



CARVED BY THE SUN

AUSTIN COUCH

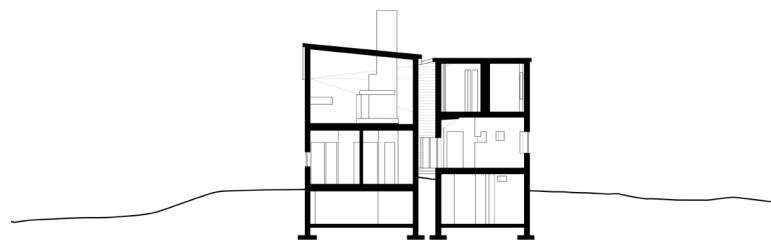
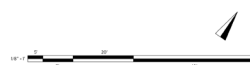
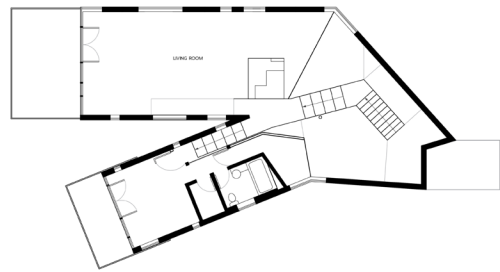
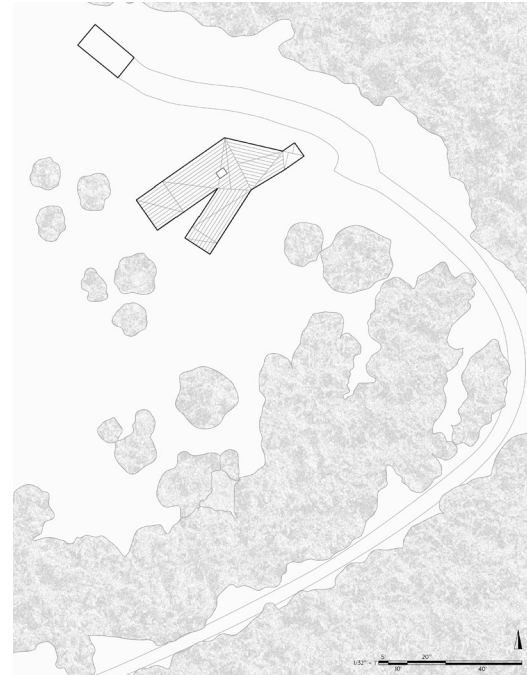
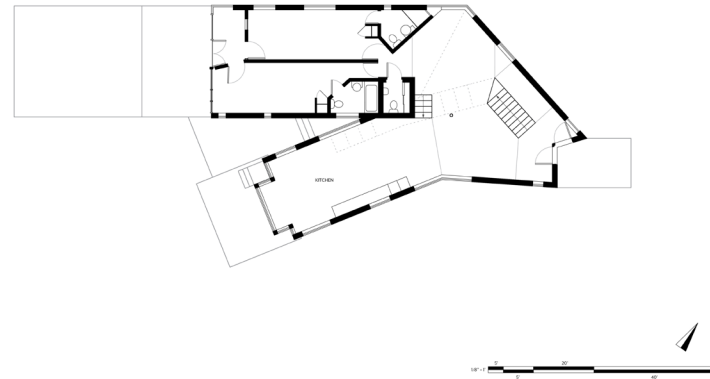
B.Arch Second Year | Design Studio III | Fall 2020

Instructor: Rodolfo Reis Dias

FRAMING VIEWS AND ORGANIZING SPACE

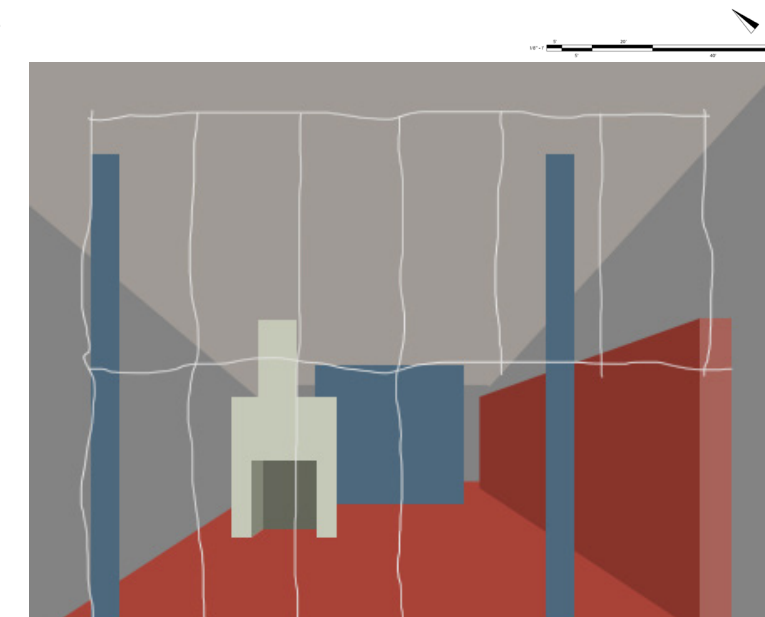
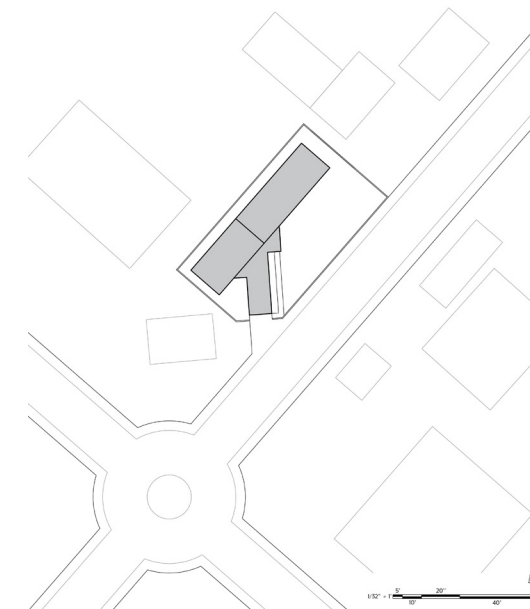
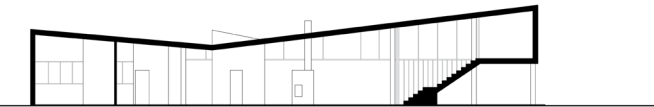
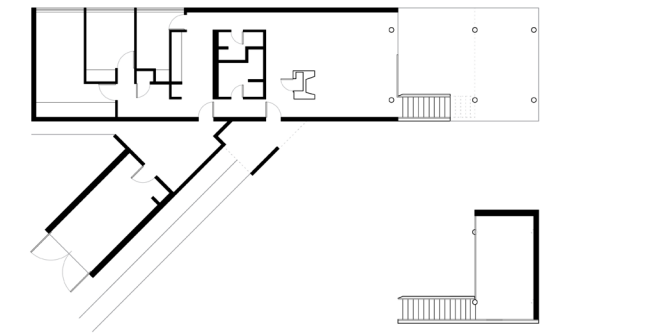
PRECEDENT ANALYSIS

The Y House, by Steven Holl was built in 1999 in the Catskill Mountains, in upstate New York. It was designed as a getaway for a couple who lived in New York City. The building, built on a vast lot of trees, looks out over a forest in all directions. Nature was the driving force of inspiration in the design, shaped after a forked tree branch.



The building is split into two wings, each with two floors that define two functions. These two functions are defined by the sun path, where, the top floor in the northwest wing, and the bottom floor in the southeast wing are both used as common, or “day” spaces, as Steven Holl has denoted in a watercolor sketch. The geometry of the design is made so that the “night” spaces receive less early sunlight than the “day” spaces. The second floor is accessed by a main stair, that connects the entire house and determines a circulation towards the windows. With scattered windows across the facades of the house, views of the surrounding nature are constantly puncturing the enclosed living space. At nearly every corner, windows wrap the rigid geometry, as if taping the edges with views outside. In contrast to normal facades, where windows are separated by walls, Holl removes this notion by separating walls with windows. The living room, located at the top of the northwest wing, opens to a shared balcony that culminates the views hinted at from the beginning of the circulation. This balcony cantilevers, and is supported by tension cables and columns with a thin welded connection. The exterior of the house is clad in red siding, a bright contrast to the green site. Built with minimal colors and materials throughout the building, the red appears even more striking, similar to many of the barns in the Catskill mountains. Y House is an example of inspired geometry with an informed design.

