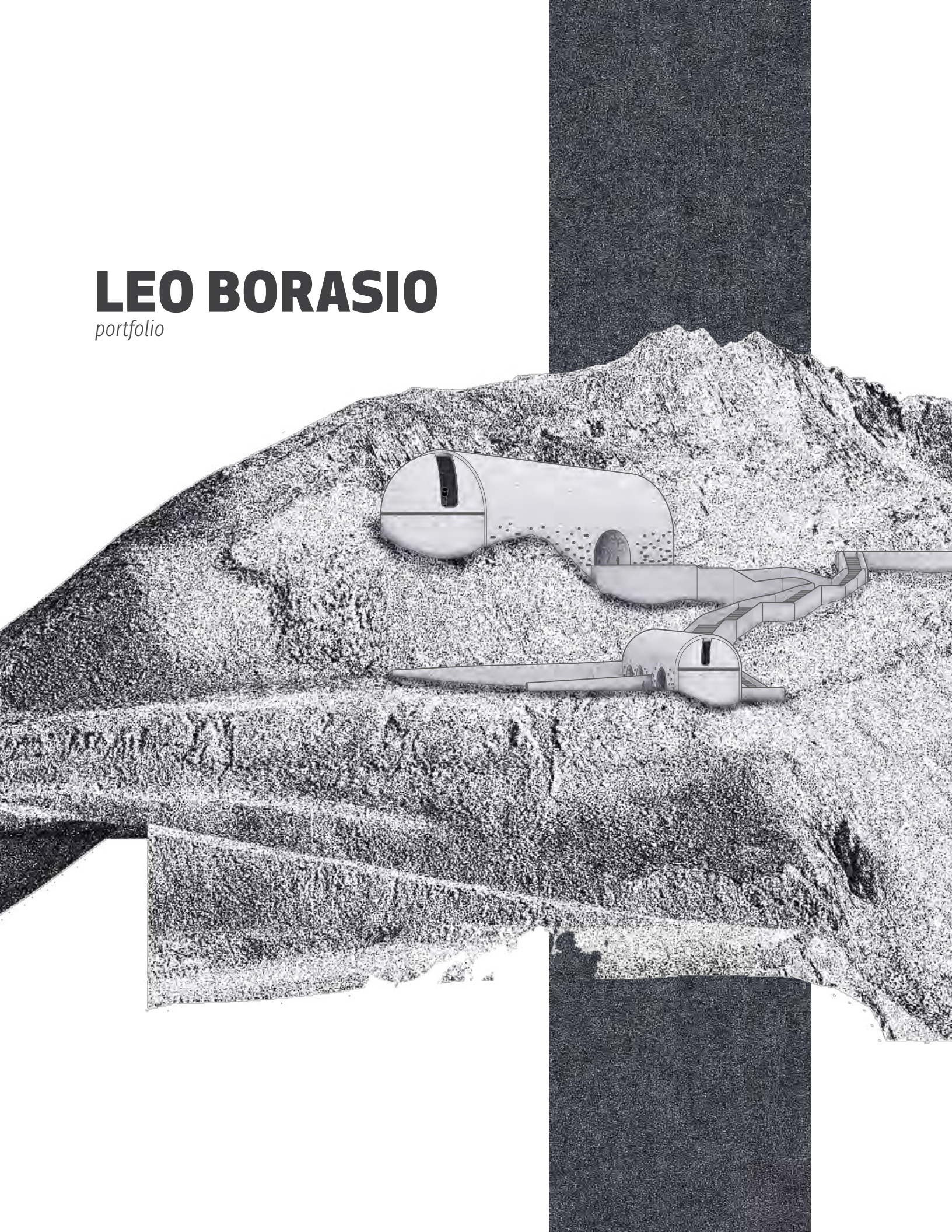


# LEO BORASIO

*portfolio*





*About*

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## LEO BORASIO

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As a designer, Leo strives to create beautiful projects that are of their place, focused on their users, and conceptually driven. Inspired by his background in Anthropology, he strives to create structures that will last the test of time and be ever adaptable.

Working with Colorado Building Workshop to construct the Holt-Watters Field Camp, Leo is inspired to work on projects from initial design through completed construction - with an eye for architectural detail and quality in the forefront. With a passion for fabrication, making, and craftsmanship, he strives to get his hands dirty, and execute his designs.

## CURRICULUM VITAE

### Experience

#### KEVIN HIRTH CO.

*Research Assistant*

2023 - Present

3D Modeling, Digital Drawing, and Photography of significant, strange, and unique buildings around the Denver metro area for Kevin Hirth's upcoming book: Normal Denver.

#### JUNKYARD SOCIAL CLUB

*Co-Founder, Director of Design*

2020 - Present

Developed and launched the Junkyard Social Club: a non-profit Adventure Playground, Cafe, and Event Venue. Led artists and volunteers through design and construction of the 'Junk' Playground. Designed and developed the Junkyard logo, brand, signage, website, and marketing. Designer for cafe tenant improvement, and fabricator for all new cafe mill work and concrete counter tops. Barista for the community on Saturday mornings.

#### UNIVERSITY OF COLORADO DENVER

*Project & Fabrication Lead*

2021

Lead for the initial fabrication of the "Stacked" project. Designed with 3 fellow March students in graduate Studio II, Stacked is a permanent installation within the College of Architecture lobby that renovates the existing security desk. Project management included further design and development of shop drawings. Fabrication included constructing and welding the large structural steel frame.

#### LB DESIGN CO.

*Freelance Creative*

2018 - 2021

Graphic design, web design and development, and brand building for local startups and non-profits. Design of investor focused pitch decks that led to millions in seed funding. Creation of brand identity standards and guidelines. Selected clients include: Buderflys Earbuds, Build a Robot, Silver Buffs, The Hopper c3, Violaee.

#### THE HOPPER

*Intern - Communications Manager - Director of Branding & Co-Founder*

2017 - 2020

A Startup focused on bringing an innovative Science Museum, Restaurant and venue to Boulder CO. Began as a communications intern focused on digital marketing and web development and was elevated to Director of Branding within 18 months. Assisted with re-branding efforts from previous name to "The Hopper." Designed and Developed the company's websites and pitch materials. Worked on the client-side with local architects to design and develop the adaptive-reuse of an existing print-shop warehouse.

### Education

#### UNIVERSITY OF COLORADO DENVER

*Master of Architecture Candidate*

2020 - 2023

Design Build Certificate with Colorado Building Workshop

#### UNIVERSITY OF COLORADO BOULDER

*Bachelor of Science: Strategic Communication - with Distinction*

2014 - 2018

Outstanding Graduate: College of Media, Communication and Information Class of 2018  
Technology, Art, and Media Certificate

*Bachelor of Arts: Anthropology - with Distinction*

2014 - 2018

Archaeology Field Camp Program: 2016

### Skills

#### SOFTWARE

|                   |                     |             |
|-------------------|---------------------|-------------|
| Rhinoceros        | Adobe Premiere Pro  | Elementor   |
| Revit             | Adobe After Effects | Wordpress   |
| Sketchup          | Adobe Lightroom     | Woocommerce |
| Adobe Illustrator | Sefaira             | HTML        |
| Adobe Photoshop   | Office 365          | CSS         |
| Adobe InDesign    | G Suite             | Mailchimp   |

#### FABRICATION

|                    |                  |
|--------------------|------------------|
| 3D Printing        | Drafting         |
| Laser Cutting      | Sip Construction |
| CNC Milling        | Concrete Casting |
| CNC Plasma Cutting | Welding          |
| Model Making       | Woodworking      |



*Selected Graduate Studio Works*





## HOLT-WATTERS FIELD CAMP

Cape Shirreff, Livingston Island, Antarctica



**Course:** Graduate Studio IV - Design Build Certificate  
**Instructors:** Rick Sommerfeld, Will Koning, Brendon "Shaggy" Neahusan

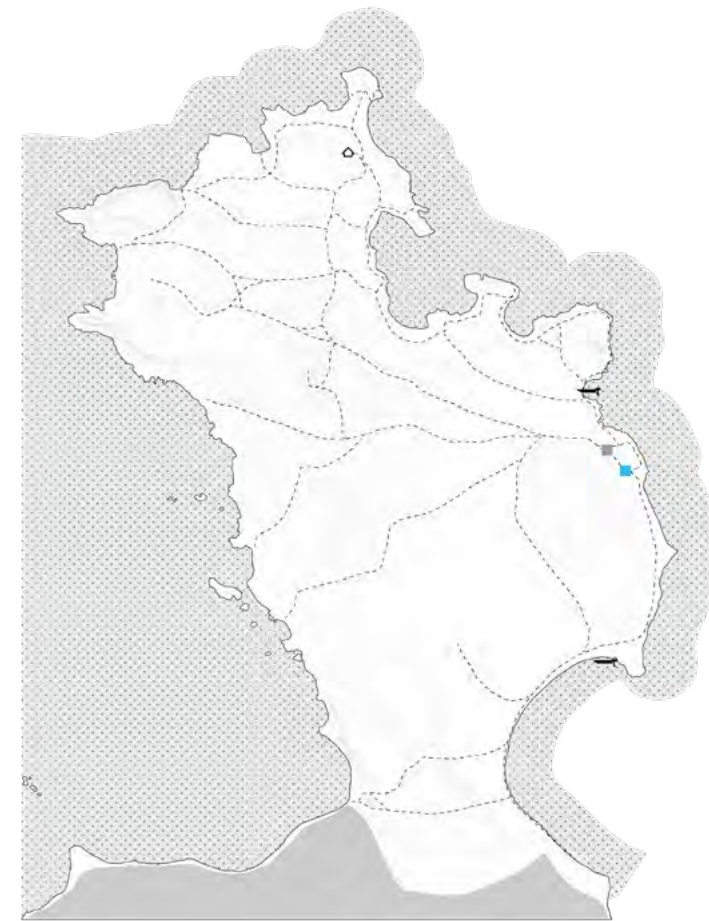
In the Antarctic Summer of 2020 George Watters, Ph.D., Director of the Antarctic Ecosystem Research Division (AERD) was stuck at home due to the pandemic, unable to make his usual trip to Cape Shirreff Field Station. It is at the Cape where he, along with his research team, conducts yearly research on pinnipeds, penguins, and krill. But rather than take this time off, George set his sights on a long term goal of his: to rebuild Cape Shirreff Field Station. During the normal field season, George was able to procure the funds to rebuild the camp, and put together an RFP highlighting the current camps state of disrepair.

The contract was awarded in Fall of 2021 to a joint team of OZ Architecture, Bespoke Project Solutions, and Colorado Building Workshop - the design-build program at the University of Colorado Denver. From here, 22 master of architecture students, 2 professors, and the premier antarctic contractor set their sites on designing a functional, eco-friendly, and beautiful field camp for NOAA Fisheries scientists in the place Shaggy claimed "architecture goes to die."

Taking on environmental extremes, logistical challenges, and an island full of penguins and fur seals, the team set off on a 16 week journey through Design, Development, and full pre-fabrication.

**Above:**

The completed Galley & Berthing Buildings built by a crew of CBW alumni. Phase 1 was completed February 2023. Chinstrap Penguins in the foreground.



Cape Shirreff is a small, mitten-shaped protected wildlife area on Livingston Island. Livingston Island is on the Antarctic Peninsula, just off of the Drake Passage. Here the snow melts in Summer, but rarely gets much above freezing. Cape Shirreff is only accessible by Zodiac, so large boats must anchor a mile offshore, and every piece of equipment must be brought in by raft, and carried up from the beach. Next to the USA base is Guillermo Man Station, the Chilean research station.

