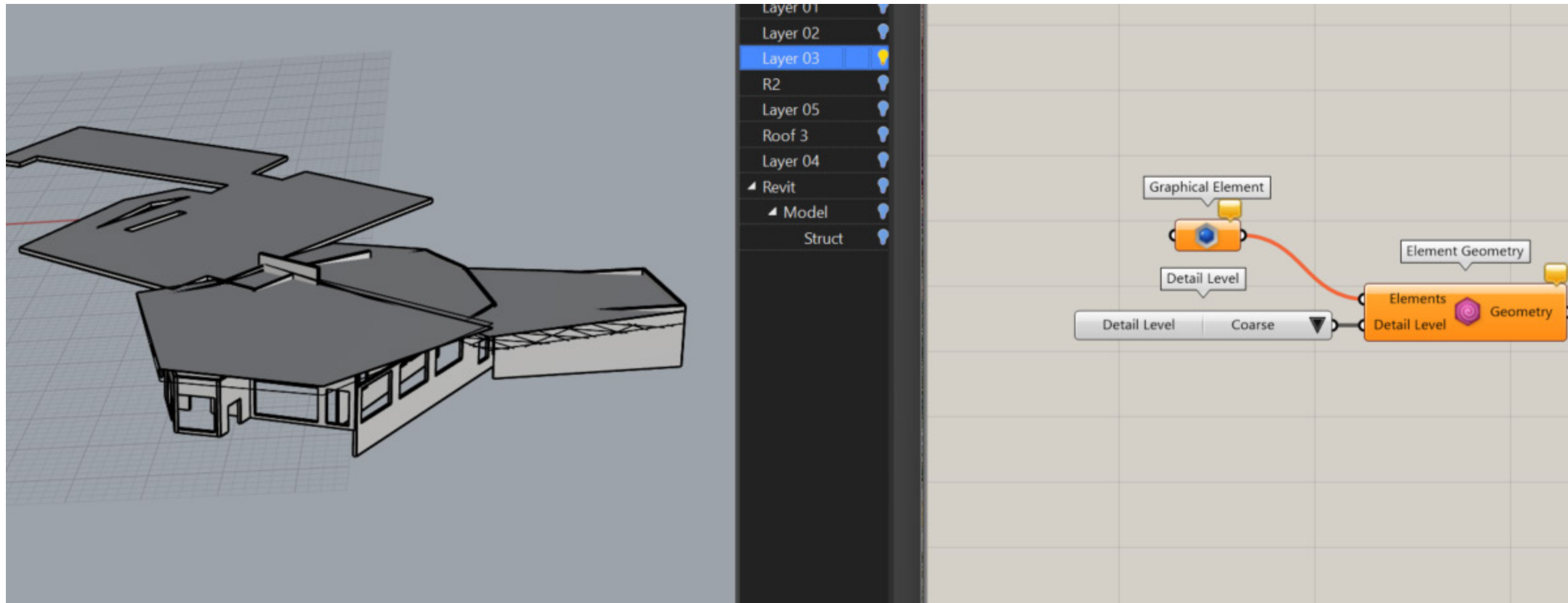
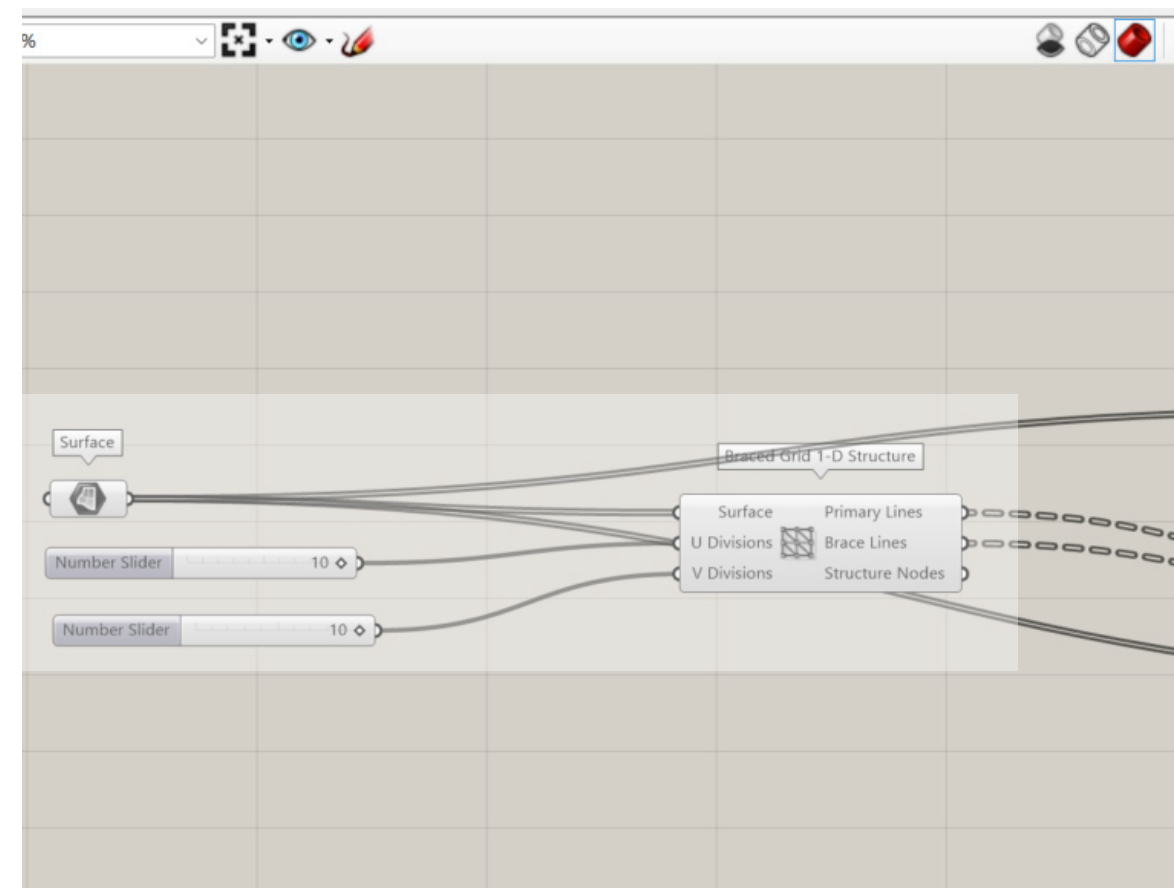
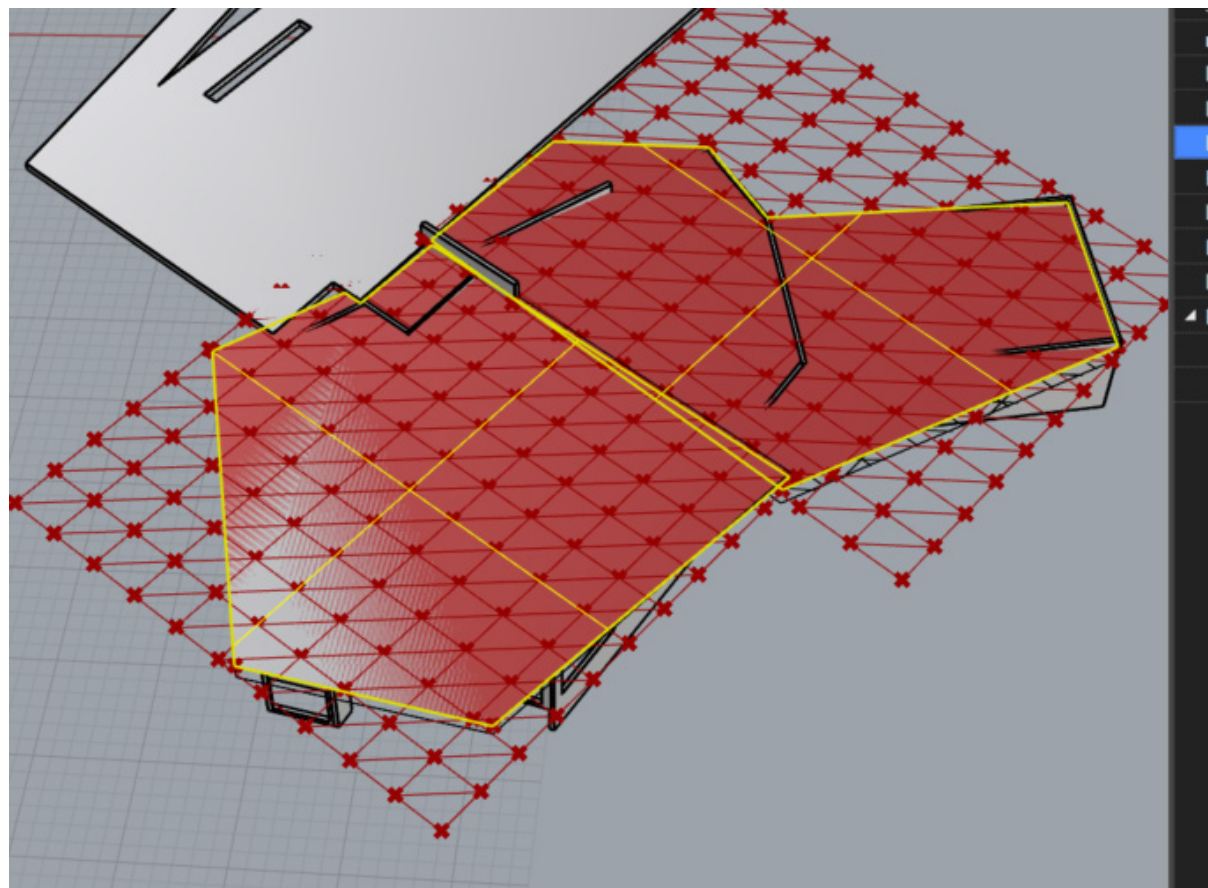


