

Review

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Electronic Armory

Verts, Edges, Faces, Polygons, N-Gons



vertices

edges



faces



polygons



surfaces



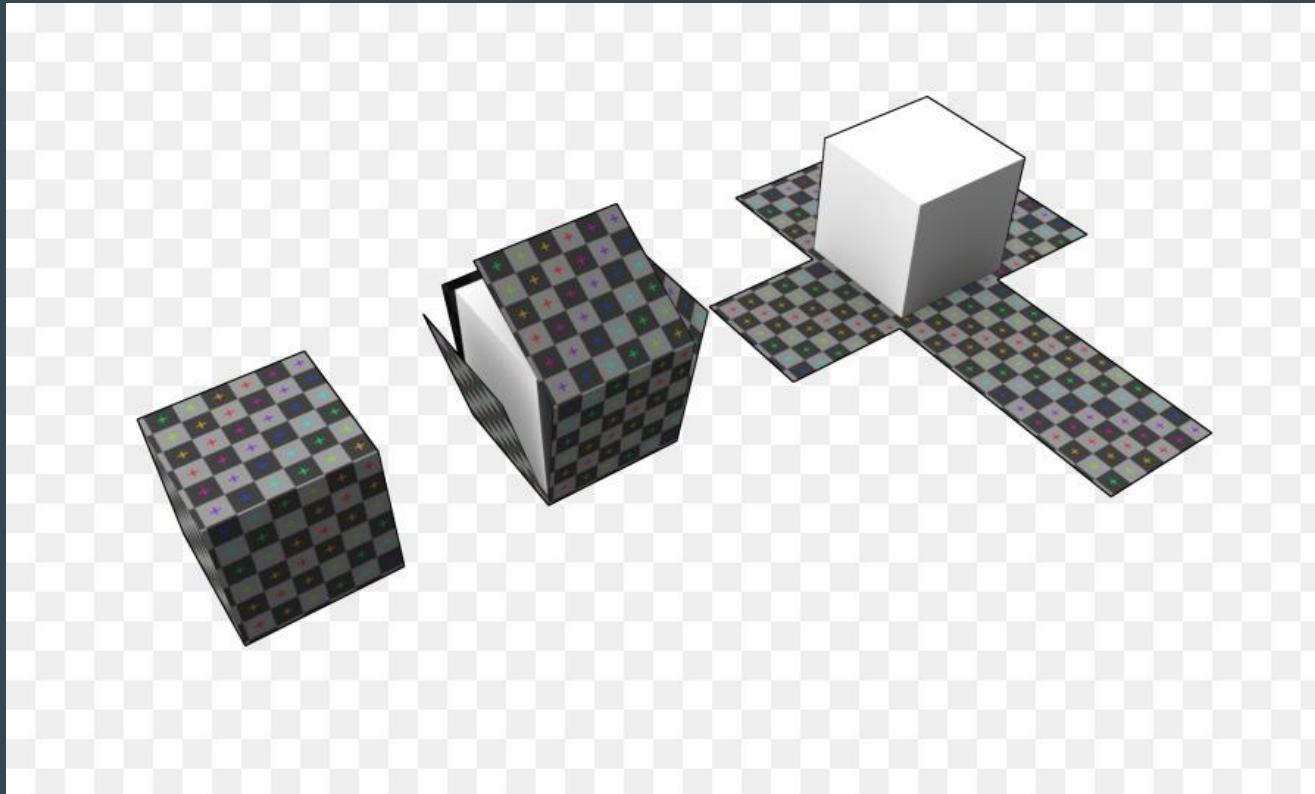
Problems with N-Gons

<https://www.youtube.com/watch?v=BjnCV2PIkKA>

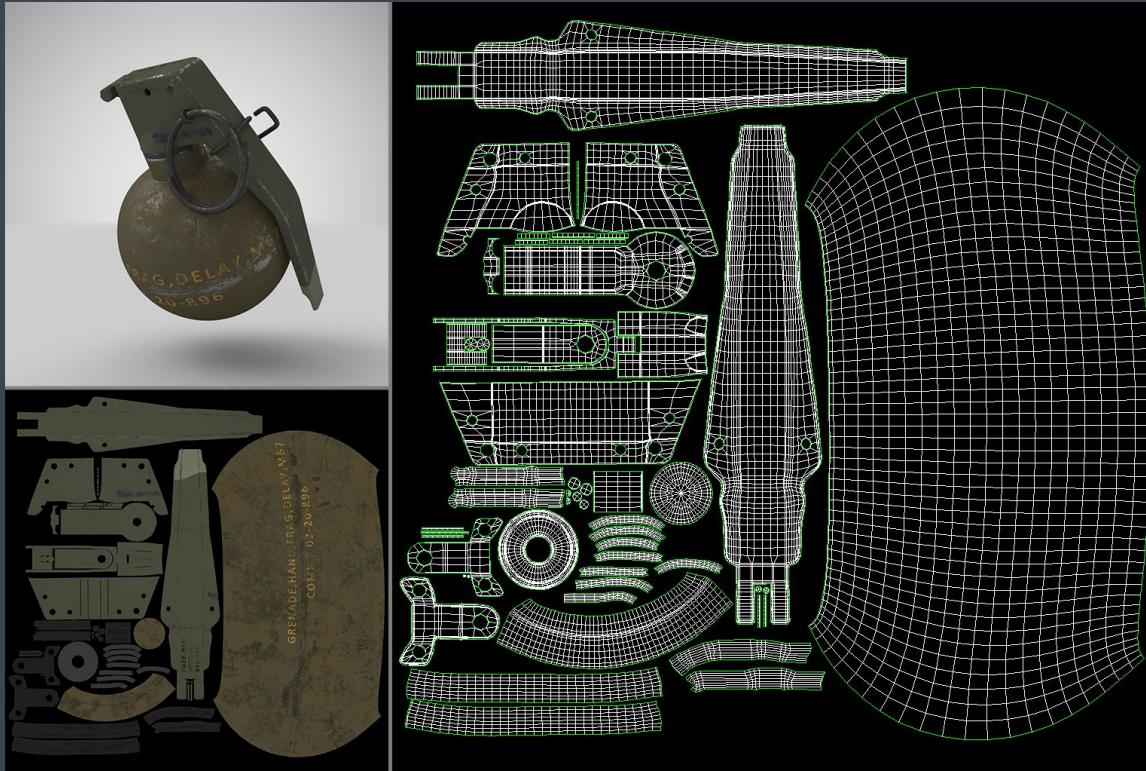
TLDR:

- Triangulation is undefined and haphazard
- Deformation causes issues
- Subdividing causes issues
- If your model is static, you may not have issues

