

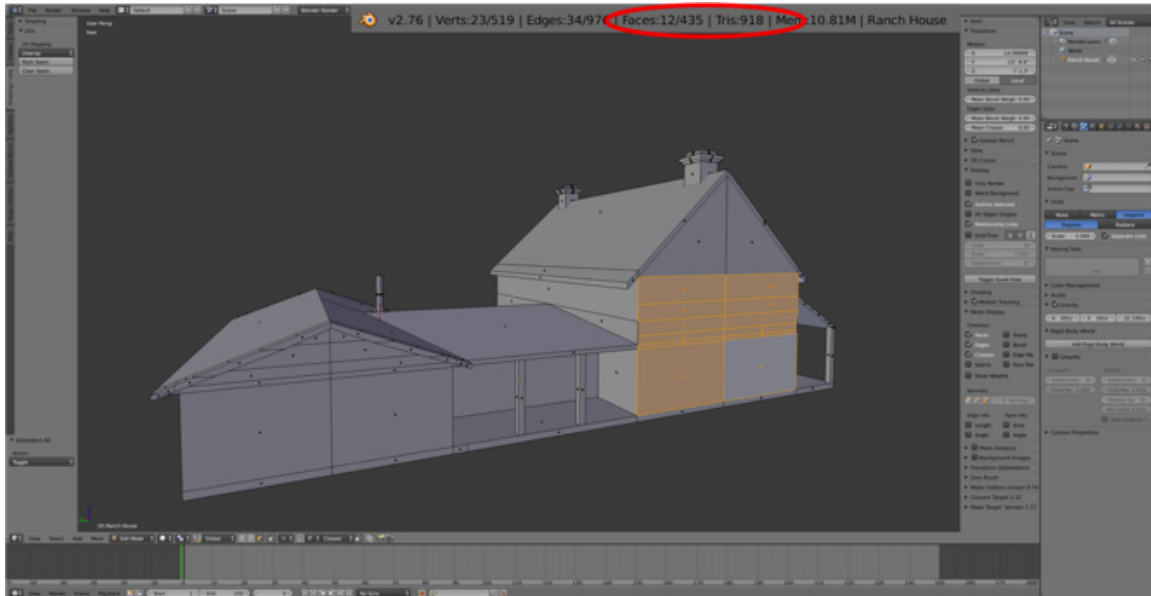
# Modeling a Ranch House

## Step 08

### Modeling - Cleanup

A shortcoming of this form of modeling is that it creates a large number of polygons (triangles). Ideally a low poly model for Trainz should have less than 500 triangles. Anything more, and LOD (Level of Detail) needs to be applied. That is, more than one model is created in which the number of polygons (triangles) in the highly detailed model is reduced by half until a model of less than 500 polygons is reached. This series of models is then displayed at increasing distance in Trainz so that performance is not sacrificed unduly by the presence of highly detailed structures. Indeed, new versions of Trainz (T:ANE) require that LOD be applied for assets with more than 500 triangles.

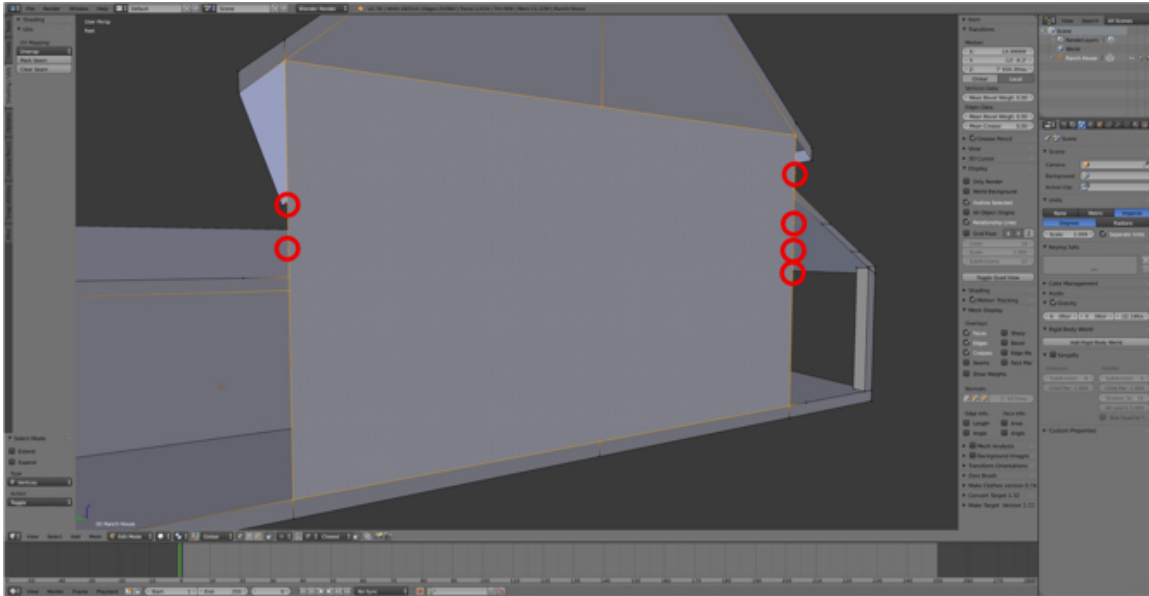
Looking at our model, the number of faces (polys) is 435 and the number of triangles is 918.



