

Modeling a Law Office

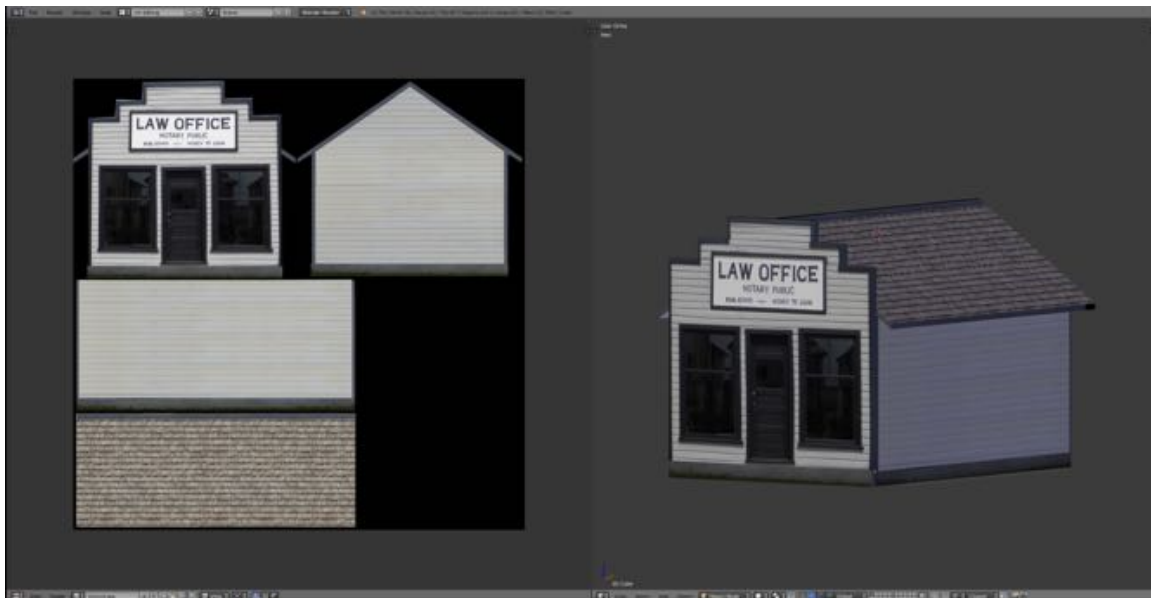
Step 08

Creating a Textured File for the Law Office

The next step in using Blender to create a Trainz asset of our Law Office is to change the gray surface of our model to something that resembles the appearance of the Law Office.

Textures can be painted onto your model within Blender, but the easiest way to add texture is to create in a vector and/or paint program an image that contains the surfaces of your model. (I use iDraw, now called Autodesk Graphics, Pixelmator and GIMP, all available on the Mac, GIMP for free.)

Your model is 3-dimensional (3D) and vector and/or paint program work with 2-dimensional (2D) images. So, obviously, you are going to have to convert your 3D model into a 2D image. The process is called “UV mapping” or “UV unwrapping” (see website).



708

When using Blender to make Trainz assets you can either export the UV map to a vector and/or paint program and apply the textured image, or you can import the texture image created in a vector and/or paint program into Blender and apply the image to the UV map.

For the Law Office we are going to do the latter. We are going to:

- First, create the textured image in a vector and/or paint program,
- Import the finished image into Blender,

- Unwrap the model and apply the image.

Size - Power of 2

The image we are going to create has to fit some interesting requirements.

First, it needs to be a “power of 2”, that is, the number of pixel in its dimensions need to be 2^n (2 to the n^{th} power). Usually we will want to make the image square and either 1024 X 1024 pixels (2^9), 2048 X 2048 pixels (2^{10}) or 4096 X 4096 pixels (2^{11}). But it can be rectangular as long as both sides area power of 2 (e.g., 1024 X 2048 pixels).

Next, we need to compile all the surfaces of the building (font, back, sides, roof eves, etc.) into the one image. If surfaces are identical or similar, or mirror images of each other as are the two halves of the roof, only one copy need be included in the final textured image as it can be mapped multiple times.