UV Mapping

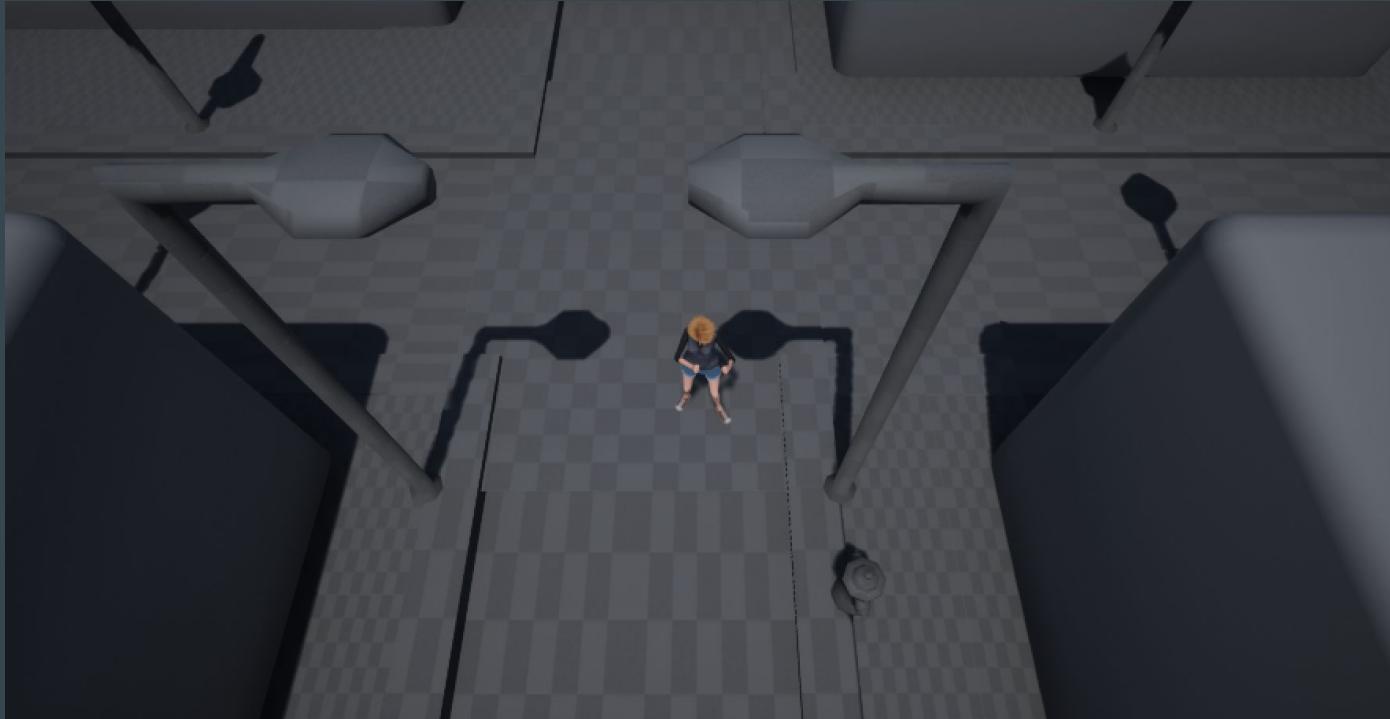


UV Example

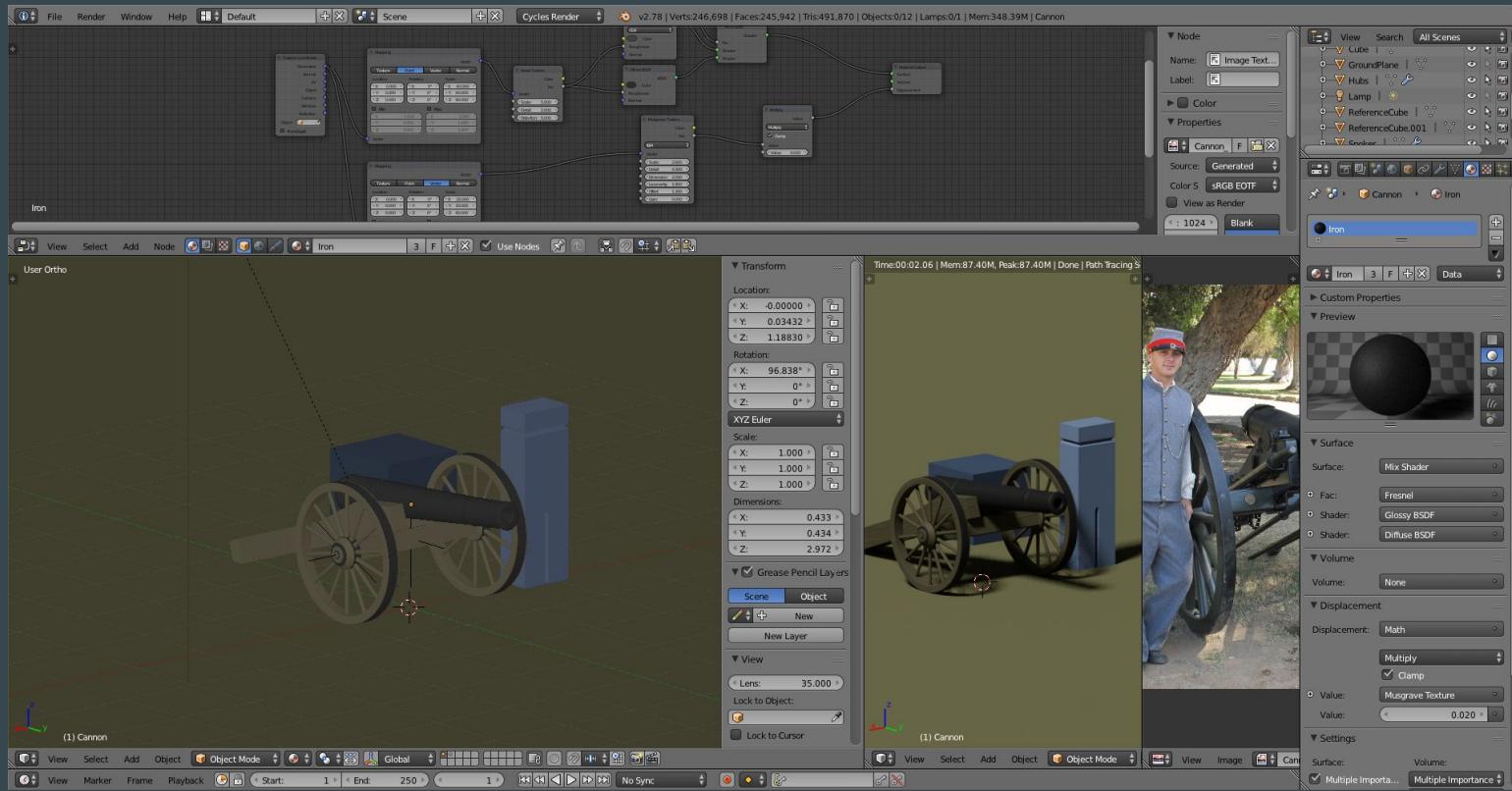




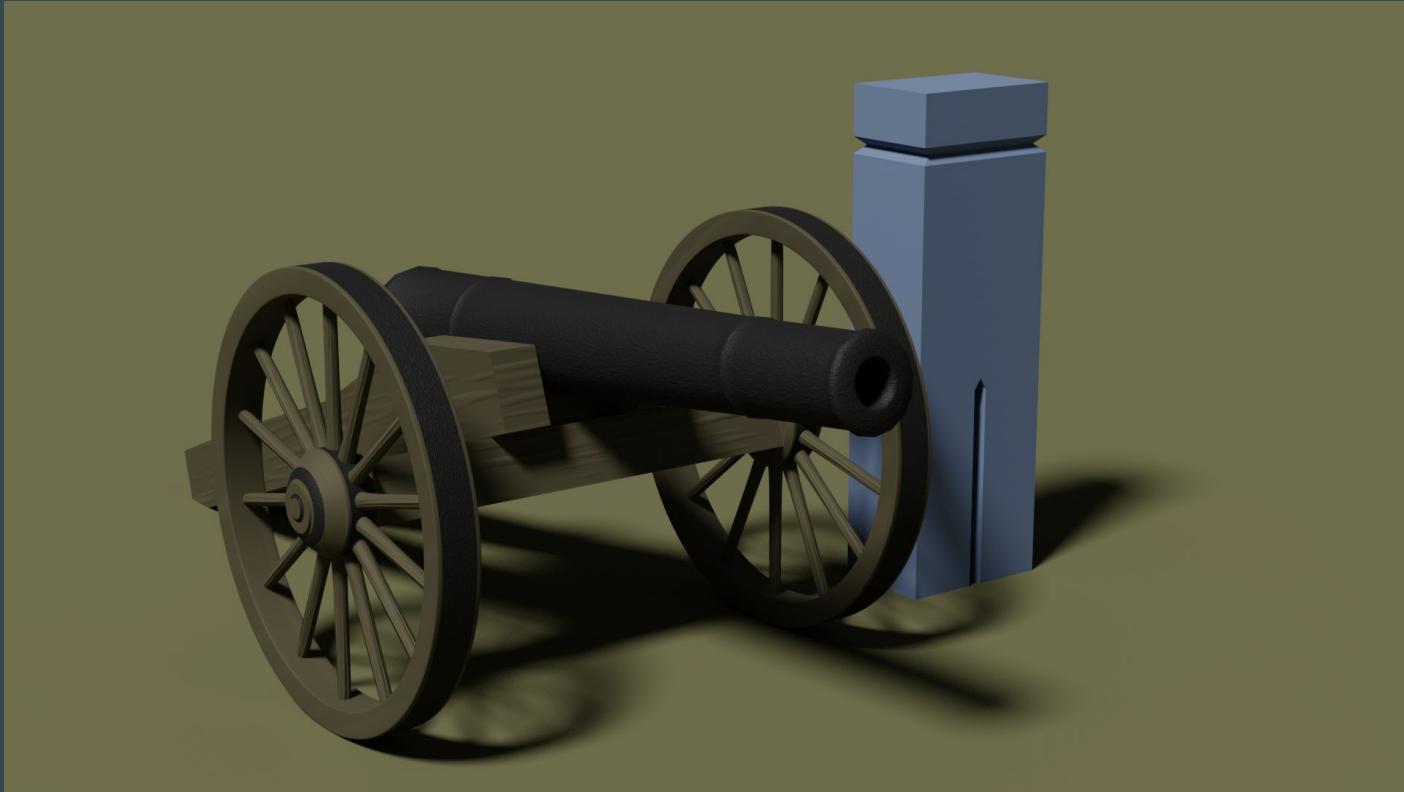
UV Stretching



