48-749 Parametric Modeling
Lecture 2a

Carnegie Mellon University
School of Architecture

Revit 2010 Basics

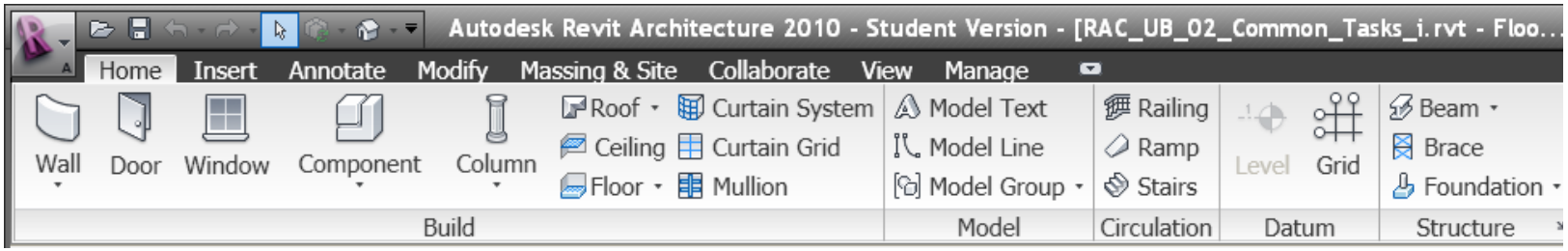
- Walls
- Modeling with Sketch based techniques
  - using sweep and extrusion
- Doors, windows
- Floors, roofs
- Miscellaneous Functions

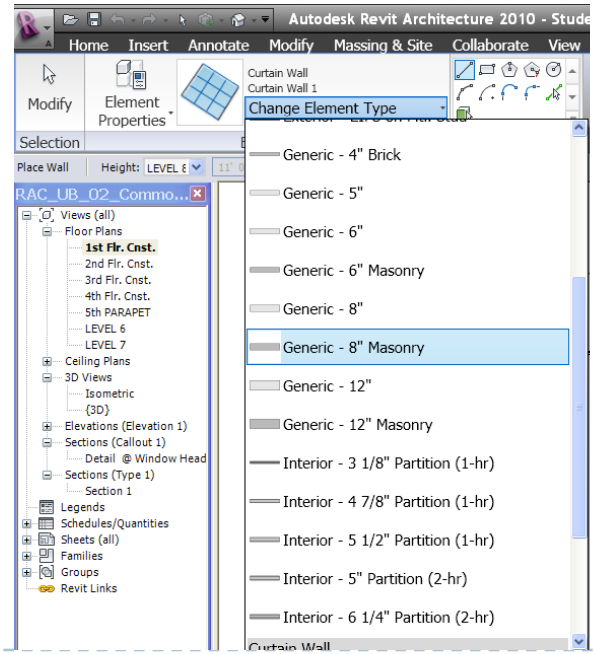
Wall Types

- Exterior Walls
  - exterior skin of the building model
- Interior Walls
  - interior partitions in a building project and have a non-bearing character
- Foundation Walls
  - walls that form the foundation or substrate of the main building structure
- Curtain Walls
  - predefined curtain walls or screen walls consisting of panels and mullions

Wall Types

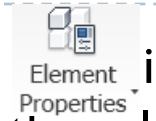
- **Wall tool** Choose Home tab **> Wall** from the menu bar or choose the **Wall** tool from the **Design Bar**



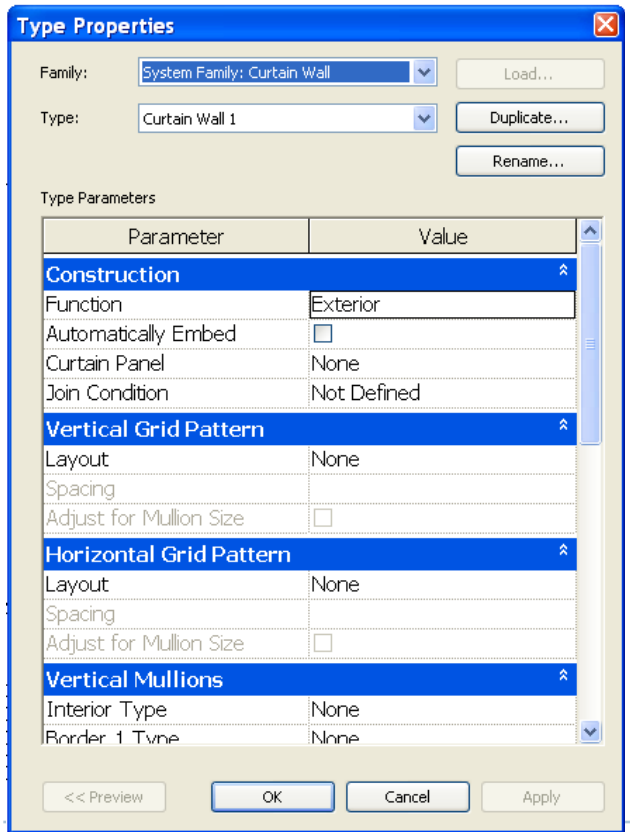


Type Selector Bar

Wall Properties

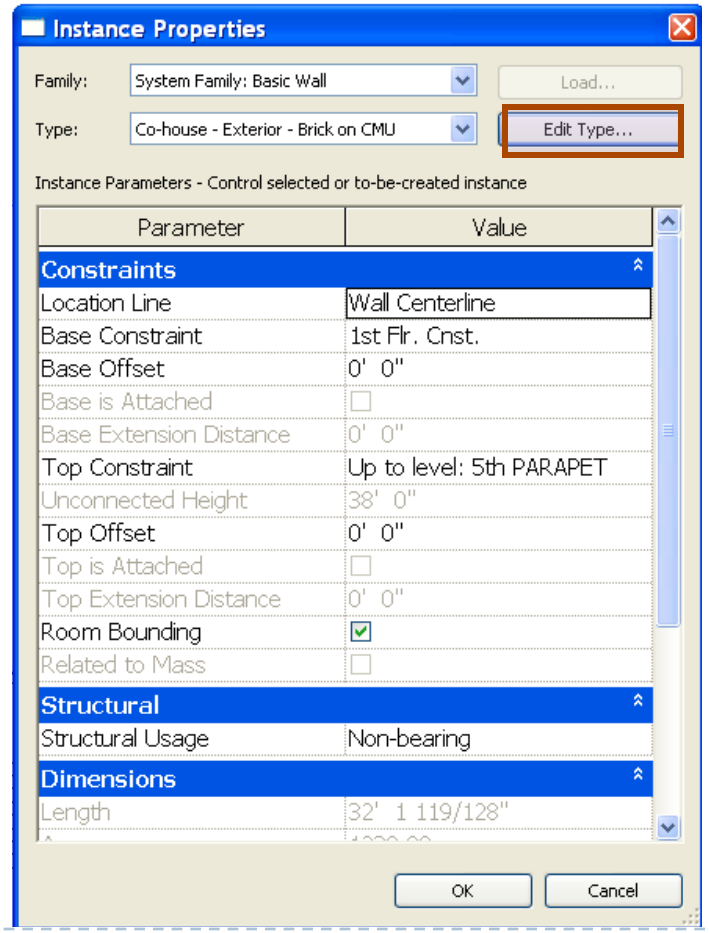
- The Properties button 

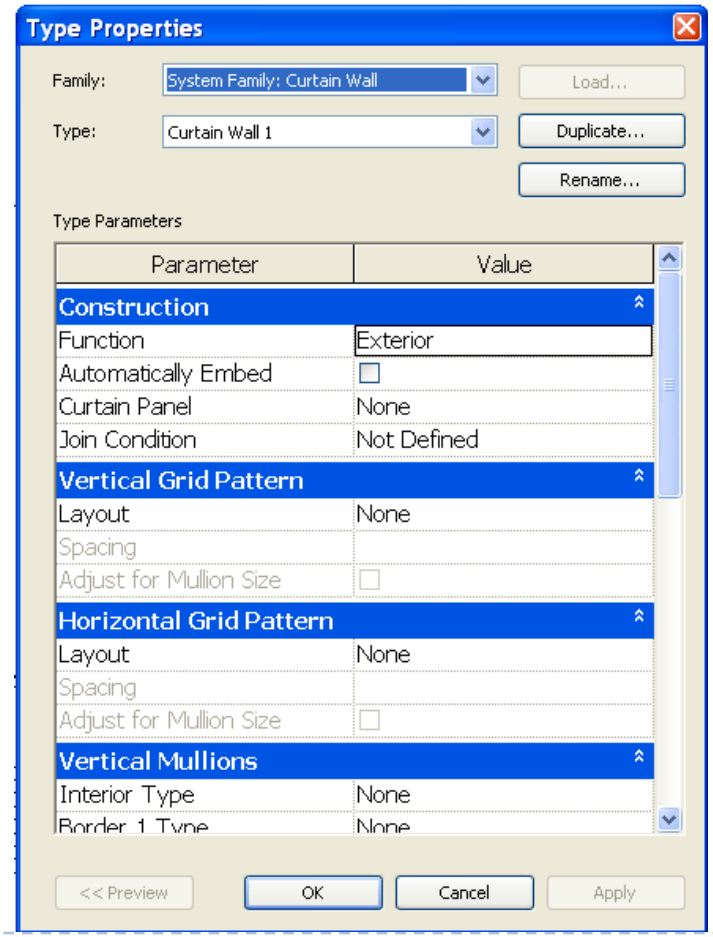
is used to view and modify various predefined properties of the selected wall type.
- When you choose this button, the Element Properties dialog box is displayed.



Wall Type Parameters

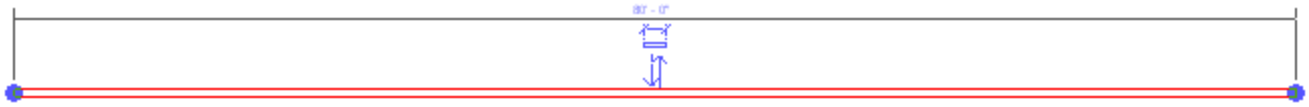
- To view and modify the type parameters of a wall, choose the **Edit/New** button in the **Instance Properties** dialog box.





Wall Instant parameters

The *Instance Parameters* table in the Element Properties dialog box shows various parameters and their corresponding values the selected wall.

