ARCH@UCSD

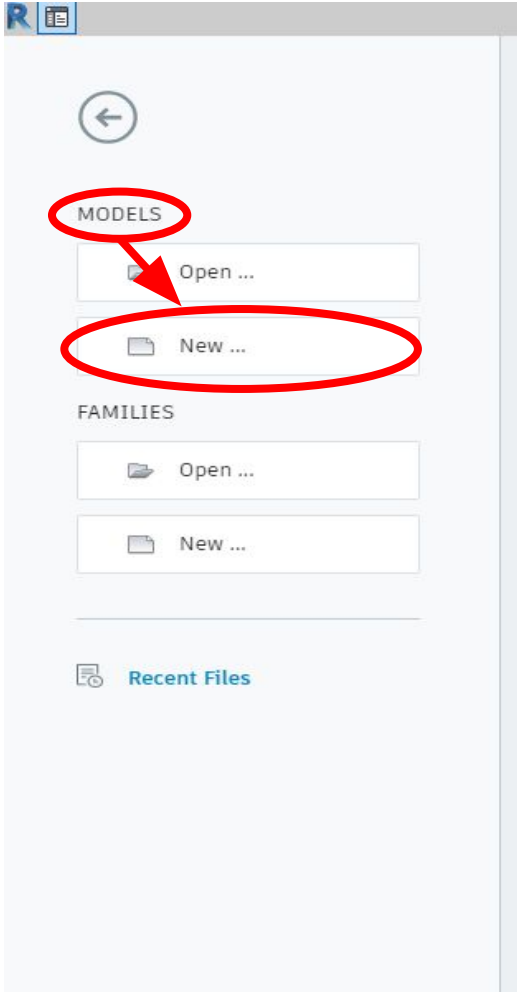
Revit Basics:

Creating a Simple House

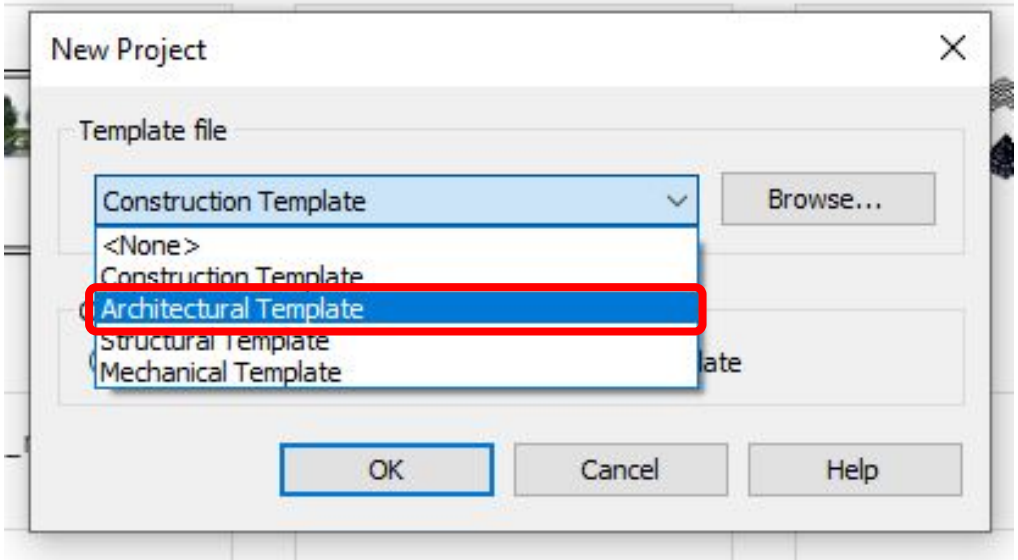
Slides Created By: Doris Liu

Creating a New Project

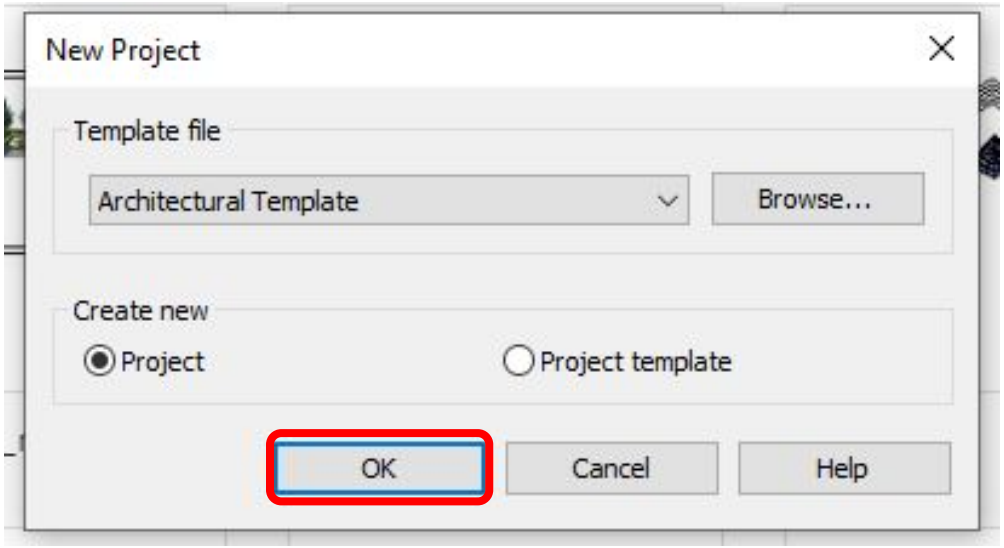
Under *"Models"*
Select "New..."



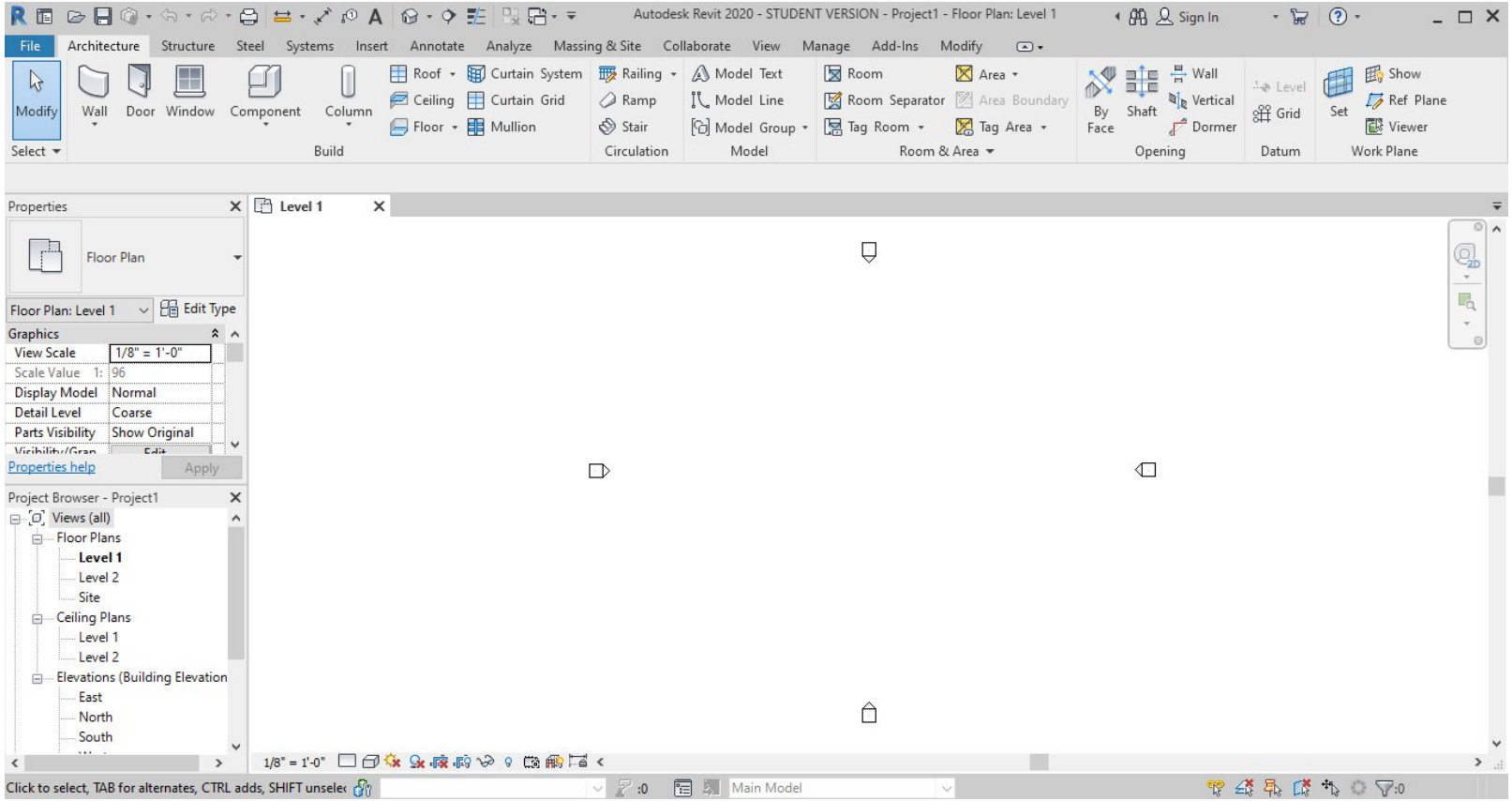
Choose *"Architectural Template"*



Leave the *default* options and click *"ok"*



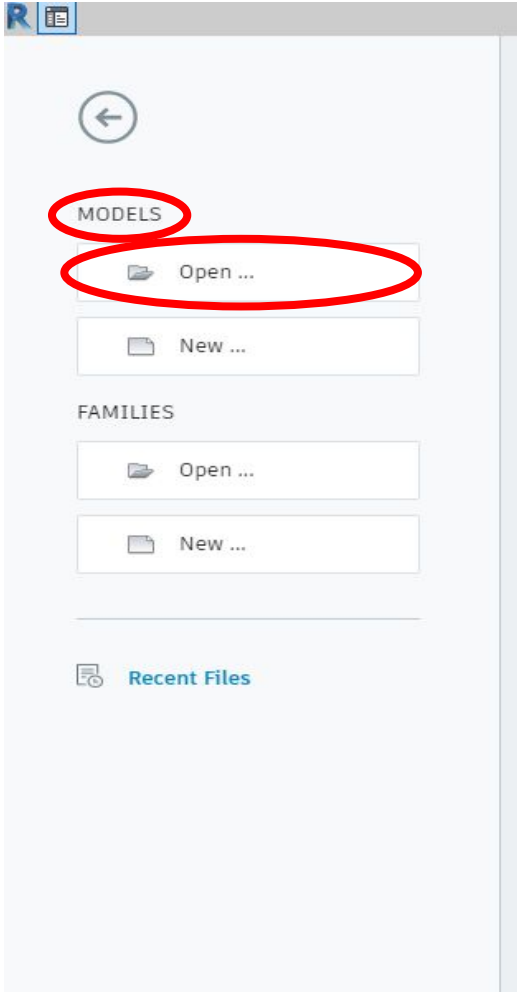
New *Blank* Project



Opening an Existing Project

Under *"Models"* select *"Open..."*

Note*: Find your file where you stored it in your computer. It could also be under *"Recent Files"*, to the right of this menu.



Basic Functions

(These things would be quite good to know)

Remember to *SAVE YOUR PROJECT* often!

How to *Zoom In*:

Scroll *Mouse Wheel* Up

How to *Zoom Out*:

Scroll *Mouse Wheel* Down

How to *Pan*:

Use the *Vertical* & *Horizontal Scroll Bars*

OR

Hold down *Mouse Wheel* & move mouse around

How to *Zoom* & *Pan*:

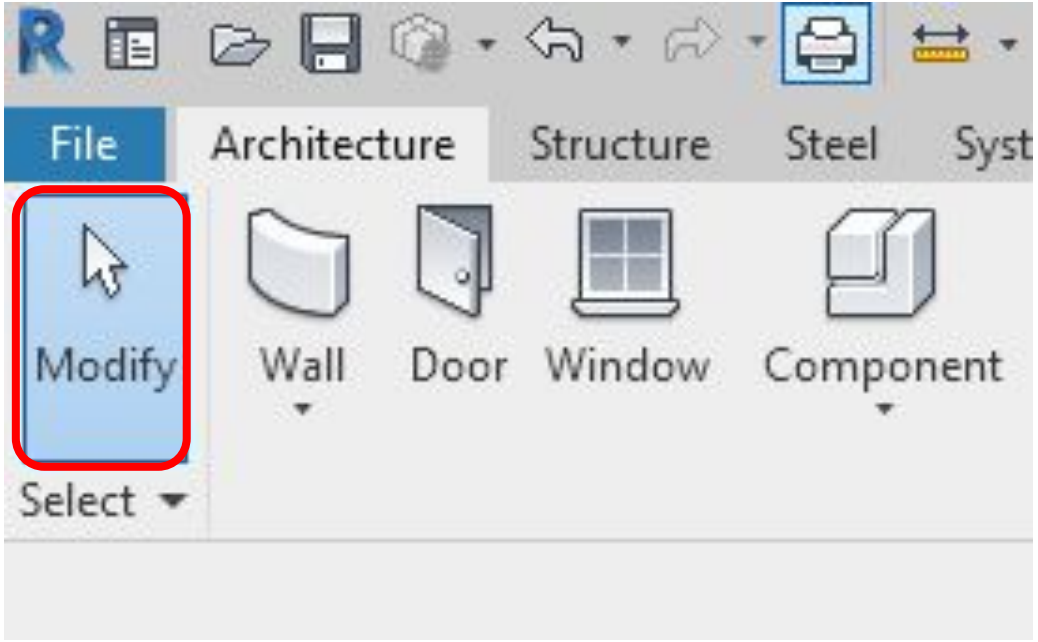
Scroll *Mouse Wheel* to zoom as usual and to pan while zooming, *Move Mouse* to different part of screen and then zoom.

How to *Rotate* Components:

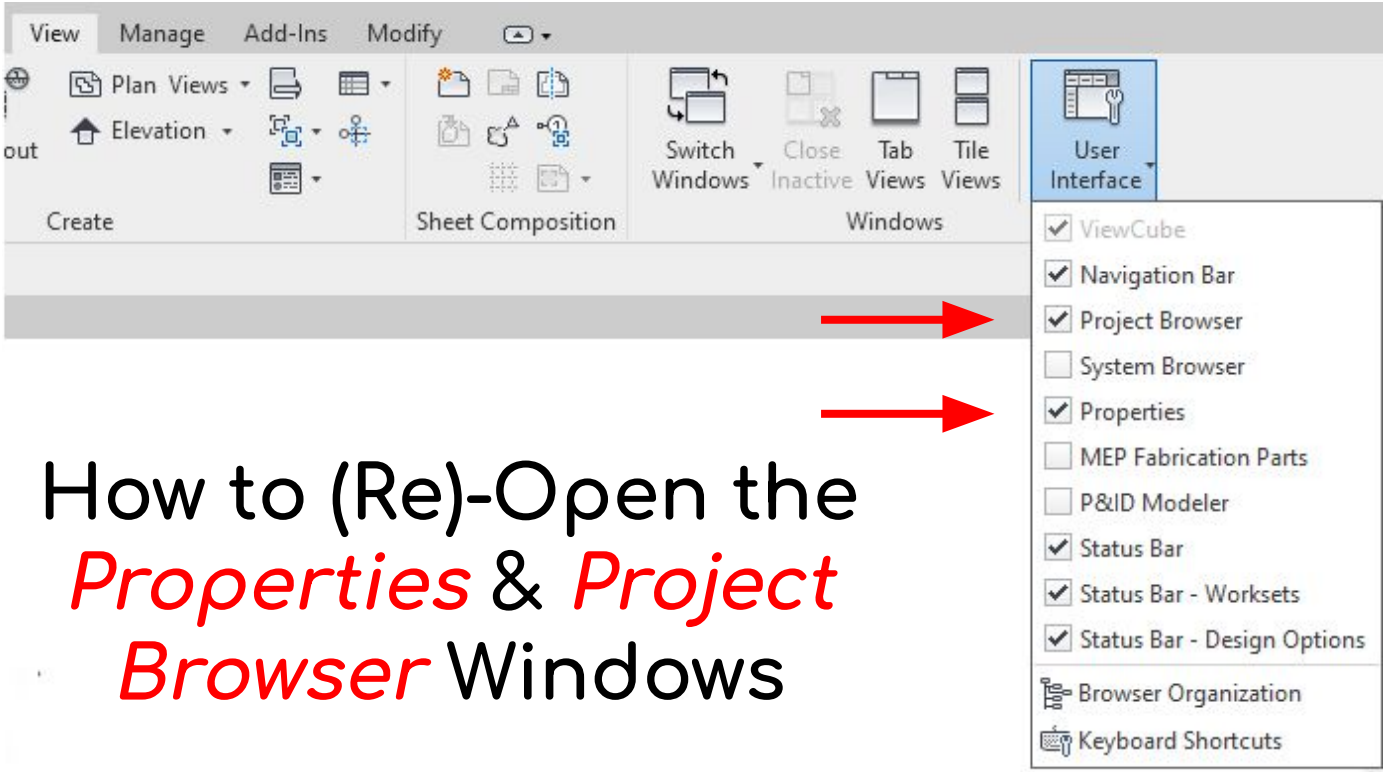
Use the *Spacebar* to rotate furniture, & switch the direction doors and windows are facing.

Note*: Click on the *component first*, then the *spacebar*.

Press the *"ESC"* Key or *"Modify"* Option to exit out of a command



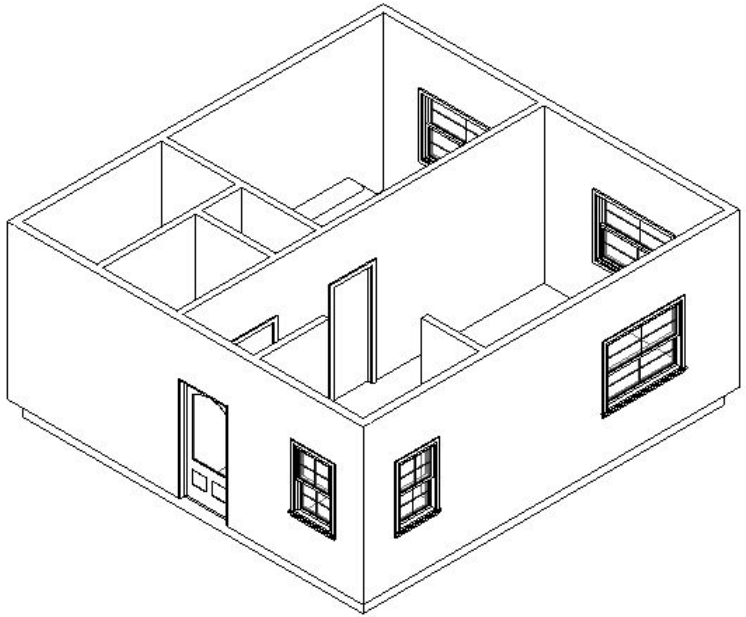
Note*: *Esc* could be pressed once or twice as needed.

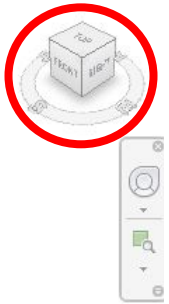


How to (Re)-Open the *Properties* & *Project Browser* Windows

Note*: *These are important windows* & if you accidentally close them, this is how to find it again. If project browser & properties are unchecked, *they need to be checked to be visible*.

How to *Rotate* in *3D-View*: Click & drag that cube with your mouse

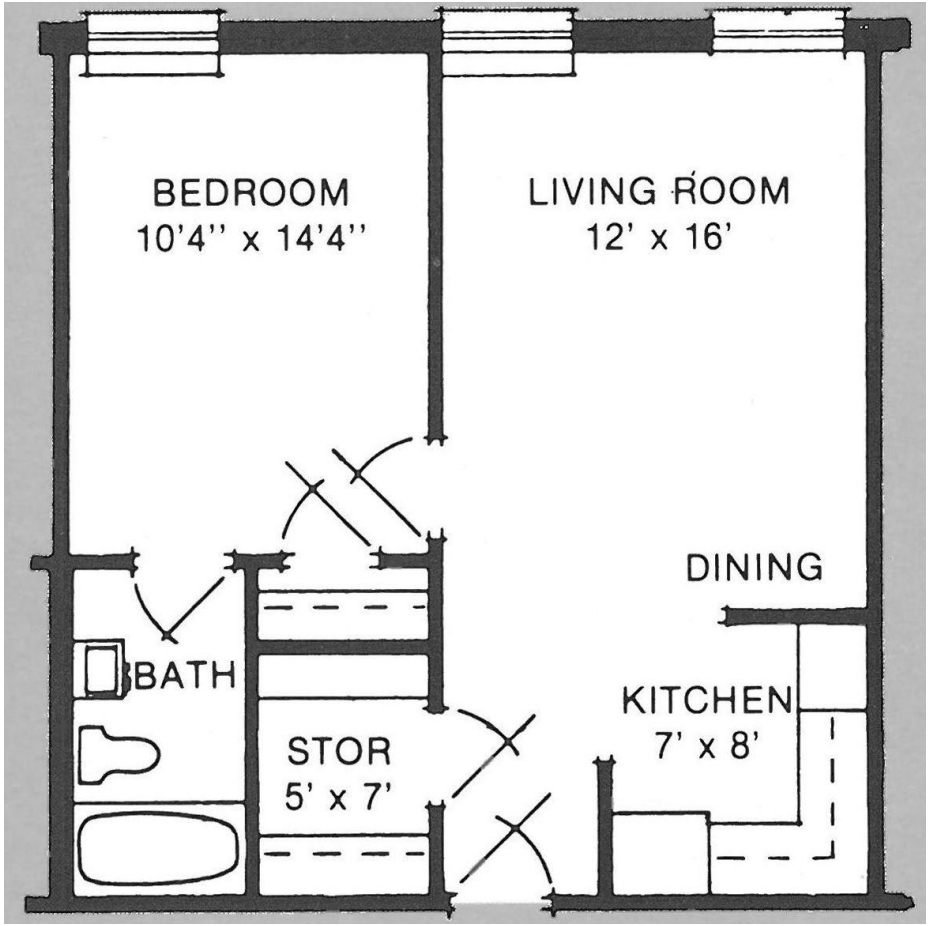




Note*: *Zooming* & *panning* stay the same in 2D & 3D view.

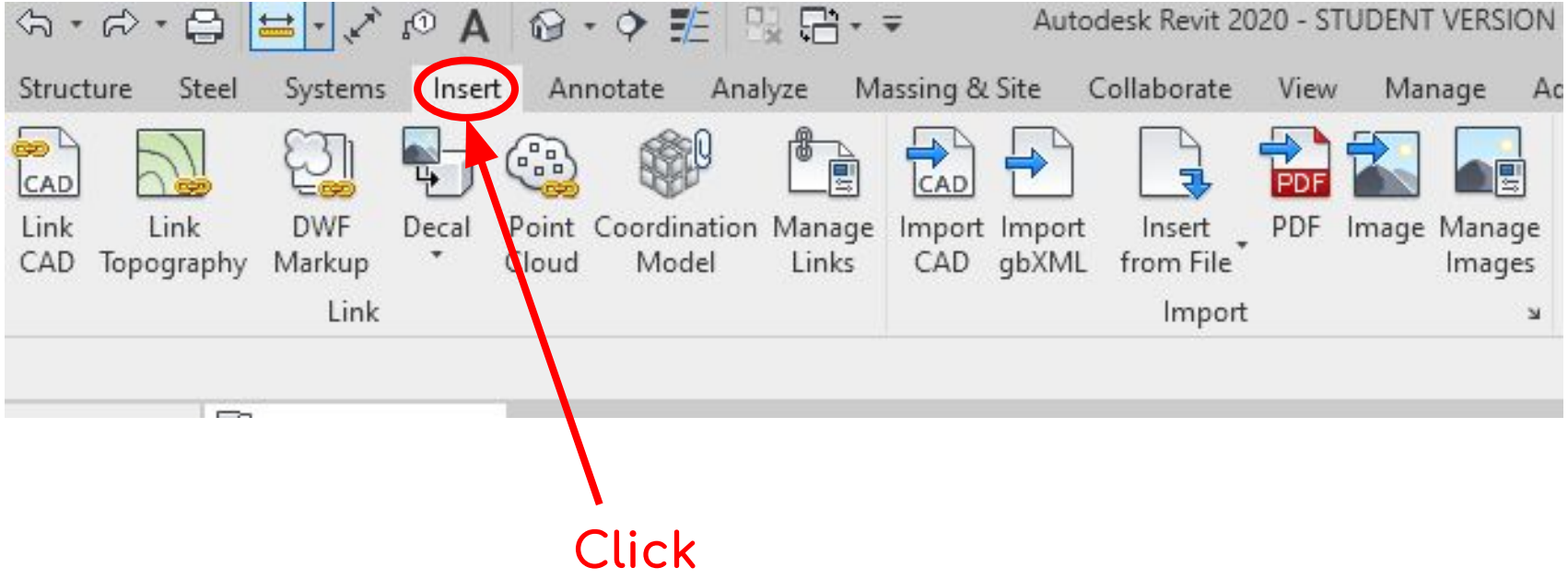
Inserting Floor Plan Image

Screenshot
this Floor Plan

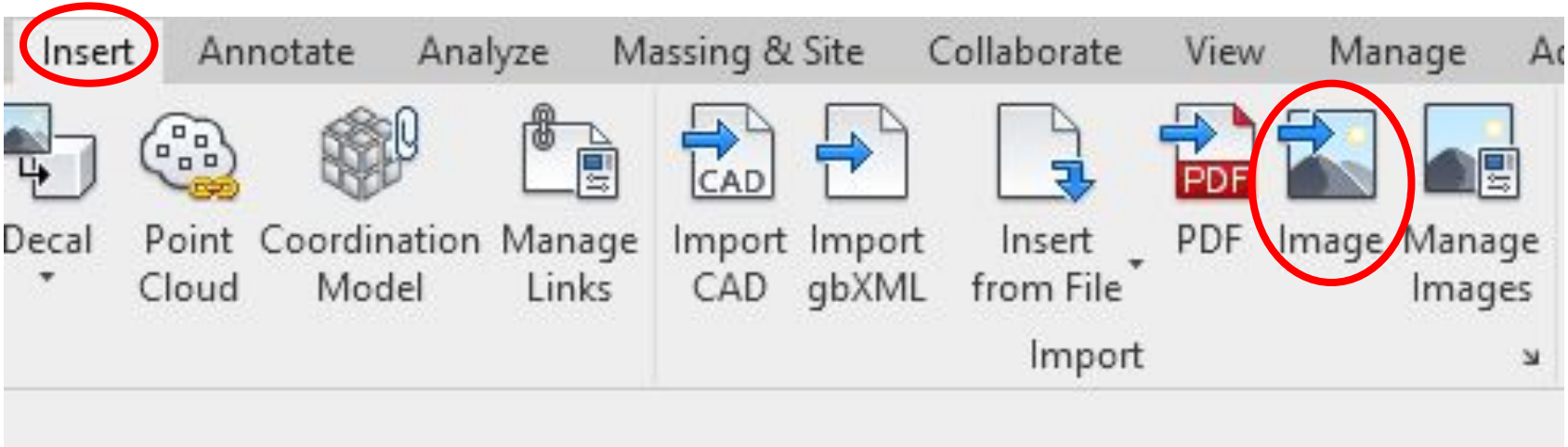


OG Image: https://i.pinimg.com/originals/86/11/5a/86115a1b4a95a091dff7de2da1ae20cf.jpg

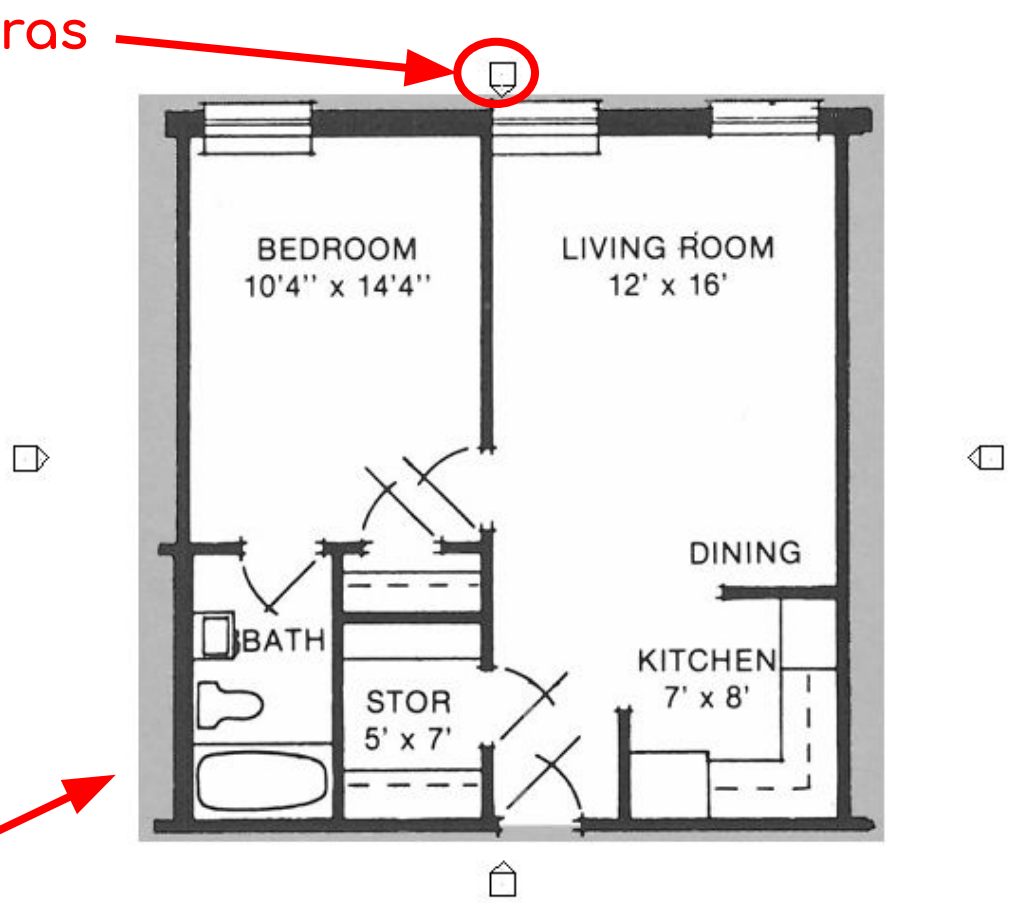
Go To *"Insert"* Tab



Insert *Image* from your files



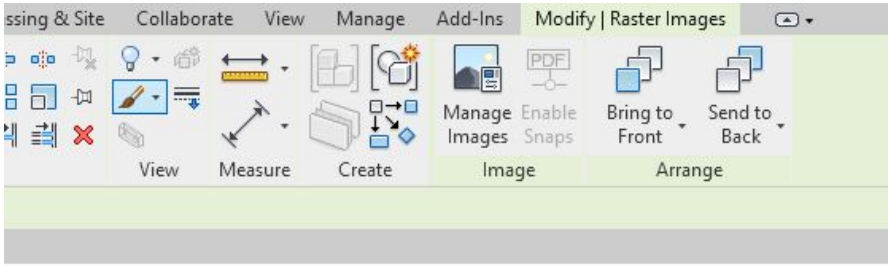
Place *Image* in the middle of the four *cameras*

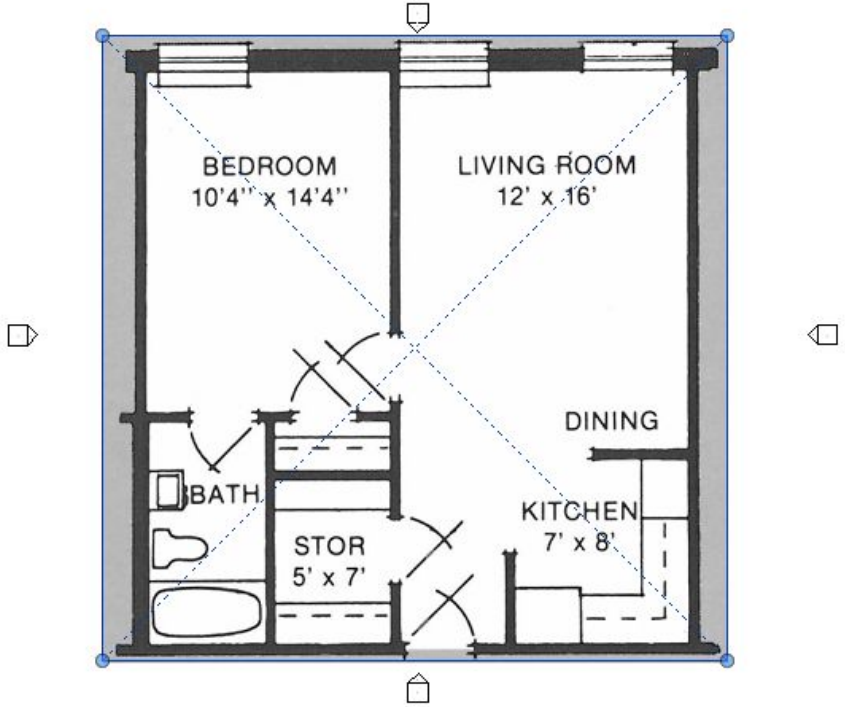


Scaling Floor Plan Image

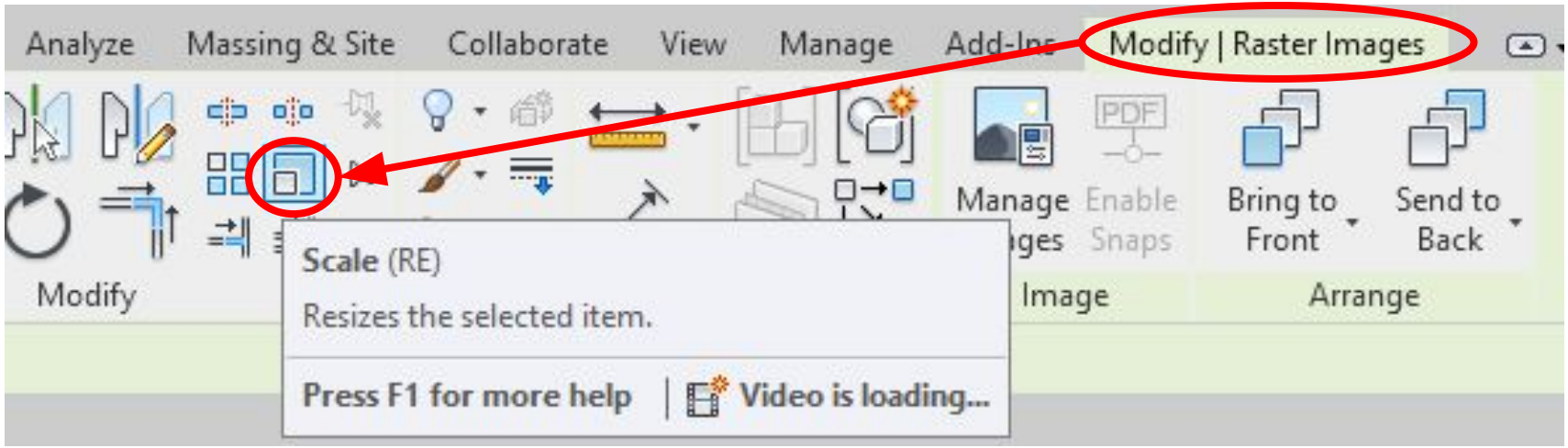
(This step may not be necessary for every image)

To scale, first select the *image*. A light dotted X should appear as shown.

