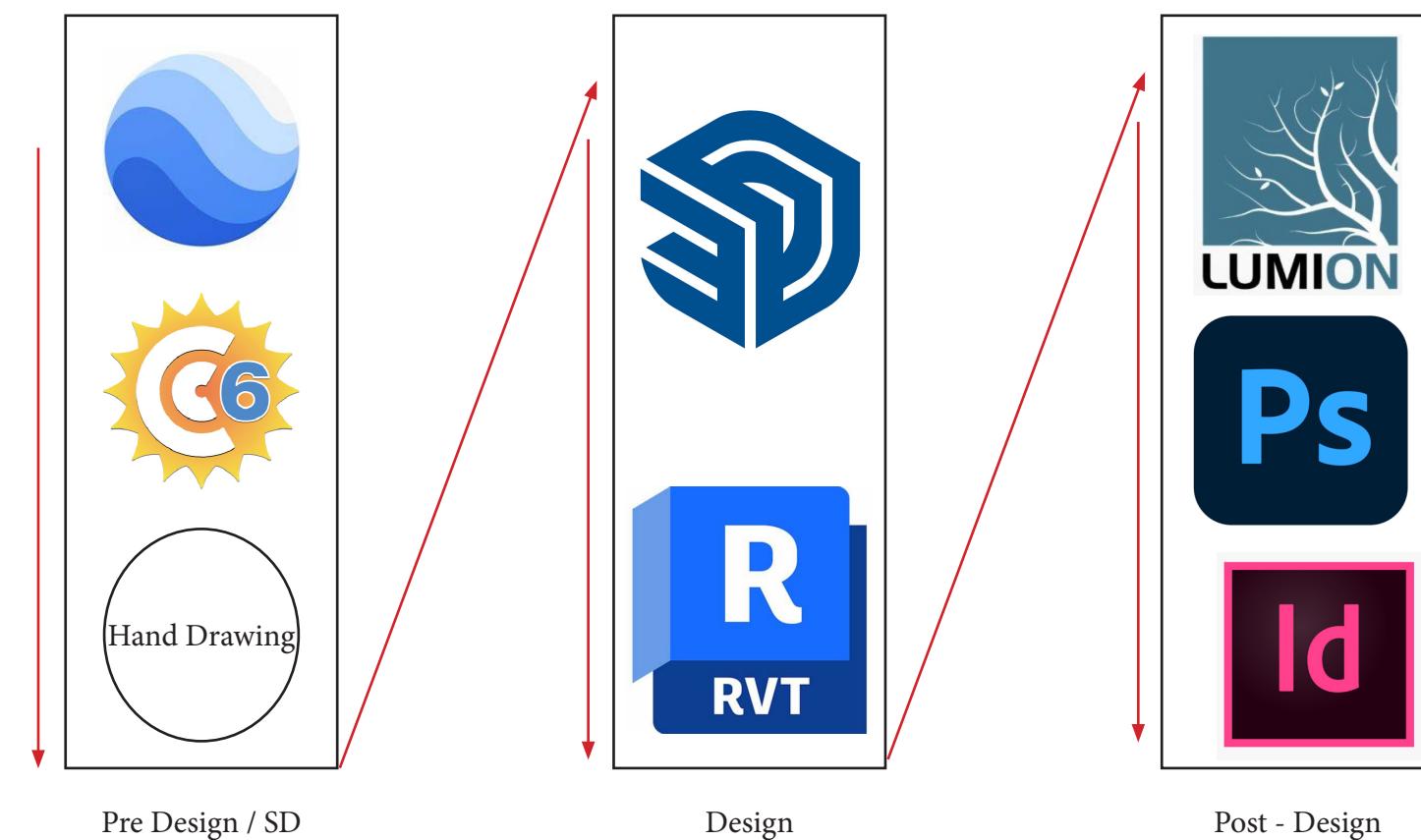


Cameron Sherrodd
Journal
Advance Computer Applications
565

Cameron Sherrodd

Journal 1



Week 2

Cameron Sherrodd

Journal 2

In the summer I saw this rendered video of a house inspired by the Dune series. It would be able to adapt to the weather conditions of the harsh desert. When sand storms came, walls would come down and protect the fragile glass.

I think the ability to open and close the building like this is super interesting and being able to do this in grass hopper would be sweet. Just like the panels of Al Bahr Towers. However making the form even more conceptional. Taking it a step further, using this video as inspiration it would be fun to render out a movie of this working in unreal engines.

The overall concept is to have a small space that would be used as a place to stop and take a moment to enjoy the scenery. Then when weather hits such as rain, snow, wind or hail, the small space would be able to shut down like the Dune precedent. I believe the first installment should be in Puerto Rico since it has a mild climate so this space would get used year round however Puerto Rico is known for having some of the most aggressive and quickly developing storms, allowing it to become a place of safety and possibly even an observation of the storm.



Location : Puerto Rico



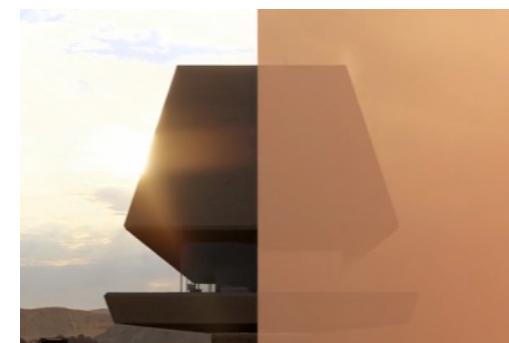
Open



Closing



Closed



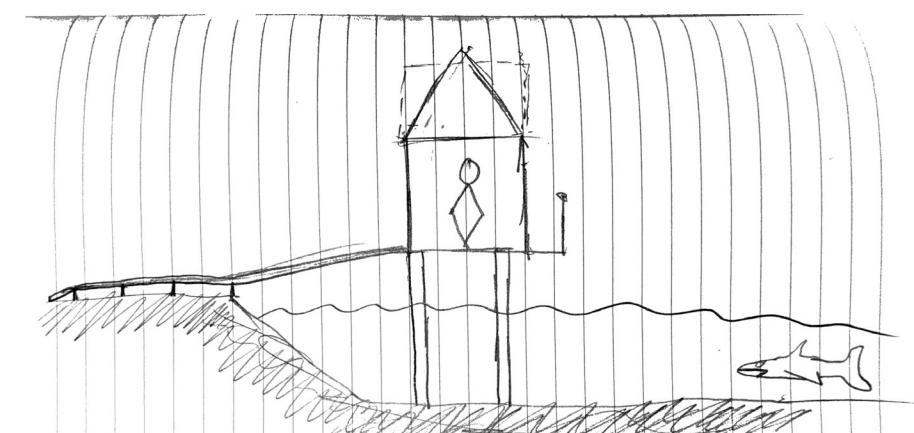
Adaptable



Open



Closed



Final product will be much more conceptual

Week 3

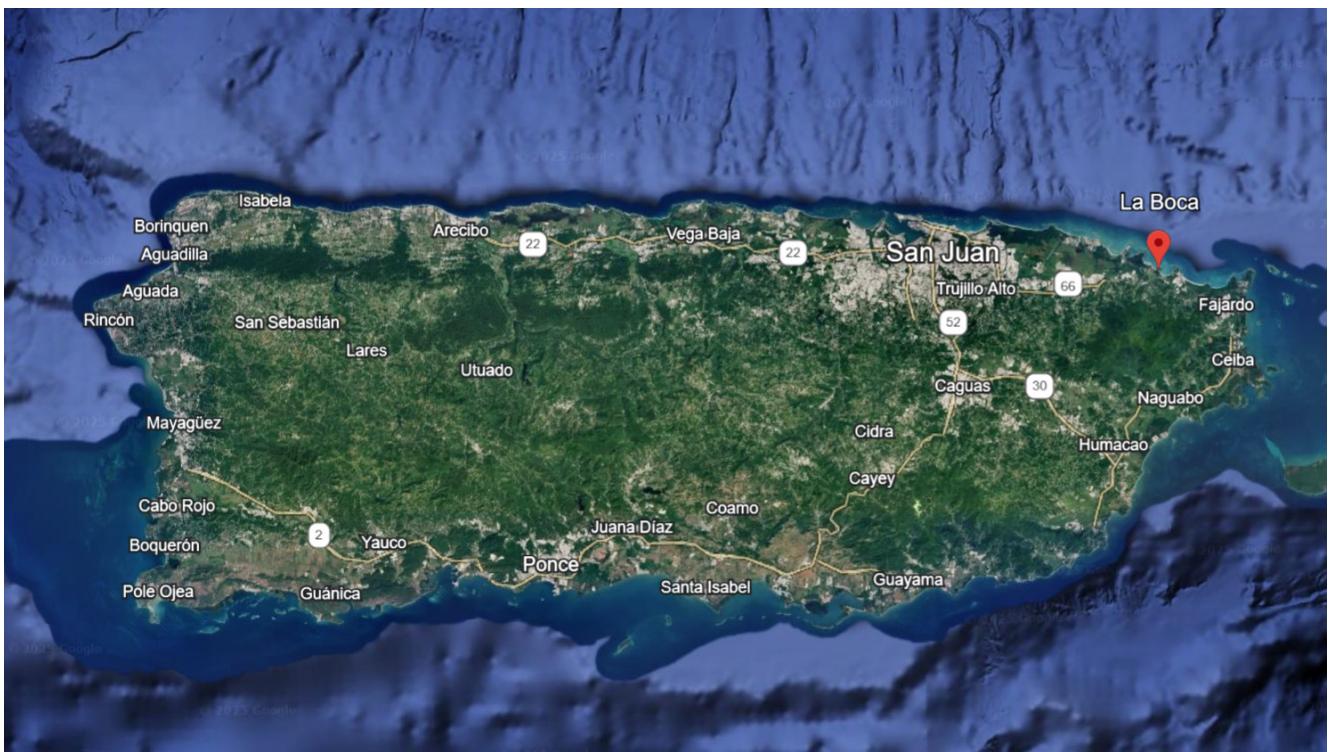
Cameron Sherrodd

Journal 3

With my location being in Puerto Rico, I looked into where storms were most likely going to hit in regards to the island. I found that the North East portion of the island is hit the most during storms. From there I looked into popular beach locations within the NE corner of the island. I found a very interesting river delta that was near some private homes and a resort. Being that my program is a storm shelter for people who get caught in storms with nowhere else to go I decided this peninsula near the delta was perfect.

My idea for this location is that people may be snorkeling near this delta and unaware of the changing weather conditions. If you are caught on the East side of the delta on the beach away from the resort your only option is to cross the wide river or swim back in the ocean. Instead you would be able to take refuge within my storm shelter, once the storm passes you would then be able to make your way back to the resort.

Note, CC keeps crashing. I am going to try and find a solution by tomorrow.



Location : Puerto Rico - Coco Beach



Site

Topography

[HOME](#)[DATA](#)[RESOURCES](#)[LEARN](#)

Data ?

