than air, they escape the Earth's atmosphere, making it relatively scarce on Earth. Helium can be found from radioactive decay of uranium and thorium in the Earth's crust within pockets of natural gas. This process, while ongoing, takes many millenia making helium essentially a non-renewable resource. For many years, extraction facilities in the US were the principal source of helium worldwide. The US government recognized the element's potential and placed it under government control, claiming it is "a mineral resource pertaining to the national defense." In 1962, the Bureau of Mines constructed a 425-mile pipeline from Amarillo, Texas to Bushton Kansas to connect a series of private and public extraction plants to the federally run Cliffside facility. The helium extracted along the pipeline would be placed in storage in the Bush Dome Reservoir, a natural geologic gas storage formation where helium can be held.

Helium is a volatile market due to the limited number of gas fields that contain enough helium to be economically viable to extract. There are opportunities for finding more gas fields that contain helium but local residents are hesitant due to the environmental impacts of fracking to extract the gas. There was a movement by the Navajo Oil and Gas Company to seek for more sources in the Navajo land but the residents protested in order to protect their natural resources.



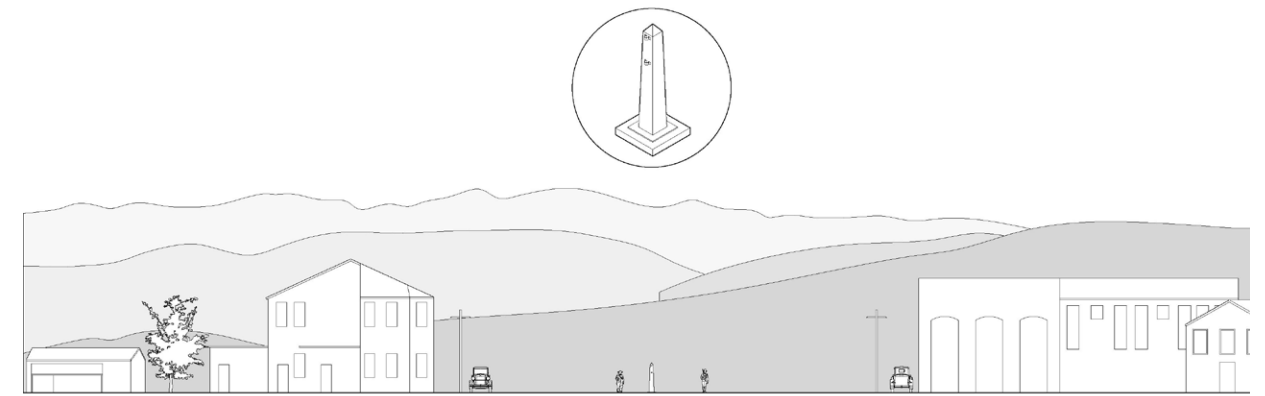
HELIUM + TARS BALLOON LOCATIONS



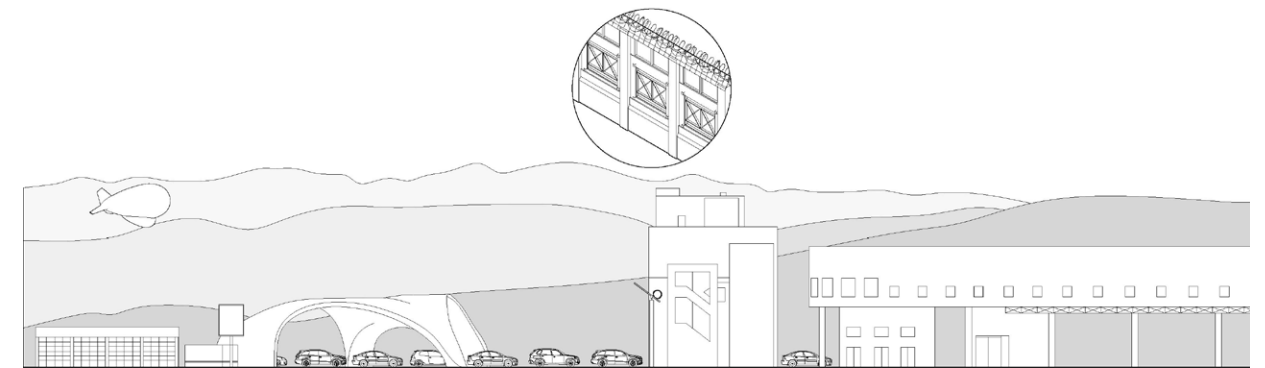
SPECULATIVE COLLAGE

Ambos Nogales is the first location of a border wall between US and Mexico but the two cities continued to grow mutually dependent on each other. In the city-state future, the border wall is deconstructed and where it used to divide and exclude, it becomes a connective corridor for humans and nonhumans. The extreme weather conditions in the future demand for better solar protection for residents. The formerly oppressive surveillance infrastructure is reclaimed to support shading structures made of recycled fabric from TARS balloons filled with helium. The device also become mobile to follow the dismantling process of the border wall to provide shading and cooling for workers as well as becoming a marker in the sky for the progress of the border wall being removed.

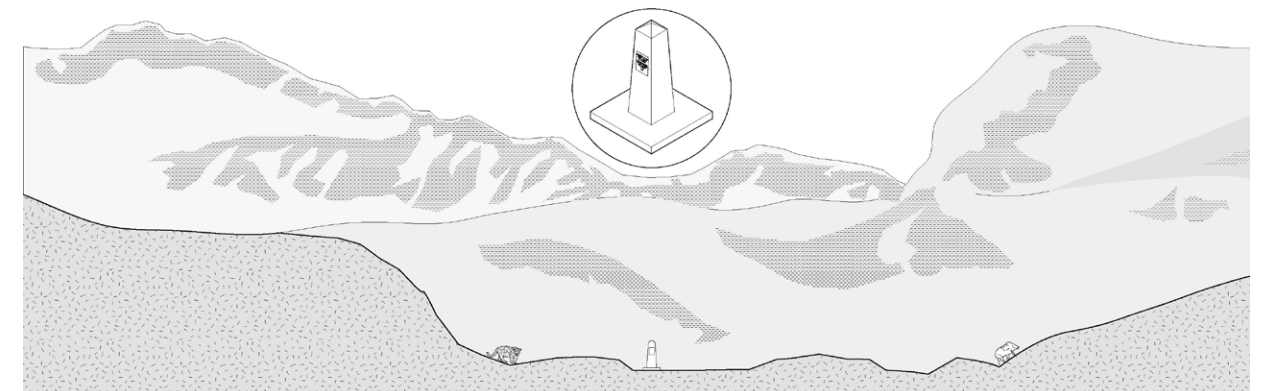
US-Mexico Border Condition



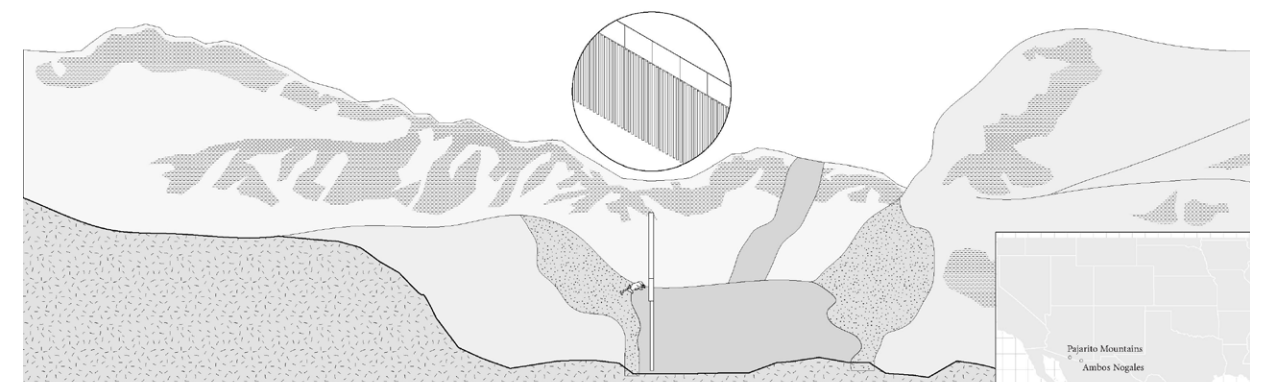
Ambos Nogales, 1918



Ambos Nogales, 2023



Pajarito Mountains, 2020



Pajarito Mountains, 2023



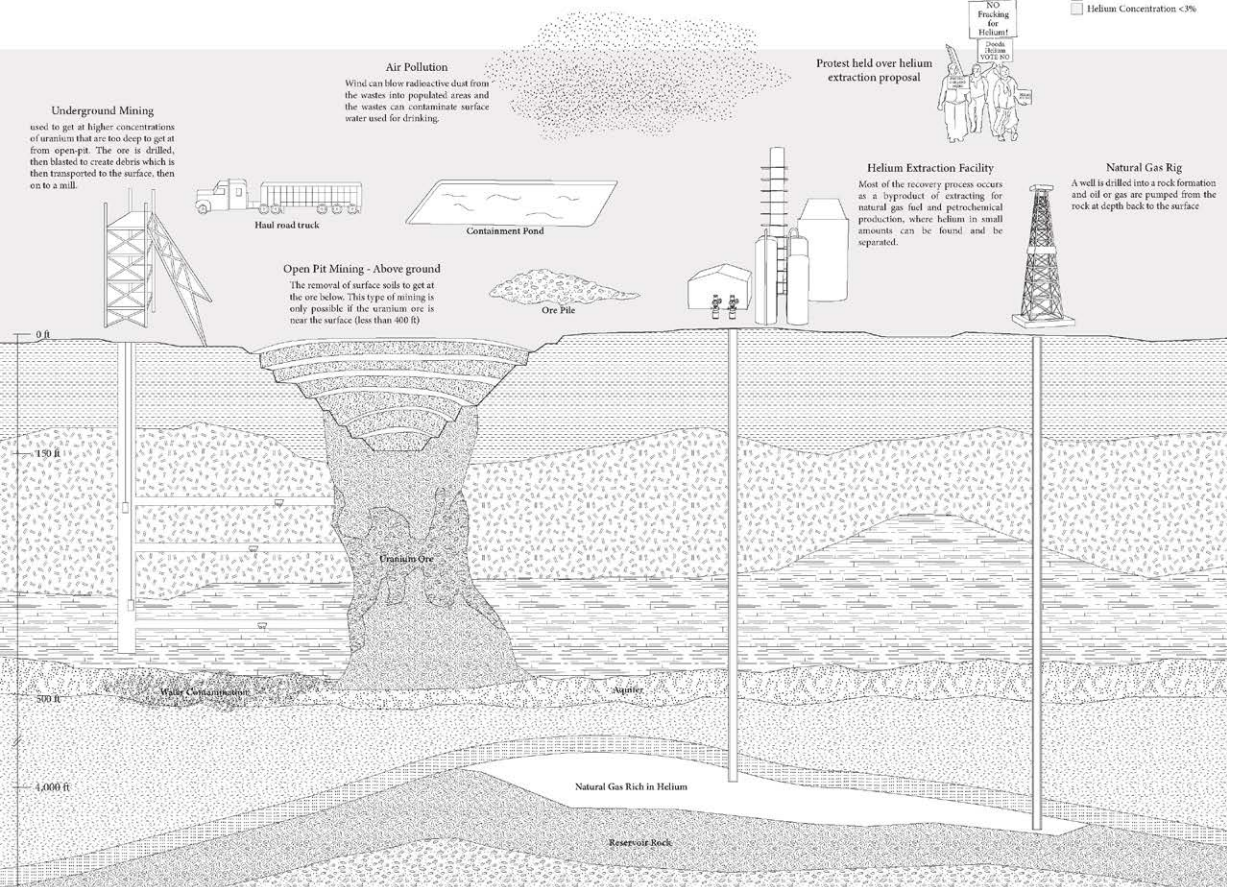
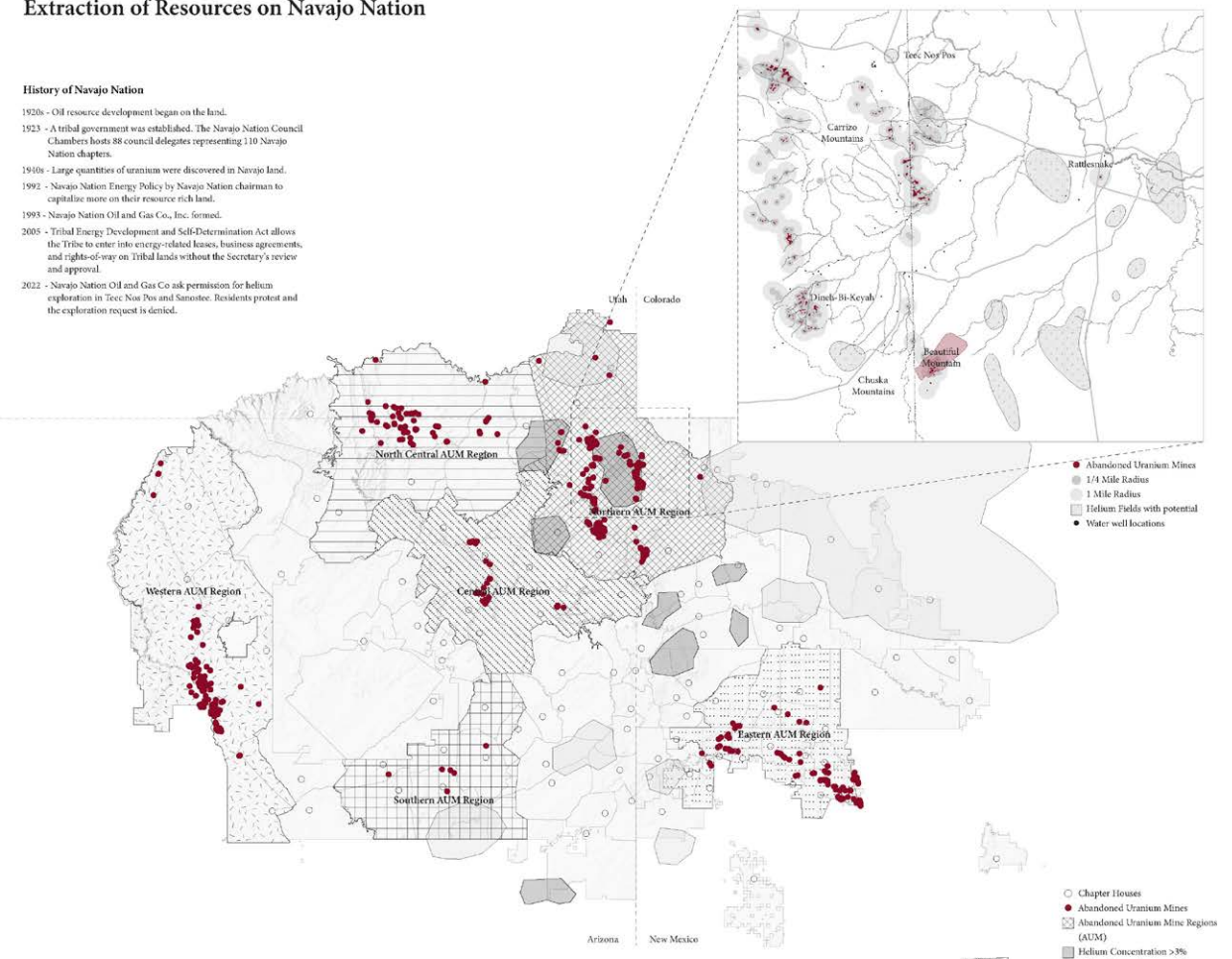
SPECULATIVE COLLAGE

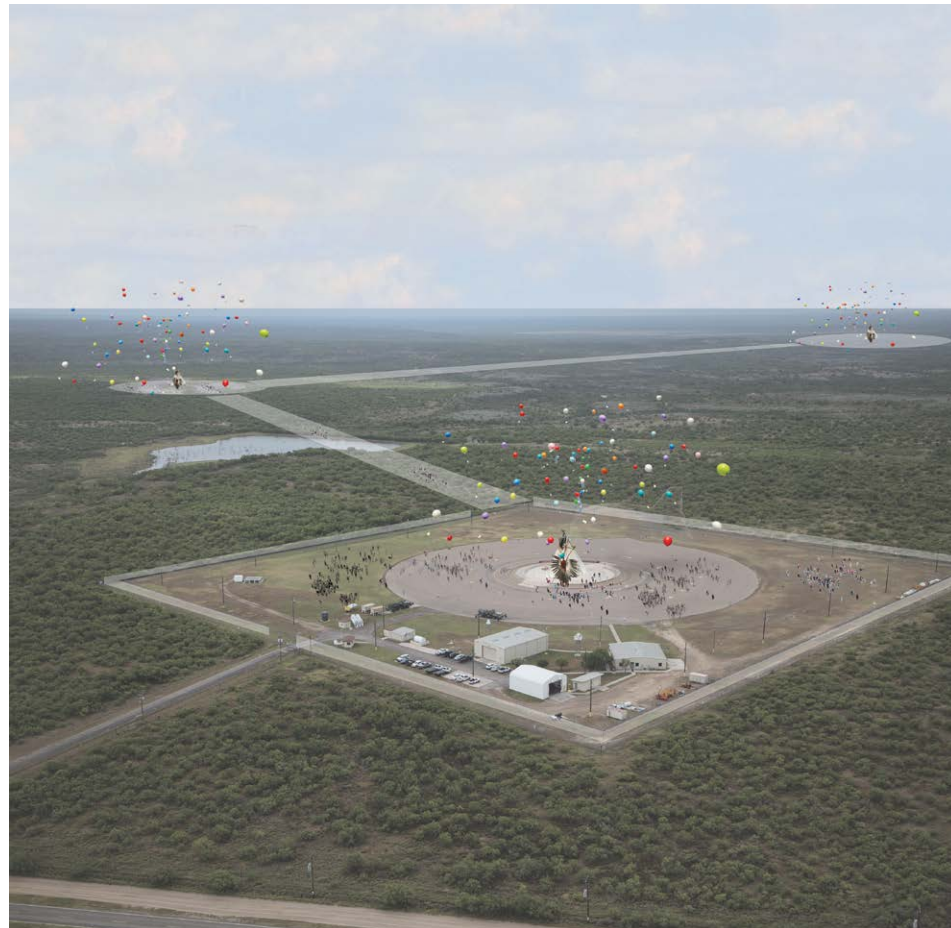
The future of the Navajo Nation becomes intertwined with helium as they enter a charter that grants them the ownership of all helium fields in North America. The future sales of helium becomes a form of reparations for the Navajo who have had their lands extensively extracted for rich natural resources by outsiders. In return, they promise stewardship to helium in order to manage extraction levels to ensure a supply for the long-term future. New helium plants will be built over abandoned uranium mines to take advantage of its unproductive vacant lands and to alleviate some air pollution by erosion of radioactive dust. The perimeters of the radioactive zones will be marked by light towers that glow with helium to warn people of the dangers of pollution.

Extraction of Resources on Navajo Nation

History of Navajo Nation

- 1926 - Oil resource development began on the land.
- 1923 - A tribal government was established. The Navajo Nation Council Chambers hosts 88 council delegates representing 110 Navajo Nation chapters.
- 1948 - Large quantities of uranium were discovered in Navajo land.
- 1992 - Navajo Nation Energy Policy by Navajo Nation chairman to capitalize more on their resource rich land.
- 1995 - Navajo Nation Oil and Gas Co., Inc. formed.
- 2005 - Tribal Energy Development and Self-Determination Act allows the Tribe to enter into energy-related leases, business agreements, and rights-of-way on Tribal lands without the Secretary's review and approval.
- 2022 - Navajo Nation Oil and Gas Co ask permission for helium exploration in Teec Noo Poo and Sanostee. Residents protest and the exploration request is denied.





SPECULATIVE COLLAGE

The Kickapoo tribe who have a history of forced migration are able to reclaim their migratory lifestyle into the future using helium filled structures as additional inhabitable space for their expanded tribe. While they have always had the ability to migrate across the international border with little regard for political boundaries, these restrictions become less obstructive in the future where borders and boundaries no longer exist. The tribe is able to reunite with their distant tribes in Kansas and Oklahoma to farm and return to their sacred home in El Nacimiento Mexico for their New Year festivities and traditional ceremonies.

History of Kickapoo Migration

Ki-wika-pa-wa means "He stands here and there"

Most of the Texas/Mexico Kickapoo tribe leave each April to work as migrant workers, returning to their village in the late fall.

They have always had a semi-nomadic lifestyle that allowed them to have a subsistence lifestyle. They were primarily hunters and gatherers.

Each year many Kickapoo families from the Texas/ Mexico seek agricultural work with farmers in the northern states.

**8 FAM 302.9
SPECIAL CITIZENSHIP PROVISIONS UNDER THE KICKAPOO ACT OF 1983
8 FAM 302.9-1 INTRODUCTION**
a. The Kickapoo Act of 1983 (Public Law 97-429) enabled Mexico-born tribal members of the Kickapoo Tribe of Oklahoma and the Kickapoo Traditional Tribe of Texas to acquire U.S. citizenship through a specialized naturalization process and/or free passage of the borders.

The Indian Removal Act
The Indian Removal Act was signed into law by President Andrew Jackson on May 28, 1830, authorizing the president to grant unsettled lands west of the Mississippi in exchange for Indian lands within existing state borders.

Kickapoo migrating to Mexico, Alameda Canyon, 1910

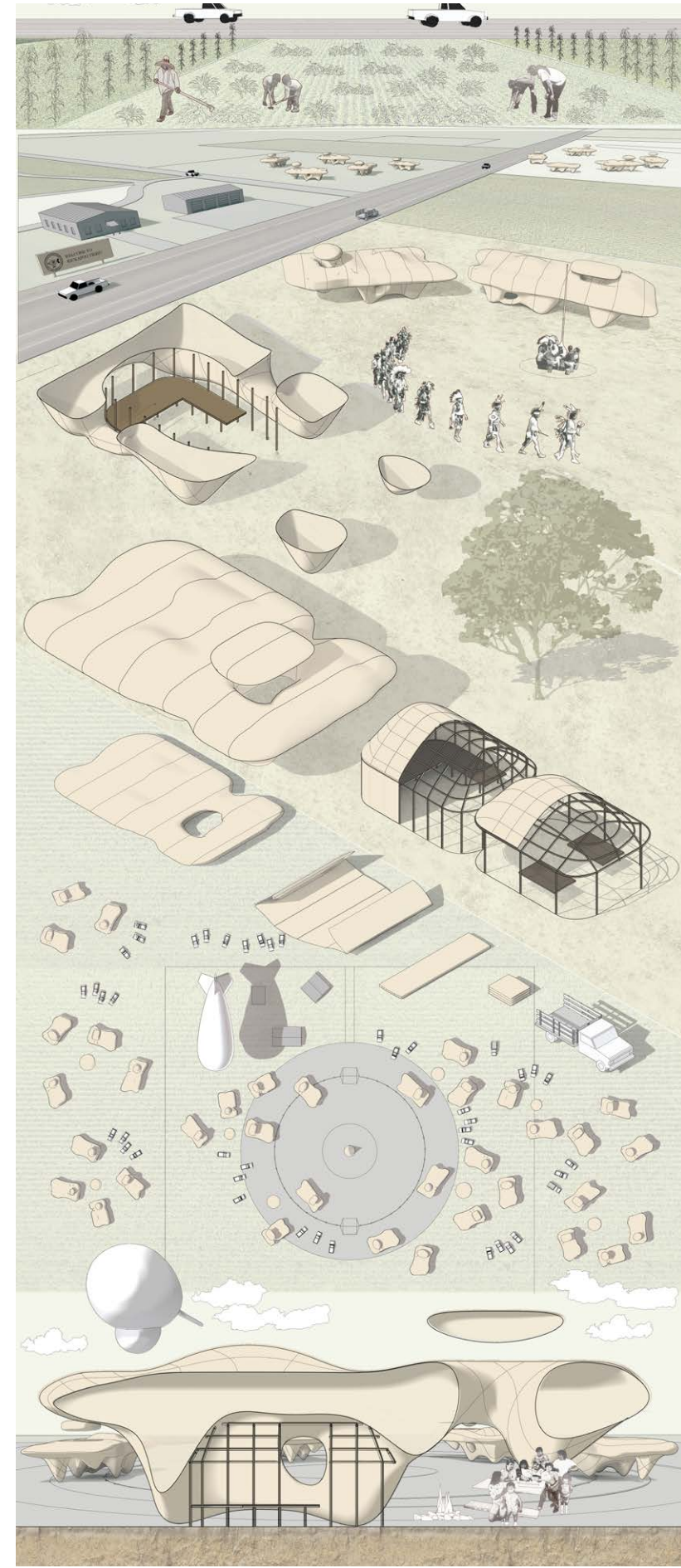
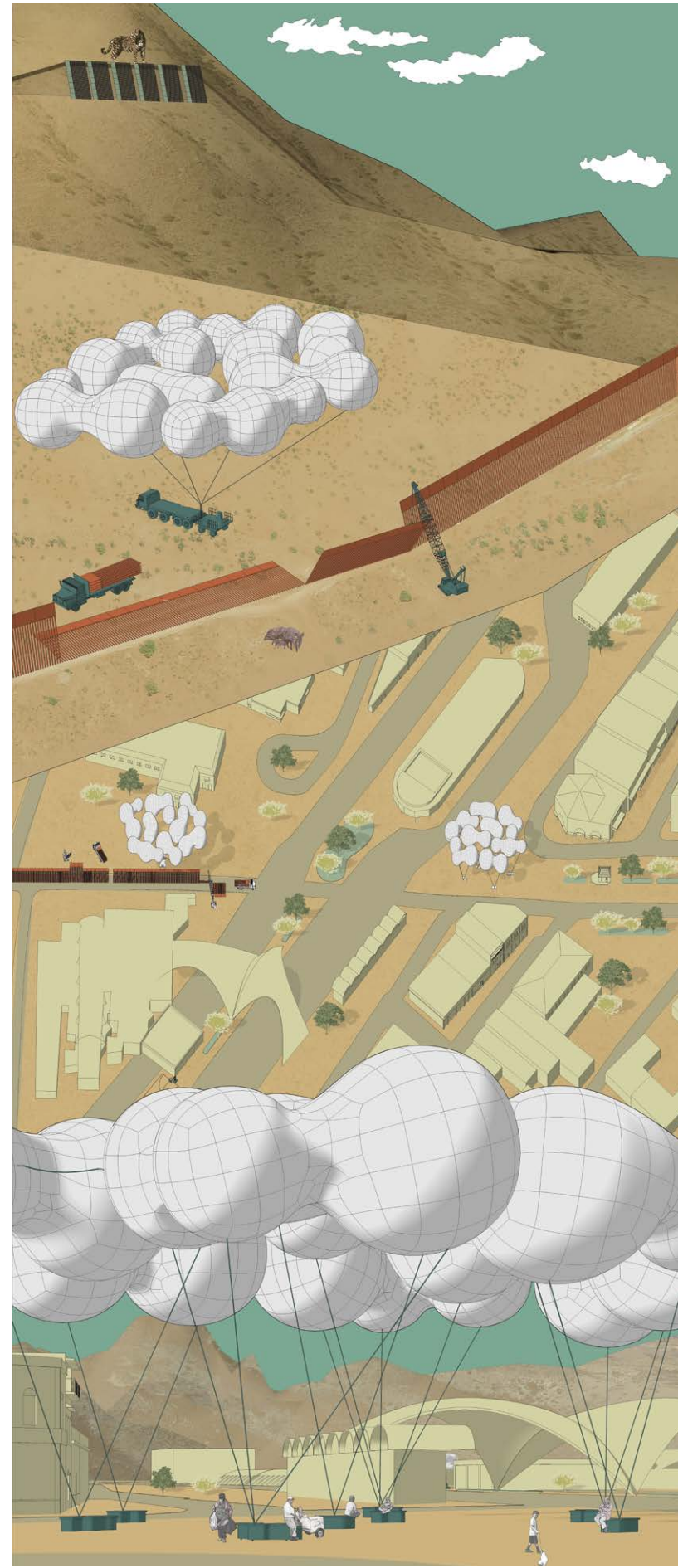
Kickapoo tribal members negotiated with the US Committee on Interior and Insular Affairs to purchase land in Eagle Pass, TX in 1981.

