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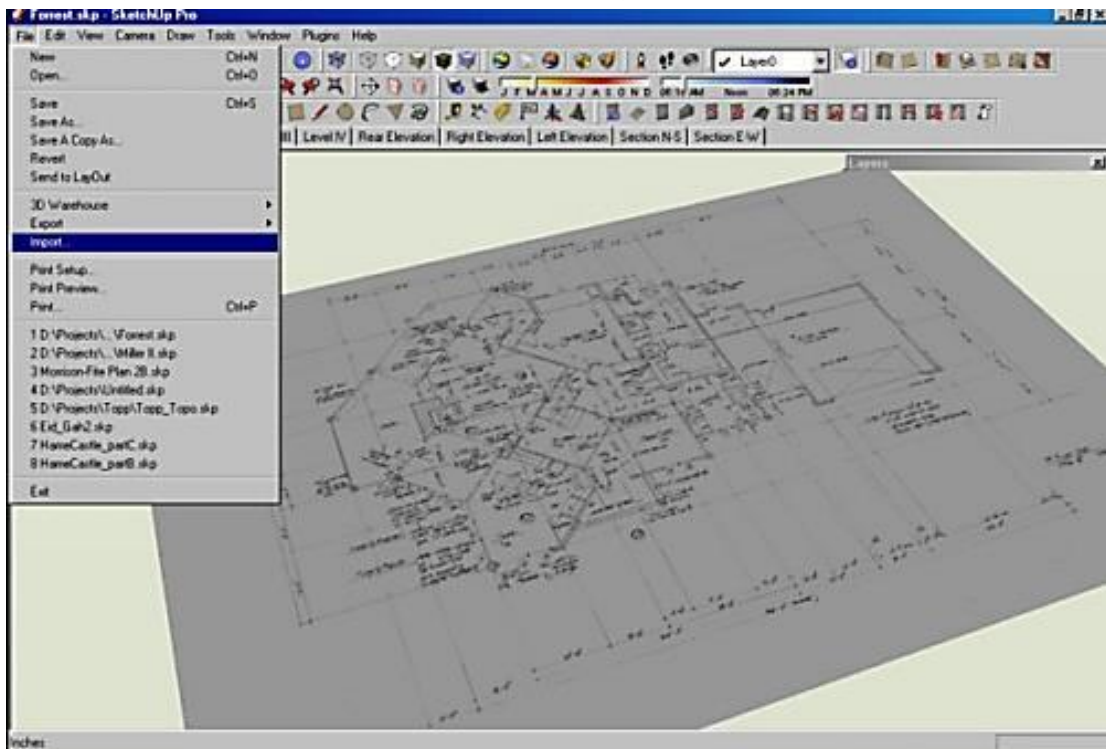
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Modelling How a Pro Builds a House in SU pt. 1

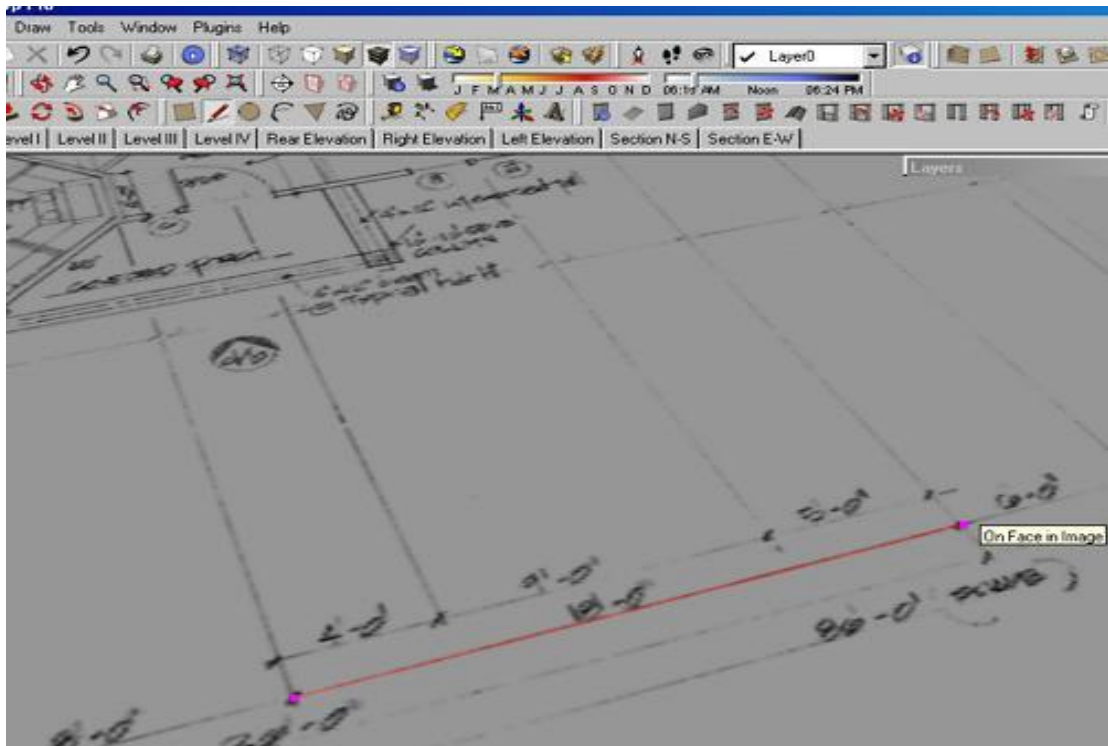
- *First we need a template setup for our architectural use...*
<http://www.sketchup-house-plans.com/48-architectural-modeling>

Now that we have our template:

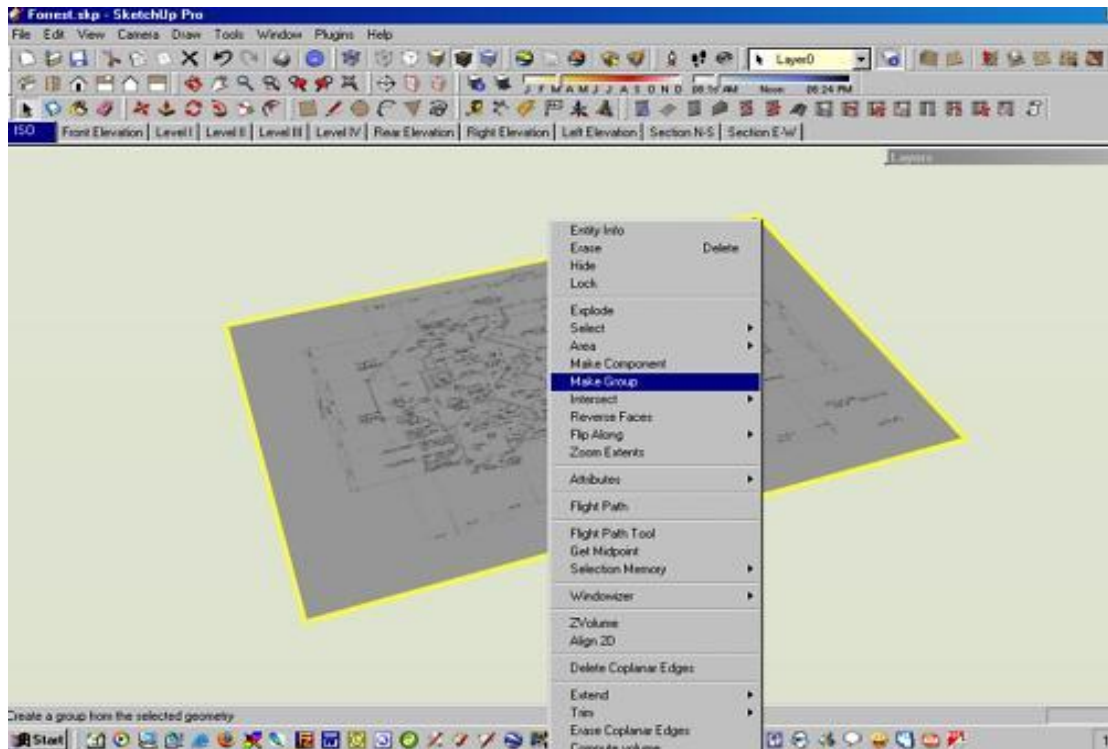
- Import your house plan image as an image.