# Assignment 2

Bennett Walden



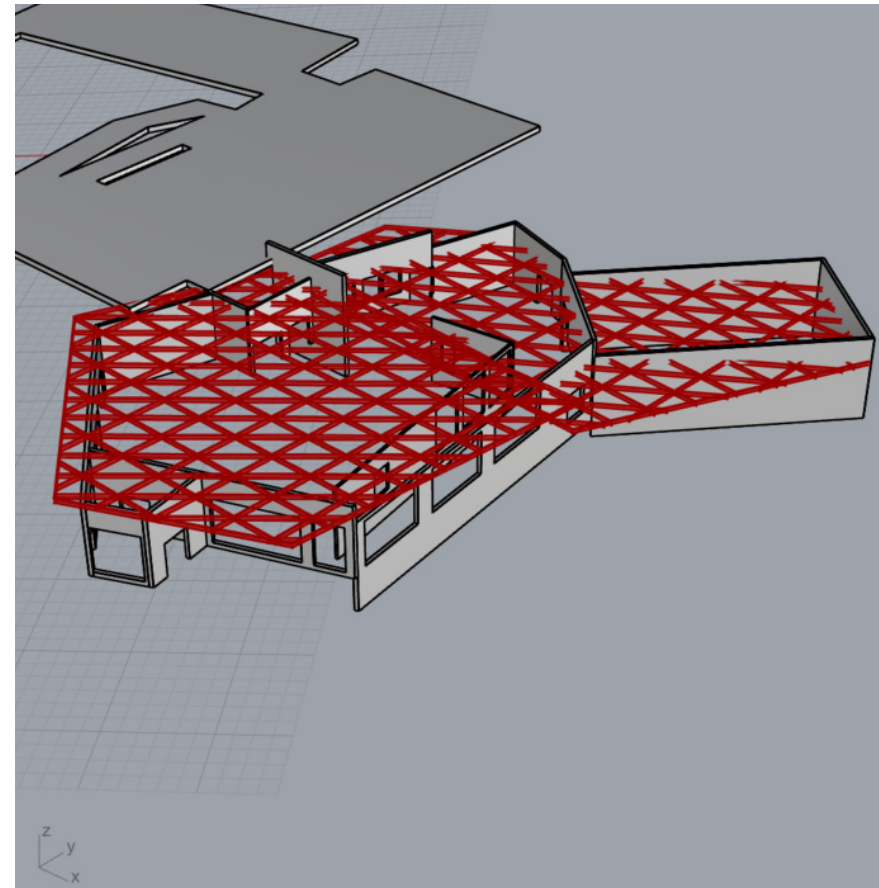