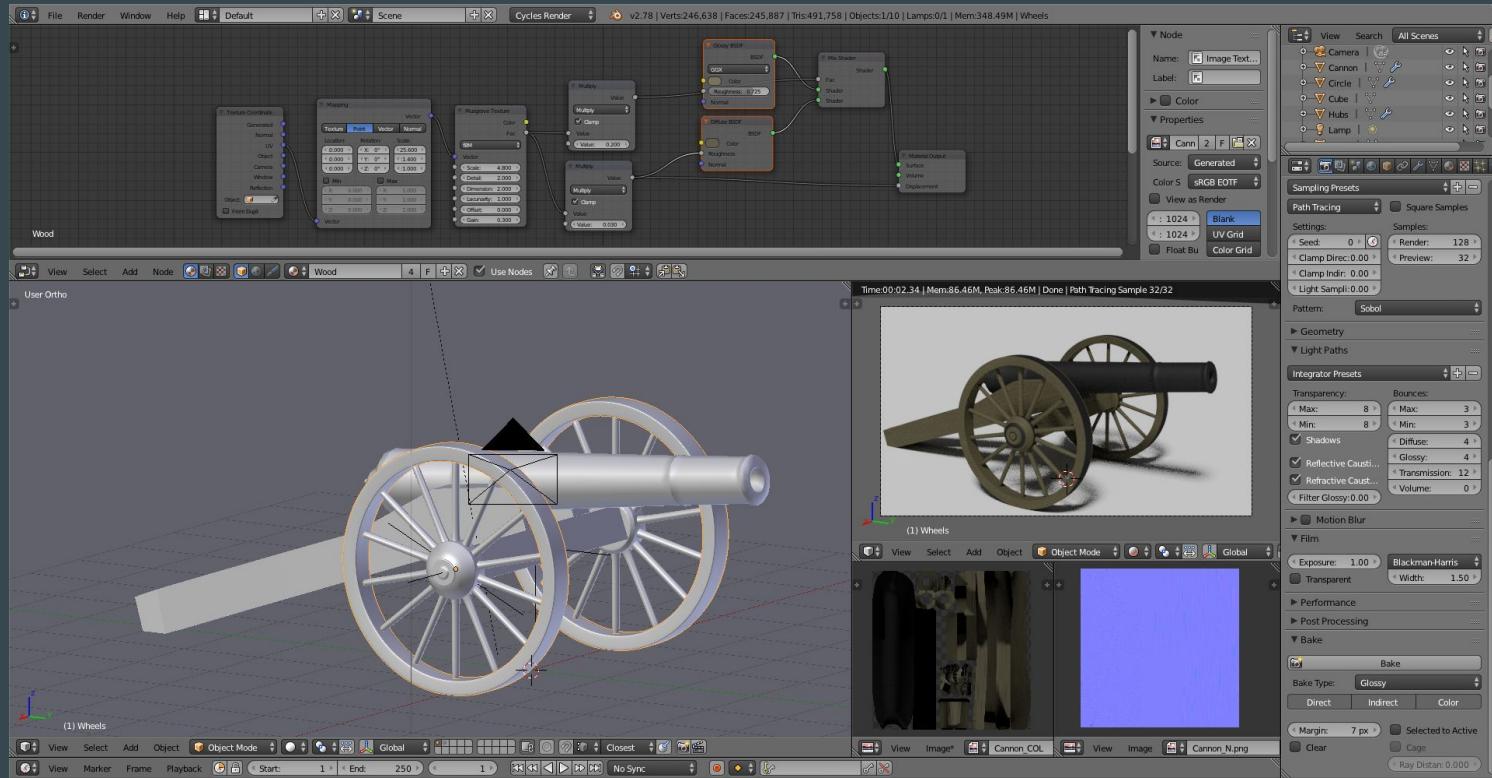
Need Reference Images



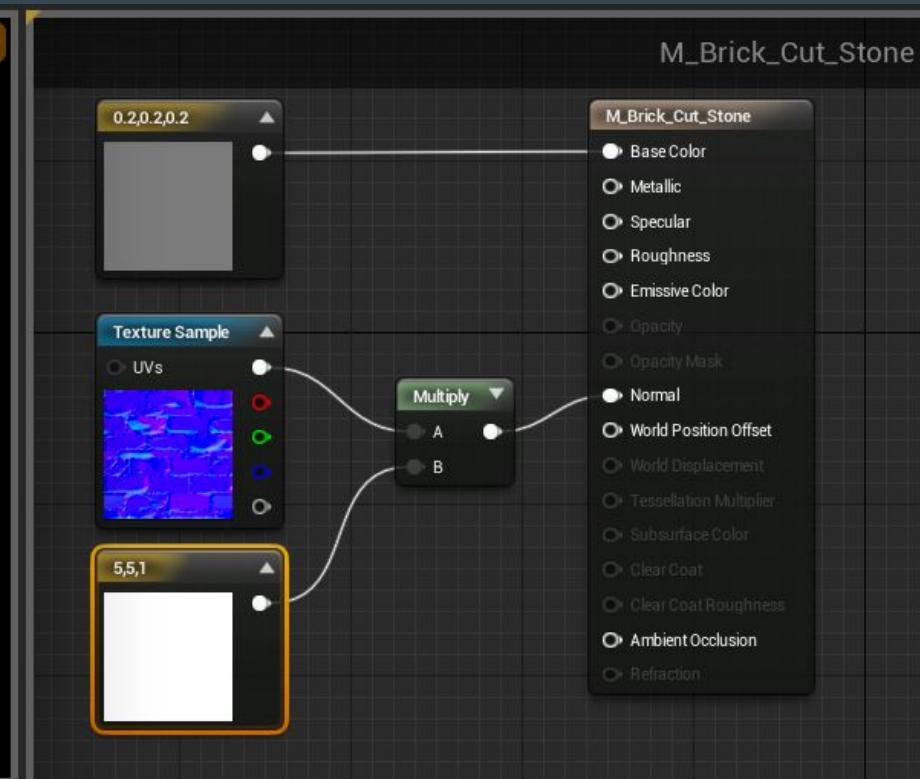
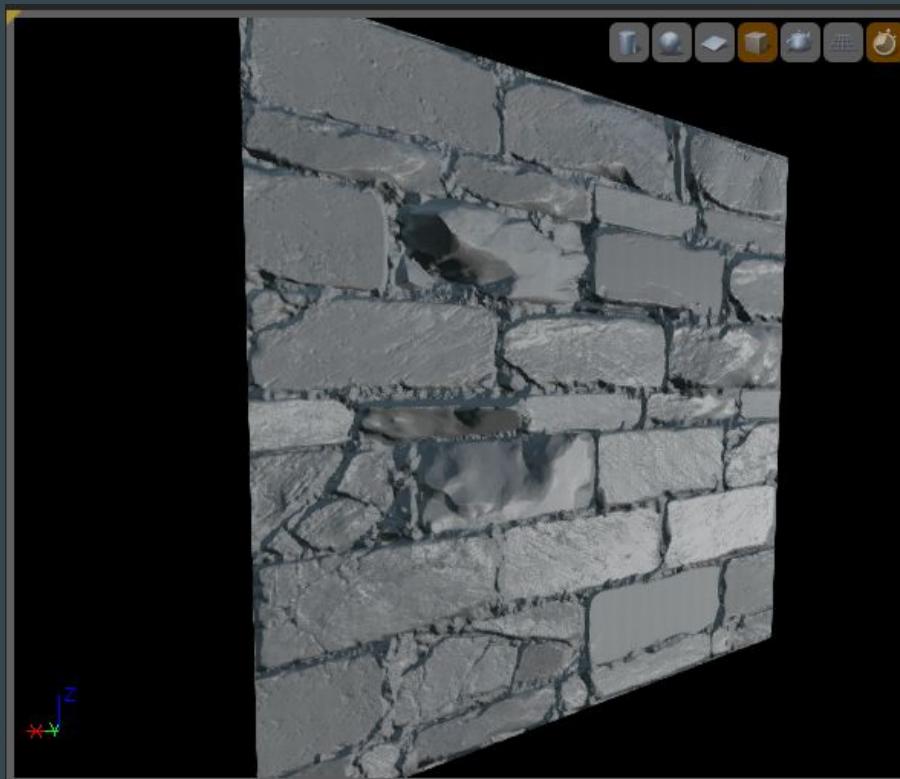
Mesh Scale