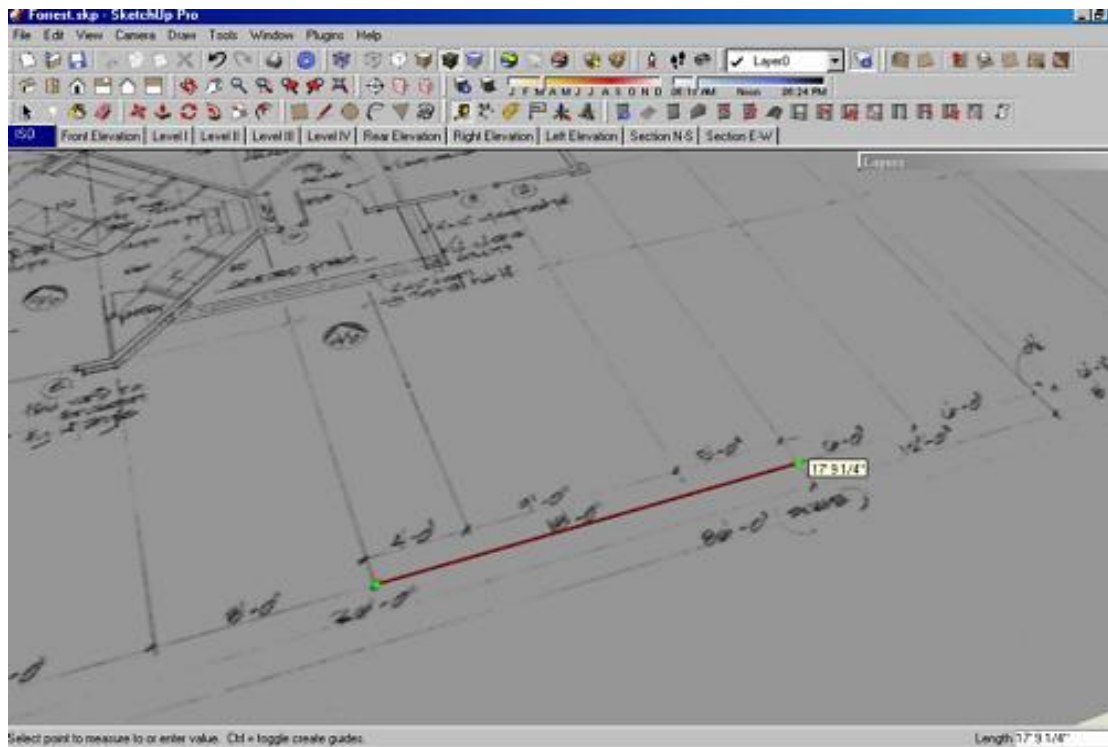
- Draw a line along a distance in the drawing in which you know what the distance is beforehand. Example a standard shower/tub is 5' so I would draw a line along the shower/tub wall.



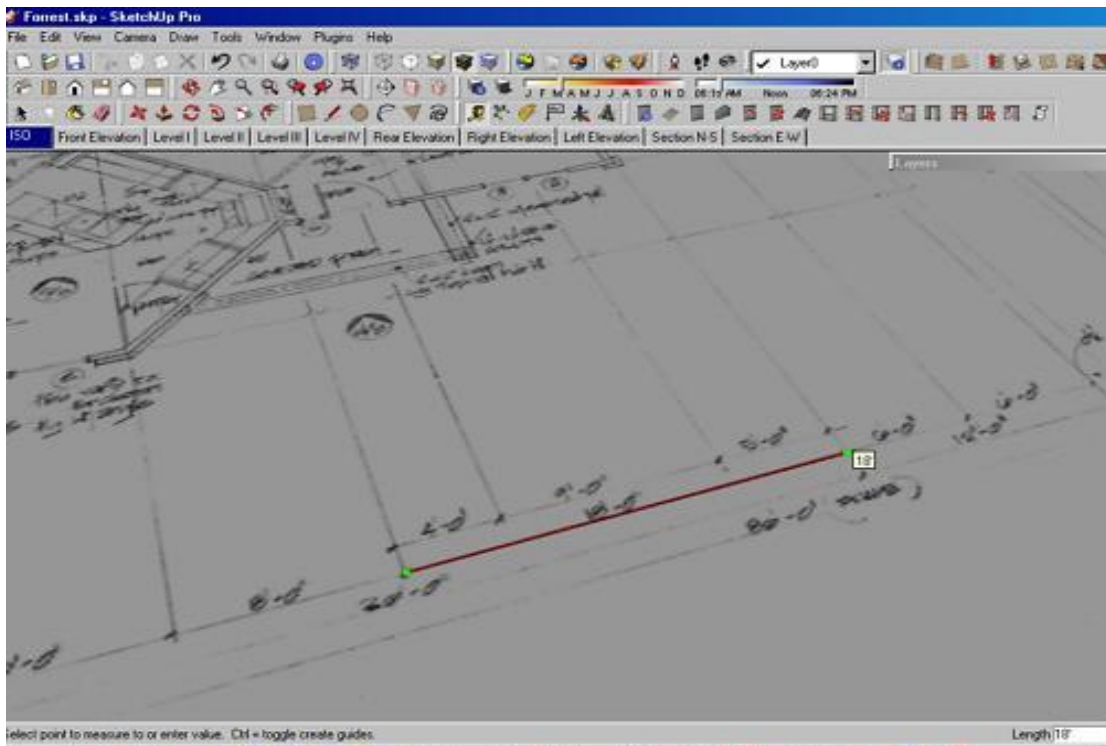
- Now group the house plan image and the line you drew together.



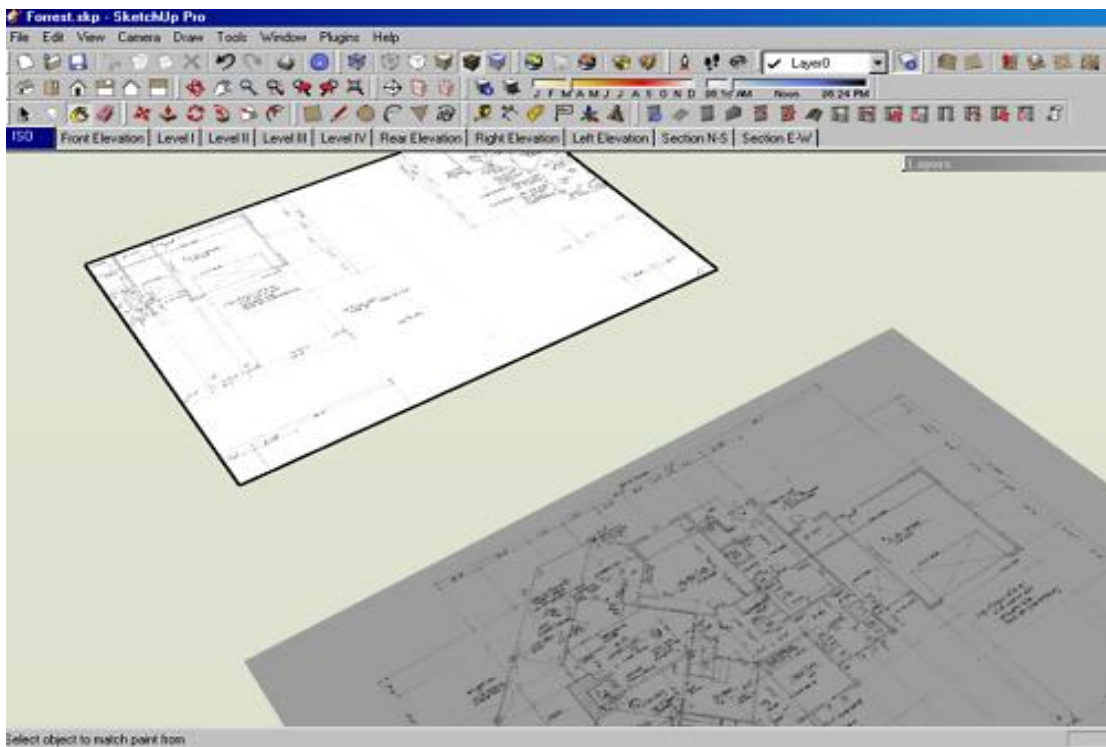
- Open the group you just made, and use the measure tool to measure the distance of the line that you draw in step 2. As soon as you click the second point on the measurement, type in the specification line 5' or the distance of the wall you chose. SU will ask do you want to re-size the group. Answer yes.