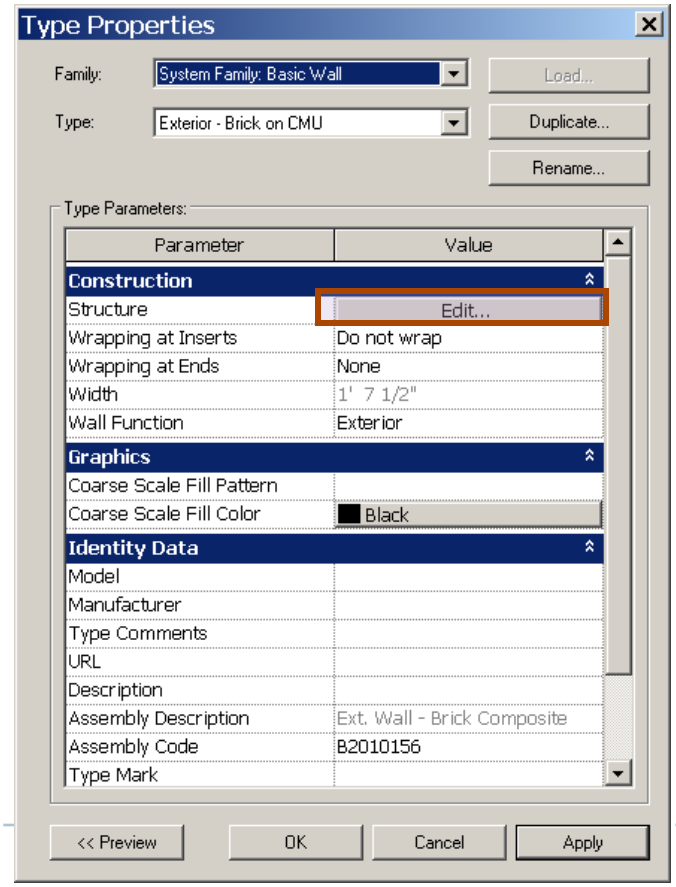


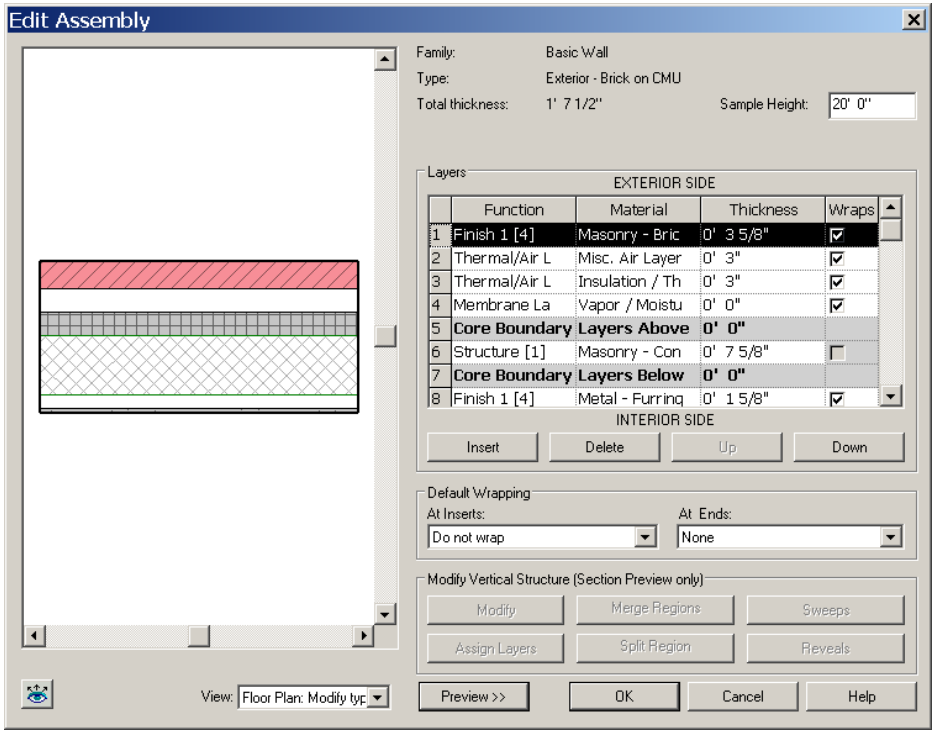
Instance Parameters - Control selected or to-be-created instance

Parameter	Value
Top Extension Distance	0' 0"
Room Bounding	☑
Related to Mass	☐
Structural	
Structural Usage	Non-bearing
Dimensions	
Length	56' 6"
Area	1130.00 SF
Volume	1836.25 CF
Identity Data	
Comments	
Mark	

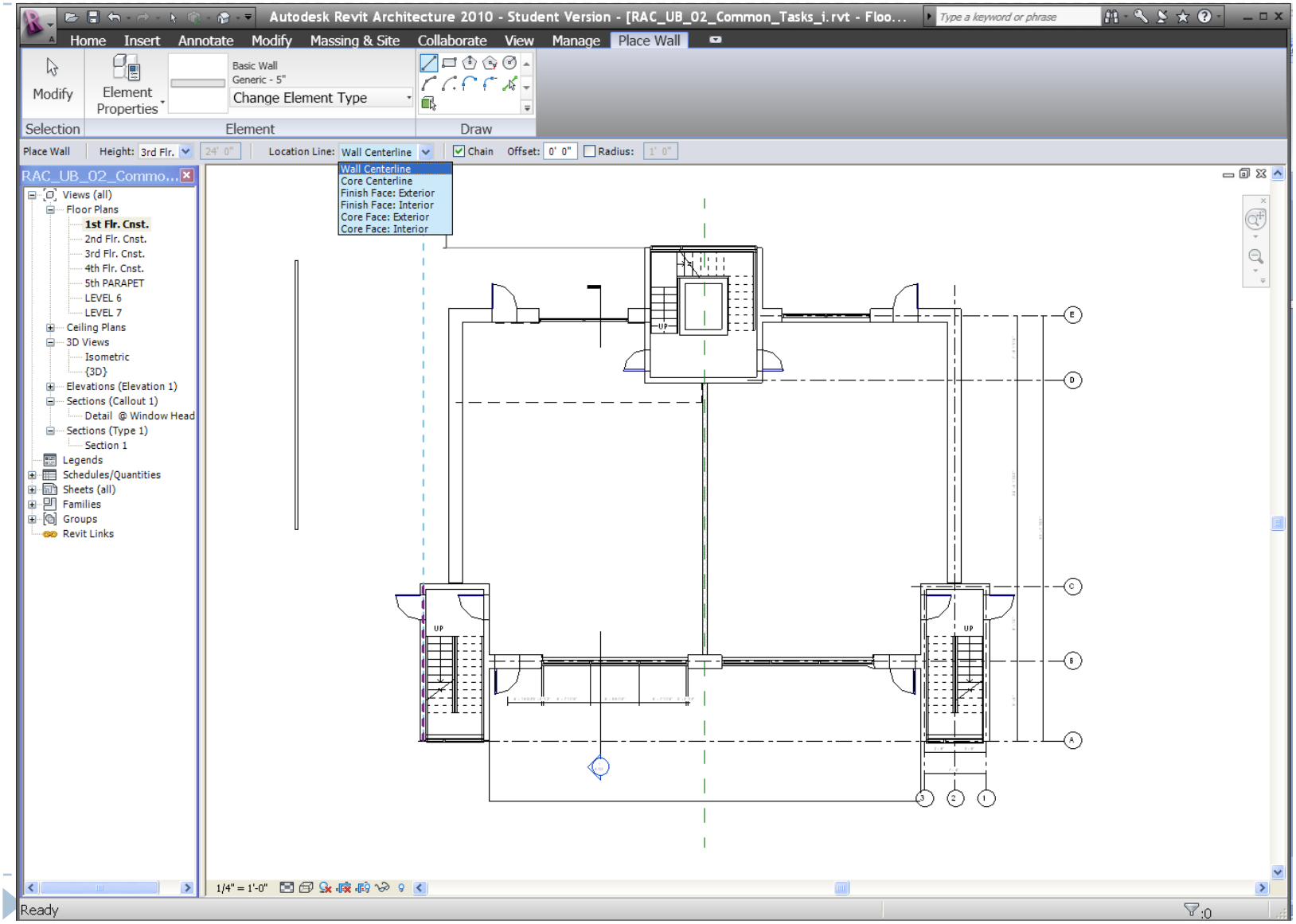
Wall Assemblies

- Walls are comprised of layers of material
- it can be seen by Preview on in the Edit Assembly dialog box to view the graphical representation of the layers

