Architecture
Portfolio

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UNIVERSITY OF CALGARY
ENVIRONMENTAL DESIGN

Contents

Disruption

Disruption is all about the concept of disrupting the everyday to bring back something that has been lost. The Cartesian Grid that shapes the city, has acted as a flattening force which has hidden the beautiful foothills that make up the Calgary landscape. The Site was chosen based on its emptiness of activity. Because of these aspects, it became the perfect place to revamp and re-utilize it by disrupting the grid and bringing back the landscape. The first step was to grid out the entire site with the same aspect ratio as the grid used for the district. By grabbing a block size and dividing it by 10 to get a pixel size, the entire site was gridded out. The architecture was shaped like a U to created both a community with the occupants and the public. Using 5 floors with a mixture of 1 bedroom, 2 bedrooms, 3 bedrooms, and public spaces, an initial form was created. This initial form was the mold for the intervention and skin. Bounding by the rules of the grid which makes up the city, the vertices were then pushed and pulled to create an overall form. The structure is made of concrete to play with this idea of lifting up and delaminating the ground plane to create habitable space. The concrete is transparent to show both imagery of the foothills on the exterior and place privacy and view for the interior. In the end the project disrupts the grid by using the structure of the grid to bring back a form in which the grid has destroyed.
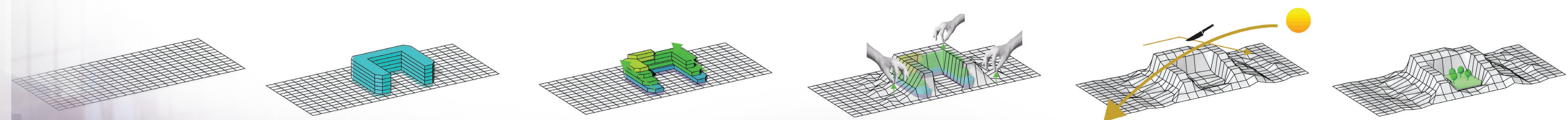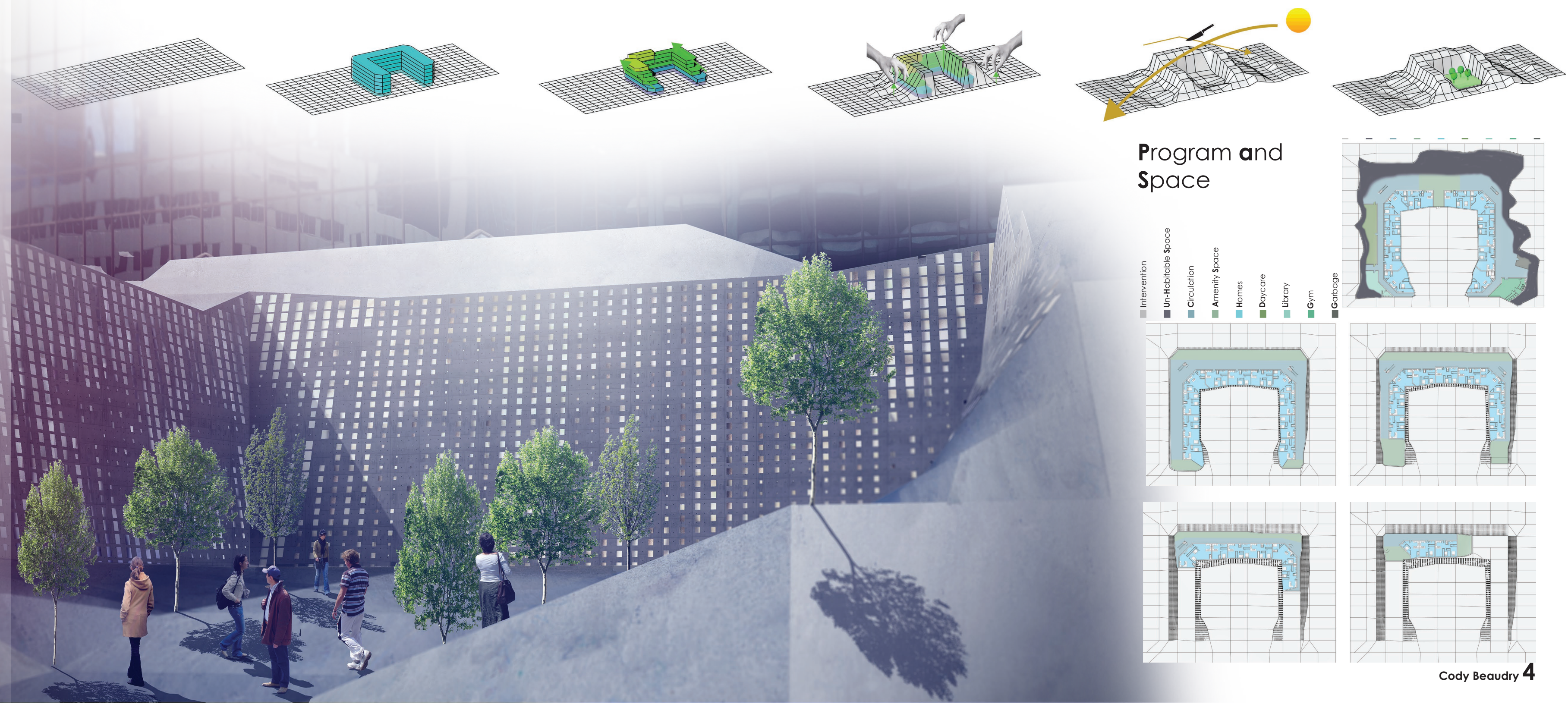
Program and Space

Intervention
Un-Habitable Space
Circulation
Amenity Space
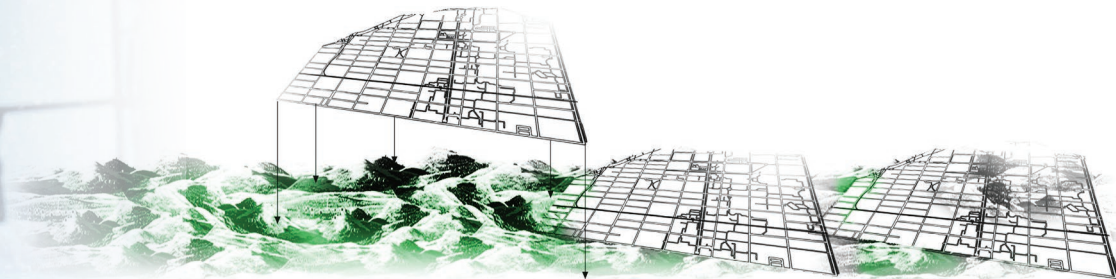Homes
Daycare
Library
Gym
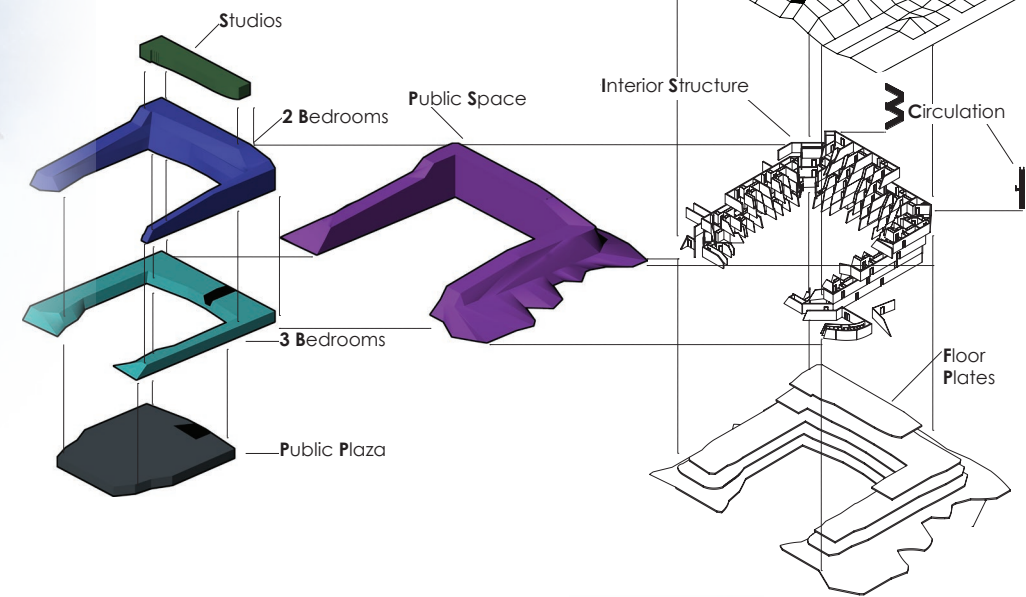Garbage
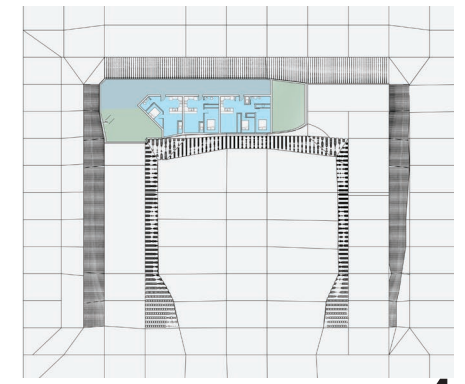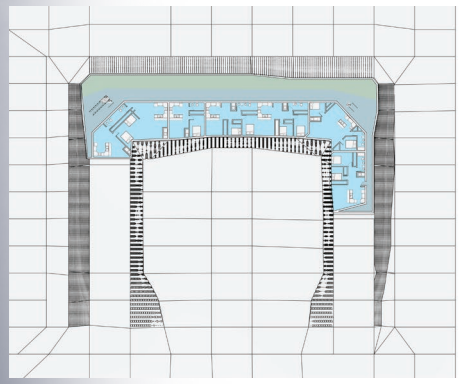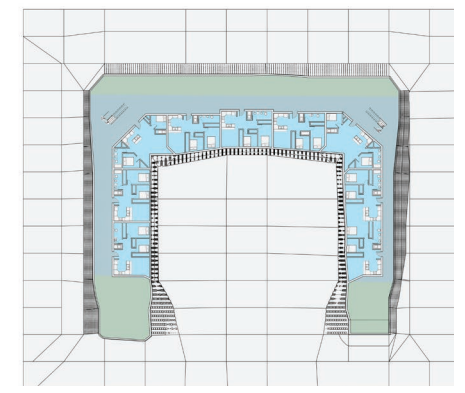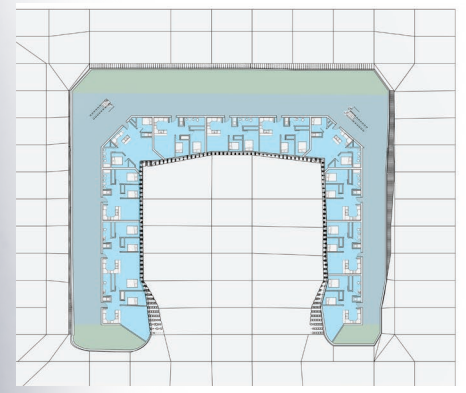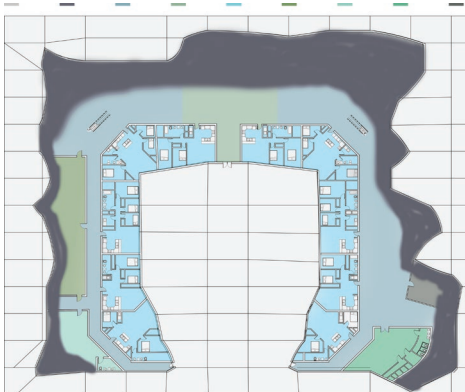
Experience Renders