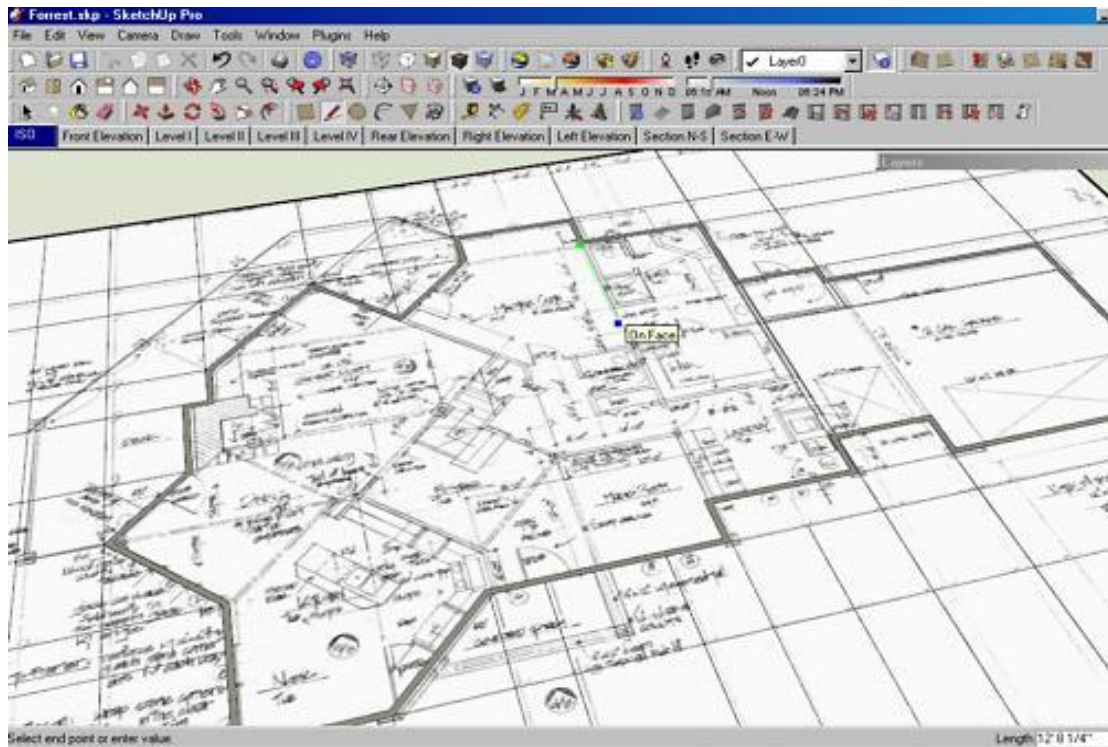
- Explode the group, and delete the line you drew. Your plan should now be scaled, to real life dimensions.



- Draw a large rectangle, larger than your plan. Right click on your plan image and choose "use as material" and apply the material to the rectangle.



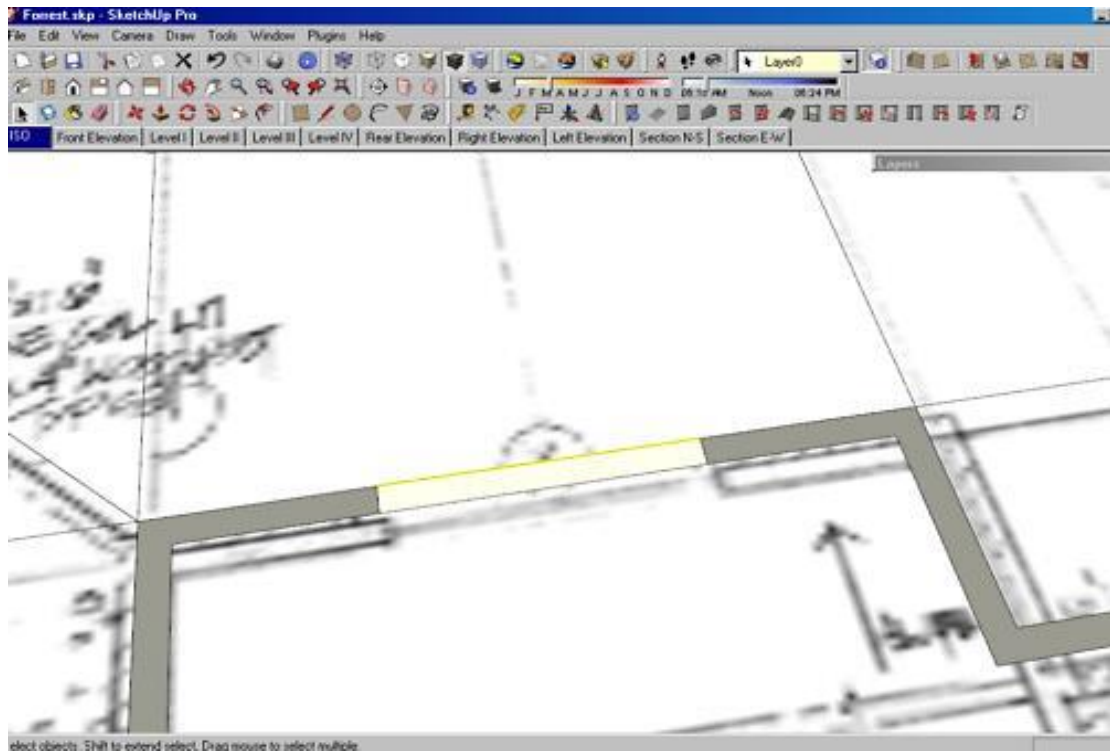
- You should now have your plan on a large face, trace the plan.



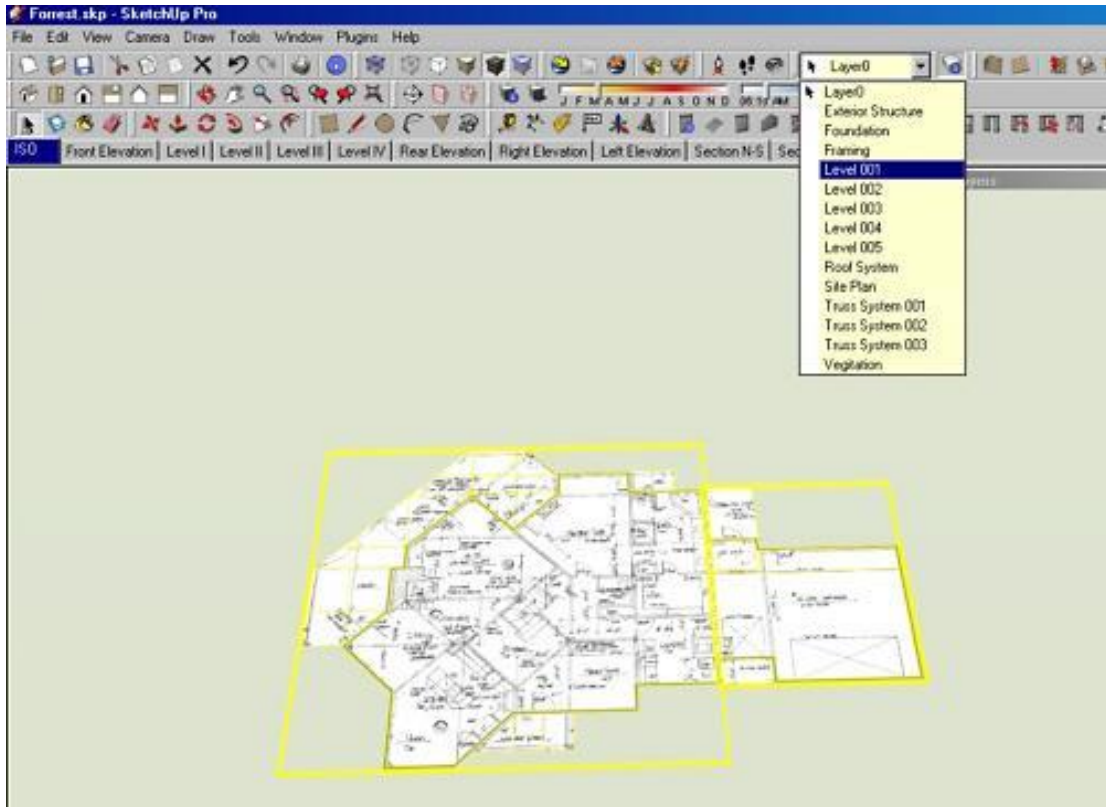
- Be sure to use proper thicknesses, such as 6" exterior walls for wood and 8" for concrete.



