

# **COLLIDE**

**Portfolio**

# Prologue

Living in an era with crucial climate change, the designing and making of architecture has become imposing in a new way. How to apprehend the certainty of climate change with the uncertainty of how to engage it as concerned citizens, as an endangered species, but also, importantly, as architects in the practices shaping the built environment.

This series of projects presents a range of investigations into various topics such as housing, infrastructure, schools, landscapes, and adaptive reuse. These explorations encompass solutions, innovations, and creative thinking that not only inspire hope but also create anticipation for a fresh architectural future. Buildings are often seen as repositories for materials that are discarded once their lifespan ends, resulting in valuable resources going to waste. However, by incorporating a questioning approach during the design phase, we can uncover constructive techniques that may be implemented in future practices. This allows us to recycle and salvage the valuable materials contained within buildings, preventing their loss and contributing to a more sustainable approach in architecture.

**Columbia University**  
**Graduate School of Architecture, Planning and Preservation**

Master of Architecture  
 2019 - 2023

# Plan

## Iteration

## Exploration

### Vibrant Node

Core III / Fall 2020

### From Cradle to Cradle to Grave

Adv V / Fall 2022

### Entanglement

Core II / Spring 2020

### Poly-species Environments

Adv IV / Spring 2021

### Post War

Adv VI / Spring 2023

### Sub-station

Core I / Fall 2019

### Goo

The Outside In Project / Spring 2023

### SESC Pompeia

ADR / Fall 2019

### Oxtorgsgatan Skin

Advanced Curtain Wall / Fall 2022

### Orbiting

Techniques Of The Ultrareal / Spring 2021



# Vibrant Node

Housing & Community / Bronx, New York  
2020 Fall Core III

Critic : Galia Solomonoff  
Partner : Hazel Villena

If an apartment building's amenity spaces are an afterthought during the design process, they will feel like afterthoughts in someone's life, too. We want to make a place where memories can be created, a new type of communal space setting will enhance the living experience of the residents. And it will help the residents to form bonding. The energy of a building filled with residents that are happy and excited to meet people is unique and unmistakable. It is something that can be encouraged, with design. In an attempt to achieve so, we have created an urbanscape that has contrasting architectural language.

Unlike most of the apartment buildings, where they integrated all the amenity spaces at one spot. We are proposing to separate all the amenities at different locations. Each amenity space will be integrated with several housing units to form a cluster. For example a library combines with four 1B1B, two 2B1B and one 3B2B to become one cluster. And we have in total 12 clusters that are scattered on our site.

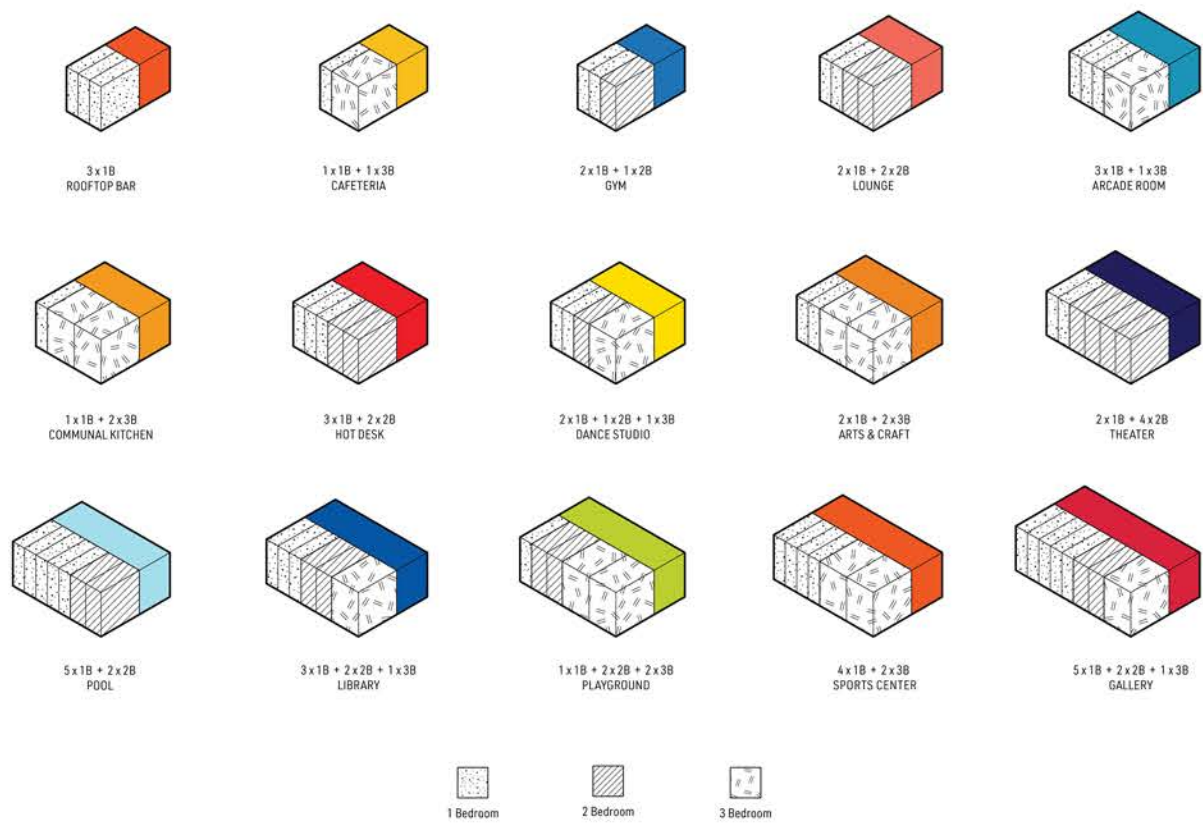
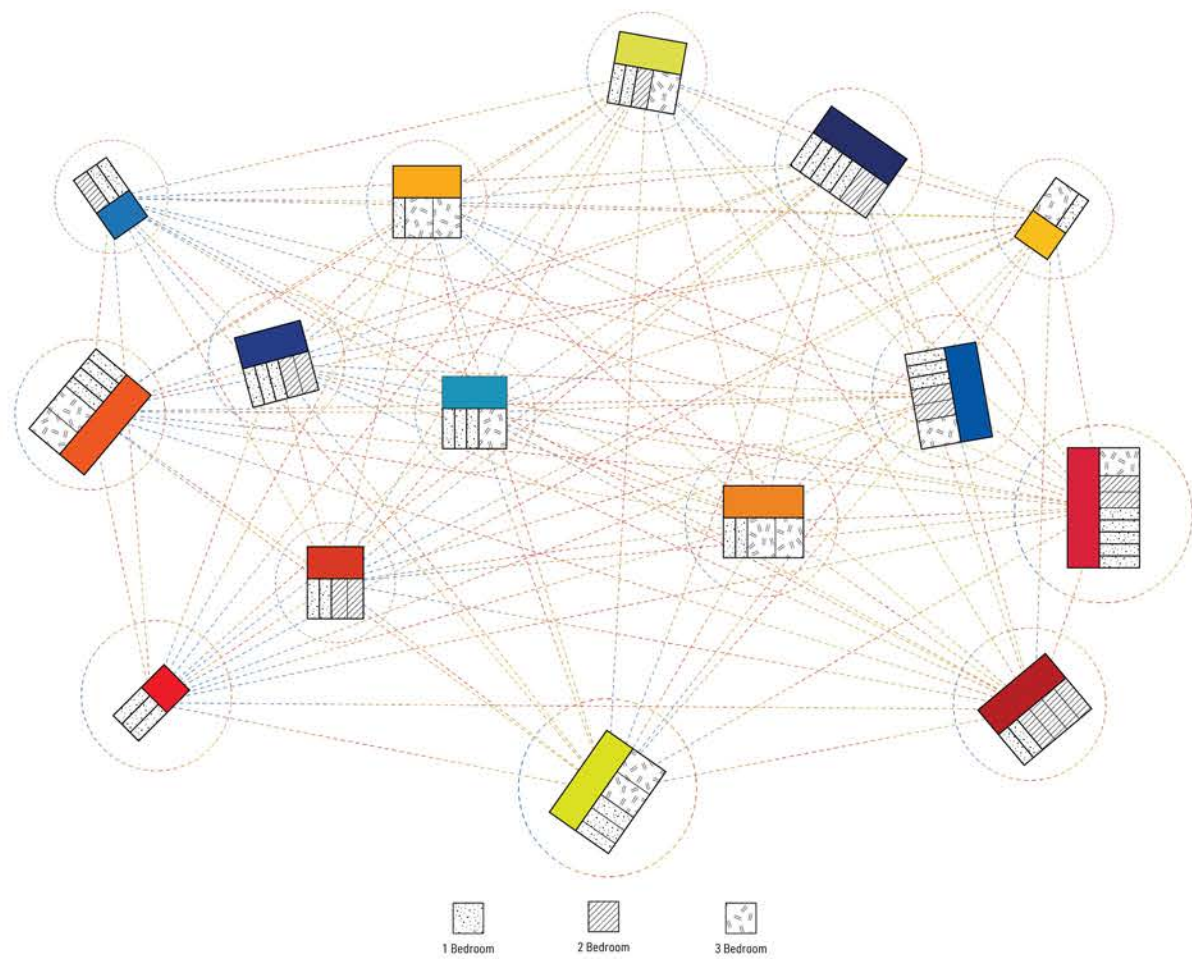
We are having 5 main housing buildings with 5 sets of cores. Each cluster will be wrapped around the core. From the ground floor plan, we are creating a communal garden that opens up to the public. Additionally, an elevated park will be floating above at the center of the ground level garden, which will have connecting paths to different clusters. In order to have more outdoor communal spaces, we are creating vertical gaps in between the clusters, to create a mezzanine space which can be a sky garden or just an outdoor gathering space.

We're thoughtful when we choose the background for memorable moments. Common areas in the building are where all the fun stuff is going to happen, and they should be anything but common. The lounge, the rooftop, maybe even a game room — these are the places where memories are made. The amenity spaces should be the intersections where random encounters make for the stories worth sharing.



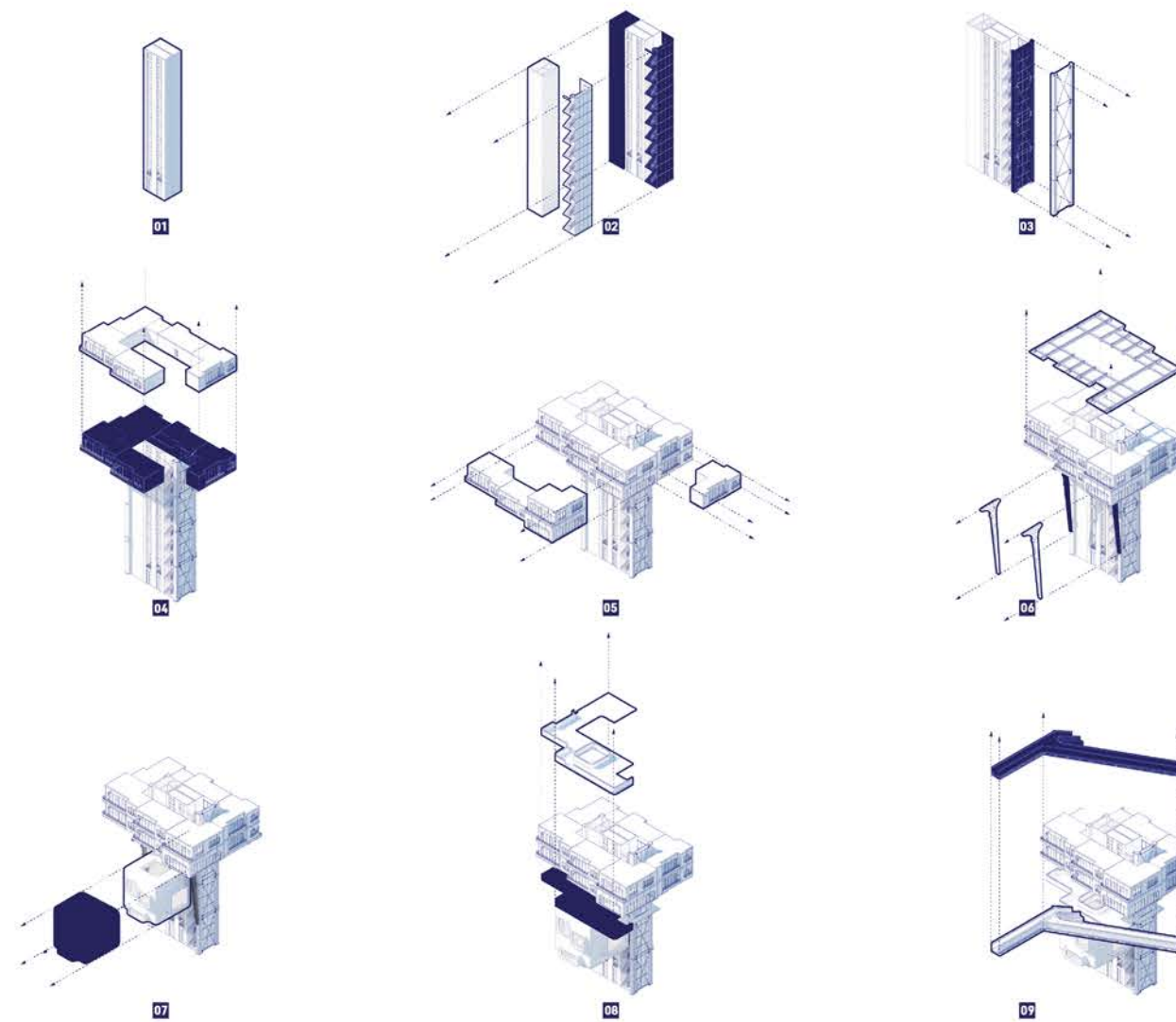


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**Unit Diagram**

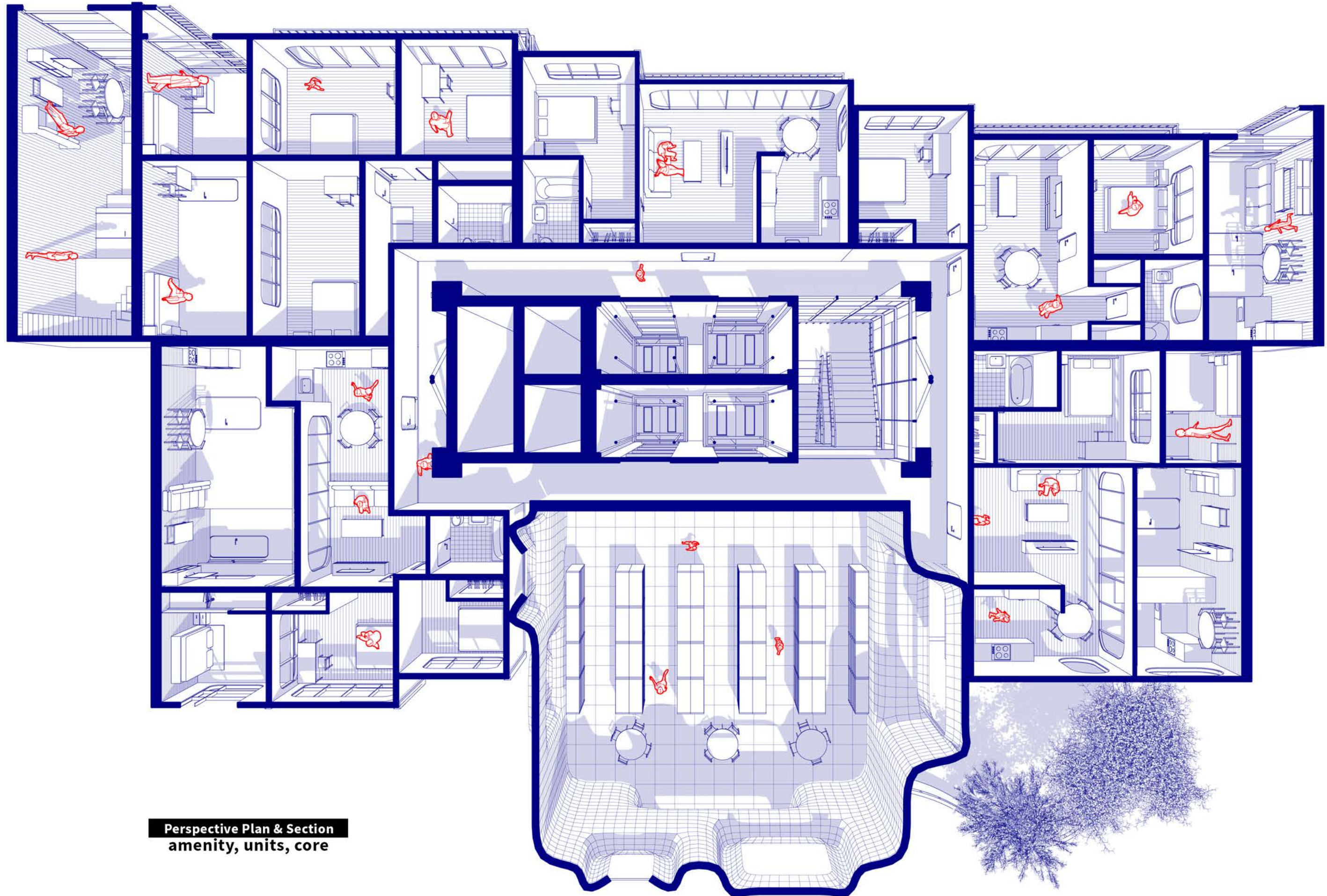
Amenity to Housing Unit relationship study



**Cluster Formations**



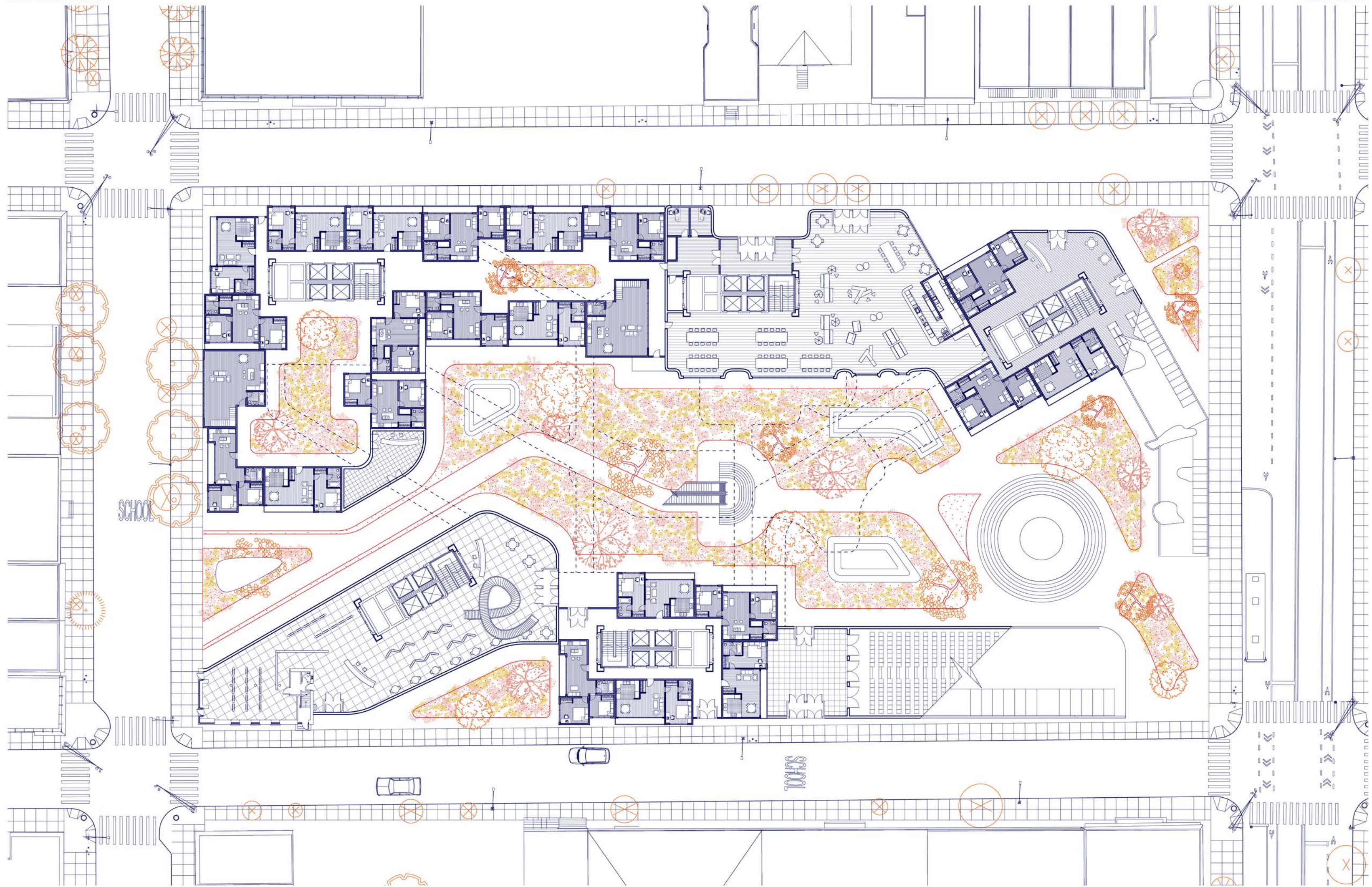




Perspective Plan & Section  
amenity, units, core

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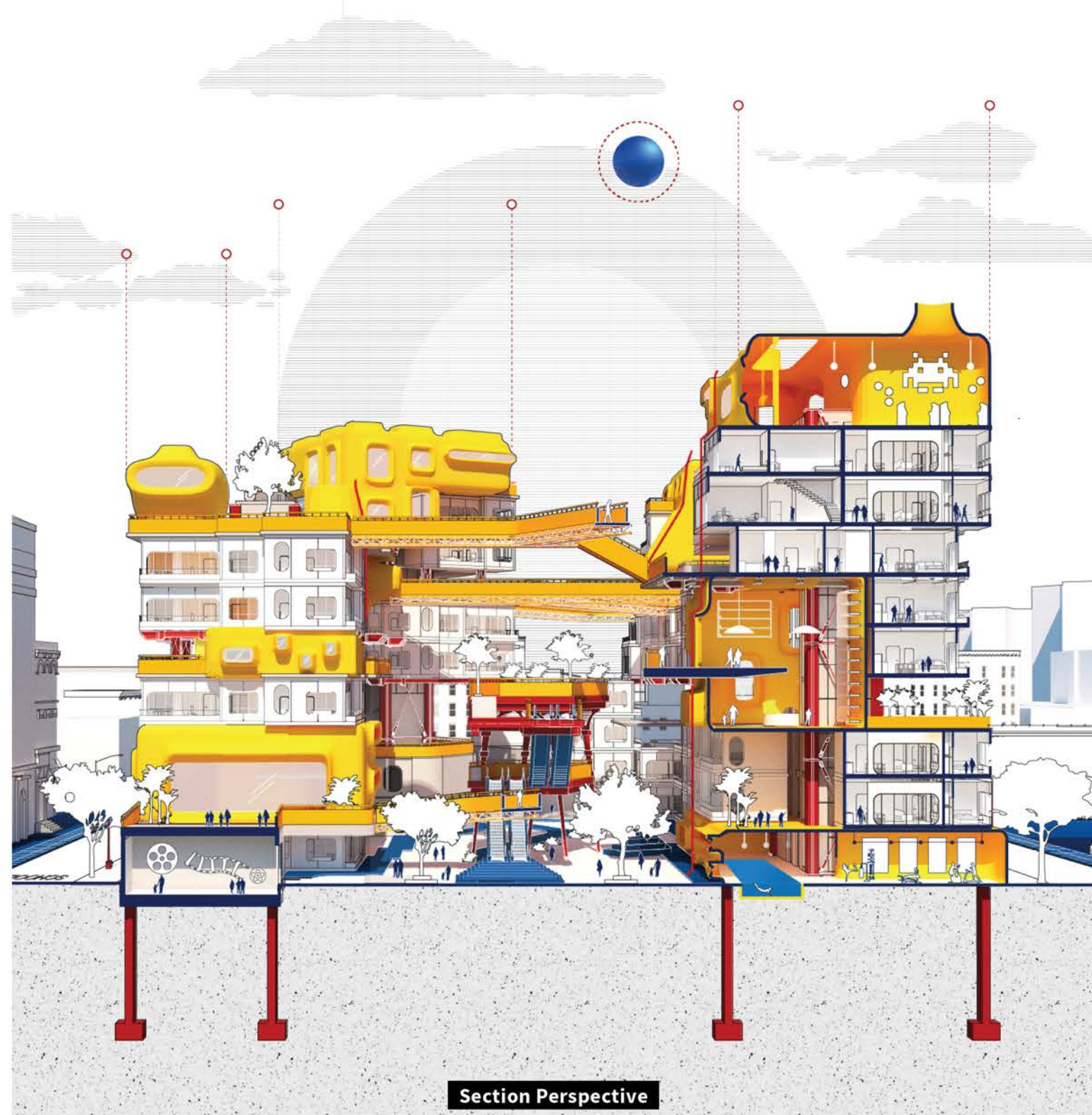
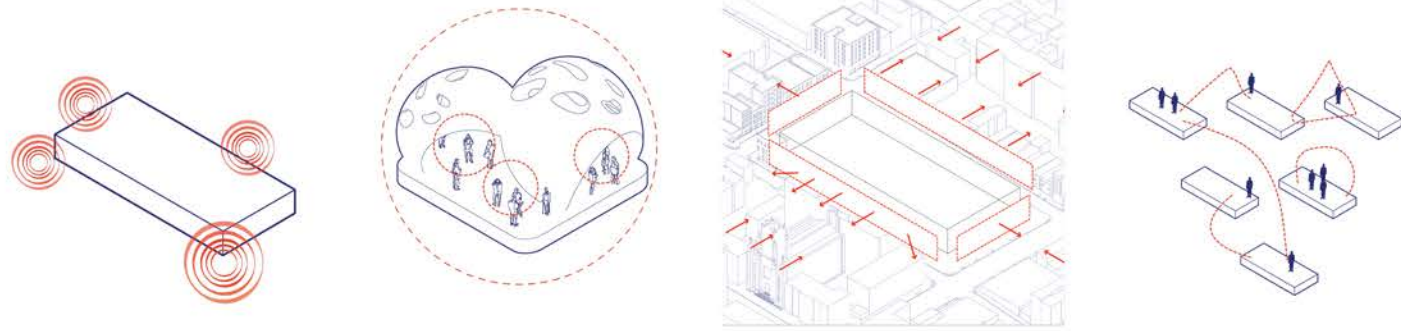


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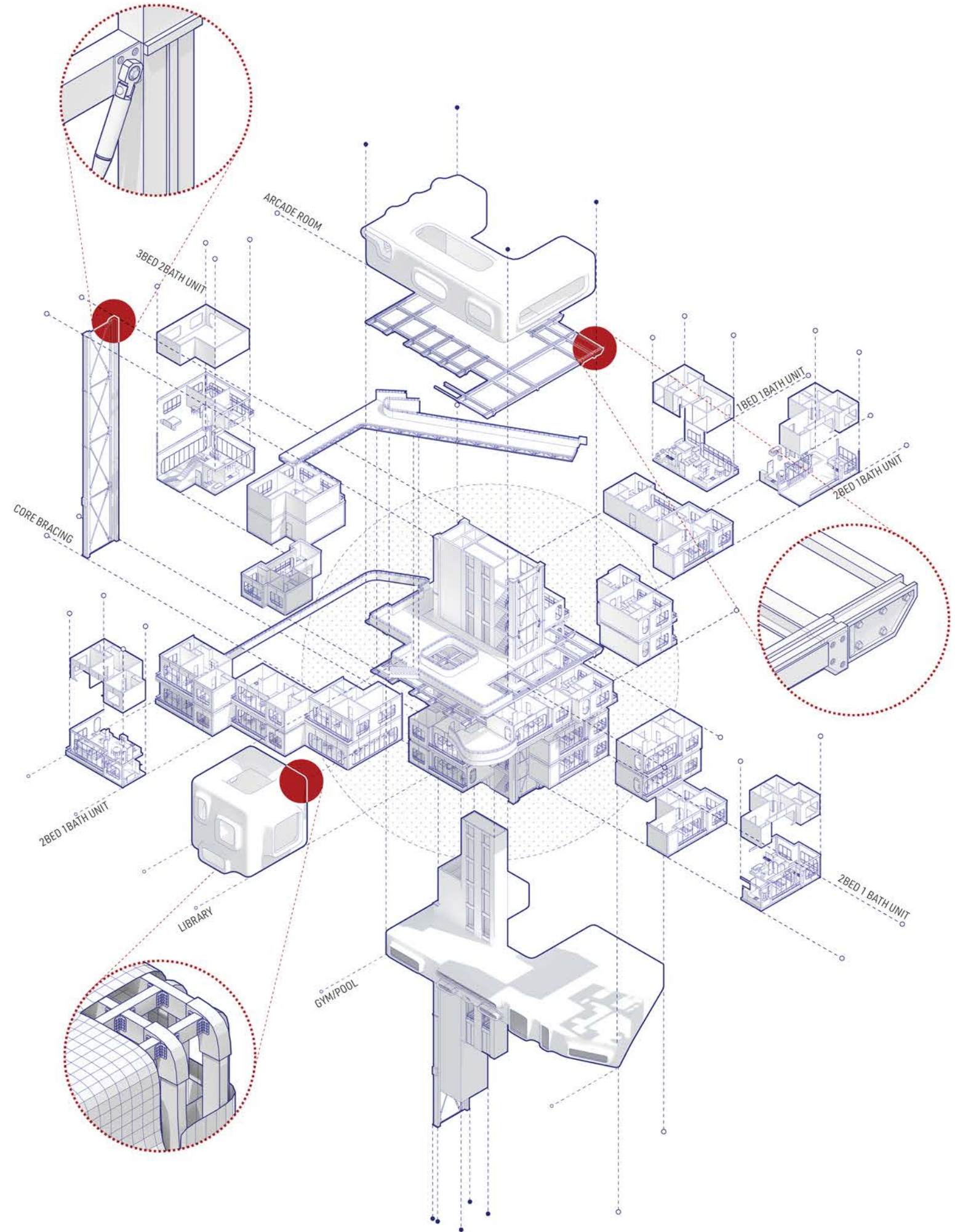
SCHOOL