Finally, we need to make maximum use of the available space so we optimize resolution. This means that surfaces need to be enlarged where detail is important, and surfaces need to be shrunk where detail is less important, to make room for expanding the other surfaces.

Creating the Texture File

Note: I will describe this process in general terms, as you will likely have your own preferred vector and paint programs. If you are using Windows you will certainly use other programs as iDraw and Pixelmator are specifically Mac OSX programs. If you have been following along modeling your own version of the Law office, you can download the lawofficetexture.tga file [here](#) (see website).

I am going to use photos to create the texture image. Ideally, I would like to have photos of all four sides of our building. This isn't the case with the Law Office. I only have the front and an angled view.



470



471

Fortunately, I have pictures of a similar building the Optometrist's Office, which I can use (kuid 431633:1009082).



709

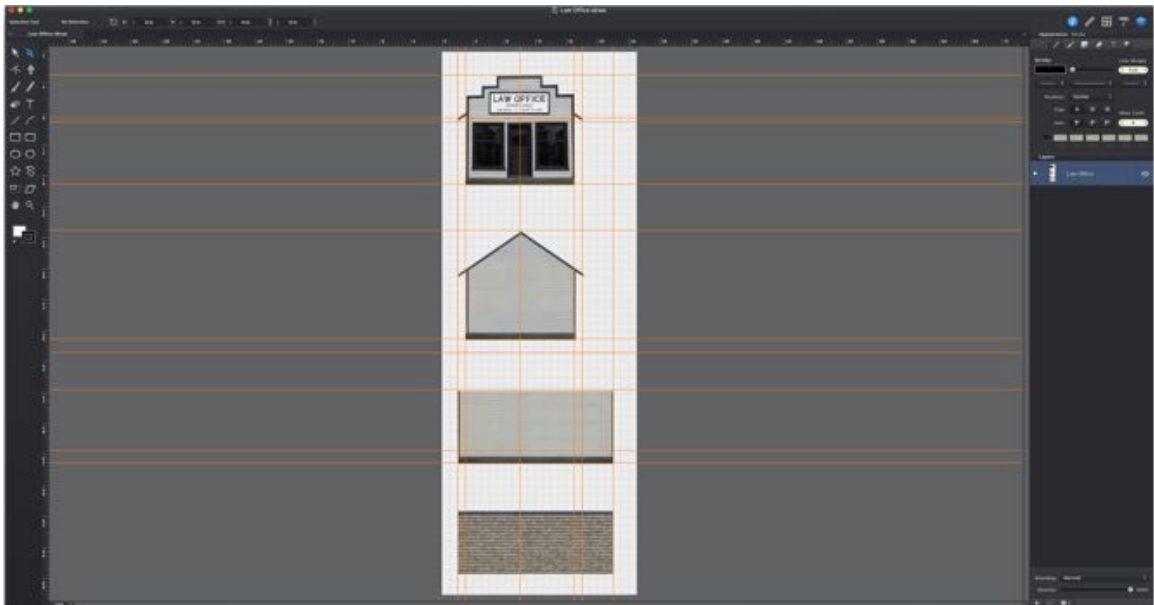


710



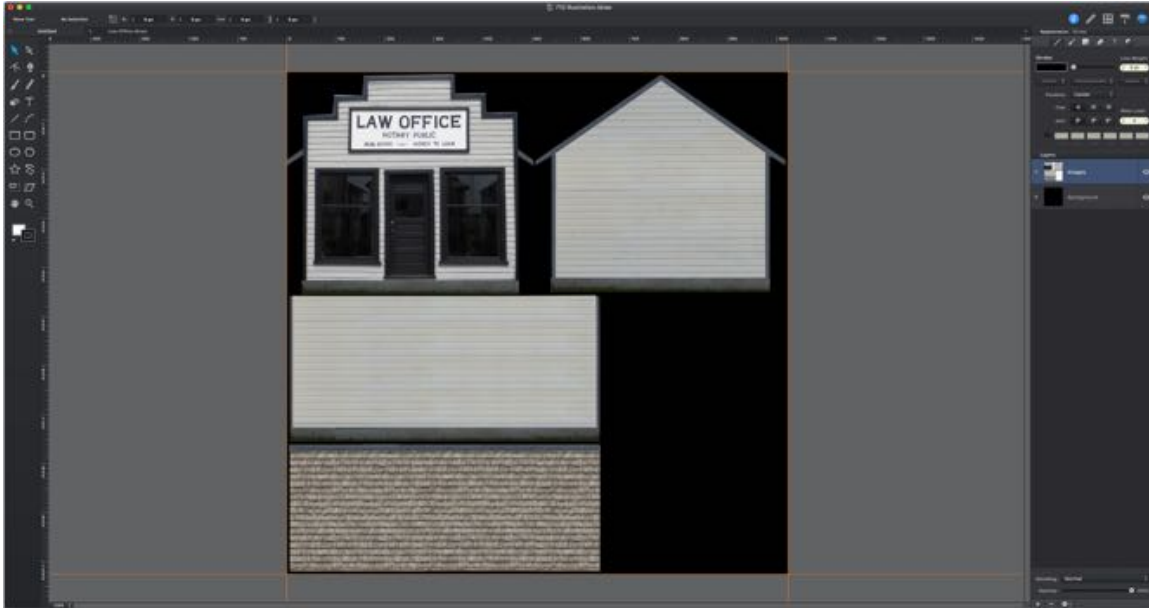
711

Combining pieces of these pictures the front, side, back and half of the roof were constructed using iDraw and Pixelmator. In particular, Pixelmator's clone tool was used to remove detail in the widow and in the concrete foundation. Pixelmator's color balancing tools ere also used to match the colors of the siding from the Optometrist's Office to that of the Law Office.



712

Finally, the images were packed into a 1024 X 1024 pixel image in iDraw that was also given a black background.



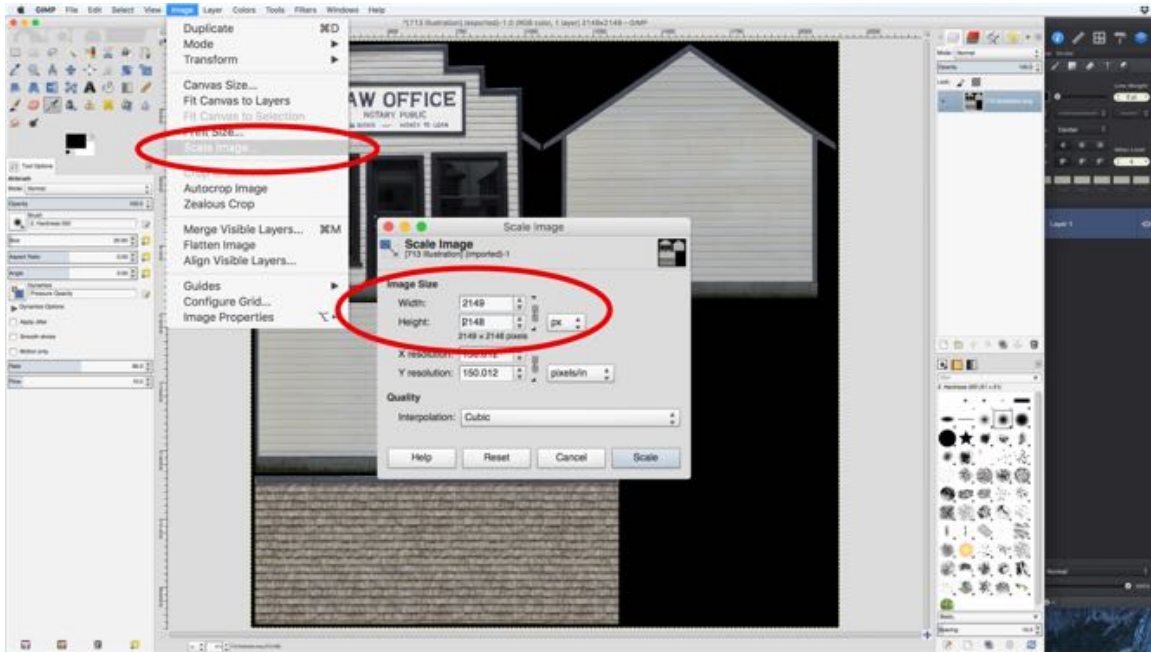
714

Strangely enough, iDraw does not allow one to specify the pixel count precisely, i.e., 2048 X 2048. So one final step is needed, to import the image into GIMP and scale the image to 2048 X 2048 pixels.

