Design and Production
Building Ville Savoye Part 1

The Pilotis and Spiral Staircase
This document will show you how to build the column grid or Pilotis, the floor slab, and the first part of building a spiral staircase. You will use this basis to design your own version of Ville Savoye, with your own designs for the interior space. It is very important that you create GROUPS or COMPONENTS for all objects otherwise this will become very difficult very quickly. Anything you know will be copied around many times (such as the individual column) should be a COMPONENT. Things that you may copy once or twice but may want to modify individually should be a GROUP.

1. First create a new drawing and save it as "firstname Lastname Ville Savoye.skp".

2. Go into the TOP view and create a circle at the origin with a 6" radius. Orbit around and pull that upwards 10'6. Select that column and turn it into a component (G on the keyboard) called "Column".
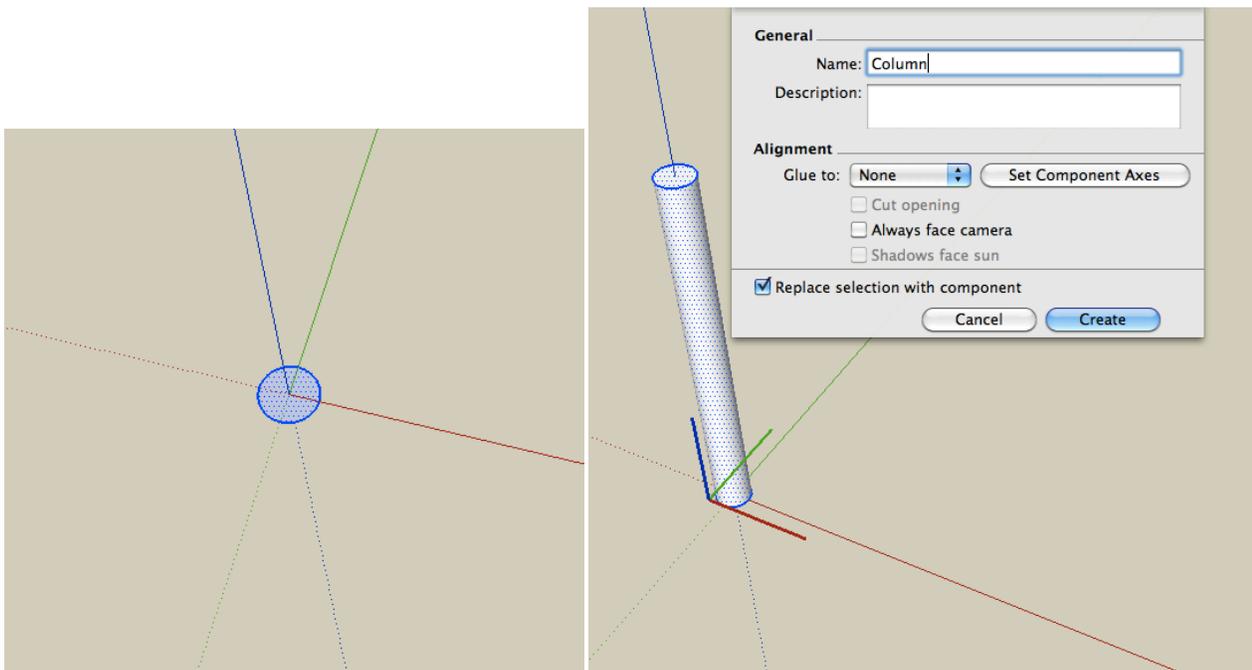

3. Orbit around so you are looking from above. Move > Copy that column to the right 15'9 and input 4x for the number of copies.