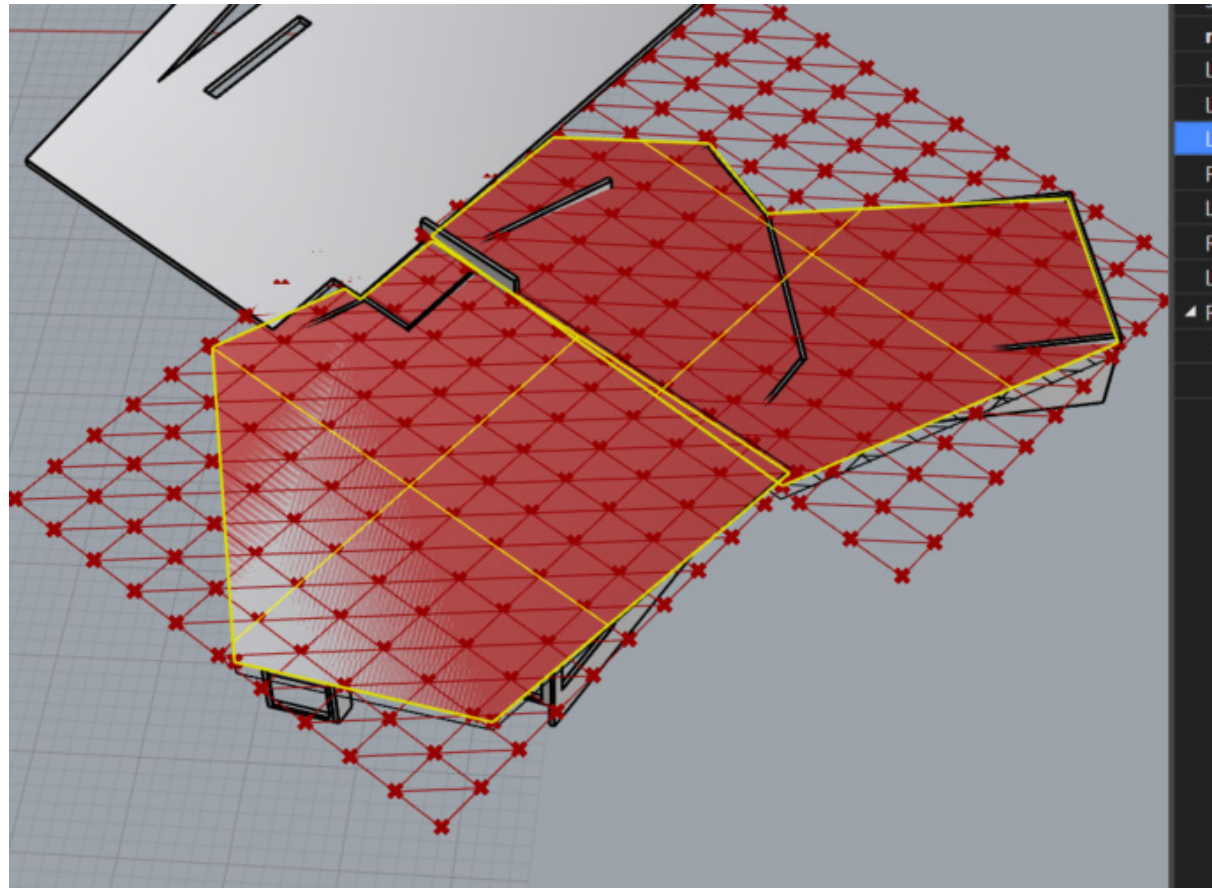
## Grasshopper Script:



My goal for this project was to create a diagrid structural system for my studio project. This approach allows for larger spanning distances and greater head clearance.