In 1949, Vilanova Artigas designed and built his own residence. The home, built at the time of the growing movement of modernism and brutalism in Brazil, reflects a delicate connection of the two genres. The structure is made out of concrete and masonry that is painted white and red. The bold colors of the masonry contrast with the rich texture of concrete establishing a juxtapositional palette that exists through the house. Consisting of two rectangles, you enter the home from the street, the access to the booming metropolis of Sao Paulo. The smaller front rectangle is a garage, and opens up with two manual doors. Alongside the garage, a pathway parallels the geometry, intersecting the house creating a unique entrance to the main space. As one walks in, you are positionally greeted with a corridor. This corridor defines the concept of the house, stretching from one side all the way down to the next experiencing each different function of living. This corridor is also the divider of public and common space. As one enters, the direction of the corridor moves either towards the private bedrooms or to the living room and the cantilevered lounge. In doing so, the corridor becomes a sort of gradient, bridging the gap between private and common. The materiality along the facade acknowledges the same phenomenon: On one side, the walls are completely covered and dark, and as they progress, the facade develops slowly into a glass curtain, bringing the view of the trees and city into the room.



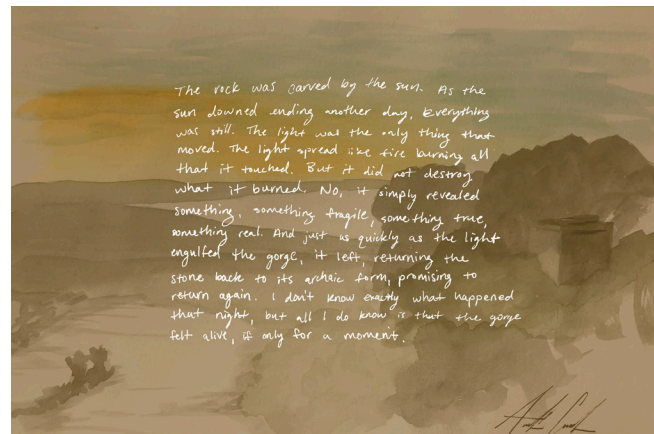
The living room is open to a courtyard next to the stairs that has full view into all of the rooms around it. Here, outside and inside are completely blurred and Artigas calls into question what inside space truly is. Throughout the entire building, a color palette of reds, whites, and blues, is encased by a concrete shell, fusing a simplistic modernism with brutalist form. The building magnificently manipulates one's understanding of a home through very simple and subtle choices.

ACTS OF NATURE

SITE ANALYSIS

The site was first understood as an artifact, a monolithic stone. As the gorge runs westward towards Cayuga Lake, it winds and slices through the stone with this one directionality being its only rule. From this rule, I establish that, more than a tributary to the Cayuga, the gorge was a tributary to the sunset. At sunset the light perfectly aligns between the two shear stone cliffs, lighting the cliff walls immensely. This discovery became the basis of the project; a stone was somehow carved by the sun.

To represent the carvings by the sun, I first worked with linear cuts in a stone found from the gorge. Through the concept model (pictured below), a mimicry of the modular linear elements of stacked shale began to reveal itself. However, in certain moments, the radial blade of the saw began to reveal subtle curves that indicated the gorge's relation to the sun. Formally, these radial curves discovered in the concept model are expressed in higher resolution in the site model.

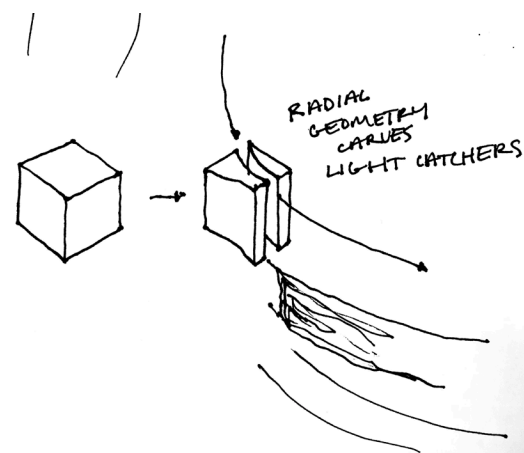
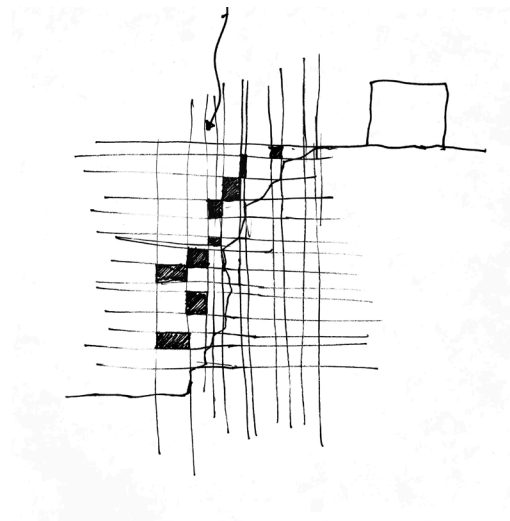
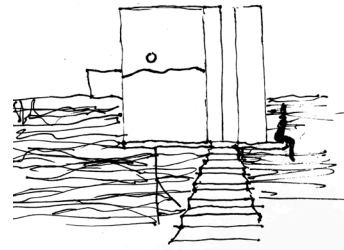


The site model (pictured to the right) is a high resolution depiction of the cliff face, maintaining the radial nature of the sun-carved marks in the concept model. Here, however, the radial cuts are made laterally, producing a stacked logic that is highly similar to the shale cliffs in the site. The bridge is braised metal, while the Carl Sagan house is represented through poured concrete. Careful attention is put towards representing all qualities of the site through authentic materials, revealing a site that is formally interperetive but materialistically, captures the reality of the gorge.

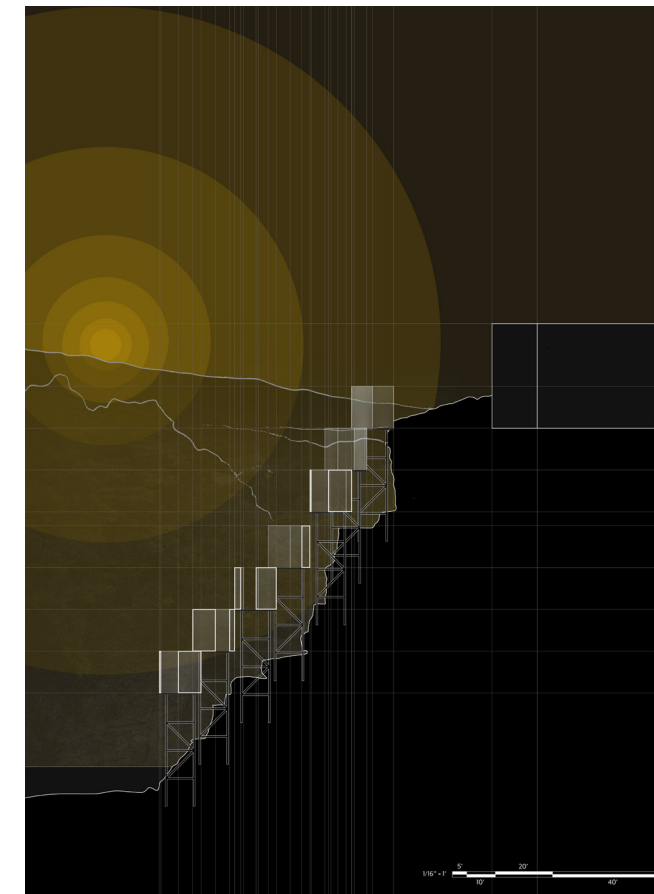
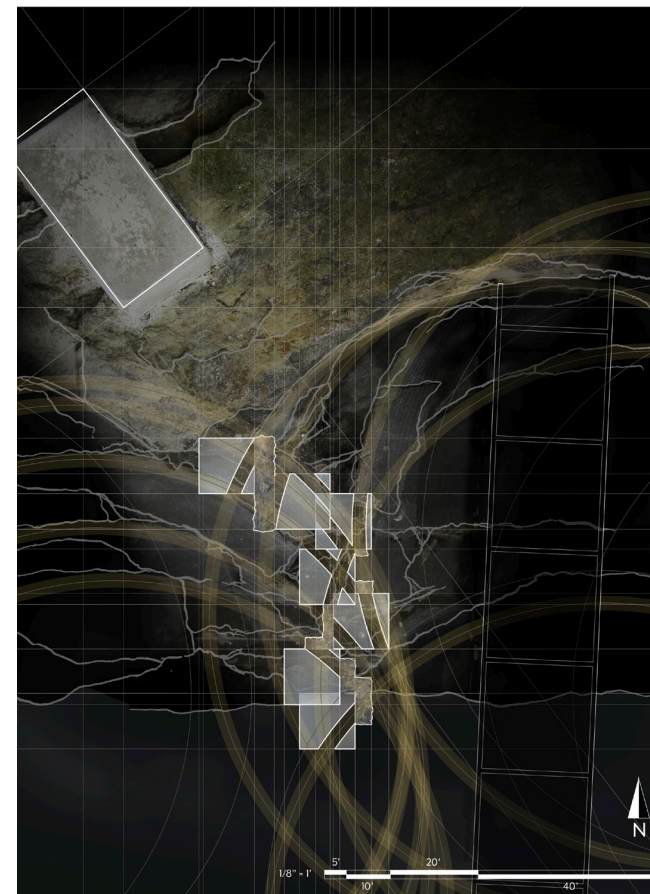