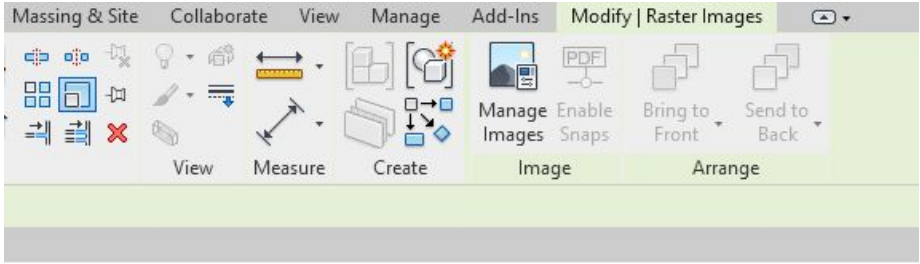


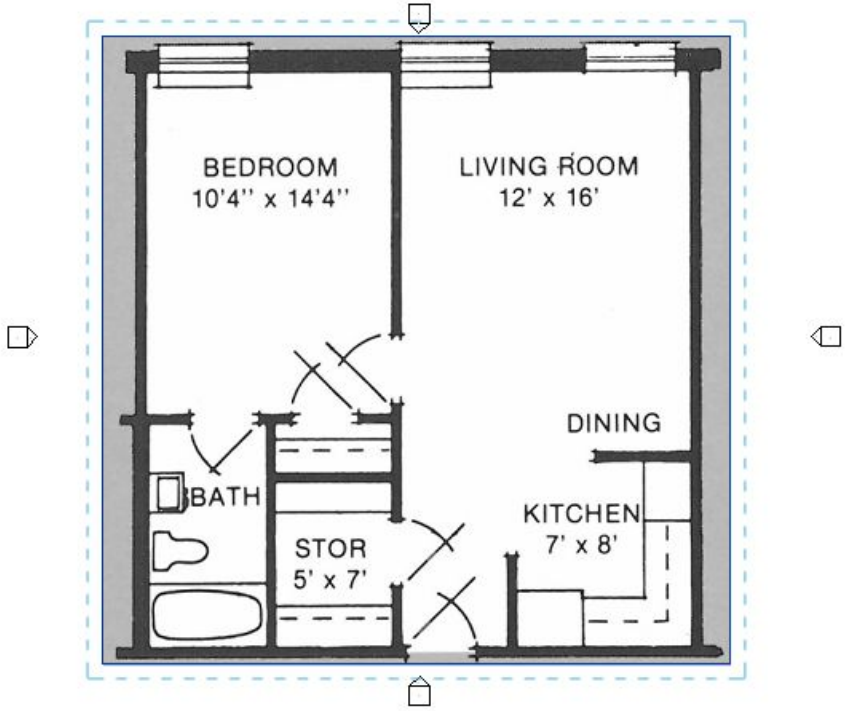


Under *"Modify | Raster Images"* select *"Scale"* Option

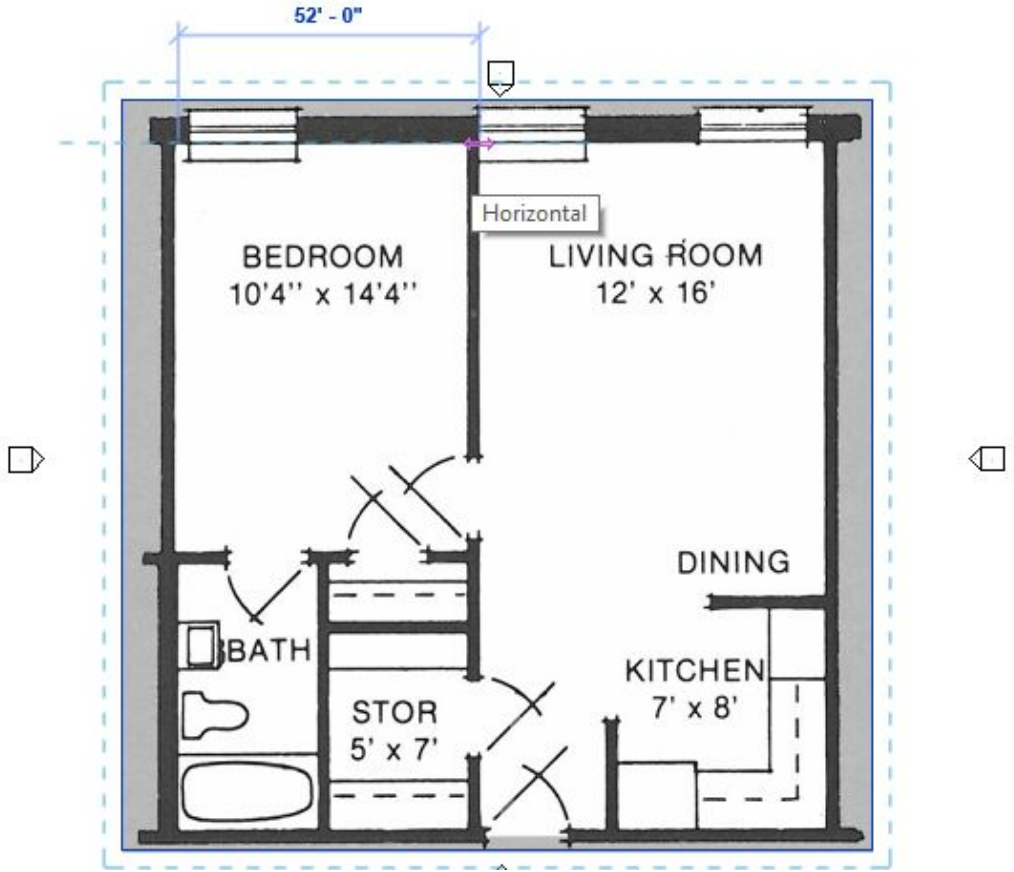


Once *"Scale"* is selected, a light dotted box should show up bordering the image



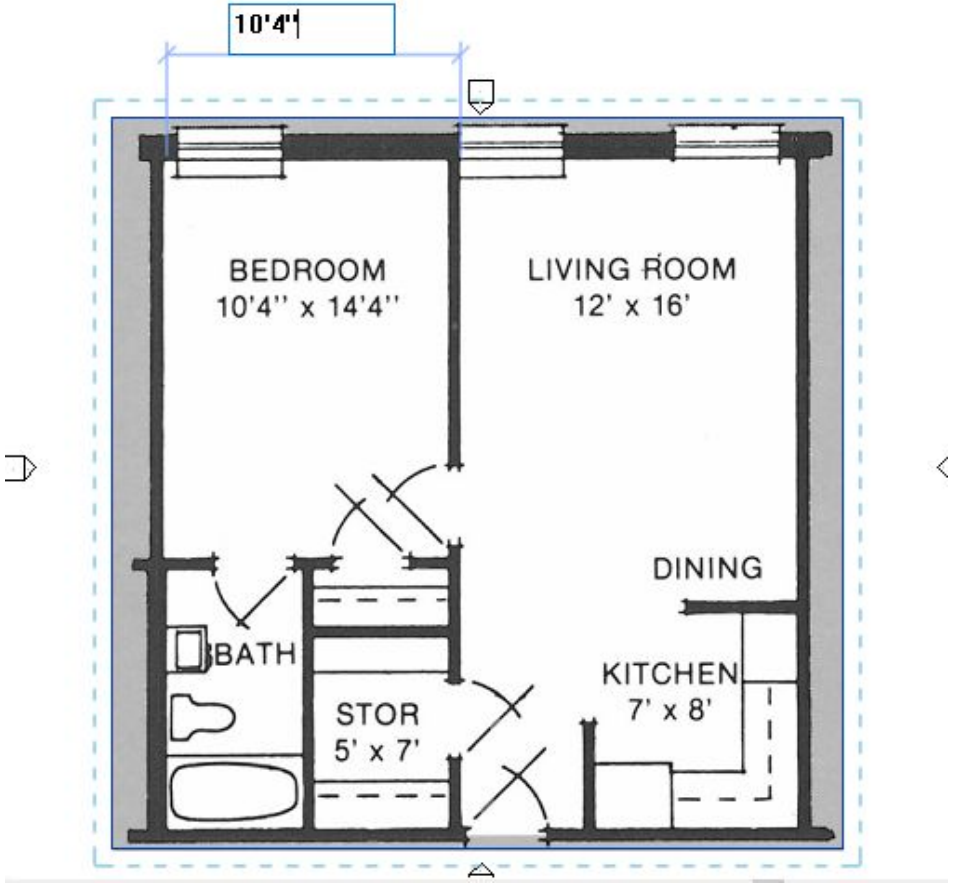


With *"Scale"* selected, choose a length of the floor plan & measure it to check current dimensions



Note*: When *scaling* begin measuring from inside corner of wall. *Click first corner* and *move mouse* to the *second corner* and *click* to *confirm the second corner*.

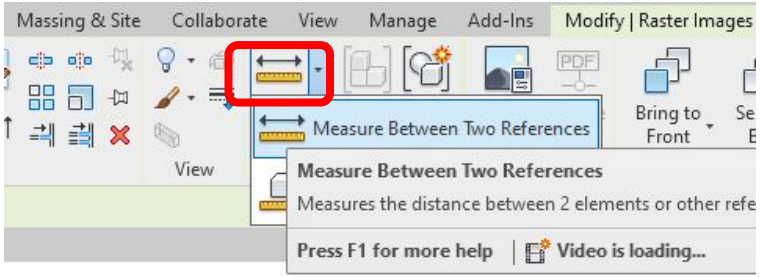
After viewing current dimension for length of choice, type in new dimension, *10’4”* (10 feet 4 inches)

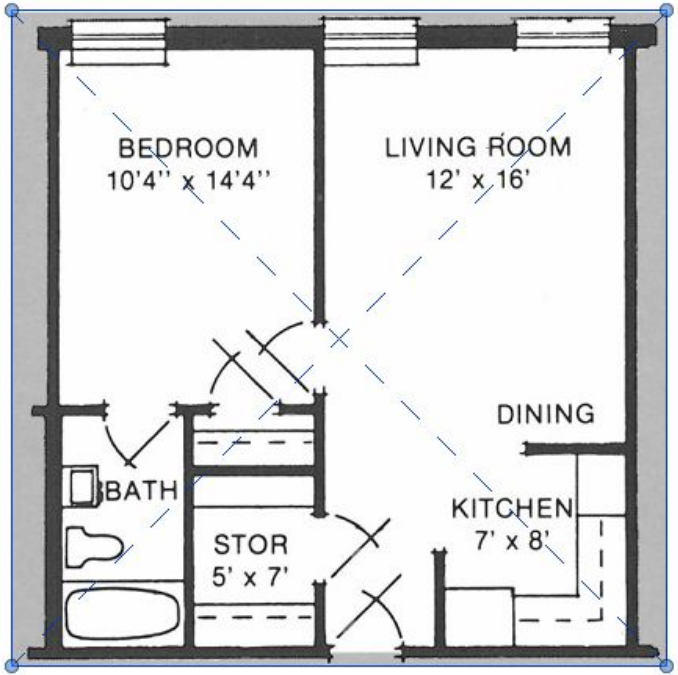


Note*: Type in *10’4”*. You *only need to do this once* and it *will scale the entire image*.

After typing new dimension, press *"Enter"* to confirm and the image will scale to the new dimensions.

Zoom in to image, *Select* image, under *"Modify | Raster Images"* Select the drop down menu, and choose *"Measure Between Two References"*

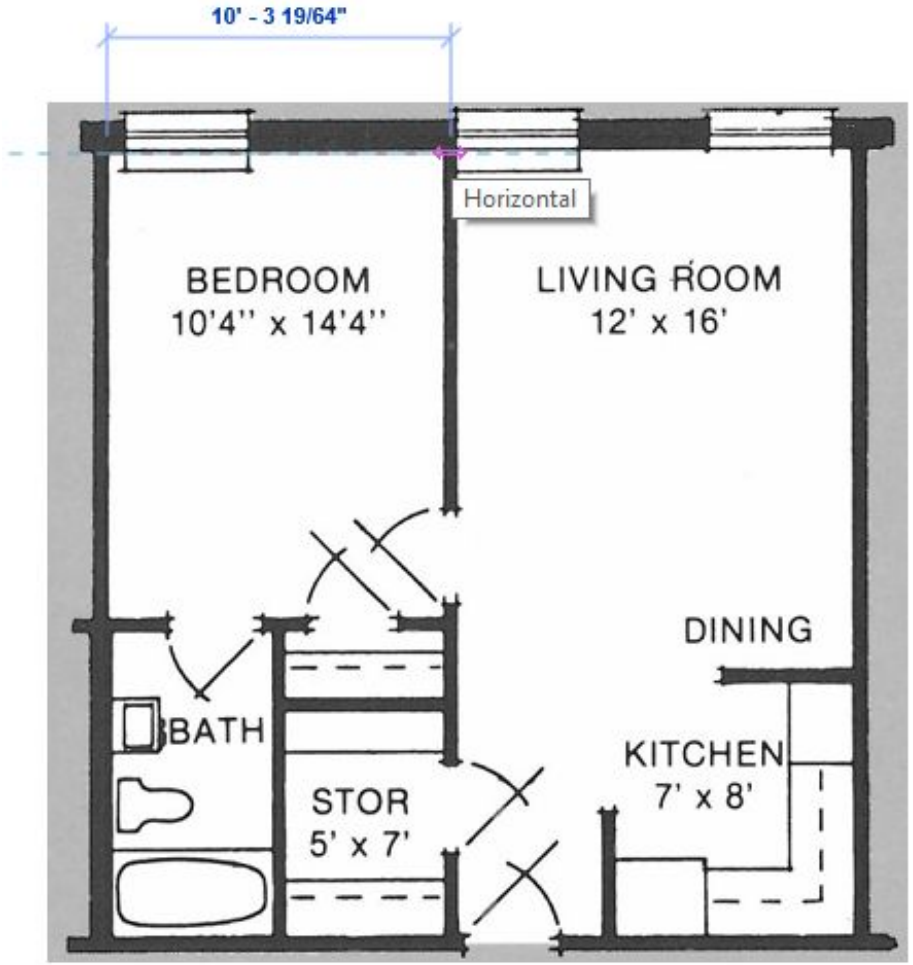




Note*: *This step isn't mandatory* but it is good practice to double check that it scaled correctly.

Measure the length that was recently modified during the scale and make sure it matches the dimensions shown in the image.

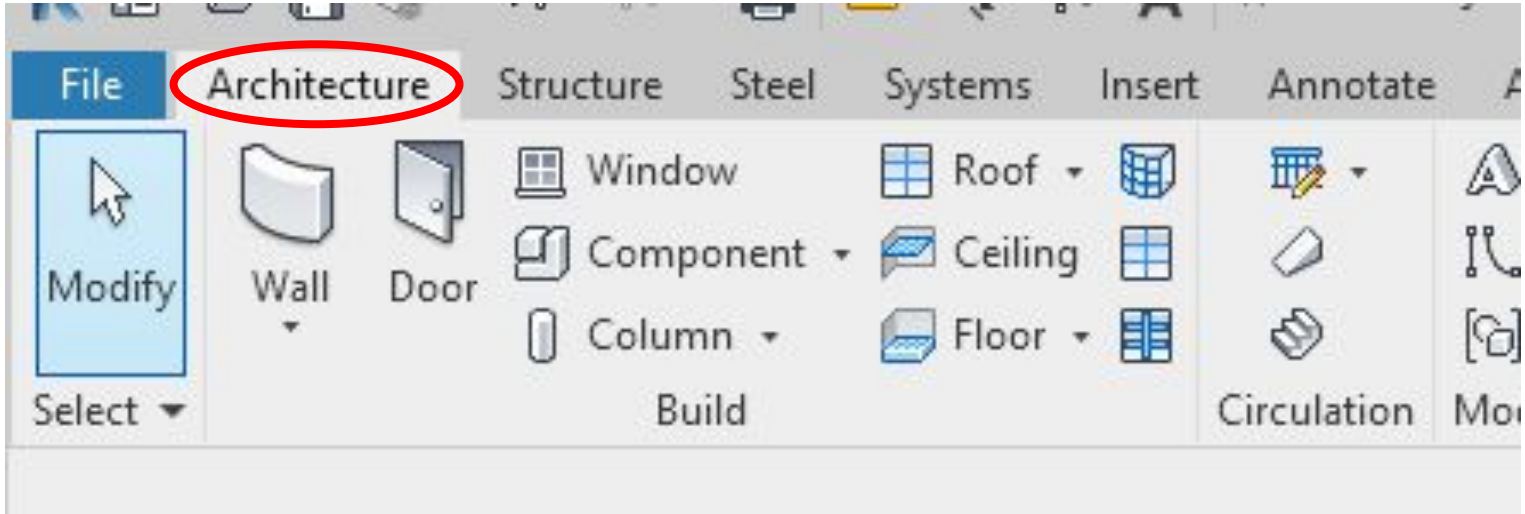
Note*: It *doesn't need to be exact* but as long as it is close enough, it is good.

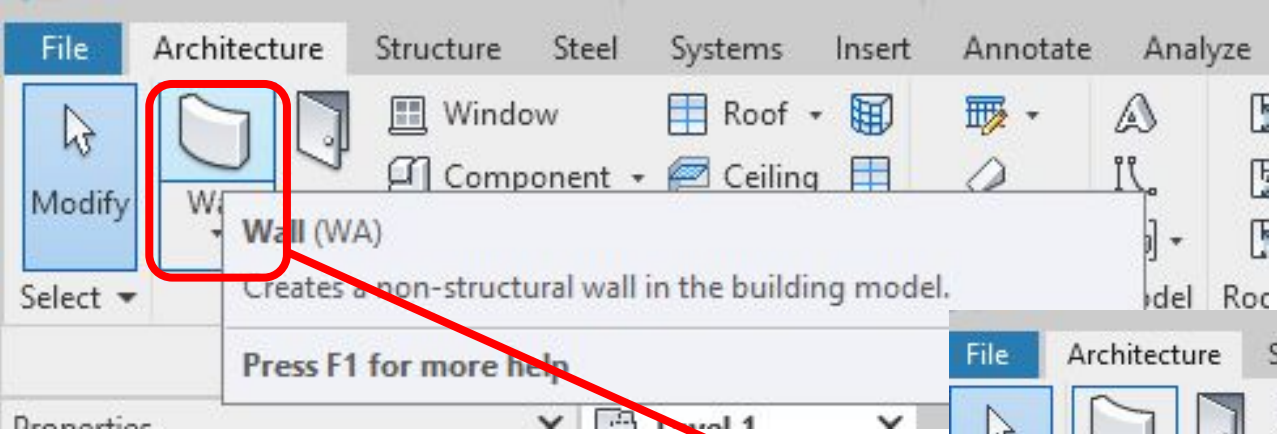


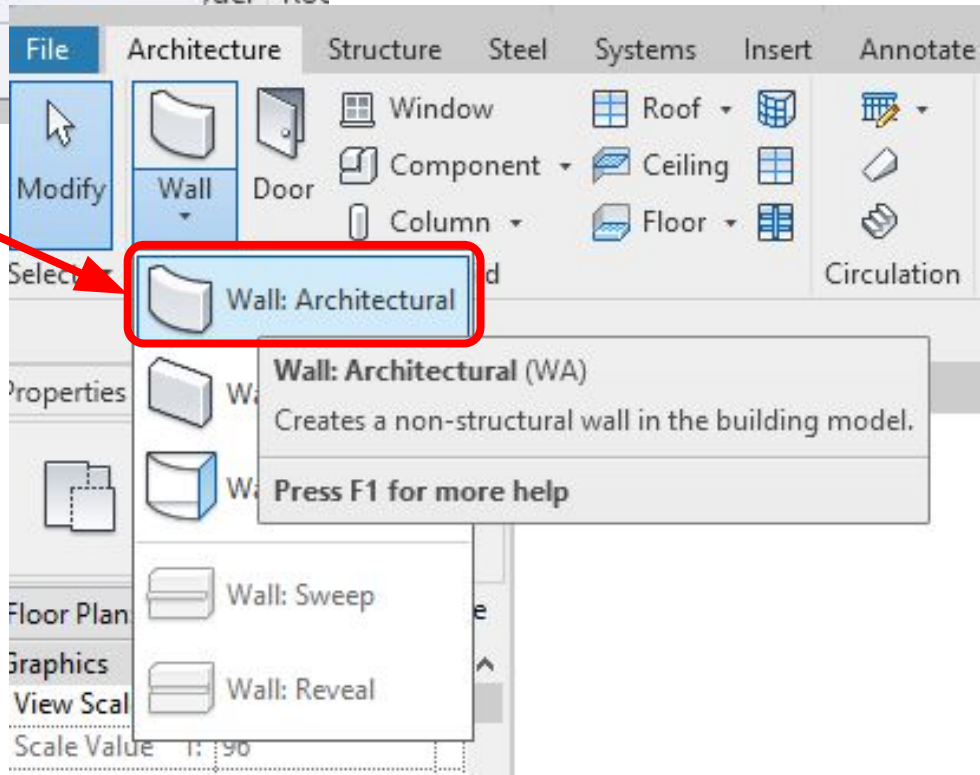
Drawing Exterior & Interior Walls

(Doesn't Need to Be Exact)

Go to *"Architecture"* Tab

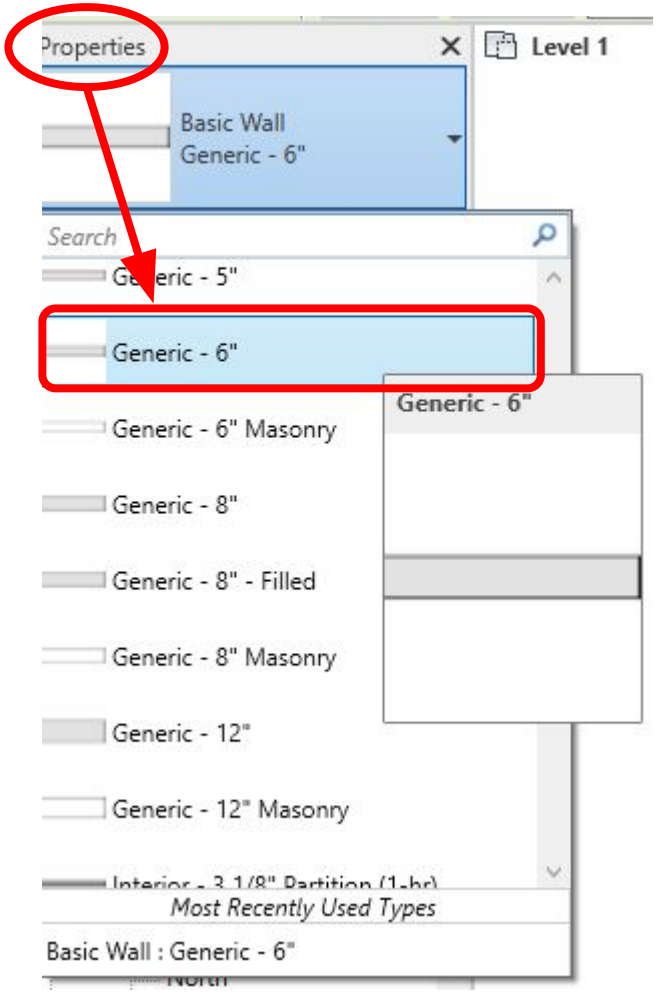


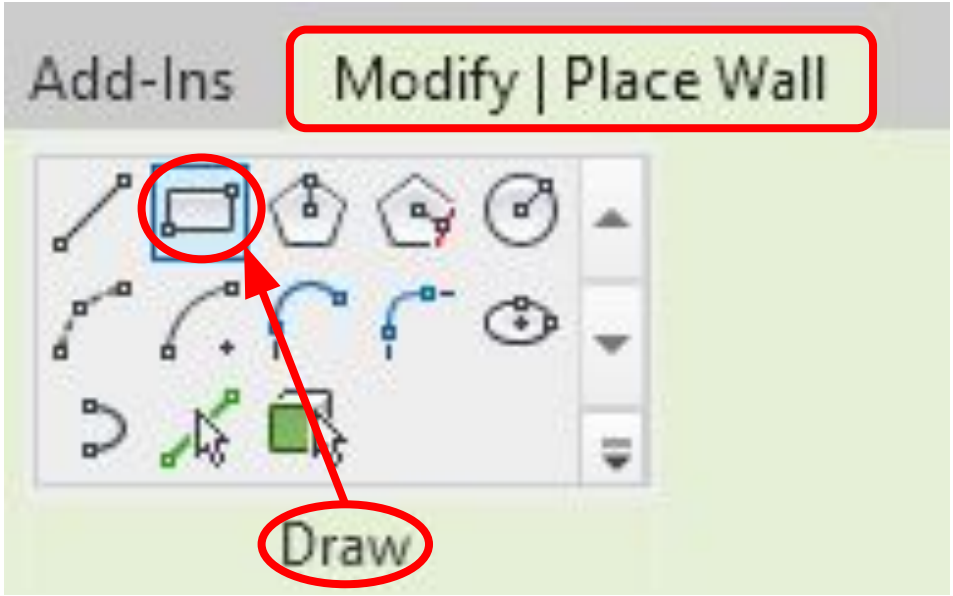




Choose *"Wall"* or Drop-Down Menu *"Wall: Architectural"* which is default & what you should choose

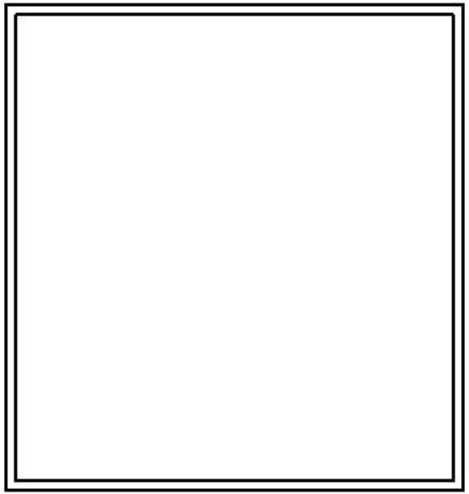
Go to *"Properties"* & Change Wall Type to *Generic - 6"* for *exterior wall*





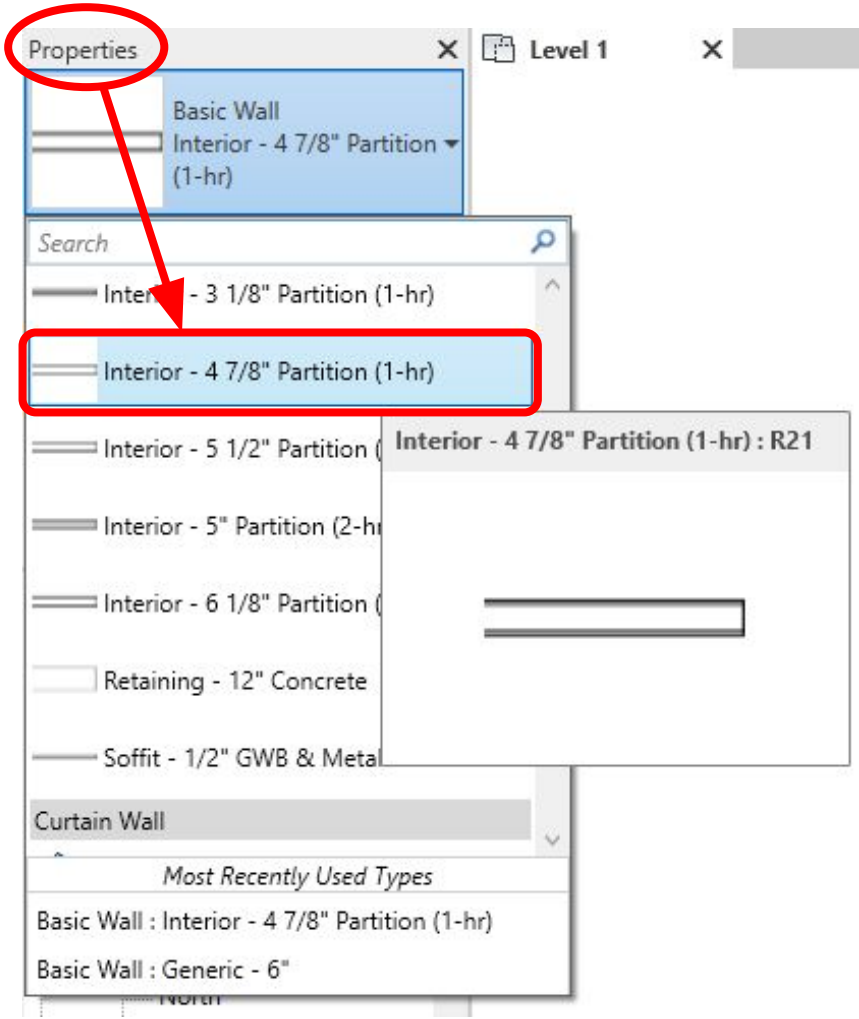
With wall selected, click *"Modify | Place Wall"* & under *"Draw"* select the *"Rectangle"*

Draw a *rectangle* about the size of the image *(exterior)*



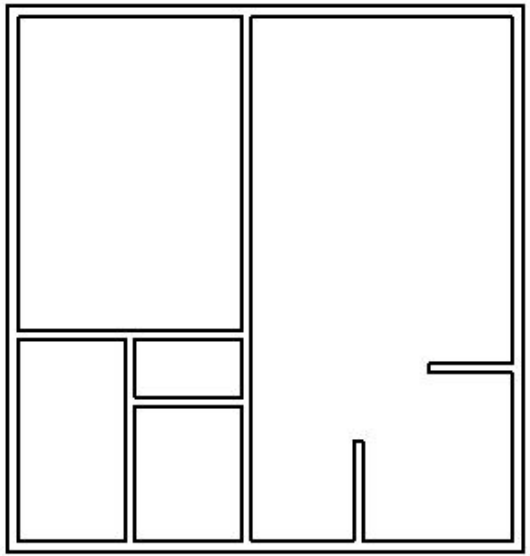
Note*: You can *modify* the dimensions by *selecting the walls* & *typing in the new dimensions* if desired.

Go to *"Properties"* again & change to *Interior - 4 7/8 (1-hr)"* for interior walls



Under *"Modify | Place Wall"* use default *"Line"* under *"Draw"*

Use the *"Line"* to draw all the interior walls as shown below

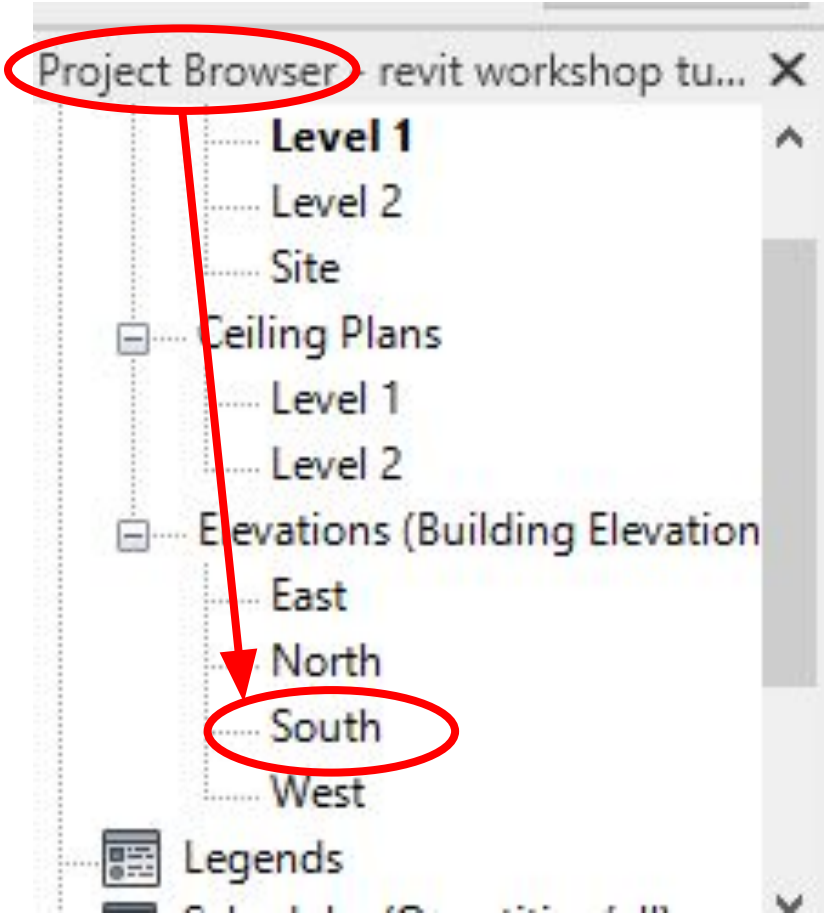


Note*: *No gaps* should be left where there are *doors*. To *draw a separate wall*, press *"ESC"* once and it will go back to the *"Line"* command.

