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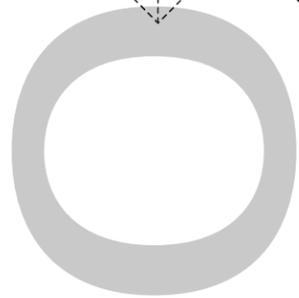
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**CLAIRE CHEN**

**2019-2022  
SELECTED WORK**

CONNECTION

TRANSFORMATION



# REGISTRATION

PART I.

**REGISTERING REGISTRATION**  
STUDIO | ADV VI | SPRING 2022

**WARPED I**  
VISUAL STUDIES | CORE I | FALL 2019

**WARPED II**  
VISUAL STUDIES | ADR | SPRING 2020

# REGISTERING REGISTRATION CODE NAME TRINITY

SPRING 2022  
STUDIO | ADV VI

Instructor: Mark Wasiuta  
Partner: Scarlett Xu

Located in the northern part of the White Sand Missile Range in New Mexico, this project aims at re-registering the apparatus and administrative organization in the Trinity test--the first atomic bomb detonated in human history. Noticing the inadequacy of commemoration on the site today, the project explores alternative ways of visiting and reading the site--- it transforms the site into a sensing system that registers a catalog of apparatus prepared for the test and discloses both the precision and contingency during Trinity's choerographed execution.

This project starts off with the research that looks into a chain of two events that took place in 1945 during WWII. Trinity test in New Mexico and the bombing of Hiroshima, which is the first nuclear weapon used in warfare. Viewing the Trinity test as the rehearsal of the Hiroshima Bombing, the research looks into and reconstructs the test chronologically, from its preparation, and detonation to the impacts.



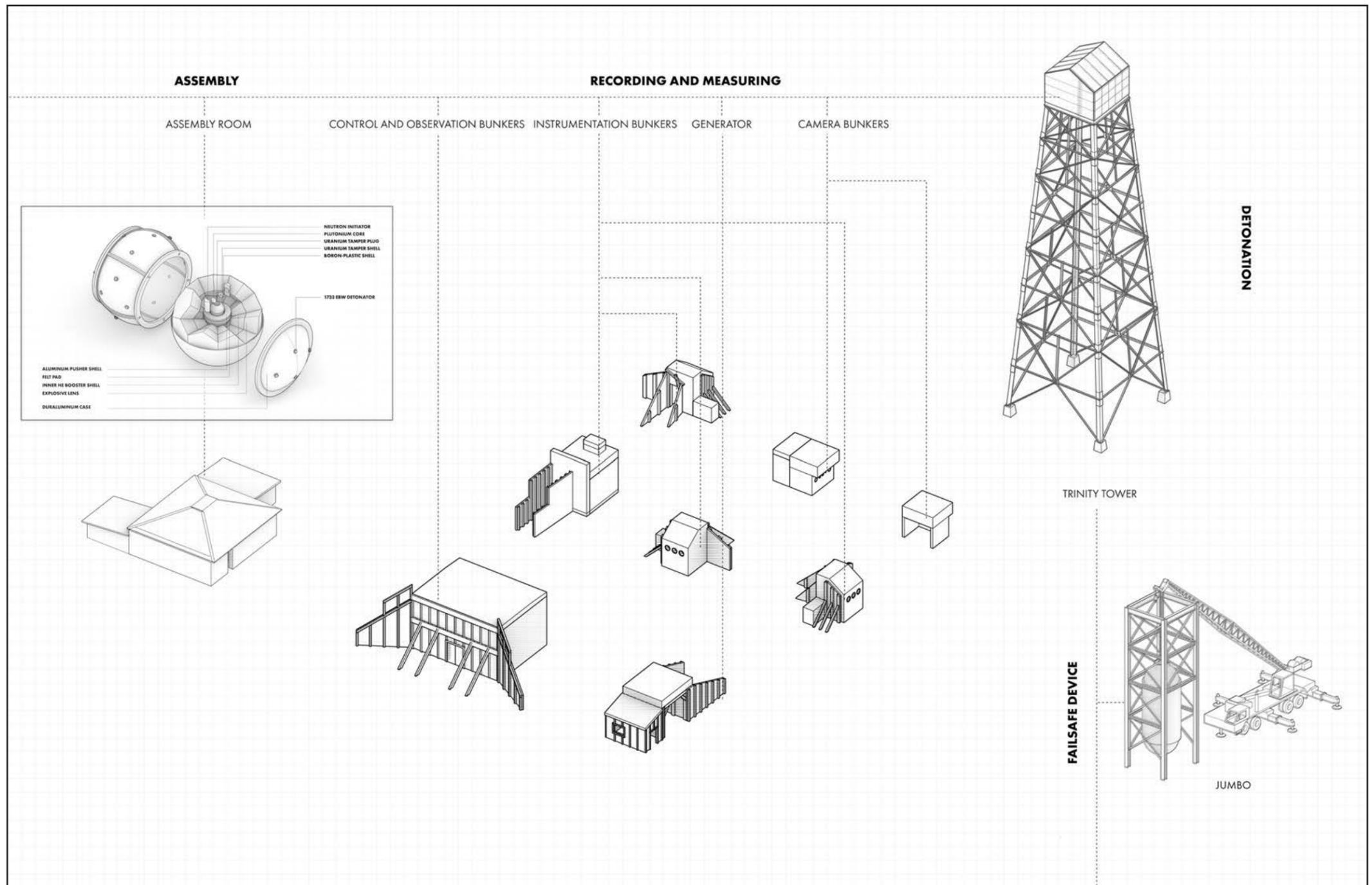
PAST

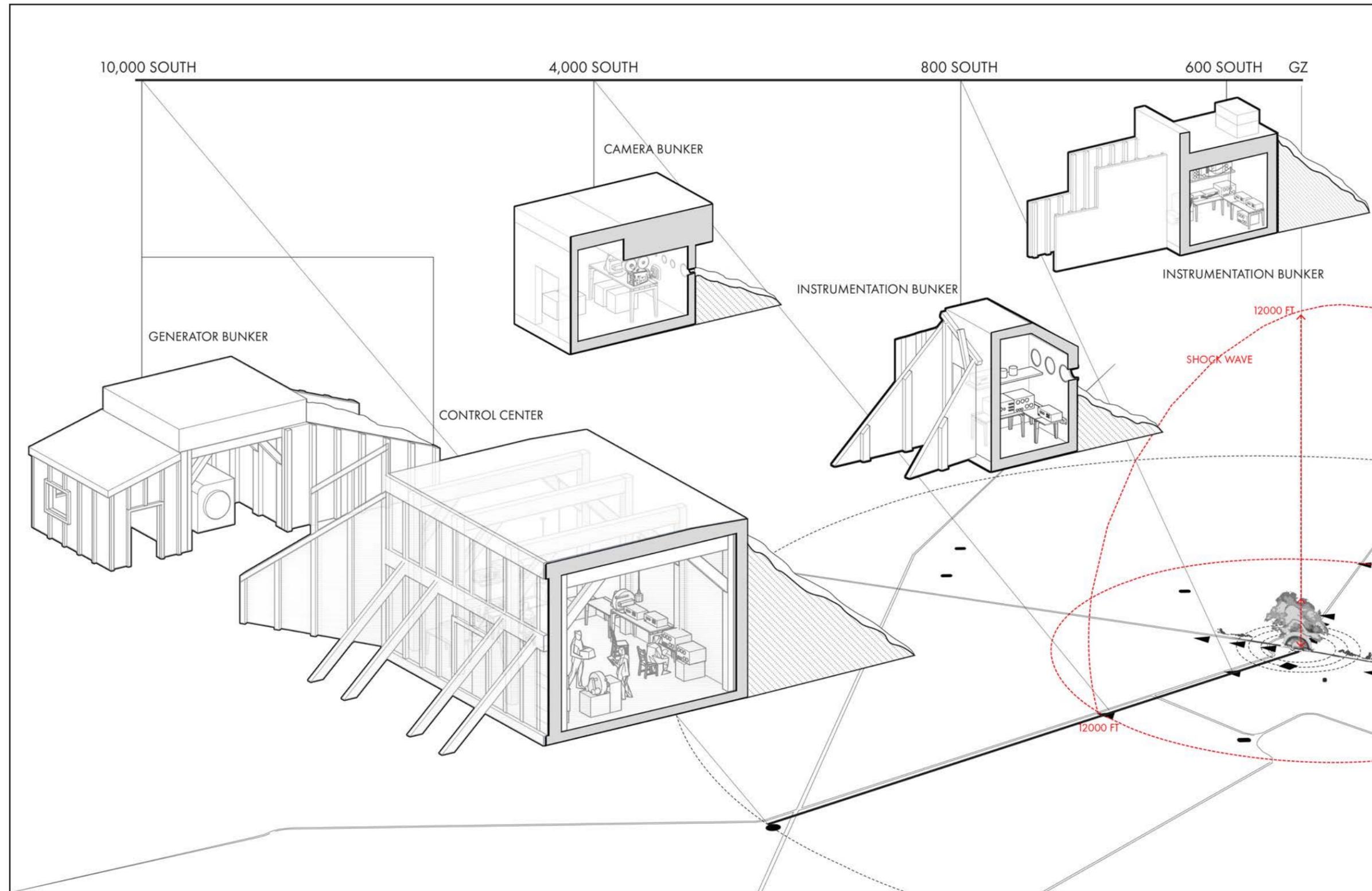


PRESENT

# CHAPTER I. SITE OF REGISTRATION

The research focuses not only the test, or the moment of detonation itself, but more importantly, the infrastructure, the systematic structures and objects that supported and recorded, or in other words, registered the test.

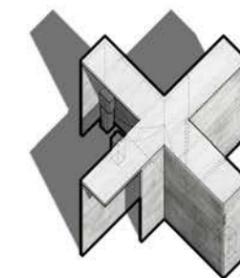
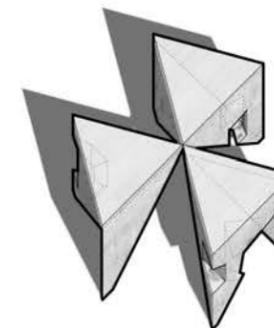
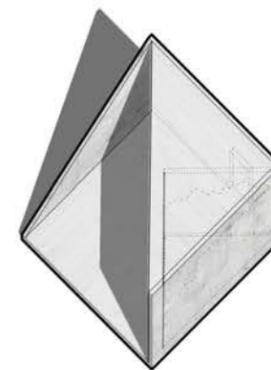
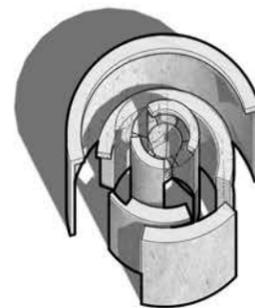
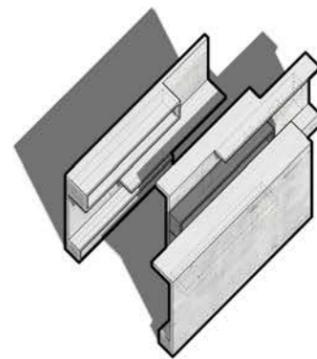




Instrumentations and cameras protected by these bunkers captured and registered this moment of explosion. Here you see what was happening during the detonation. All of the eye-witnesses were in the 10,000 bunkers. Nobody was in the camera and instrumentation bunkers that were closer to ground zero. Instrumentation bunkers contained recording equipment for measuring implosion time, air blast shock waves, and gamma rays. Camera bunkers were holding photographic equipment such as FASTAX high-speed cameras.

## CHAPTER II. REGISTERING REGISTRATION

The Trinity Test is not simply about the moment of detonation. Instead, it is composed of carefully calibrated and choreographed preparation that involves thousands of devices and objects that monitor and record the test. Through different architectural and spatial languages, the project looks into the original use of these means of registration and translates them into an informational and spatial system that could be perceived and registered by the visitors today.

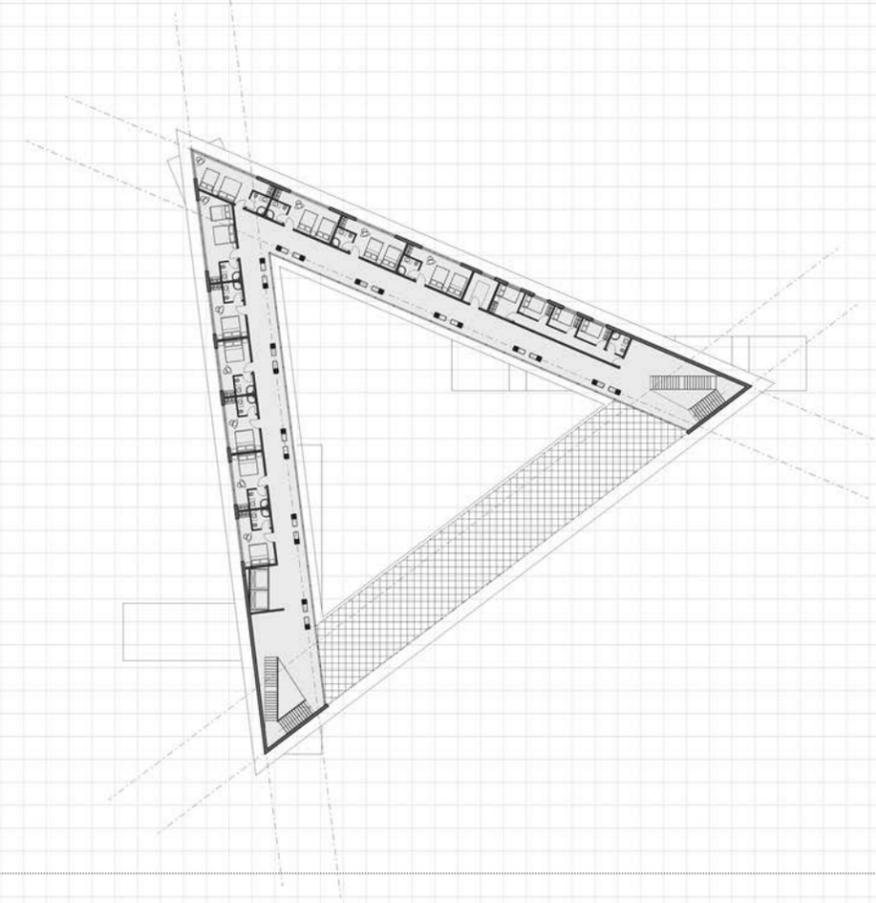
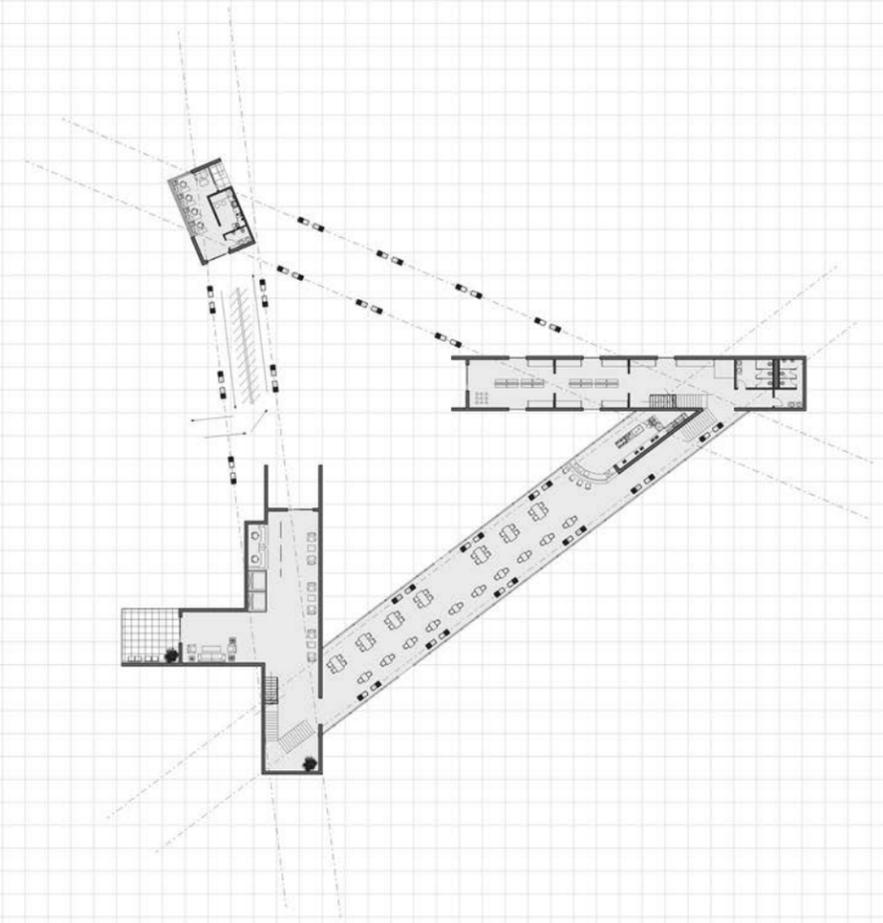
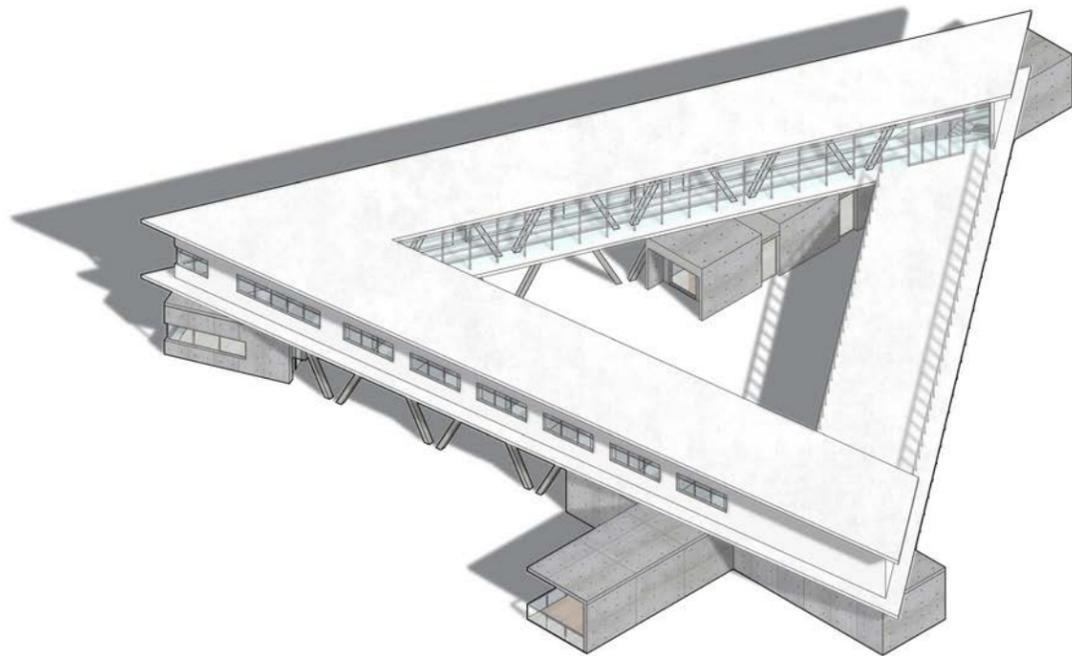


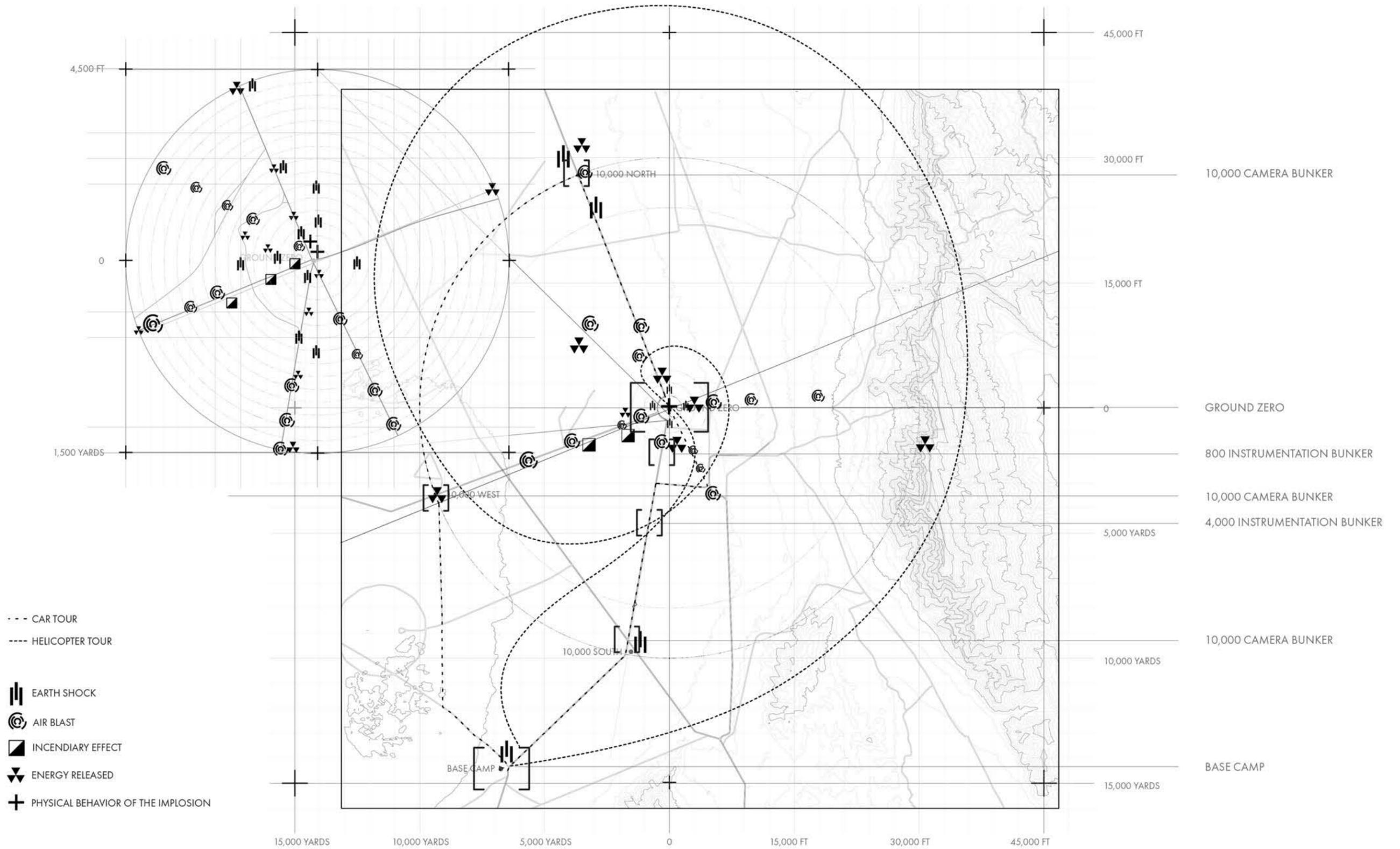
## BASE CAMP

The base camp would be the first stop of their registration tour. It is repurposed into a visitor center and hotel complex.

Some of the original footprint of the base camp were restored on the first floor and now act as their corresponding function. For example, the original main hall for gathering and meeting is restored and used as the lobby of the hotel. The first floor is also populated with other programs, including a restaurant, a gallery and offices for staff.

For the upper floor, a triangular massing is proposed for the hotel space, staff accommodation, and an outdoor viewing deck to provide visitors with a panoramic view of the site.

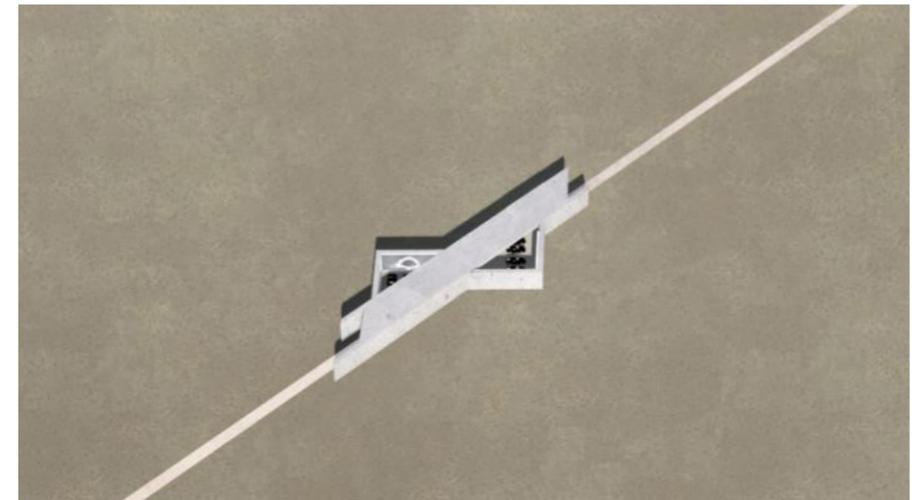




Starting from the base camp, visitors would embark on their registration tour. There are two options, a car tour and a plane tour. They will register different apparatus and objects, thus provide a completely different perspective and experience

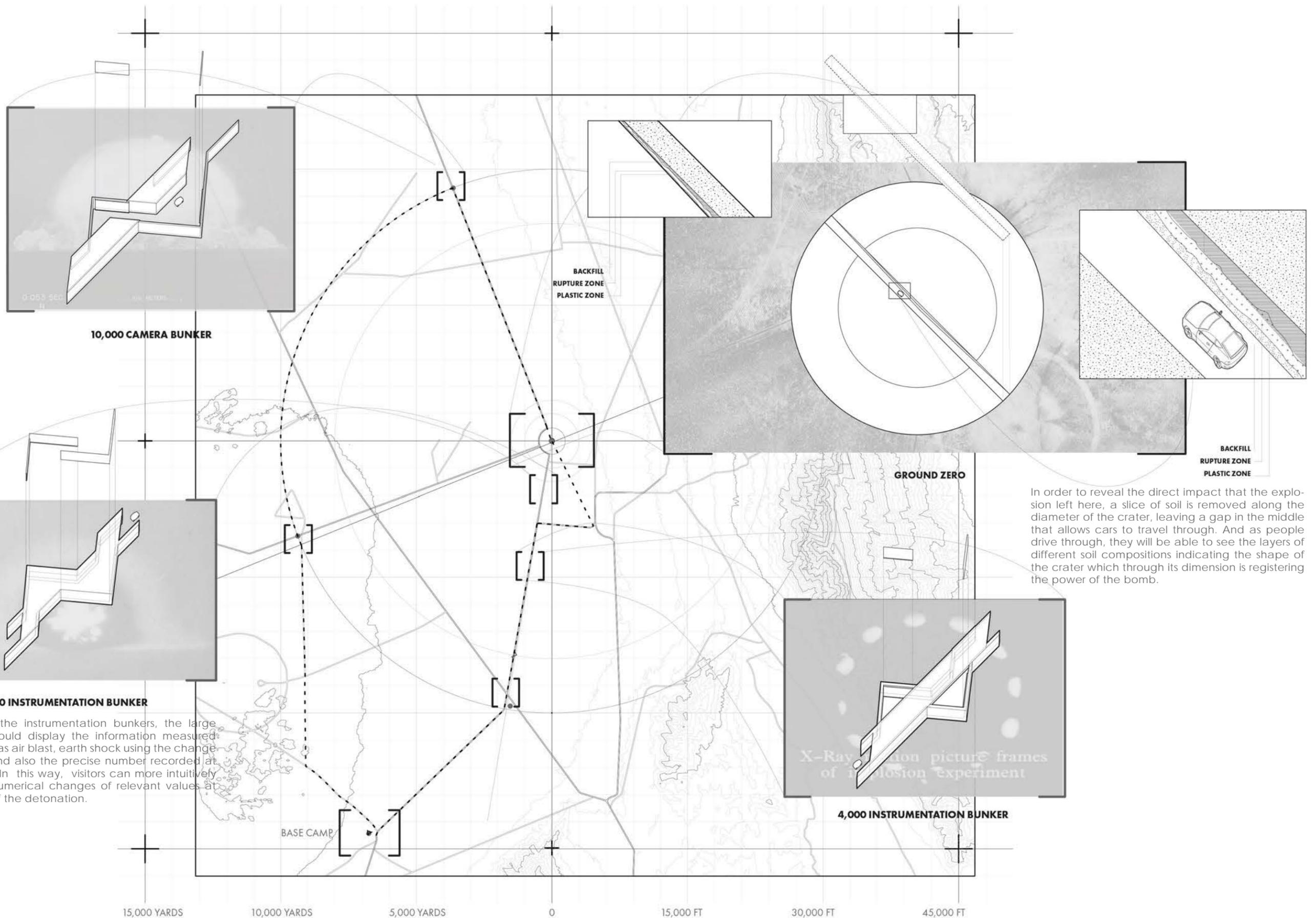
## ROUTE ONE CAR TOUR

The car tour registers three original camera bunkers on a circle of radius 10,000 yards from ground zero, and two instrumentation bunkers, which are 4,000 yards and 800 yards from ground zero, and the crater itself. The car tour is composed of the original path on the site and would loop back to the base camp.