COLLECTING LIGHT

BAIRD PRIZE



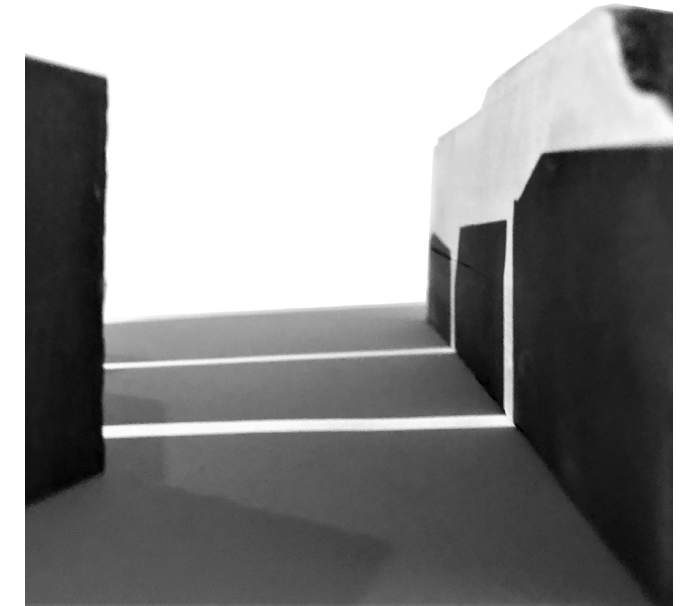
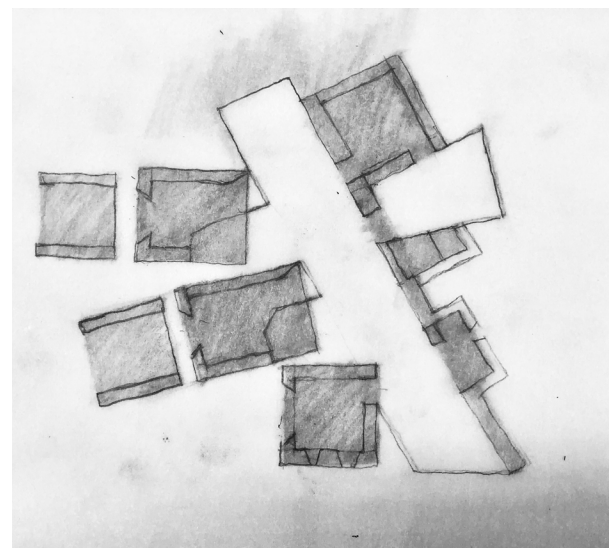
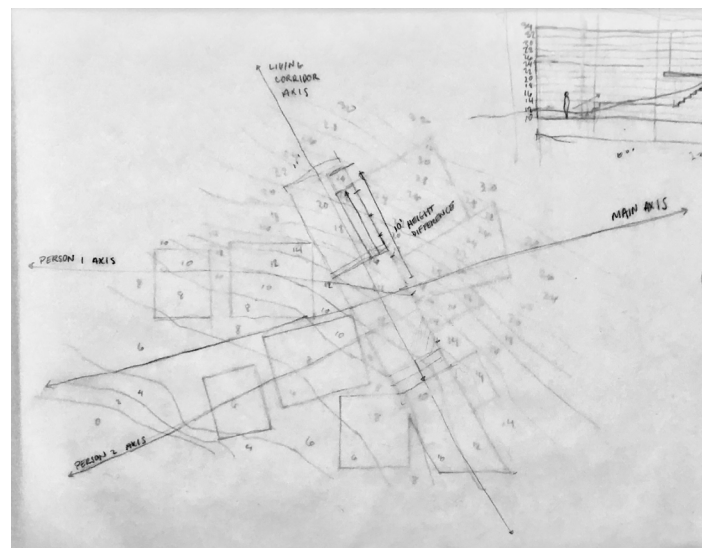
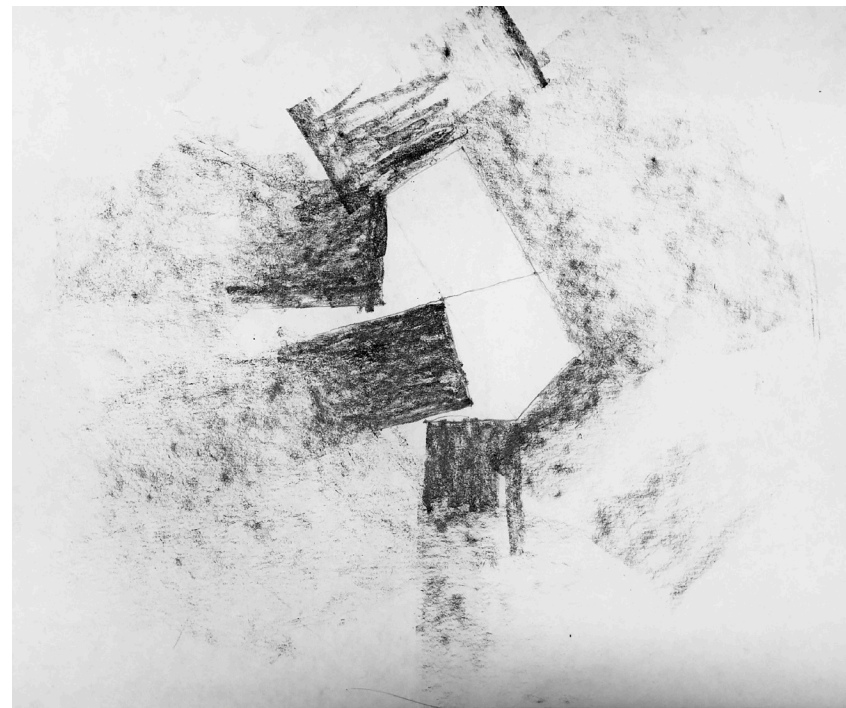
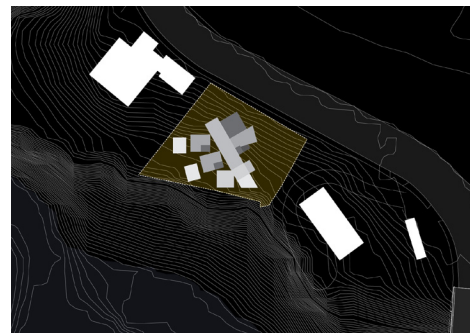
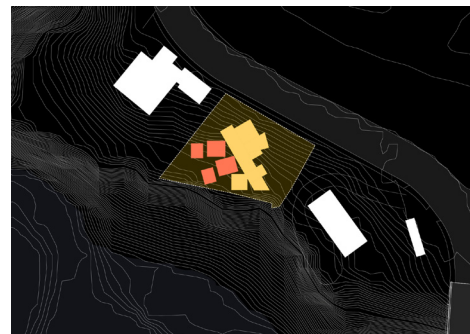
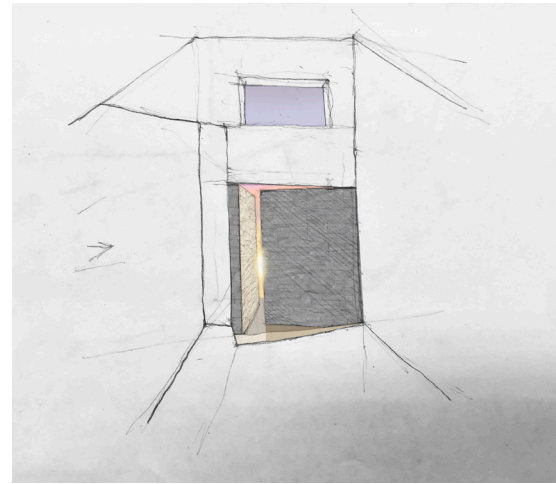
Building from the understanding of the site as a stone radially carved by the sun, my Baird Prize explores the collection and experience of the light on the cliff. The intersection of radial cuts of the site form a spine of the cliff, that is left raw and chiseled. This spine is conceptually the most important space of the site, as it collects the light in moments of sunrise and sunset. At each height of the cliffs, the radial cuts have different geometries: different locations, radii, and arcs. The geometries informed by the cliff become the pathways for the sun to enter cascading glass cubes down the spine of the southern facing cliff. By splitting the cubes through these curved pathways, seemingly arbitrary volumes collect, reflect, and manipulate light in infinitely differently controlled experiences.