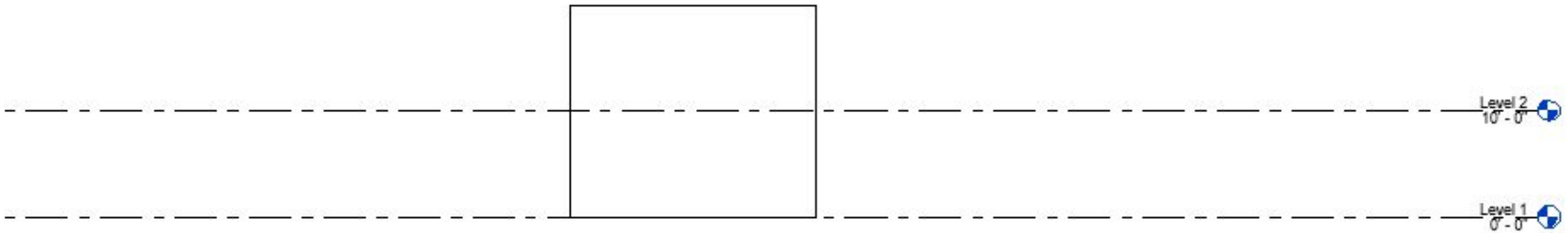
Adjusting Wall Height

Go to *"Project Browser"* & Click (under elevations) *"South"*

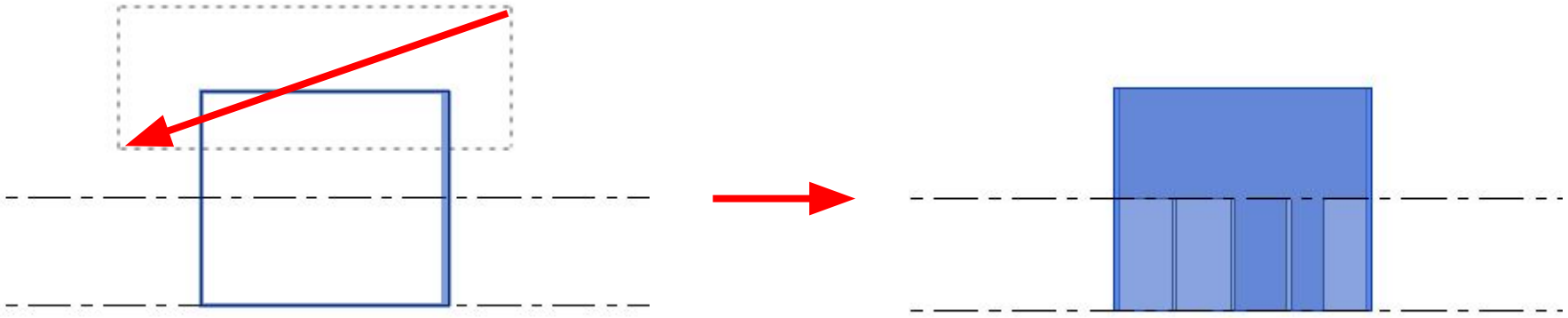
Note*: *Any elevation* is fine as well.



South Elevation View

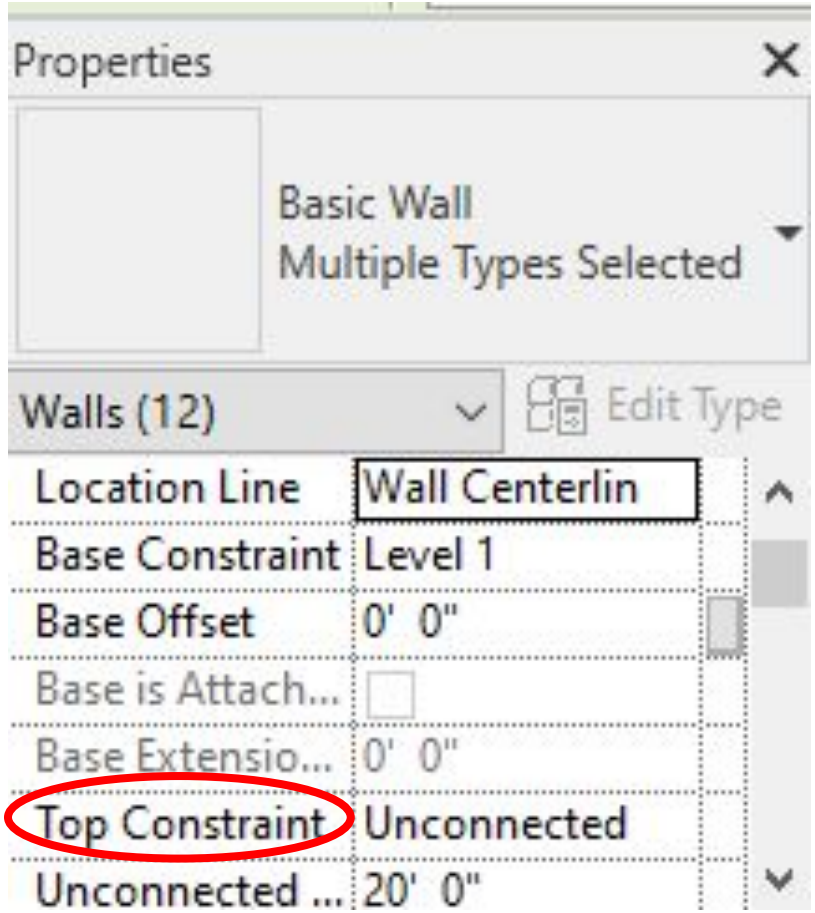


Select all walls by *cross selecting*

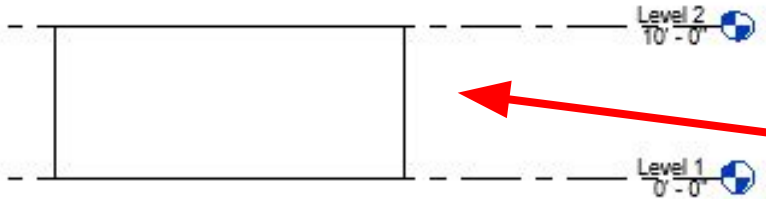


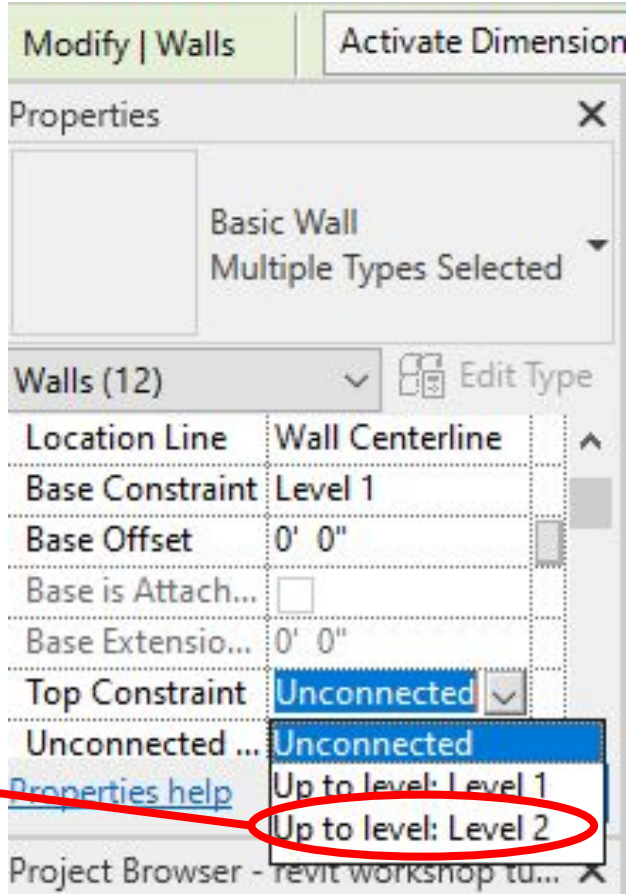
Note*: *Click & drag* from top right corner to the bottom left corner.

Under *"Properties"*, find *"Top Constraint"*



Choose *"Up to level: Level 2"* & the result is displayed below

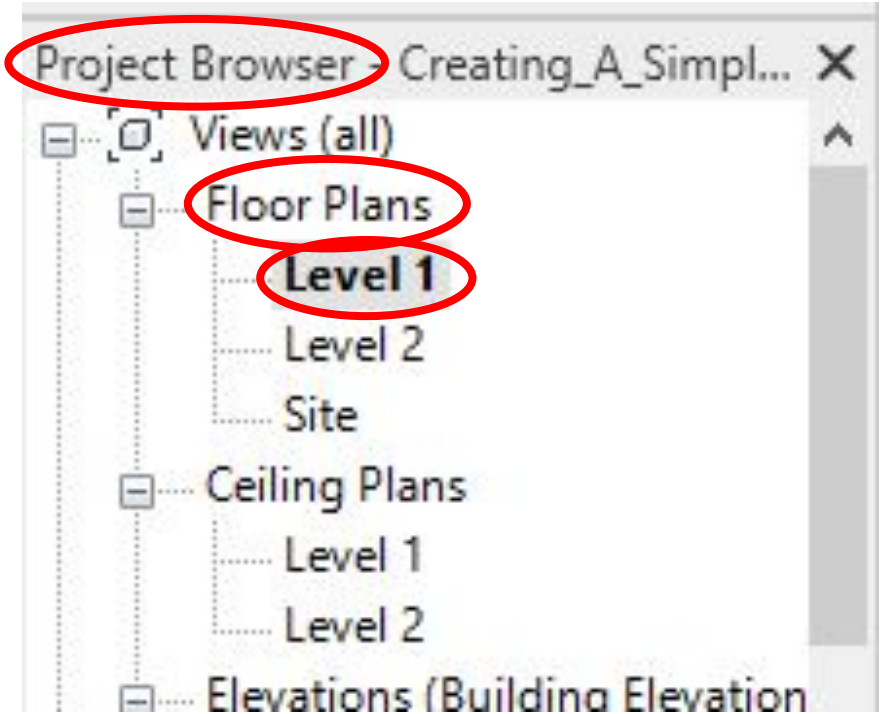




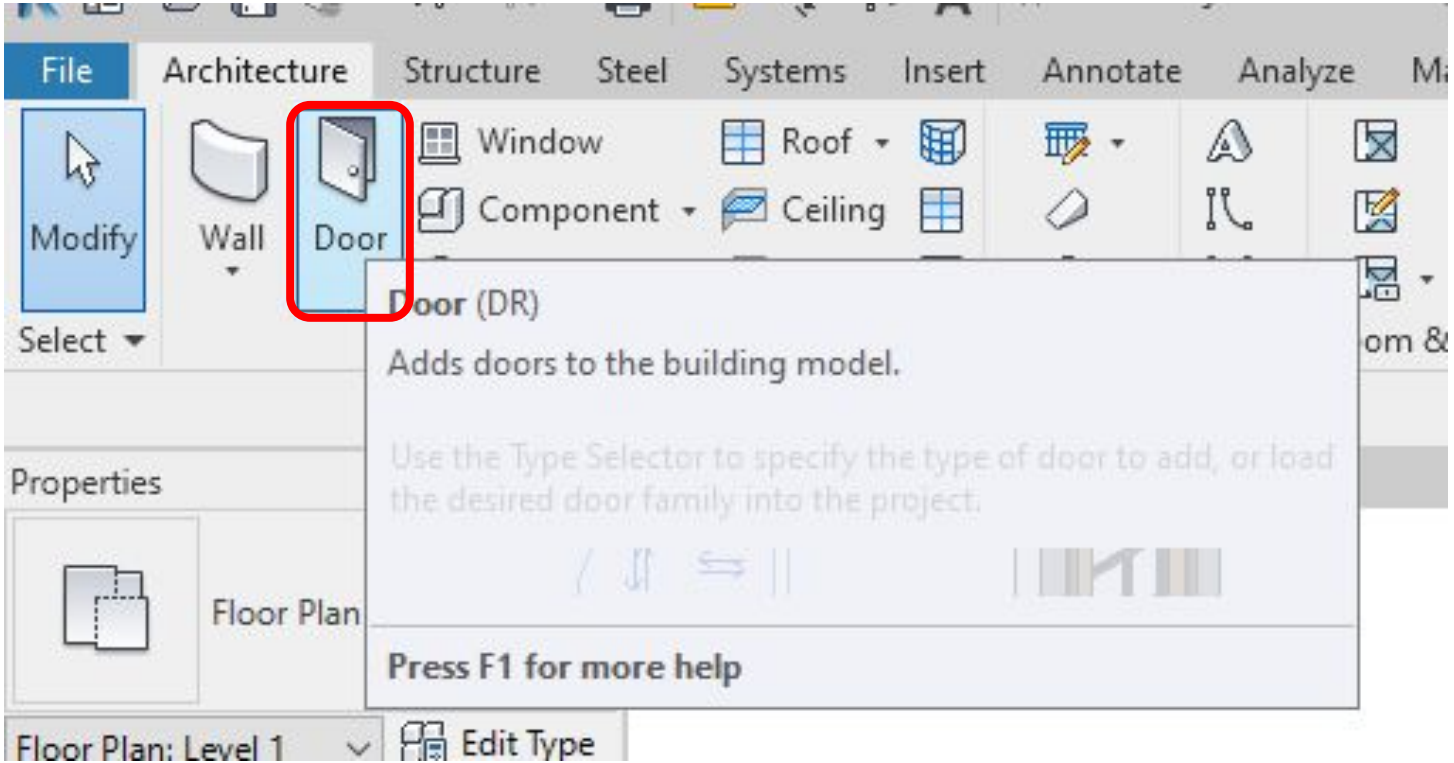
Placing Doors

(You don’t have to choose the same door style)

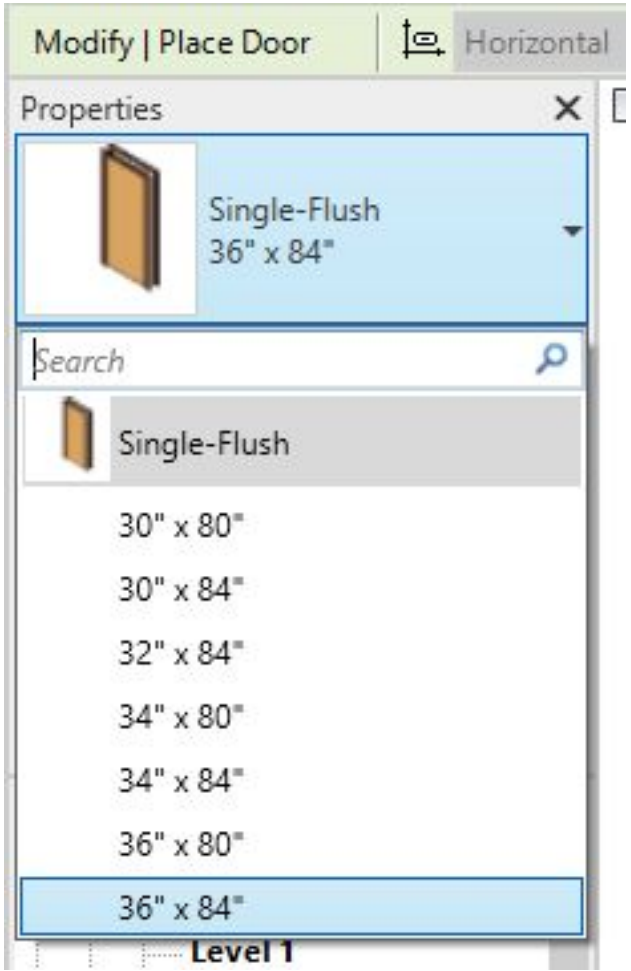
Go back to 2D View by navigating to *"Project Browser"* -> *"Level 1"*



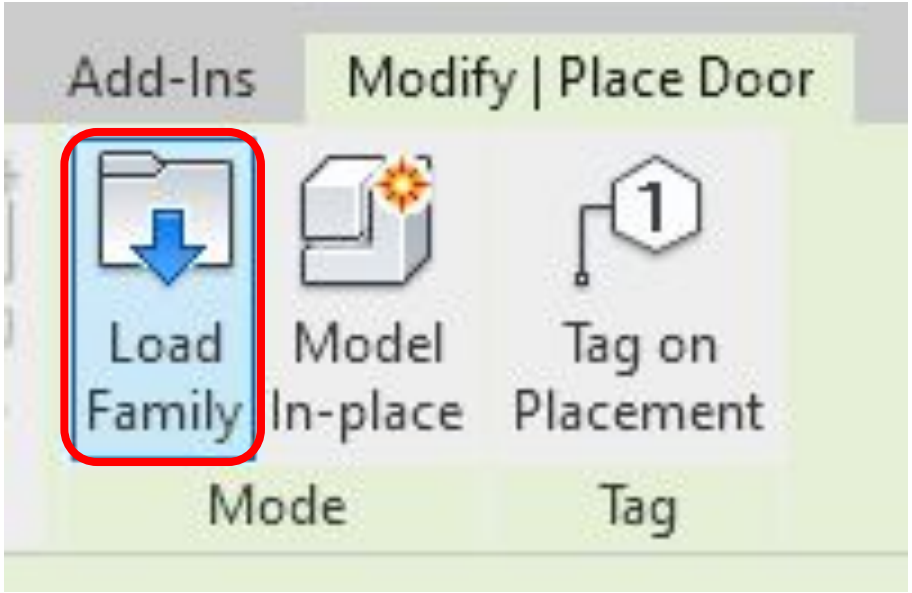
Under *"Architecture"* tab, choose *"Door"*



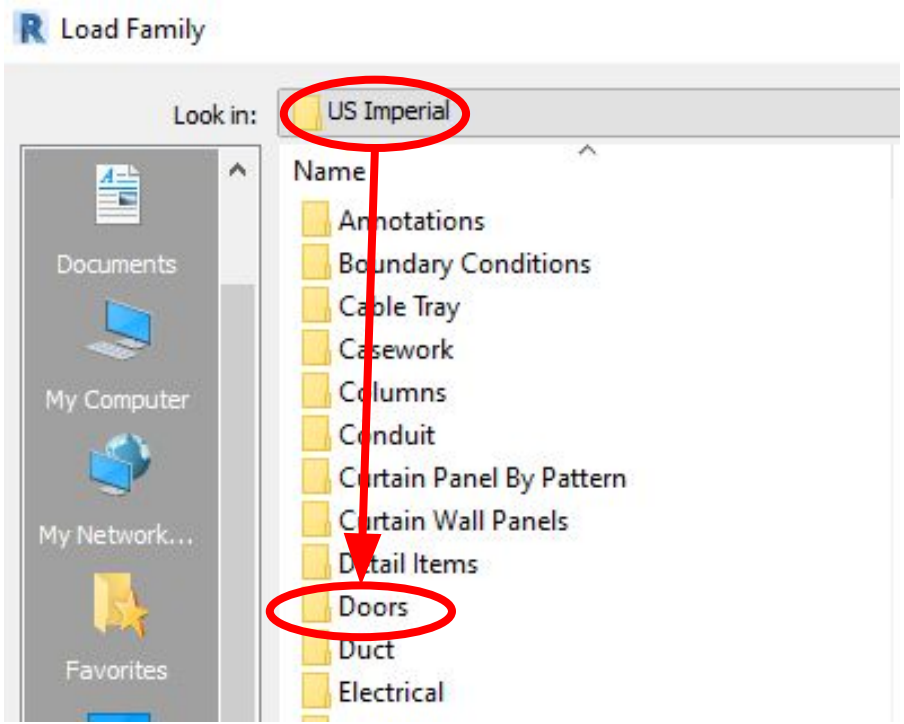
In *“Properties”*, there is no *“Exterior Door”* style door



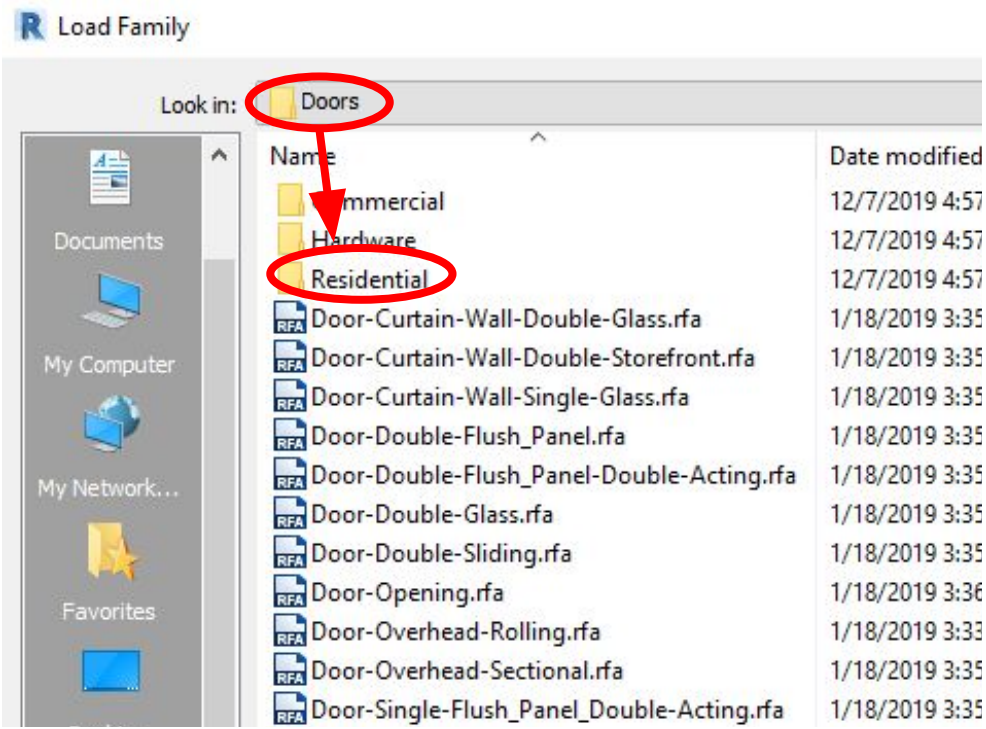
Click on *"Load Family"* to load in more door styles



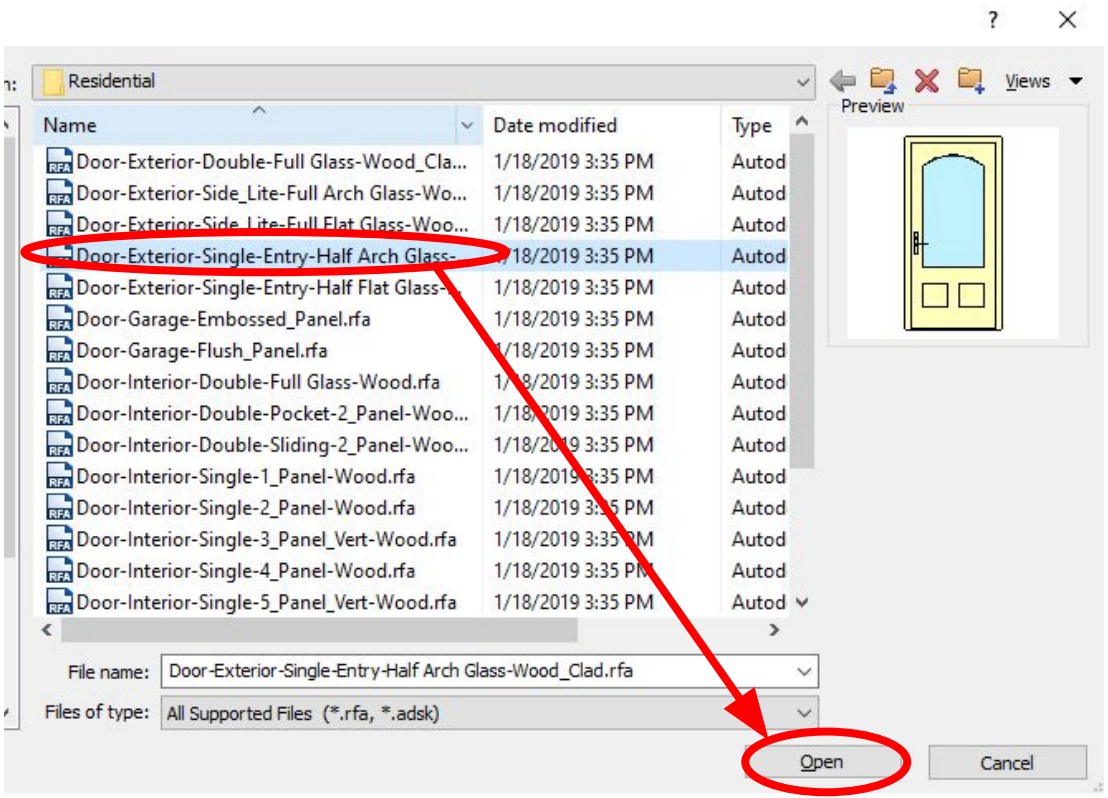
Under *"US Imperial"* go into the folder named *"Doors"*



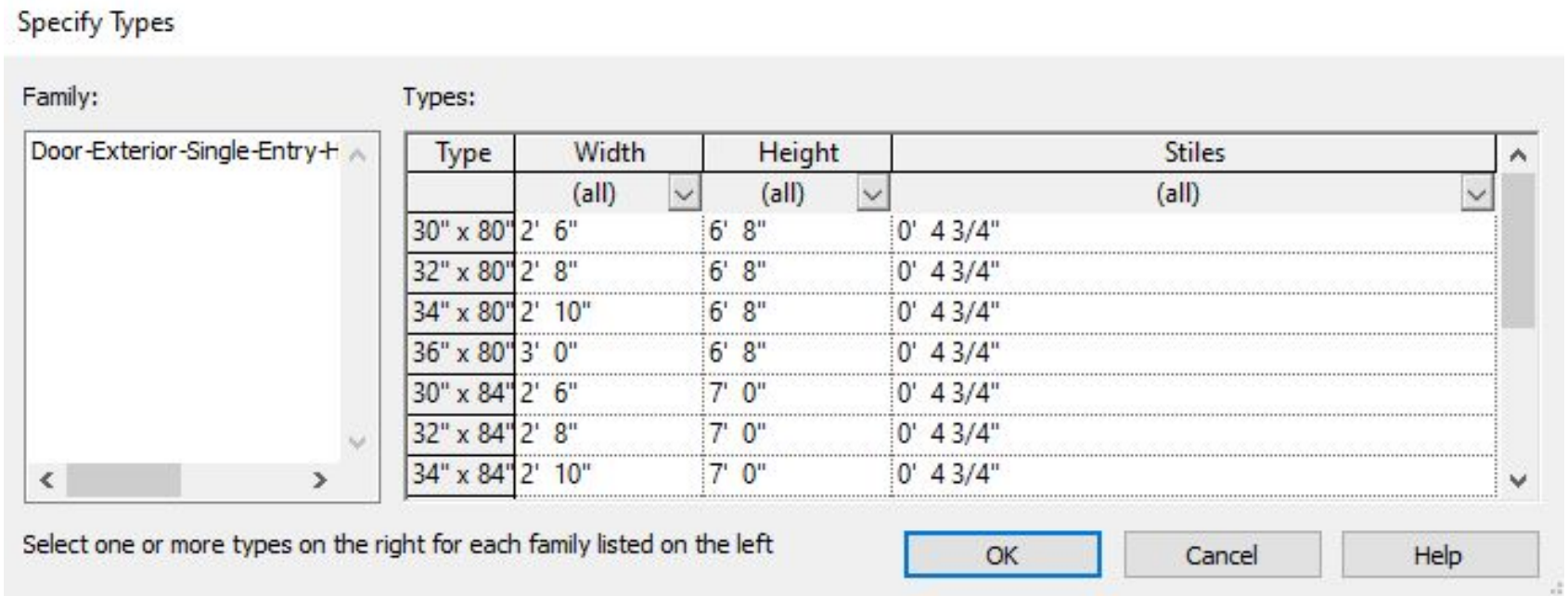
Under *"Doors"* go into the folder named *"Residential"*



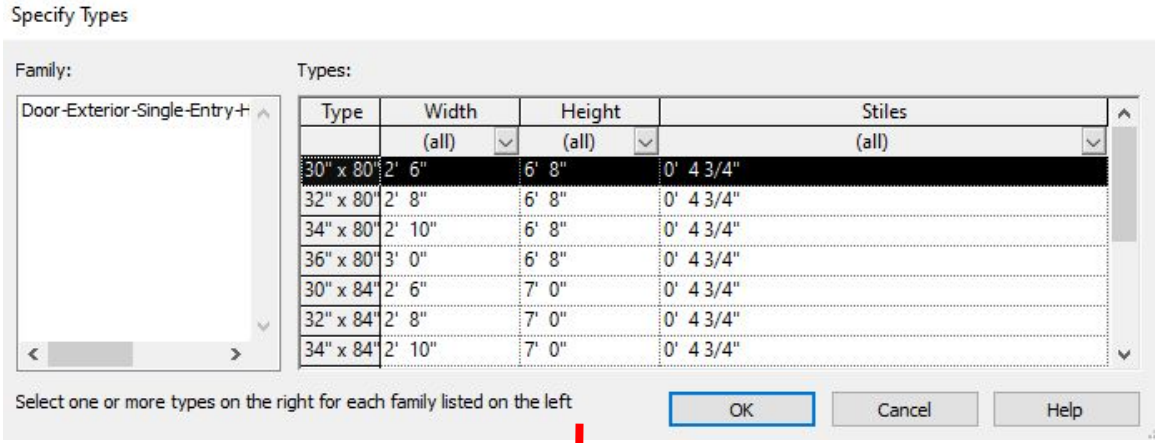
Choose *"Exterior Single Entry Half-Arch..."* & Click *"Open"* or Double Click

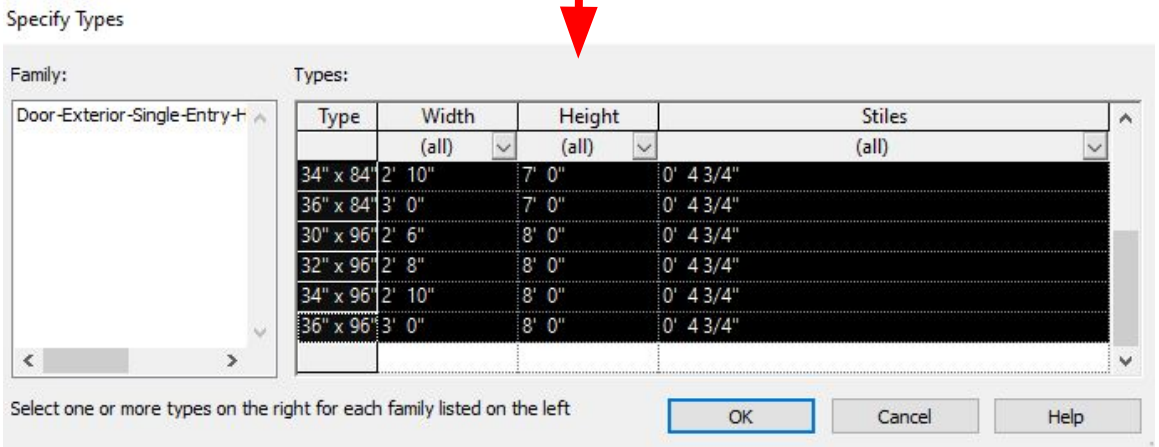


Specify *"Exterior Door"* Type(s) Window

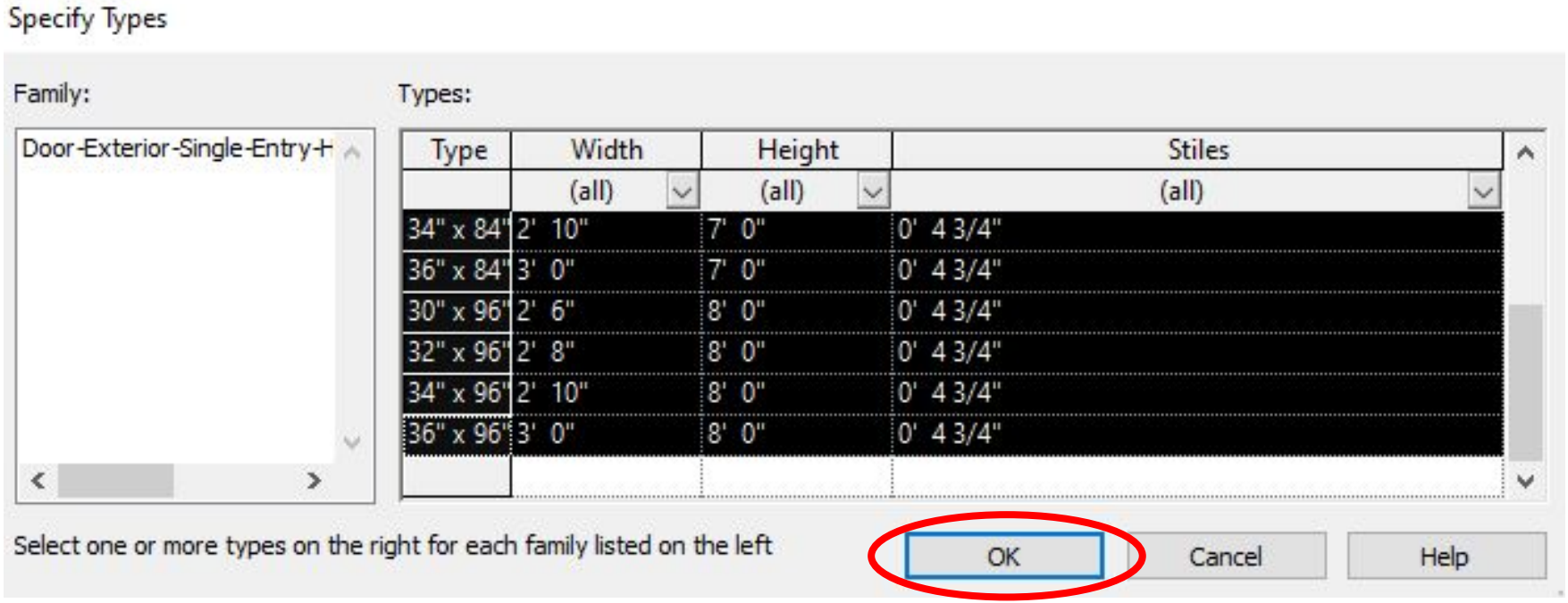


To Select All Types: Click on first one, then scroll to the last one & *hold "shift"* & left-click the last type