[Download Results](#)

- Download point cloud data in LAZ format [points.laz](#) (585.3 MB)

[Download Products](#)

- Download DEM (TIN) [output.tin.tar.gz](#) (27.5 MB)

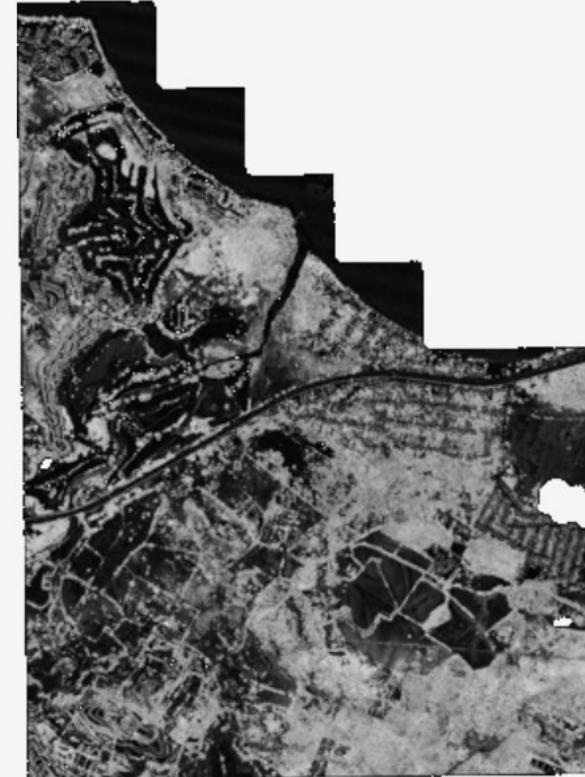
[Download Visualization Products](#)

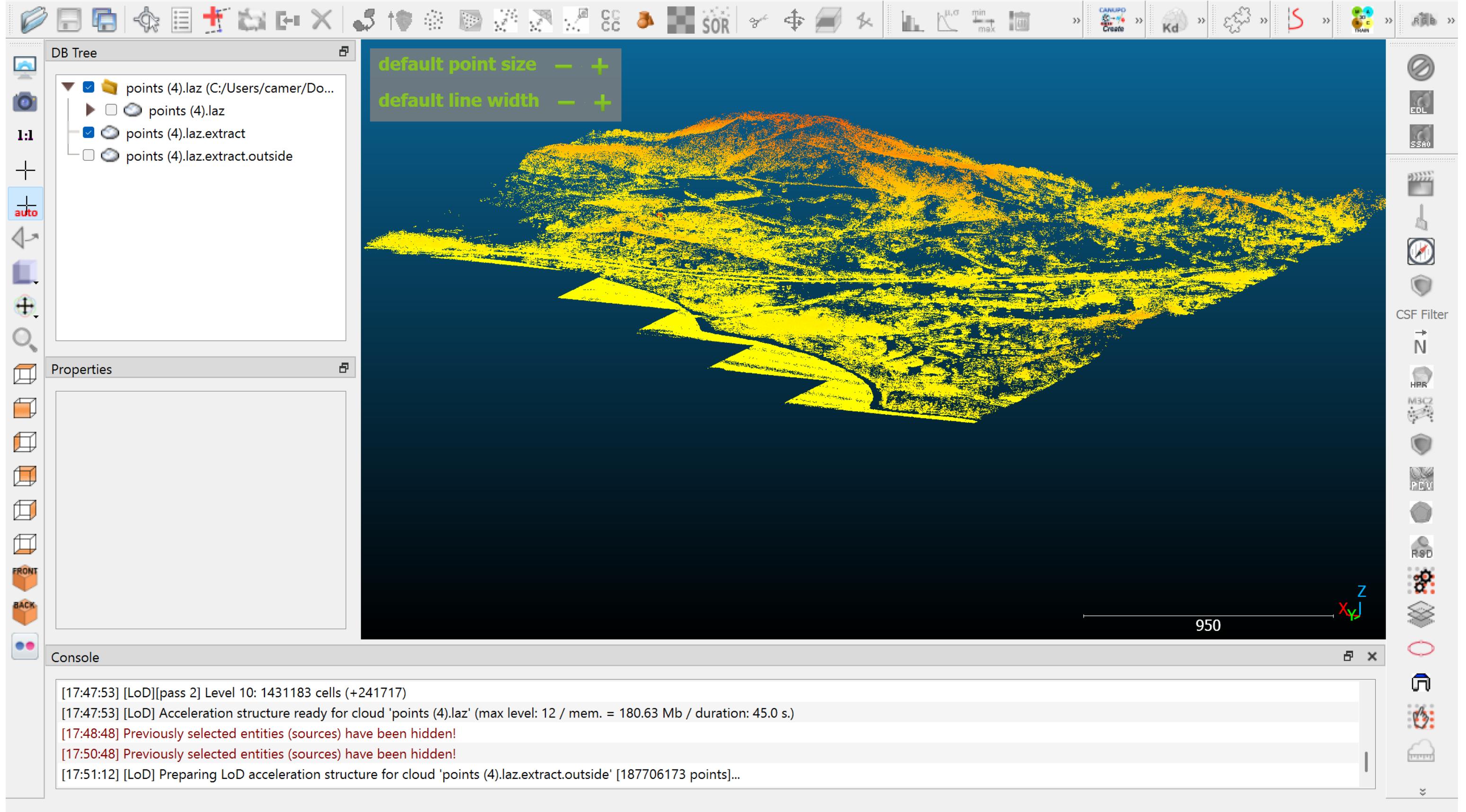
- Download Visualization Products (TIN) [viz.tin.tar.gz](#) (44.4 MB)

Visualization Products

Slope

- [View on map](#)







DB Tree

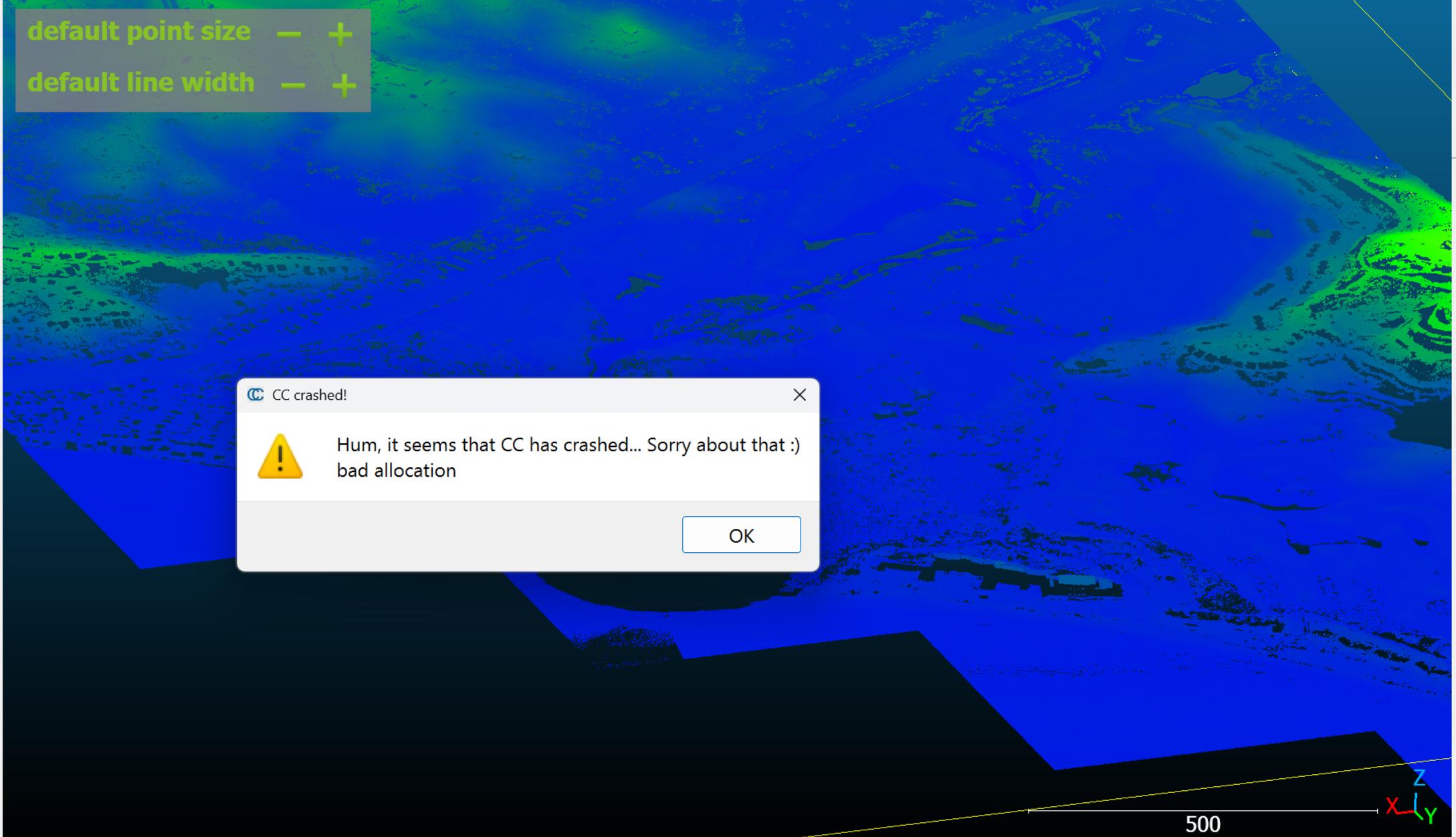
- points (4).laz (C:/Users/camer/Do...)
 - points (4).laz
 - points (4).laz_CSF
 - Ground points
 - Off-ground points
 - Ground points.extract

Properties

Property	State/Value
CC Object	
Name	Ground points.extract
Visible	<input checked="" type="checkbox"/>
Colors	RGB
Show name (in 3D)	<input type="checkbox"/>
Box dimensions	X: 3286.38 (-1286.39 : 1 Y: 4408.78 (91.21 : 4499 Z: 197.67 (-6.79 : 190.88 X: 356.8

Console

```
[18:32:04] [LoD][pass 2] Level 7: 10876 cells (+121)
[18:32:04] [LoD][pass 2] Level 8: 45057 cells (+1148)
[18:32:04] [LoD][pass 2] Level 9: 172946 cells (+17383)
[18:32:04] [LoD][pass 2] Level 10: 686417 cells (+192736)
[18:32:04] [LoD] Acceleration structure ready for cloud 'Ground points.extract' (max level: 12 / mem. = 92.48 Mb / duration: 22.5 s.)
```



point mesh 2 - Rhino 7 Educational Lab License

File Edit View Curve Surface SubD Solid Mesh Dimension Transform Tools Analyze Render Panels Help