These **experience renders** were created to show the depth in activity such a place like this could have. It would essentially be an open hill like park, where the city could have events and the architecture can be played on without disrupting those who live within the building. Fall the leaves will be able to be played in, hot summer nights a movie could be played, and in the winter you could sled down the easier banks.

Parti- Evolution of the Ground Plane

Structure and Organization

Concrete Skin

Studios

2 Bedrooms

Public Space

Interior Structure

Circulation

3 Bedrooms

Floor Plates

Public Plaza

Exposure **H**ouse

The Exposure House was a concept created to create a space which induced a need of connection. The entire facade is glass with a unique pattern to create unique lighting and exposure. Standing from the outside you are able to look into the entire house but your vision is skewed by the openings. Fogged glass is used in more private areas such as the bathrooms and the glass floor of the bedrooms. The rest of the house has moments where a subject can be seen through playful artifacts in the walls, staircase and so on. the balcony is a multi-leveled playground of sorts where one can climb and interact throughout and inside the house. The house was meant to be playful an open.
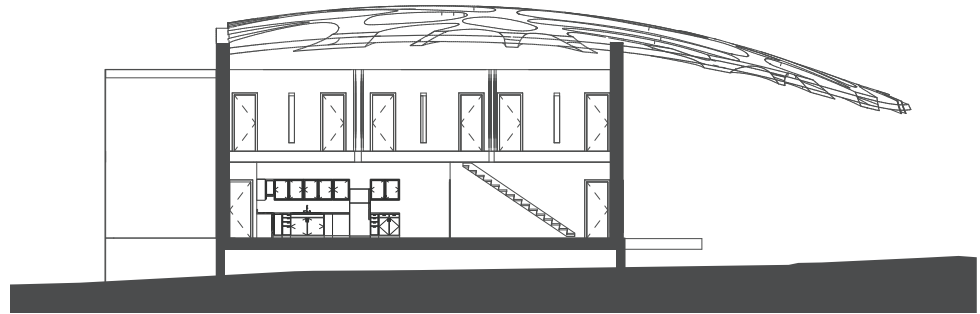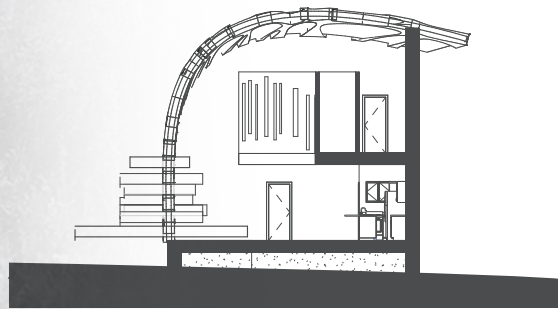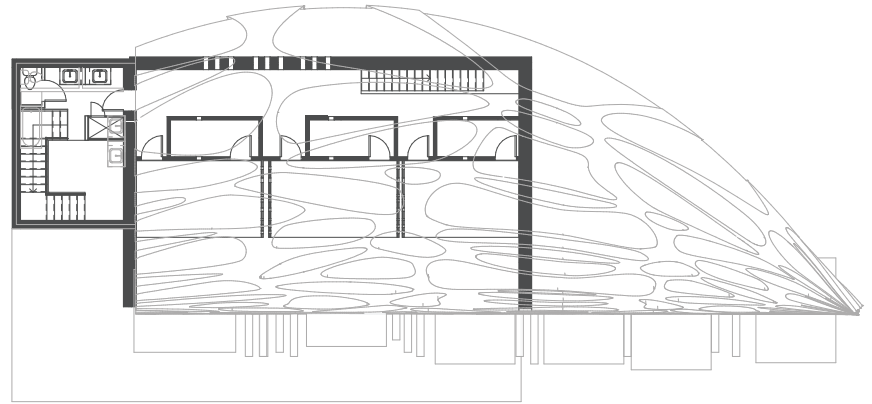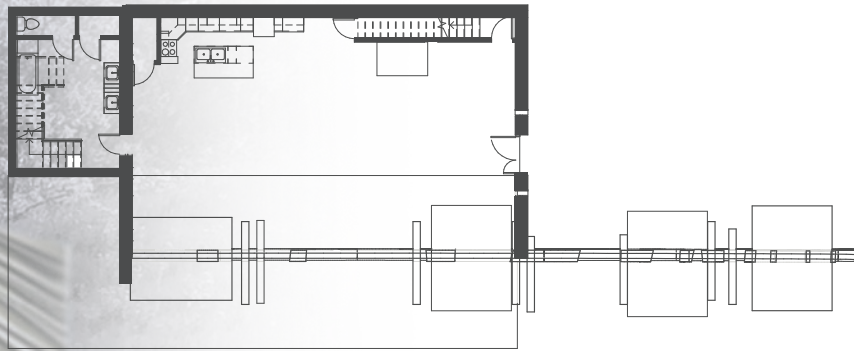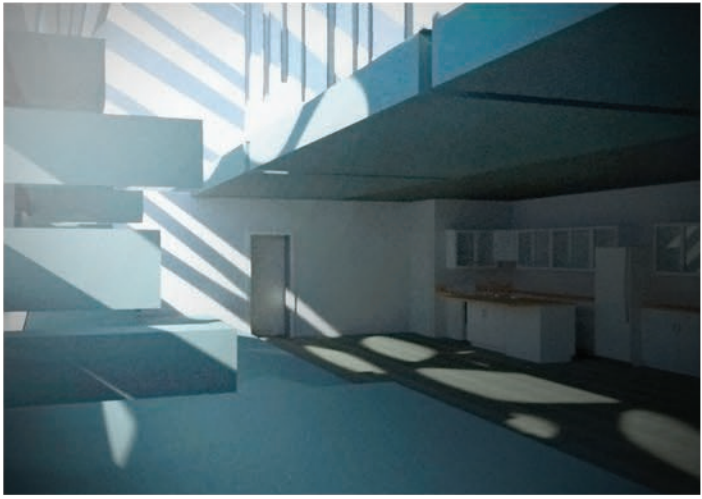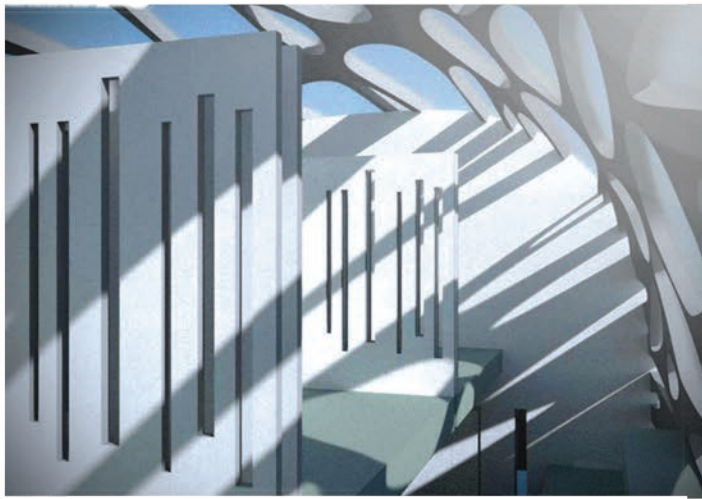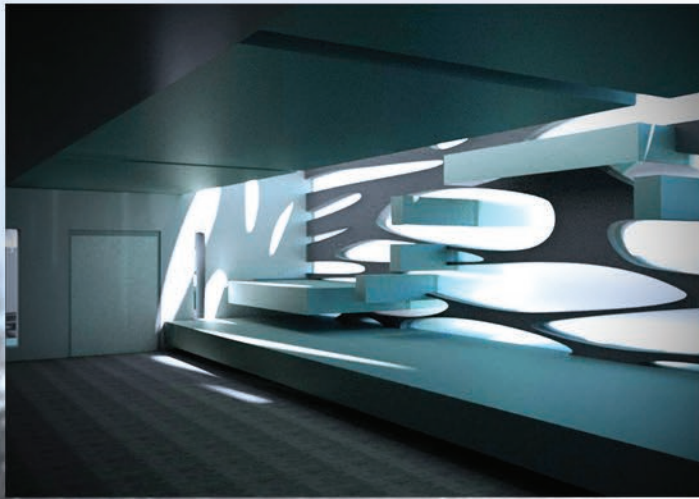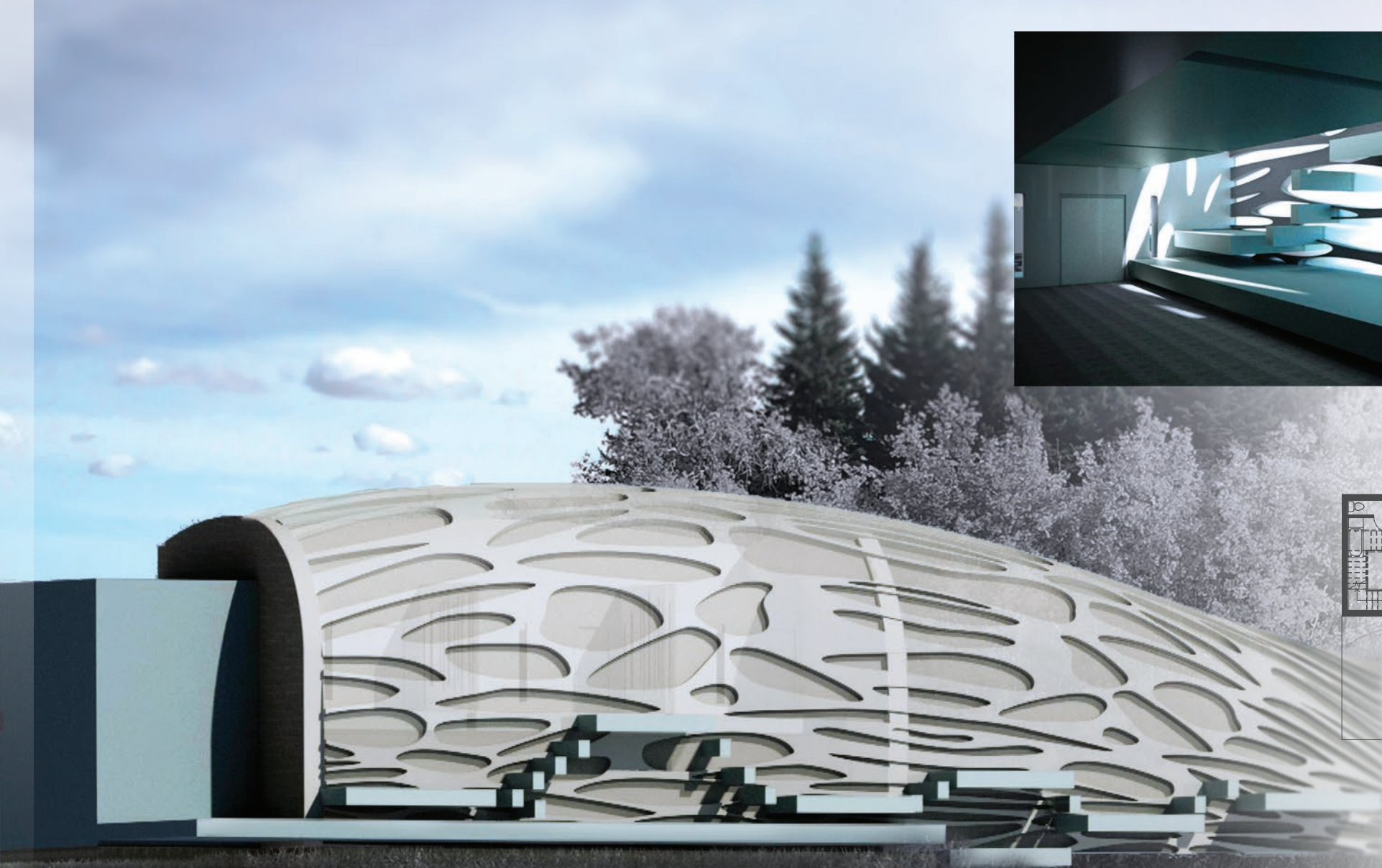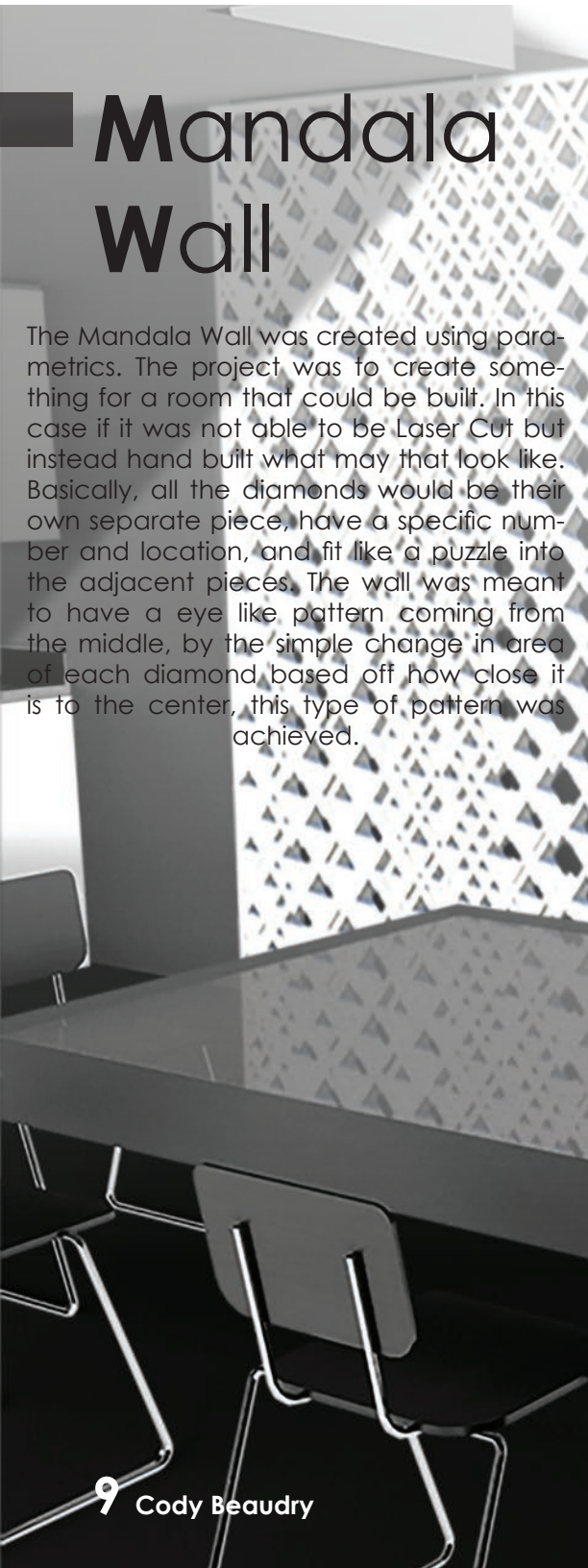
Mandala Wall

