



**THOMAS LANTZ**

Portfolio 2018 - 2021

# ***Assembled Work***

Greek Research Center



Biospike



Philly Fold



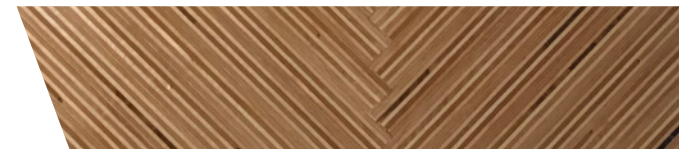
Theatrical Home



Recycle Generate Build



Herringbone Chair





# GREEK RESEARCH CENTER

The criteria for this project was to create a multidisciplinary research center in Arcadia, Greece. There are many Greek ruins located all around this site and every year researchers come to the nearby town study the history of the area. They need a dedicated place to research and this is what was created.

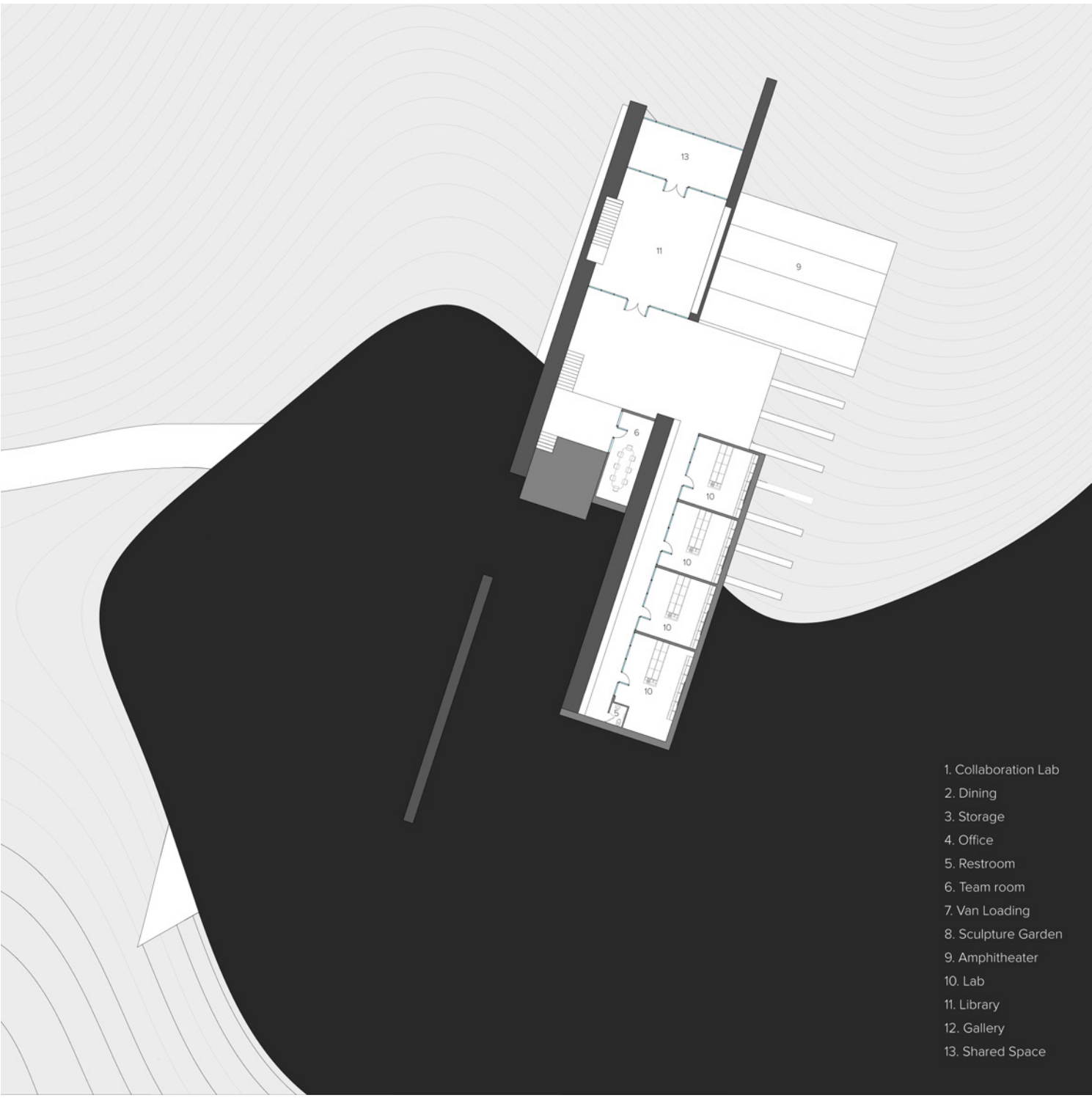
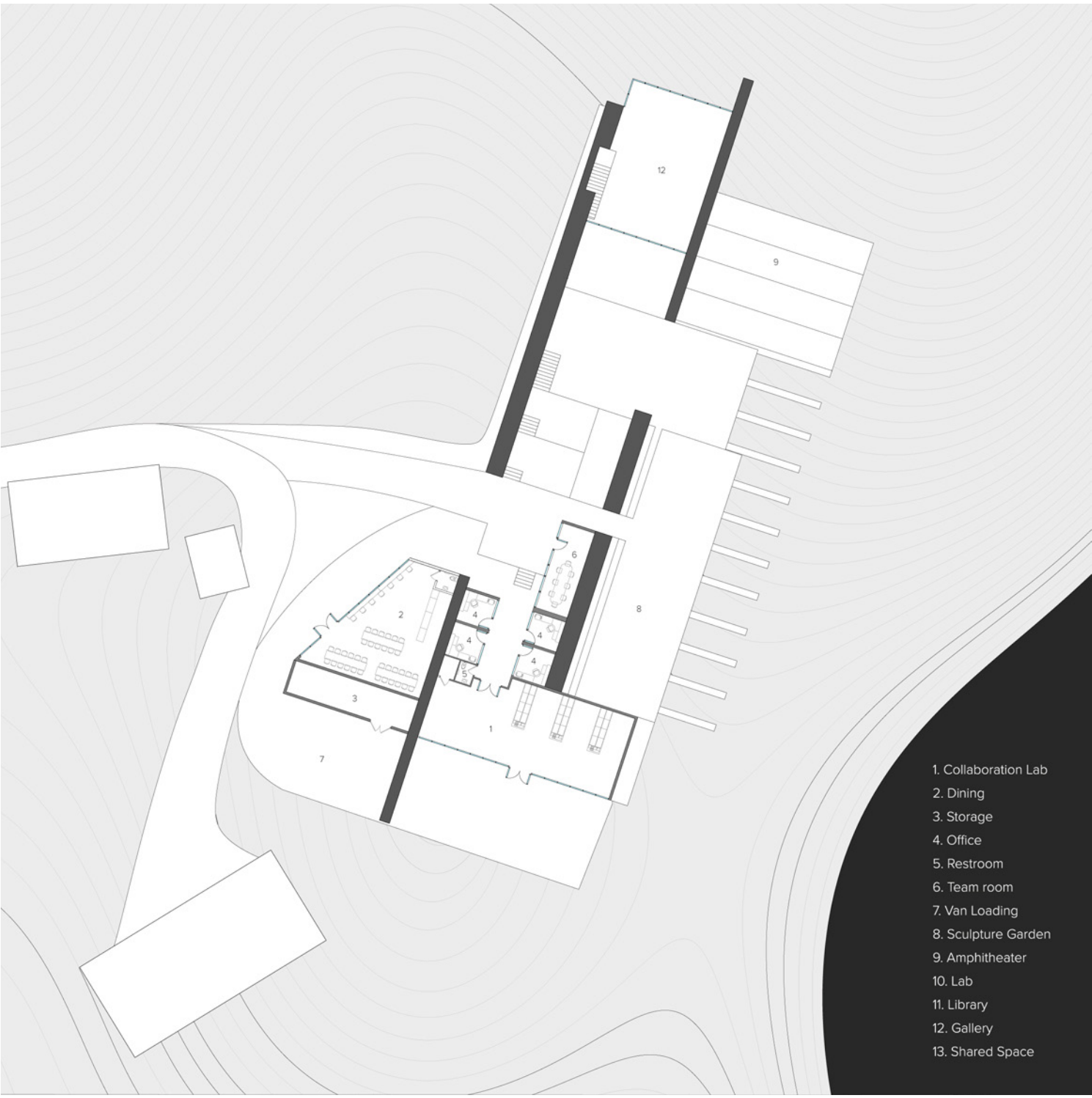
The programing is balanced across the site with different levels of privacy with the most public programming located closest to the village. The more private programing, like the offices and the lab spaces, are located in the back of the site. This site progression ends with an amphitheater that looks out over the Greek landscape.

The plan is centered around two walls that divide the site and direct views both in and out to the landscape. They provide a grounding element to the different programs connecting everything together materially. The wall also has spaces where it is carved away to create points of access.

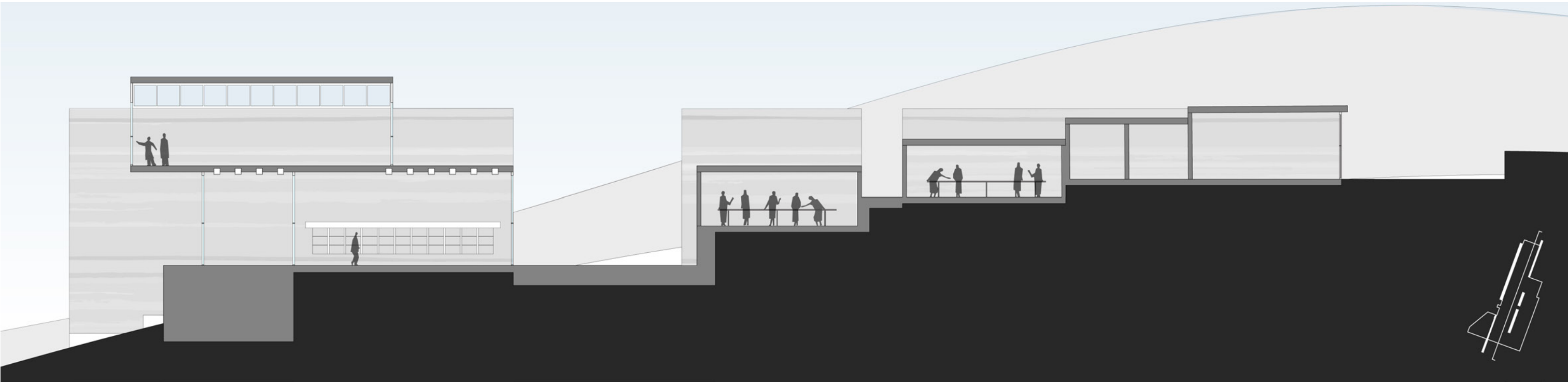
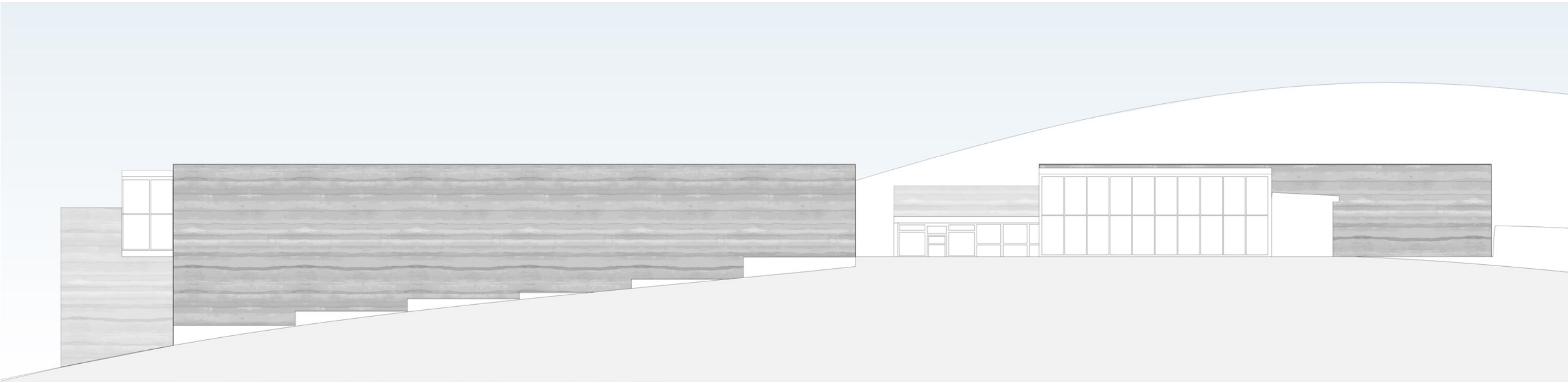
Summer 2020