SITE ANALYSIS



Southeast View



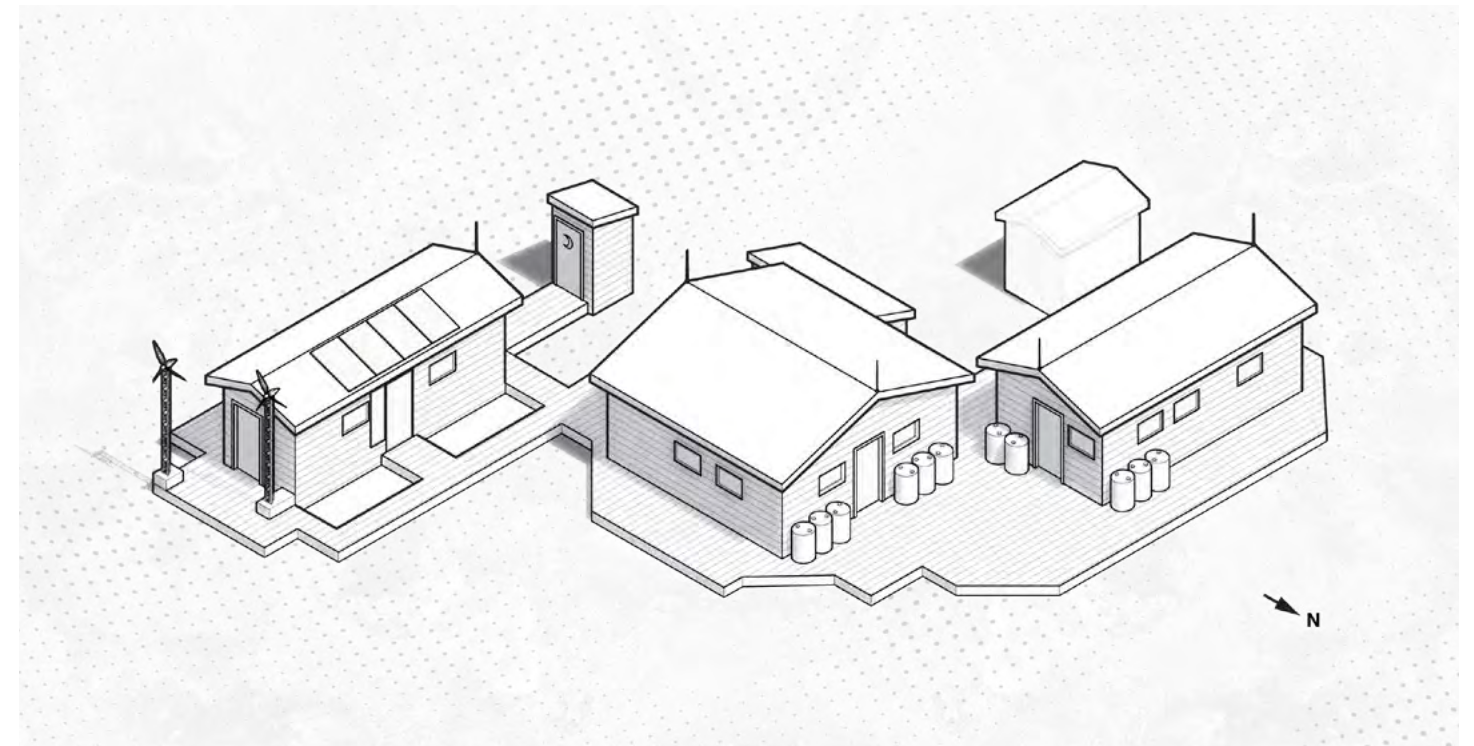
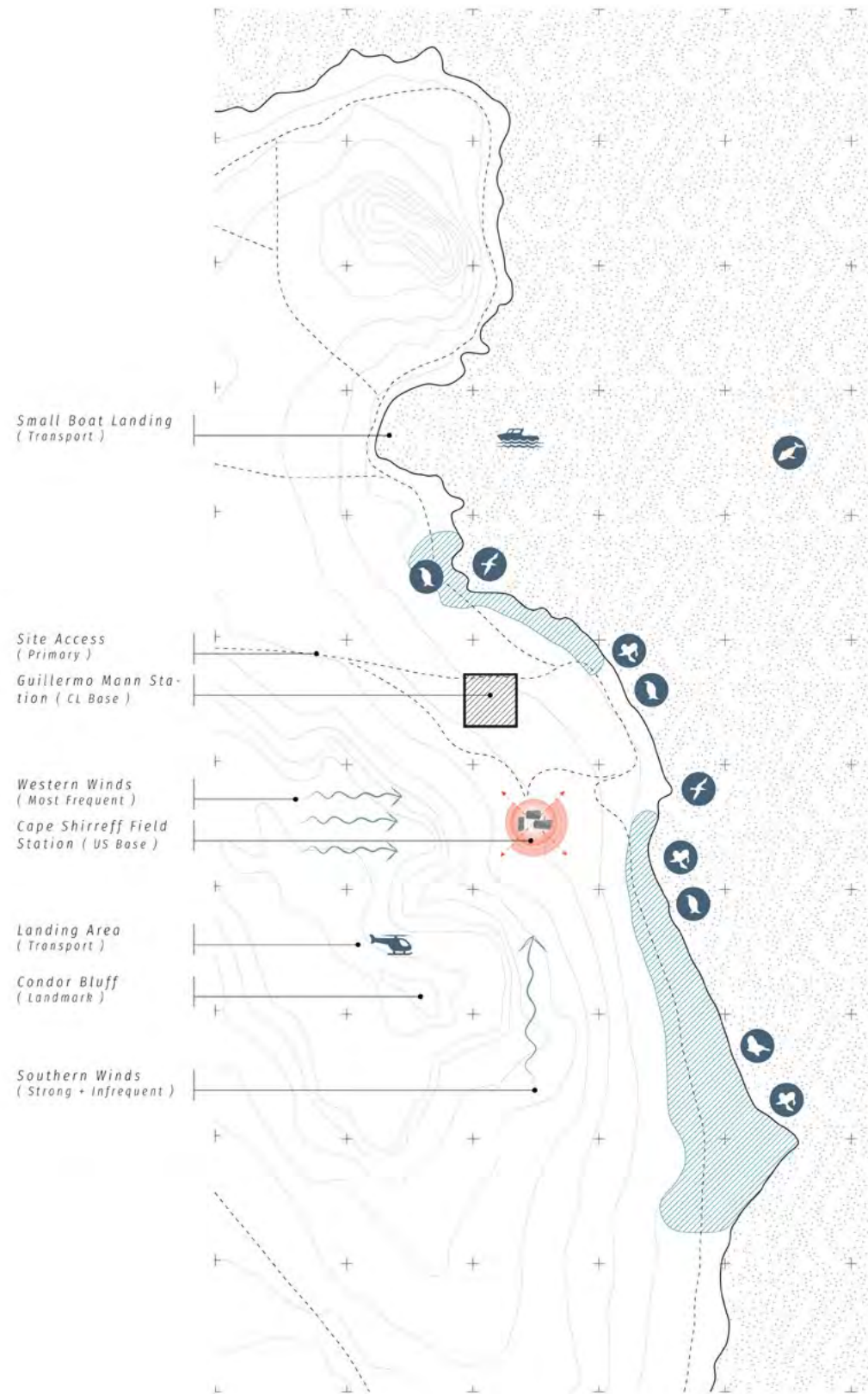
Southwest View



Northwest View



Northeast View



EXISTING FIELD CAMP

The existing Cape Shirreff Field Camp was built over 30 years ago - and while it has been a useful and important home base for the scientists, it was also falling deeply into disrepair.

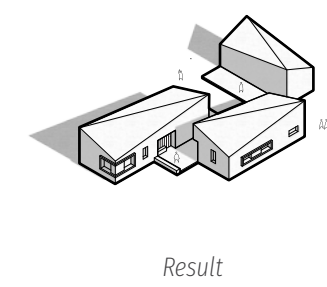
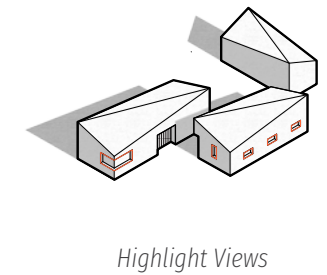
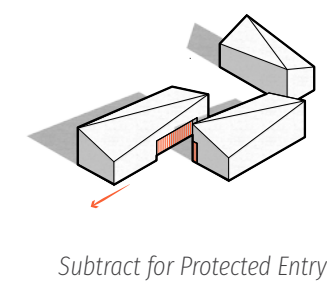
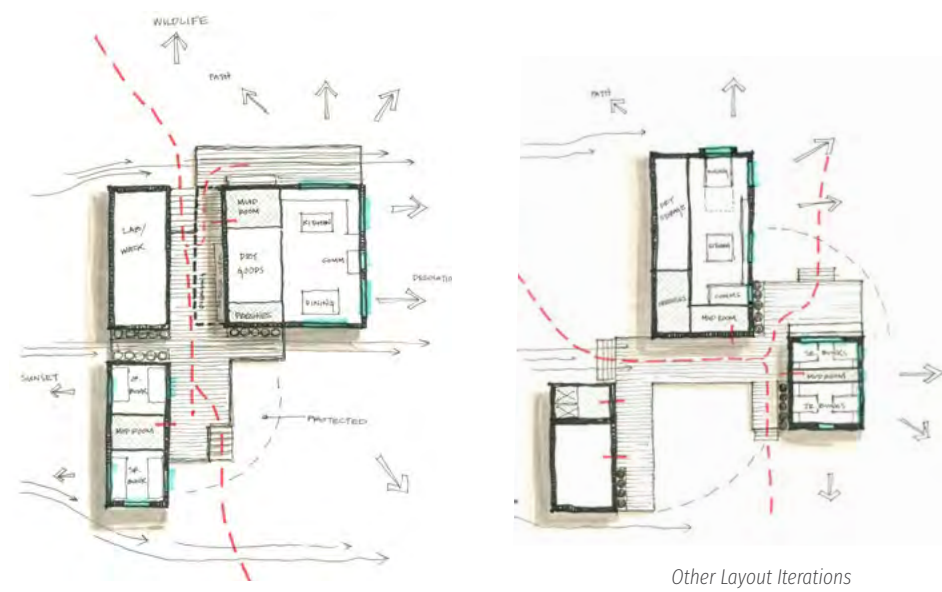
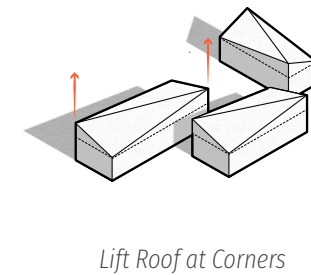
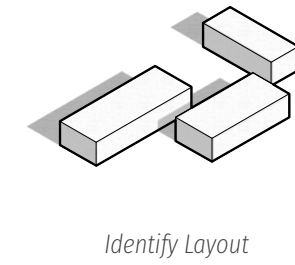
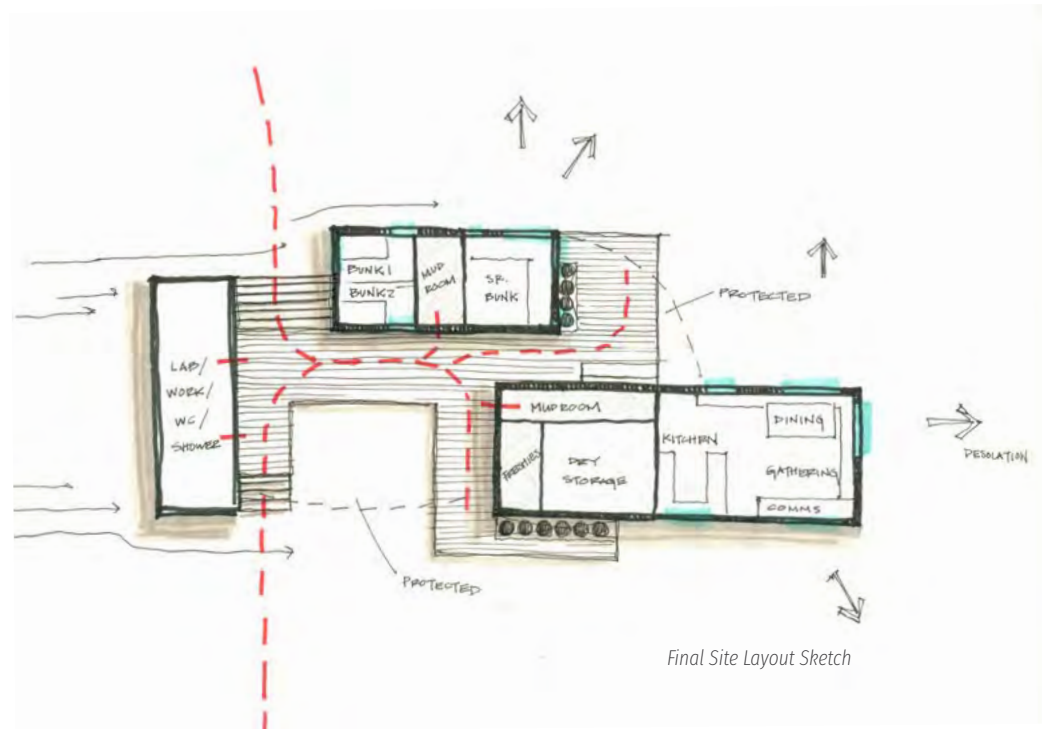
This extremely humid and moist environment led to large amounts of mold and decay within the camp. Scientists would spend significant amounts of time each season mitigating mold, painting exterior cladding, and fixing the camp. This was valuable research time that was being wasted on maintenance.

The CBW team quickly documented and recorded each piece of the existing camp, to more fully understand the requirements of these structures, and the unique environment they sit in.

Left:

The Cape Shirreff Site offers spectacular views in all directions. From this site Penguins, Fur Seals, Whales and more can be spotted. However the site also presents some extreme challenges. Winds from the West are frequent and frigid.

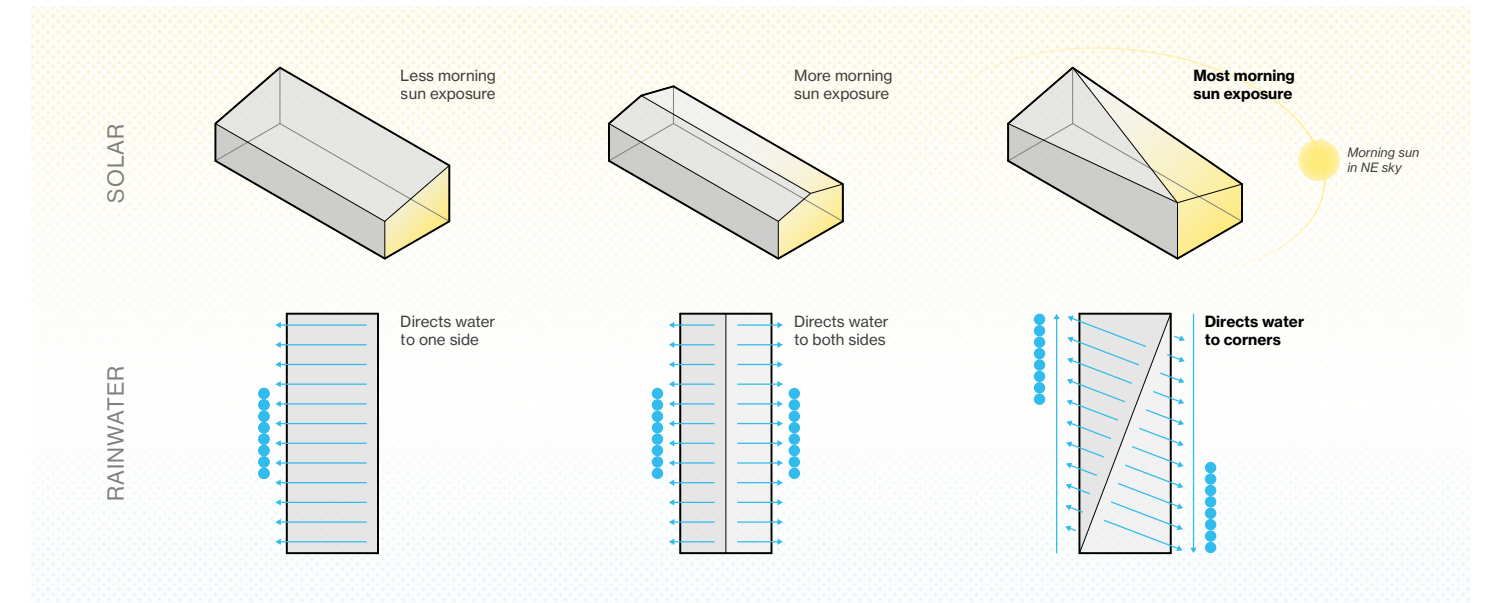




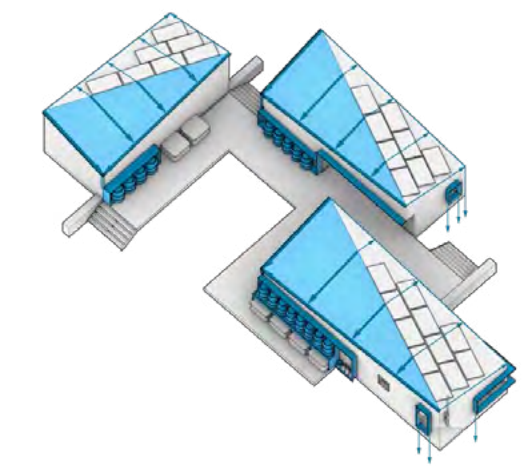
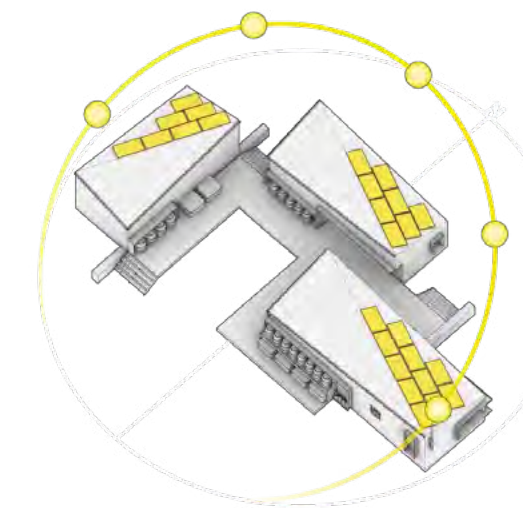
**CONCEPTUAL DESIGN**

