

Sunique Plante

04/24/2022

Houdini Version: 19.0.383

## **Procedural Building**

### **Statistics:**

Renderer: Mantra

Average render time: 7.6 min/frame

Resolution: 1280 x 720

Samples: 3

Diffuse limit: 2

Global quality: 3

Diffuse quality: 3

Samples: 3 Key

Min Ray Samples: 1

Max Ray Samples: 9

Number of lights in scene: 3 (1 environment light, 1 sphere light, and 1 area light)

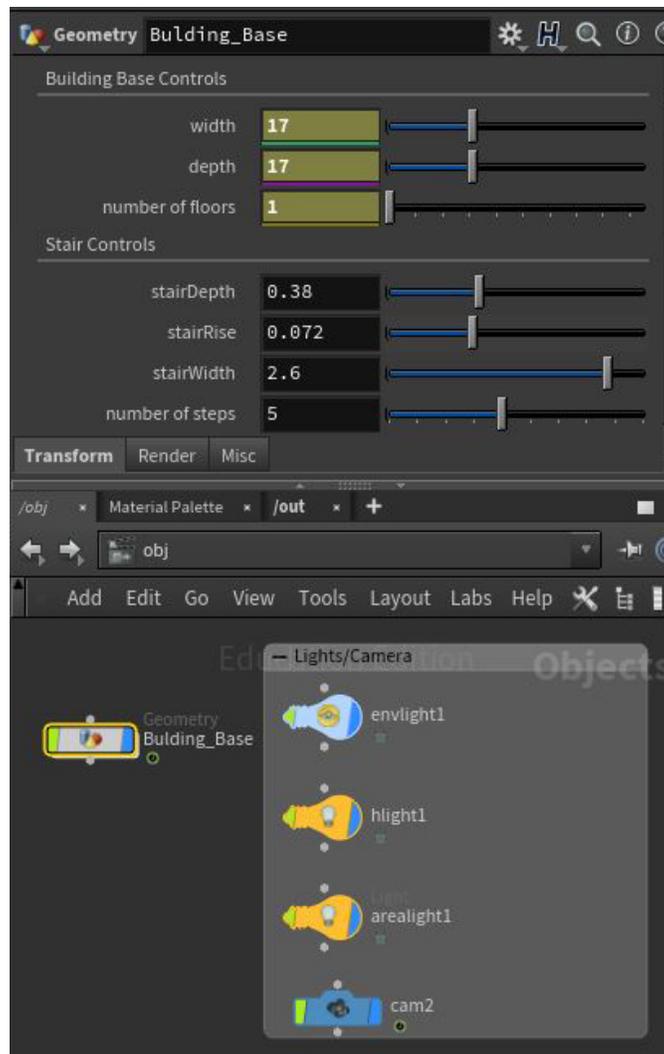
Complexity of geometry (estimate):

Points: 3,520

Primitives: 2,601

Vertices: 11,710

Polygons: 2,559



## **Building Base Controls**

Width: controls the size of the building along the x-axis

Depth: controls the size of the building along the z-axis

Number of Floors: controls the number of floors added to the building along the y-axis