4. Now select all 5 of those columns and move > copy them upwards 15'9 and input 4x for the number of copies. Now you have a grid of 5x5 columns.
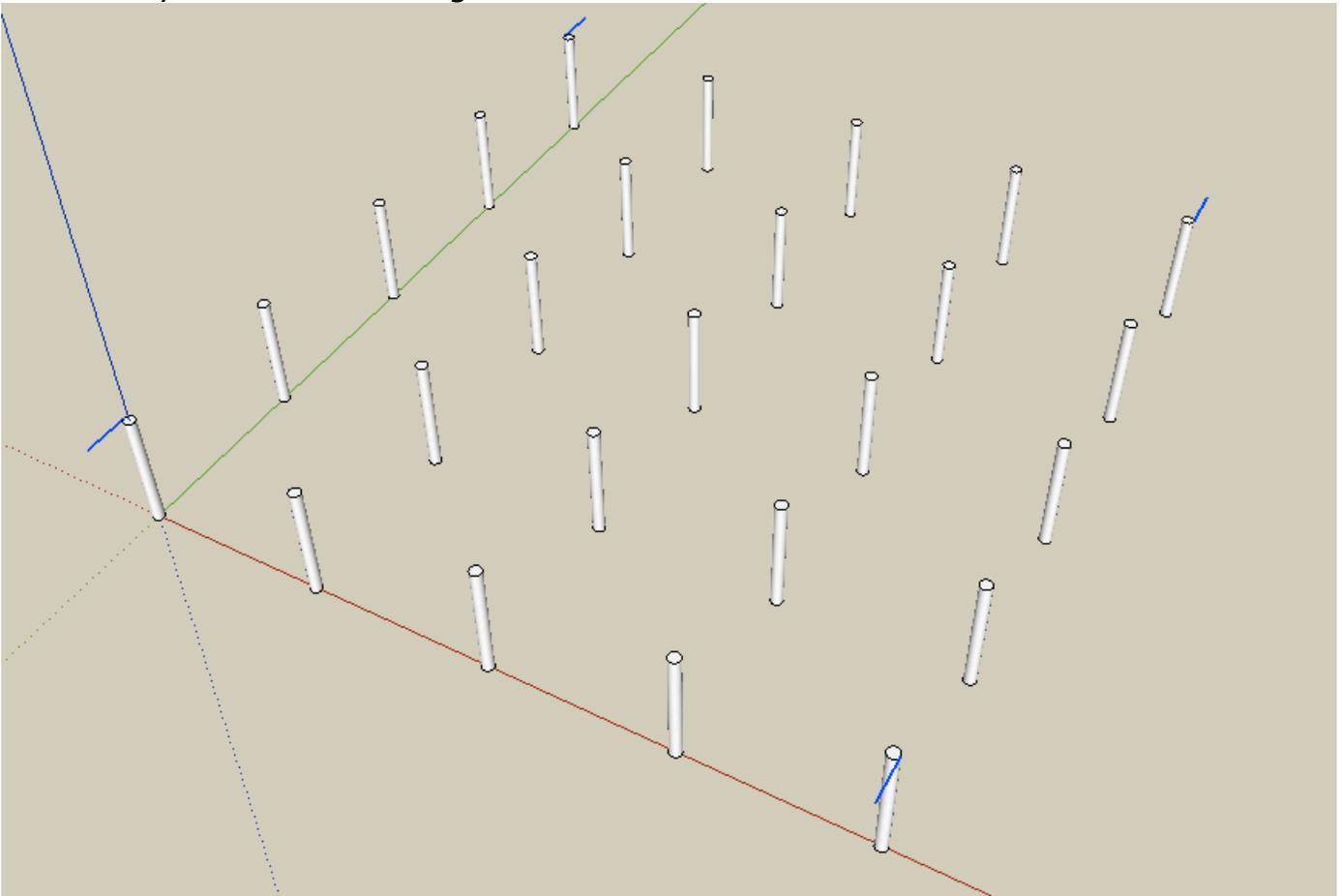