In laying out the site, the clients has a rough napkin sketch of their ideal campus layout - one that blocked the winds from the west, while providing a protected central courtyard for outdoor research. Working with these desires, the team analyzed the surrounding context, choosing to prioritize views from the North to the South East. The final layout was chosen for its sense of privacy and release for the living quarters of the Galley Building.

Early in the process, the CBW team chose to make the roof form their primary architectural move. Inspired by the simple elevations and useful interior storage space, the twisted gable was chosen.

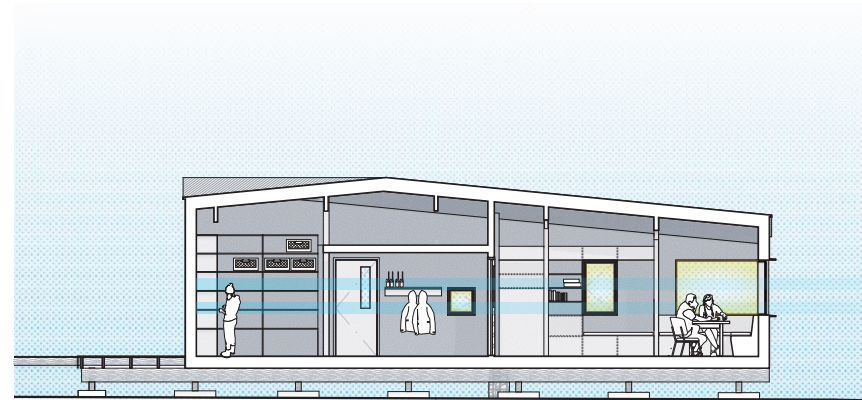
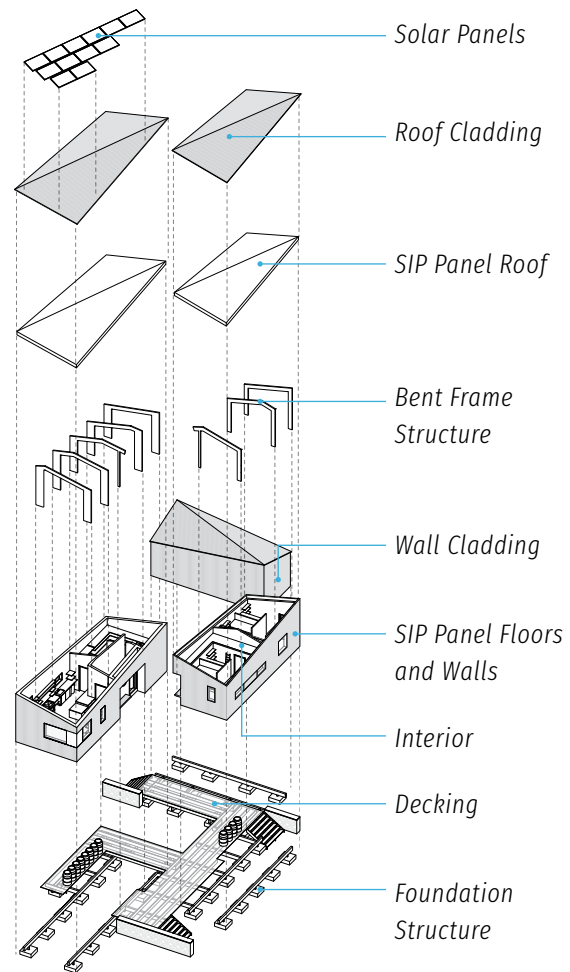
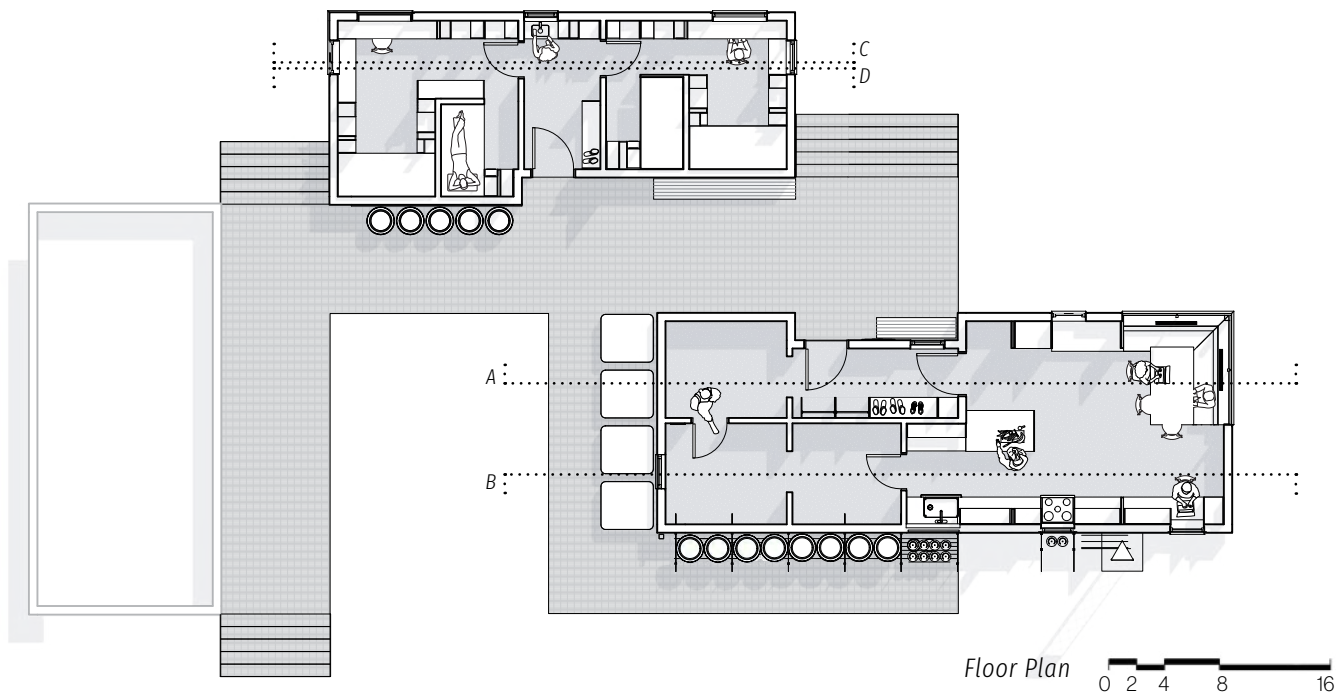


Beyond the Architectural Interest, The twisted gable provides efficient and effective Solar and Rainwater Collection. By offsetting the ridge line, solar and water collection could be optimized to the site conditions - much more than with a traditional gable or a shed roof.

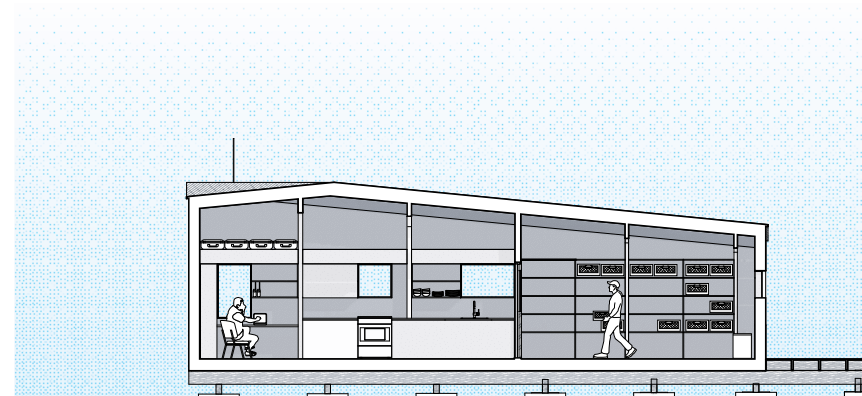


**Left:** The Galley Building (at the far right) houses the kitchen, dining, comms, and food storage areas. The offset gable allowed for high ceilings in the living quarters, as well as high ceilings in the food storage area - optimizing lofted storage within a small building footprint.

The Berthing Building (center) housed the bunks for the scientists. Here the offset gable allowed for stacked bunk beds.



Section A - Looking into freshies, the mudroom, and the corner bench



Section B - Looking into comms, the kitchen, and dry storage.



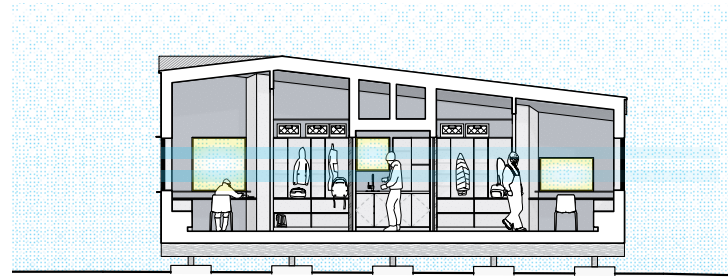
### GALLEY INTERIOR

The Galley is the heart of the campus - consisting of a mudroom, kitchen, dining, living space, the communications center, dry storage, and fresh food storage. Only half of this building is fully conditioned, allowing for energy savings in the storage areas.

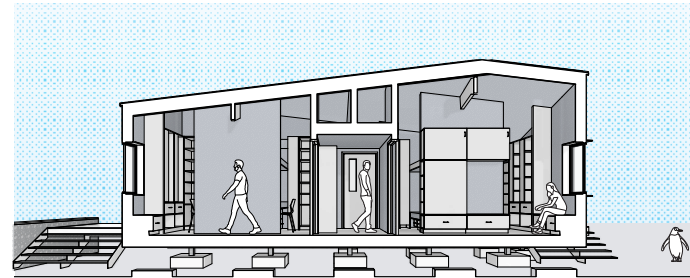
The Interior of the Galley is constructed from a warm lauan plywood - meant to contrast the cold, gray exterior conditions at the Cape. Integrated lighting in the mill work and the beams create for a seamless and modern lighting layout. The Kitchen features GFR Concrete Counter tops and back splashes, as well as a wolf range.



Photography by Rob Cleary



Section C - Looking at the desks, modular mill work and mudroom



Section D - Looking into seniors, the mudroom, and juniors.



### BERTHING INTERIOR

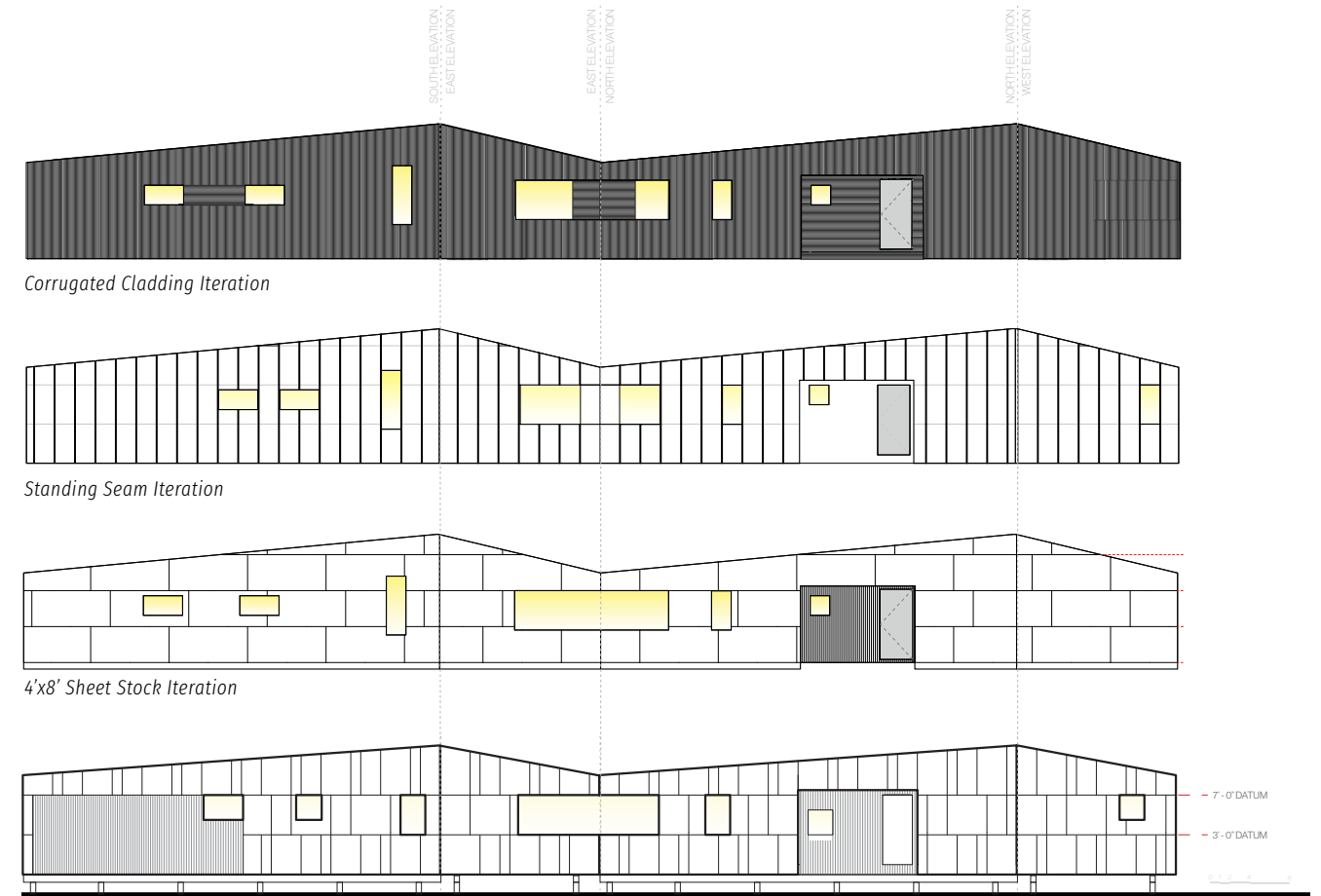
The Berthing building consists of eight bunks, divided into the Juniors side (W) and the seniors side (E). Featuring the same warm wood interior, Berthing aims to efficiently and comfortably sleep eight. Efficiently dividing spaces meant heating could be mitigated while noise could be reduced.