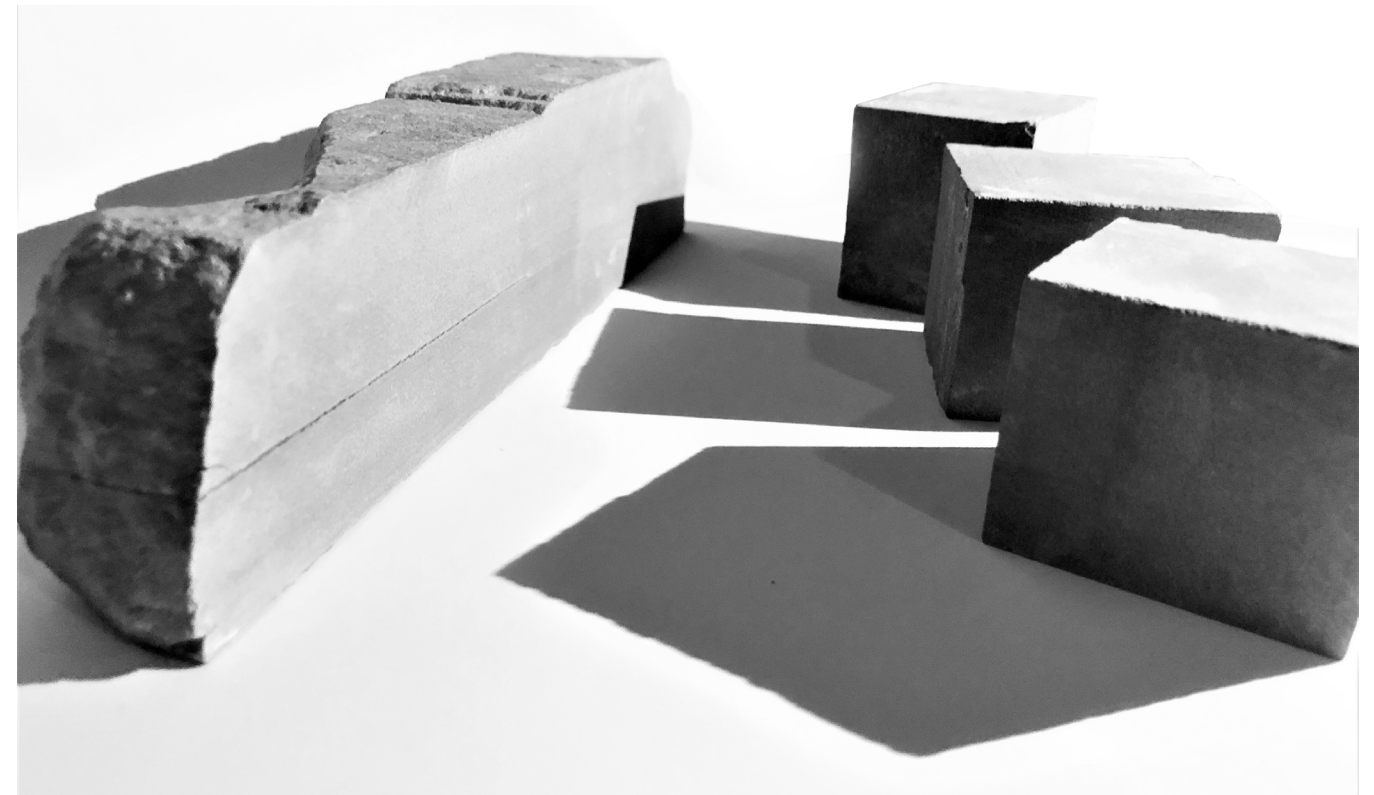
CARVED BY THE SUN

THE HOUSE

The house is organized by and according to the light, specifically at sunset. According to this ruleset, the studies, kitchen, dining spaces, and bedrooms are organized radially along the southwestern facing cliff, all oriented to experience the sunset in unique and controlled ways. By understanding these programs as separate volumes to a main living corridor, the house's geometry allows the light at sunset, in specific moments of the year, to seep in through the cracks of the stone, painting the floors and walls of the living corridor. This corridor becomes an empty void, a canvas, to be painted by the sunset.

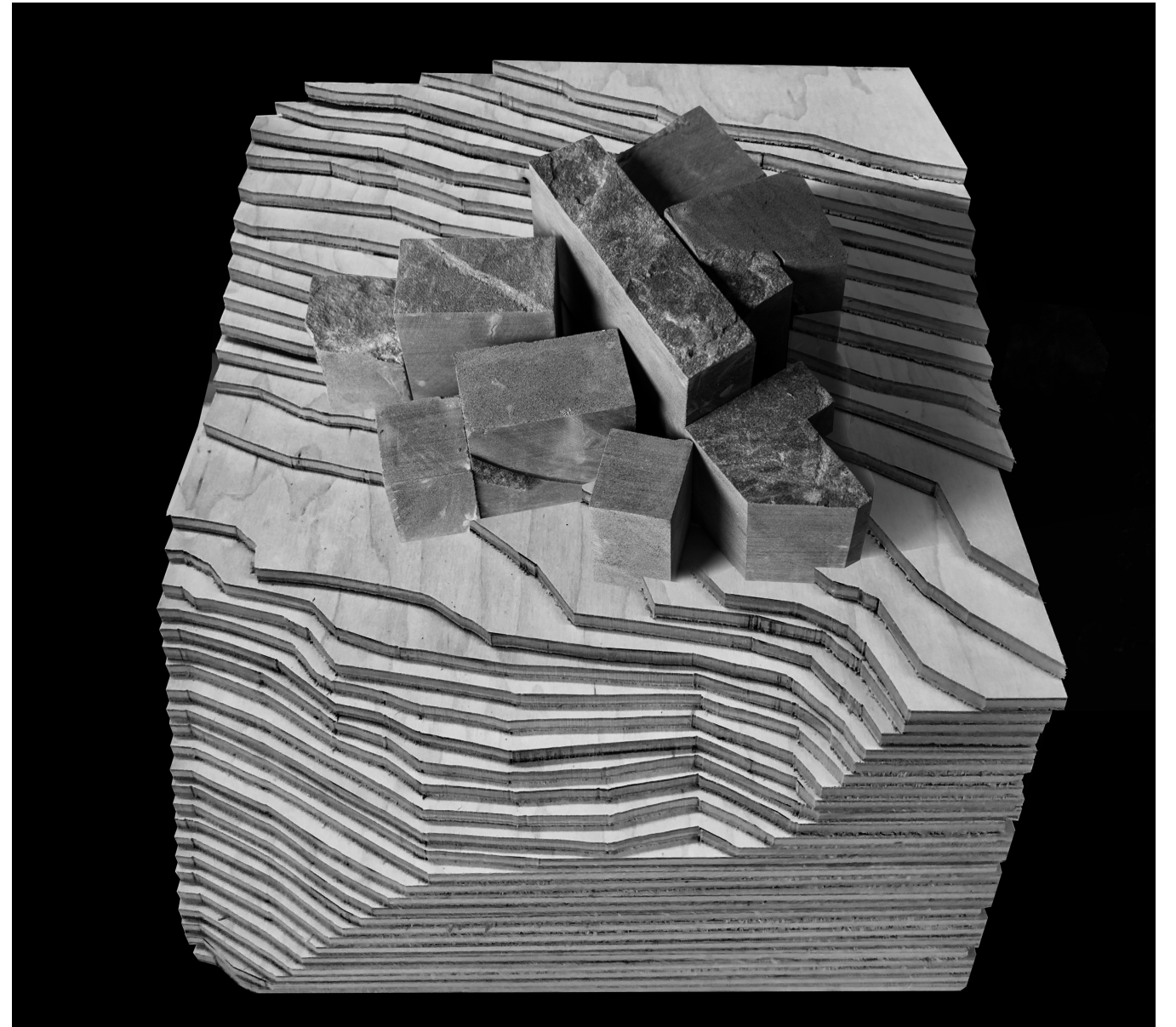


This allows the house to become a dichotomy of experiences: light and shadow; mass and void. Spatially, each program in the house inhabits and explores these concepts uniquely, to create a multitude of spaces that define an experience much more than a house. Conceptually, the void of the living corridor mirrors the condition of the gorge, a void between ancient stone monoliths, in which light carves into. Through this understanding, the house is a product of the site, its materiality, and its feeling.