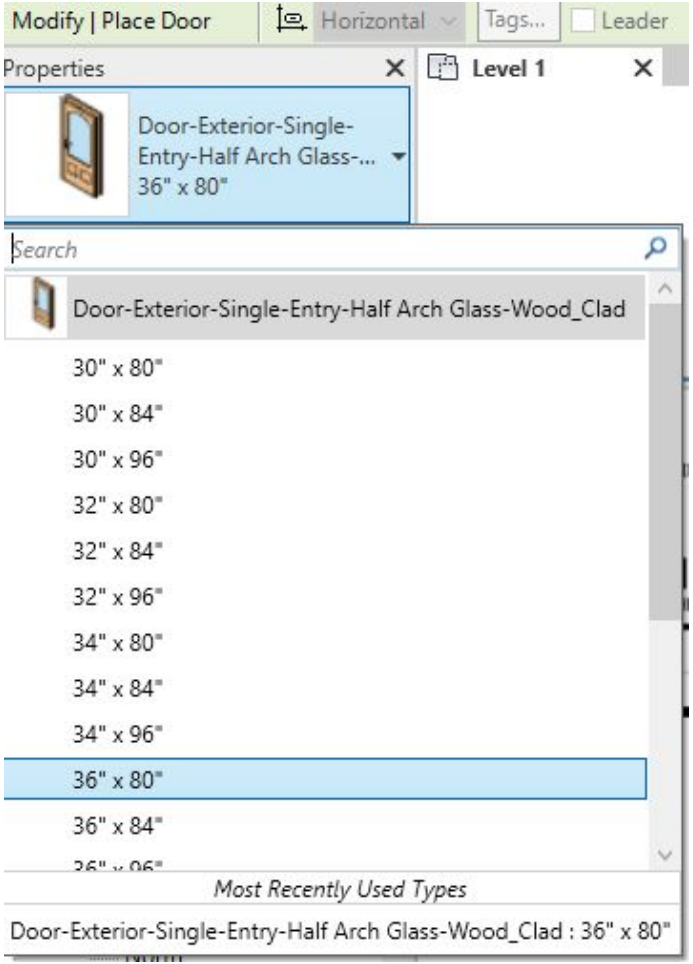


Click *"Ok"* to Confirm Your Selections

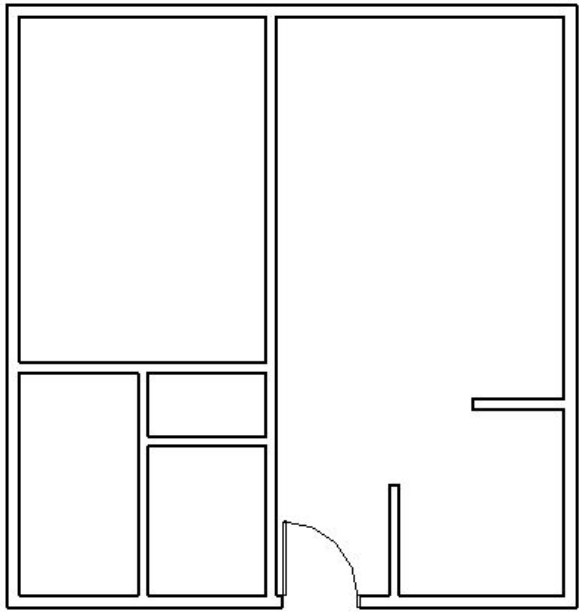


Note*: There will be a pop-up after this. Just click *"OK"*

This is what your *properties* should look like after the selections were loaded in

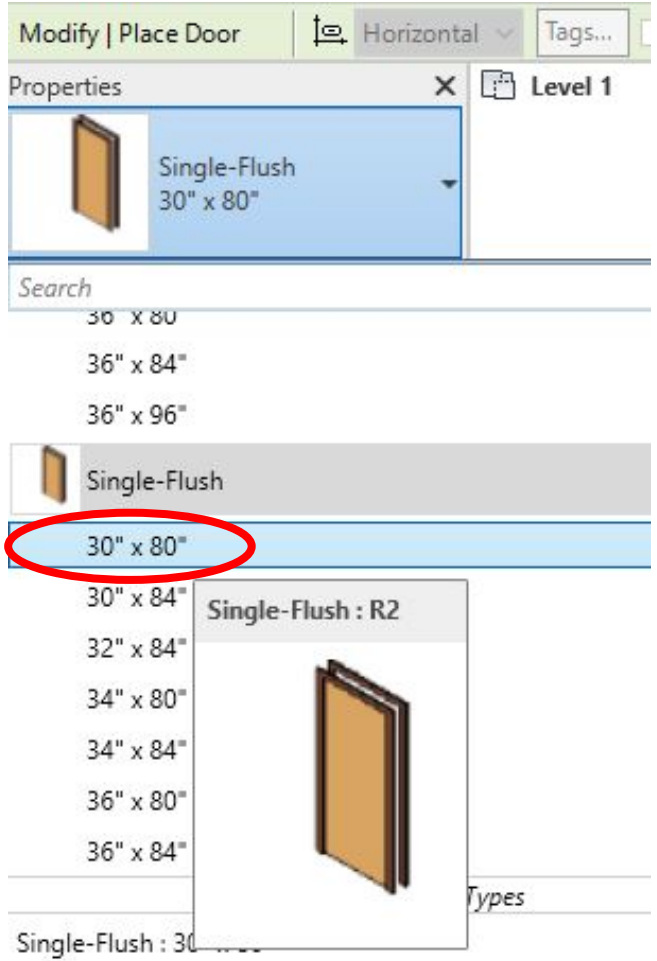


Place the *36" x 80" Exterior Door*

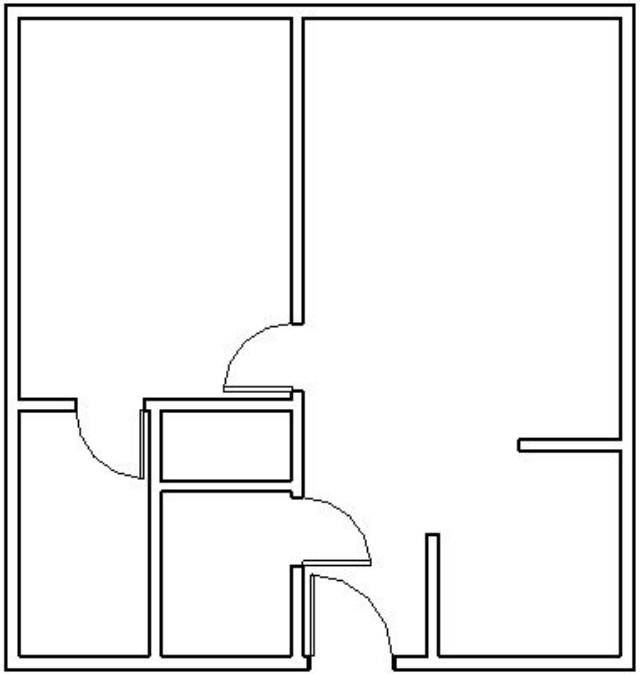


Note*: Under *properties*, *select the door* & *click the location* you want the door to be placed.

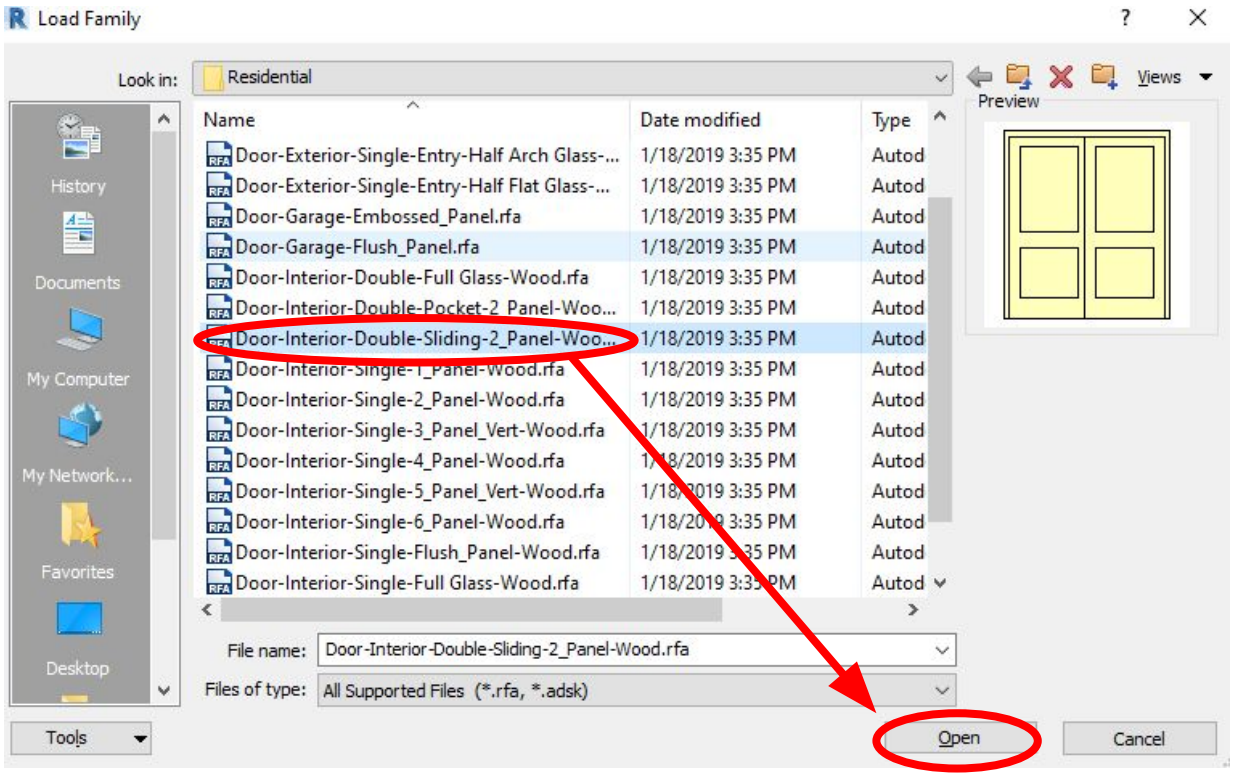
Go to *"Door"* again, and place *30" x 80" Single-Flush Door* (Go According to the Floor Plan)



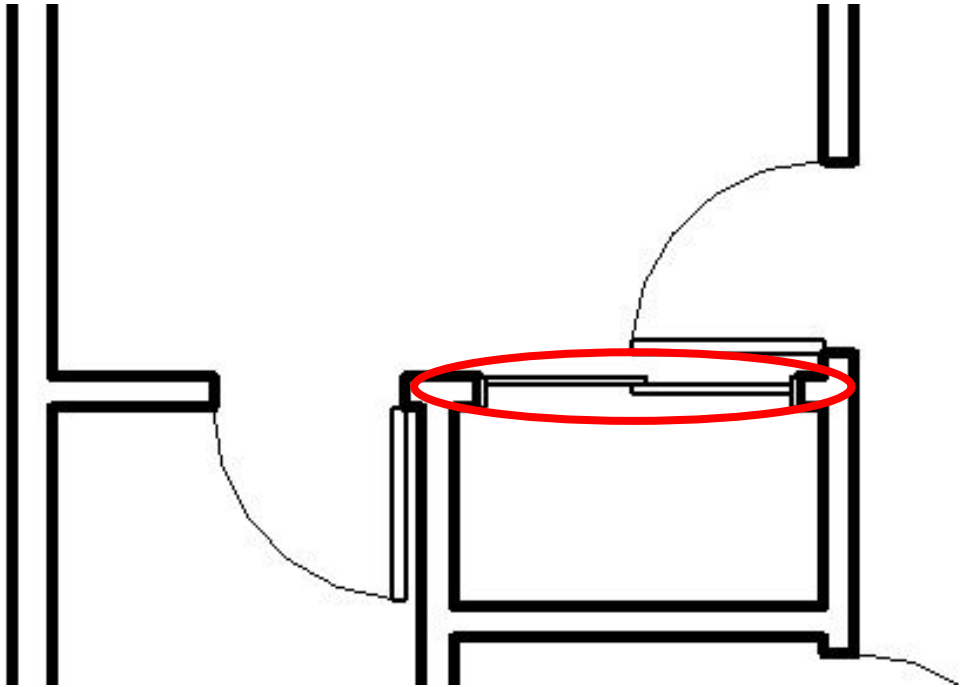
Place *Single-Flush Doors*



Load *"Interior Double-Sliding 2 Panel..."*



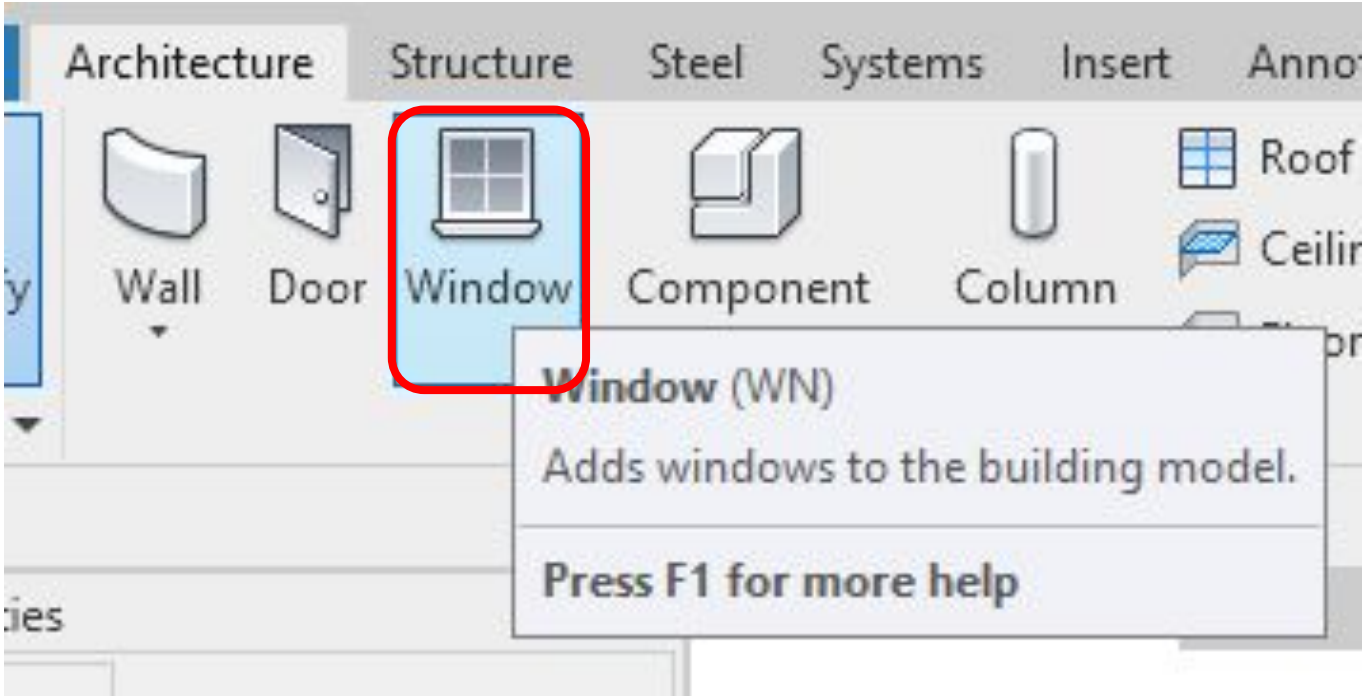
Place *48" x 80" Double-Sliding Door*



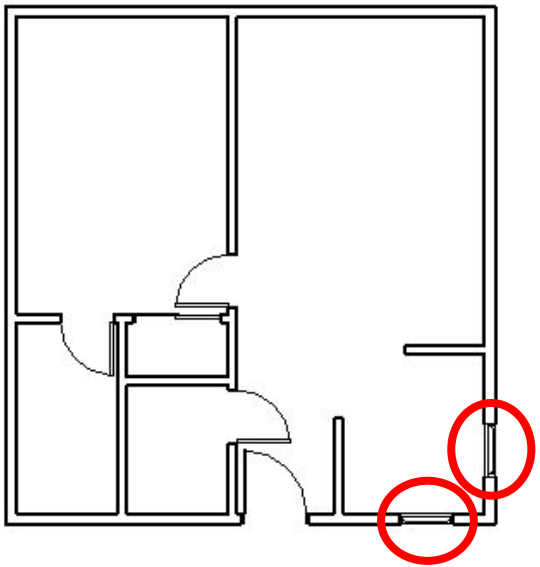
Note*: I am replacing a regular swinging door with this sliding door (different from the original image)

Placing Windows

Select *"Window"* under *"Architecture"* tab

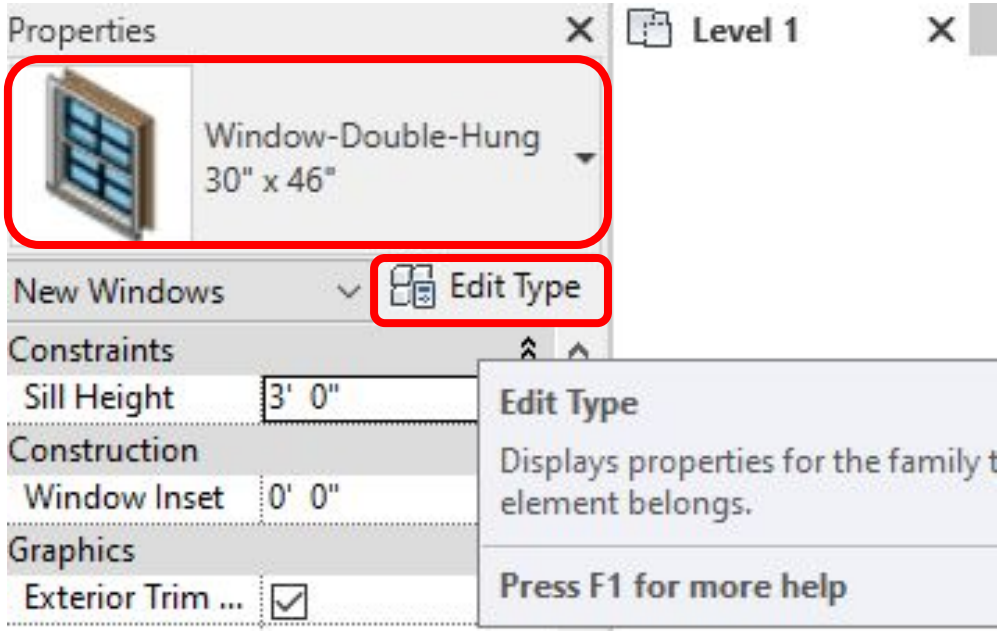


Place any *window* of your choice from the *properties* panel



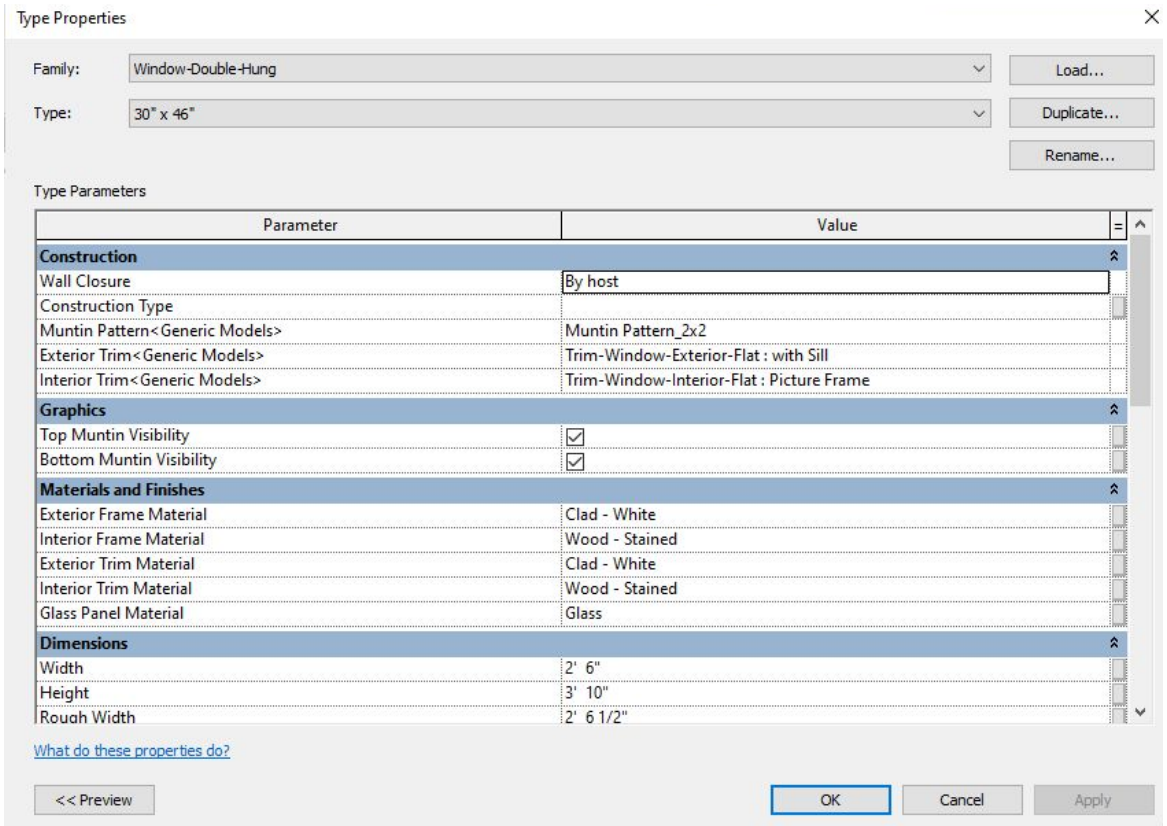
Note*: I chose to place two windows in the kitchen first. I used the *30" x 46" Window Double-Hung*.

Modifying *Window Size*: Using *"Window Double-Hung 36" x 46""*, click *"Edit Type"*

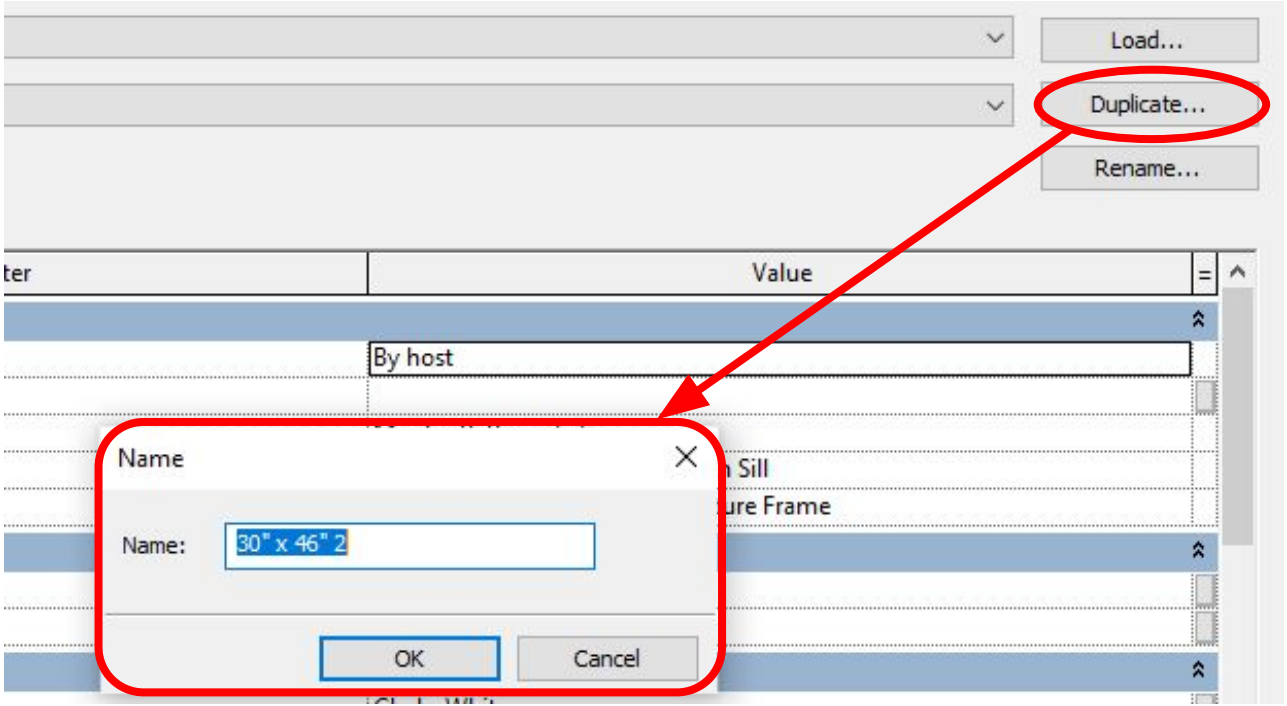


Note*: The newly modified window size will be used for the bedroom & living room.

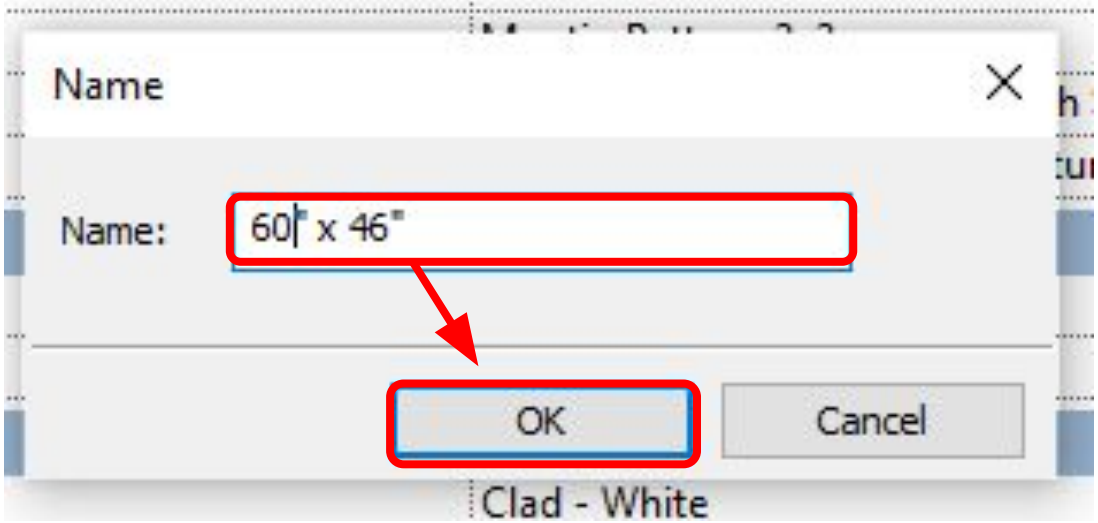
Clicking *"Edit Type"* brings up this window



Within this window, click *"Duplicate"* & this window titled *"Name"* will pop up

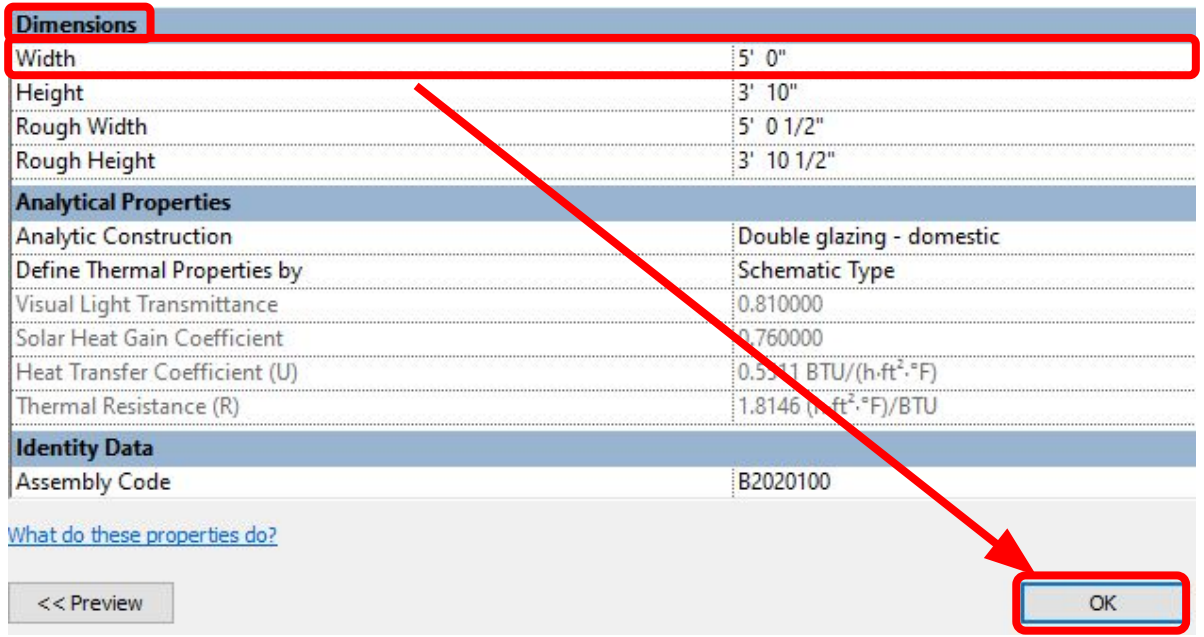


In the *"Name"* window, type in a new name that reflects the new window size, then click *"OK"* to confirm



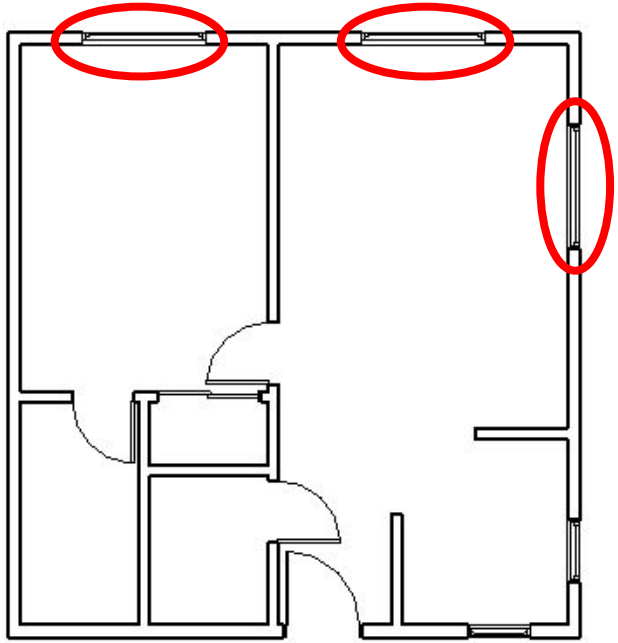
Note*: The new size can be anything you want. This is just an example.

Scroll down to *"Dimensions"* & modify (in this case) *"Width"* to *5' 0"* to match new window size, then click *"OK"*



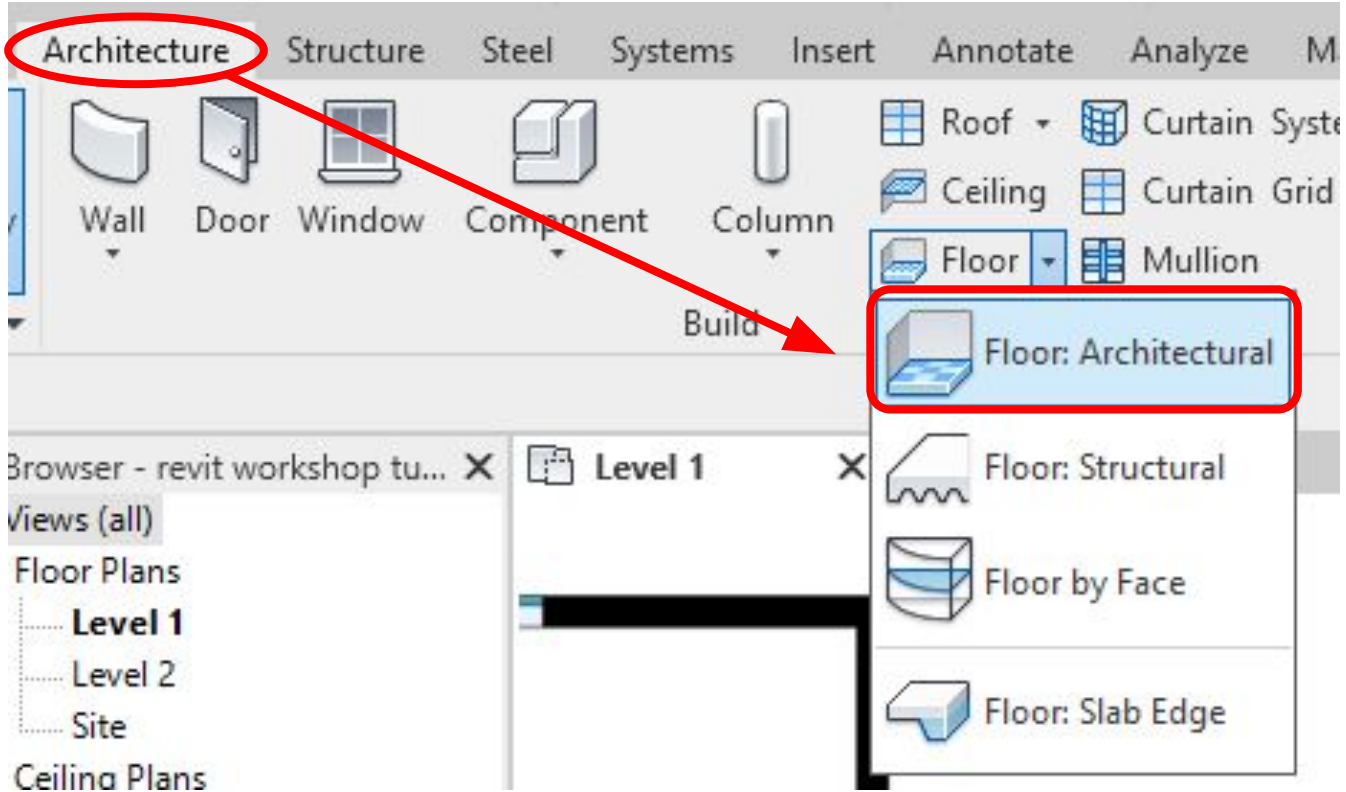
Note*: In Revit, any dimensions you see such as 60" x 46", it is always *W x H* (width times height)

With the newly created window, *place* the windows down where you desire. Example below.