5. This part is tricky – you need to zoom in onto each of the 4 corners of the grid and draw a line from the outside edge of each circle. Note how I am right on the outermost endpoint of the lines of that circle. Zoom in close to be sure you are at the right point. Draw the line 4' long.
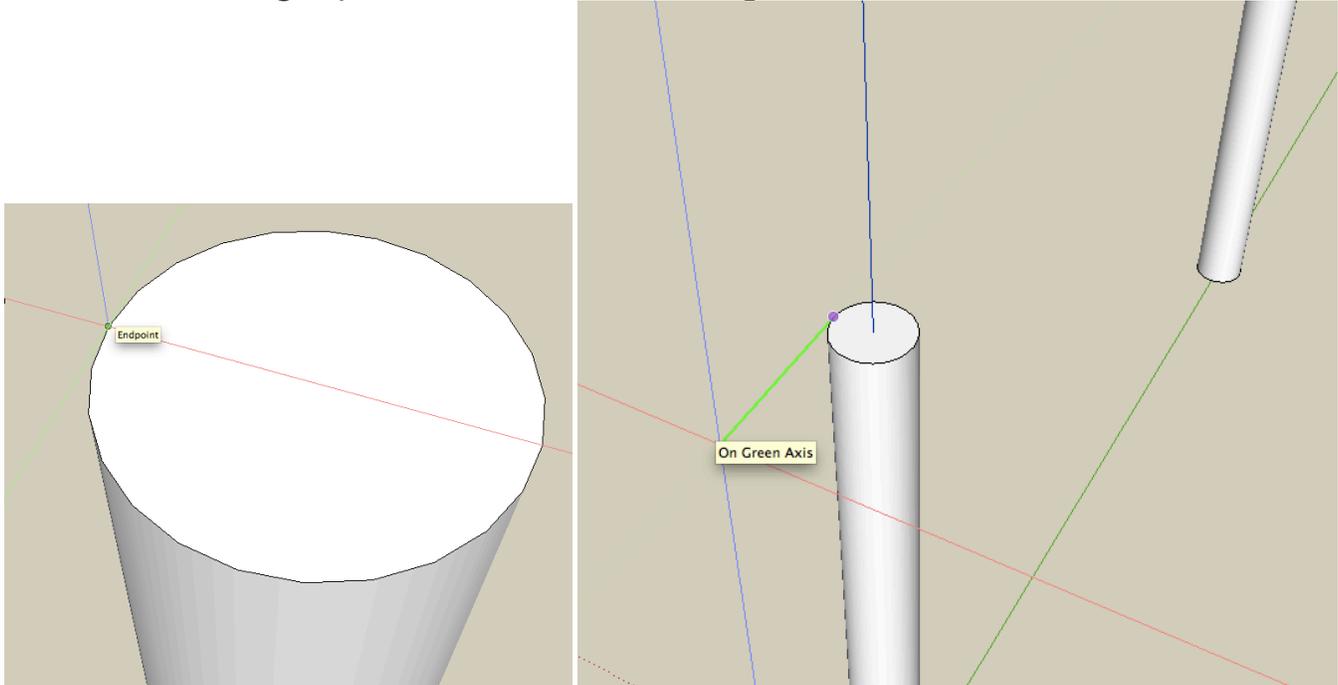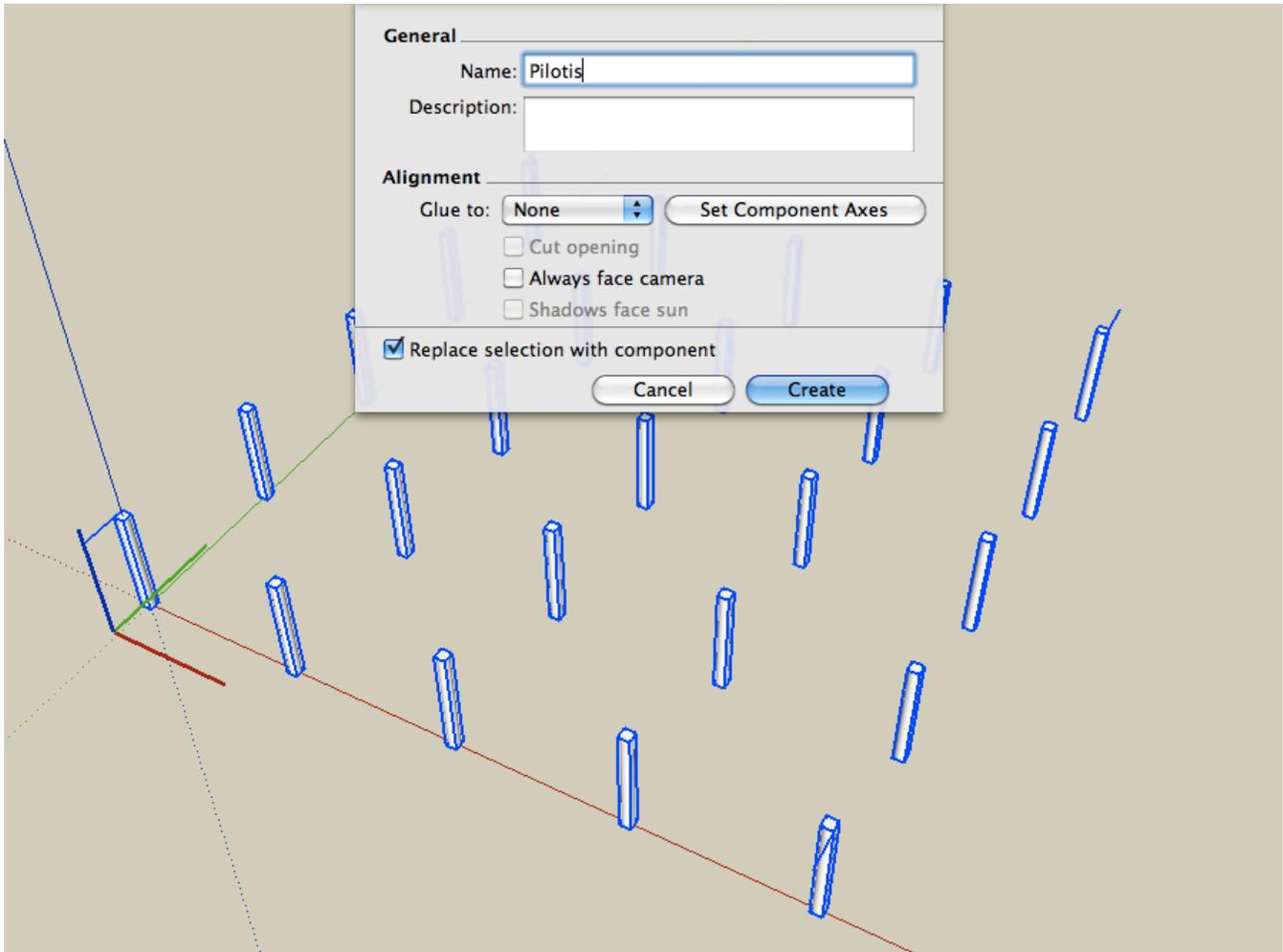
6. Repeat this for all 4 corners, drawing a line 4' outwards.
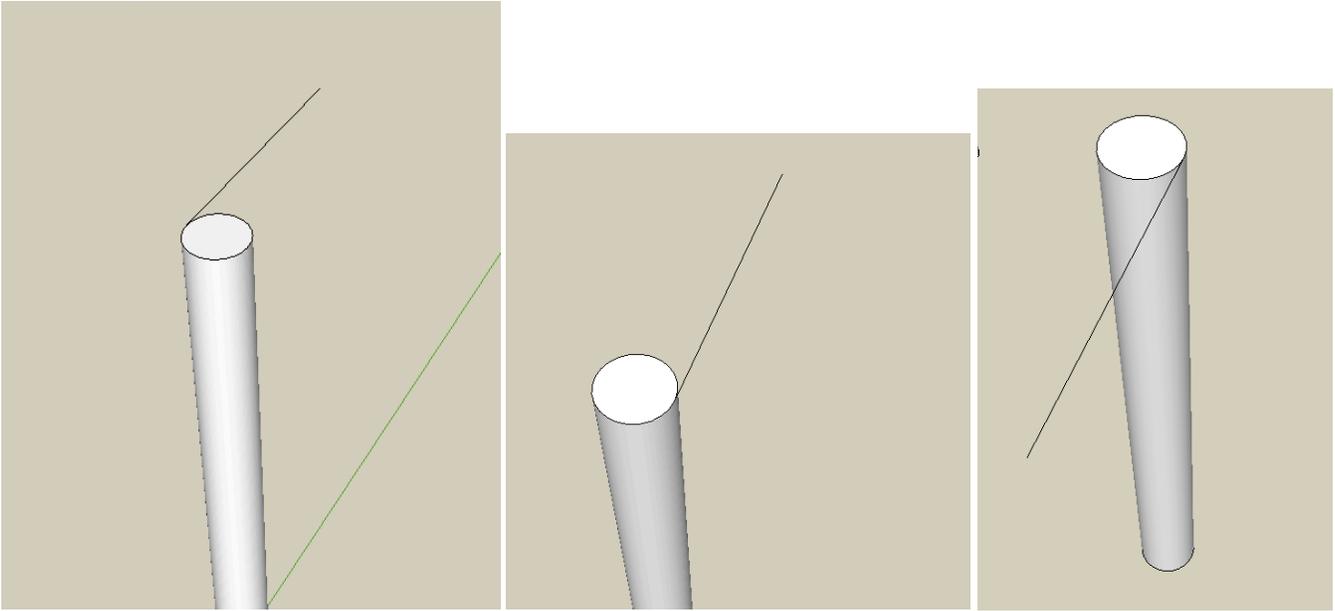
In the end you'll see something like this.