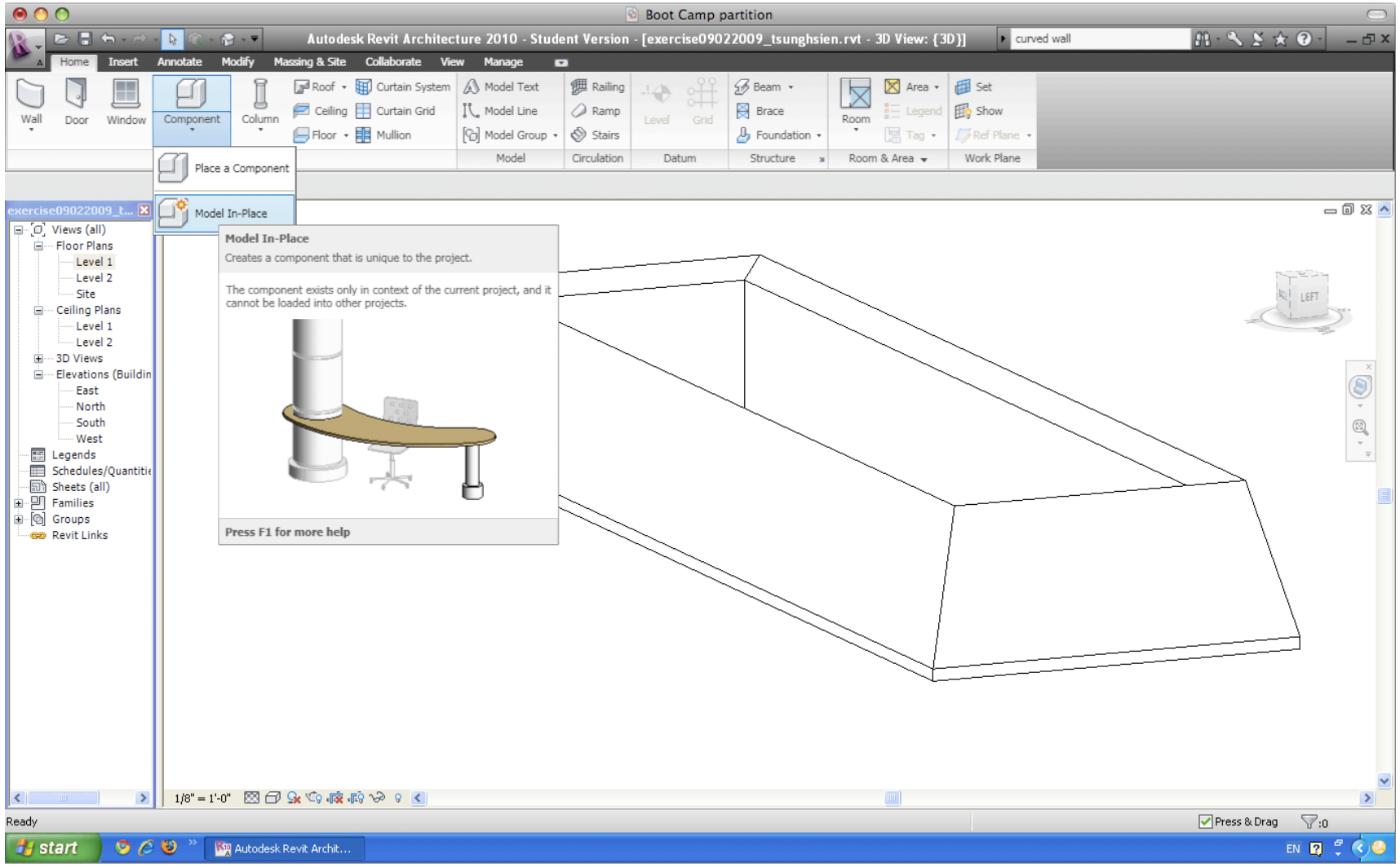




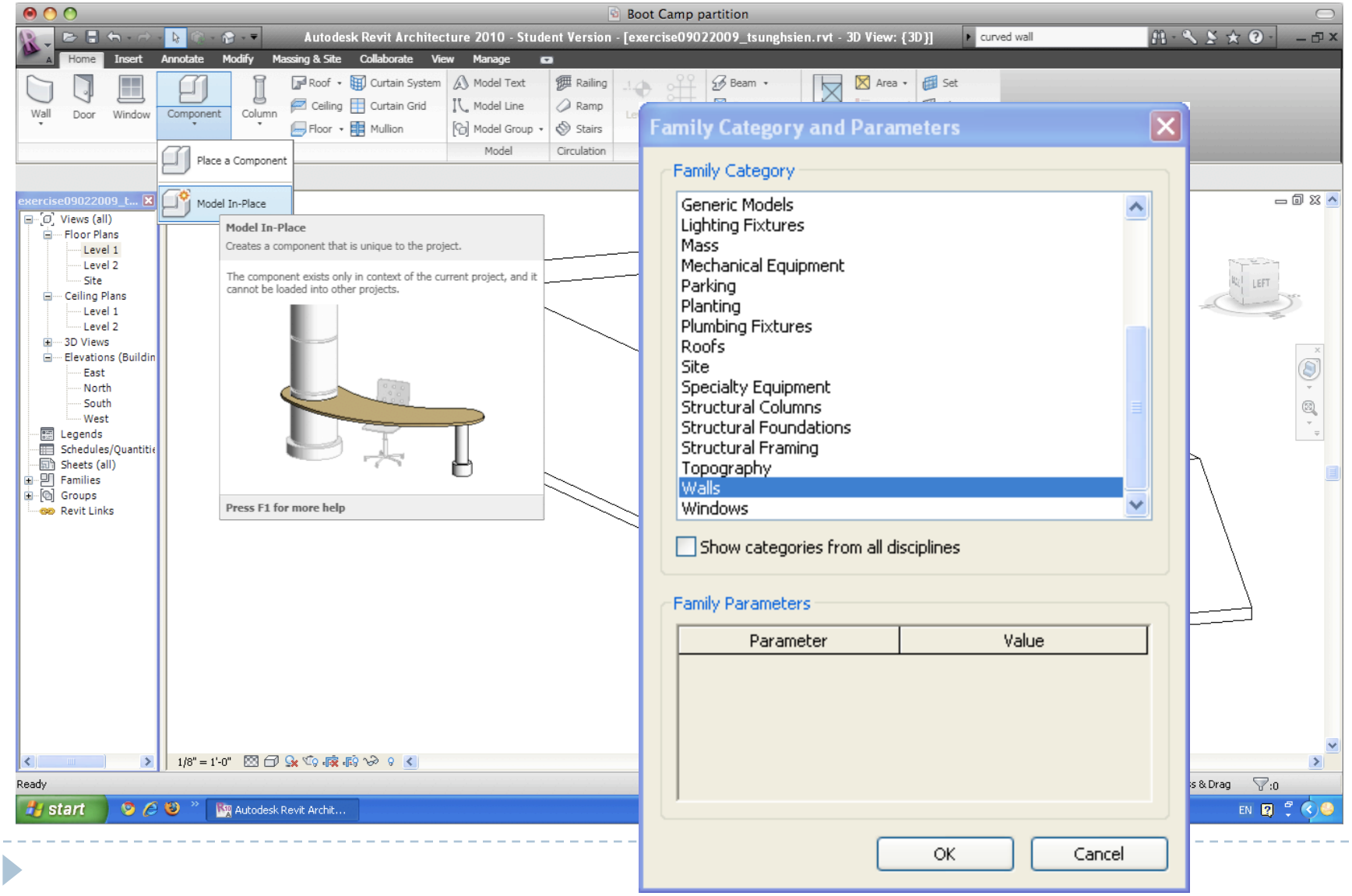
Sketching Walls



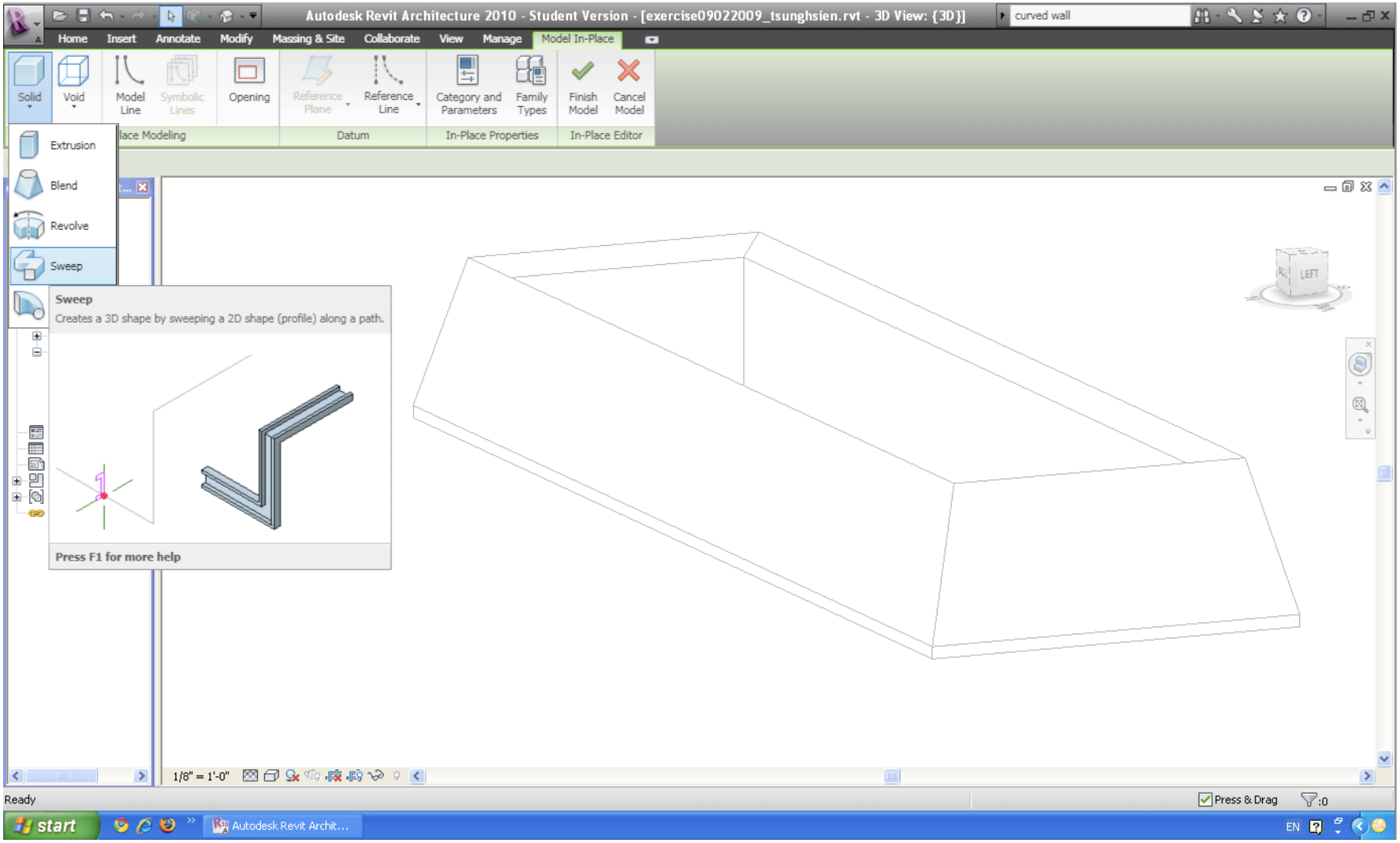
Sketching using sweep(In-Place Component)



