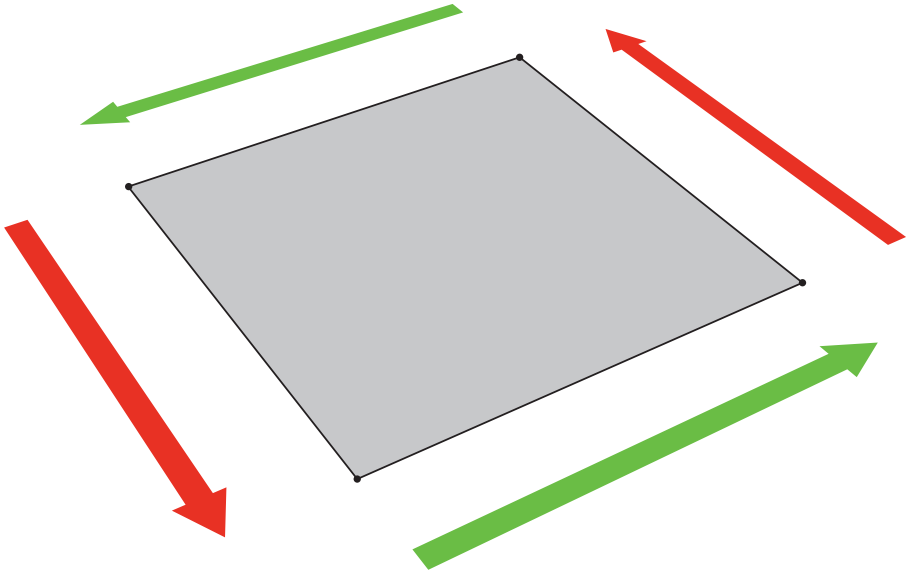
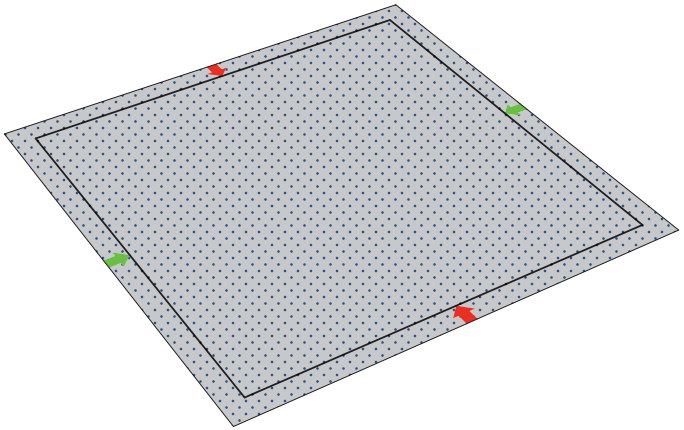
Introduction to SketchUp