The language of the concrete envelope or enclosure is derived from the similar language adopted by the original bunkers. They were built to serve as defensive devices, so there's a strong feeling of heavy and enclosed attached to their form and materiality. Also, the closer the bunker is to ground zero, the heavier the enclosure structure will be, and the more compact the internal space will be. The proposed new structures aim at reconstructing that experience.

Camera bunkers are repurposed into drive-in cinemas with large screens displaying images that were recorded here. Different screens will be showing images taken from different devices. The format of each screen varies depending on its original sources. As visitors travel from one bunker to another, these nuances may also serve as hints suggesting a change in the location.



**10,000 CAMERA BUNKER**

**800 INSTRUMENTATION BUNKER**

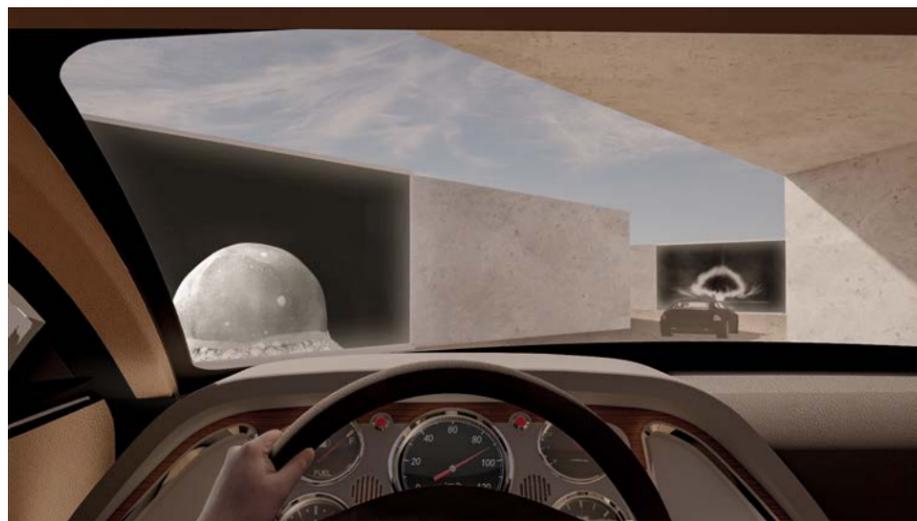
Same for the instrumentation bunkers, the large screens would display the information measured here such as air blast, earth shock using the change of color and also the precise number recorded at that time. In this way, visitors can more intuitively feel the numerical changes of relevant values at the time of the detonation.

**GROUND ZERO**

**4,000 INSTRUMENTATION BUNKER**

In order to reveal the direct impact that the explosion left here, a slice of soil is removed along the diameter of the crater, leaving a gap in the middle that allows cars to travel through. And as people drive through, they will be able to see the layers of different soil compositions indicating the shape of the crater which through its dimension is registering the power of the bomb.

## ROUTE TWO HELICOPTER TOUR

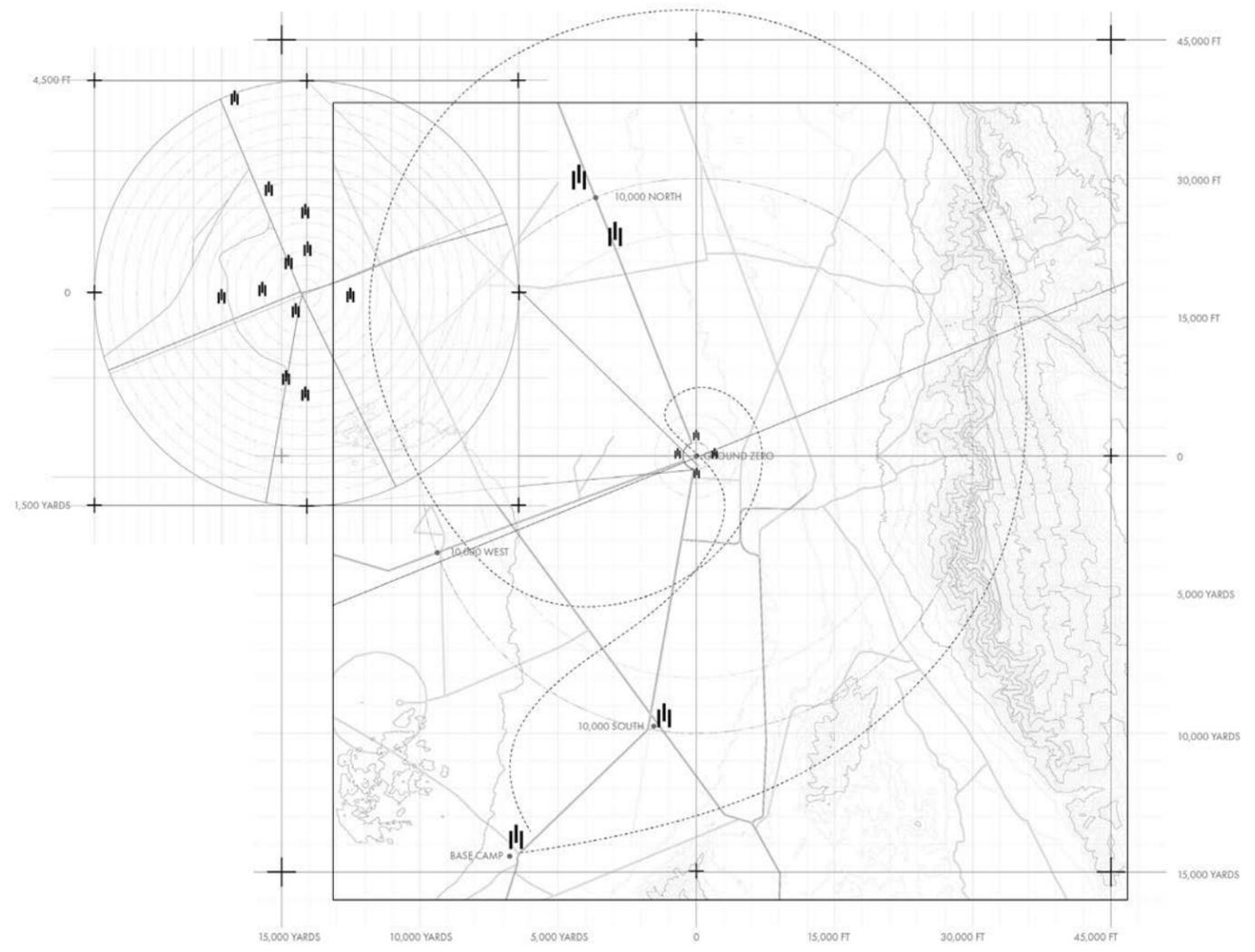
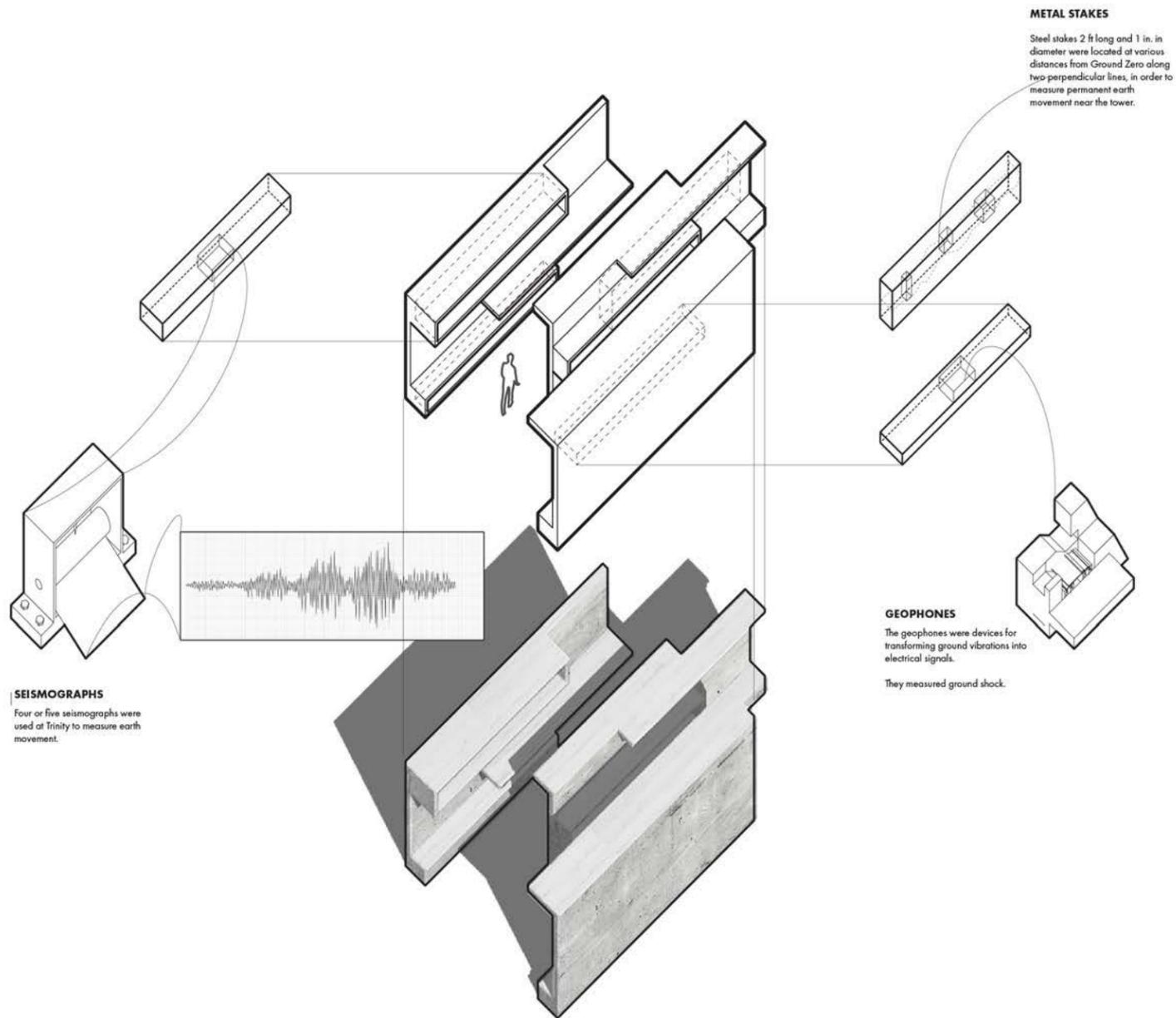


Screens in 10,000 camera bunker



Back at the base camp, there is a series of small pavilions outside the main building. There are five of them, arrayed in a straight line. They are made out of concrete, the same material used in the bunkers. Each takes on a different geometry marking the respective category of registration, or the exhibition of registration.

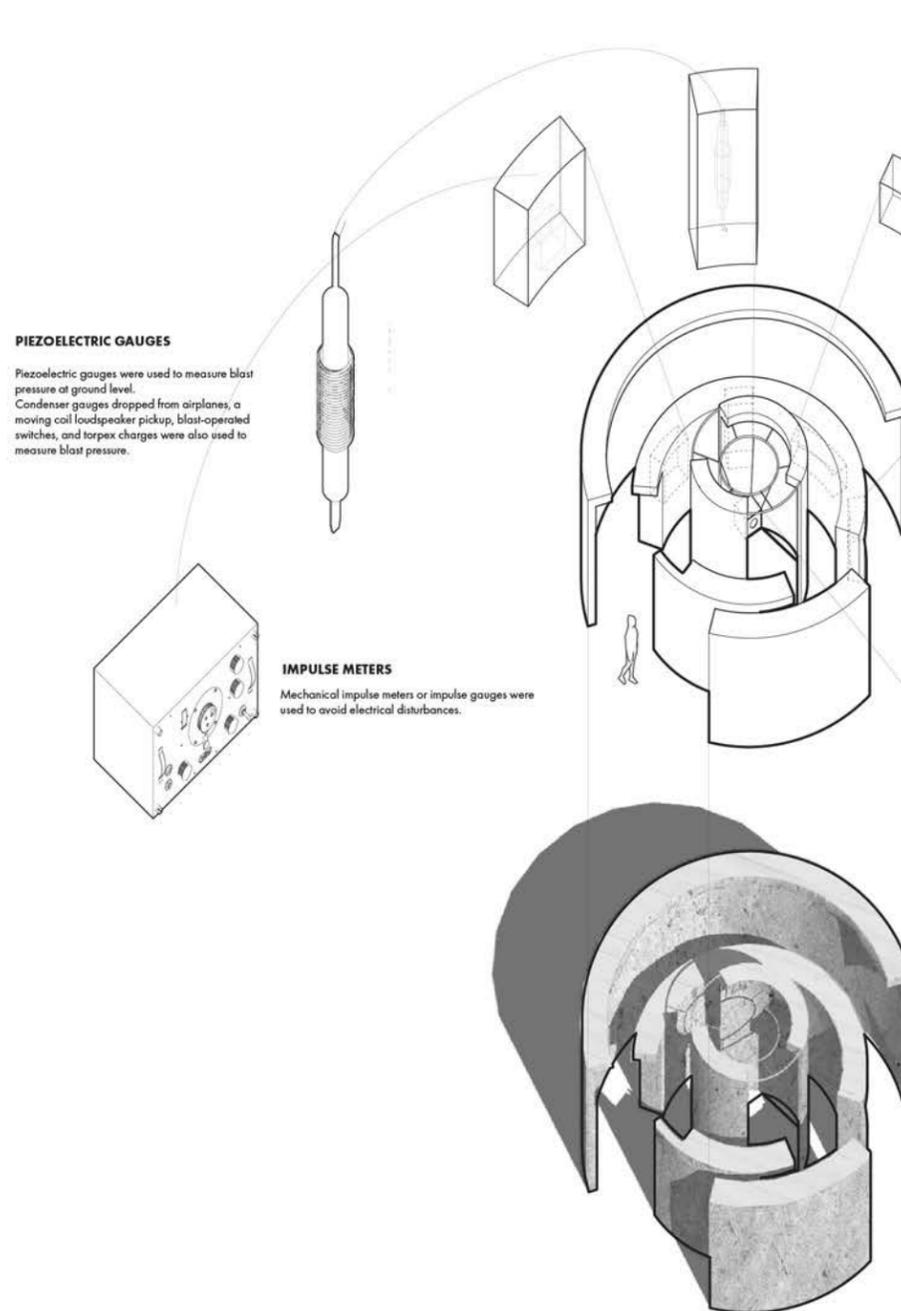
The journey travelling through these pavilions marks the beginning of the helicopter tour.



The earth shock created by the bomb would be measured with strong motion geophones close to Ground Zero and Leet three-component string motion displacement seismographs at greater distance. Permanent horizontal and vertical earth displacement would be measured with steel stakes placed around Ground Zero.

**PIEZOELECTRIC GAUGES**

Piezoelectric gauges were used to measure blast pressure at ground level. Condenser gauges dropped from airplanes, a moving coil loudspeaker pickup, blast-operated switches, and torpex charges were also used to measure blast pressure.



**IMPULSE METERS**

Mechanical impulse meters or impulse gauges were used to avoid electrical disturbances.

**TORPEX CHARGES**

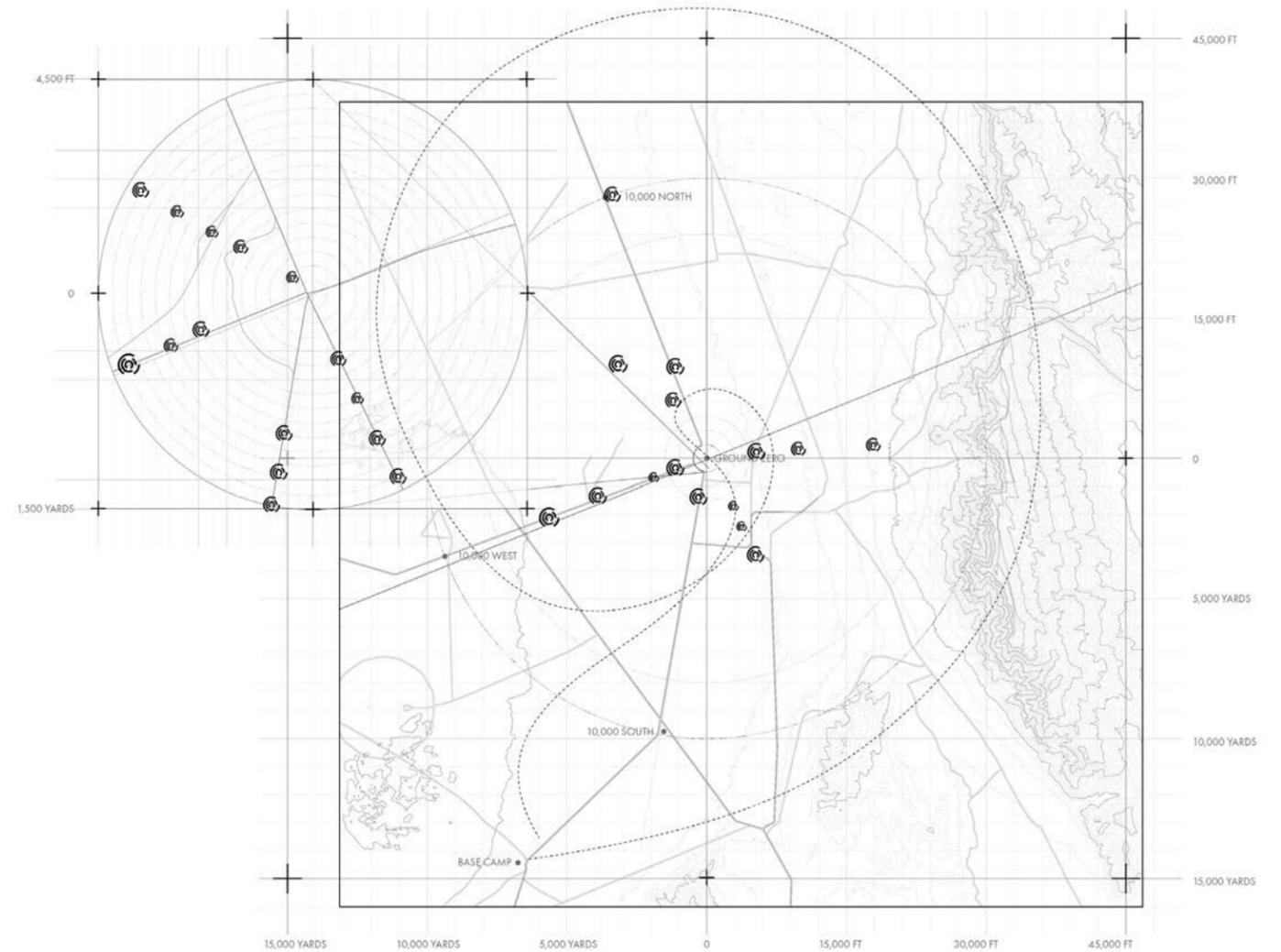
3/4-in. pipe tripods with a Torpex charge taped to the top of the tripod. Shock switches were designed to activate the Torpex charges. Each assembly had a battery on the ground, with a circuit connecting it to a detonator.

**PRIMACORDS**

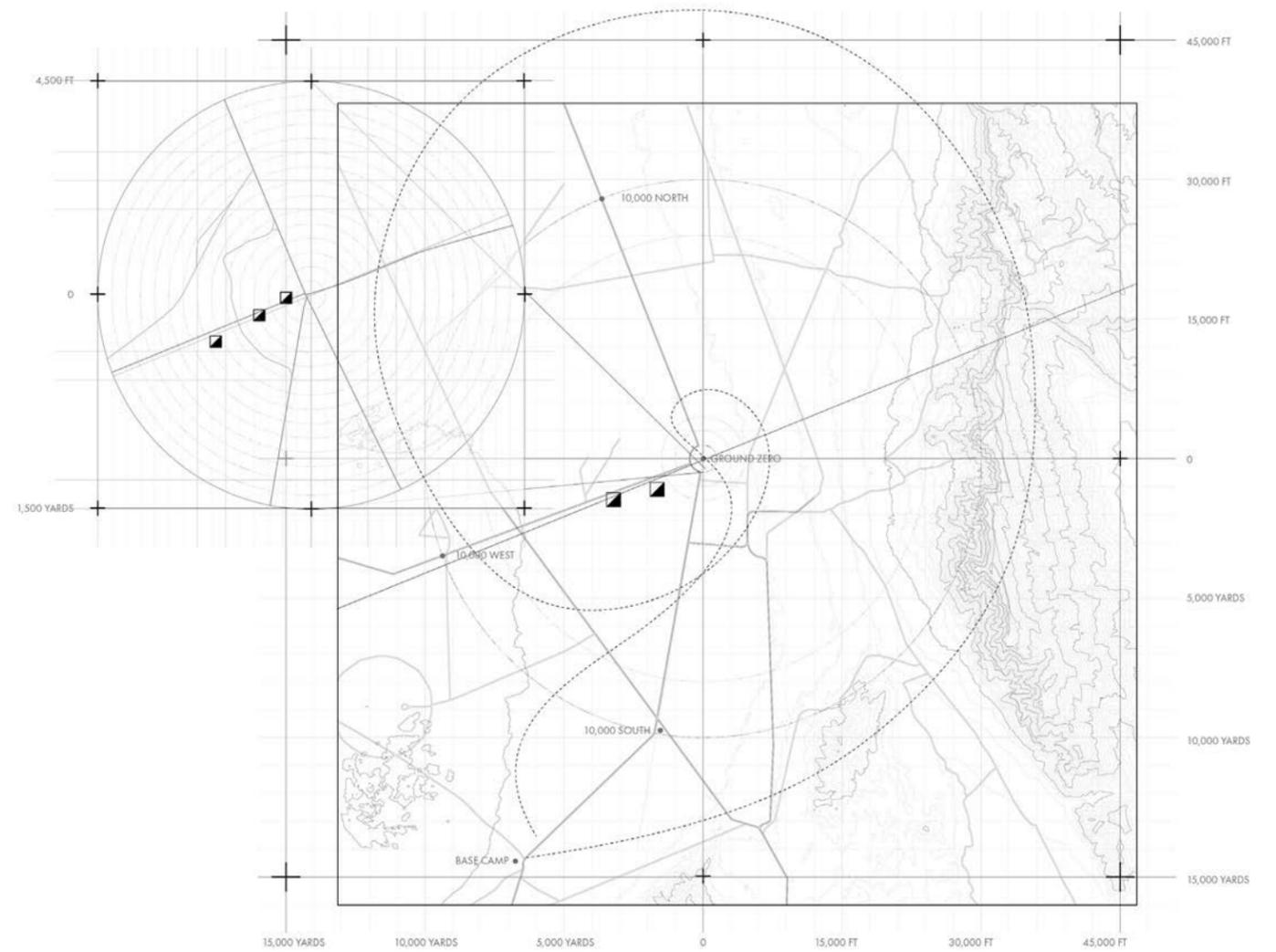
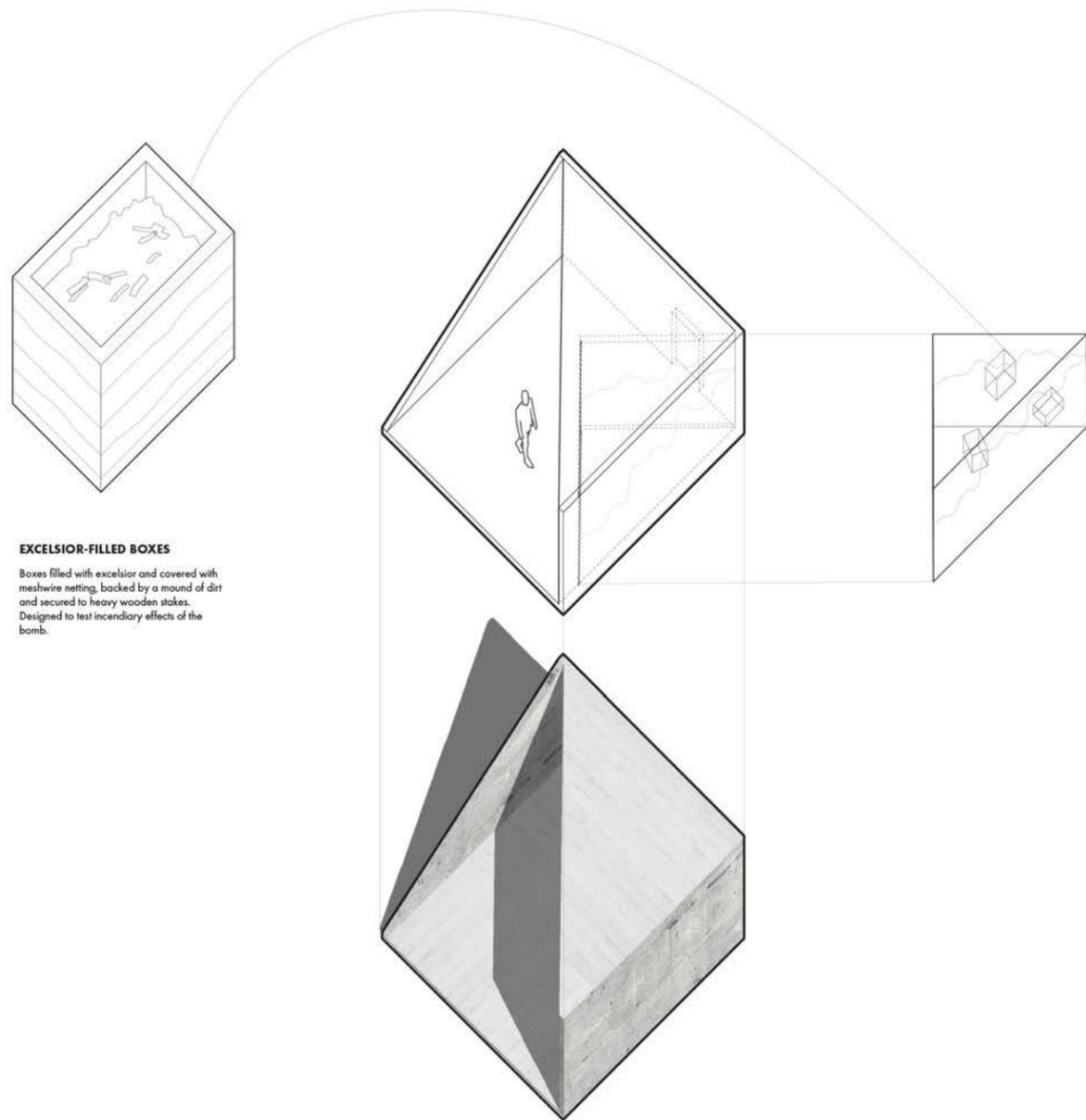
Intended to measure shock-wave expansion. Primacord was set off by the intense radiation rather than by the blast pressure as intended.