## **Stair Controls**

stairDepth: controls the depth of all the stairs

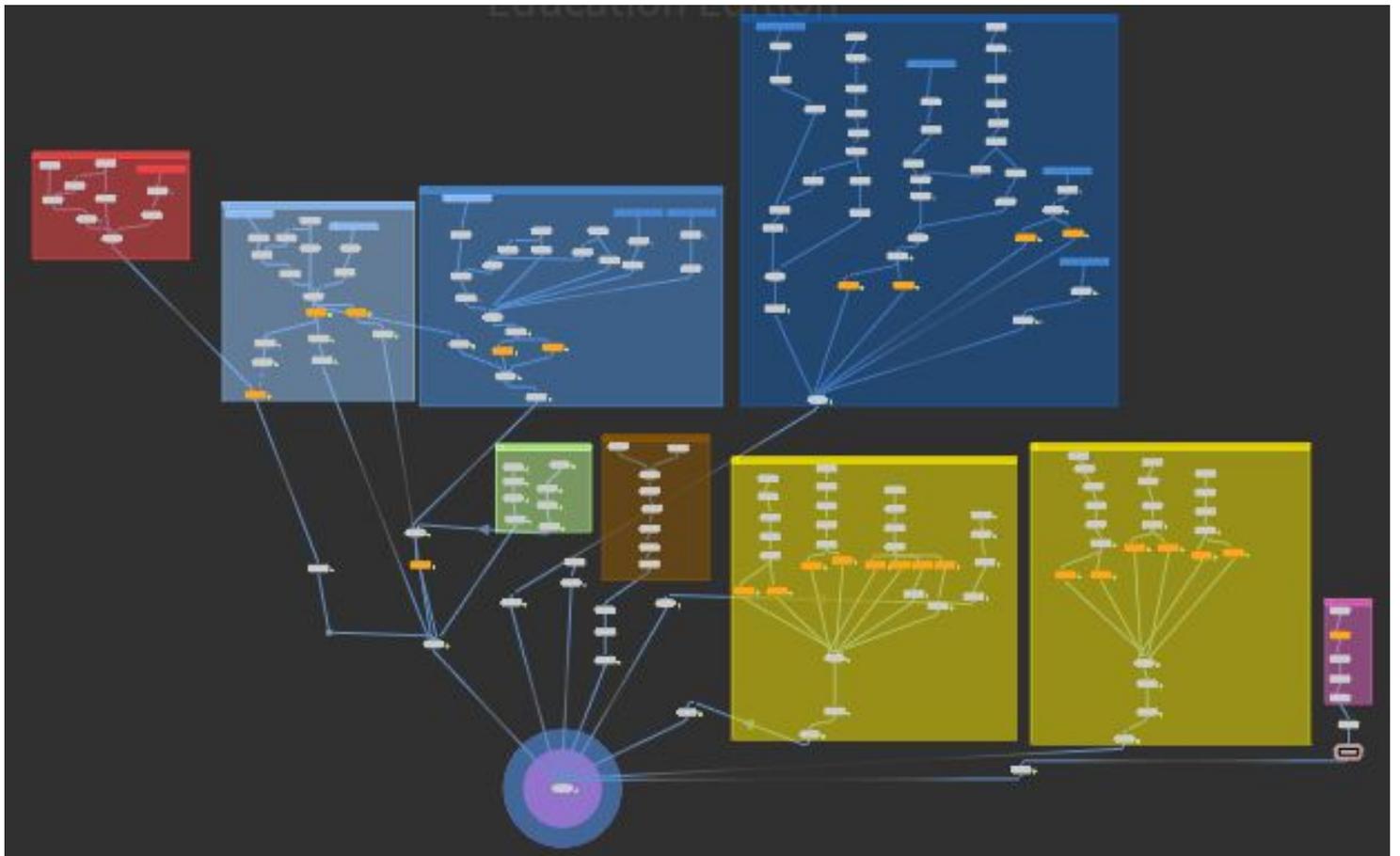
stairRise: controls the height of all the stairs

stairWidth: controls the width of all the stairs

Number of Steps: controls the number of steps added to the stair geometry

## Technical guide:

I created all the nodes for the building in one geometry node. I started with the adding the building base and the second base to create the number of floors (the green network box). The nodes for the windows are in the blue colored network boxes, the roof is in the brown network box, the door is in the red network box, the porch/post are in the yellow network boxes, and the stairs are in the pink network box.



I used multiple copy stamp nodes and copy to points nodes to duplicate the windows, the posts, stairs, and the number of floors for the building.

The base color of the building is a texture map I used to create a similar wood texture seen in the reference photos. The color for the roof is also a texture map that I used to replicate the look of the roof in the reference.

I used booleans to make the window's outer pane and for the inner window frames I created my own texture map.

The porch details are applied by my own texture map to replicate the look of the posts in the reference image.

Most of the materials are applied to the base geometry of each object. I connected all the geometries into one mergeAll node.

### **Description of what you have done beyond the requirements:**

I created texture maps for the windows and posts; I used Adobe Photoshop to make simple, tile-able maps with similar designs to the reference. I used uv project nodes to place the textures on base floors, windows, roof, and posts. For the roof, base floors, and windows. I added displacement maps to create more dimension in the house.

Image Based Textures



Custom Made Textures