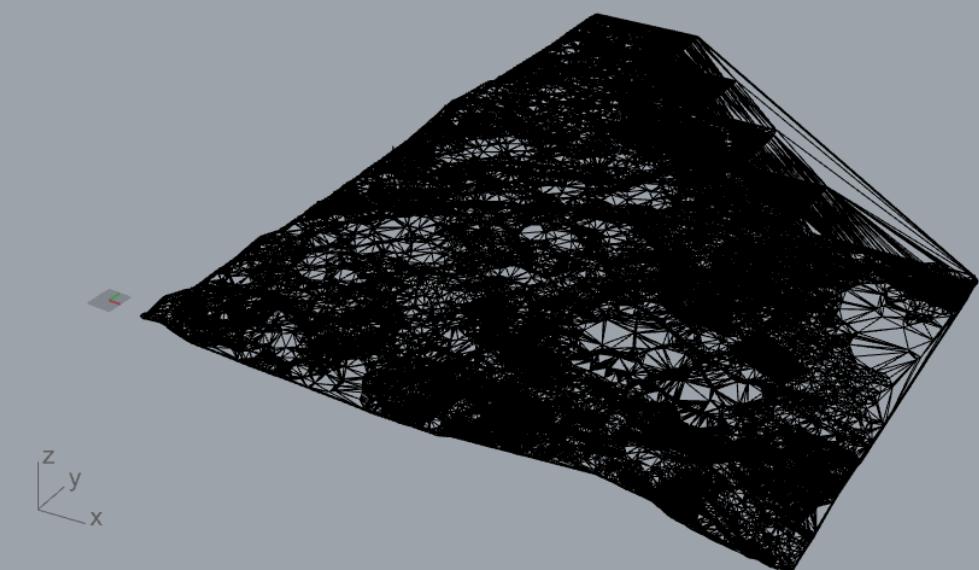
Standard CPlanes Set View

Command: '_Zoom
Drag a window to zoom (All Dynamic Extents Factor In Out Selected Target 1To1): _Extents

Command:

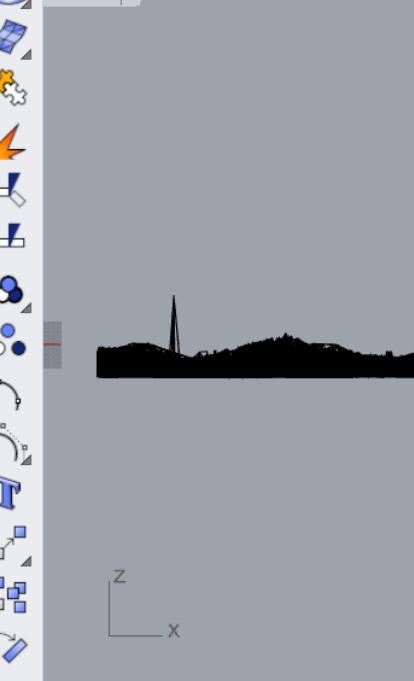


Perspective



Front

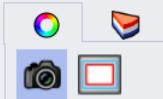
Right



Perspective Top Front Right +

End Near Point Mid Cen Int Perp Tan Quad Knot Vertex Project Disable

Properties: View properties



Viewport

Title	Top
Width	991
Height	602
Projection	Parallel
Locked	<input type="checkbox"/>

Camera

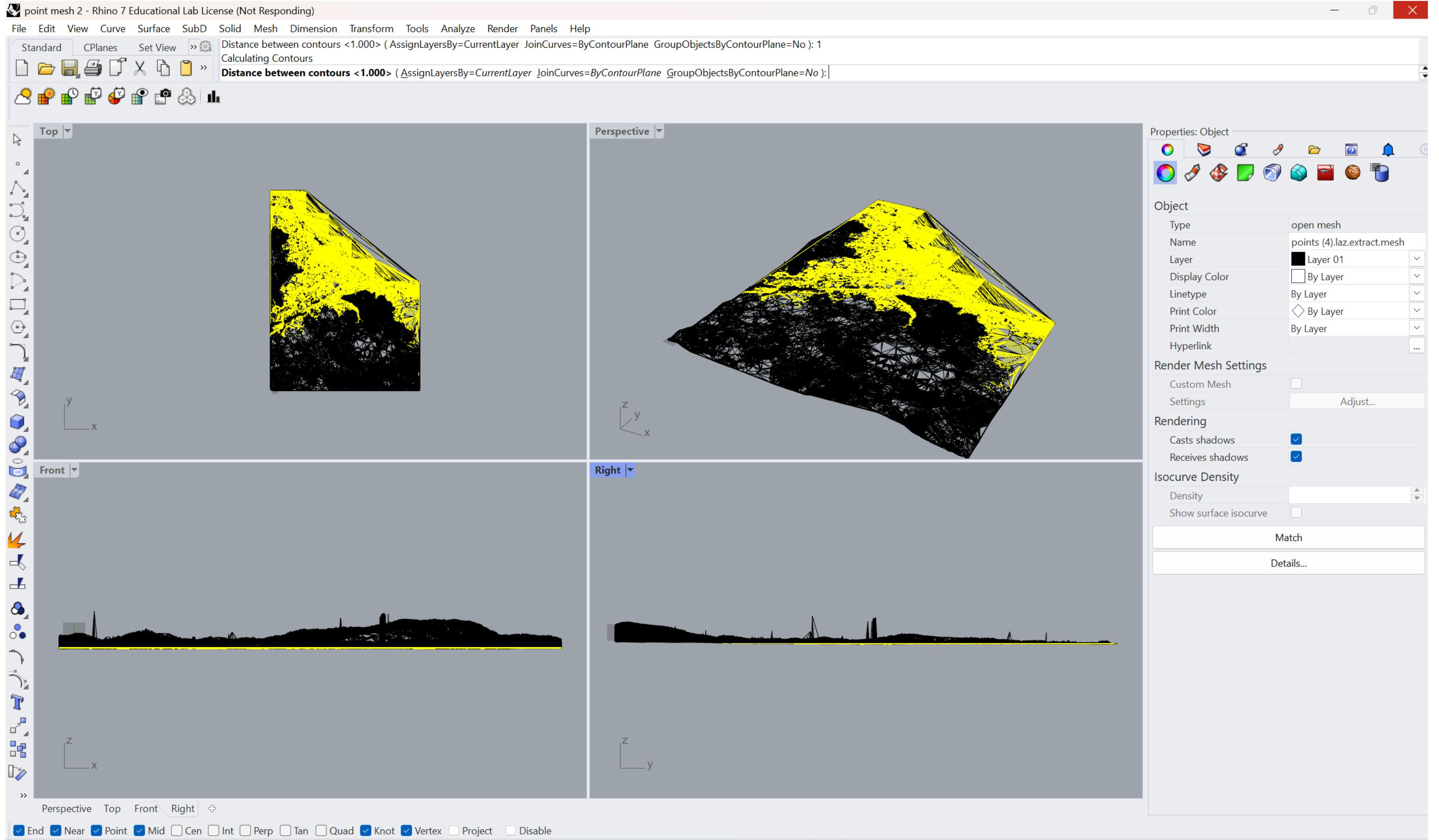
Lens Length(mm)	50.0
Rotation	0.0
X Location	860.874
Y Location	2332.435
Z Location	183.422
Distance to Target	160.192
Location	Place...

Target

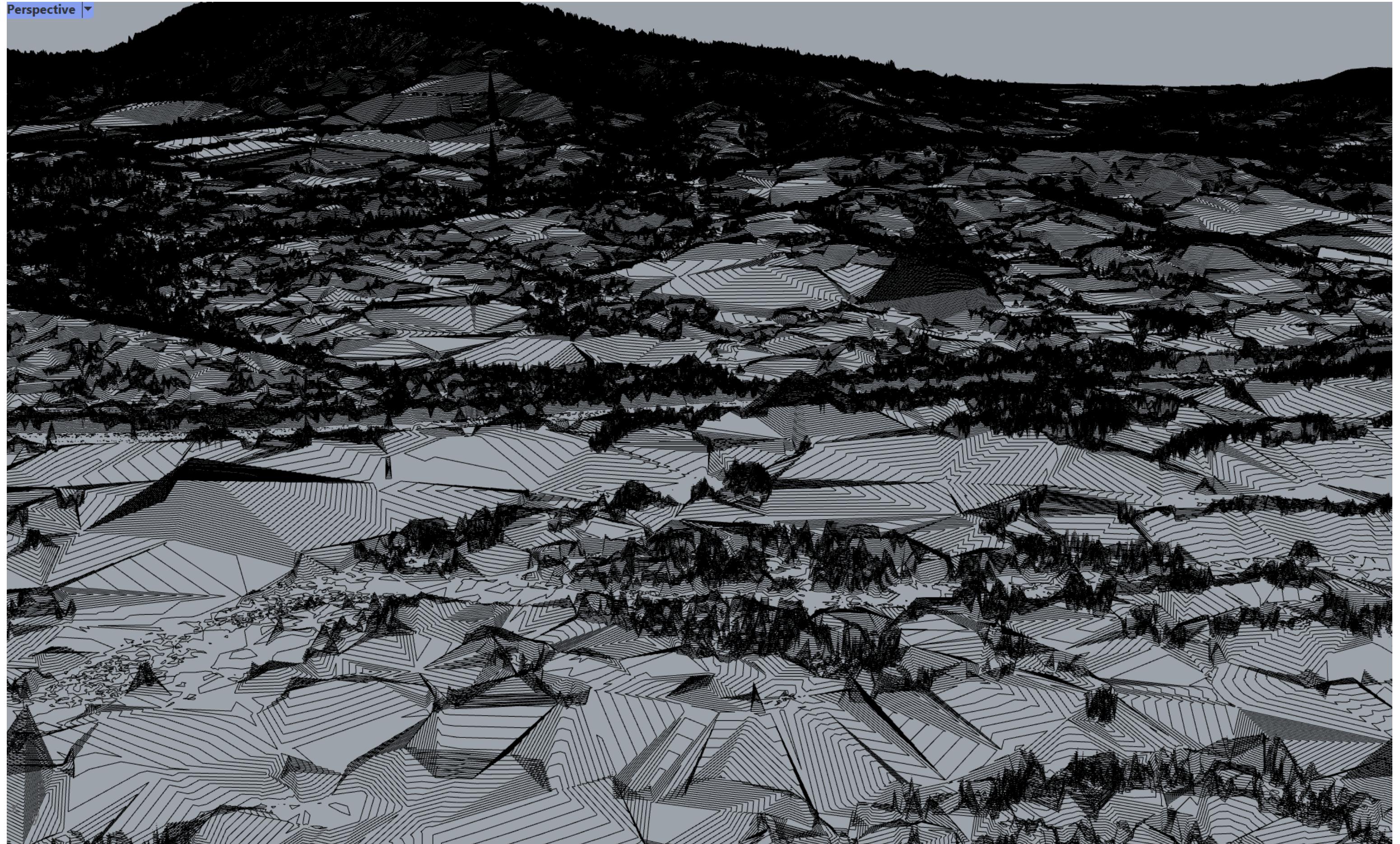
X Target	860.874
Y Target	2332.435
Z Target	23.23
Location	Place...