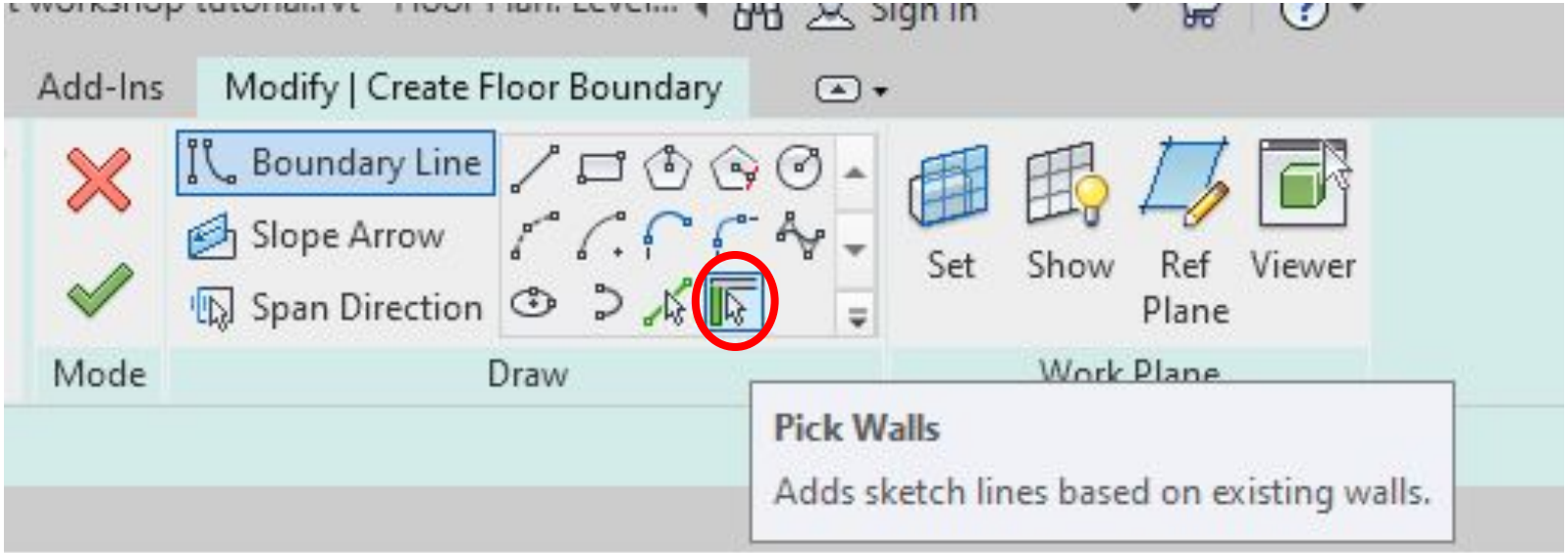


Creating Floors

Choose *"Floor Architectural"*

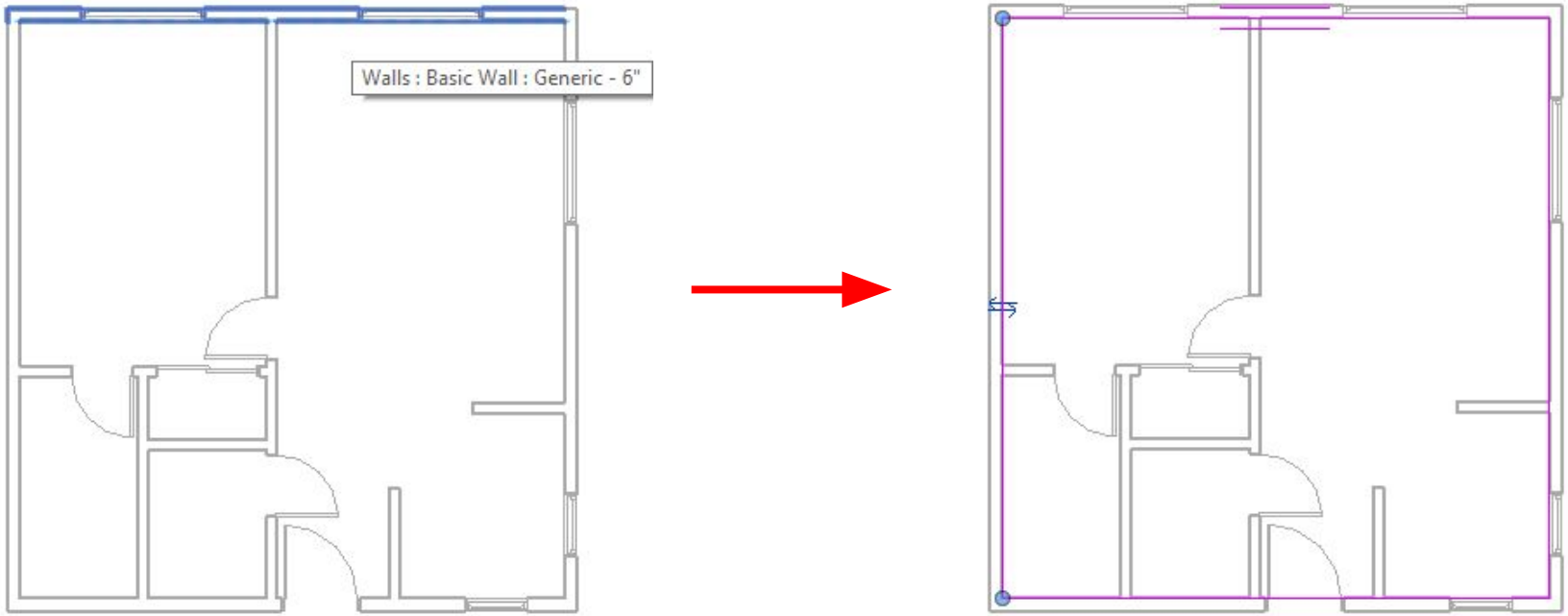


Choose the *"Pick Walls"* option to draw your floor

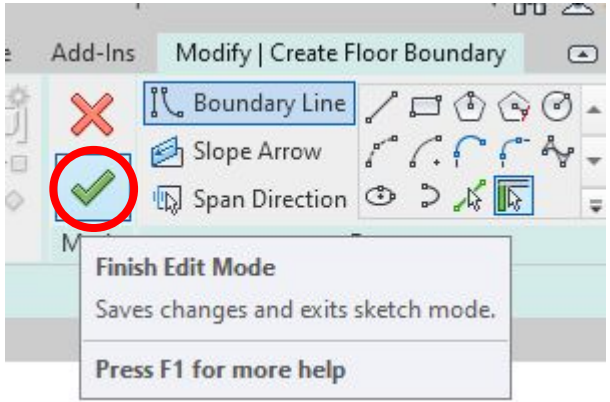


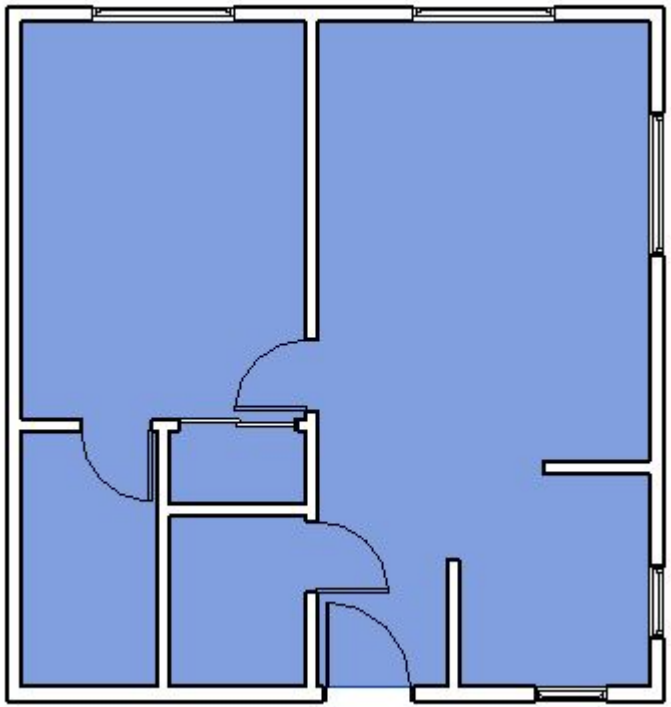
Note*: You can leave the default floor type under properties.

Hover over wall to select it & when selected it should be *pink*



Confirm your creation & see the successful *result*!

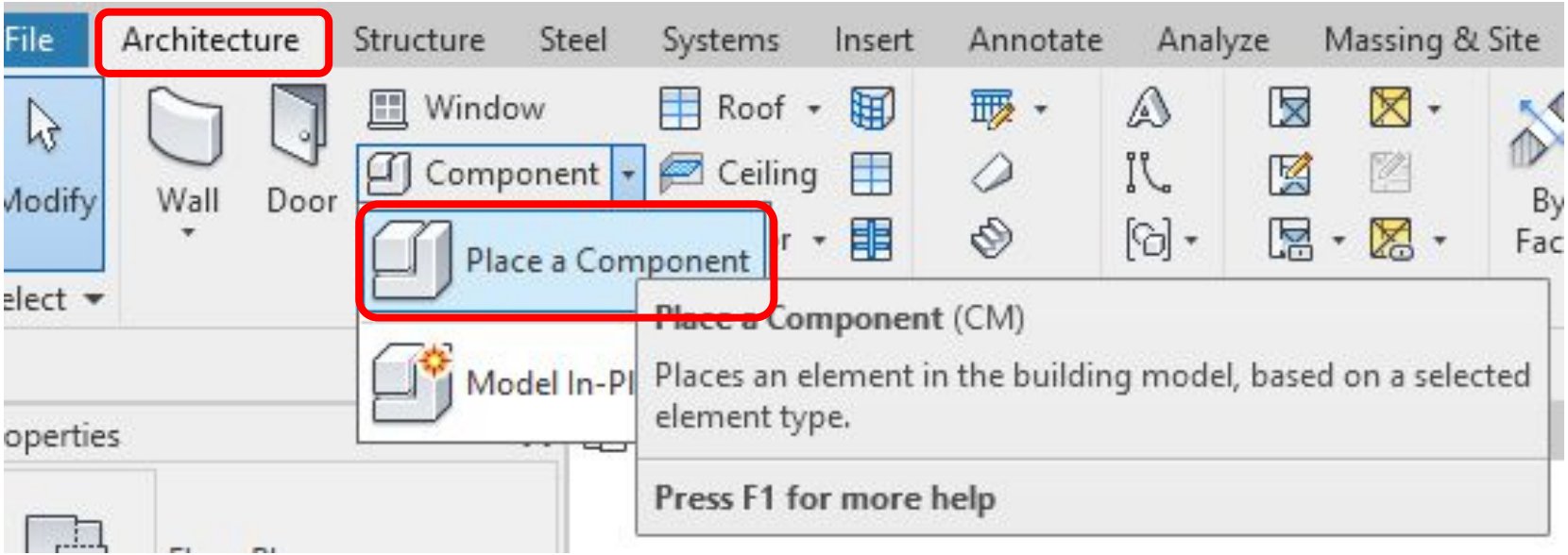




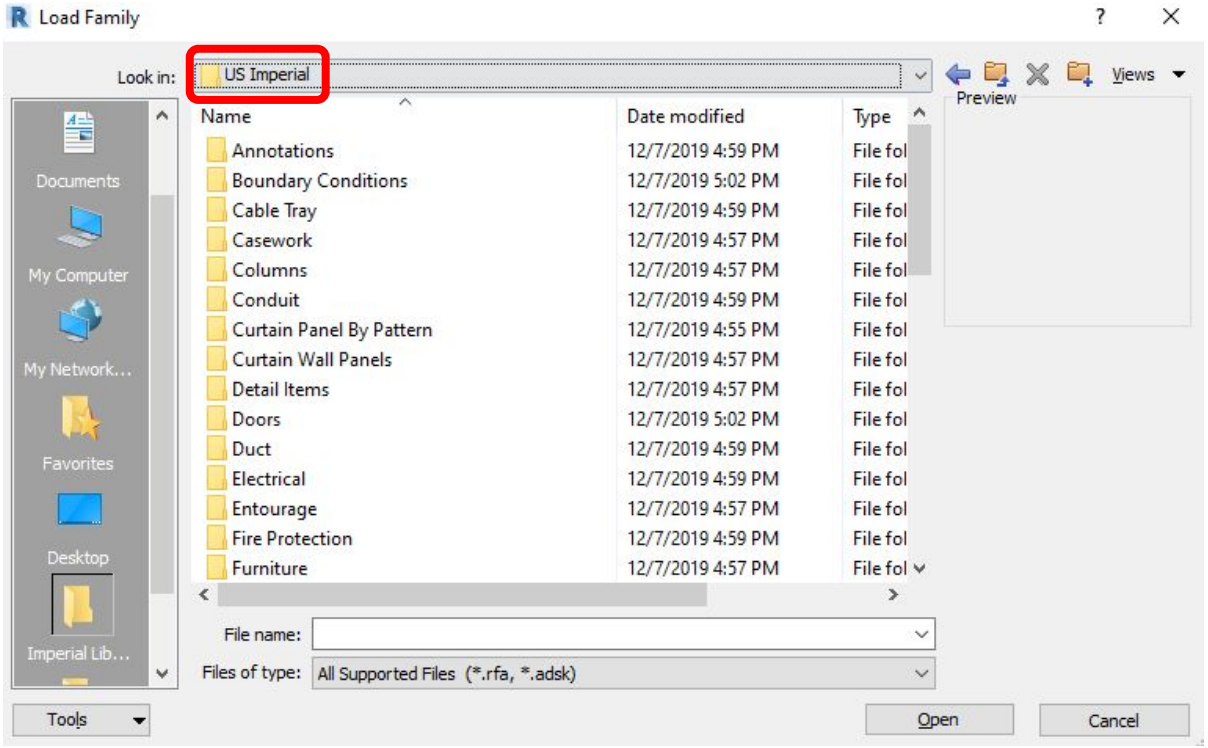
Placing Furniture

(I am only going to show one example)

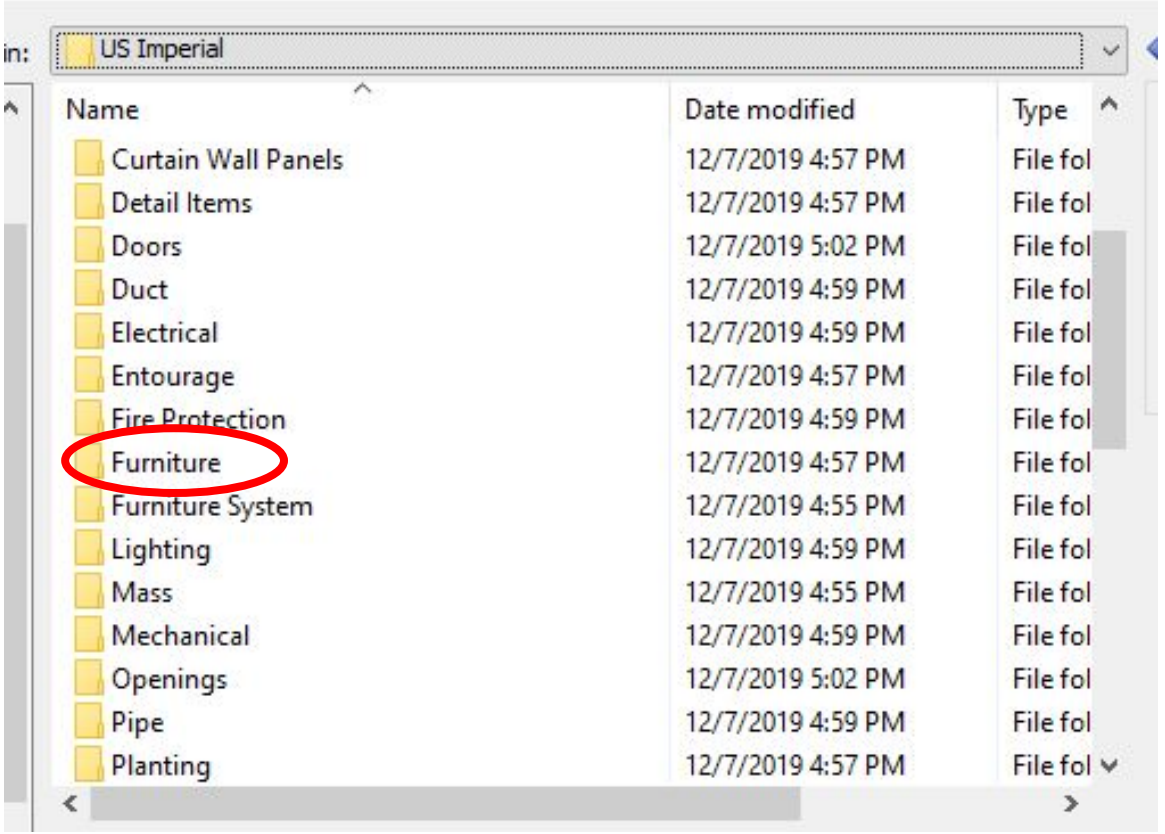
Click *"Component"* & *"Place a Component"*



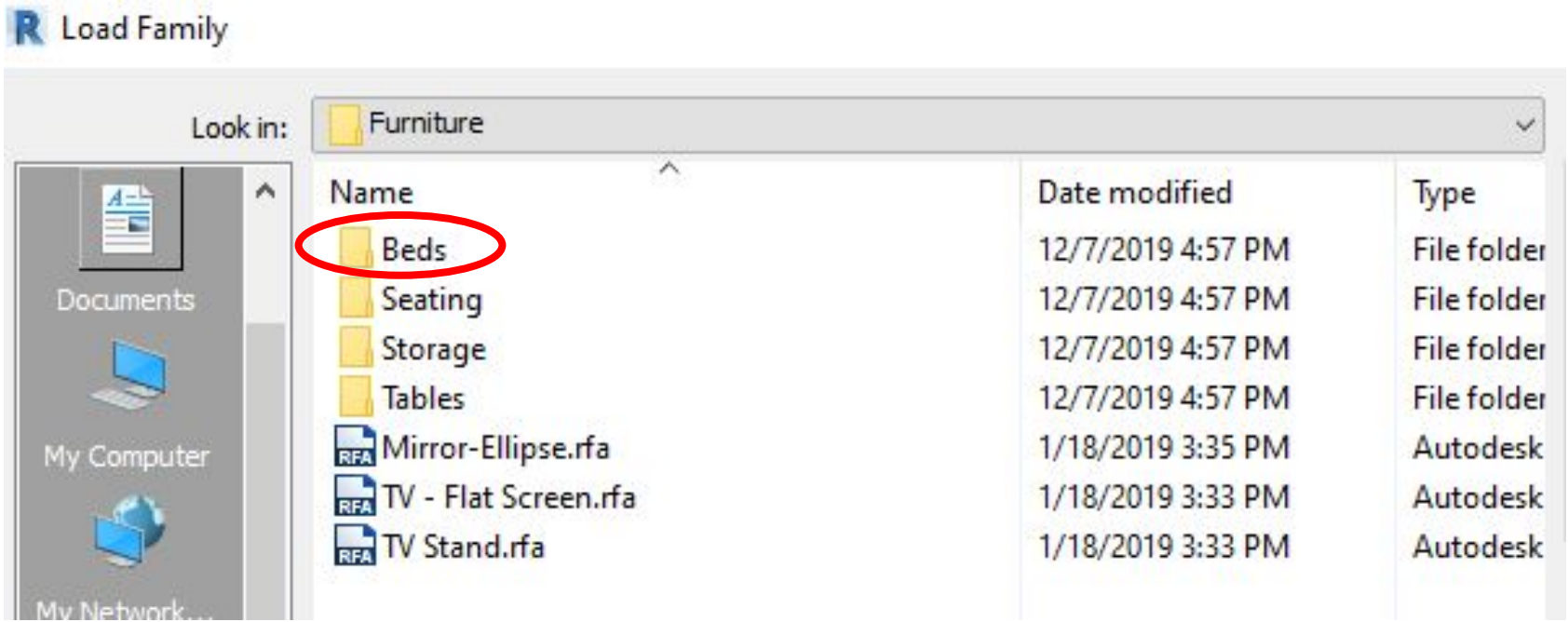
No *"Beds"* in Component so *"Load Family"* & go to *"US Imperial"* folder



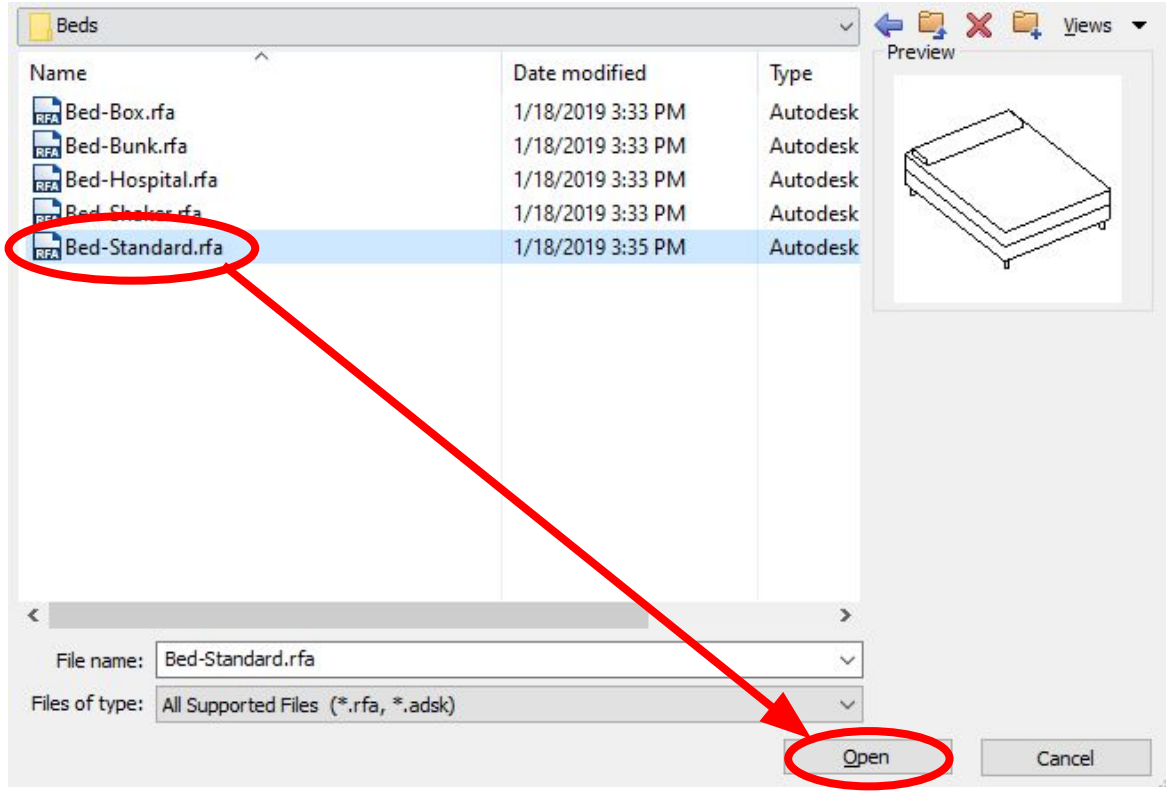
Navigate to
"Furniture"
Folder



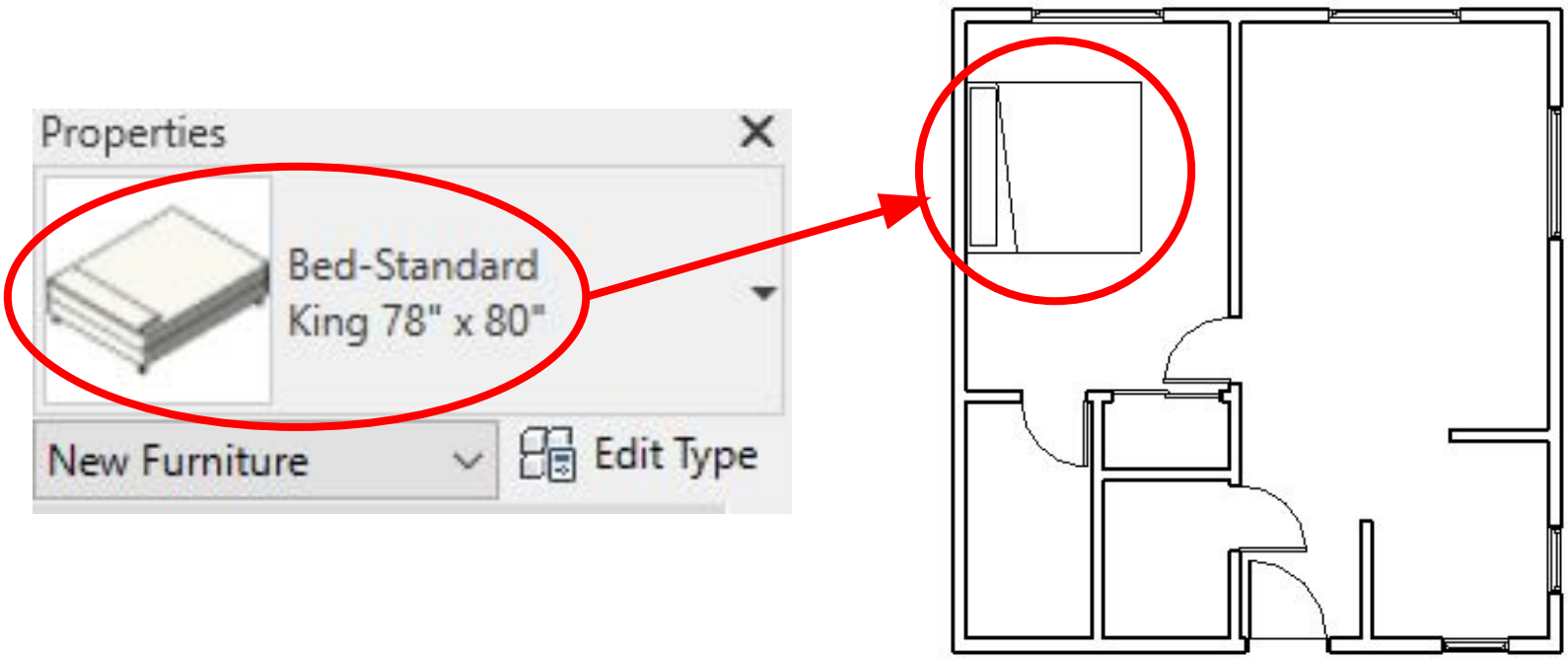
Navigate to *"Beds" Folder*



Choose *"Bed-Standard.rfa"* & Click *"Open"*



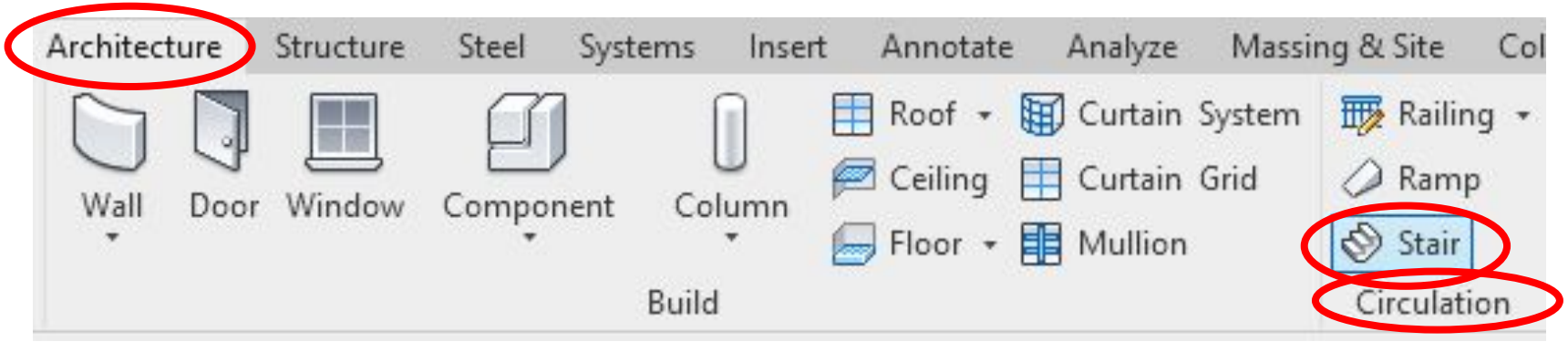
Choose *"Bed-Standard King 78" x 80""* and *Place* onto Floor Plan



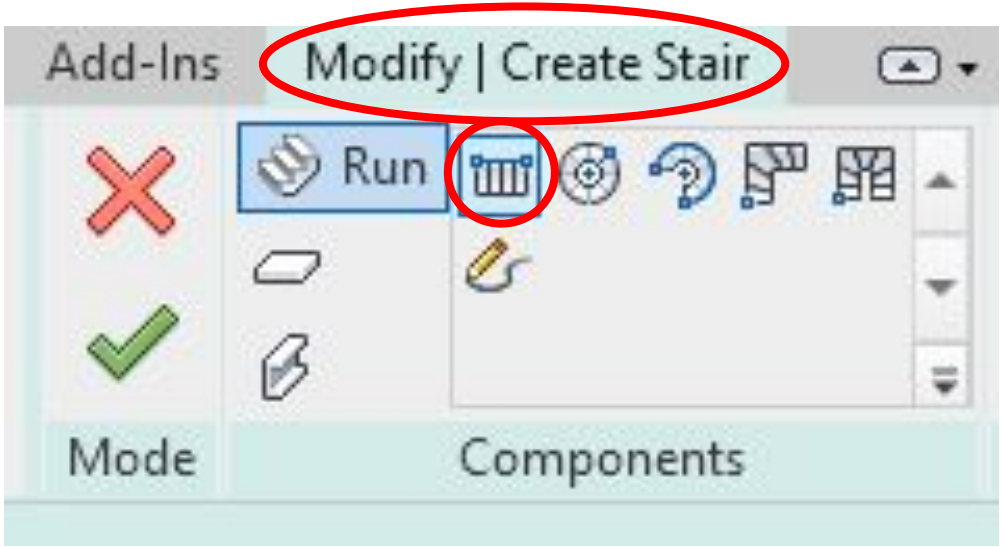
Note*: Use the *spacebar* to *rotate* furniture.

