

El Mesón Sandwiches, San Juan, Puerto Rico

Project Breakdown

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VSFX 350

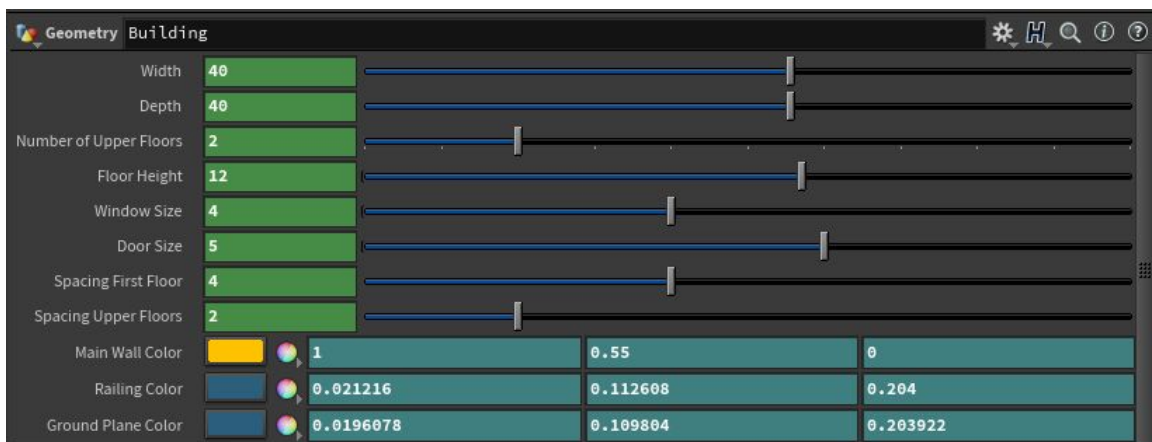
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Houdini Version: 18.0.287

Important Statistics:

- Render Information
 - renderer: mantra
 - image resolution: 1280 x 720
 - noise level: 0.01
 - min/max rays: 4 / 10
 - diffuse quality: 3
 - pixel samples: 5
 - average render time per frame: 0:17:22
- Lights: sky, sun, and environment with HDRI
- Geometry Complexity:
 - points: 242
 - primitives: 236
 - vertices: 830
 - polygons: 198
 - packed geos: 38

User Guide to Parameters:



- **Width / Depth:** Adjusts the physical width and depth of the building and adds/takes away windows and doors accordingly. The spacing stays exactly the same between the doors and windows as it scales.
- **Number of Upper Floors:** Creates more floors building up from the base level.
- **Floor Height:** Makes all the floors taller or shorter, creating a more condensed or elongated appearance.

- **Window Size / Door Size:** Makes the windows or door wider or skinnier. These are controlled separately and the spacing is adjusted automatically as the size is changed for each.
- **Spacing First Floor / Spacing Upper Floors:** This will change the length of the gap between the doors and windows on the first floor and upper floors, making them closer together or further apart. The base floor and upper floors are independent of one another.
- **Colors:** There are three color parameters for the main wall color, railing color, and ground plane color that can be changed to fit the user's aesthetic preferences. This also fits in with the colorful nature of Old San Juan where this building is located.

Technical Notes:

- The siding on my building was created by extruding down from the roof and placing the whole thing on top like a shell using an object merge node in the main geo. The lamps were attached directly in the roof geo so that they could be merged in together and stay in place.



- The spacing for this building was created by using vex code in a point wrangle node (see below) in order to ensure that the doors and windows stayed evenly spaced at all times. I ran into an additional challenge when adding the siding of my building, so I created a variable called "sidingSize" using a divrate value from the roof extrusion to make sure the windows and doors did not overlap anything.

```
Edit String for: /obj/Building/pointwrapgle1/snippet
// Original Code from Deborah Fowler:
// http://deborahrfowler.com/HoudiniResources/WrangleNodeExampleWindowCalculation.html

// Grab the variables
float door = ch("../doorSize");
// Add breathing room if desired with spacing parameter
float windowSize = ch("../windowSize");
float size = ch("../width");

// Add siding size variable to make sure windows don't overlap siding roof geo
// Use division variable copied from Roof geometry to get the width of each division (and therefore siding)
float sidingSize = (ch("../Roof/width")/ch("../Roof/box_Roof/divrate1"));

// Calculate how much space is available for the windows
float spaceForWindows = size - (door + ch("../spacing"));

// Calculate how many windows fit, leftover, gap and start
// Siding Size multiplied by 2 for correct gap size on both sides
int winFit = int(spaceForWindows / (windowSize + (sidingSize*2) + ch("../spacing")));
int geoFit = winFit + 2;
float leftover = size - (winFit * windowSize + door);
float gap = leftover / (float)geoFit;
float start = -size * .5;
float xval;

for (int i = 0; i < winFit; i++)
{
    xval = start + door + gap + windowSize * .5 + gap * (i+1) + windowSize * i;
    v@loc = set(xval,0,0);
    addpoint(0,v@loc);
}

// and door
xval = start + gap + door * .5;
v@loc = set(xval,0,0);
addpoint(0,v@loc);
```

Beyond the Requirements:

- **Additional Parameters:** I wanted to ensure that my building was customizable in more than just width, depth, and number of floors. I added floor height, colors, window size, door size, first floor spacing, and upper floor spacing to do this.
- **Additional Walls:** I put windows on three walls instead of just the two shown in the image for a more interesting turntable and cohesive building that seems like it could stand alone.
 - I added the lamp on all sides of the building instead of just one for a more symmetrical, unified image.