- Trace the door and window openings.



- Select your whole first floor plan and move it to the "Level 1" layer. Make a copy of it, Move it over about 100' feet or more to the side. Stay with me... this copy will now become many things to us. It will be a truss layout, a foundation layout, a framing layout, the list goes on. We will use it over and over to create different levels of the home.

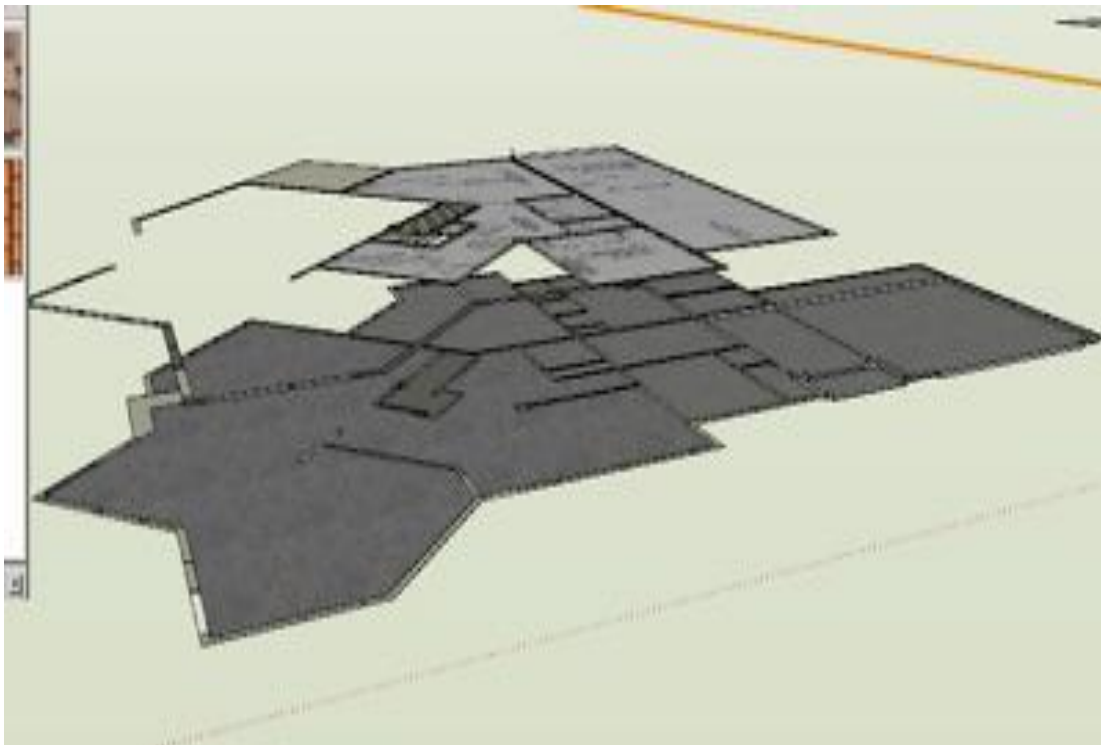


- ***Repeat this process for your foundation, your first level and your second level and third...***

Modelling How a Pro Builds a House in SU pt. 2

- *Hello fellow sketchupers... last week we left off with..."step 11 repeat this process for your foundation, your first level and your second level and third... next time we'll create components from each of the layers and show how to work on your house while looking at it too..."*

Since we last spoke, you should have traced each of the floor plans on your house and cut out the doors and windows. Now you should have your floor plans on separate layers. "Level 001" and so on.

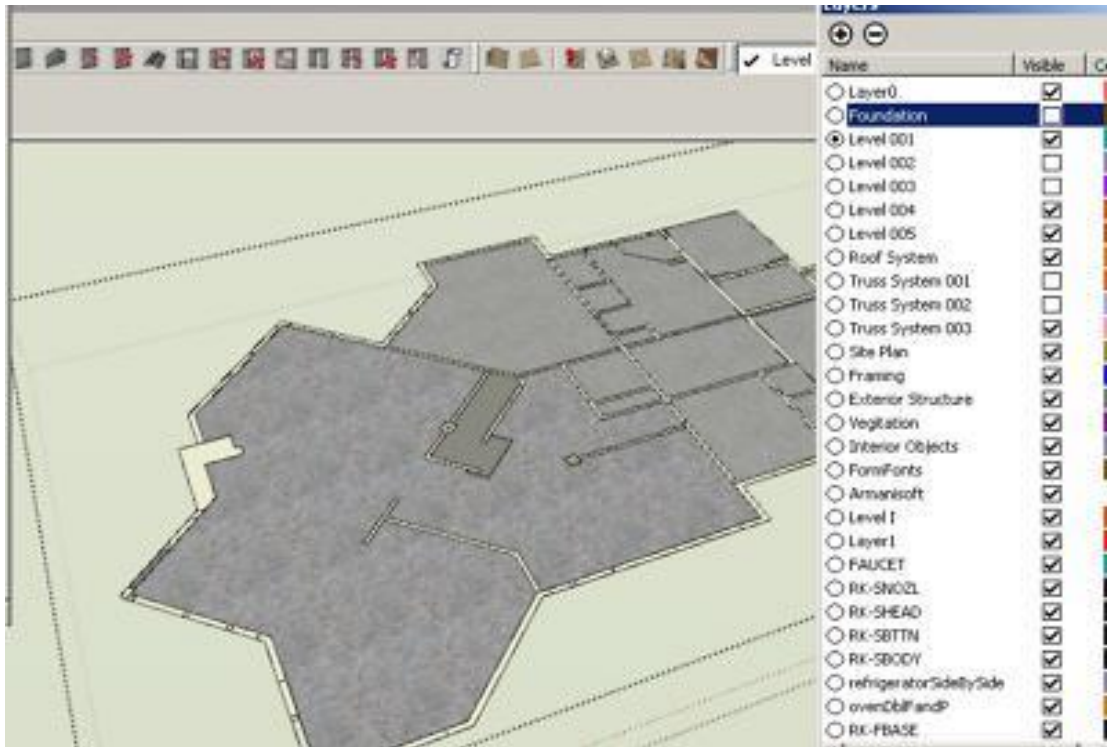


Before we begin...