SCHOOL





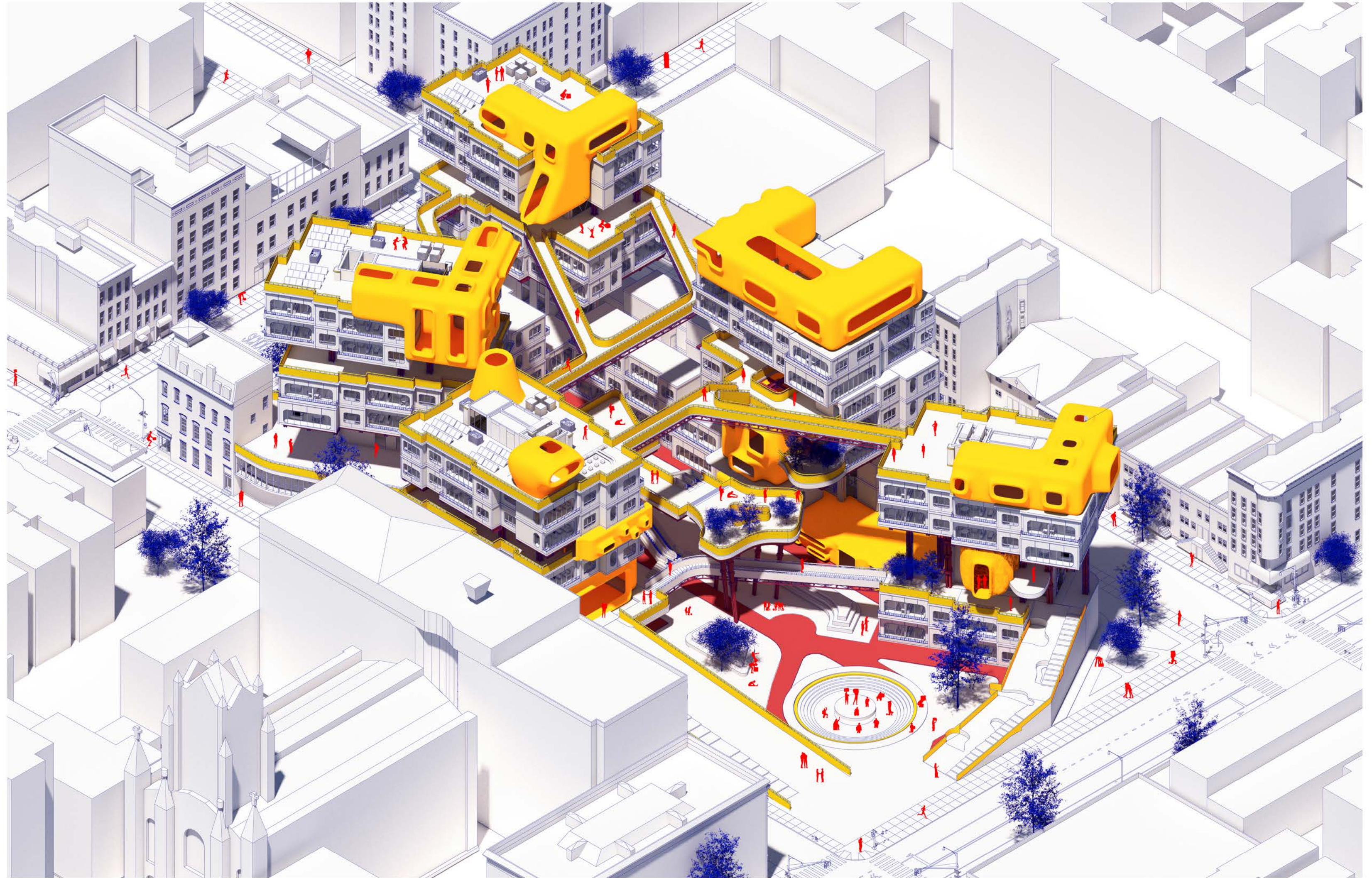
Section Perspective



Exploded Axonometric

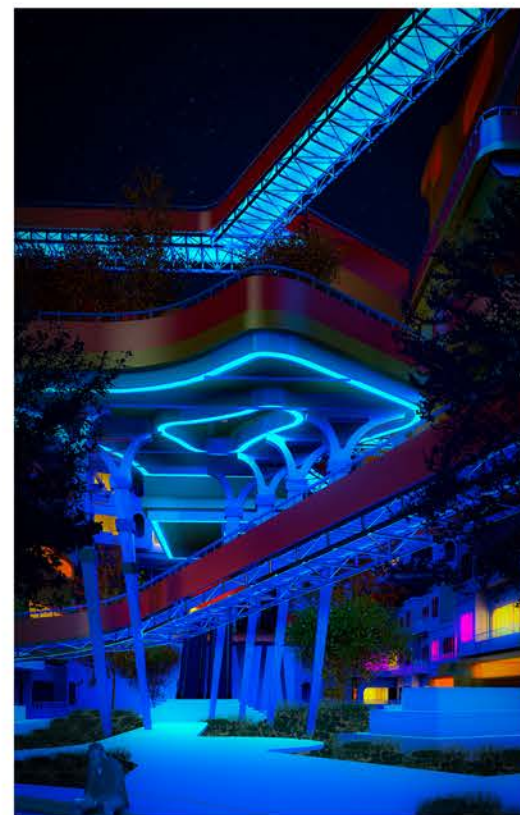
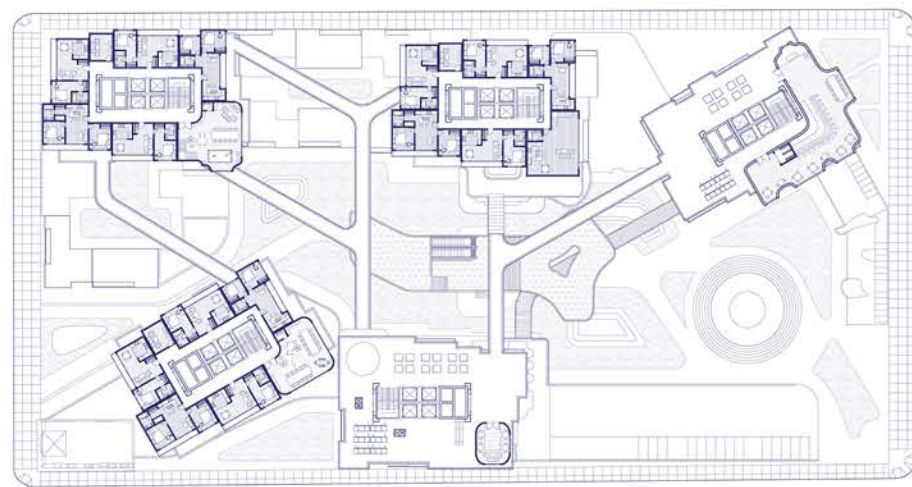
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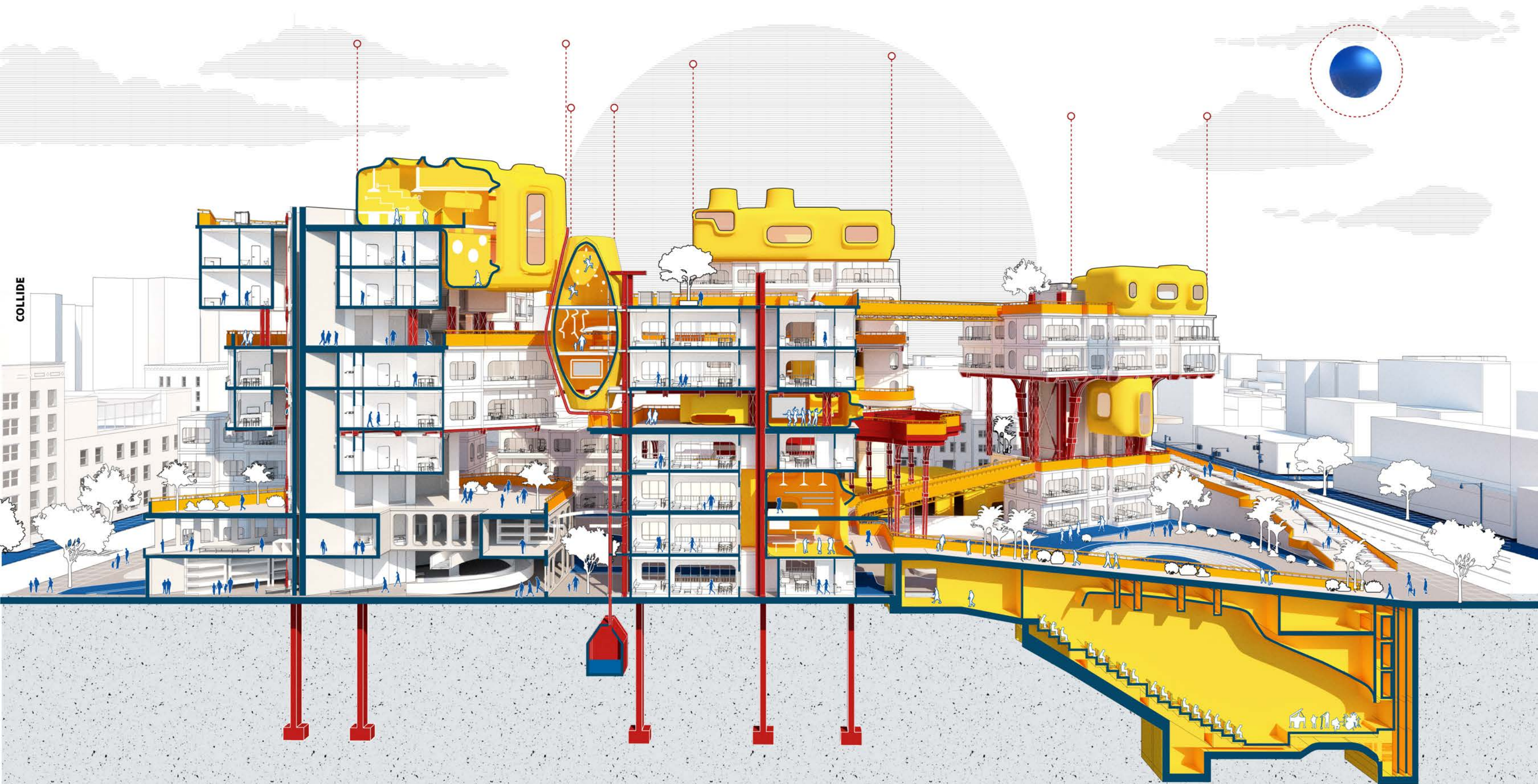


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# From Cradle to Cradle to Grave

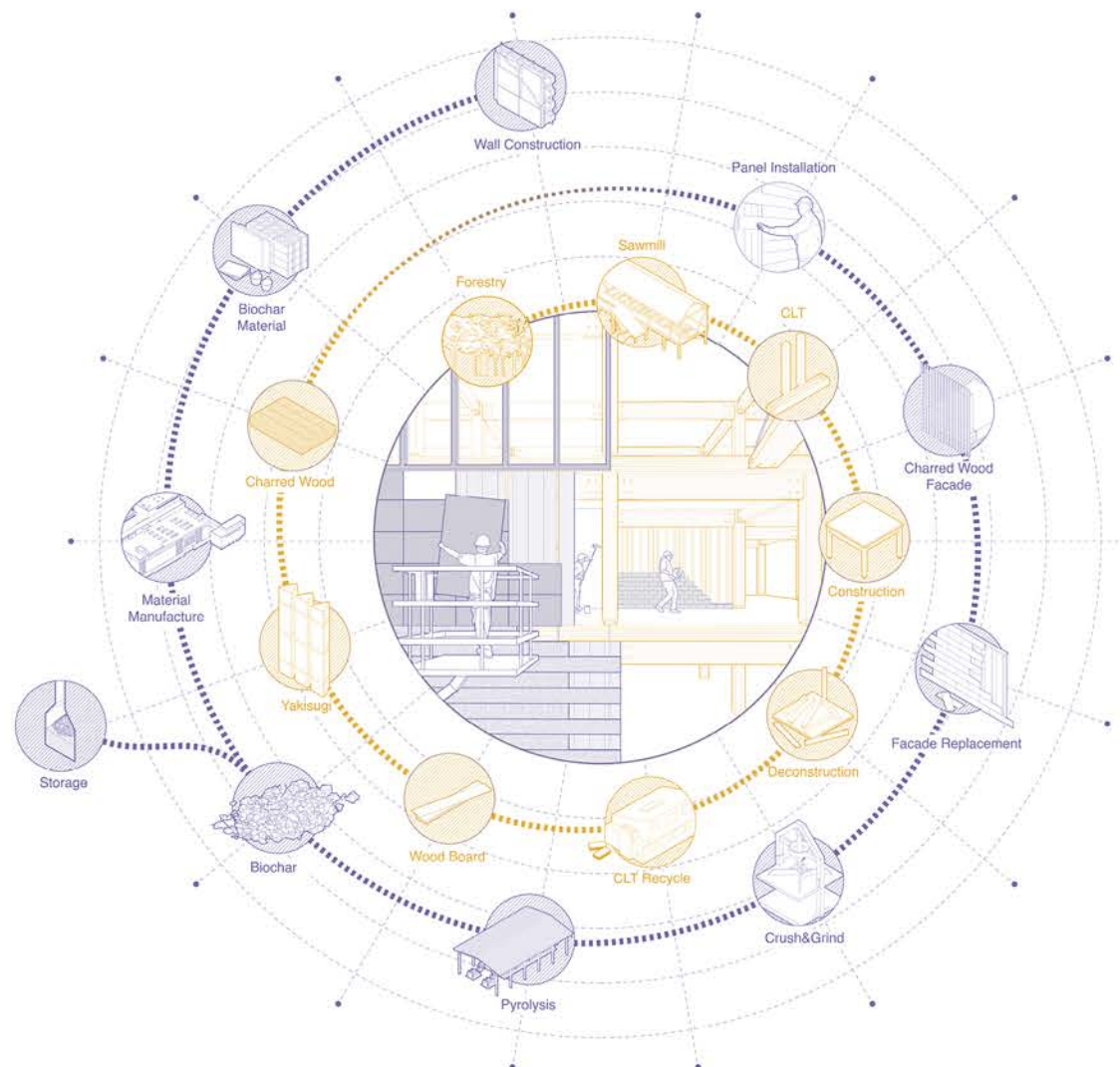
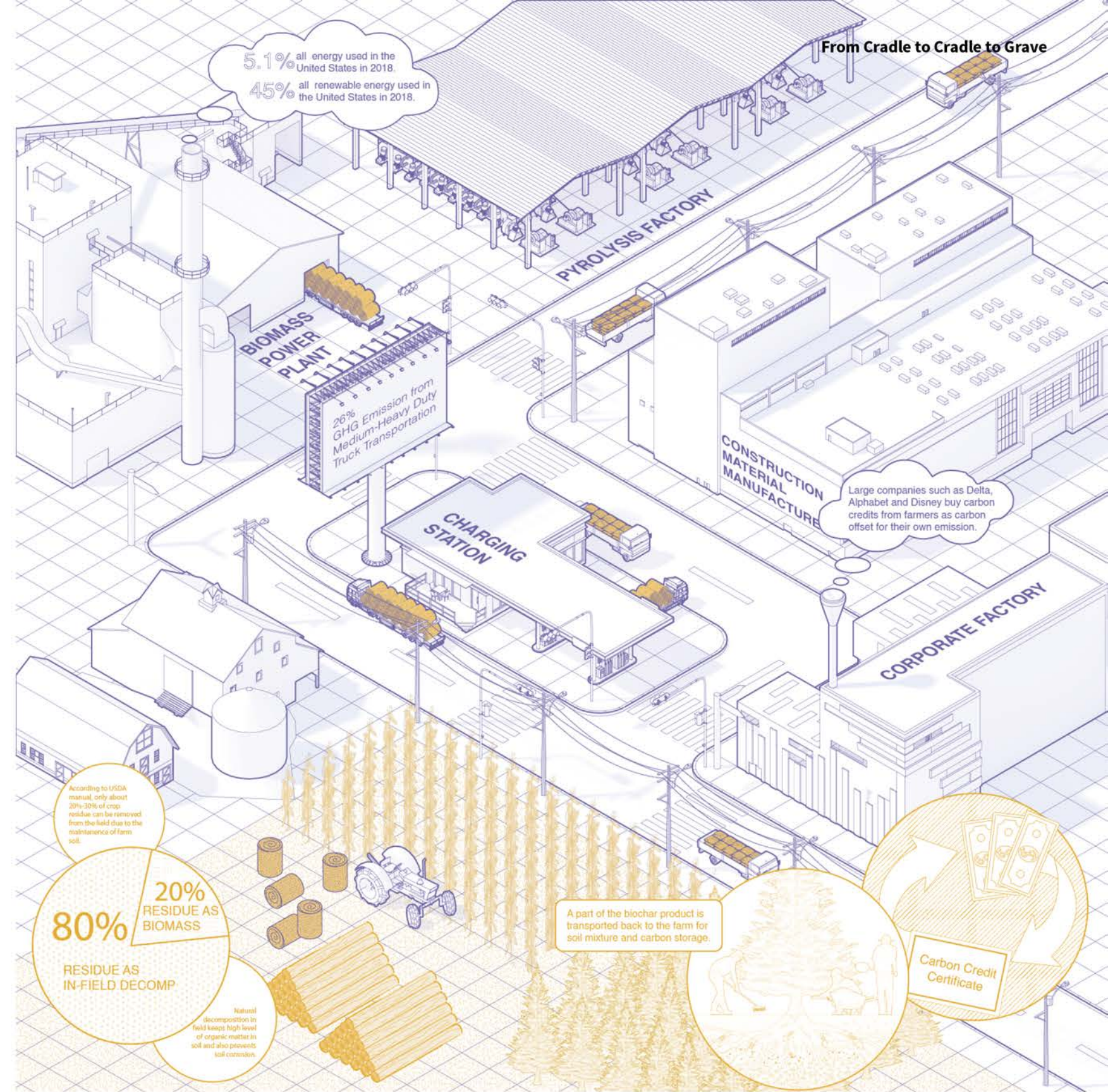
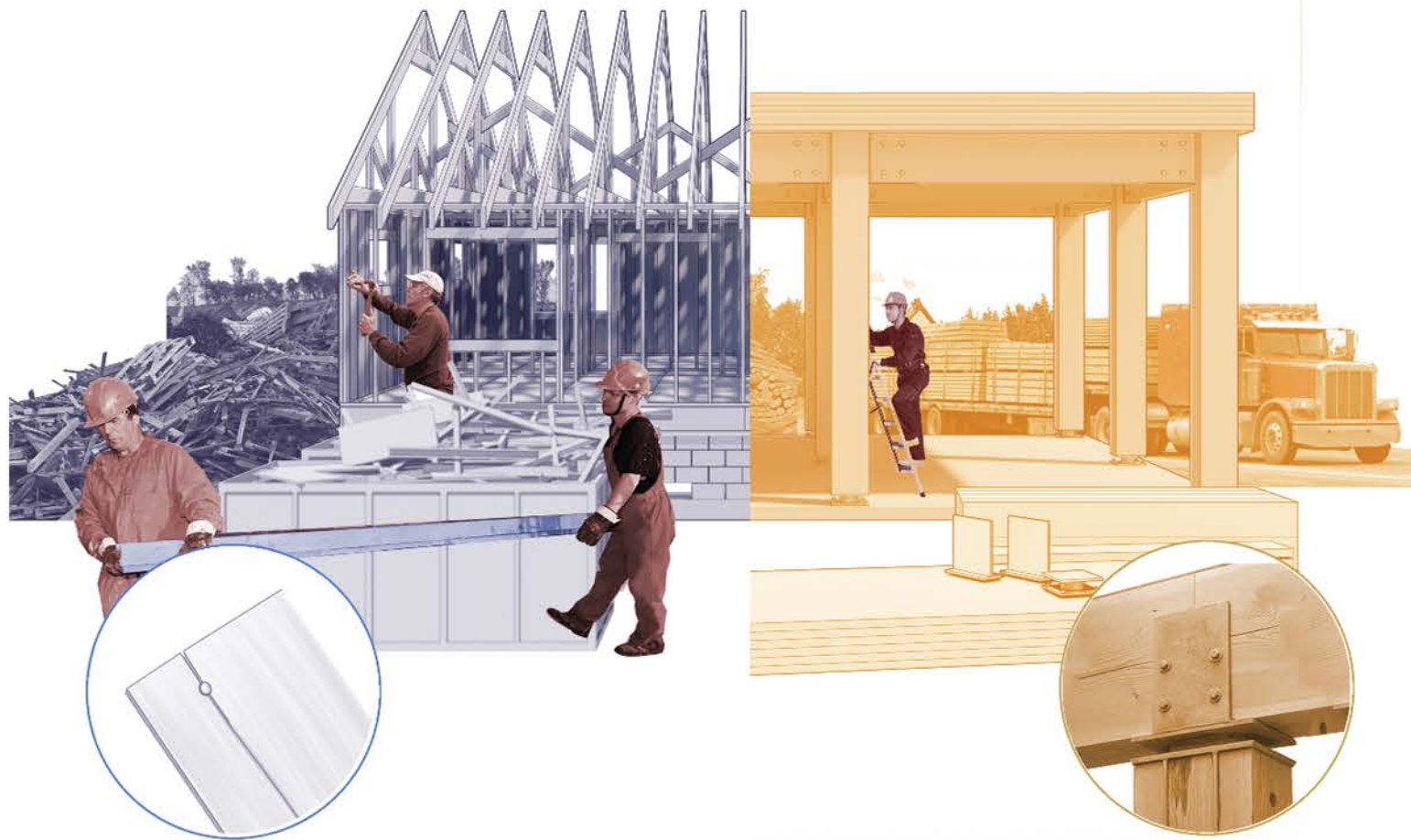
Civic, Infrastructure / Anchorage, Alaska  
2022 Fall ADV V

Critic : David Benjamin  
Partner : Tom Zixiao Zhu

The demolition of stick frame houses has contributed a huge portion of the construction waste. Due to the low recycling rate, most of the wood will be burned or landfilled, which releases carbon back into the atmosphere. Resonated with the Buy Clean initiative, in 2025, "From Cradle to Cradle to Grave" responds to the policy, announced by the Alaska governor, to create Stick Frame Waste Treatment Facility in Anchorage. The facility not only transforms stick frame waste into biochar, a highly stable material that has a net carbon-negative production process but also serves as carbon storage. The proposal utilizes mass timber to promote low embodied carbon and reusable construction materials.

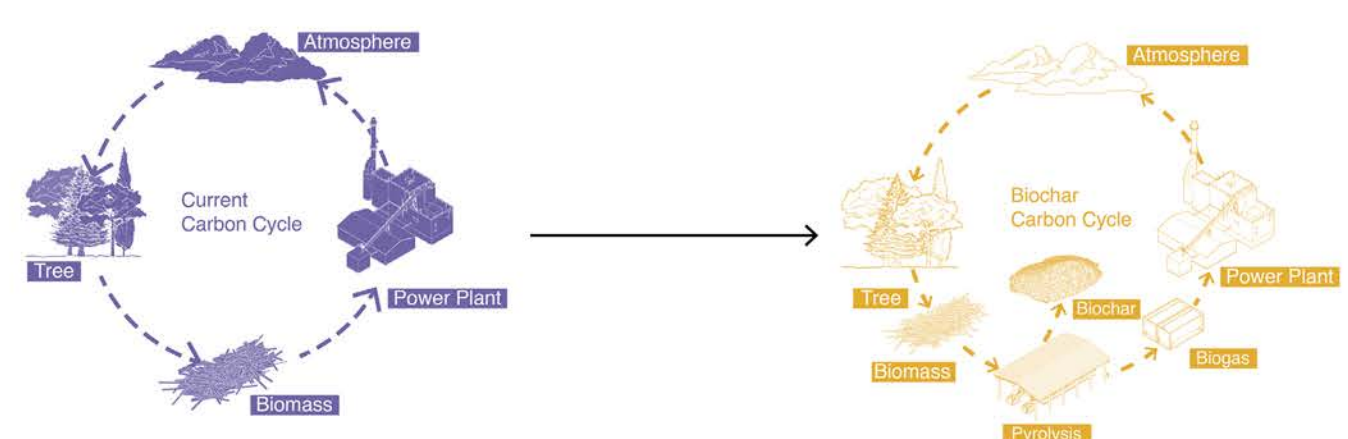






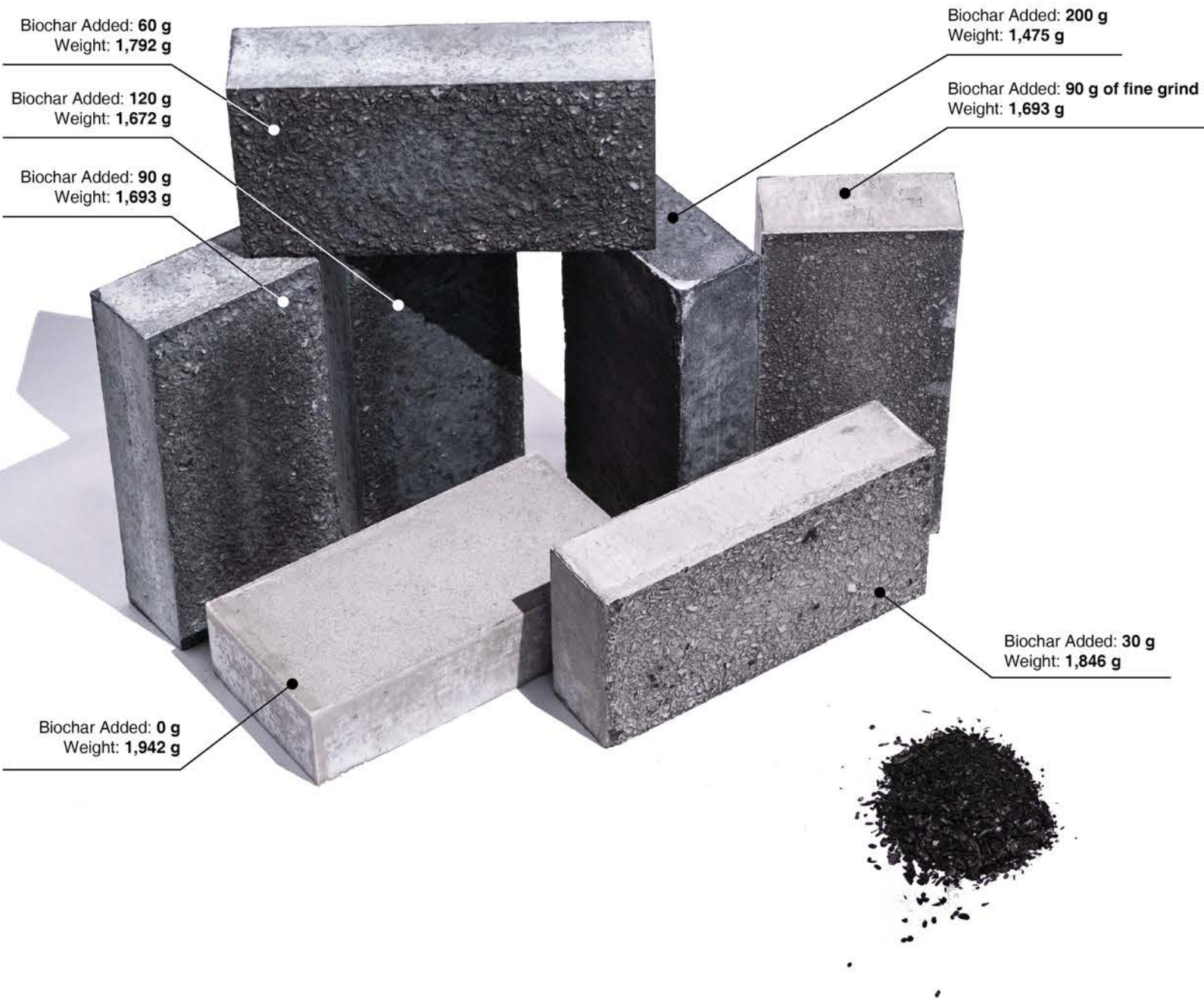
**Biochar**

As we are stepping in the age of mass timber, how do we deal with this transitional carbon from stick frame waste? Introduction of biochar in the whole wood industry provides an efficient, sustainable way of treating transitional carbon from stick frame to mass timber. Biochar is a product of pyrolysis, a process of burning biomass such as wood and agricultural residues with no oxygen. Pyrolysis is able to transform more than 50 percent of the carbon stored in wood and agricultural residues into this charcoal-like stable substance, biochar. Biochar could be used as a raw material to fabricate architectural products such as insulation, CMU blocks, Facade panels, etc. Replacing conventional building material with biochar products can further lower the embodied carbon from construction.