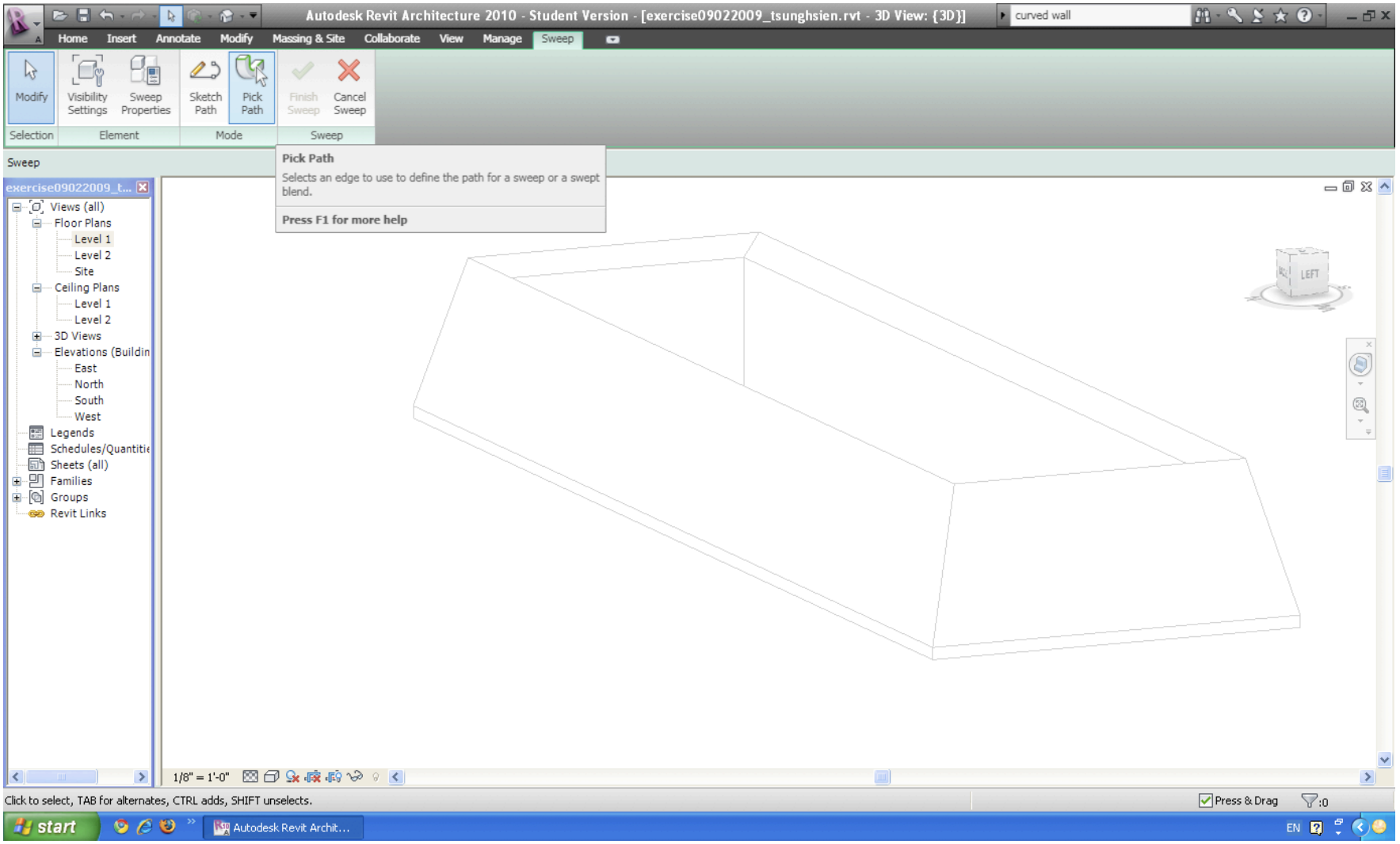
Sketching using sweep
Step 01_Type of Component



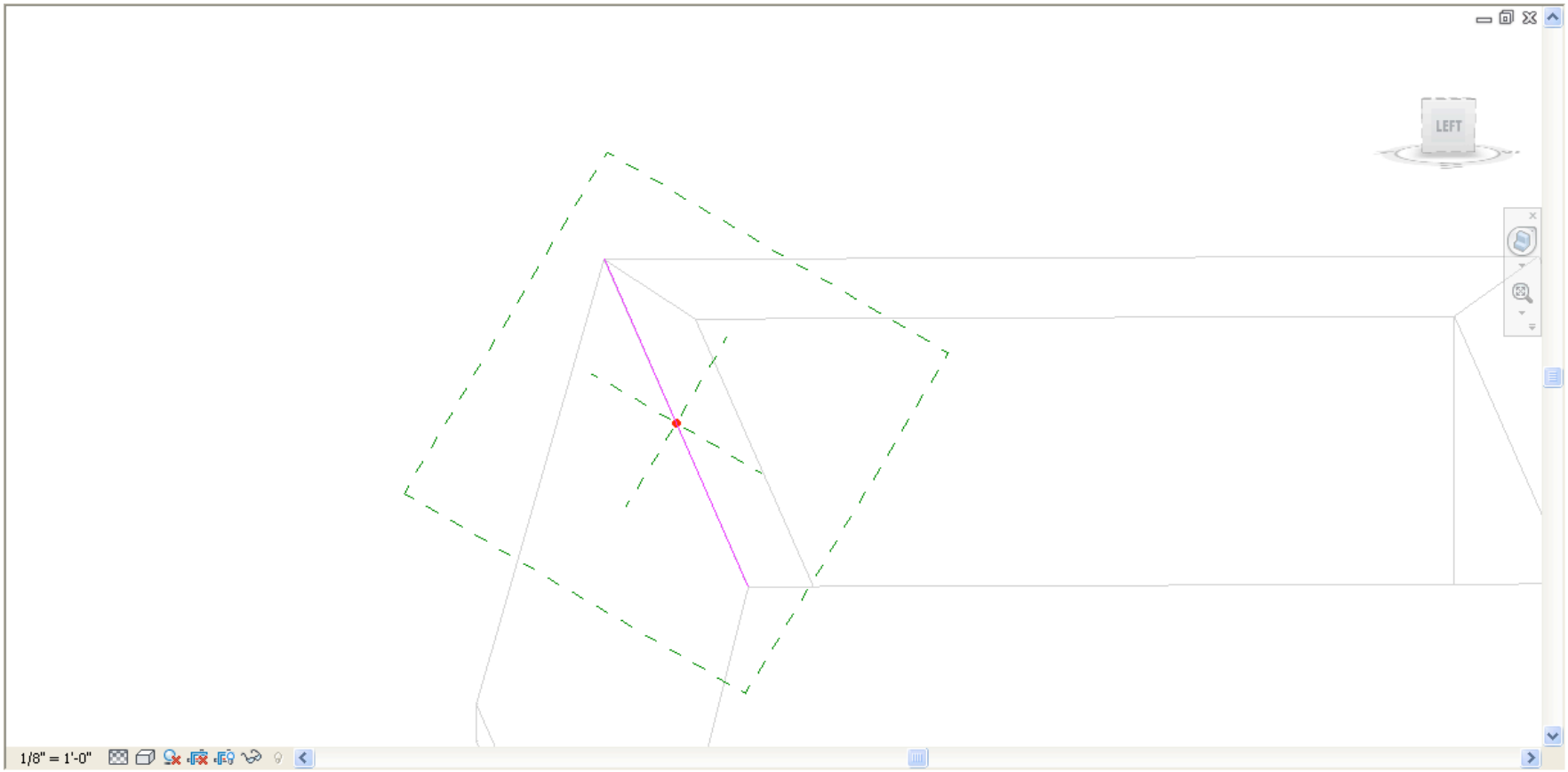
Sketching using sweep
Step 02_Use Sweep to create a solid mass



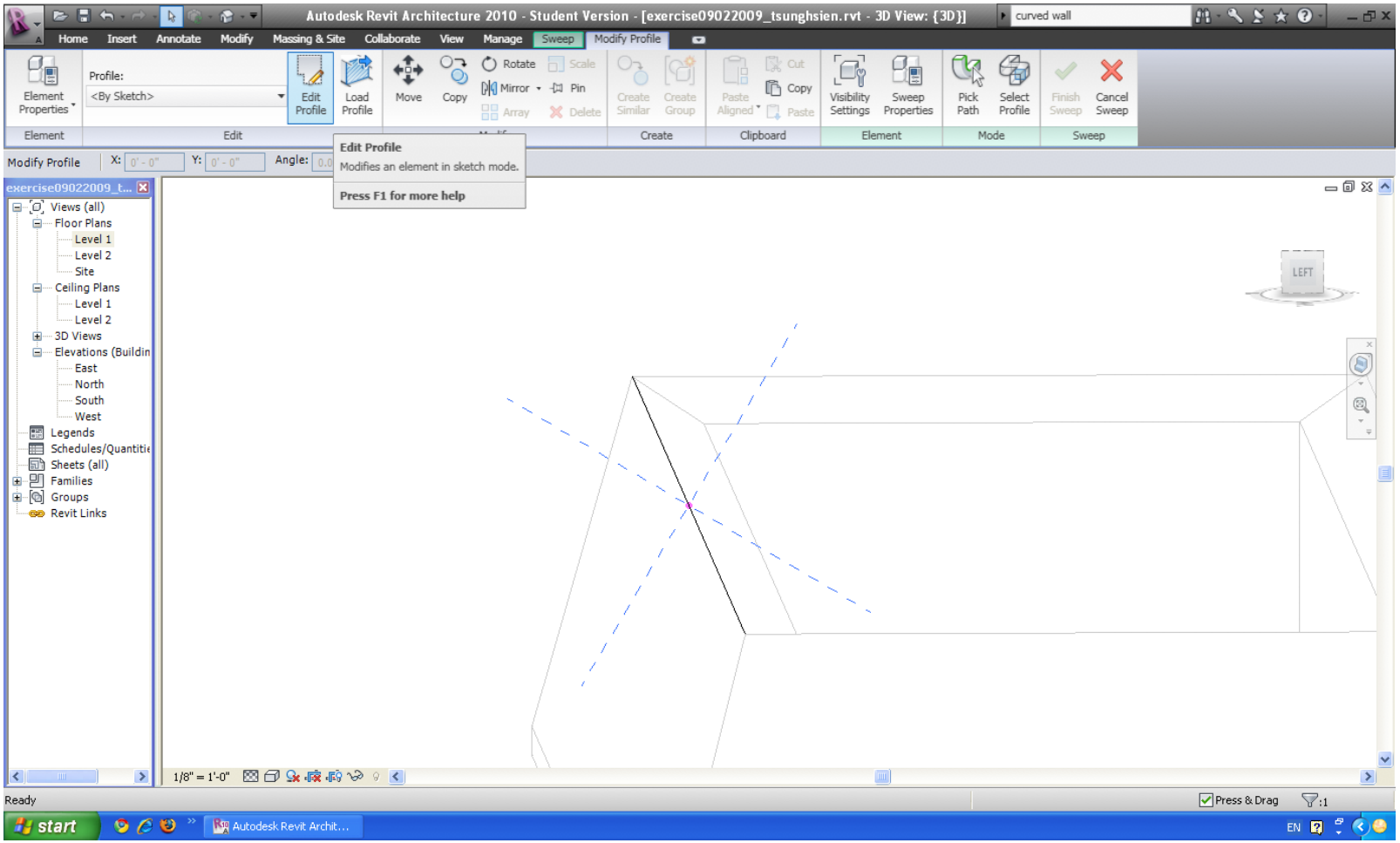
Sketching using sweep
Step 03_Pick the sweep path