7. Now select this grid and these lines and turn them into a component called "Pilotis".
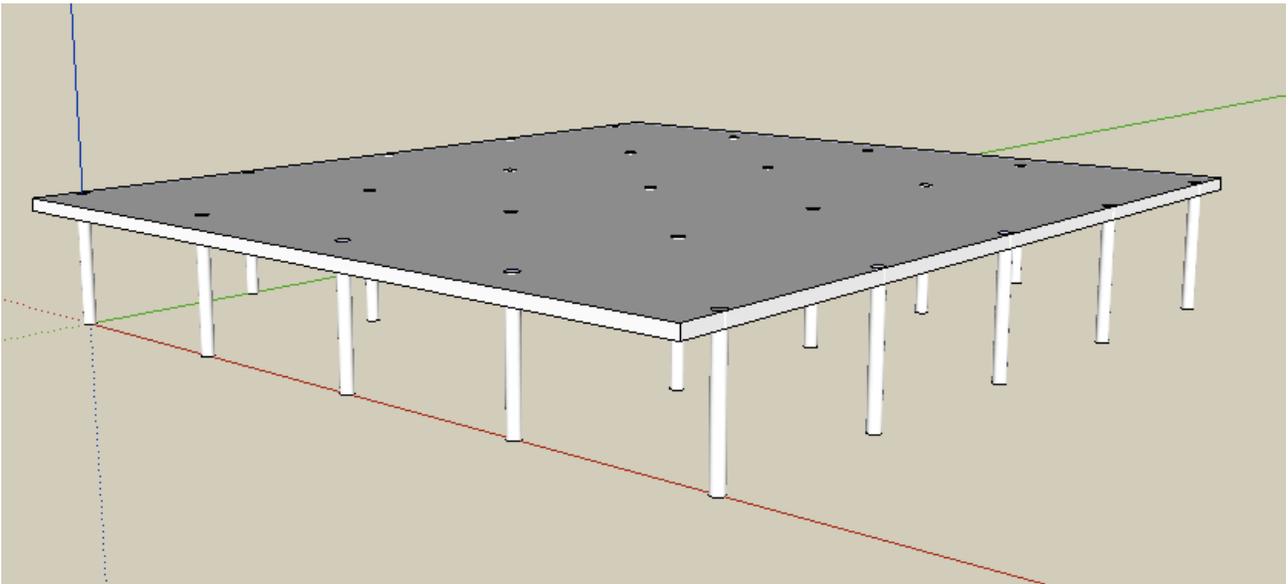

General

Name: Pilotis

Description:

