

ENVIRONMENT GUIDE | Building Guide

Building Types

Every building in this game can be broken down into 3 categories.

- ONE-OFF SETS
- MONUMENTS
- TILEABLE SETS

Each set is also a set that is used in the Editor and in the game, called PALETTES. A PALETTE is not only used to organize a group of objects for the artists but also to streamline memory. It is used so that we only need to store an asset on the DVD once and helps us by loading fewer times.

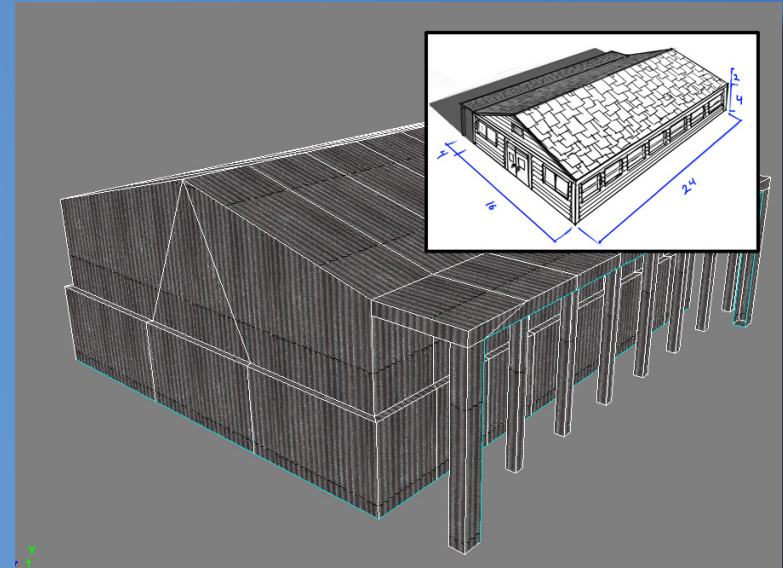
A ONE-OFF set is a series of stand alone geometry buildings that share a common texture set.

A MONUMENT is a unique structure that is not reused somewhere else in the world. It can also include the props surrounding it that are also not used anywhere else. A monument does not have to be large. It becomes a monument by only being used once in the world. It has it's own texture set.

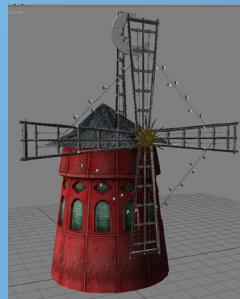
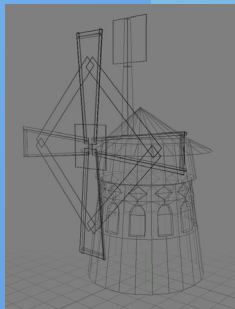
A TILABLE set is a series of objects that come together to create a building and many variations. This is mostly used for buildings that are in very close proximity to each other.

1. MOCKUP

– In the transition from 2D concept to 3D model asset, proportions are not absolute and may need to be modified. The windows may be too low, the door may be too small and the roof may be too flat. The way we ensure that proportions look correct is by putting a mockup into the engine and walk the character around it. A mock up is VERY simple geometry composed of primitive shapes with no texturing or polish. It is a quick way to get something in the game and check it out. Check perforce first to see if someone has already created a mock up for your asset. If it's not there you should create your own. Do not spend a lot of time on it. Get it in the game and make sure it looks right. Check the mock up into perforce as soon as you can. It will be used as a placeholder in the world.



2. MODEL 3. UV/TEXTURE 4. TECH DETAILS



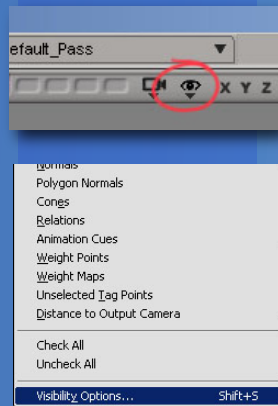
Create the LOD (level of detail), Occluder(OCC) and Collision Volume(CV).