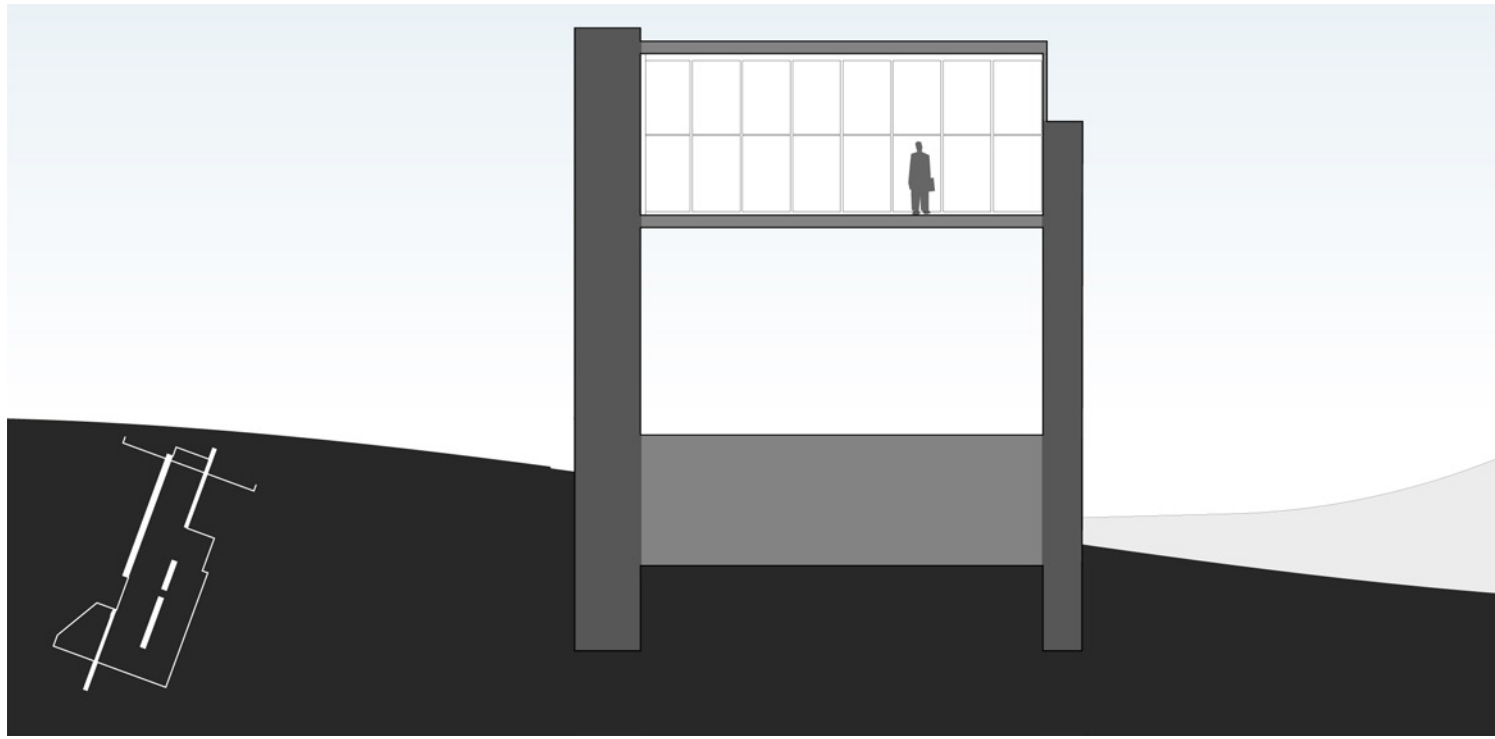
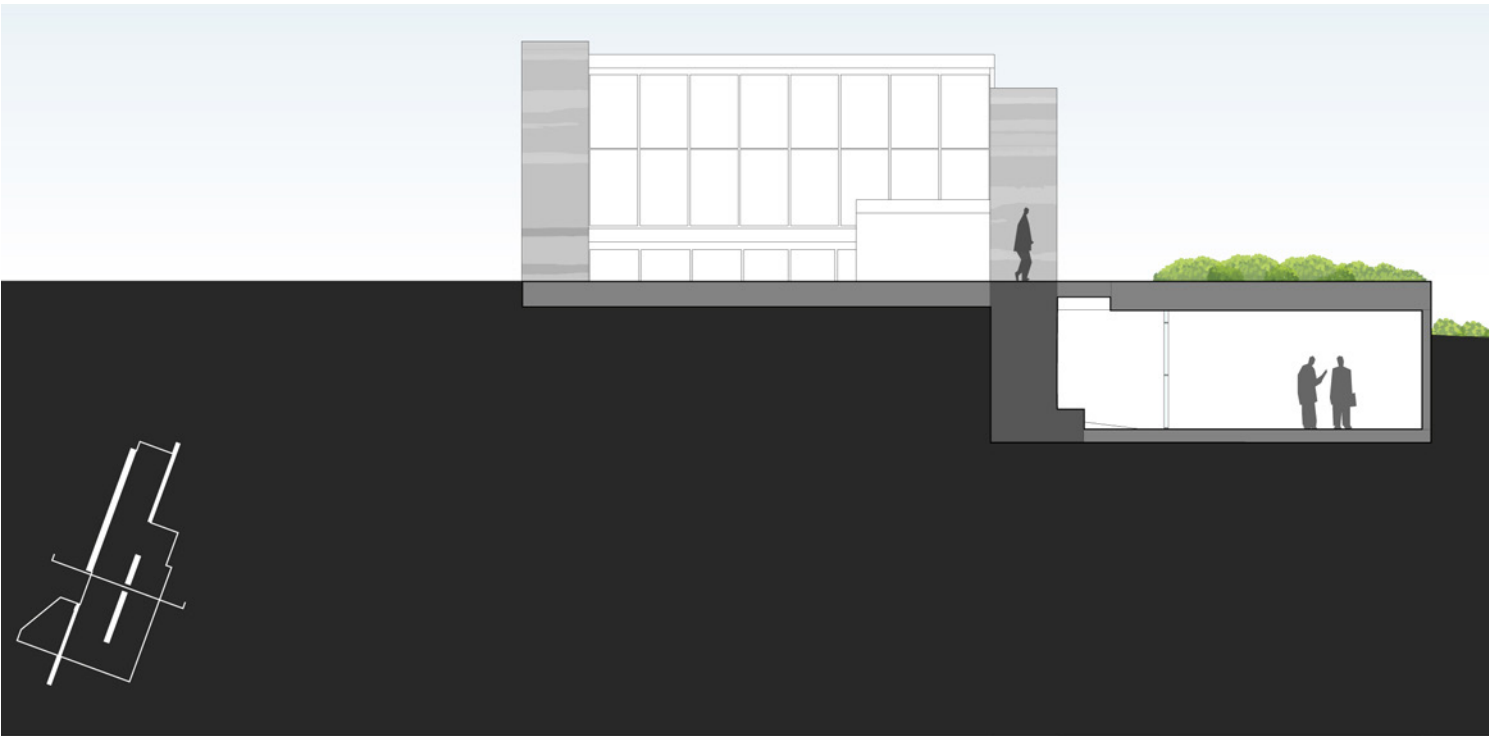
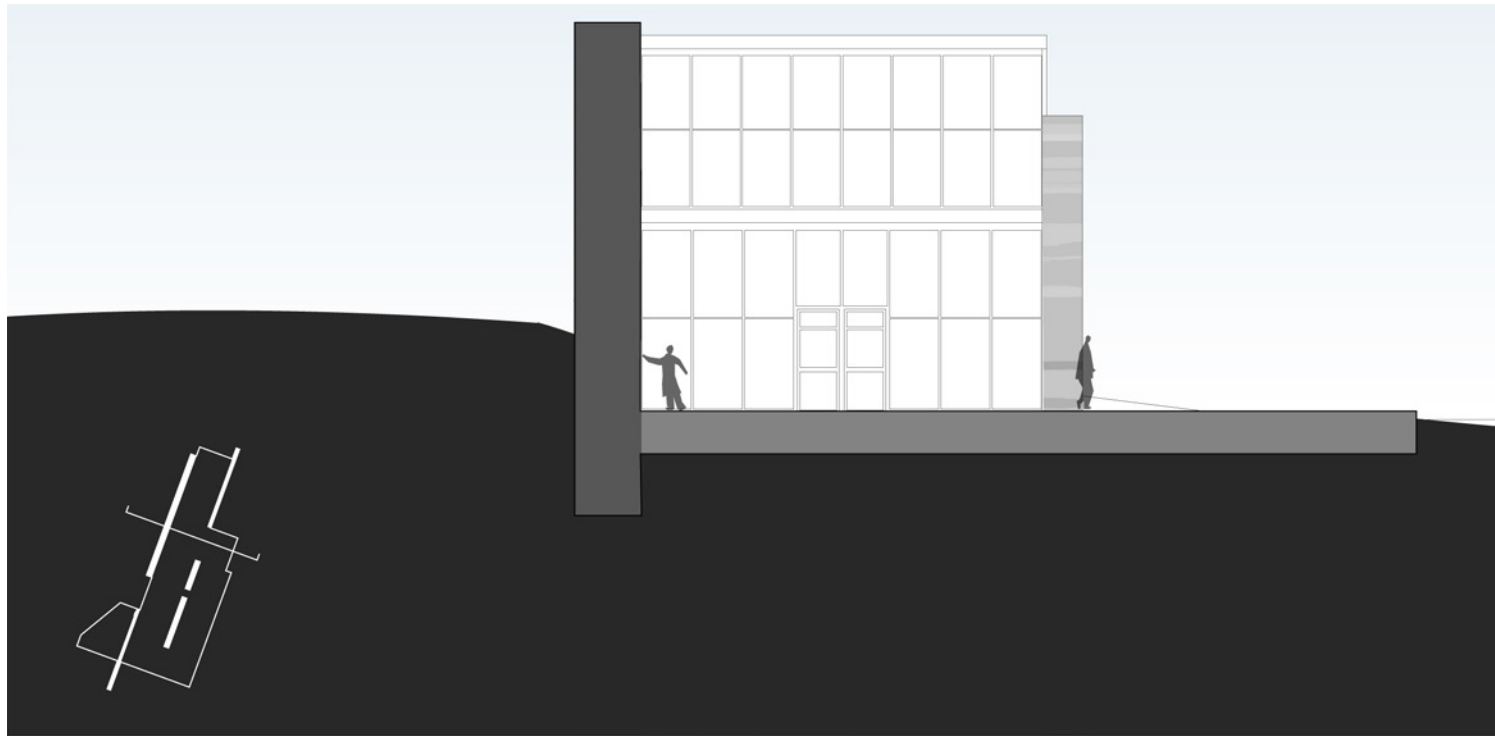
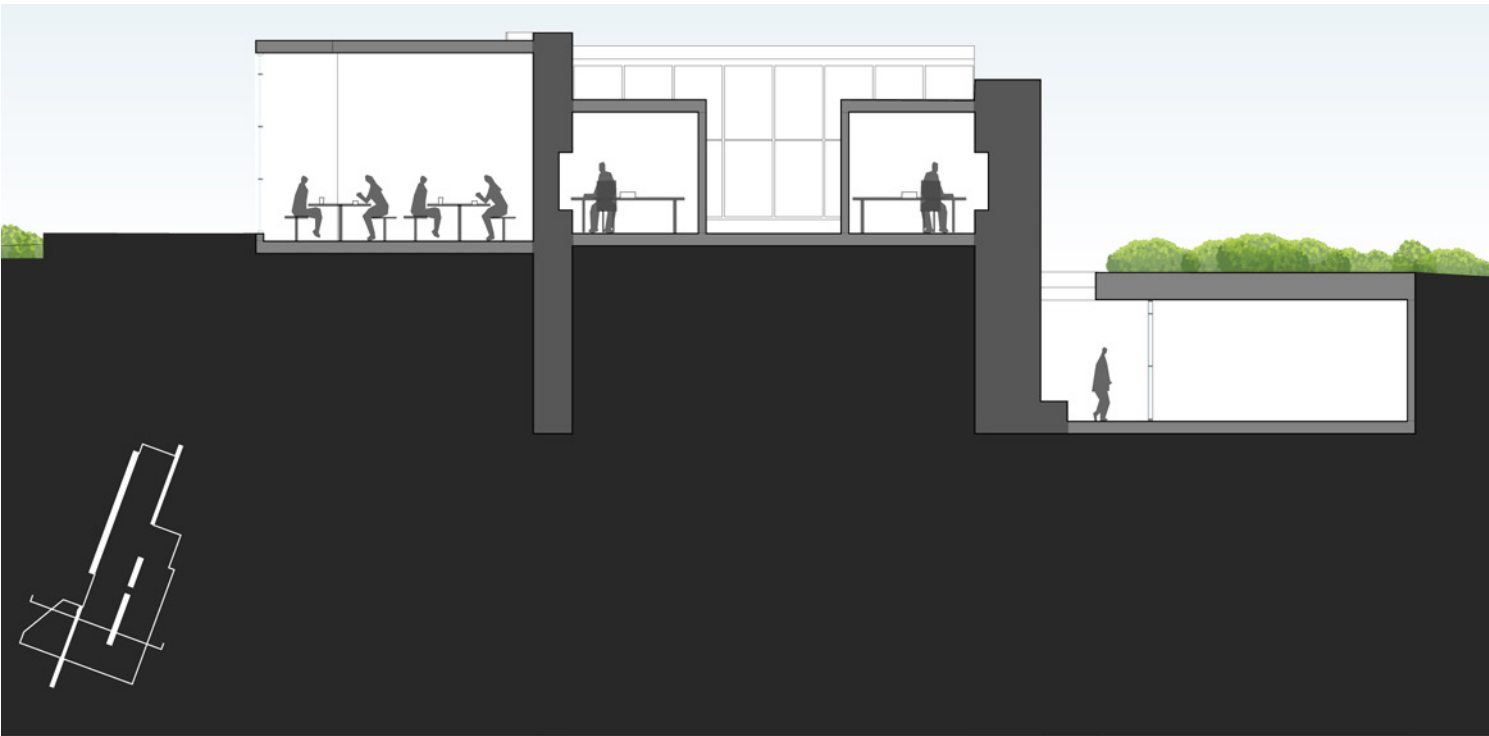