The Mandala Wall was created using parametrics. The project was to create something for a room that could be built. In this case if it was not able to be Laser Cut but instead hand built what may that look like. Basically, all the diamonds would be their own separate piece, have a specific number and location, and fit like a puzzle into the adjacent pieces. The wall was meant to have a eye like pattern coming from the middle, by the simple change in area of each diamond based off how close it is to the center, this type of pattern was achieved.
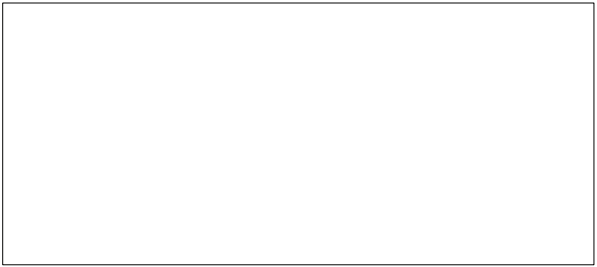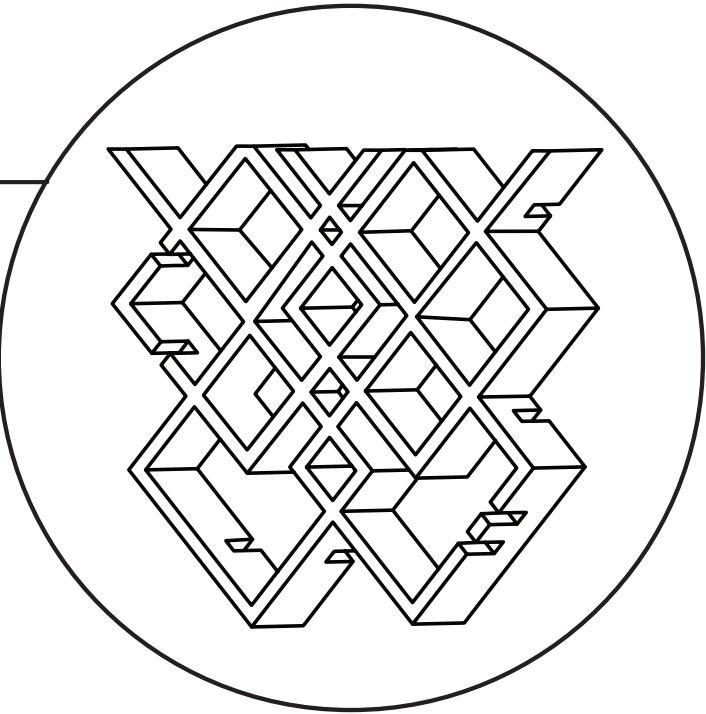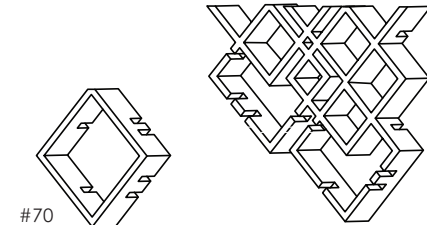
#16   #17   #42

#43   #69   #70

0.1   0.2
         0.3
#16
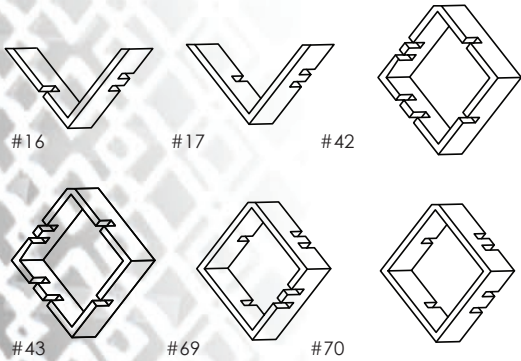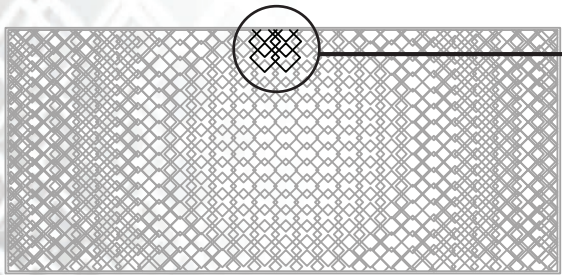
1. Each diamond is categorized by a number and each slit is categorized by a decimal

#43

0.3   0.3
#16   #17
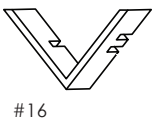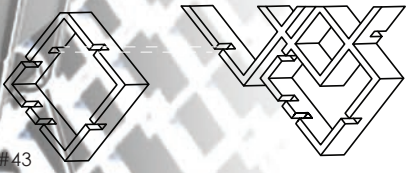
2. The decimal for a slit matches the same decimal as the corrisponding diamonds slits for connection.

#69   #70

#42
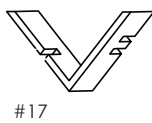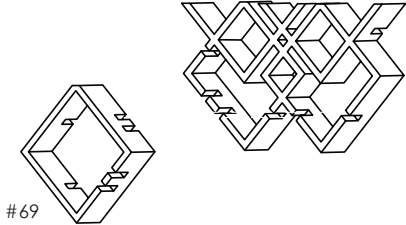
3. All diamonds connect in this fashion

1. Start with a frame that 6 m by 2.5 m

2. Evenly rid out the frame with centroids to create a grid that is 26 x 14

3. Create diamonds around every centroid
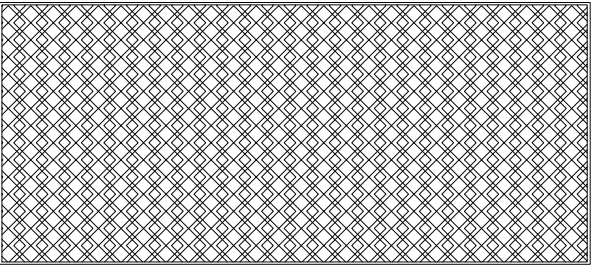
4. Remove centroids to isolate the pattern
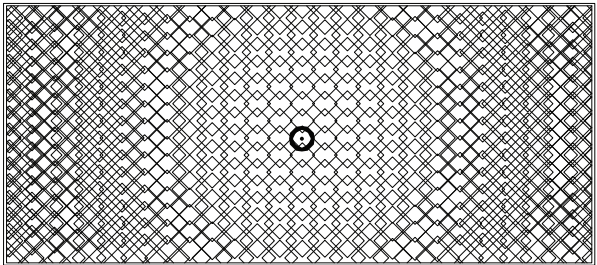
5. Use an attractor point in the middle of the wall to create a field where the length of each side changes depending on its distance to the point
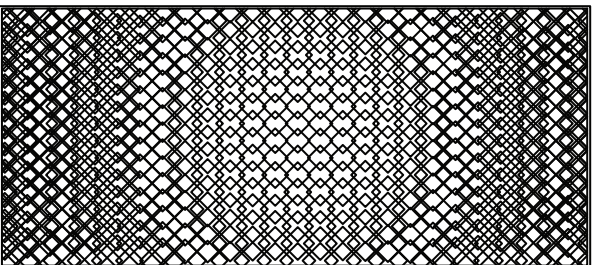
6. Thicken and Extrude to create final Wall
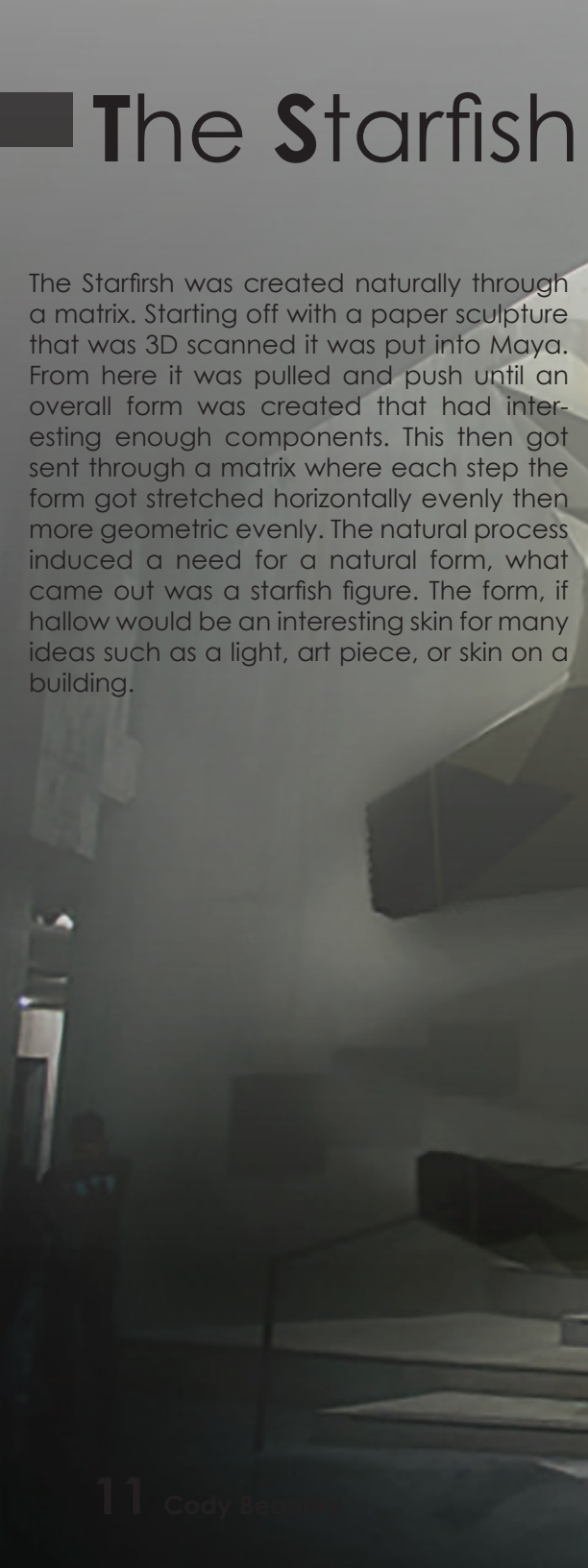
The **S**tarfish