5. CHECK ASSET

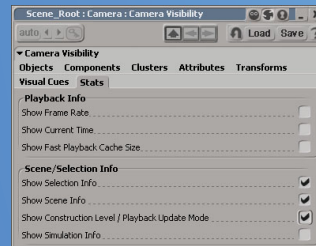
Run it through SMED and make sure there are no errors and it runs.

XSI GRID AND INFO

The first thing we have to do is set up the grid in XSI. In the perspective window (and any other windows you need), select the EYEBALL icon. From the drop down, select the VISIBILITY OPTIONS. Select the VISUAL CUES tab and change both the U Cell Size and V Cell size to 4. This helps to visualize the floors on a building.



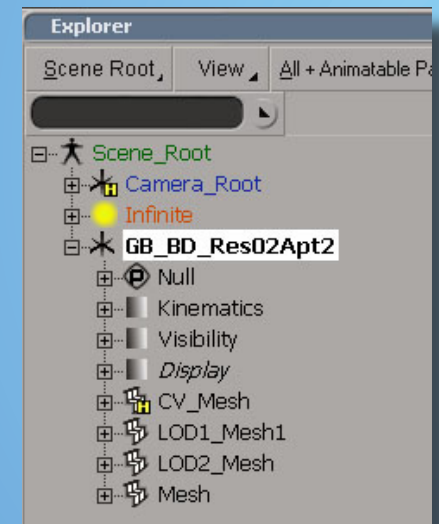
While you are there, select the STATS tab and check box SHOW SELECTED INFO and SHOW SCENE INFO. These are nice just to keep track of your poly count.



XSI HIERARCHY



Create a null and name it the actual name of the assets. The 'Null' must be centered at 0, 0, 0. Place all your geometry under here. This includes LOD's Occluders, and Collision.



MODELING



RULE

One XSI Unit = One meter

One floor on a building is 4 meters



RULE

Create a 2 Meter foundation UNDER the 0 ground plane. The door should be 2.5 Meters tall.



- Model in some thickness on the edge of the roof. Later you'll slap a wood trim on it.



MODELING TIPS

- Always bevel the outer most edges of important walls on your building. This will get us some nice lighting when a highlight catches on the edge.
- Rooftops should have a couple added segments to make the edge slightly irregular. They should not be extreme or cartoon-y, but look worn and aged. Also make sure you do this to the side edges, not just the top.



- Remember that the outline of a building is the most important thing that makes it look low poly. You should spend a few extra verts to 'tweak' the roofline and wall edges to make it slightly off. We want to get away from the 'editor' feel or 90 degree edges everywhere.

- Wood warps more than plaster and plaster more than cement/stone.

MODELING TIPS

- In general, create frames around a window. They do not always need to be extruded out. They are there so that when you texture you can assign them a wood or other appropriate material to them.
- Try to make blank walls more interesting by extruding in to create a space for shadows. Push verts in and out slightly so that the shadows will make interesting shapes.
- In most cases, stitch geometry together. You should use your good judgment to decide if stitching something together is going to cause WAY too many polygons. In the case of lattice work and stairs do not stitch.