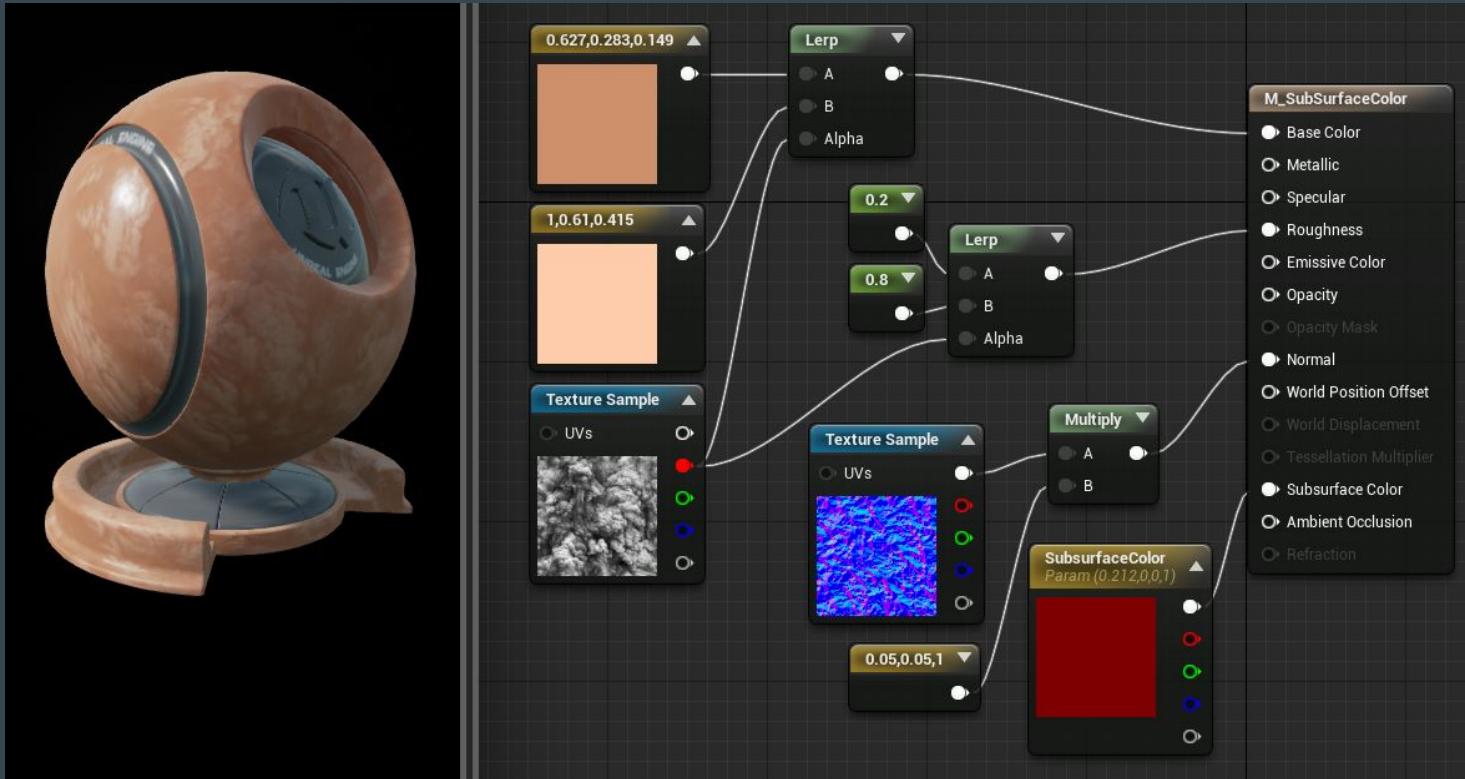
Baking Your Own in Blender



Normal Map



Materials



The image displays a 3D model of a spherical object with a brown, textured surface, resting on a matching base. To the right is a detailed material editor interface showing the node graph for this material.

The material editor interface includes the following components:

- Texture Sample** (UVs): A node with a preview showing a brown, mottled texture. It has inputs for UVs and color channels (Red, Green, Blue, Alpha).
- Lerp** (0.627, 0.283, 0.149): A node with a preview showing a brown color. It has inputs for A (Base Color), B (Metallic), and Alpha.
- Lerp** (1.0, 0.61, 0.415): A node with a preview showing a light orange color. It has inputs for A (Base Color), B (Specular), and Alpha.
- Texture Sample** (UVs): A node with a preview showing a blue and white noise texture. It has inputs for UVs and color channels (Red, Green, Blue, Alpha).
- Lerp** (0.2): A node with a preview showing a green color. It has inputs for A (Roughness) and B (Emissive Color).
- Lerp** (0.8): A node with a preview showing a green color. It has inputs for A (Opacity) and B (Alpha).
- Multiply** (0.05, 0.05, 1): A node with a preview showing a red color. It has inputs for A (Normal) and B (World Position Offset).
- SubsurfaceColor** (Param (0.212, 0, 0.1)): A node with a preview showing a red color. It has inputs for UVs and color channels (Red, Green, Blue, Alpha).

M_SubSurfaceColor (Param (0.212, 0, 0.1))

- Base Color
- Metallic
- Specular
- Roughness
- Emissive Color
- Opacity
- Normal
- World Position Offset
- World Displacement
- Tessellation Multiplier
- Subsurface Color
- Ambient Occlusion
- Refraction

Level of Detail

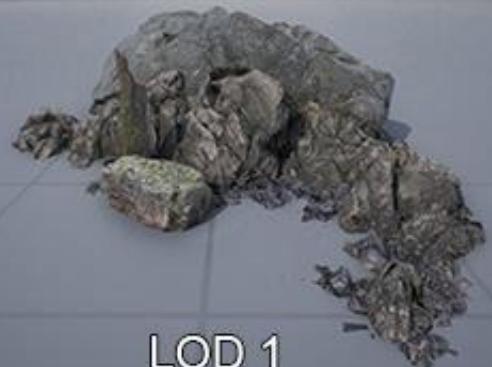


LOD



Base LOD

7 Draw Calls



LOD 1

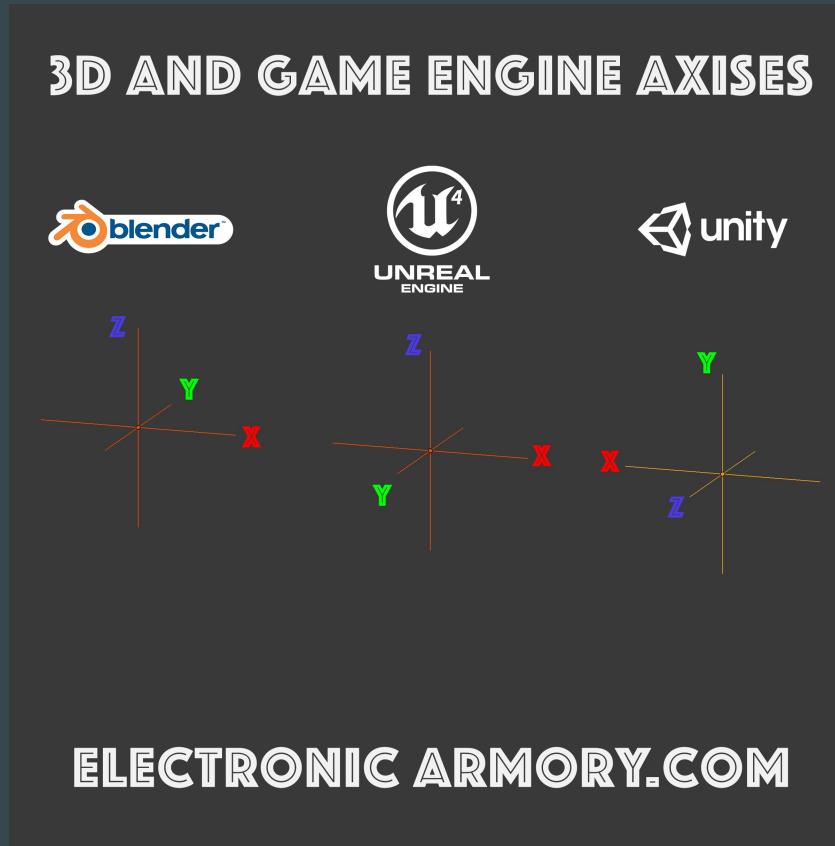
7 Draw Calls



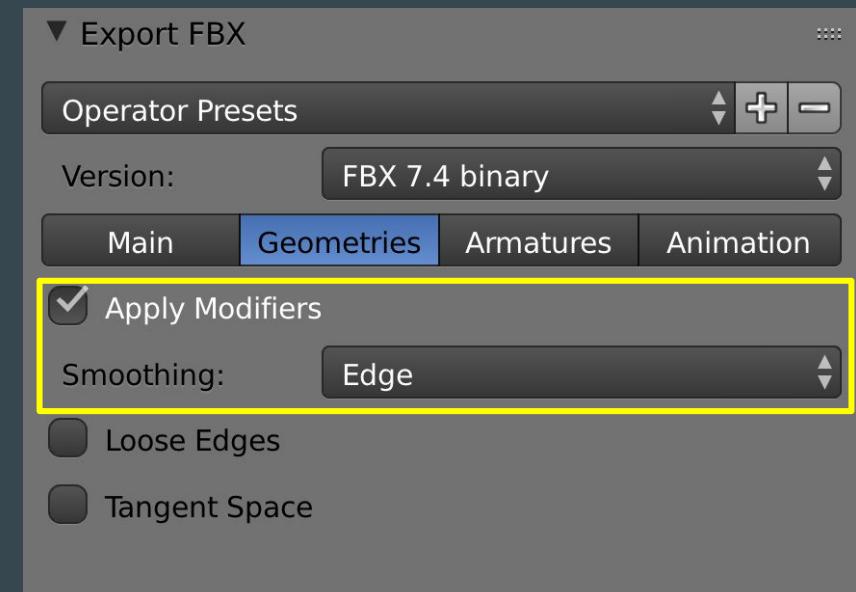
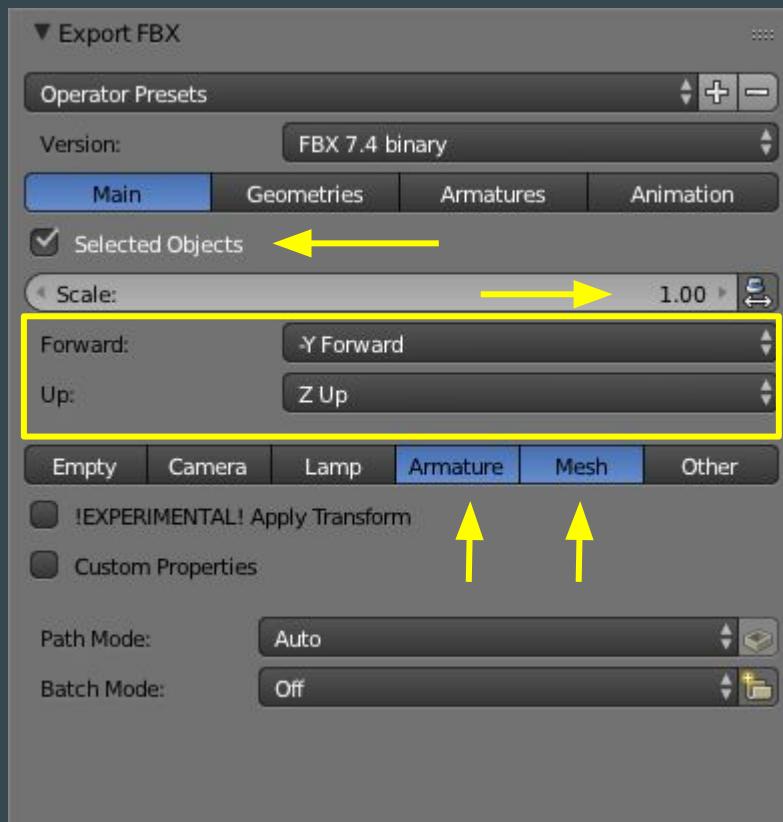
HLOD