**EXCESS VELOCITY GAUGES**

Designed to measure blast velocity. Among the most successful of the experiments, the excess velocity gauges gave substantially accurate measurements.



The air blast from the bomb would be determined by gauging blast pressure near Ground Zero with quartz piezoelectric gauges and condenser gauges, by measuring blast velocity with moving coil loudspeaker pickups, and with blast-operated torpex charges whose explosions would be photographed. Mass velocity and shock wave would be measured by photographing the ignition of suspended primacord and magnesium flash powder.

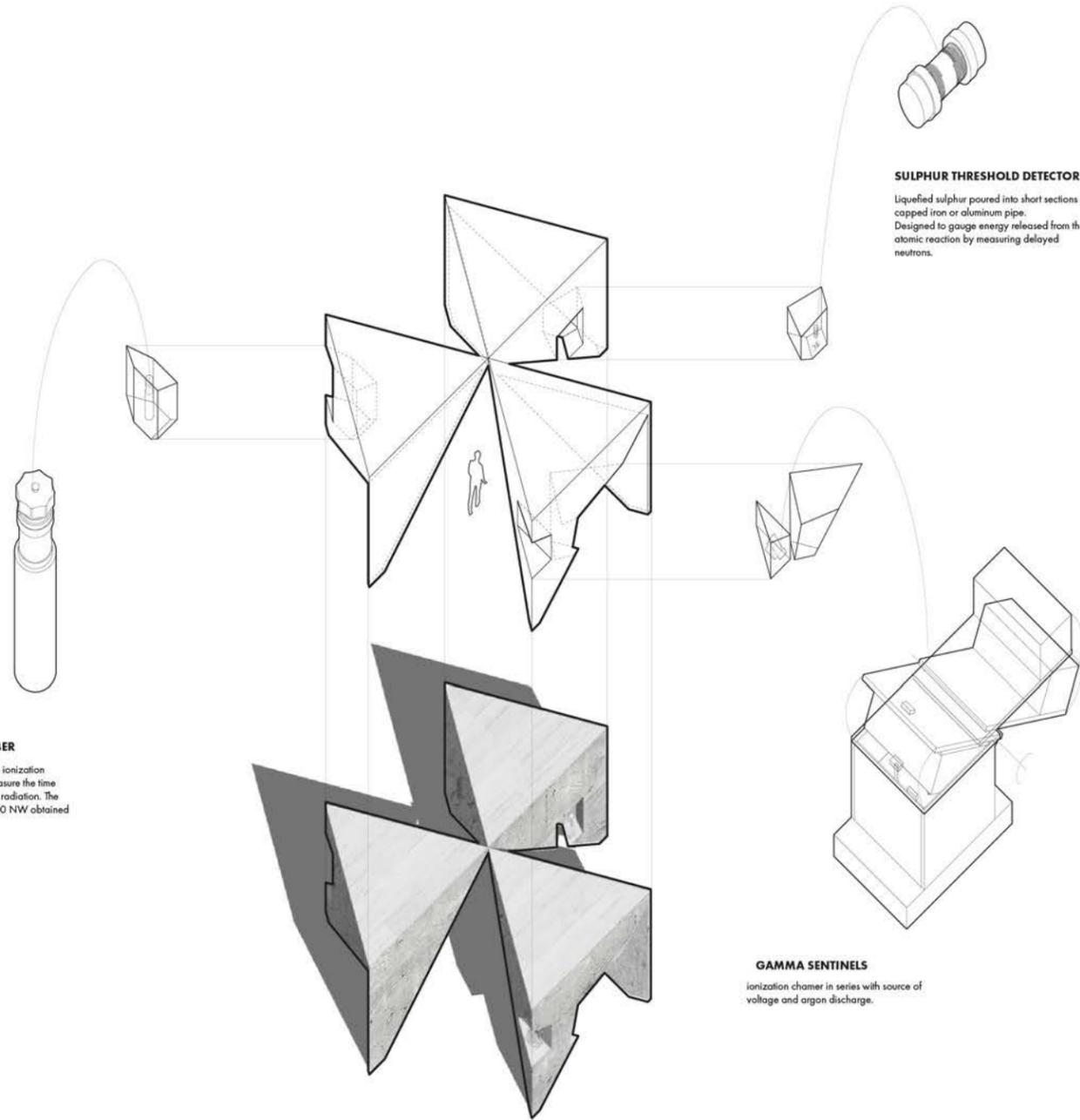


The bomb's incendiary effects would be tested by evaluating the burning and charring of various materials.

 **INCENDIARY EFFECT**

**IONIZATION CHAMBER**

Ground and balloon-borne ionization chambers were used to measure the time dependence of the gamma radiation. The ionization chambers at 600 NW obtained significant readings.

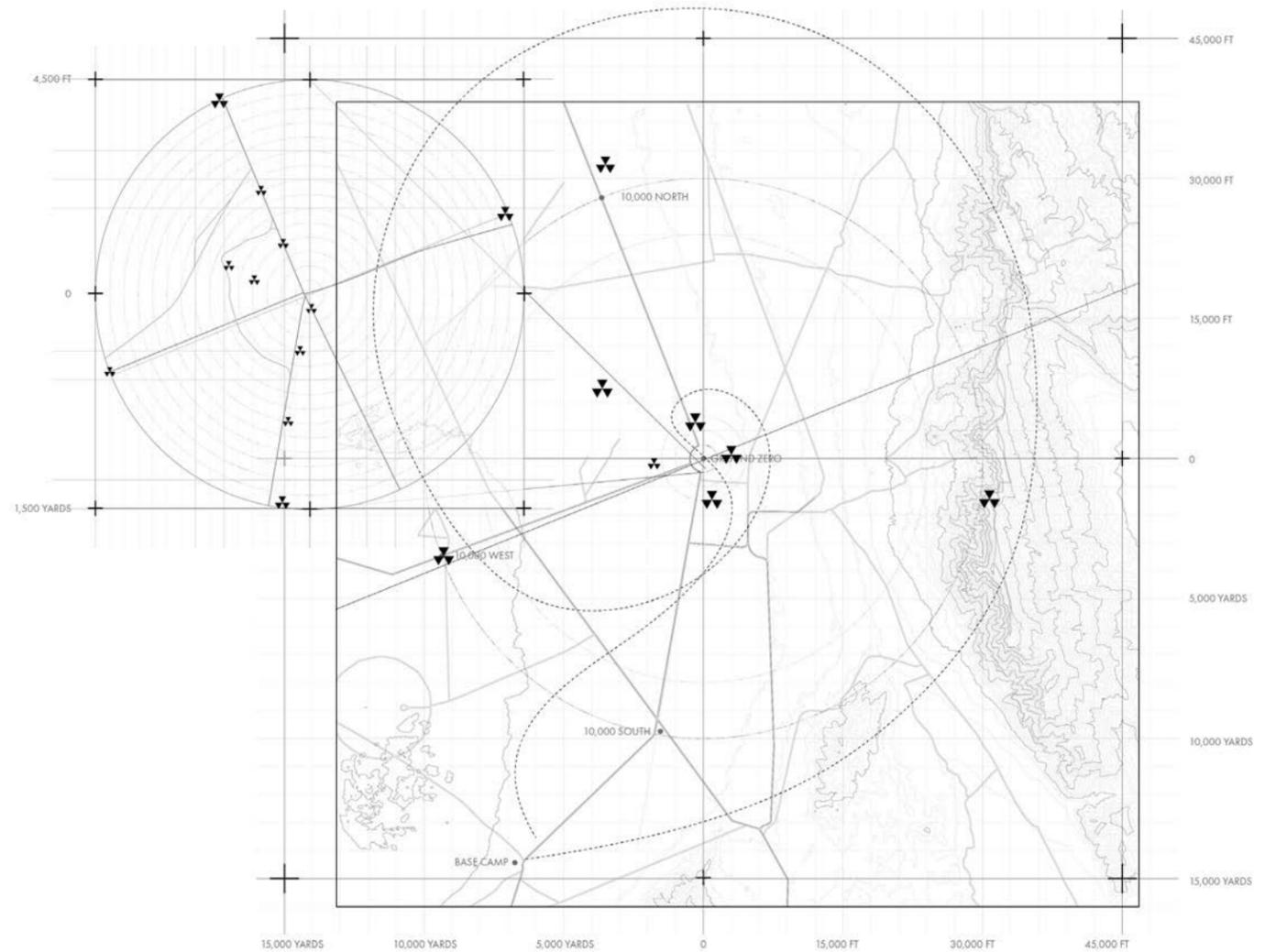


**SULPHUR THRESHOLD DETECTORS**

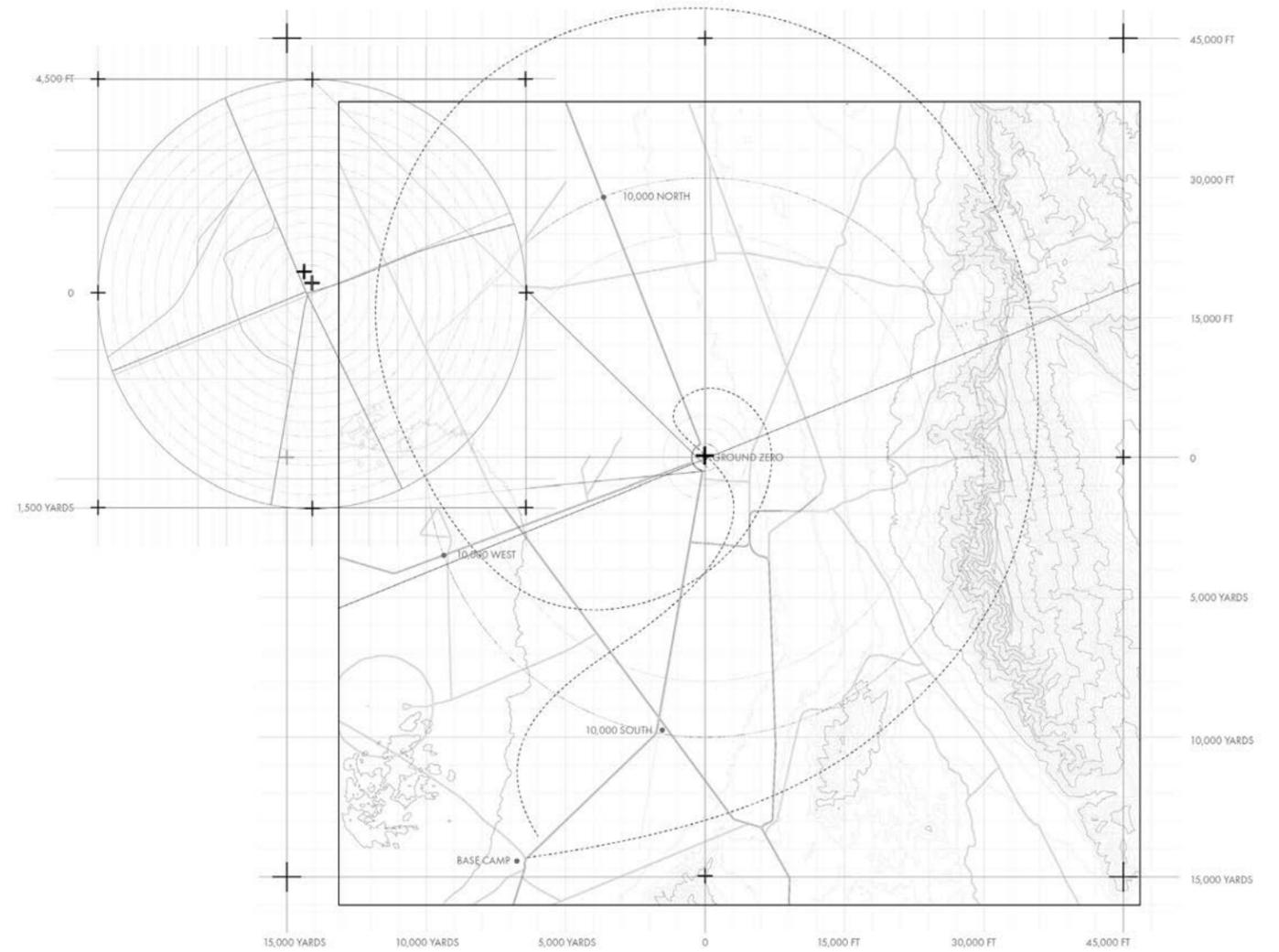
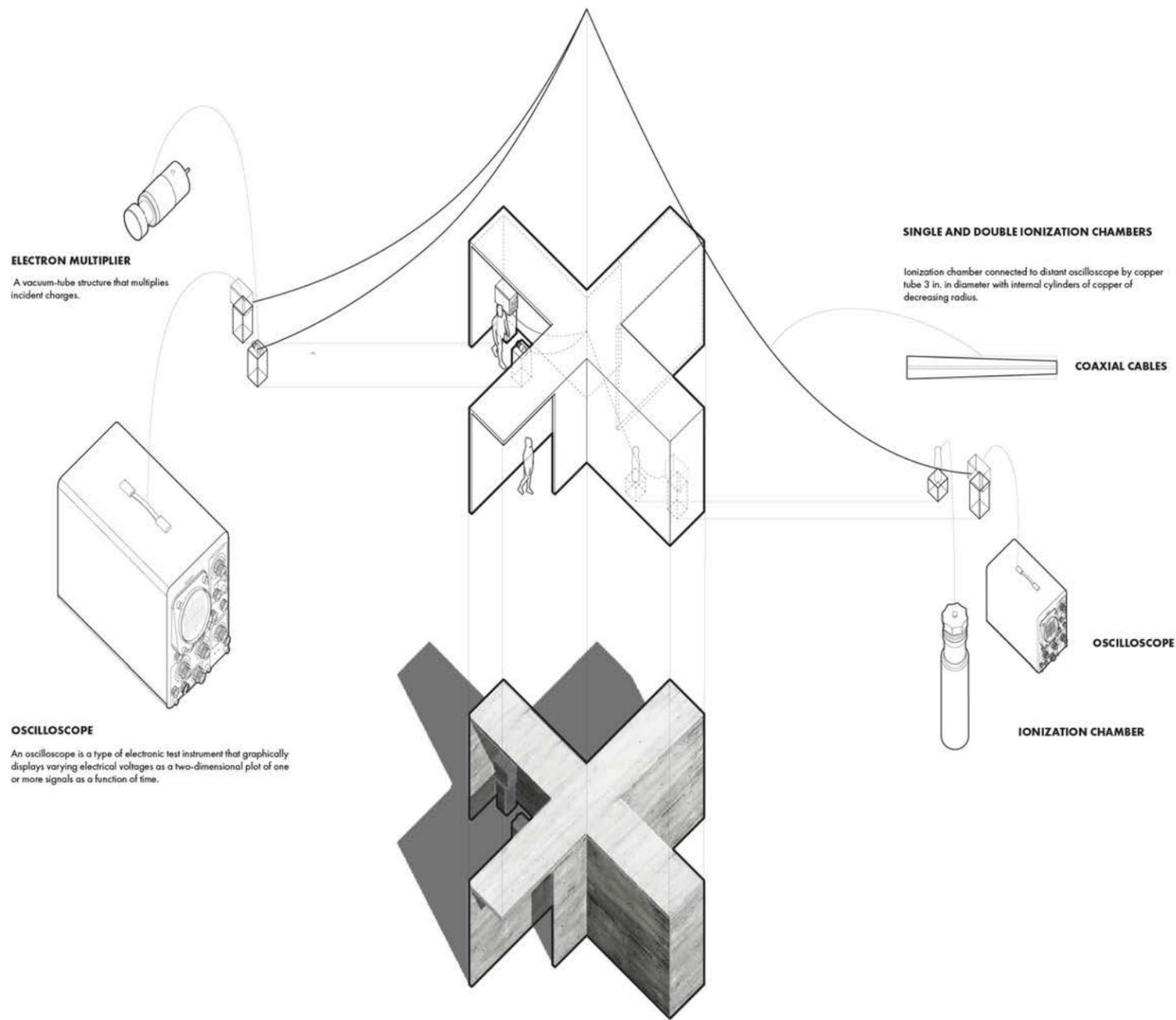
Liquefied sulphur poured into short sections of capped iron or aluminum pipe. Designed to gauge energy released from the atomic reaction by measuring delayed neutrons.

**GAMMA SENTINELS**

ionization chamber in series with source of voltage and argon discharge.

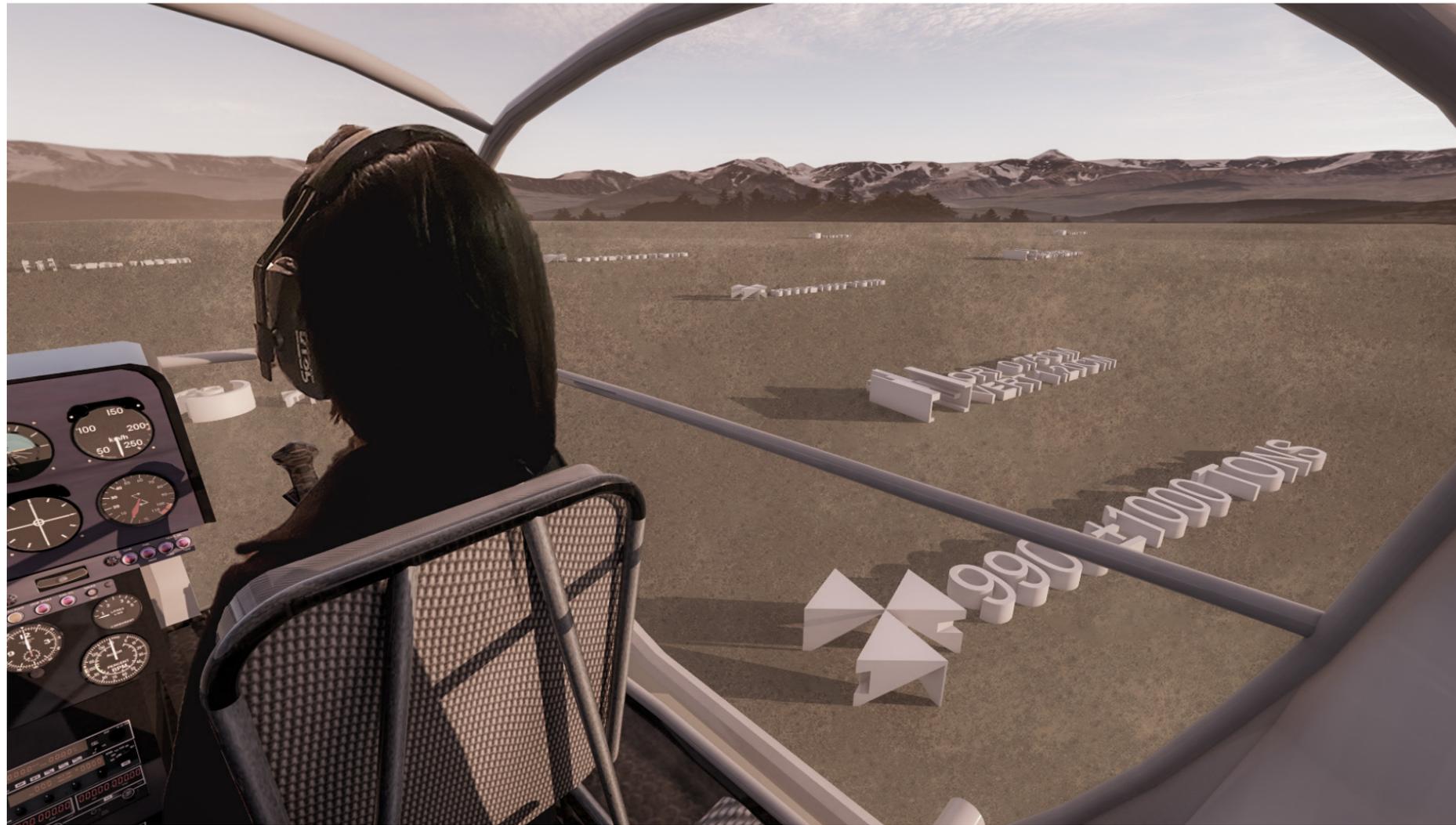


The energy released from the atomic reaction would be gauged by recording delayed gamma rays in ground and airborne ionization chambers, with information transmitted to the three 10,000-yd bunkers. Eight sulphur threshold detectors and a number of gold-foil detectors would also measure delayed neutrons.



The physical behavior of the implosion would be determined by recording the simultaneity of the bomb's detonators as they exploded, with electronic signals sent to fast oscilloscopes at South 10,000. The interval between the firing of the detonators and the first gamma rays emitted from the explosion would be measured, and the rate at which fissions occurred would be measured with electron-multiplier chambers and a direct-deflection, high speed oscillograph.