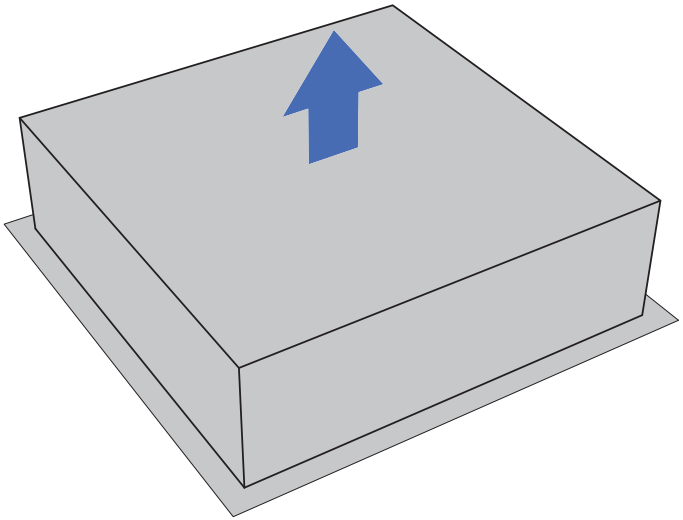
- SketchUp is a **line and surface** based program. The simplest surface you can make is a triangle by drawing three connected lines.
- Depressing the roller ball allows you to **rotate**. Holding shift while doing so allows you to **pan**. Rolling the roller ball allows you to **zoom**.
- When using the pencil tool, holding "shift" **locks you onto an axis**. The arrow keys can also be used to lock you onto an axis.
- While locked onto an axis, moving the cursor to an existing point will **align you to that point** along that axis.
- You can have lines without a surface, but **not a surface without lines**. If you erase a line bounding a surface, that surface will disappear.
- The simplest way to **draw a volume** it is draw a surface with the pen tool and extrude it with the push-pull tool.
- You can only push-pull surfaces perpendicular to themselves.
- **Double clicking** a surface will also select all lines that bound it. **Triple clicking** a surface will select all attached lines and surfaces.
- Lines and surfaces should always be drawn on "**Layer 0**."
- Groups are the way you organize collections of lines and surfaces that you wish to modify discretely or turn on and off.
- No object should typically be nested more than **3-4 groups deep**. After selecting your lines and surfaces, right click for the "group" option.
- Groups are then managed by layers. To **place a group on a layer**, select the group and then change its layer in the "Entity Info" window.
- Components are groups that when one is modified, all other copies are changed as well. To **make a component**, first make a group. Select and right-click on the group, and choose "Make Component." If you want modify only some of a component, select all those you wish to modify, then right-click and choose "Make Unique."
- To bring an aerial image in as a base, save the image as a JPEG. Under "File", choose "Import" and change the file extension to ".jpg." Select the file, then double-click to place it in the model. Measure a known distance on the image, and use a calculator to figure out the scaling factor. Select the image with the arrow, then select the "scale" tool. Grab any green corner box, then use the keyboard to input the desired scale.



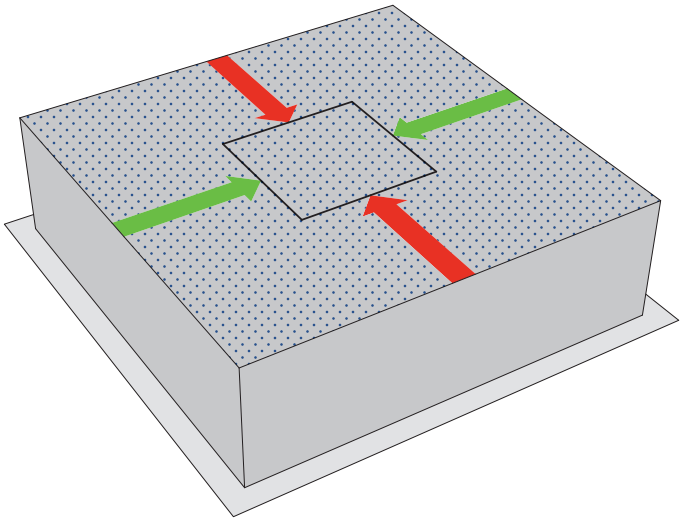
1 Using the pencil tool, lock onto the red and green axes to trace out a 200’ by 200’ block



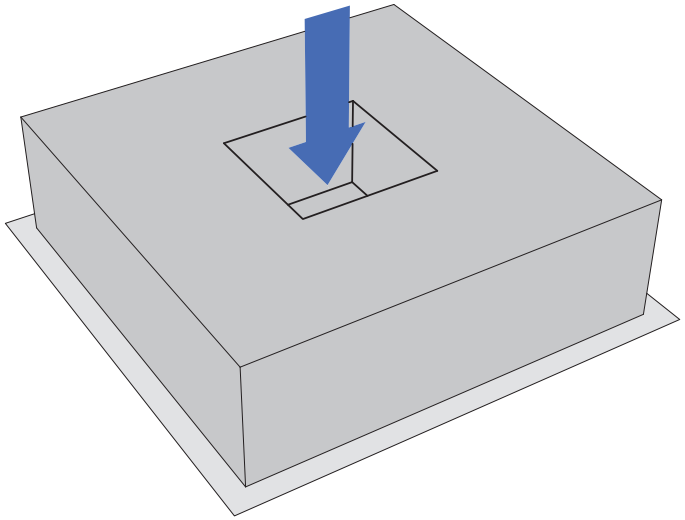
2 Using the offset tool, offset 10’ in from the edges of the square to create a “sidewalk”