Between 1940s and 1980s, the Kickapoo occupied land underneath the Intercession Bridge in Eagle Pass, TX. They set up wildpans on the flood plain of the Rio Grande, 1987.

The Kickapoo continue to build traditional structures as part of their rituals, even if they own modern homes.

17th Century
18th Century
19th Century
20th Century

Kickapoo Villages





03 RESEARCH

STUDIO: ADVANCED VI
YEAR: SPRING 2024
CRITIC: EMANUEL ADMASSU
COLLABORATOR: PREETHI GANESH

How can restitution unfold in the city of London while addressing the colonial exploitation that has allowed for the development of the metropole?

This project addresses restitution and reparation through the unfolding of the historical narrative of London's role as the epicenter of gold trade and colonial exploitation. While the British were extracting gold from its colonies and other conquered lands, they were constructing their metropole of London. The height of colonialism coinciding with the Industrial Revolution witnessed the rise of railway infrastructure, built on top of brick viaducts that were connected across England.

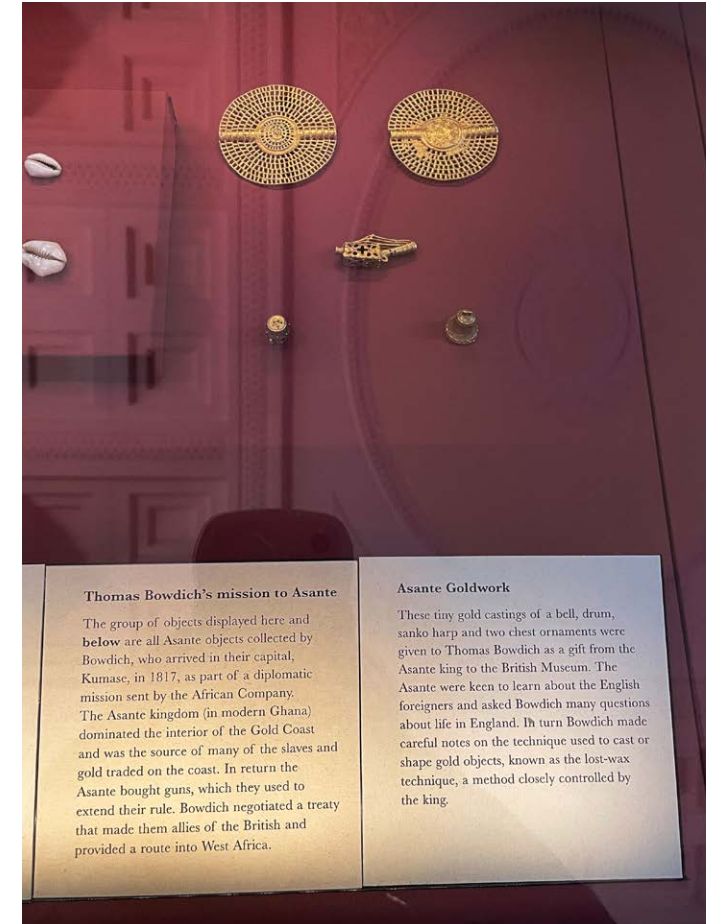
As part of the development of the metropole, the British Museum is benefitting from the exploitation of far away lands by acquiring looted objects from these places. They continue to accrue profits today using the objects they stole and exoticized to further create an imbalance between the British and their former colonies.

This studio began with a thorough analysis of an object from the British Museum and a site in London to begin to form our ideas around restitution. We acknowledge that restitution cannot occur without reparations so our intervention embodies this principle by addressing the imbalance perpetuated by the looting of cultural objects alongside extraction of wealth from former colonies.



CONCEPTUAL COLLAGE

London has been the epicenter of the gold trade throughout history. The gold rush of 1697 in Brazil brought gold into London and since then they serviced gold to the European market. They established a standard for gold bars called Good Delivery which specifies the weight, purity, and physical appearance and only refineries approved by the Good Delivery list are allowed to produce gold bars that enter the London market. Underneath the city today, there are secured vault spaces where the Bank of England holds bars for its own funds as well as other countries. The space amounts to 30,000 sq ft of space and holds \$200 billion worth of gold bars.



In the Gold Coast or current day nation-state Ghana, there has been a natural rich supply of gold which decorated the royalty of the Ashanti Kingdom. The British sought control for this area because of its potential for lucrative trade in gold and slavery. The Asante resisted the European infiltrations but eventually the British attack in 1874 resulted in their city being burned down and the Asante having to pay an indemnity of 50,000 ounces of gold for the expenses caused to the Queen for the war. Before the city was burned, the British Punitive Expedition Force ransacked the palace and stole every treasure they could find, which comprises many of the gold regalia displayed in the British Museum and V&A today.

Thomas Bowdich's mission to Asante

The group of objects displayed here and below are all Asante objects collected by Bowdich, who arrived in their capital, Kumase, in 1817, as part of a diplomatic mission sent by the African Company. The Asante kingdom (in modern Ghana) dominated the interior of the Gold Coast and was the source of many of the slaves and gold traded on the coast. In return the Asante bought guns, which they used to extend their rule. Bowdich negotiated a treaty that made them allies of the British and provided a route into West Africa.

Asante Goldwork

These tiny gold castings of a bell, drum, sanko harp and two chest ornaments were given to Thomas Bowdich as a gift from the Asante king to the British Museum. The Asante were keen to learn about the English foreigners and asked Bowdich many questions about life in England. In turn Bowdich made careful notes on the technique used to cast or shape gold objects, known as the lost-wax technique, a method closely controlled by the king.





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ABSTRACT MODEL - SAND CLOCK



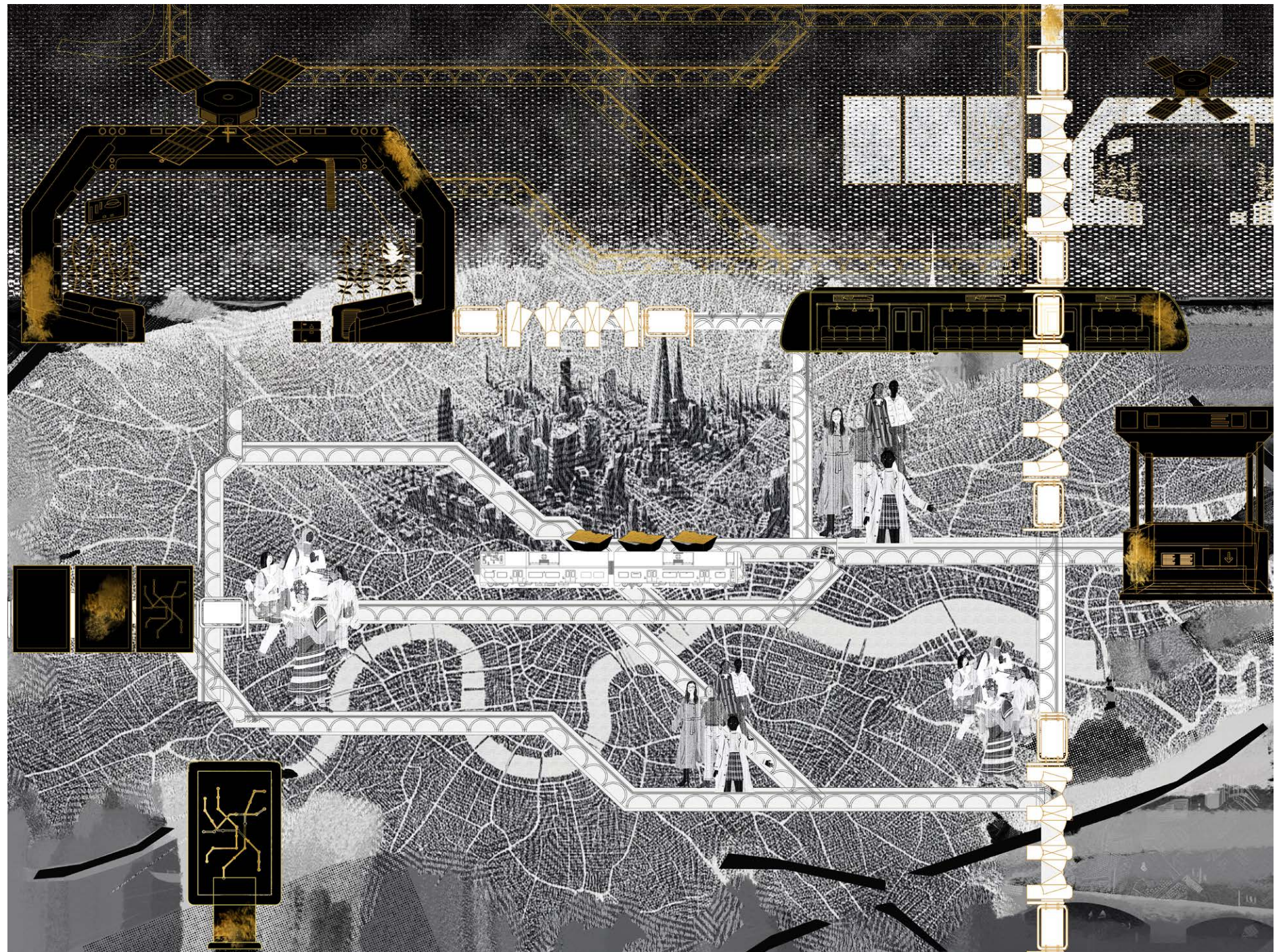
ABSTRACT MODEL - MELTED ASANTE GOLD PLATE

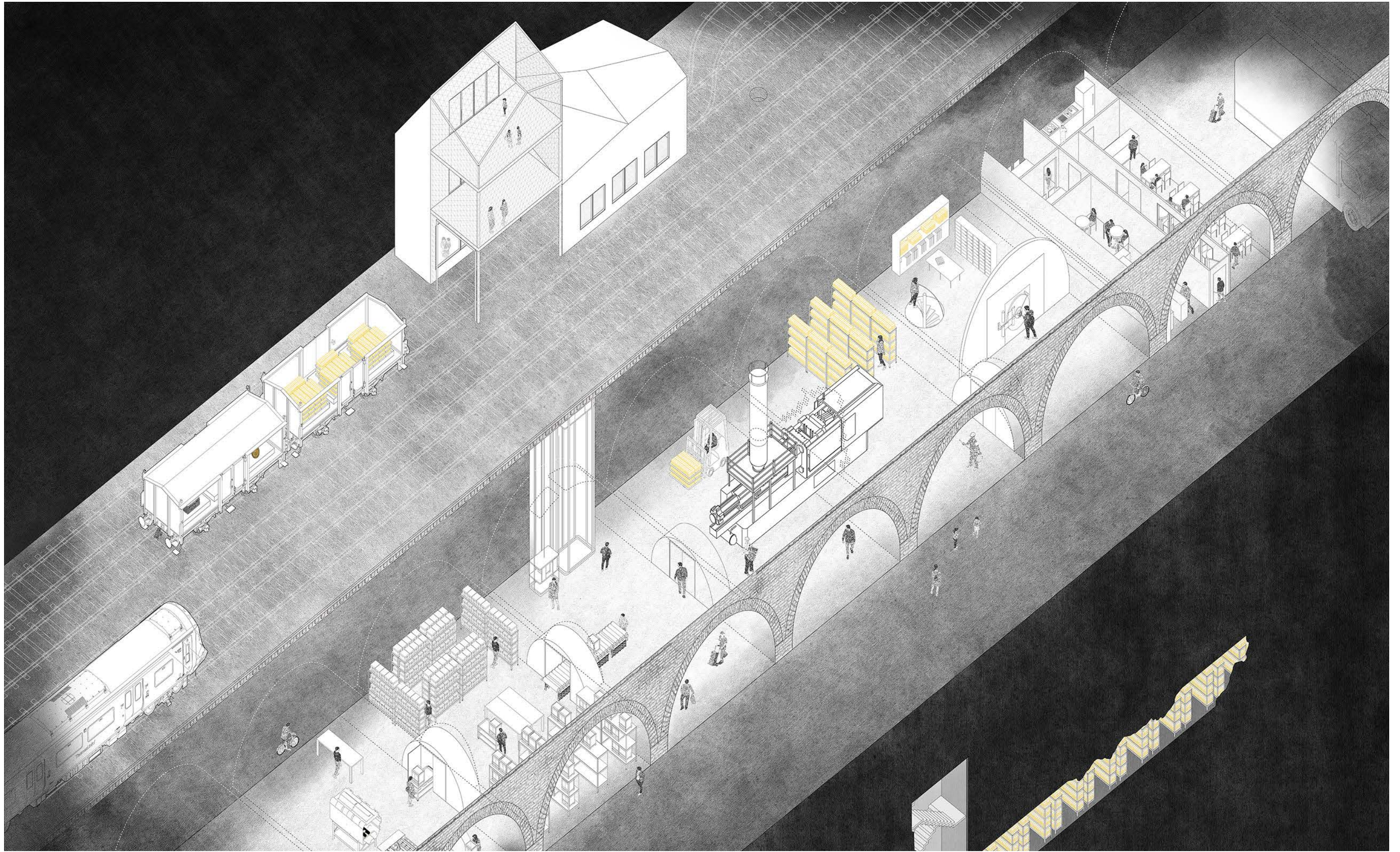
The intervention imagines the repurposing of viaducts - the symbol of the British empire - into spaces for restitution and a network for reconciliation. Within the adjacent archways, the spaces serve as restitution and reparation processing centers. The reparation center manifests as a gold refinery factory which extracts the gold from the Bank of England underground vault to be used as reparations. The objects that have been processed with restitution and its related reparation to the origin will be raised above to the train level to be transported out of London. To culturally de-value the British museum, the procession of restitution will occur as a public spectacle where the objects are displayed on the trains that allow for the objects to be seen for free outside of the museum walls. It invites viewers to reflect and question the cultural authority of such institutions. While infrastructure has often represented the development of empire due to colonial legacy and exploitation of distant lands, our project overturns that association through speculative forms of reparation to accompany restitution.

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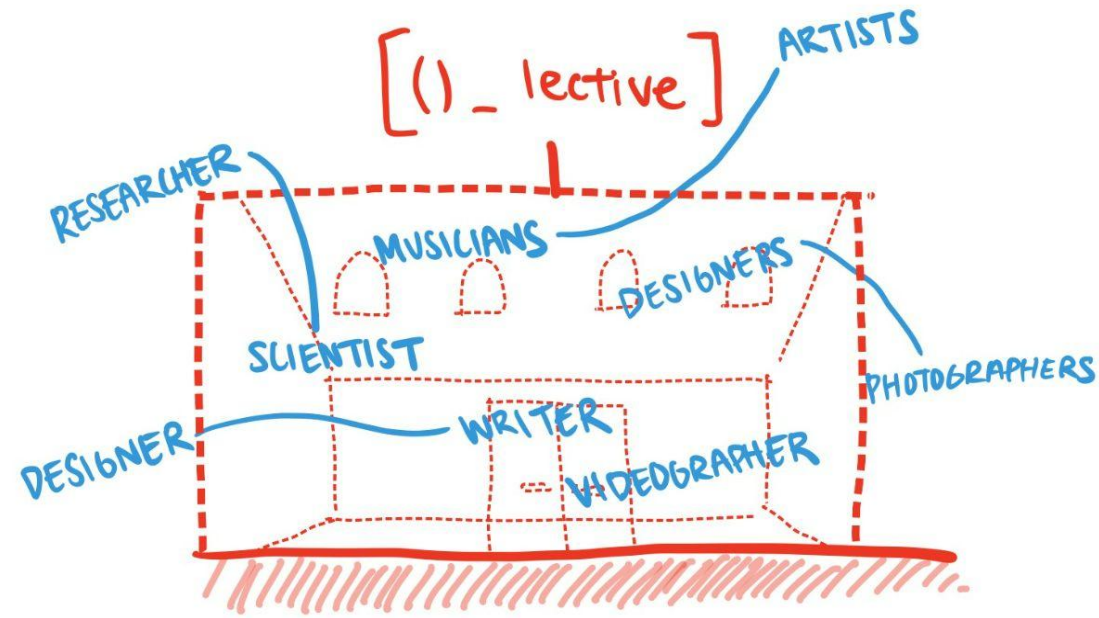
ABSTRACT MODEL - GOLD BRICK WALL





04 RESEARCH

COURSE: UNORTHODOX
ARCHITECTURAL PRACTICES
YEAR: SPRING 2023
CRITIC: JUAN HERREROS
COLLABORATOR: STEVEN GAN



BEYOND A TYPICAL OFFICE, WE FUNCTION UNDER
COLLECTIVE GOVERNANCE.

NO CONTRACTS, NO SALARY AGREEMENTS.

ONE SIMPLY CHOOSES TO BE A PART OF THE collective ECOSYSTEM.

EVERYONE IS ENCOURAGED TO LIVE / WORK / SHARE
WITH EACH OTHER FOR THE COMMON GOOD.

ROOTED TO A LOCAL RURAL TOWN.

SEEKING TO REVITALIZE SPACES, COMMUNITIES, CREATIVE INFRASTRUCTURE.

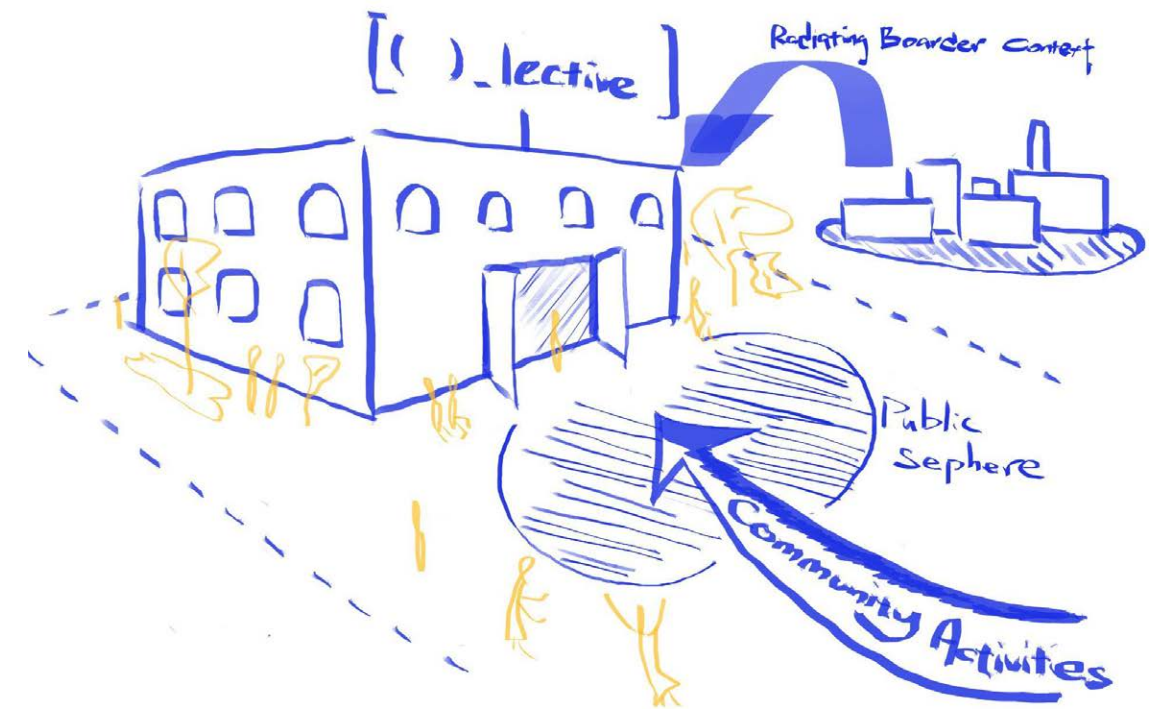
How do you design an office that values the circular economy of design practice while being non-hierarchical and creating a sense of collective?

Through a series of research and conversations, this class allowed us to reflect on what kind of practitioner we would like to become and develop a business proposal for our hypothetical office. My partner Steven and I wanted to push the boundaries of a non-hierarchical office by exploring how to create an ecosystem within the business. Tasks and responsibilities are self assigned so employees must be passionate and self-disciplined in order for the office to function smoothly. We determined that in order to make this work, we would need to create a new "currency" for the office where revenue from projects go into a public pool that everyone manages together. The space, food, office resources are all shared. The office occupies a building with rentable spaces that becomes a source of income for the collective. Other creatives are encouraged to rent the space to encourage cross-breeding of knowledge to happen across the building.

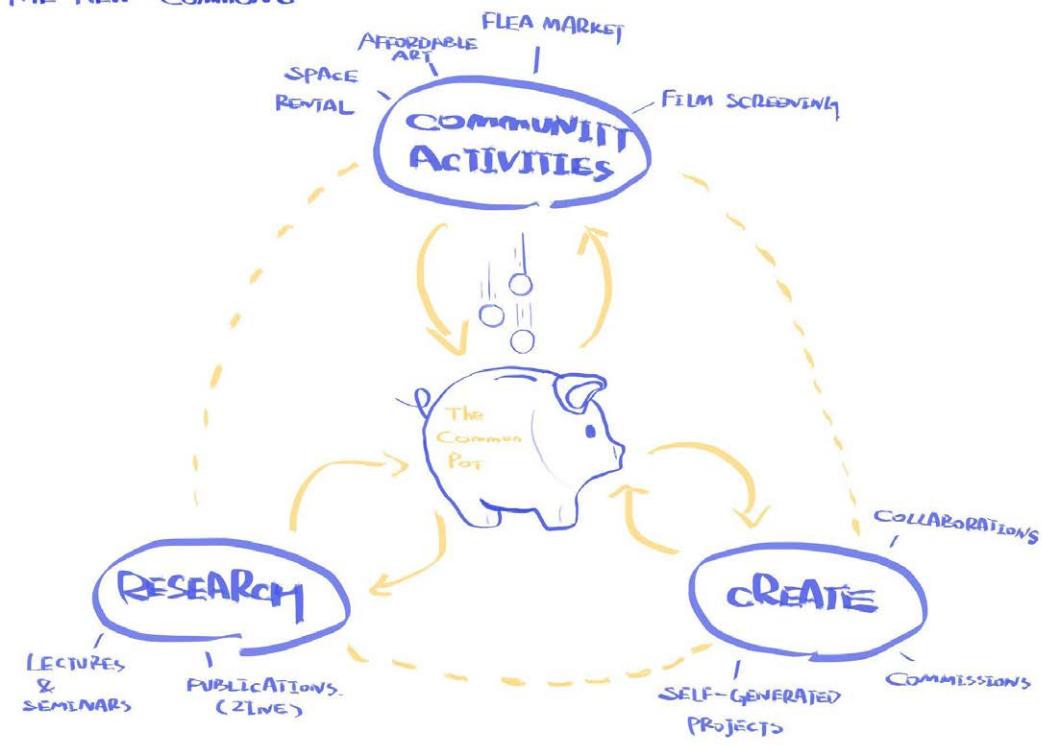
The office also prioritizes being connected to the local community and organizations. We chose Newburgh, NY as a potential post-industrial town that we could engage in over time and at different scales. The office will also host and organize events such as markets, film screenings, fundraising, etc. to encourage the community to get to know us and engage us in community-building projects. A part of our ethos is our material ecology where we emphasize reusing and recycling of materials to build. We believe this will give us a framework to execute our projects in a sustainable and methodological way.