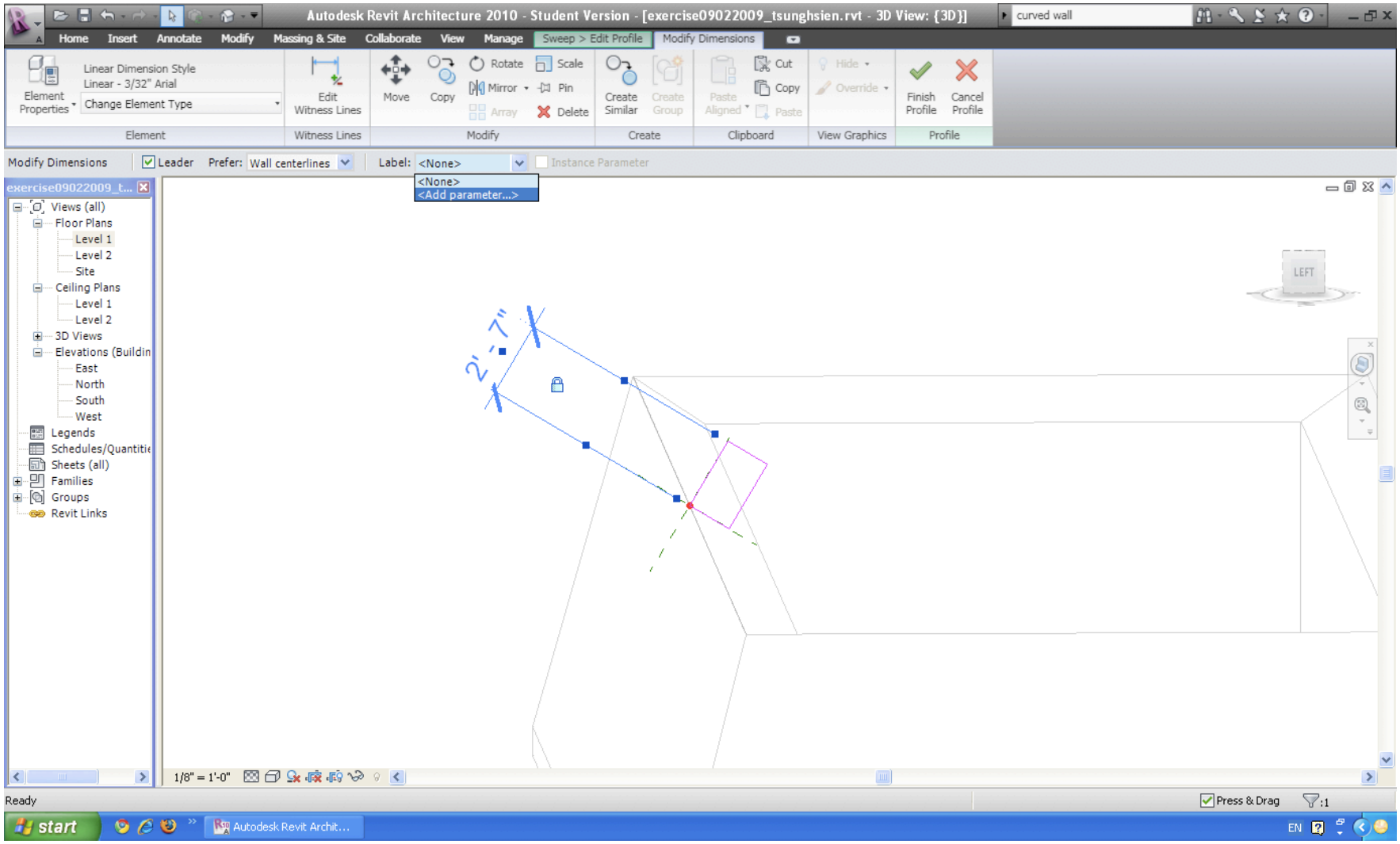
Sketching using sweep
Step 04_the reference plane on the path



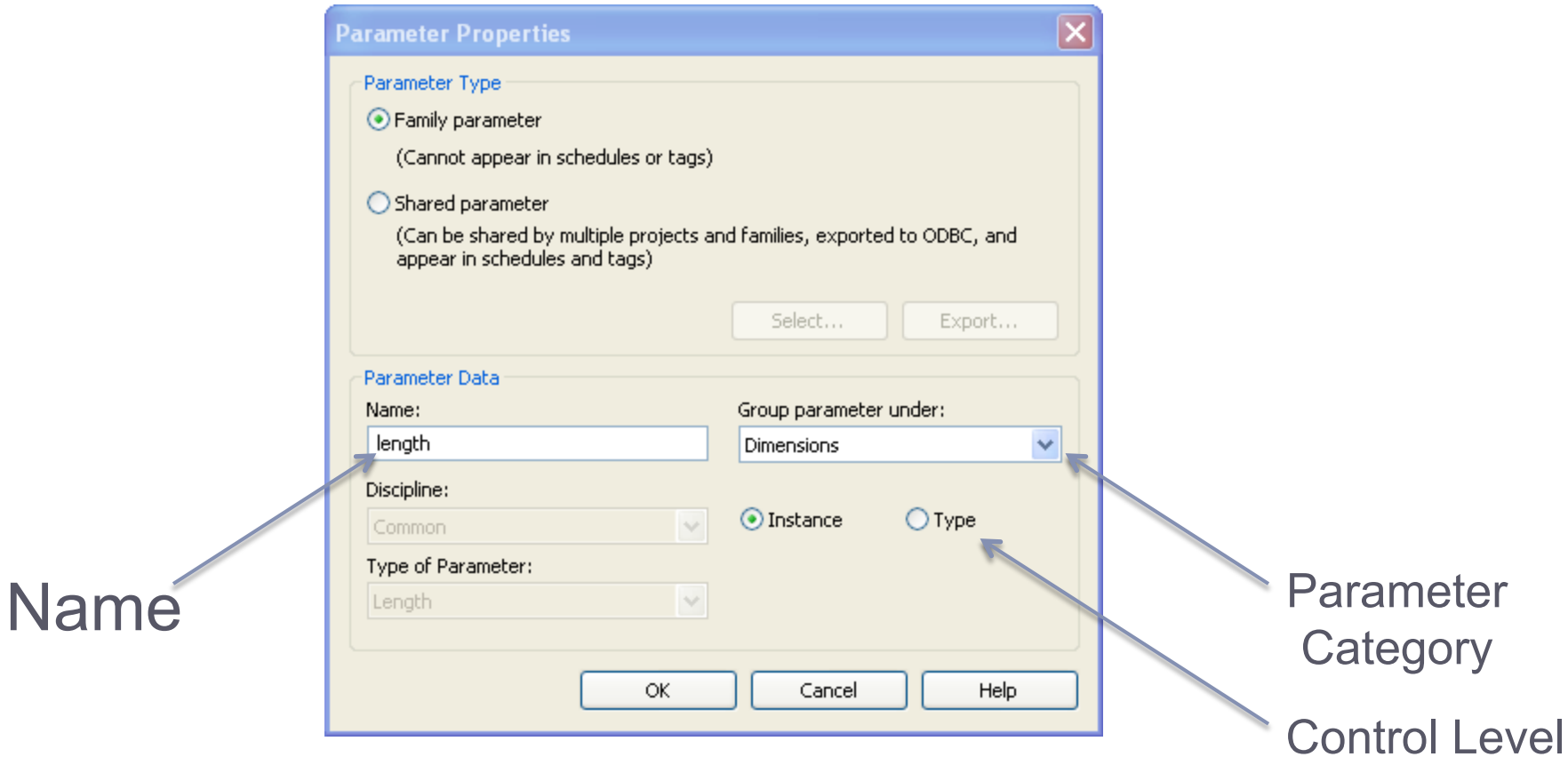
Sketching using sweep
Step 05_Edit Sweep profile



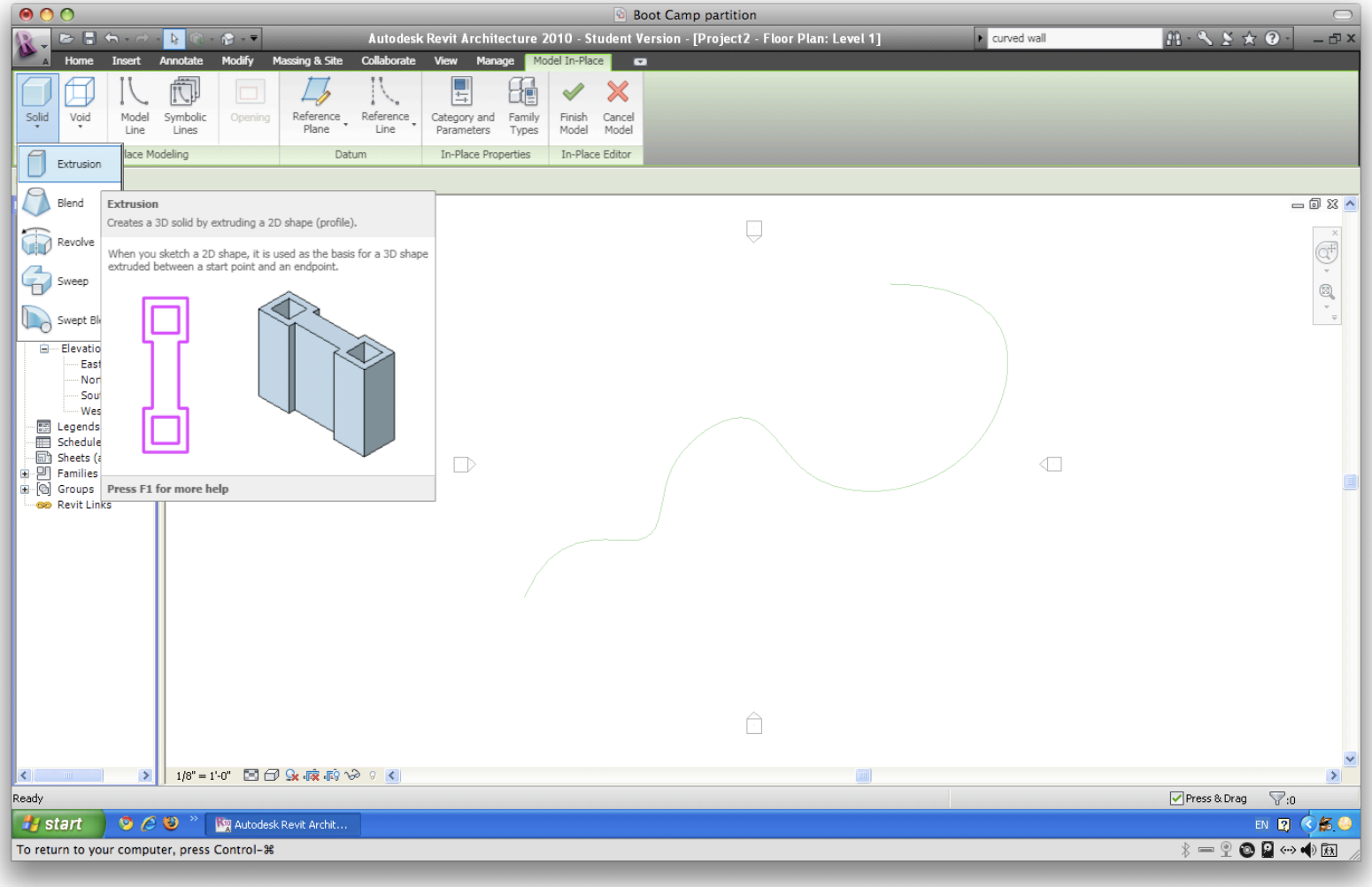
Sketching using sweep
Step 06_Set up component parameters