All of the mill work in the Berthing building was modular, aiming to create a quick, repeatable process, and provide each scientist with a consistent and predictable wardrobe, bunk bed, and shelving unit.

Photography by Rob Cleary

### CLADDING

As a member of the cladding team, our problem was complex: Figure out a cladding material that is extremely durable, easily packable, not too heavy, easily repeatable, and most of all - fit in with the surrounding context. Early on the cladding team decided that we wanted the cladding to be a beacon when scientists arrived in the snow - yet camouflage itself within the context of the Cape once the snow melted.



Variable Panel Iteration - Chosen for its alignment with window datums, and its minimal sheet waste along the ridge line.



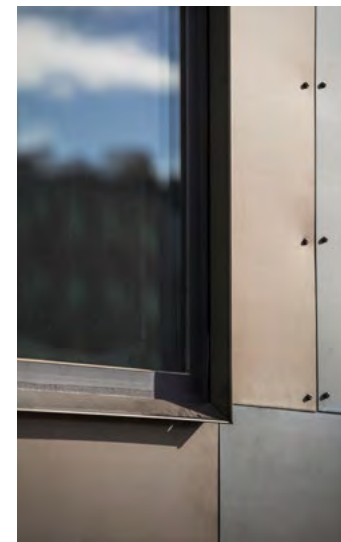
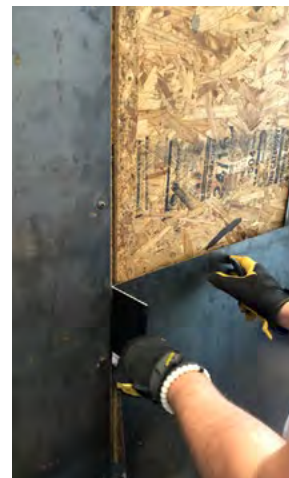
### ONE-TO-ONE MODELING

In order to develop the cladding design, the cladding team spent countless hours researching, drawing and modeling cladding ideas. Early materials such as standing seam aluminum were considered, but deemed to be tricky to flat pack. Inspired by sheet stock, the team set off to see how efficiently they could use a singular sheet of 4x8 metal. Finding that a variable panel iteration was aesthetically pleasing and efficient, the team set off to find the proper metal for the environment. Steel would rust, anodized aluminum would scratch, zinc based products would get brittle in the cold. So our options were limited.



**ONE-TO-ONE MOCK UP**

Through the development phase, the cladding team spent countless hours building and learning on a one to one mock up. Here we learned how to properly flash windows with Vaproshield products. We tested window shrouds, custom flashing profiles, innovative gutter solutions, pre-battening layouts custom puncture shrouds, decking structure and more. As for the cladding, the team used scrap hot-rolled steel from a previous CBW project to test fastener spacing, miesian corners, panel layout, and efficient panel spacing techniques. These hours were well worth it, with no mistakes being made during construction.



Photography by Rob Cleary

**LIC STAINLESS STEEL**

The Cladding material we chose is called Light Interference Color Stainless Steel. This material gets its color from an electrochemical process - coloring the stainless without using dyes or pigments. The layer on top of the stainless steel behaves like a prism, reflecting light differently based on the thickness of the coating. This means the material changes color based on the surrounding environment - perfect for our goal of camouflage.

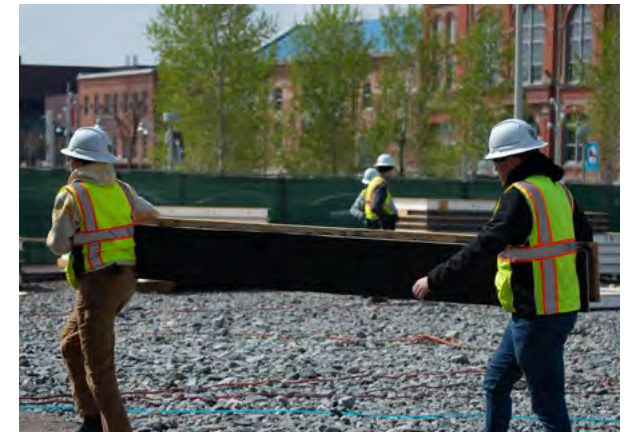
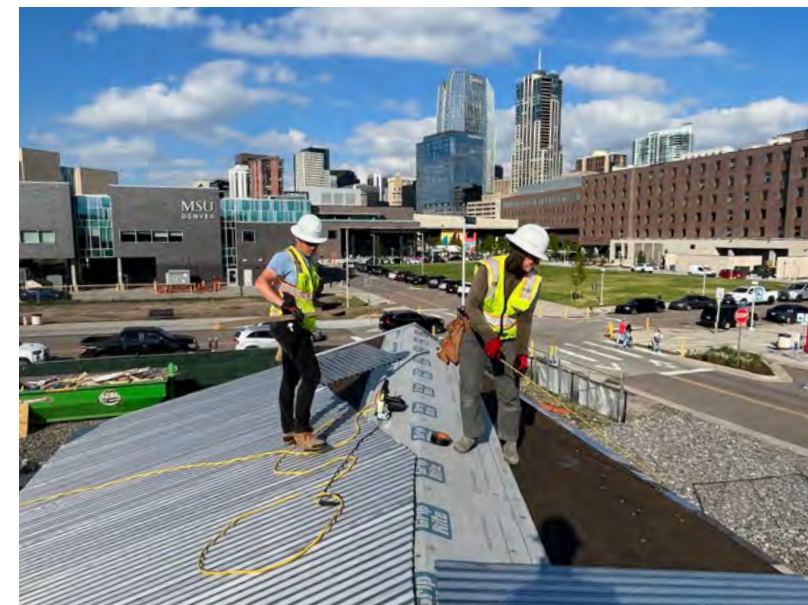
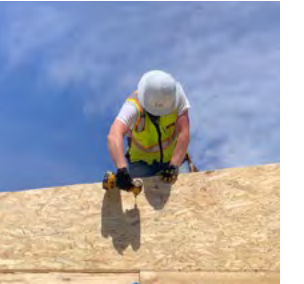
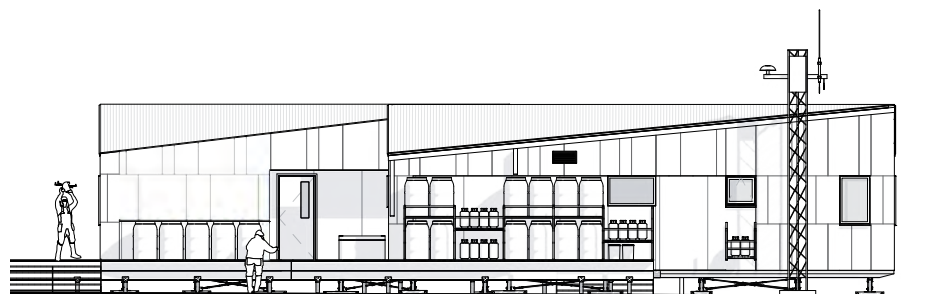




Photography by Rob Cleary

**SYSTEMS FOR LIVING**

Also part of Cladding's scope was the roof, gutter, exterior storage, systems, and the decking. The roof features 22 gauge corrugated stainless steel. The gutters are half-rounds out of galvanized steel, and the decking is a fibergrate product. The systems of the camp live on the South side of the Galley, featuring the comms tower the propane for the indoor stove and the rain water barrels.



**DENVER PRE-FABRICATION**

The entirety of the Holt-Watters Field Station was constructed in Denver by the CBW team. The buildings were exhibited in the Summer of 2022 before being disassembled, packed into shipping containers, and sent to Cape Shirreff. There, a crew of CBW alumni reassembled the buildings - completed in February of 2023.



## CHATFIELD HILL

*Chatfield State Park, CO*

**Course:** Graduate Studio III

**Instructor:** Rick Sommerfeld

The brief for Grad Studio III was to create a nature center within Chatfield State Park that highlighted the area's diverse and plentiful bird population. The client was the Denver Audubon Society - who focus on research and public education regarding migratory birds. With the entirety of the State park to choose from, I was drawn to a site between the dense Cottonwood forest, and the expansive gravel ponds. It was here that a break in the trees caught my imagination.

Aiming to create a "theatre towards the trees" Chatfield Hill lifts visitors into the canopy of the cottonwood forest - encouraging them to sit and watch the birds as they fly in and out of the trees. Instead of having indoor, programmed exhibit space, Chatfield hill provides a vast, occupiable roof that encourages users to be out in nature, and to observe all that surrounds them. Sitting at the transition point between the ponds and the forest, this site aims to capture maximum biodiversity, all while remaining accessible to nearby roads and park infrastructure.

**Above:**

A rendering of Chatfield Hill nestled at the threshold of the clearing, and the forest along the S. Platte.

**Right:**

The site plan for Chatfield hill, featuring the large landscaped roof, and small punctures that highlight program underneath.





**Morphology**

*Identify Site on Edge of Forest, Viewing the Impressive Wall of Cottonwood Trees*

*Peel Up Landscape to Create a Theatre Focused on Viewing the Cottonwood Canopy*

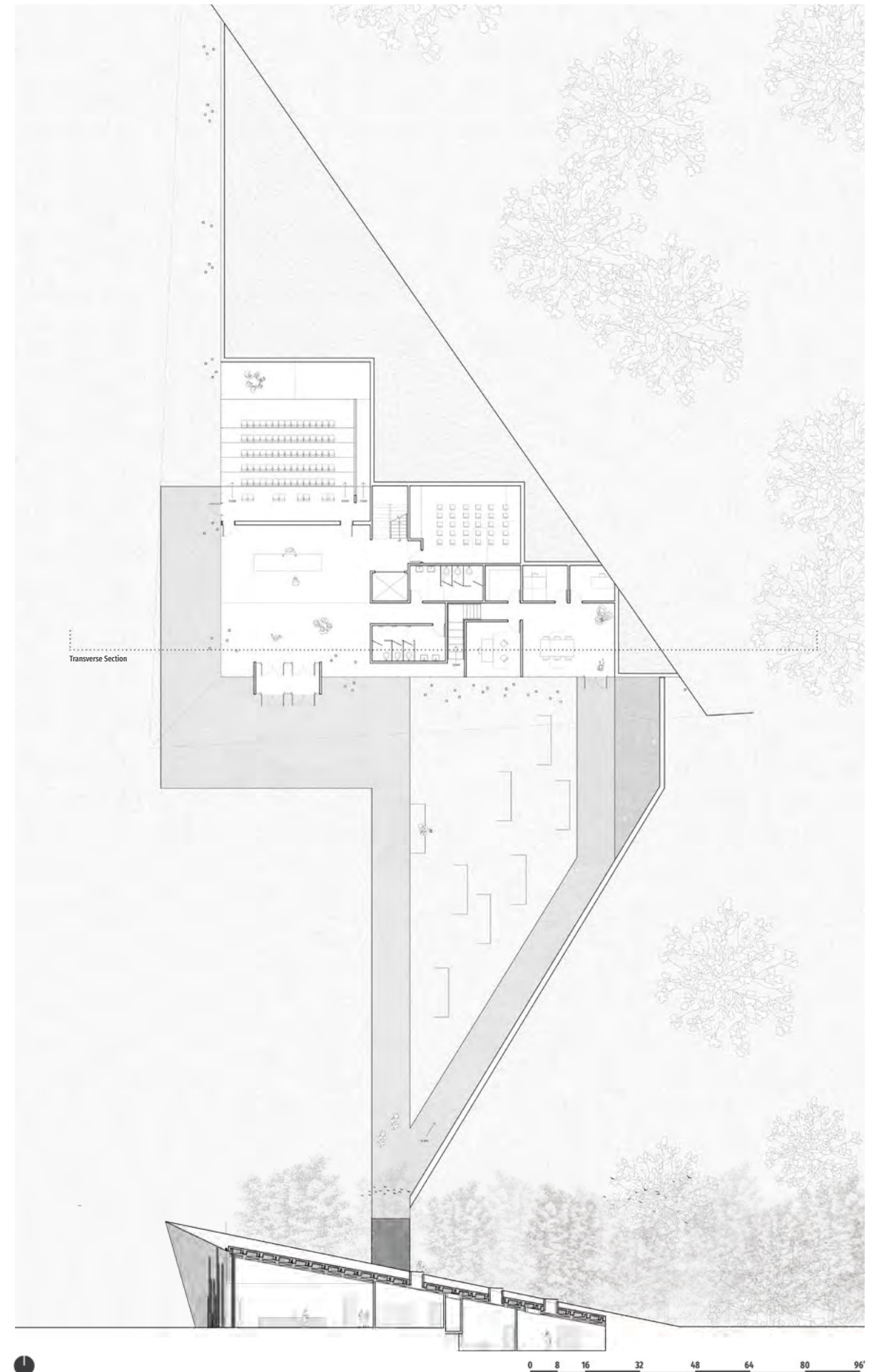
*Push Down Landscape to Create Gathering Spaces - The indoor auditorium, and the outdoor amphitheater.*