1 Draw Call

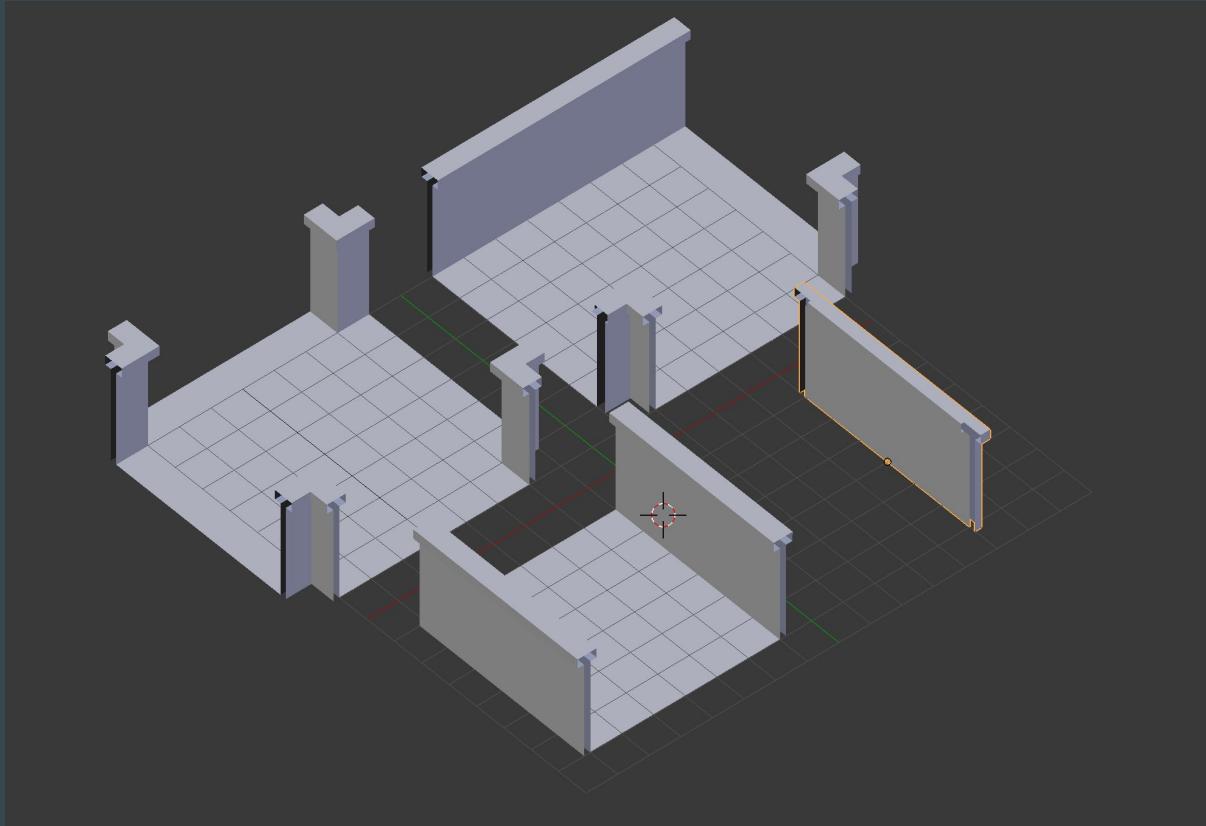
Exporting from Blender to UE4



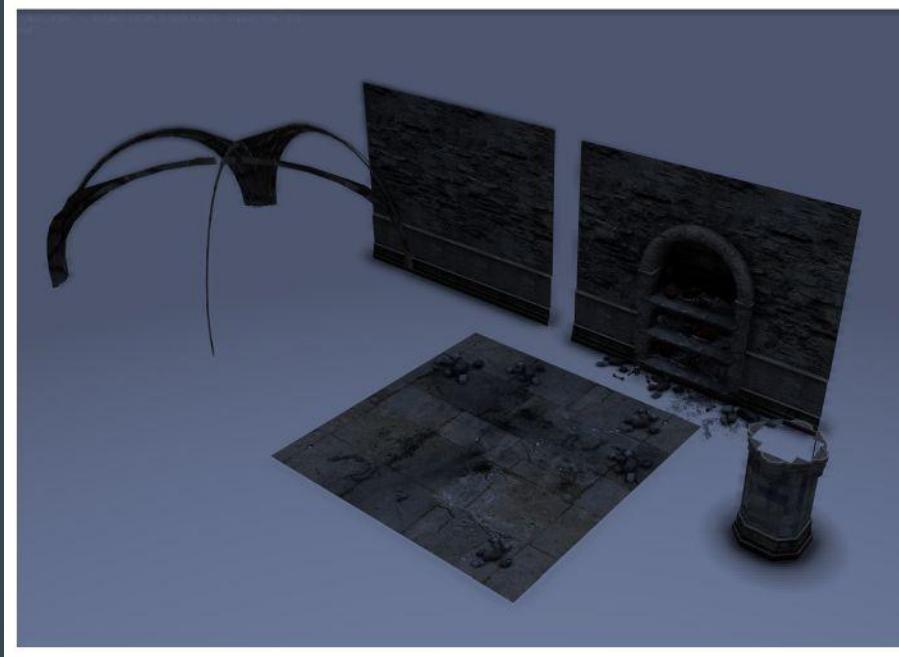
Exporting from Blender to UE4



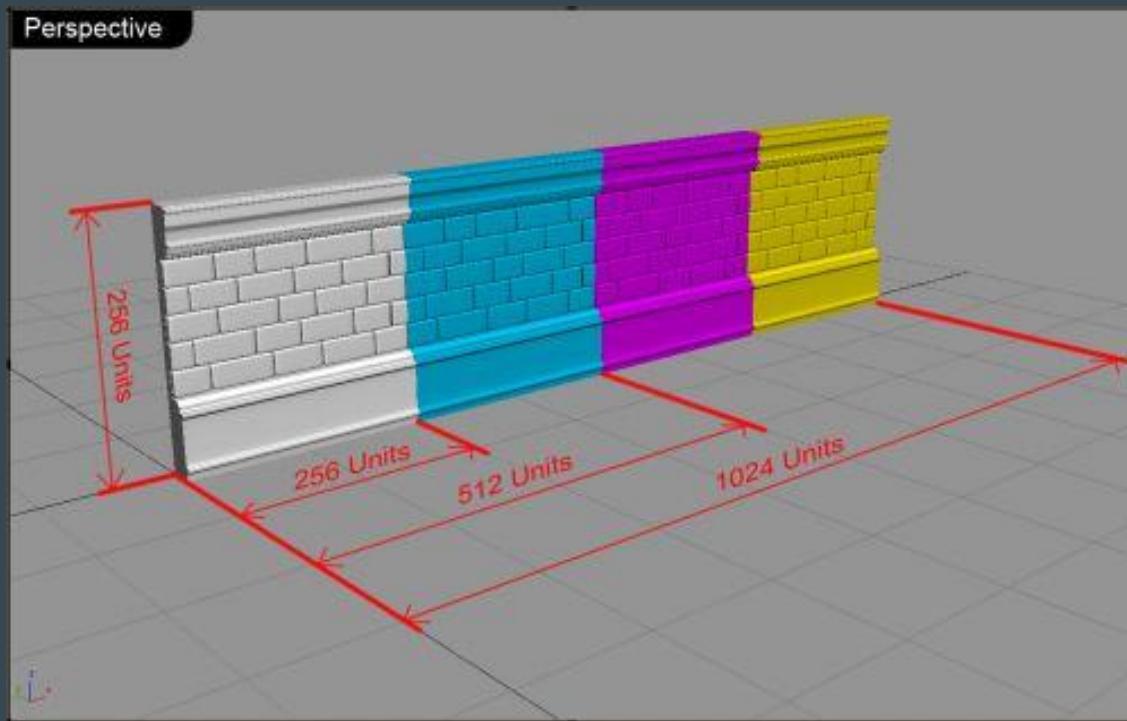
Modular Level Design







Modular Construction



2^x = Grid size

$$2^0 = 1 \text{ Unit}$$

$$2^1 = 2 \text{ Units}$$

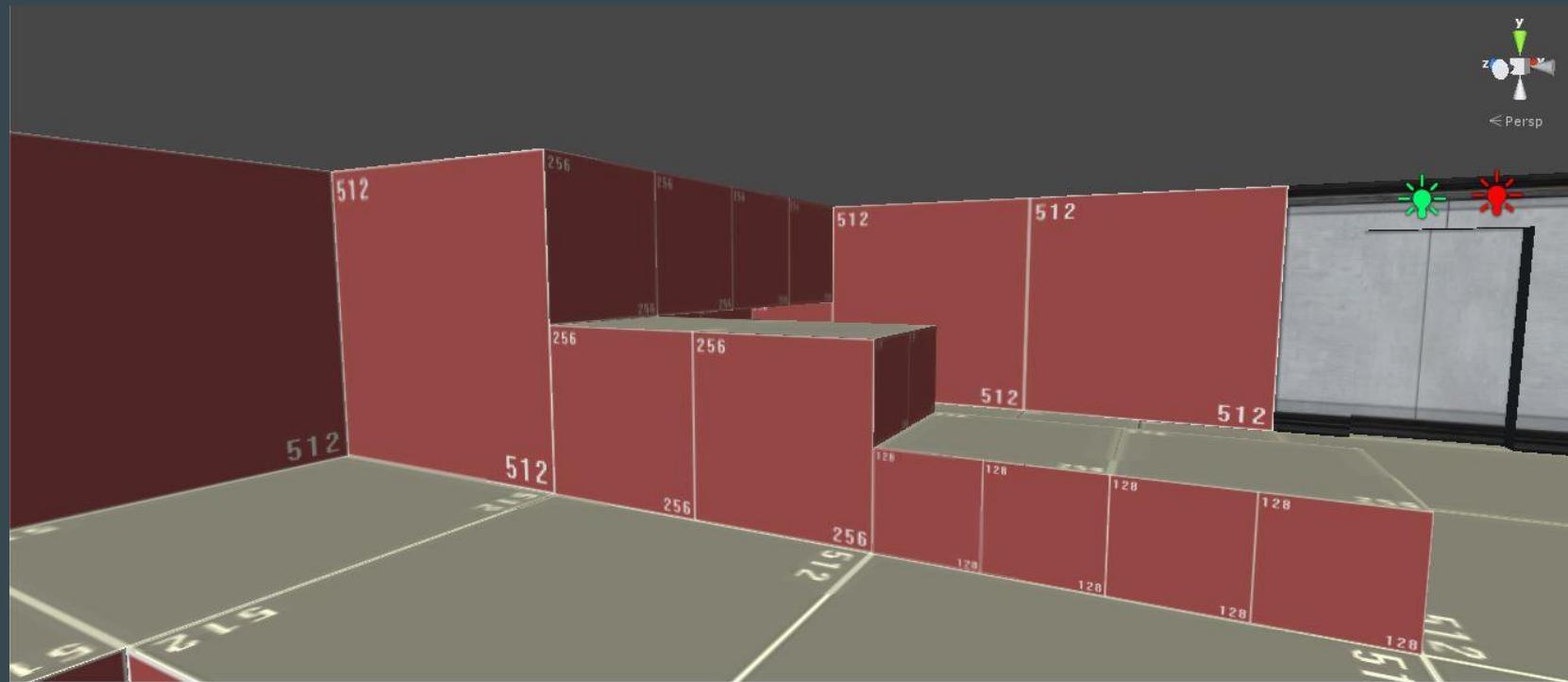
$$2^2 = 4 \text{ Units}$$