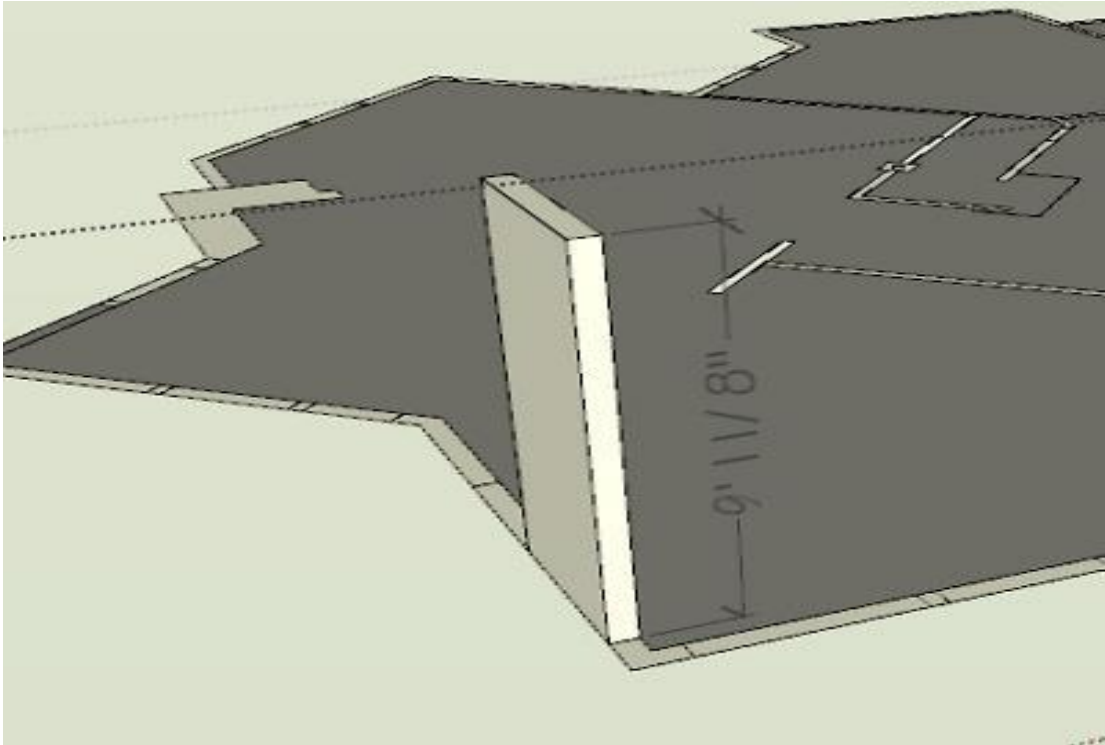
Let me stress the importance of a "Tidy Drawing"... Layers, Groups & Components... make sure to use them often and make sure to not to rely on the Hide command very much. Hide should be used to hide geometry lines, not things you are not working on. Having everything on controllable layers and groups will allow you more control later when the model becomes larger and harder to deal with. The ability to work on specific areas will make your life much easier and make exporting your drawings much easier later on down the road. So when you build something, check its layer and get into the habit. When you group something, go back and name that group in the group list window. this will allow us to view as much or as little of our plan at any given time, while leaving them connected, although you might find it easier to not only make Level 001 Layer but also a Level 001 Group so that you can move it around without destroying vector lines. That's your chastisement for the day....

A word about detail. from this point on you need to decide your detail level, from here you could start building the rough framing for your house and putting it on a separate layer... if you go this far and even farther by setting a value for material you can use your model for very accurate take offs. I use it regularly for concrete volumes and roof square counts and tile counts and so on. For this example we are just going to build the wall shell for visual walk through.... now on to the lesson.

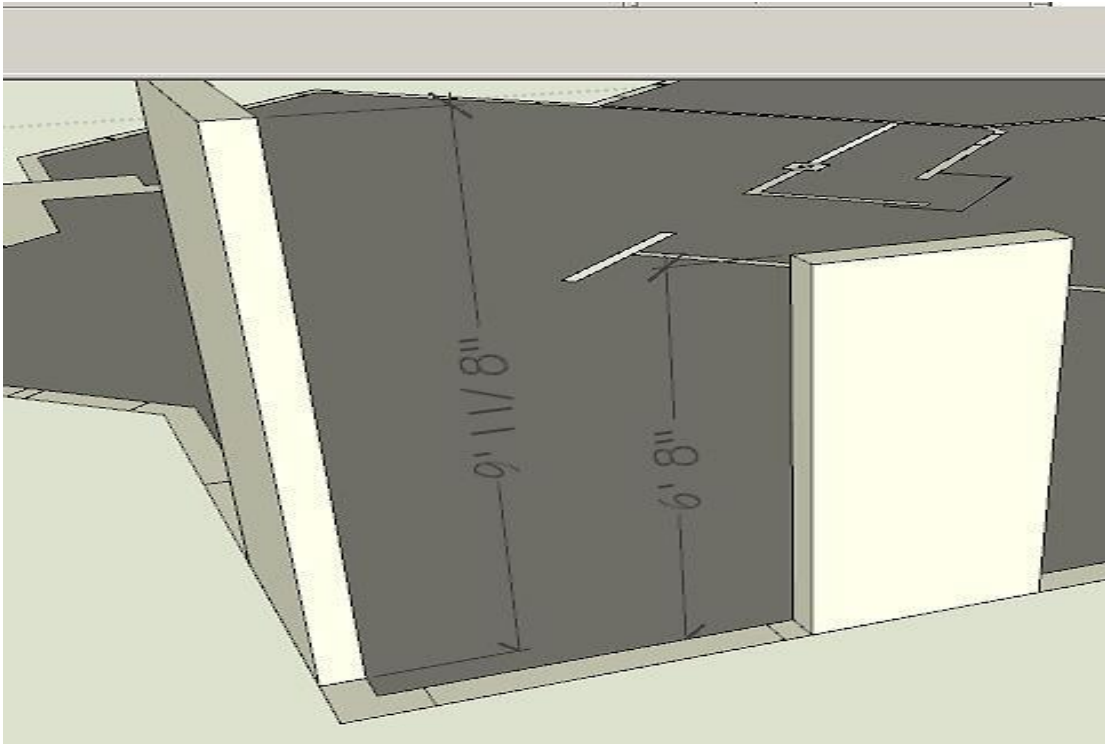
- Turn off all layers Except the Level 001.



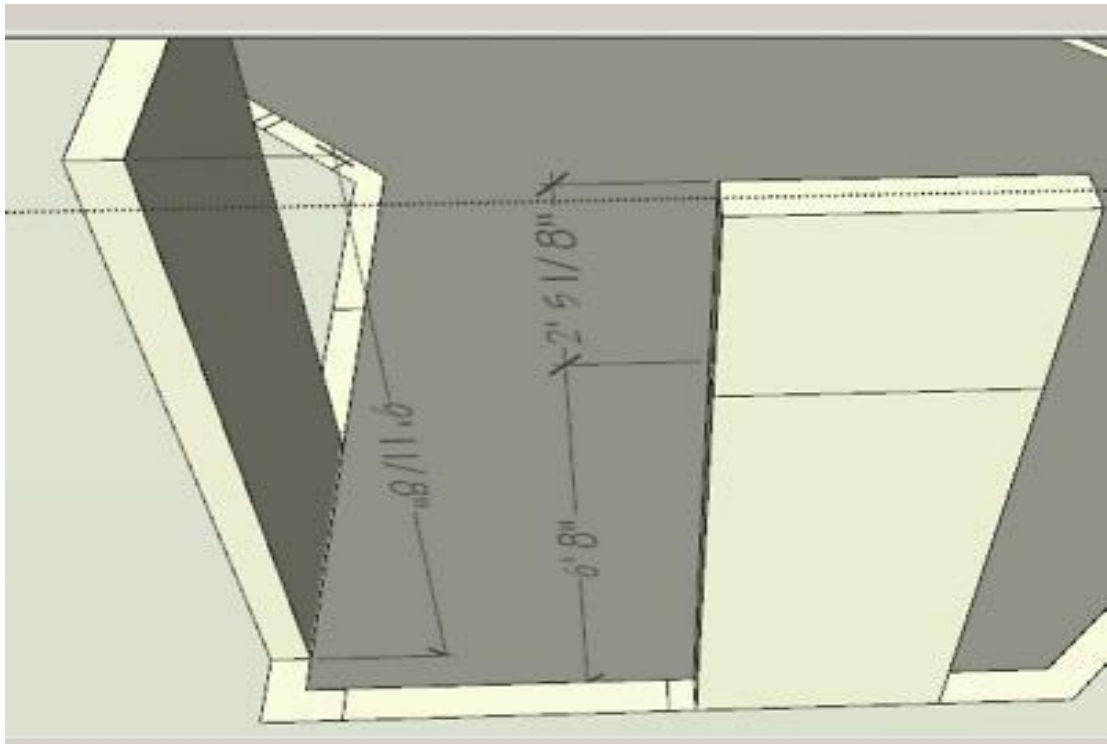
- Extrude, or push/pull all of the walls up 8' 1-1/8" or 9'1-1/8" or so on for whatever top plate line you intend.