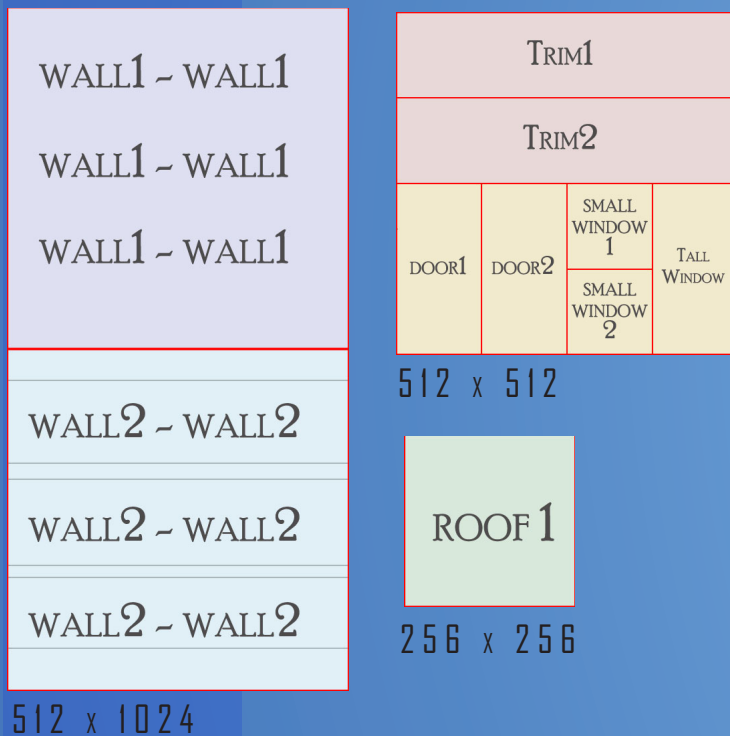


A one off building should be 1000 - 2000 polygons.

MATERIALS

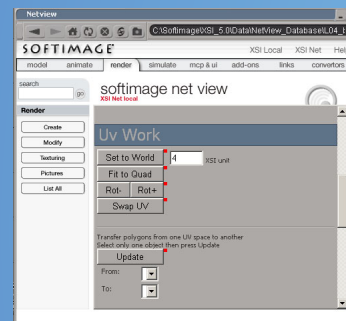
We can texture a building using 3 materials. The first allows for two WALL variations that can tile horizontally. The second is the TRIM and DETAILS. The trim can also be tiled horizontally. The rest of the space on the TRIM texture can be used for doors, windows and extra details. The ROOF is tileable in all directions.

It is important to remember that these 3 materials will texture **an entire** one-off or tileable set. They must be able to be used over a wide range of buildings.



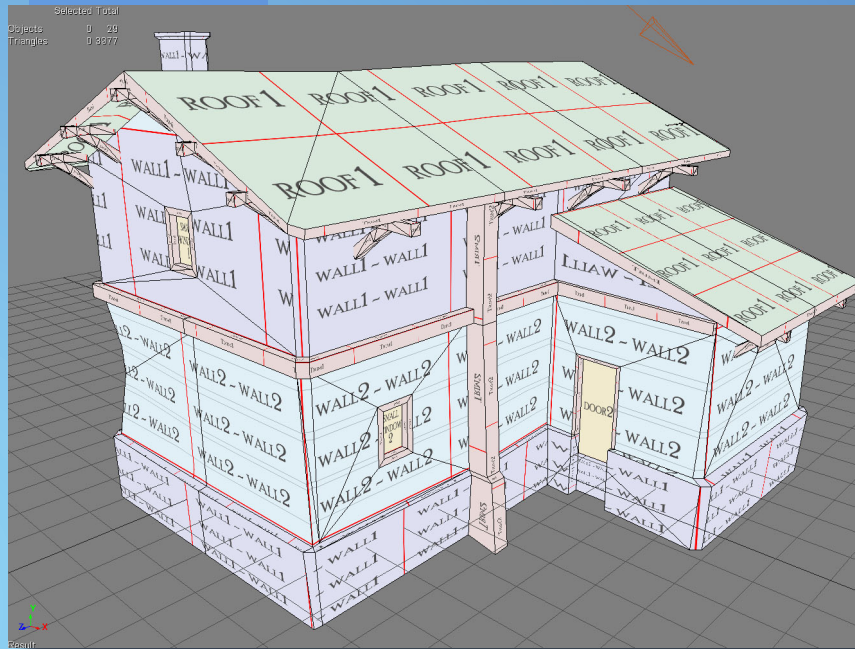
TEXTURE TOOLS

A great way to keep your pixel ratio is with Net Views TEXTURE TOOLS. This allows you to UV your model at the correct pixel ratio quickly. You can then polish the UV's from there. Go to WINDOW > NETVIEW or (Alt + 5) for the shortcut. Hit the RENDER tab and scroll down to 17 TEXTURE TOOLS.