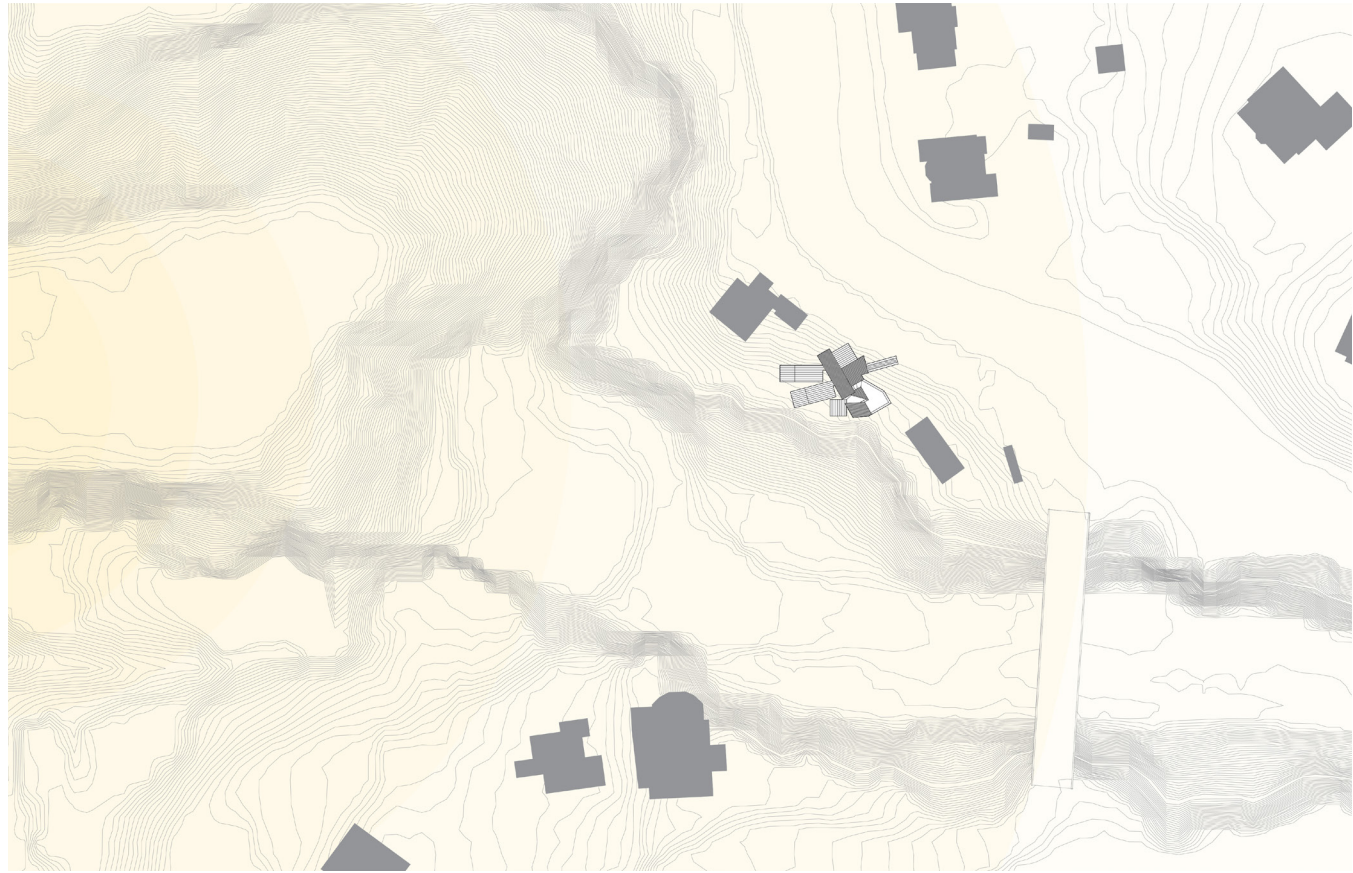
MASSING MODELS



From the conceptual basis of the house, a material system was discovered. As a mimicry of the gorge, the house naturally is made out of stone, expressing the heavy and authentic qualities of the site, initially discovered through the site analysis. The stone system consists of rough and smooth textures telling a story to the people living there, interlocking like lincoln logs. Wooden systems to represent the voids are built the same but are thin, and light.

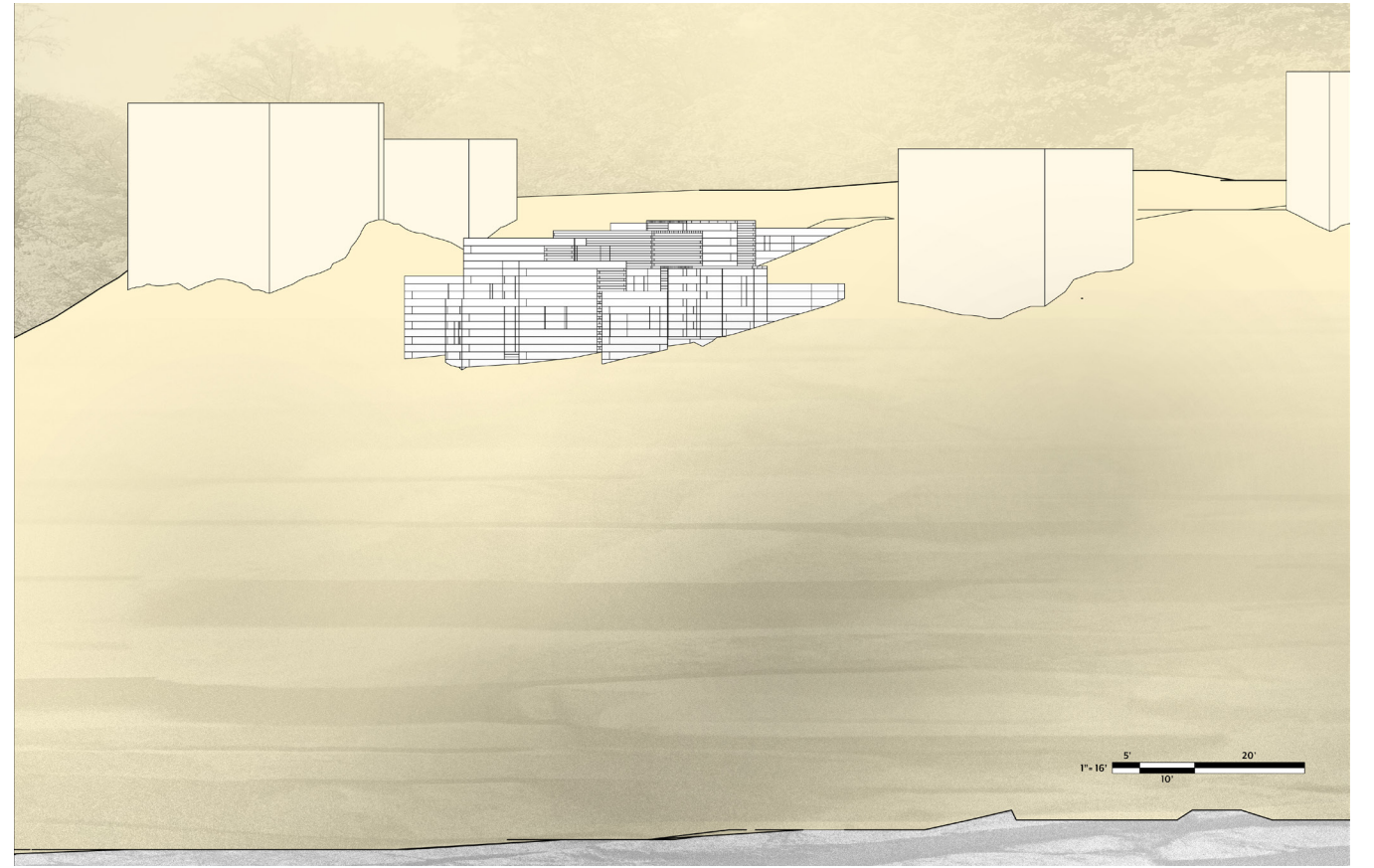


Sitting at the top of the cliff, panoramic views are possible through the angular volumes, while still maintaining the mass expressed through the material. A logic of seeing and feeling the sunset became evident, and becomes the core experience of each space. For example, while the bulk of the living corridor feels the sunset, the dining area at the end is surrounded by floor-to-ceiling glazing, inviting views of the sunset into the house.