RECLAIMING THE POST-INDUSTRIAL LANDSCAPE



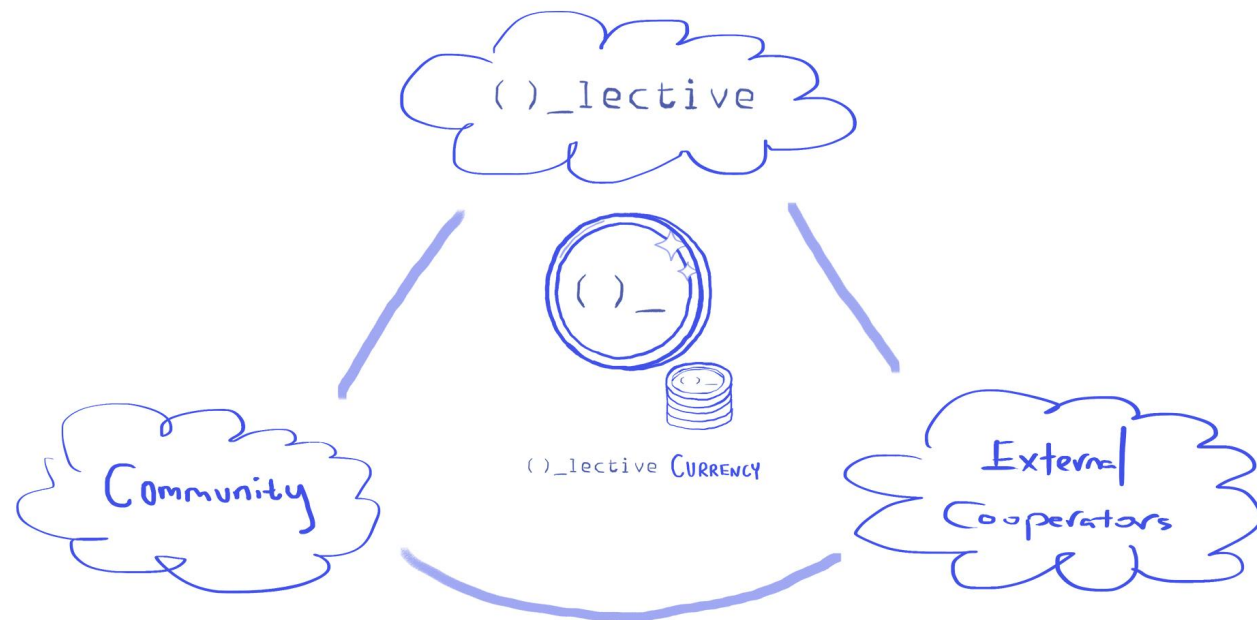
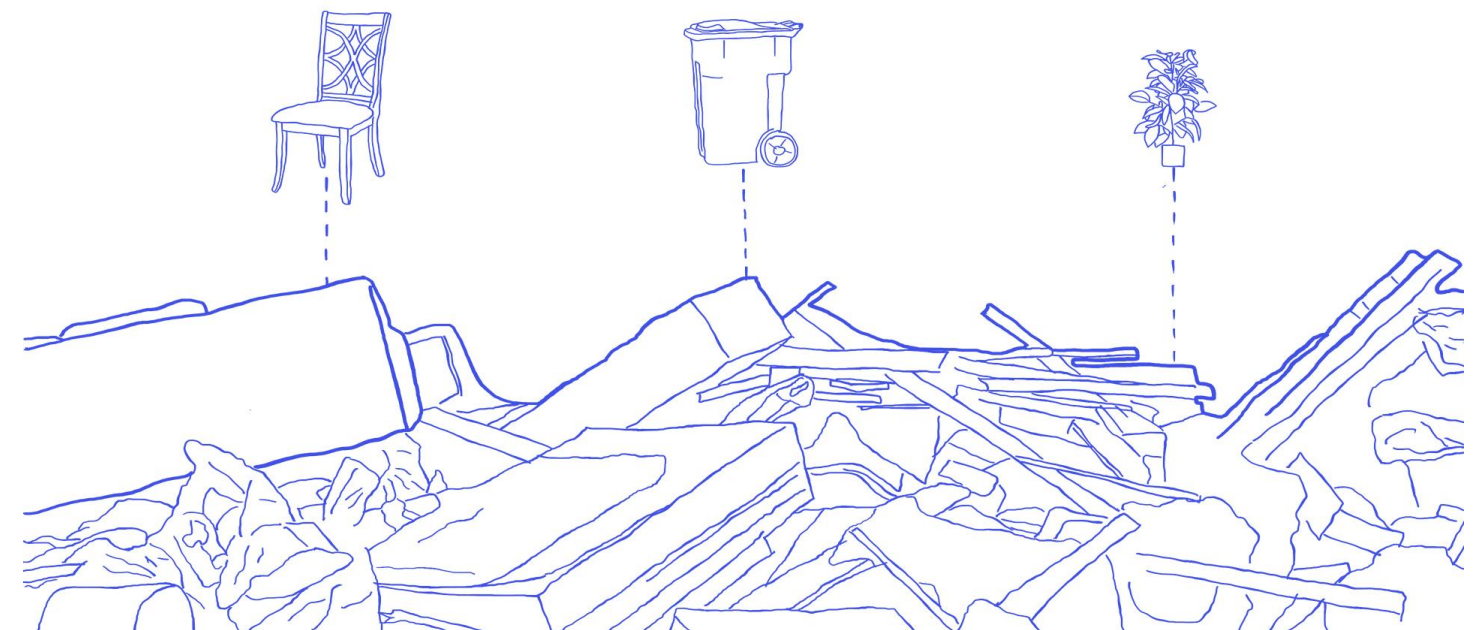
THE NEW "COMMONS"



REUSE OF EXISTING MATERIAL.



REINVENTING STREETSCAPE





05 RESEARCH

COURSE: BODIES AND PUBLIC SPACE
YEAR: FALL 2023
CRITIC: BRYONY ROBERTS
COLLABORATORS: KELVIN LEE, RILKA LI, VINCENT YANG

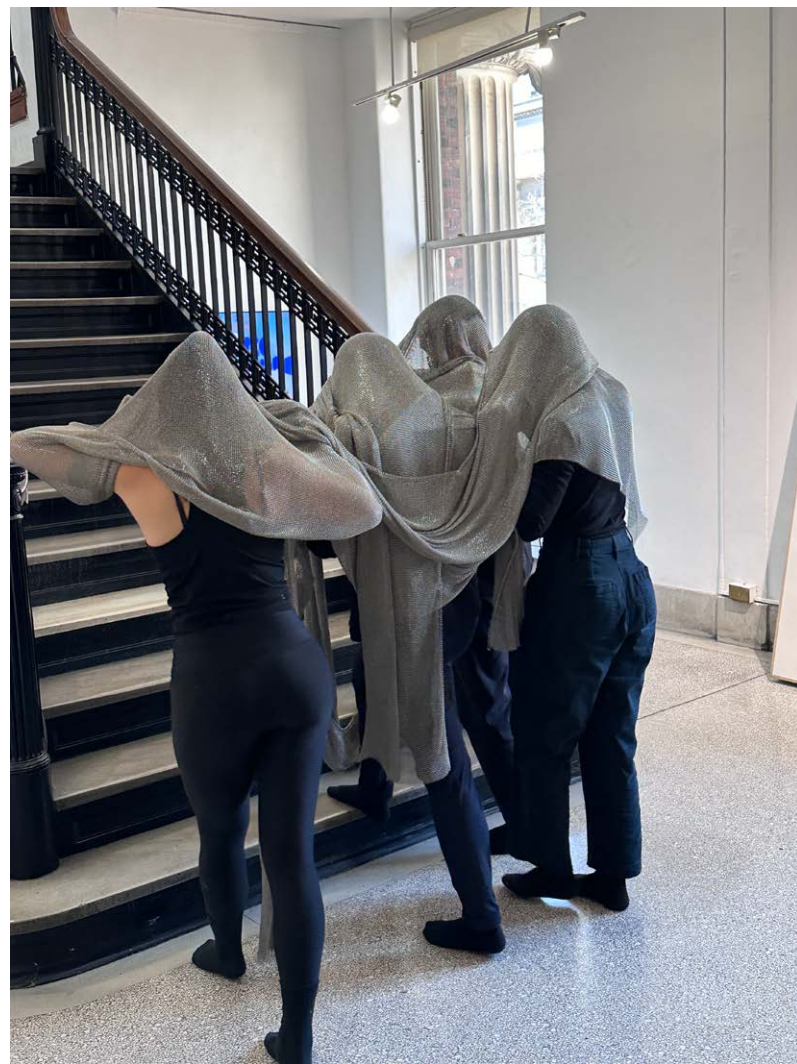
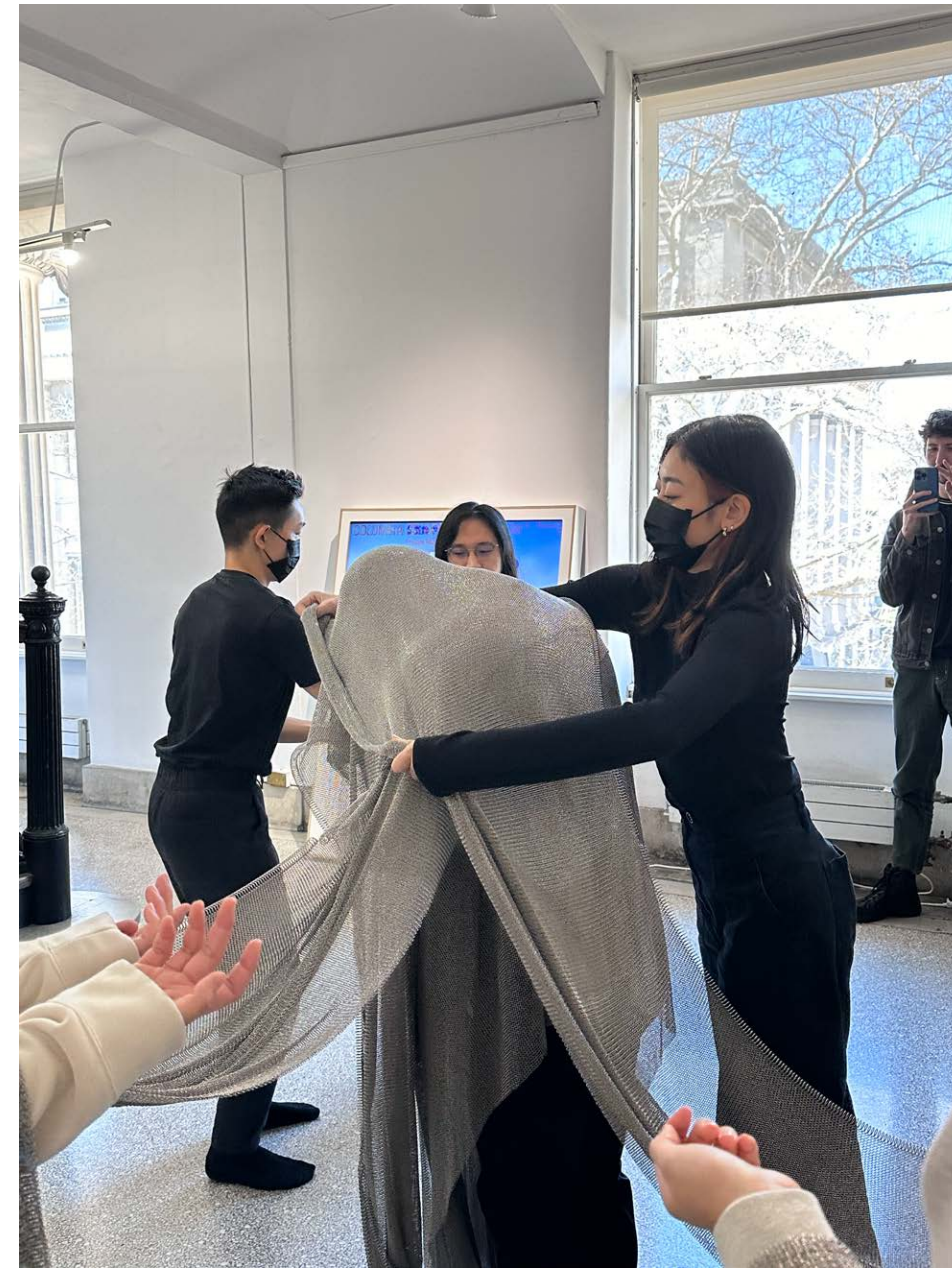
How do you perform “affect” through the relationship of bodies, fabric, and space?

This history and theory course had an optional performance aspect to be able to embody and experience the various topics covered throughout the semester. My collaborators and I chose to execute a group performance that took place in the central staircase of Avery Hall that speaks to affective bodies. The performance was loosely choreographed and left space for interaction and reactions in order to visualize the chainmail fabric as a visual representation of the relationship between bodies. By visualizing affect, the intent of the performance was for the participants to be disoriented and get a new reading and sensing of their bodies within a space that we are all familiar with.

It was important for the piece to feature multiple bodies from the performing bodies to the participating bodies and observing bodies. This range of interaction speaks to the level of belonging, as according to the Affect Theory Reader.

“affect marks a body’s belonging to a world or encounters or; a world’s belonging to a body of encounters but also, in non-belonging, through all those far sadder (de)compositions of mutual in-compossibilities. Always there are ambiguous or “mixed” encounters that impinge and extrude for worse and for better, but (most usually) in-between.”

– Melissa Gregg and Gregory J. Seigworth, “An Introduction to Shimmers,” In The Affect Theory Reader





06 RESEARCH

COURSE: SPECULATIVE CITY
YEAR: FALL 2023
CRITIC: DAVID E. MOON

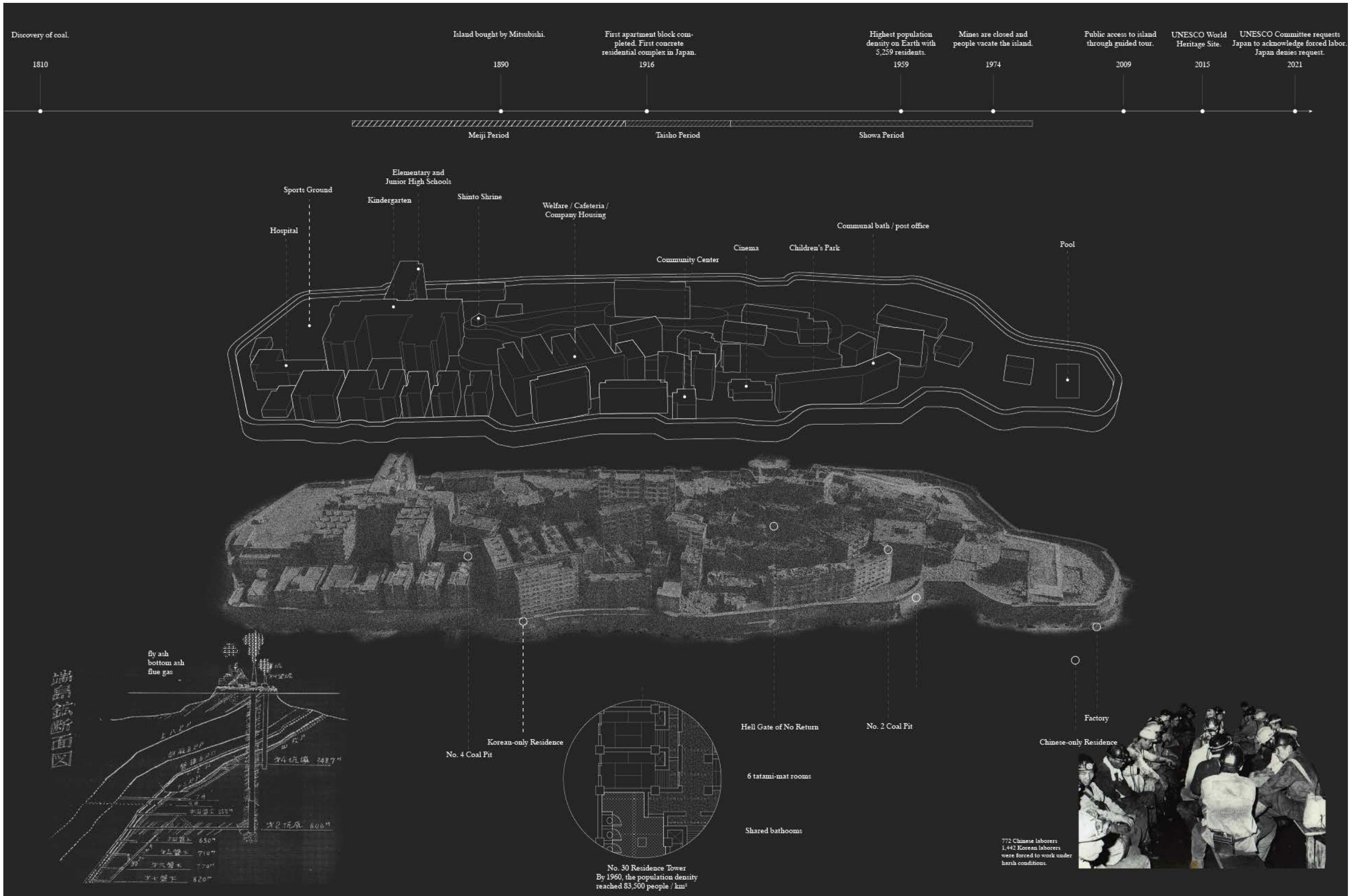
GUNKANJIMA

What are the dangers of creating an aesthetic of abandonment to create constructed narratives that fail to acknowledge the history of colonialism and forced labor?

By looking into the speculation of abandonment, the project takes a deep historical dive into Hashima Island, also known as Gunkanjima, an abandoned island in Nagasaki, Japan. The island served as a coal mine from the late 1800s to 1974 and housed around 5,000 residents which created a build up of land that made the island look like a massive battleship. The island has been abandoned since 1974 when the mine was closed and the buildings began to deteriorate, giving an eerie yet hauntingly beautiful atmosphere that became a source of fascination for visitors. The island was registered as a UNESCO World Heritage site in 2015 as a 'Site of Japan's Meiji Industrial Revolution' but failed to acknowledge the forced labor of Koreans and Chinese workers on the island.

The island has become a site of movies and photoshoots, creating an aesthetic of abandonment removed from the authenticity of the place. Photographs by Yves Marchand and Romain Meffre express the island as nostalgic through a documentary mode of exploration following the themes of decay, impermanence, time, and ephemerality. But these images flatten the narrative of the island by showing the more fortunate lives on the island amidst the decayed but sublime nature of the abandoned architecture. These constructed narratives help Japan press forward their claim as a UNESCO World Heritage site and disregard labor exploitation.

The project was completed as a booklet with historical research, photo essay, and original drawings.





07 EXPERIMENTATION

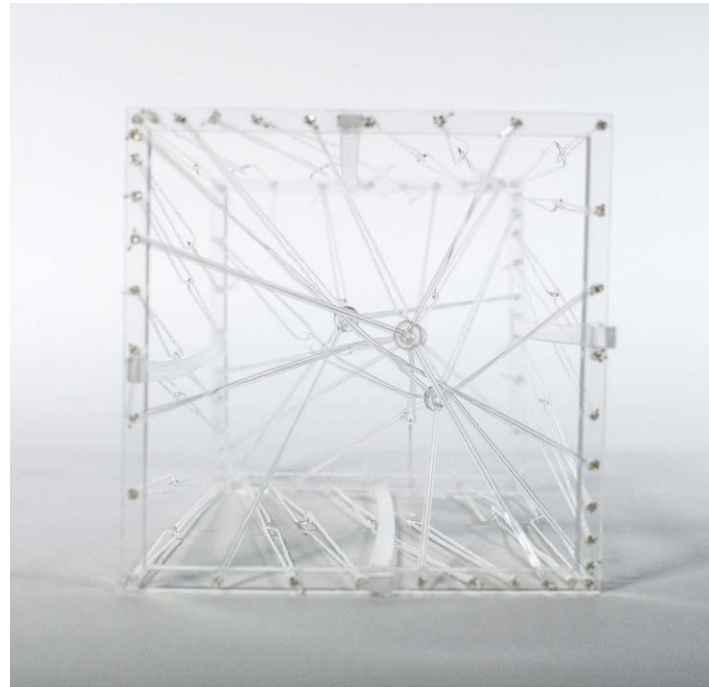
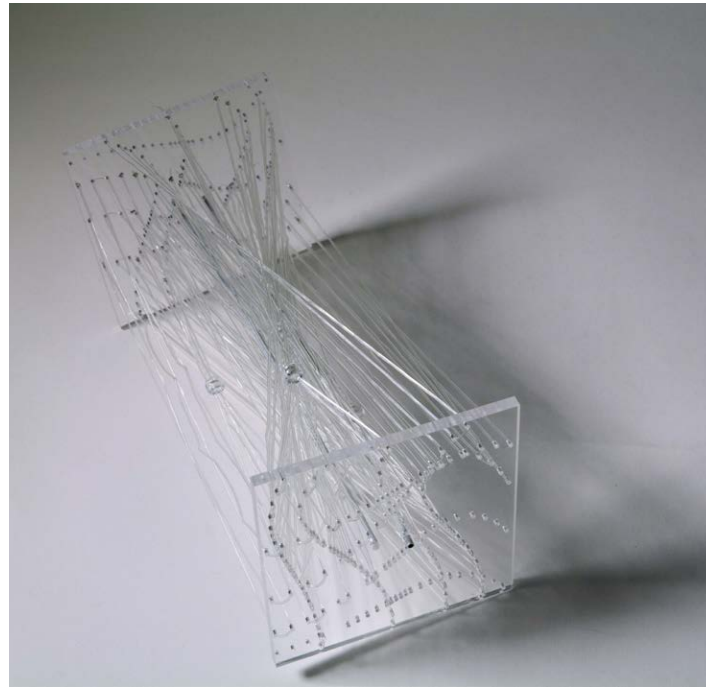
STUDIO: CORE II
YEAR: SPRING 2022
CRITIC: KARLA ROTHSTEIN
SITE: 198 FORSYTH ST, NEW YORK

LIMINAL VOIDS

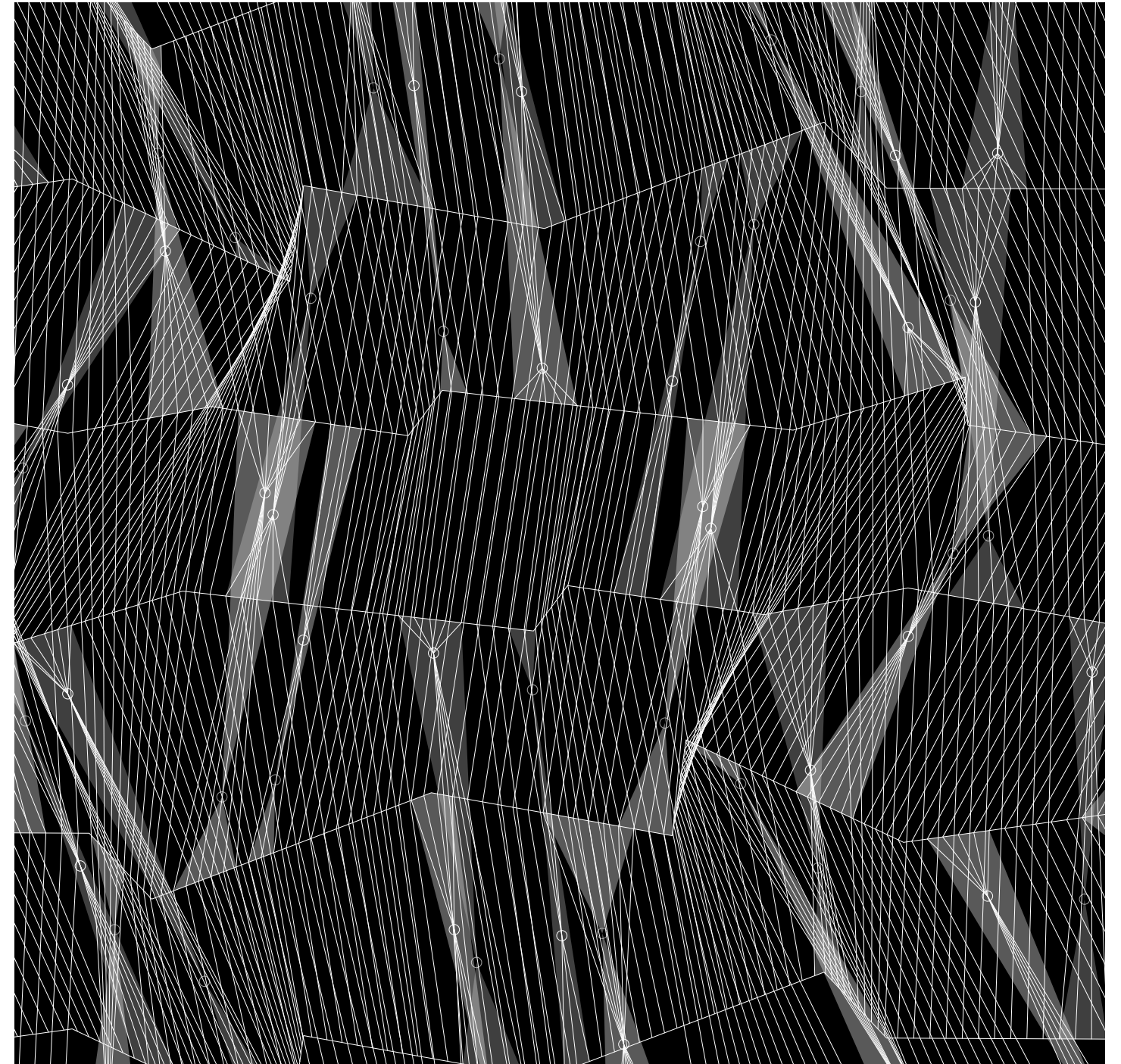
How do you design for a school where the occupants are always transient?

Education is a transitory period in one's lifetime, where a K-8 school occupies nine years of one's life. During this time, the student becomes a transient being in a school, only occupying the space from 6 to 7 hours of the day. With the occupants always at flux, what if the school embraces the transitional nature of formal education? If school is simply a vessel that you occupy from one stage of life to the next, it could become a liminal void that blurs the thresholds of time and space. Liminality can be associated with ambiguous or unsettling feelings, but they also offer opportunities to become places of introspection and reflection.