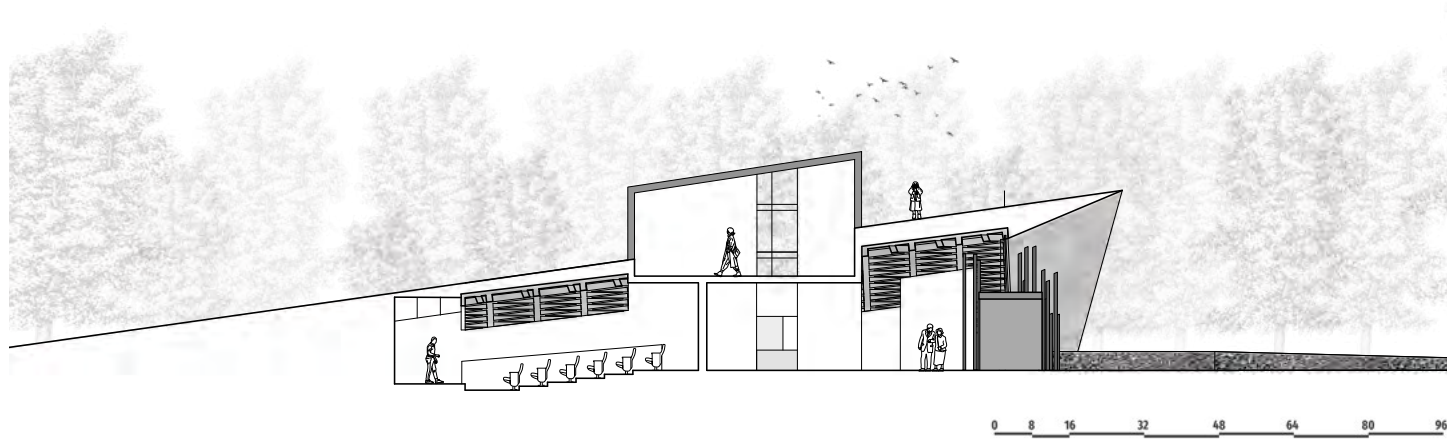
*Peel Up Benches, and Skylights to Create Seating on the hillside, Expand Ceiling Heights on the inside, and Provide Natural Light Under the Hill.*

*Extrude the Vertical Circulation through the Hill, to provide Passive Way-finding Through a Linear Approach. Push Down Adjacent Hillside to Create Outdoor Classroom.*

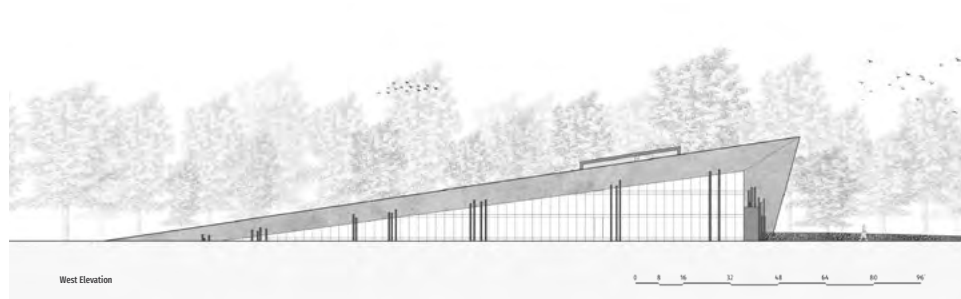
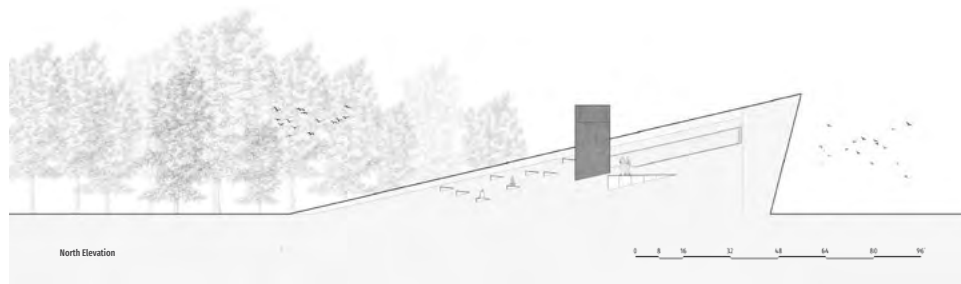
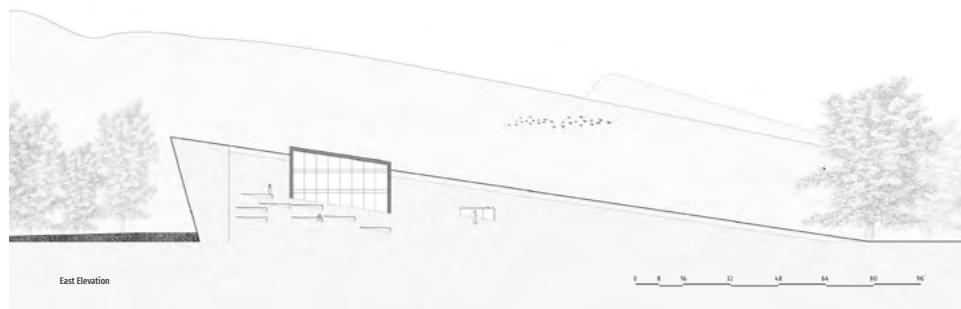
**Right:**

The majority of Chatfield Hill's programming exists underneath the hill. This space includes the lobby, auditorium, classroom, restrooms, and staff office space. Both the auditorium and the office space are sunken into the earth, allowing for more usable area underneath the hill. The office space is provided additional natural light by sloping the exterior amphitheater at the same slope as the roof line.





0 8 16 32 48 64 80 96'



**Above:**

The Auditorium at Chatfield Hill slopes with the above roof, creating an efficient use of the subterranean space. The upper classroom is accessed through the vertical circulation core, which punches through the hillside. The concrete waffle structure of the roof aims to remind users that they are always underneath the hill.

**Left:**

The columns at Chatfield Hill are meant to be sporadic and clumped, much like the trees in the surrounding forest. On the hillside skylights push through the slope, creating benches for the public to sit and view the trees.



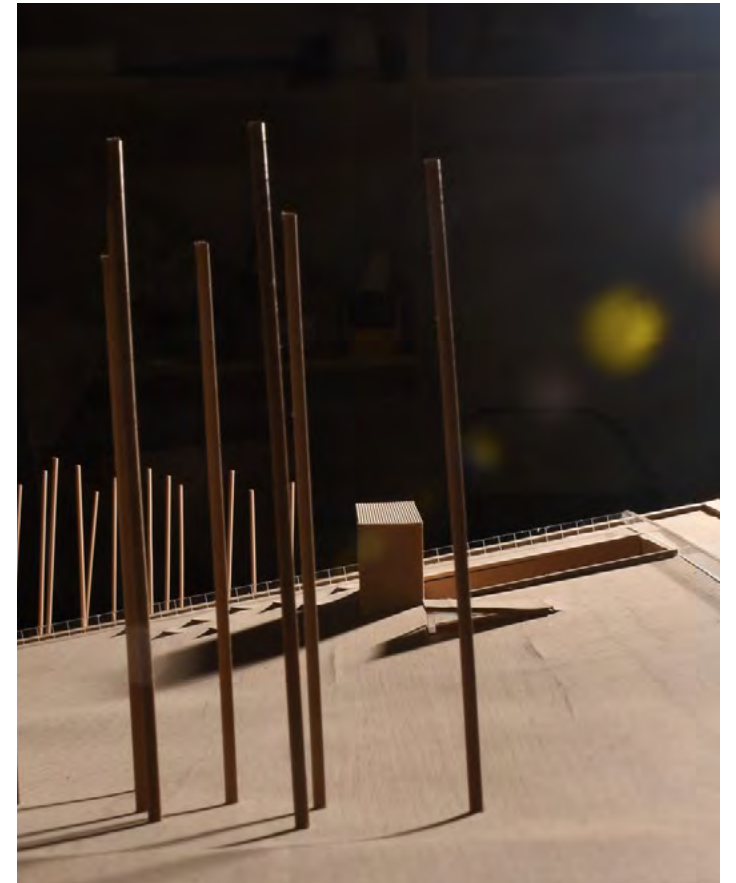
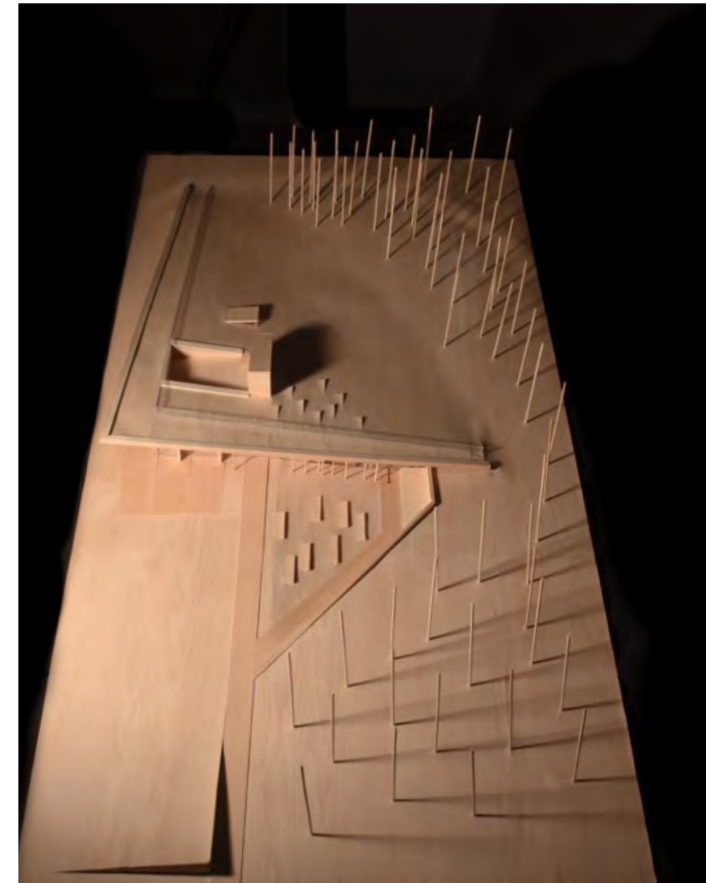
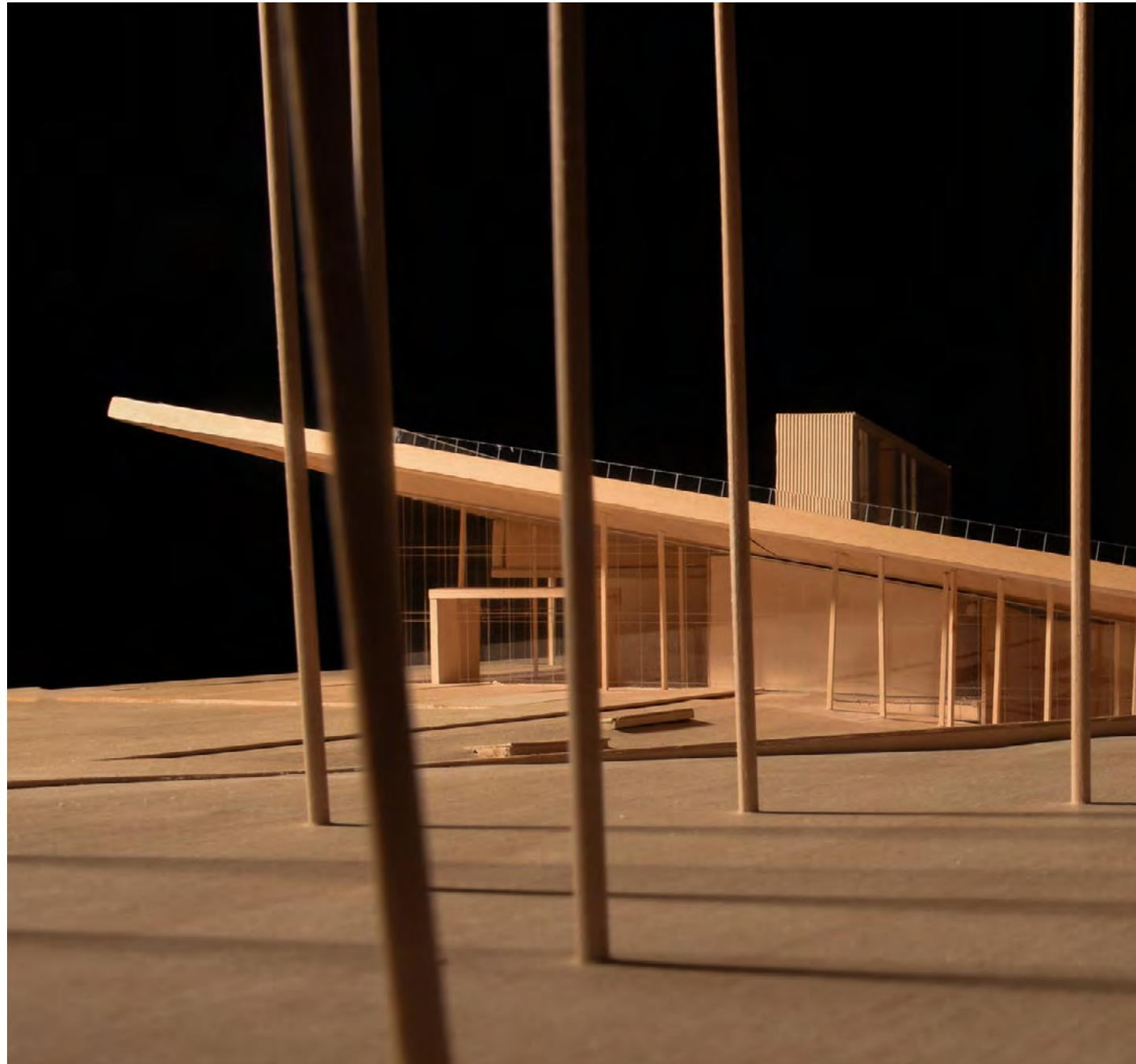
**Above:**

From the back, Chatfield hill hardly resembles a building. Climbing the Hill one would have expansive views over the gravel pond and towards the foothills.