My first step was importing my Revit geometry into Rhino to obtain the correct dimensions for the roof.

I then set my roof surfaces in Rhino to the Surface node in Grasshopper and connected them to the diagrid system I selected from the LunchBox plugin. Using number sliders, I customized the system to best suit the needs of my program.



## Grasshopper Script:

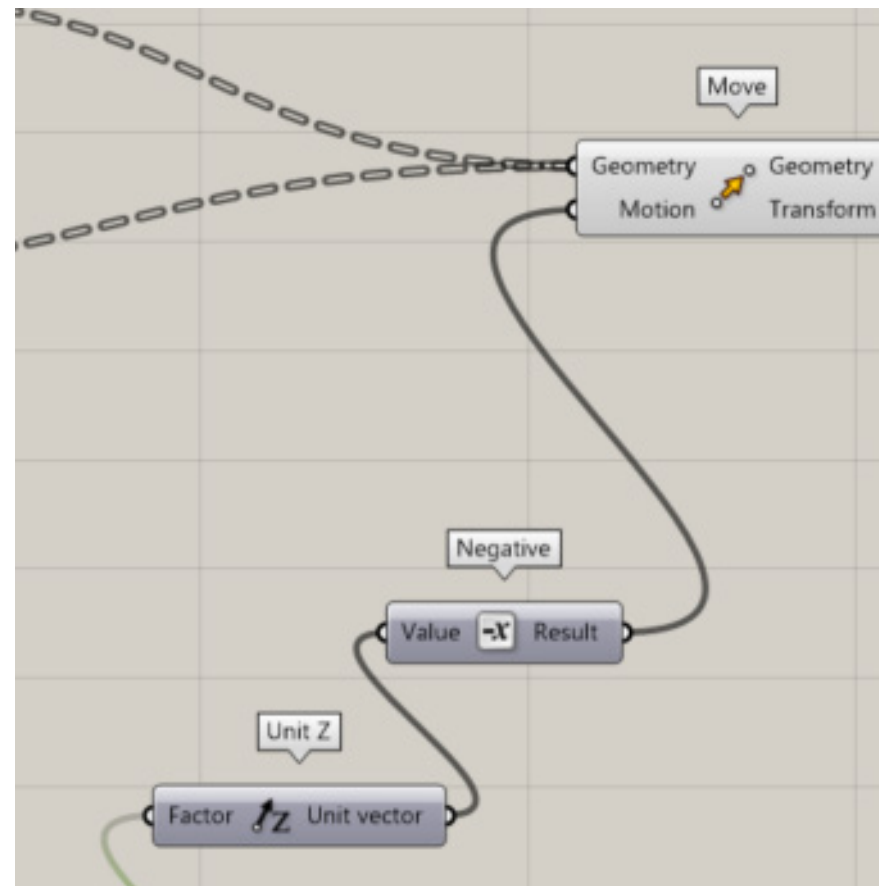