The Starfirsh was created naturally through a matrix. Starting off with a paper sculpture that was 3D scanned it was put into Maya. From here it was pulled and push unti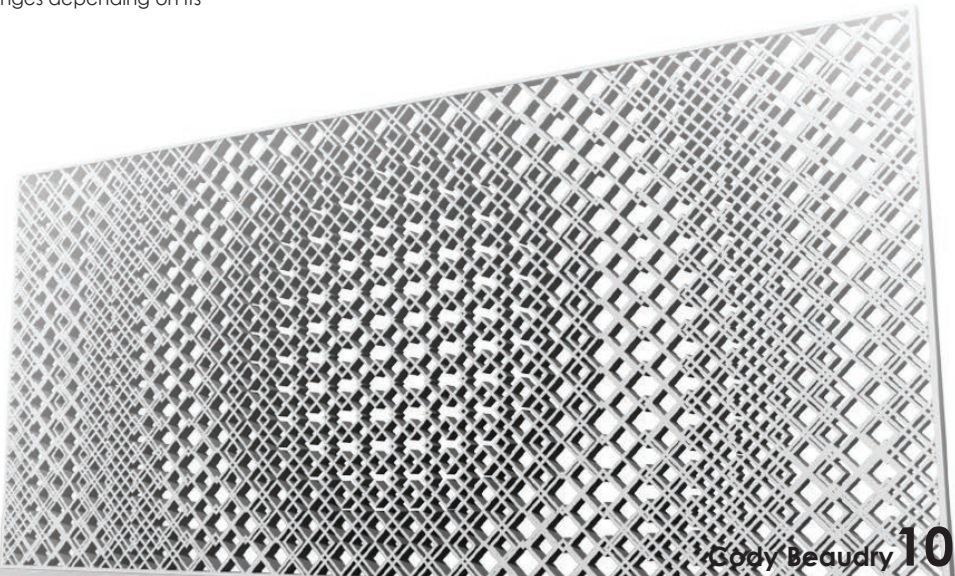l an overall form was created that had interesting enough components. This then got sent through a matrix where each step the form got stretched horizontally evenly then more geometric evenly. The natural process induced a need for a natural form, what came out was a starfish figure. The form, if hallow would be an interesting skin for many ideas such as a light, art piece, or skin on a building.

Plan

Section

Isometric

S1

S2

S3

S4

S5

S1 S2 S3 S4 S5
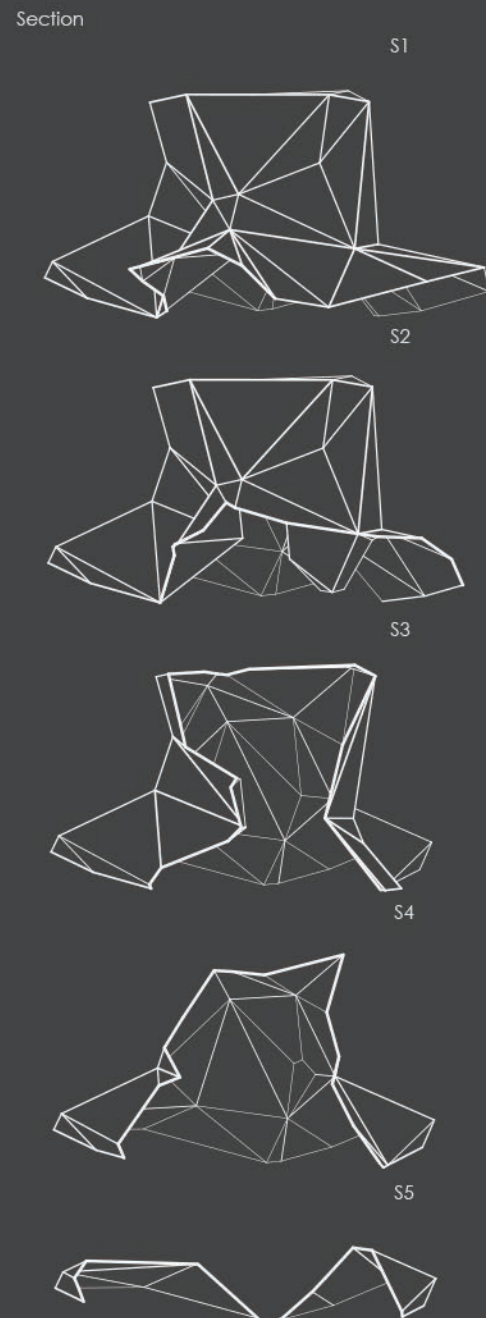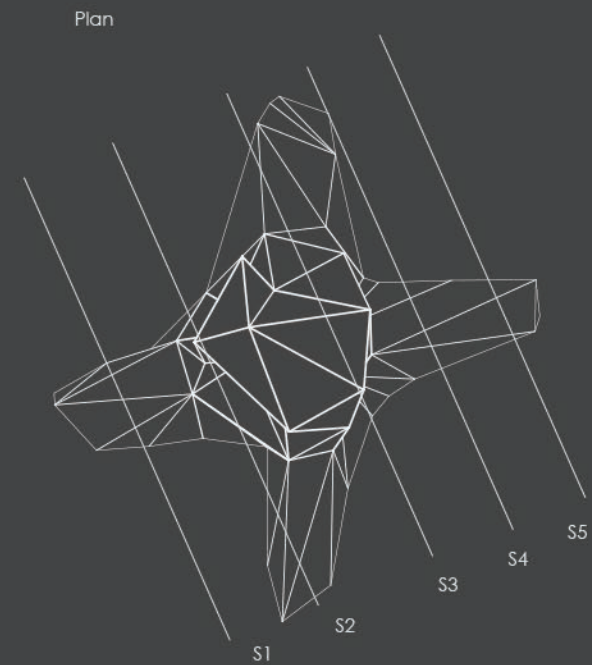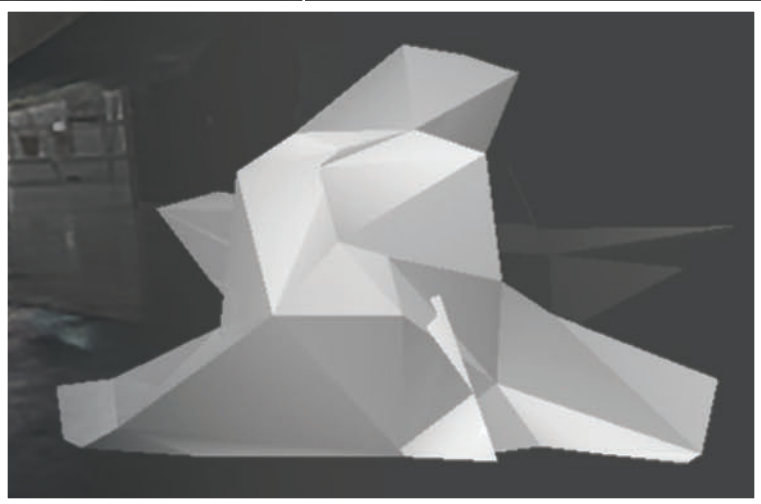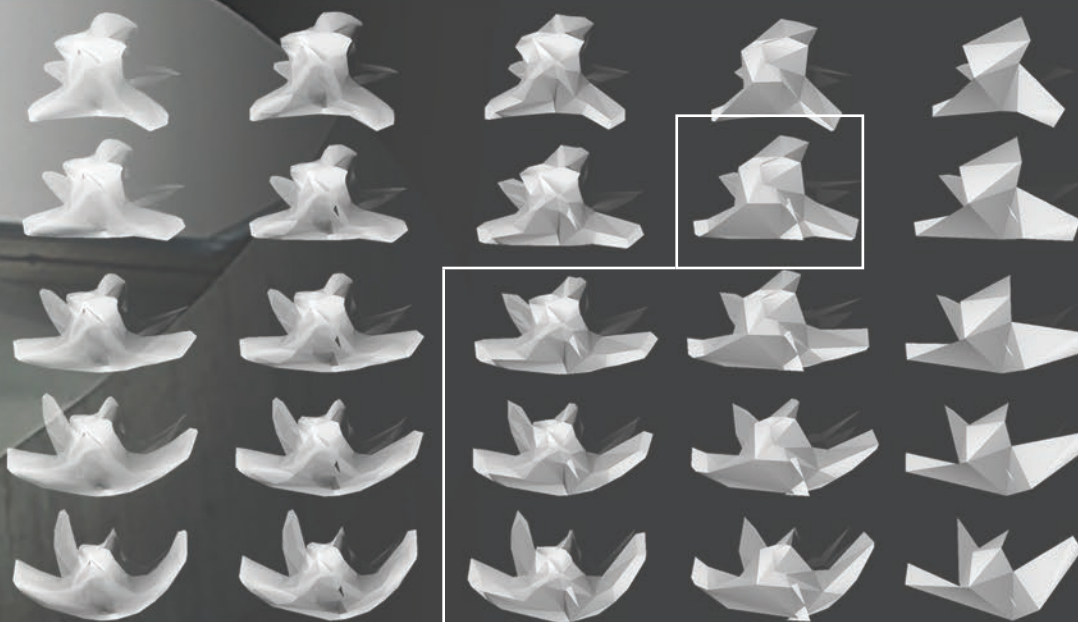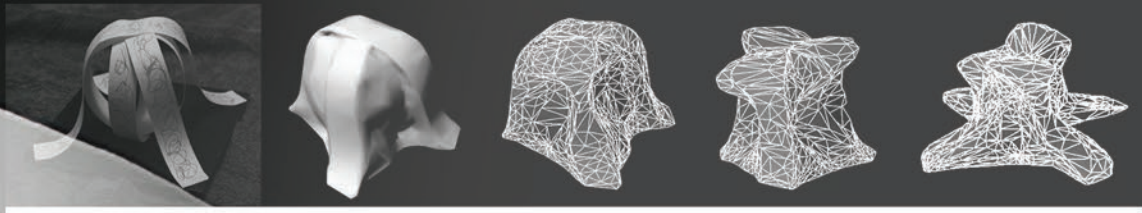
Diamond Spider Table

The Diamond Spider Table was created for project that was to combine sculpture and function. The goal for me was to create a unique end table which consisted of two small shelfs and a large top. I started with sketches of the base playing with different leg forms. I came across a zig-zag like pattern that I really enjoyed. I thought if I took this form and made it into a circle I could create a unique stand for a table. In this case it created an octagon. Doing some engineering I used 45 degree angles to attached every piece separately starting at the base and making my way up, the final built piece is shown on the right.