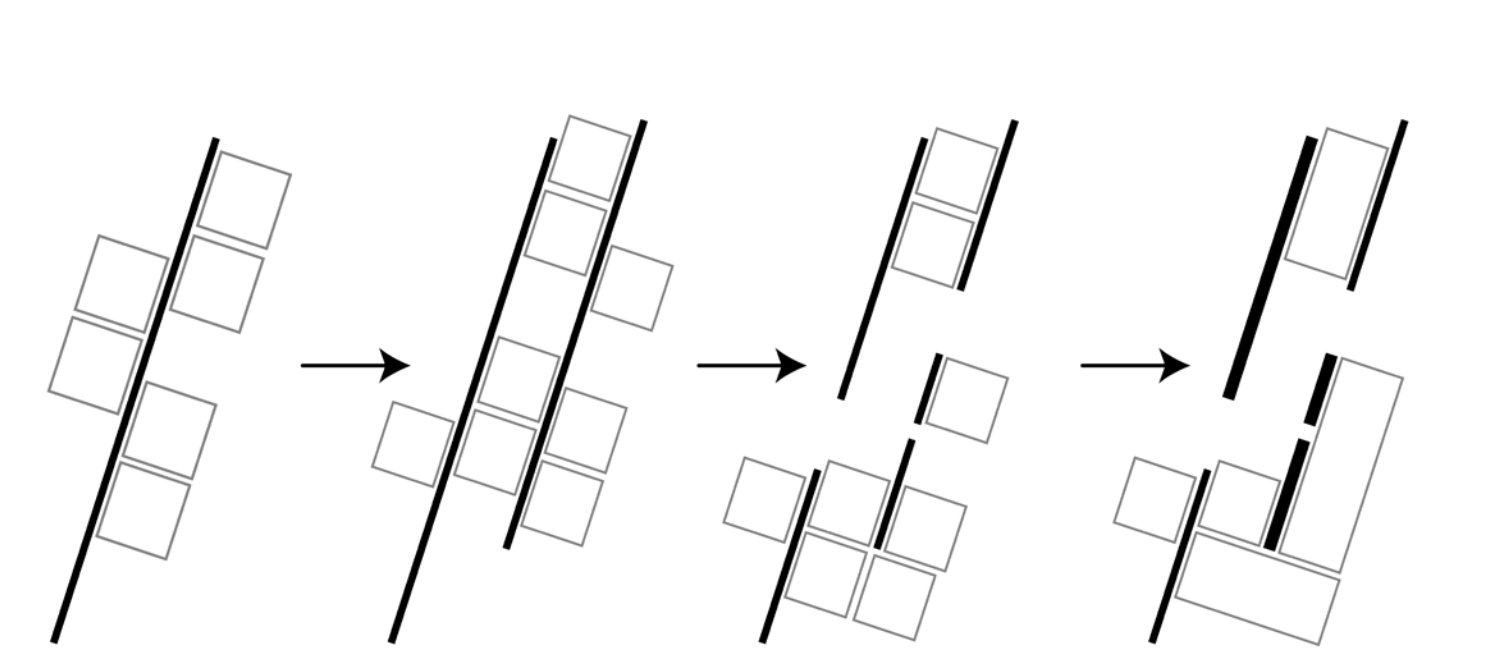
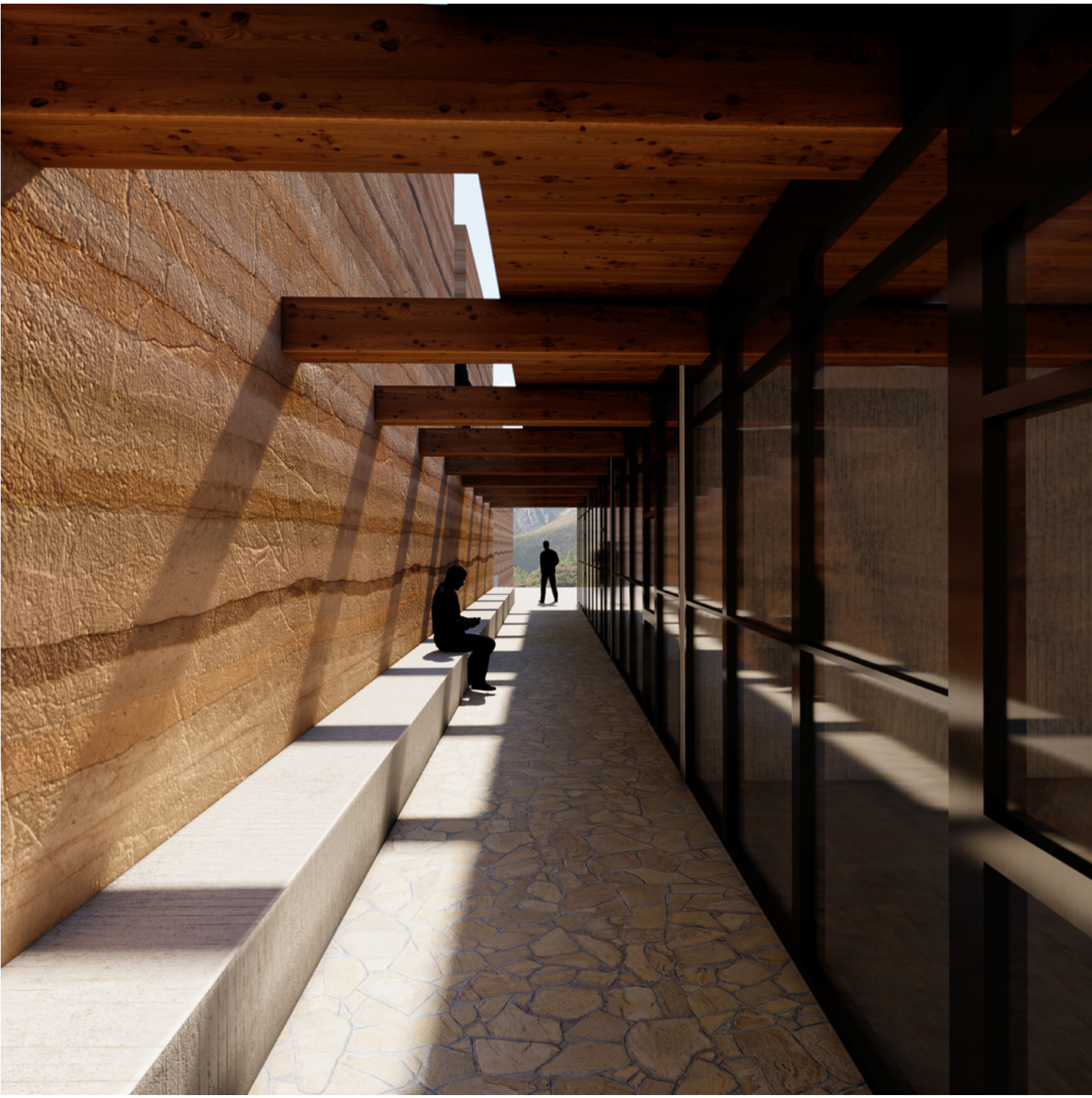












Form Finding





# BIOSPIKE

Biospike tackles the issues of energy generation and food cultivation within the domain of Fly Ranch. It is located in Nevada, just a few miles from where the annual Burning Man festival is hosted. The program of the project came from the Land Arts Generator Initiative with the goal to tackle sustainable concepts through an artistic lens.

One of the key features of Fly Ranch is Fly Geyser which is full of rare biological species of algae that can only grow within the warm pools of the area. Algae is an incredible energy source, having the potential to be converted into bio-fuel and food. Biospike aims to harness this process.