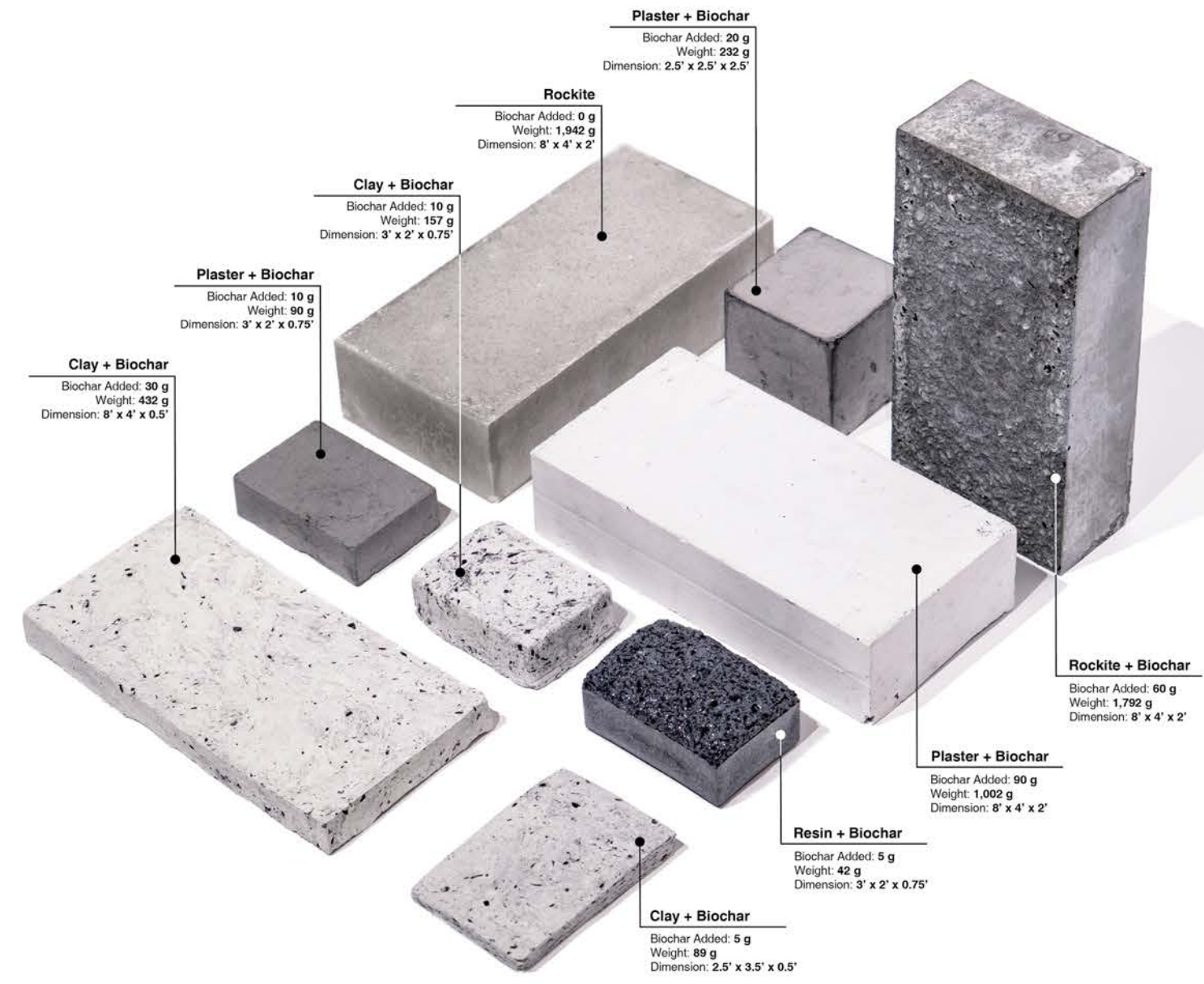




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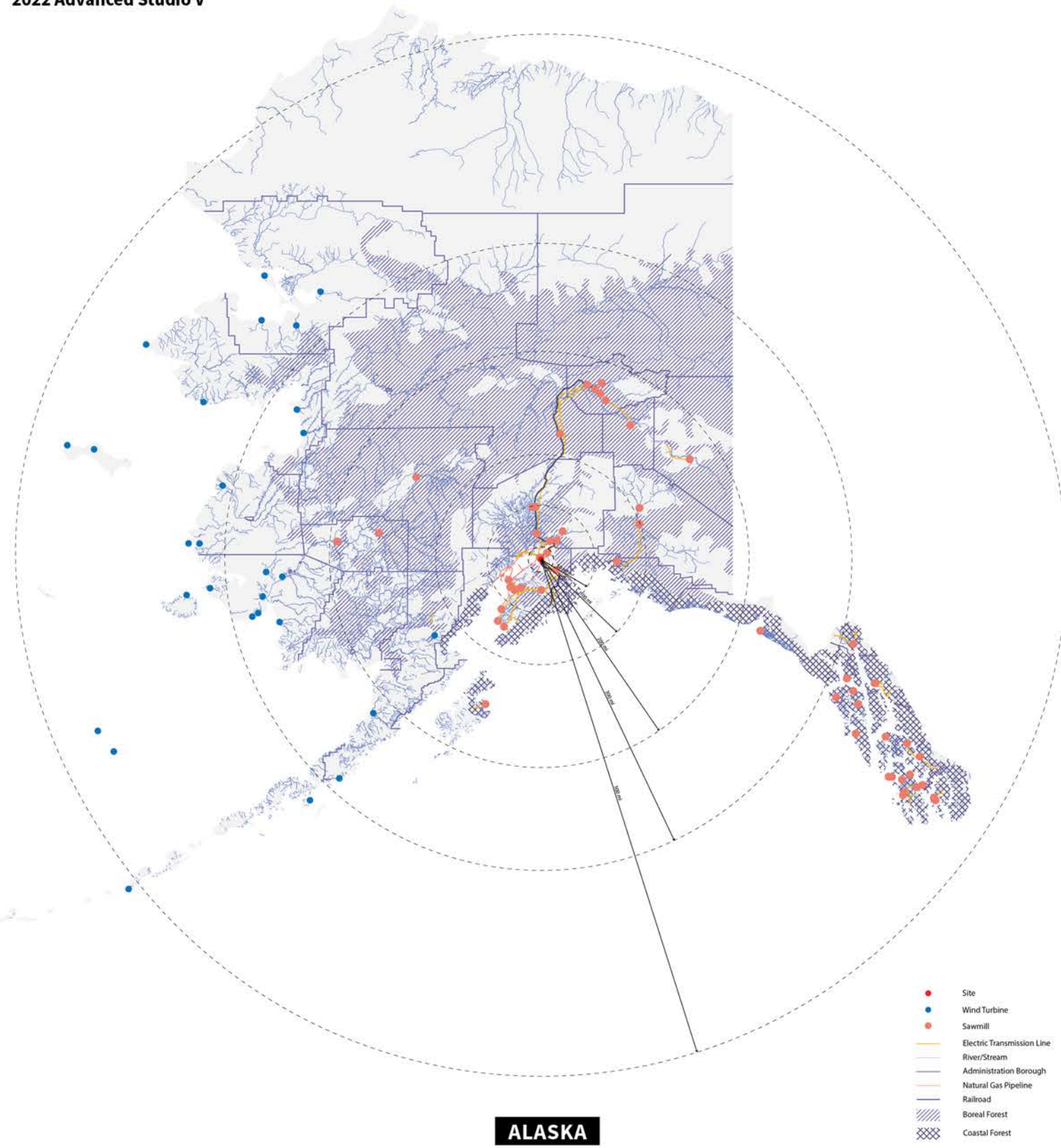
Prototype - Biochar Brick



Prototype - Other Experiment



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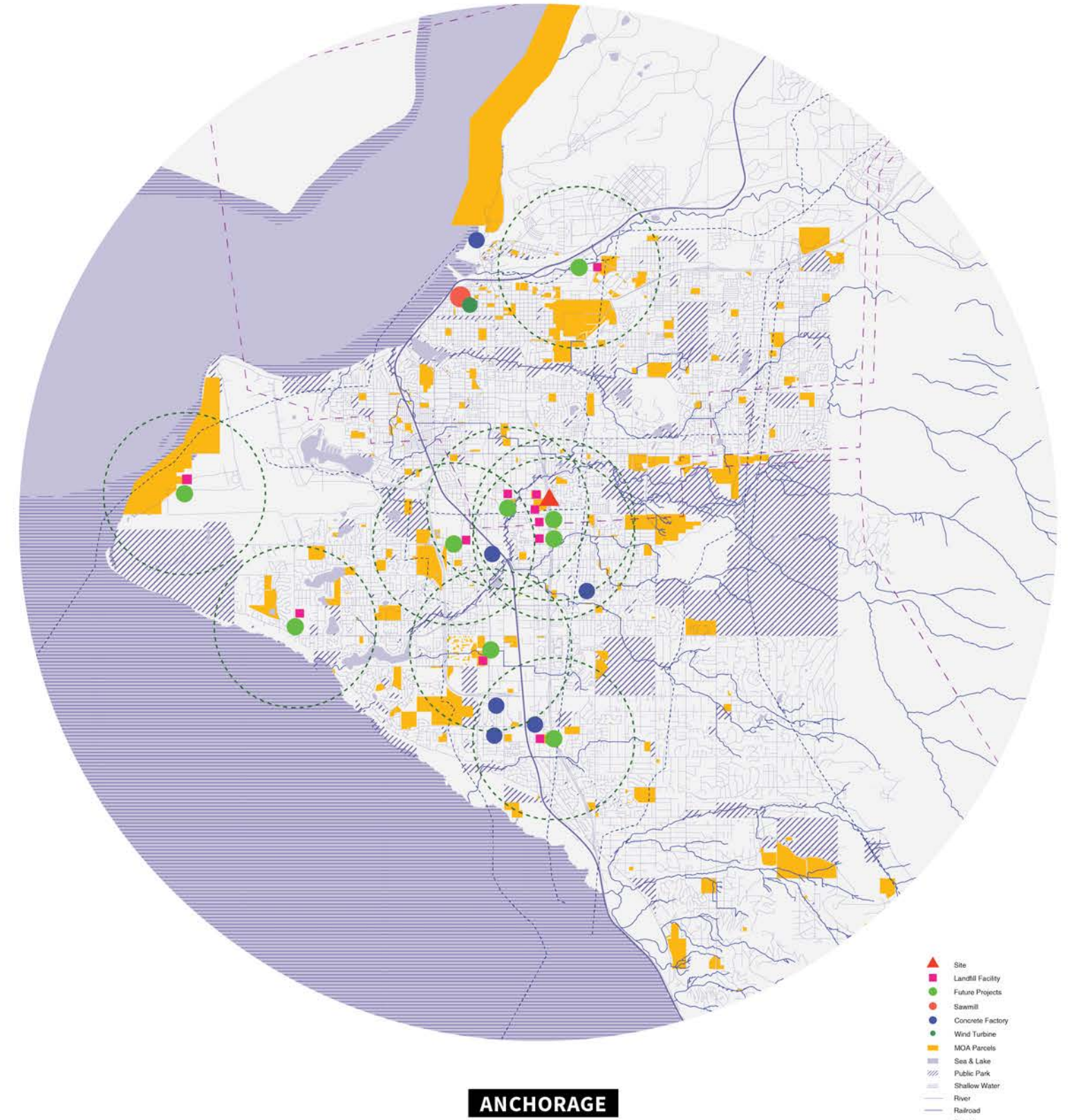


### Timber and Logging Resources

Alaska is known for its vast forested areas and abundant wood resources, making logging and timber industries significant contributors to the state's economy. The state's forests cover approximately 132 million acres, representing nearly 47% of the total land area of Alaska. The forests contain various tree species, including Sitka spruce, western hemlock, red and yellow cedar, and white spruce. These trees provide high-quality timber for construction, furniture, and other wood-based products. Logging operations in Alaska primarily involve commercial harvesting of timber. The industry employs skilled workers who extract trees through processes like selective cutting or clear-cutting, depending on the management objectives and sustainability practices. Alaska has implemented sustainable forest management practices to ensure the long-term viability of its wood resources. This includes practices such as reforestation, selective cutting to maintain forest health, and adhering to regulations and guidelines set forth by state and federal agencies.

### Renewable Energy

Alaska recognizes the importance of transitioning to renewable energy sources to reduce reliance on fossil fuels and combat climate change. It has significant hydro-power potential due to its numerous rivers and water bodies. Hydroelectric projects generate a substantial portion of the state's electricity, especially in remote areas where access to traditional power grids is limited. The coastal regions and interior areas offer excellent wind resources, making wind power a viable option for renewable energy generation. Several wind farms have been established across the state to harness this potential. Despite Alaska's high latitudes and long winters, solar power is gaining traction. Solar installations are particularly valuable in off-grid communities where they provide electricity during the extended daylight hours of summer. Alaska has a significant biomass resource base, including wood waste from logging operations and agricultural byproducts. Biomass can be converted into heat or electricity, and some communities utilize this renewable energy source for heating or power generation.



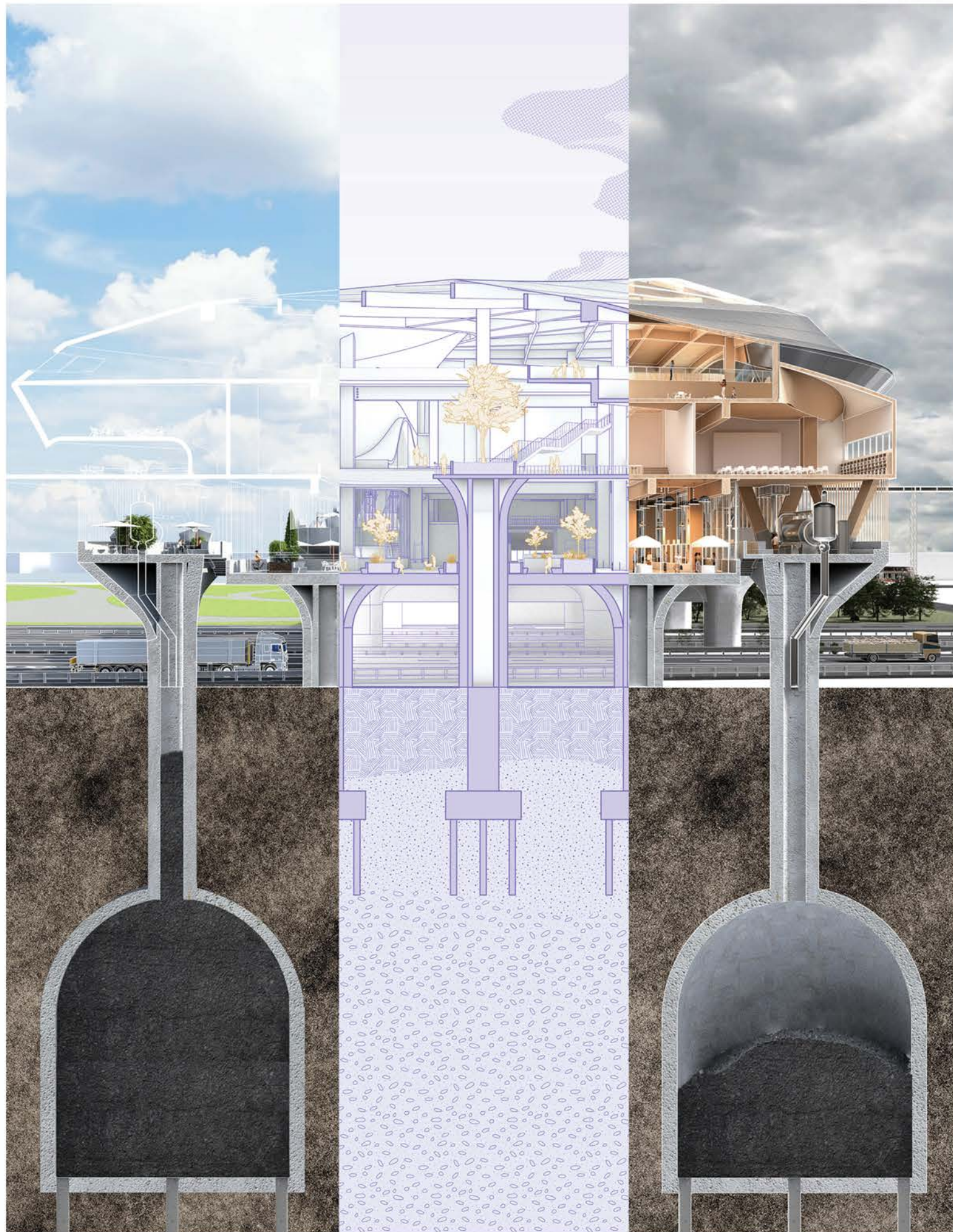
### Landfill Facility

Anchorage, as the largest city in Alaska, has a well-developed waste management system that includes a landfill facility. The Anchorage Regional Landfill (ARL) serves as the primary disposal site for municipal solid waste generated within the municipality. The ARL is situated in the northern part of Anchorage, near the community of Eagle River. It covers a vast area and has multiple cells designated for waste disposal. The landfill has a substantial capacity to handle the waste generated by the city and surrounding areas. The landfill accepts various types of municipal solid waste, including household waste, construction debris, and commercial waste. It follows strict waste management protocols to ensure compliance with environmental regulations, including waste sorting and recycling efforts. The ARL implements various environmental protection measures to minimize the impact of waste disposal. These measures include the installation of liners and leachate collection systems to prevent contamination of soil and groundwater. Methane gas generated by the decomposition of organic waste is also collected and utilized for energy generation.

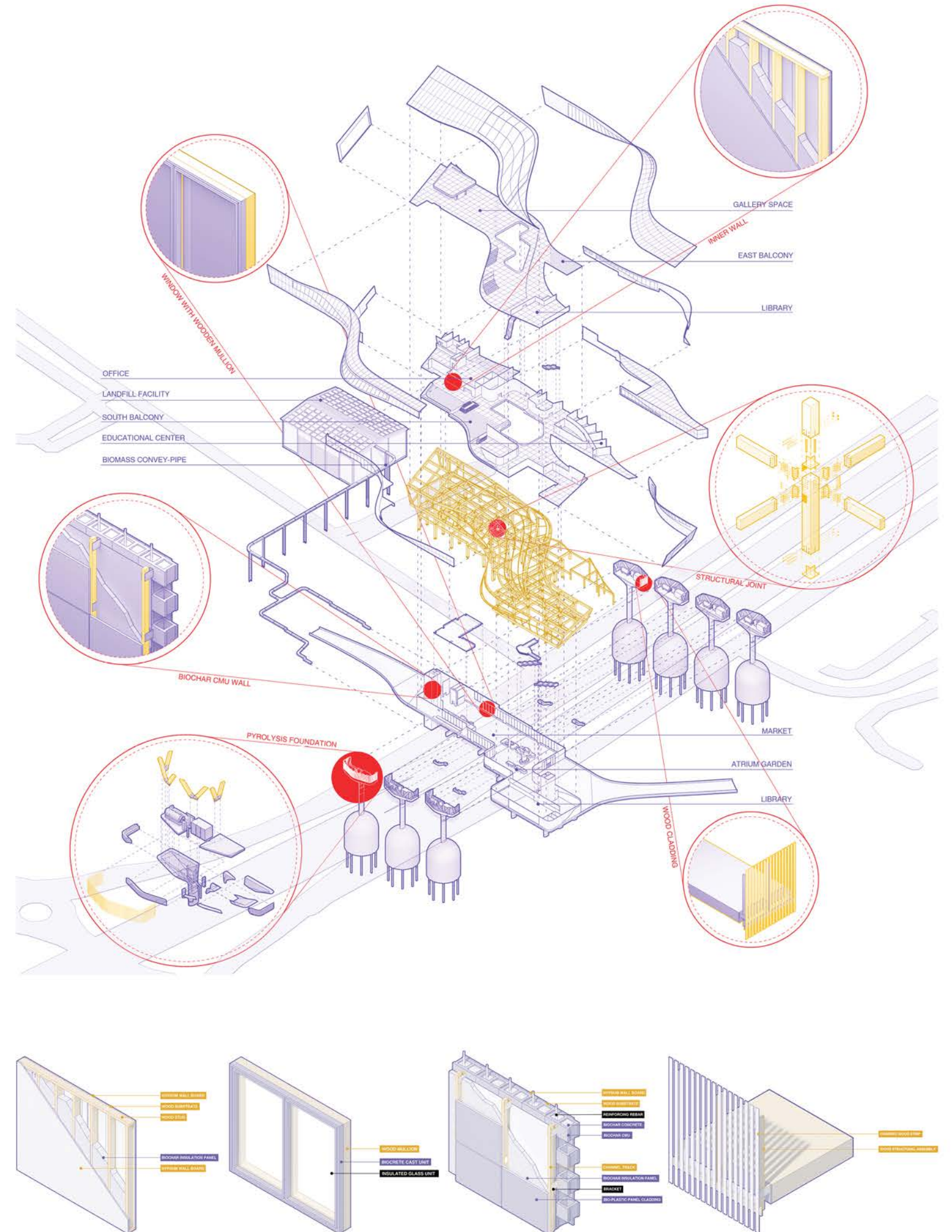
### Potential Construction

The city has a thriving construction industry due to ongoing development projects and infrastructure needs. The construction sector plays a vital role in the city's economy and supports various residential, commercial, and public projects. The construction industry in Anchorage increasingly focuses on sustainable and energy-efficient building practices. This includes the use of renewable materials, green building certifications, energy-efficient designs, and the integration of renewable energy systems. On the map above, we have marked out some of the potential site that could be further develop under the system that we are proposing. And how we could collaborate with the existing concrete factories and the government to build a series of building codes and regulations to ensure safety, structural integrity, and compliance with local and state requirements.

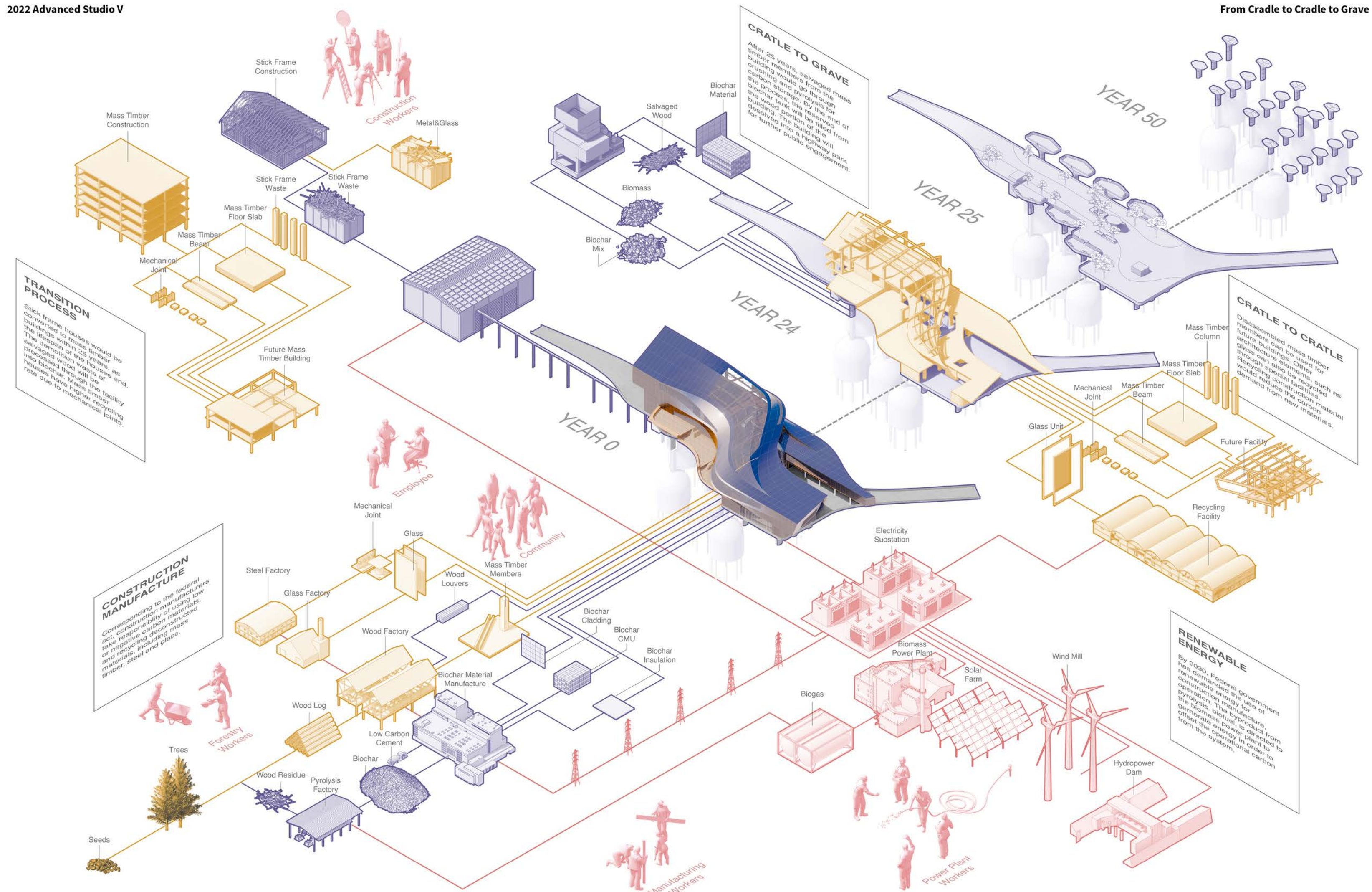




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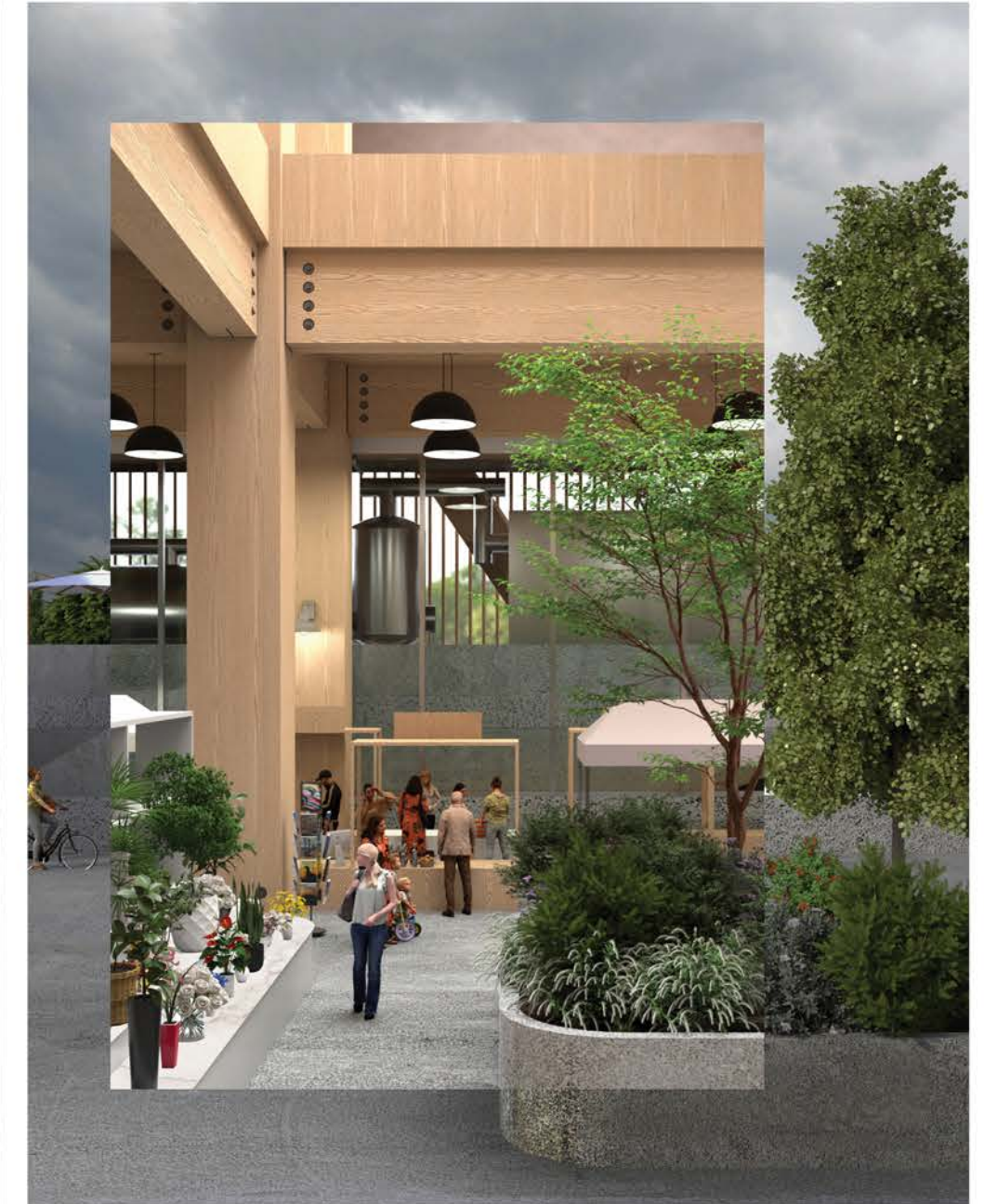




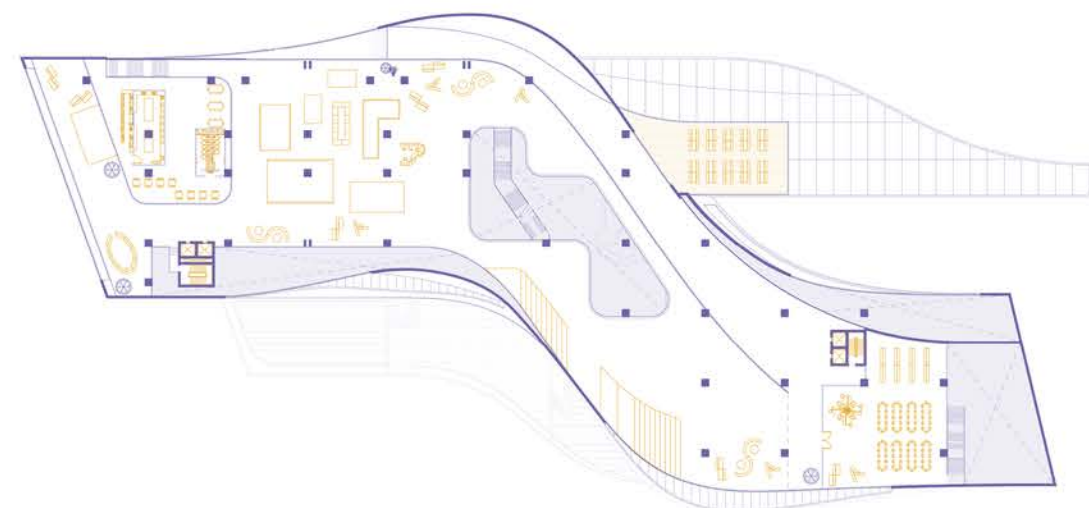
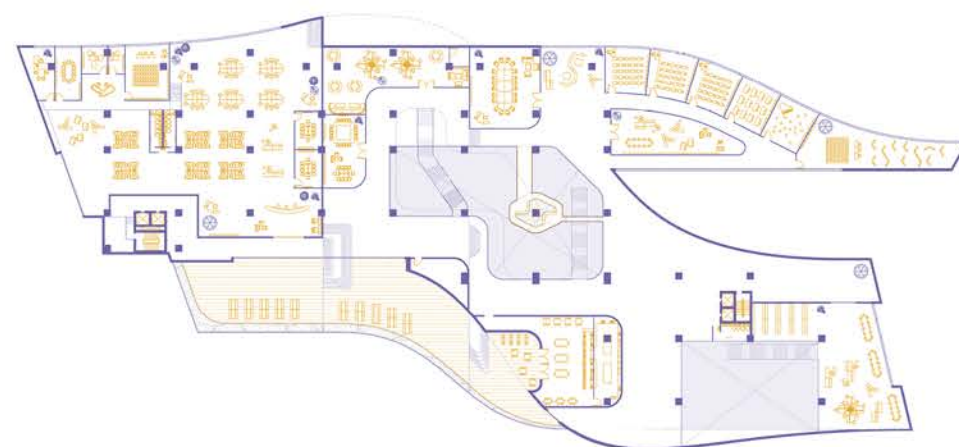


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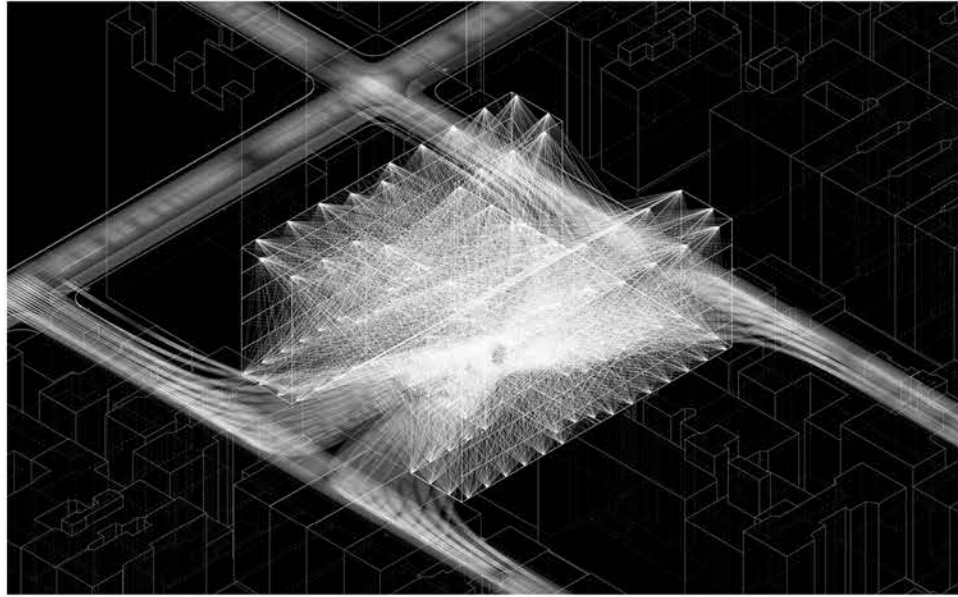
**25 Years**

The facility is responsible for converting stick frames to biochar from the transition demolitions within 1 miles radius. Within 25 years, all stick frame houses would be finished converting to mass timber construction. After its mission, the facility would consume itself through pyrolysis. Demonstrating the benefits of mass timber construction, the members would be recycled. The salvaged wood would then be converted and stored. At year 2050, the pyrolysis machines will be removed, and the remaining biochar concrete bridge would serve as a public park for the nearby residents.