$$2^3 = 8 \text{ Units}$$

$$2^8 = 256 \text{ Units}$$

$$2^{10} = 1024 \text{ Units}$$

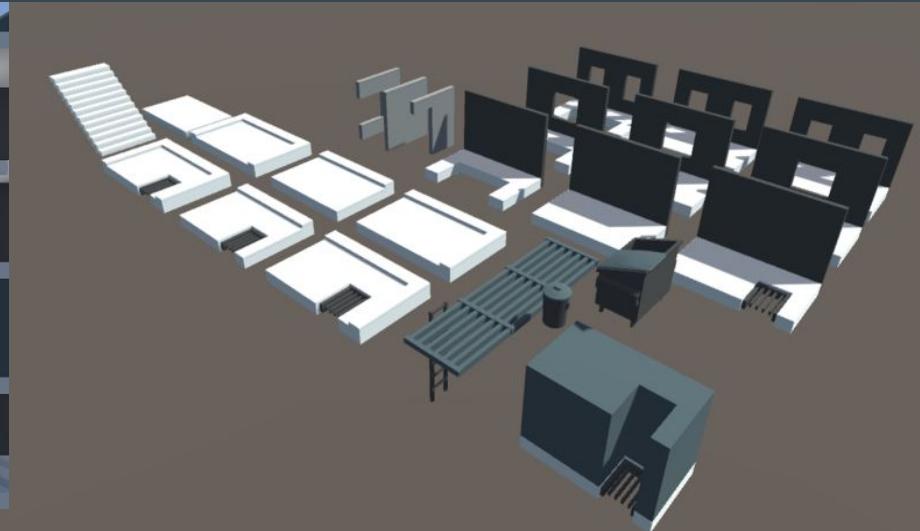
Prototyping



Epic Games Modular Level Set



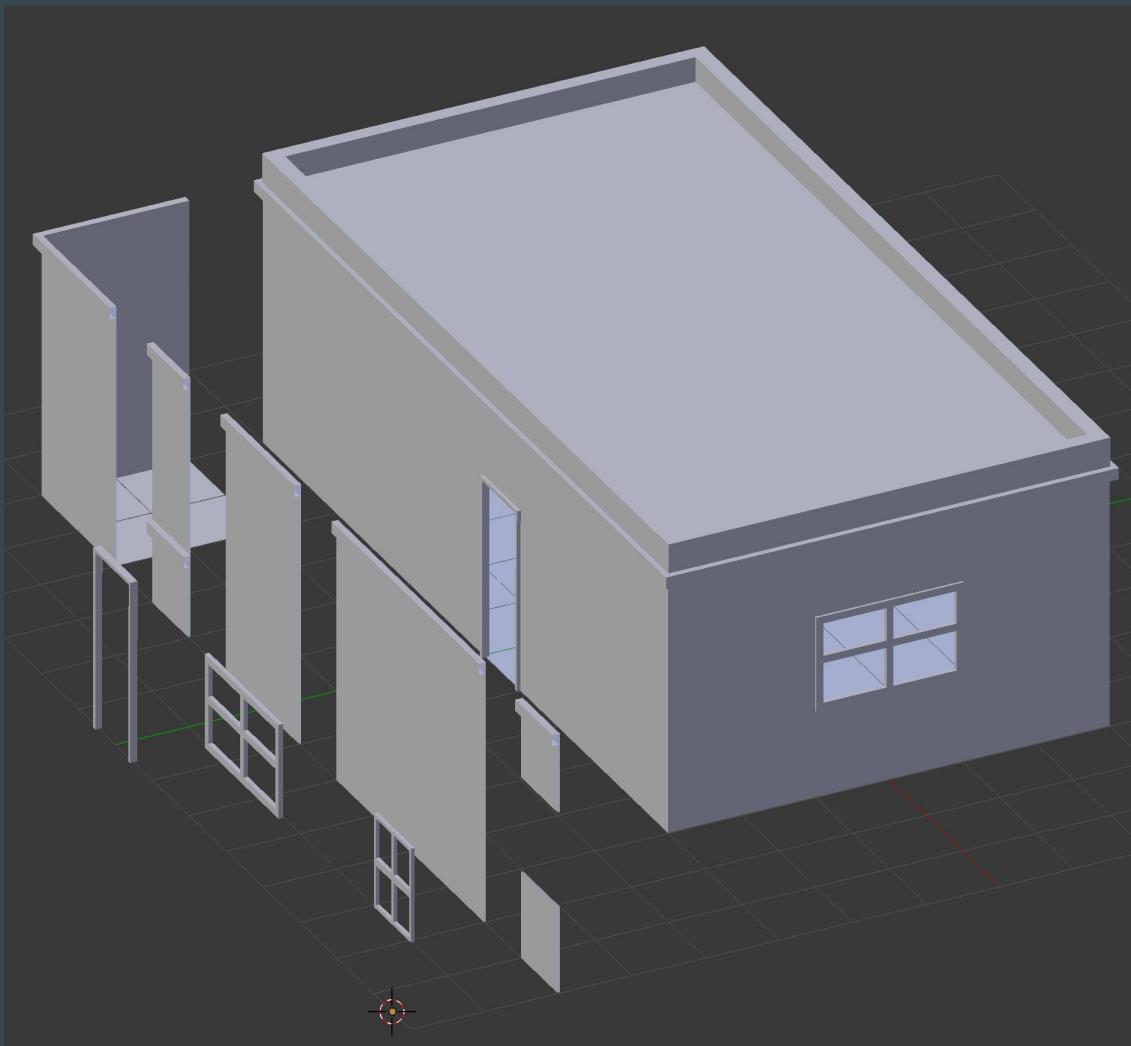
Complex Levels from a few pieces

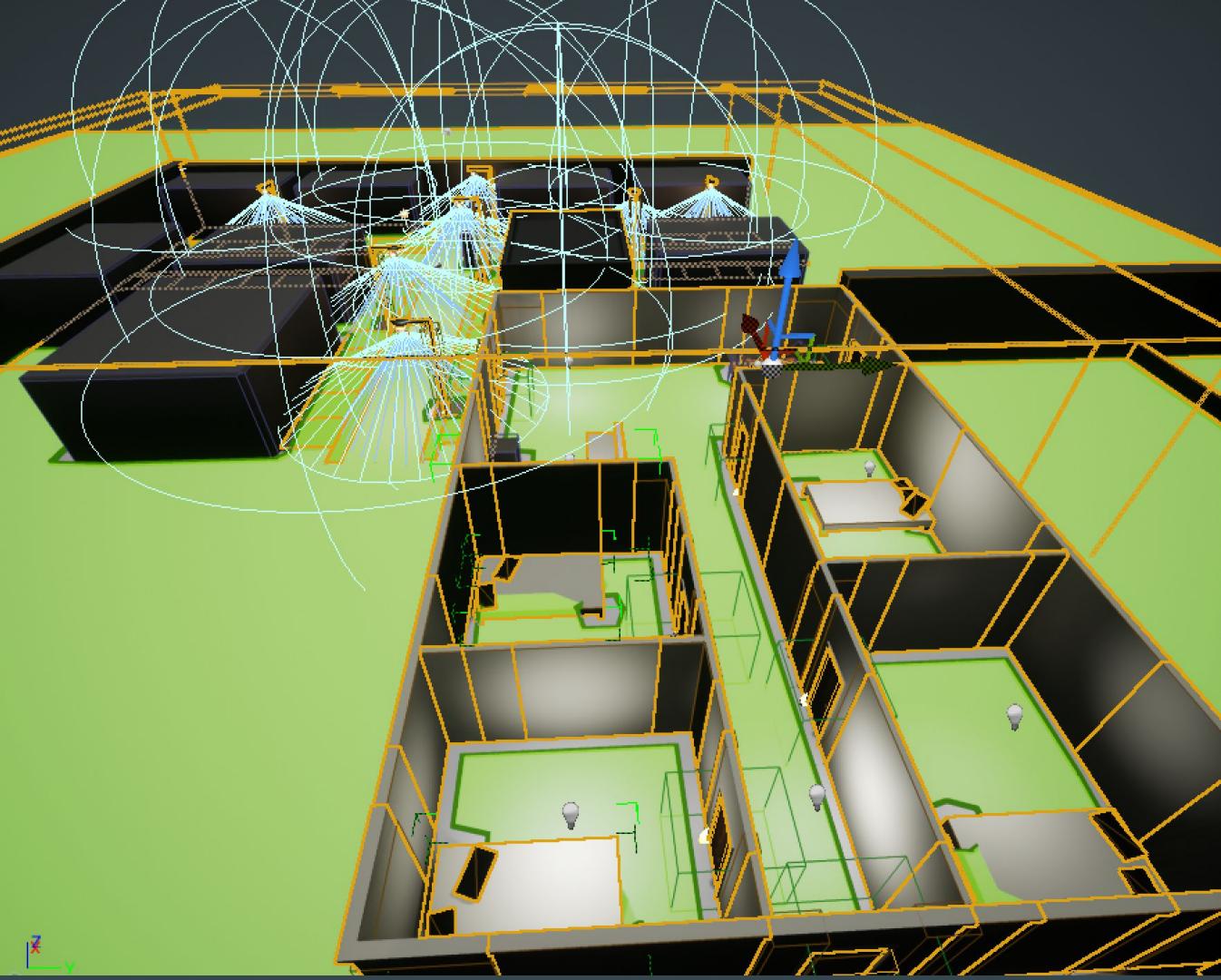


<http://warrenlindseyart.com/bloggo/2019/1/8/modular-level-design>

Kit Bashing