The spikes reach up similarly to how the geyser shoots out of the landscape. The exterior structure was designed with the intention of human interaction. Like many burning man sculptures, these climbable spikes give individuals a never before seen view of the surrounding landscape. The core of these spikes hold the Bioluminescence algae in clear containers so that they can photosynthesize in the day and release a faint glow in the evening.

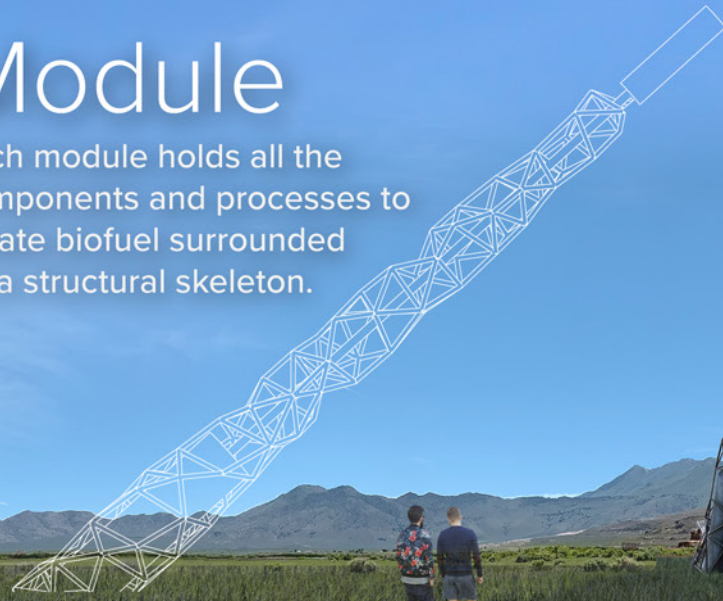
Spring 2020  
LAGI 2020 Shortlist





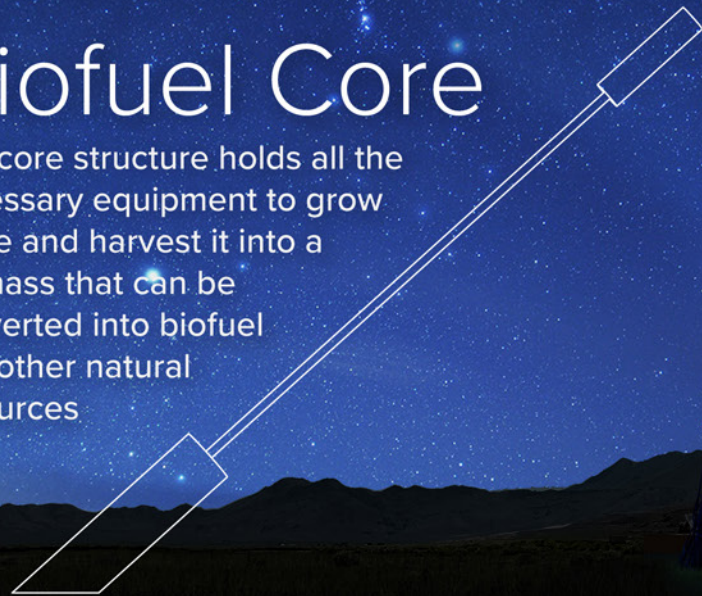
# Module

Each module holds all the components and processes to create biofuel surrounded by a structural skeleton.



# Biofuel Core

The core structure holds all the necessary equipment to grow algae and harvest it into a biomass that can be converted into biofuel and other natural resources





## Algae Growth

The tip of the biospike is where the algae uses the sun to photosynthesize and multiply to a point where they can be processed and turned into biofuel.

## Bioluminescent Algae

Bioluminescent Algae is the main organism that is used to create fuel and organic light.

## BioFuel Production

The containers hold 22,653.5 Liters of water/algae solution that can create 11,321 Liters of Biofuel per Cycle.

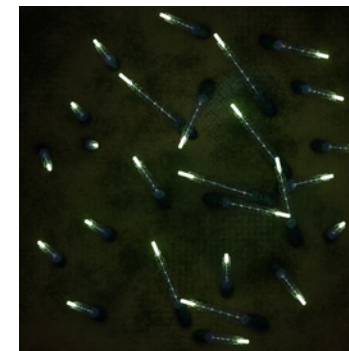
## BioFuel Processing

The algae is brought down to the base of the spike where it is processed. The algae is aerated with CO<sub>2</sub> and the sediment sinks to the bottom of the spike where it can be collected and the rest of the algae can be pumped back to the top to continue the process.

Agitation Tank

Air Tank

BioFuel Harvesting





# PHILLY FOLD

The Charter High School for Architecture + Design (CHAD) was founded by the Philadelphia Chapter of the AIA in 1999 but sadly the school closed at the end of the 2019-20 school year. The goal of this project was to design a new school that is concentrated on Design and Visual Arts Education.

The Philly Fold focuses on the student experience through the organization of classrooms, the circulation between those classes and the access to natural light. This was accomplished by having a single loaded corridor that pivots around a central stair which acts as the main element of vertical circulation. This leaves the public space on the ground floor making the spaces more open to the surrounding community.

The entrance is through a central courtyard that takes the visitor under the central wing which then opens up into the courtyard. The west wing is held up by exposed concrete columns which start to reveal the structural nature of the building. Each floor is a concrete waffle slab that is exposed in every way. Since the structure provides the needed strength for overhangs, the first floor is set back from the street, bringing more emphasis to the upper floors. These floors are wrapped in a panel system that provides shading and also acts as a solar collection system on the facade to help mitigate the carbon cost of the building.

Spring 2021

In Collaboration with David Pintor



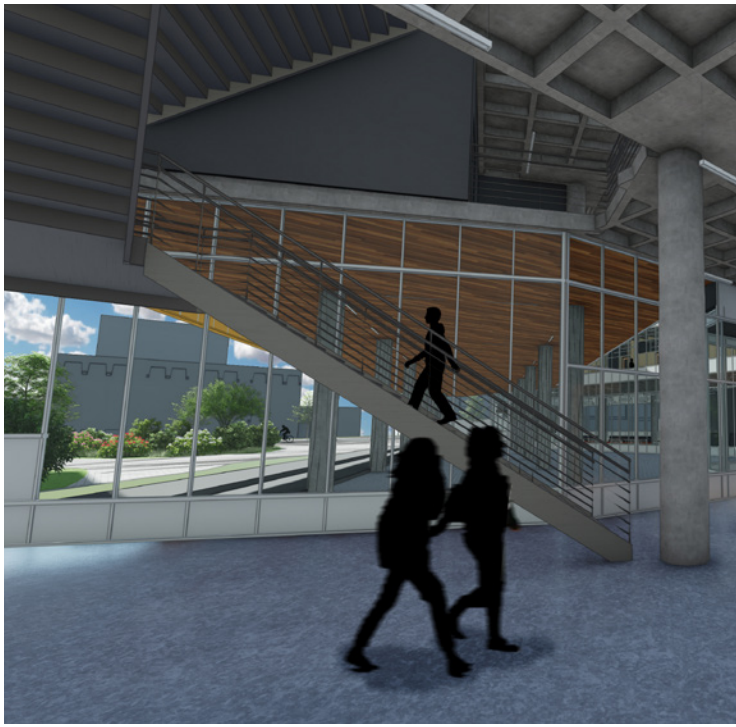
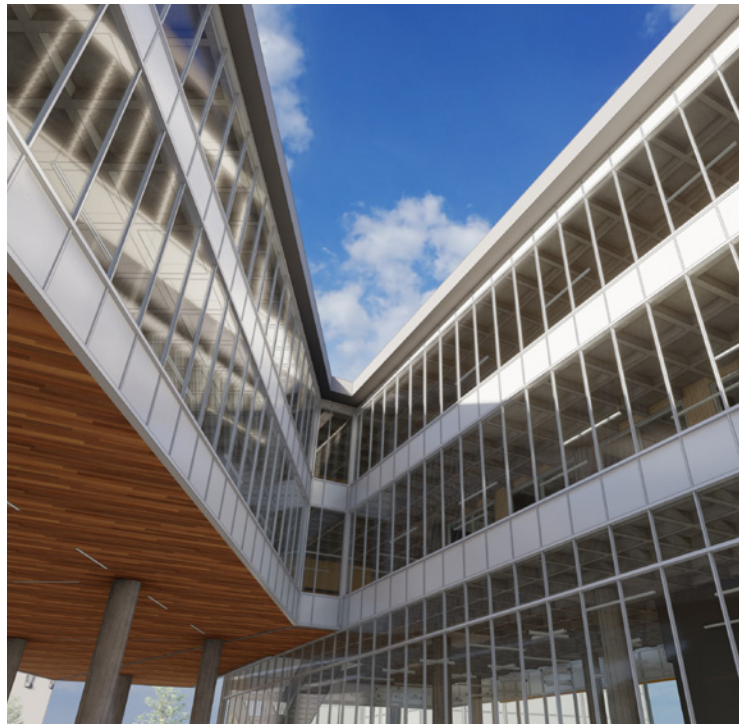
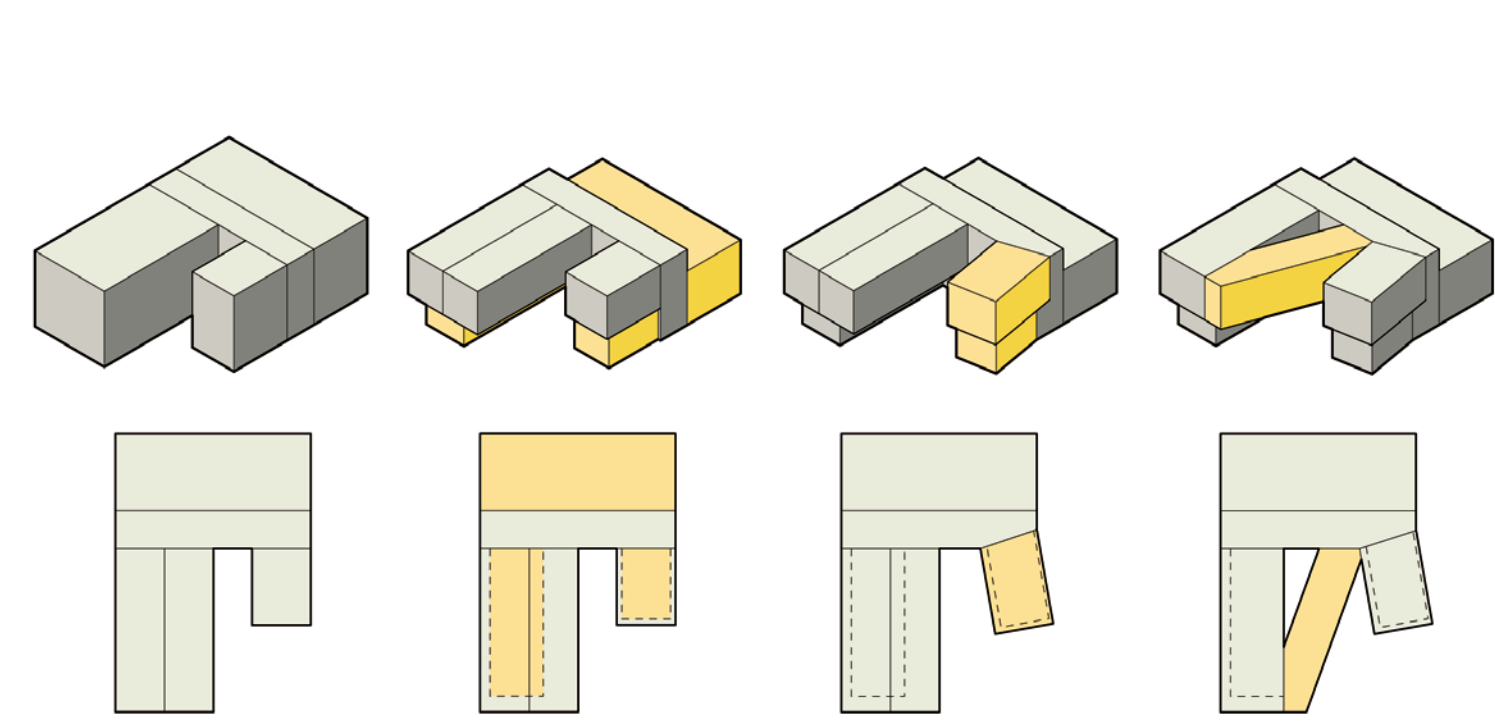