Creating Stairs

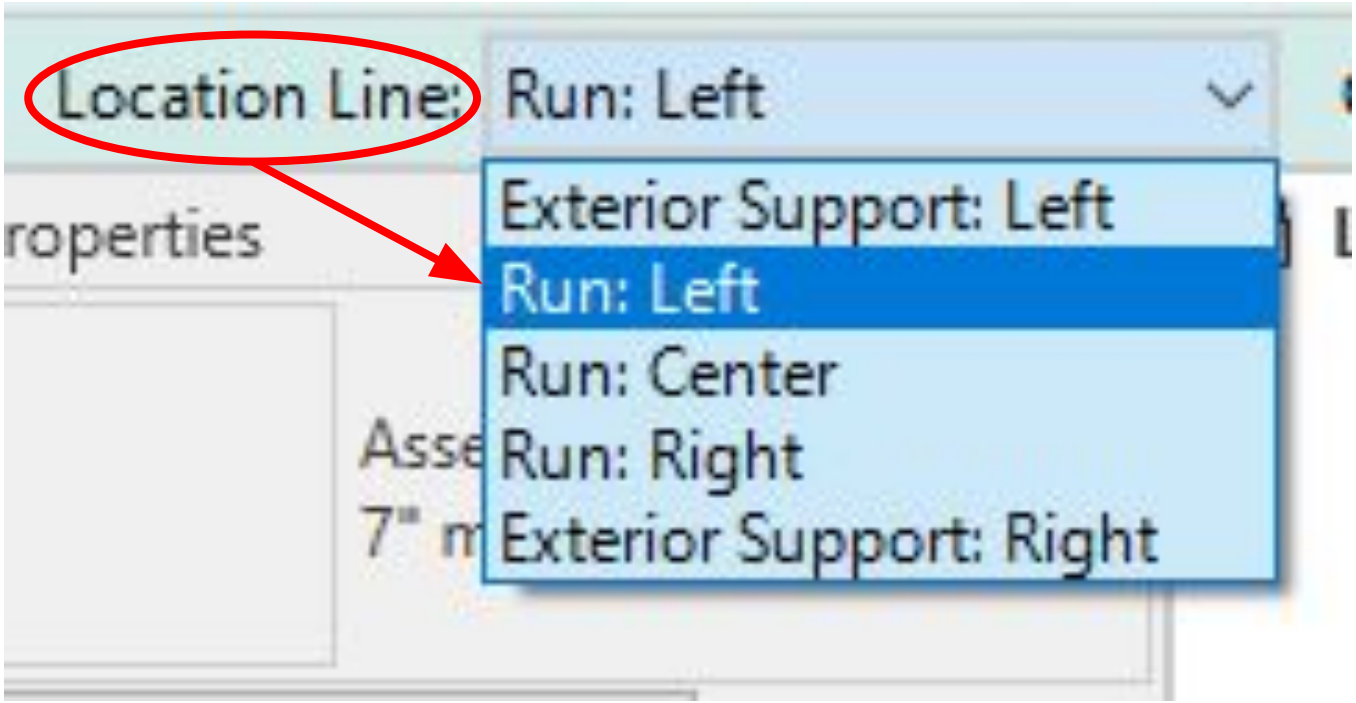
Go to *"Architecture"* tab & choose the *"Stair"* Option Under *Circulation*



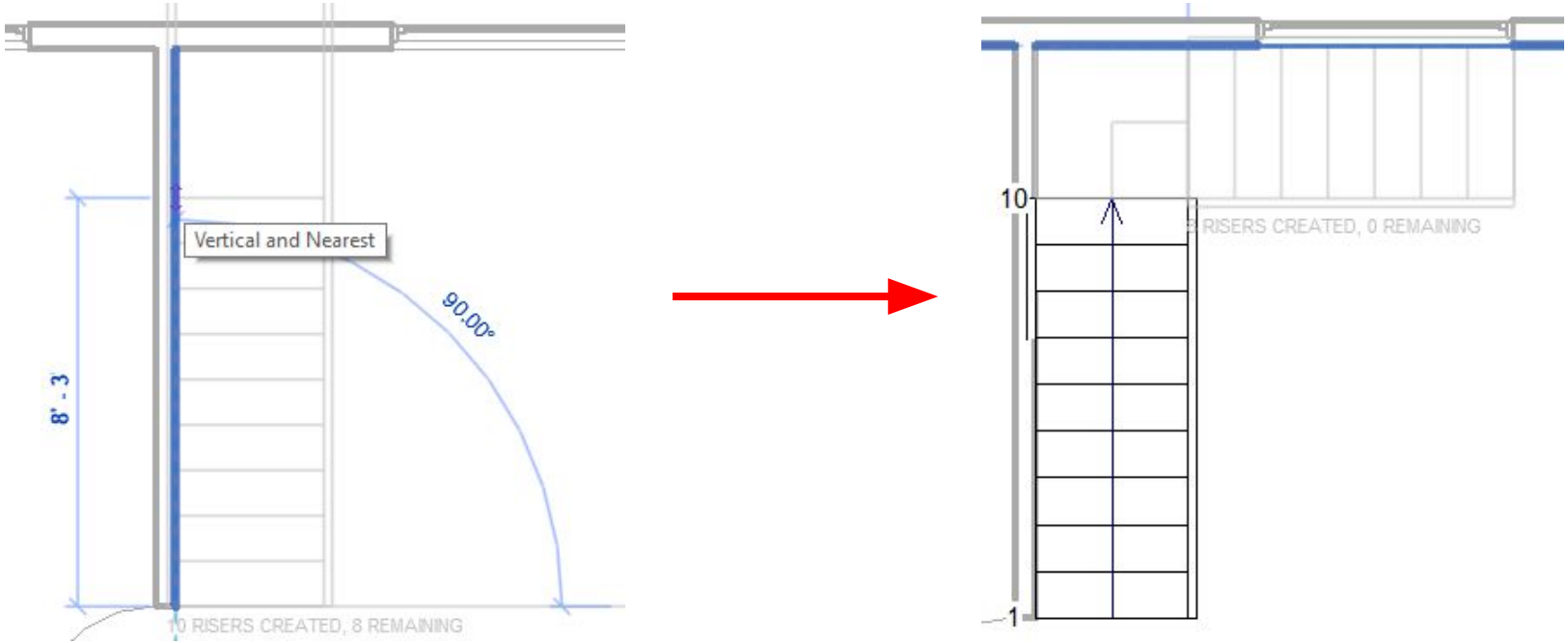
To Create L-Shape Stair:
Under *"Modify | Create Stair"*, choose the default *"Straight Stair"*



Change *"Location Line"* to *"Run Left"* (for this specific case)



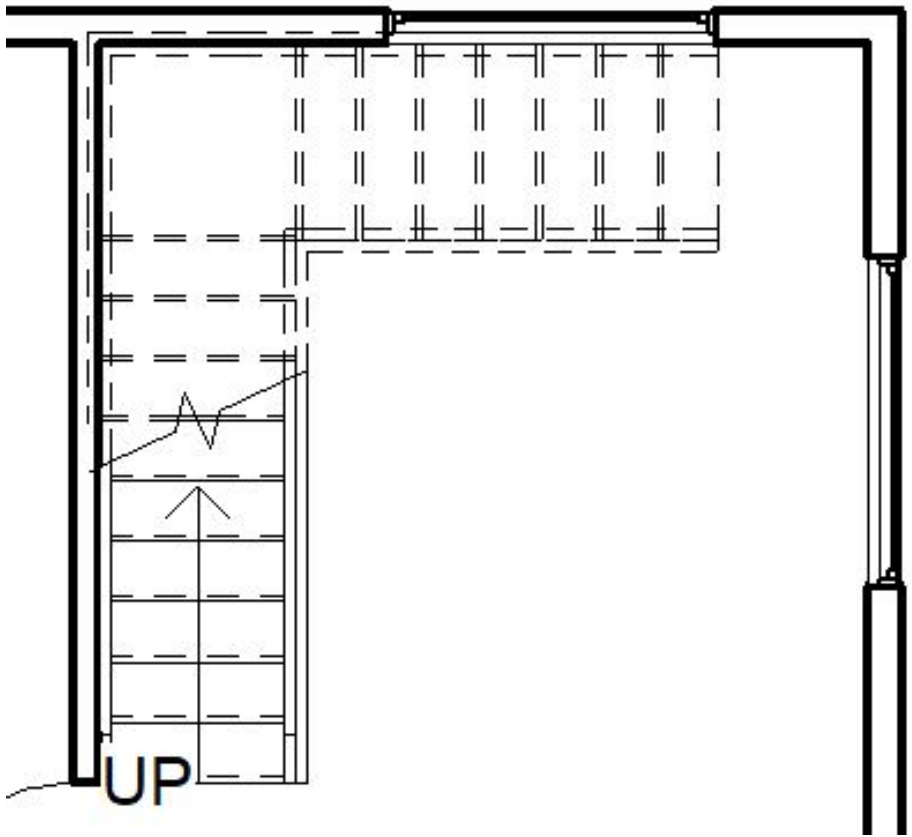
Draw *two vertical stairs* (both times starting from the walls) to form the L-Shape Stairs



Note*: When creating the second part of the stairs (right), make sure you *start on the inside edge of the railing except across from it at the wall*. The *landing will be automatically generated*.

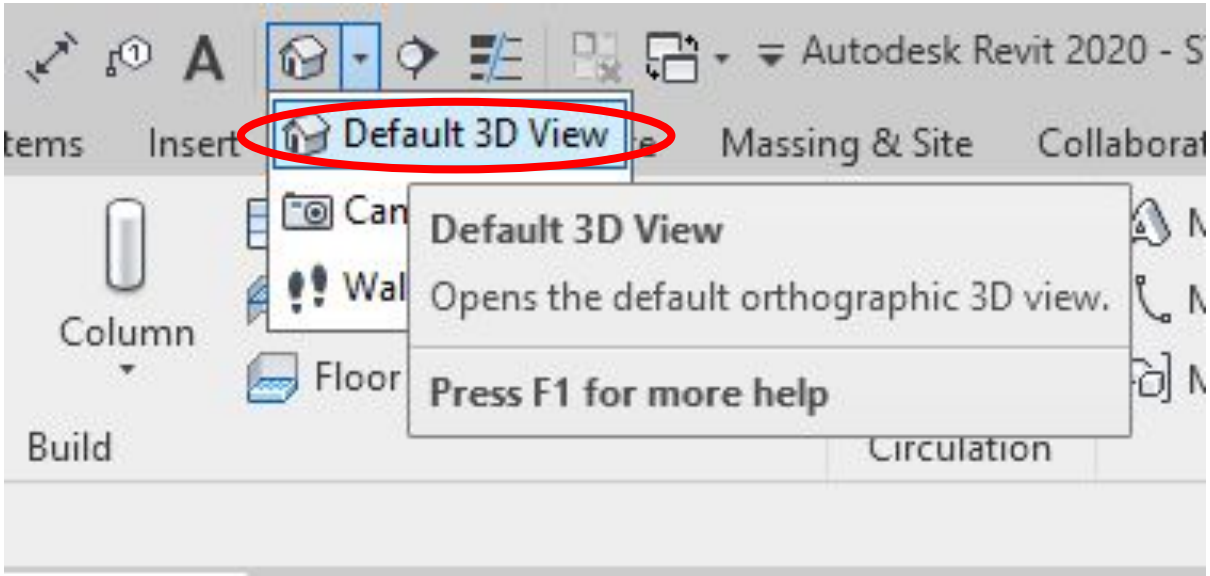
Click the *"checkmark"* to confirm your creation

This is the final *2D view* of your *L-shaped stairs*.



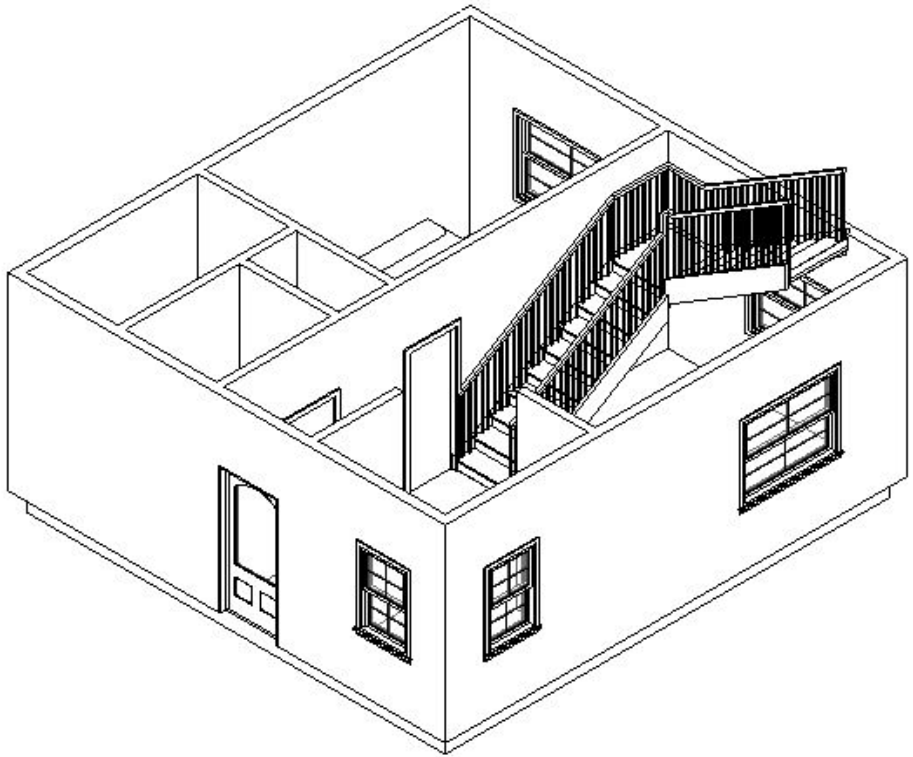
3D-Result!

Go to *3D View*

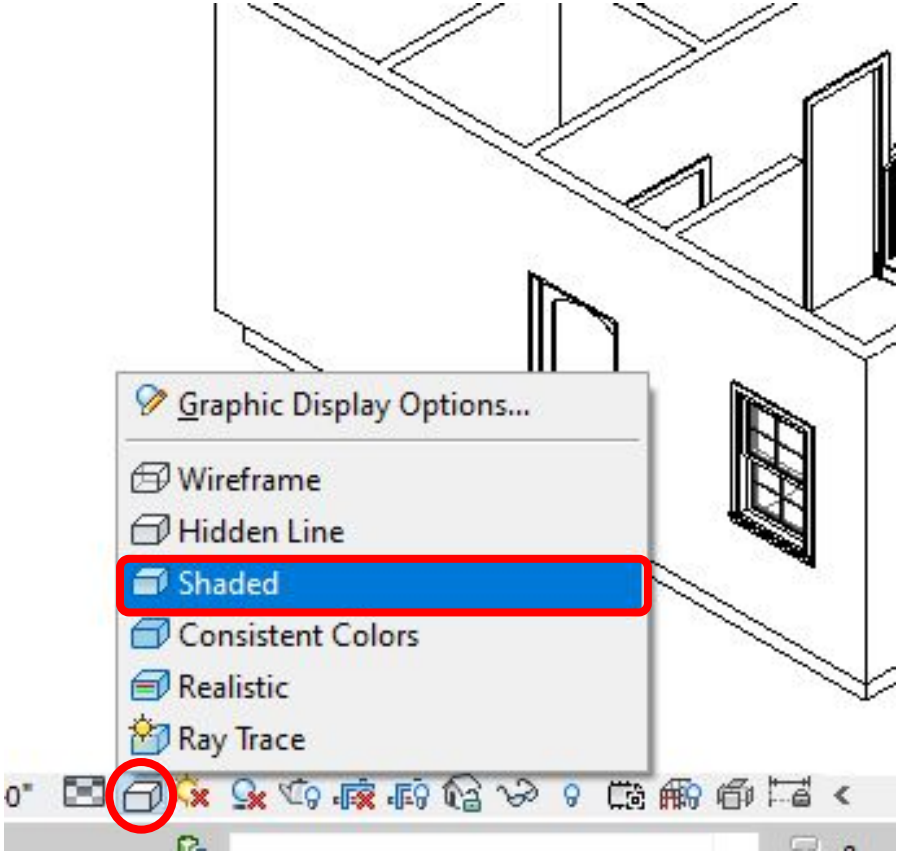


Note*: You can also just *click the house icon directly*.

Default 3D View: *Hidden Lines*



If you like to see more detail: change the *visual style*!



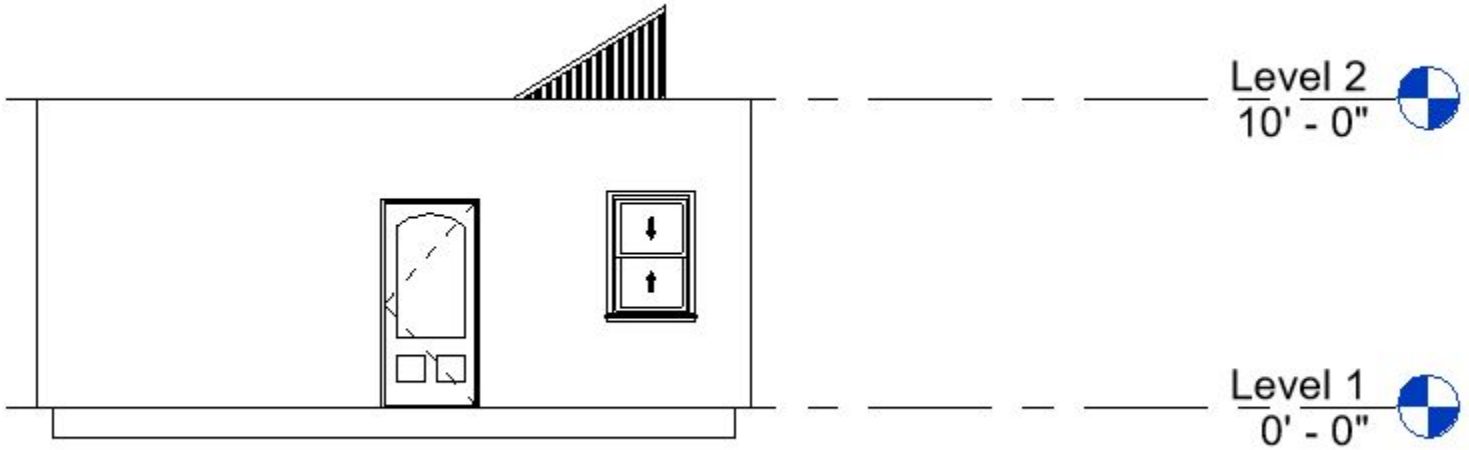
New Visual Style: *Shaded*

Extra: Second Floor!

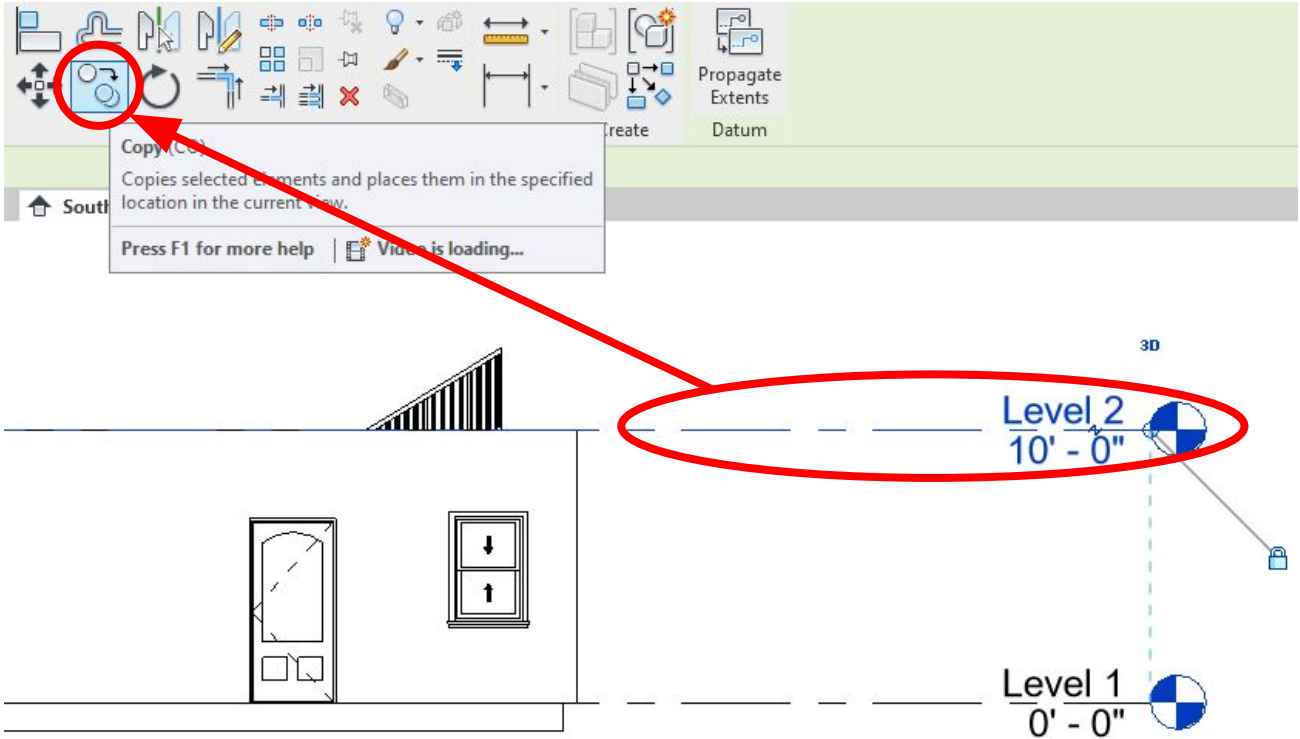
(Not part of floor plan image but cool to know!)

Adding a Second Level

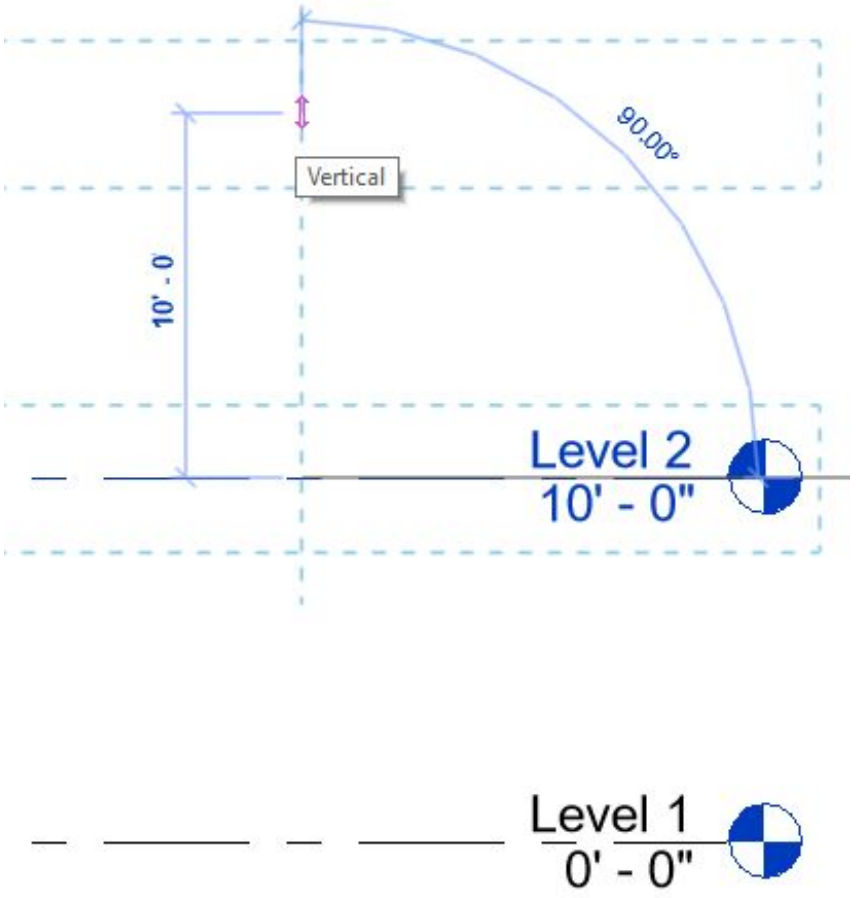
Go to *"Project Browser"* & Under *"Elevations"* click on *"South"*



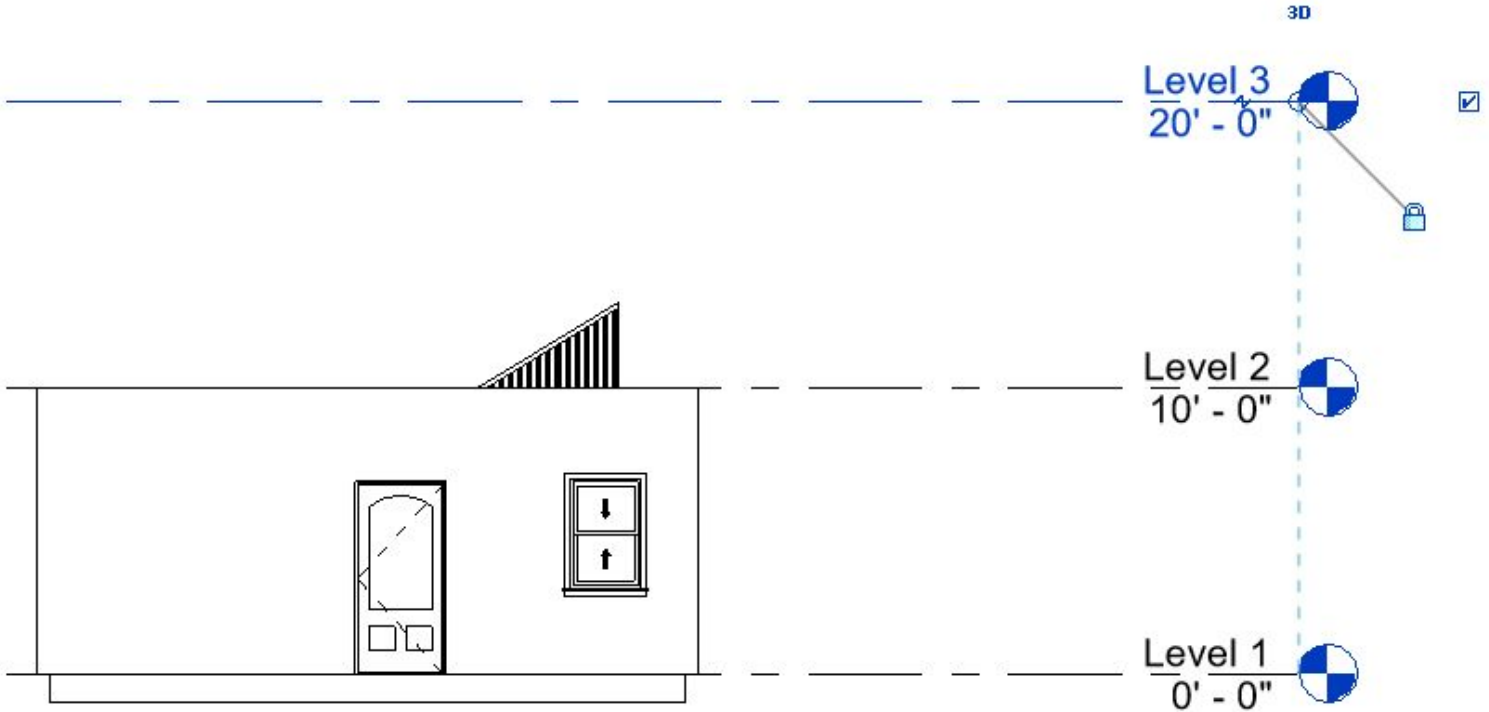
Click on the line of *"Level 2"* & under *"Modify"*, click the *"Copy"* icon



With *"Copy"* selected, click on the *"Level 2"* line again then move mouse upwards clicking at *10' - 0"* above creating *"Level 3"*

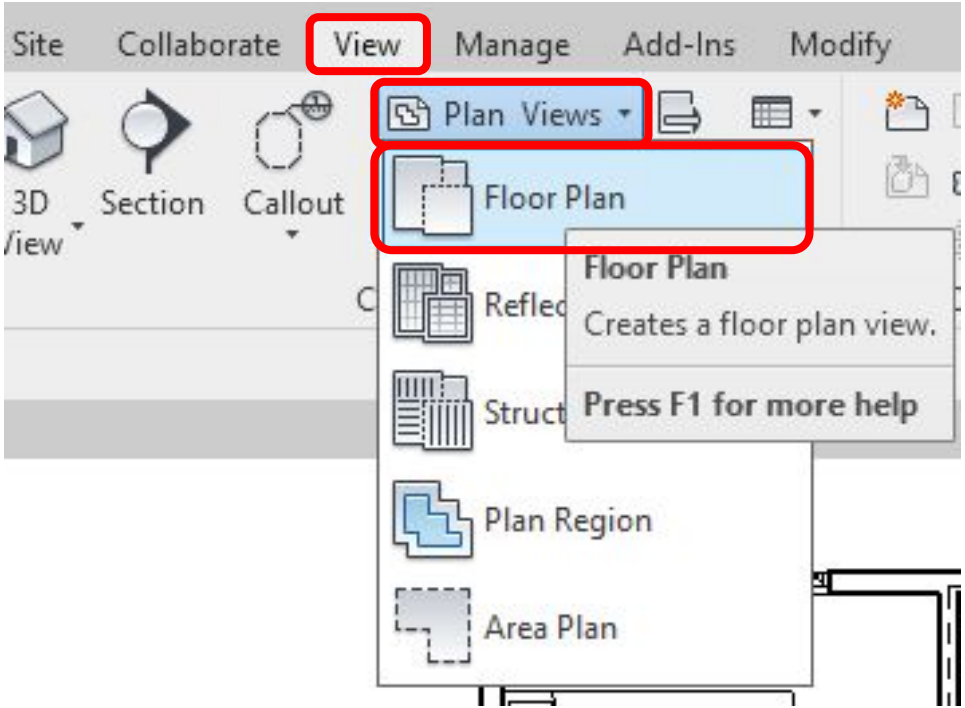


"Level 3" Created



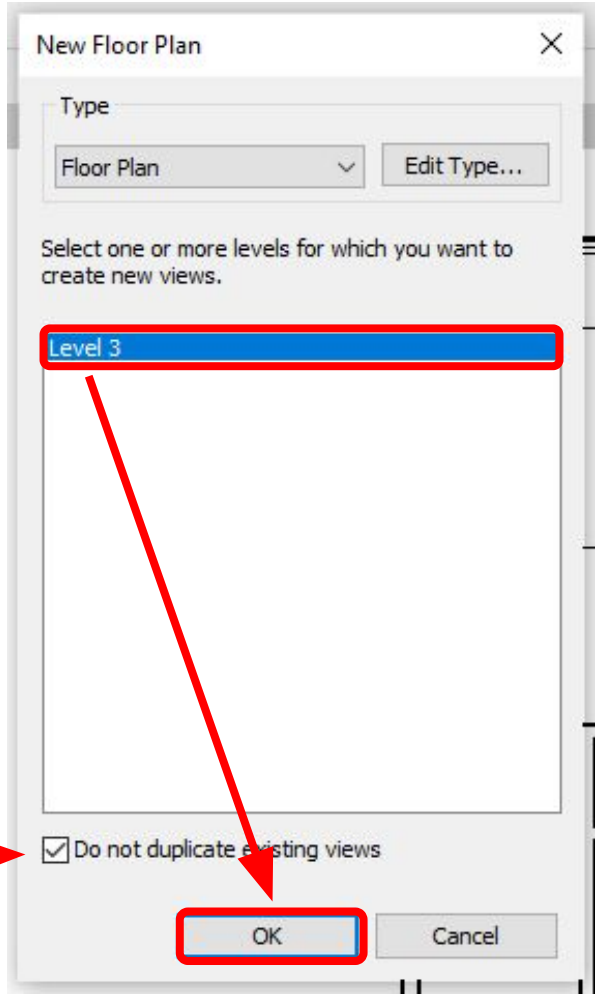
Note*: The creation of level 3 is so the second floor has a *ceiling constraint*.

Go to *"View"* tab & under *"Create"* click the drop down menu of *"Plan Views"* & click *"Floor Plan"*

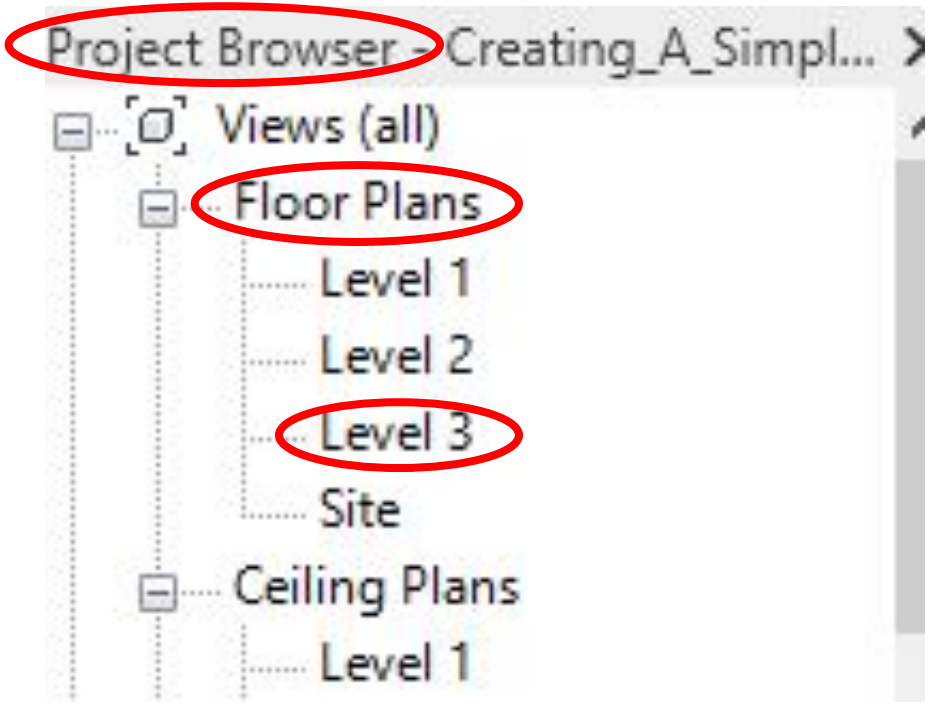


Selecting *"Floor Plan"*, this window will appear, make sure *"Level 3"* is selected then click *"OK"*

Note*: Make sure the *"Do not duplicate..."* is checked.