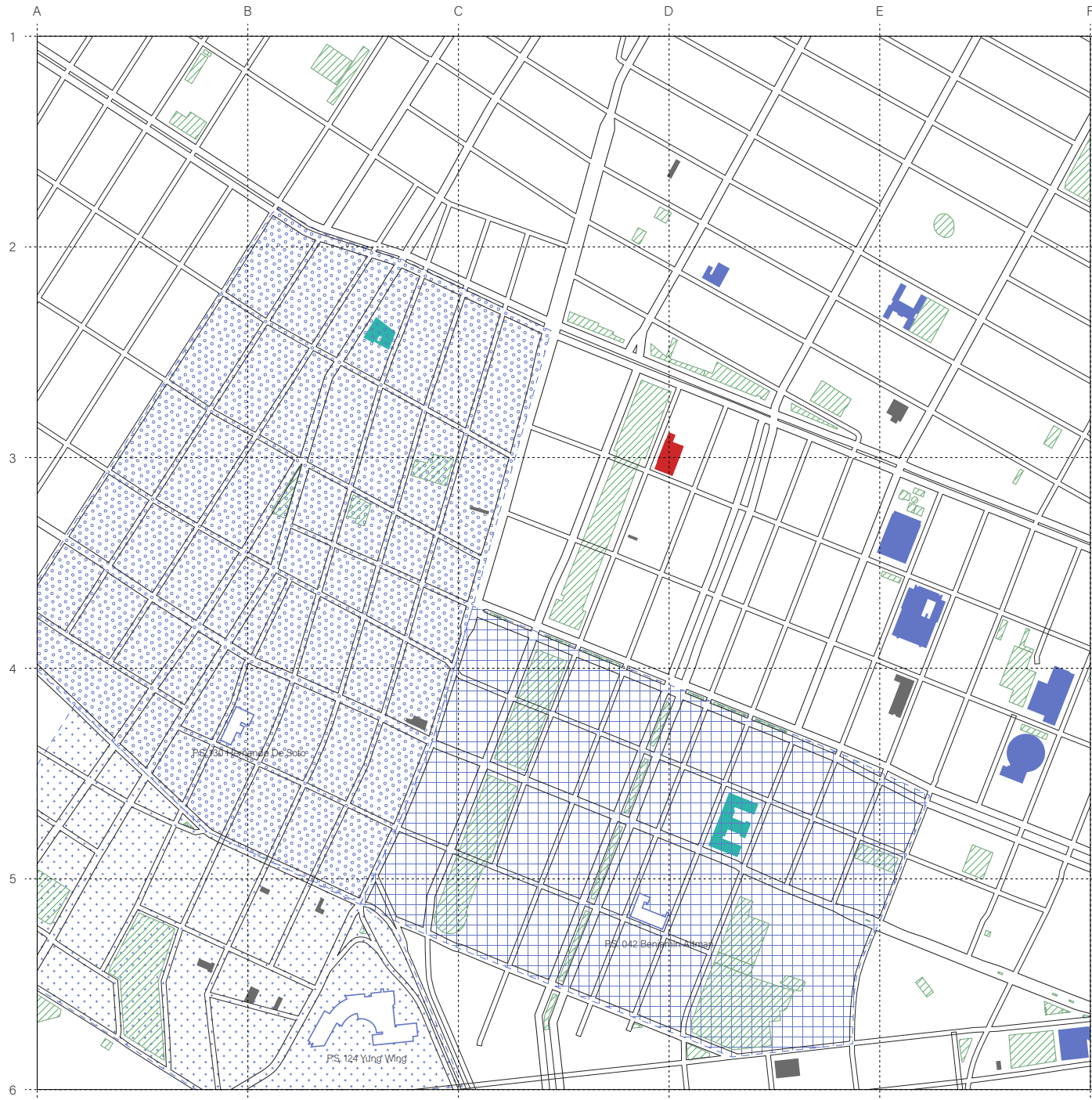
The delineation between liminal spaces like hallways and the "destination" of the classrooms become permeable through arrayed cord walls that create an interactive surface. The temporal threshold marking the end of the school day is blurred by allowing various spaces and amenities to be accessible outside of school hours, allowing a place for students and community members to occupy into the late afternoon. The school will offer a home to the various cultural organizations that have supported the Lower East Side through its transformations throughout history. Despite the transitory nature of people, the school will be a permanent anchor for the community to shape and form to their needs.



ABSTRACTION MODELS

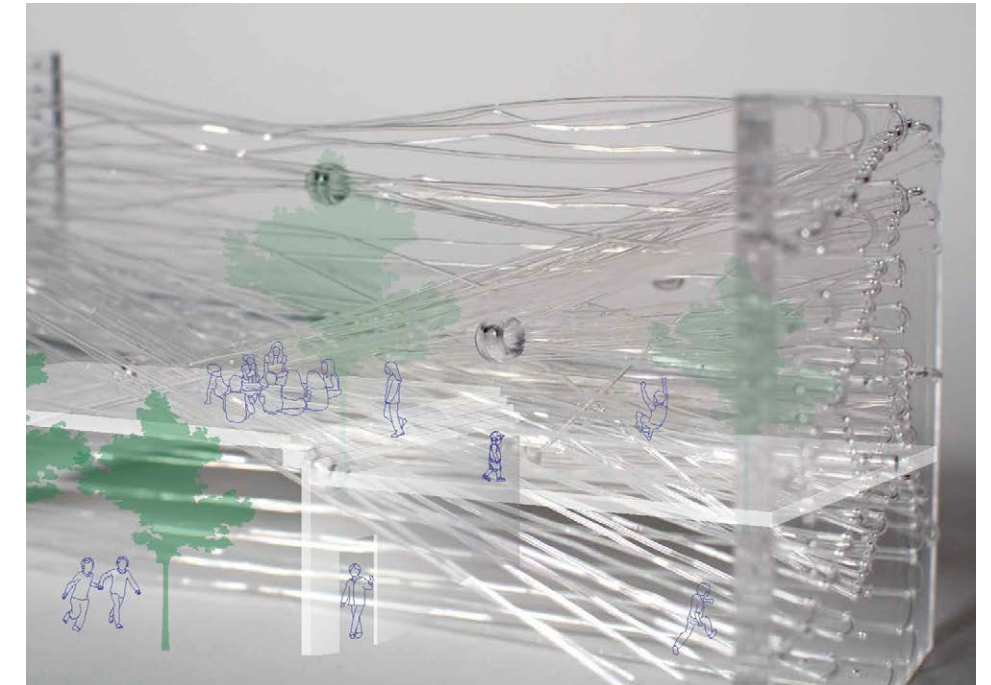


OPERATIVE GRADIENT DRAWING

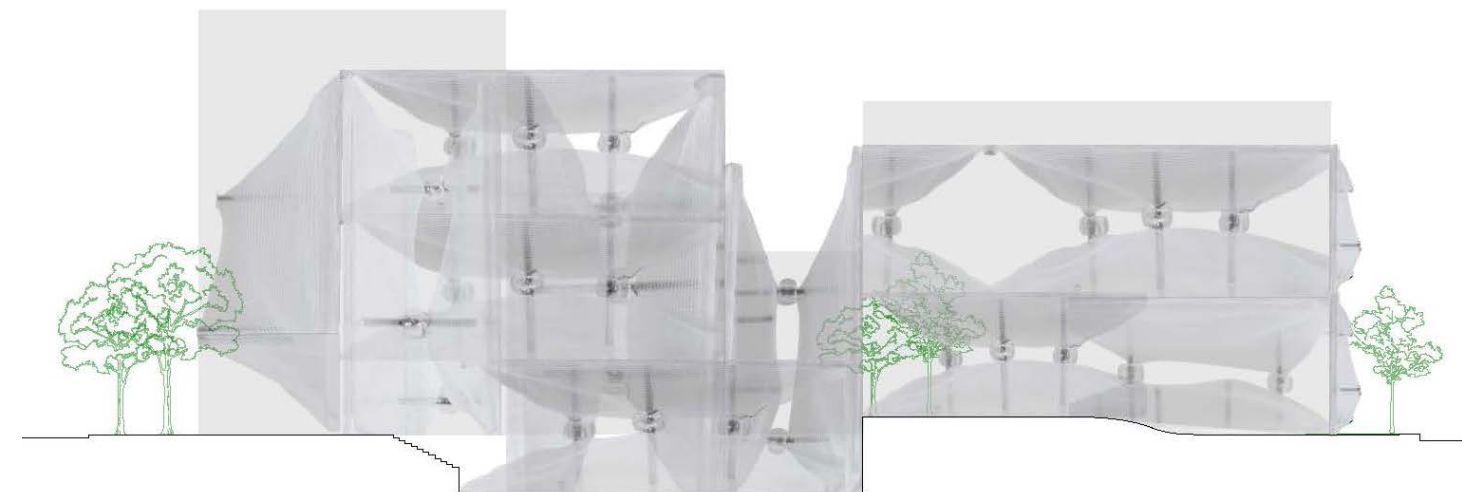


COMMUNITY ORGANIZATION SITE PLAN

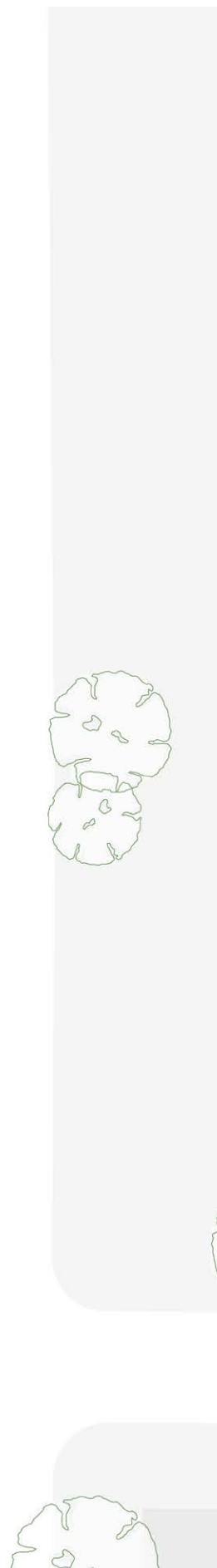
This studio began with an abstraction exercise dissecting a childhood artifact to develop an operative gradient that would guide our design for the K-8 school. I chose to operate on a gradient between transience and stability, using the material substance of elastic connections. The model allowed the project to develop through the view of the frame dictating the boundary and the filament marking spatial thresholds. Introducing the nodes, they bring kinetic qualities into the model that influence and conflict, altering the definitions of thresholds. Each threshold becomes transient, the nodes marking a level of impermanence.



MODEL COLLAGE

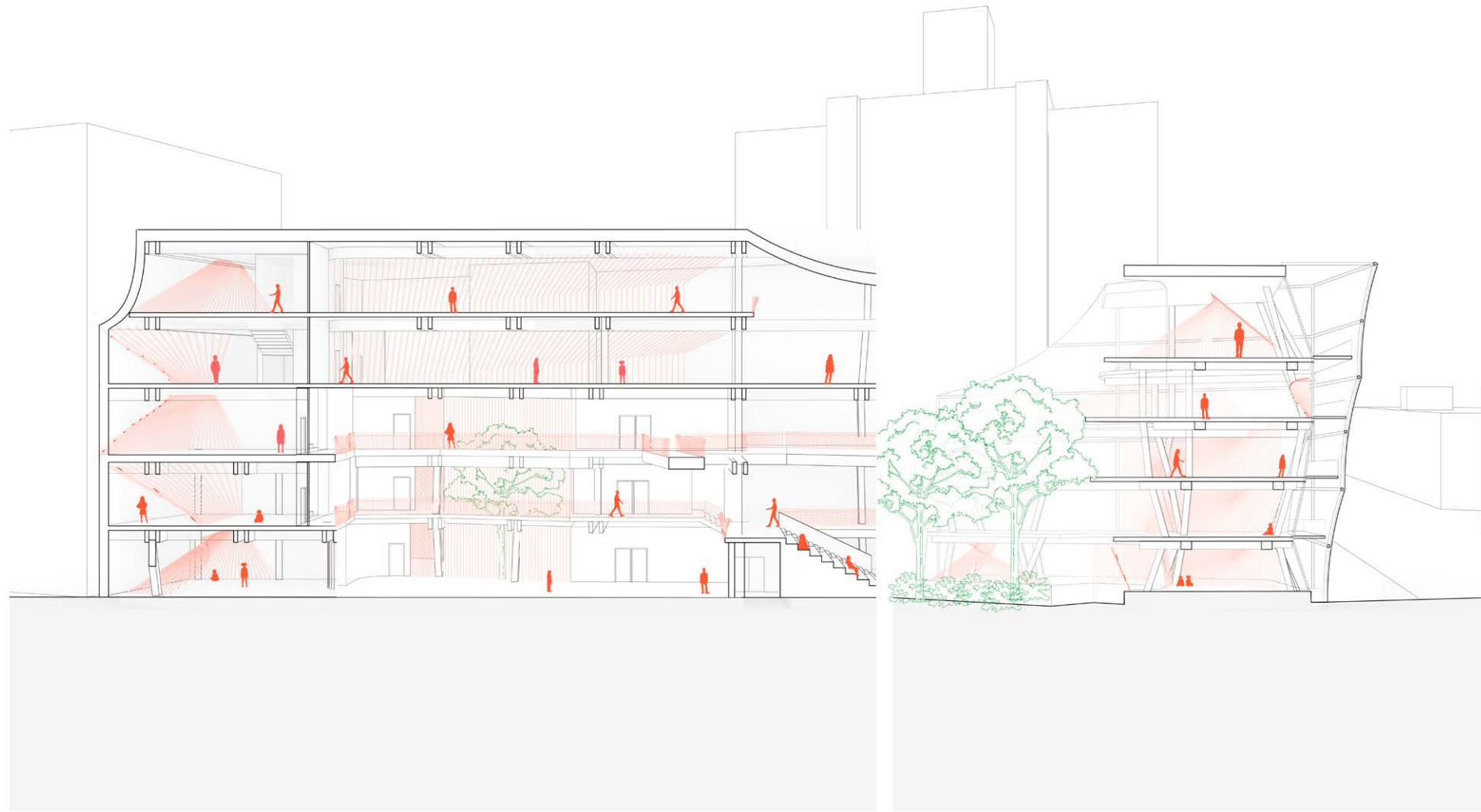


SECTION COLLAGE

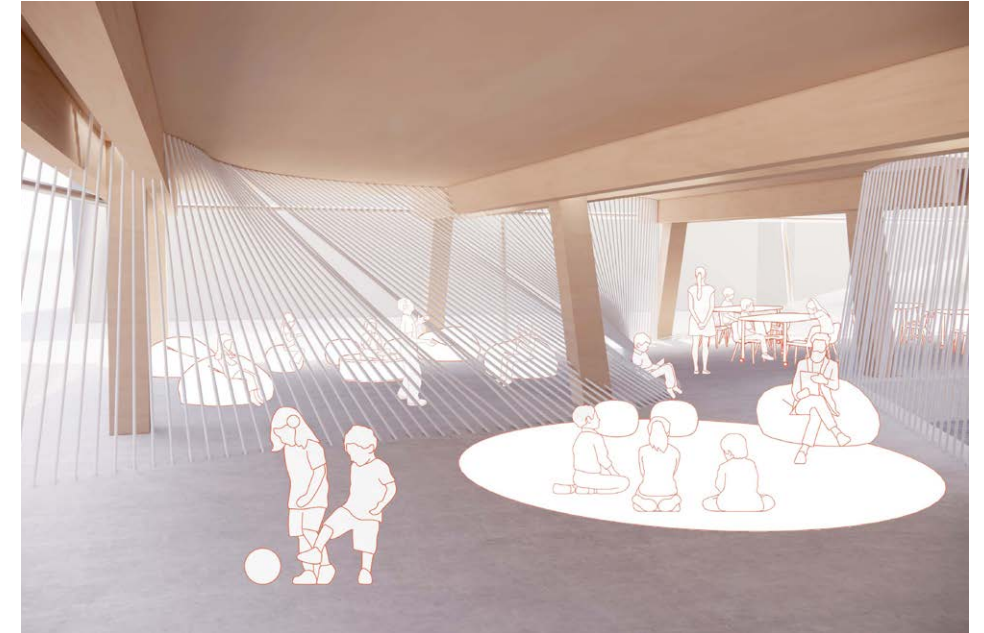


Interstitial spaces like the hallway begin to blur with the destination of the classrooms. By use of permeable surfaces made with arrayed cord, the classrooms lose the typically solid boundary between room and hall. In the earliest stages of education - grades K, 1, and 2 - there will be no dictated classroom for the students. They will have the flexibility to go between three different spaces for their different needs. As they progress through grades 3 through 8, they are presented with non-rectangular rooms which disperse hierarchy by not having a defined front/back of the classroom. This allows for collaborative and non-hierarchical education, fostering methods such as Phenomenon-based learning where there is no specific subject nor preset learning objective, but is learner-centered and led by student inquiry and problem solving. Without a preset learning objective, the students learn to embrace the liminal ambiguity and follow their instinctive research interests.





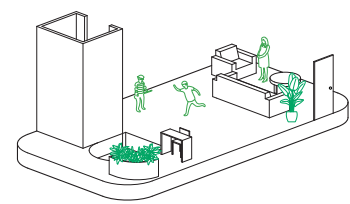
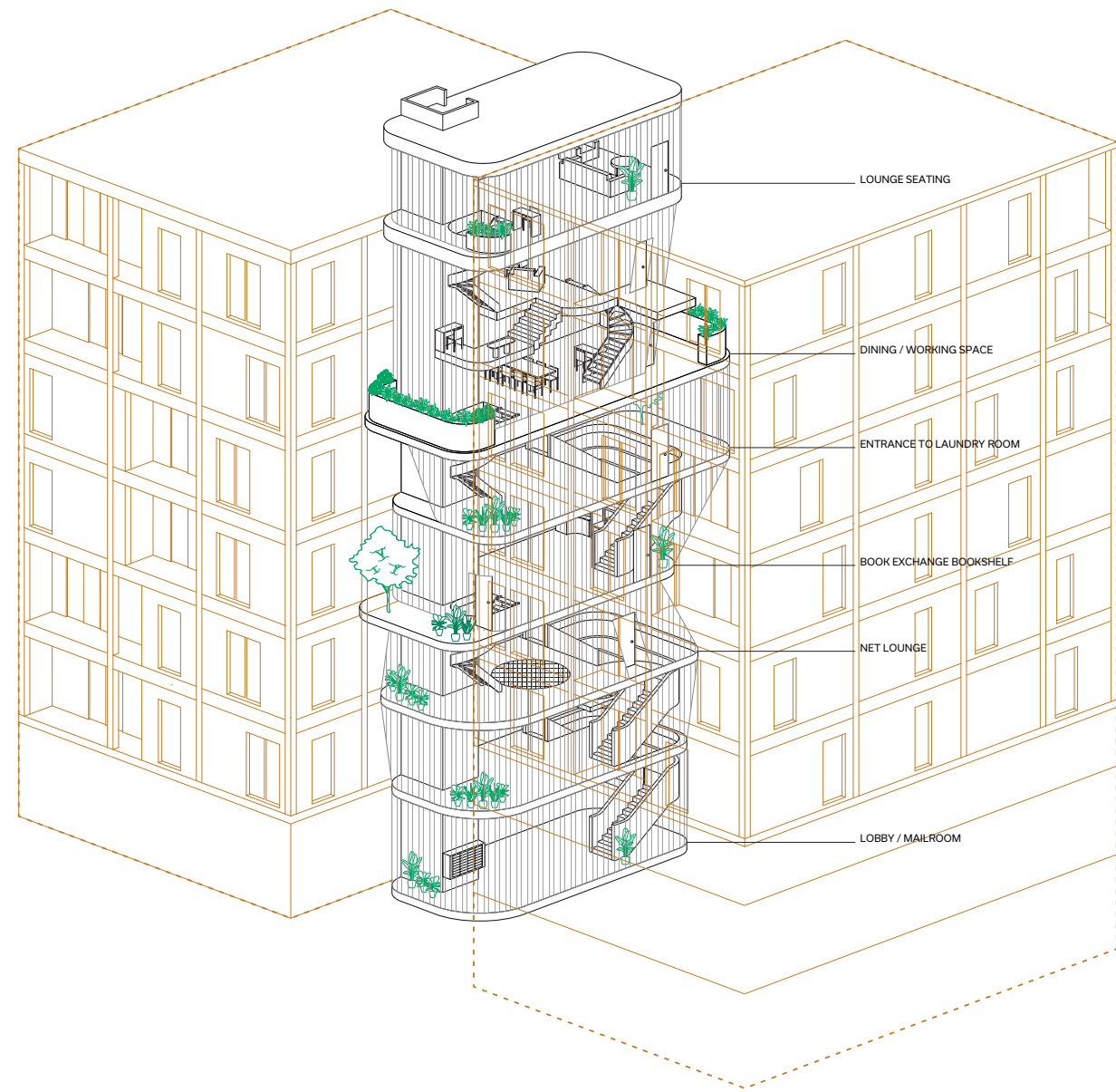
LONGITUDINAL SECTION



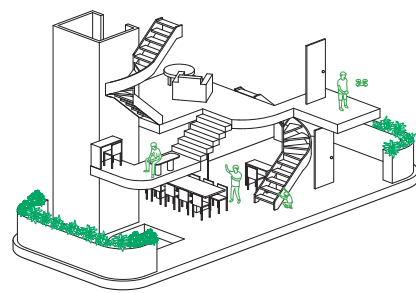
KINDERGARTEN CLASSROOM VIEW



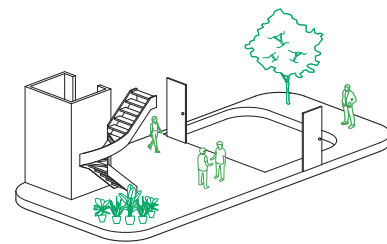
065 LIBRARY VIEW



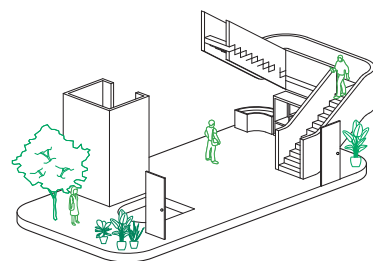
LOUNGE SEATING



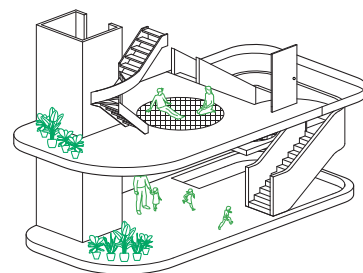
DINING / WORKING SPACE



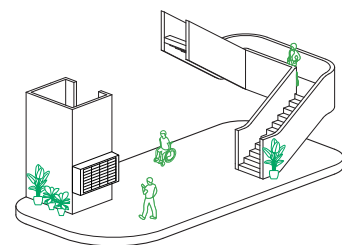
ENTRANCE TO LAUNDRY ROOM



BOOK EXCHANGE BOOKSHELF



NET LOUNGE



LOBBY / MAILROOM

08 EXPERIMENTATION

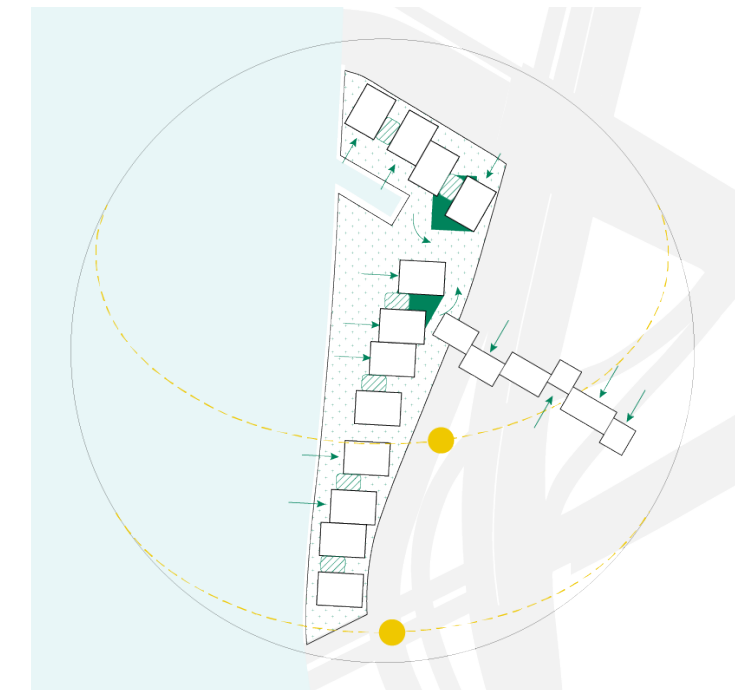
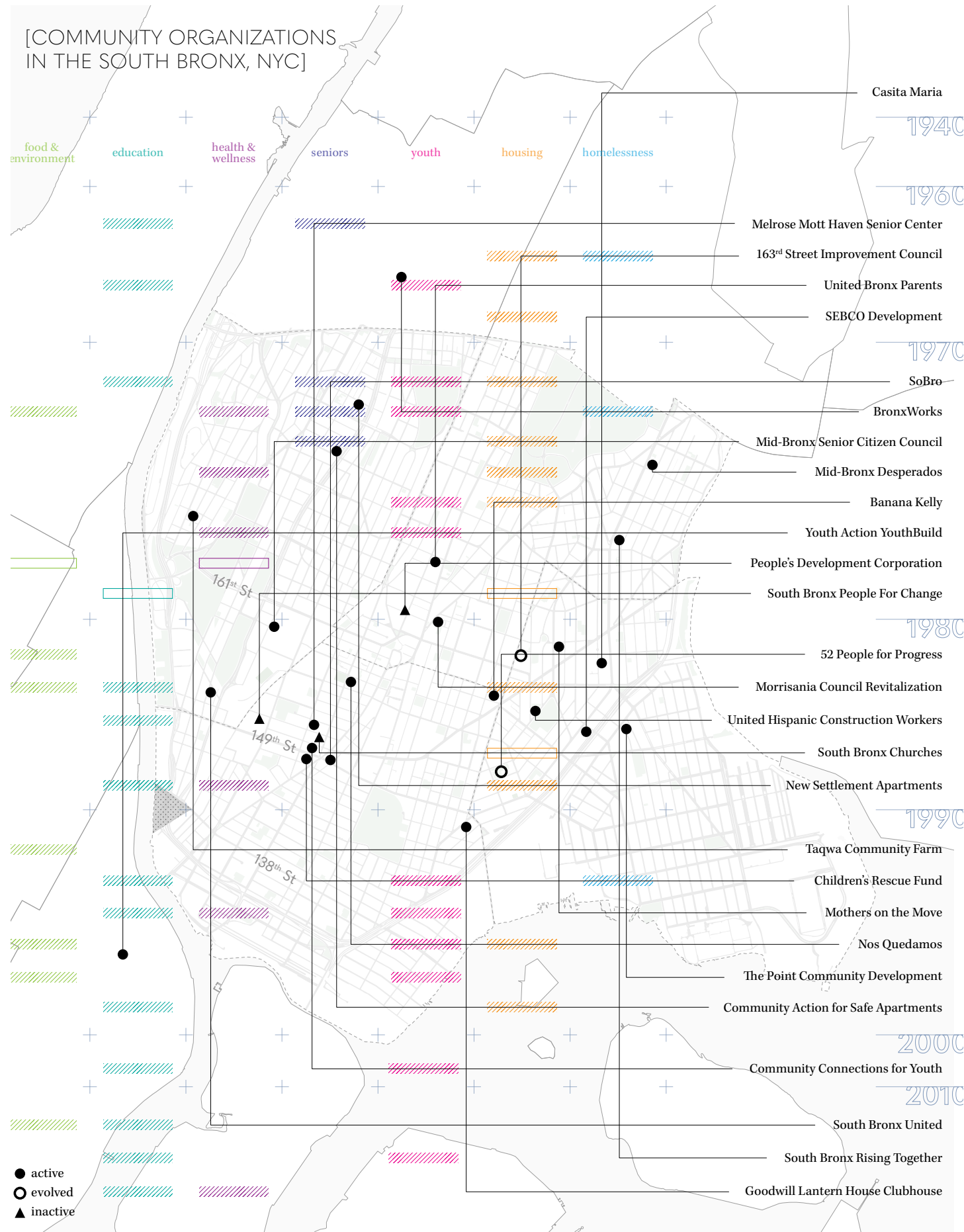
STUDIO: CORE III
 YEAR: FALL 2022
 CRITIC: CHRISTOPHER LEONG
 COLLABORATOR: KELVIN LEE
 SITE: MOTT HAVEN, BRONX

How do we create housing that serves as social infrastructure at different scales?