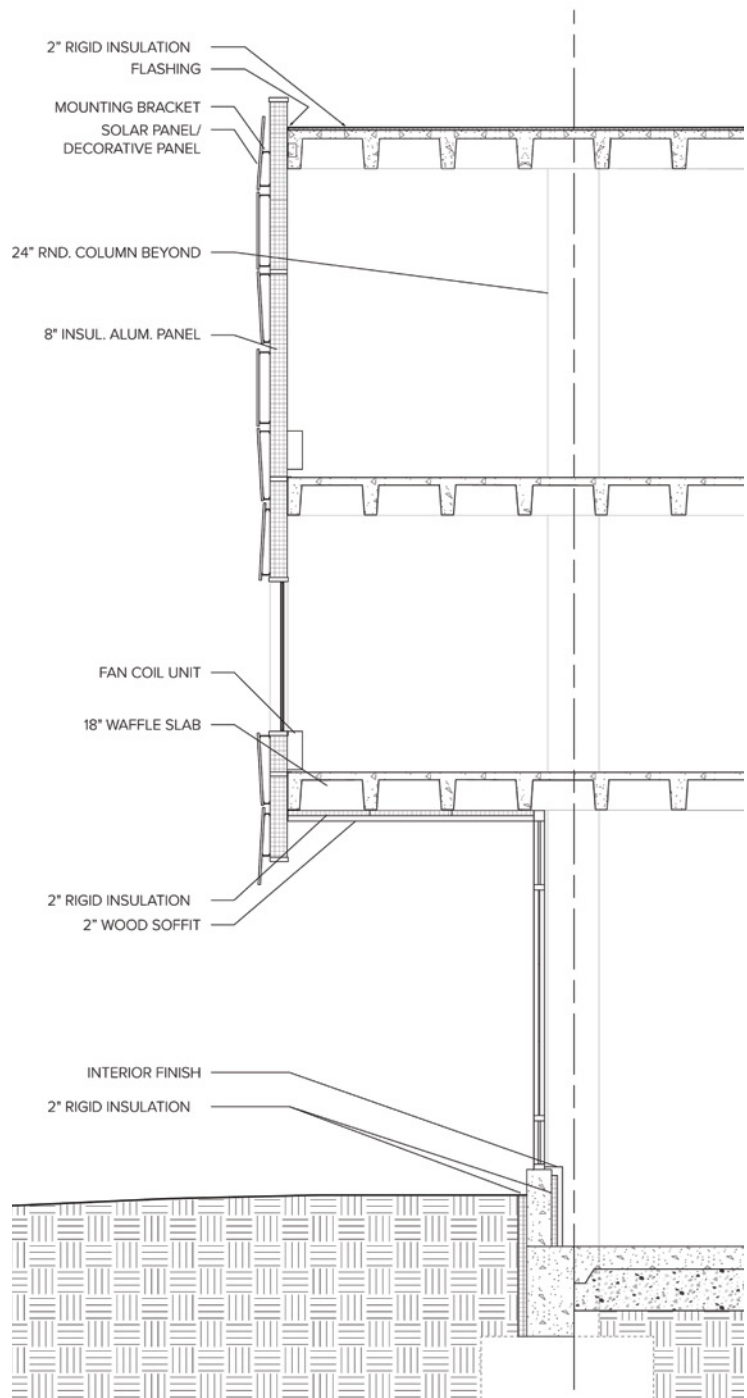
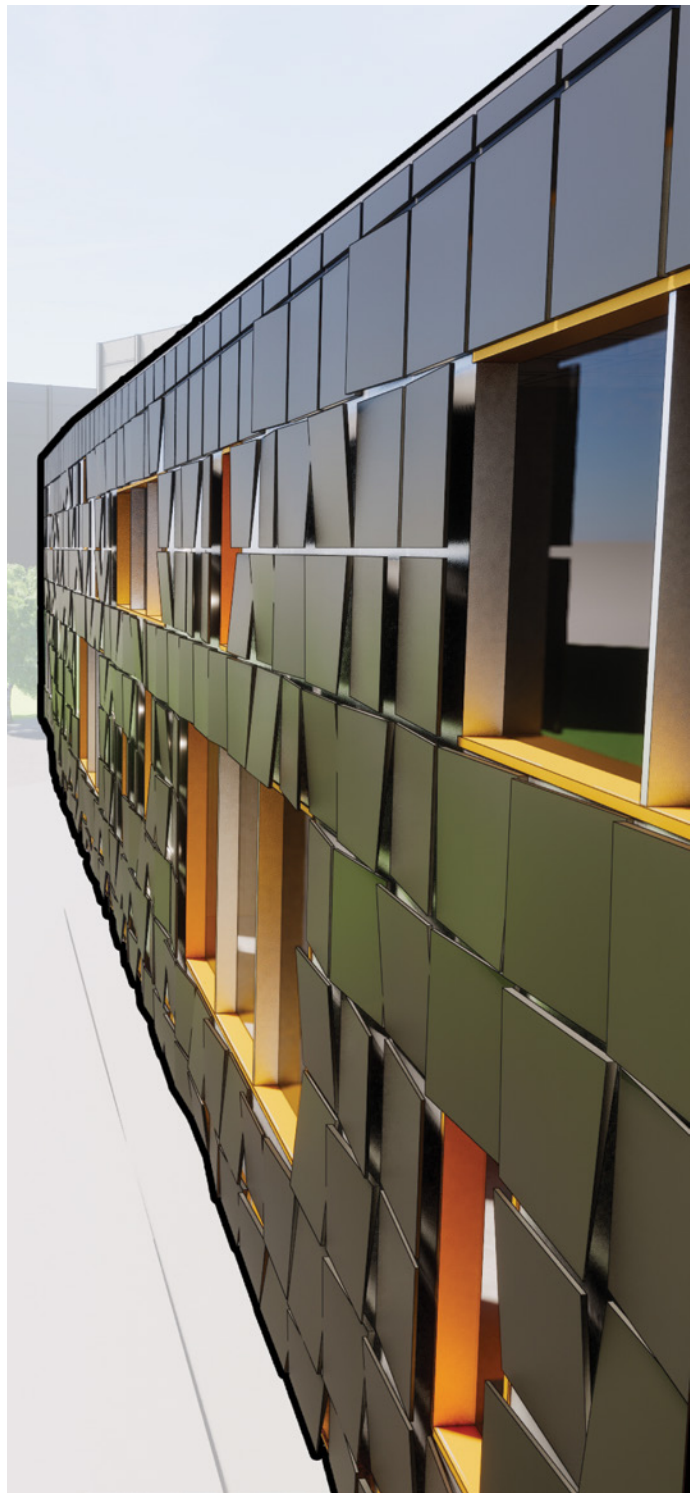




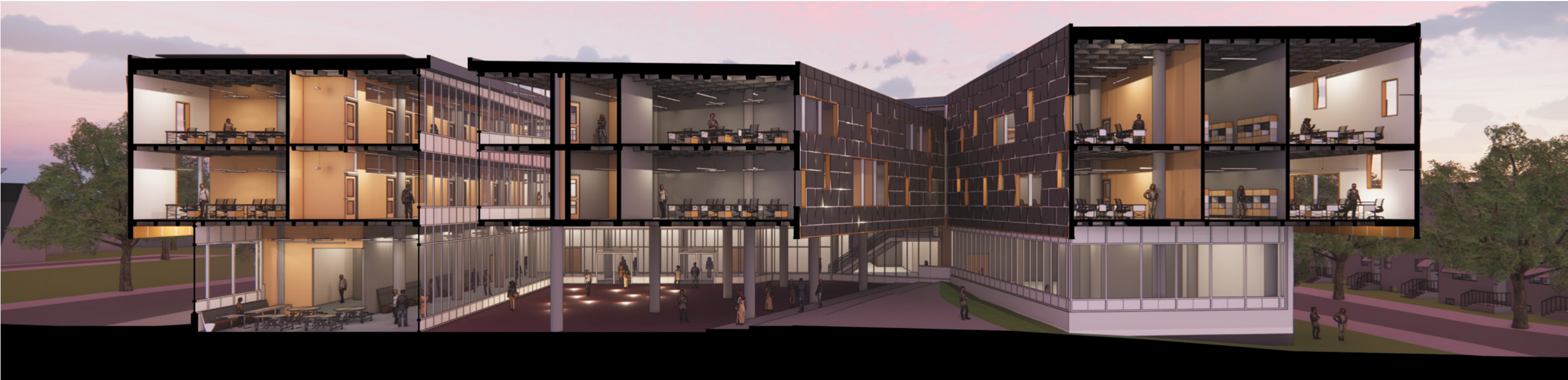














# ***THEATRICAL HOME***

This project evaluates how circulation and program can intersect with one another to make a cohesive project. The site is located on the 1500 block of South Street in Philadelphia.

Multiple topics were tackled with this design such as understanding of the hierarchy of public vs private, commercial vs residential, and circulation vs program. These topics helped emphasize the site's interior courtyards which distinguished the program elements from one another.