**Right:**

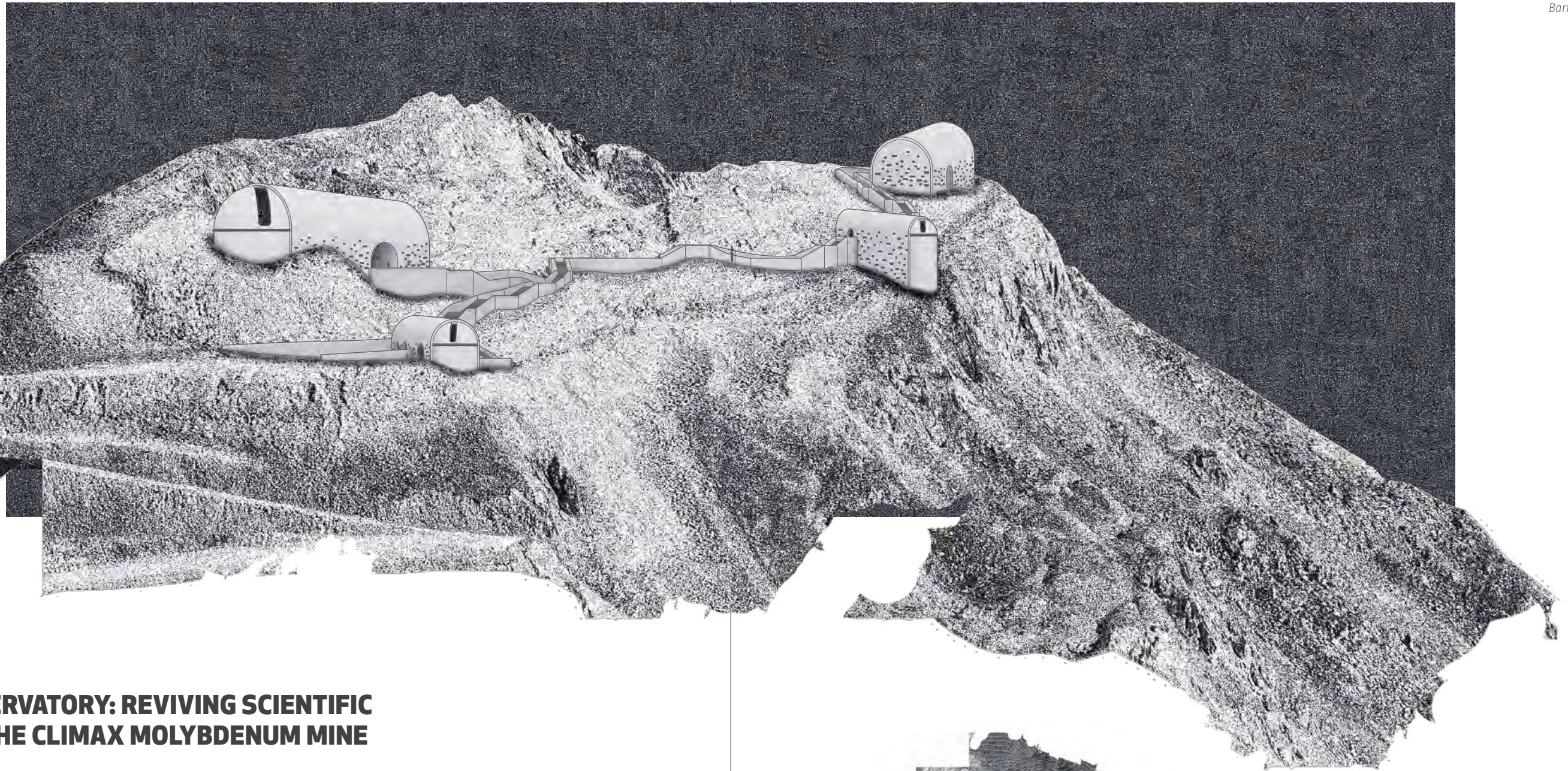
The auditorium features the concrete waffle above, the sporadic columns outside, and the slope that descends down into the earth.





#### **The Model:**

The Chatfield Hill Model is 3' x 5' - aiming to fully capture the surrounding context, and the "theatre towards the trees" idea. Creating the seamless slope from surroundings into hillside was a challenge. I used birch veneer that was laid over an mdf base - allowing for the full slope and topography, while still appearing seamless. The Rest of the model was constructed with hand cut basswood, laser cut acrylic, and a lot of dowels used for the surrounding trees.



## BARTLETT OBSERVATORY: REVIVING SCIENTIFIC TRADITION AT THE CLIMAX MOLYBDENUM MINE

Leadville, CO

**Course:** Graduate Studio V

**Instructor:** Kevin Hirth

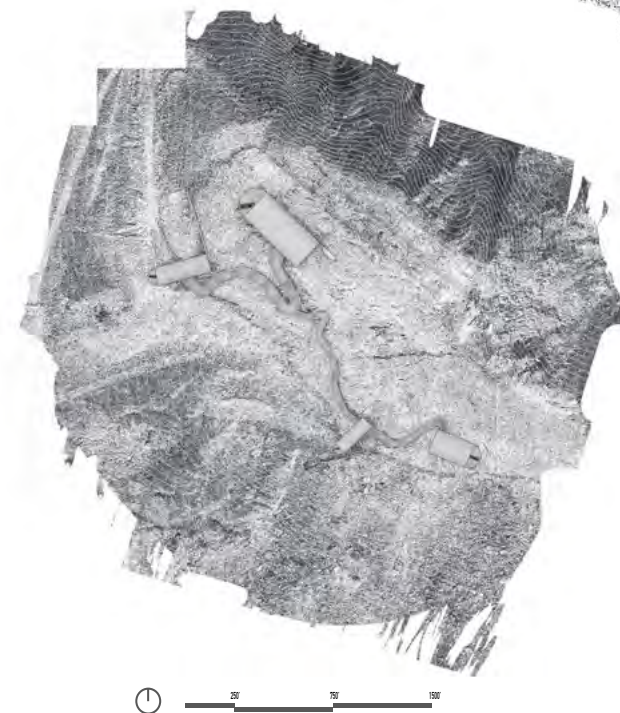
The brief of the studio: Look, a Ghost! Inspired by the strange, interesting, and unusual history of Leadville Colorado, this thesis based studio set out to research and explore Leadville's past, while imagining and analyzing its potential future.

In my research, I was struck by the historic tradition of mining in Leadville. Most intriguing to me was the Climax Molybdenum Mine - a mine that sits 12 miles above town, and while it mines the least sexy mineral of the area, it has arguably been the consistent economic driver of the community for nearly one hundred years. Yet, the molybdenum supply is dwindling. Molybdenum levels at Climax are estimated to only last another ten years and when the mine closes, economic collapse seems imminent for Leadville.

Currently Leadville is attempting to re-brand itself as a high-altitude, extreme sports epicenter - yet with little tradition or history, the locals are having a hard time buying in. However, Leadville had another historic identity - a scientific tradition of astronomy promoted by the Climax Mine. My thesis explores these historic observatories, and proposes a revival.

### Above:

A rendering of the Bartlett Observatory Campus, situated on top of Bartlett Mountain - the center of the current mine.



The Bartlett Observatory Campus sits on top of Bartlett Mountain, at 13,376' above sea level. Here the skies are dark, and the nearest town is 12 miles away, hidden by the surrounding mountains. Here, scientists would be able to gather data far away from light pollution - at a research station that aims to promote scientific discovery, all while educating the public of the tradition of the High Altitude Observatory at Leadville.



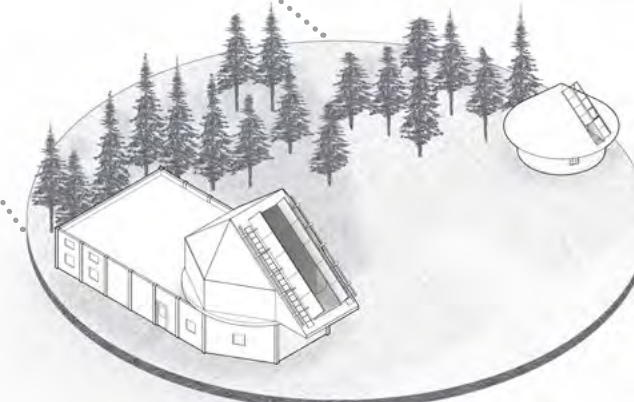
**SCIENTIFIC TRADITION AT THE MINE**



**Fremont Pass Station of the Harvard College Observatory**  
 Ceresco Ridge \_ Climax, Colorado  
 1940-1952

Leadville has a deep Scientific tradition and it all started at the original Fremont Pass Station. This station was pioneered by Walter Orr Roberts, and was funded by Harvard College, with the Climax Mine donating land and materials for the observatory. As a scientist, Roberts built the third ever coronagraph in the world, allowing researchers to look at the sun and see solar flares and solar storms. For six years, Roberts lived in the house next to the station, where he concluded that solar flares can cause radio interference - a valuable discovery during World War II. Post-war, the original observatory was in jeopardy. Dust from the mine was obscuring the astronomers research. The campus would need a new location.

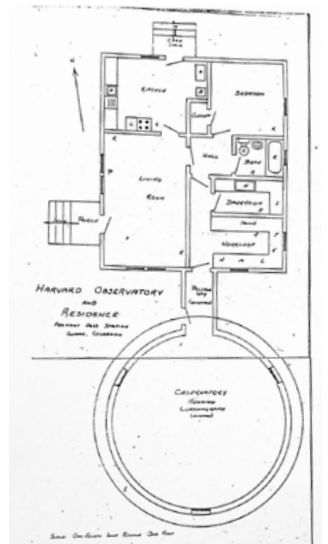
NCAR Archives, UCAR Archives, CU SBO.



**High Altitude Observatory**  
 Chalk Mountain \_ Climax, Colorado  
 1954-1972

It wasn't long before observatories returned to the Climax Mine, with another site donated by the mine, this time near the tailings ponds. The HAO would move their original, conical dome to this site, while also building a much larger dome. Local school kids would often take field trips here to observe the coronagraph's in action. However, dust from the mine continued to be an issue, and NCAR slowly moved equipment from the Climax site to HAO's Mauna Loa Solar Observatory. The Mauna Loa Observatory would become the main site for the HAO, while the Climax Observatory would close for good in 1972.

NCAR Archives, UCAR Archives, CU SBO.





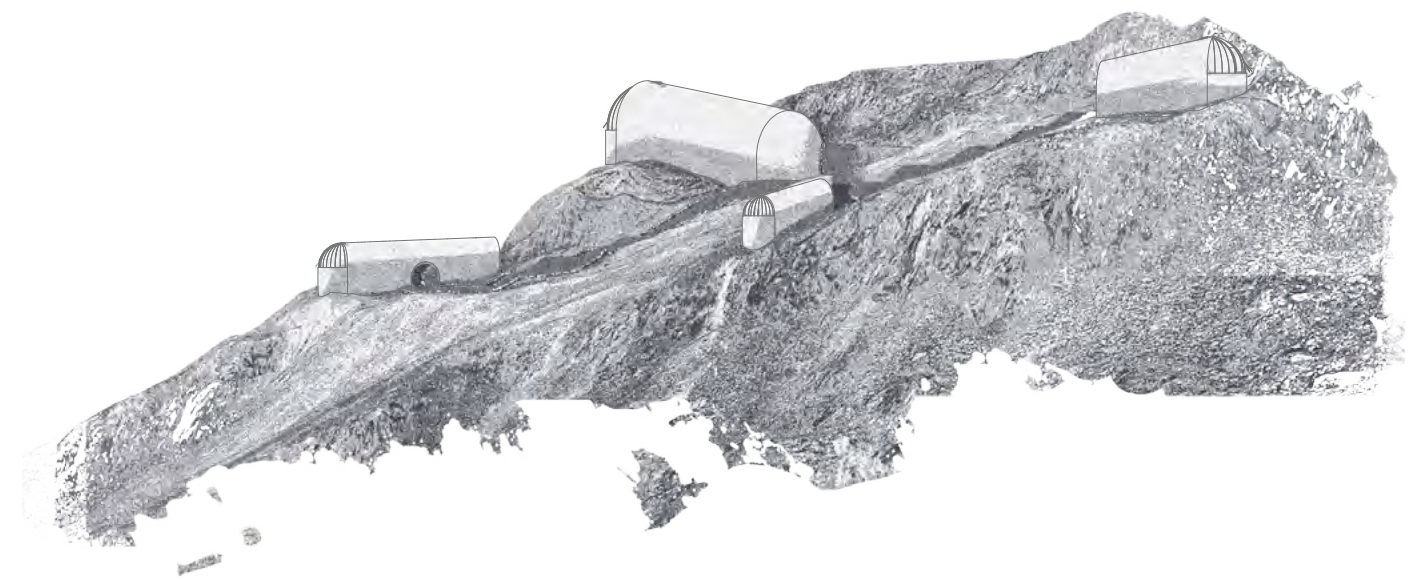
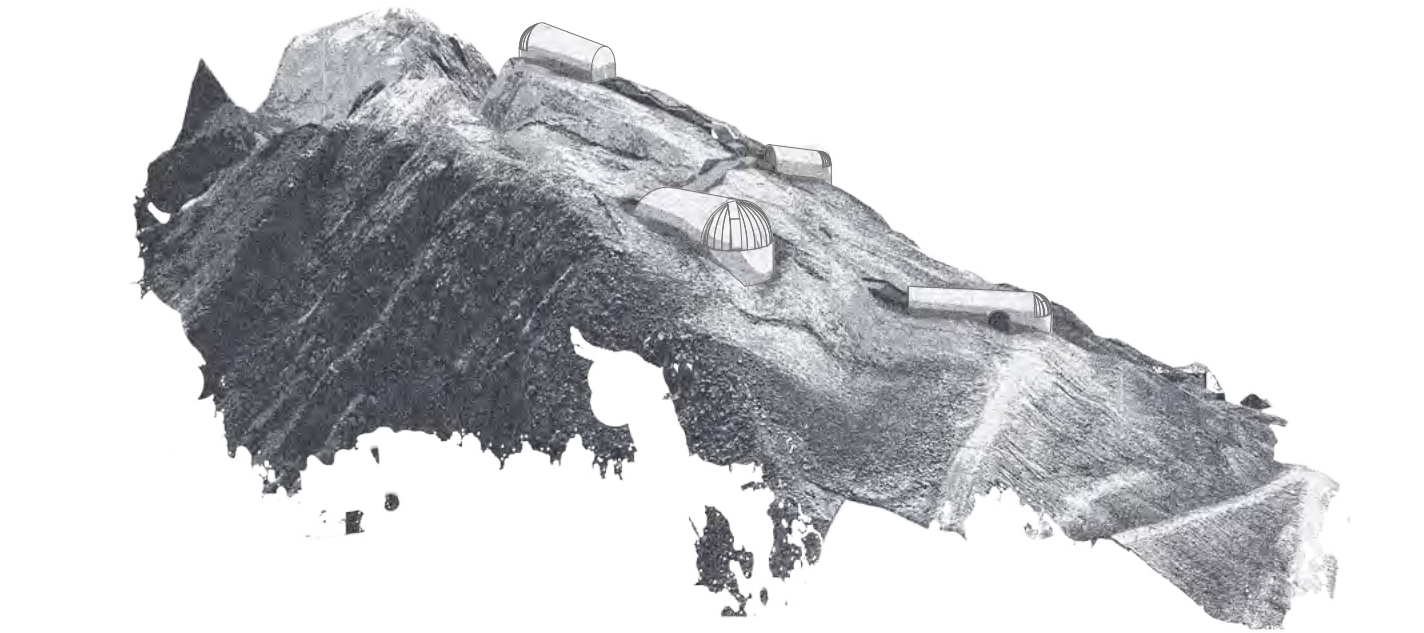
**BARTLETT MOUNTAIN - 13,376'**