The site located in the South Bronx has a history of fractures. In 1956, the Major Deegan Expressway was extended directly through open green space and pedestrian walkways, creating a precarious infrastructural network that remains today. The surrounding community itself has had a difficult relationship to ownership of its land and housing; the South Bronx has been home to many grassroots organizations that have over the past few decades needed to advocate for themselves, particularly the Latinx and Black communities.

Our project aims to create connections at multiple scales through affordable and collective housing. At an urban scale, the housing collective connects to La Finca Del Sur community garden to expand their footprint, programming, and outreach as well as reconnect pedestrian access across Major Deegan Expressway. At the unit scale, the project eliminates traditional corridors by introducing the joint: a central form of vertical programming and circulation that serves as residential egress while encouraging overlaps of intimate interactions. Through alternative systems of collective land ownership, long-term affordability and stability allows South Bronx residents to connect to their neighborhood.

MENDING FRACTURES



SITE DIAGRAM

MANIFESTO

Housing is social connection at multiple scales.

Housing creates opportunities for intimate relationships while connecting to the broader collective.

Housing connects the individual with the community and bridges fractured legacy.

It facilitates impromptu interaction between households and allows flexibility for any form of relationship to live comfortably.

Housing provides stability and collective empowerment through cooperative residential participation.

POLYAMOROUS GROUP

Simone, 33 | Matty, 27 | Lola, 36
The group enjoys having an open, flexible layout with multiple bathrooms accessible from the common space and not en-suite. They are very close with their neighbors one floor down and enjoy being able to easily and quickly gather.



EMPTY NESTER MARRIED COUPLE

Akiko, 61 | Nico, 63
Akiko is extroverted while Nico is introverted. Akiko cooks most of the time and enjoys having a simple, open kitchen. Nico takes care of his mother (who lives directly upstairs) on the weekends and has to fill in during the week when her attending nurse cannot visit, so they benefit from the intimate scale of the joint. They prefer a smaller terrace because it's easier to clean.



CO-PARENTING SEPARATED EX-COUPLE

Devon, 42 | Mia, 9
Devon co-parents his child Mia with his former partner who lives upstairs with their new spouse. They are all on good terms and are very happy that they are all able to support Mia together while having their own, separate units. Mia especially loves being able to go up and down the spiral staircase to see all of her parents and read while laying on the net.



YOUNG COUPLE EXPECTING FIRST CHILD

Laura, 30 | Abe, 30
The couple's priority is getting the apartment baby-ready for when their son is born in a few months. They are very happy that there is a day-care center on site and are hoping to socialize with other young parents and neighbors as well. Abe works from home and enjoys being able to have the option of either stepping out onto the joint for a call or remaining on their private terraces.



GRANDMOTHER, JUST MOVED FROM SENIOR HOUSING

Lucy, 88
Lucy used to live alone in a senior housing center but wanted a more vibrant community with more accessible amenities and services. She can now socialize with all types of people and while she doesn't have a terrace in her unit, she loves being right next to the joint and having direct access to La Finca community garden where she volunteers twice a week. She also has gotten to know her next door neighbor Prescila well and they frequently go on walks together.



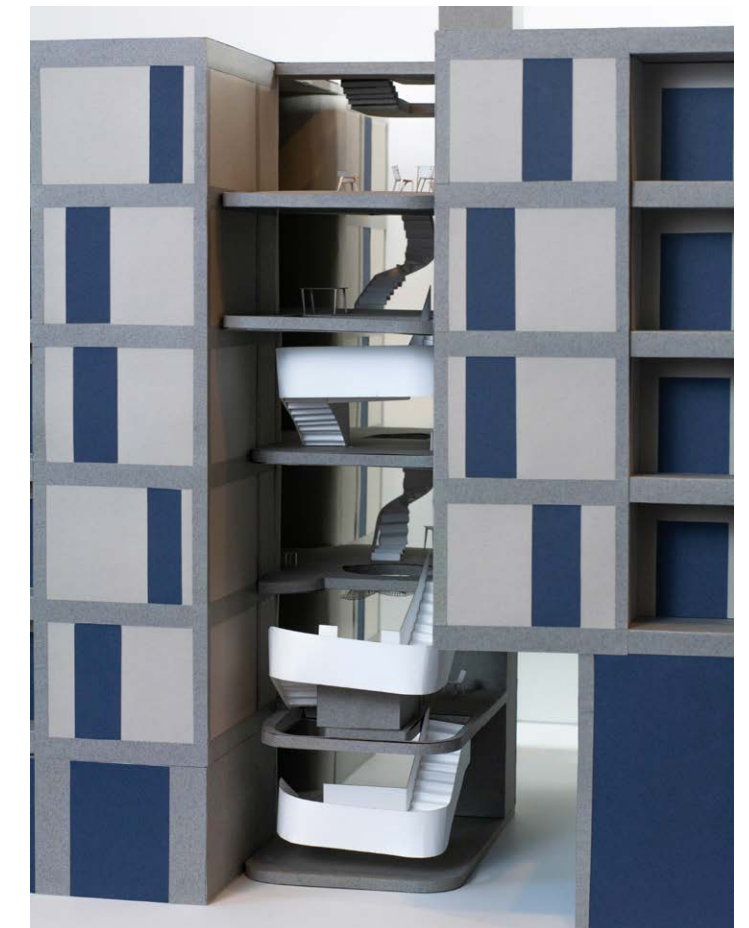
SINGLE WOMAN

Prescila, 53
Prescila grew up in East Bronx but wanted to move to be closer to her daughter who also lives in Mott Haven. Growing up, she rarely had safe outdoor spaces to play in so is very happy to have her own terrace and programmed waterfront, somewhere she loves taking her granddaughter to when she visits. She enjoys having a salon in the building and is also active in community organizing work that takes place in the building.



TYPICAL FLOOR PLAN

Building strong connections with neighbors enhances one's well-being through increased feeling of safety and belonging. Our vision for a new housing framework begins with eliminating the traditional corridor and introducing the joint: a central form of vertical programming and circulation that serves as residential egress while encouraging overlaps of intimate interactions.



1/4" = 1' 0" MODEL

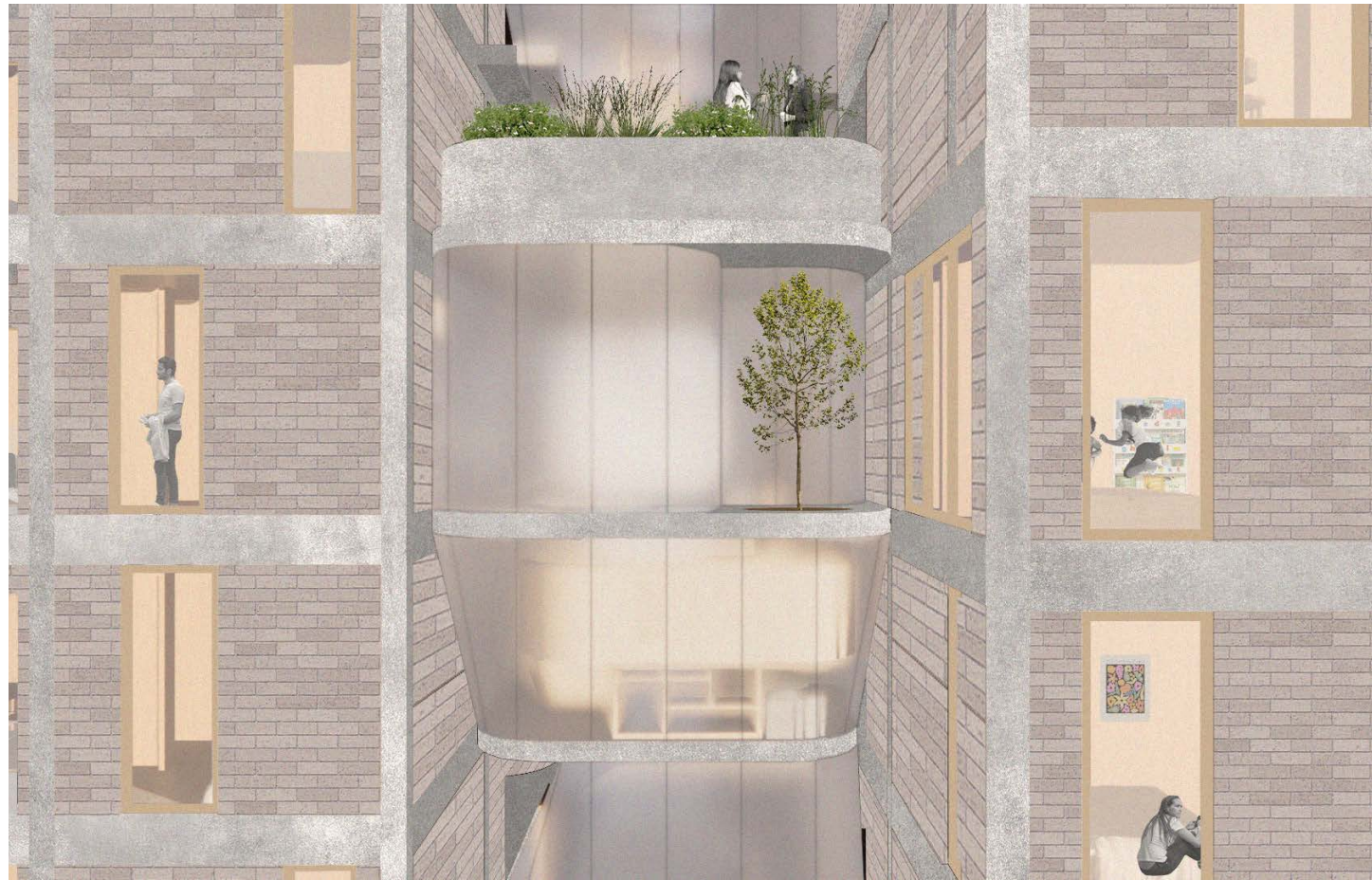




GROUND FLOOR PLAN

The Bronx has a prospering self-organizing spirit and a strong sense of empathy towards their neighbors. The project provides integrated communal spaces to encourage communication amongst residents in order to negotiate public and private spaces.

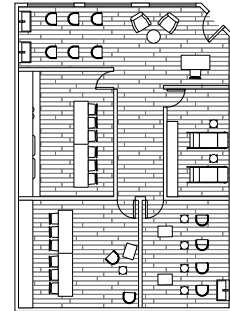
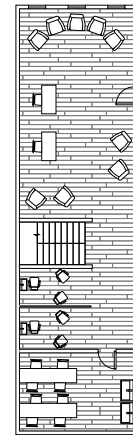
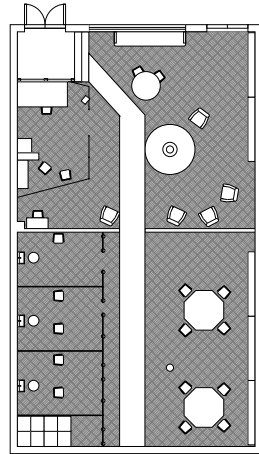
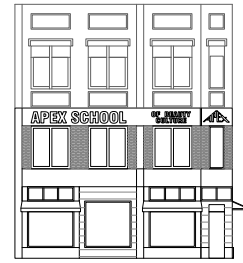
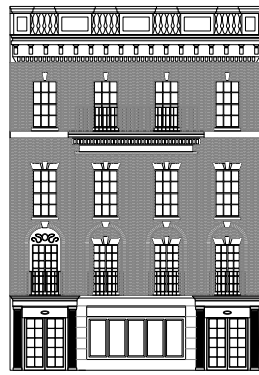
New developments and land speculation causes fluctuations in property value, creating instability for long-term residents. To offset the volatility, this project ensures long-term affordability to anchor generational residents of the South Bronx neighborhood.



JOINT EXTERIOR VIEW



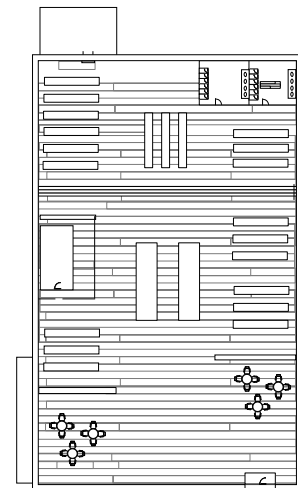
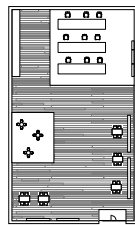
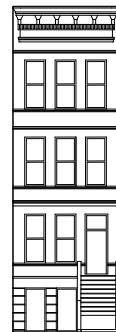
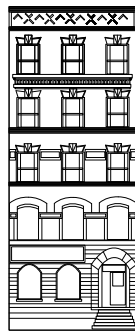
BRIDGE VIEW



MADAME C.J. WALKER BEAUTY SHOPPE
110 W. 136 TH ST.
1914 - 1930

APEX SCHOOL OF BEAUTY AND CULTURE
133 TH AND 7 TH AVE.
1930 - 1953

PORO SCHOOL
1997 7 TH AVE.
1915 - 1930



HARLEM ARTS ALLIANCE
229 W. 135 TH ST.
2001 - PRESENT

HARLEM COMMUNITY ARTS CENTER
135 TH AND LENOX AVE.
1937 - 1942

SALON OF CONTEMPORARY NEGRO ART
229 W. 125 TH ST.
1939 - 1939

09 EXPERIMENTATION

STUDIO: CORE I
YEAR: FALL 2021
CRITIC: ALESSANDRO ORSINI
SITE: HARLEM, NY

How can we protect spaces where communities naturally congregate and provide exchange of knowledge?

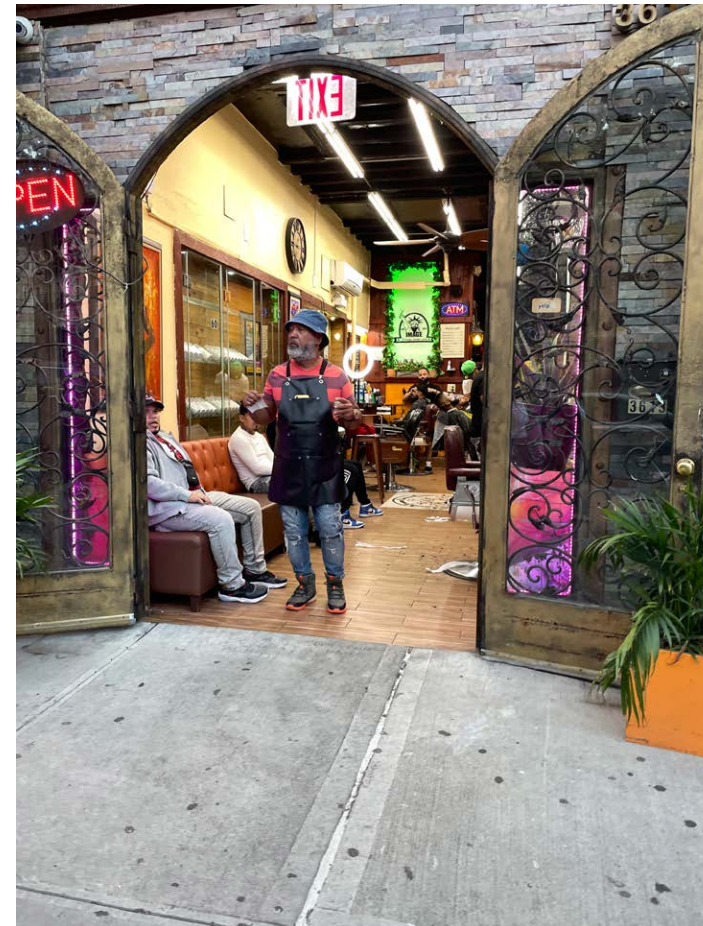
Hair salons and barbershops are prominent in African American and Latinx cultures that reside in East Harlem neighborhood. These shops are often at the center of knowledge exchange and provide the residents with important news, gossip, and information. I was inspired to explore the history of hair salons, specifically at Madame C.J. Walker Beauty Shop.

By comparing the spatial qualities of the historical Madame C.J. Walker Beauty Shop and a contemporary hair salon in East Harlem through detailed line drawing, I was able to analyze the similarities between the two to find the optimal spatial arrangements for cultural exchange. This provided the framework to develop a new form of commercial commons using urban voids.

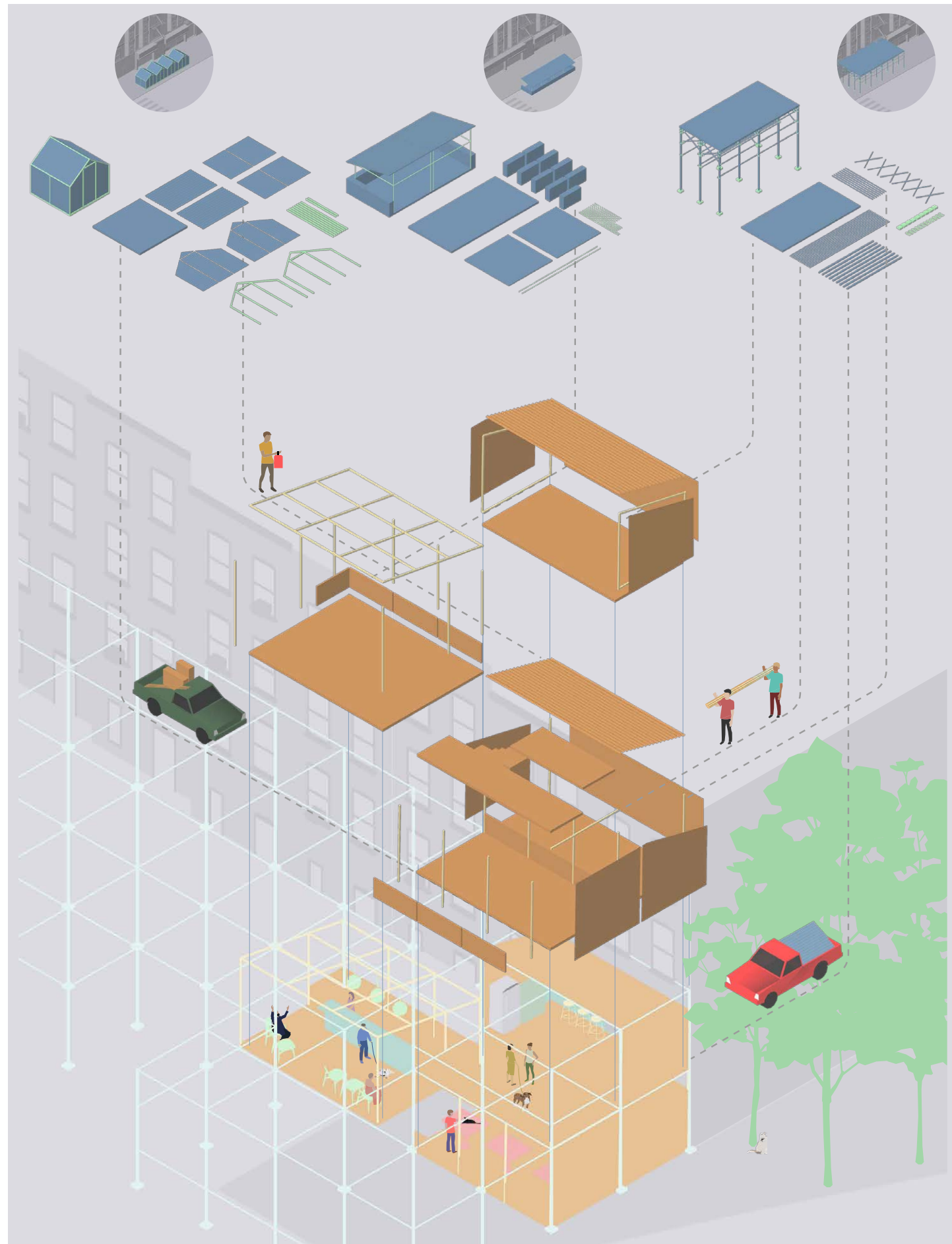
The project imagines utilizing the interstitial void behind residential buildings to create a new typology of the commercial corridor. These backyard spaces are often neglected and under-utilized, but could be repurposed to support local businesses that may not be able to afford the rising property values on the main commercial storefronts on Broadway. By inverting Broadway from the edge of the block to the interior, the vibrancy and activity of the street is brought into the residential block, giving spaces for the neighbors to come together.

INVERTING BROADWAY





PHOTOGRAPHS OF CONTEMPORARY SALONS



MODEL PHOTOGRAPH

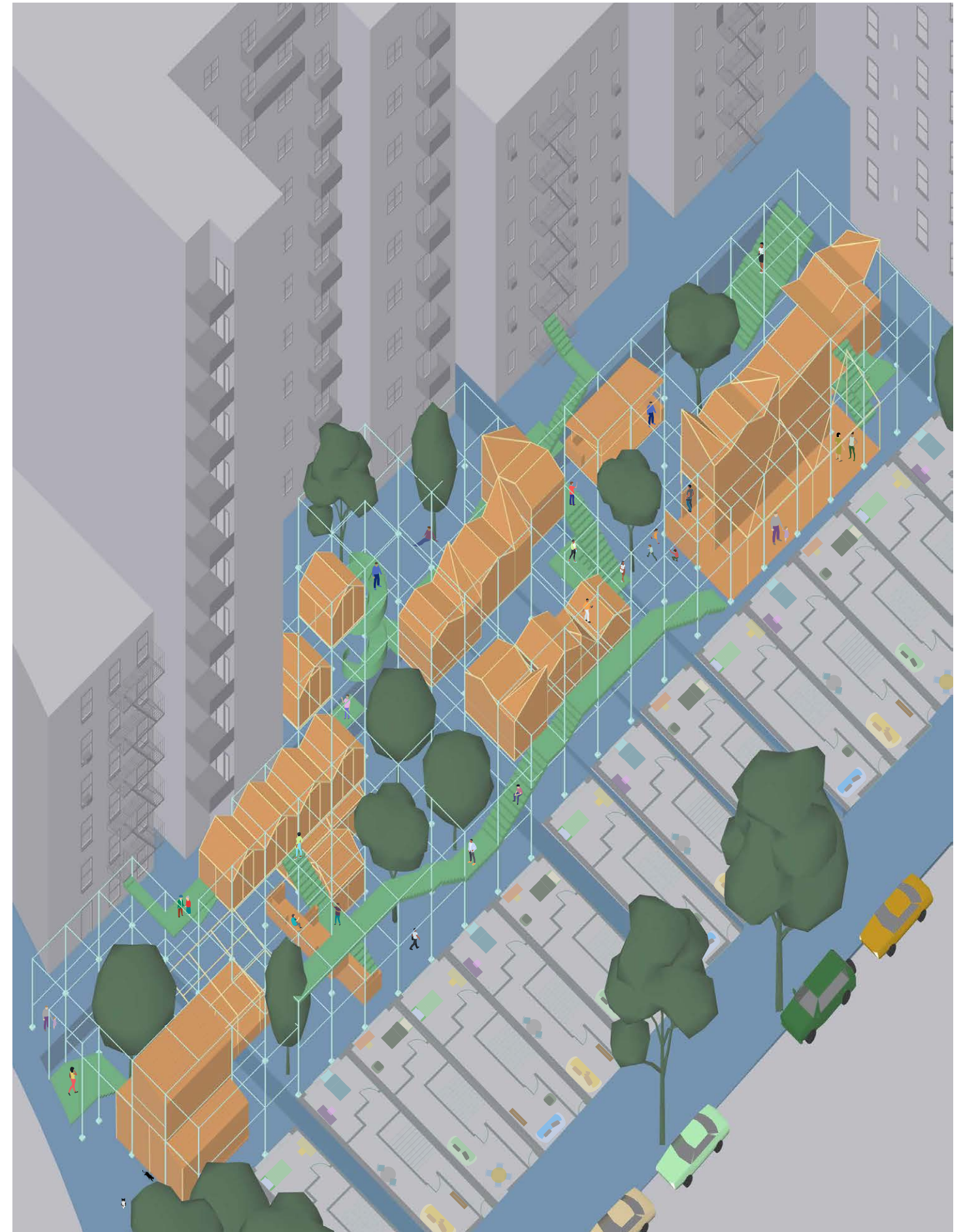
The new commercial corridor will be comprised of recycled materials from the abandoned outdoor dining structures leftover from the COVID-19 pandemic. The typical structures due to its fast erection are composed of simple parts that are easily taken apart. These parts can be reconfigured to create more optimal spatial arrangements that allow for commercial activity to take place. This could be a wide range of programs like cafes, laundromats, markets, and hair salons.

These networks of businesses will be connected through a scaffolding structure, another modular structure that occupies New York City streets. The scaffolding provides a grid structure to the ad-hoc nature of the reconfigurable parts.

In addition to the circular economy of materiality, there is mutual funding for the business owners and property owners. Since the collective of property owners of the residential block will be renting their backyard space to the businesses at an affordable rent price, these funds can be used to provide rental assistance for the residents of the block. By having a mutually beneficial system for both parties, they will be able to support each other and protect the vibrant community that resides there.