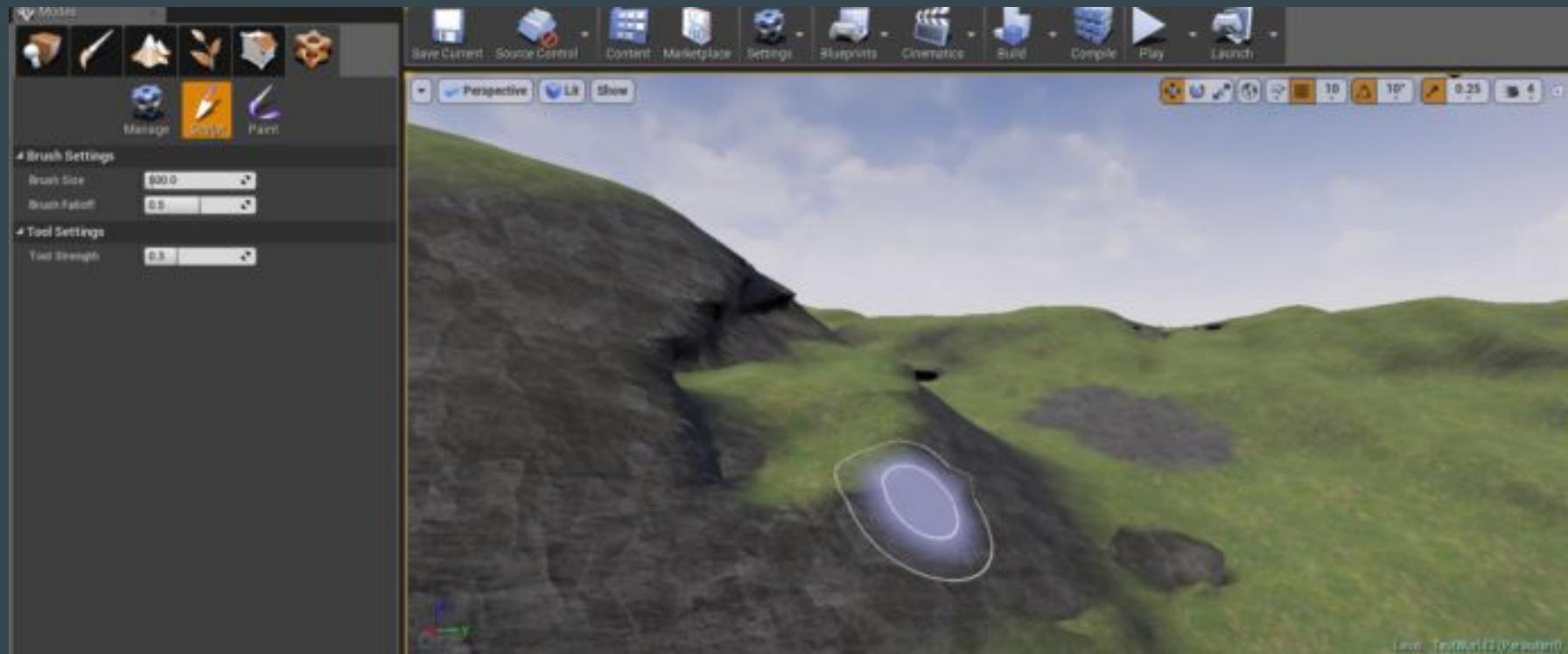


Procedurally Generated Levels

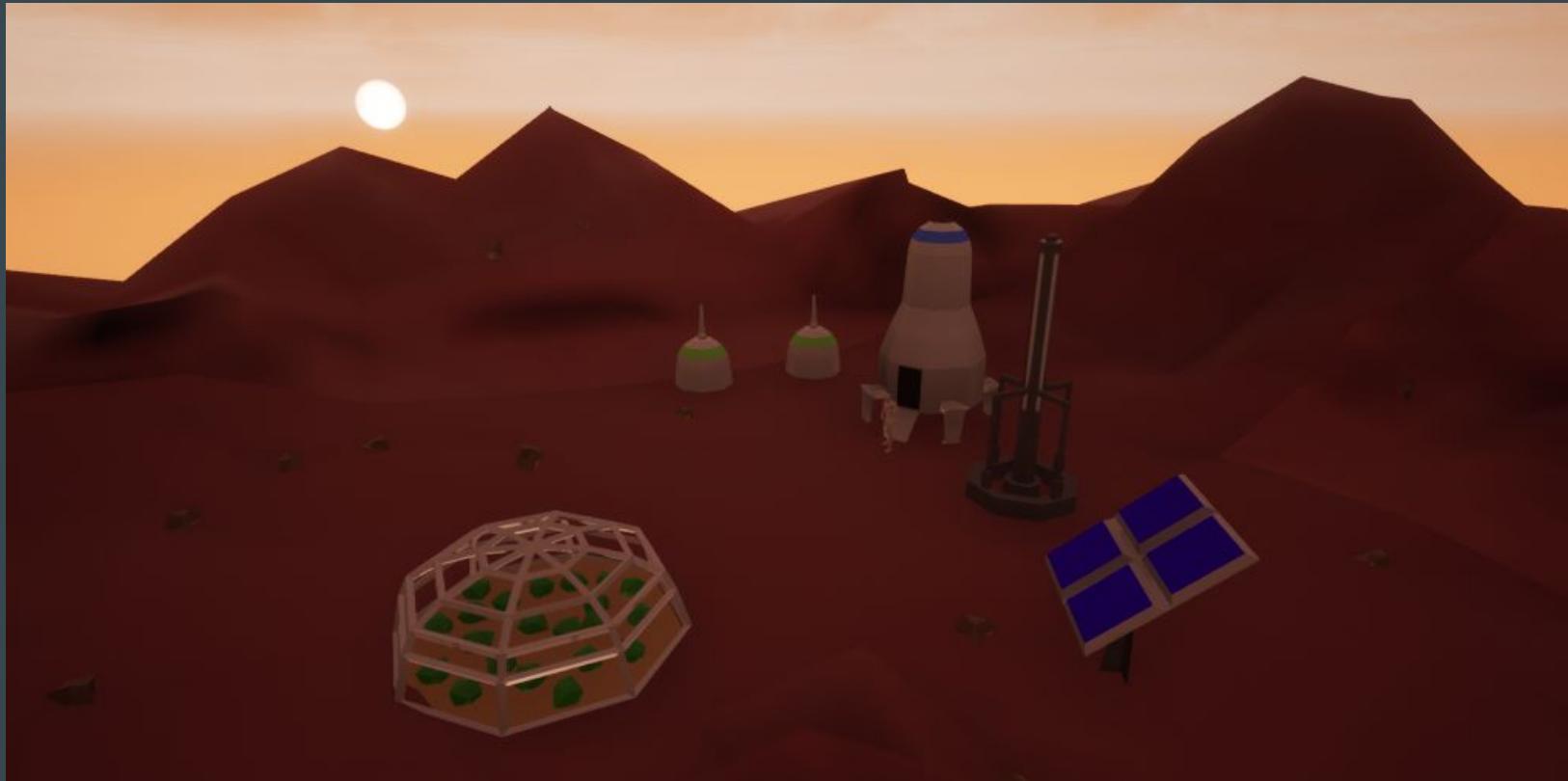


Daggerfall (1996)

Terrain Editor



Terrain



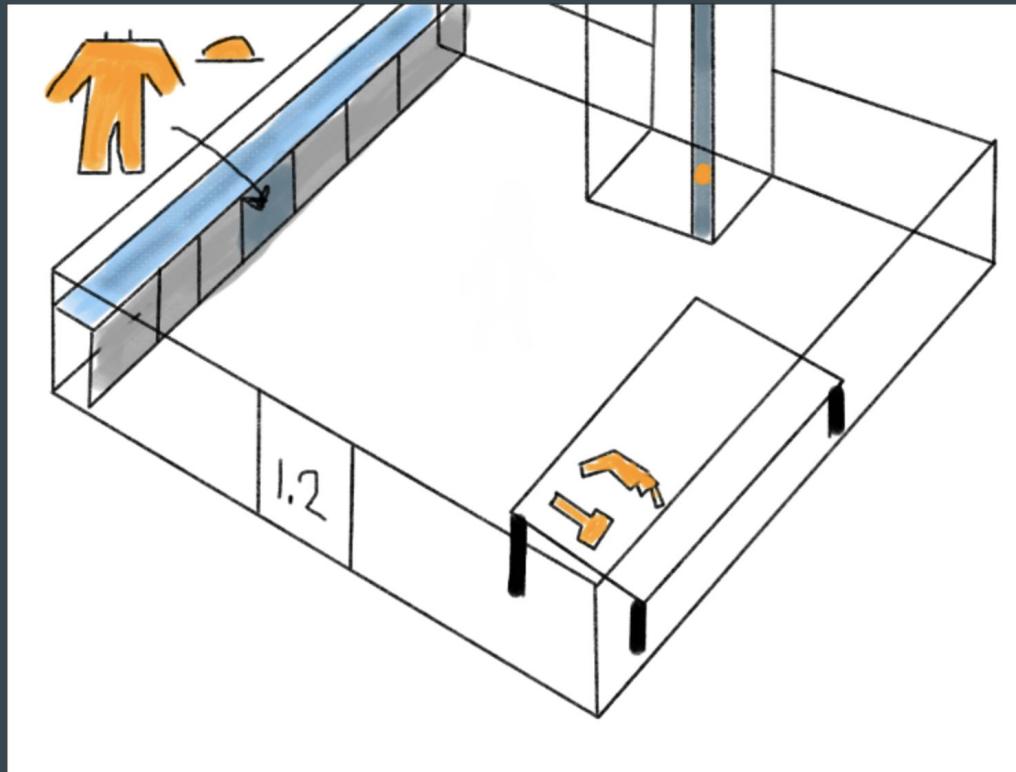
Planning

Game Concept Document (GCD) - General overview of your initial game idea

Game Design Document (GDD) - Defines everything in your game and how it works, including