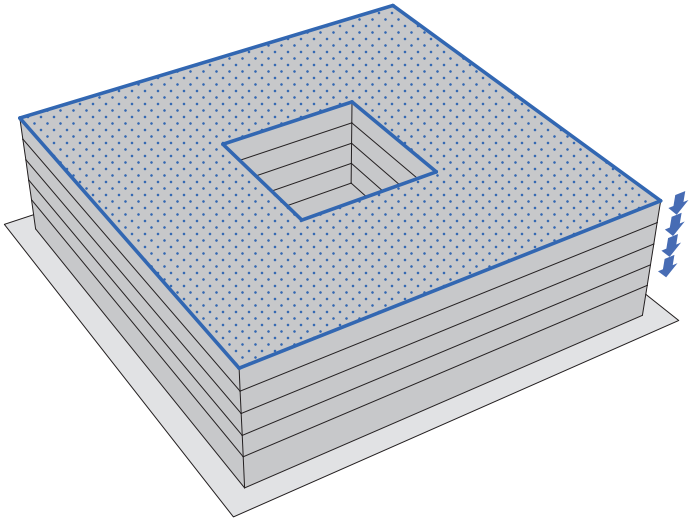
3 Using the push-pull tool, extrude the central square to 55’ along the blue axis



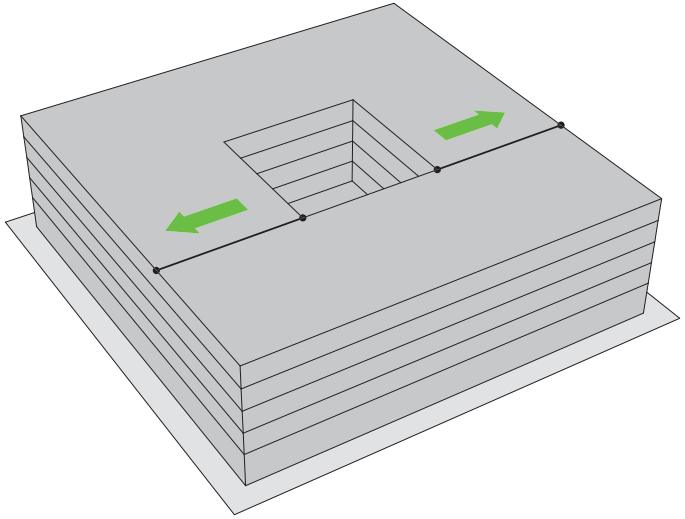
4 Using the offset tool, offset 60’ from the edge to match a typical residential depth



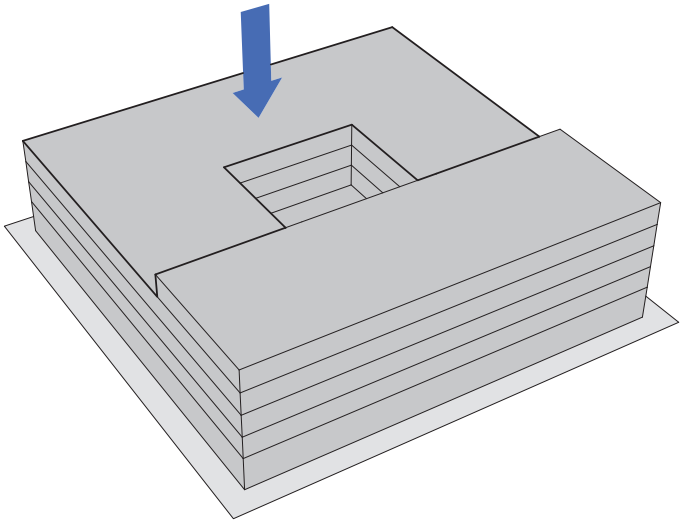
5 Using the push-pull tool, depress the central square 40’ to create a light well in the middle



6 Use the arrow tool to double-click the upper surface, and use the move tool to copy it 10’



7 Using the pencil too, draw 2 lines along the green axis from the light well to the edges



8 Using the push-pull tool, depress the rear of the top floor 10’ to simulate a lower height