Alignment

Glue to: None   Set Component Axes

☐ Cut opening
☐ Always face camera
☐ Shadows face sun

☑ Replace selection with component

Cancel   Create

8. Now you can draw a rectangle from the outside corner to the outside corner of the lines you just drew.
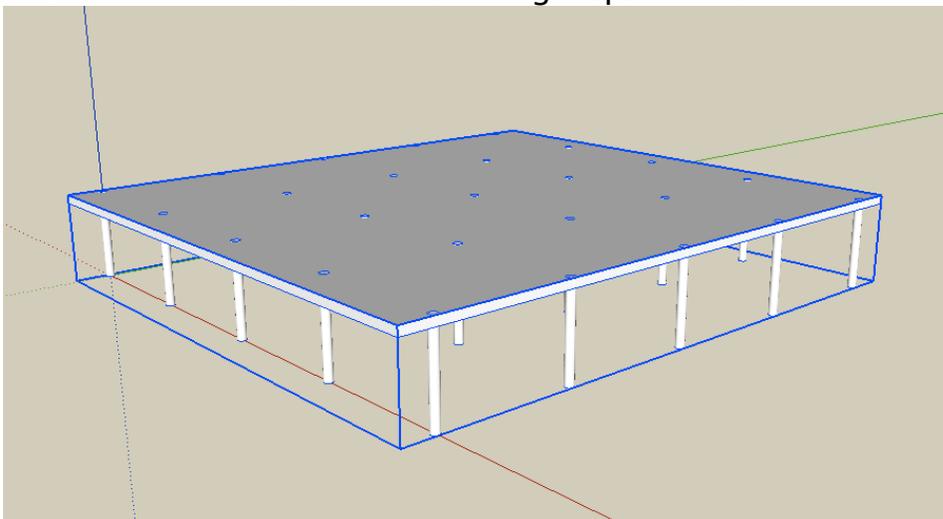

Endpoint in Component
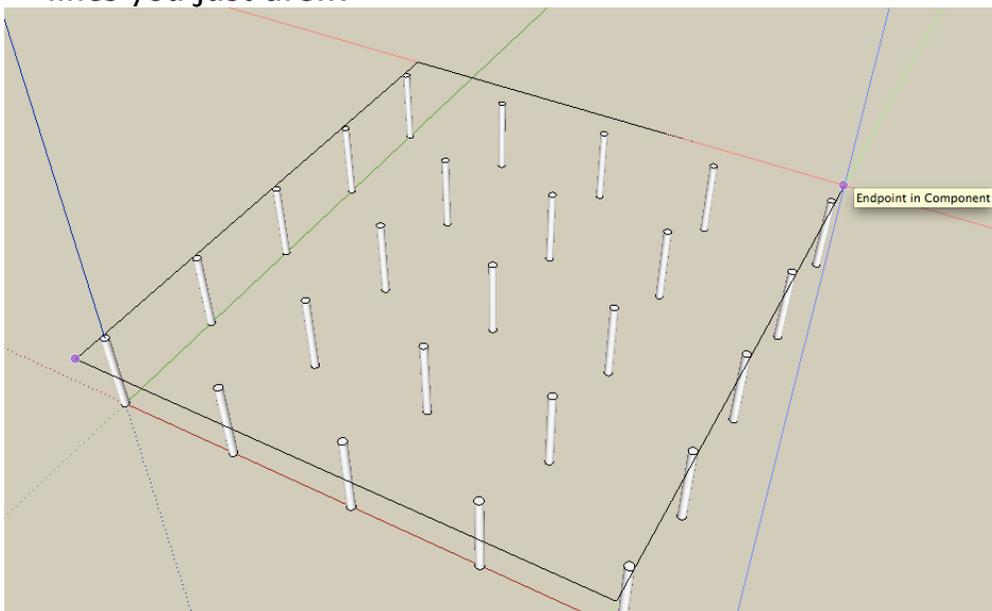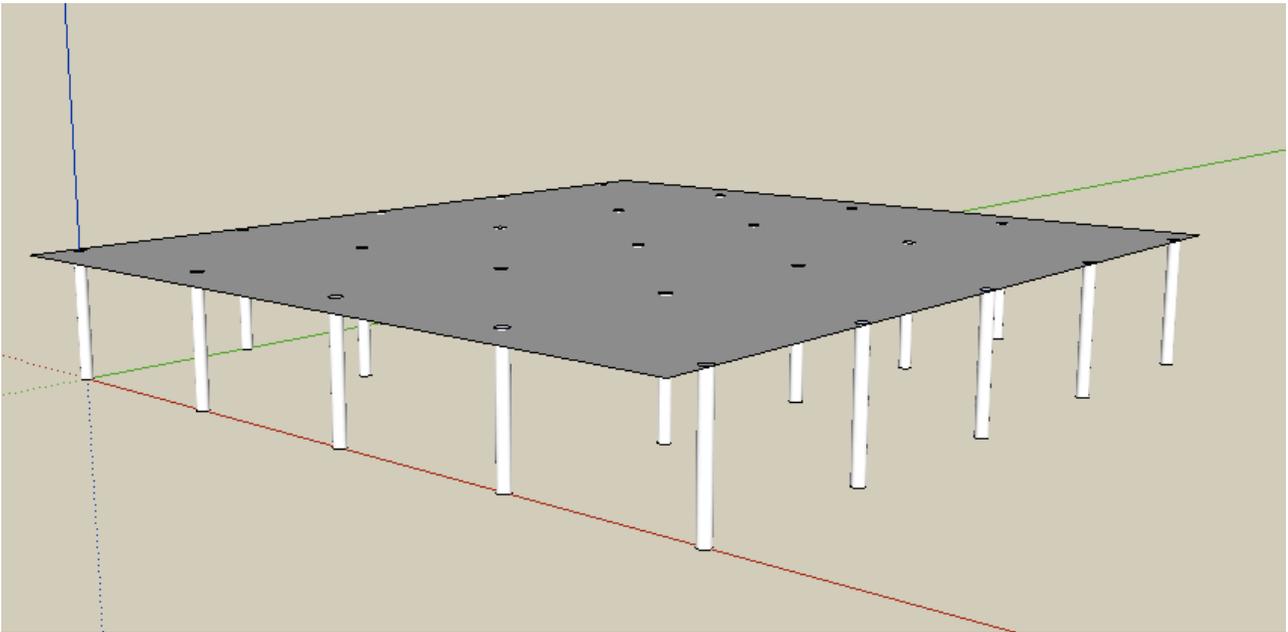
9. Pull this face downward 1'.