# Entanglement

School, Adapt Reuse / East Village, New York  
2020 Spring Core II

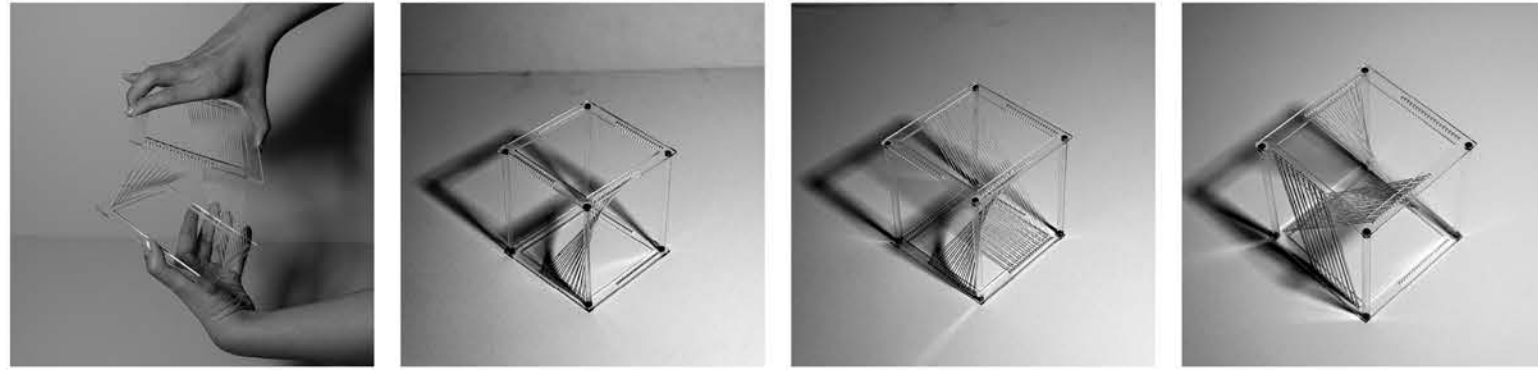
Critic : Karla Rothstein

Perspectives oscillate and the horizon summons as students and the community navigate fissures and bridges within a field of nesting, weaving, interlocking and sheared spatial conditions. Tension is created between the two wings by removing the middle part of the building's "H" shape, redefining relationships across the site. By introducing the new landscaping gesture at the ground level as an urban strategy, which connect 9th street and 10th street. Maximizing access to light, most of the classrooms are

sun positioned toward the south-facing facade. Existing stacked floor slabs are divided into interconnected multi-level spaces arranged in programmatic clusters, providing both spaces of retreat and an energetic spatial quality to the students. Regarding the urban strategy, I am seeing a tension among the end users, which is between the students who are attending the school and the folks who live in the neighborhood using the communal spaces.

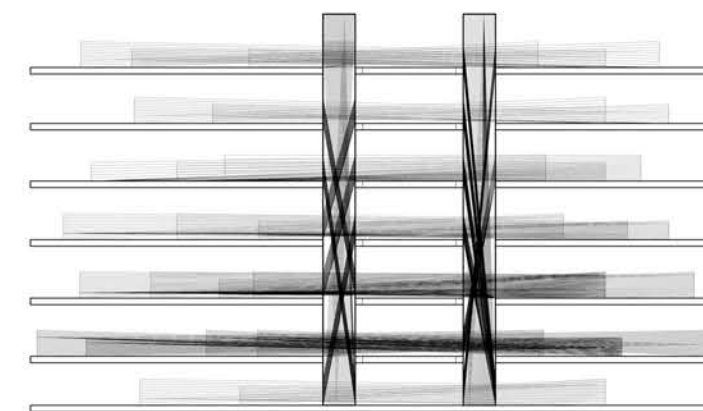
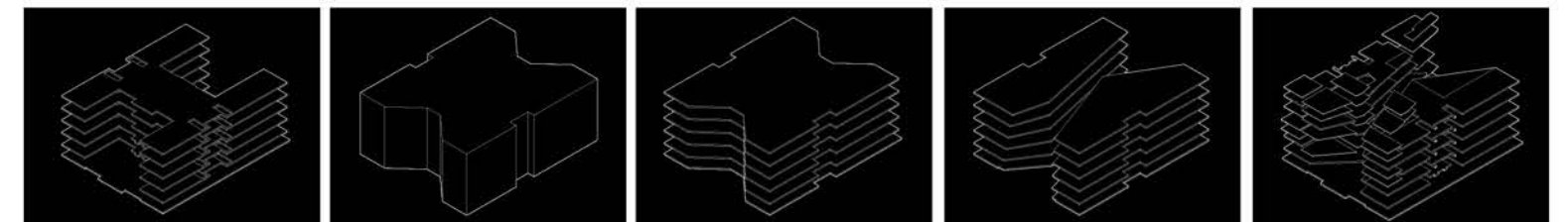
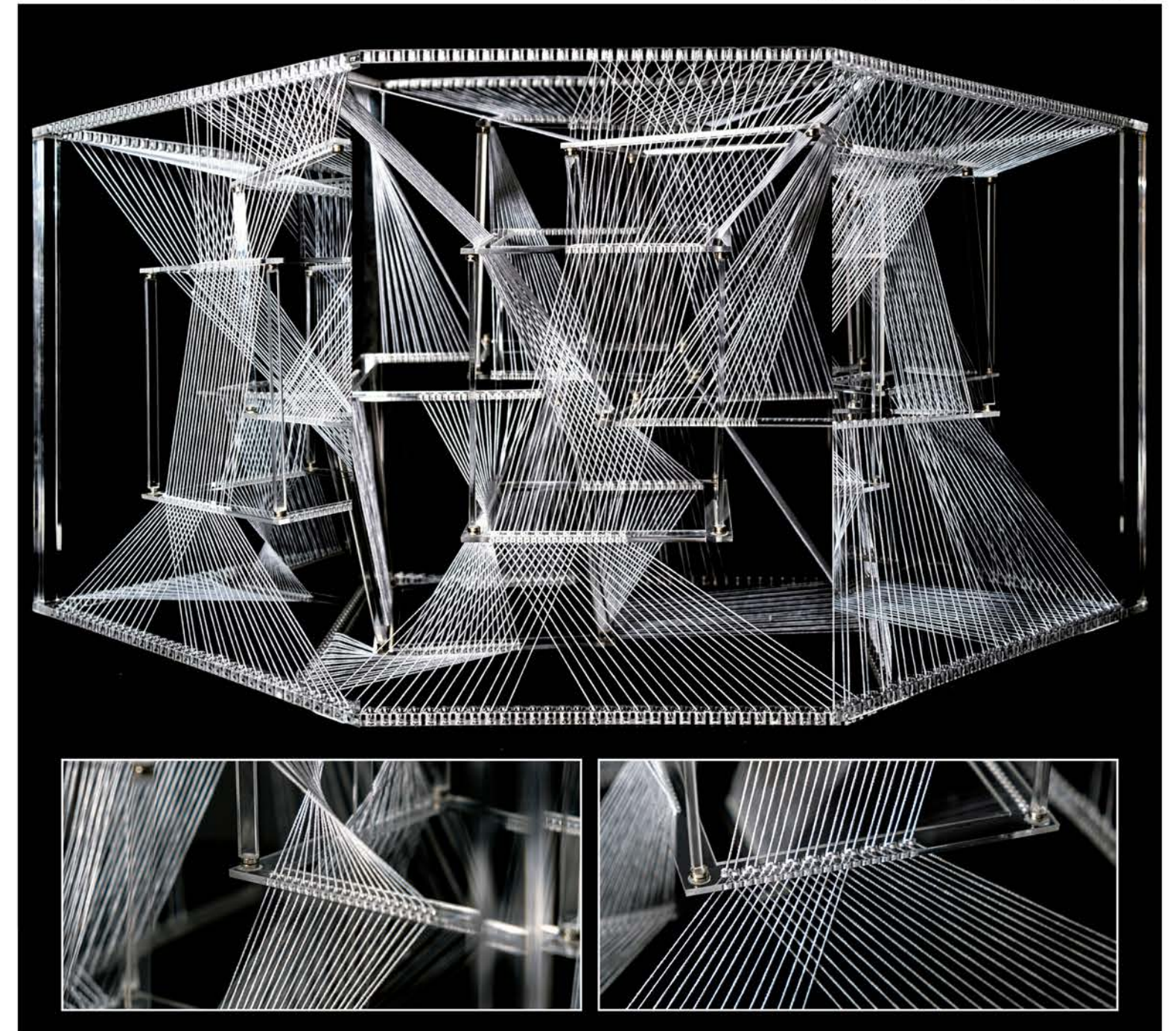




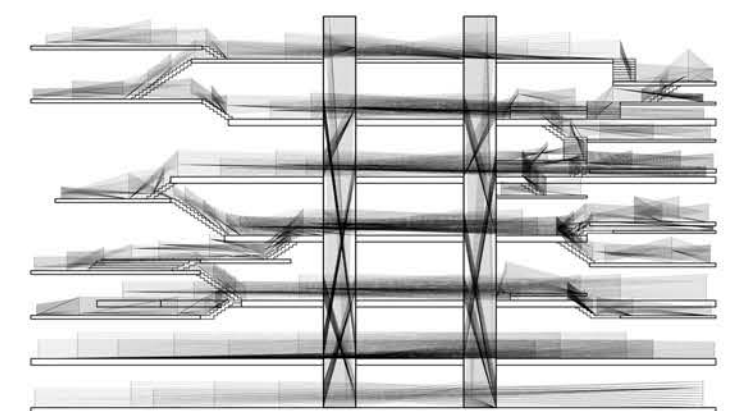


**MATERIAL EXPERIMENT**

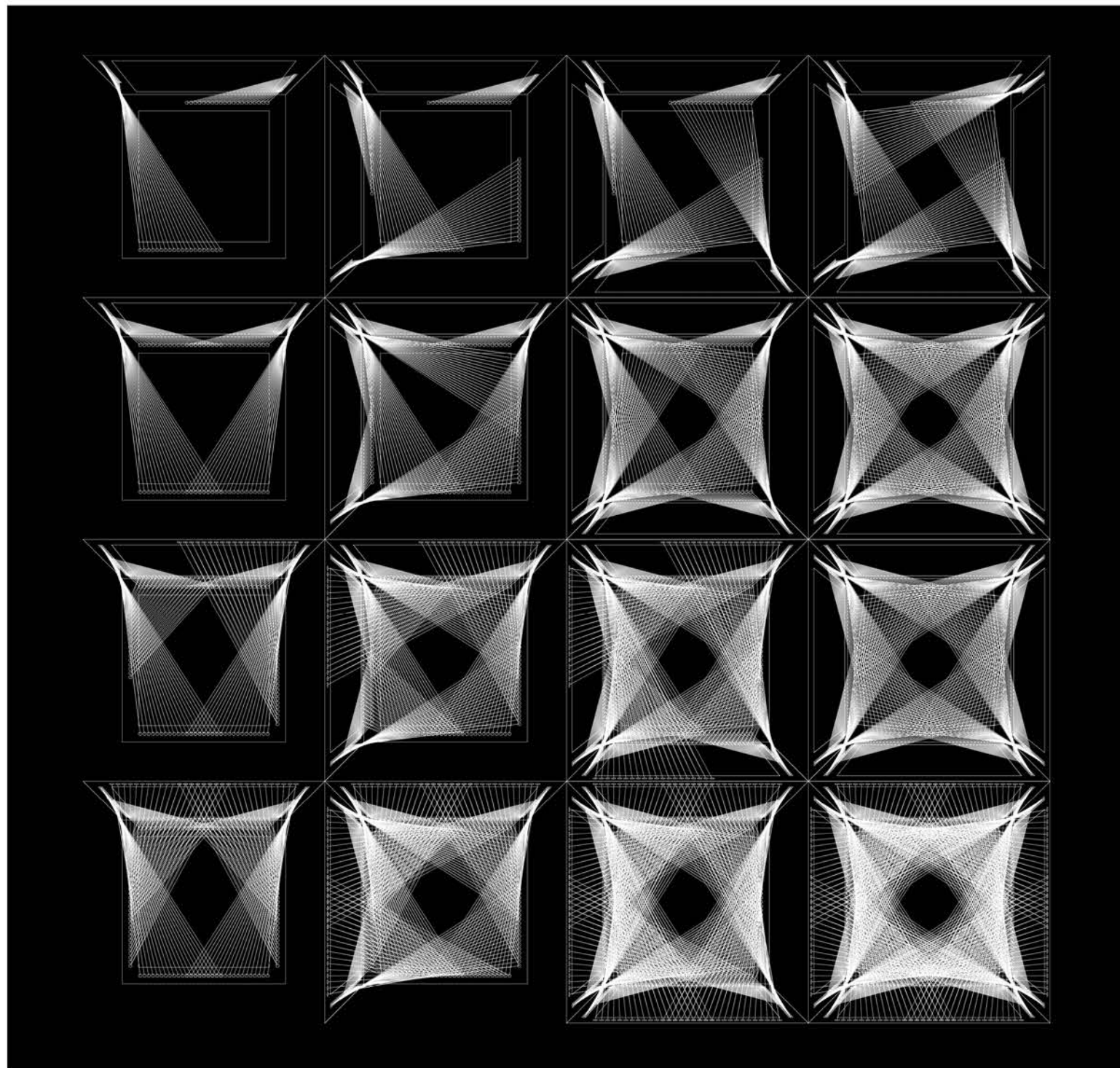
5"X5"X5"



Existing Circulation

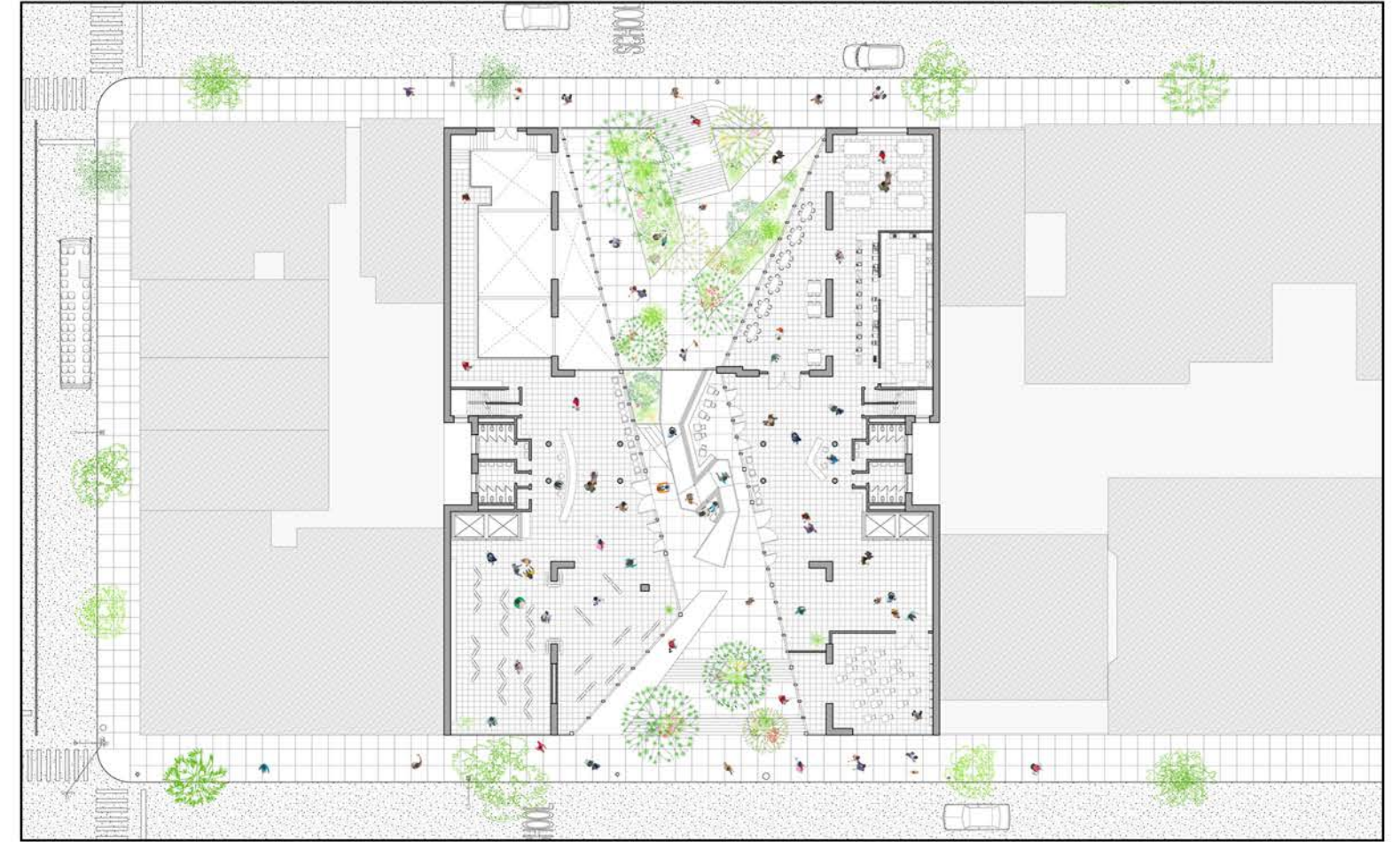


Proposed Circulation

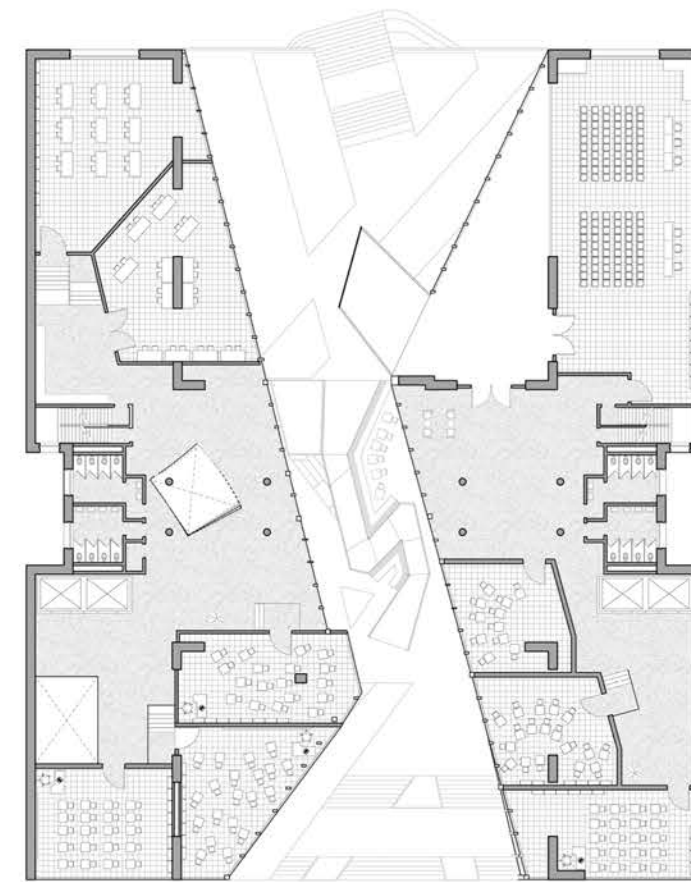


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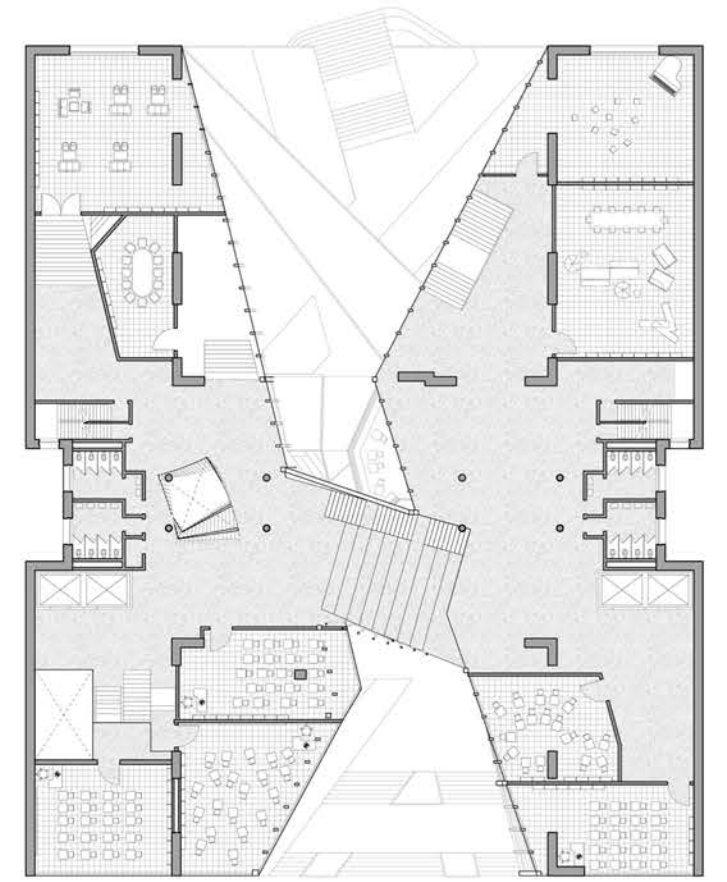




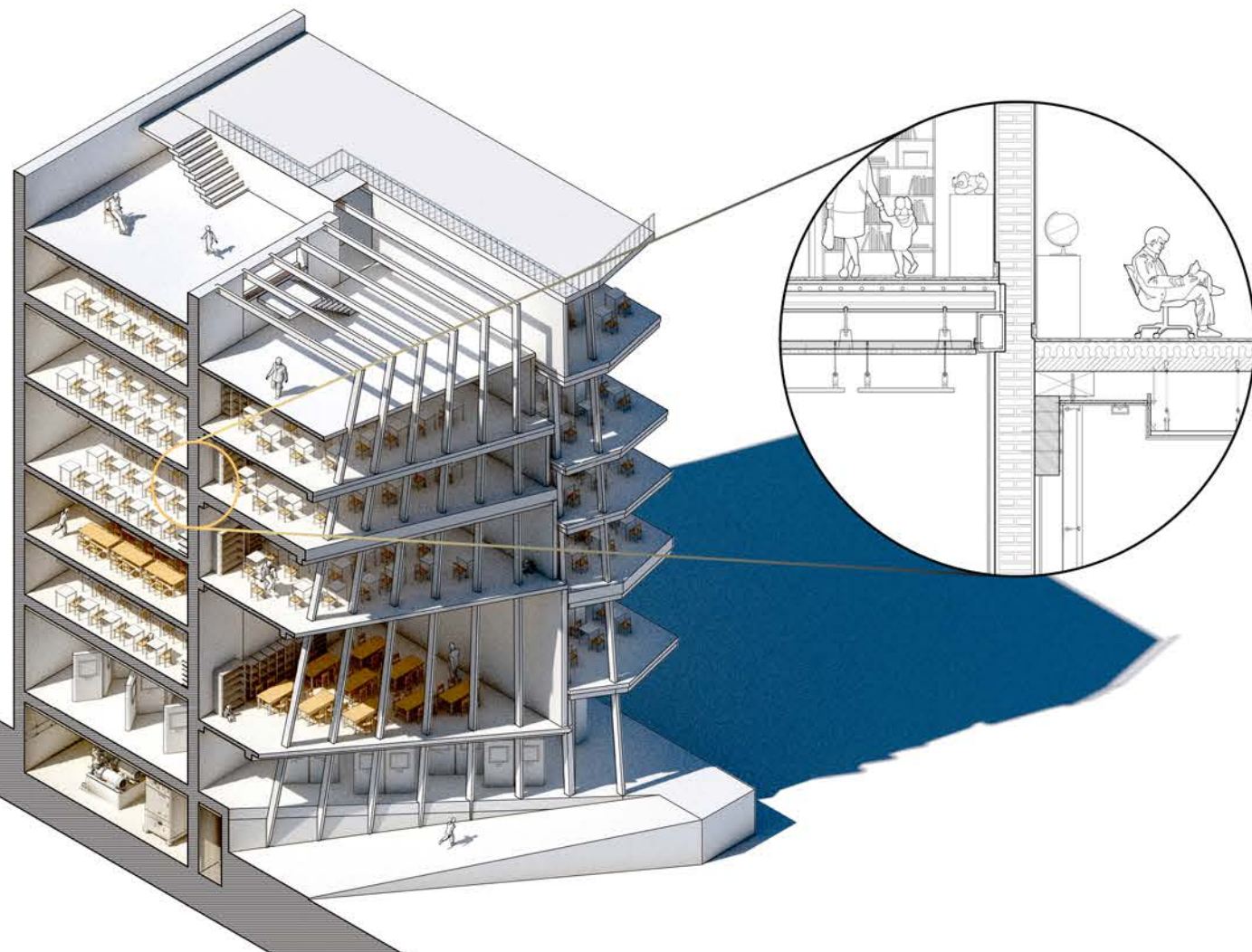
GROUND LEVEL



LEVEL 2



LEVEL 3 & 4

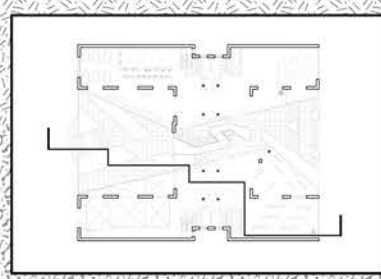


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# Poly-species Environments

Landscape / Columbia County, New York  
2021 Spring ADV IV

Critic : Vanessa Keith

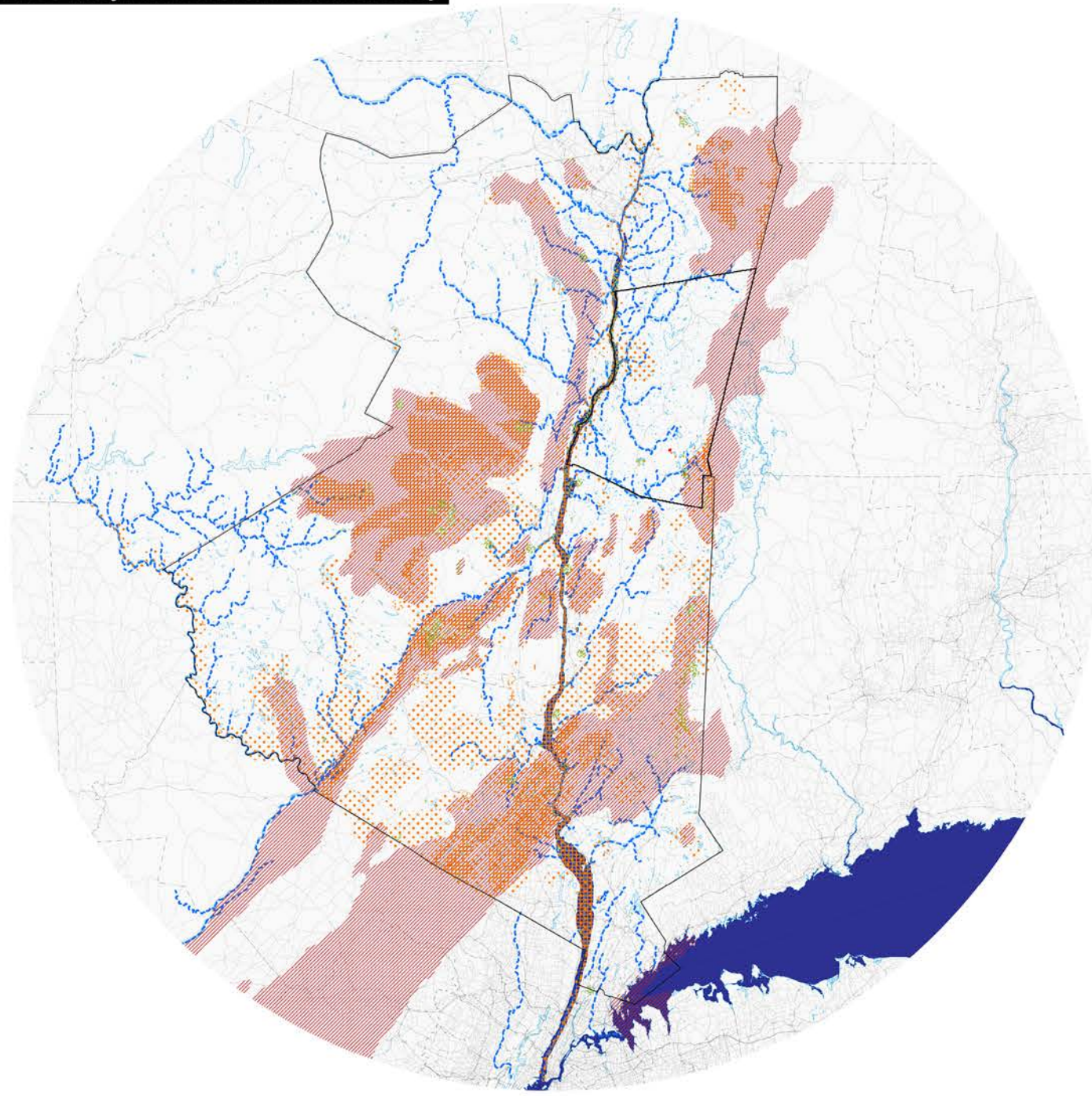
Around the world, humans are fracturing vast forests. Human population growth reached exponential rates in the twentieth century, as humans converted increasing proportions of temperate and tropical landscapes to agriculture and animal husbandry. Today, 40% of all terrestrial landscapes have been converted for human use. In New York State, About 72% of New York's forests are privately owned. Approximately 500,000 private forest land

owners in the state to engage them in forest management decision making in a landscape context. Rather than to preserve, or cater to outside species this Architecture could demonstrate that architects could actively participate in the life around it. By directing, responding to and intervening in, to influence individual species, architecture and infrastructure can become redefined as animal players in a much larger system.

