

Blue House Scene | Breakdown

Rendering Statistics

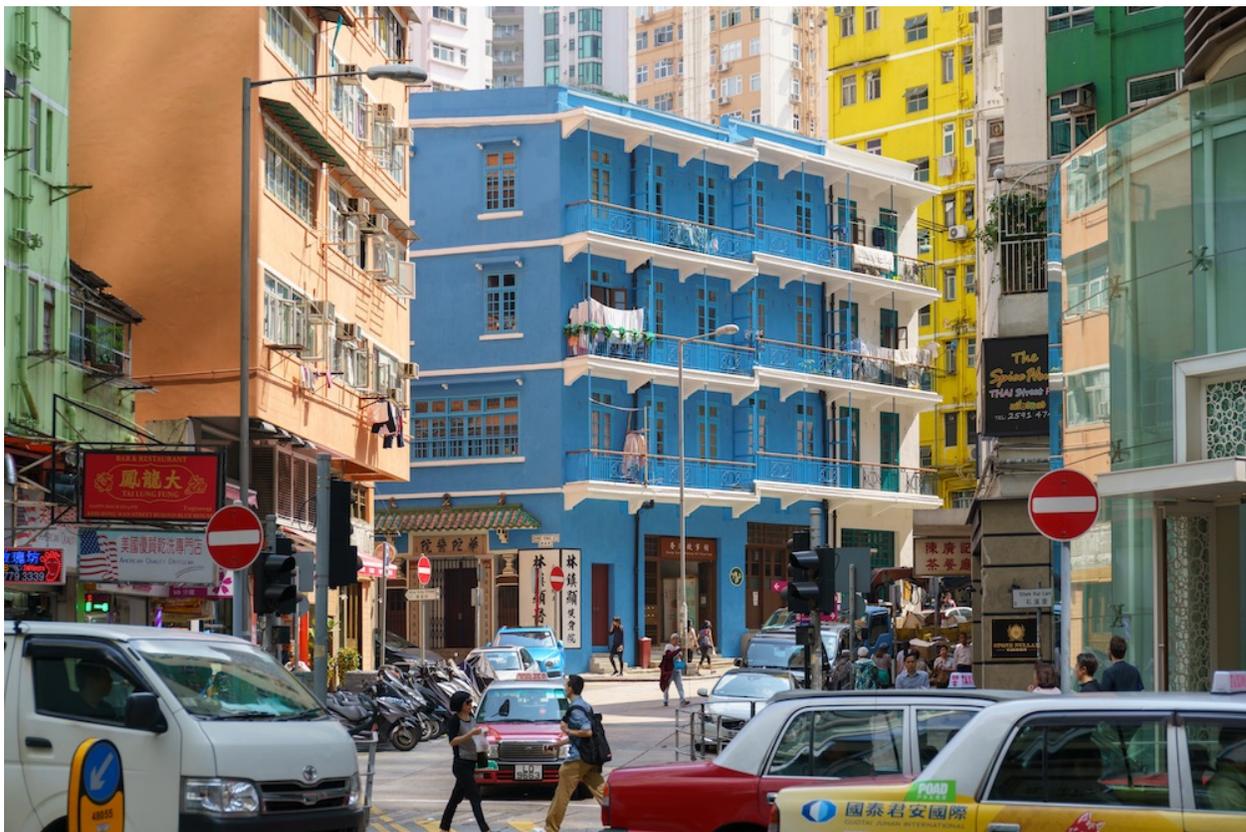
renderer - mantra
average render time - 1 hr, 17 mins
image resolution - 1280 x 720
number of lights - 2 (sun & skylight with HDR)
geometry complexity - approximately 173,000 polys

Sampling

noise value - 0.01
pixel samples - 5 x 5
min/max rays - 4 / 10
diffuse - 2
reflection - 3

Project Description

Following the reference picture below, the goal of my project was to compose a city scene using the procedural building model I created for the first project. I focused on creating as much variation between the buildings as possible within the restrictions of procedural modeling and copy stamping.



Process

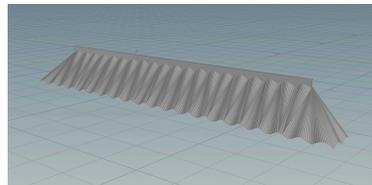
1. Gather city reference
2. Model a procedural building with custom parameters
3. Layout the city by adding points and copying to these points using the copy stamp node
4. Set the camera and adjust the layout as needed
5. Model the streets and sidewalks around the buildings
6. Add variation to the buildings through copy stamping in switch nodes and building parameters
7. Add on additional details, such as street lights and signs
8. Light and texture the scene, then render

Problems & Solutions

- Variation through Copy Stamping**
- create variation through expressions in switch nodes and building parameters
 - use a nested if statement format to get controlled variation:
if(condition, true, if(condition, true, false))
 - the condition should be referencing the point number(s) of the necessary building(s), and will vary depending on the desired result (example below)

- Beveling the Street Curbs**
- to create the street/sidewalks:
 - draw a curve of the street shape, convert to polygon, and extrude
 - use this object as a *subtract* boolean on a large plane
 - this shape is not suitable for beveling, so to create the rounded curb:
 - group the faces of the sidewalks, extrude and slightly shrink the face
 - repeat as many times as needed to get a rounded edge

- Modeling the Ridged Awning**
- start with a simple awning shape as a base, then create lines that follow the edges
 - select every other point in the line, transform up, and resample to create a wavy line
 - repeat this for every line and finally loft the lines together one section at a time (ex. front, left side, and right side)
 - add a box on top to finish



- Texturing**
- when exporting an .obj to Substance Painter to paint textures on:
 - uv map the object using (in order) the uv project, uv unwrap, and uv layout nodes
 - to export the uv mapped geometry, right click on the final node of the geo and select *save*, then *geometry*
 - a dialog box will allow you to set the file location and type

- Tangents**
- while laying out the scene, be sure to watch for tangents and adjust as necessary
 - *tangents* occur when edges line up with each other or the edge of the frame, and have a tendency to flatten out or weaken the composition

- Lighting**
- to create the effect that there are buildings extending beyond what has been modeled in frame, add large planes out of frame to cast extra shadows in the scene