1.

2.

3.

4.
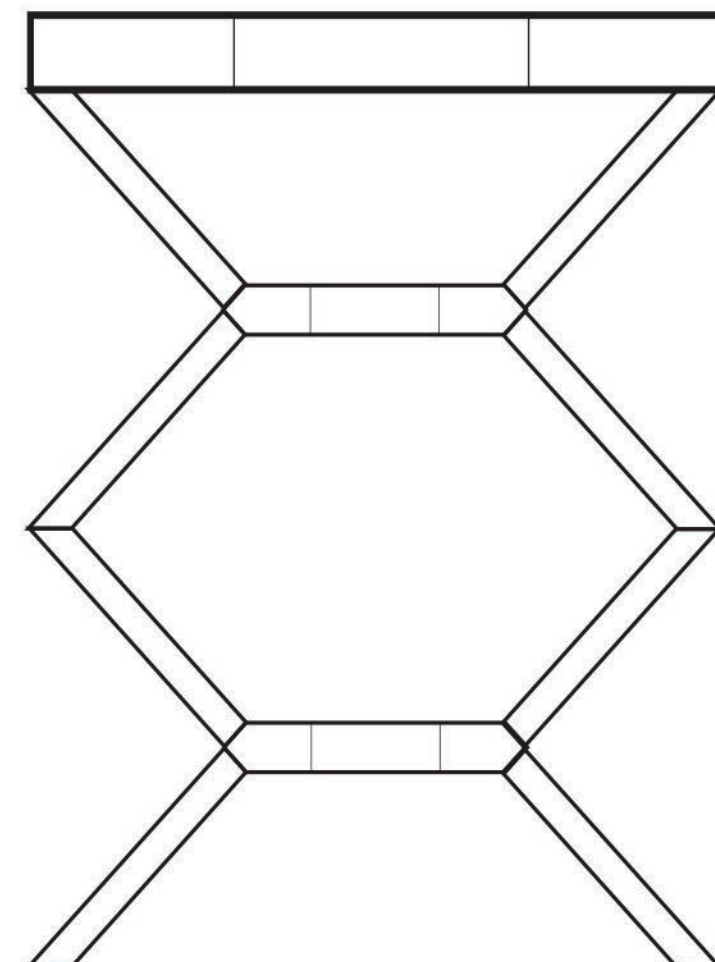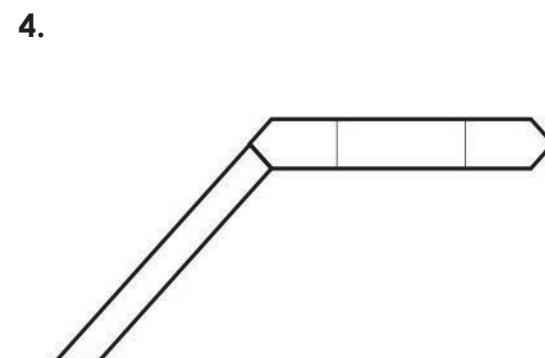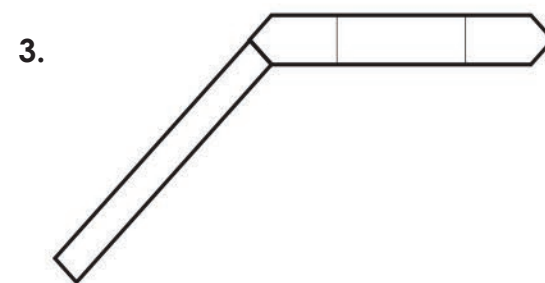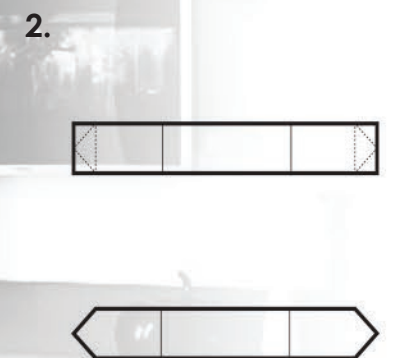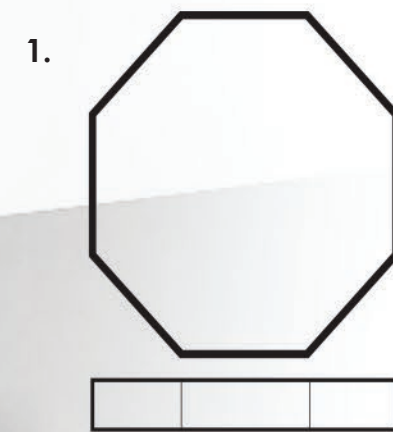
Final Construction Elements
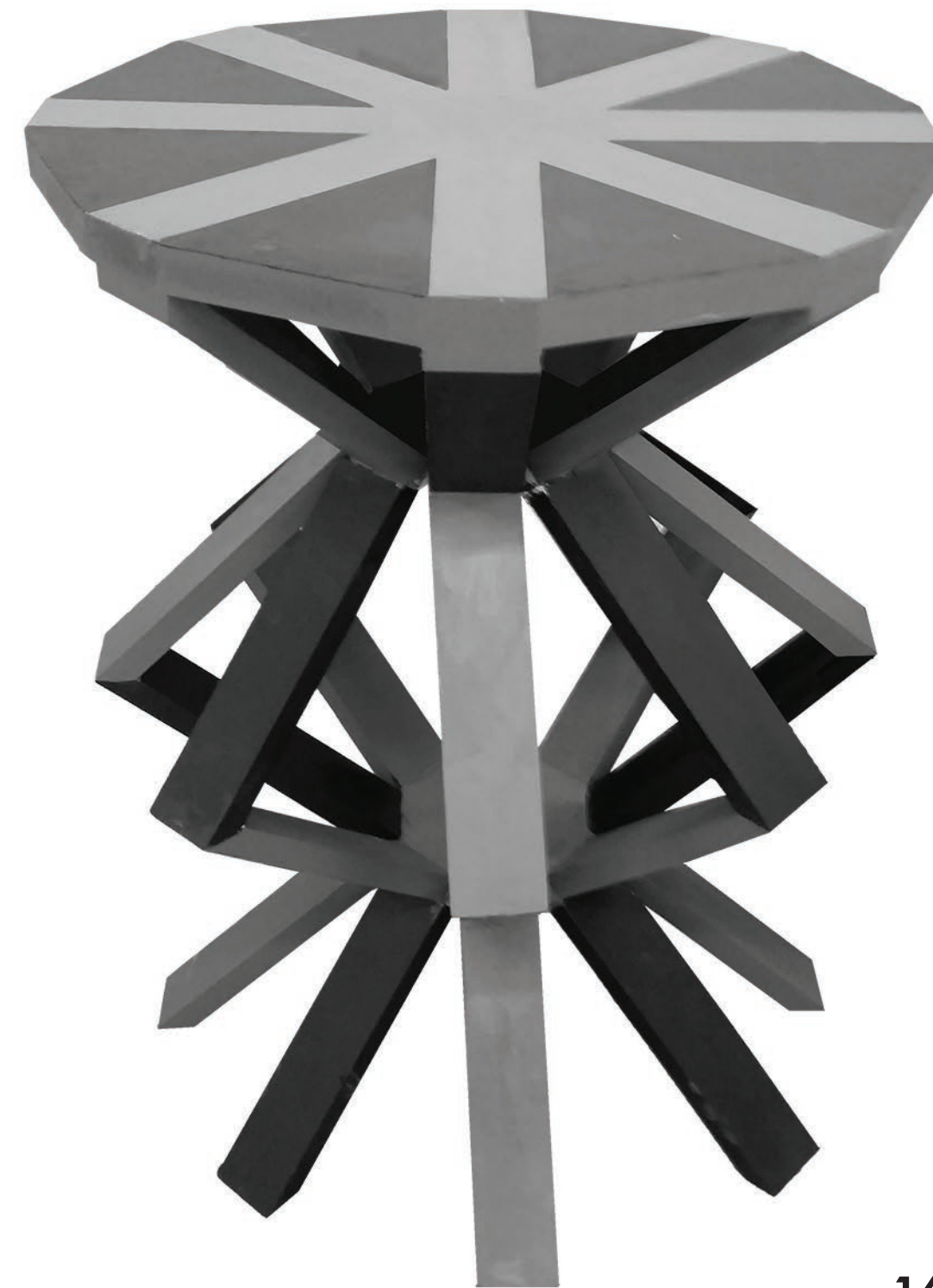
The Female Form

This Project was meant to sculpt a busk of the female body. Working with a live model standing in the middle of the room, the job was to hand sculpt the forms of the body into solid clay. The Clay Sculpture was about 2 feet high and 1 foot wide. Once the clay sculpting was done a plaster mold was done by covering the clay sculpture in a thick layer of plaster. Washing out the clay left an empty mold that was then filled with additional plaster. The plaster was hardened and once the breakaway mold came off you are left with a sold plaster model of the female form. Sanding and painting with some rock paint, the final product is left.