10.   Select all this and turn it into a group. That creates the basic structure.

11. Now we want to build a basic spiral staircase. First go to the TOP view and off to the side, draw a circle with a 3'6 radius. Remember to drag downward along an axis. Draw a line across the middle of the circle, being sure that it goes directly across from one side to the other, from an endpoint to an endpoint. Then draw the other lines as shown. They all go from the midpoint to one of the endpoints on the outside of the circle.
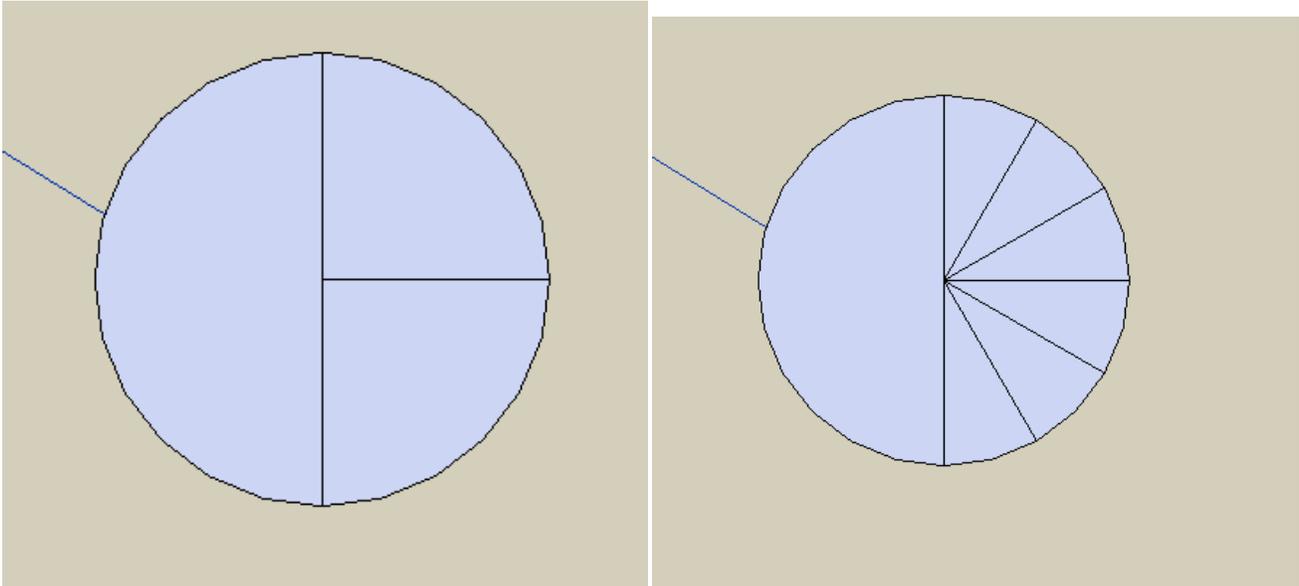

