Project 1 – Procedurally Modeling a Building

DATE DUE: Class 8
[Optional Render: Class 9 – *place all content in a folder with _Final appended to the name and place it at the **top-level directory**. Leave the original submission. This way a quick check of the folder indicates whether a resubmission was completed.*]
Proposal DUE: Class 3
DATE ASSIGNED: Class 2

CHECKLIST:
- hipnc
- mov or mp4 (compressed)
- pdf
- jpg beauty
- jpg compare
- and reference and textures

Ensure your building changes properly in width/height/depth and has a door and a roof

Goals:
This assignment will focus on the student becoming familiar with expressions and procedural modeling.

Requirements:

The following are the minimum requirements for the project:

- The dimensions of the building, both footprint and height, should be changeable through high-level parameters. (**width, depth and height**)
- The building should have windows, the number of which is tied to the size of the building.
- There should be at least one entrance.
- There should be a roof structure that is distinct from the main body of the building.
- The building should have multiple material assignments. You may incorporate file-based textures, but they are not required.
- Rendering should be production quality.
- The scene file should be well organized and documented with network boxes, sticky notes, informative node names and comments.
- Everything must be done in Houdini except compositing/creating mov

REFERENCE, REFERENCE, REFERENCE

You will work from reference for this project. Please find or photograph a building as reference. You may use found images of existing, proposed or imagined buildings. If instead, you would like to design your own building, you should submit concept artwork. You are not required to replicate all the detail of your reference building; the basic forms should be recognizable and be proportional when the building is in its base configuration. Do not include details in the model which should be addressed via texturing, such as brickwork.

Submissions guidelines:

The project will be submitted to your dropbox in a **directory**

F24_V350_P1_LastnameFirstname_Title/ containing:

- **F24_V350_P1_LastnameFirstname_Title.hipnc**

- **F24_V350_P1_LastnameFirstname_Title.pdf** – user guide *and breakdown* – see template.

- **F24_V350_P1_LastnameFirstname_Title.mp4** – use the following as **guidelines**
    - *approximately* 10 seconds of animation, high quality, H264 compression (use handbrake), 1920 x 1080 (or 720 x 405 if rendering during high renderfarm usage).
      Additional animation is allowed at your discretion – practice good time management skills.
    - first 5 seconds should be a **turntable of the base** model, rotating *guideline*: no more than 10° per second. (If there are no details on the back, no need to use the full 360 degrees – use your judgment). HINT: use a null node for rotation parented to the camera – see tips and tricks page. Or rotate your building.
    - next 5 seconds should **demonstrate the range of variation** possible when modifying the building's parameters. For this portion of the animation, there should be little or no camera movement and little or no rotation of the building. THIS IS TO BE RENDERED, **NOT** SCREEN CAPTURED! Keep the building in view.
    - The mp4 should contain a screen capture of the **custom parameter interface** of your procedural building.
    - Place your compare image (reference/result as listed below) at the front of your video. Url of your reference should be included.

- **F24_V350_P1_LastnameFirstname_Title.jpg** (or png, **NO tifs!**). This is a "beauty shot" of your building – exact aspect ratio is at your discretion. **Note – you should be rendering to exr** – use mplay to convert your beauty shot.

- **F24_V350_P1_LastnameFirstname_Compare.jpg -** A side by side screenshot of your reference and final beauty shot (camera view should match as closely as possible)

- Additional information required:
    - **reference/** This should contain no more than 10 JPEGs of your reference, no larger than 1,000 by 1,000 pixels. There is no set naming convention for the reference images. A file, **source.pdf,** inside the reference folder, which indicates the location of the building and the source of the submitted reference images, including appropriate URLs. Think of this as the bibliography for your reference images.
    - **tex/** If your project includes file-based textures they should be included here. In your hipnc files, **be sure that the paths are relative to the $HIP** global variable (e.g., $HIP/tex/filename.jpg) and NOT absolute paths.

Grading:

Criteria includes: Footprint parameters/windows/entrance/roof/multiple materials/quality render/clean hipnc. Refer to grading rubric posted on the class website.