Step 1 Clay

Step 2 Plaster Mold

Step 3 Plaster Sculpture

Final Form

The
Interactive
Cube

The Interactive Cube was a sculpture that was made out of the iterative process of creating. It started off with building four simple frame cubes. With this came numerous possibilities for form making. The one I settled on however was creating a 10-foot tower with the cubes without simply stacking them. By taking every second one and turning it to its point the cubes could be locked together. Without any support the structure could stand and even movement forced to the piece would not make it move.
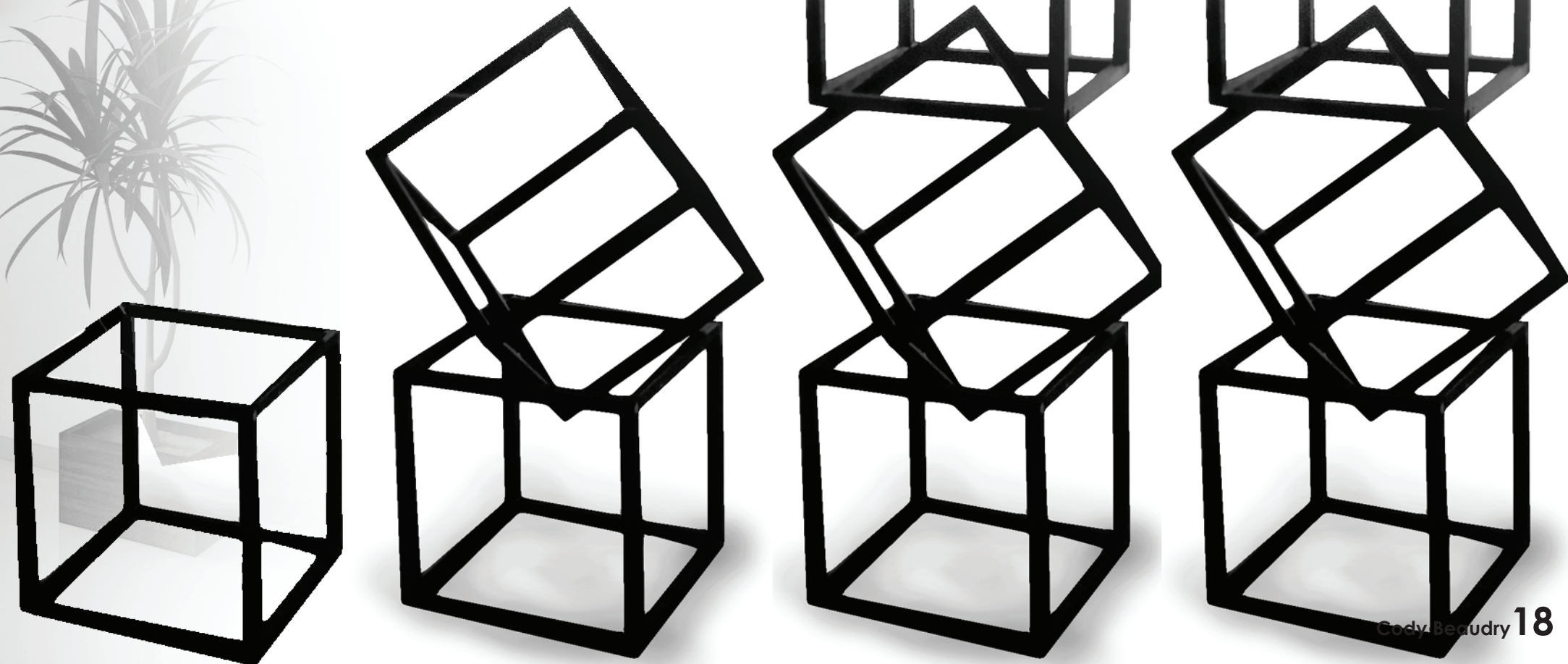
Perspective
Pencil
Drawings
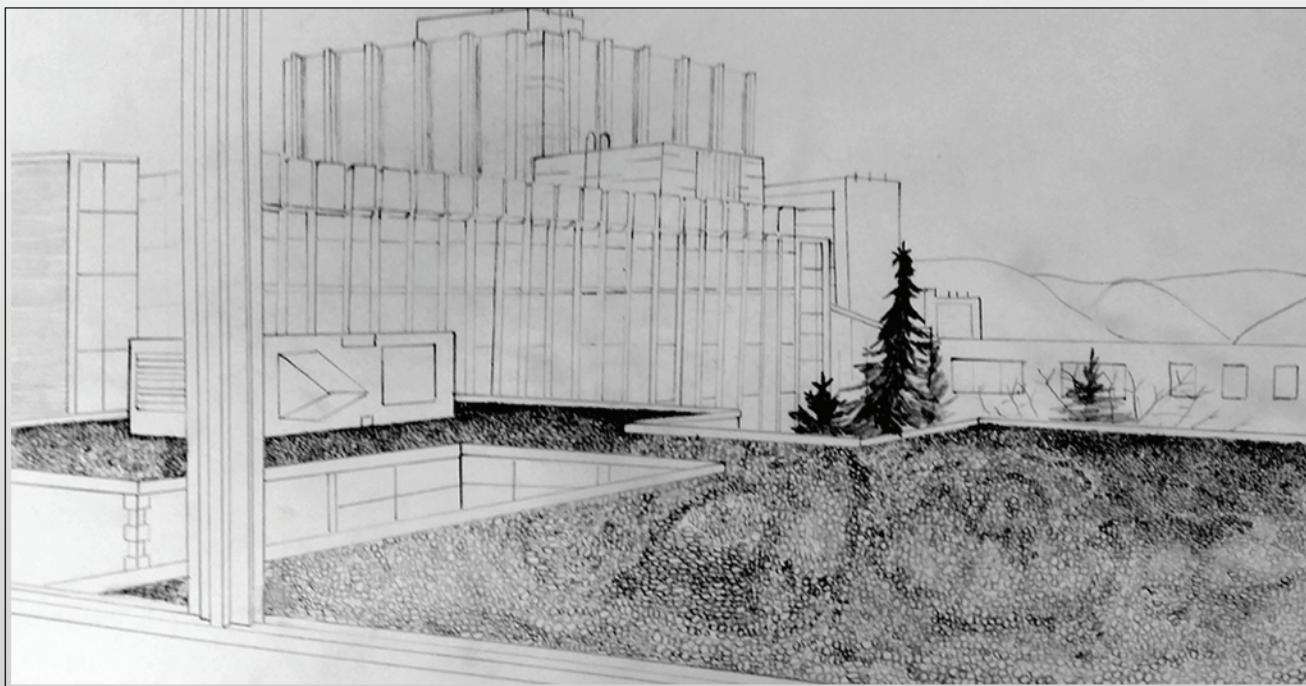
2 Point Perspective View Through a Window