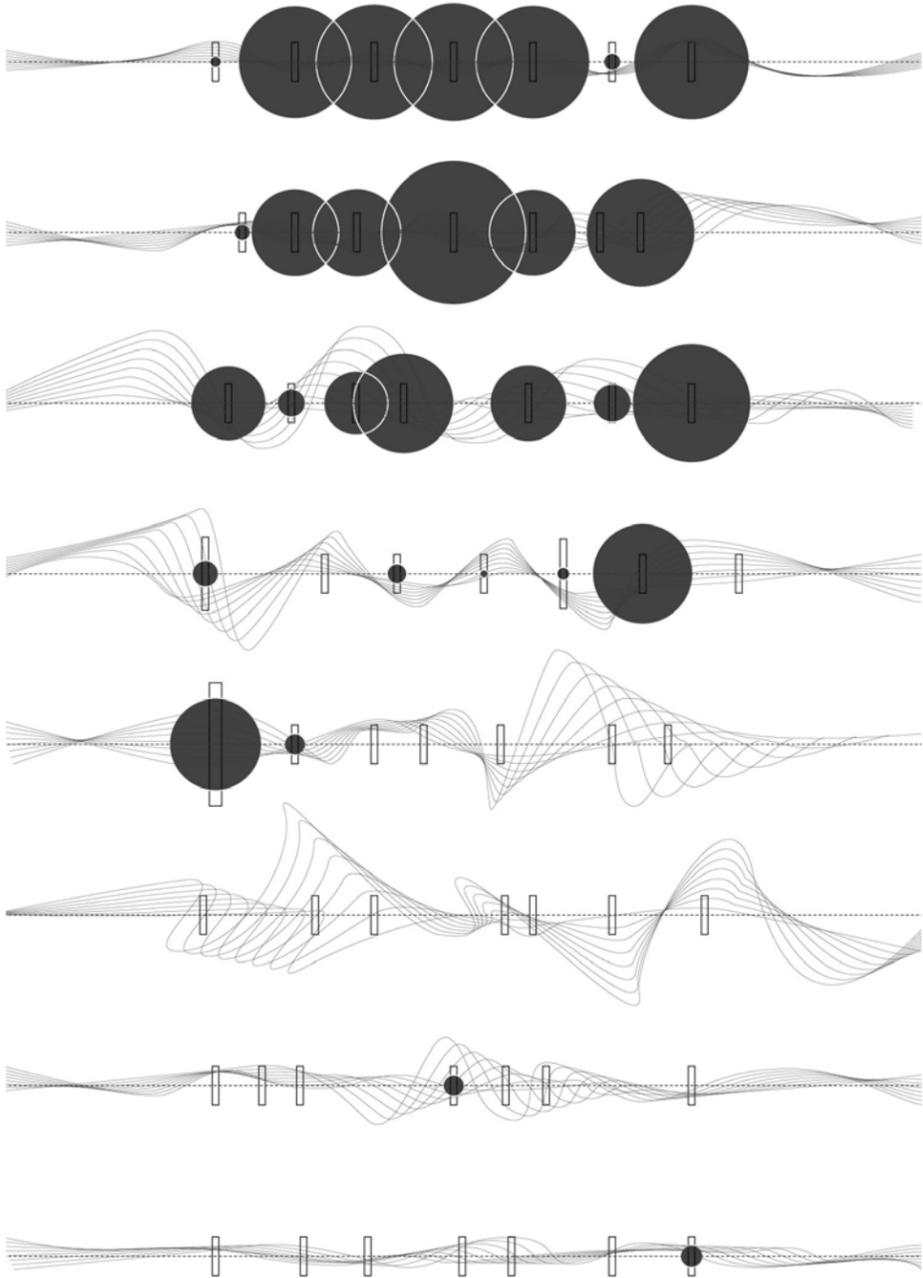
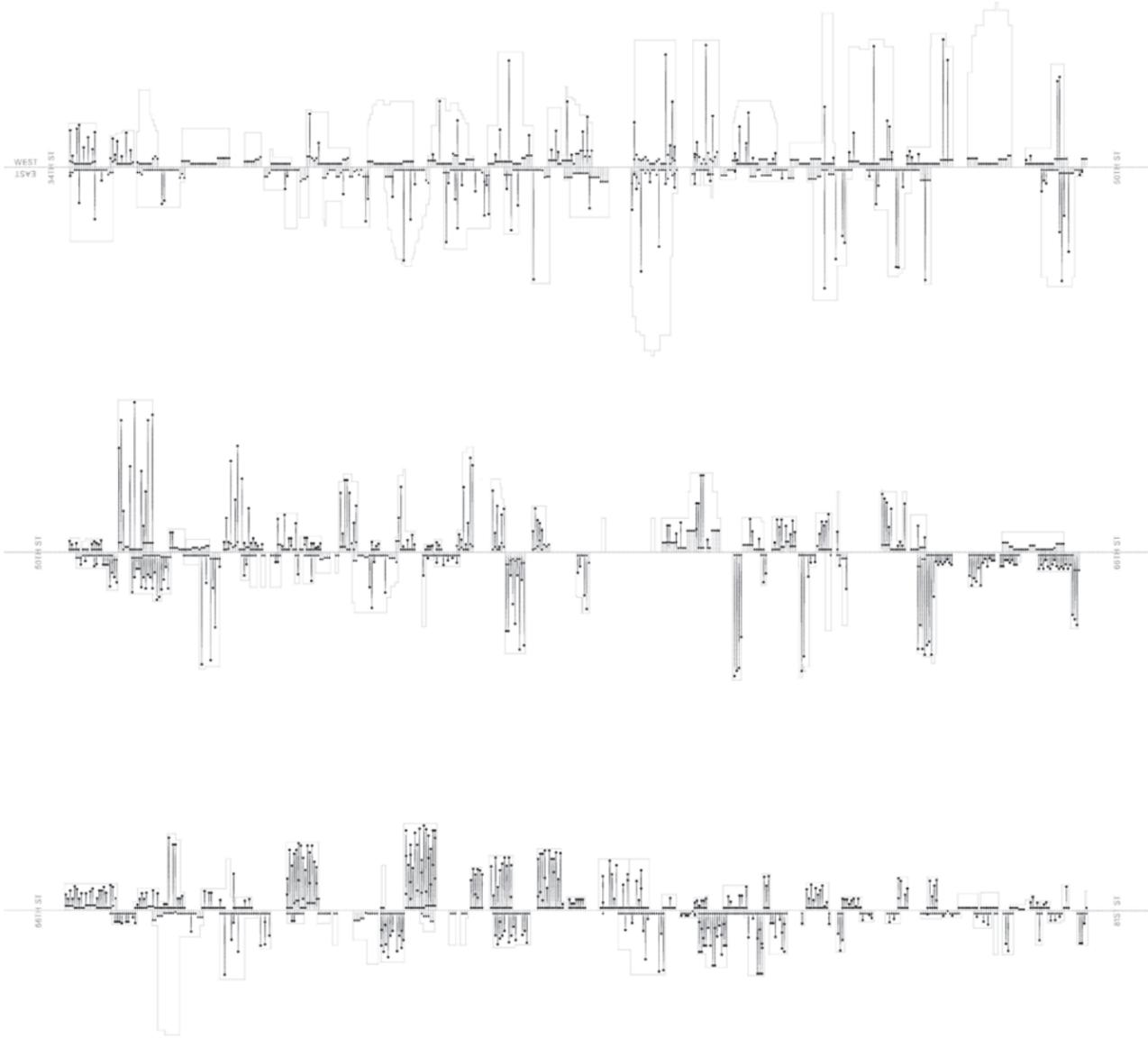
**+** PHYSICAL BEHAVIOR OF THE IMPLOSION



With these markers scattered on the site, with a display of the data that was recorded at that station. The site is now transformed into a live map of registration.

# WARPED-I

FALL 2019  
VISUAL STUDIES | CORE I



SPRING 2020  
VISUAL STUDIES | ADR II

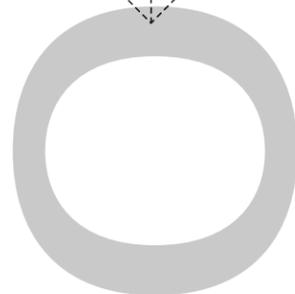
# WARPED-II

**PART II.**

**CONNECTION**

TRANSFORMATION

REGISTRATION



**THE BINARY HOUSE**  
STUDIO | CORE III | FALL 2020

**THE OUTSIDER SCHOOL**  
STUDIO | CORE II | SPRING 2020

**THE ARCADE PROJECT**  
STUDIO | CORE I | FALL 2019

**THE THIRD SPACE**  
TECH | AT III & IV | FALL 2020

# THE BINARY HOUSE

FALL 2020  
STUDIO | CORE III

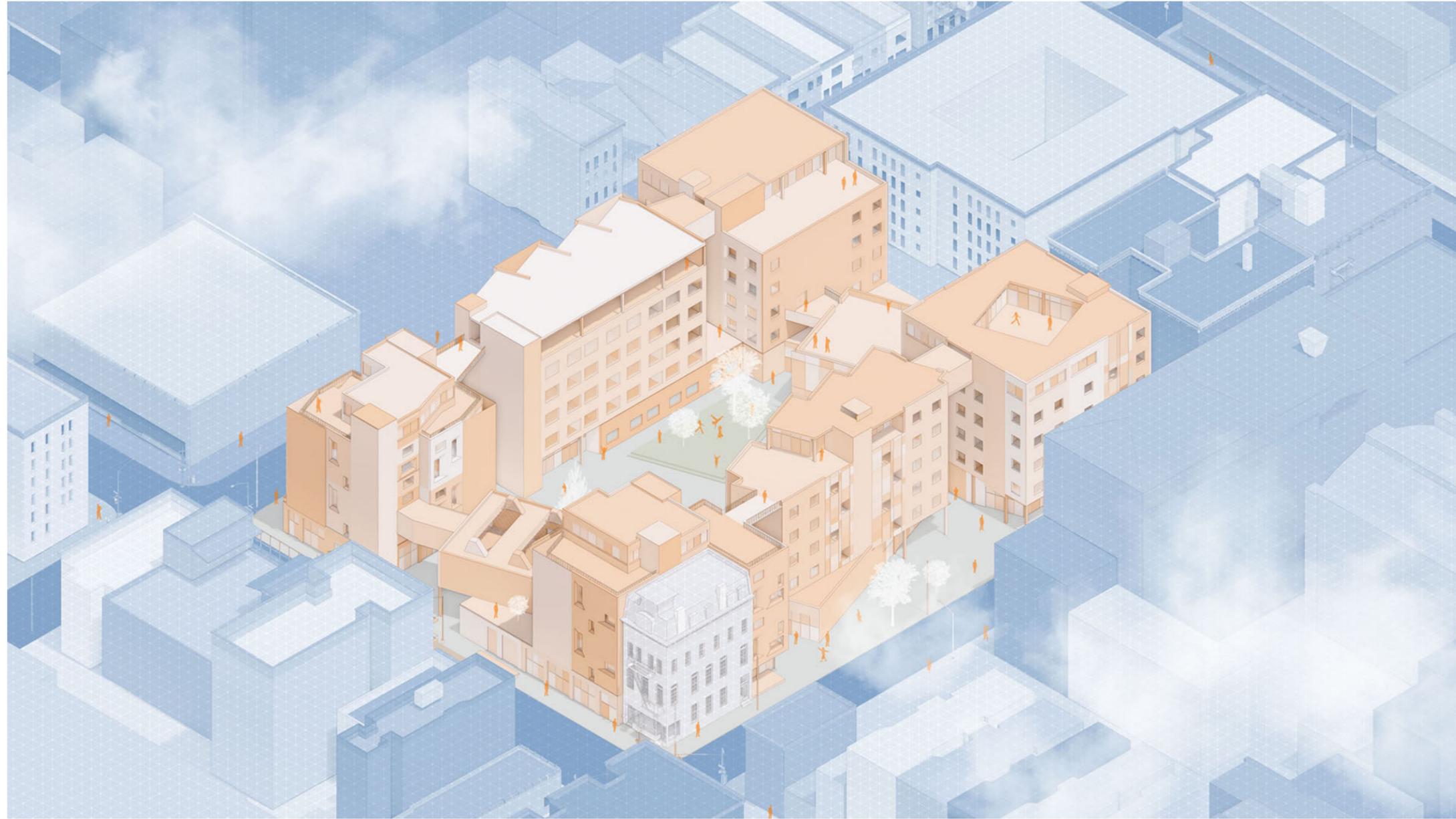
Instructor: Annie Barrett  
Partner: Xiucong Han

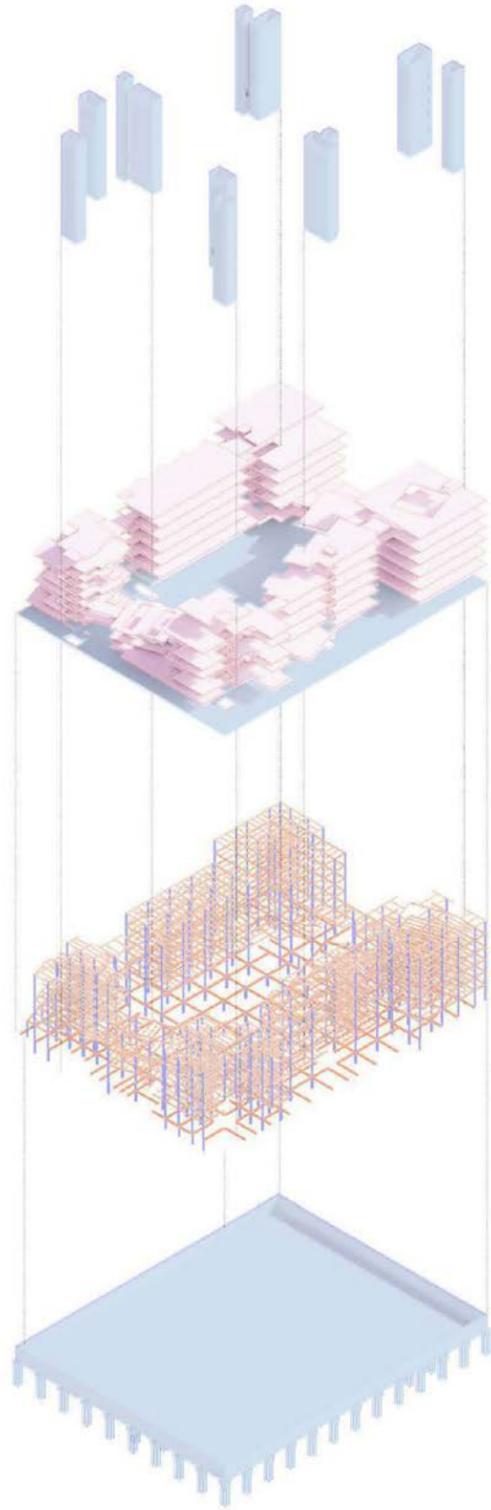
The BINARY HOUSE is aiming to design a community that provides affordable housing and a variety of art-oriented services to local artists. By introducing an in-between art space into the traditional housing unit, the project advocates a work-life integrated lifestyle. It encourages local residents to participate in the vibrant culture of Melrose, and is also accessible for the public to engage into robust art programs. Meanwhile, it enriches creative industry and the city's cultural heritage.

In this project, we were focusing on exploring the concept of threshold. In typical housing, a threshold is usually a mechanical boundary, a hard line that indicates what's public or private. However, we take threshold not as a single element, but as a volumetric space that sits in between public and private. Thus, in our binary house, we are looking at the transitional space in between these layers.

From that, we redefined and organized our program into three categories, from the most public programs into the most private ones--performing and exhibition space, practice space which is the work space for artists, and living units.

Threshold that we investigated is primarily the middle practice art space that divides but also links public performance to the private living space.



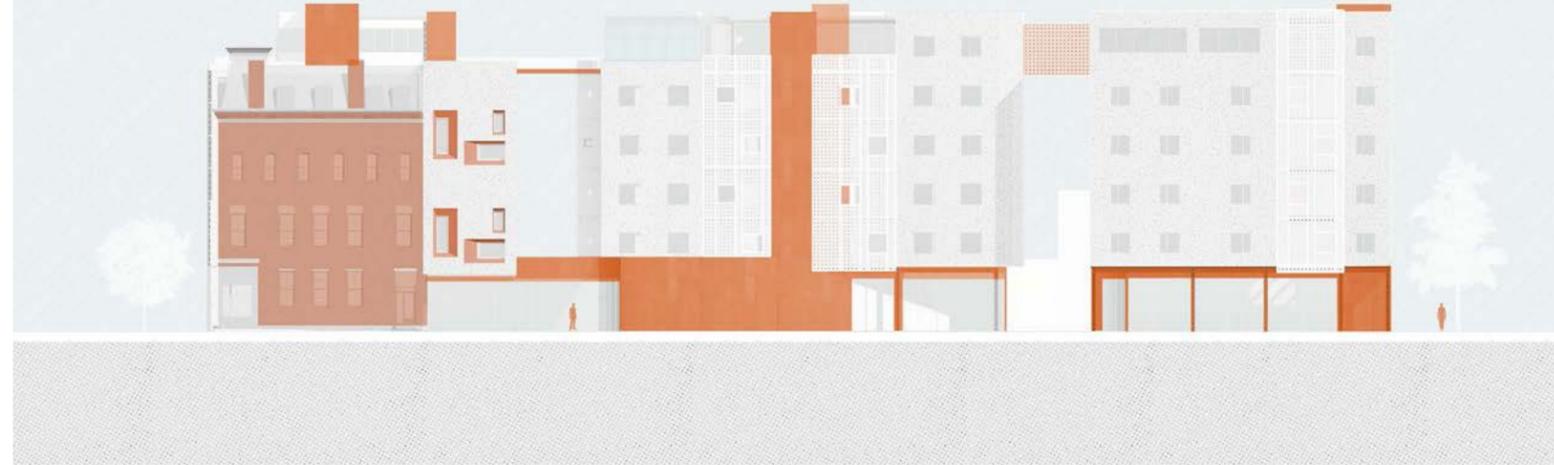


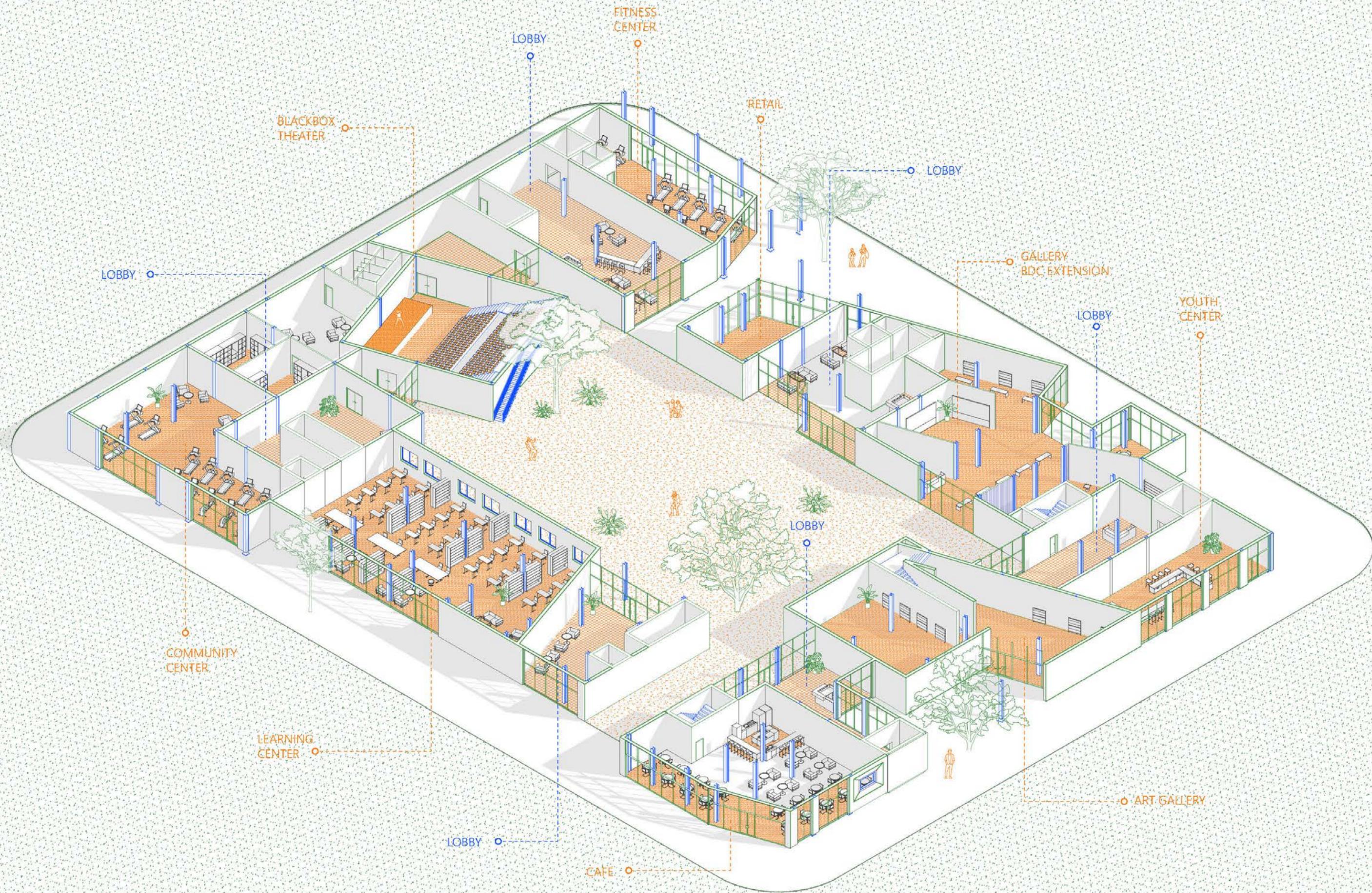
CONCRETE CORE

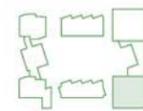
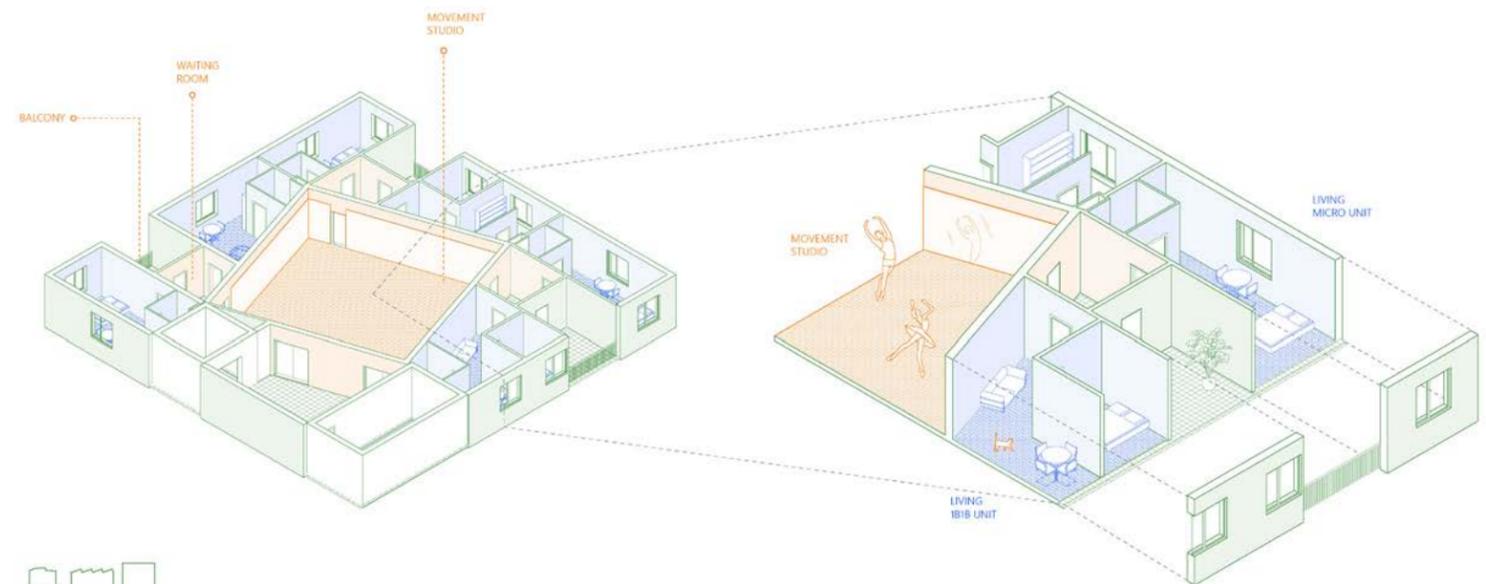
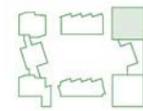
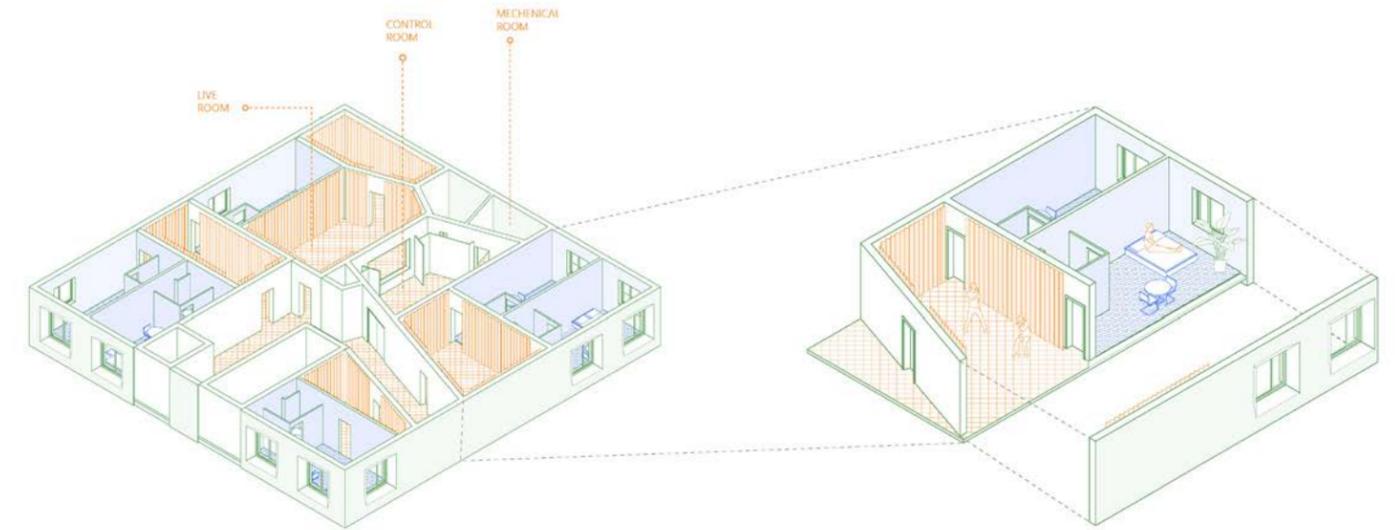
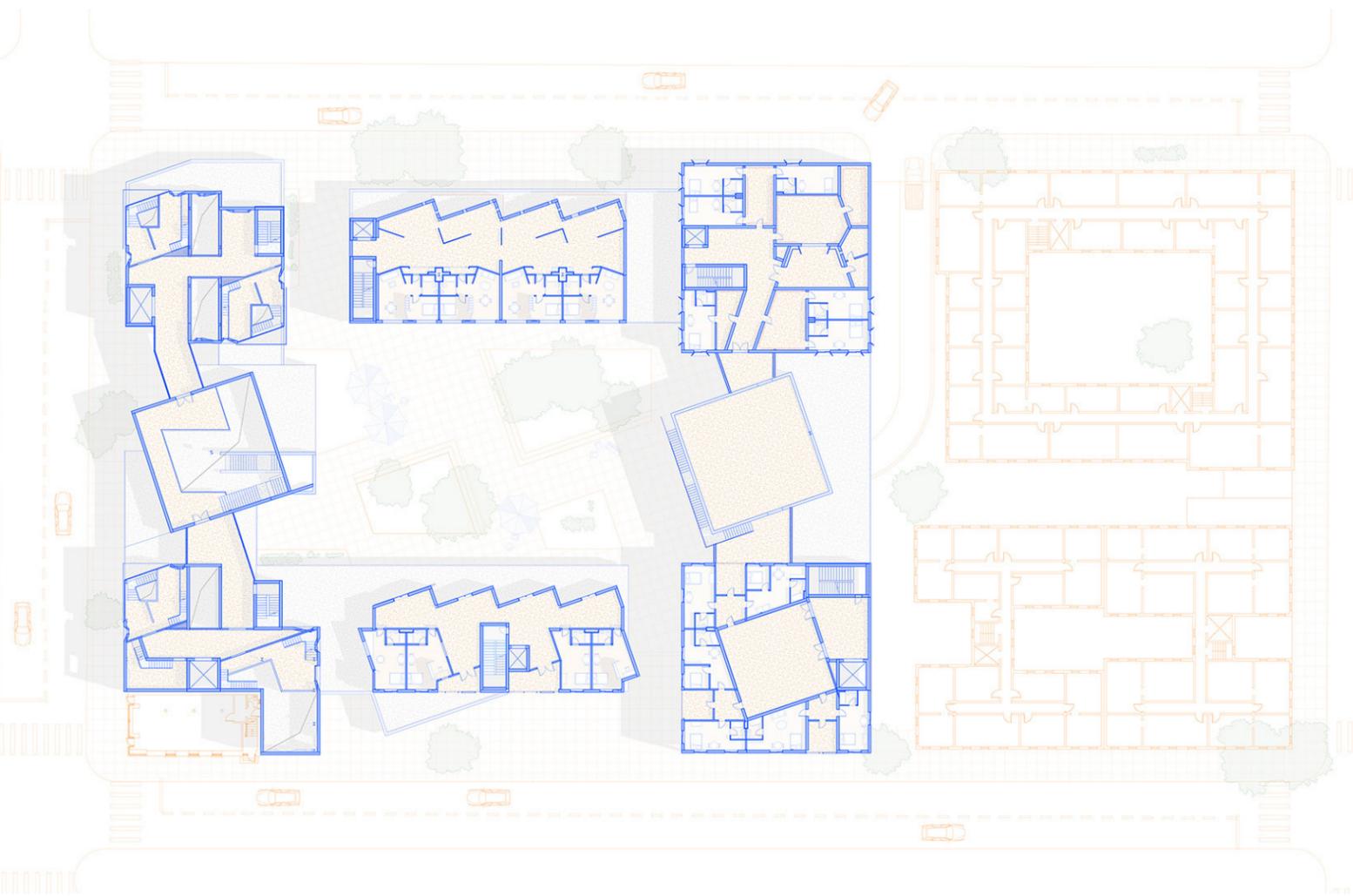
FLOOR PLATES