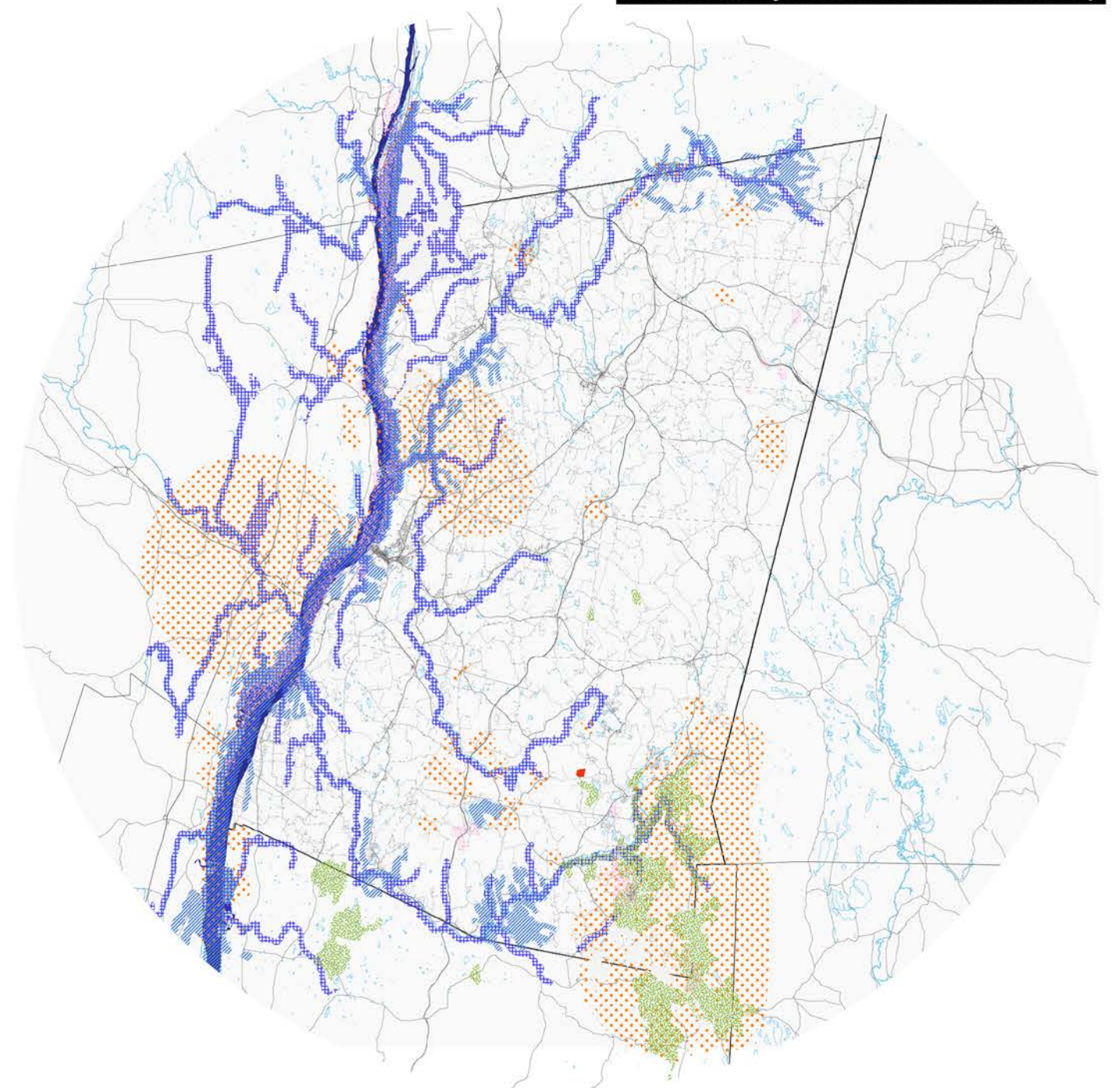




Hudson Valley Plants & Animals Distribution Map



Columbia County Plants & Animals Distribution Map



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Past

Most of the land was covered by trees, without artificial impacts on the environment.



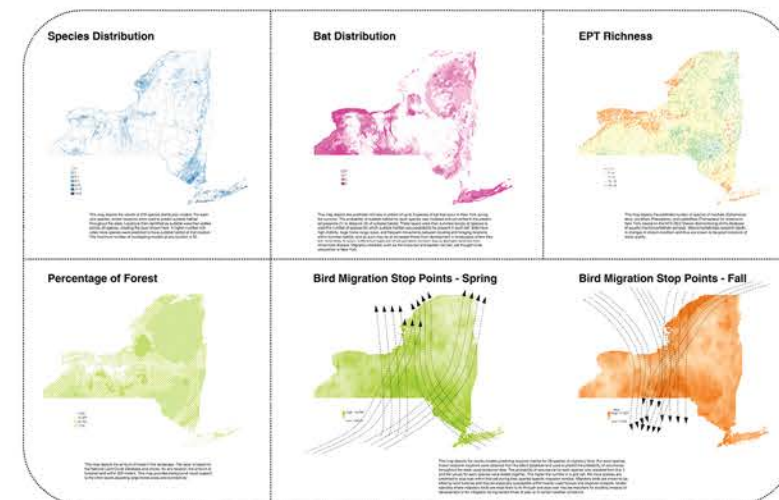
Current

Due to the man-made infrastructure and construction, ecosystems were fragmented.

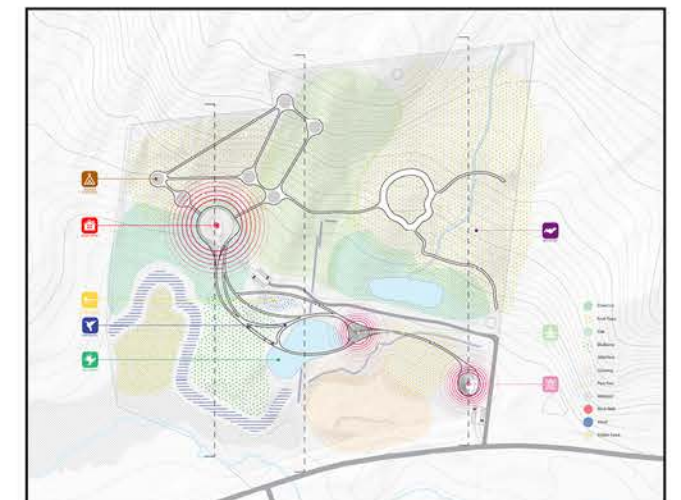


Future

By applying sustainable strategies during the design, planning and construction of projects, to pursue a more diversified ecosystem.



New York State Animal Research Map

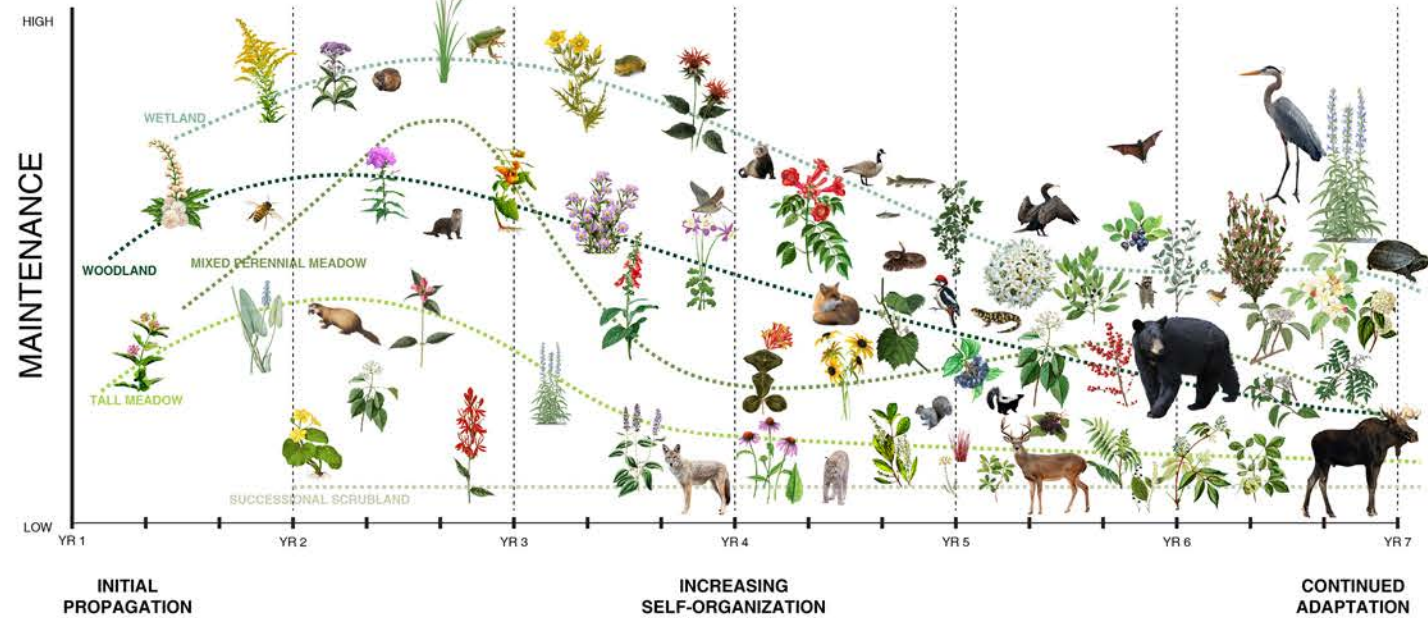
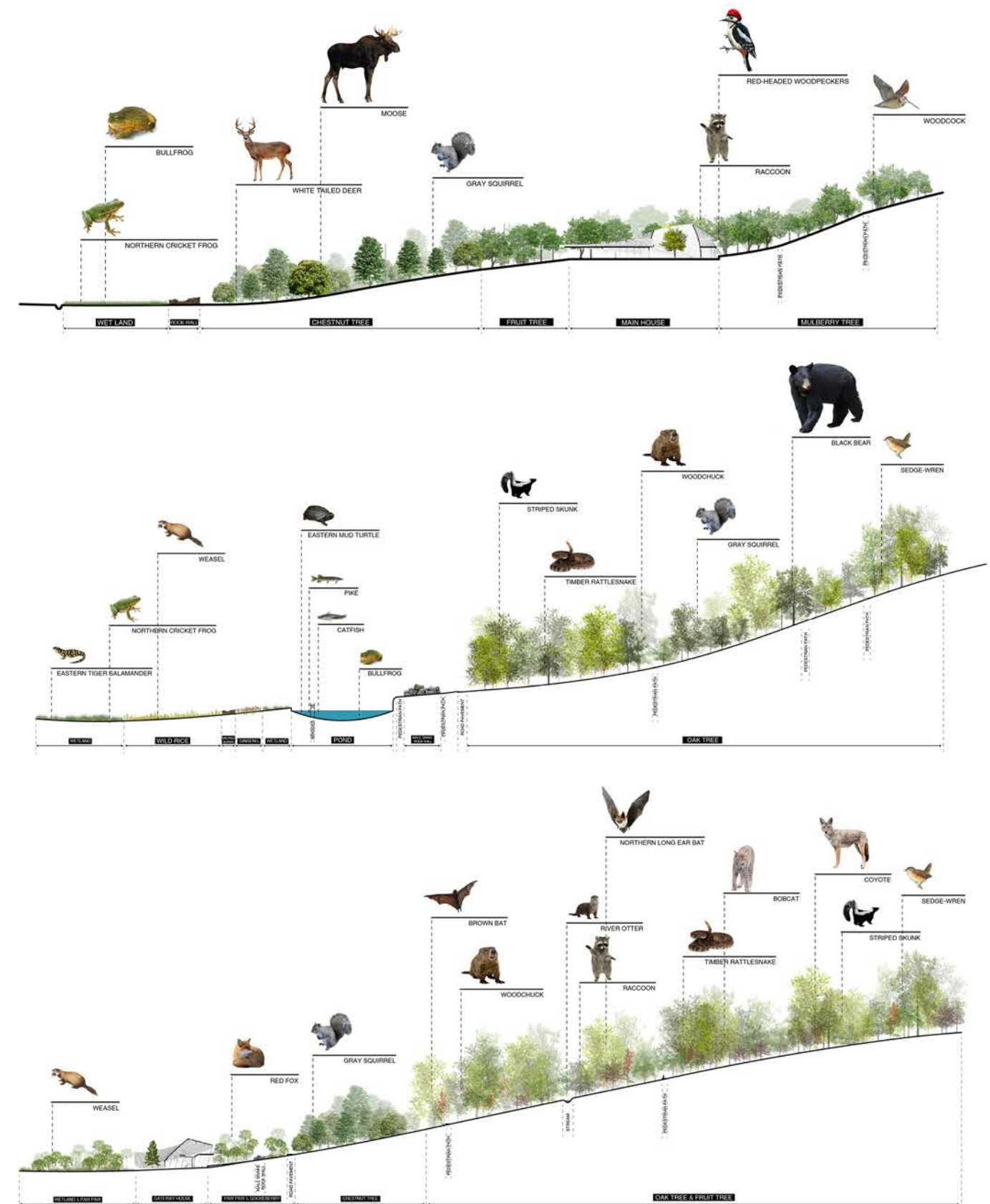
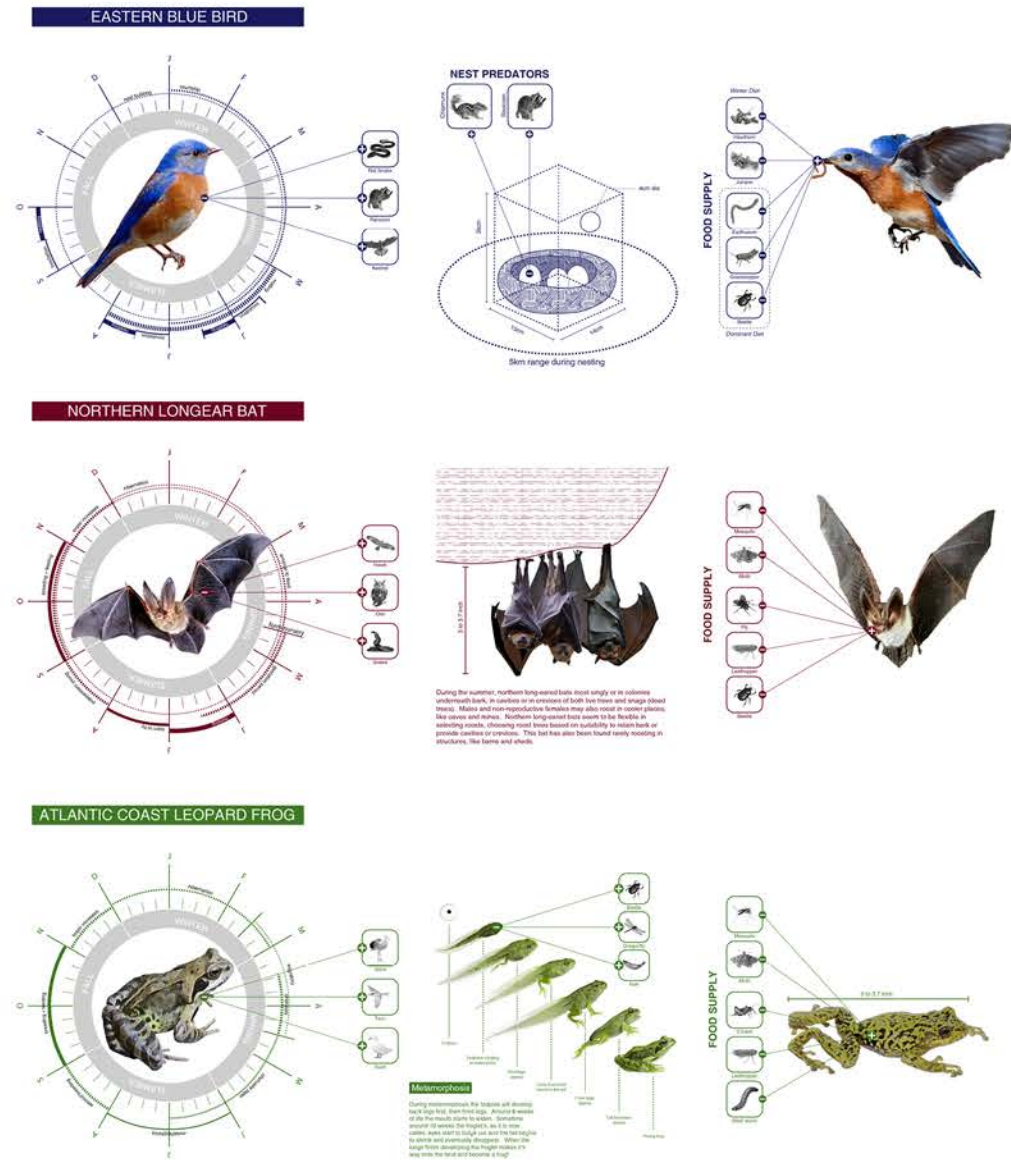


Site Map



**The Native Animals**

The Hudson River begins as a small mountain lake on the side of the state's highest peak, Mt. Marcy, and ends in New York Harbor. The region, comprising only 13.5% of the land area of the entire state, contains nearly 85% of the bird, mammal, reptile, and amphibian species found in New York State. By studying the living habits and their role in the ecosystem of different types of animals could help to design a project that could farmland, forests, wildlife habitat, and rural character by working with human activities.



**SECTIONS**

These animals are organized according to their method of interaction with larger environmental strata. There is the potential for cross-fertilization later on. Different the plants and trees will cultivate different fauna throughout the site. It offers opportunities in Columbia County for conservation of amphibian and reptile biodiversity.

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**Guest House Entrance**



**Main House Entrance**



**Guest House Section**



**Main House Section**

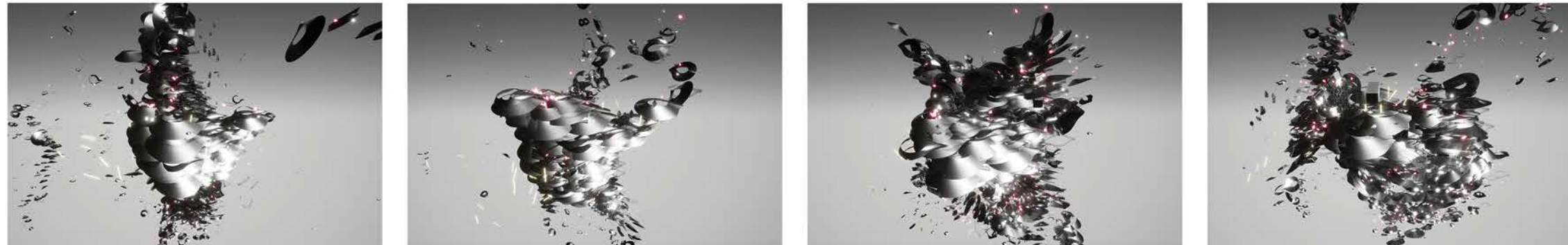
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Calm Forest



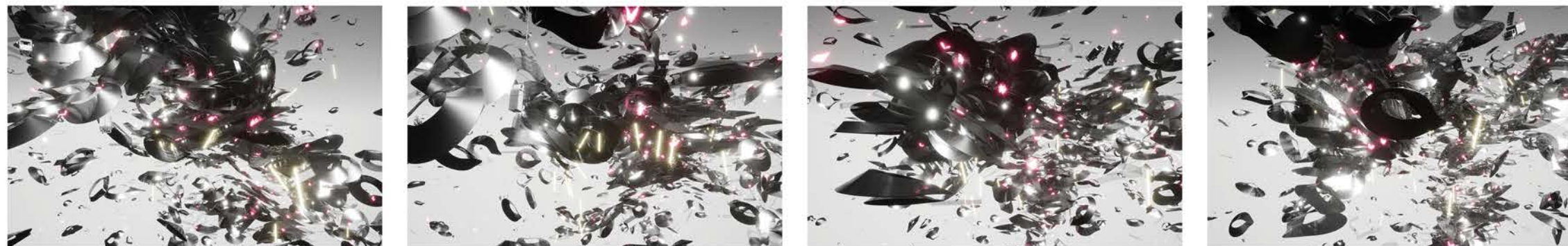
By the River



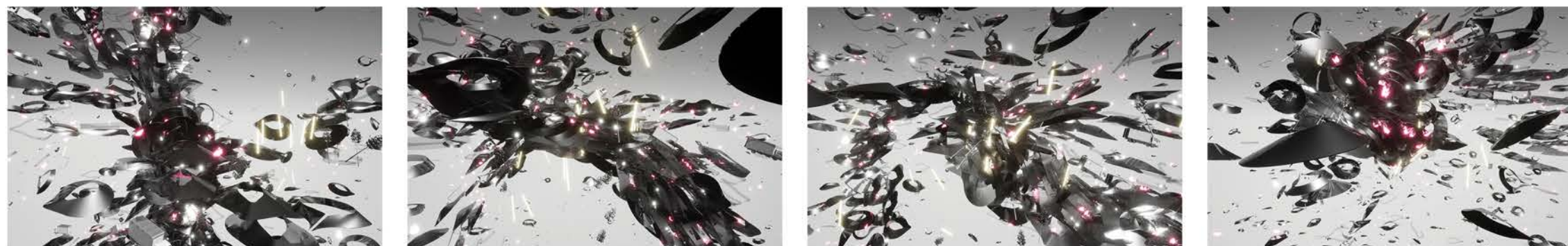
Rainy



High Way



Construction



**Audio Visualization**

Animals perceive sounds differently from humans. Here are the images produced by Unreal Engine, which I deconstruct my project to different components like the roof, columns, panels, etc, together with the components from the surrounding environments like trees and trucks that passed by. To simulate this effect using scripts to let these components respond to the sound that occurs during the different scenarios.

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# Post War

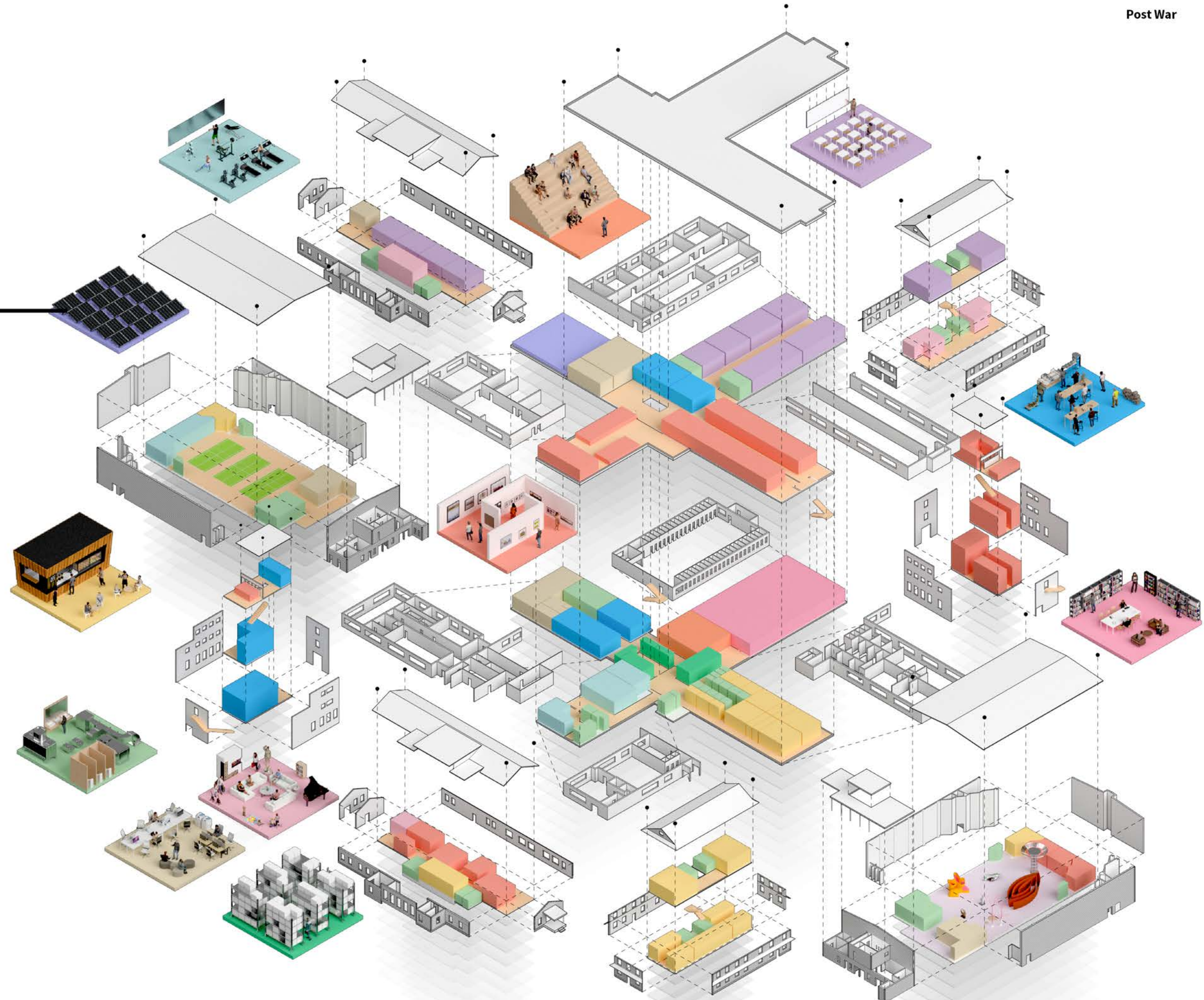
## Adaptive Reuse of Military Installations

Adaptive Reuse, Military / Fort Ord, California  
2023 Spring ADV VI

Critic : Paulo Tavares + Claudia Tomateo

In the current constructed environment, which already have many buildings that are either obsolete or in a state of neglect and disrepair, the issue of preservation should not be disregarded. Especially when considering the current global climate emergency, which has been exacerbated by wastefulness. The built environment is a major contributor to these challenges, so it should be part of the solution. Demolishing reusable buildings and constructing new ones in their place will only add to stresses on our planet's finite natural resources.

For many years, the US military has built and maintained numerous military bases across 80 countries, totaling around 750 bases. The US has significantly more bases than all other nations combined, with an annual estimated cost of \$55 billion for construction and maintenance. However, the Department of Defense (DoD) acknowledged the importance of maintaining military readiness and efficiency by closing some installations and redefining the mission of others. Ford Ord as one of the biggest military base at the west coast, for nearly 80 years, recruits reporting to central California's Fort Ord considered themselves the lucky ones, privileged to live and work amid sparkling seas, sandy dunes and sage-covered hills. Fort Ord was added to the Environmental Protection Agency's list of the most polluted places in the United States in 1990, four years prior to its closure as an active military training base. By taking Ford Ord as a case study, to assess and investigate a new approach to reconsidering the post-military life of military bases.