3 Point Perspective of Taylor Family Digitial Library

2 Point Perspective of a Hallway Intersection

1 Point Perspective of a Hallway

Conceptual
Drawings
Ink and Pencil

Layers

1-5-1 Clock

Explosion of Emotion

Tipping Point

The Miniature Workplace

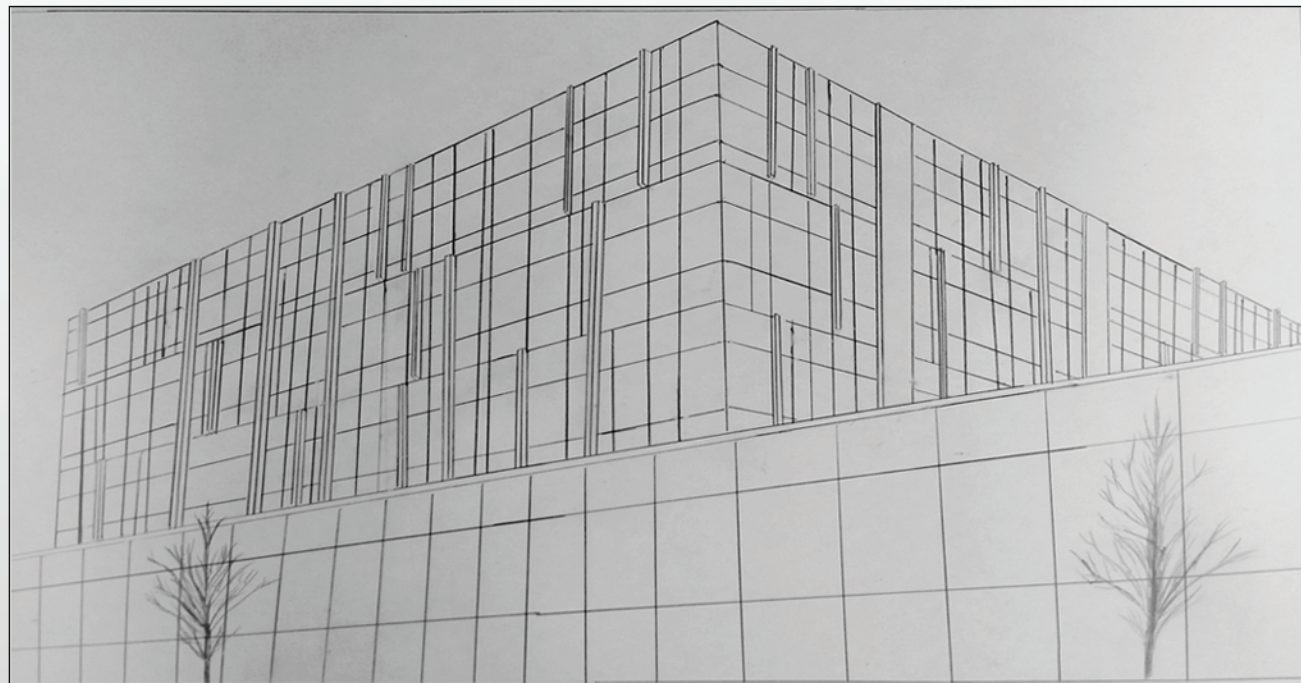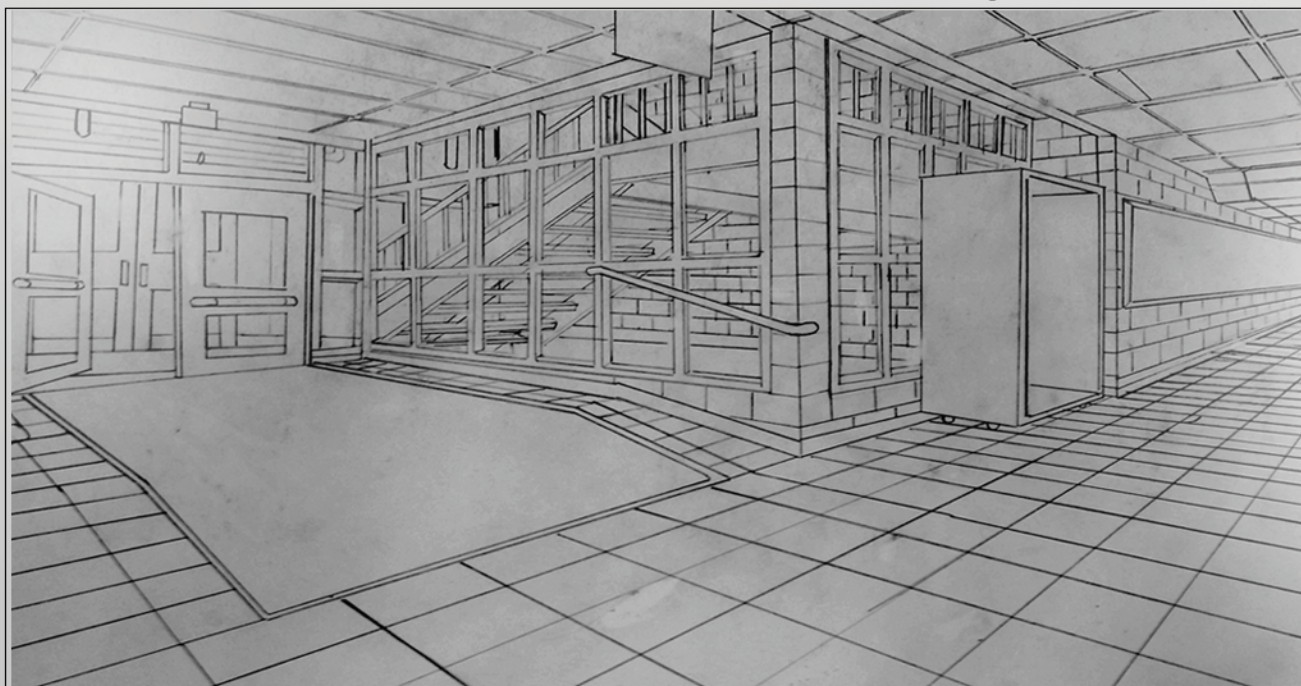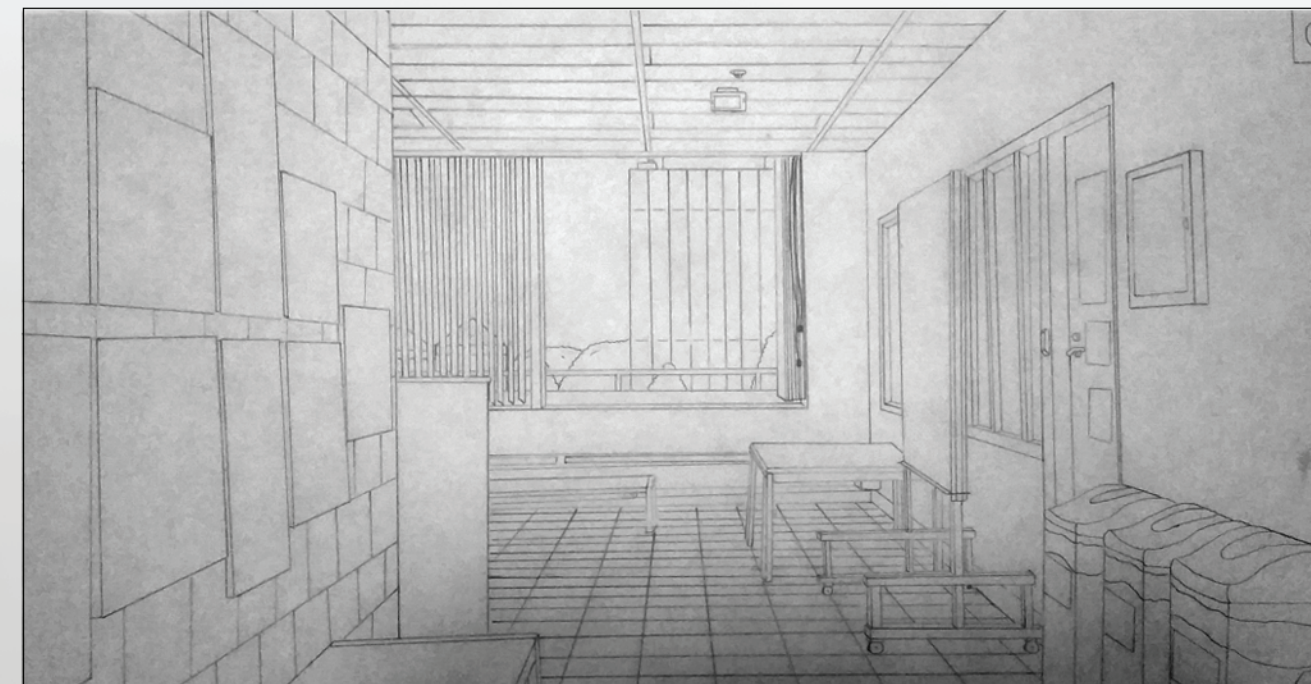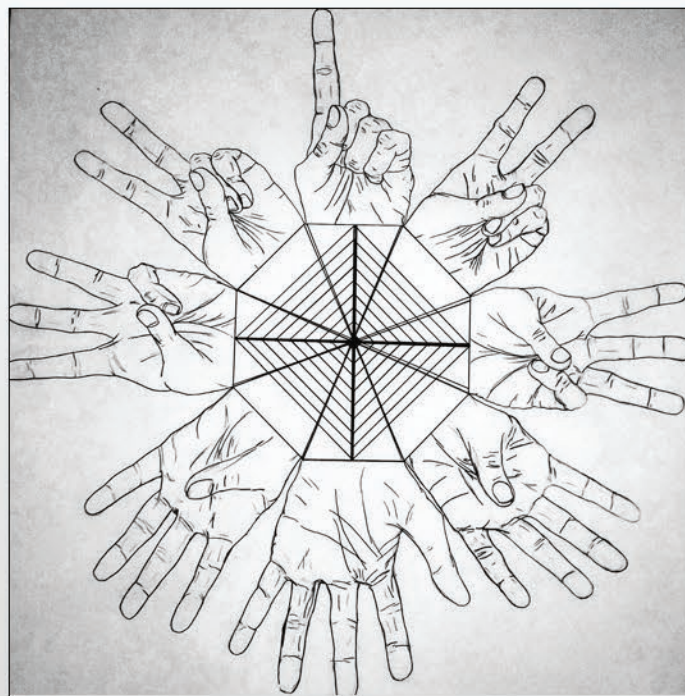This project looks at individuals interacting in their work places with the tools they use. However, the photos juxtaposed reality. Each image is a scene, framed to show the objects as larger than life. The subject who works with these objects is miniature interacting with these objects to the best of their ability. I started by setting up the scene first and capturing a photo. Using that photos light, shadows and angles as reference, I took a separate photo of the individual pretending to act in the scene that was created and using Adobe Photoshop placed that individual into the scene. Matching the colour and lights and shadows making it seamless.The project is meant depict the world that people work in. People spend more time at work during a week then at their home. They spend more time in the work atmosphere then with their families. According to a survey done by the Bureau of Labour Statistics, in the American Time Use Survey of 24-54-year-olds in the workplace subtracting holidays out of a 24-hour day on average you spend about 8.7 hours of that day at work, 7.7 hours of that day sleeping, and 7.6 hours doing everyday activities. Meaning you work 67 thousand hours over that 30-year period, equaling to 7.75 years of that time working. Subtracting sleep, you live in the world of work more than you do out of it. It really does become the world you live in. These photos are meant to take this idea of your workplace as your world literally. Creating a world for an individual that is their workspace. Why? The idea is to critique the absurdity of time we spend working, if that is positive or negative with the absurd idea of working in a giant atmo sphere of our own workspaces. Some jobs people put their lives into because that is what they love. They love working in their work world. Other jobs people hate and only do it because they need to income or that is what they are qualified to do. This project is a mixture of the two.