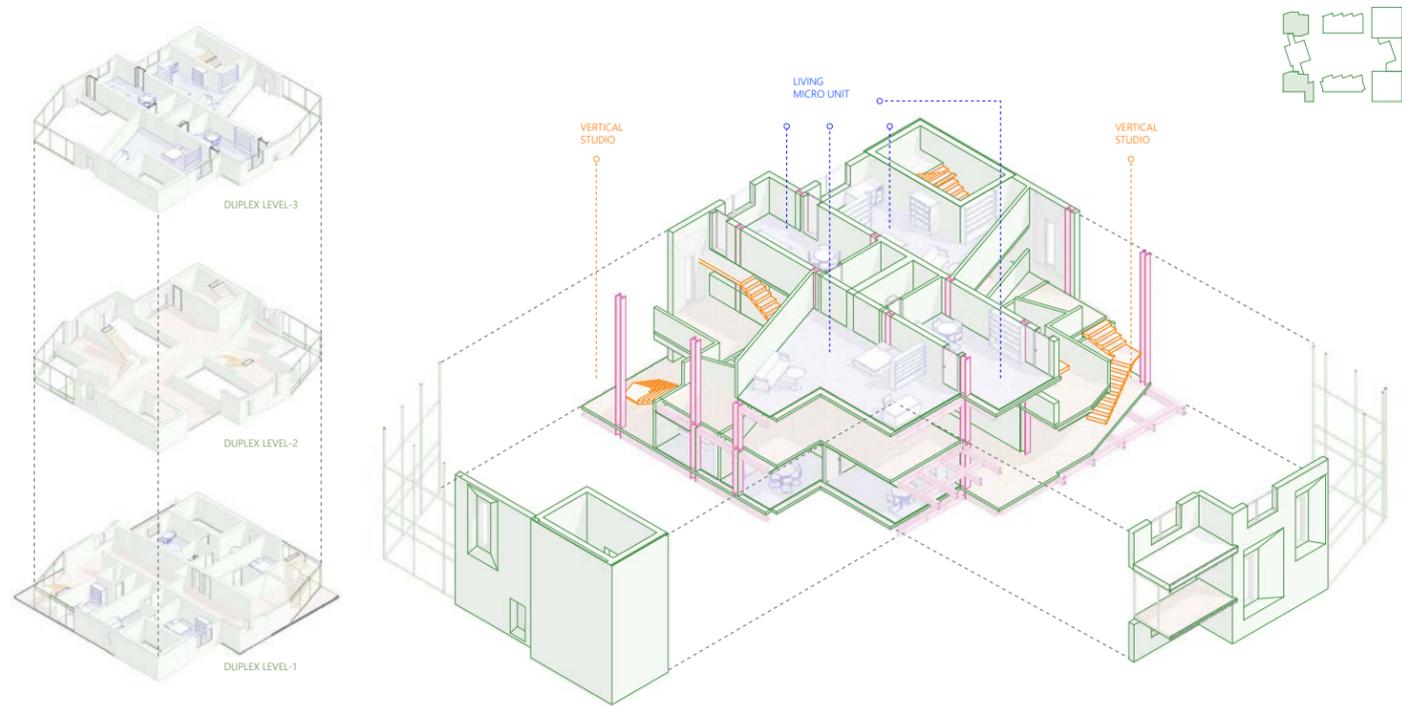
STEEL FRAMING

CONCRETE FOUNDATION

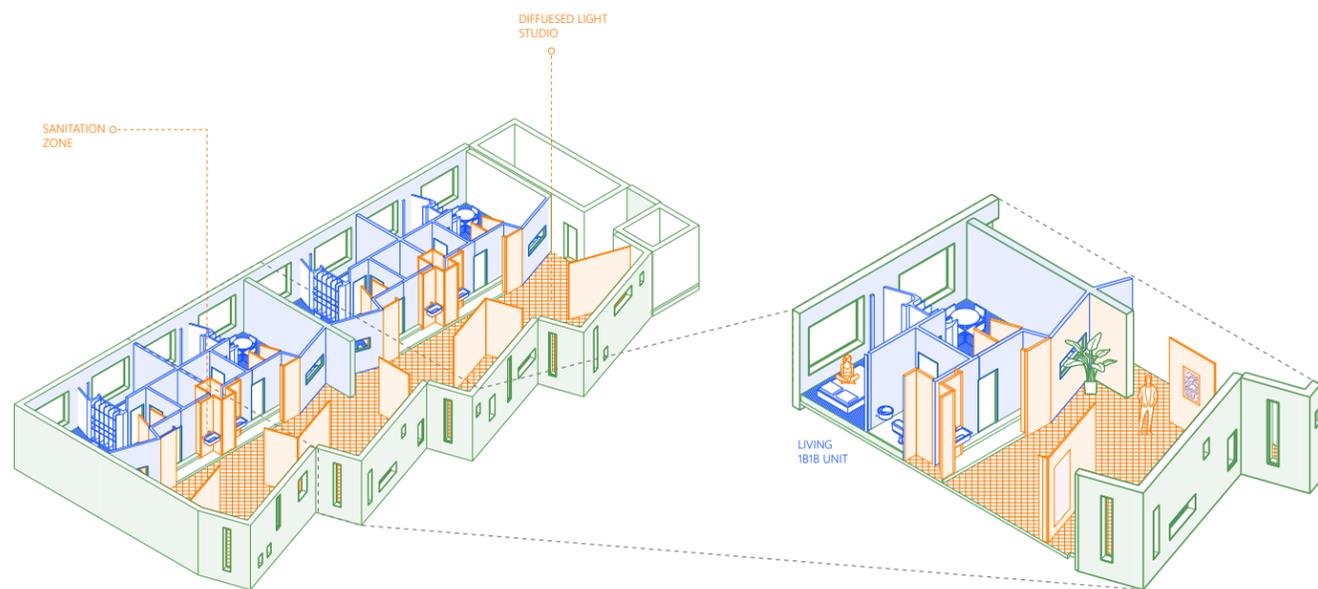








Typology: Vertical Studio



Typology: Diffused Light Studio



# THE OUTSIDER SCHOOL

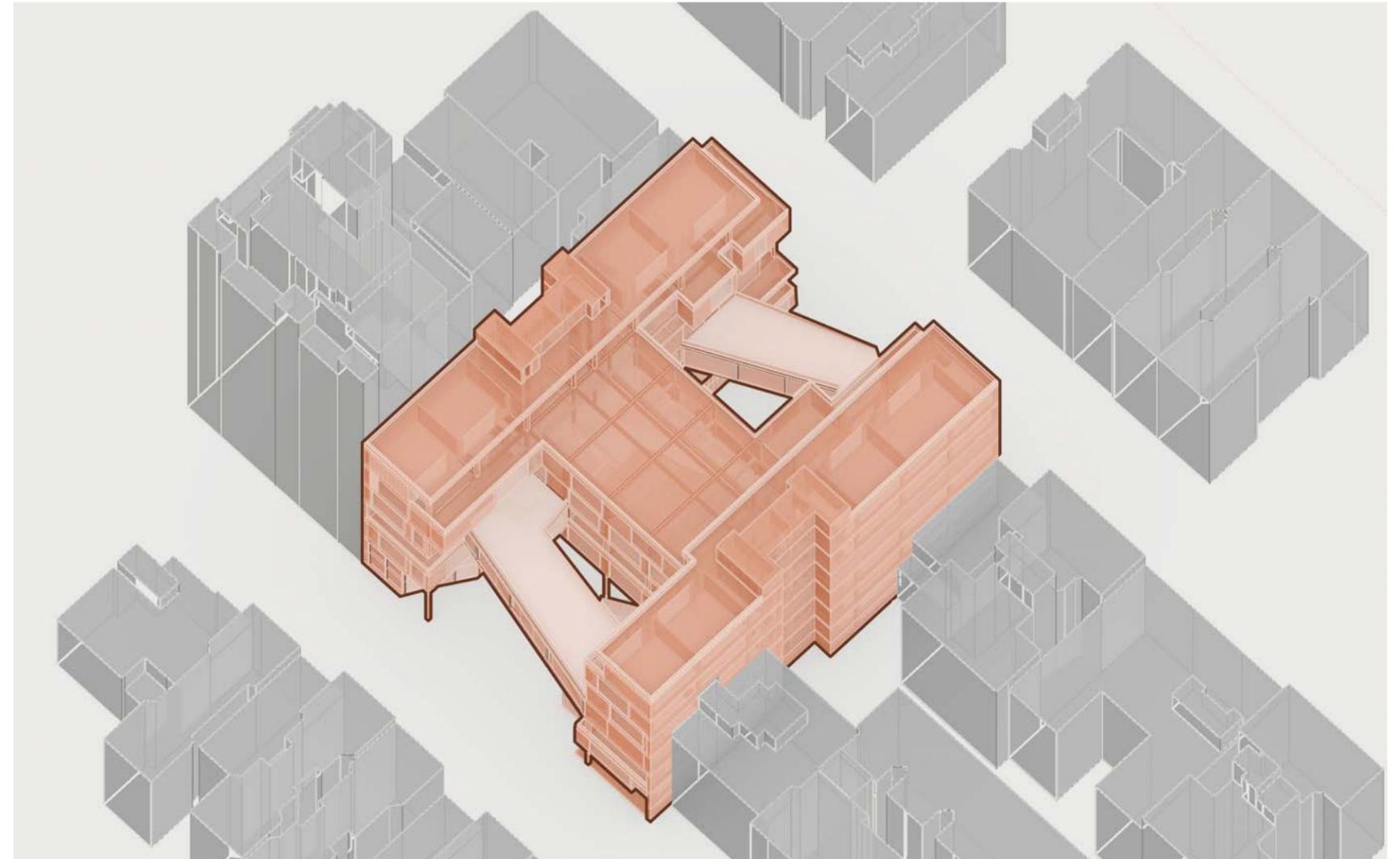
SPRING 2020  
STUDIO | CORE II

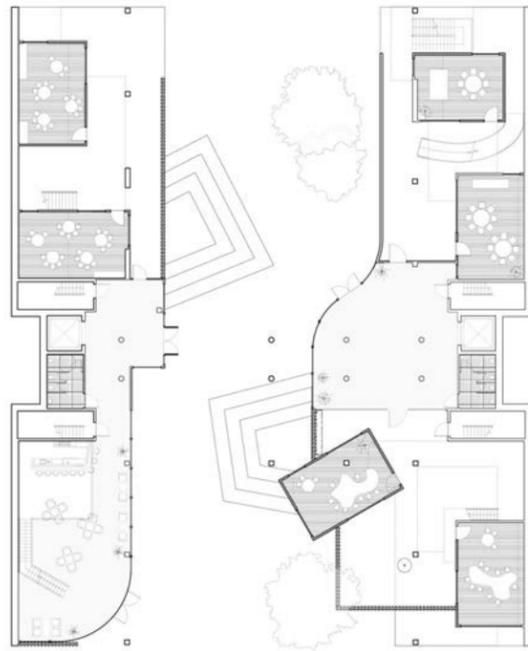
Instructor: Christoph Kumpusch

A school for outsiders is a school for everyone. We are all outsiders at certain moments. There is always a part of ourselves that is different from others and not understood by others. But in fact we recognize that other people are a mirror in which we come to see ourselves. Conversely, other people are shaped by our presence in their lives. We are insiders and outsiders at the same time.

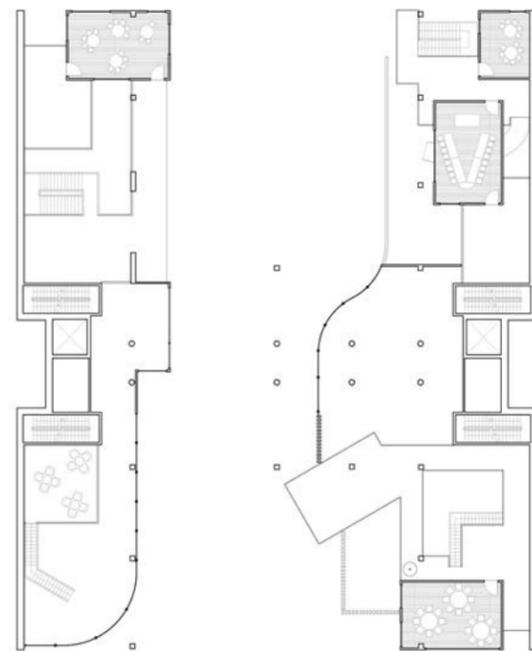
So the pedagogy behind this school is that we not only learn from teachers but more importantly from our peers. As that's how we establish our identities. School building as the third teacher enhances this experience by exploring the binary aspects of inside vs outside and providing more opportunity for interaction and self-exploration. Dynamic building envelopes and sky bridges are introduced to break the rigidity of the original H-shaped floor plan and encourage interaction through this new layer of circulation.

The Outsider School is a bridge that connects outside and inside. It is a mirror in which we come to see ourselves. It is also a journey on which we learn to embrace our existential selves and explore our potential identities.