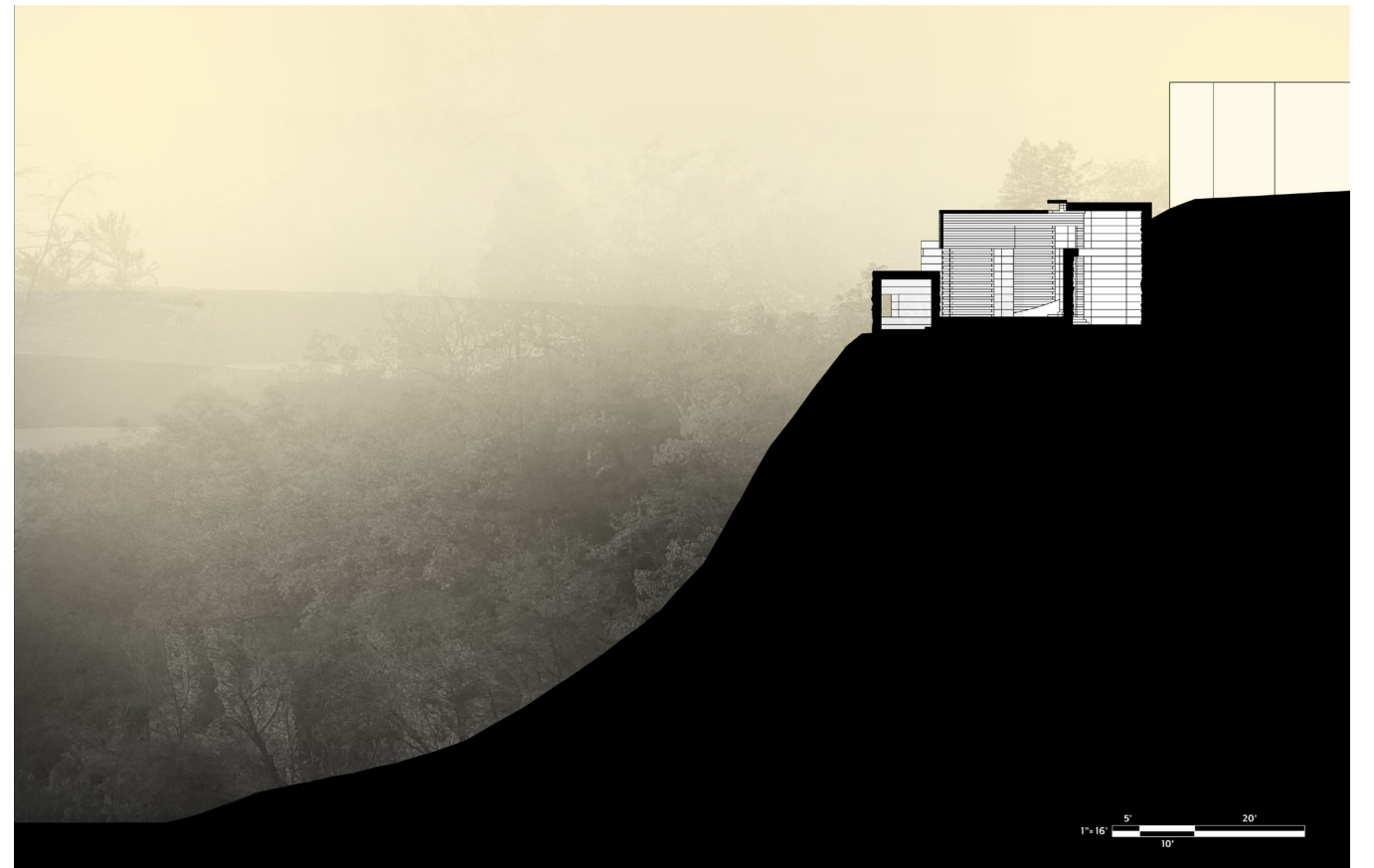
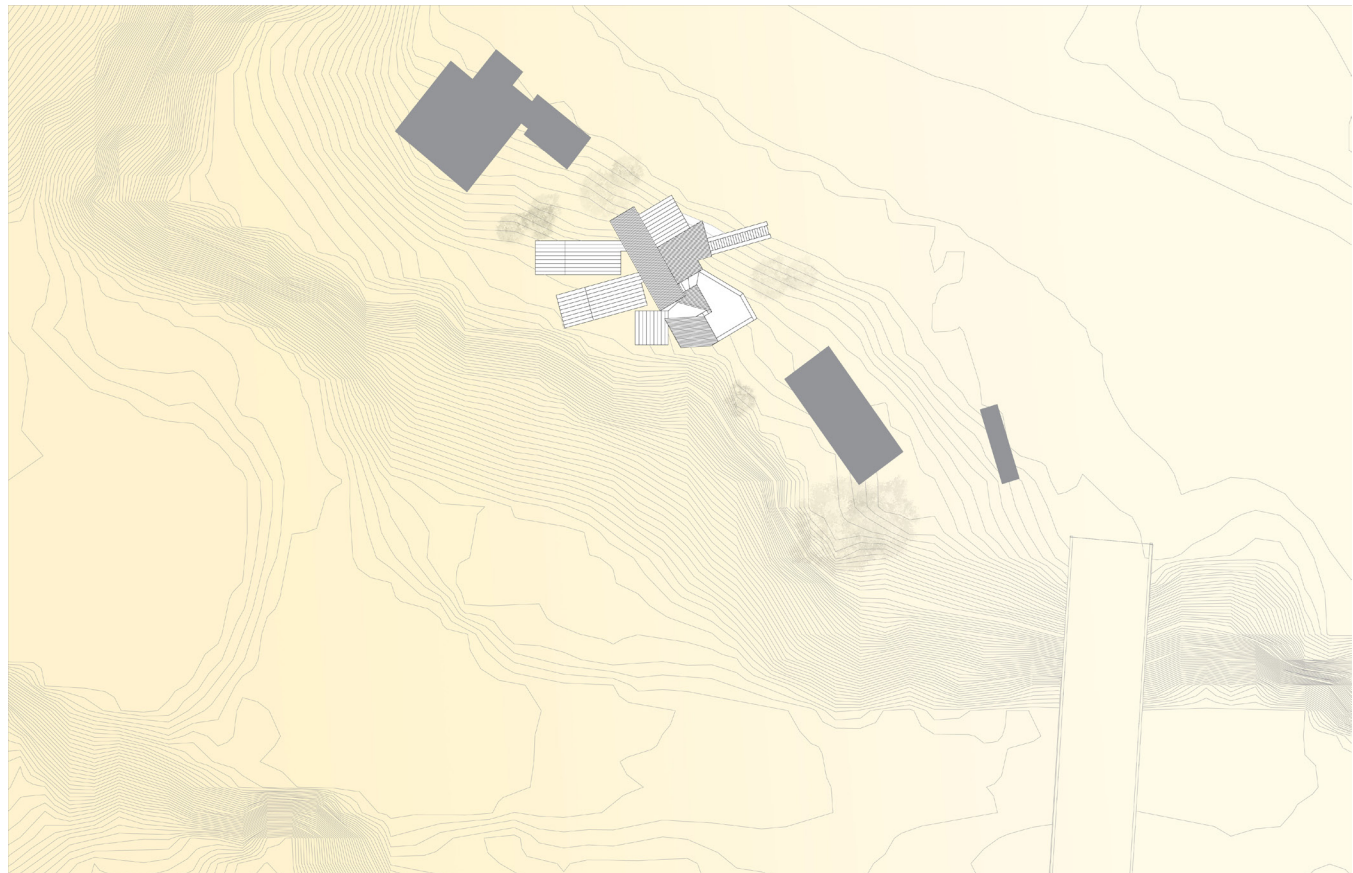
LOCATION PLAN