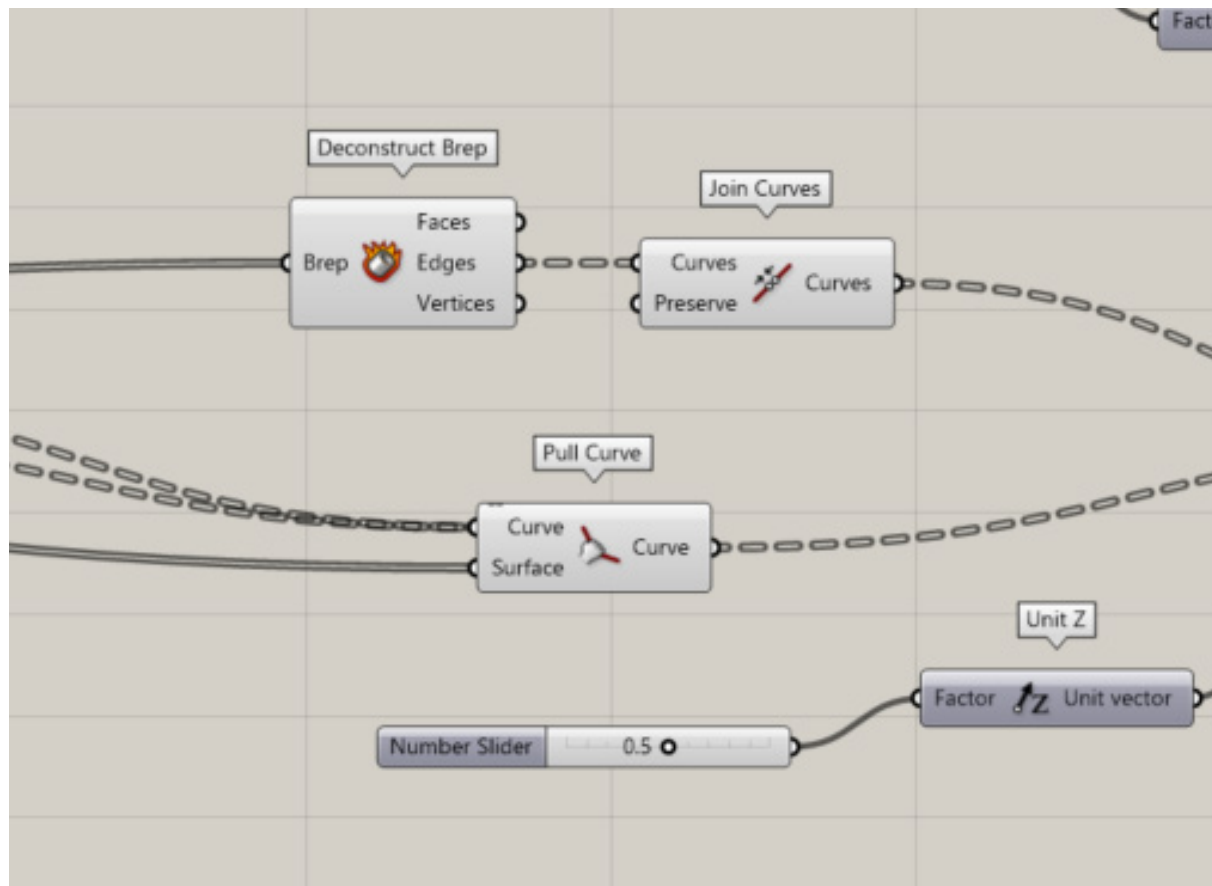
After I had the desired grid layout, I used a Deconstruct Brep node to find the edges of my surface and joined those curves using the Join Curve node.

Next, I used the Pull Curve node to adjust the default grid so it aligned with the surface lines taken from my roof geometry.

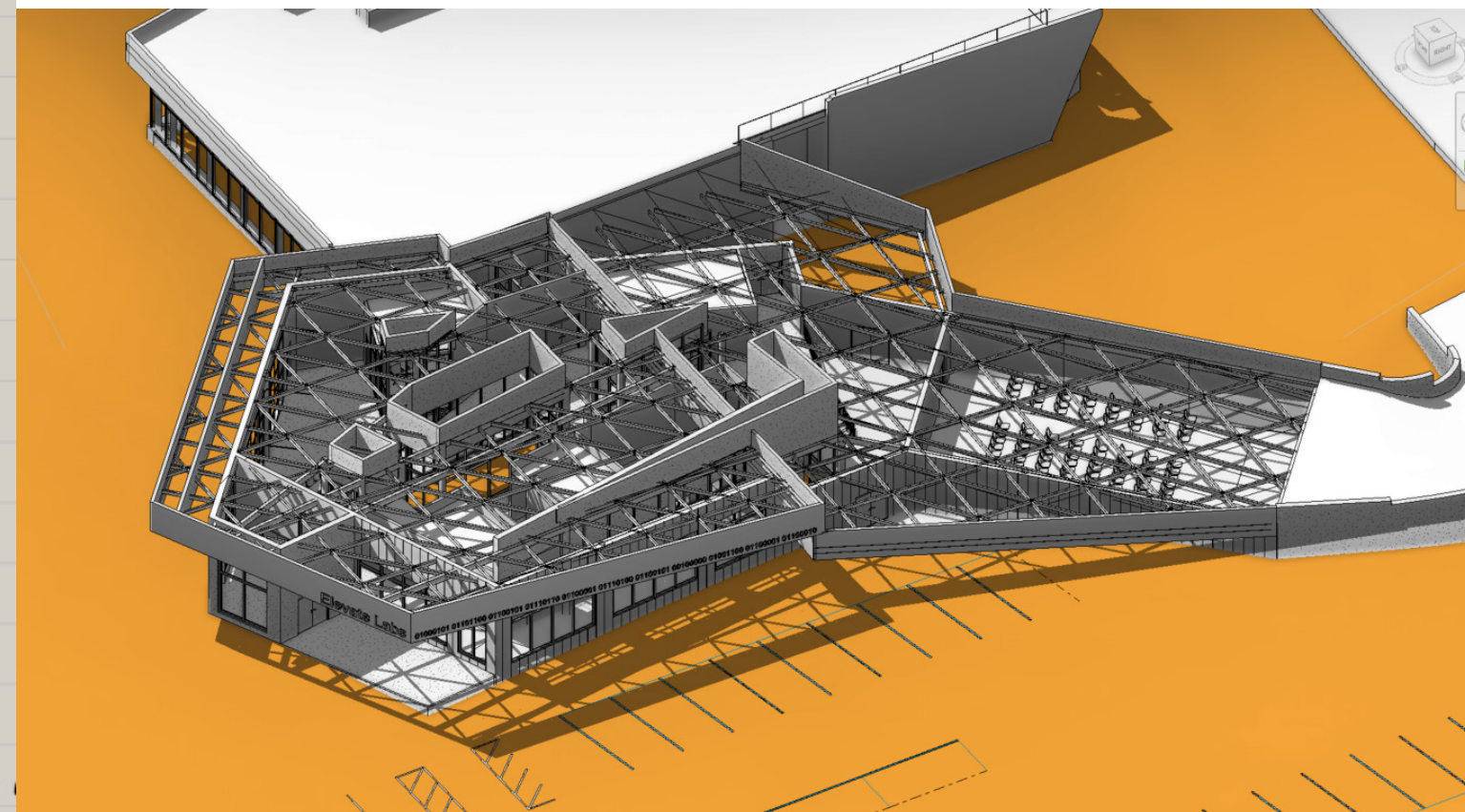
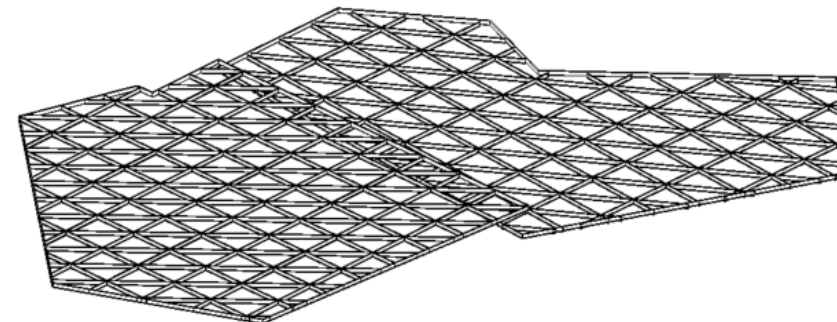