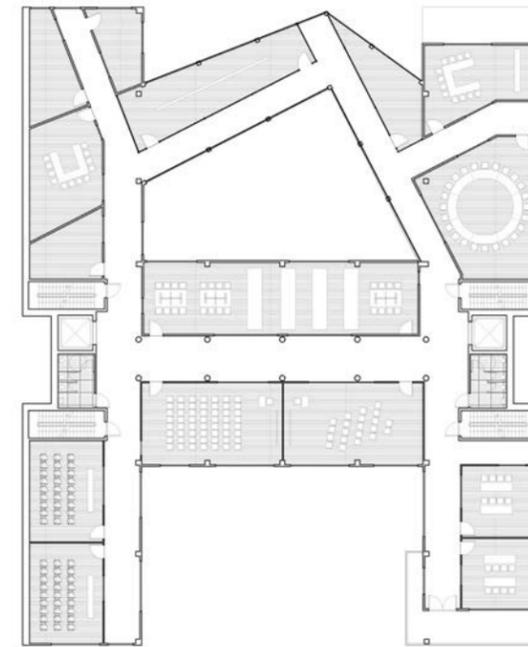




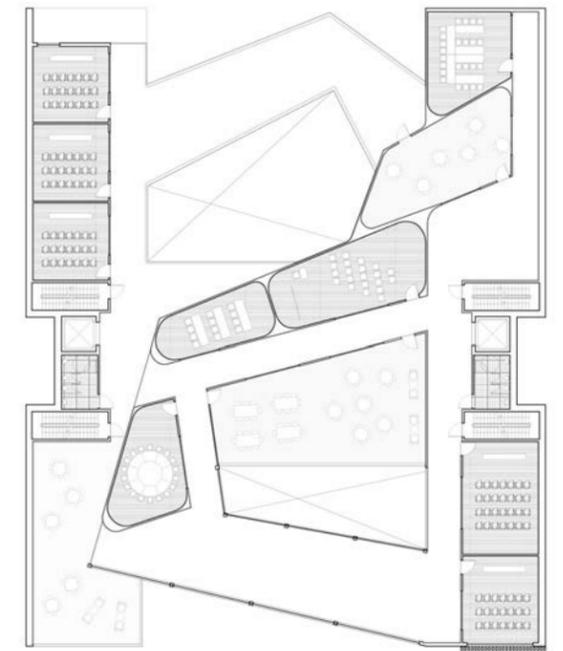
GROUND FLOOR



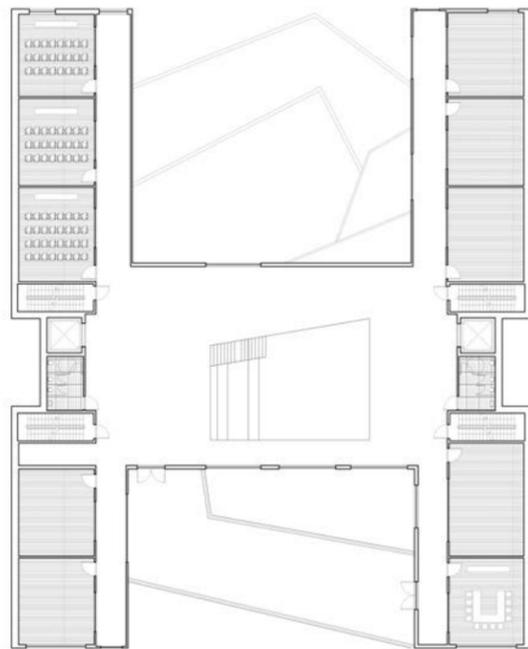
MEZZANINE



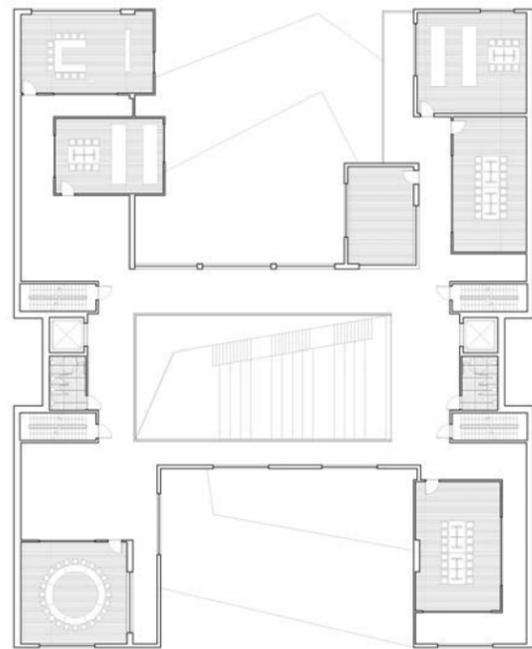
2ND FLOOR



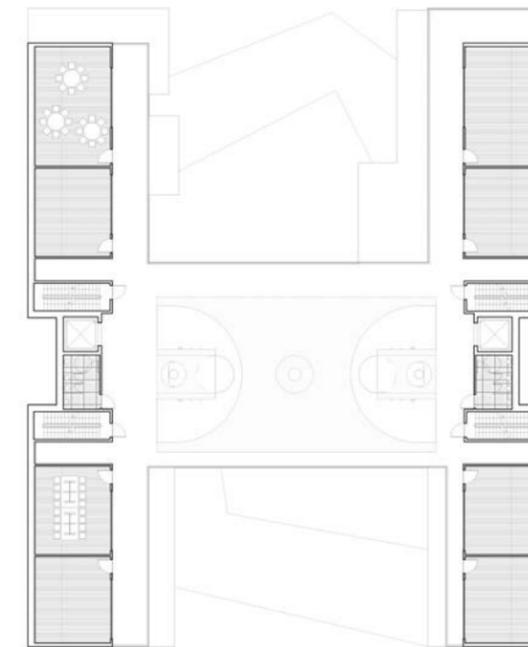
3RD FLOOR



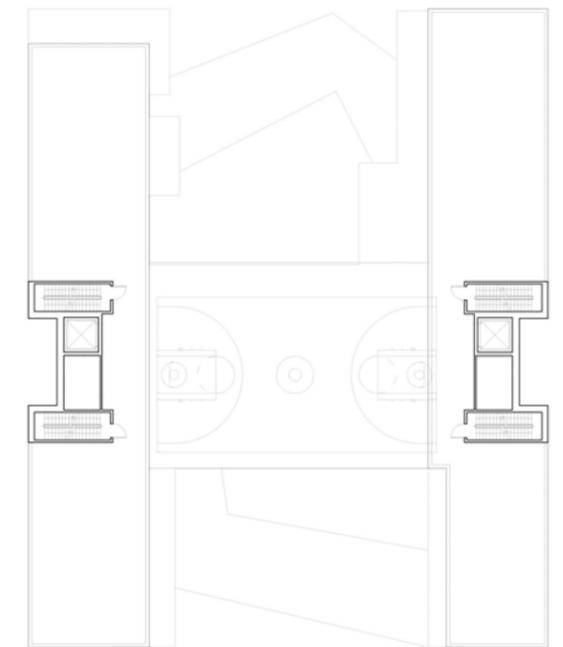
4TH FLOOR



5TH FLOOR

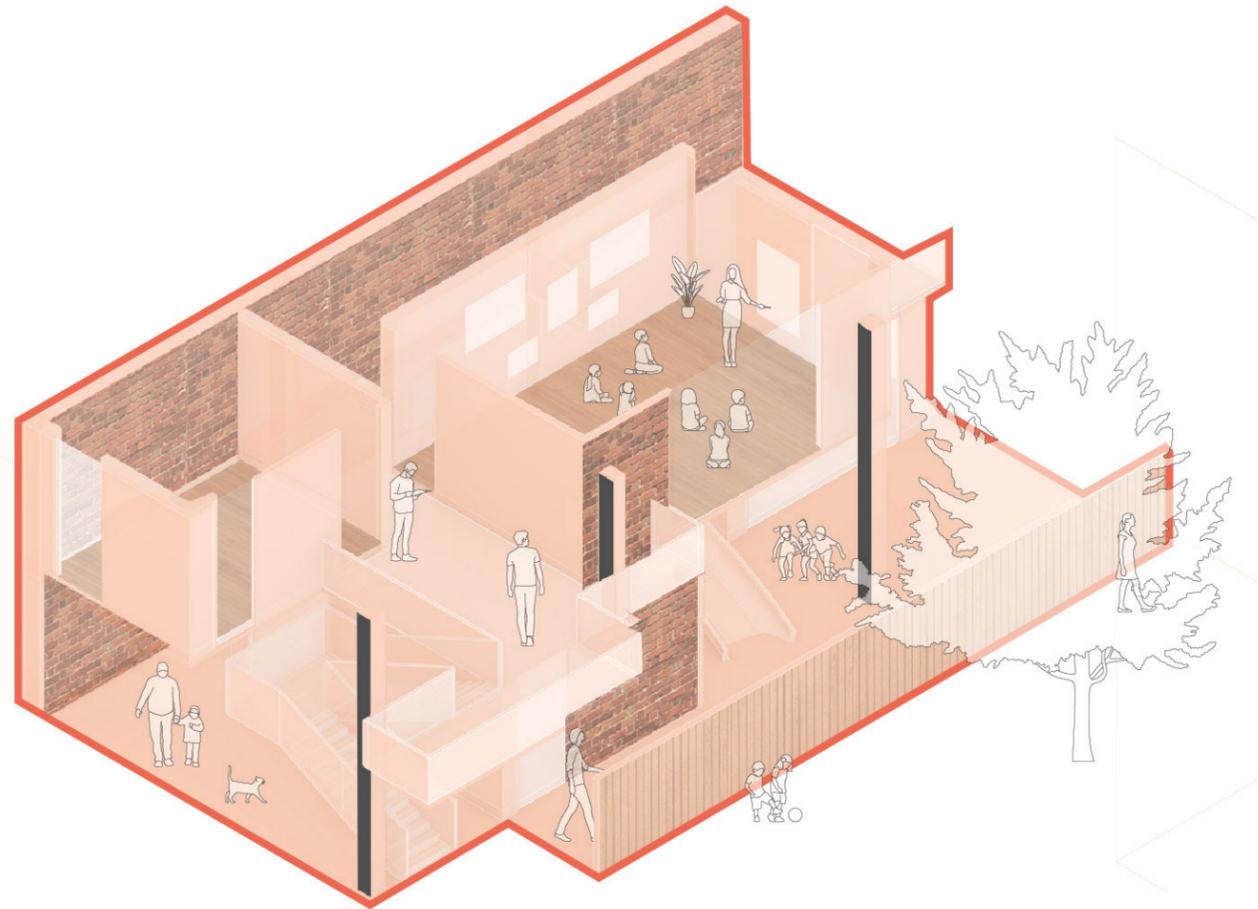


6TH FLOOR

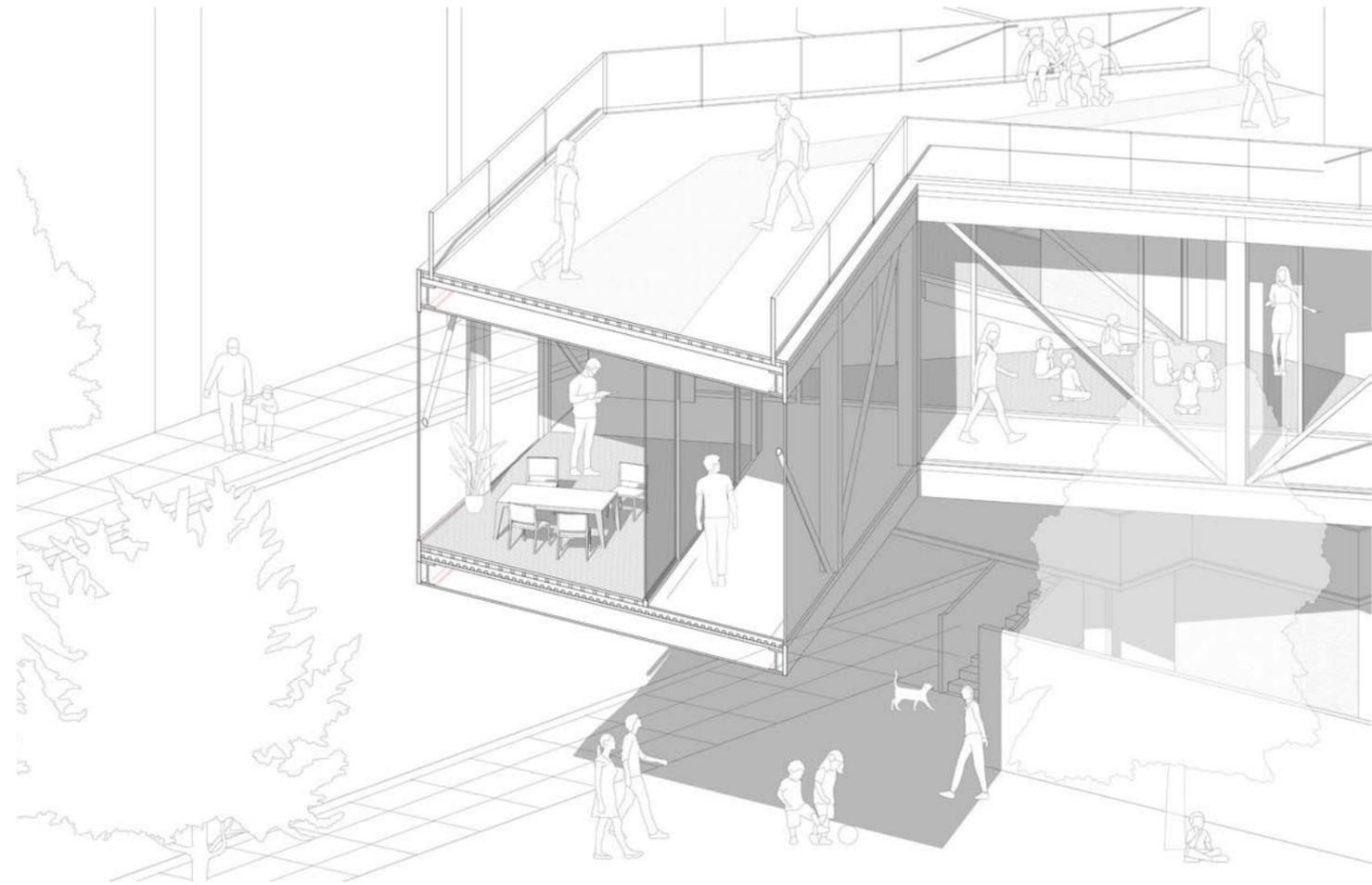


ROOF PLAN





ELEMENTARY SCHOOL CLASSROOM



SKYBRIDGE

# THE ARCADE PROJECT

FALL 2019  
STUDIO | CORE I

Instructor: Anna Puigjaner

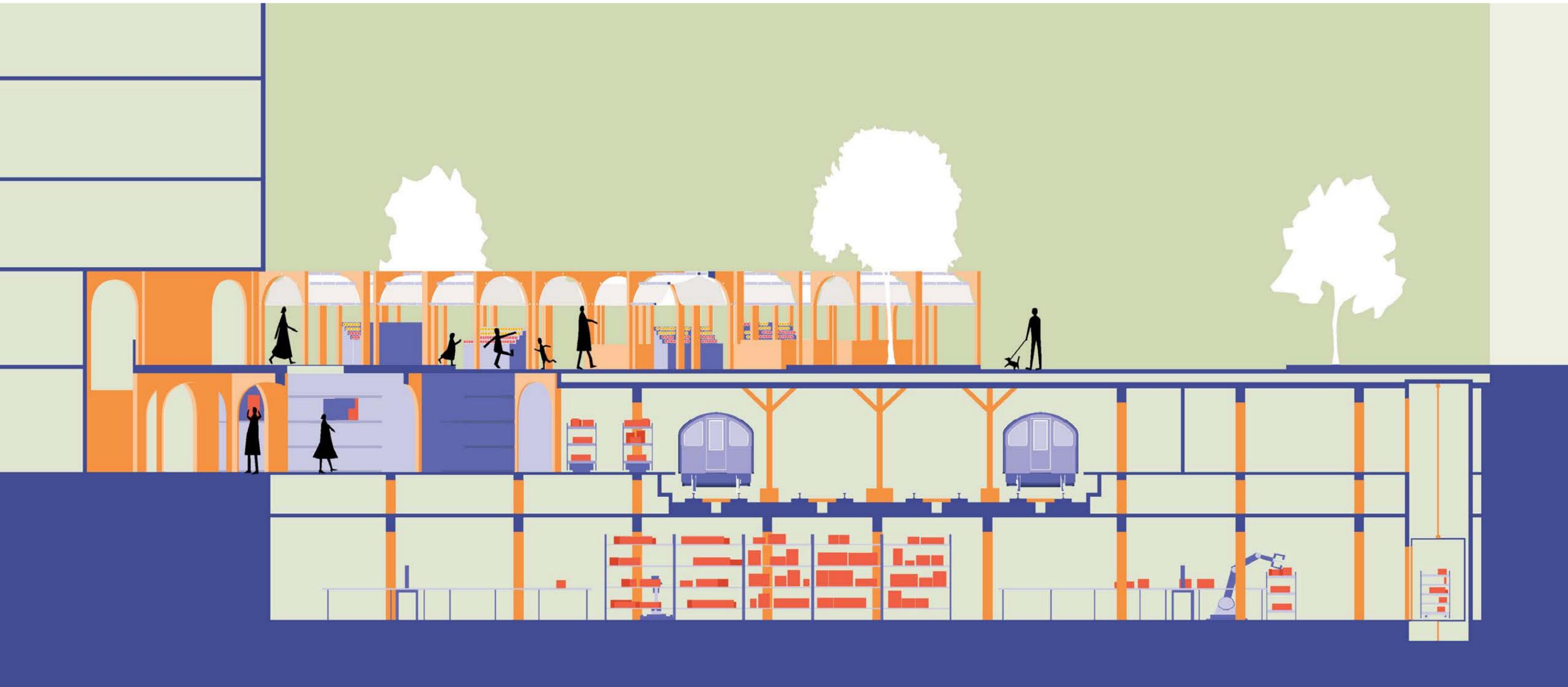
This project starts off with the concept of alleviating the traffic congestion and optimizing the last-mile delivery system by reactivating the existing abandoned subway tracks and stations and to use them as a new delivery system. Along Broadway there are several existing abandoned subway stations. This project focuses on the 91st and Broadway station. The whole station was closed due to the extension of 96th st station. In this scheme, it is transformed into a local delivery station that serves its surrounding neighborhood.

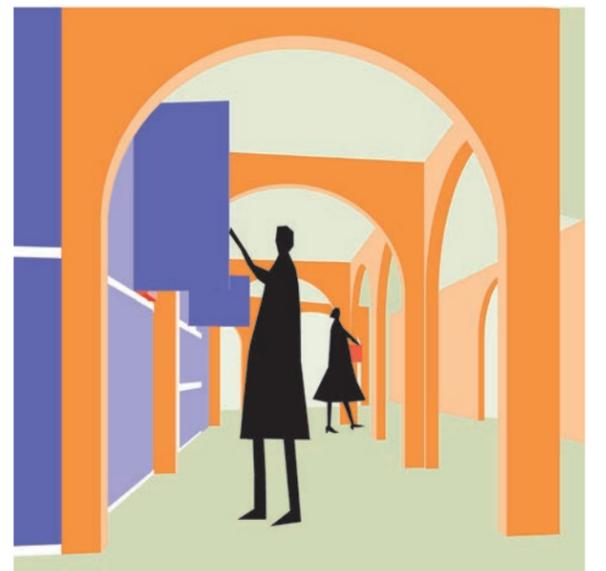
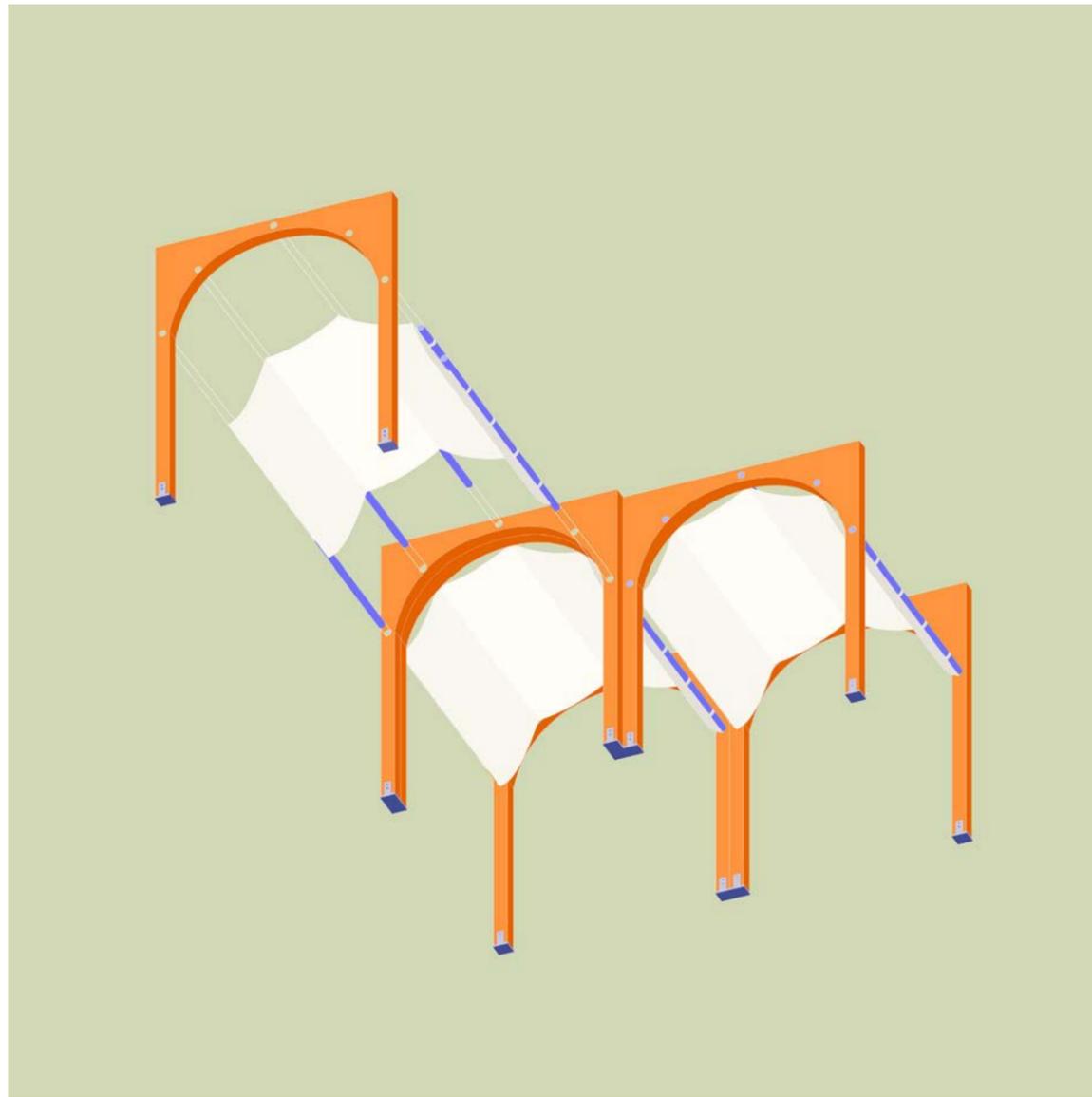
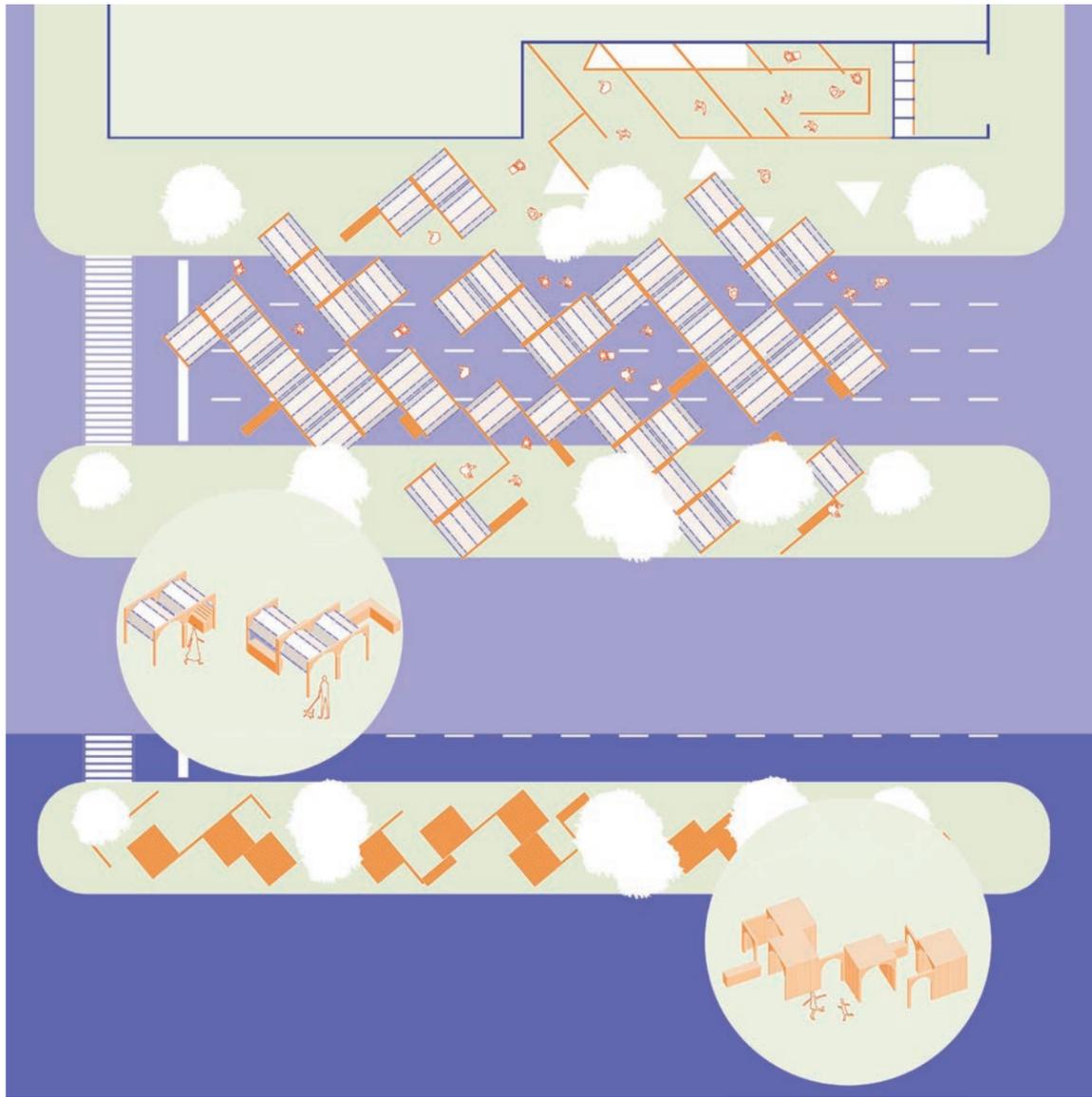
The diagram on the right shows how the system works as a whole. When the train arrives during off-peak hours, robots that run on the platform level will unload the racks and then take them down to the floor below. After they arrive at the lower level, they will get sorted and temporarily stored here at this level for customers to pick up or scheduled for delivery.

But at the same time, there are problems coming along with this system which is that it is promoting e-commerce. One of the most severe issues is that while the system is connecting the city, it creates gaps between people at the same time. For instance, social isolation as people rely more and more on the internet. And also digital divide appears, since not everyone would have equal access to technology. So in response to this issue, this new arcades project integrating with the delivery station is proposed to serve as a 24/7 market place with an urban living room. In terms of the form, this project is inspired by the Arcades Project written by Walter Benjamin, talking about how arcades being the first space uniquely designed to accommodate the flood of new industrially created goods produced for a growing consumer class in Paris in the early 19th century right after industrial revolution. Or in short, how arcades appeared as a new form of public place to accommodate new form of commerce. So to echo with that, the arcade form is adopted in response to the emerging e-commerce.

The project is composed of a series of arches that connects the underground delivery station where people can pick up their packages and can see through the glass wall of how the delivery system works. But they won't be able to get into the station because of security issues. And then the arcade goes up and forms a market place on the ground level with a collective living room or kitchen to gather people and then it extends further to the street and to the median. The structures on the street and the median are temporary and movable. So they can change constantly to accommodate different events.









# THE THIRD SPACE: MELROSE COMMUNITY CENTER

FALL 2020  
TECH | AT III & IV

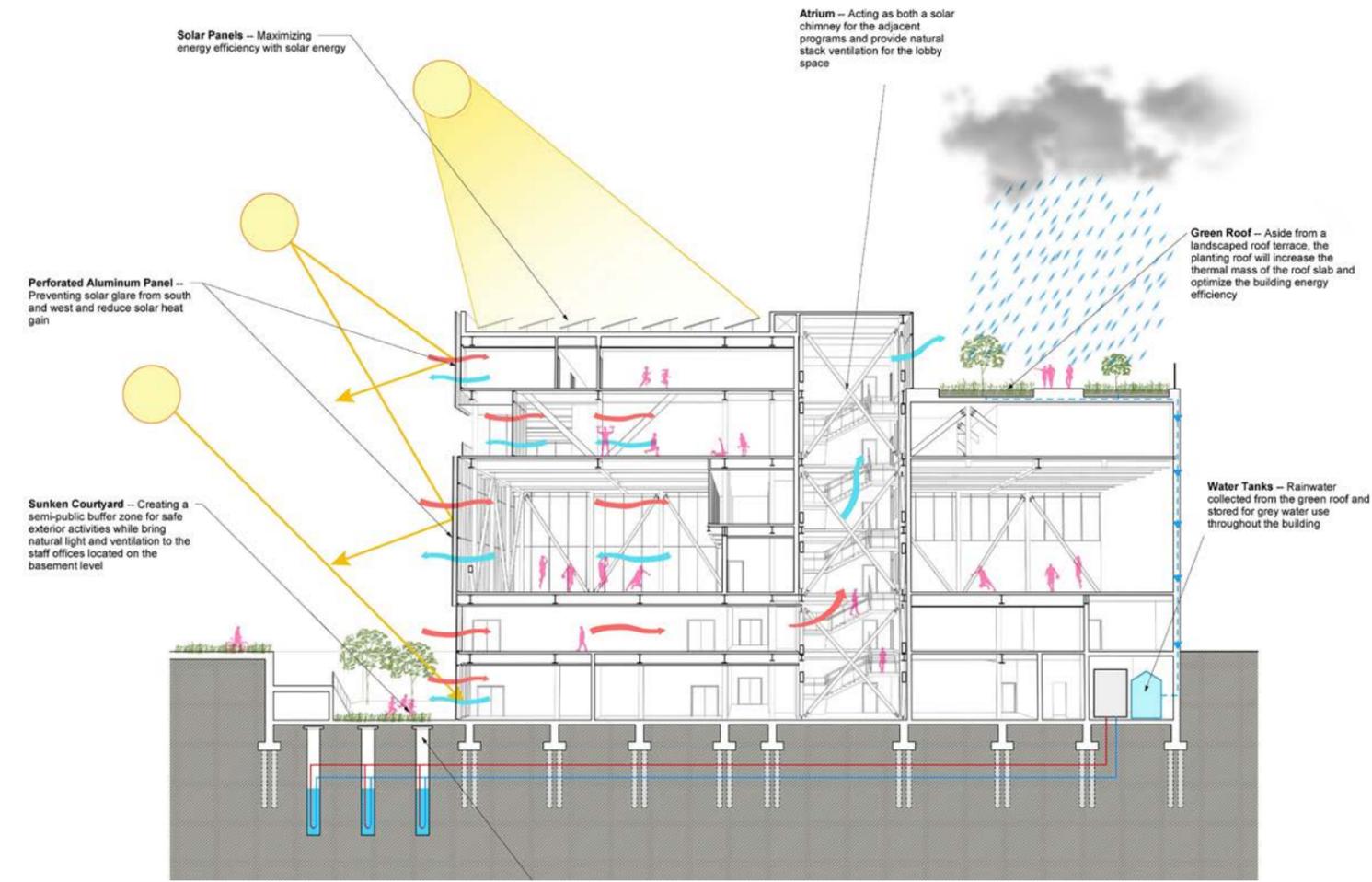
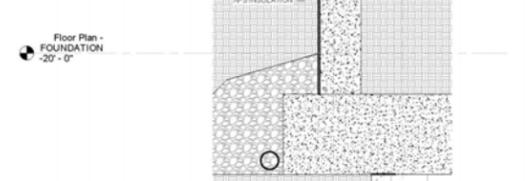
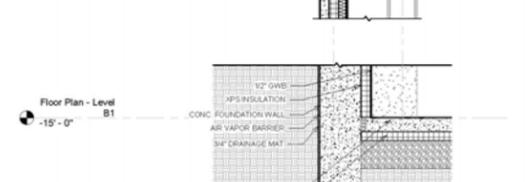
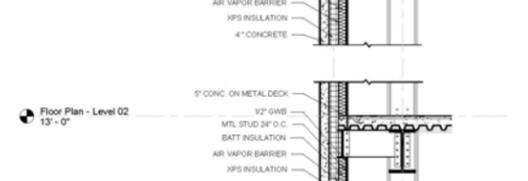
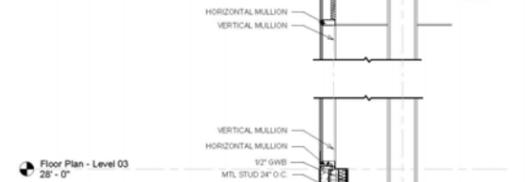
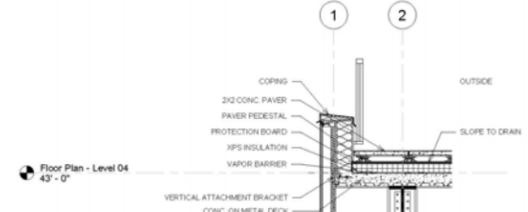
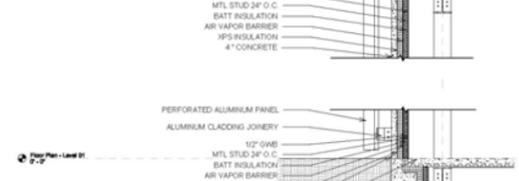
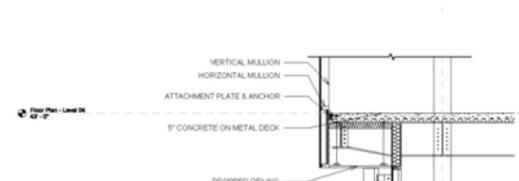
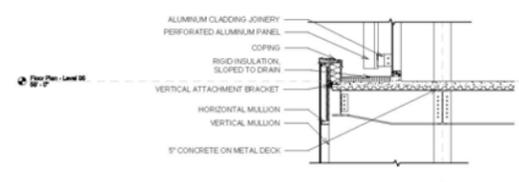
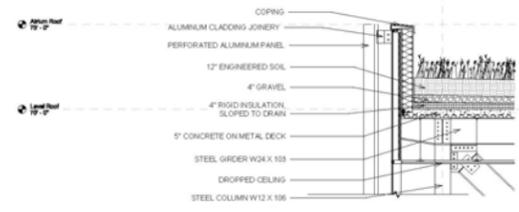
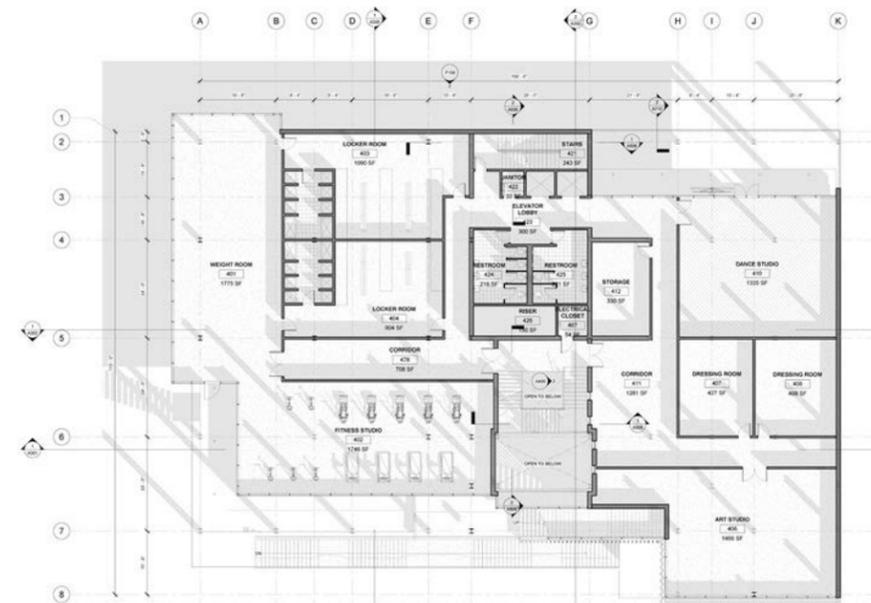
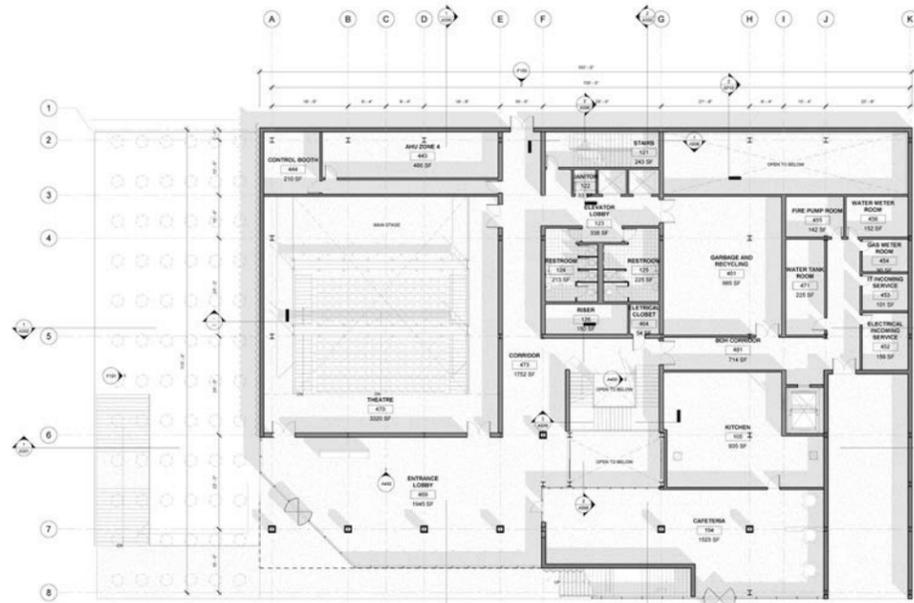
**Instructors:** Sarrah Khan, Gabrielle Brainard