The Climax Molybdenum Mine is centered around Bartlett Mountain at the top of Fremont Pass. In total nearly 500 Million tons of Molybdenite Ore has been mined at this site by over 60,000 miners. That's over four billion dollars worth of ore. However this mining success was decades in the making.

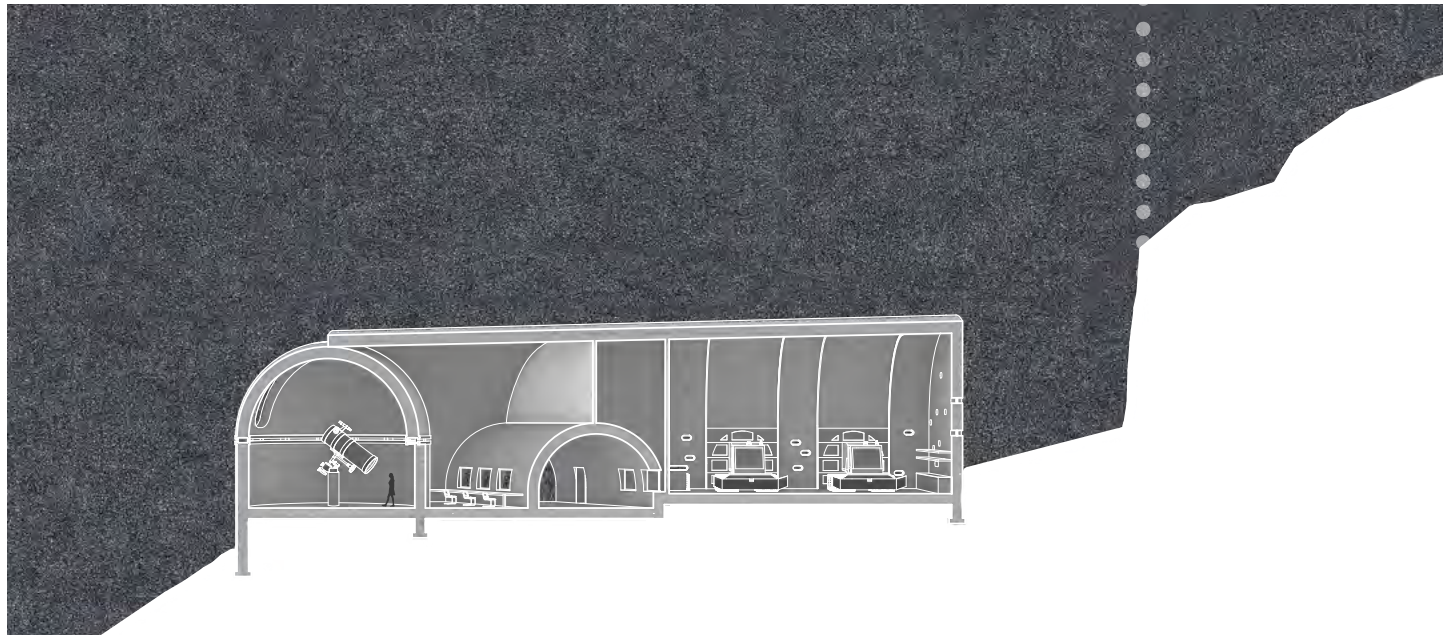
In 1879 Charles Senter was searching for gold when he stumbled upon Bartlett Mountain. There, he found a strange, nearly black, greasy mineral that he thought might be a sign of gold. He staked his claims at the Summit County Courthouse and sent the mystery mineral to the Colorado School of Mines, where, in 1895 they identified it as Molybdenite.

Mining at Bartlett Mountain began in earnest during World War I. During this time the price of molybdenum increased drastically, making mining the ore feasible. Underground mining would continue for over 30 years, until, in 1960, the biggest underground mine blast in history was set off, drastically reshaping the mountain, and registering a level 3 earthquake in Golden Colorado.

To date, over four-hundred million tons of molybdenum ore have been pulled from Bartlett Mountain. Although not the most famous mountain in Colorado, it probably should be. It's history of mining has propped up Leadville for nearly a century - and could continue to do so with the revival of observatories at Climax.



Midterm Renderings - Looking at a clustered set of Observatories atop Bartlett

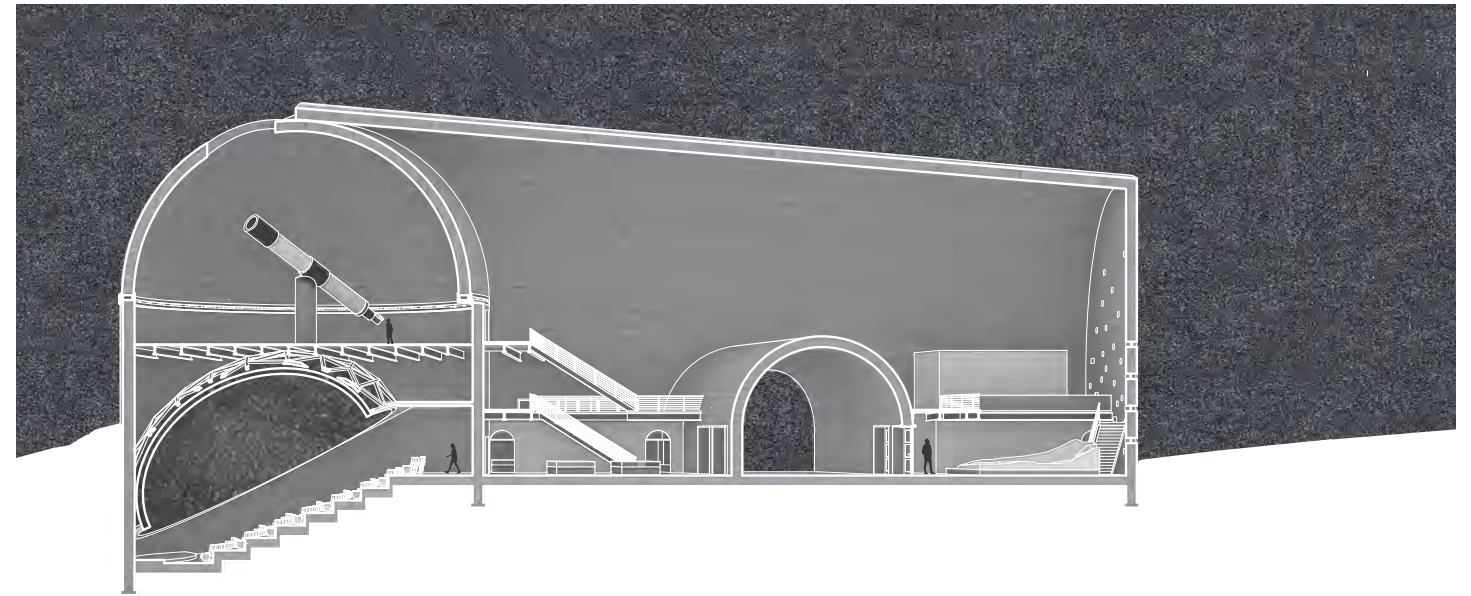
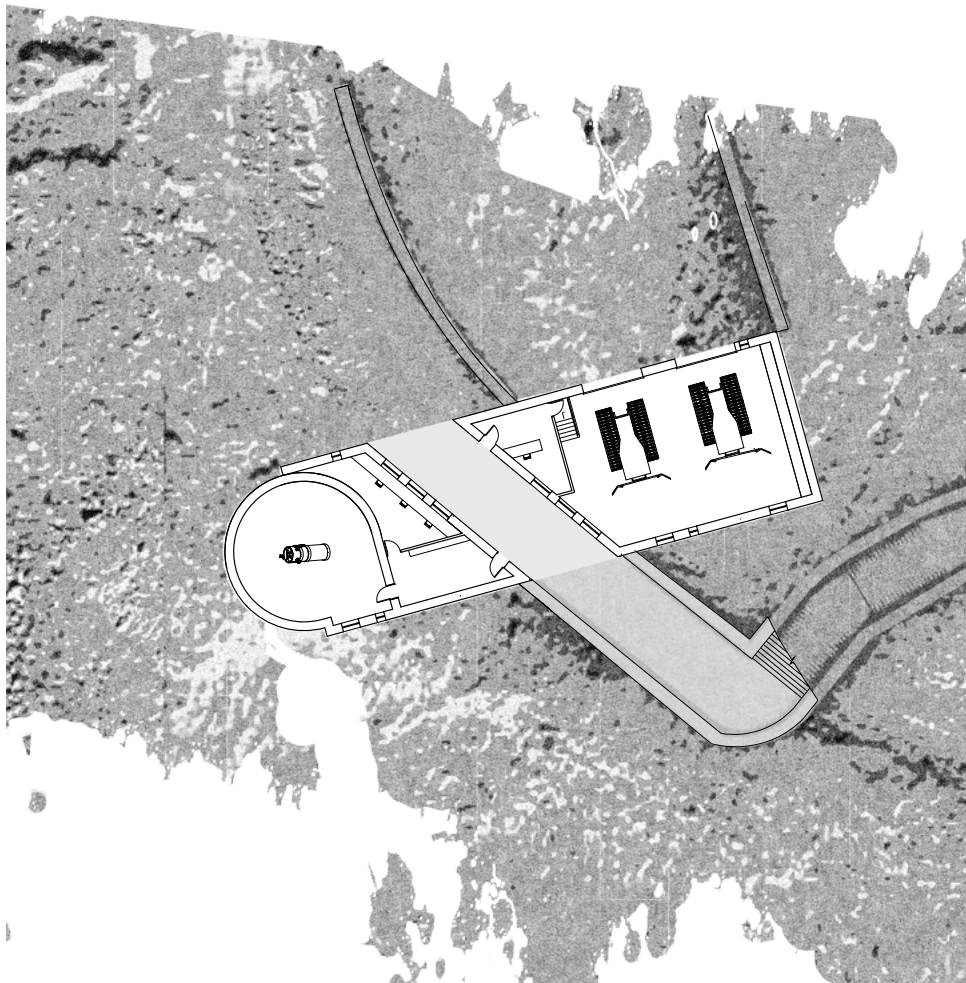


### GATE HOUSE & GARAGE

The Gatehouse and Garage is one's first experience at Bartlett Observatory. Inspired by the historic snow-cats that would take scientists to the previous High Altitude Observatories, this building houses two such vehicles for year round access.

Here the public can buy their tickets to explore the campus, and also get their first view from a telescope.

Traditional observatories often feature a dome that can rotate 360 degrees, in order to capture the entirety of the night sky. However, at Bartlett, a cluster of observatories pointed in different directions ensure full coverage of the sky, without being restricted to the full dome typology. Here a concrete dome rotates within a vaulted slip. Providing protection when closed, and a full view out when open.