"Level 3" will appear under *"Project Browser"* & under *"Floor Plans"*



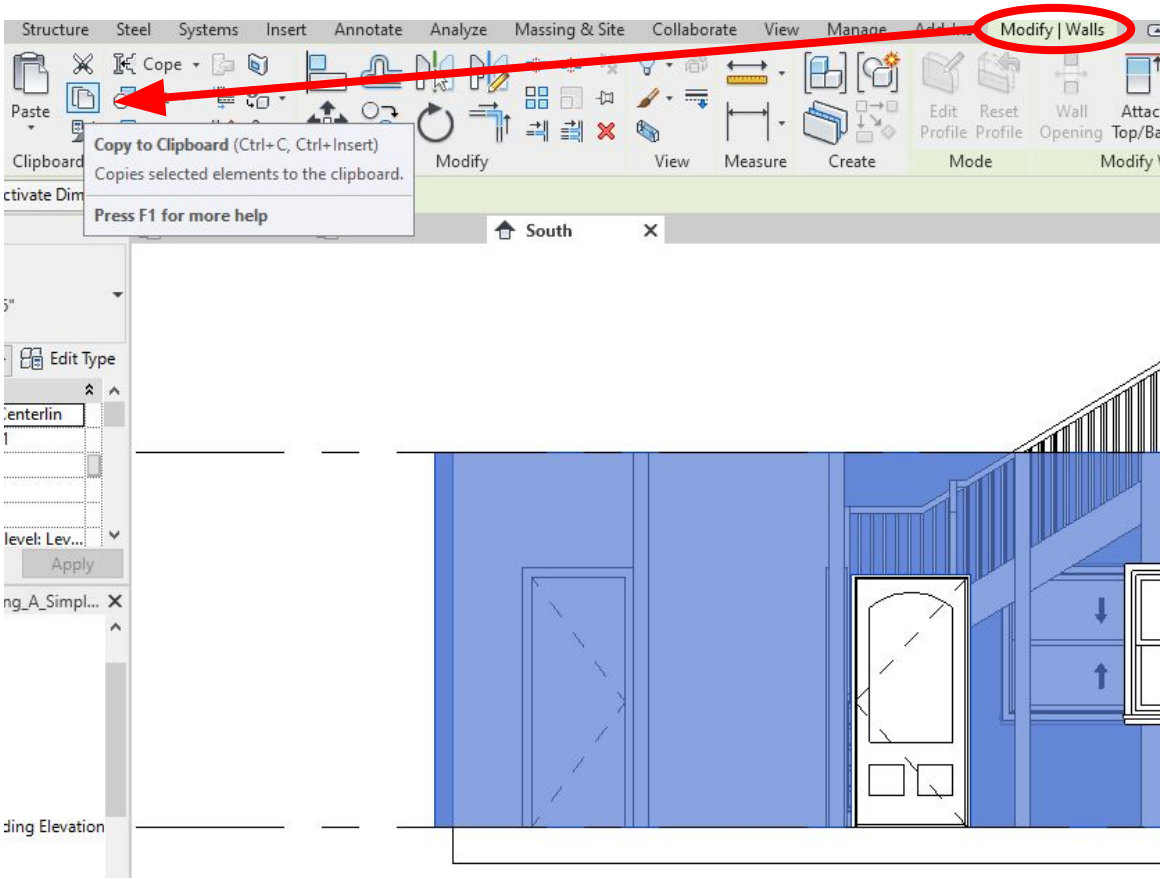
Copying to Level 2

(This is so you won't need to manually draw the same plan a second time)

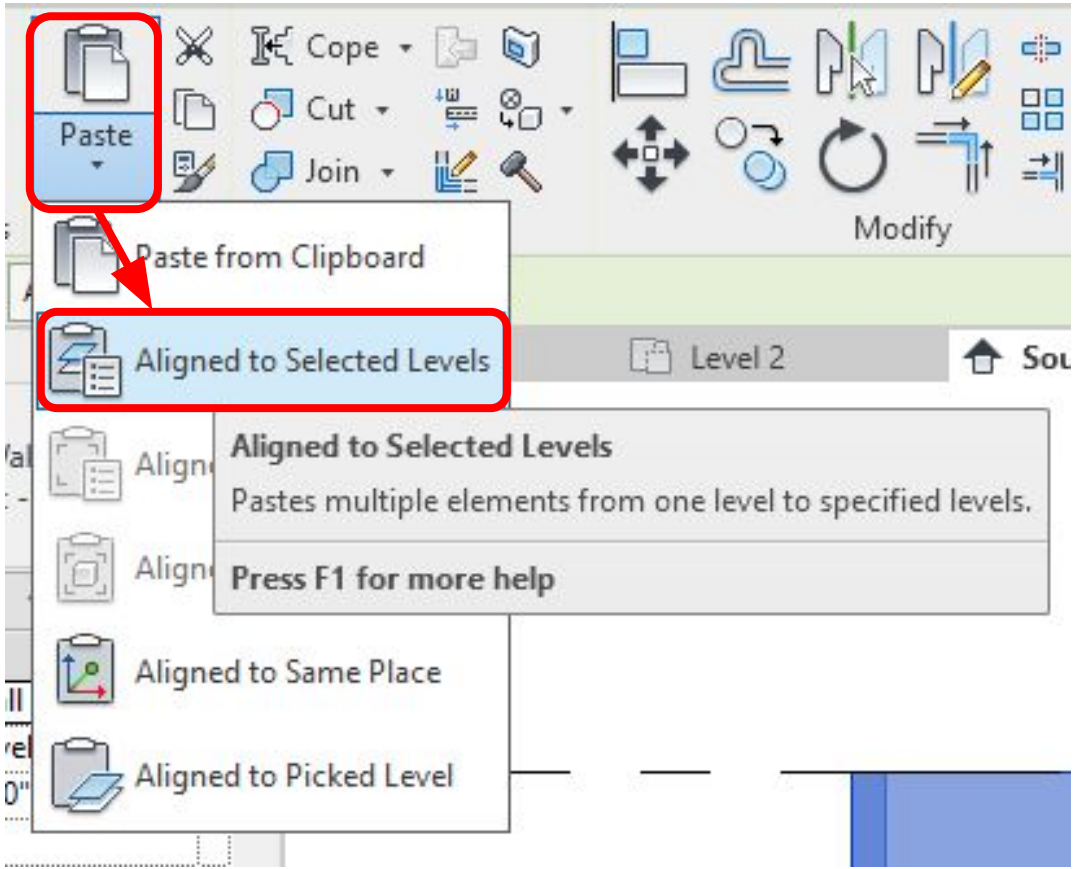
Under *"Project Browser"* & under *"Elevations"*, go to *"South"*. Click one wall & press *"Tab"* to make sure the walls are selected

Note*: Press *"Tab"* while hovering your mouse over this wall till you see this.

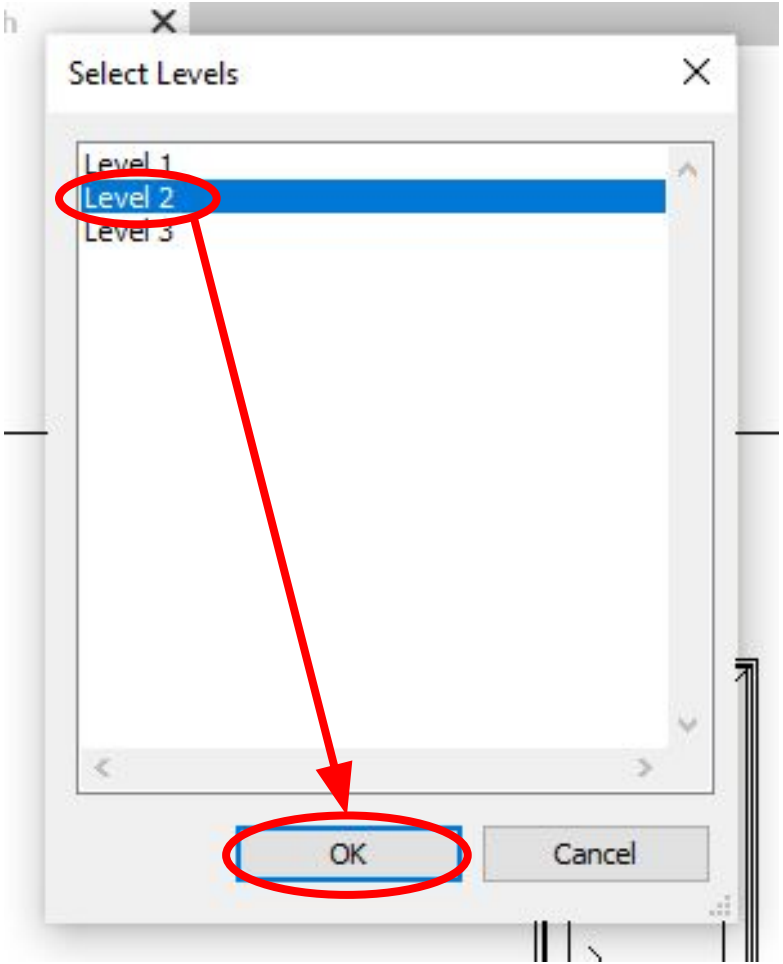
With the walls selected, under *"Modify | Walls"* & under *"Clipboard"* click the *"Copy to Clipboard"* icon



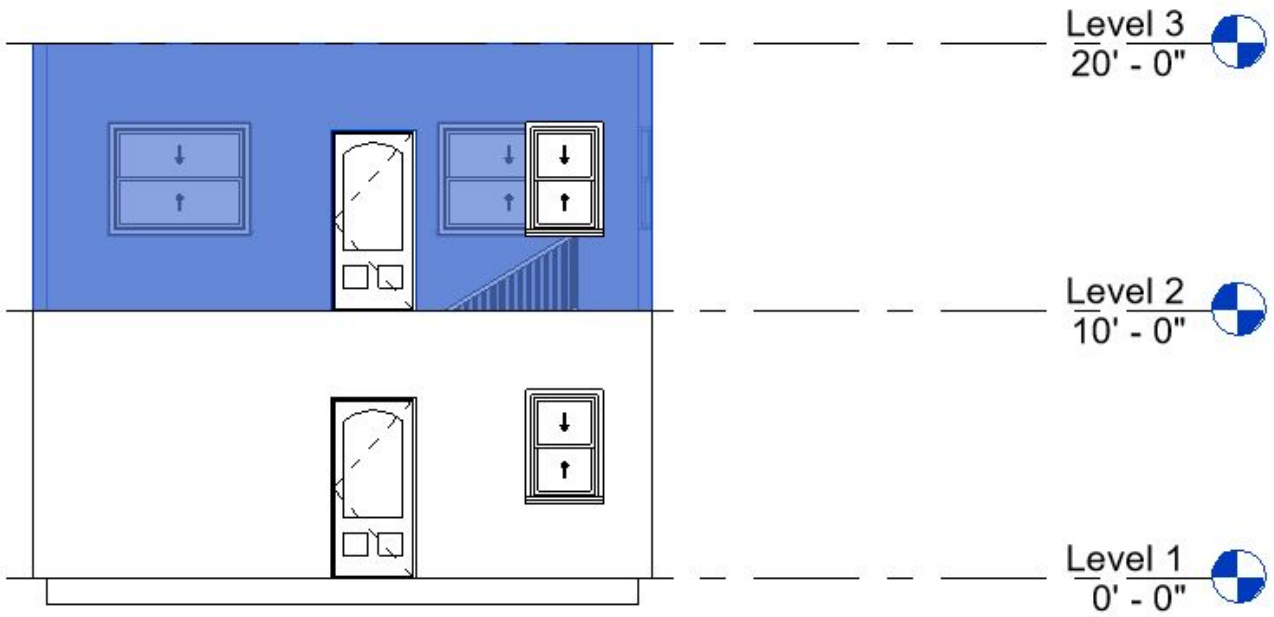
With walls still selected, click the drop down menu of *"Paste"* & select *"Aligned to Selected Levels"*



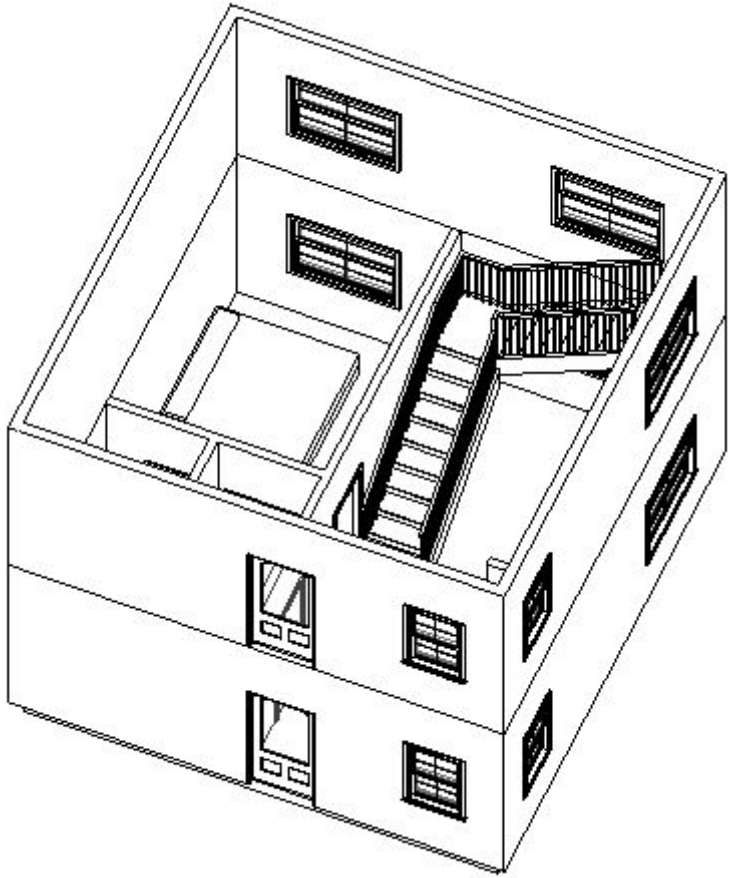
Window titled *"Select Levels"* will pop up, so select *"Level 2"* as the base level to paste then click *"OK"*



After clicking *"OK"*, here is the result of what it will look like.



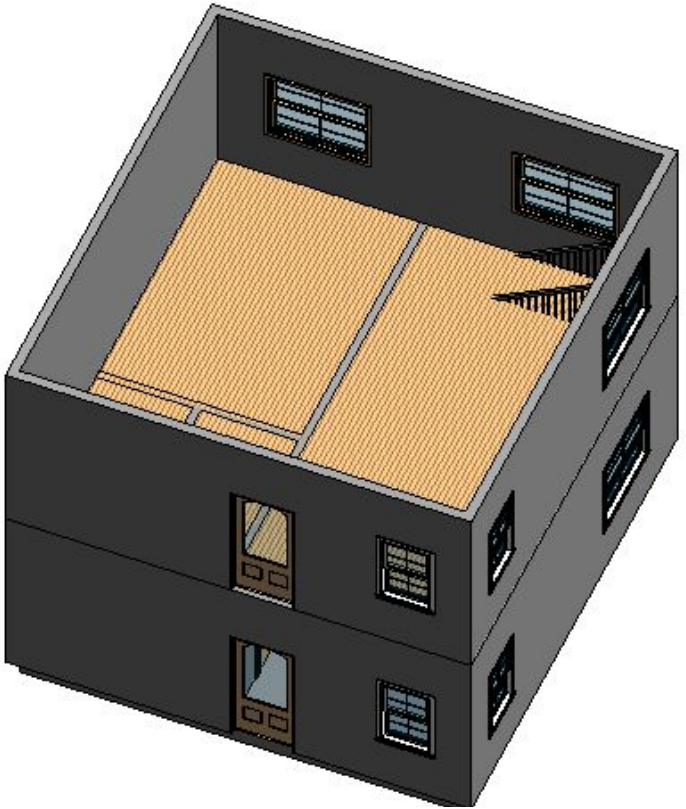
Also, here is the *3D View* of the second floor.



Creating a Floor

(for Level 2)

Create a *Floor* for Level 2. Refer to that section of the PDF for guidance.

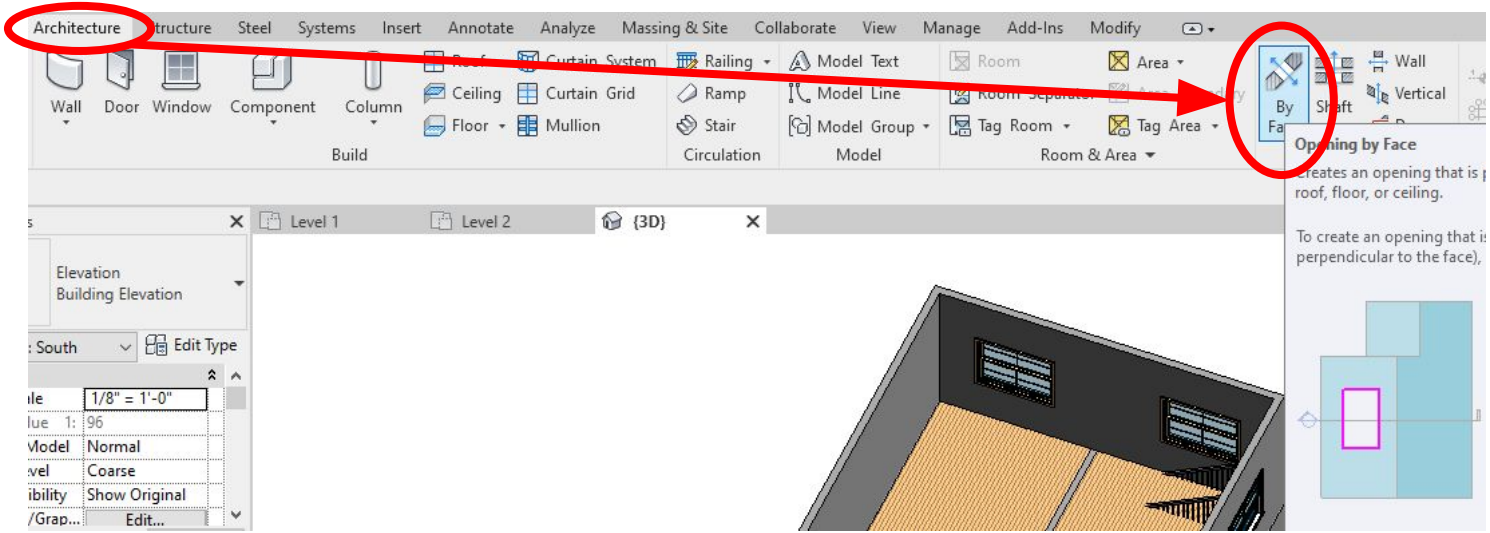


Note*: You can modify the floor type under *"Properties"* & a pop up will ask you something after you confirm your floor, click *"No"*.

Cutting a Opening

(In the floor of Level 2 for the stairs)

To open up the floor to reveal the stairs, go to *"Architecture"* tab & under *"Opening"* select *"By Face"*

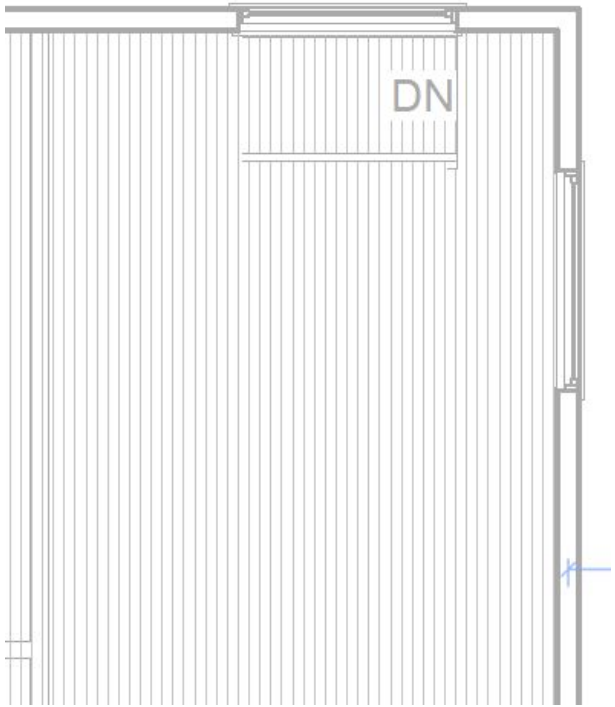


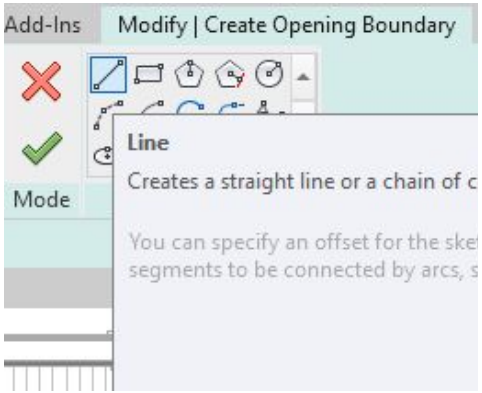
Note*: You can also go to *"Structures"* tab and it will be located the same place.

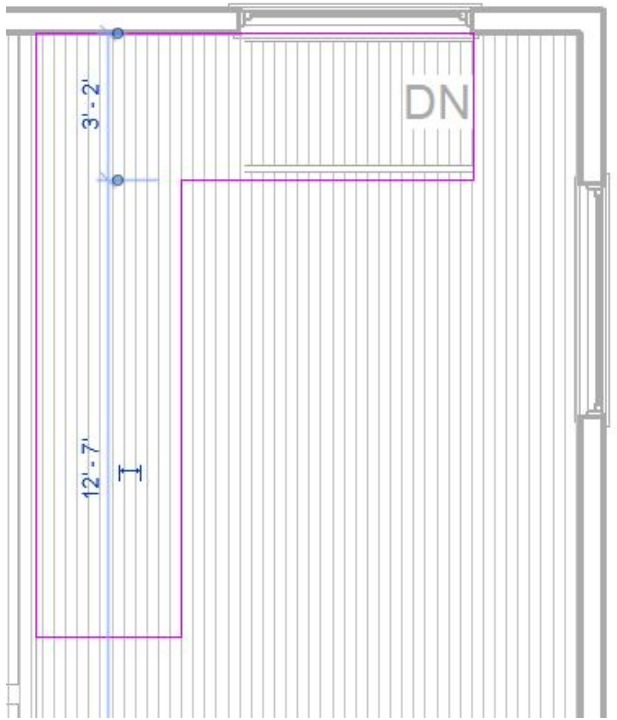
Hover near the edge of the floor & when a blue border appears with the message, *click* on the floor

Note*: This is showing *how to select on the floor face*.

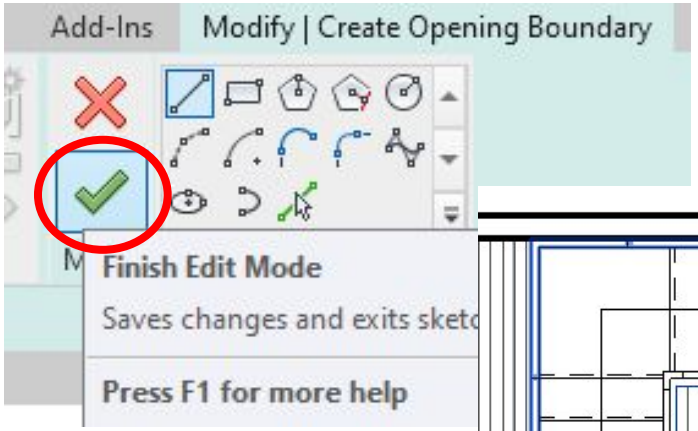
Use default *"Line"* to draw a border around where you want the floor to be cut out.



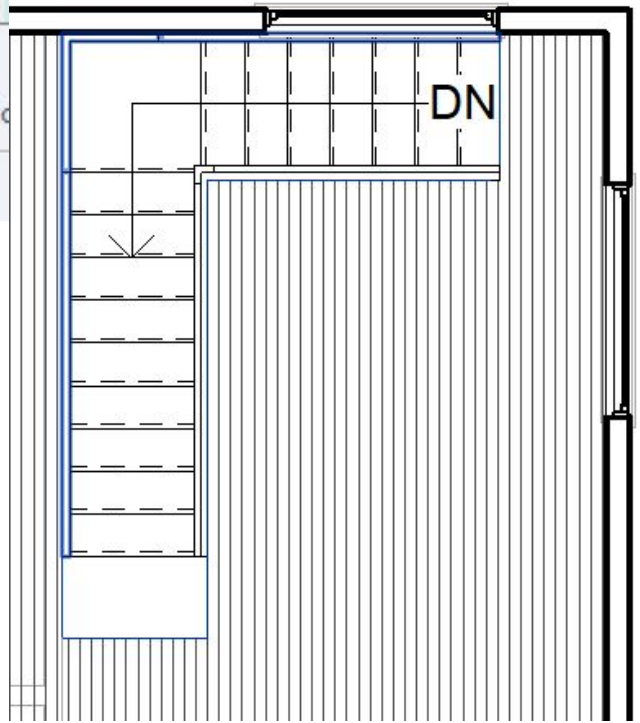




Confirm your creation with the green *"Checkmark"* & view your result

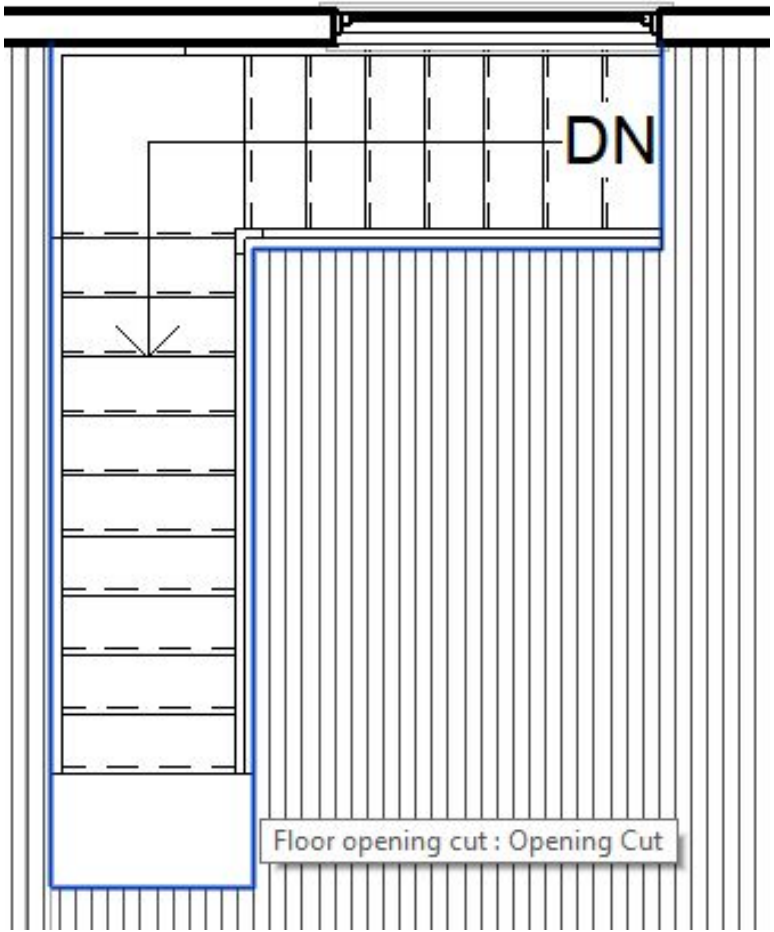


Result --->

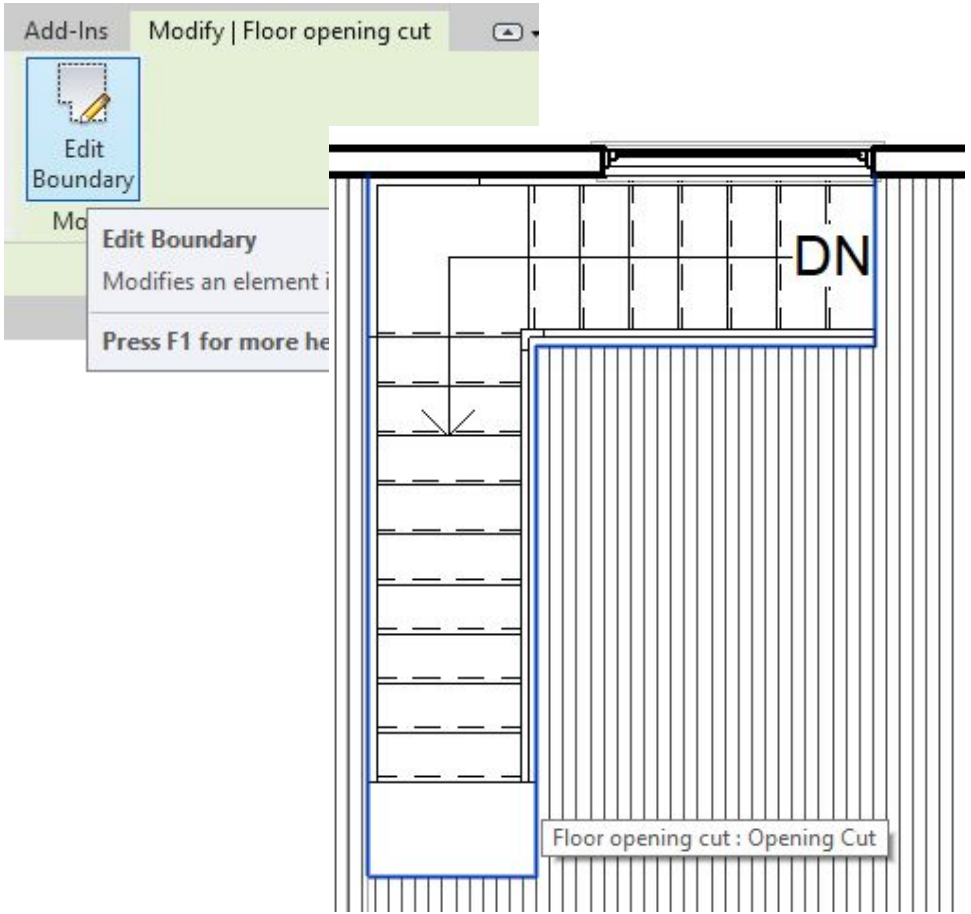


Edit floor opening by *hovering* & *clicking* on the boundary

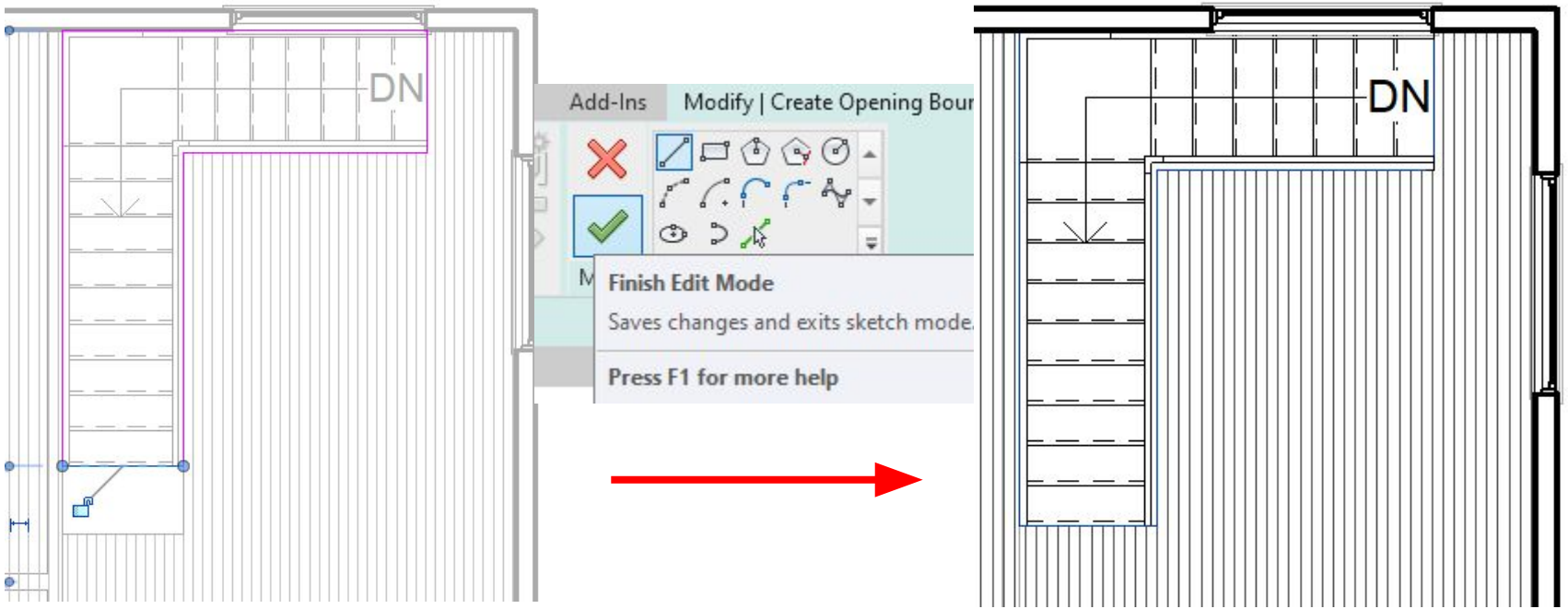
Note*: This is only necessary if you are not satisfied with your first attempt.