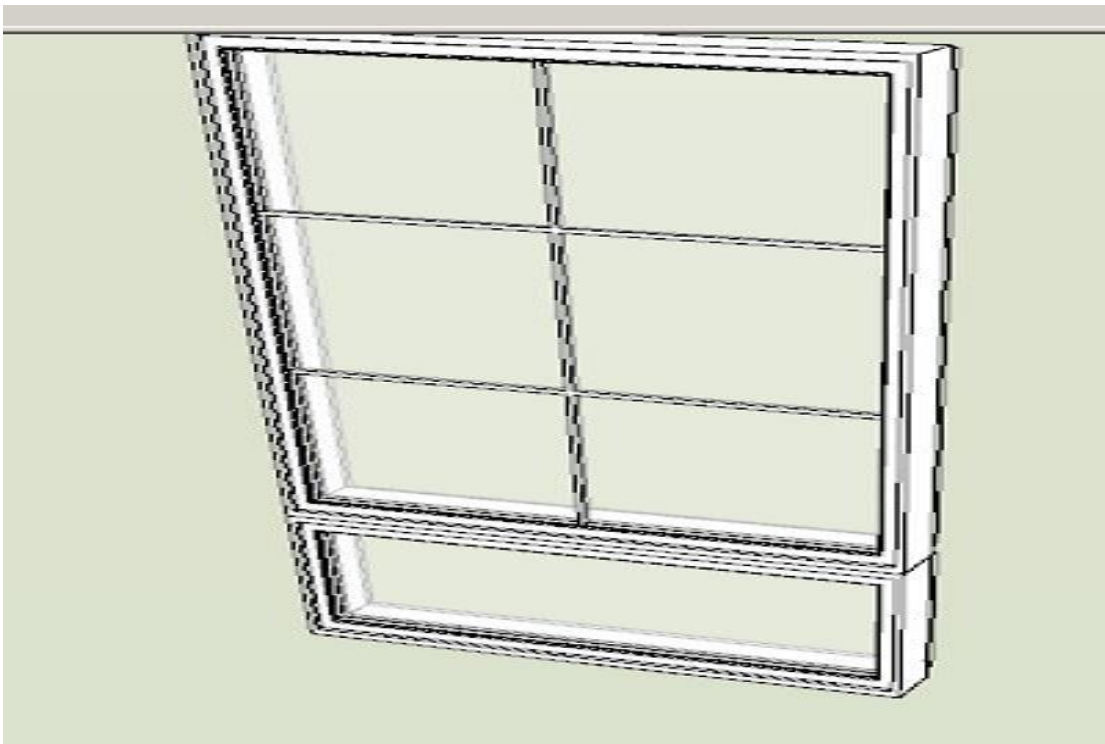
- Now extrude each door and window section up the blue axis 6' 8". This will be our door or window opening.



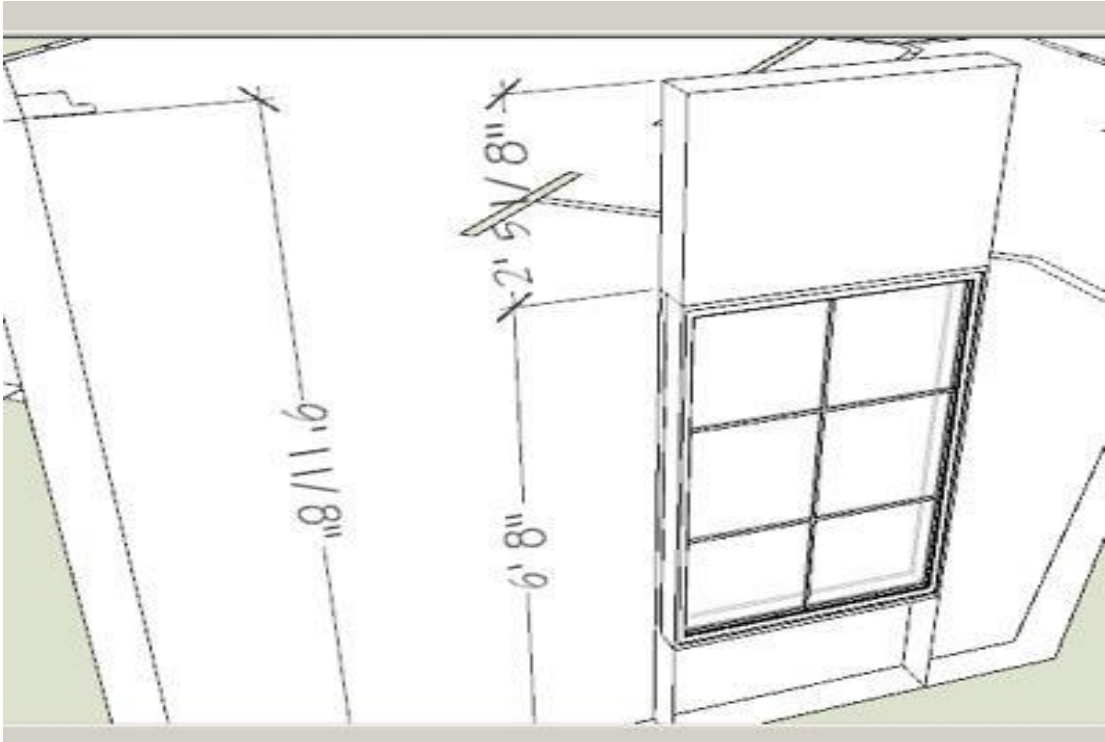
- Now extrude a new face up again to the top of the plate line. If you chose 9' 1-1/8" plate line, then it would be 2' 5-1/8" this will leave you a header area, and now is the time to think about transoms.



- Now is the fun part. Time to find or preferably build some door and window components. Search the internet for real door companies like Pella, Anderson or in my case for this project Peachtree. Now click on the lower right-hand corner where it says size chart. Here you will chose a style and size. Use the numbers at the top and side to build your components and also to name them, that way later they will be easy to use again. If you're lazy or just want to be like us cool people you can purchase components from places like <http://www.FormFonts.com>.



- Insert your windows and doors at the appropriate level. Make sure they are all on our current Level 001. Make sure that while you are inserting the doors and windows, that you don't delete the side lines from top plate to bottom. This will be needed for the floor plan sections we will export later.



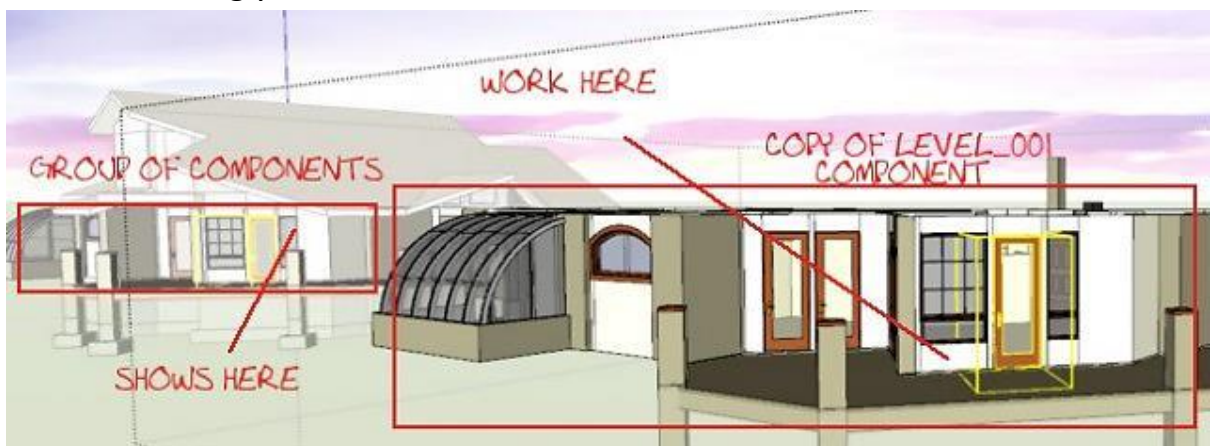
- Repeat Step 3, 4 & 6 on your other levels. Be sure to assign them to their respective layers and groups.