12. Draw two horizontal lines out from the top and bottom endpoint here, 7' long. Connect them, and erase the part of the circle as shown.
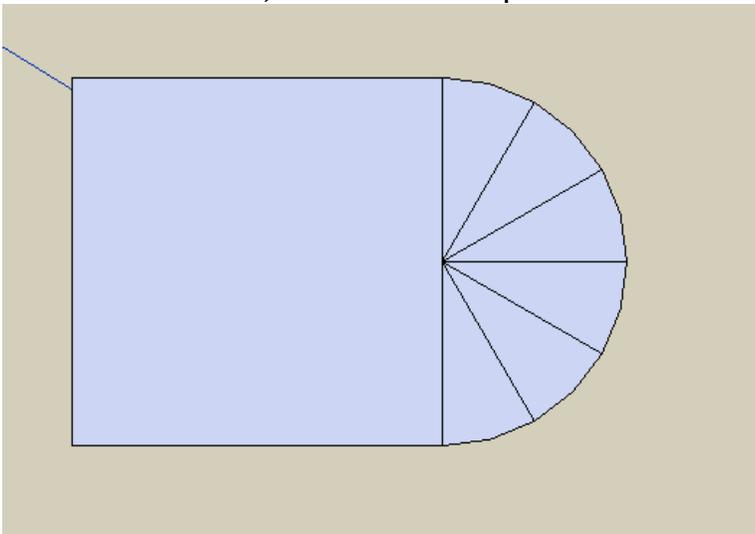
13.   Select the left edge and move>copy that over 1', and enter 6x for the number of copies. This creates the main shape of the stairs.
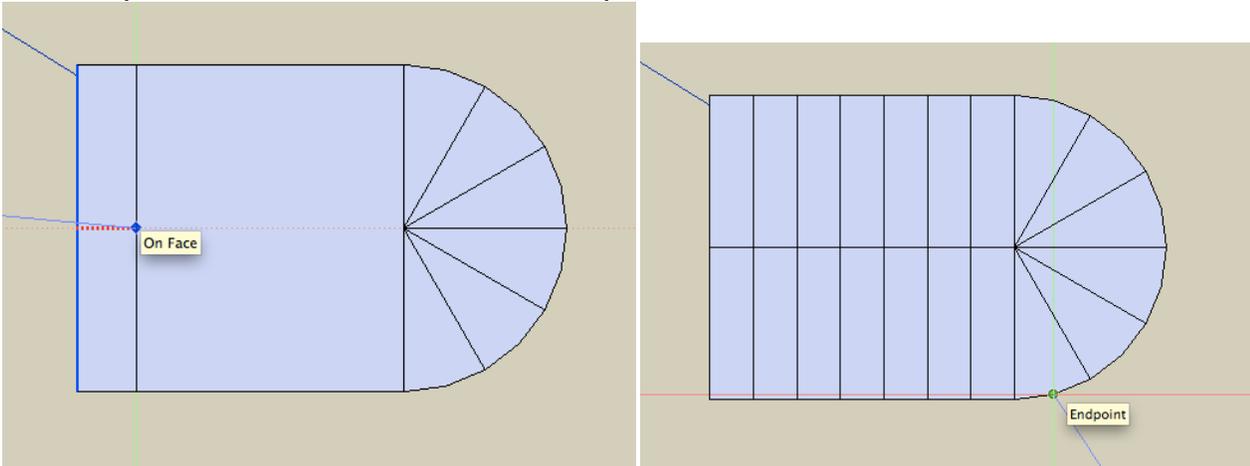
14.   Orbit so you can see the stairs as shown. Pull up the first stair 6 inches. Then pull up the second stair to match it. Then, pull the SECOND stair up another 6 inches. This process will be repeated for every stair.
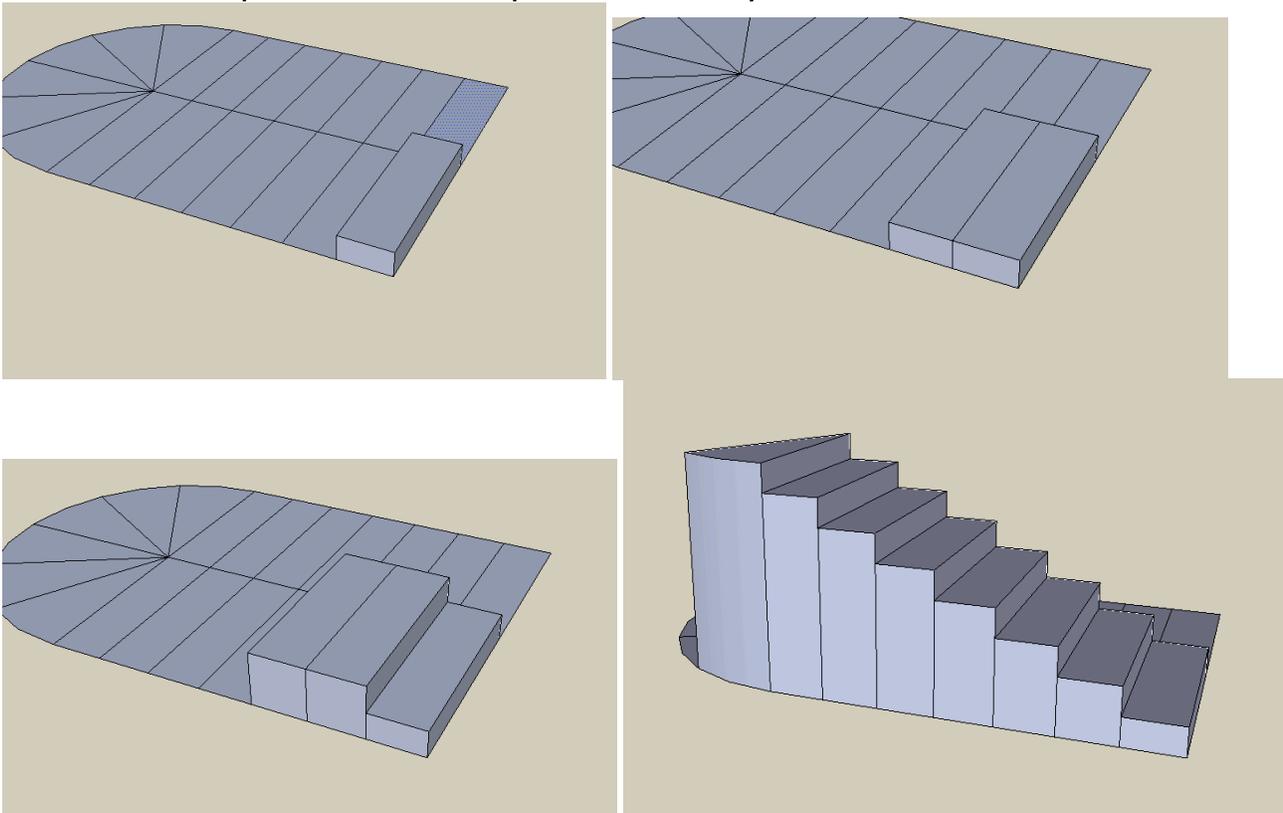
15. When you come around to the other side, you'll have to first pull it up as high as it will go (matching the stair on the opposite side, then pull it again to match the highest stair, then pull it up another 6 inches as before. Repeat this until you finish for each stair.