Edit floor opening by *hovering* & *clicking* on the boundary & selecting *"Edit Boundary"*

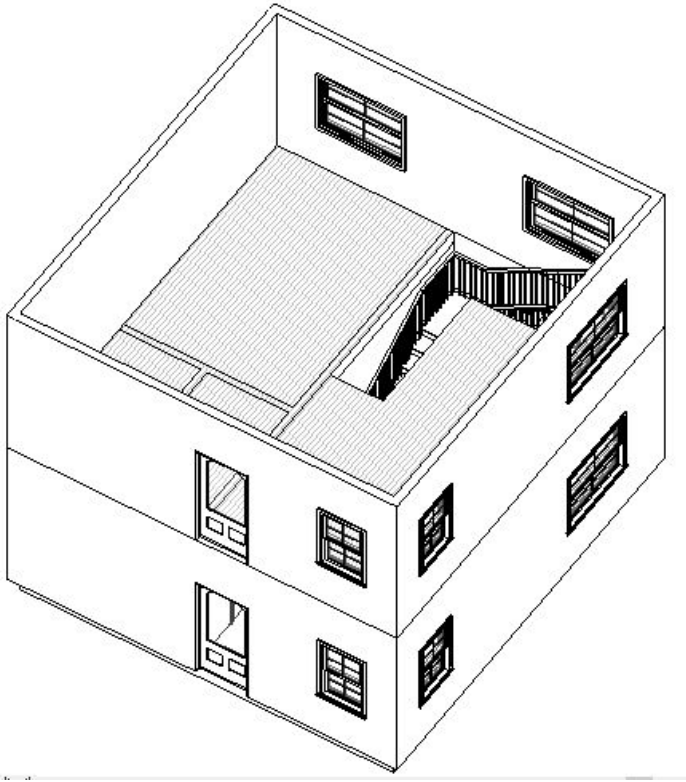


Edit the boundary to how you want it, *Confirm*, & view the new result

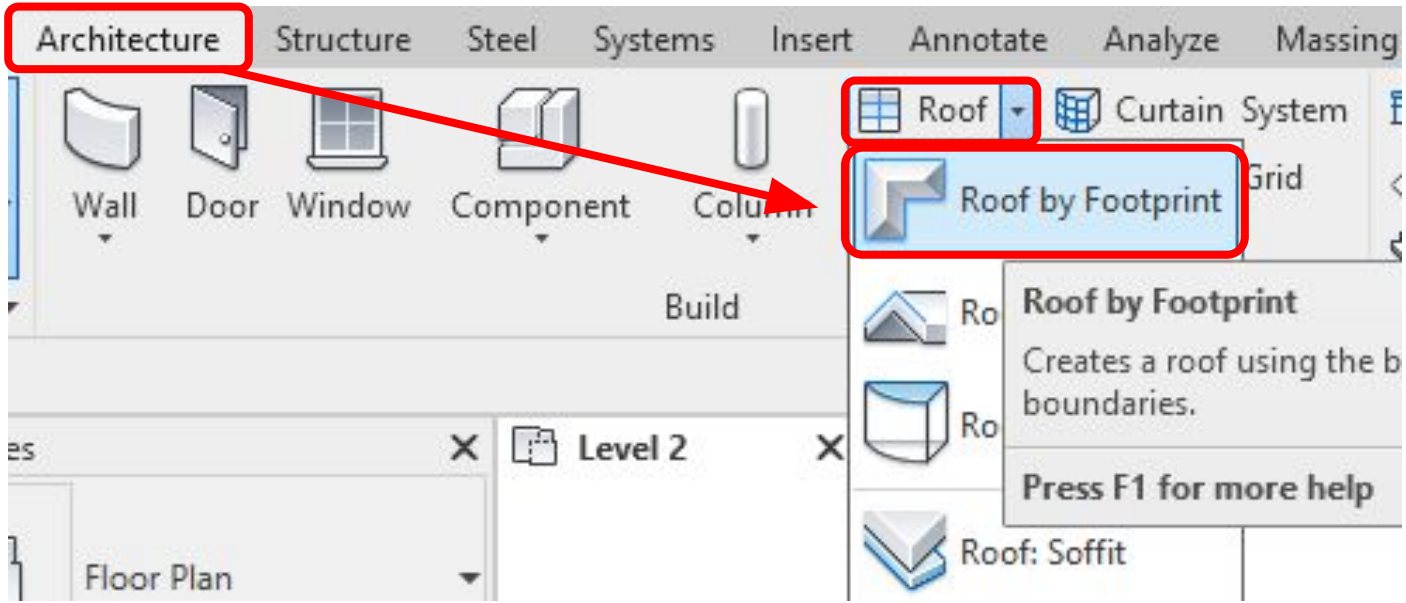


Creating the Roof

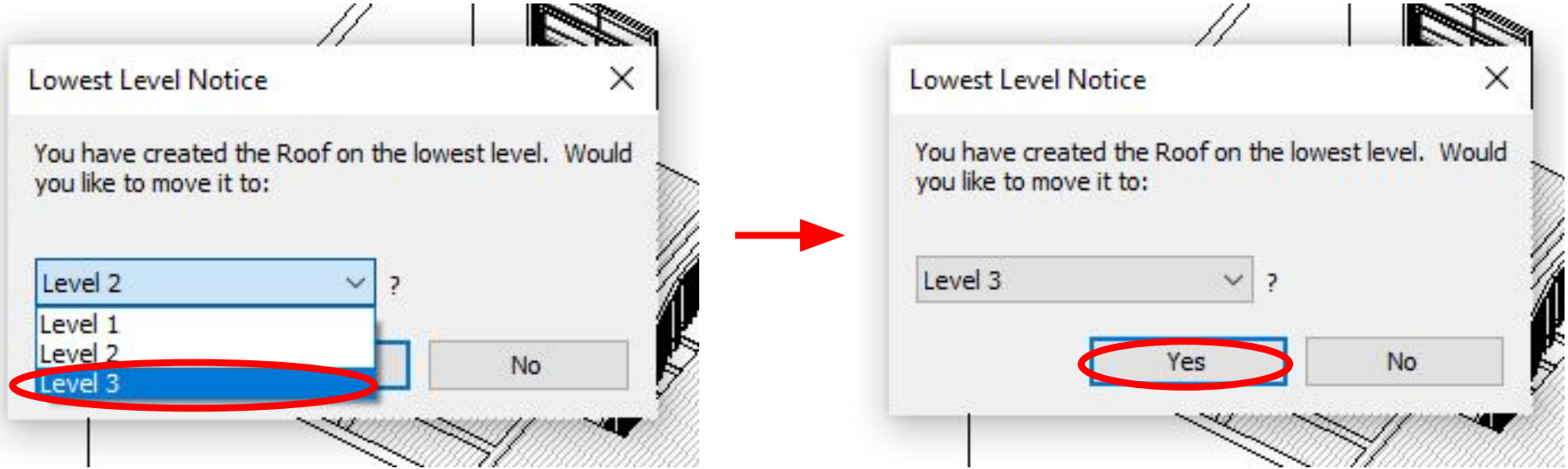
Go to
"3D-View" by
using the
"House" icon



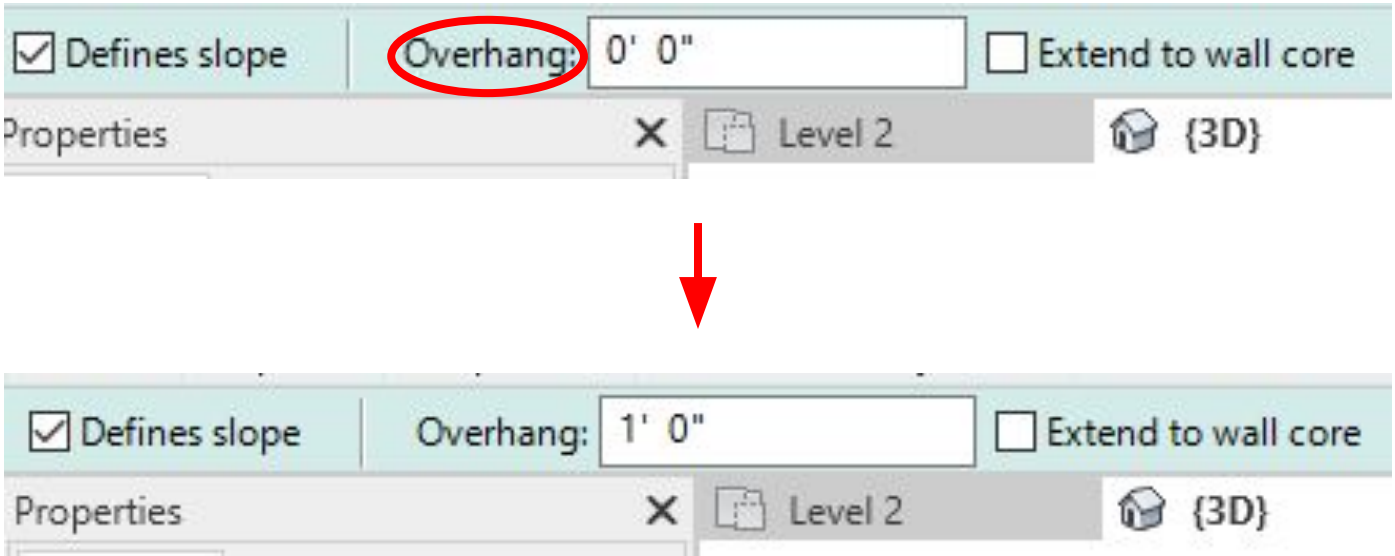
Go to *"Architecture"* tab & go to *"Roof"* drop down menu & select *"Roof by Footprint"*



Window pop-up: Switch to *"Level 3"* then click *"Yes"*

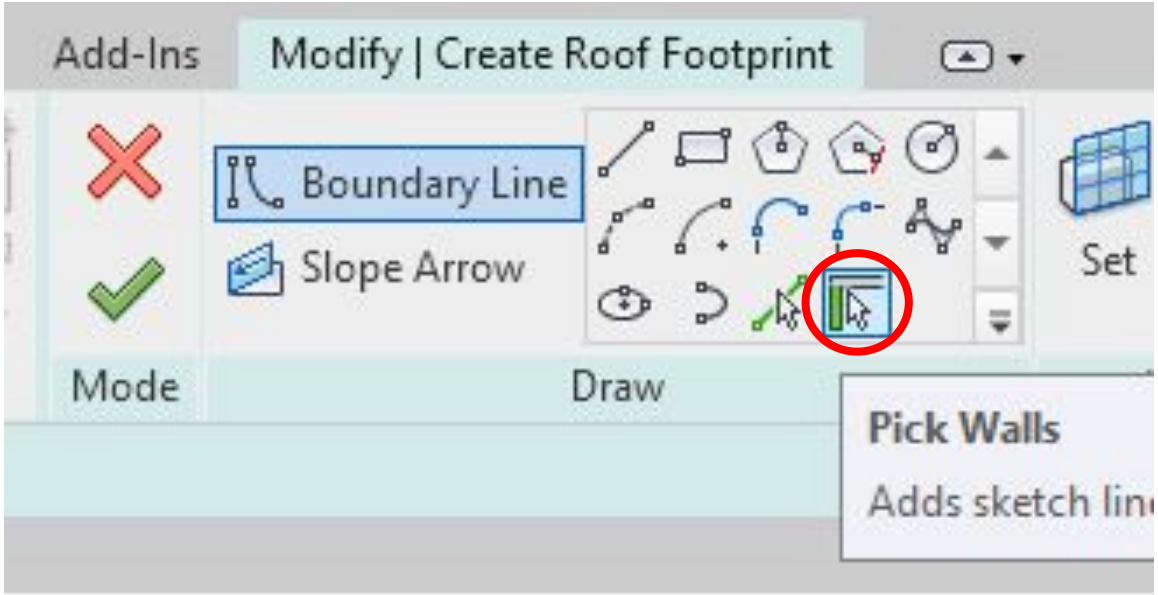


Before drawing the roof, first edit the *Overhang* value

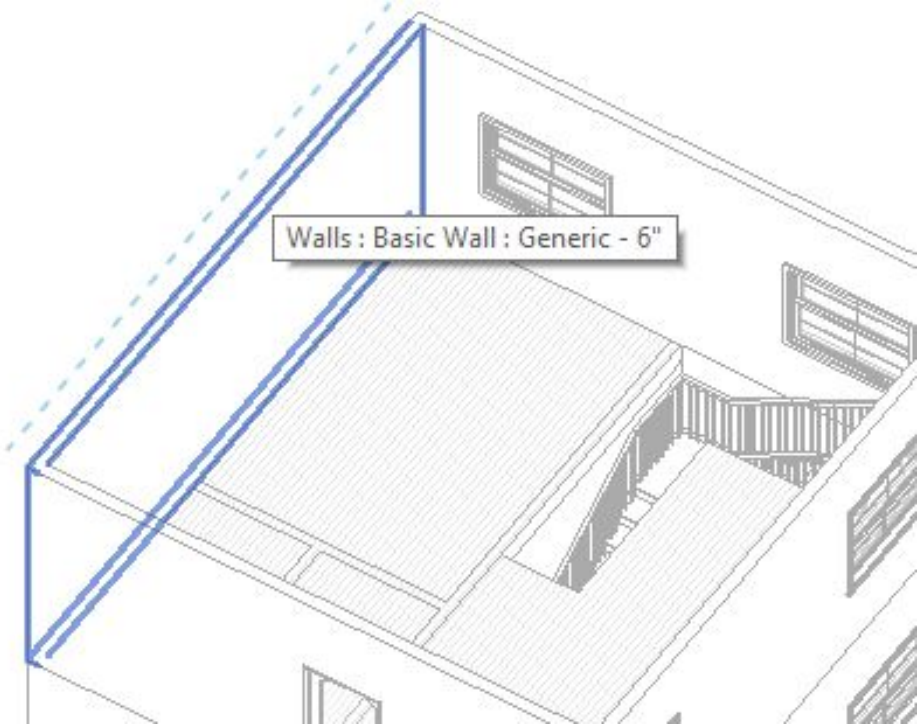


Note*: *1 foot (1')* is the minimum standard residential roof overhang. Leave the other settings as default shown.

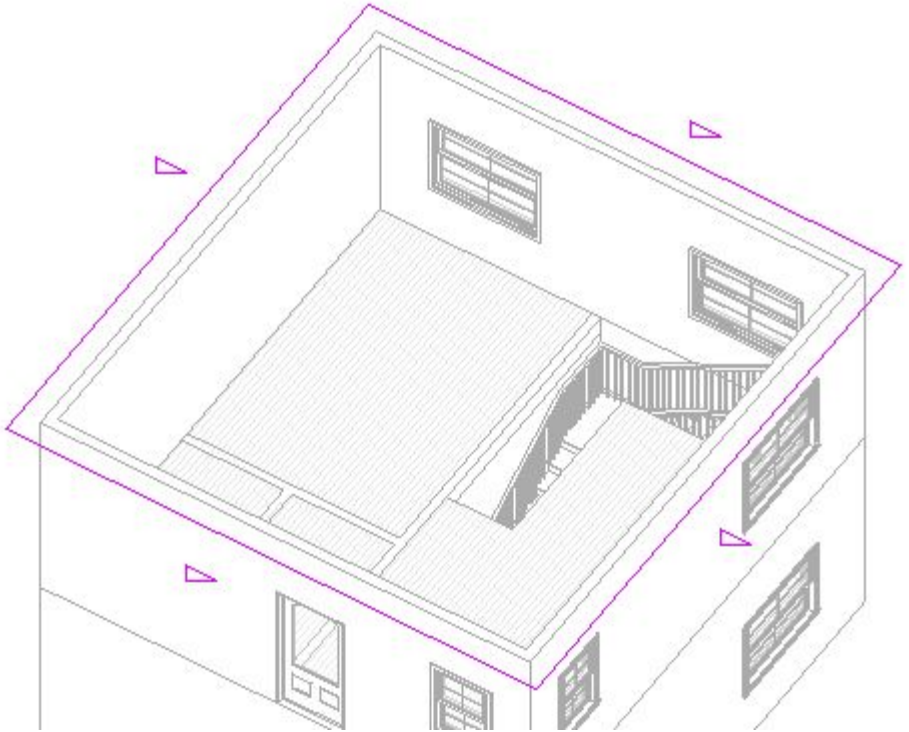
Now, use the default *"Pick Walls"* option to begin drawing the roof footprint



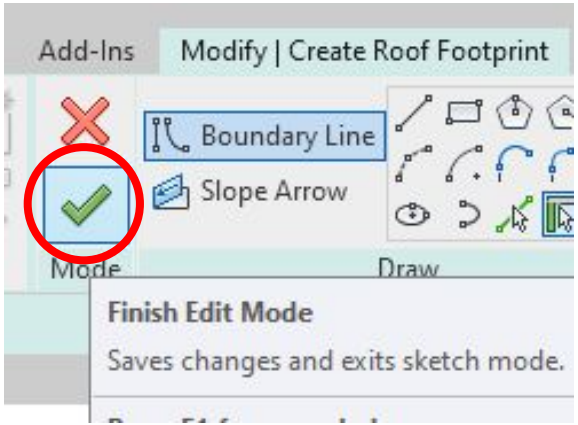
To begin drawing roof footprint, *hover* over the first wall & make sure *overhang* is on the *exterior side* before clicking

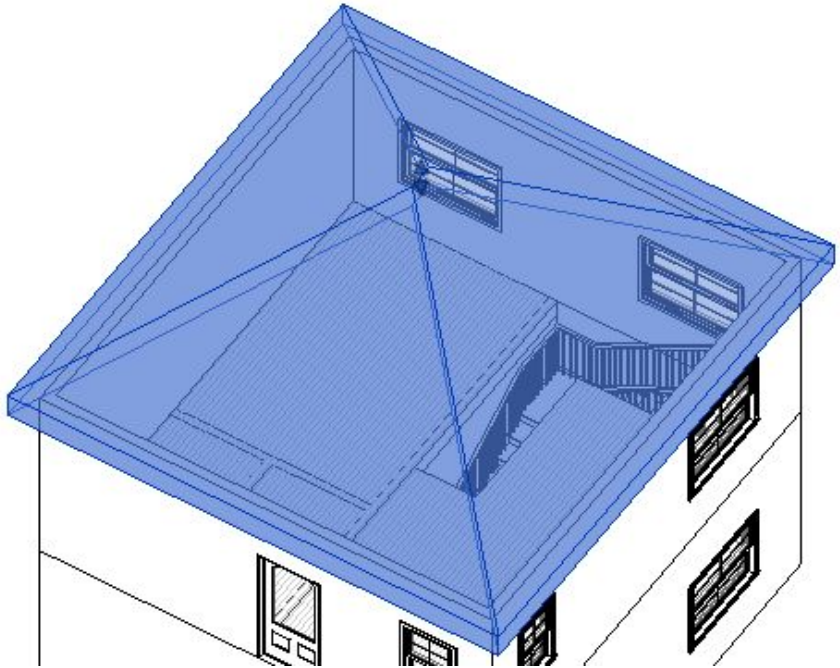


Create the roof footprint with the overhang on the exterior.

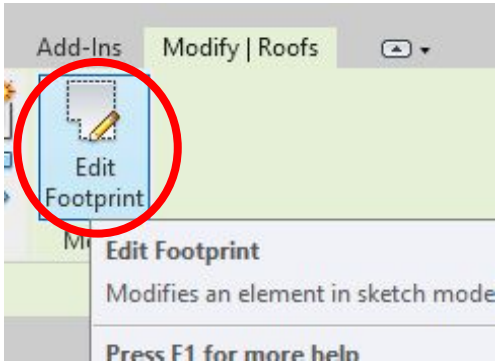


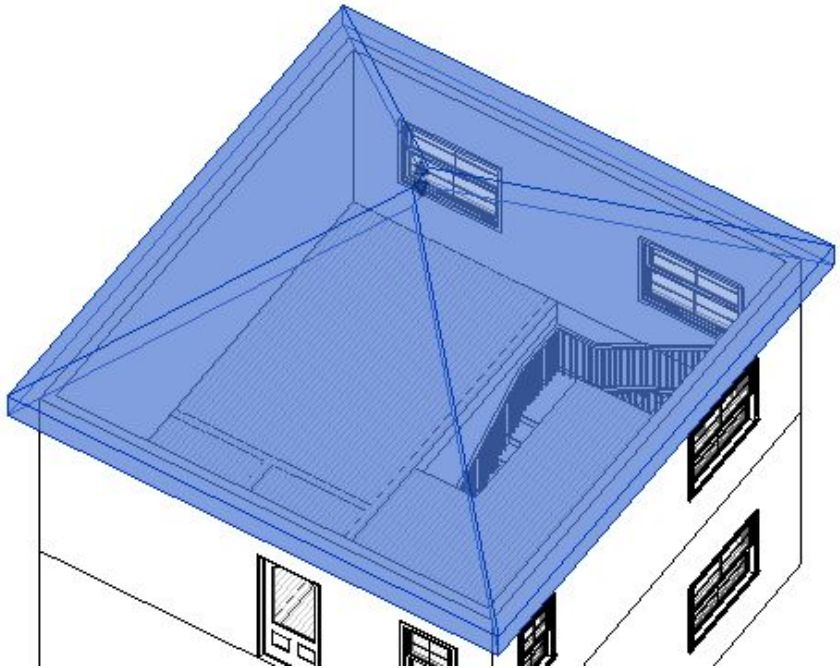
Confirm roof footprint & *View* result



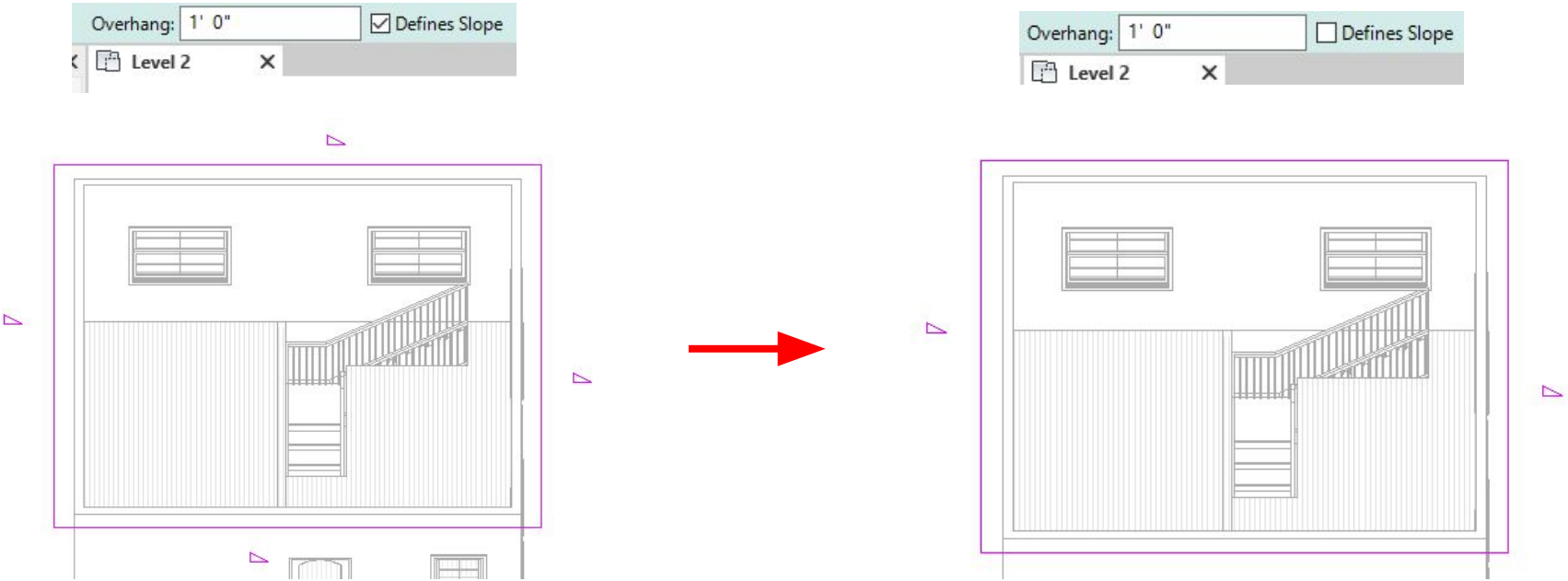


Edit roof boundary by selecting *"Edit Footprint"* while roof is selected



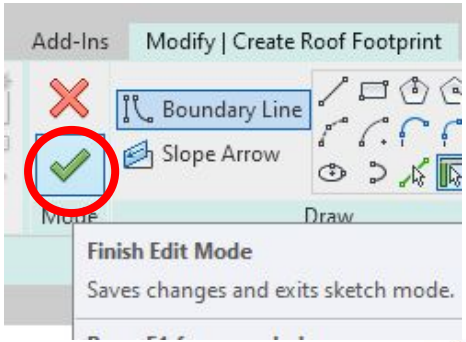


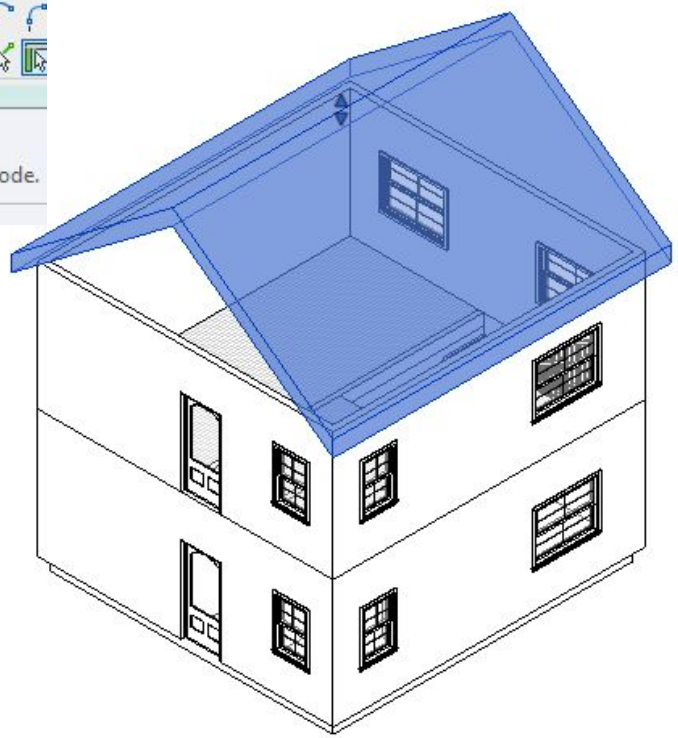
Select top & bottom roof boundary & *Uncheck "Defines Slope"*



Note*: Notice how the *"right triangle"* disappears from the top and bottom when the *"defines slope"* is unchecked. *Each side needs to be selected and unchecked individually*.

Confirm
changes
by clicking
checkmark
& view new
roof

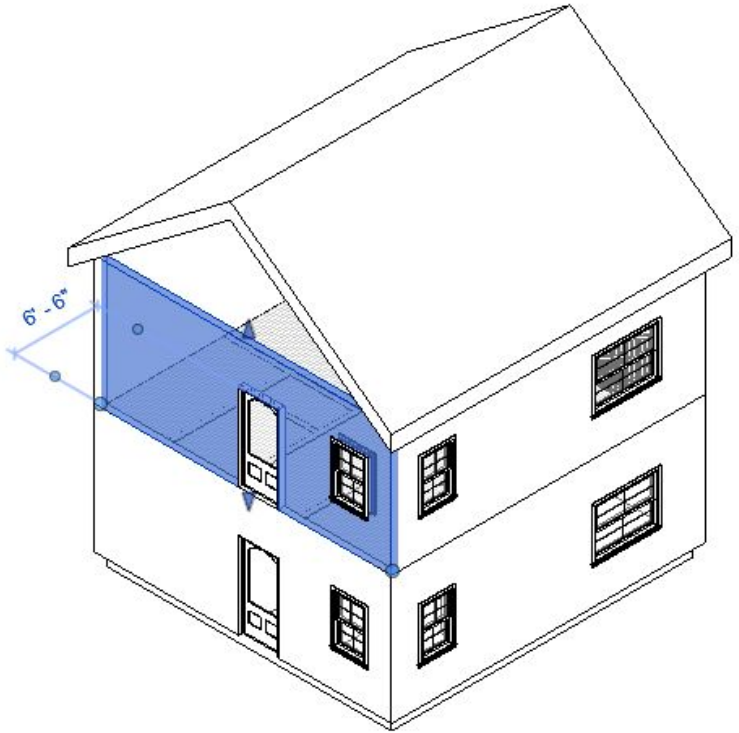




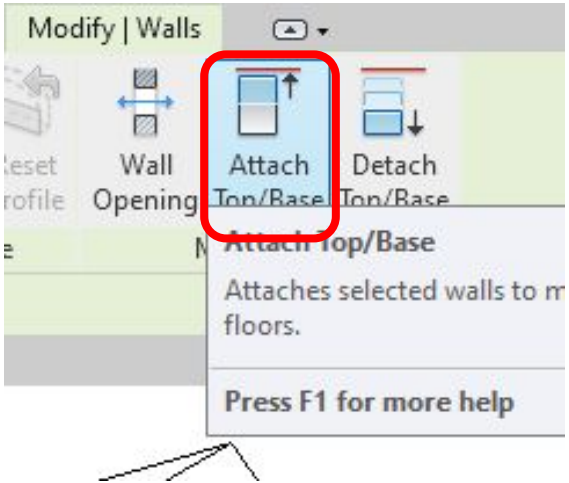
Attaching Walls to the Roof

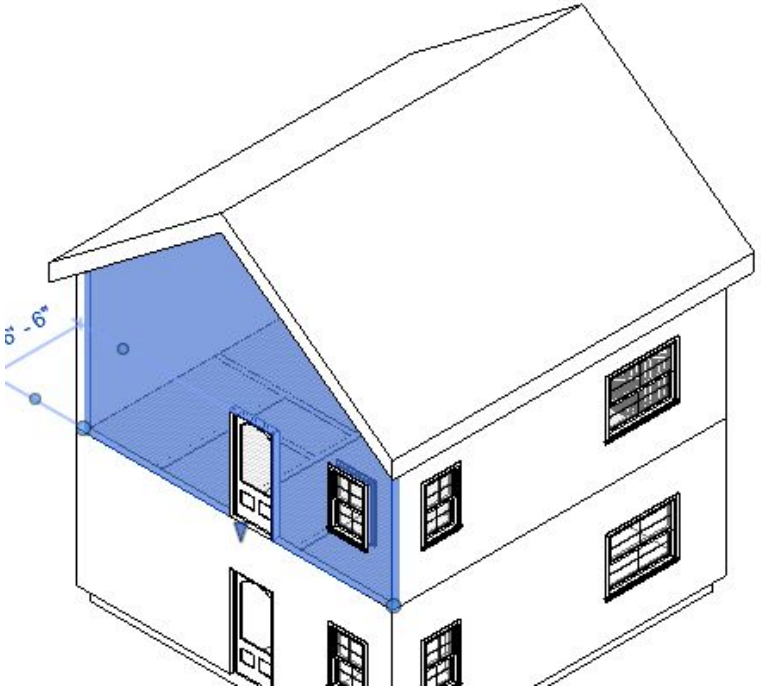
(You don’t want gaps between your roof & walls)

Deselect roof
& *select* wall
(at level 2)



Select *"Attach Top/Base"* & select the roof to attach



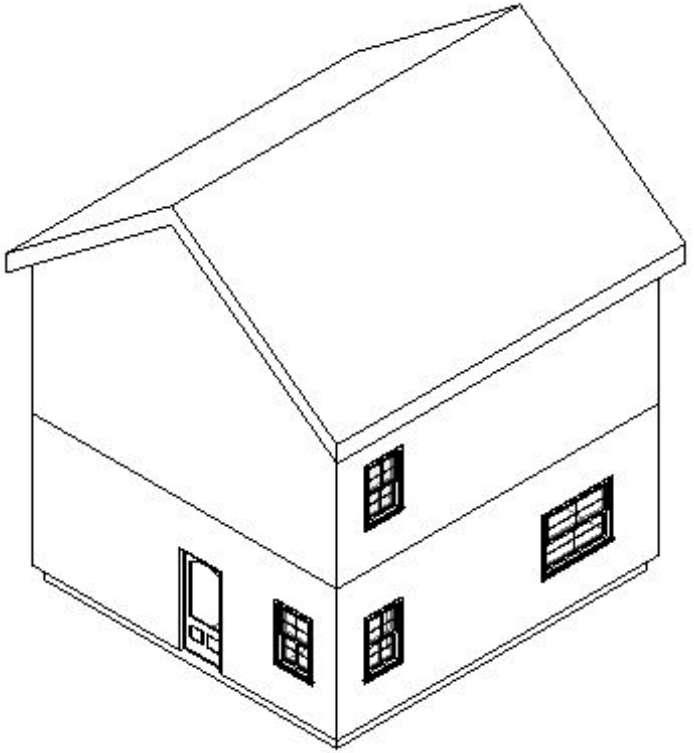


Note*: *Repeat* on opposite side.

Removing Unnecessary Elements

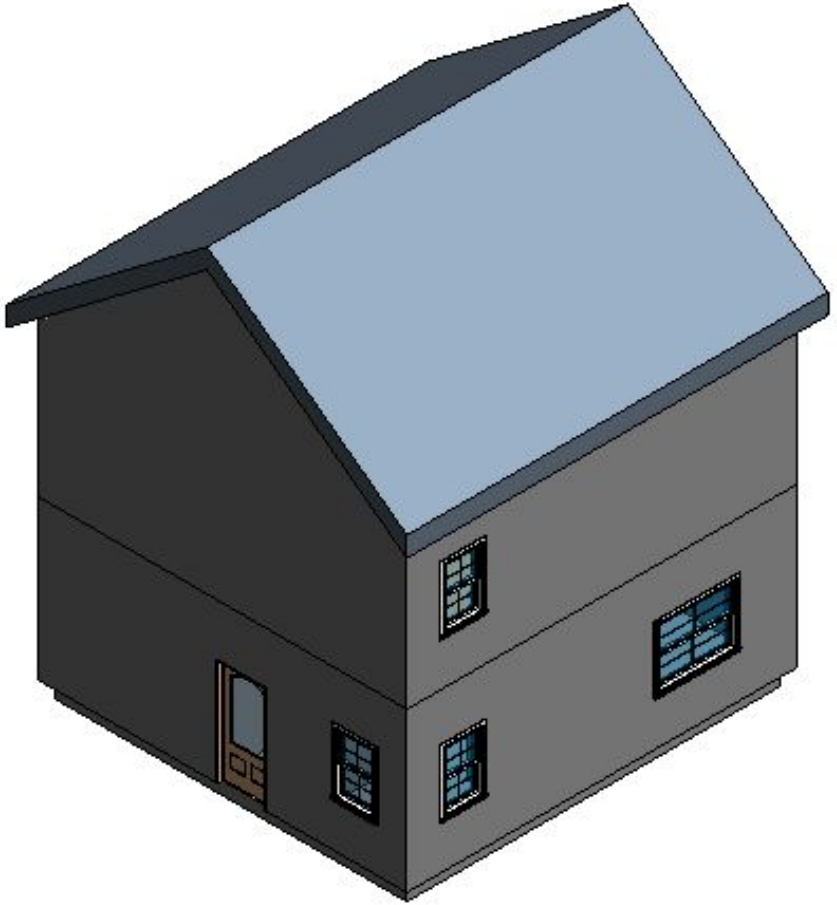
(For example: a door on the second floor is not needed)

Remove Door
by selecting it
& pressing
"Delete"



Note*: *Delete* anything else you want. This is just an example.

Final 3D View:
Shaded



More Resources

- https://www.revitcity.com/index.php (download cool furniture here!)
- Go to YouTube & Google to learn more about Revit!
- forums.autodesk.com/ & knowledge.autodesk.com/ are good sources too