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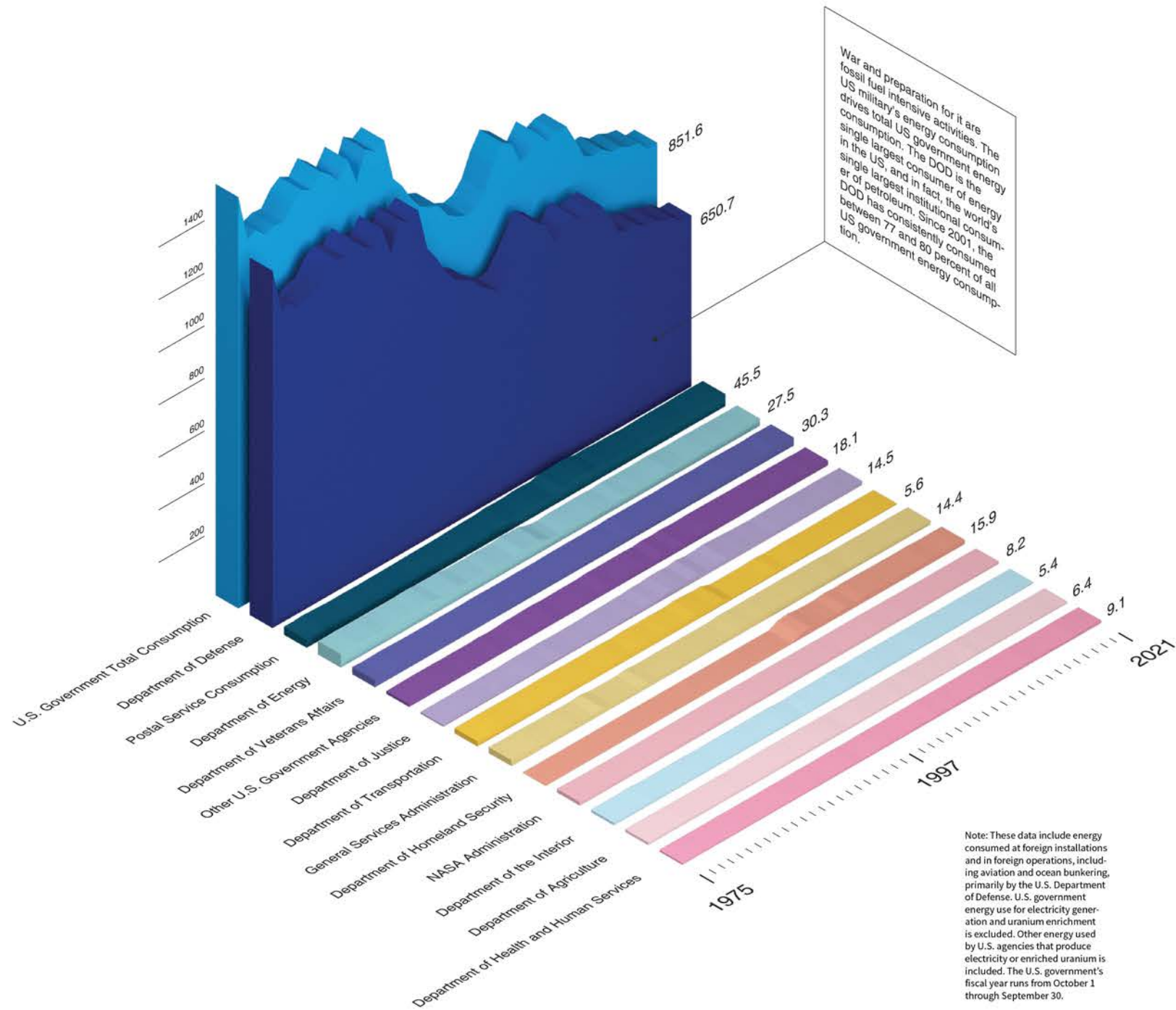


# MoD Budget

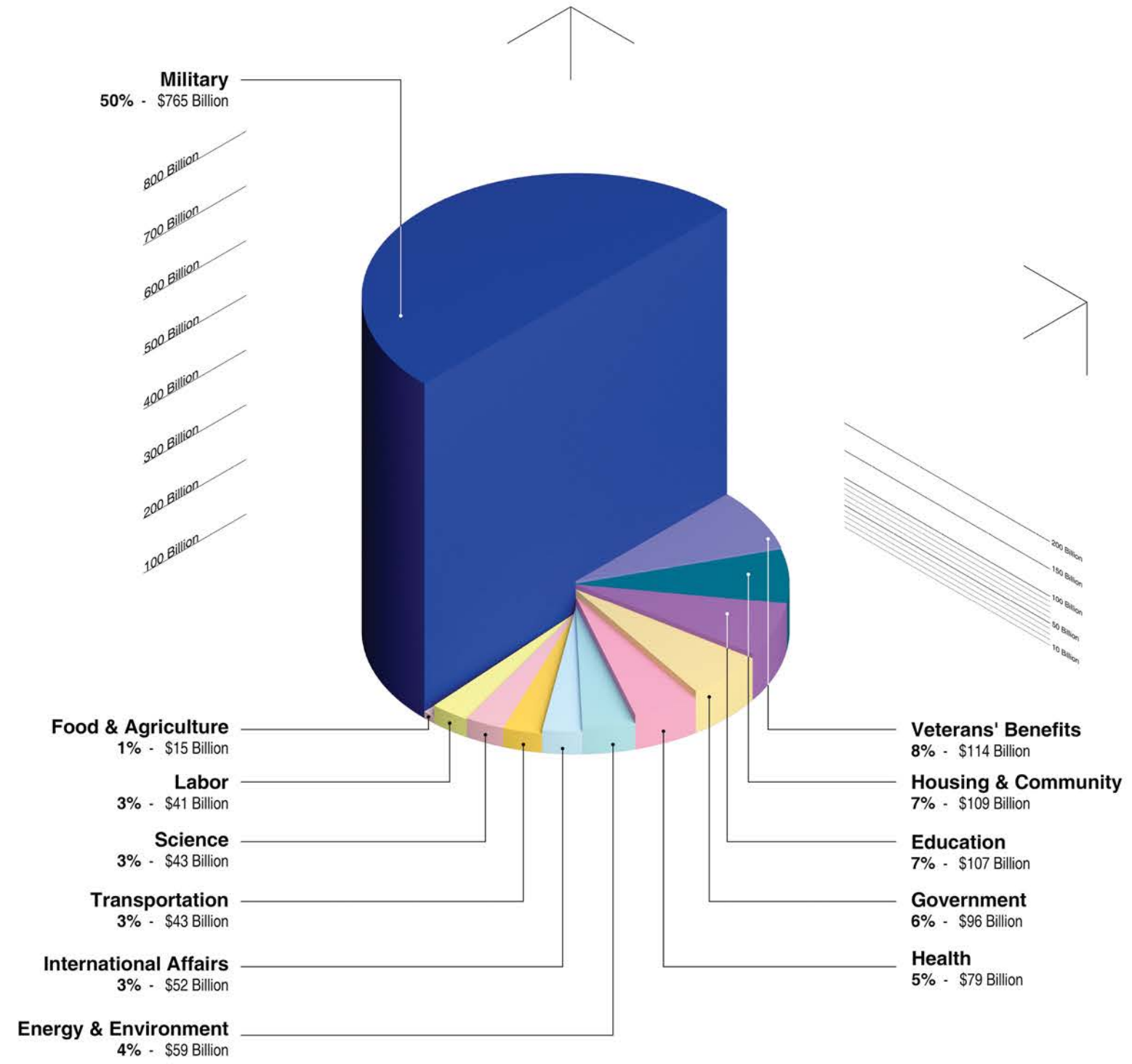
President Biden's discretionary budget request has slightly increased to \$1.5 trillion compared to previous years. While there is a notable emphasis on increasing non-military spending, particularly for education, the budget also includes an increase in the Pentagon's budget, surpassing even the historically high levels reached during the previous administration. The president's request includes \$753 billion for the Pentagon and nuclear weapons, as well as an additional \$12 billion for foreign military aid. This increase is noteworthy since the US is currently preparing to withdraw all troops from Afghanistan before the 20th anniversary of the war, which should result in some savings, considering the significant annual spending of \$20 billion to \$50 billion in recent years in Afghanistan.<sup>2</sup>

With more than 350,000 energy-utilizing buildings and 600,000 vehicles, the federal government is the nation's largest energy consumer. Energy used in buildings and facilities represents about 40% of the total site-delivered energy use of the federal government, with vehicle and equipment energy use accounting for 60%.

War and preparation for it are fossil fuel intensive activities. The US military's energy consumption drives total US government energy consumption. The DOD is the single largest consumer of energy in the US, and in fact, the world's single largest institutional consumer of petroleum. Since 2001, the DOD has consistently consumed between 77 and 80 percent of all US government energy consumption.



Note: These data include energy consumed at foreign installations and in foreign operations, including aviation and ocean bunkering, primarily by the U.S. Department of Defense. U.S. government energy use for electricity generation and uranium enrichment is excluded. Other energy used by U.S. agencies that produce electricity or enriched uranium is included. The U.S. government's fiscal year runs from October 1 through September 30.



## MoD Energy Consumption

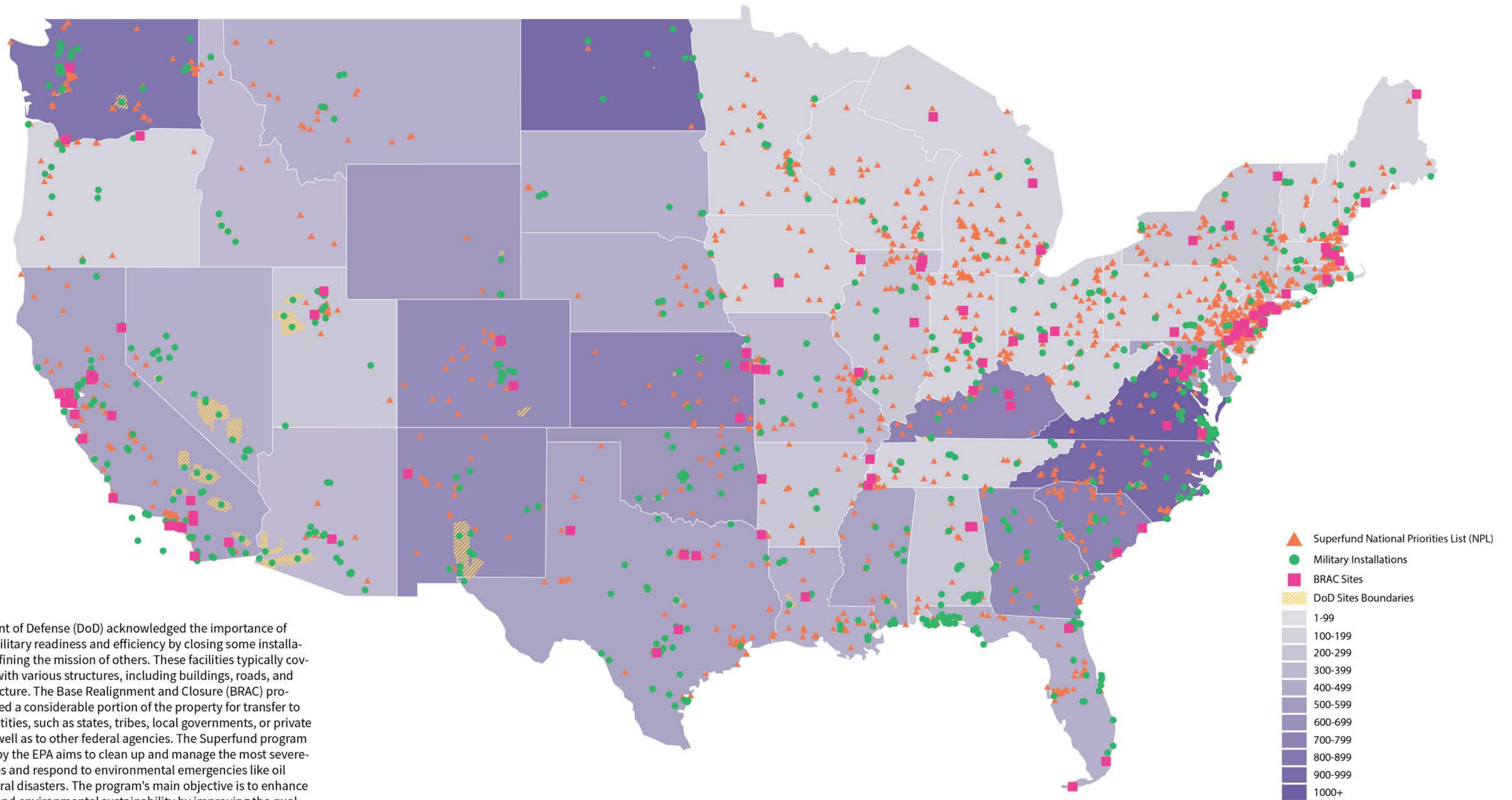
According to research conducted by Brown University, the US military has emitted a total of 1,212 million metric tons of greenhouse gases since the 2001 invasion of Afghanistan. In 2017, the military produced 59 million tons of CO2 emissions, exceeding that of numerous industrialized countries such as Sweden and Switzerland, as well as Morocco, Peru, Hungary, Finland, New Zealand, and Norway. The Pentagon would rank as the 55th largest CO2 emitter in the world if it were a country.

Since the invasion of Afghanistan in 2001, the U.S. military has emitted 1,212 million metric tons of greenhouse gases. In 2017 alone, CO2 emissions added up to 59 million tons - more than many industrialized nations including Sweden and Switzerland. The U.S. military also produced more greenhouse gases than Morocco, Peru, Hungary, Finland, New Zealand and Norway. According to the research from Brown University, the Pentagon would be the world's 55th largest CO2 emitter if it was a country.



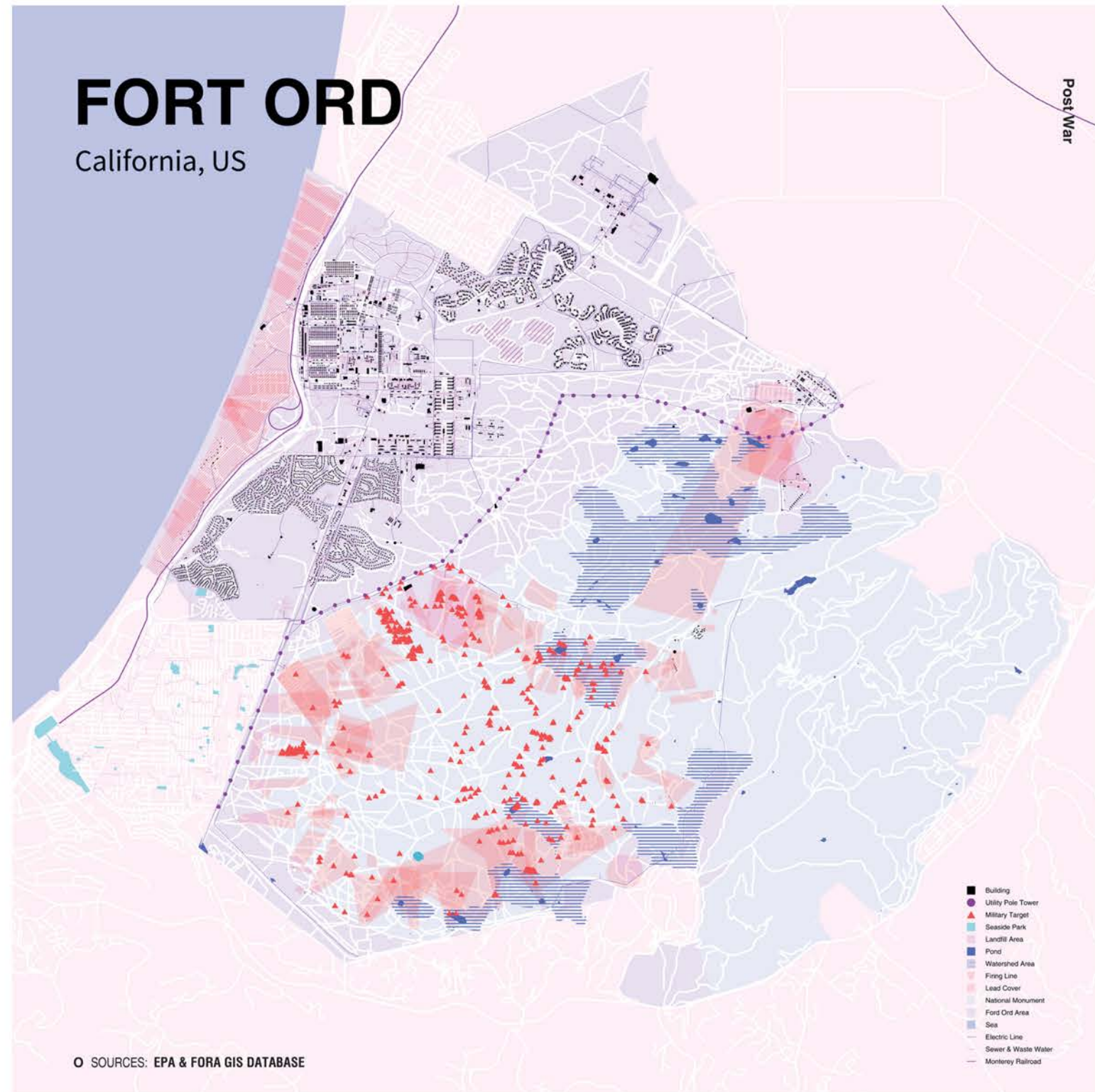
# US Military Facilities & EPA Superfund National Priorities List (NPL) Site

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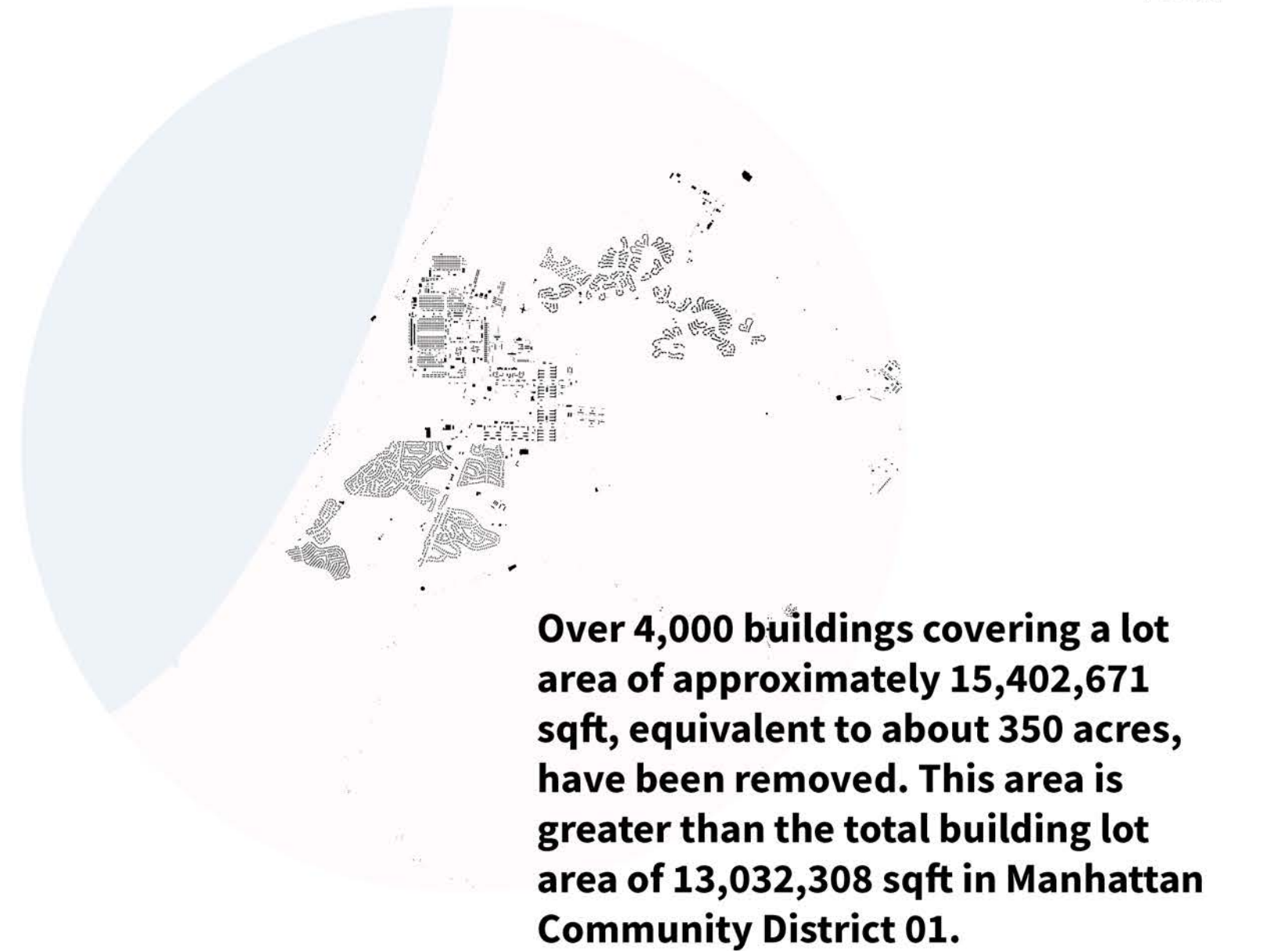
The Department of Defense (DoD) acknowledged the importance of maintaining military readiness and efficiency by closing some installations and redefining the mission of others. These facilities typically cover a vast area with various structures, including buildings, roads, and other infrastructure. The Base Realignment and Closure (BRAC) program designated a considerable portion of the property for transfer to non-federal entities, such as states, tribes, local governments, or private industries, as well as to other federal agencies. The Superfund program administered by the EPA aims to clean up and manage the most severely polluted sites and respond to environmental emergencies like oil spills and natural disasters. The program's main objective is to enhance public health and environmental sustainability by improving the quality of life in communities, making them safe and habitable. Currently, military installations are associated with approximately one-third of the Superfund sites listed on the National Priority List.



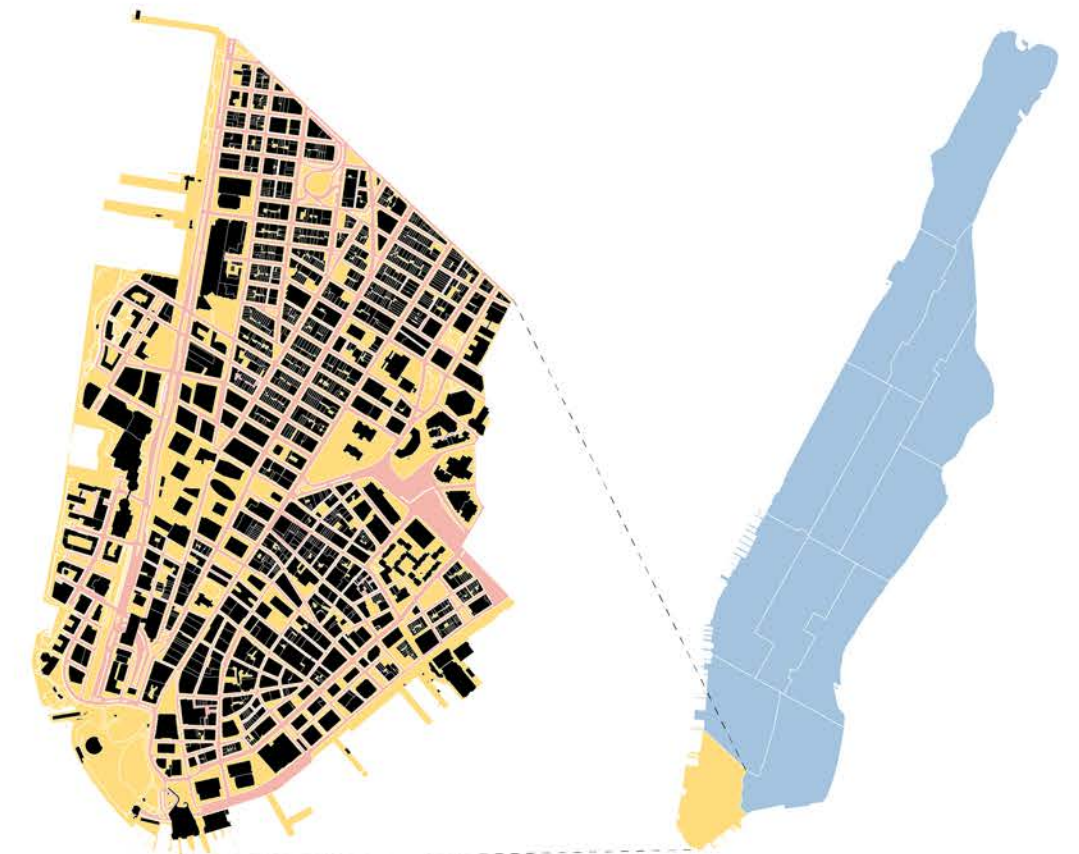


In 1988 President Bush signed the Base Re-alignment and Closure act. Fort Ord made the list and in 1994, it became the largest military base to be shut down. In 1995 state parks took over the property, turning the coast into a recreation area and spot to remember. The Fort Ord Reuse Authority (FORA) is responsible for the oversight of Monterey Bay area economic recovery from the closure of and reuse planning of the former Fort Ord. The military base was located on the California coastline near the Monterey Peninsula, consisting of 28,000 acres of

land. FORA implements this legislatively mandated mission by overseeing replacement land use; assuring compliance with adopted measures; removing physical barriers to reuse; financing and constructing major components of the required infrastructure and basewide demands; and protecting identified environmental reserves. FORA exercises its planning, financing, and monitoring responsibilities under state law authority to meet these objectives in the best interest of the northern Monterey Bay community.



Manhattan Community Board 1 (CB1) is one of New York 's 59 community boards. It is encompassing the neighborhoods of Battery Park City, the Financial District, the South Street Seaport, and TriBeCa in Lower Manhattan in the borough of Manhattan as well as Liberty Island, Ellis Island and Governors Island. The diagram(right) excludes Liberty Island, Ellis Island and Governors Island.





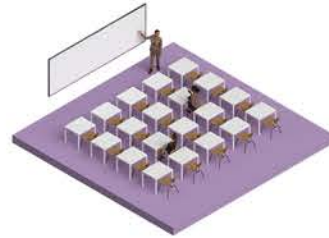
# Proposed Programs



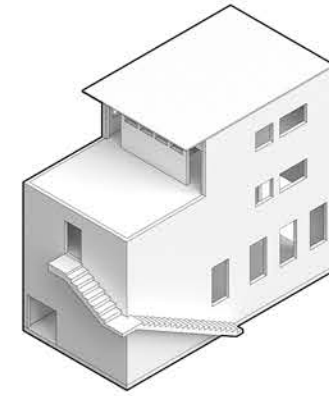
Workshop



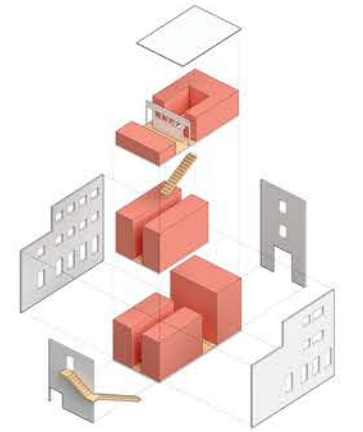
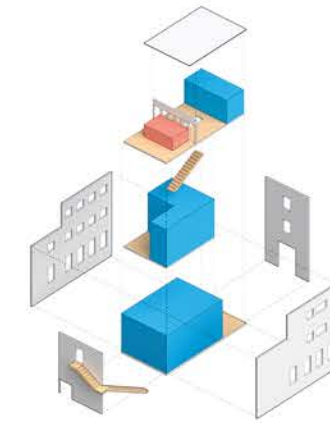
Gallery



Classroom



Target Range Shop



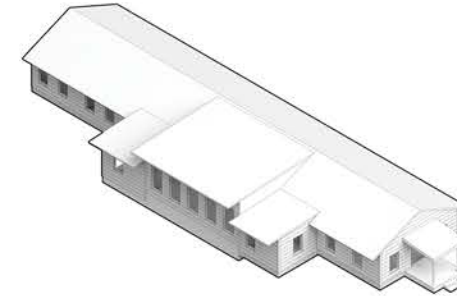
Commercial



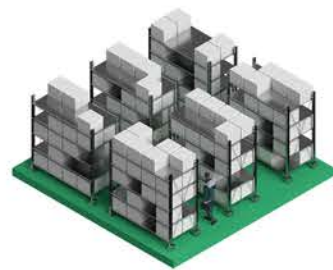
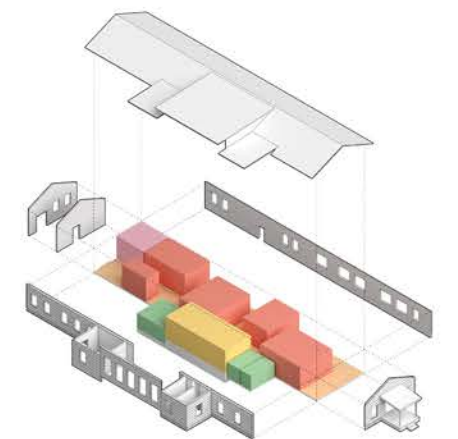
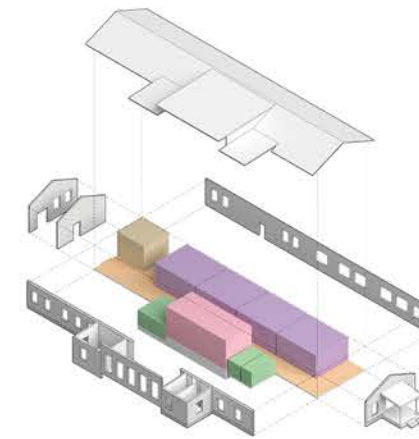
Communal Space



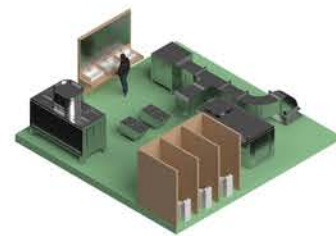
Gym / Sport



Bakery



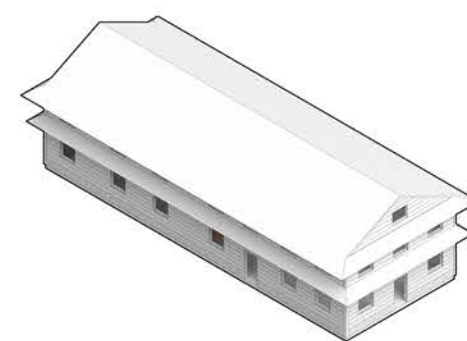
Storage



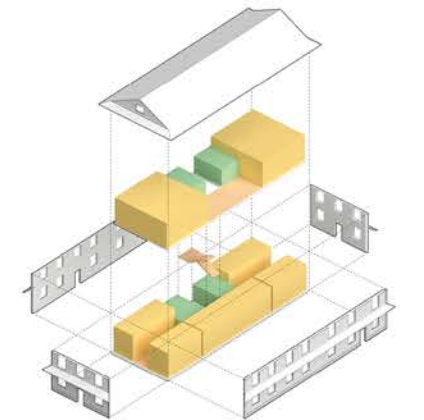
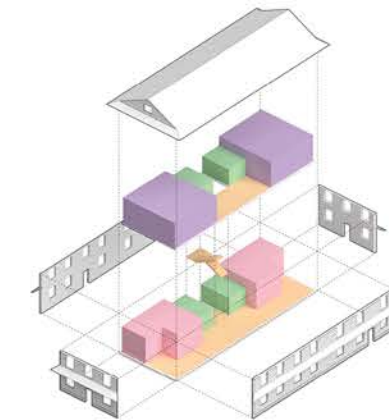
Utility



Office



Barrack



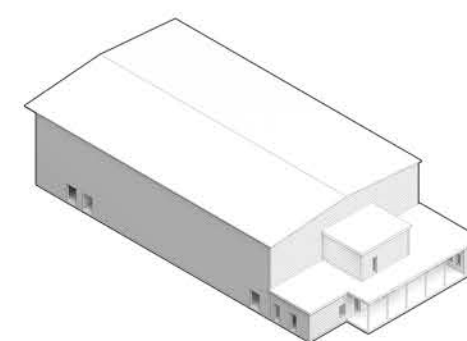
Auditorium



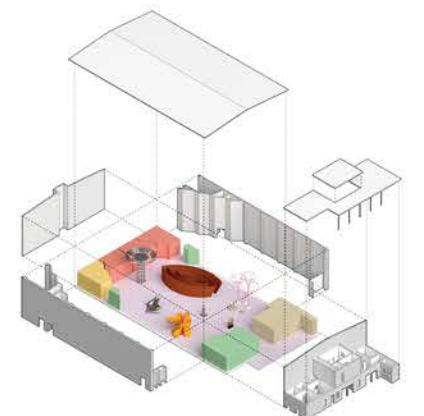
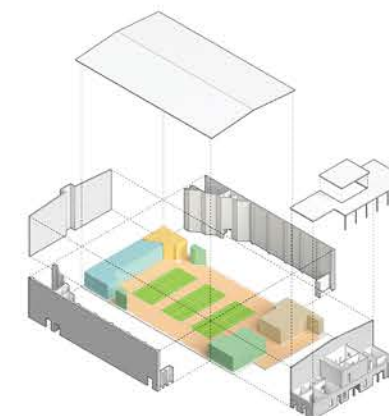
Library



Solar Roof



Doughboy Theater



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# Thoughts

A new construction project, is merely a repair within a system that is neither social nor ecological. The enormous imbalances produced by the market have so far rarely been questioned. Especially not under the guiding principle of the sustainable city, which was introduced decades ago but has changed nothing at all. Rather than allowing these structures to become obsolete and fall into disrepair, it's important to make a case for their reuse and repurposing. These heritage assets often contribute significantly to the character and appearance of our cities, and preserving them through adaptive reuse can enhance the architectural vocabulary of the built environment.