interface, game mechanics, story, input and other design elements.

Art Bible - Art direction and style guide for characters, levels, era, equipment and other visual aspects of the game

Plan your levels

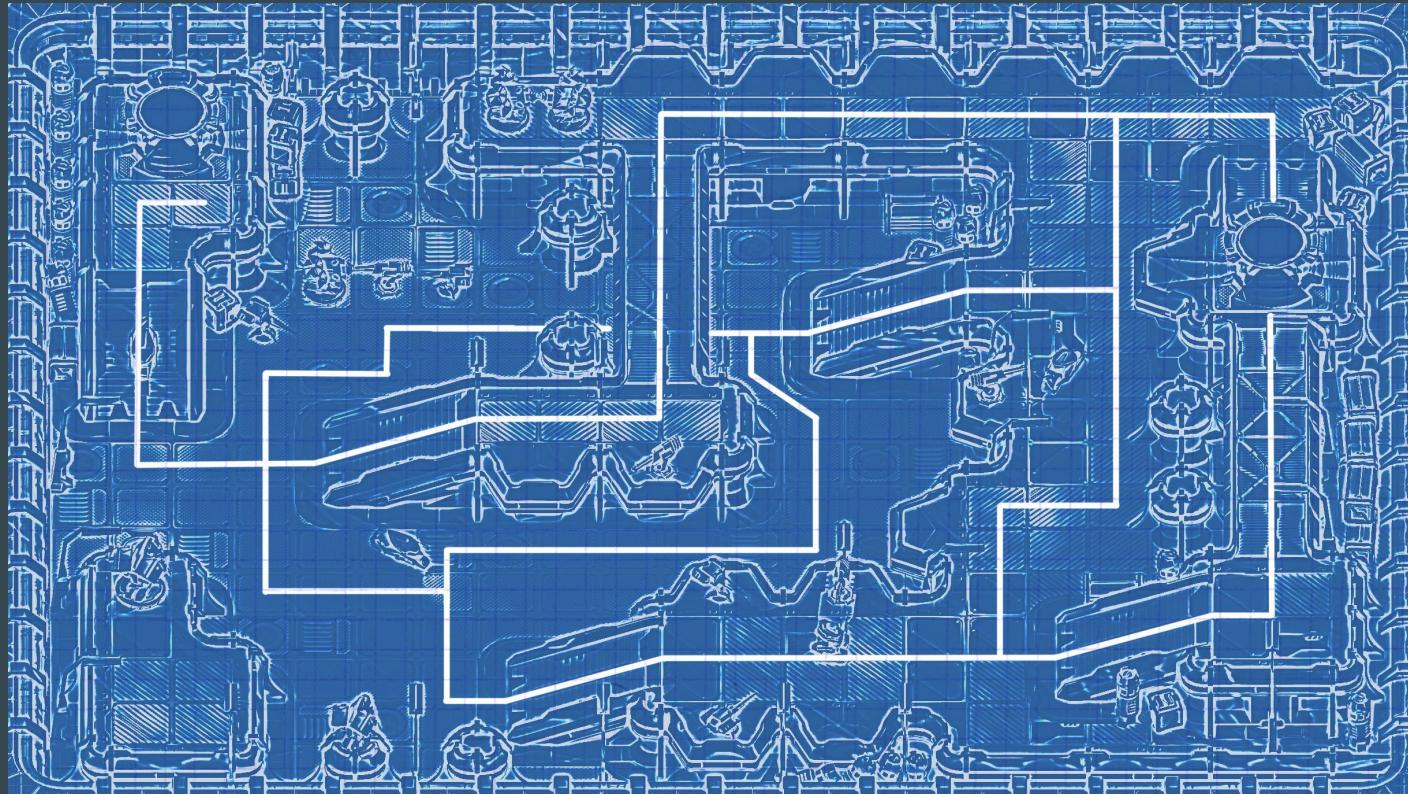


LIGHTING NEEDS TO BE REBUILT (48 unbuilt objects)

'DisableAllScreenMessages' to suppress



Level Layout



Level Design



Armatures