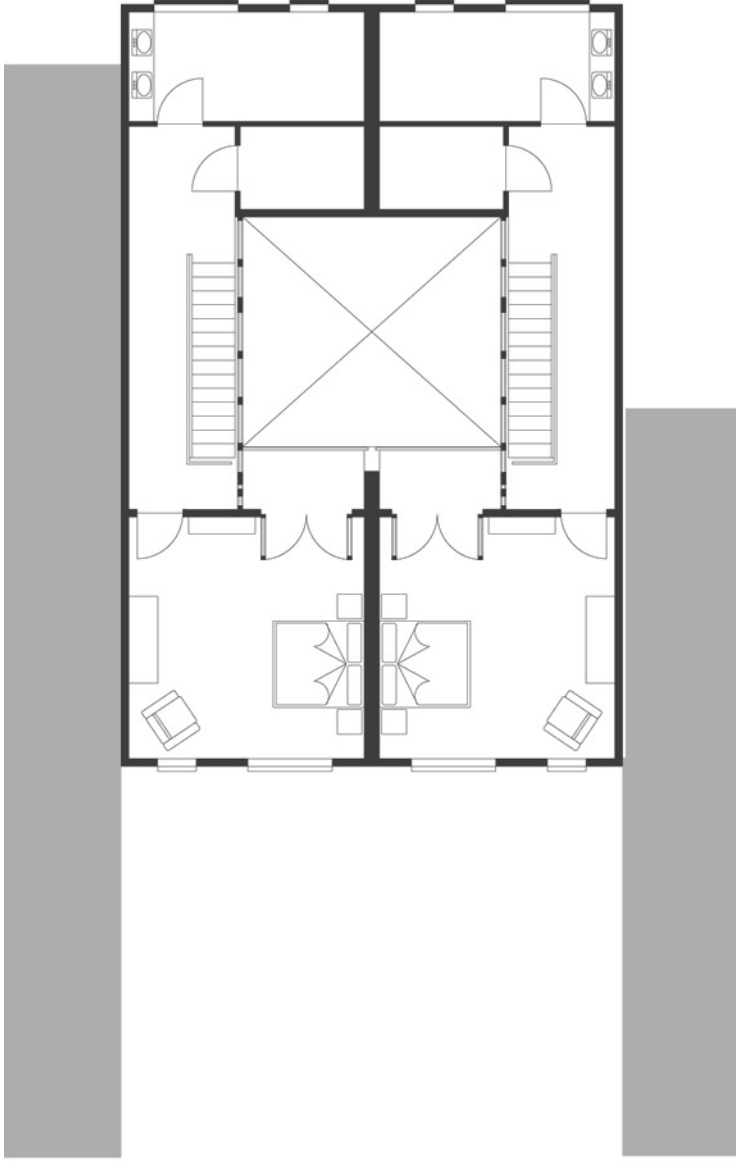
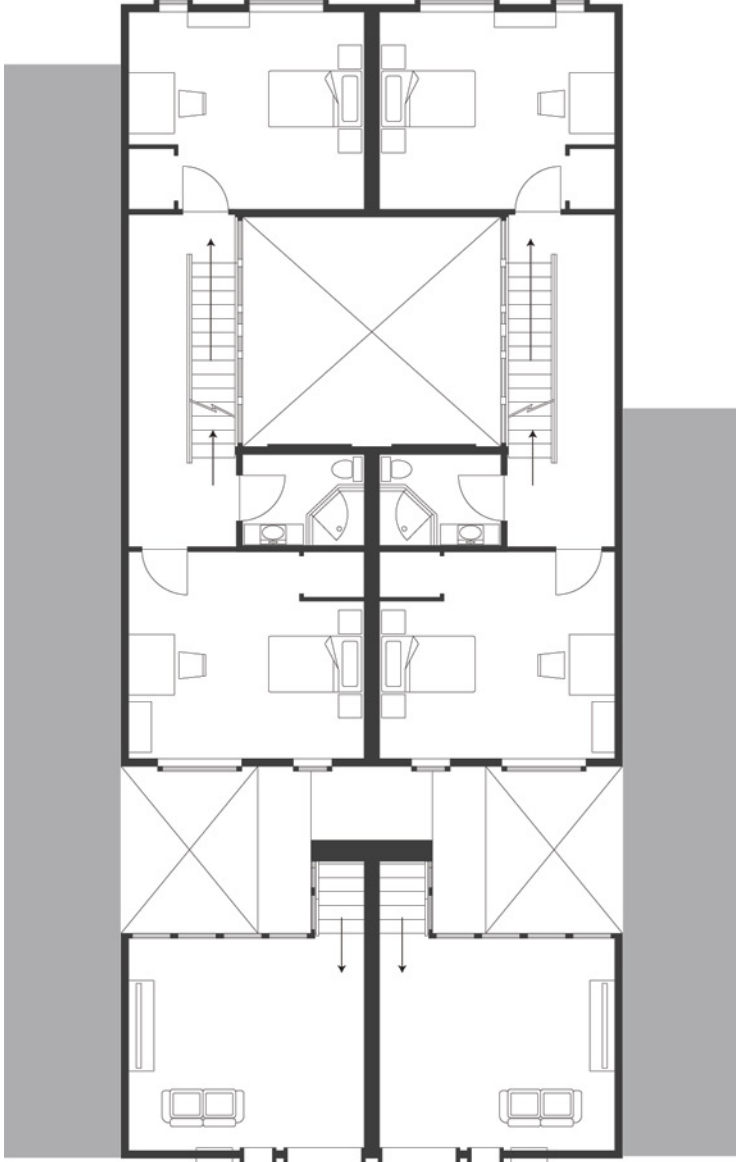
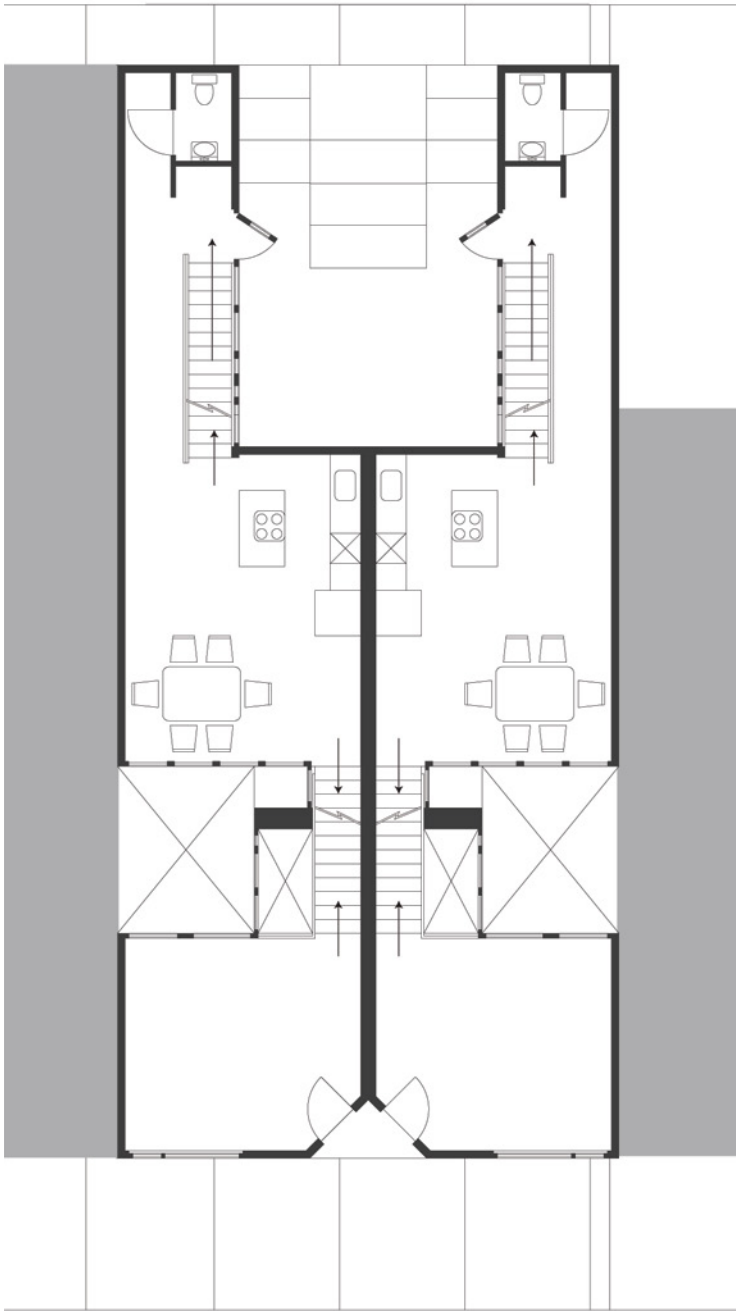
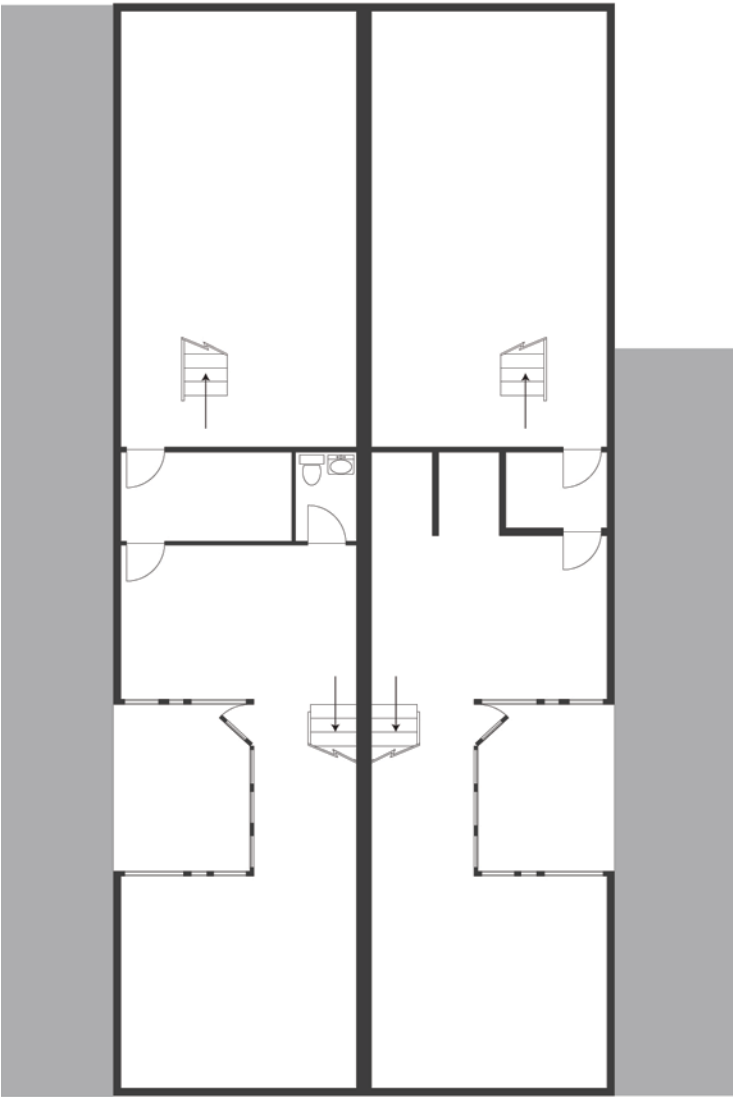
The southern face is slightly lower to allow light to enter the courtyard and private spaces located deeper in the site.

There was also a drive to create a building that fit into the dynamic facades of South Street. Directly across the street from the site is an old theater. The row home's facade is an homage to the projection boxes of theaters, projecting the views of South Street into the site.