Offset limited to –3' 6"
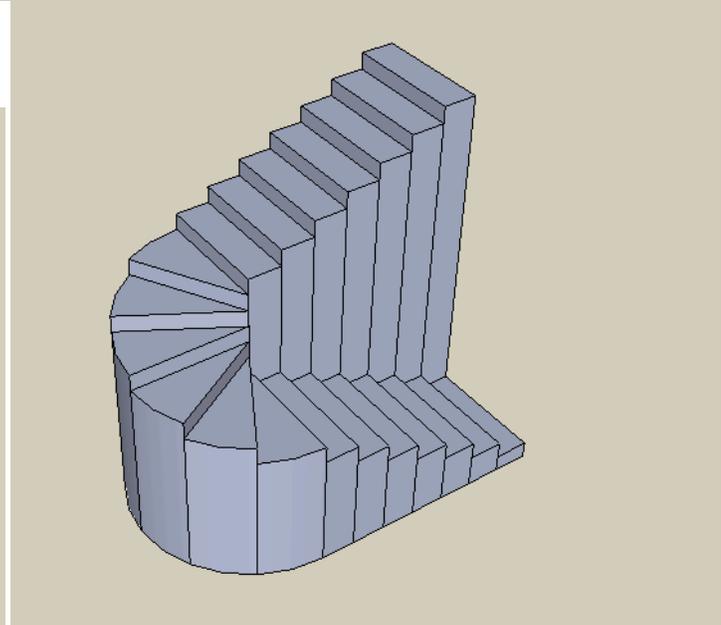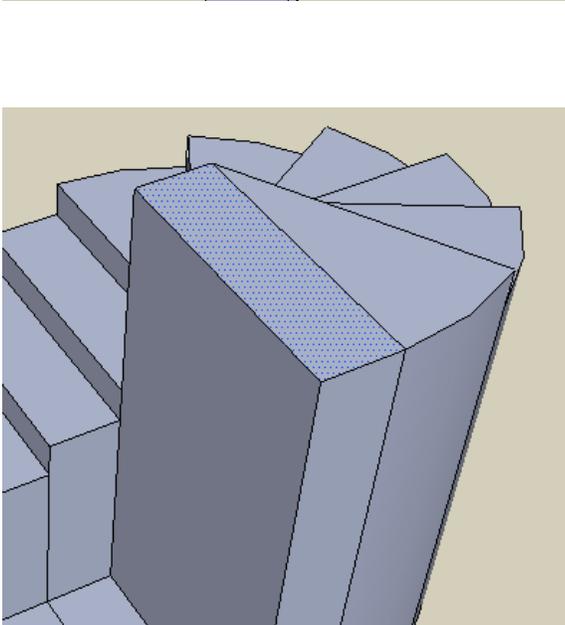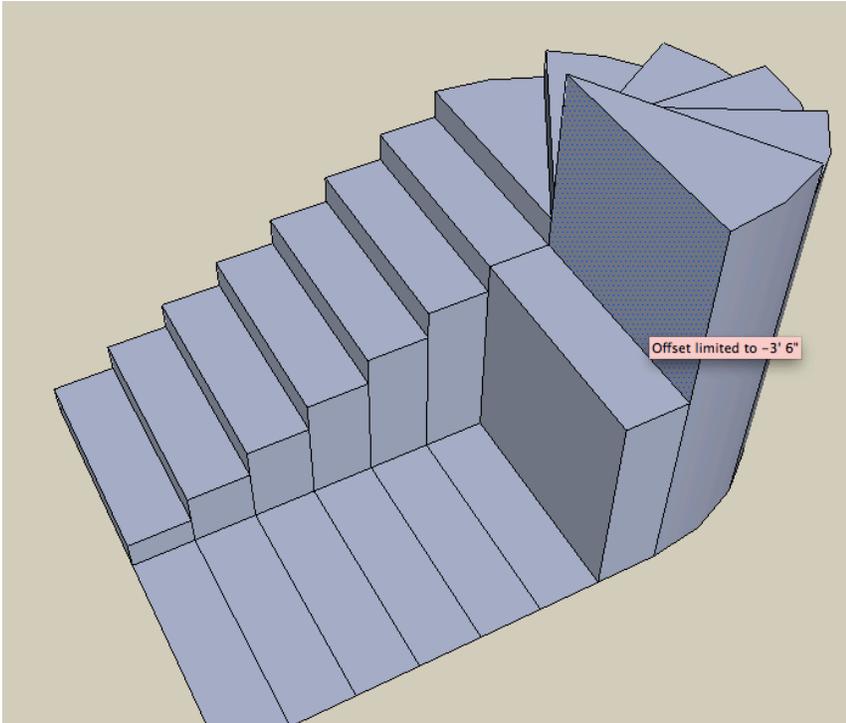
16. We will refine this staircase in the next part.