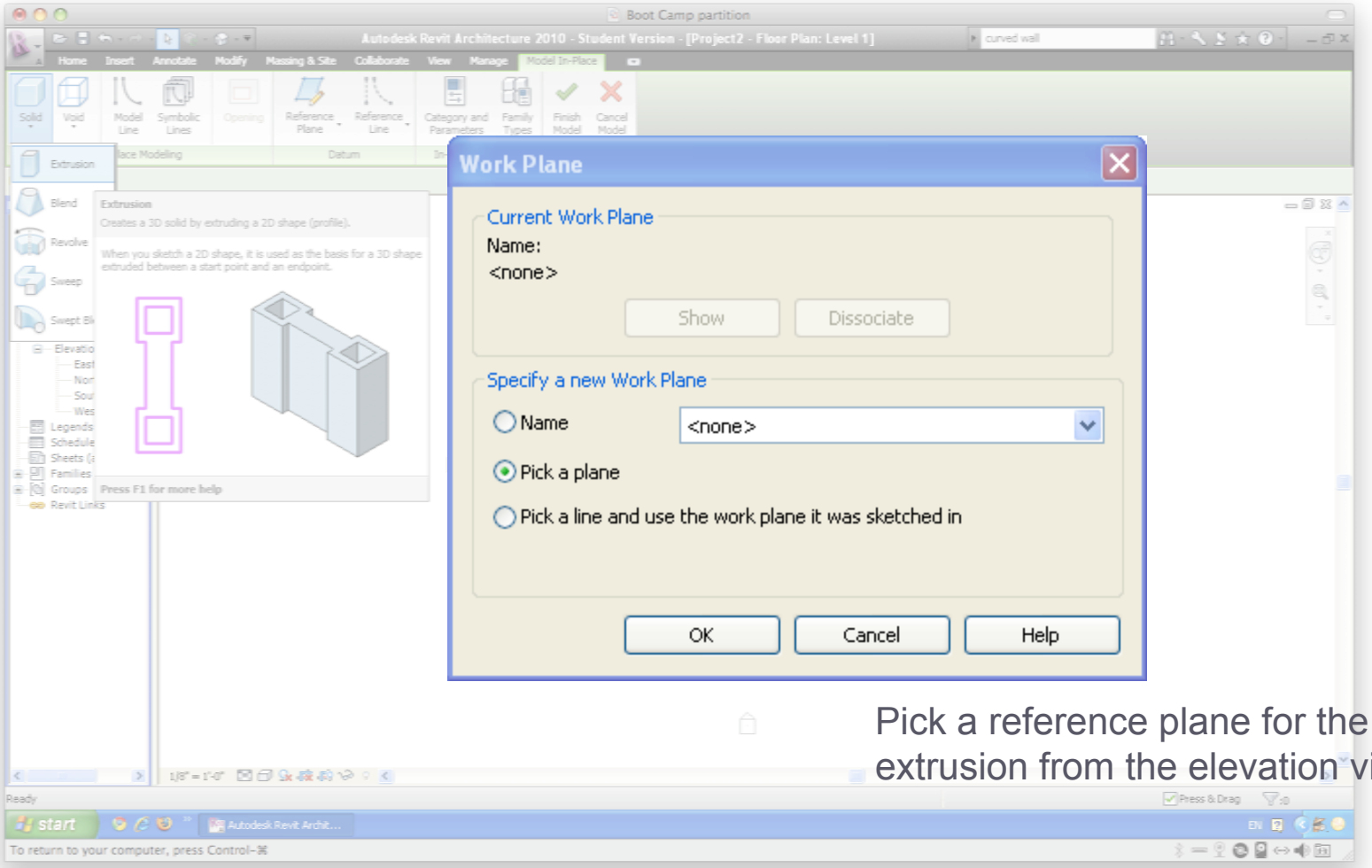
Sketching using sweep
Step 06_Component parameter settings