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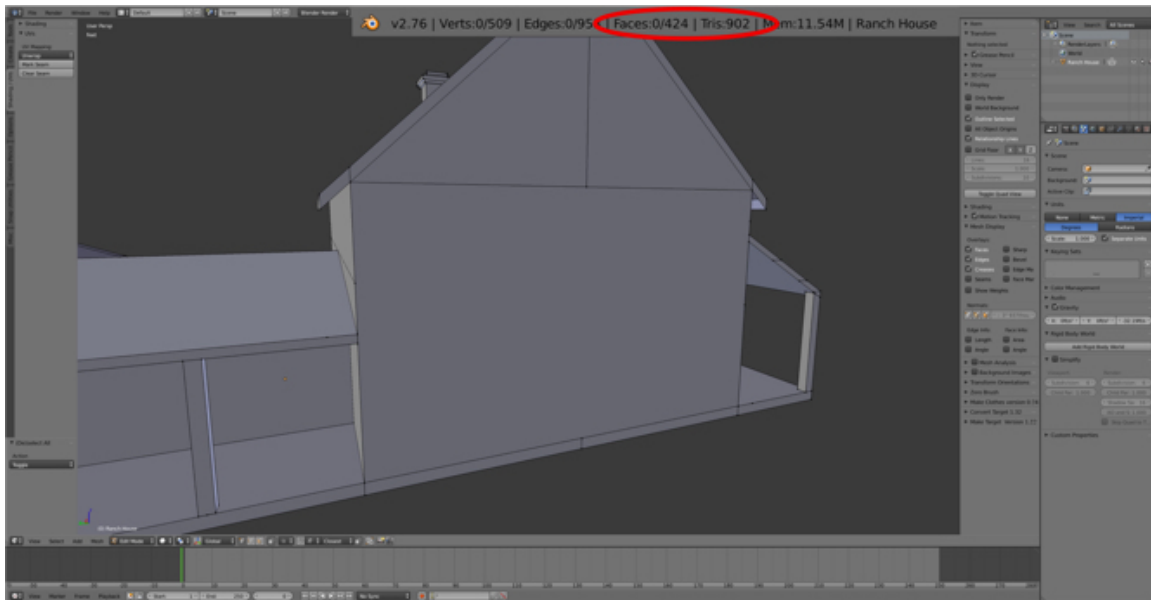
Fortunately, those numbers can be reduced by combining faces (quads) that are on the same plane. This is a two-step process. First, we select the faces and dissolve (**X-KEY** > **Dissolve Faces**). Second, we select the “unused” vertices left as a result that have only two edges attached and do not contribute to the form, and dissolve them (**X-KEY** > **Dissolve Vertices**).

Let's have a look at the process. In the figure above all of the 12 selected four-sided faces (quads) are contributing a total of 24 triangles (two per quad) to the model but are on the same plane. Selecting the faces dissolving them (**X-KEY > Dissolve Faces**) reduces the number of triangle to 908, not 876 ( $918 - 22 = 876$ ). That is because the new quad has more than four edges.



