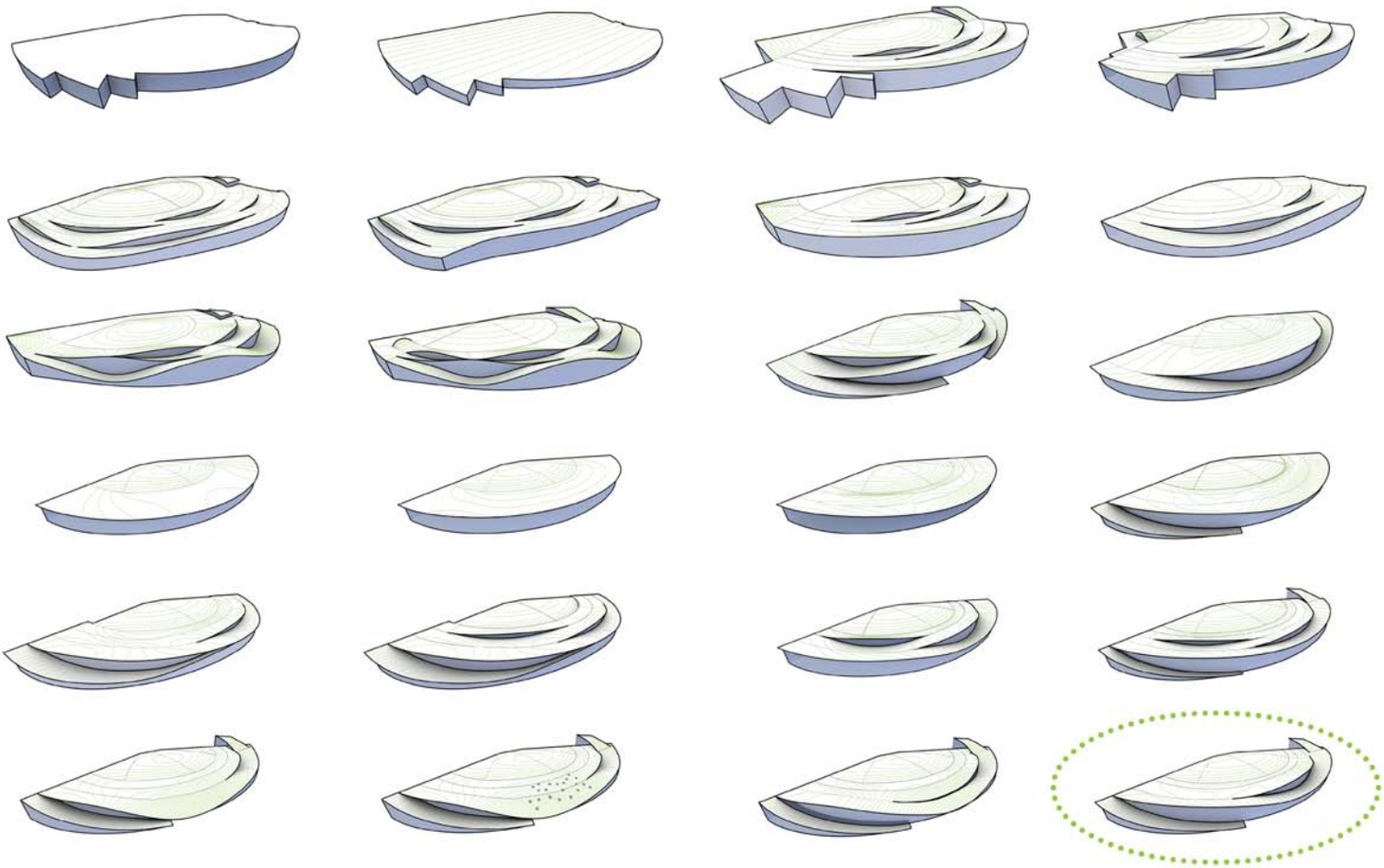
DEEP SPACE auditorium

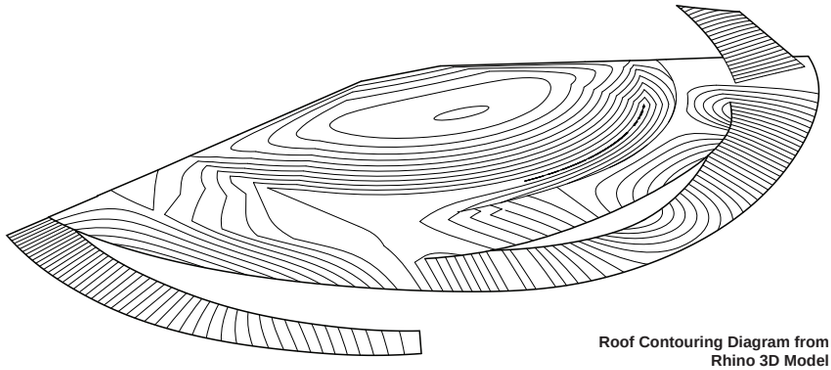
Deep Space is a 11.5K seat auditorium, that is being constructed on a private corporate campus in Verona, Wisconsin. We began with the charge of pushing the building into the ground, blending it into the rural landscape. I used Rhino 3D and grasshopper to design and protoype different roof forms.

Original Concept Model Parti



Mass Customized/Iteration through Rhino 3D + Grasshopper

3D Printing



Roof Contouring Diagram from Rhino 3D Model

DEEP SPACE auditorium

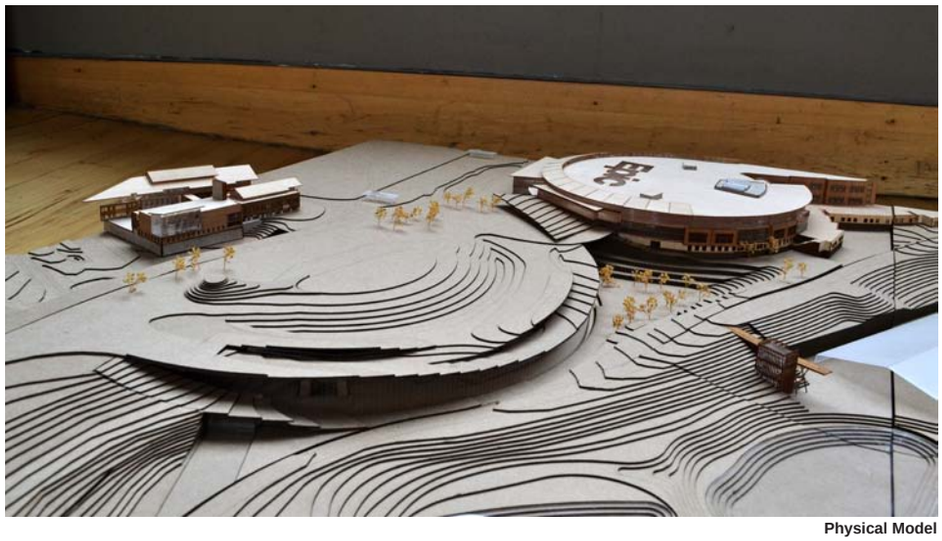
design **ABSTRACT**

West Facade Concept Rendering

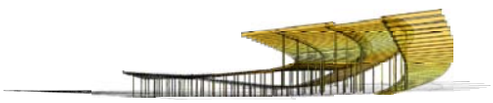
Interior Concept Rendering

After digitally modeling the roof forms, we used 3D printing technologies to present to the client and place into larger context models. From the Rhino model, I created different diagrams and renderings through Rhino, Flamingo, Vray, Photoshop, and Illustrator.

After determining the schematic surface model, I wrote a definition in Grasshopper that created a schematic structural concept for us to hand over to our structural engineer to analyze and build from. This definition allowed us to plug in different surfaces and the structure would adapt accordingly with the parameters we set up [i.e. beam size, grid layout, etc.] allowing us to manipulate the model in a much more efficient manner.



Physical Model



Structural Concept Models

for more information: **www.ryanfreeland.weebly.com**

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We then took a bit of a different direction creating more of a Cave. Therefore we used Rhino to create rough rock formation massings, which I then led a team in creating a 1/4" = 1' - 0" clay model with the intention to digitally scan and build a "rock wall" from. The scan would go to a CNC machine where the rebar would be bent according to the scan.