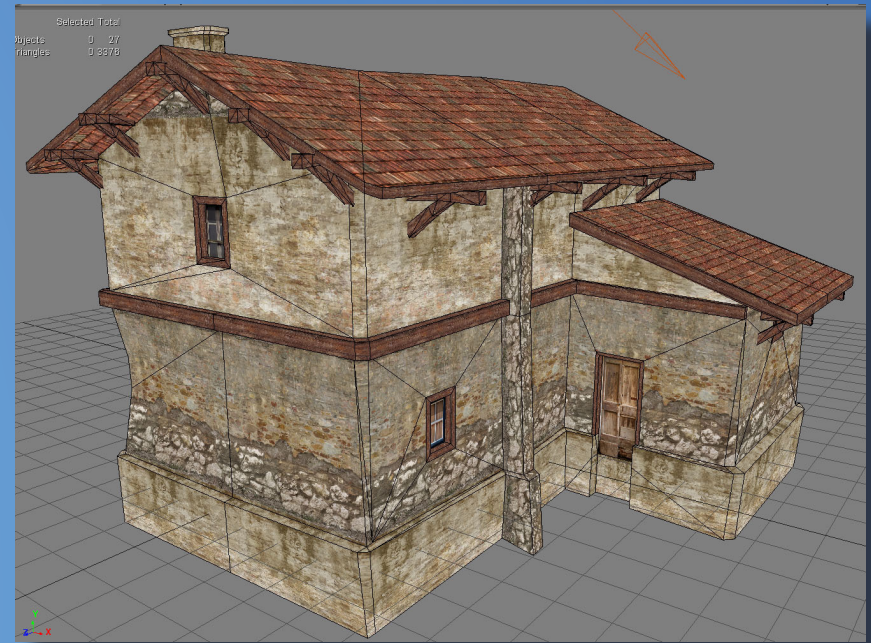


- First select the polygons you want to set the UV's for. I usually do them all the first time.
- Make sure the material you are using on the object is a 512x512.
- Then in the UV WORK section, change the value to 4. What this means is that you want to use 4 XSI units (Meters) for your 512. Or 128 pixels per meter.
- As you apply the other two materials, you will need to modify the UV's accordingly.

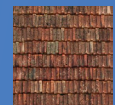
APPLYING MATERIALS



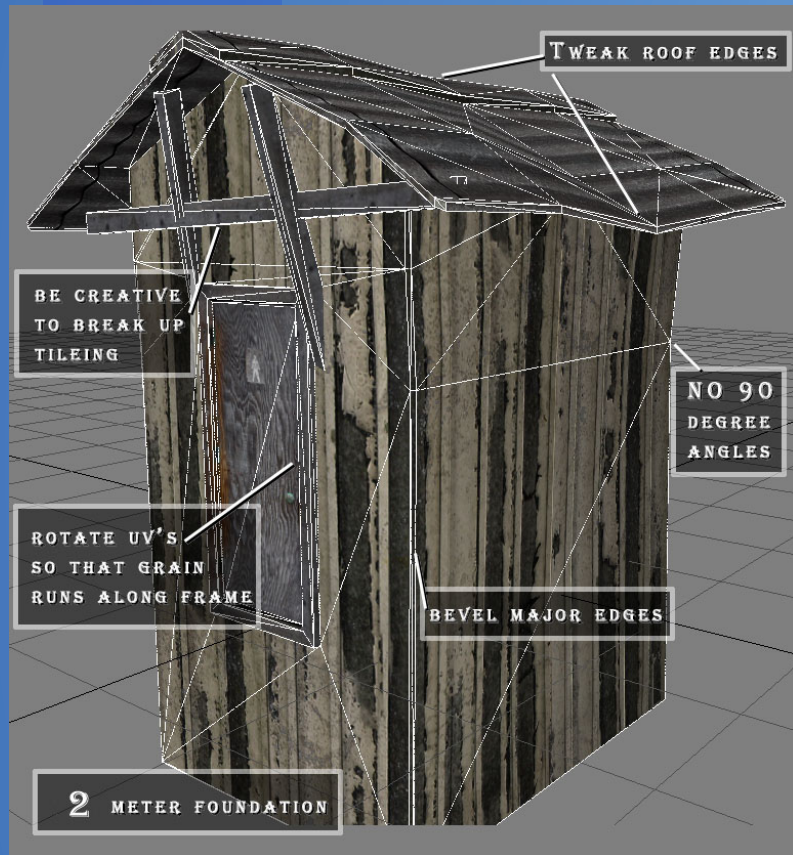
You can see here that WALL2 is used on the bottom and WALL1 is used on the top. They tile horizontally with no seams except where there is a column. For the foundation base WALL1 is re-used. Also note that the TRIM is tiling horizontally as well. But the UV's on the window frames and the columns are rotated to match the grain.