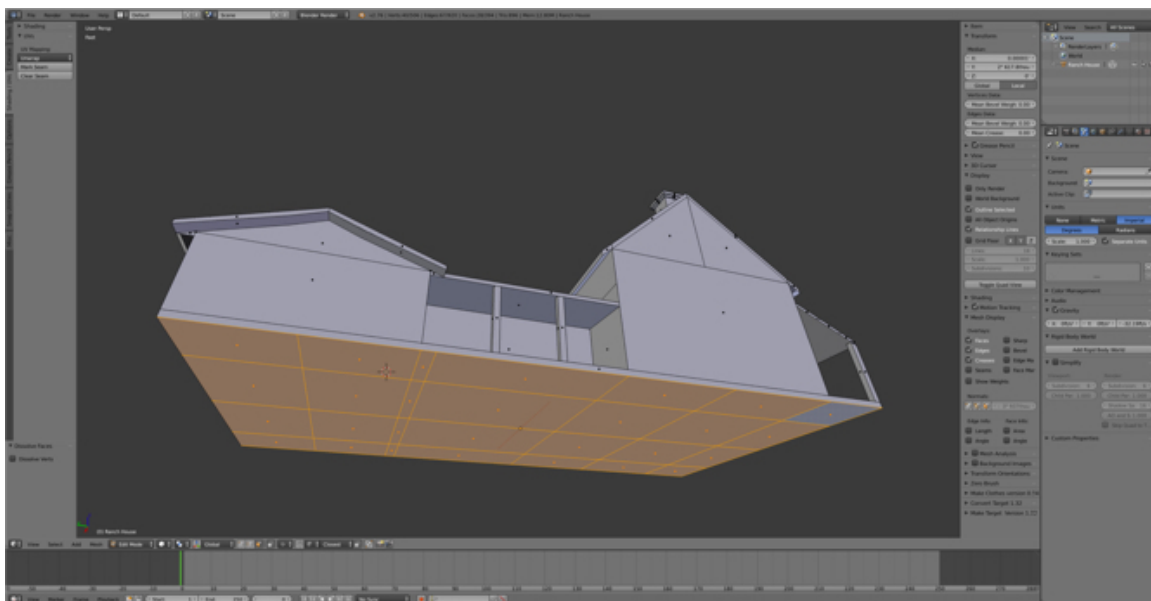
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By also selecting vertices that have only two edges attached (circle selection facilitates the process) and dissolving them (**X-KEY > Dissolve Vertices**) the number of triangles can be further reduced to 902.



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Working around the model will give further reductions. For example, I did not include the face at the bottom because they could be combined in to one long face. Among others, this free up yet another vertex on the side of the house, which can be eliminated.

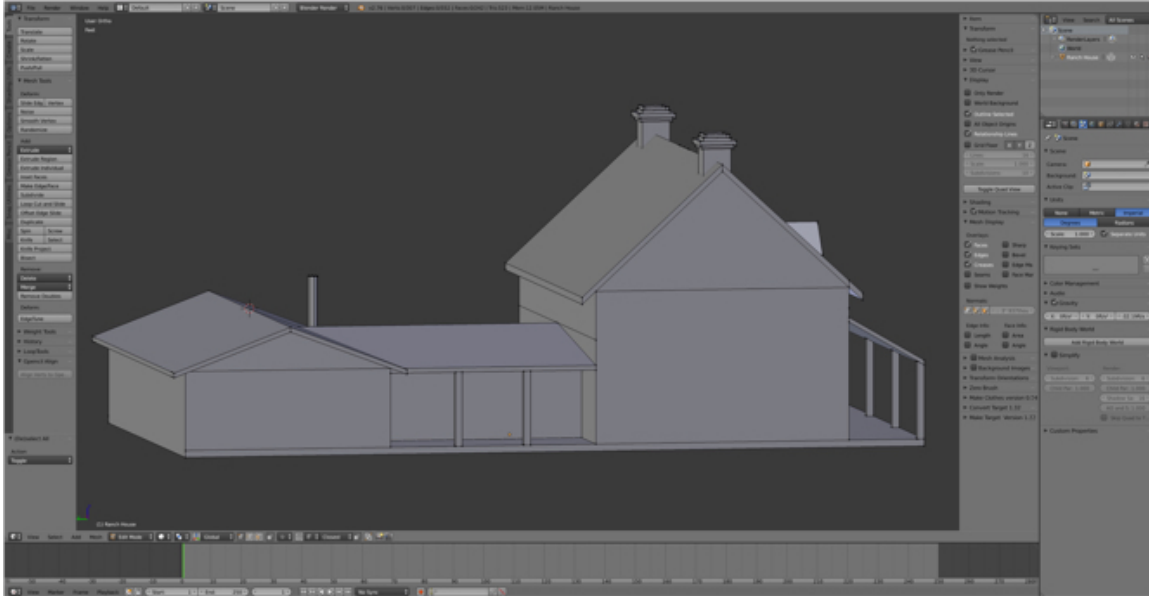


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Try applying the process.

Also when you are done, in Vertex Selection Mode, select the whole model (A-KEY) and apply Remove Doubles (**Tool Shelf > Tool Tab > Remove Pane > Remove Doubles**). I removed 29 doubles.

If you are as successful as I was you can get the number of faces down to 242 and the number of triangles down to 523.



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Time to save your work.

- **Save a copy of the Blender file (SHIFT + CMD + S-KEY) and to incrementally increase (NUMPAD-PLUS-KEY) the file number to “RanchHouse15.blend” and LMB click Save as Blender File.**
- **Save a screenshot (Information Editor > Window Menu > Save Screenshot).**