Wallpaper

Filename	(none)
Show	<input checked="" type="checkbox"/>
Gray	<input checked="" type="checkbox"/>



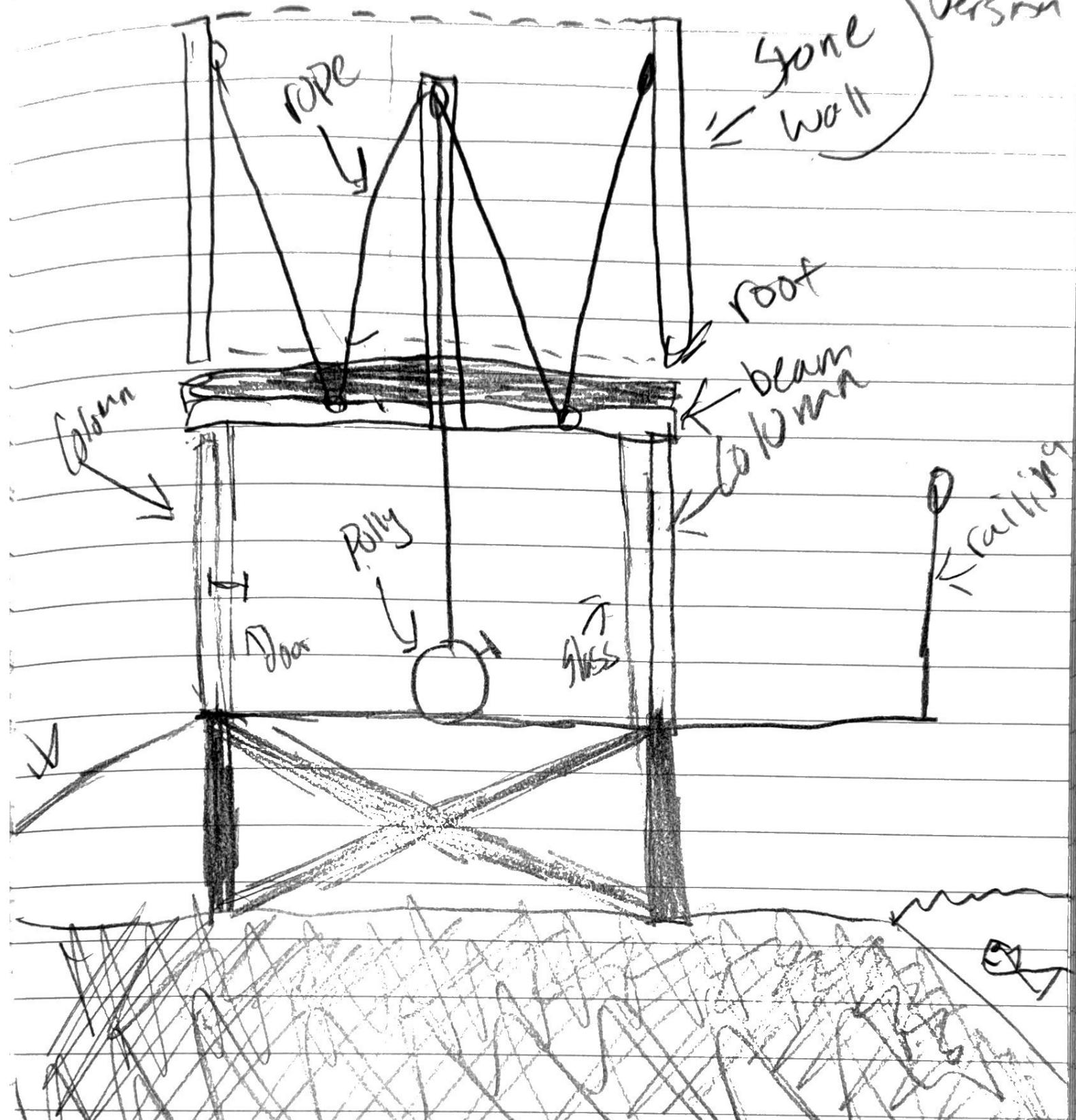
Perspective ▾



Week 4

Cameron Sherrodd
Journal 4

The Stone wall and Structure
will be Parametric. this is
a simple
version



Week 6

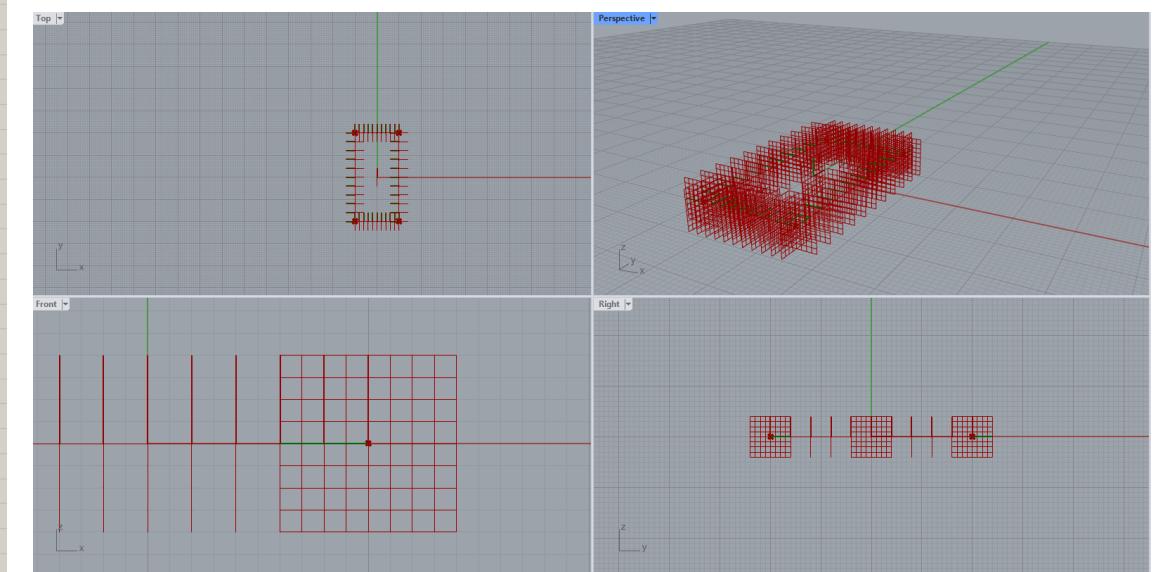
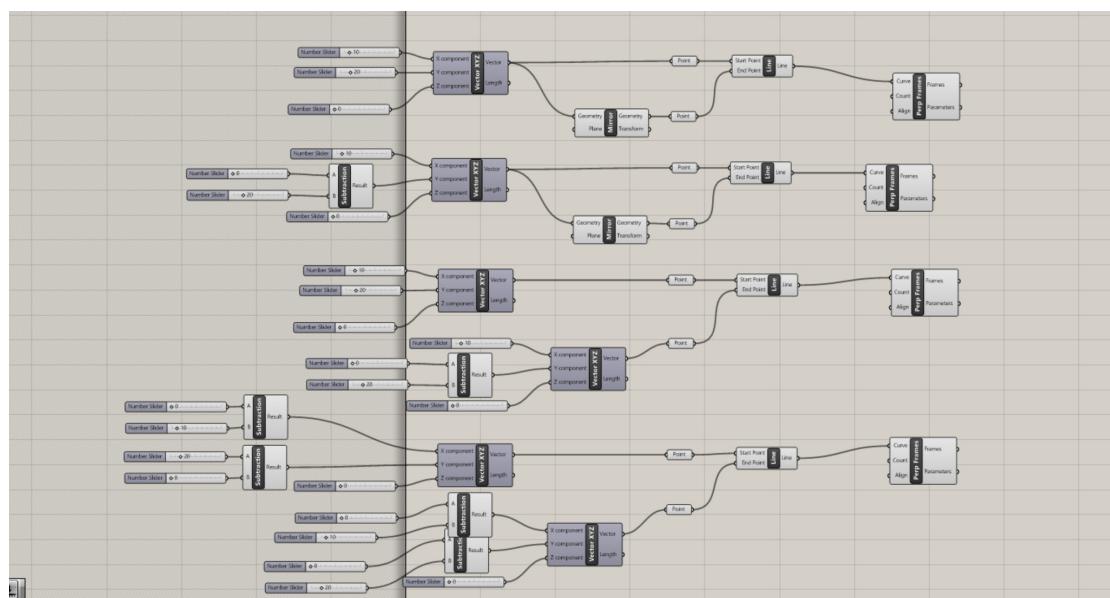
Cameron Sherrodd

Journal 6

To the right is my idea for an inhabitable space design. I wanted to use the dune reference from above and how that space is a safe haven from catastrophic weather events. I than wanted to incorporate the idea of “impossible cones”. Impossible cones are able to create an occupiable space within the absence of themselves (orange piece). They are than able to perfectly go back together.

I initially tried to create this fully in grass hopper. However my lack of knowledge in the program only allowed me to get so far.

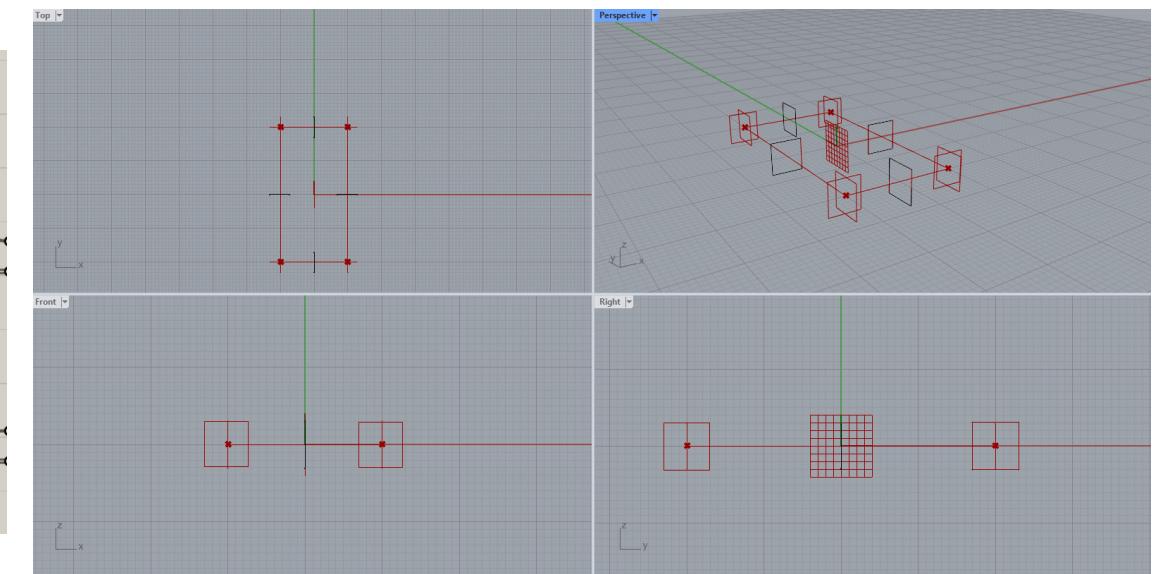
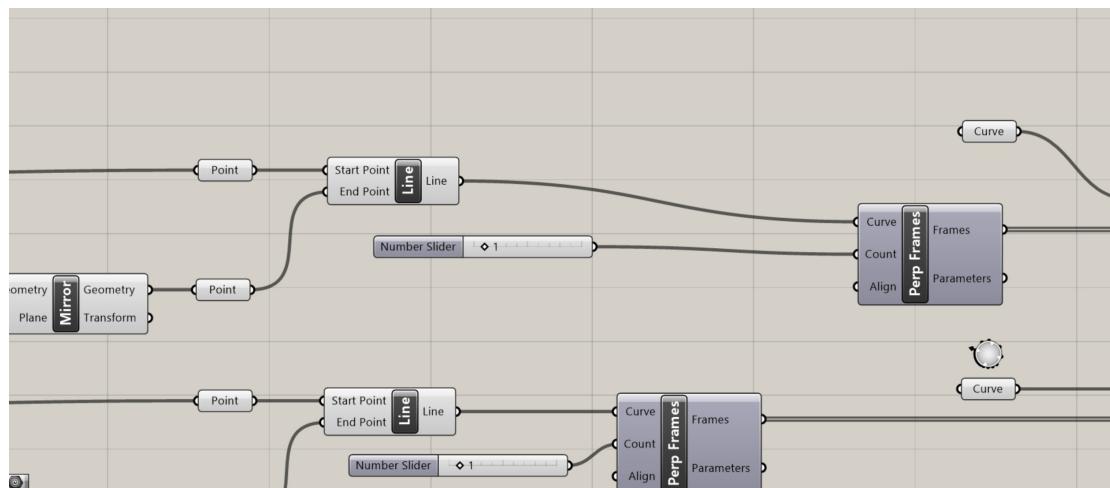
1. I initially wanted to create a bunch of frames like we did in class and then create geometry on those frames that would allow me to adjust the shape of the box to my desire with using sliders. This ended up not working.