WALL1 - WALL1			
WALL1 - WALL1			
WALL1 - WALL1			
WALL2 - WALL2			
WALL2 - WALL2			
WALL2 - WALL2			
TRIM1			
TRIM2			
DOOR1	DOOR2	SMALL WINDOW 1	TALL WINDOW
		SMALL WINDOW 2	
ROOF 1			

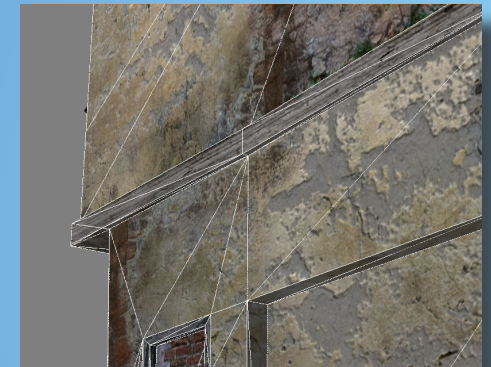


TEXTURING TIPS



- Rotate UV's around frames to make the grain run the correct way.

- Use a wood texture to create thickness on your roof instead of using the roof texture on the side.



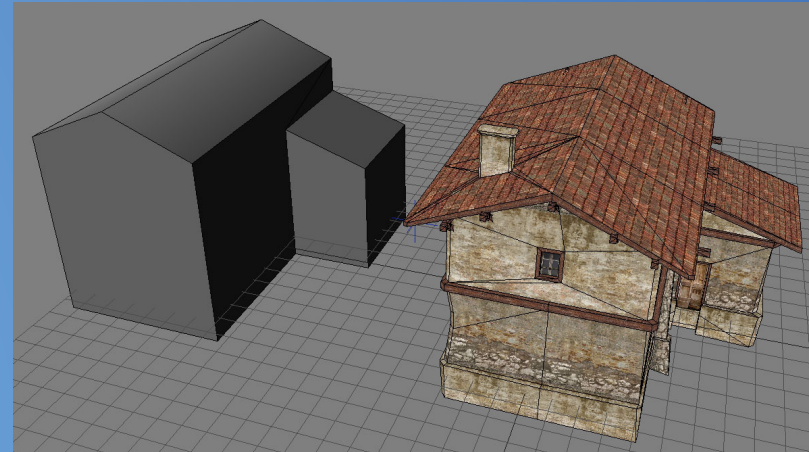
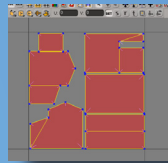
- Use trim and columns to hide tiling. It will help break up large blank space.

1. MODEL

- Model out a primitive in the shape of your building. It should be VERY low poly.
- 10 - 40 Poly's.

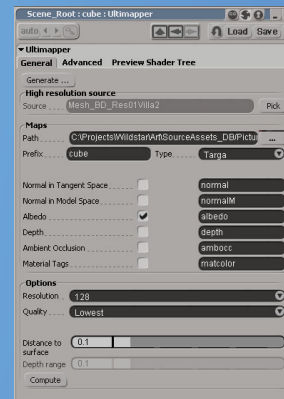
2. UV's

- Make sure all your UV's get unique space. No overlapping.



3. ULTIMAPPER

From GET > PROPERTY> ULTIMAPPER apply ULTIMAPPER. Only checkbox Albedo. Set the RESOLUTION to 256 and the QUALITY to lowest. Then hit PICK and select your high poly object. If your high poly building is made of multiple objects, merge them all as a copy. Ultimapper must have only one object as the Source object.



Before you generate the map, there are two tricks to make this work.

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