Military installations as one of the biggest sector in the field of architecture, however only a small percentage of architects will get involved with this type of projects. Most of the facilities that built during the two wars are getting maintained, demolished, or abandoned. Architecture cannot be considered as finished once construction is completed. Attempting to maintain them in an unchangeable state is a questionable demand that often prioritizes the authorship of the architect over the needs and experiences of the inhabitants who live and use the building. This project can be described as a method that offers a new opportunity to address this challenge. This project could make a significant impact toward their surroundings neighborhood that few others can rival, approaching the level of urban design projects in their own right.

No matter how long buildings exist, they are not constructed with materials that last forever. The longevity of buildings, whether they are designed to last for a long or short period, is determined by repair measures. This project focused on a specific aspect of the broader concept of adaptive reuse. There are several other subjects and domains that require attention, such as the production system, transportation of construction waste, and building system design, among others. This project serves as an introductory exploration, and it is hoped that further discussions and investigations will continue to delve into these areas.

Physical Book: 11' x 8.5'

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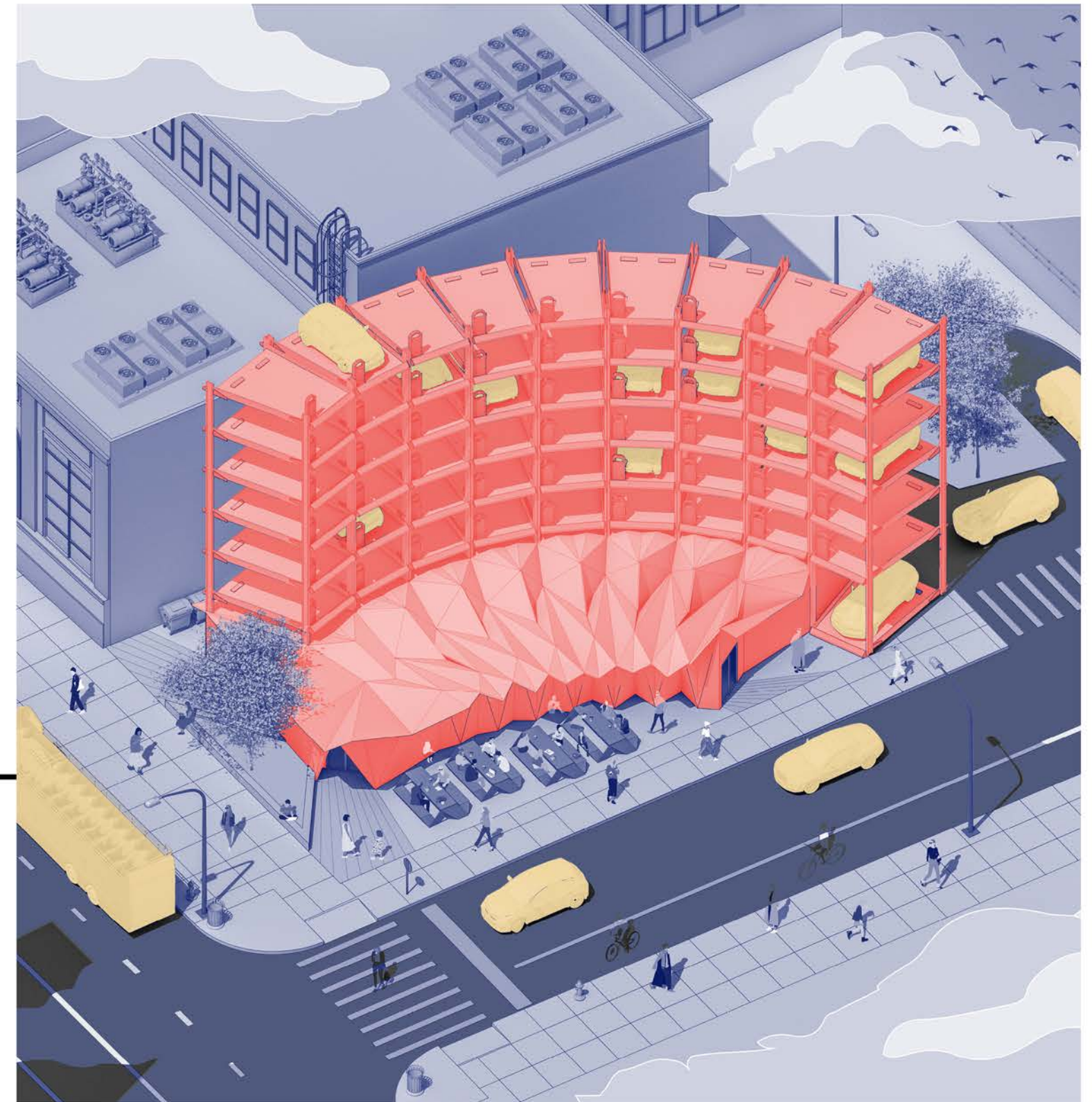


# Sub-station

Public Infrastructure / Broadway, New York  
2019 Core I

Critic : Lindsey Wikstrom

The Substation serves as a prototype for the next generation of “gas stations,” integrating two essential urban amenities: electric vehicle charging stations and public restrooms. It incorporates red oak wood, a natural and renewable material, to minimize construction emissions and reduce the carbon footprint. The parking system within the Substation employs automation, allowing cars to be efficiently moved to and from parking spaces. Upon arrival, drivers can pull up from the street and park in the designated drop-off area before entering the building. As visitors enter, they are greeted by a park area nestled under a well-lit canopy. Continuing through the structure, there is an open space with seating, followed by a communal washbasin area, and finally, individual private rooms with full-length doors. This design creates a layered experience, gradually transitioning from the public sidewalk to the most private chamber, offering a sequence of spaces that cater to different levels of privacy and comfort.







COLLIDE

The parking system incorporates an automated mechanism that facilitates the movement of cars to and from designated parking spaces. When drivers arrive from the street, they can park their vehicles in the drop-off area before entering the building. Upon entering, visitors are welcomed by a park area that seamlessly integrates beneath a well-illuminated canopy. Moving through the structure, there is an open space furnished with seating arrangements. Adjacent to this area are shared washbasins, and ultimately, individual private rooms equipped with full-length doors. This architectural layout creates a layered progression of experiences, starting from the most public sidewalk and culminating in the most secluded and private chamber.

### Idea of Generational Change

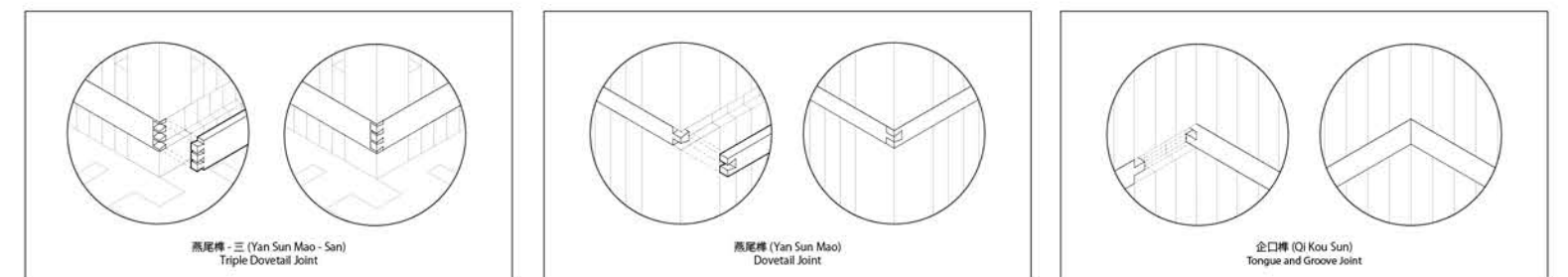
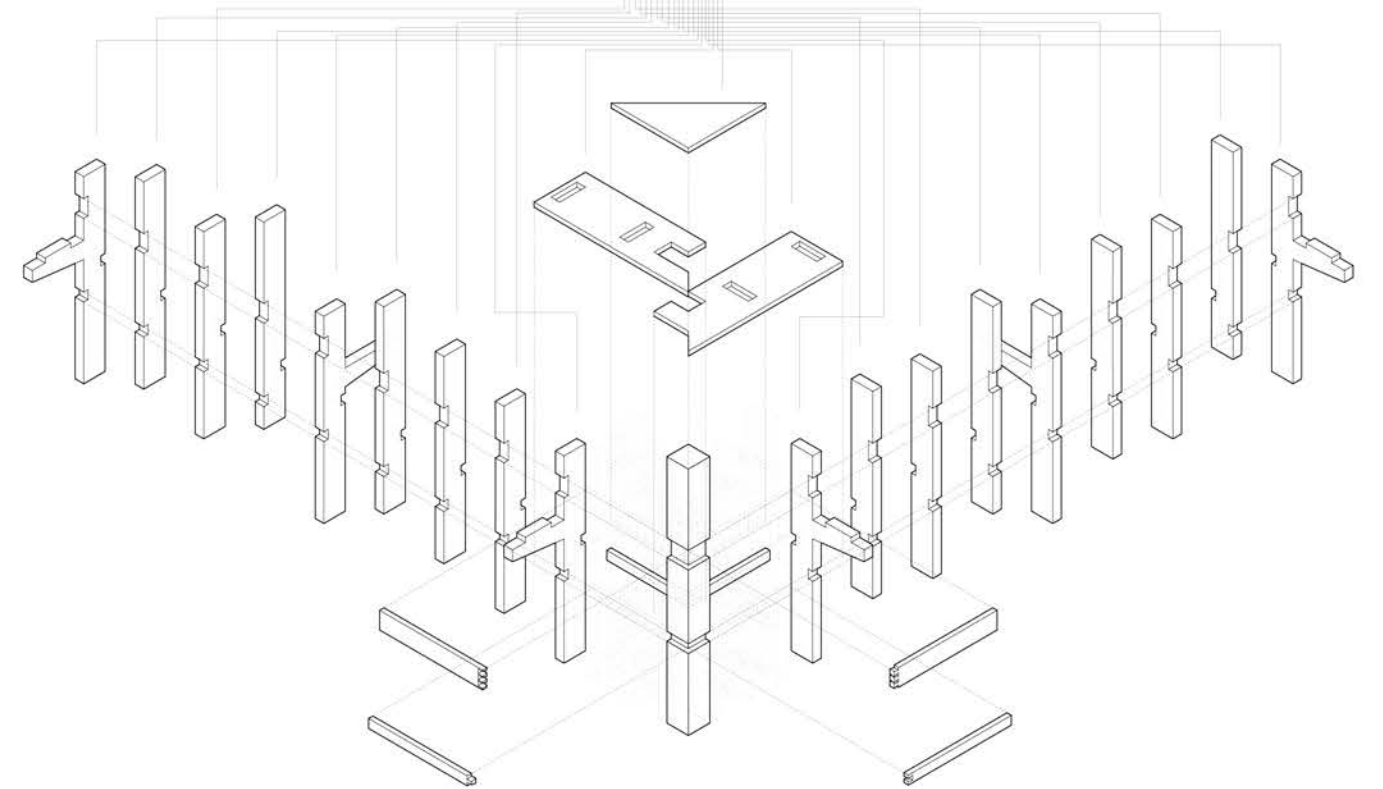
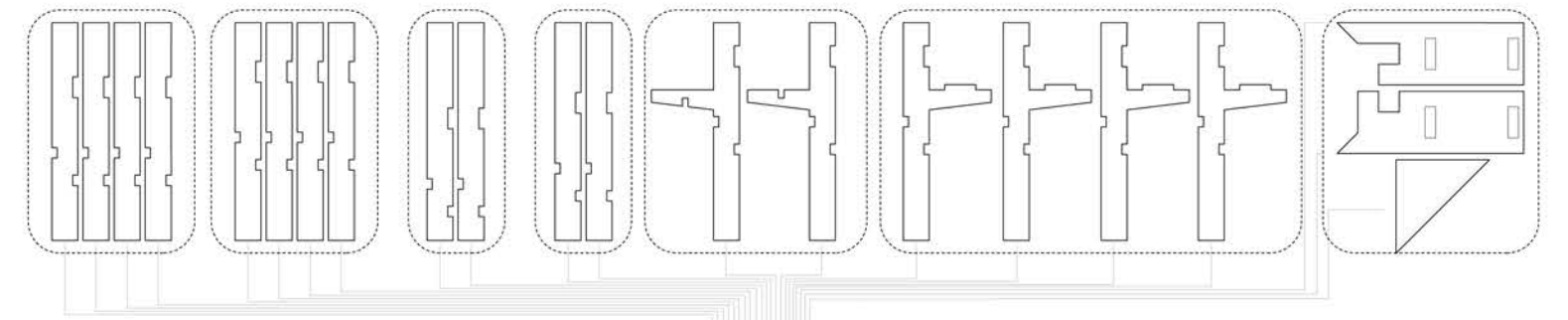
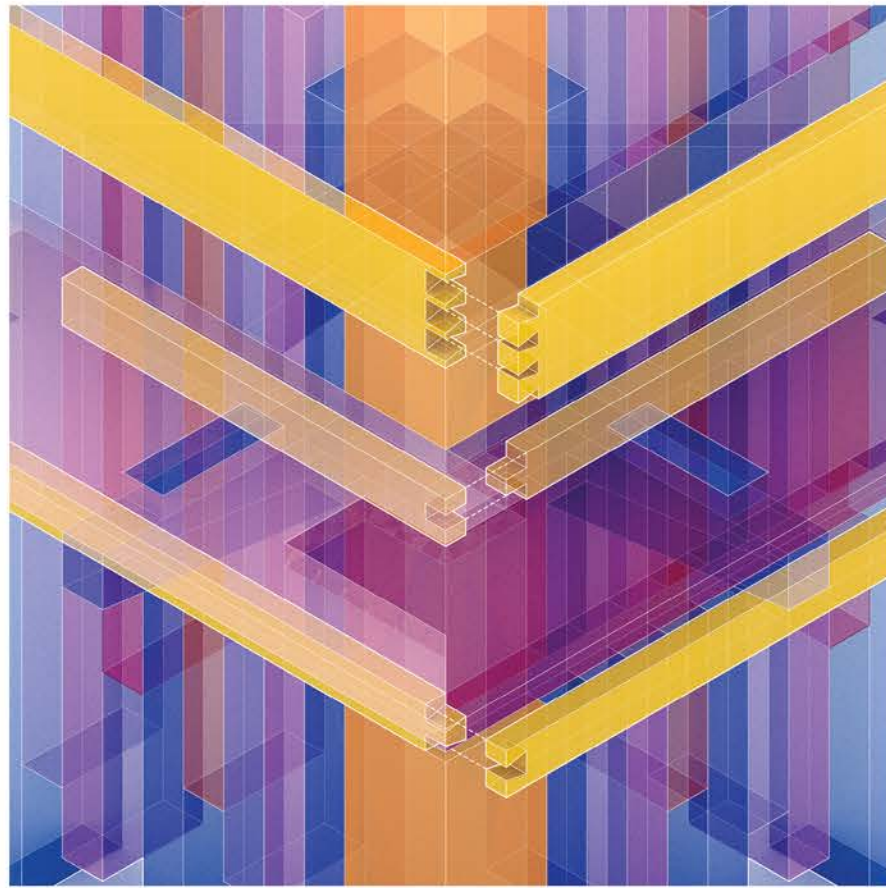
Without a doubt, all would agree that reinforced concrete is one of the best inventions of the 20th century. It allowed us to build on an unprecedented scale, to shape buildings in any style. We can use mold to determine the form of concrete, however once it has been cast, it lost the capability of changing, and it lost the freedom of morphallaxis. Rock will be weathered, metal will be rusted, but concrete almost won't be affected by any conditions. It will withstand the elements of nature. Compare to concrete, good thing about wood is it's

replaceable. Horyuji is an ancient Japanese temple, built in 607 AD. It is the world's oldest surviving wooden structure. After every 100 years, the edge of the wood will be deteriorated. People will hit the bottom of the joist to cut the edge, and use a new part of the wood by pushing out the rest of the pieces. Unlike wood, concrete is not replaceable. There is no way to extract certain parts of concrete from the structure, or even replace it. Additionally, compare to wood, concrete needs to be destroyed by mechanism system only.



### The Joints

Wood has a combination of lightness and tensile strength that nature has already mastered. It is five times lighter than concrete, and yet, it has a comparable strength-per-weight ratio. The construction process is quiet, fast and contractors who work on-site are in these environments that are not toxic. Expanding wood construction could produce a combination of emissions reduction and carbon sequestration equivalent to eliminating construction emissions altogether, roughly equivalent to the present contribution from all types of renewable energy. They grow naturally throughout most of the eastern United States. It takes 0.57 seconds to grow 1m3 of American red oak.



燕尾榫 - 三 (Yan Sun Mao - San)  
Triple Dovetail Joint

燕尾榫 (Yan Sun Mao)  
Dovetail Joint

企口榫 (Qi Kou Sun)  
Tongue and Groove Joint

**Exploded Axonometric**

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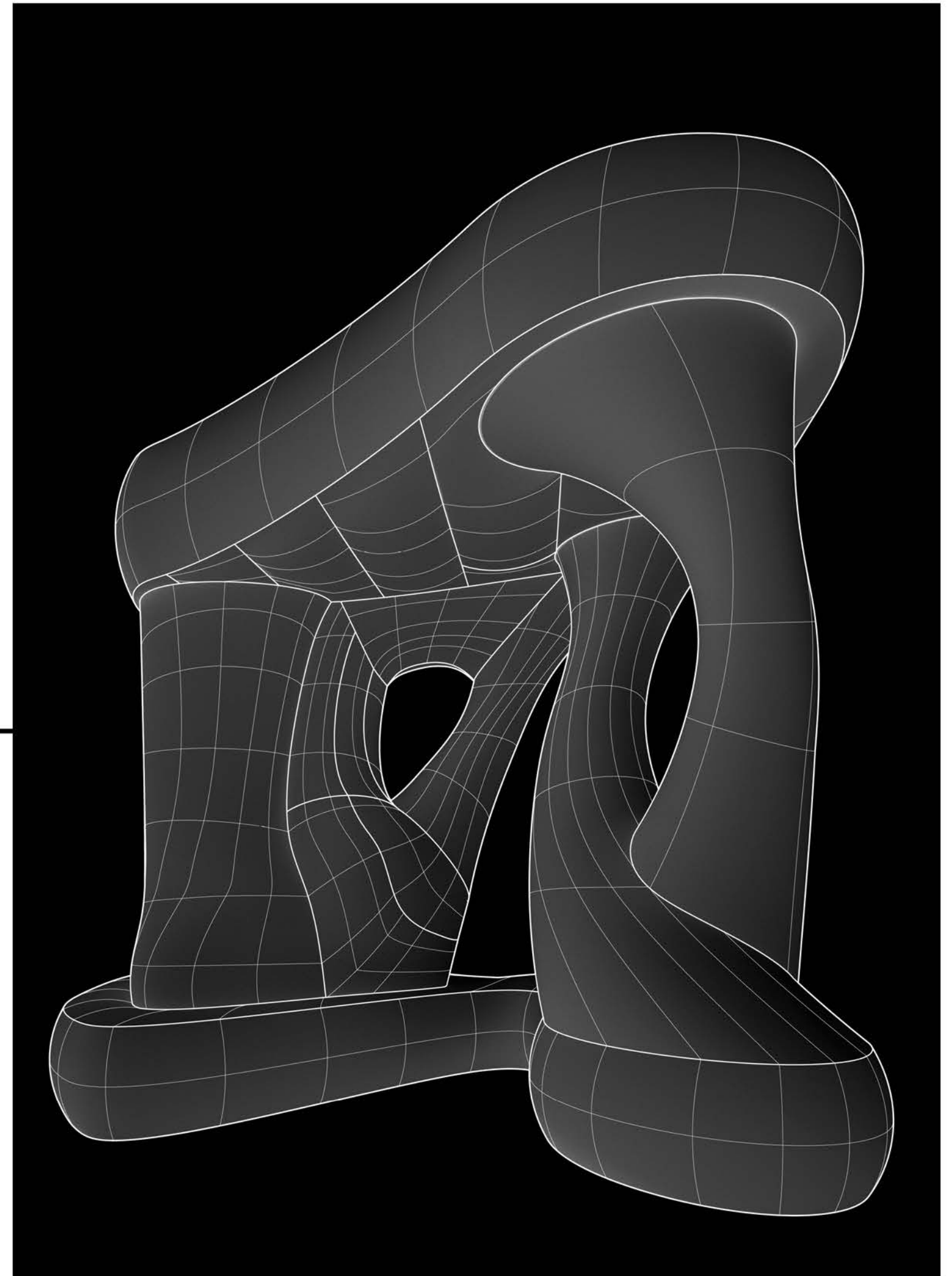
# Goo

Temporary Pavilion / Columbia University, New York  
2023 Spring The Outside In Project

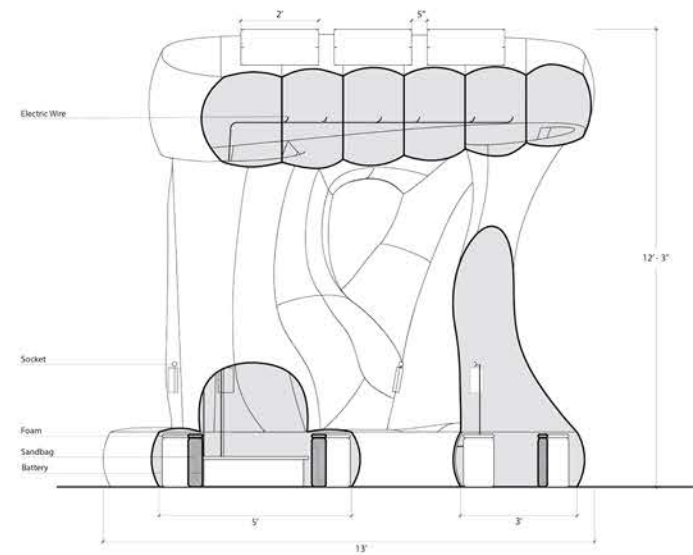
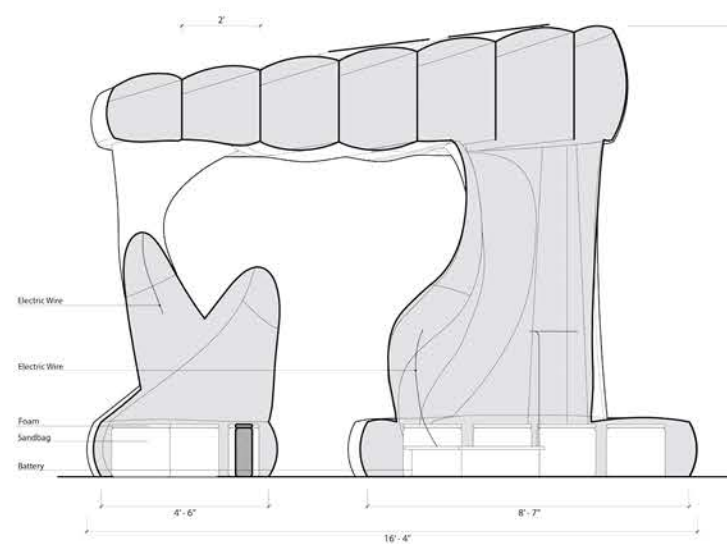
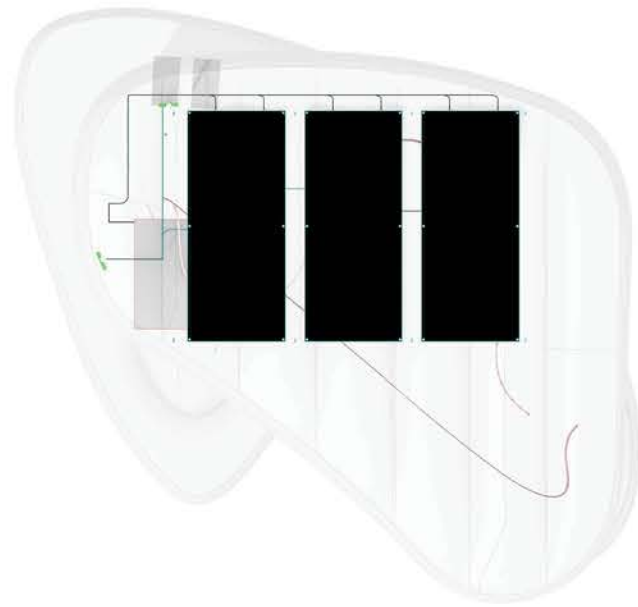
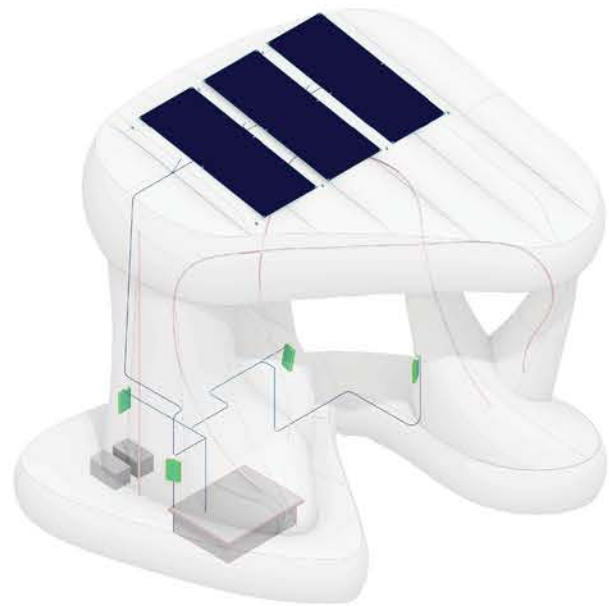
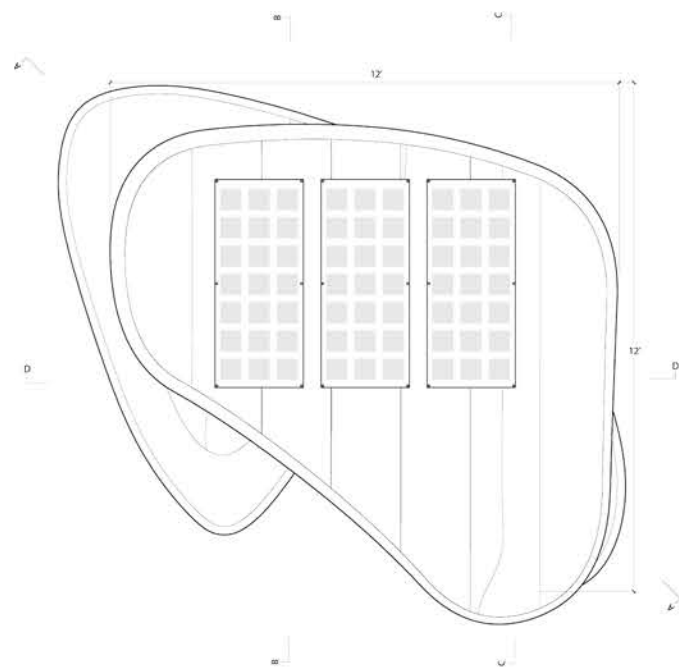
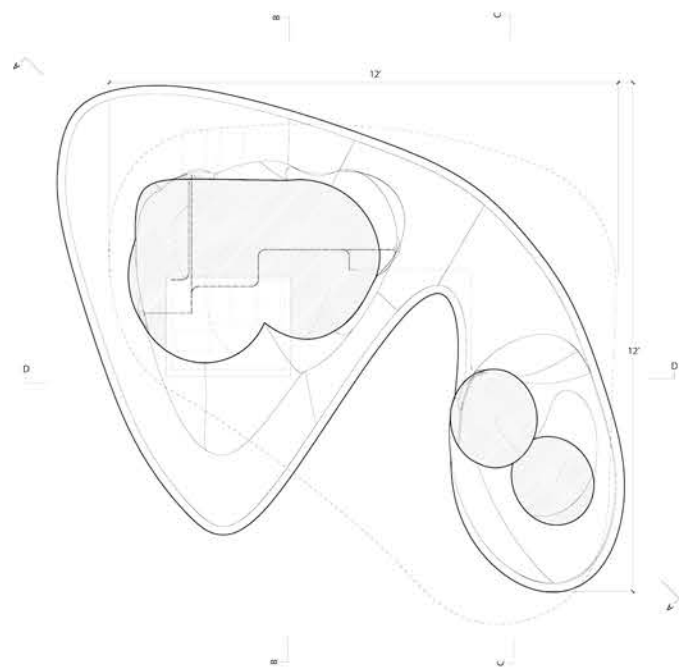
Critic : Galia Solomonoff, Laurie Hawkinson

Collaboration with:  
Syed Haseeb Amjad  
Chayanidh Chantraprapawat  
Haolan Luo  
Andy El Set  
Kriti Shivagunde

Perspectives oscillate and the horizon summons as students and the community navigate fissures and bridges within a field of nesting, weaving, interlocking and sheared spatial conditions. Tension is created between the two wings by removing the middle part of the building's "H" shape, redefining relationships across the site. By introducing the new landscaping gesture at the ground level as an urban strategy, which connect 9th street and 10th street. Maximizing access to sun light, most of the classrooms are