Cameron Sherrodd

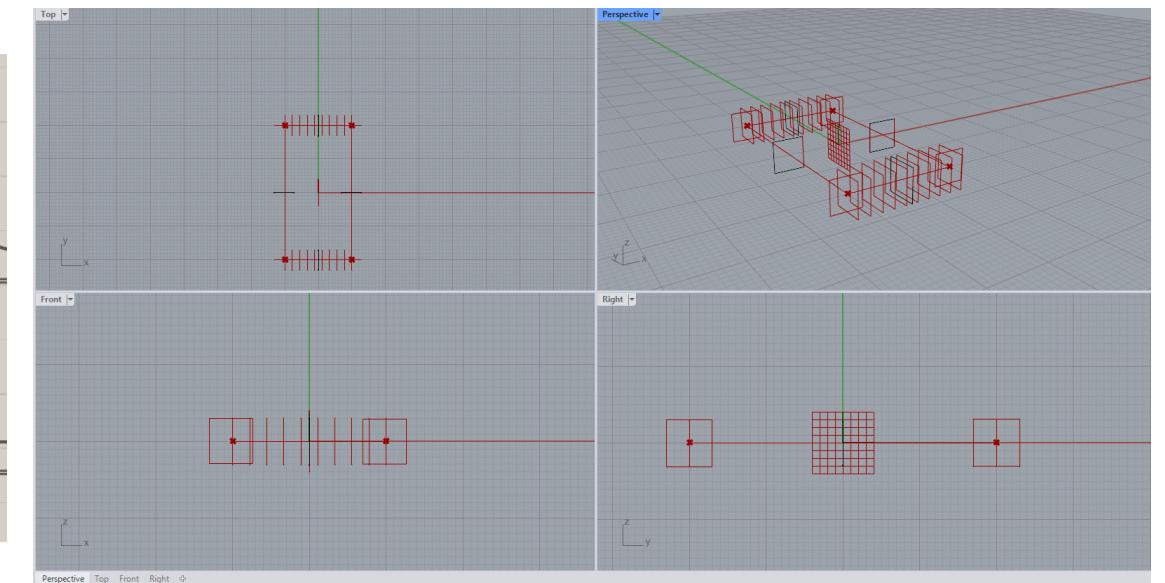
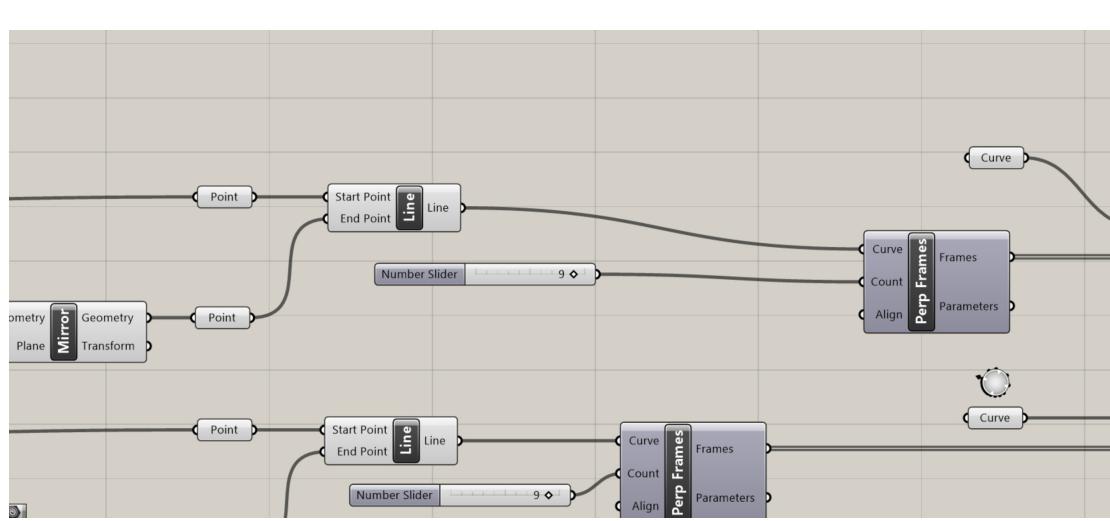
Journal 6

2. I than tried a few other ways to create this geometry on the frames but was unsuccessful. However you can see when i change the slider it would work with the amount of frames on the line.



2

2



2

2

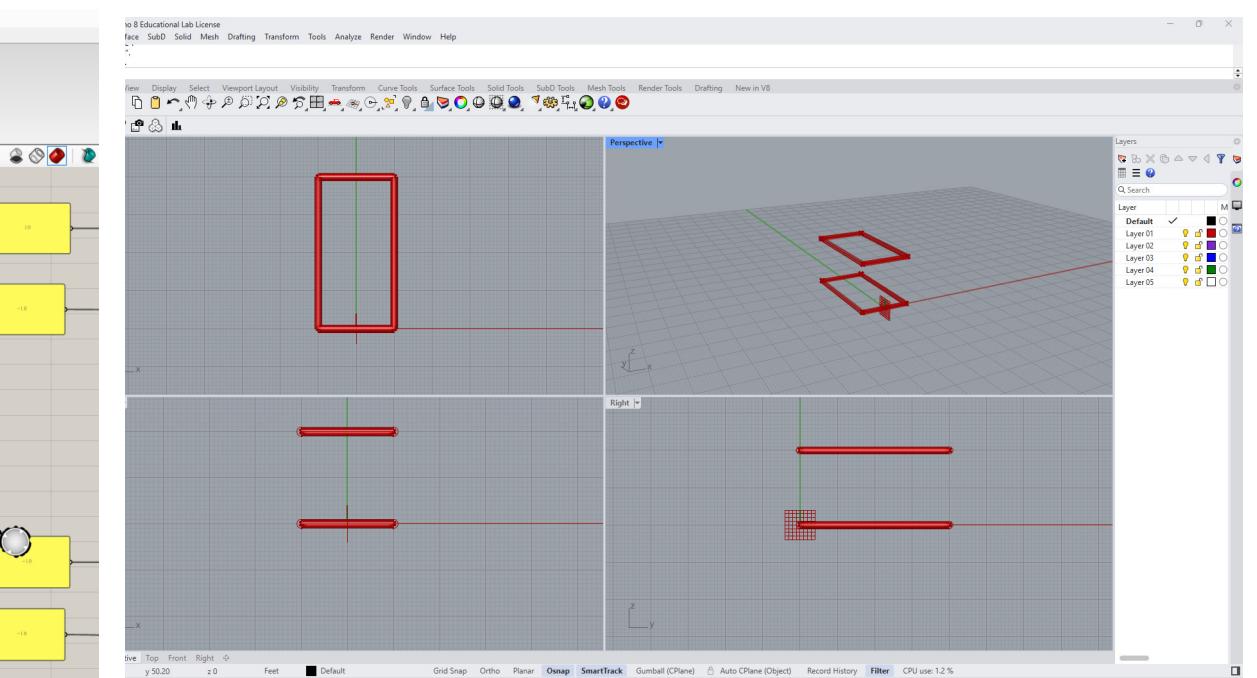
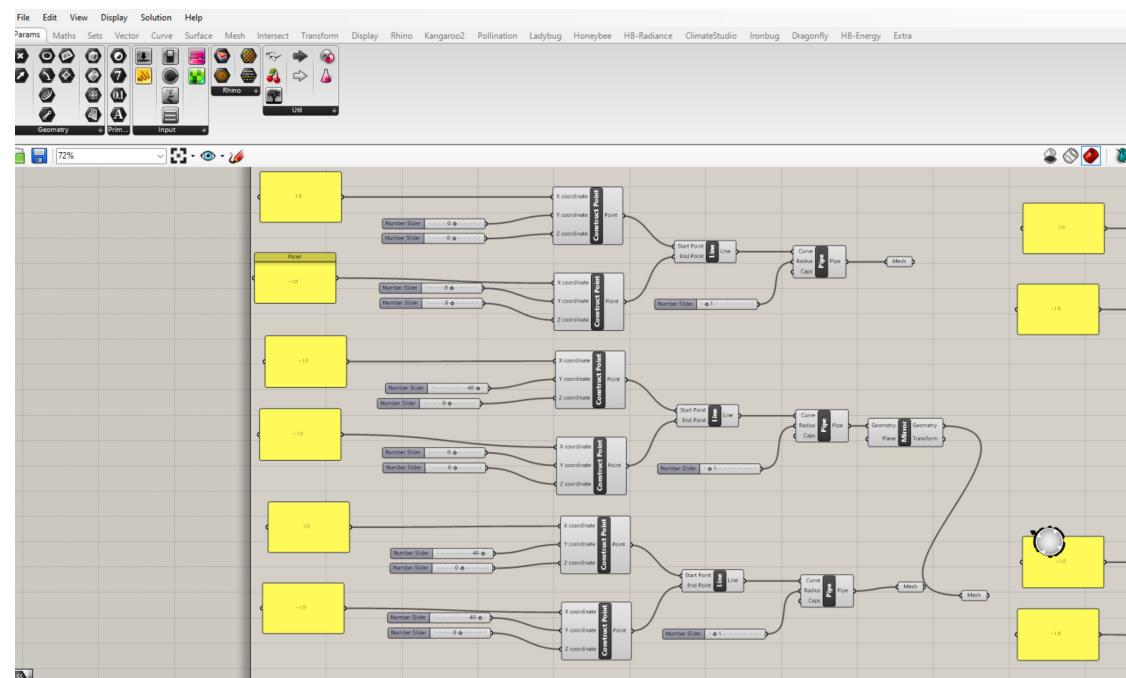
Cameron Sherrodd

Journal 6

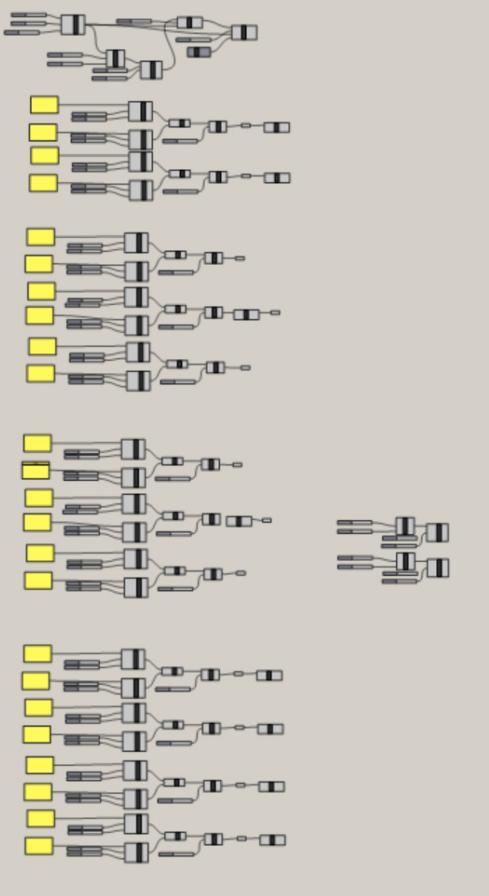
3. After multiple attempts with the previous script I moved onto the idea of creating pipes rather than a geometry on frames.