Note: I will describe scaling the image to 2048 X 2048 pixels as GIMP is available in both Mac OSX and Windows for free and may be your preferred paint program.

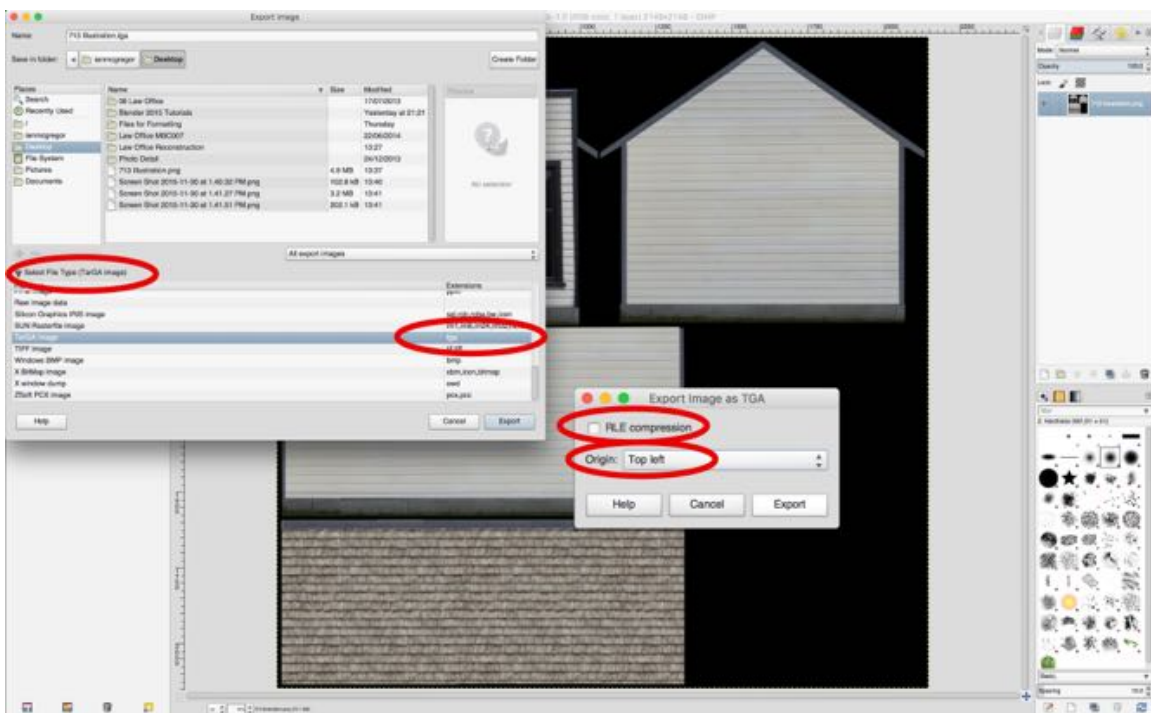
- **Open GIMP**, locate and **open** the **texture image** (mine's called "Law Office.png").
- In the **Image Menu** select **Scale Image**.
- Set the **width** and **height** to **2048 pixels** and **click Scale**.

Note: If you have difficulty setting both, click on the chain icon to unlink the two.



715

- In the **File Menu** select **Export**.
- **Choose .tiff** as the file type as Trainz does not support .png and we will eventually be importing this file into Trainz.
- **Uncheck RLE Compression** set the **Origin** to **Top Left** and click **Export**.



716

- **Place the texture file** in the same folder **with** your **Law Office Blender files**.

Our texture file is not ready to be imported into Blender.