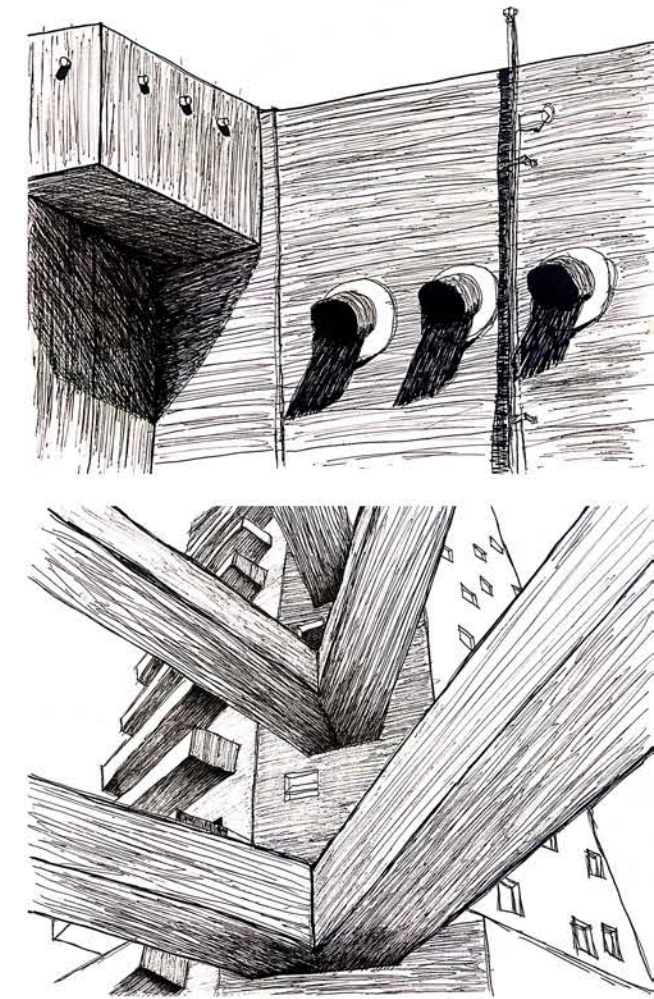
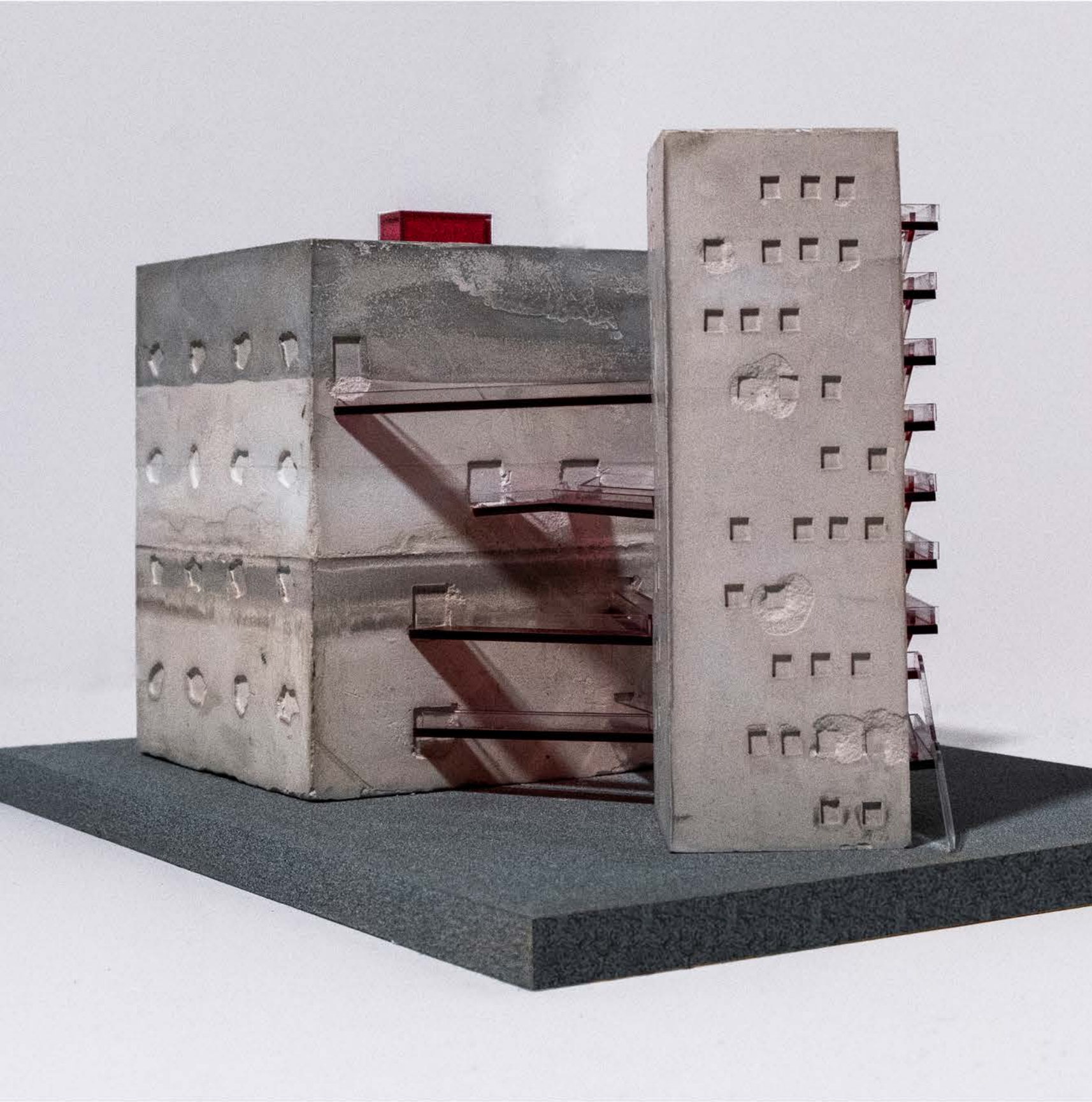
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# SESC - Pompeia

Community Center, São Paulo  
2019 Architectural Drawing and Representation I

Critic : Zachary White

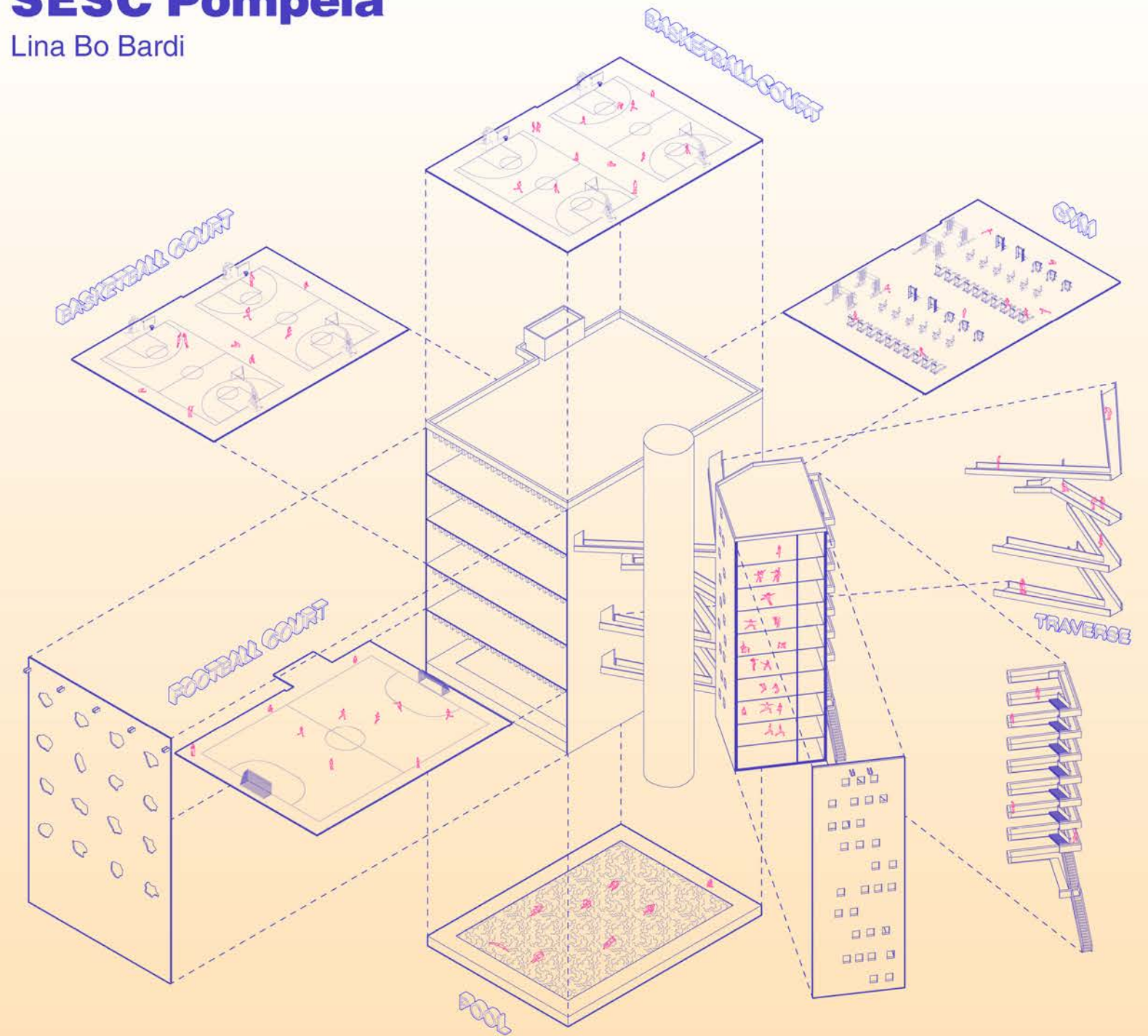
Drawings can be prescriptive when they are generated to convey a particular set of formal relationships, and they can be descriptive when they act as tools used to interrogate adjacencies and spatial conditions. A series of studies of investigating the concepts, techniques, and working methods of computer aided 'drawings' in the project of SESC Pompéia by Lina Bo Bardi. Studies will be in the form of drawings, physical models, and digital renderings.





# SESC Pompéia

Lina Bo Bardi



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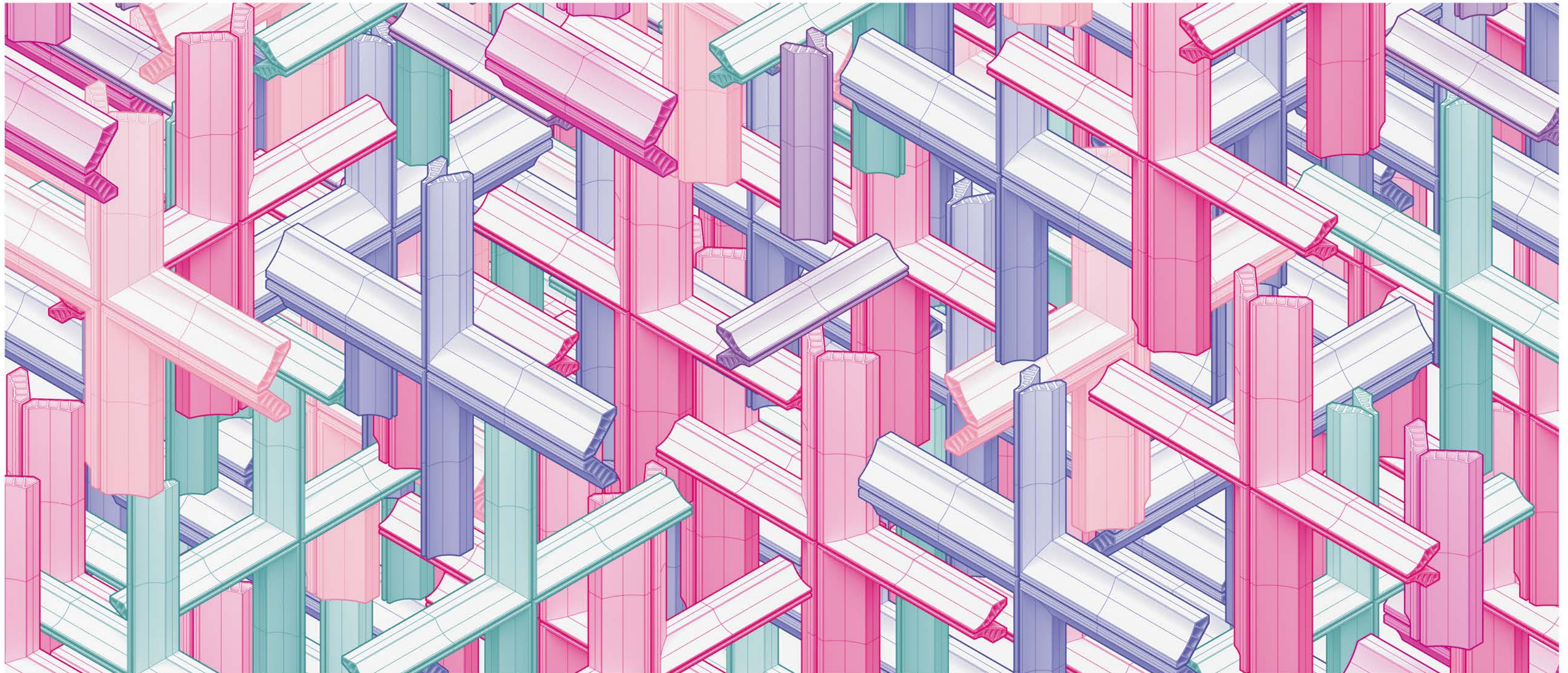


# Oxtorgsgatan Skin

Office Building Facade, Stockholm  
2022 Advanced Curtain Wall

Critic : Daniel Vos

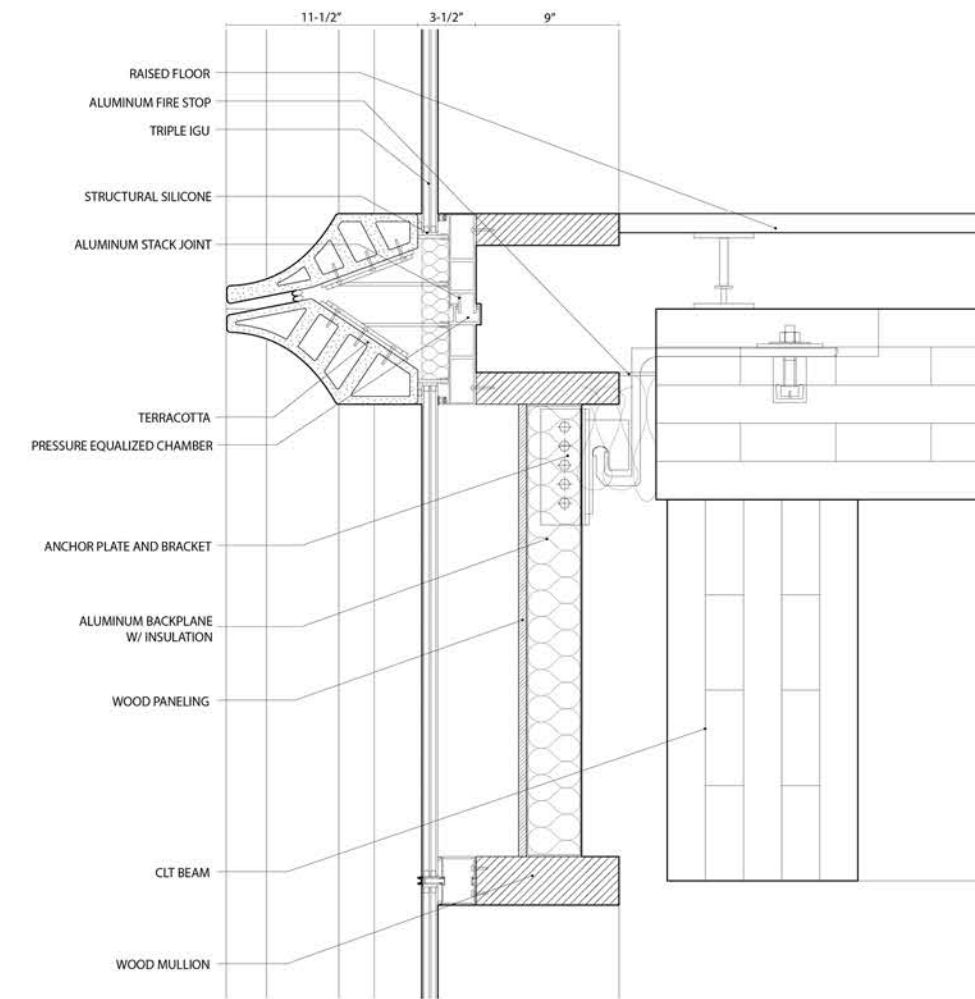
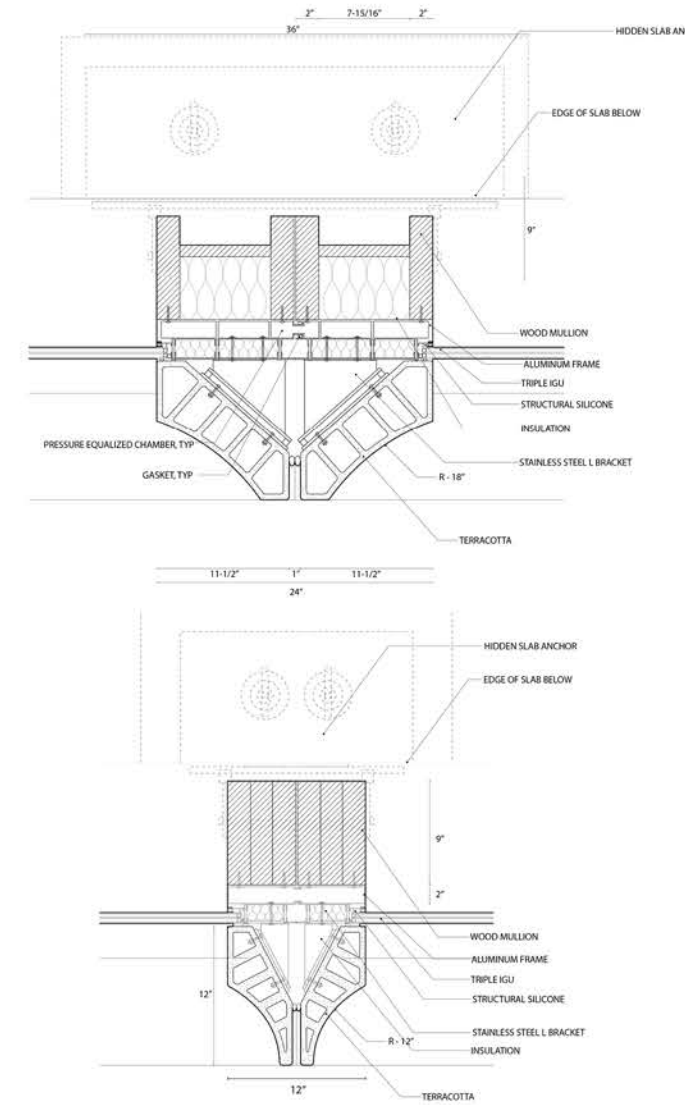
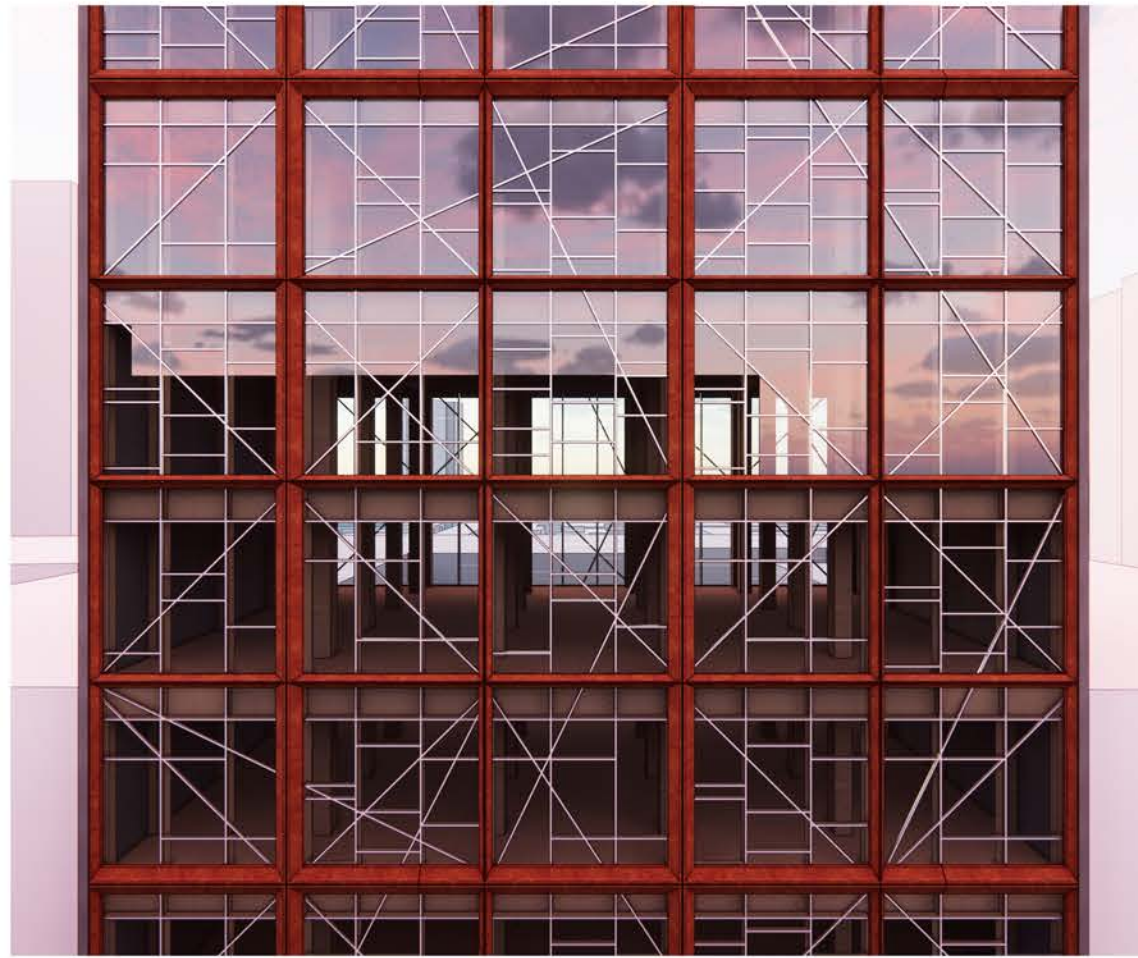
A curtain wall façade enclosing a 9 story office building on Oxtorgsgatan Street in Stockholm. By extracting the lines from the painting to project to the façade. Different line weight represents different façade elements. Each line weight would define the width or the thickness of the size of each cladding. System consists of insulating glass four-side structural silicone glazed onto custom profile frames of thermally broken, standard profile extruded aluminum with wood interior mullion and terracotta exterior cladding. Terracotta anchorage includes through body connections to integral aluminum supports clipped to aluminum sub-framing as required within curtain wall unit to allow for individual removal of tiles. Terracotta rain screen assembly is backed with integral insulation and galvanized air vapor barrier sheet. System is anchored to building structure at top of CLT slab.



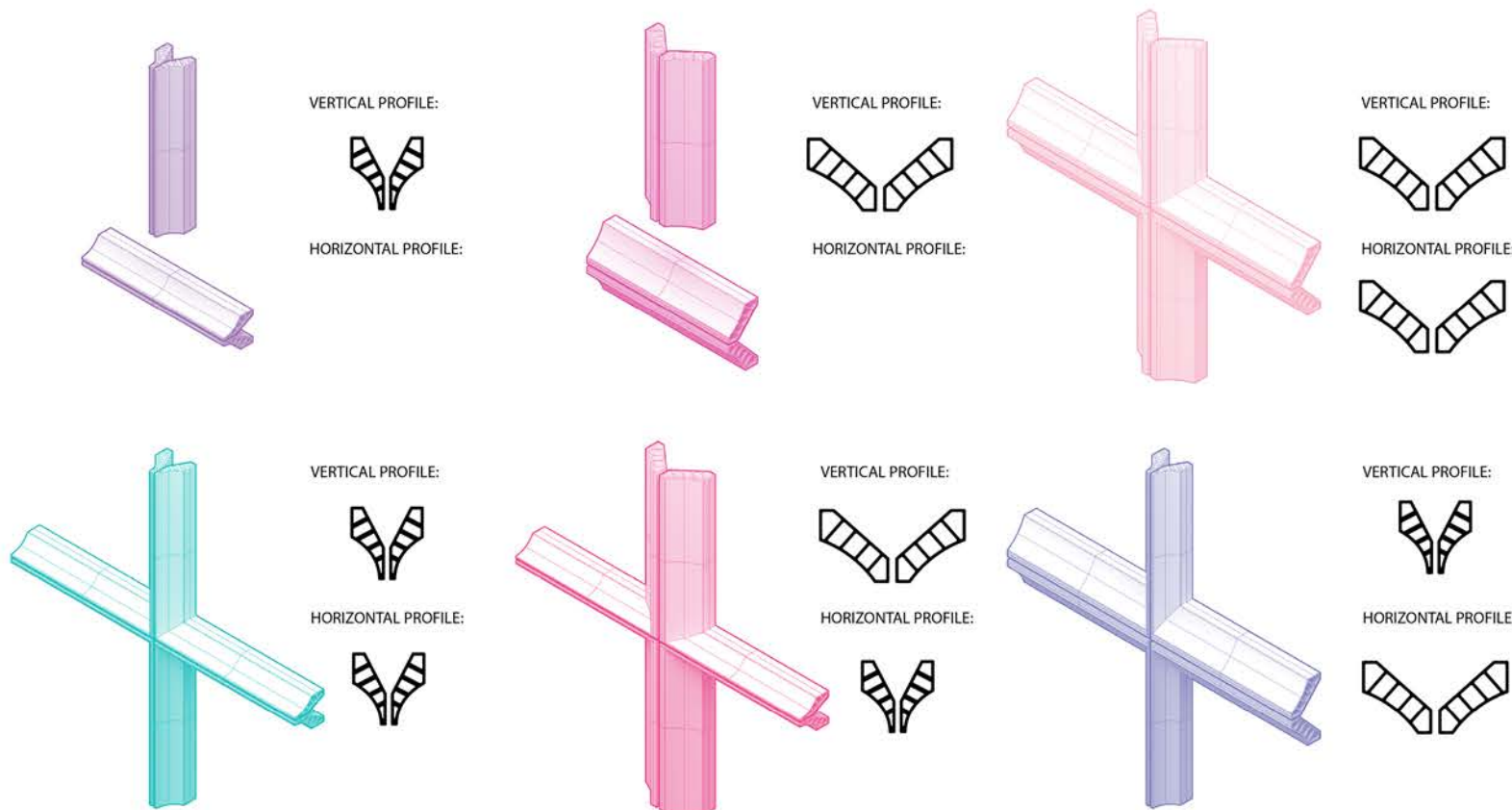


**Supports and Fixings**

The terra cotta rain screen cladding system shall be designed and installed to resist all specified loads and shall conform to the performance criteria specified herein. Each terra cotta tile shall be individually supported. All tiles to include aluminum reinforcement fastened through interior hollow sections with clips securely attached to the back-up framing structure. All support clips and framing members shall be aluminum or stainless steel, approved for use by the terra cotta tiles manufacturer, and conform to requirements for aluminum and/or stainless steel specified herein.



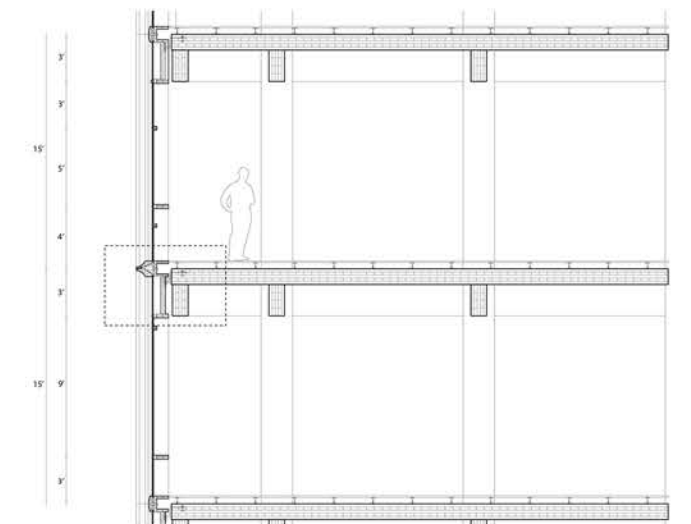
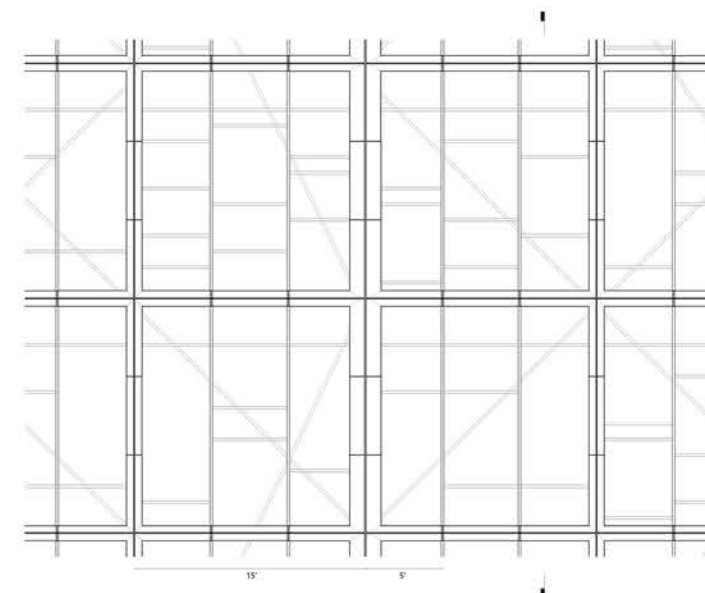
COLLIDE



**Glass**

Reflective and Low-emissivity (low-e) coating(s) shall be neutral in transmitted and reflected color. Performance characteristics for a 1/4 inch minimum thickness clear outer lite with high performance reflective coating on the no. 2 surface - 1/2 inch argon filled air space - 1/4 inch minimum thickness clear inner lite insulating glass unit shall be equal to or better than the following:

- 60% VLT low-e coating:
- 1) Visible Light Transmittance (VLT) of 55-65%
  - 2) U-Value(Summer) 0.22 BTU/hr ft<sup>2</sup> °F
  - 3) U-Value(Winter) 0.25 BTU/hr ft<sup>2</sup> °F
  - 4) Shading Coefficient: 0.33
  - 5) Solar Heat Gain Coefficient: 0.29





# Orbiting

Infrastructure, Transportation Hub  
2021 Techniques Of The Ultrareal

Critic : Phillip Crupi + Joseph Brennan

Collaboration with: Hazel Villena, Chuqi Huang, Andrew Magnus

We present to you our visionary transportation hub of the future. Our project started with a deep dive into the technological elements depicted in science fiction movies, photographs, and drawings. We studied these themes to come up with ideas for a conceptual transportation hub that seamlessly blends future technology and infrastructure, levitating above the water's surface.

The hub consists of multiple levels and starts with a slender body at the bottom, gradually bulking up in the main cabin area where various elements come together to create a complex spatial structure. The design is sleek and aerodynamic, with advanced propellers that effortlessly keep the hub floating above the waves.

Our vision for this project is set on a faraway planet where an abandoned and orbiting object has been reconstructed using scattered parts from former spaceships. Through our visualizations, we aim to capture the essence of this setting and convey the concept of a futuristic and deserted object. Our transportation hub of the future is the result of extensive research and a creative interpretation of sci-fi technology. Our goal is to bring this visionary concept to life, offering a unique and inspiring space that pushes the boundaries of what's possible in transportation and infrastructure design.