SECTIONAL OBLIQUE DRAWING



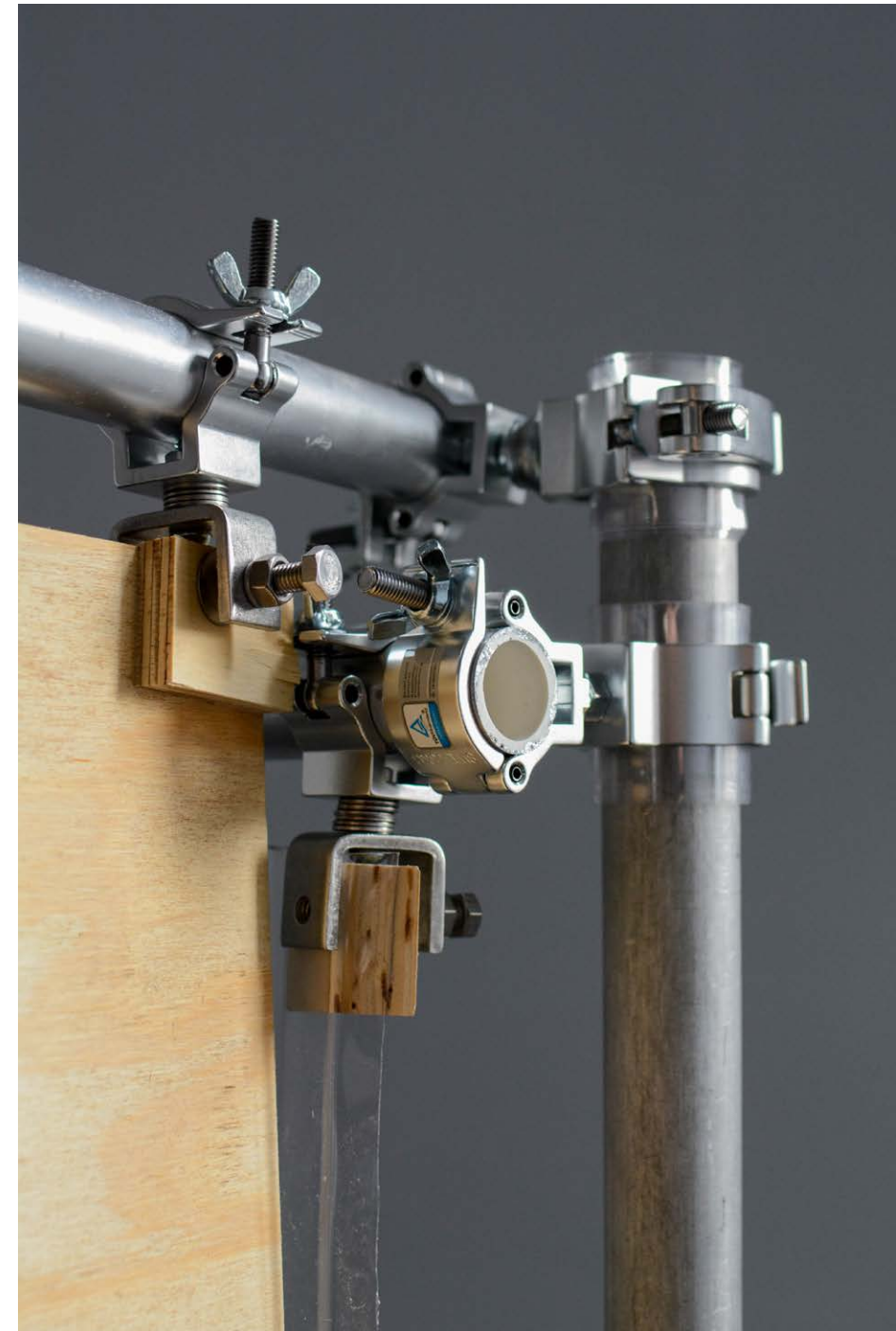
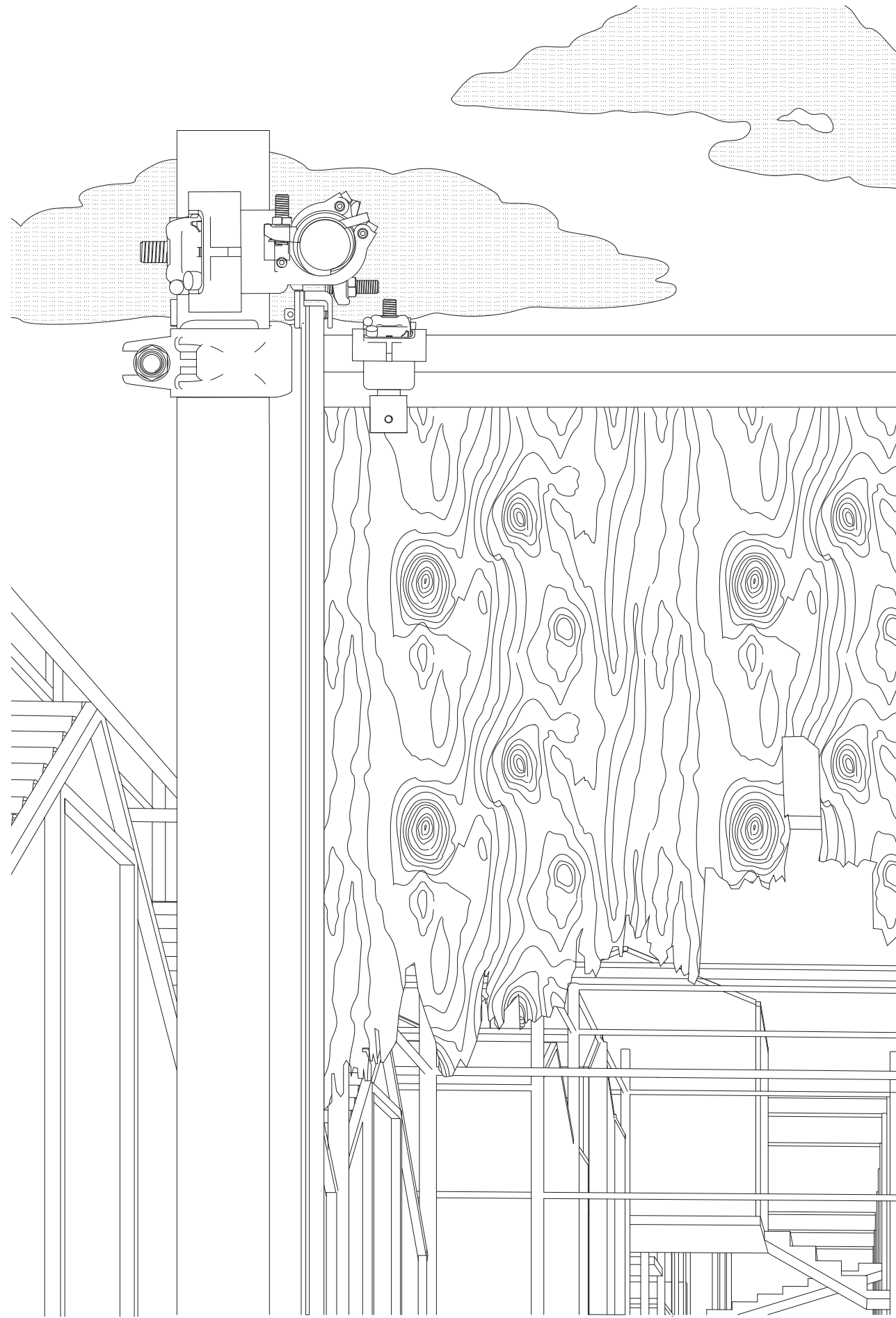


MODEL PHOTOGRAPH



MODEL COMPONENTS





1:1 SCALE MODEL

The project included a 1:1 scale model of the scaffolding structure and the component required for the assembly-disassembly of parts. The new scaffolding clamp allows for either two poles to be connected perpendicular or for one end to be swapped out for a clip that attaches planar surfaces to the pole.



10 EXPERIMENTATION

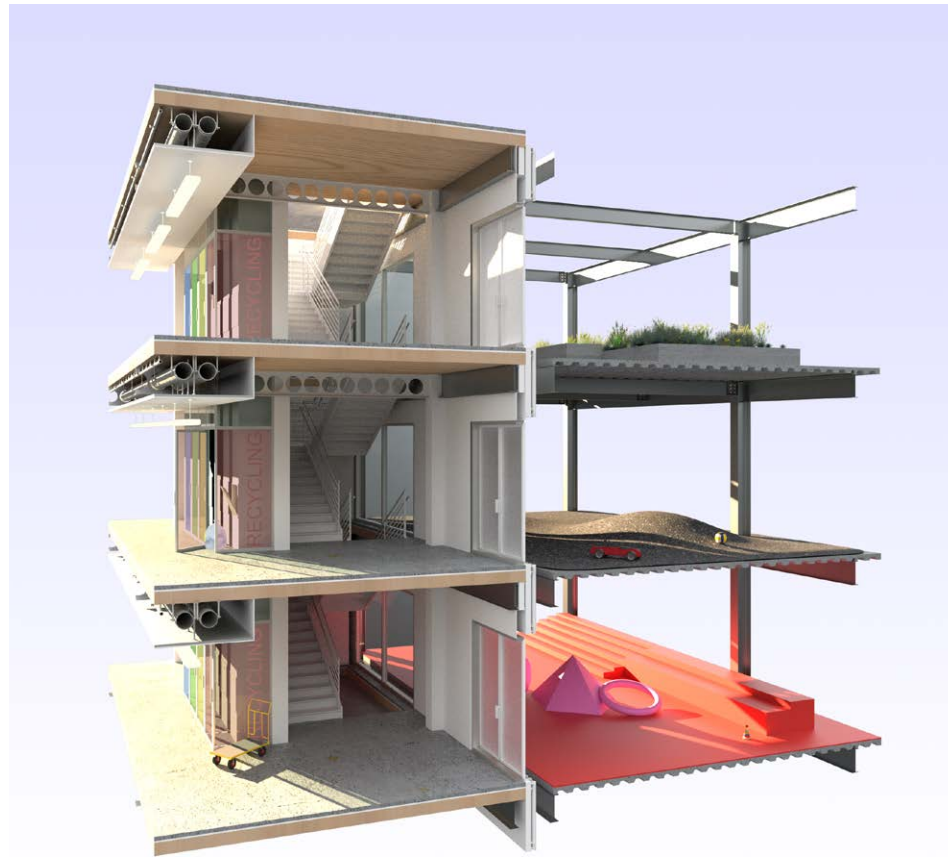
COURSE: BUILDING TECHNOLOGY IV
YEAR: FALL 2022
CRITIC: BERARDO MATALUCCI
COLLABORATORS: ADAM FRIED,
ANAIS HALFTERMEYER,
KELVIN LEE, REBECCA SIQUEIROS,
SOPHIA STRABO

How can a school work as an open framework?

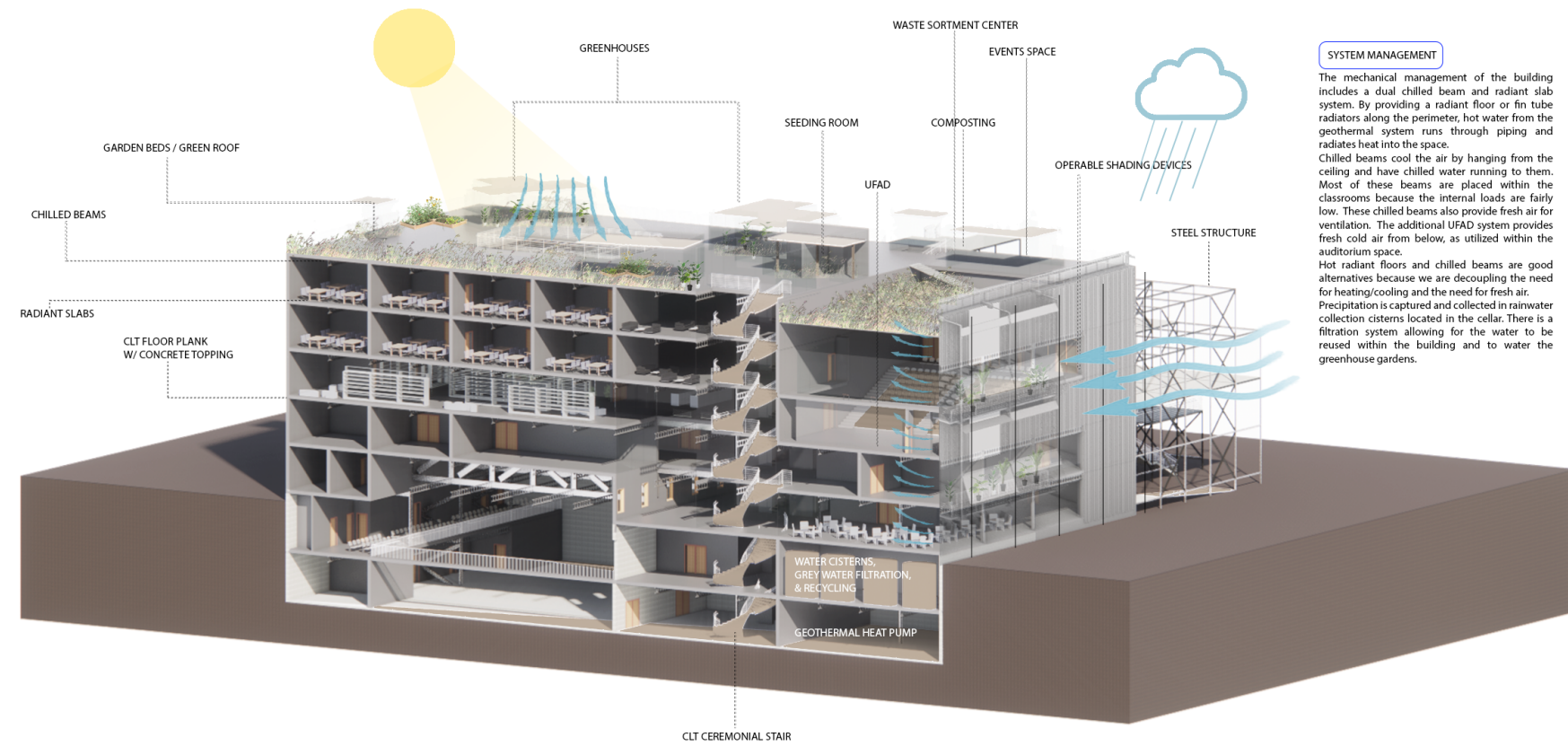
The intent of the course was to take a team member's previous concept design and develop it into a DD package. The school that we developed took interest in how a structure can support multiple programs and different uses over time.

Managing the lifecycle of a building is tied to this notion of an open framework, and our approach transformed into a waste management strategy. What would it look like to have a school that addresses waste? We consider waste as three different scales:

The largest scale of waste is Longevity. We decided to create a robust structure which allows for readaptation and resilience. The second scale of waste is related to Materials. By using recyclable materials in our structure, such as steel, we allow for reduced waste. The third scale of waste is the regenerative systems within the building. Our green roof, geothermal heating, chilled beams, radiant slabs, rainwater collection, trash chute, and educational gardens introduce systems of sustainability and waste management.



WASTE SYSTEM + RECONFIGURABLE PLAYGROUND



STRUCTURE

Steel structure is a reliable structural system, ensuring the longevity of our building. This is ideal for areas where we have long spans, like the gymnasium and auditorium. We overcompensated on the size of the steel structure, more than the standard load, to withstand time allowing for the structure to remain. We propose to use recycled steel, which reduces the annual energy consumption of the industry by about 75%. The CLT slab was utilized as CLT has a smaller carbon footprint, and the concrete topper allows for durability and longevity of the system.

DAYLIGHTING

The school is designed to capture as much sunlight as possible, allowing for solar heat gain in the colder months. The operable shading devices allow for control in the warmer months. The atrium allows natural light to enter the building on the North wall. Light penetrates through the double layered facade, which contains a partial green screen. During the summer, this can be used for heat control via cooling, and in the winter for warmth retention. Both strategies reduce the energy required for lighting.

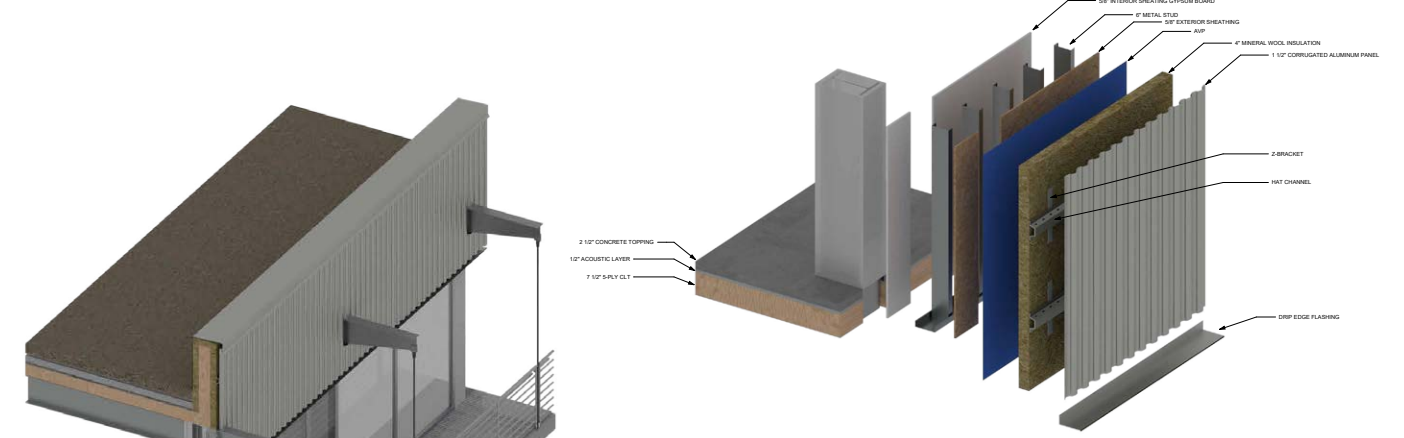
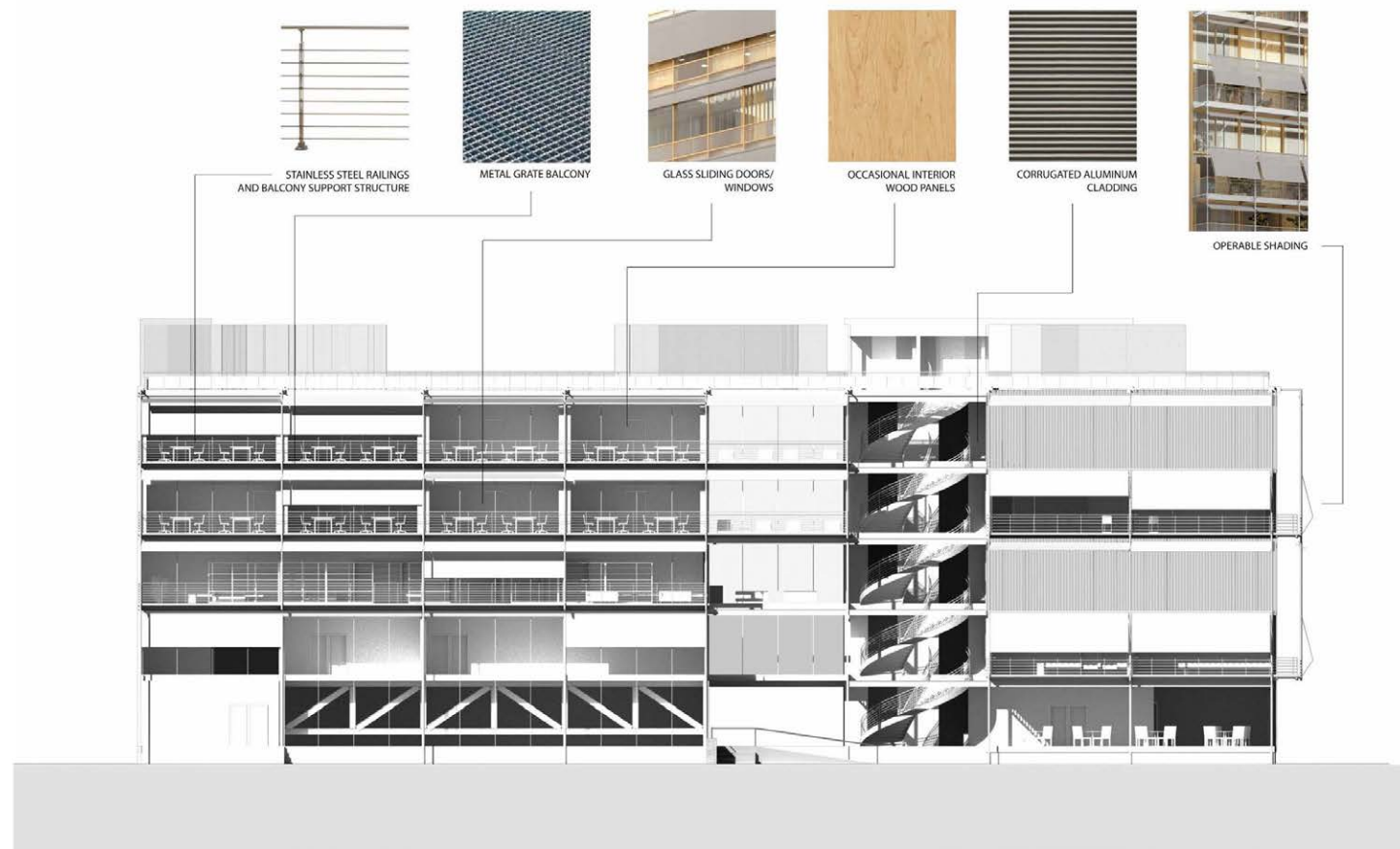
HEALTH + WELLBEING

The health and well being of the students is increased due to the daylighting strategies and implementation. The additional spaces for congregation and events, such as the auditorium, the greenhouses, the seeding room, and rooftop event space, add to the health and well being of the students. The inclusion of biophilic design, through the use of natural materials of CLT slabs, contributes to the health and well being.

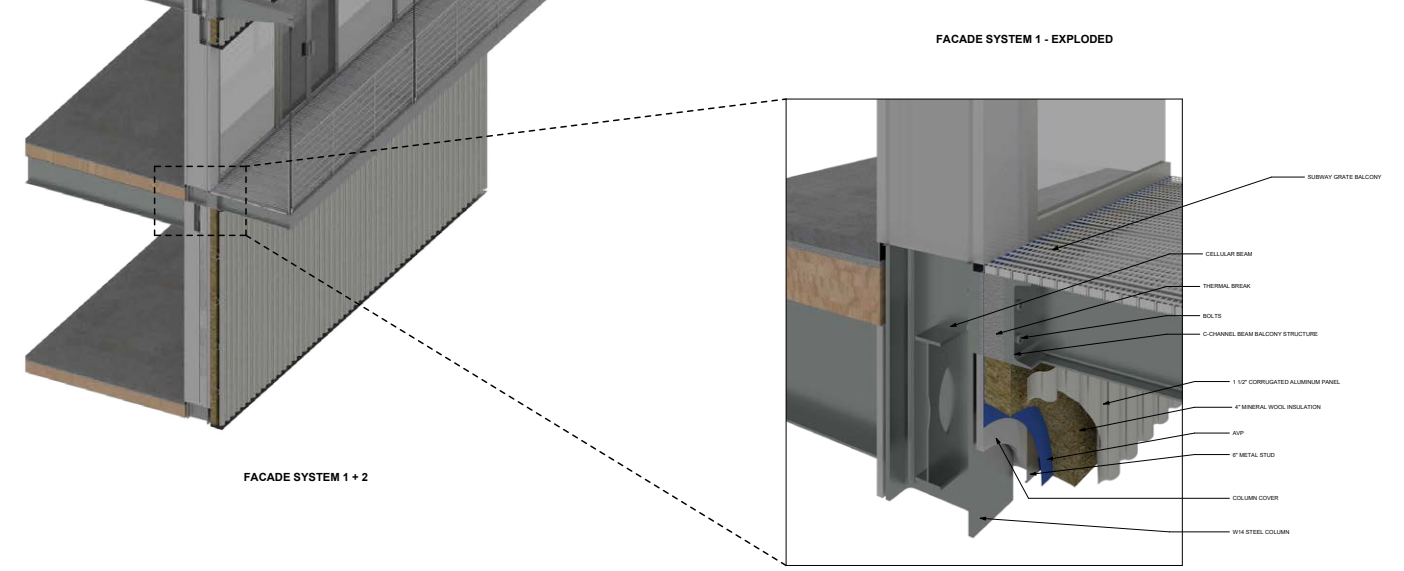
SYSTEM MANAGEMENT

The mechanical management of the building includes a dual chilled beam and radiant slab system. By providing a radiant floor or fin tube radiators along the perimeter, hot water from the geothermal system runs through piping and radiates heat into the space. Chilled beams cool the air by hanging from the ceiling and have chilled water running to them. Most of these beams are placed within the classrooms because the internal loads are fairly low. These chilled beams also provide fresh air for ventilation. The additional UFAD system provides fresh cold air from below, as utilized within the auditorium space. Hot radiant floors and chilled beams are good alternatives because we are decoupling the need for heating/cooling and the need for fresh air. Precipitation is captured and collected in rainwater collection cisterns located in the cellar. There is a filtration system allowing for the water to be reused within the building and to water the greenhouse gardens.

SUSTAINABILITY DIAGRAM



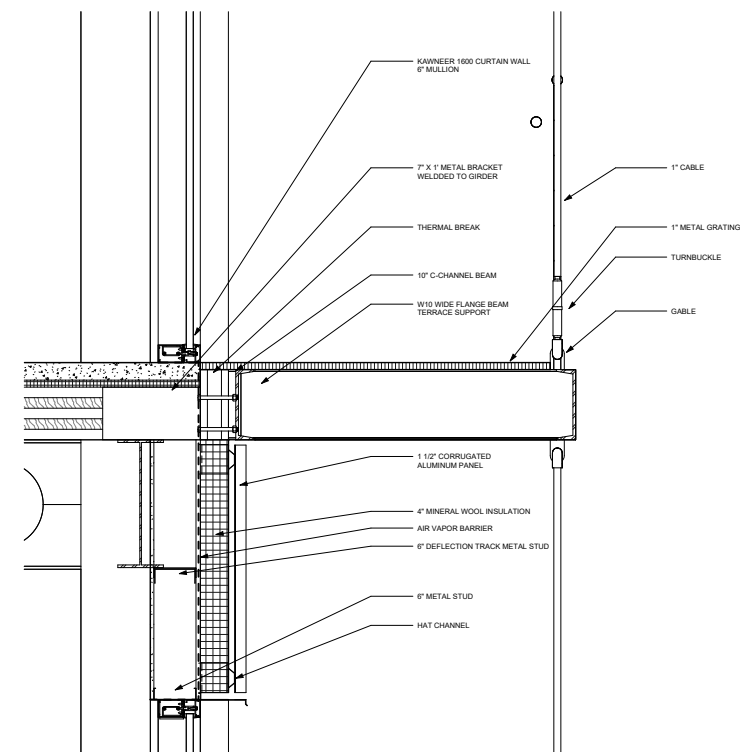
FACADE SYSTEM 1 - EXPLODED



FACADE SYSTEM 2 - DETAIL CUTAWAY

FACADE SYSTEM 1 + 2

FACADE SYSTEM CALLOUT





11 ACTUALIZATION

COURSE: 1:1 CRAFTING AND
FABRICATION OF DETAILS
YEAR: SPRING 2024
CRITIC: ZACHARY MULITAUAOPELE

What can we learn from fabricating things true to scale?