Disregarding the visual appeal of the design it did relatively work. I was able to change all parameters with sliders. However two issues revealed themselves.

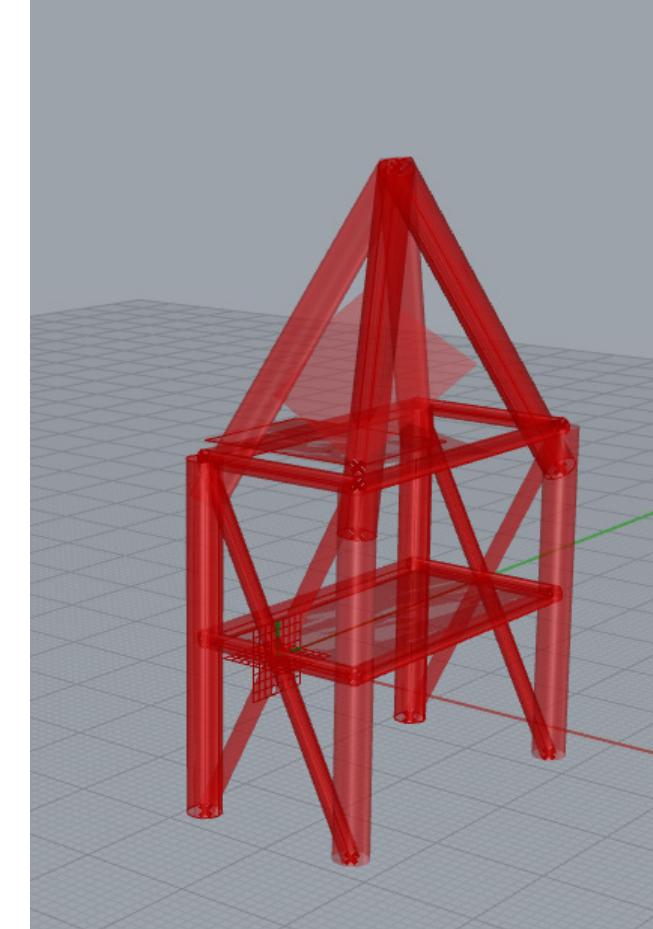
The first issue is the design was ugly and not at all what I was picturing in my head. The second issue was I was unable to create a slanted piece of mesh. Having already spent an ample amount of time on this project I decided it needed to shift.



3



3

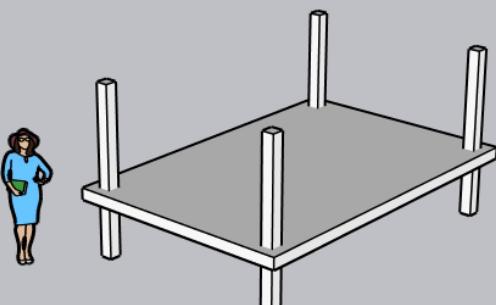


3

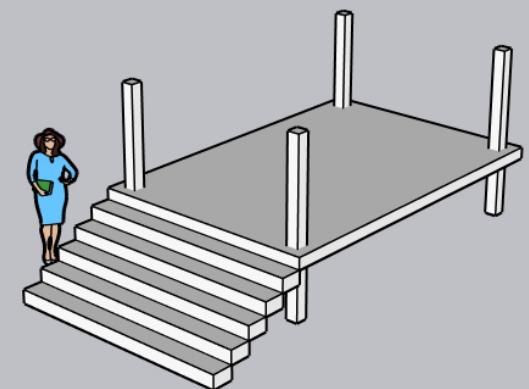
Cameron Sherrodd

Journal 6

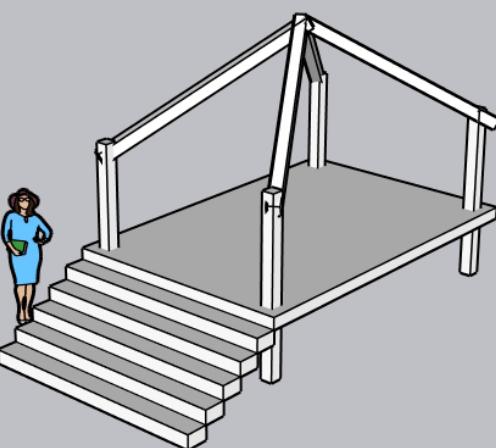
4. It was time to go into a program that i was familiar with in order to be able to have a conversation about what was in my head. The idea situation now is to take this sketch-up design and implement it into grasshopper. However as of now I am unsure of how to do that.



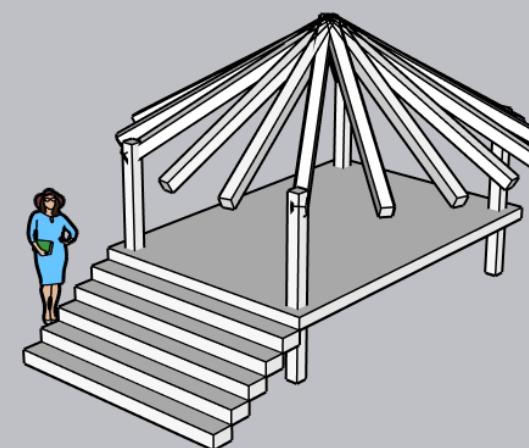
4 Base / Elevated Floor



4 Stairs



4 Roof Structure



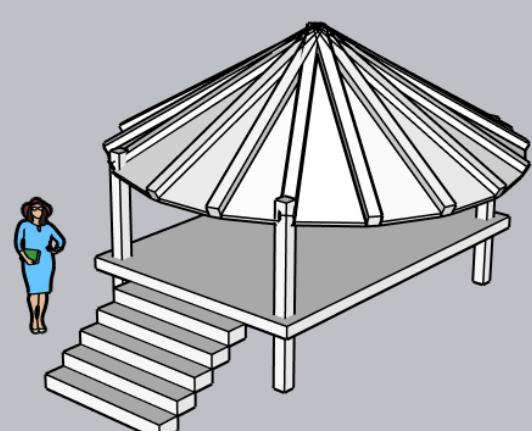
4 Creating the Void

Cameron Sherrodd

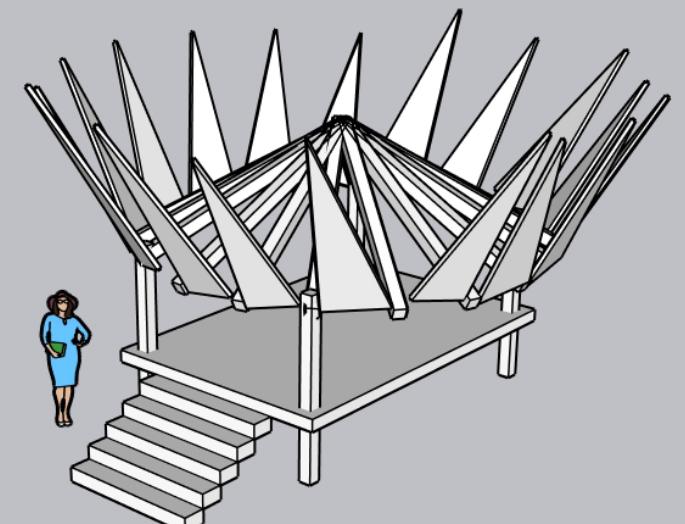
Journal 6

4. During operational hours the shelter will have its triangles sitting 90 degrees from the beams. This will allow sunlight to enter through the roof as well as people being able to enter from the steps.

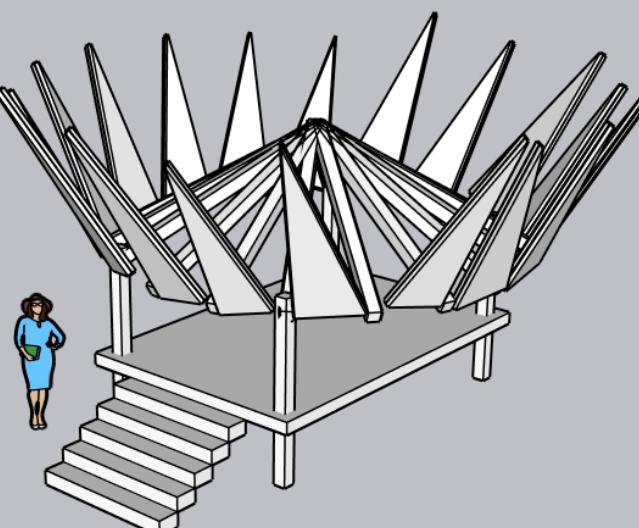
When a weather event happens, there would be a way to be able to shut the top roof triangles onto the structure and lower the other triangles so they are able to touch the ground. Creating a shell over the person inside the shelter.