Sketching using extrusion

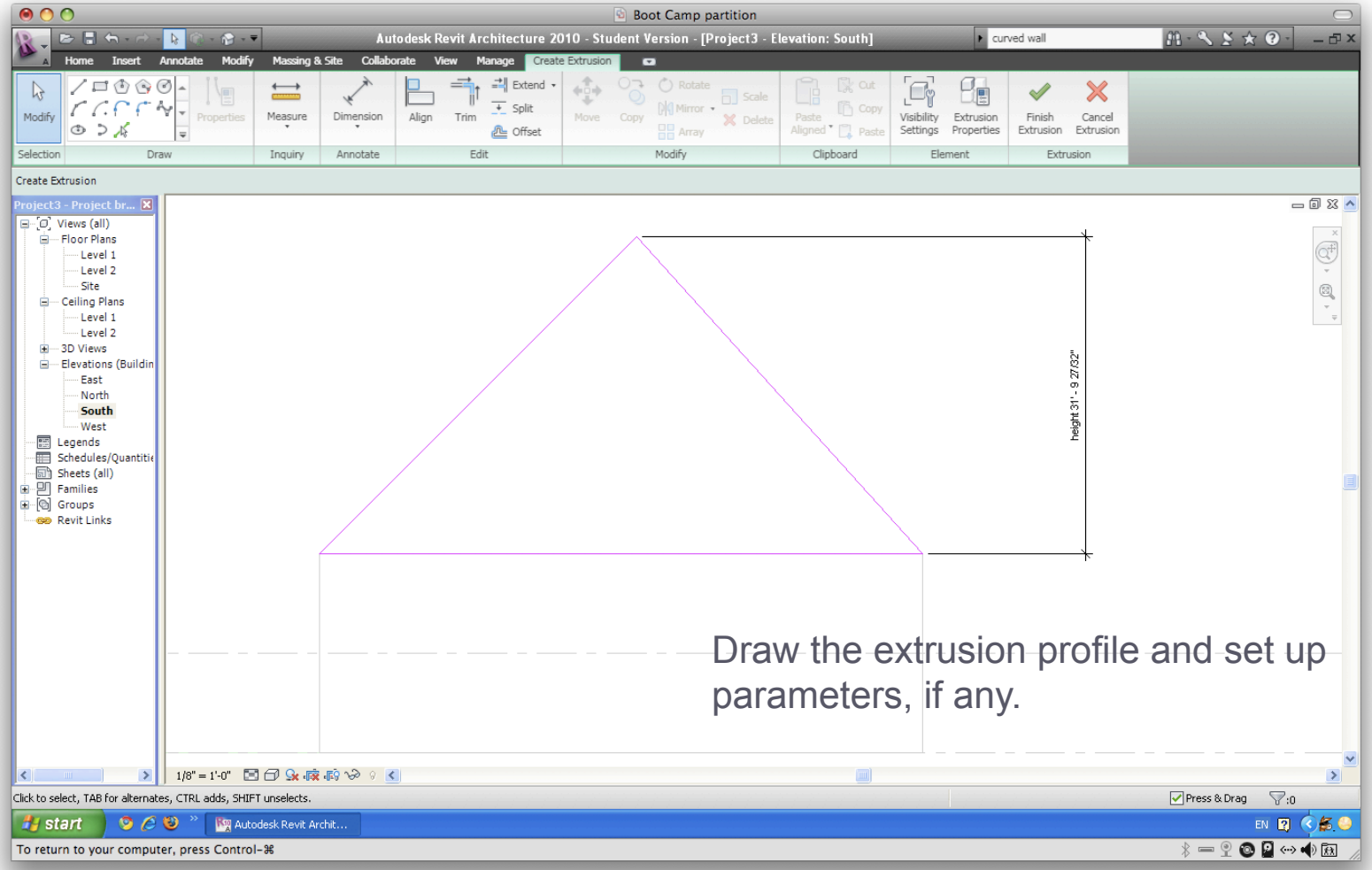


Sketching using extrusion

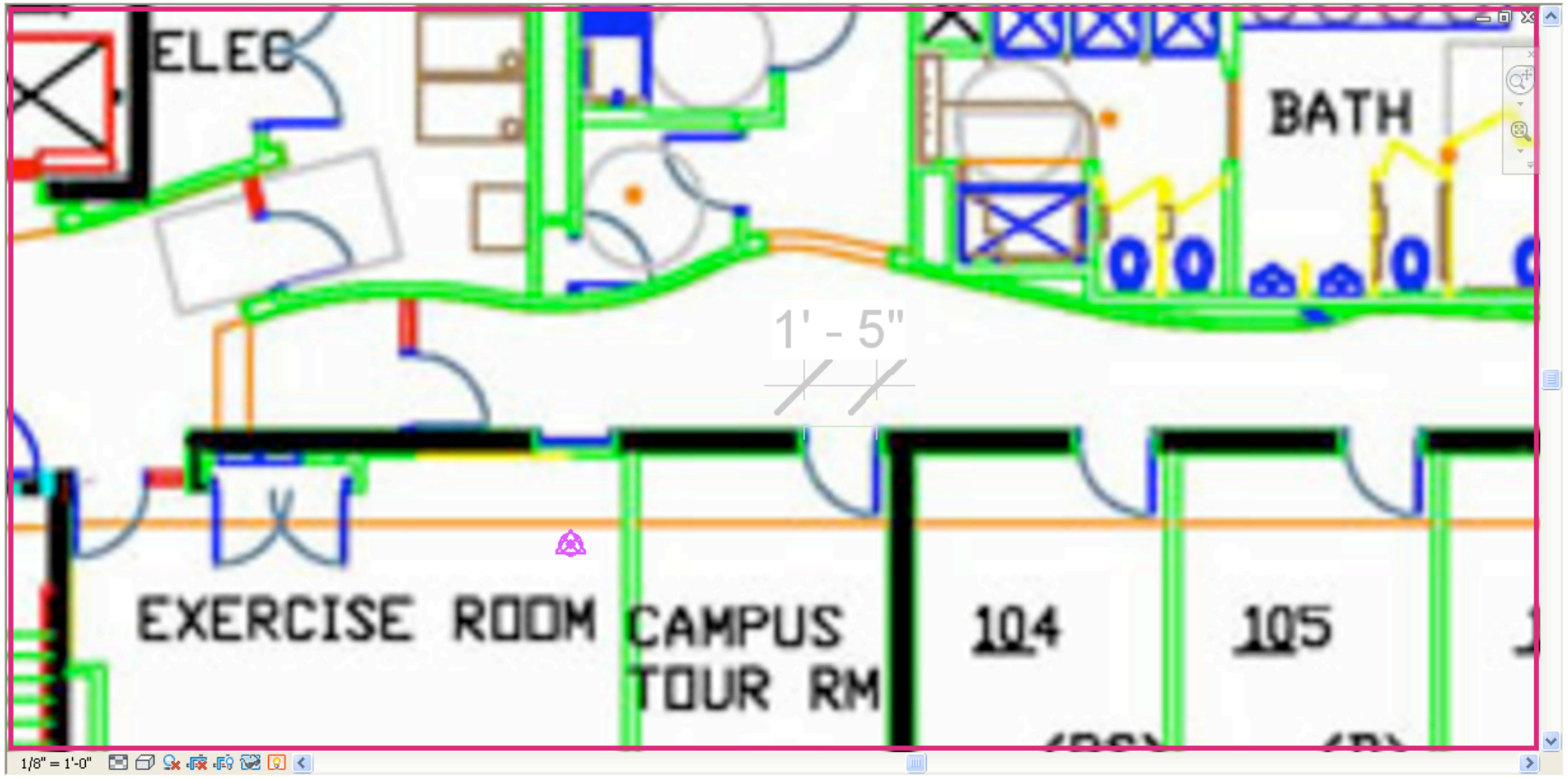


Pick a reference plane for the extrusion from the elevation view.