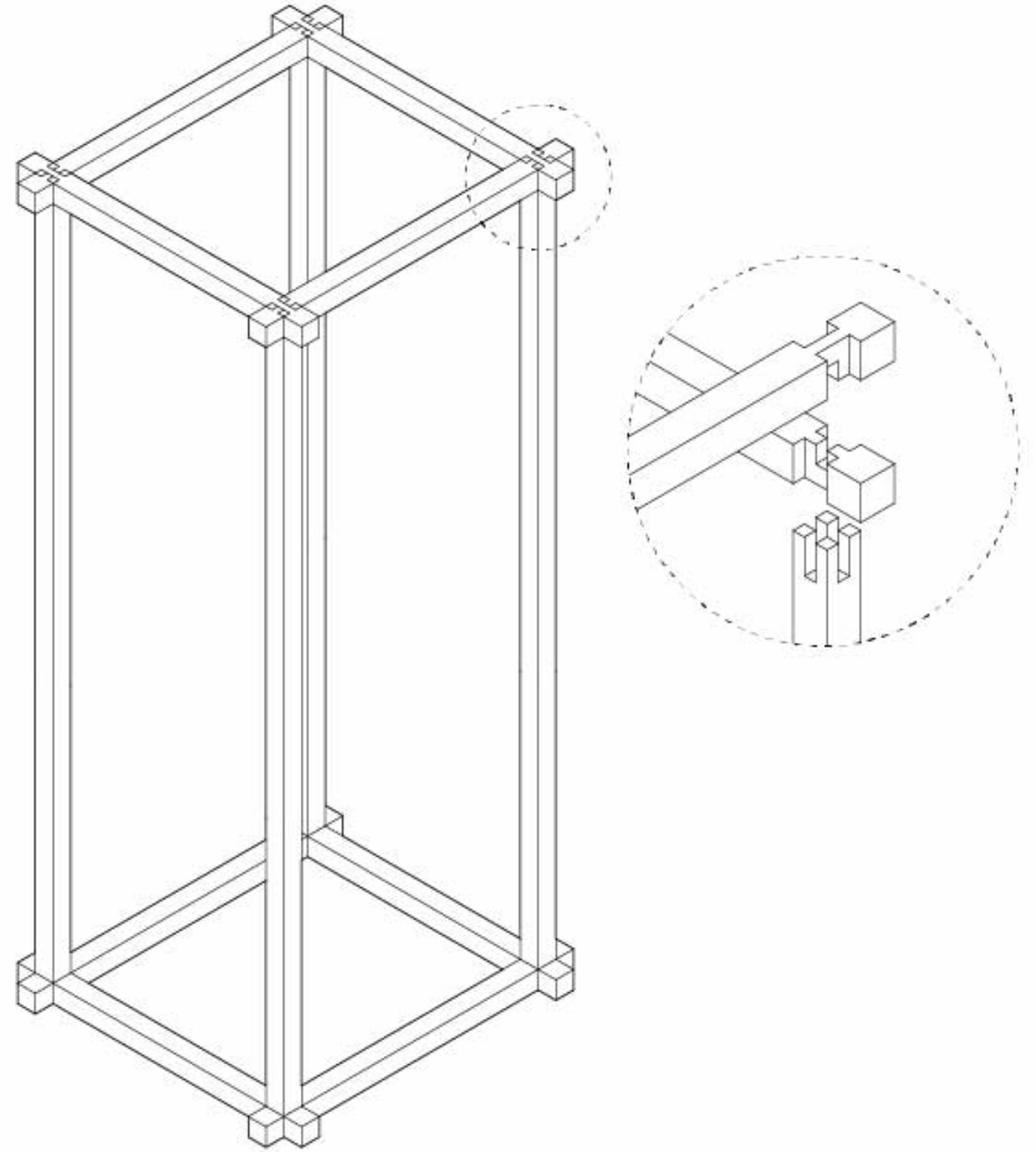
This project was a process of trial and error to explore methods and tools to build out furniture without permanent attachments. The “totem” is an assembly of household furniture that can be assembled and disassembled, as with each piece that creates each item.

The piano bench is made of CNC cut plywood with each piece being cut precisely to fit together, not requiring any hardware to keep it attached. The dark wood stain adds richness to the design evoking post-modern forms.

The end table is made of aluminum composite material cut on the waterjet machine. This object contrasts the piano bench in the sleek and coldness of the material, but brings together similar formal language through the curved corner.

The frame brings the two furniture pieces together, joined together using castle joinery. The frame allows for the conceptual and visible connection between the pieces by making the joinery details visible due to the variance in wood colors.

TOLERANCE + FITTINGS

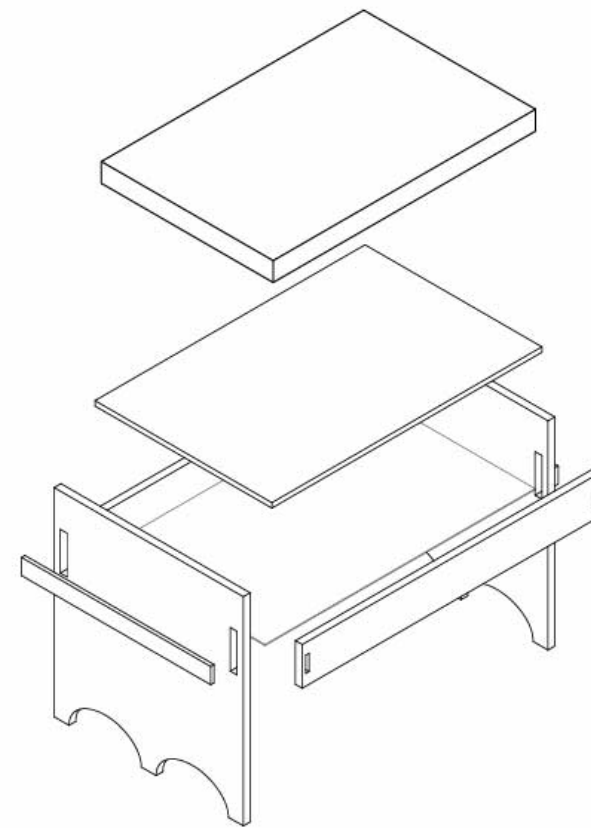




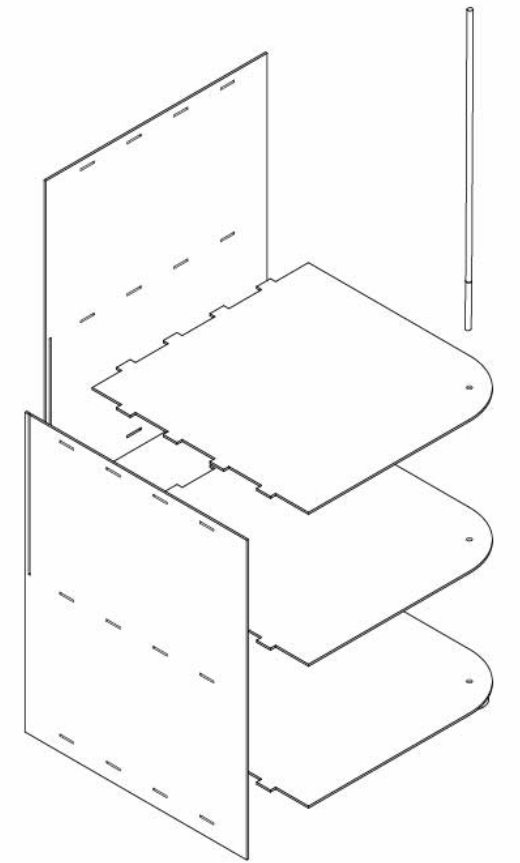
PIANO BENCH



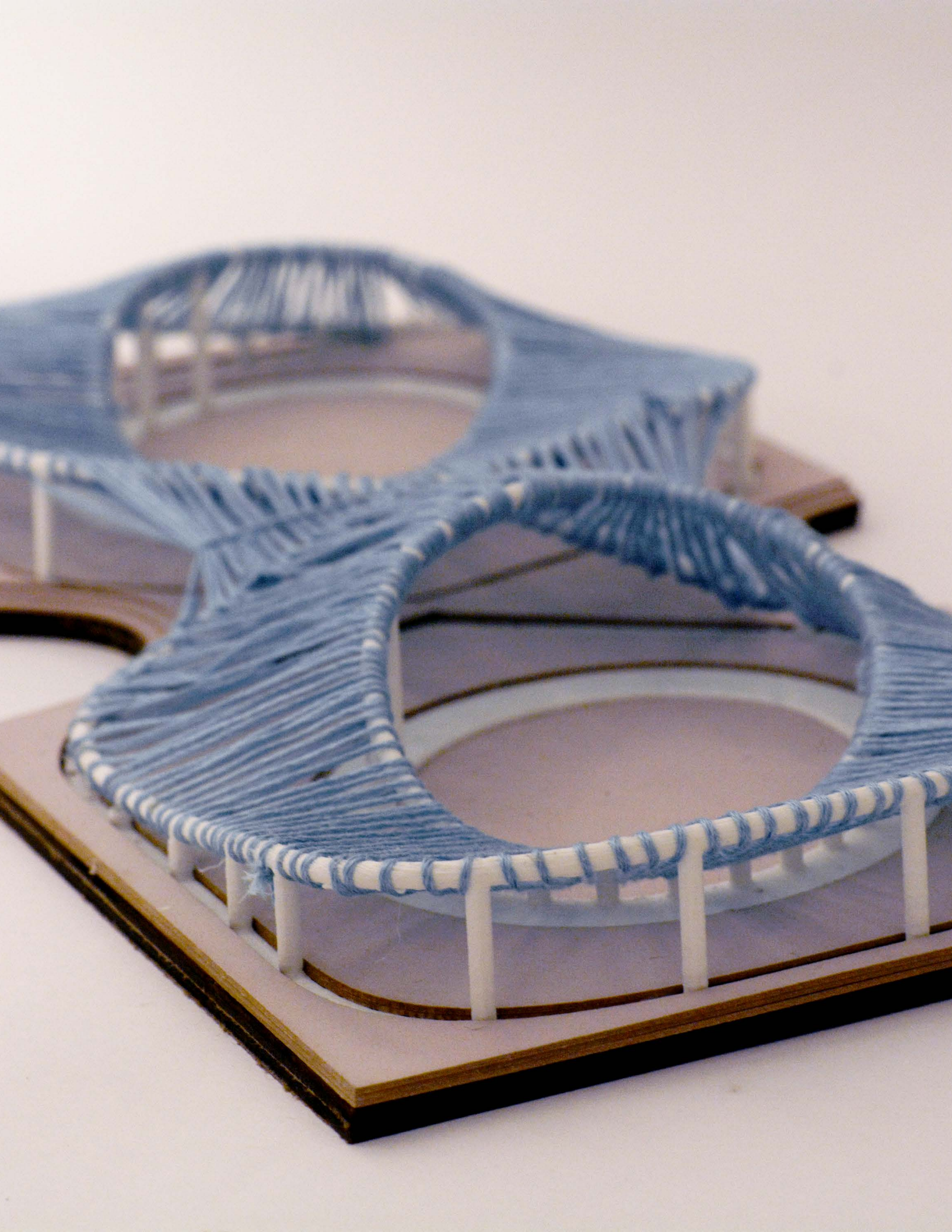
END TABLE



PIANO BENCH



END TABLE



12 ACTUALIZATION

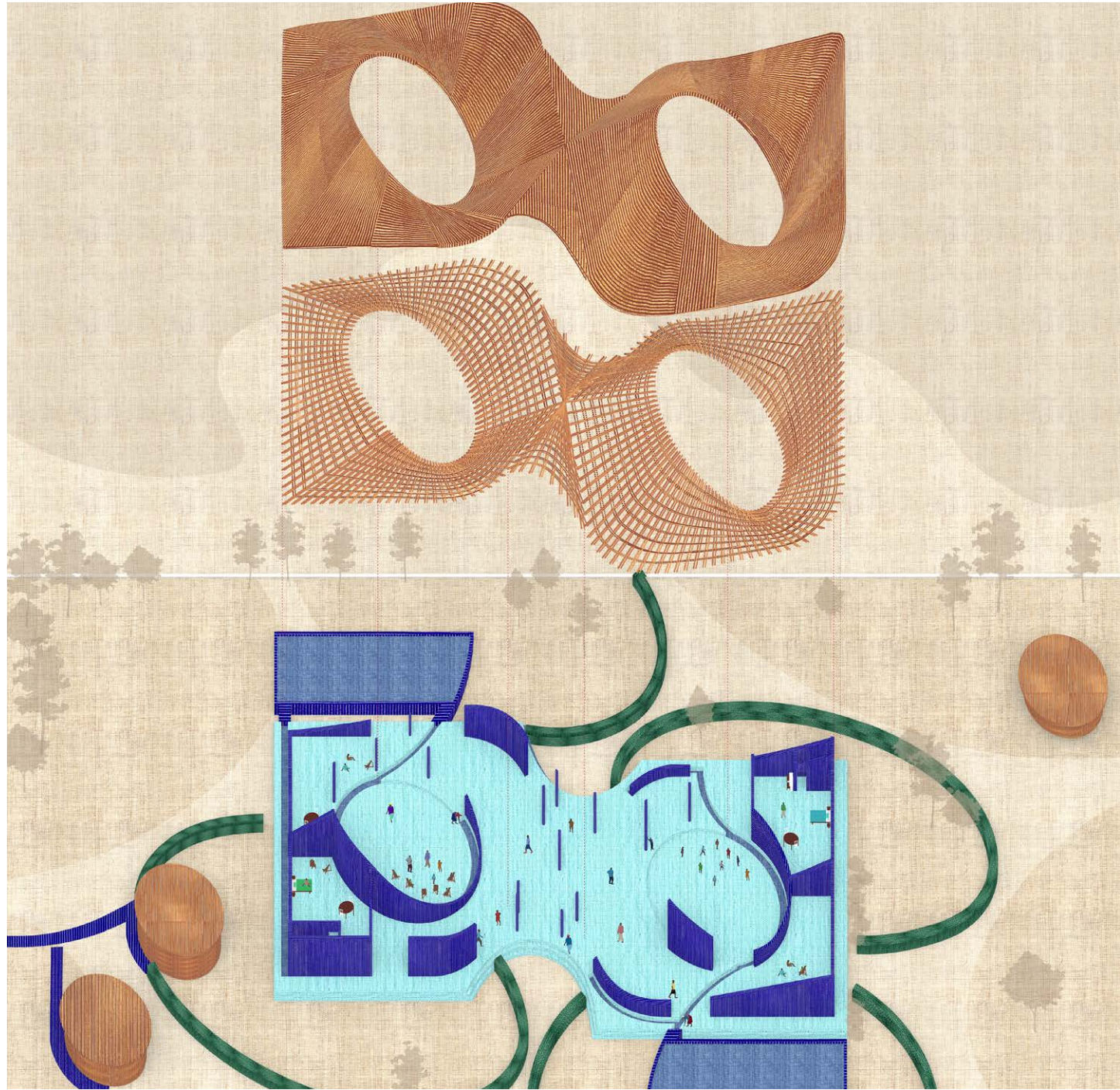
COURSE: ARCHITECTURAL DRAWING
& REPRESENTATION
YEAR: FALL 2021
CRITIC: JELISA BLUMBERG

WOVEN DRAWING

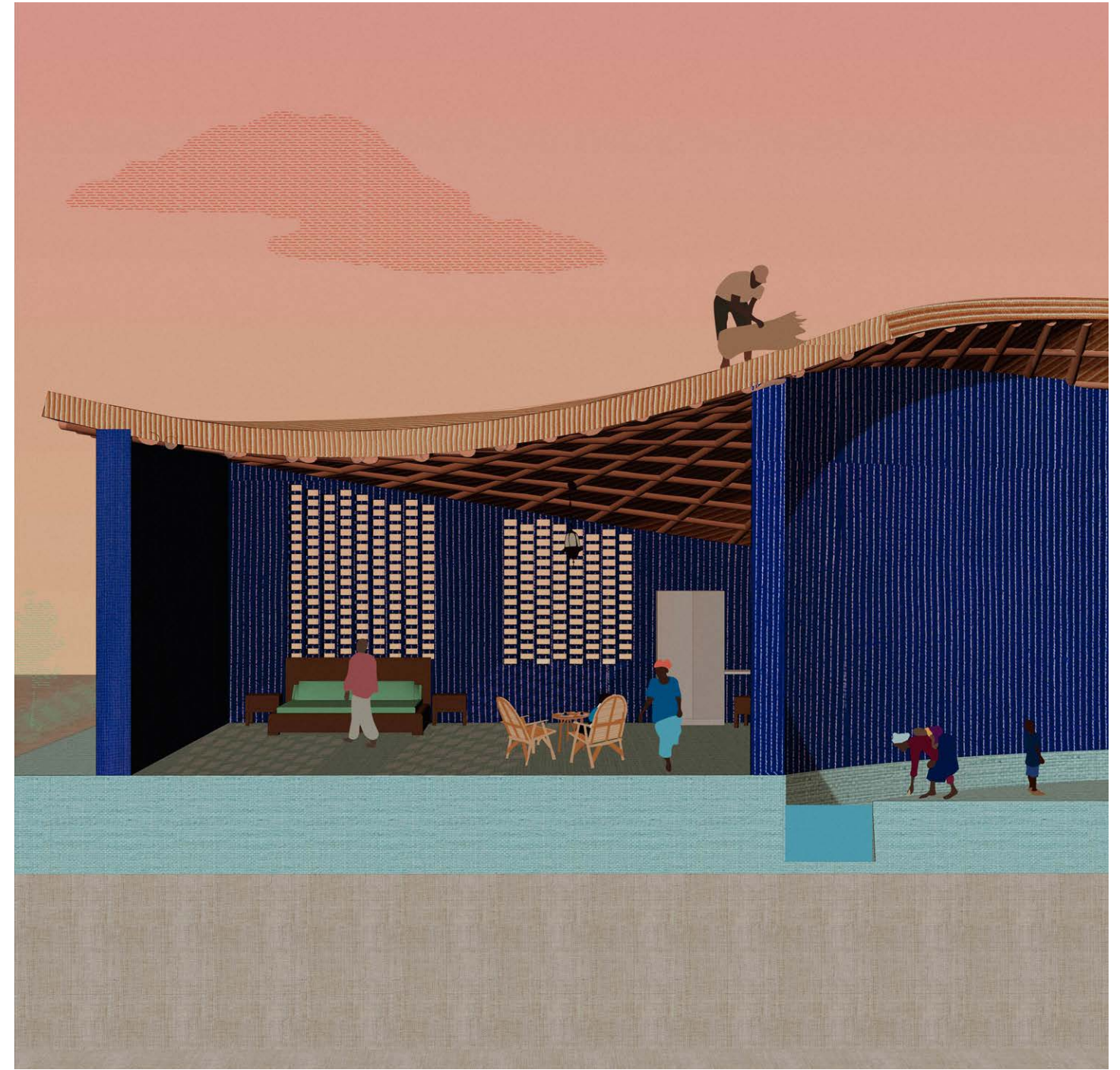
How do you represent an existing project with a new perspective?

The Artist's Residency THREAD in Senegal designed by Toshiko Mori takes the traditional pitched roof and applies a parametric transformation in order to use the roof as a strategy for collection and storage of rainwater. The building relies on local materials and construction techniques, working with local artisans to execute the project.

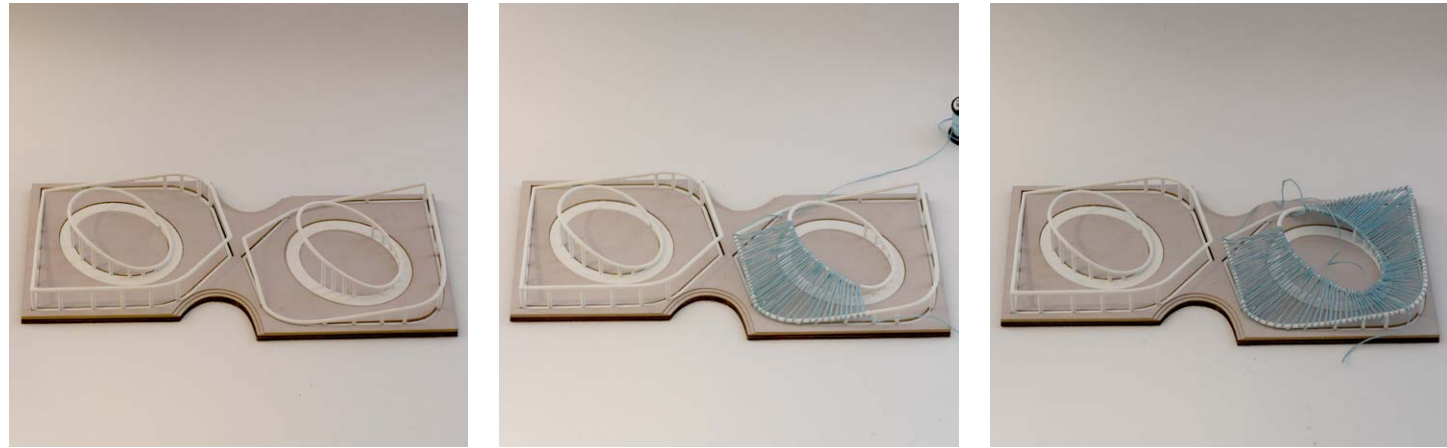
Inspired by the rich textiles of Senegal as well as the careful man-made nature of the construction materials, my project sought to illustrate these qualities in a new representation of the building. The two drawings use textile texture to illustrate the form of the building and the ways in which labor is embedded into the use of the space. The physical model takes inspiration from the name of the residency, THREAD, and uses thread as a material to recreate the roof surface. The meticulous threading of the model using my hands is representative of the local labor that carefully laid down the traditional thatched roof.