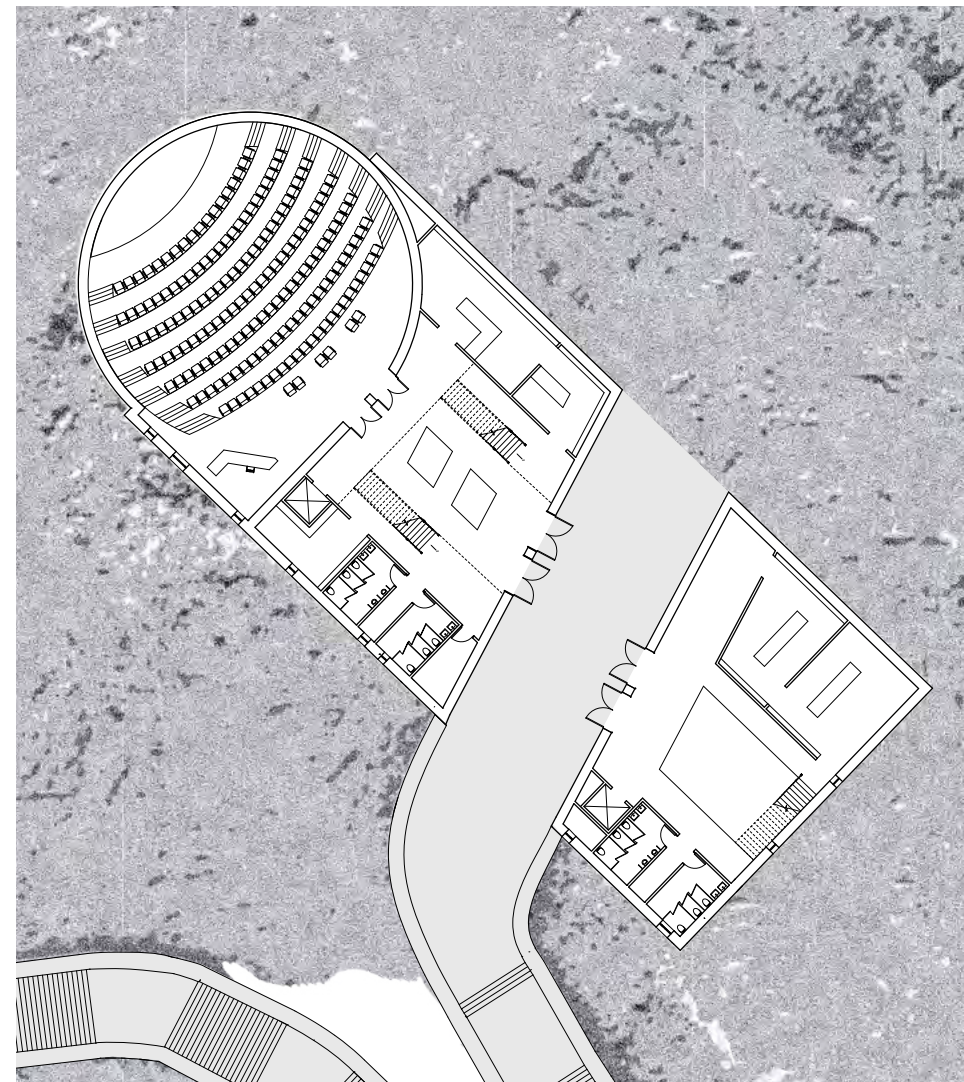


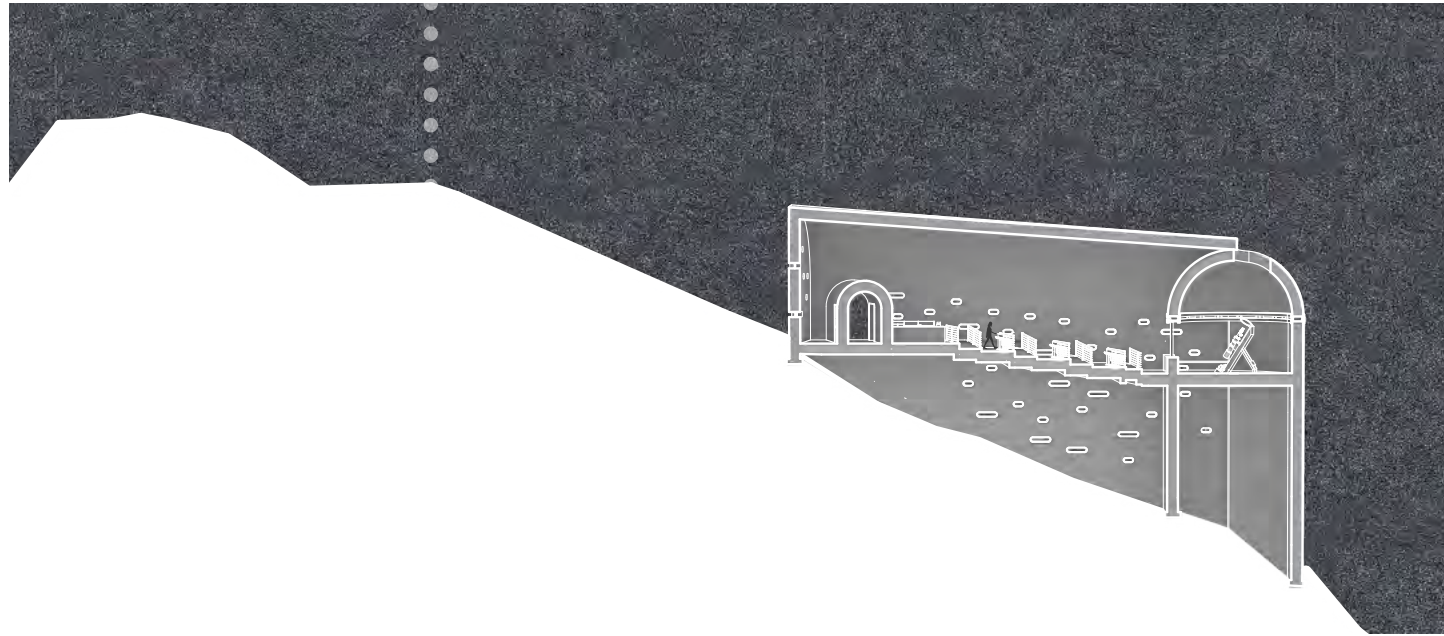
### MUSEUM & PLANETARIUM

The Museum and Planetarium is the primary building for public education and tourism. Here the public is encouraged to learn more about the scientific tradition of observatories in the area, as well as the deep history of the Climax Molybdenum Mine.

On the Southeast side of the museum building, a dedicated Climax Molybdenum Mine History exhibit aims to educate the public about the mine, and the mineral. Featuring a large topographic map that shows the changes of the landscape through history with the mine, this exhibit aims to highlight the buildings surroundings within the mine

On the Northwest side of the building, is dedicated exhibit space for the history of the High Altitude Observatory, and its history both in Leadville and in Hawaii. On the second floor an archive would house historic documents from the HAO, and on the 3rd floor would be the largest telescope on campus. In the basement, a large planetarium would invite the public to look beyond the Earth's atmosphere, and contemplate the future of space travel, including mining on other planets (while surrounded by one of the Earth's biggest mines).

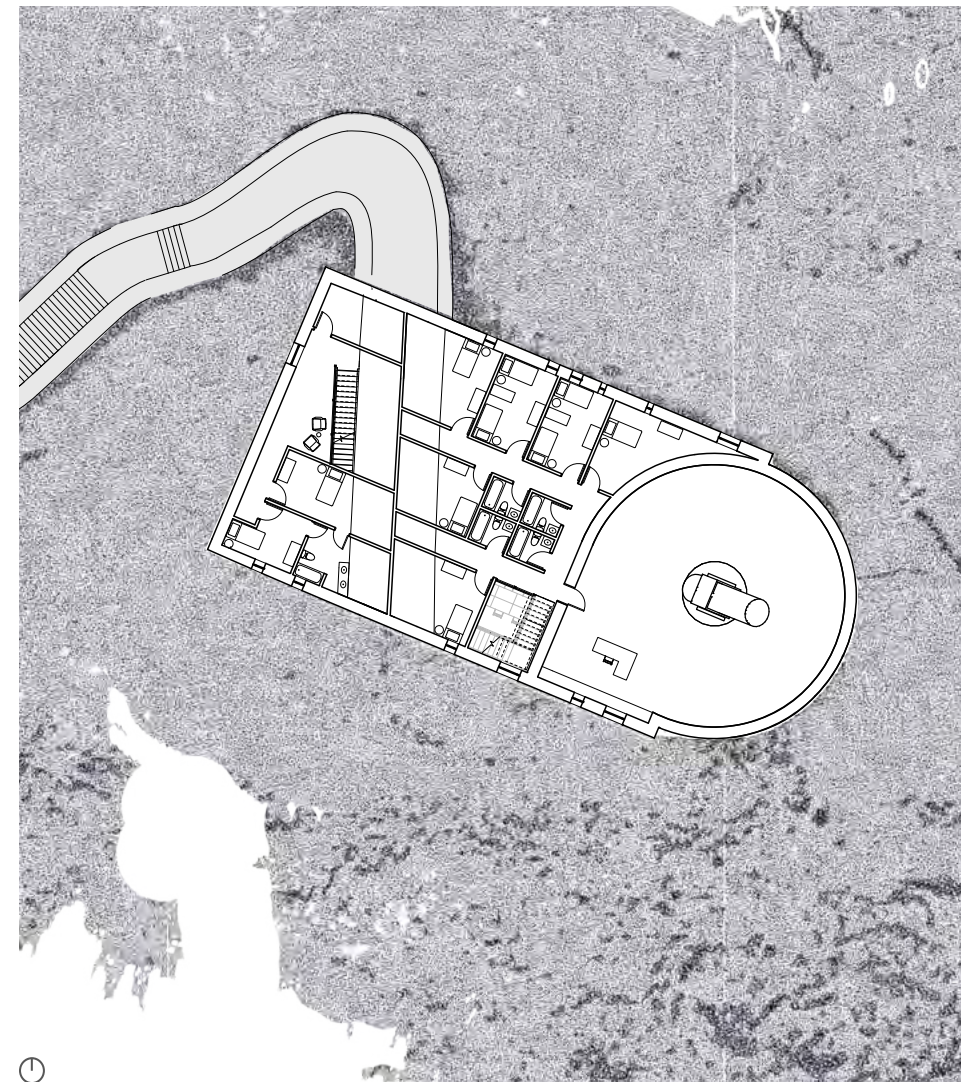
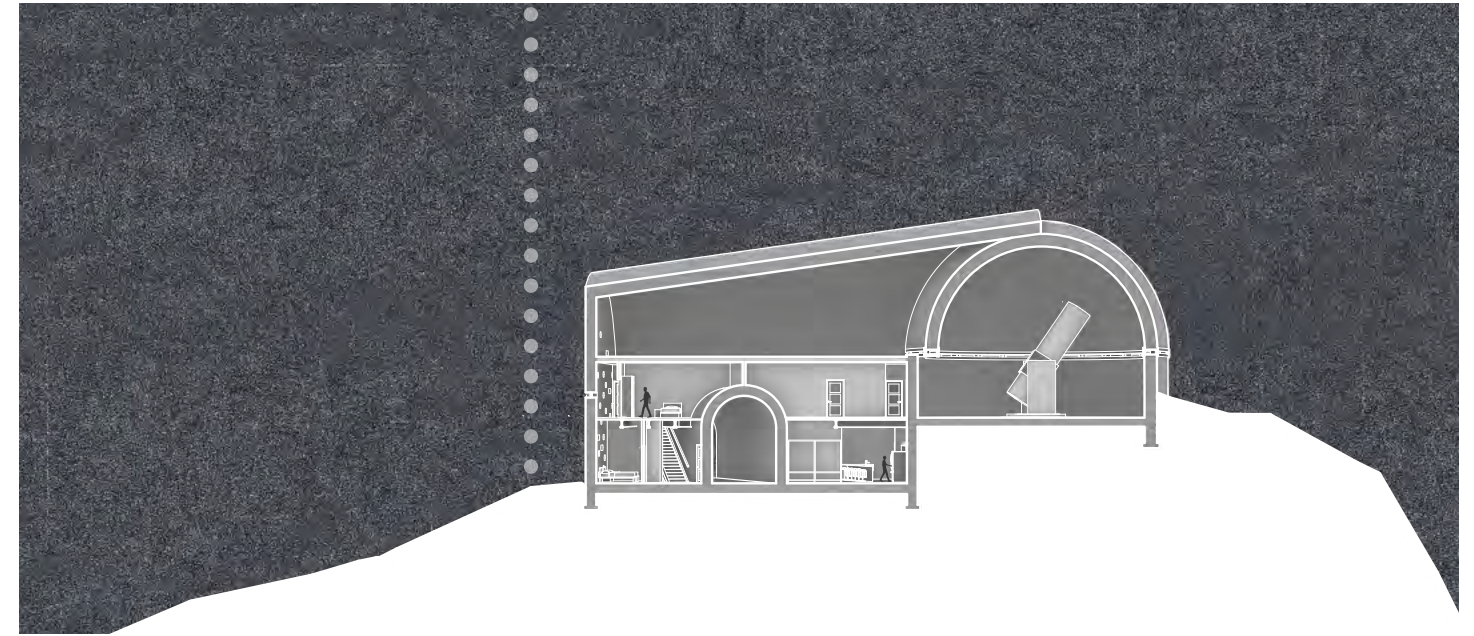




### DINING HALL & CORONAGRAPH

The Dining Hall and Coronagraph is on the researchers side of campus, but is open for the public to use as well. Here scientists and the public alike can eat from the small restaurant while sitting on the sloped floor. Intended to feel like you're sitting on the side of the mountain.

Here, instead of a telescope to look at the stars, there is an original coronagraph. Just like the one Roberts originally invented, this device will show diners the corona of the sun as it tracks it across the sky.



### ROBERTS RESEARCH STATION

Named after the founder of the High Altitude Observatory, Walter Orr Roberts, The Roberts Research Station provides a home for up to 15 scientists to live and work on the campus.

Featuring a full kitchen, office space, and of course a large telescope this research station is aimed to maximize data collection. Bedrooms and bathrooms are split on either side of the vaulted entry, with more senior staff getting the private rooms on the west side of the observatory. More junior members sleep in the shared rooms on the east side.



Each of the observatories for the model was made from casting concrete into 3D printed molds. After casting, the molds were stripped away using heat, revealing small details such as the spar openings in the dome, and even striations meant to mimic board form concrete.

The Bartlett Observatory Model was built using 9 pieces of 3D printed Topography that was glued together, and fitted into a custom wooden base. The 3d printed topography was then covered in five layers of feather finish concrete, giving the model a seamless finish.