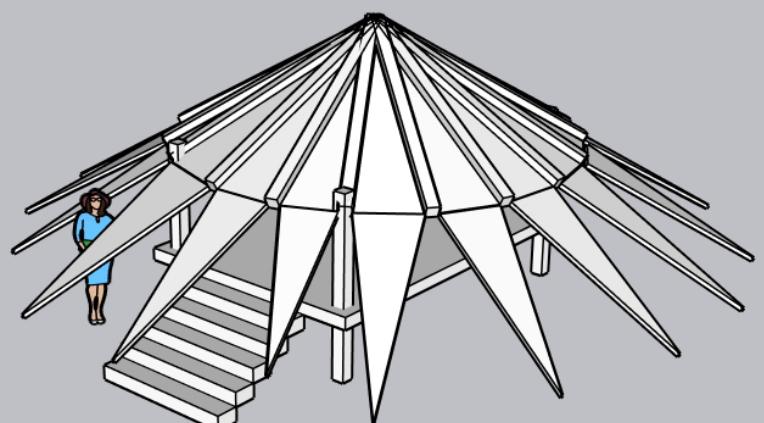
4 Fill



4 Position panels to their natural state



4 Double the amount of panels -Final

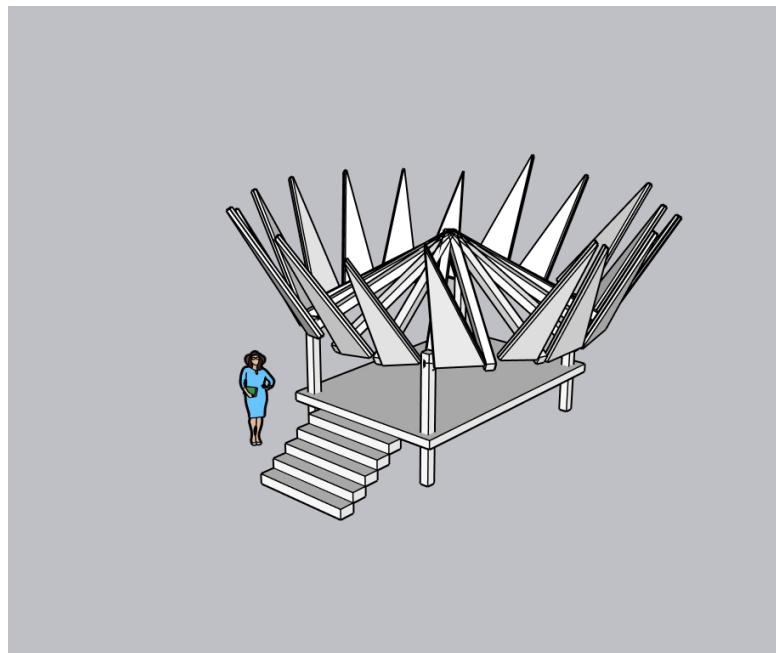


4 Showing “lockdown” mode - Final

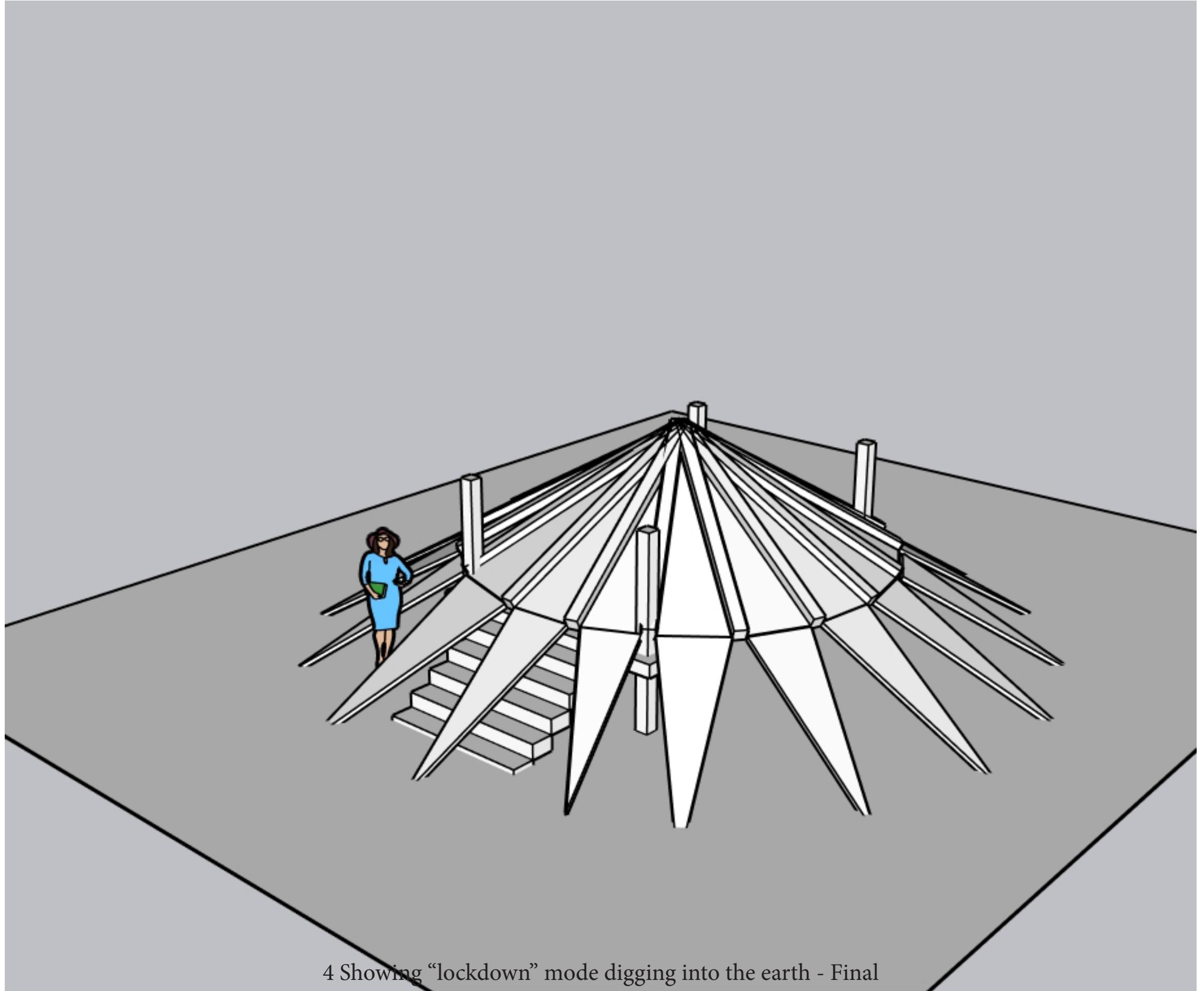
Cameron Sherrodd

Journal 6

4. Here is the shelter than lowering and digging into the earth in order for the space within the shelter to be fully enclosed and safe from the outside weather.



Once again, after the weather even the shelter will raise back up and the triangles will go back to sitting naturally in the air.



4 Showing “lockdown” mode digging into the earth - Final

Week 7

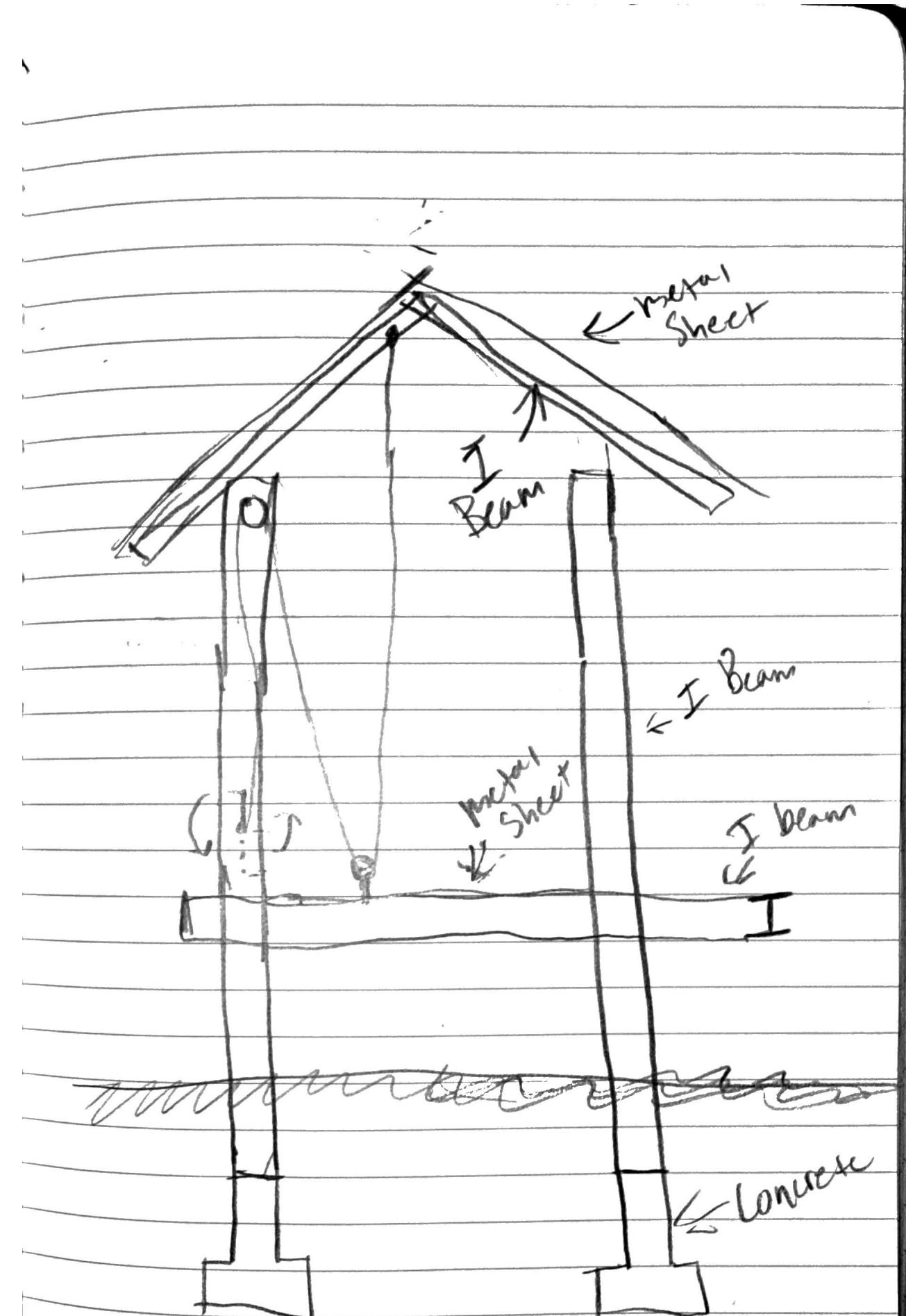
Cameron Sherrodd

Journal 7

1. Structural concept

2.