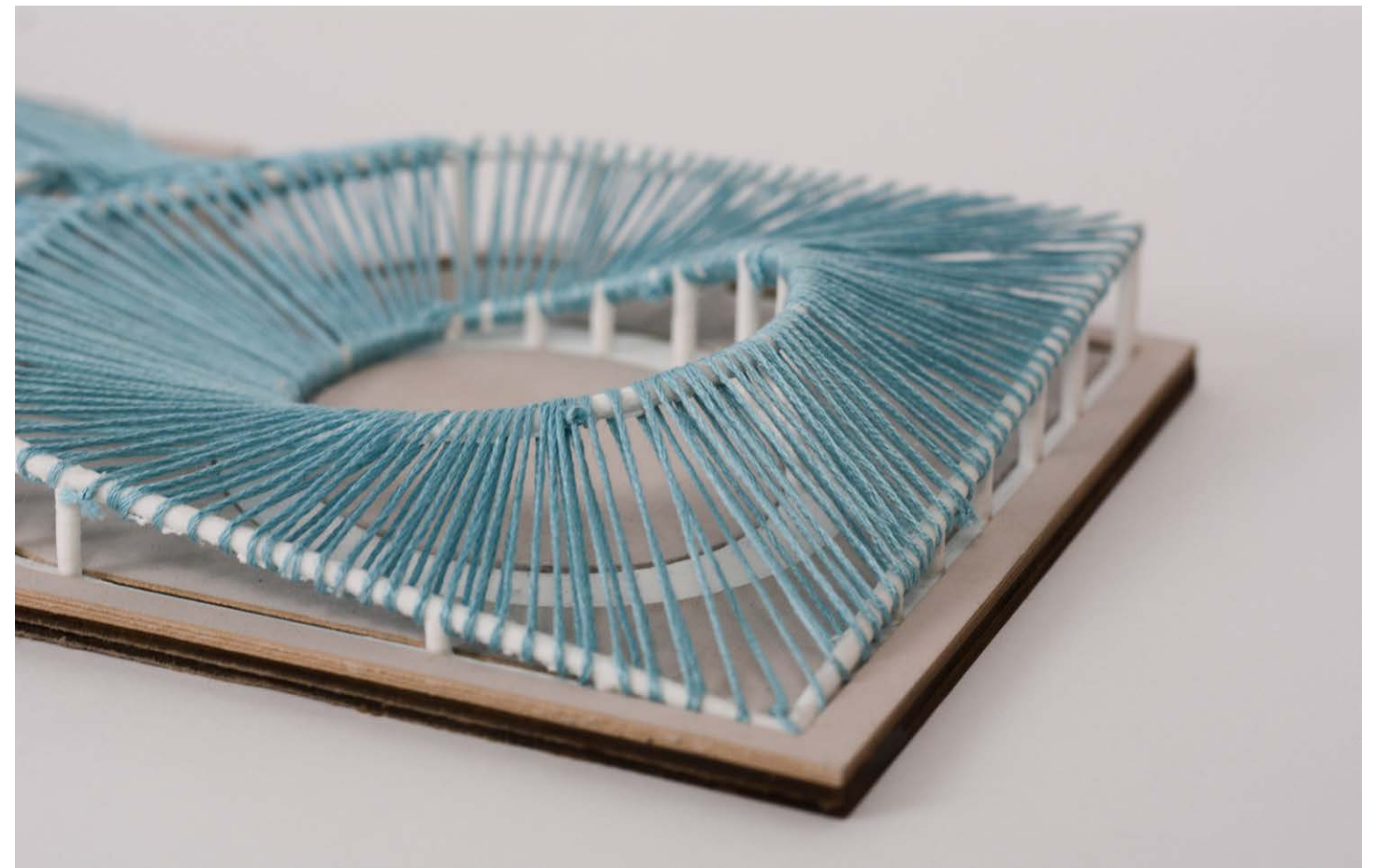
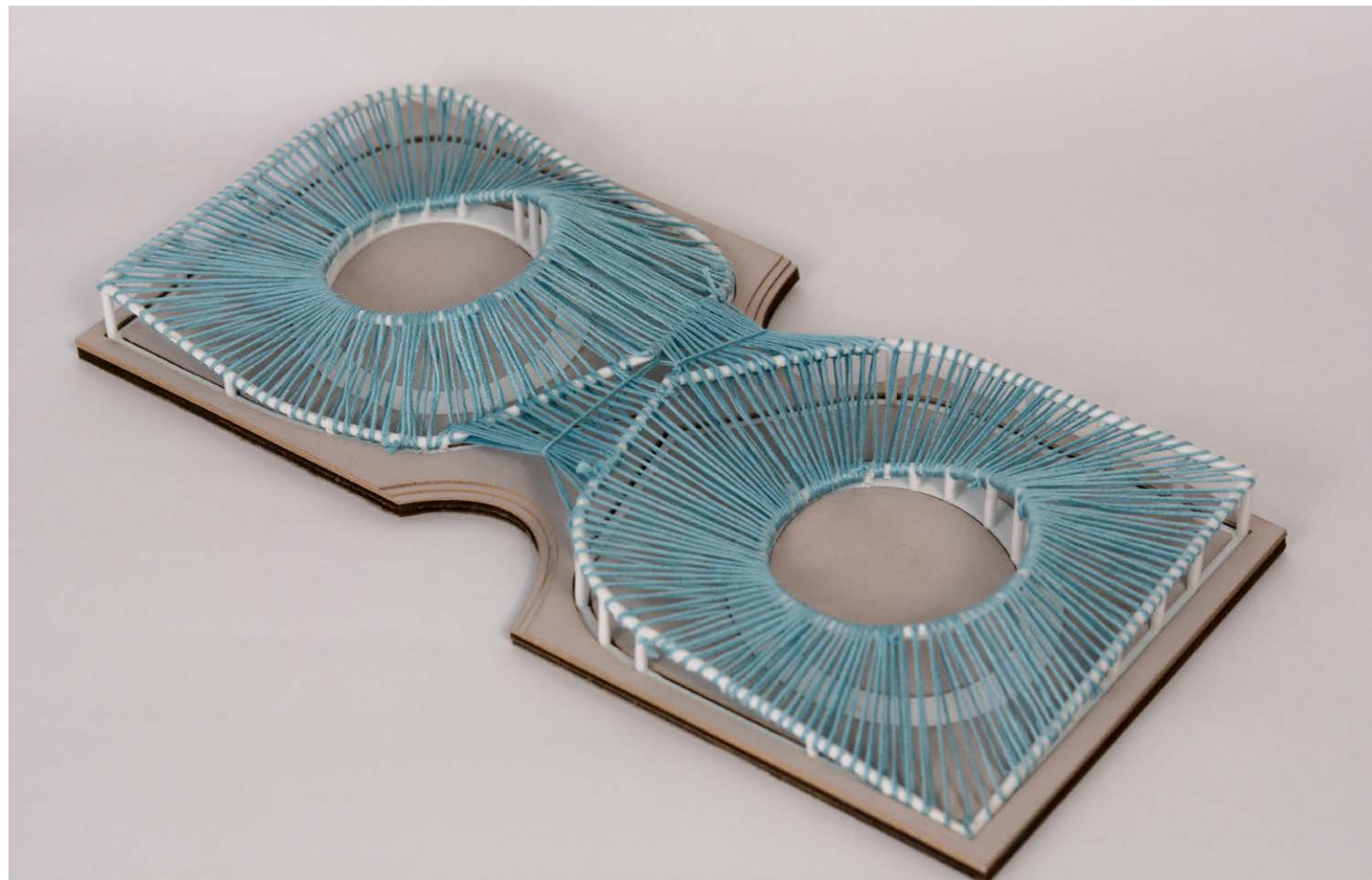
EXPLODED PLAN OBLIQUE



SECTION PERSPECTIVE



MODEL PROCESS PHOTOGRAPHS





13 ACTUALIZATION

COURSE: IF BUILDINGS COULD TALK
YEAR: SPRING 2022
CRITIC: SHARON AYALON
COLLABORATORS: BEN DILLER-SCHATZ, CESAR DELGADO, CHANGBIN KIM, LULA CHOU, MAX GOLDNER, YUNHA CHOI

DISPLAYCED



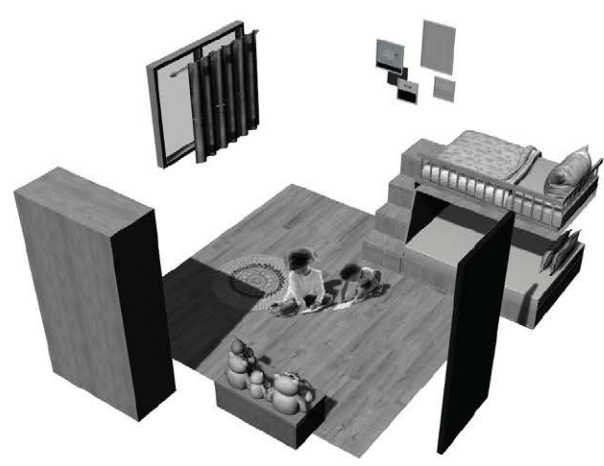
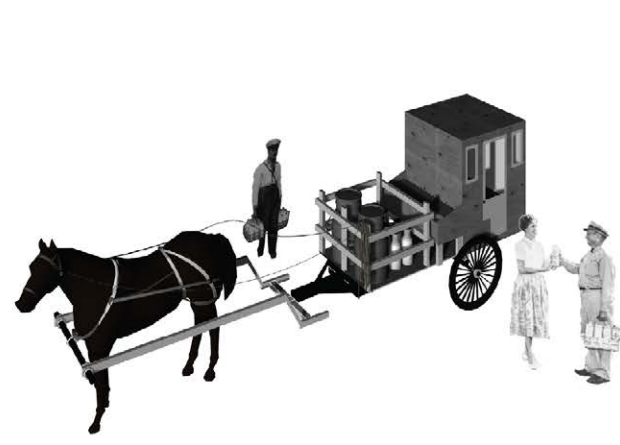
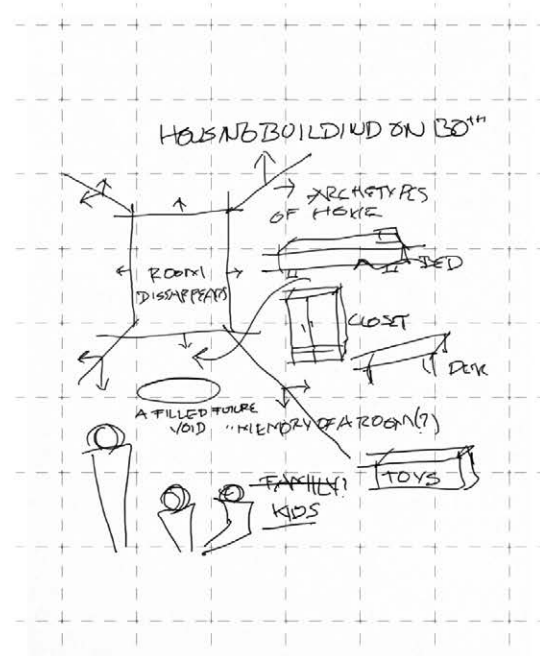
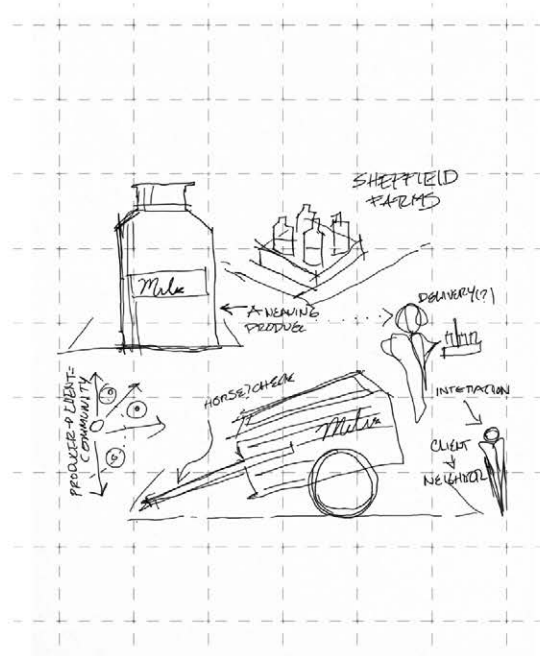
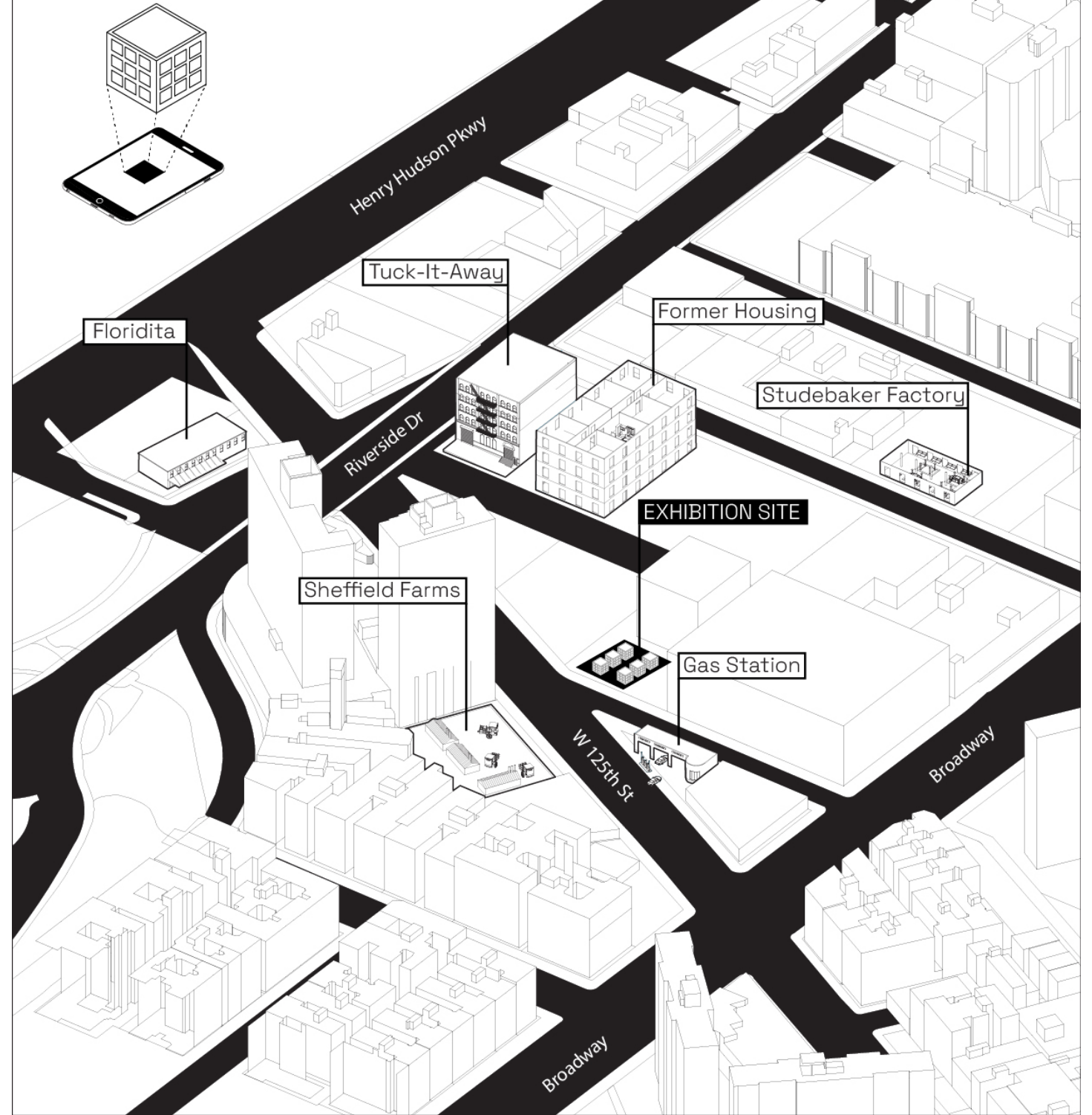
In what ways can technology be used to recreate buildings and neighborhoods that have been displaced?

This project puts Columbia's gentrification and displacement of the Manhattanville community on display, literally. Asking what traces of Manhattanville's past remain and what was fully erased, the work contends with the numerous scales of displacement, from families to local businesses to entire community networks. In comparing multiple time periods, disputes, and phases of change, the DISPLAYCED also grapples with the many nuances that come with displacement at such a large scale: the discrepancies of settlements, the other various agents of change and exploitation, as well as the archives that remain lost.

The work uses an empty display case as both a physical and virtual signifier. Physically, the display case suggests a curated museum space as well as the affect of sheer absence. Jarring and peculiar, visitors are encouraged to go up to these cases where they can scan a QR code to take them to an augmented reality on their phones, whereby they can see objects, buildings, and stories from various pieces of Manhattanville that no longer remain. While primarily clustered around the Manhattanville campus, some of these cases are dotted along the walk from Columbia's main campus, suggesting a longer tour that takes into consideration Columbia's evergrowing domain.



DISPLACED GUIDE MAP

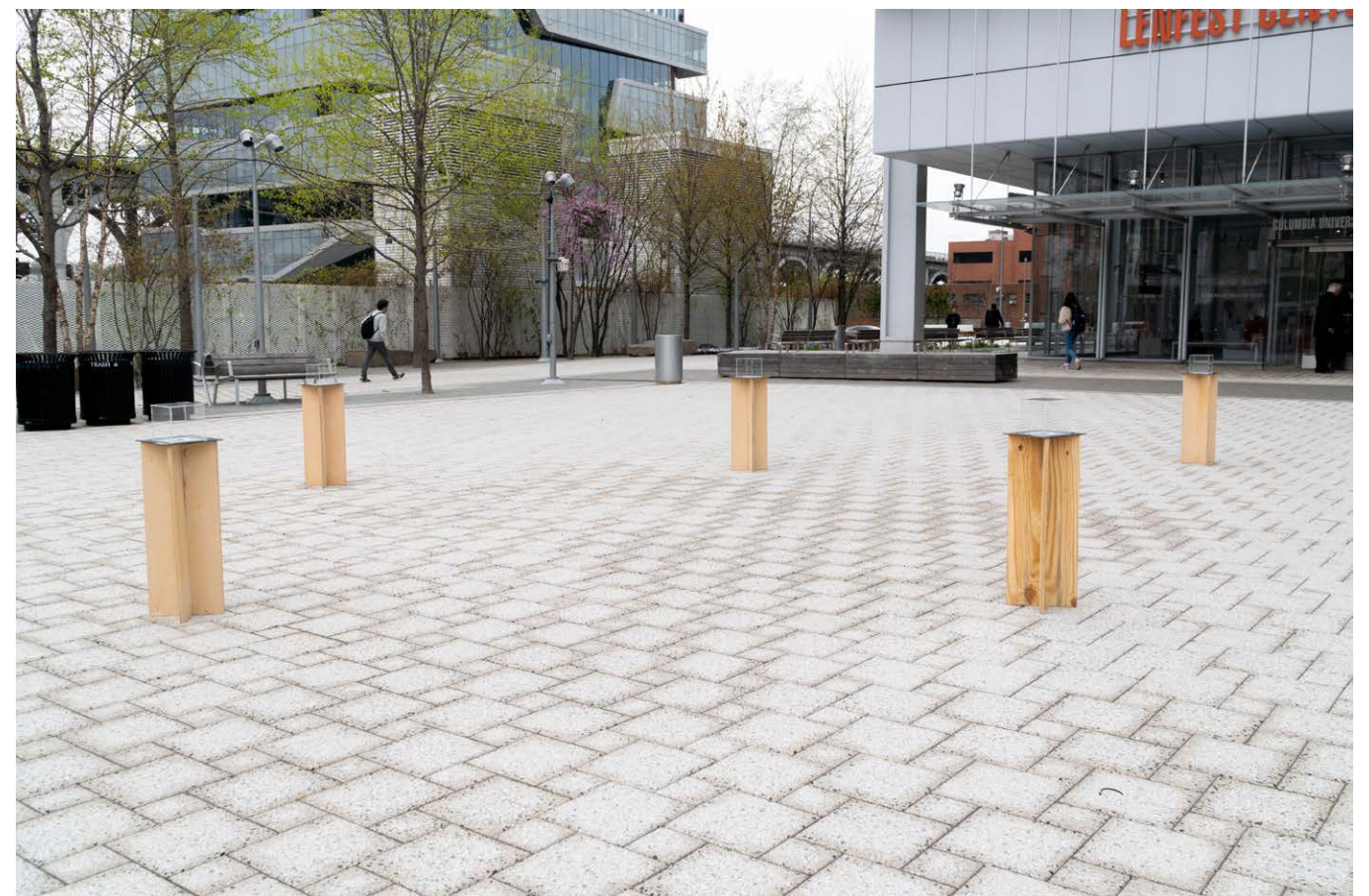
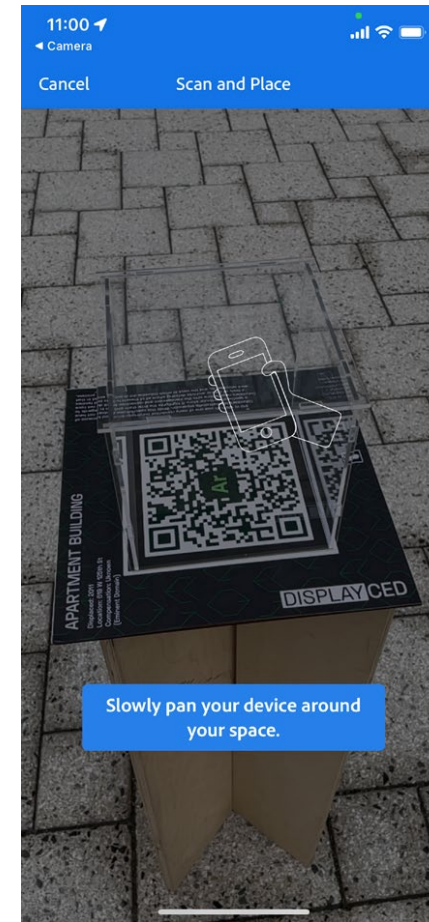
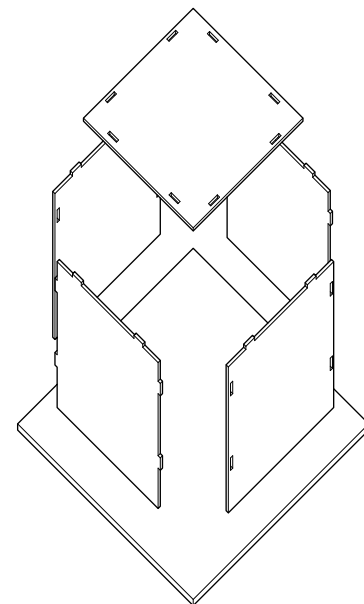
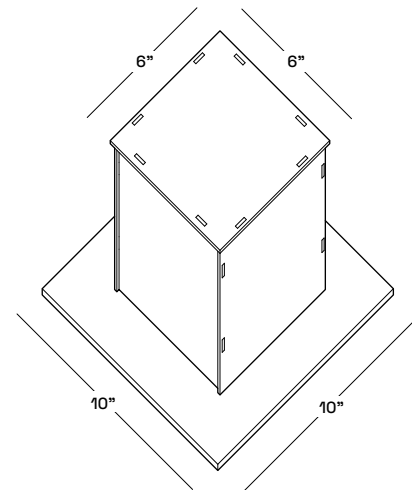
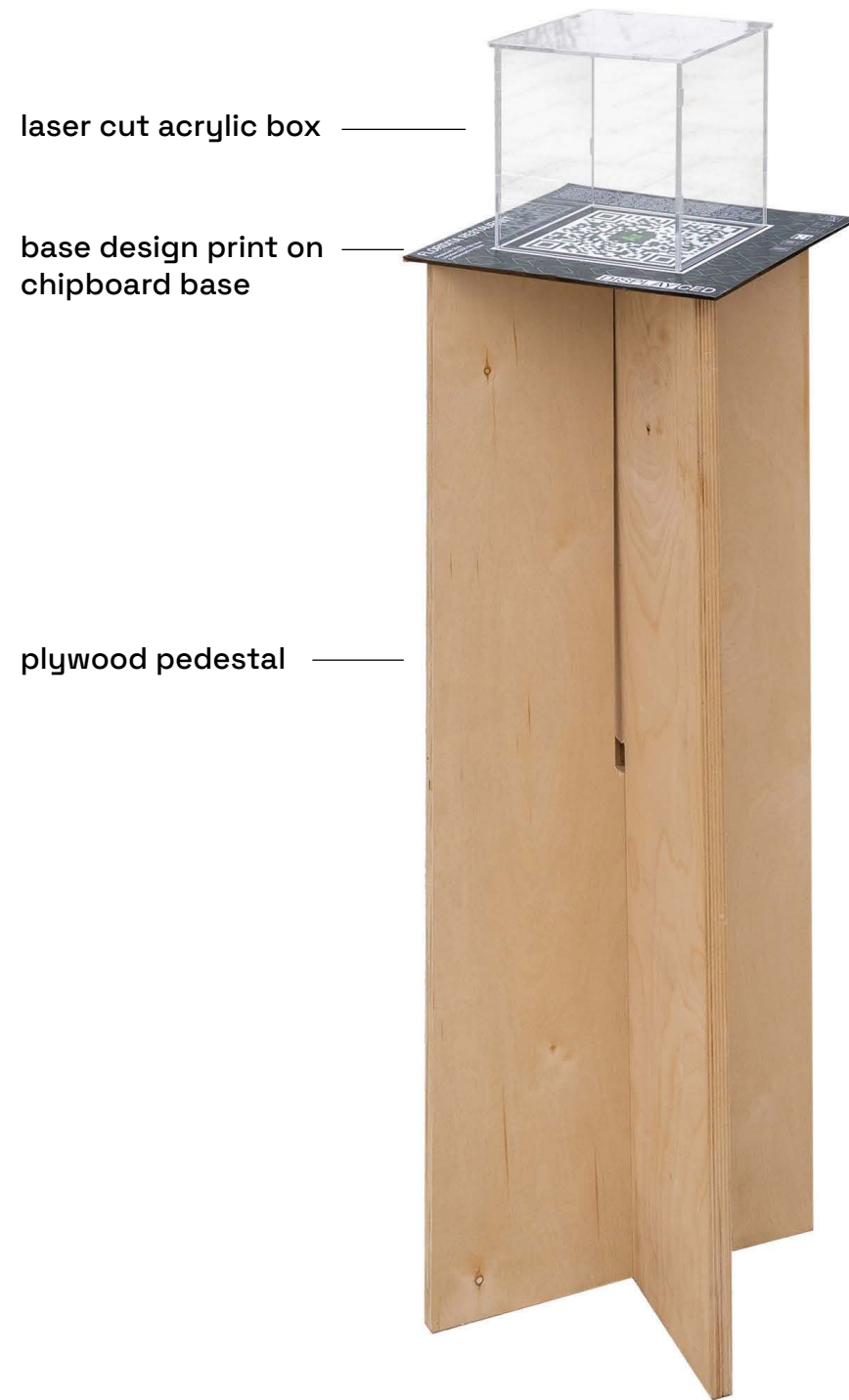


WORK PROCESS

LOCATIONS OF DISPLACED BUILDINGS

FINAL DISPLAY CASE

We designed a laser cut acrylic box that can be simply attached together to minimize the use of adhesives. This will also allow for the edge conditions to be as less apparent as possible in order for the AR objects "inside" the box to be able to be seen clearly. We placed the acrylic box on a base that includes the QR code to be read. This was balanced on top of plywood pedestals provided by GSAPP to optimize the height of the objects for viewing.





14 ACTUALIZATION

FOR PUBLIC PROGRAMS AT
COLUMBIA GSAPP DIRECTED BY
BART-JAN POLMAN
YEAR: FALL 2023

LIBRARY IS OPEN

LIBRARY IS OPEN - LIGHTBOX FRAME
Columbia GSAPP Special Events + Exhibitions
Under Bart Jan-Polman

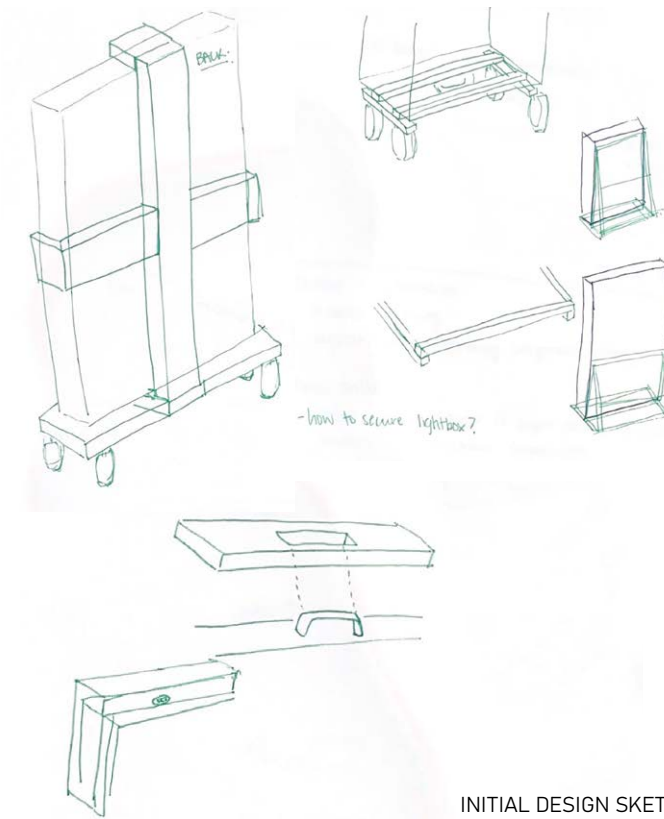
Under work-study employment, designed and constructed a frame to carry a lightbox to be used to present posters for the Library is Open events.

Materials: CNC-ed plywood, screws, wheels.

◀ ON DISPLAY IN AVERY



FINISHED LIGHTBOX FRAME



INITIAL DESIGN SKETCHES



CNC CUT PIECES

ERISA NAKAMURA

COLUMBIA GSAPP
MASTER OF ARCHITECTURE

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