- Restrain yourself from adding textures and furniture just yet. Texturing and furniture layout should be seen as a reward to you for your hard work on the model, and leaving it until later will allow us to make changes to the structure if a problem should arise in our layout, without redoing texture and furniture. Only use it early if you need it for sizing rooms.



- We should be starting to see a recognizable structure now.... let's go around and offset corners and exterior walls 4" or 6" for stone facades... also we can do our columns and other exterior attachments. Again, layer these accordingly.



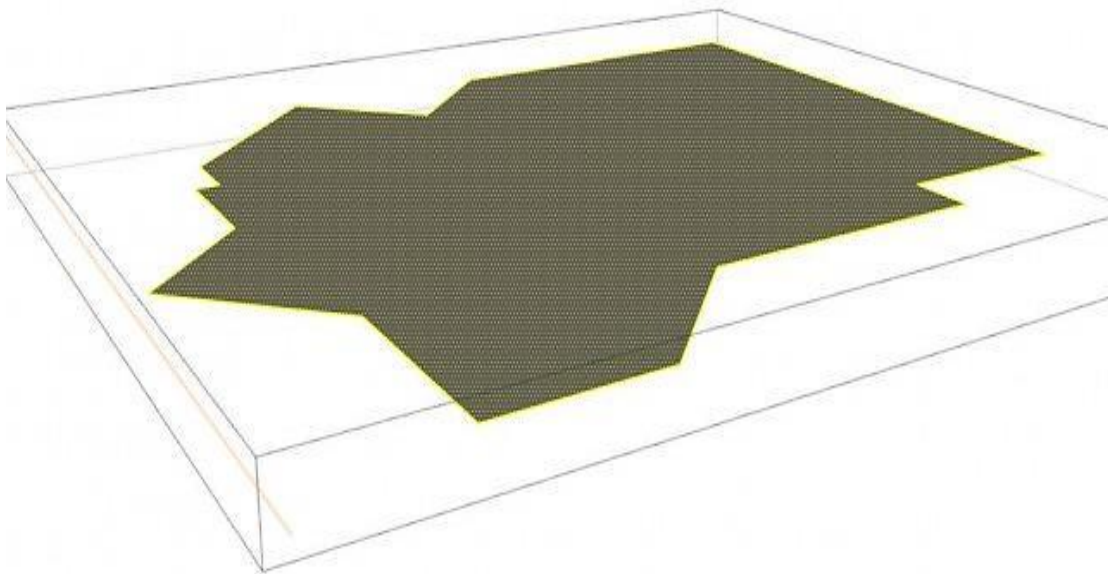
- Now for the crème de la crème;

If you are building multiple copies of one structure or just want to watch your design as it is built. Save each of your levels as components and then make copies of each level and stack them in order over in a "Viewing Area" in your model. And put it on a layer named "Whole House" now after you do this, you'll be able to work on each level independently and watch the changes over all on the whole house model...

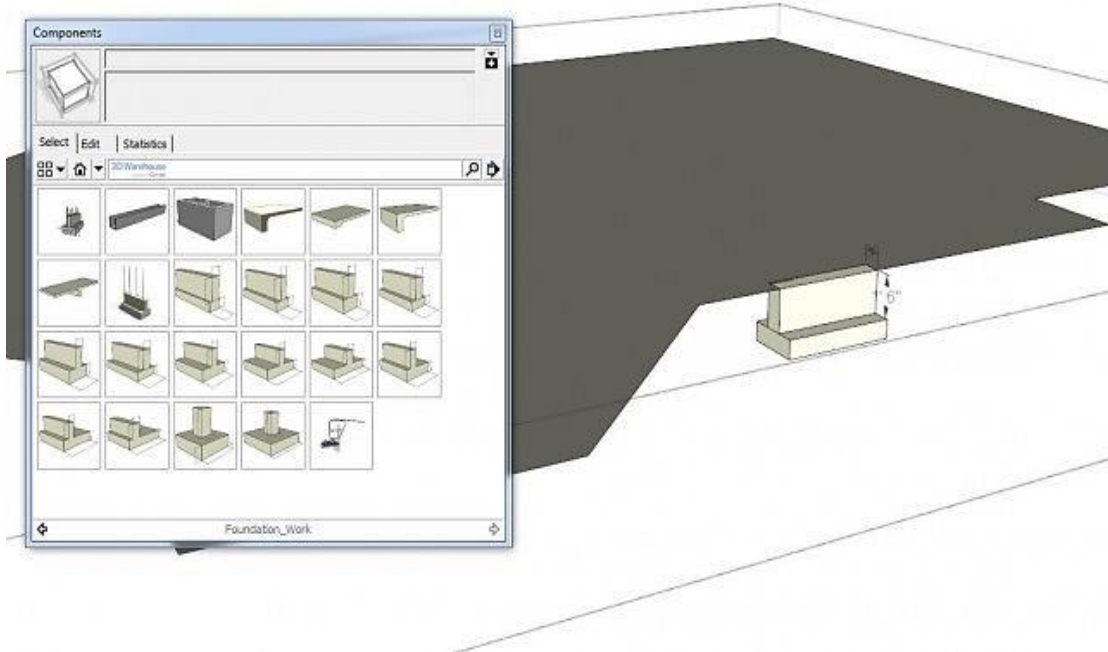
Next time we'll add a foundation and a roof...

Modelling How a Pro Builds a House in SU pt. 3

- when last we spoke we were just about to put the foundation and roof on our House Shell we had made in part I and Part II.
- So let's open our SketchUp file and unhide our entire model. by now you should have several layers that represent the shape of your structure, we'll need to copy one of them to start our foundation. (some might think, why not foundation first? if you had an entire set of real construction documents, I would say ok do it that way. but if you're designing a structure or you're tracing over a plan, then you need to "get to know" your structure first, and the foundation is easier to do after you know all the "in's and out's" of the building.) Now after you have this shape of the outside structure, delete all lines that are not in the very outer perimeter. Don't count stone extruding from the wooden shell, just exterior walls.

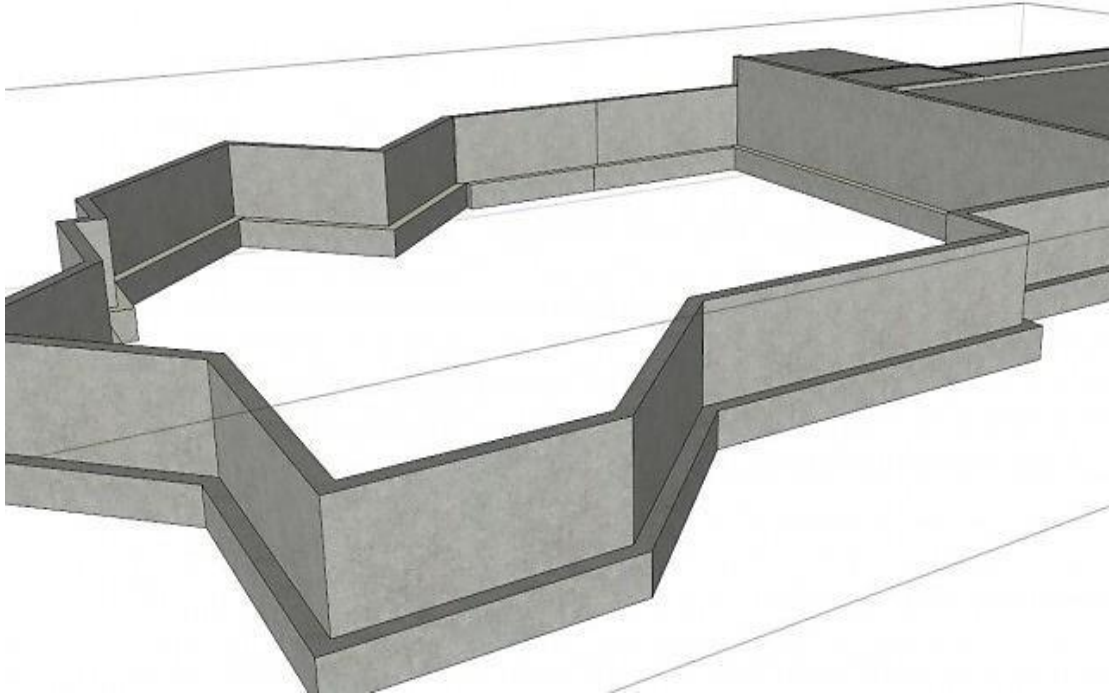


- Now we have our shape, we need some concrete. Open your component window and browse to Construction>Foundation_Work> and choose a foundation section that fits your needs... and insert it.