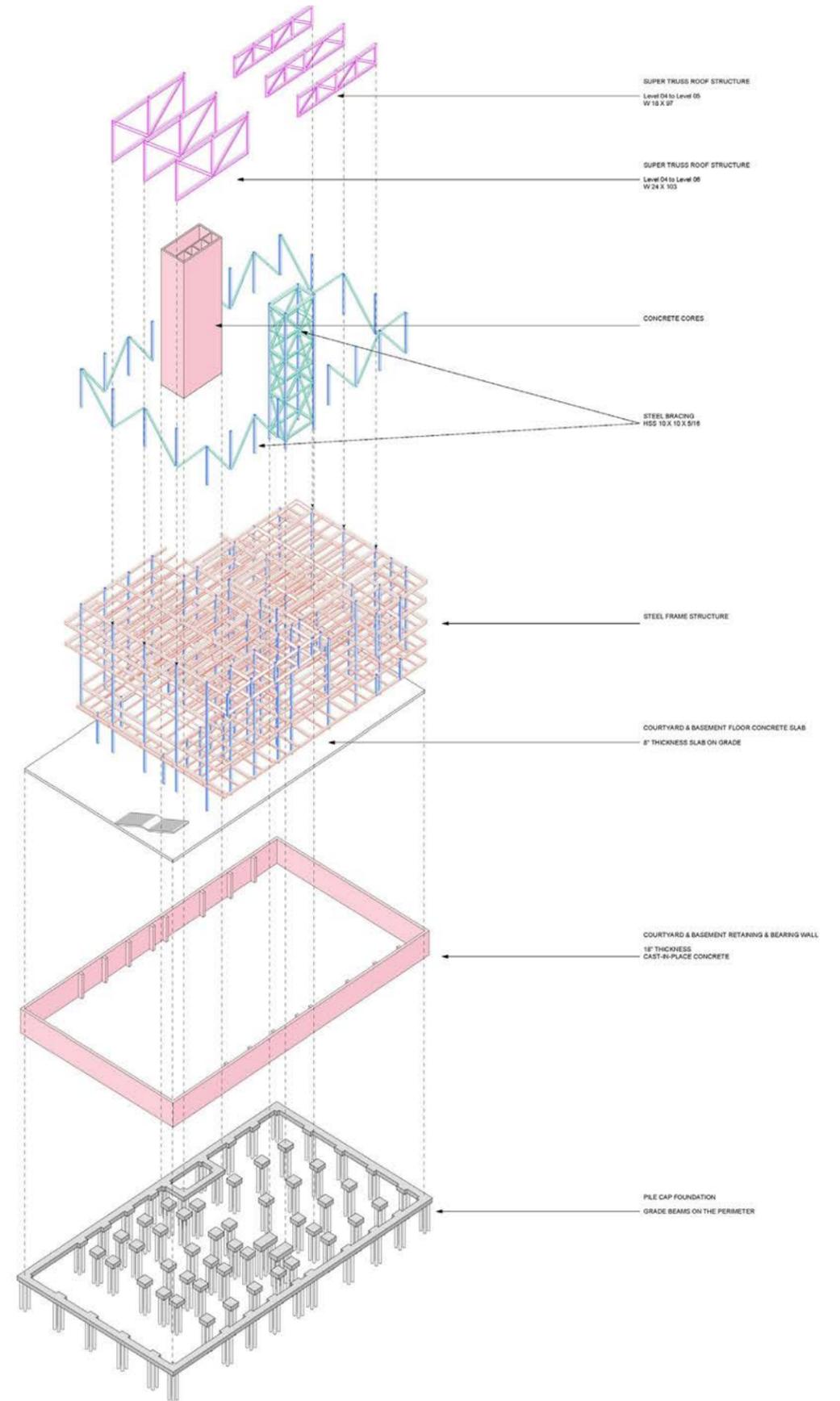
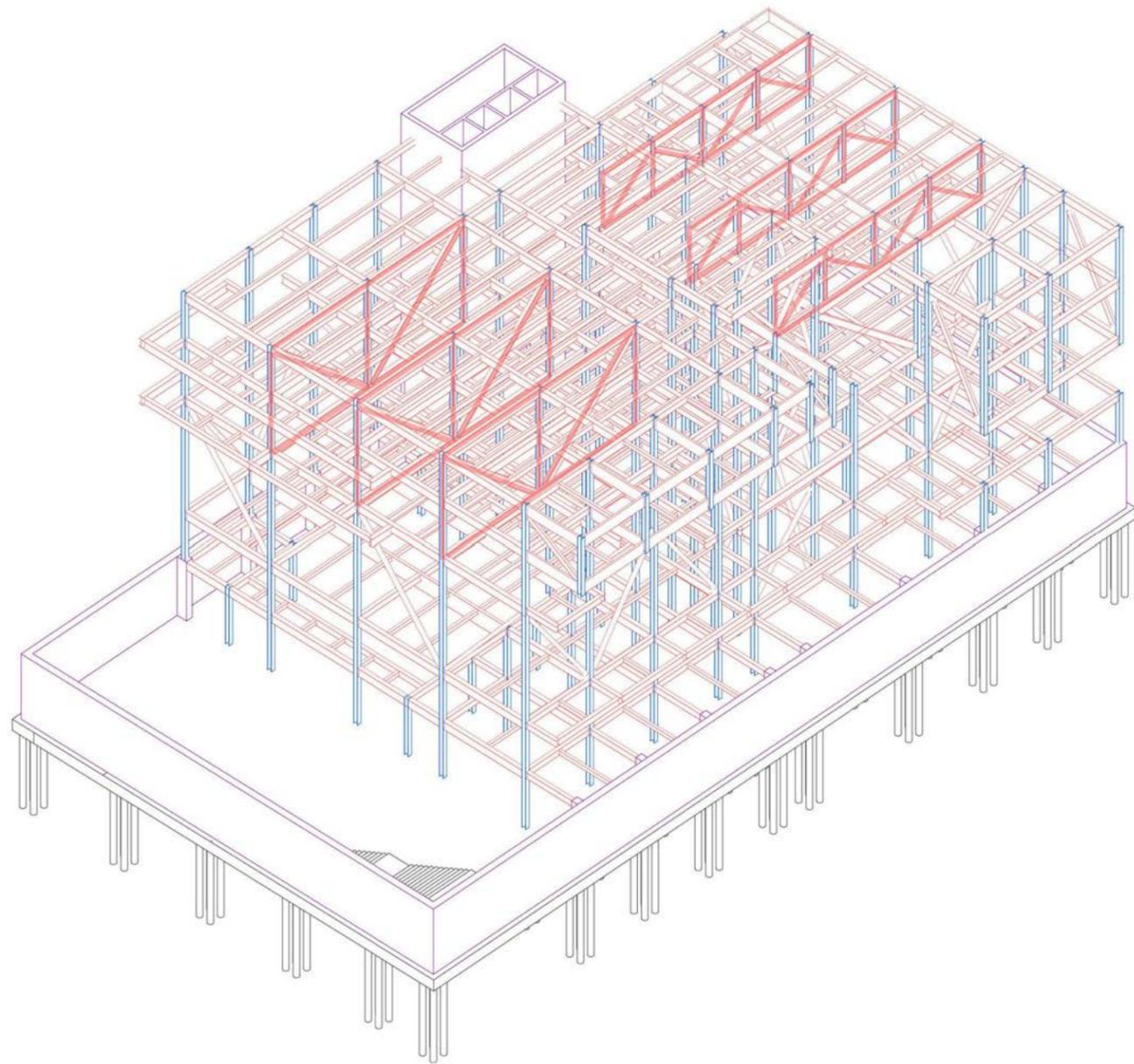
**Critics:** Stephan Potts, Aaron Campbell, Berardo Matalucci, Teel Riggs

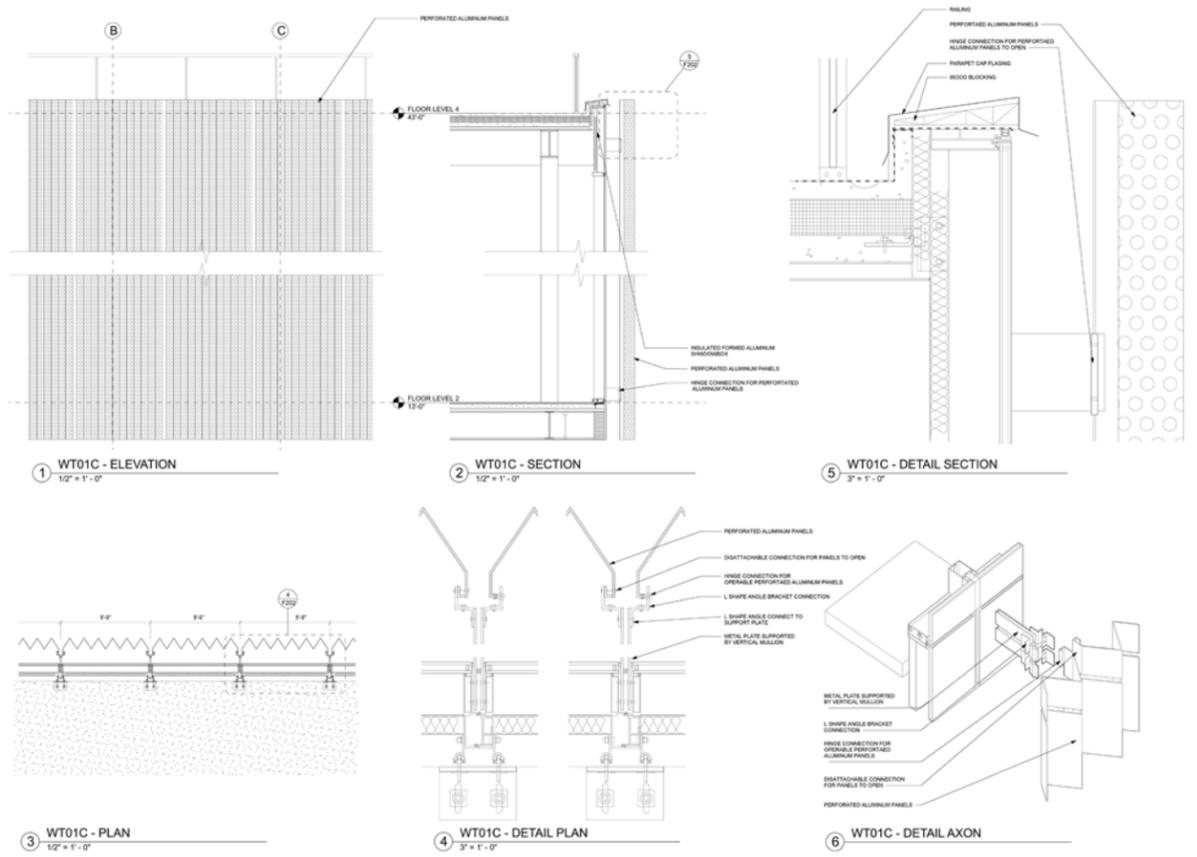
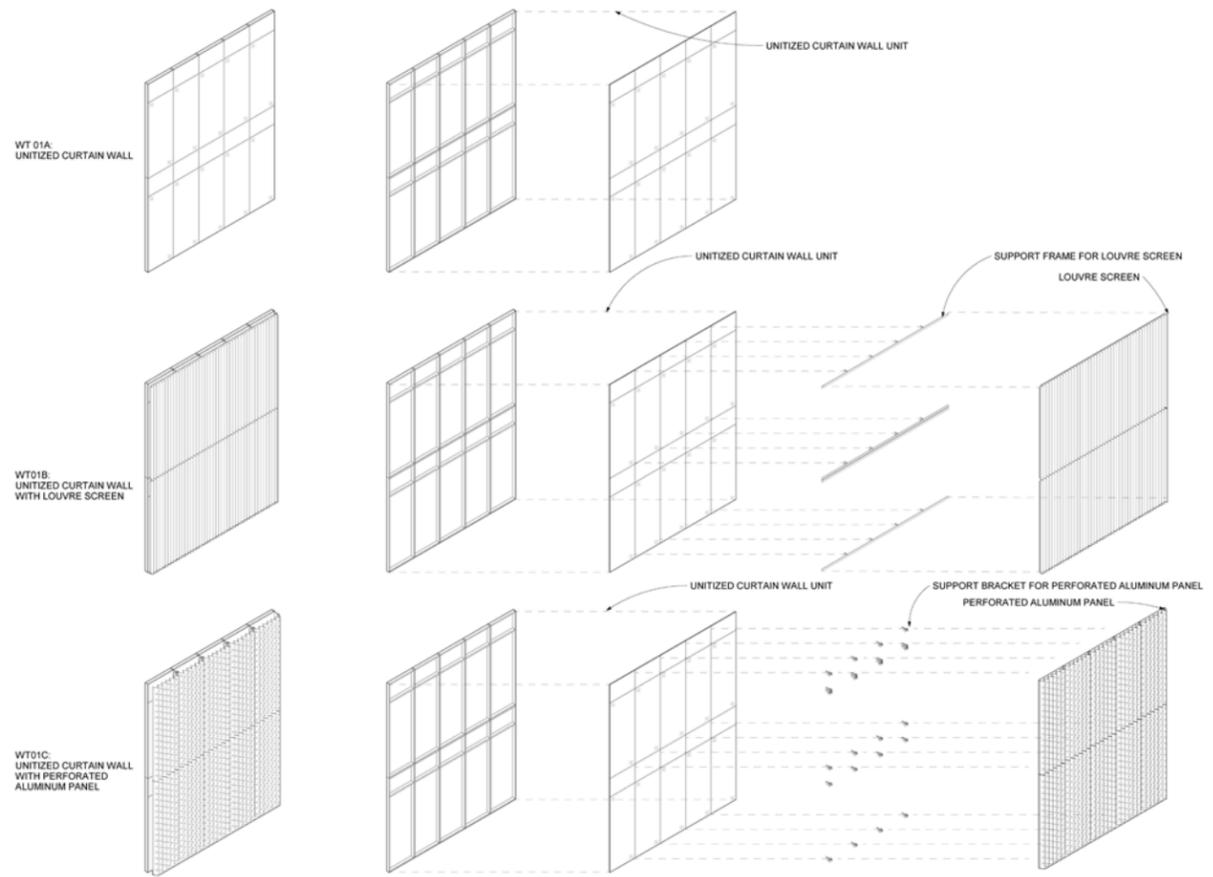
**Partners:** Yuchen Qiu, Minghan Lin, Qing Hou, Shuhan Liu

The Melrose Community Center, located in Bronx, will provide community programs for children and young adults age 5-21, including health and nutrition; education; youth development and the arts. The programs aim to strengthen the social and academic outcomes of a generation of young people in Melrose.

The design employs a grand exterior staircase that stitches not only the two wings of the building together, but also invites the public in melrose community to the center directly from the street. With this welcoming pathway, the public will be able to have access to all the facilities that the center provides.







# TRANSFORMATION PART III.

## CITY OF BILLBOARDS

TECH & VISUAL STUDIES | GENERATIVE DESIGN | FALL 2021

## CARBON CROSSING

STUDIO | ADV IV | SPRING 2021

## URBAN RETREAT

STUDIO | ADV V | FALL 2021

CONNECTION

REGISTRATION



# CARBON CROSSING: THE NEW HORIZON

SPRING 2021  
STUDIO | ADV IV

**Instructor: Lindsey Wikstrom**

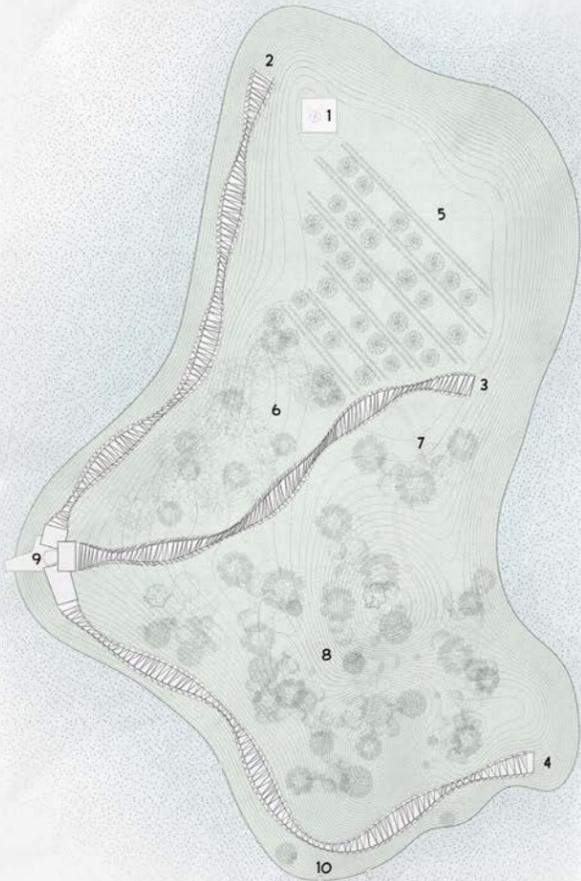
**Partner: Yuchen Qiu**

Located on Davids Island in New Rochelle, CARBON CROSSING is an experimental project which aims to create an immersive and transformative experience for the visitors to participate in a society centered around environmental value rather than economical value.

The programs on the island are divided into two parts, labor, and leisure. Labor includes agroforestry, which reduces tensions between the food and trees growing here, of which a balance must be maintained. Participants earn carbon coins that they can use on the island by laboring. In order to enjoy time and space for leisure such as the spa, pool, or a better room or food, participants use the carbon coin to pay for the leisure. For example, someone skilled at cultivating mushrooms earns carbon coins to eat more healthy and delicious foods during their stay.

The price of leisure activities is determined by their resulting carbon emission. Therefore, the more you work in tune with the landscape, cultivating plants that sequester carbon, the more you can unlock desirable and high-emitting experiences. Regardless of the visitors' financial status, once they step on this island, their wealth depends only on the carbon offsetting they do.

# ABOUT CARBON ISLAND - ALL YOU NEED TO KNOW



AGROFORESTRY  
FOREST FARMING  
SILVOPASTURE  
ALLEYCROPPING

CARBON OFFSET

LABOR

THE ACTIVITIES INCLUDED IN THE LABOR PROGRAMS WILL MAINLY BE AGROFORESTRY ACTIVITIES. AGROFORESTRY IS A COLLECTIVE NAME FOR LAND-USE SYSTEMS AND TECHNOLOGIES WHERE WOODY PERENNIALS ARE DELIBERATELY USED ON THE SAME LAND-MANAGEMENT UNITS AS AGRICULTURAL CROPS AND ANIMALS.

EXCHANGE / UNLOCK / UPGRADE

VALUE



SYSTEM

CARBON COIN  
THE CURRENCY THAT MOST OF THE LEISURE ACTIVITIES BASE ON IN ORDER TO ENJOY THE LEISURE ACTIVITIES OFFERED BY THE ISLAND. PARTICIPANTS WILL NEED TO EARN IT TO "PAY" FOR THE EXPENSE.

LIVING QUARTER  
RESTAURANT  
SPA  
POOL  
SAUNA  
HOT AIR BALLON

CARBON EXPENSE

LEISURE

DERIVED FROM THE IDEA OF CARBON EQUIVALENT, THE PRICE OF THESE ACTIVITIES WILL BE BASED ON THE RELATED CARBON EMISSION. IMAGINE THAT THE PARTICIPANTS WORK MORE ON ONE ACTIVITY, THEY'RE ABLE TO LEVEL UP AND UNLOCK BETTER LEISURE.

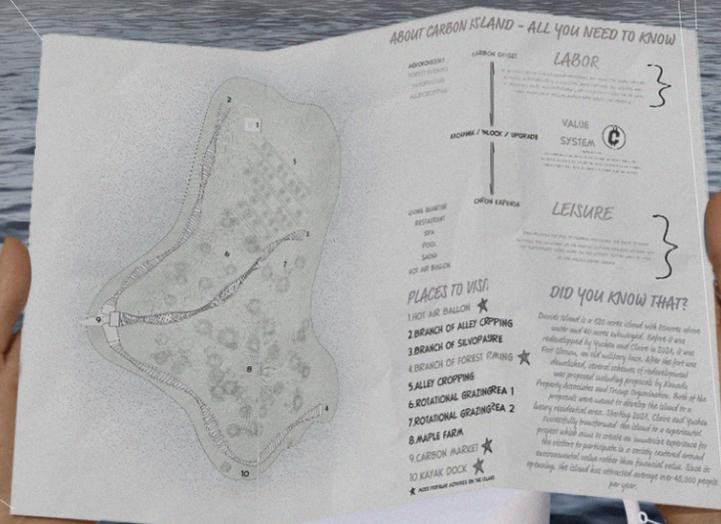
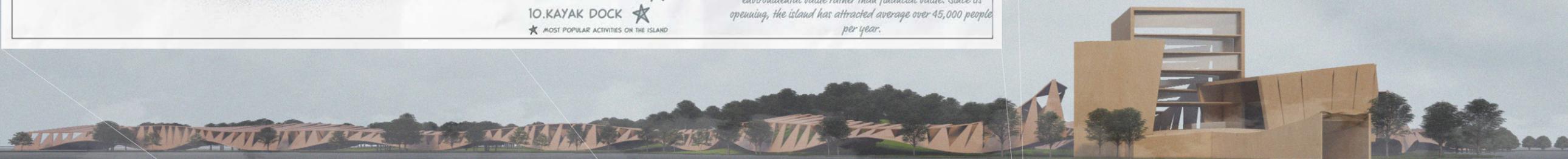
## PLACES TO VISIT

1. HOT AIR BALLON ★
2. BRANCH OF ALLEY CROPPING
3. BRANCH OF SILVOPASTURE
4. BRANCH OF FOREST FARMING ★
5. ALLEY CROPPING
6. ROTATIONAL GRAZING AREA 1
7. ROTATIONAL GRAZING AREA 2
8. MAPLE FARM
9. CARBON MARKET ★
10. KAYAK DOCK ★

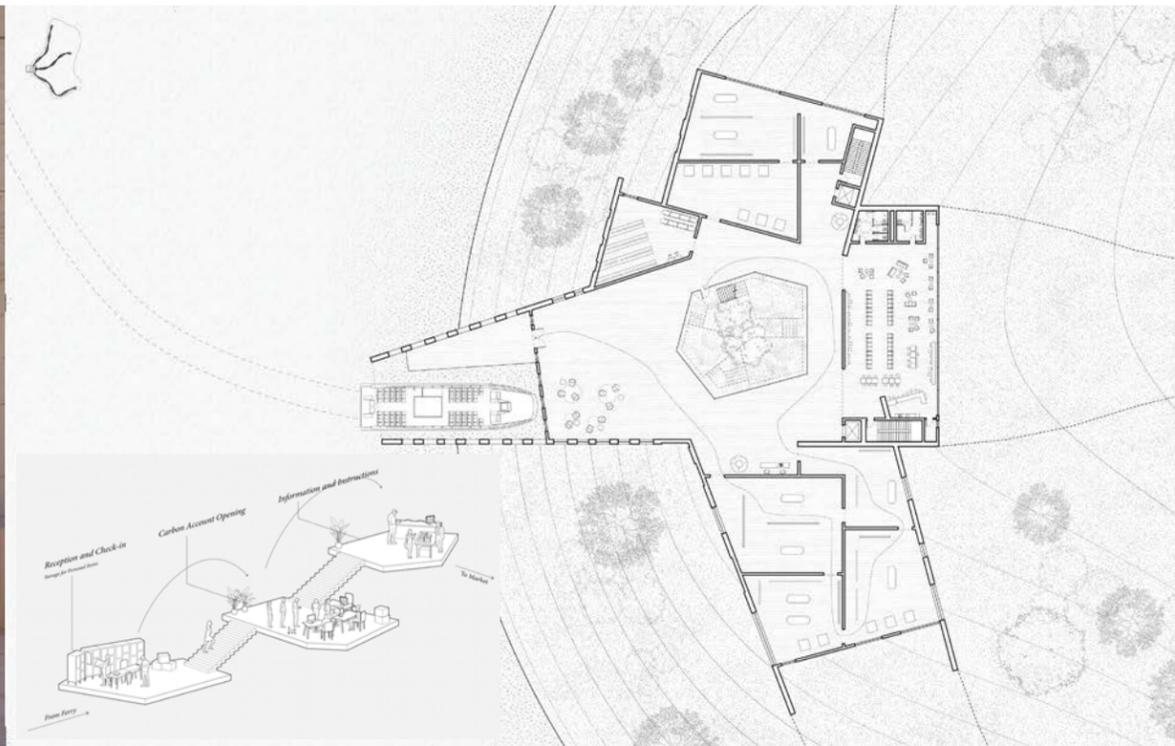
★ MOST POPULAR ACTIVITIES ON THE ISLAND

## DID YOU KNOW THAT?

David's Island is a 120 acres island with 80 acres above water and 40 acres submerged. Before it was redeveloped by Yuchen and Claire in 2021, it was Fort Slocum, an old military base. After the fort was demolished, several schemes of redevelopment was proposed including proposals by Kanadu Property Associates and Truup Organization. Both of the proposals were used to develop the island to a luxury residential area. Starting 2021, Claire and Yuchen successfully transformed the island to a experiential project which aims to create an immersive experience for the visitors to participate in a society centered around environmental value rather than financial value. Since its opening, the island has attracted average over 45,000 people per year.



David's Island is 120 acres. 80 acres above water and 40 submerged. Before Carbon Island, it was Fort Slocum, an old military base. The island has different zones, each one with different activities following the principles of agroforestry: Forest Farming, Silvopasture, and Alley Cropping. Living quarters and working space are allocated along three branches, while other public areas such as the market center, event space, and research center are located in the main towers near the ferry.