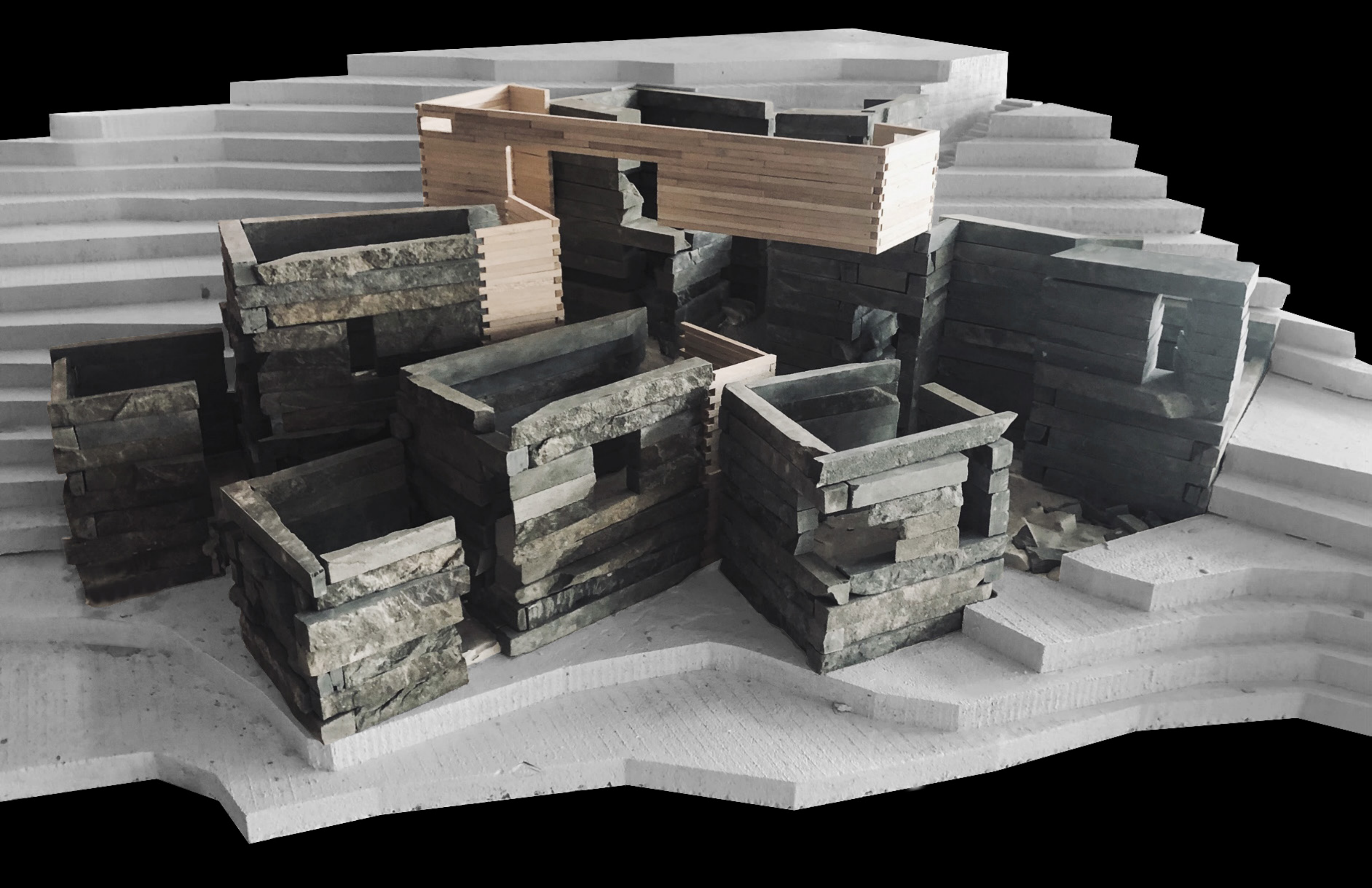
SITE PLAN

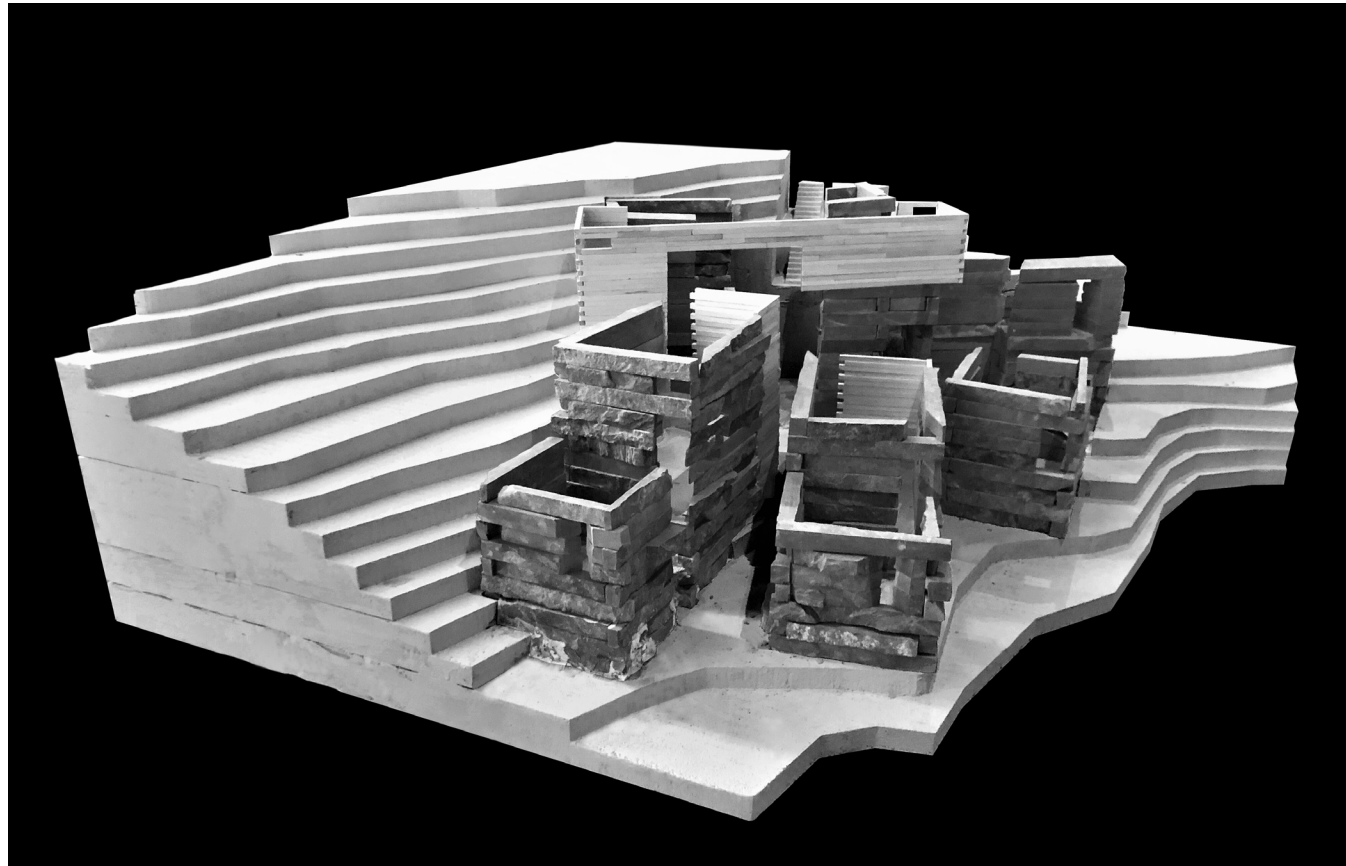


SOUTH ELEVATION

SITE SECTION







MODEL FROM SOUTHWEST

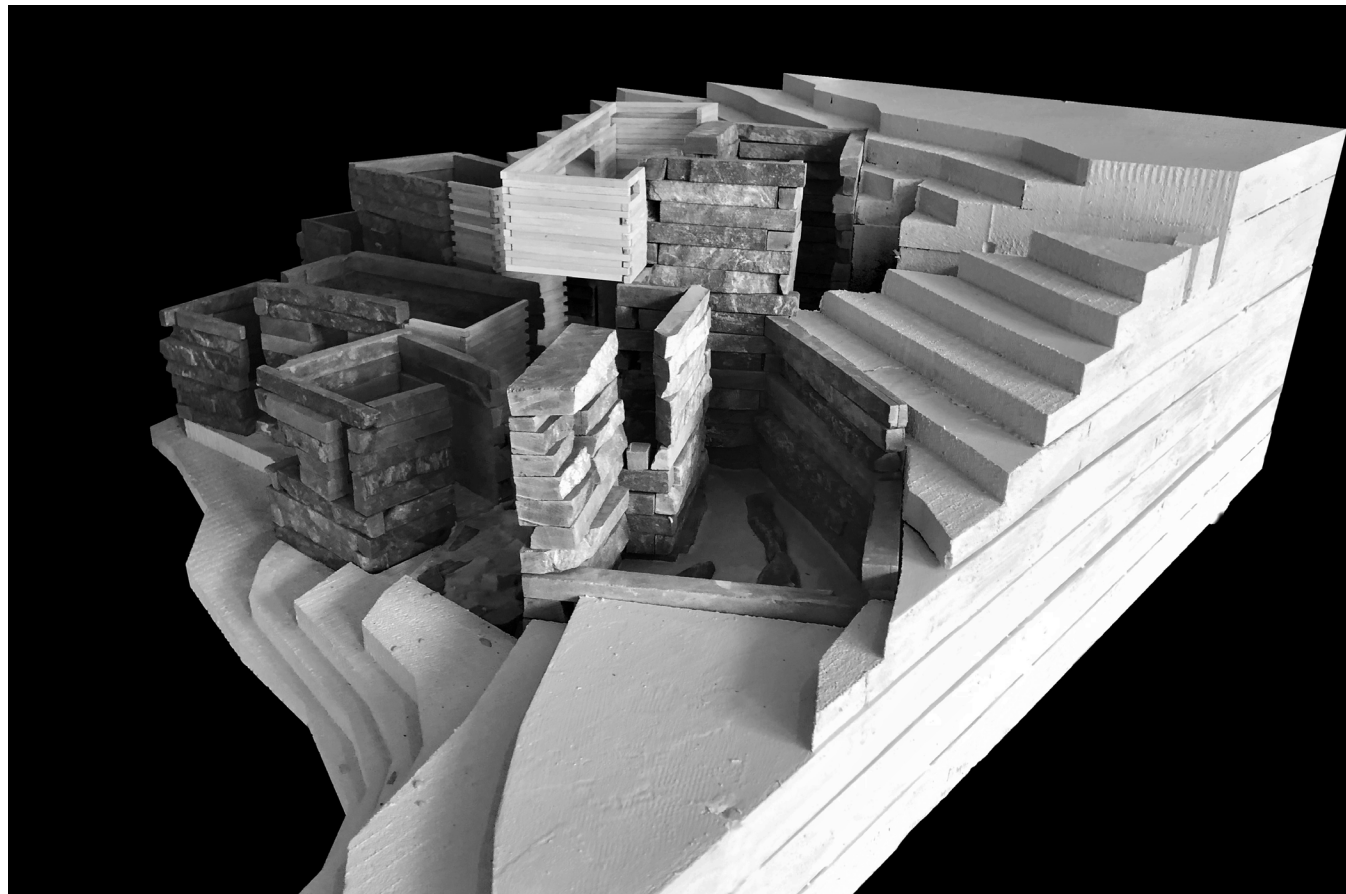


COURTYARD



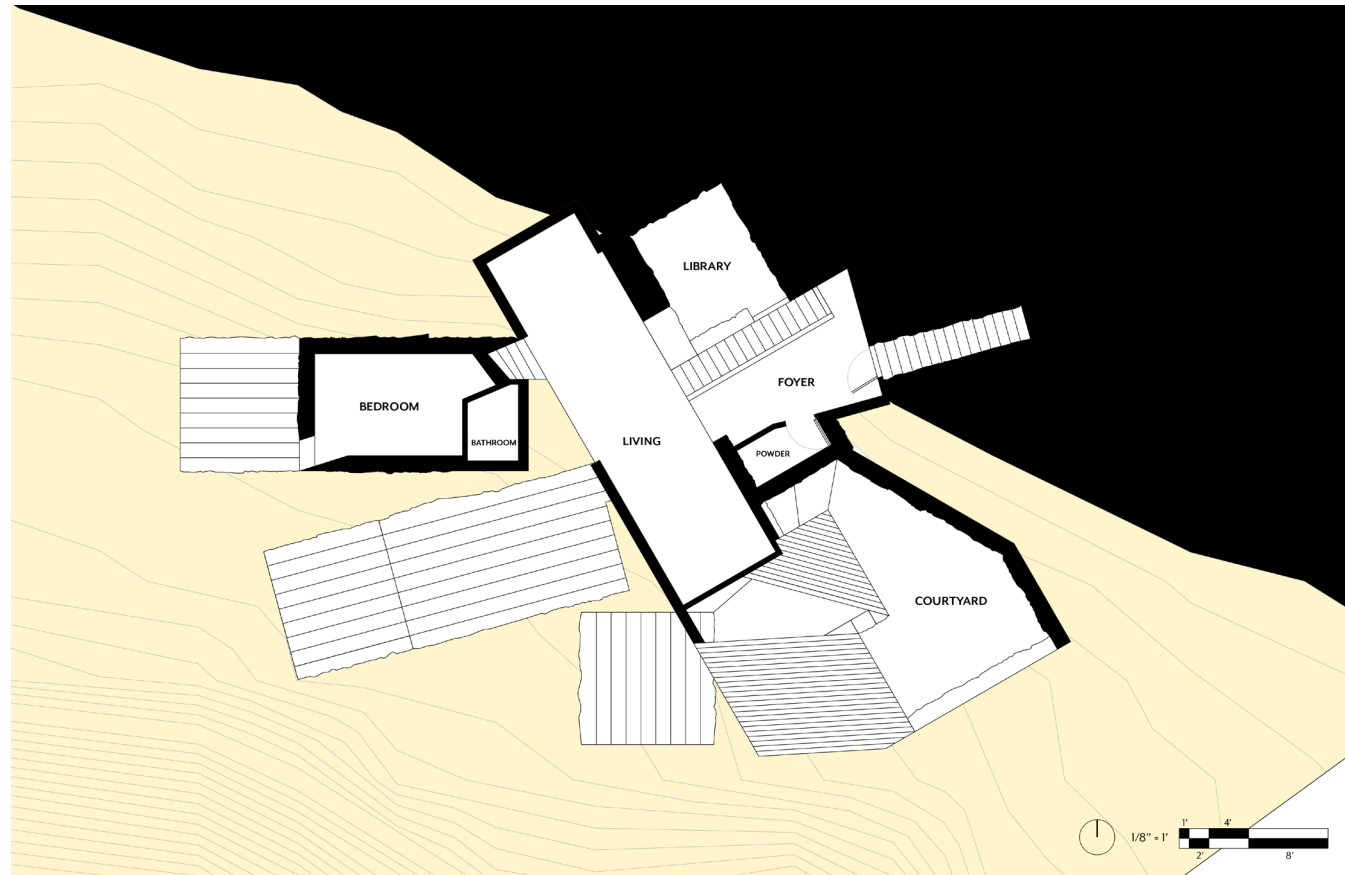
KITCHEN AT SUNSET

BEDROOM AND ATTACHED STUDY



MODEL FROM SOUTHEAST

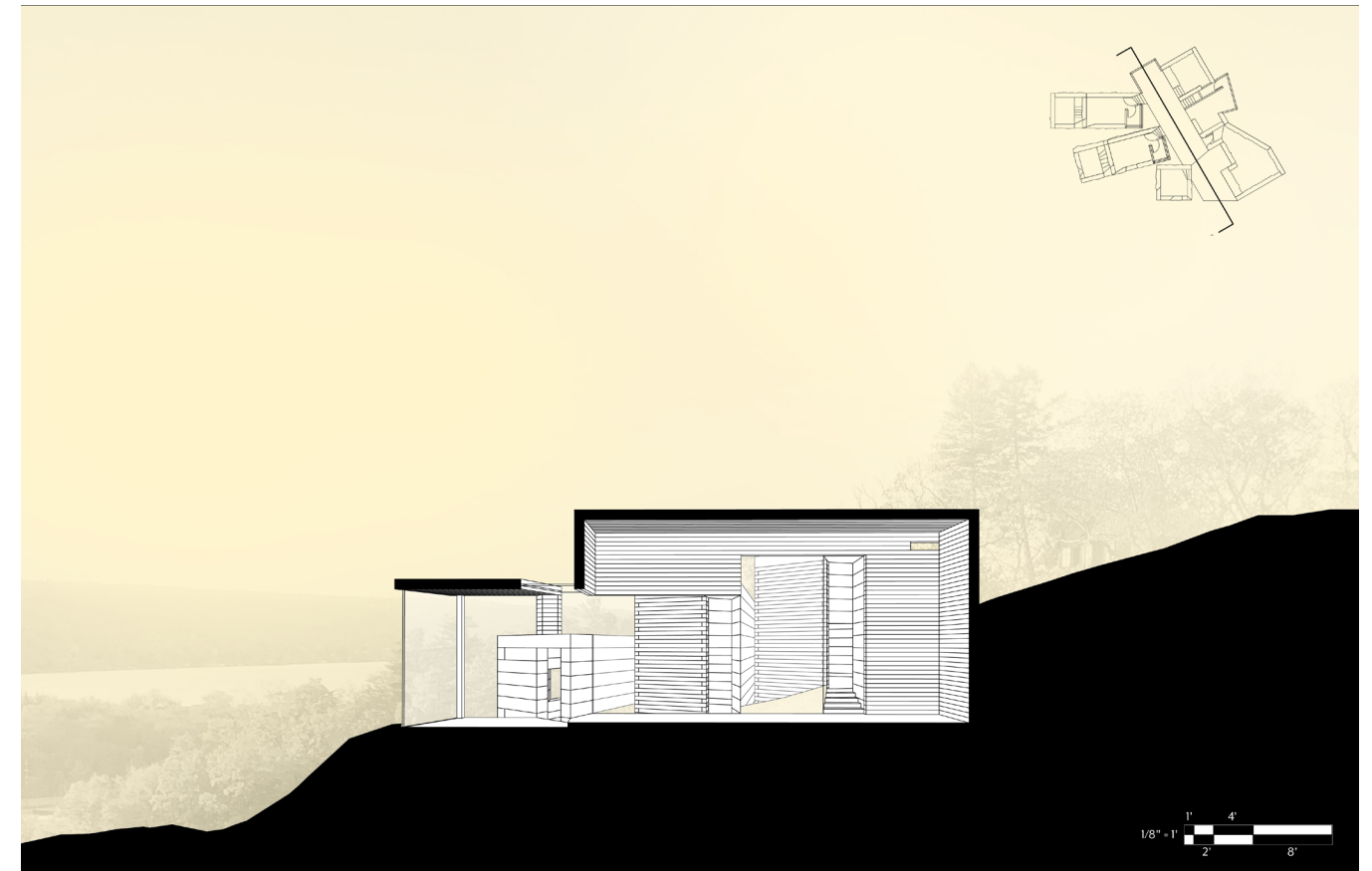




One enters the house through a main stair that follows along the main axis of the house, aligning with the split of the bedroom volumes. This access then intersects with the main living corridor, splitting the house in radial directions allowing multi-directional circulation to and through different programs. These programs consist of a foyer, powder room, library, living room, bedrooms, personal studies, a kitchen and dining space, as well as a courtyard, and a den for lectures and exhibitions. These programs functionally define the house, while the spaces themselves are defined through light and material.

The house has a series of split-level rooms, each at different heights, engaging with the sight in different ways. While materially the rooms are defined by smooth and rough surfaces, these alternating surface textures create different controlled experiences within each room. For example, the exposed stone walls in the living corridor are smooth on one side, while on the side towards the sunset, the rough layered stone intersects with the space creating a harmony of material textures. With this intention, the courtyard and library interiors have rough surfaced stone. This ruleset is deviated from however at certain moments within the house. A datum line of stone wraps through the house all at the same level, but is noticeable as it alternates the rough and smooth surfaces respectively. Because each floor is at a different height, the datum line appears to be different in each space, but is actually the only constant reference in the house.

Certain spaces within the building envelope are double height as well. These spaces negotiate with the sloped site while simultaneously allowing light in at higher volumes. For example, both the foyer and living corridor step down slightly each above the next building volume, with small horizontal windows that let the light at sunset seep into the space subtly. Other openings in the house are defined by the attitude towards the sunset that each space carries. While some openings are large and meant for views into the landscape, others are small vertical and horizontal slits that let light paint fragile lines on walls and floors.





EXTERIORS SEEN FROM BRIDGE AND ROAD

SUNSET AT ENTRY



LIVING CORRIDOR AT SUNSET

BEDROOM; ATTACHED STUDY AT SUNSET

