

Project 1: Procedurally Modeling a Building

## Sorrel Weed House | User Guide and Breakdown

### Rendering Information

<b>Renderer</b>	Mantra
<b>Average Render Time</b>	12.2 min/frame
<b>Image Resolution</b>	1280x720
<b>Number of Lights</b>	2(Sun + Sky Light)

### Sampling

<b>Noise Value</b>	0.01
<b>Min Rays</b>	6
<b>Max Rays</b>	12
<b>Pixel Samples</b>	5/5
<b>Global Quality</b>	1
<b>Diffuse Quality</b>	1

### Approximate Geometry

<b>Points</b>	26,250
<b>Primitives</b>	14,478
<b>Vertices</b>	86,396
<b>Polygons</b>	14,476

# User's Manual

This tool was created to customize the outside appearance of the Sorrel Weed House. These controls are located at the top of the SorrelWeedHouse node.

**Width-** This controls the width of the entire building- including any extra floors added. More windows will generate when the building gets wider and disappear when it gets slimmer.

**Depth-** This controls the depth of the entire building- including any extra floors added. More windows will generate when the building gets deeper and disappear when it gets shallower.

**Height-** This controls how tall the building becomes. More floors (along with their respective windows) will generate when the control's value is higher. 5 is the default and the lowest the building can become. Floors generate at a rate of +2.5 in value for the second floor and +3 after that.

**Window Width (side)-** This controls the width of all the windows on either side of the building. They can become slimmer or wider.

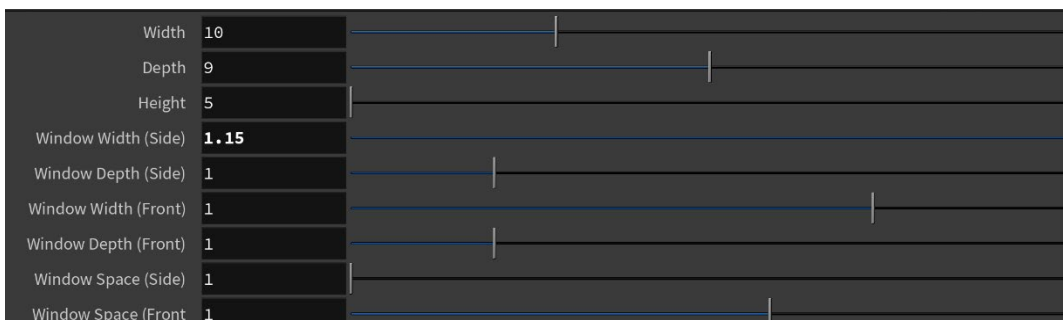
**Window Depth (side)-** This can make the windows protrude more out of the building if they need to be more defined. This is only for the windows on both sides of the building.

**Window Width (front)-** This controls the width of all the windows on just the front of the building. They can become slimmer or wider.

**Window Depth (front)-** This can make the windows protrude more out of the building if they need to be more defined. This is only for the windows on the front of the building.

**Window Space (side)-** This control can change the amount of spacing between the windows. This gives the user freedom to make the windows very close together or very far apart if they choose. This control is only for the windows on the side of the building.

**Window Space (front)-** This control can change the amount of spacing between the windows. This gives the user freedom to make the windows very close together or very far apart if they choose. This control is only for the windows on the front of the building.

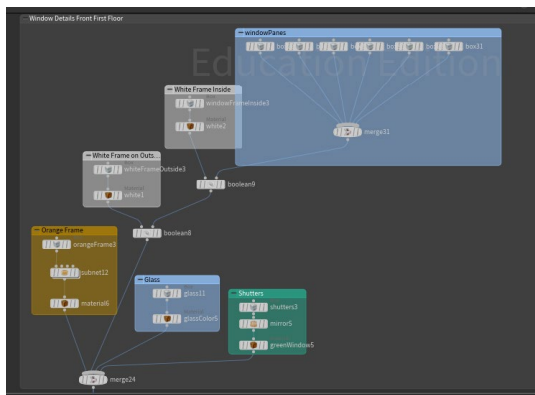


## Technical Guide

Everything for my building was modeled separately and then merged at the end to create the final image. This way, it was easier to organize my file and I did not run into any strange issues when my building was changing size. My main floors were box modeled and fitted with the width, depth, and height controls early on so I could test out as I went. After that, I was able to build onto my model and add more detail with adding edge loops and poly extruding.

All of my windows and façade accessories were created separately with box modeling. To create multiples of my objects, I used hscript, copynodes, and mirror nodes. This was used the most for windows. For all of the extra objects that sit on the building's façade, I used `ch("../depth") * .5` or `ch("../width") * .5` in their translate x or z. This made it so the objects "stuck" to the building's façade as it changed in width or depth.

My windows and my door+doorframe were created using Booleans. The door and doorframe were created using a union, while the windowpanes and window were created using a subtract Boolean and then a union Boolean to merge them together.

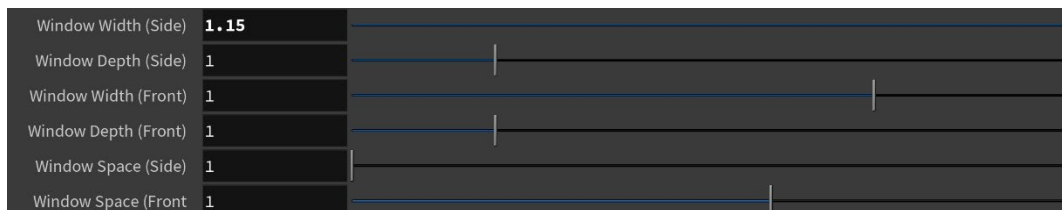


## Challenges

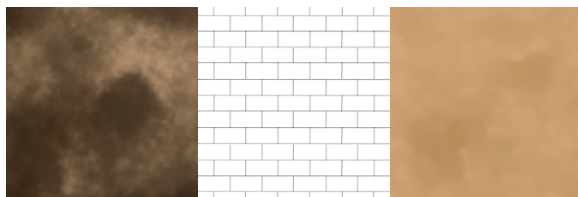
I had issues where my geometry would double transform and warp when the controls were used to manipulate their width/depth. This came from my problem of not correctly pasting my relative reference in the right place. After doing that, my geo transformed correctly. I also did not understand that I needed to do the \$HIP file extension so my textures would show up when I rendered on the renderfarm. I quickly realized after a test render that I needed to fix all of my texture file paths.

## Beyond the Requirements

**Extra Parameters-** I added a few extra controls to my building that were not required for the assignment. These include parameters for the front and side window's width, depth, and the spacing between them.



**Textures-** I created most the textures used on the house by hand using the drawing program Clip Studio Paint. I wanted a very specific texture for the main building texture that I knew I would not be able to find. I used a light base color and darkened it with a textured brush to give the illusion of weathering in the paint (some pictures of the house showed a lot of weathering while others did not). I also created the tileable brick texture that is used as a bump map with the line tool in Clip Studio.



## About the Sorrel Weed House

The Sorrel Weed house is a historic (haunted) house located in the heart of Savannah, GA. The house was constructed in 1835 and is one of the largest houses in the city. The opening of the film *Forrest Gump* was filmed from the Sorrel Weed House's roof. Today it is a museum that hosts tours both during the day, and at night for ghost tours!