CHECK-IN AND EXHIBITION SPACE AT FERRY TERMINAL



CARBON MARKET



Research Lab . Info Center

Research Lab

Living . Office

Living . Office

Living . Auditorium

Restaurant . Auditorium

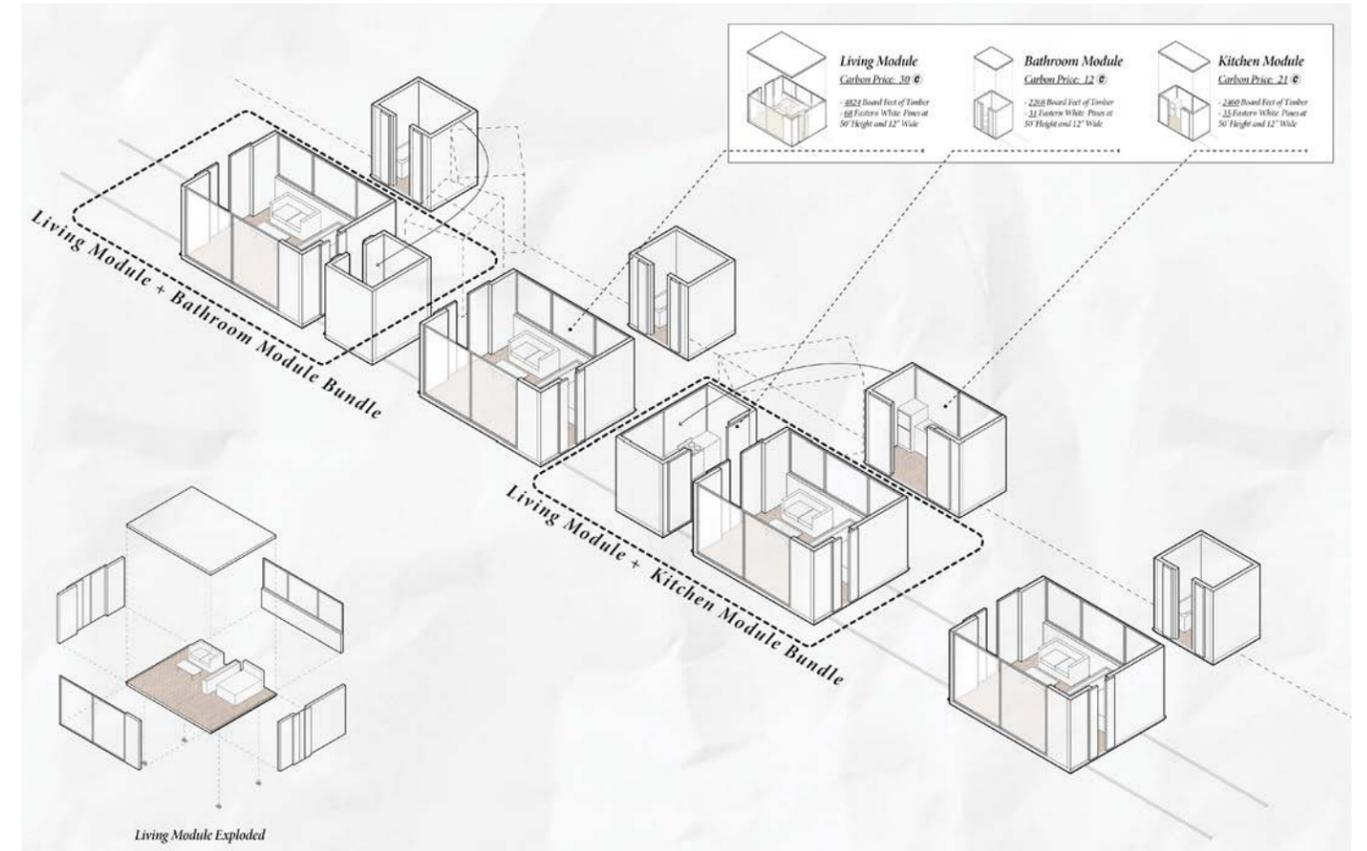
Carbon Market



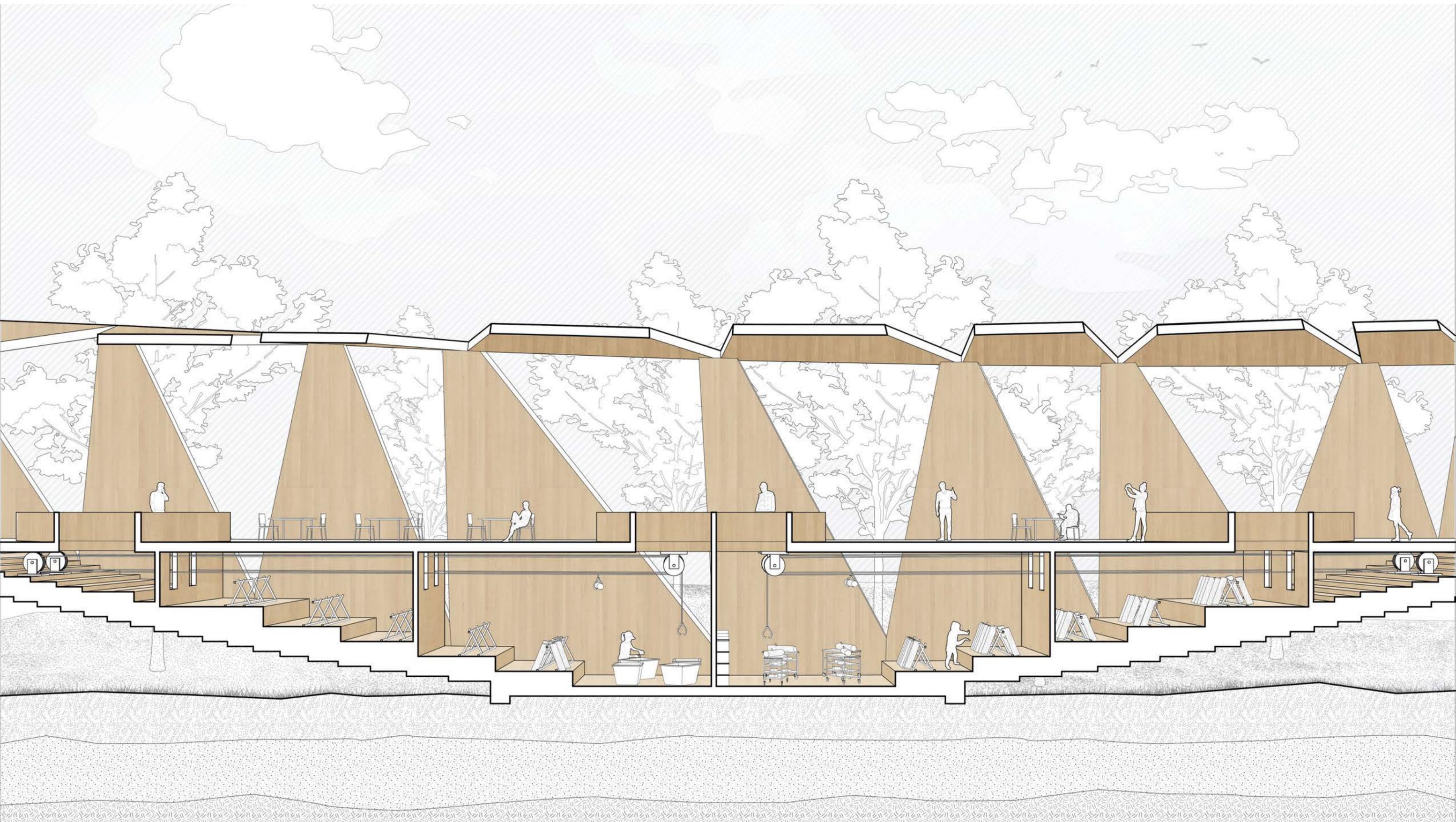




LIVING QUARTER



LIVING MODULES





LABOR: MAPLE SYRUP FARM



LEISURE: SPA

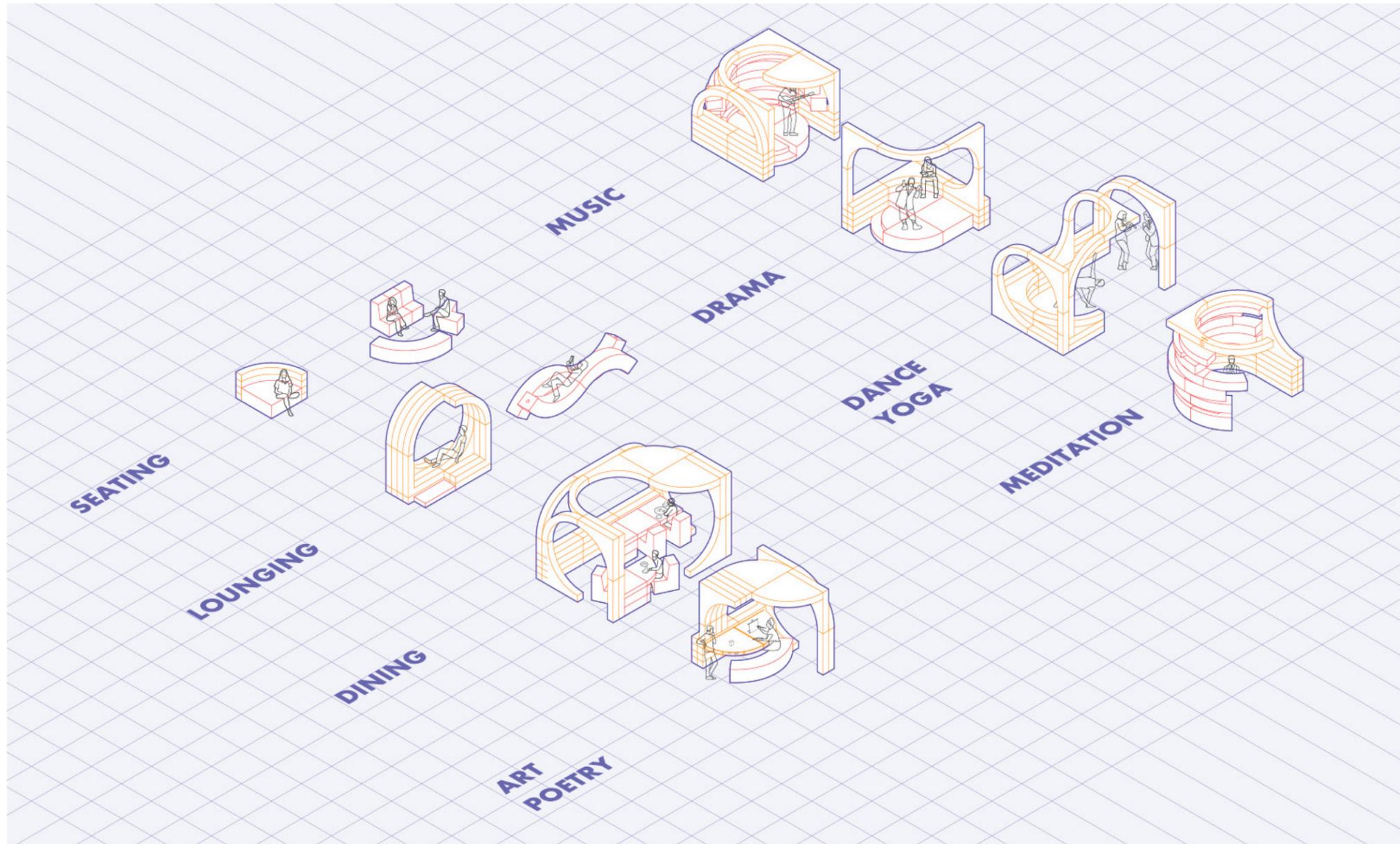
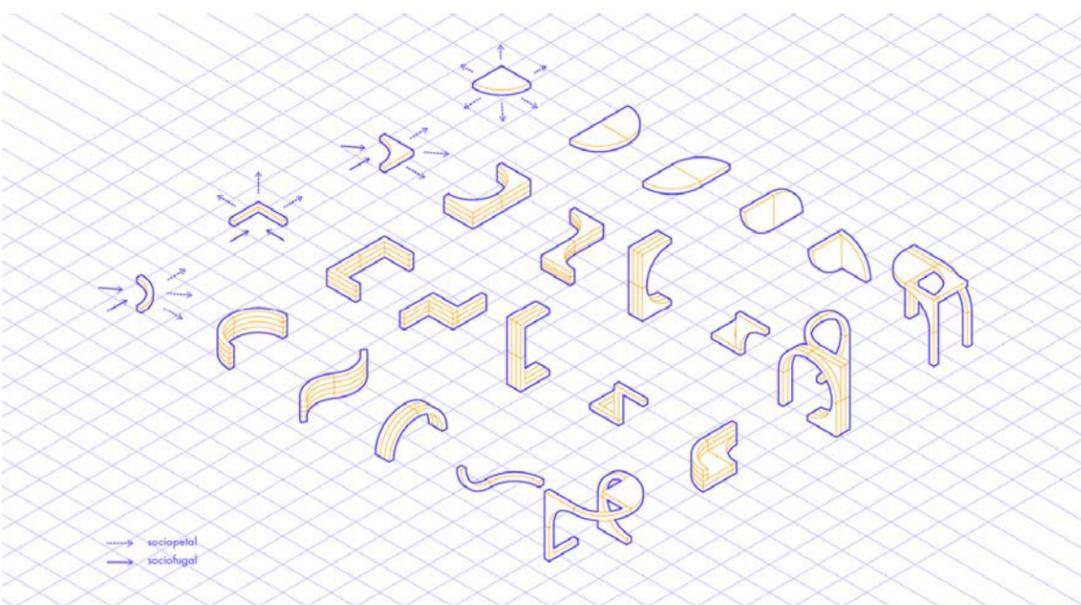
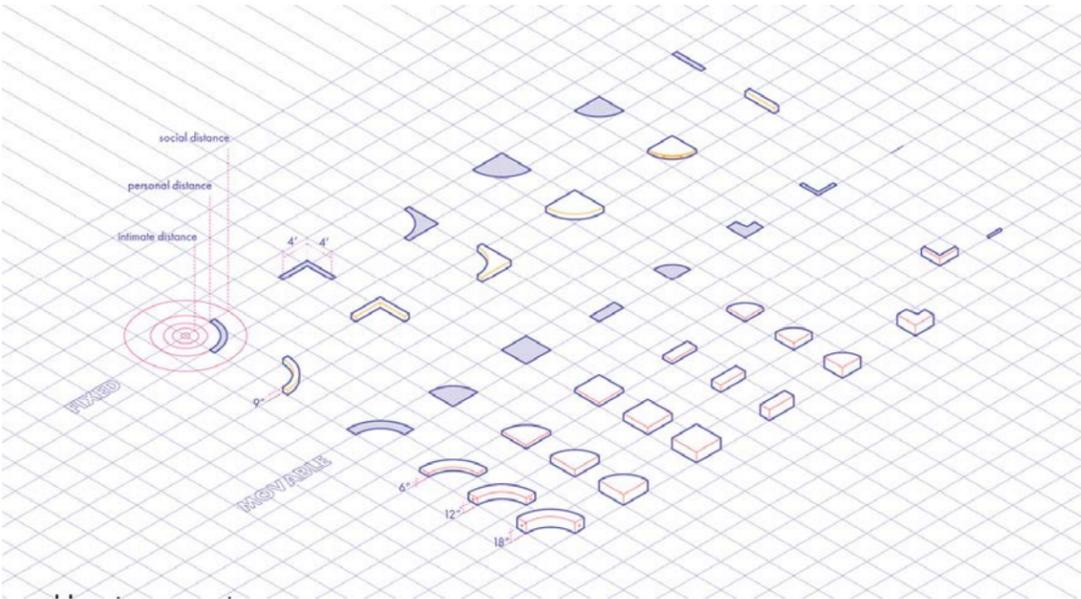
# URBAN RETREAT: THE SOCIAL INFRASTRUCTURE

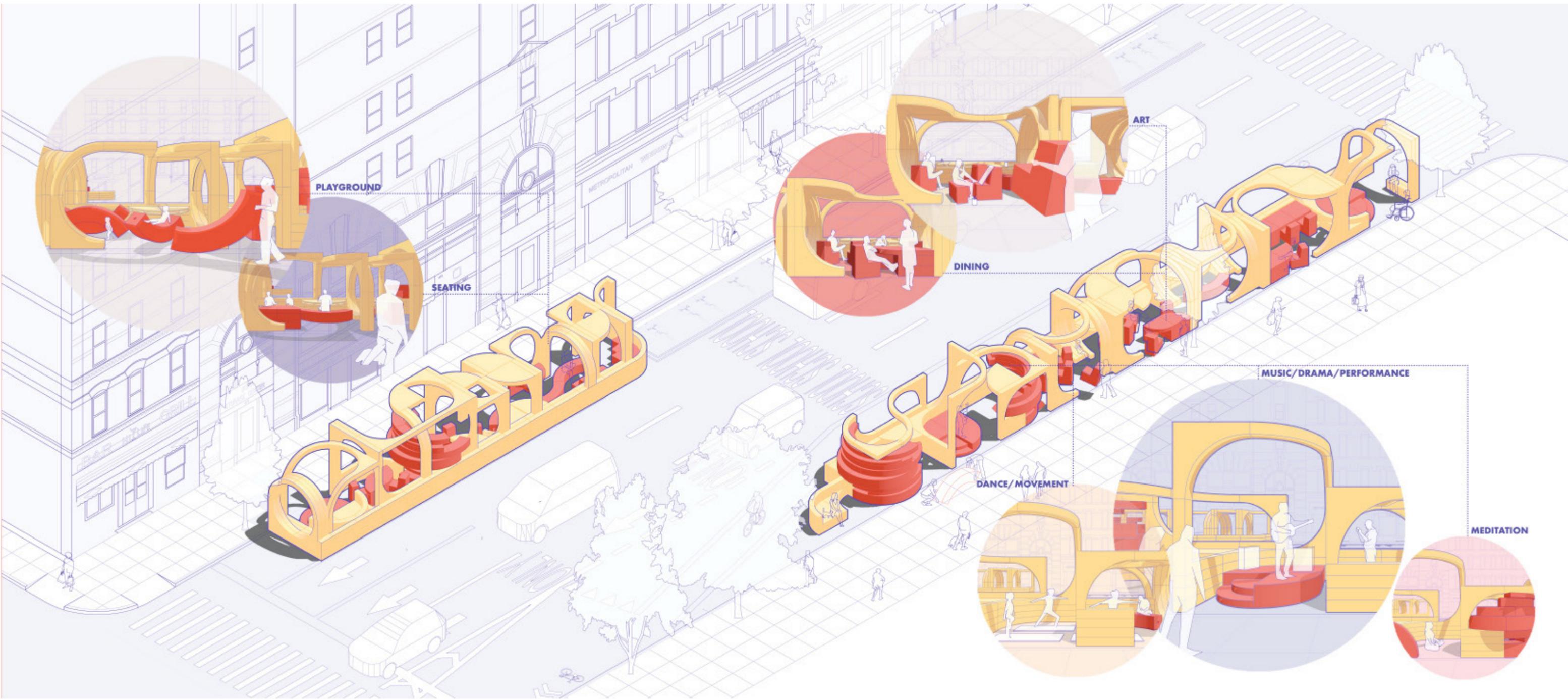
FALL 2021  
STUDIO | ADV V

**Instructor: Bryony Roberts**

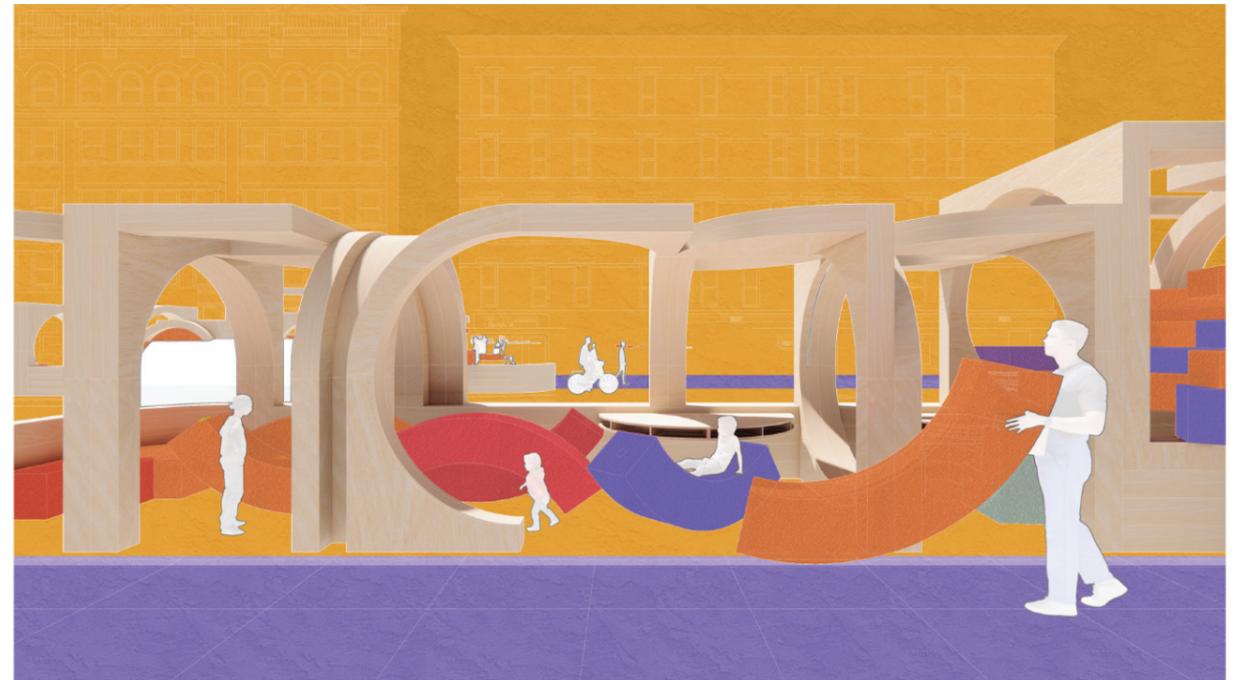
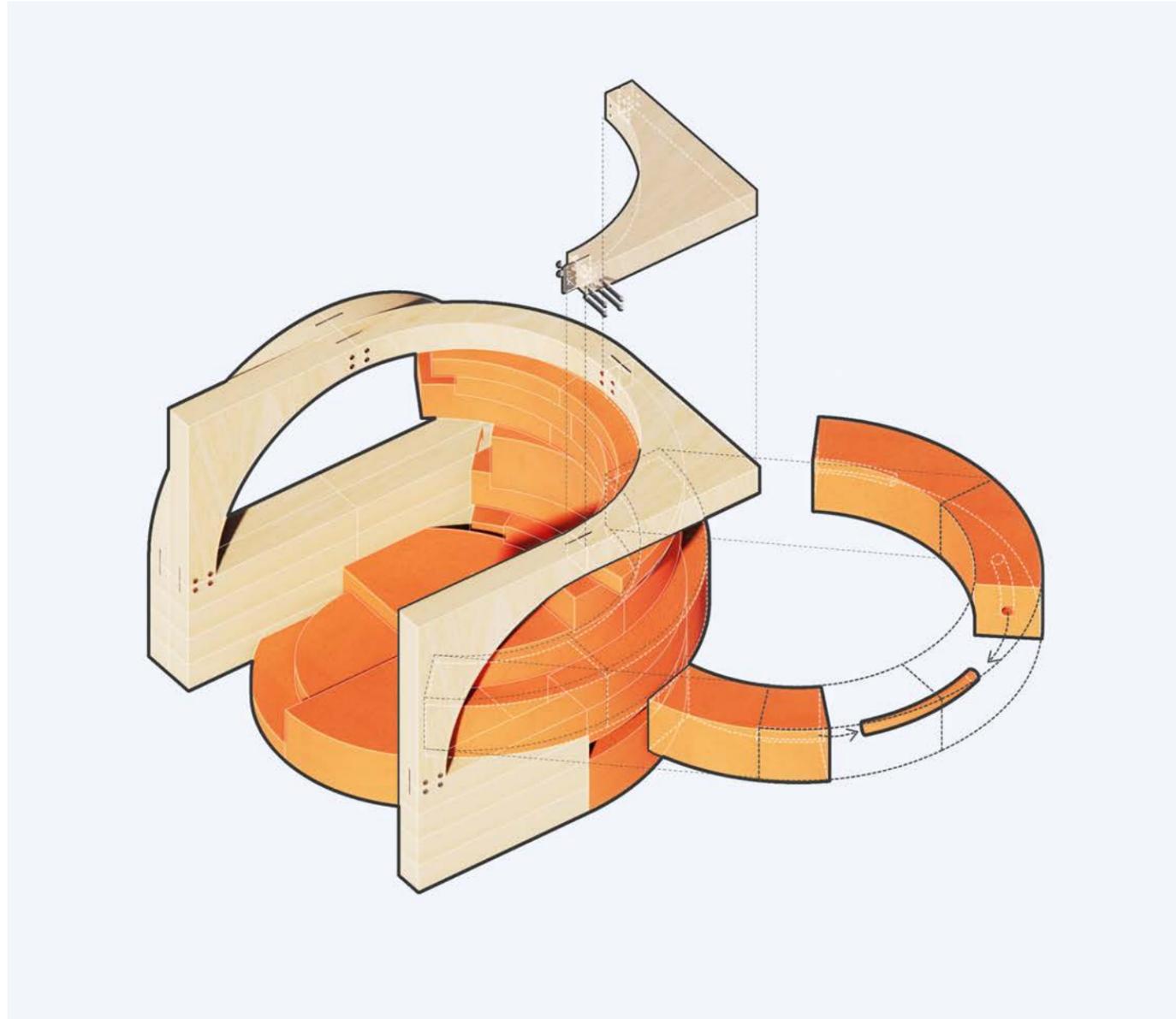
This project aims at reclaiming the street and transforming it into inclusive public space for pedestrians that accommodates various needs of not only social space but also personal space at the same time. Having the proxemics as an underlay, the design adopts a modular system that can be deployed throughout the city. Through different aggregation and configuration, the modules can form both sociopetal space that facilitate gathering and sociofugal space that allow for a mental retreat. The goal is to design for a better mental-scape and promote overall health and well-being.







fixed  
movable



# CITY OF BILLBOARDS

FALL 2021  
TECH & VISUAL STUDIES | GENERATIVE DESIGN

Instructors: Danil Nagy  
Group Members: Duo Xu, Xiucong Han, Chuqi Huang, Hao Zheng

Billboards are essential for advertising and propaganda in the capital world. Their dazzling graphic styles and lines always catch pedestrians' eyes at their first glance. In the era of information explosion, people perceive information non-stop. In the cityscape, billboards as the second layer of facade influence people's mood, mind, and action. The increasing need for marketing and advertising for products has spurred the need for billboards. In cities already cramped in high density, it is unreasonable to construct new structures for advertising. Therefore, the project aims to use generative design as a method, combined with the application 'Discover' to generate designs that maximize the use of the existing structures in cities while improving the advertising quality. At the same time, customization is considered, allowing users to choose the layout that fits their needs most. The generative model provides flexibility for the arrangements of billboards with different dimensions and orientations to achieve maximum visibility. It could also be used as a tool to find optimized layouts for a designated building or block to achieve maximum profits.