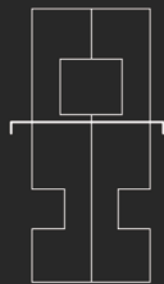
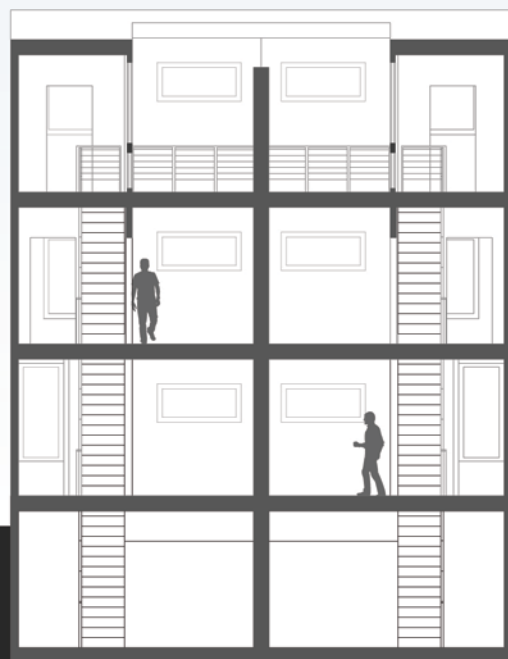
Fall 2018



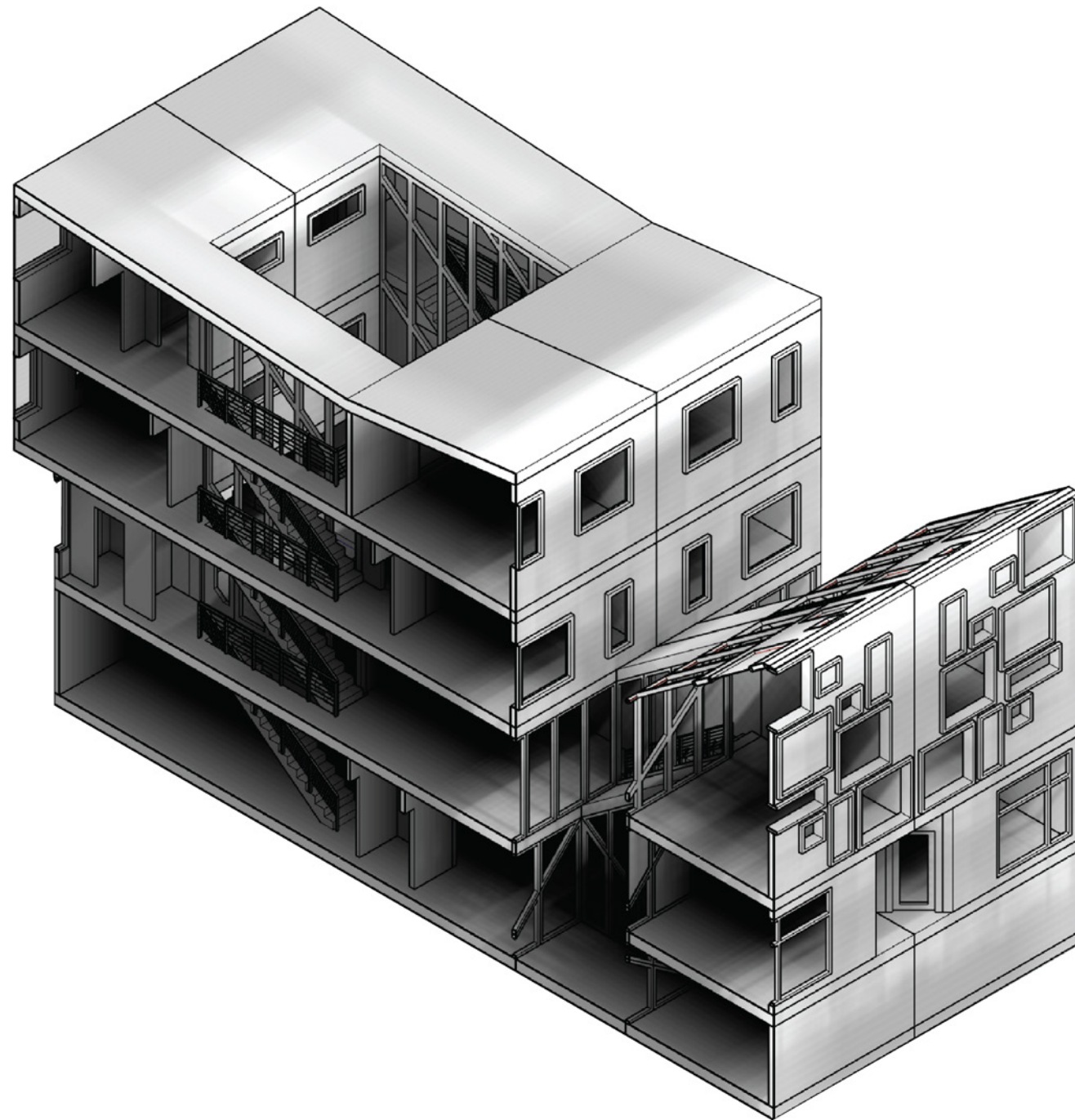
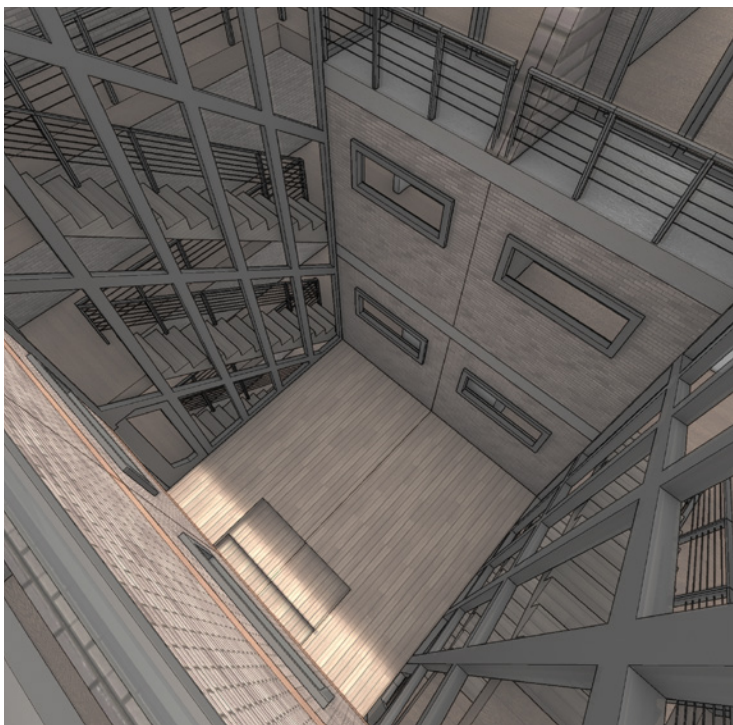














# RECYCLE GENERATE BUILD

The goal of the Recycle Generate Build (RGB) containers is to get communities engaged in recycling by creating a beautiful, modular installation made by the people for the people. The project's goal was to not only create a space that gave a piece of art to the communities but also showed how important recycling is to the community.

The basis of this project is three modules with different programs. Following the recycling theme, shipping containers were chosen due to their ease of transport and flexibility. Each module holds an element of the recycling process. First plastics are brought in from the community, sorted, and shredded into smaller raw material. The material is then brought over to the generation station where the raw material is formed into different objects. The last stop is a place for the community to decorate and finish their creations.

In a time where we need to be living more sustainable lifestyles, projects that encourage recycling, reuse, and creativity are more important than ever. The RGB containers serve as a way to not only bring communities together but also as a way to educate communities about what they can do to lead more sustainable lives.

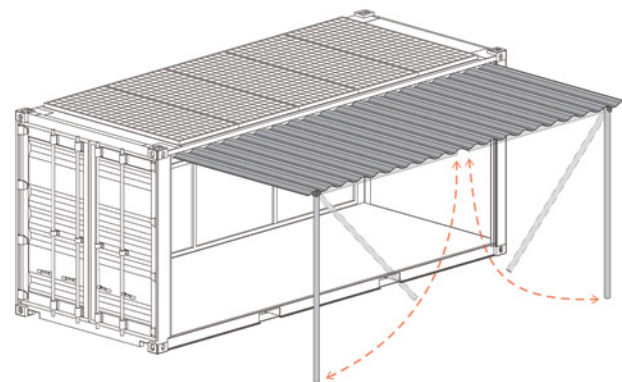
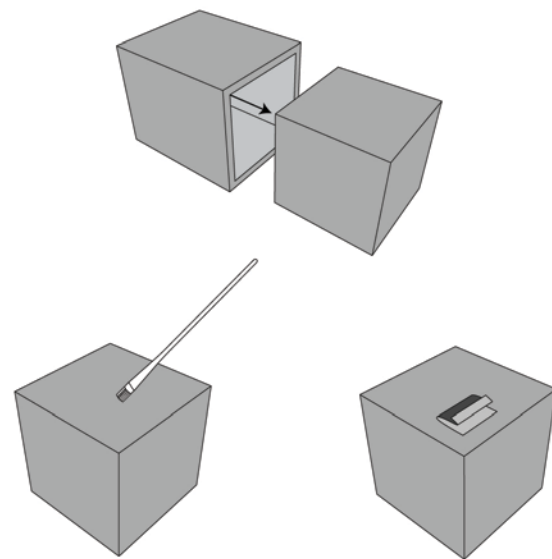
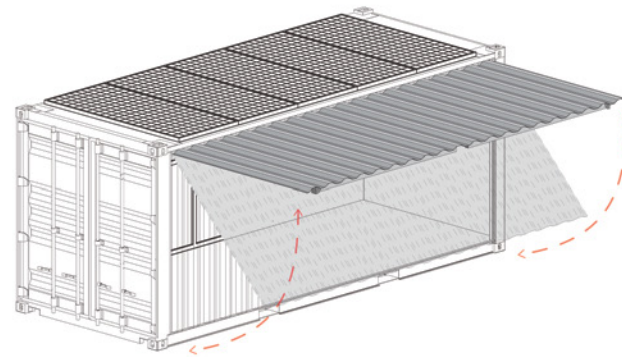
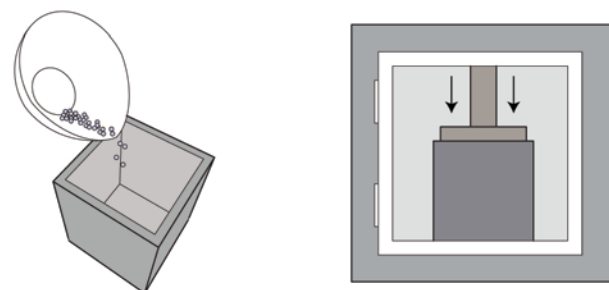
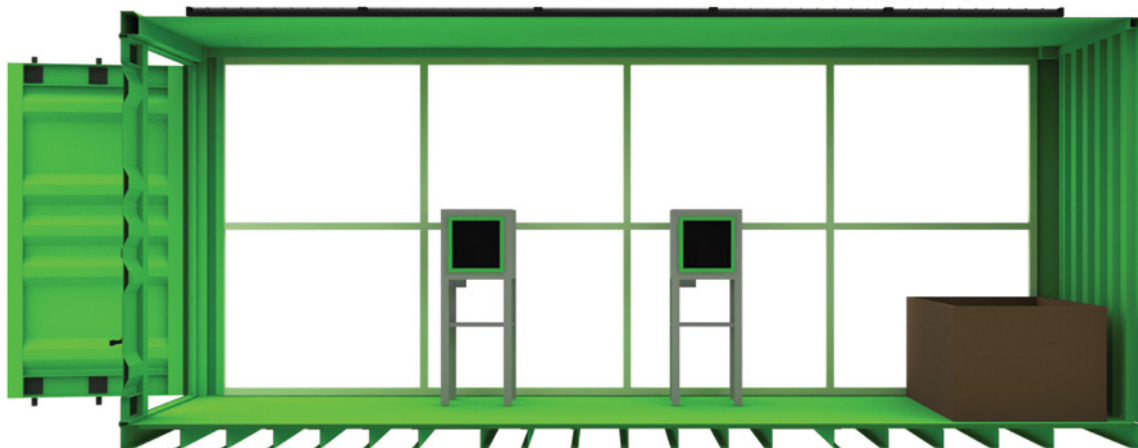
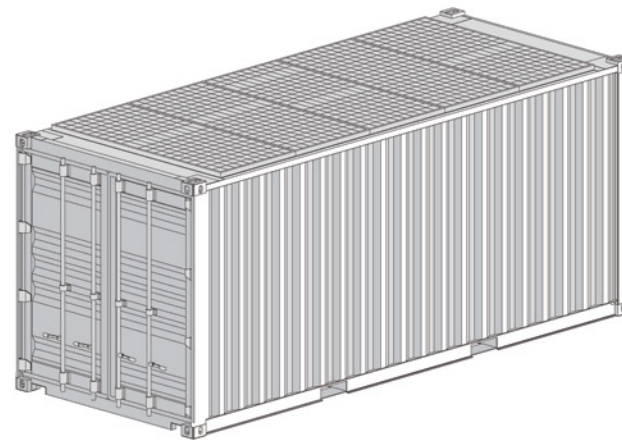
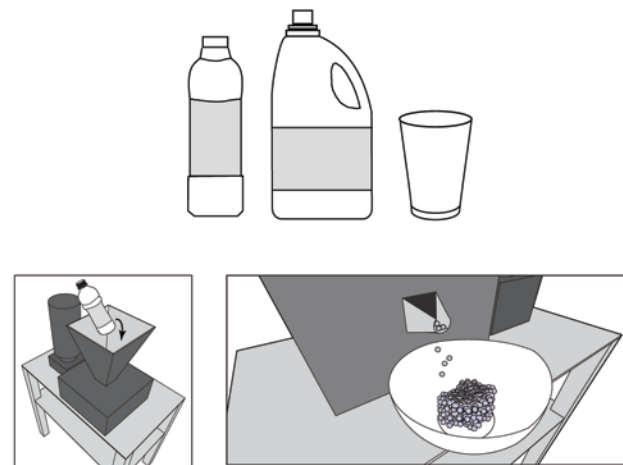
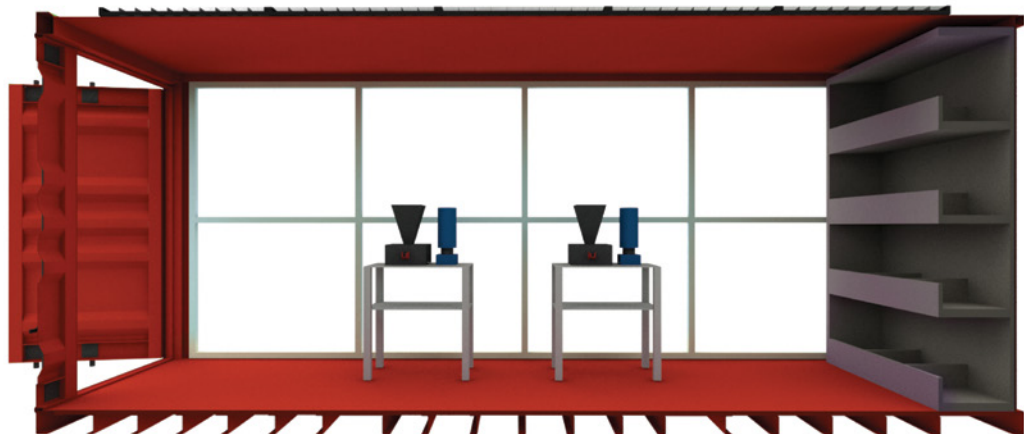
Summer 2019