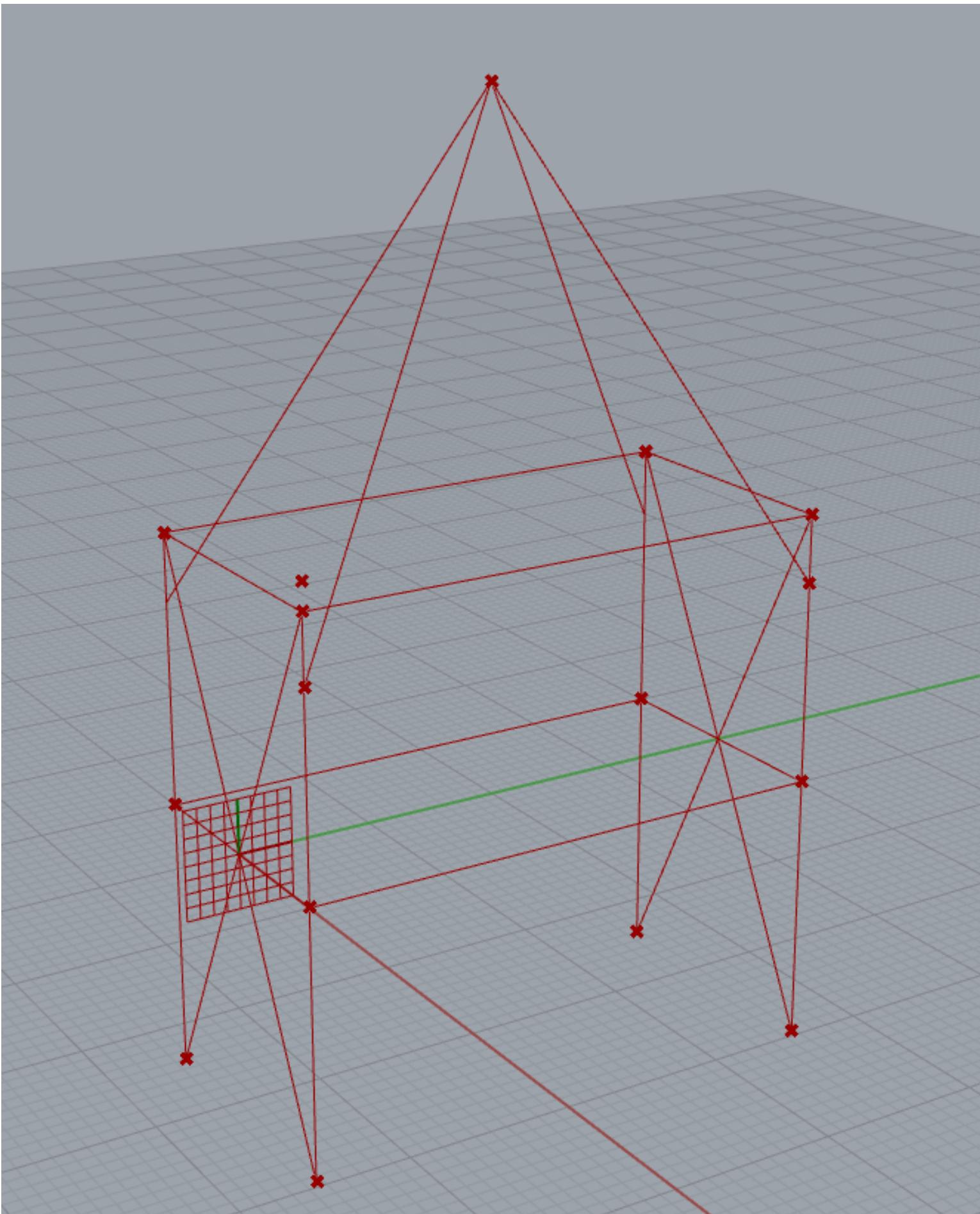
I chose to use Steel I beams for the super structure. Since this is a storm shelter it seemed fitting for it to be made of steel. As well as steel it is sitting on a foundation pillars that should hopefully keep it from lifting into the sky. I also included all the panels to be metal. This is for safety as well, hoping to create a very safe bomb like shelter from the elements. In the summer this metal will be hot so incorporating a possible skin onto these membranes will be necessary. Since the project is based in Puerto Rico, I could wrap the metal in a rope/ vine type of material which will become more appealing but primarily cut down on the solar gain of the metal.



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Journal 7

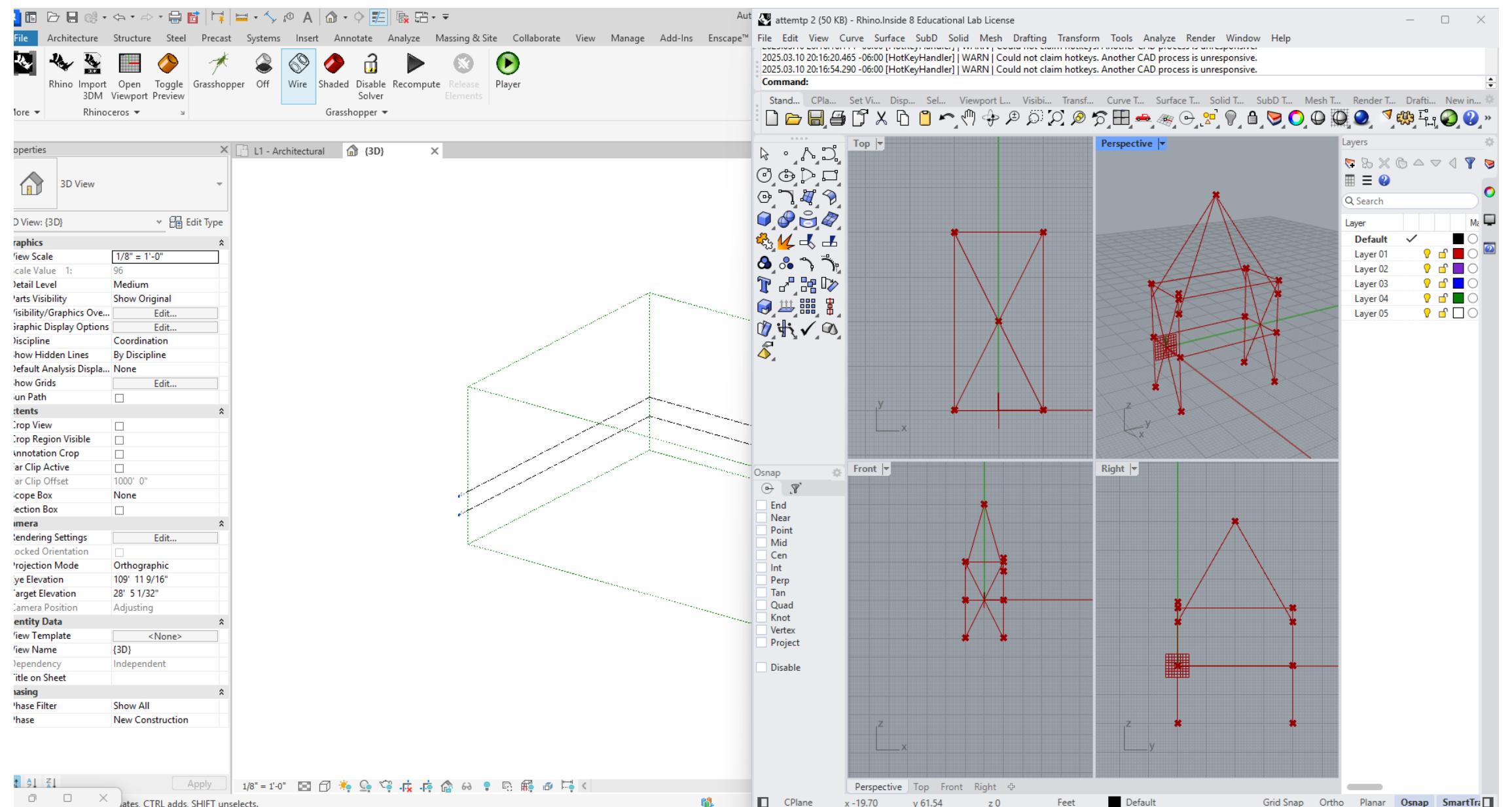
3. Single line structure using grasshopper



Cameron Sherrodd

Journal 7

4. Rhino Inside wont work



Week 8

Cameron Sherrodd
Journal 8



1. Position panels to their natural state



2. Starting Lockdown Mode

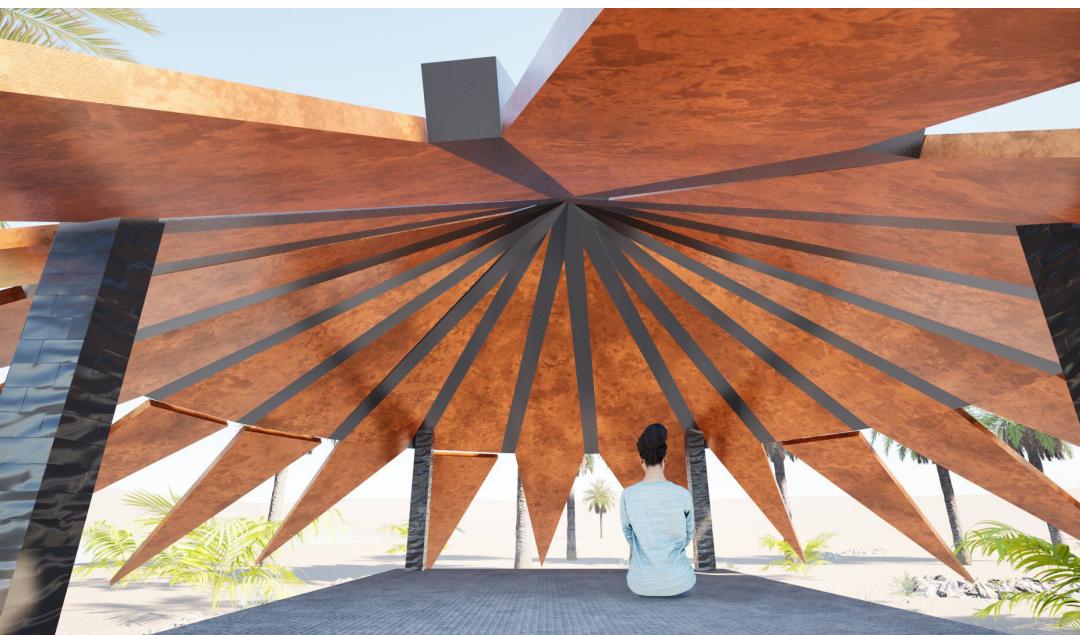


3. Lockdown Mode Finalized

Cameron Sherrodd
Journal 8



4. Position panels to their natural state- Interior



5. Starting Lockdown Mode- Interior



6. Lockdown Mode Finalized - Interior

Cameron Sherrodd
Journal 8



1. Position panels to their natural state

Cameron Sherrodd
Journal 8



2. Starting Lockdown Mode

Cameron Sherrodd
Journal 8



3. Lockdown Mode Finalized

Cameron Sherrodd
Journal 8



4. Position panels to their natural state- Interior

Cameron Sherrodd
Journal 8



5. Starting Lockdown Mode- Interior

Cameron Sherrodd
Journal 8



6. Lockdown Mode Finalized - Interior

Week 10

Cameron Sherrodd

Journal 10

I took a few stabs at this and what route I wanted it to go. However I have landed on not possibly the best option I could of chosen rather the option that has been a constant precedent within my projects.

I chose the “The Interlace” in Singapore. Throughout school i have referenced this building because of its scale, material and circulation. However what i have referenced the most is the ability to produce these massive cantilevers. Often we hear excuses from professors for why we cant do something in studio. This may because its “to expensive” or “unrealistic” while the whole time its because it doesn’t fit into either their design style or the overarching style of the school. This project time and time again has been a way to show that it is possible and has been a way for me to justify cantilevers within MSU.



The cantilever - Singapore