Clay Model for Scan

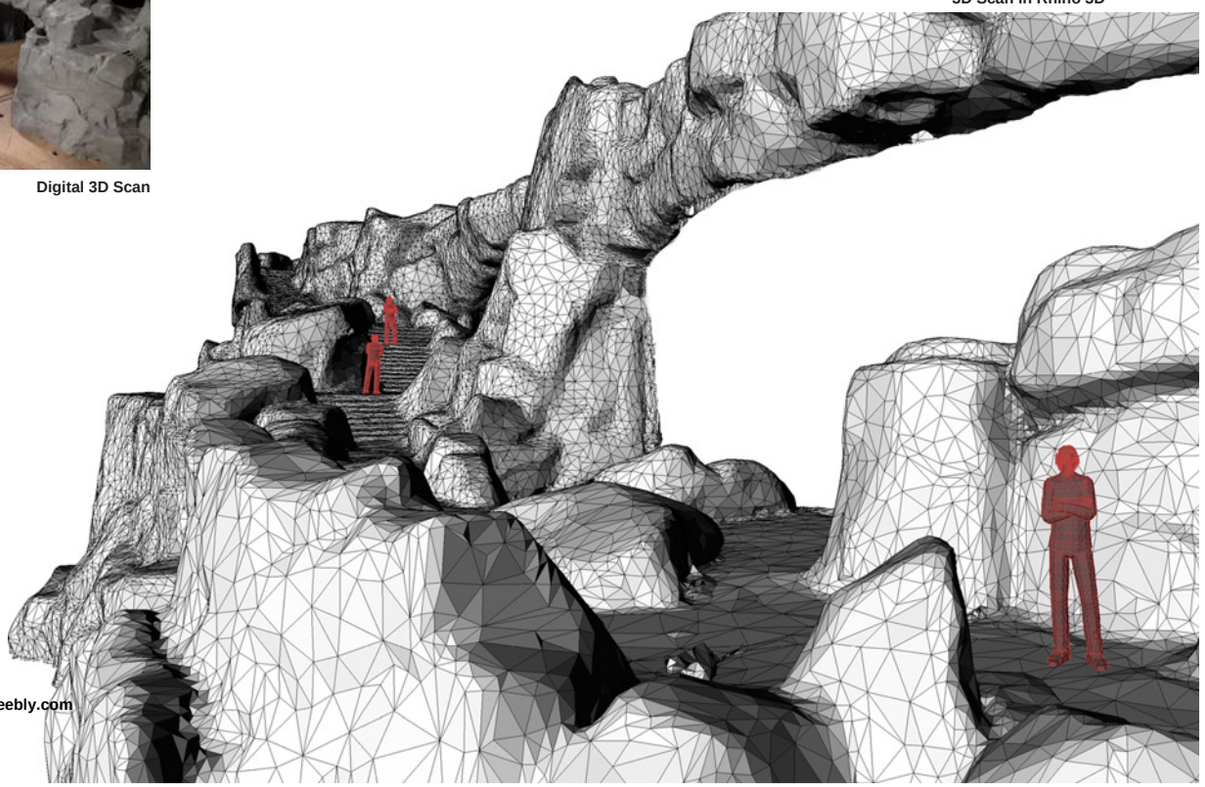
Clay Model for Scan

Rendering of West Facade

Laser Cut Model from 3D Scan

Digital 3D Scan

3D Scan in Rhino 3D



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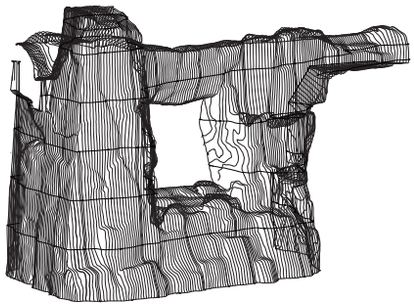
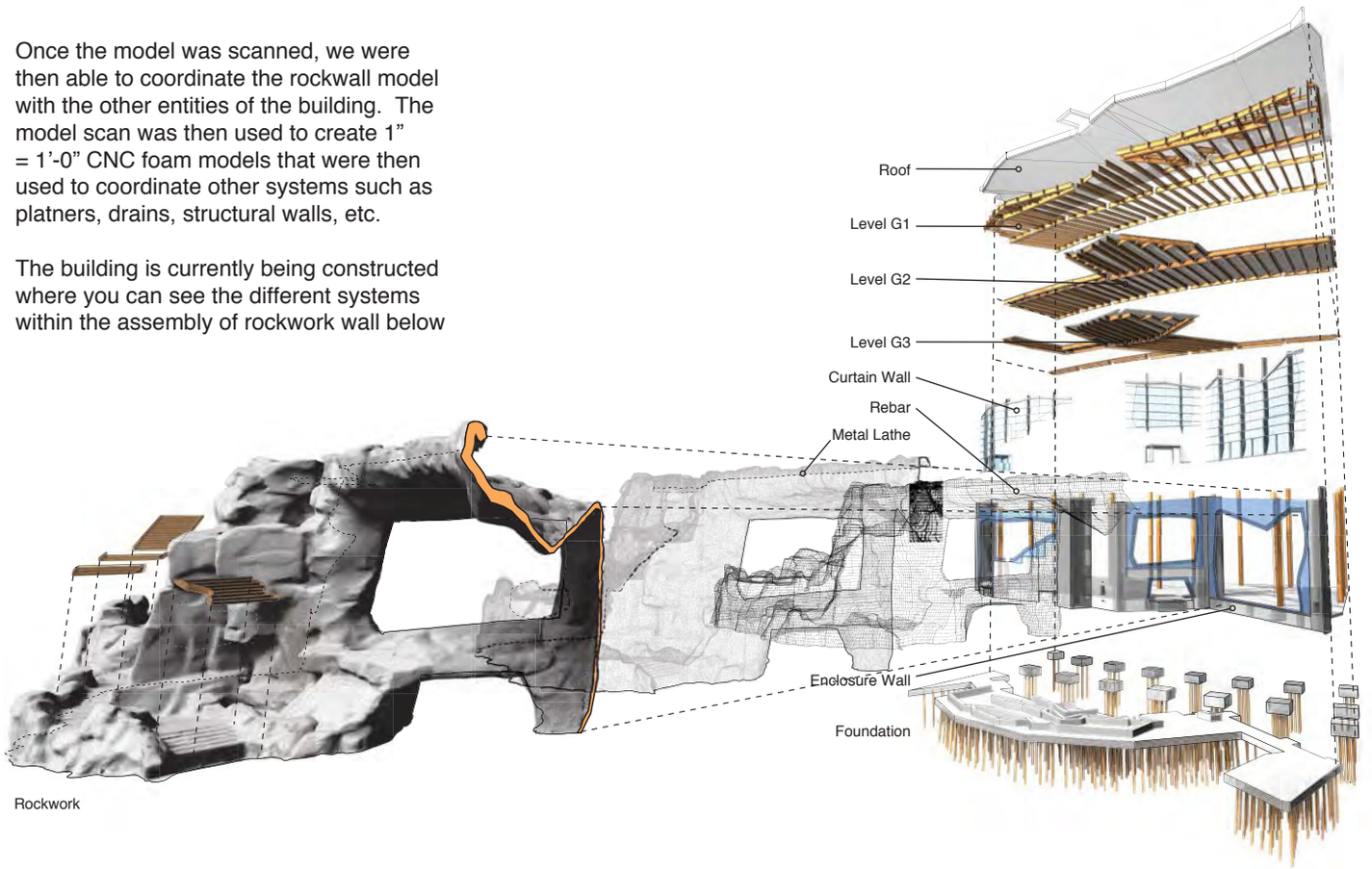
CNC model 1” = 1’-0”



Contoured Digital 3D CAD Model

Once the model was scanned, we were then able to coordinate the rockwall model with the other entities of the building. The model scan was then used to create 1” = 1’-0” CNC foam models that were then used to coordinate other systems such as platners, drains, structural walls, etc.

The building is currently being constructed where you can see the different systems within the assembly of rockwork wall below



Exploded Diagram of Wall Assembly

Rockwork Texture Coat

Rockwork Assembly

Rockwork Structural Coat

Rockwork Rebar

Structural Stand-0ffs