Colorado Museum of Outdoor Art Design/Build  
1st Place

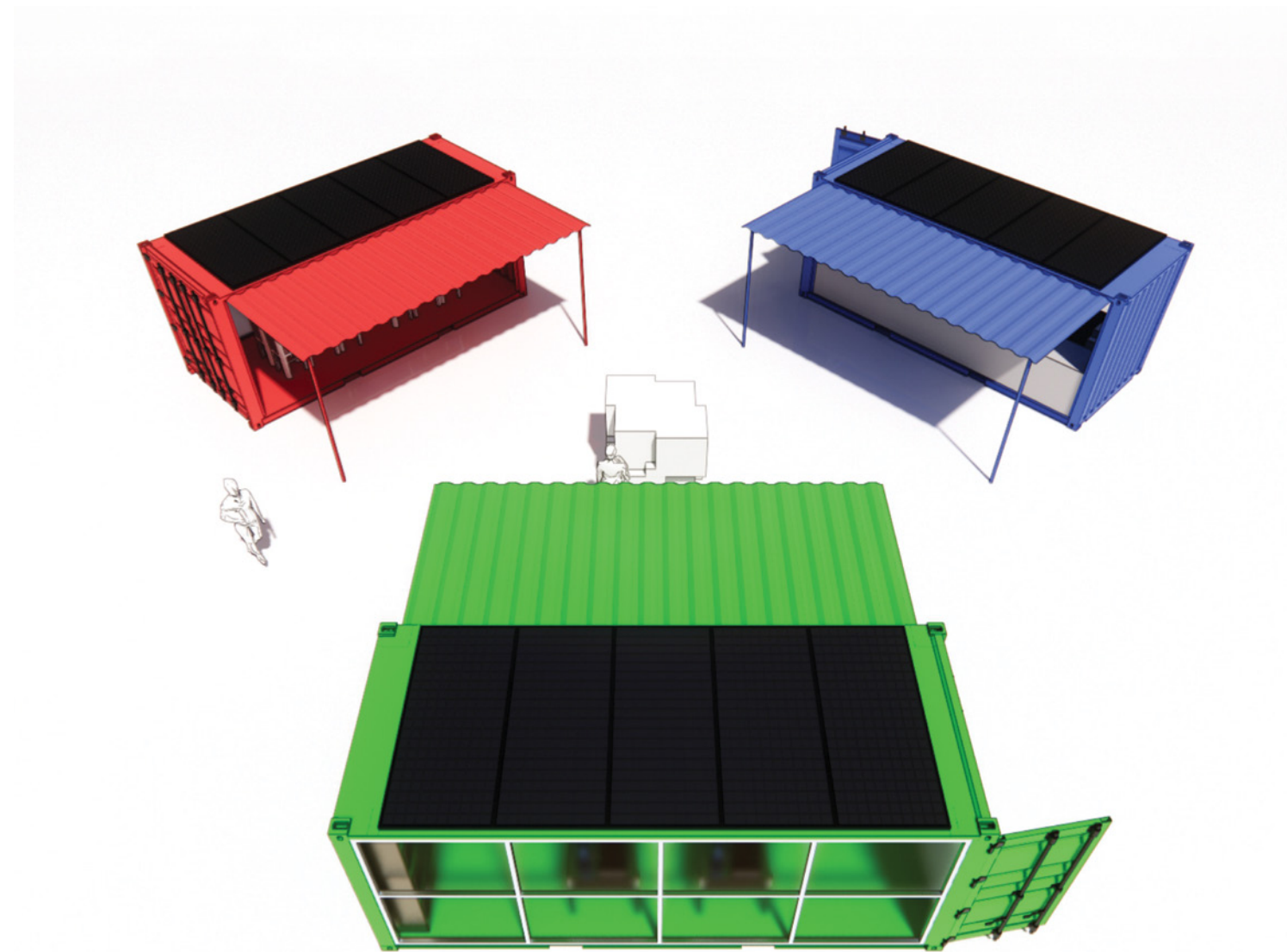
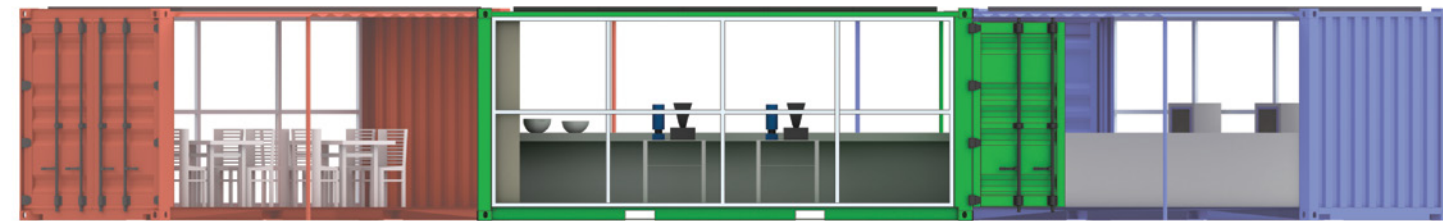
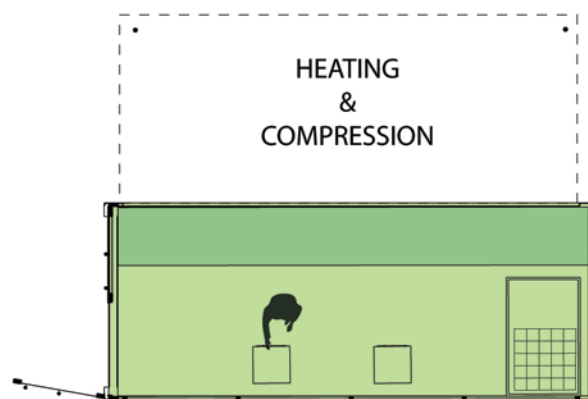
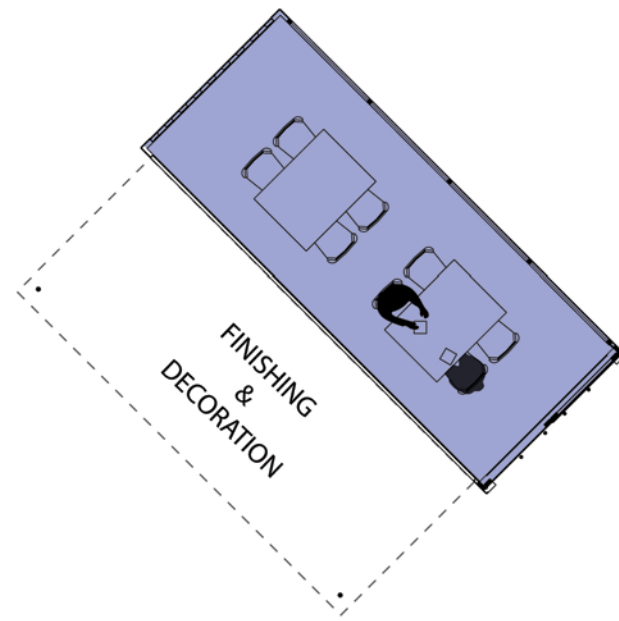
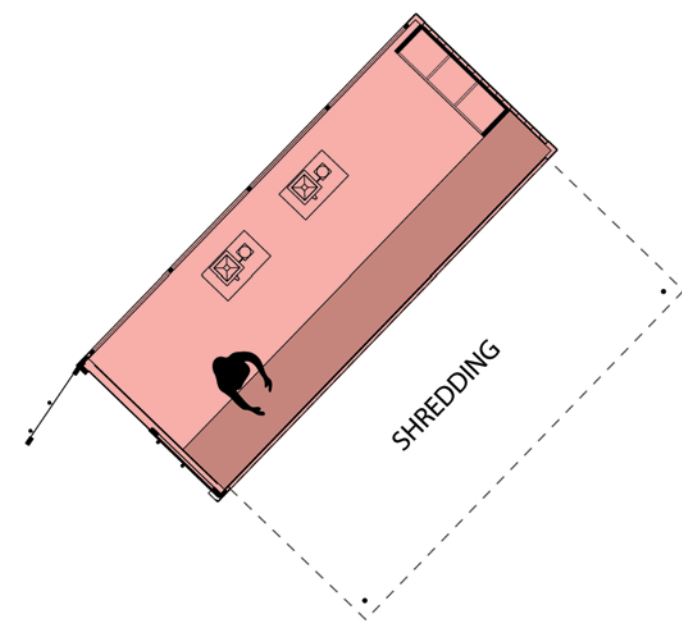
In Collaboration with David Pintor, Sharrod Parker, Avery Matthews, Emma Frecon













# HERRINGBONE CHAIR

There is a beauty in using basic materials to make handmade furniture. The Herringbone Chair was made out of two pieces of steel bar, one sheet of plywood and steel hardware to bind the components together.

In total there are 16 pieces that together make a solid seat. The individual parts were designed in a way where they could be flat packed in a box for mass production and transportation with minimal assembly.

The seat and backrest are made out of multiple pieces of plywood. The original board was ripped down to smaller strips and re arranged into a herringbone pattern to emphasize the end grain of the wood.

Fall 2019