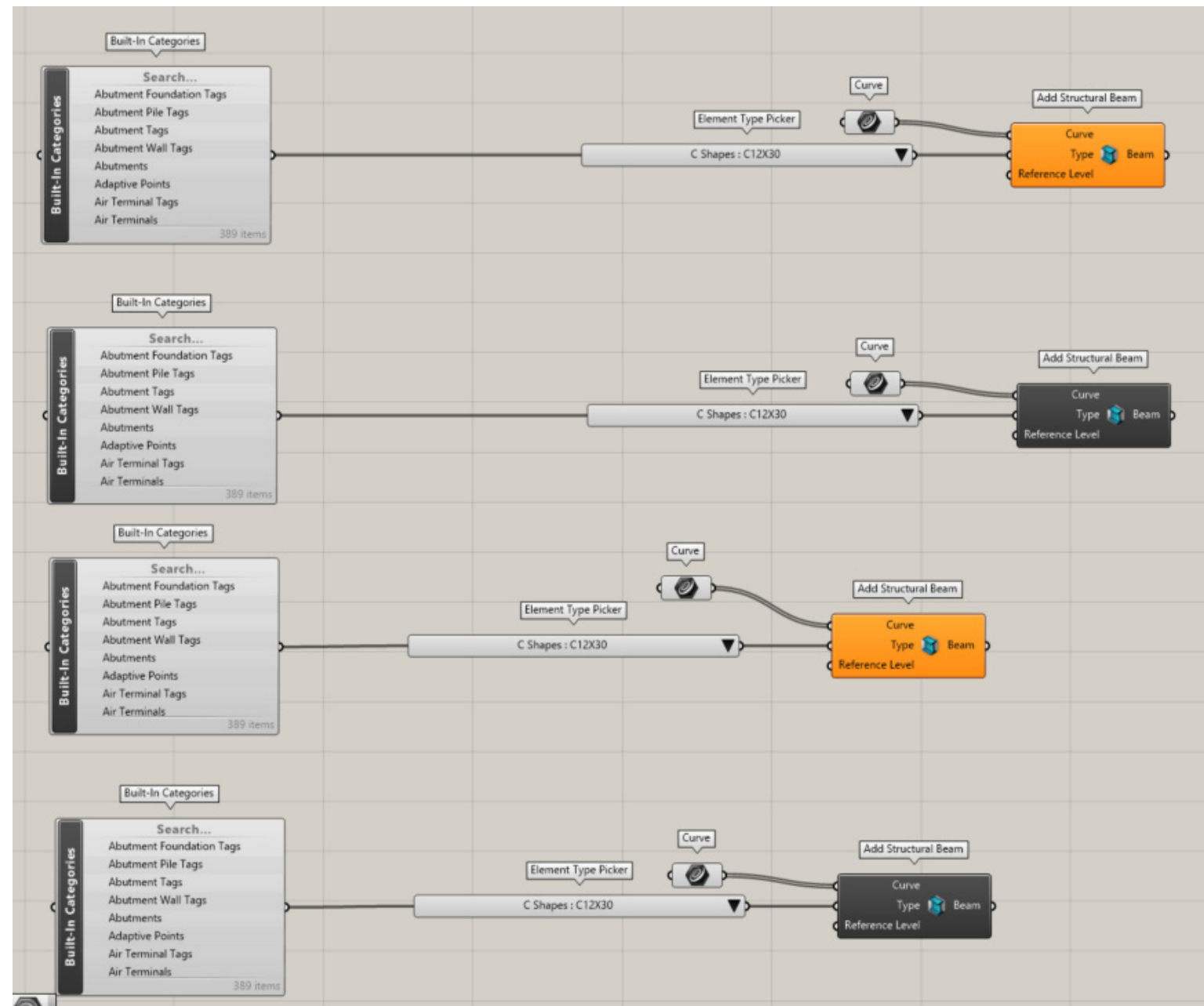
Finally, I offset the structure from the roof plane by using the Z vector tool and a Negative node to lower the structure relative to the roof surface.

## Rhino Inside:

After I had my desired curves in Rhino, I baked them and assigned them to their corresponding curve nodes. I used the Built-In Categories node in Grasshopper to find the family I wanted the curves to represent in Revit. Then, using the Element Type Picker, I selected the type of steel I-beam I wanted for my diagrid structure. I connected this element to an Add Structural Beam node to bring those curves from Rhino into Revit as beams. Finally, I selected the boundary curve to add a girder system. The result is a complete structural system transferred from Rhino to Revit using Grasshopper.







# Workflow Diagram