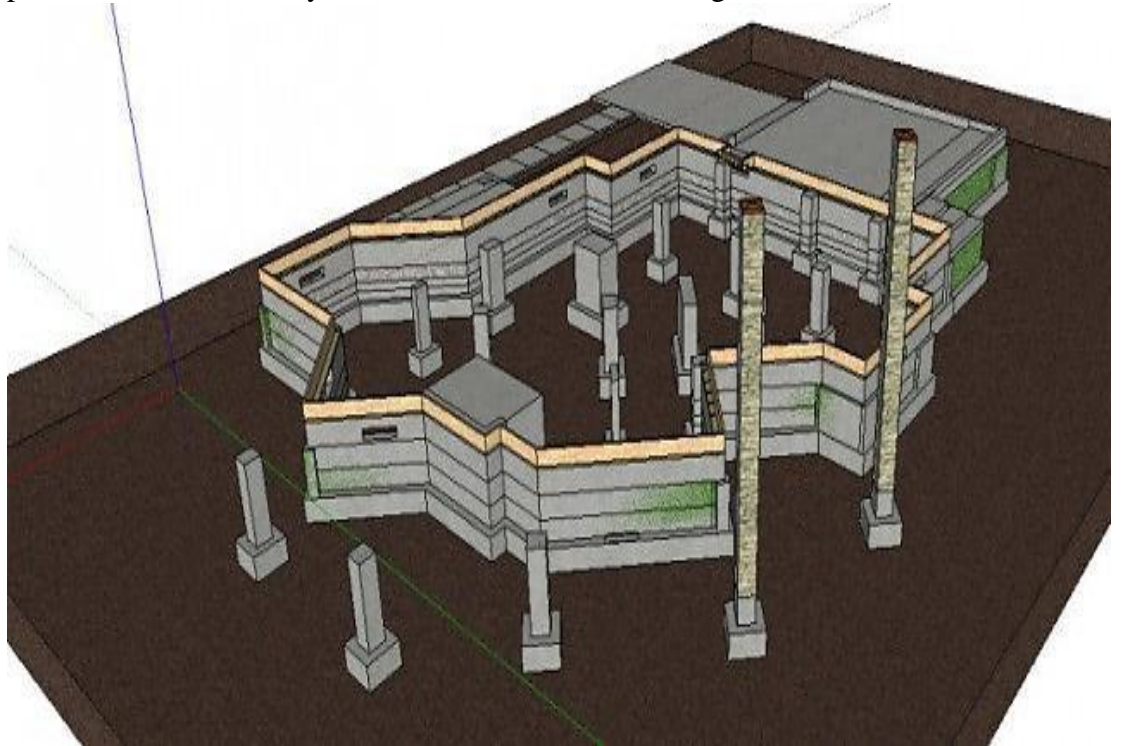
- Now explode the component by right clicking on it and choosing explode.

- Now double click the shape of the house and that should select everything on one plane. Now hold "Shift" key down and deselect or click on the face of your shape, which will leave you with just the lines around the shape selected. Now with those lines selected, click the "follow me" tool... this will create a foundation wall around your shape.

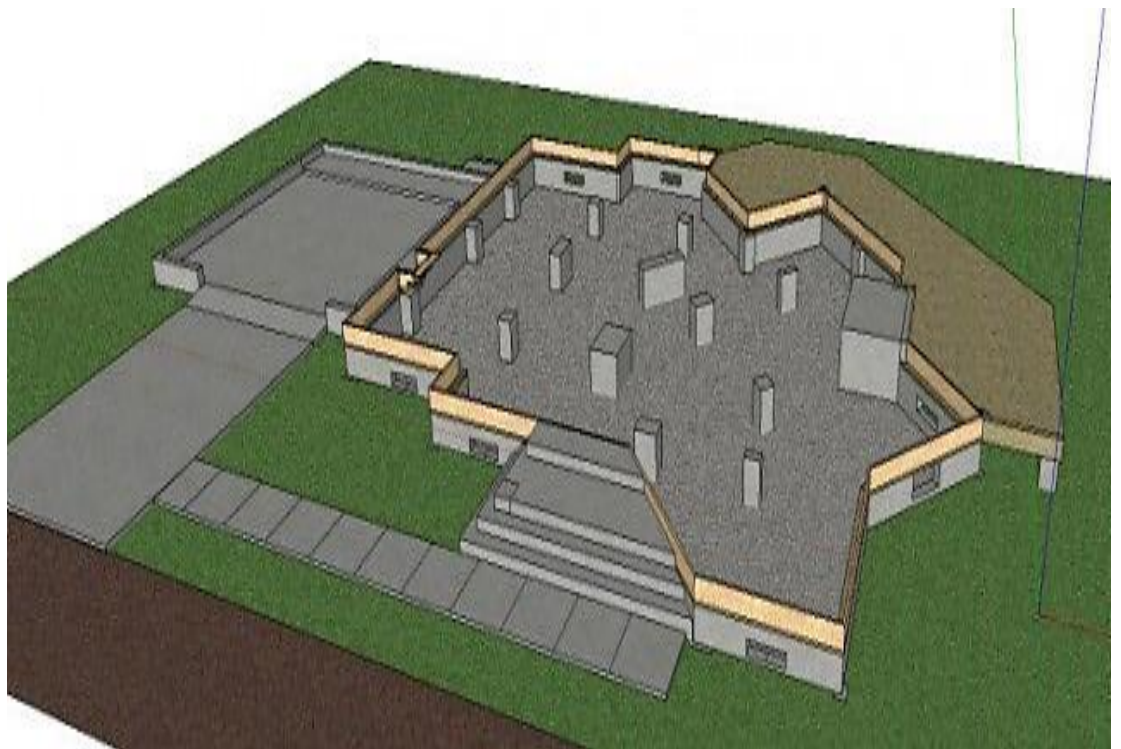


- now from here you'll really need to know what you're doing, because I don't have time to teach you everything there is to know about foundations... but your main face on your shape and extrude it 4 inches and that will be your concrete pad, or extrude it 12 or 22 inches and that will be your joists or floor trusses. This will give you what you need for foundation at the minimum level... if you'd like to learn more, do some research on foundation types and geographic requirements of foundations. As you can see my house is built for up north and needs quite a bit of stem wall to reach the frost line beneath the surface.

- Now we'll start to fill in the details of a foundation.
 - Depending on what you're doing, you'll need load bearing wall support with posts and or beams, maybe some stem walls and footings.



- Some chat to fill in the crawl space.



- Some floor trusses.



- Some Decking.



- Let's take our home shape from the foundation and copy it upwards to our top plate or the top of our shell.
 - When I first wrote this years ago there were no plugins to do roofs with... Now there are a plethora of them. Instead of showing you how to build them from scratch, I'll point you to some awesome plugins to use.
 - Vali Architect's Instant Roof - http://www.valiarchitects.com/sketchup_scripts/instant-roof
 - 1001bit Pro - <http://www.1001bit.com/pro/index.html>
 - House Builder - http://rld.crai.archi.fr/rld/plugin_details.php?id=188
 - House Builder Extension - http://rld.crai.archi.fr/rld/plugin_details.php?id=185
 - BuildEdge Plan - <http://www.builledge.com/builledge-plan.php>