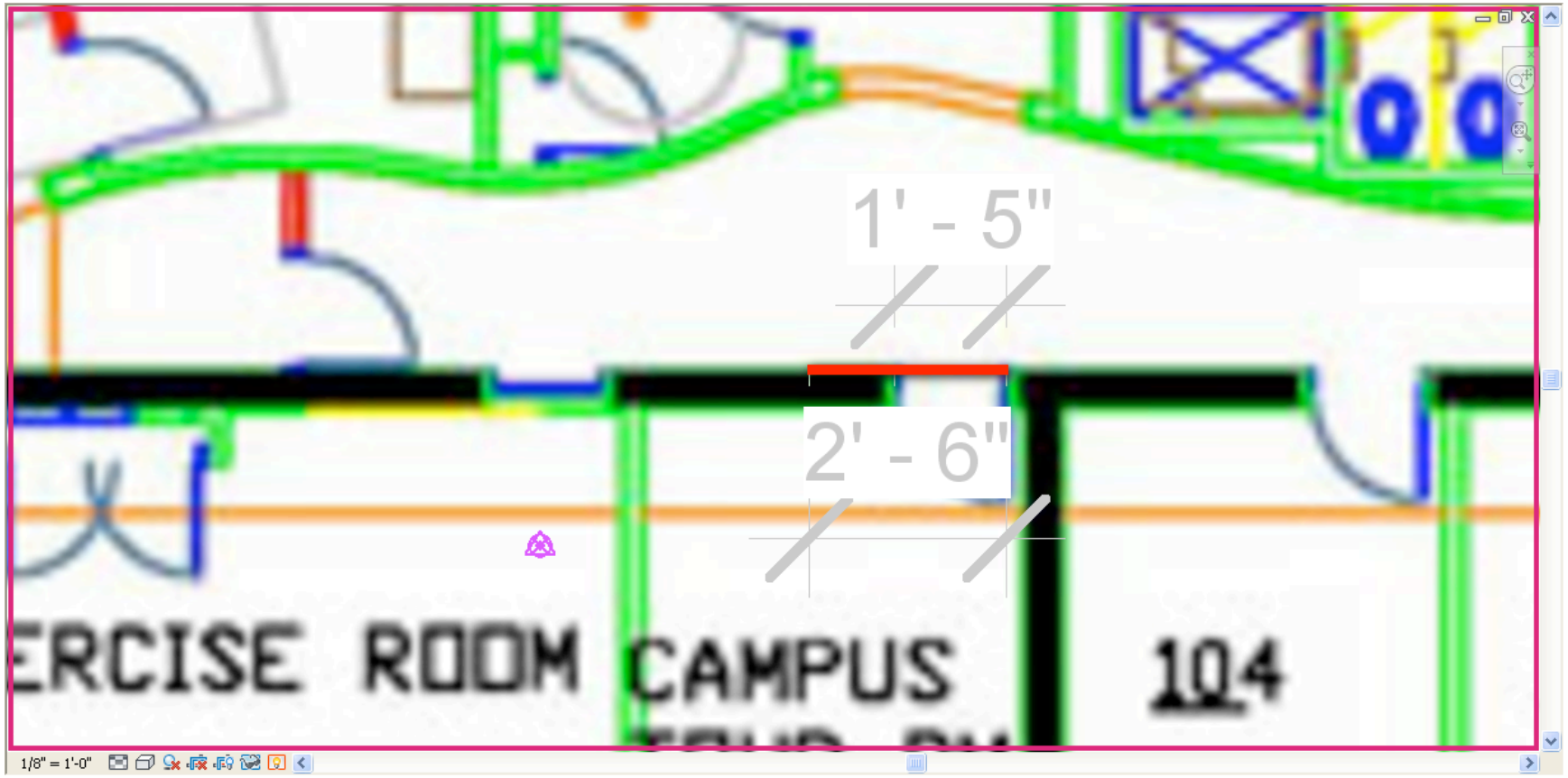
Sketching using extrusion



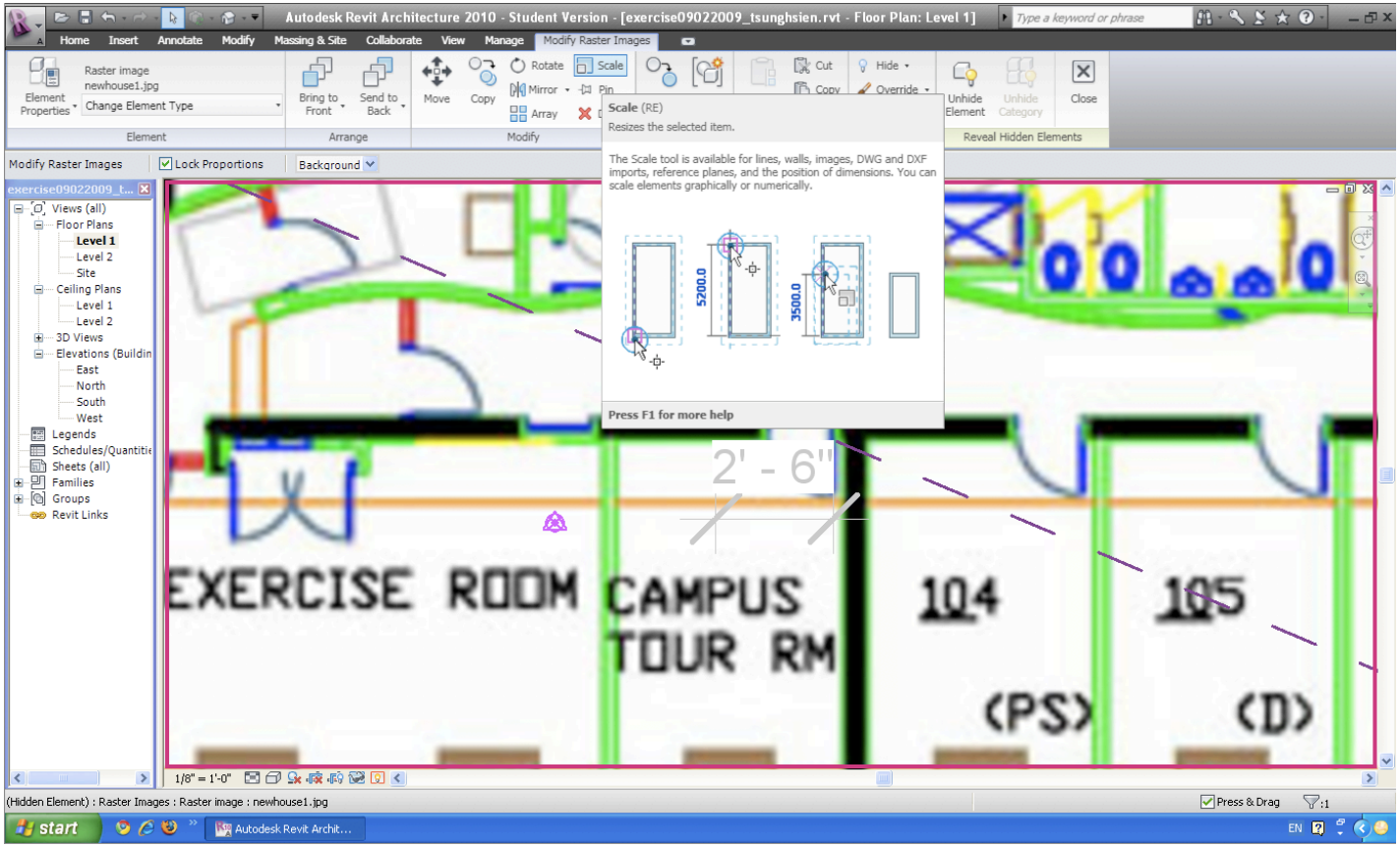
Importing and scaling images



Importing and scaling images

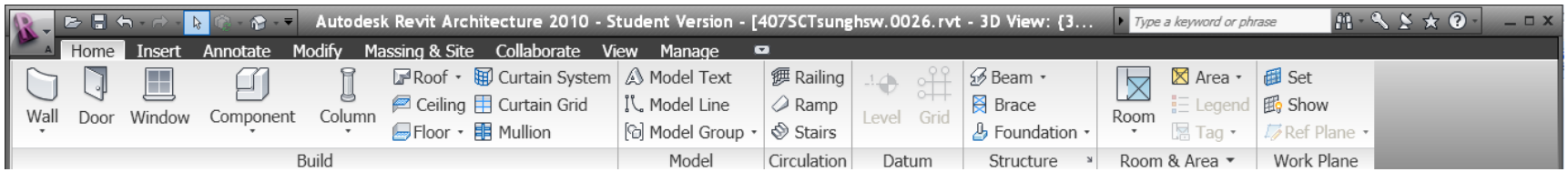


Importing and scaling images



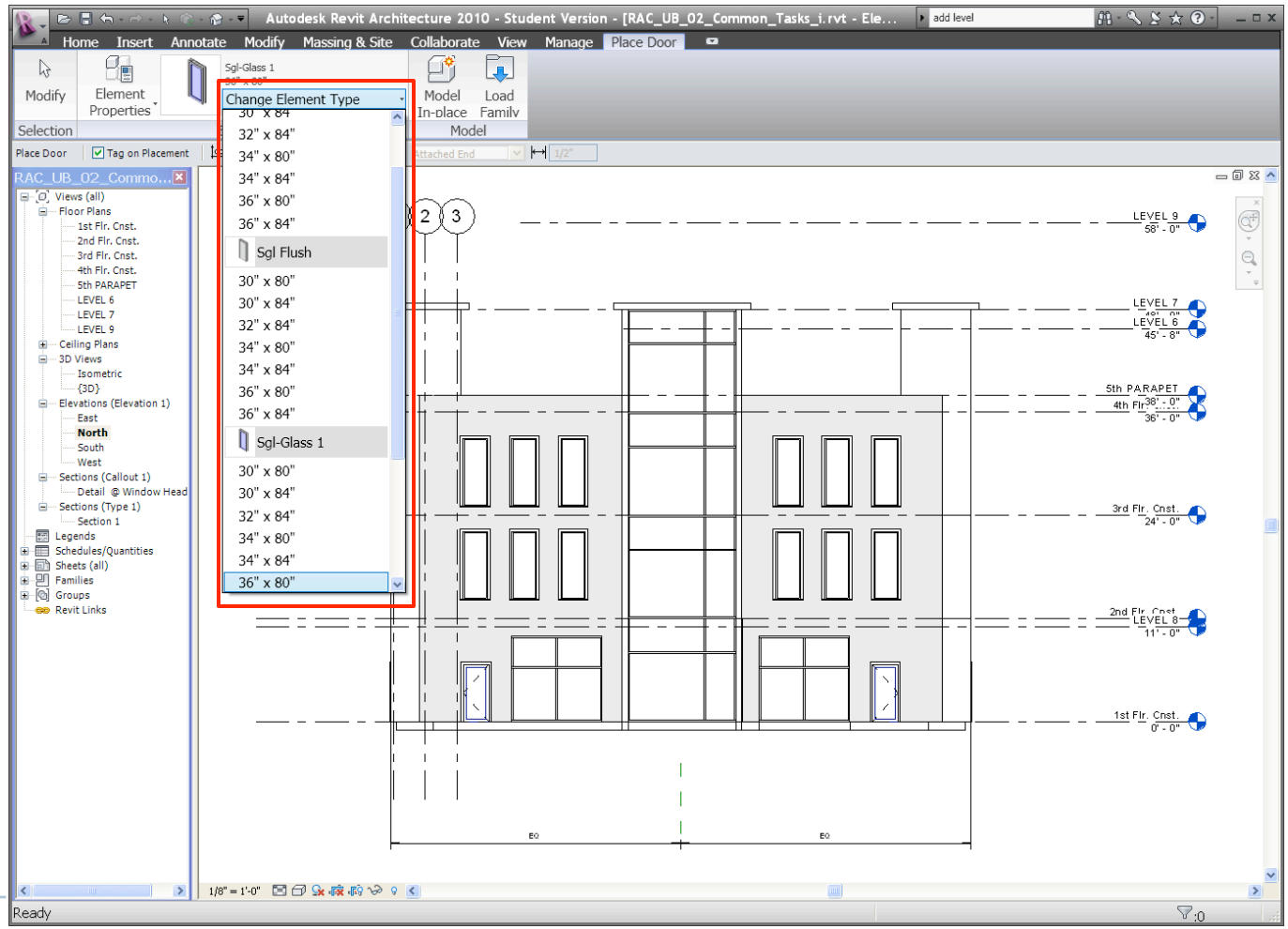
Doors and windows

- Doors and windows can be placed by choosing Door/ Window from the Home Tab

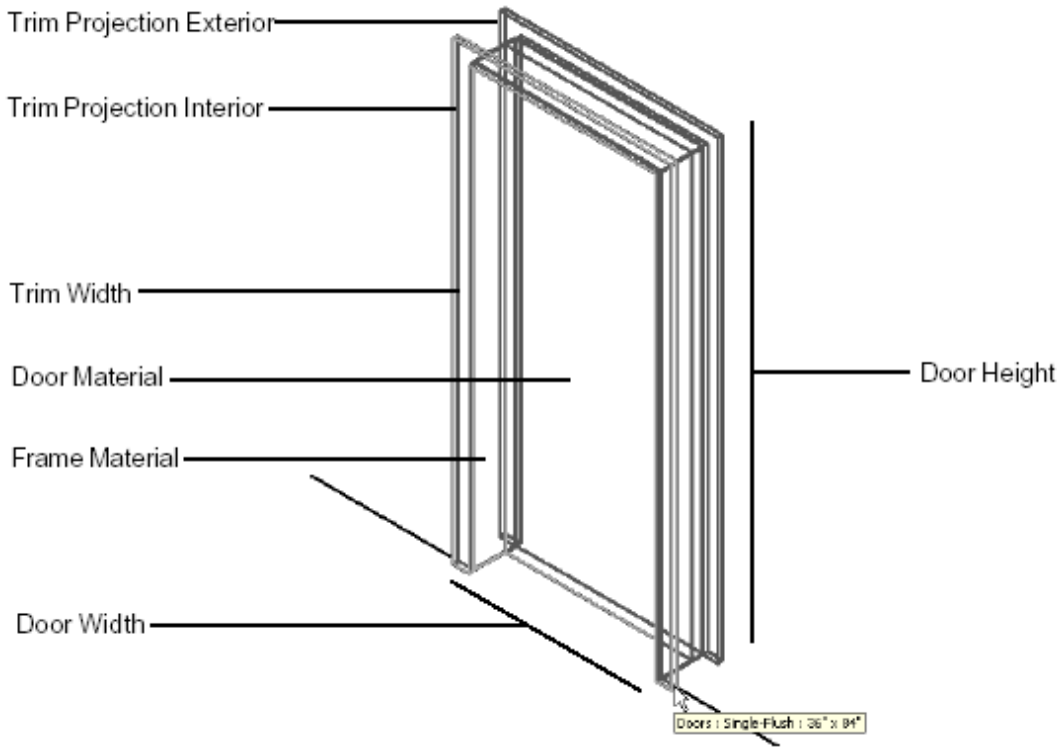


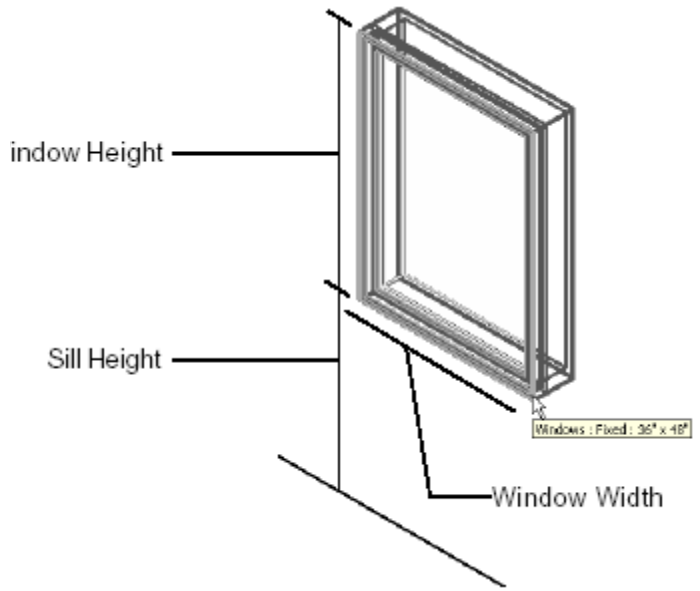
Doors and windows

- Doors and window types can be selected



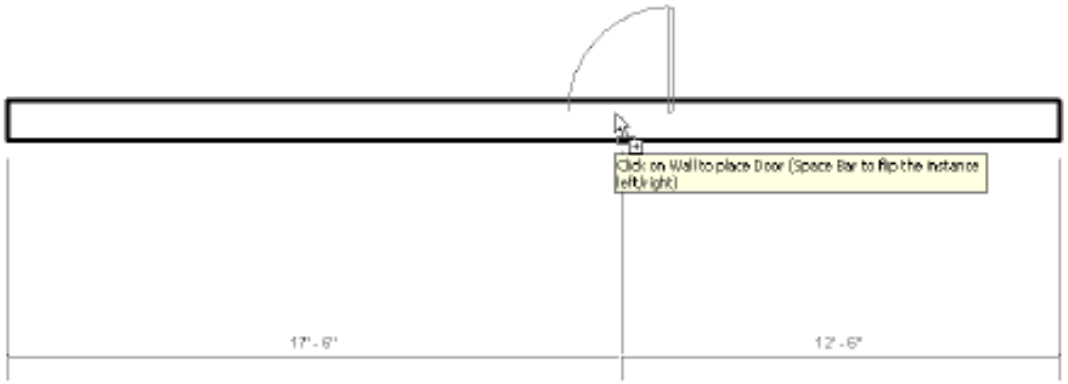
Door and window Properties



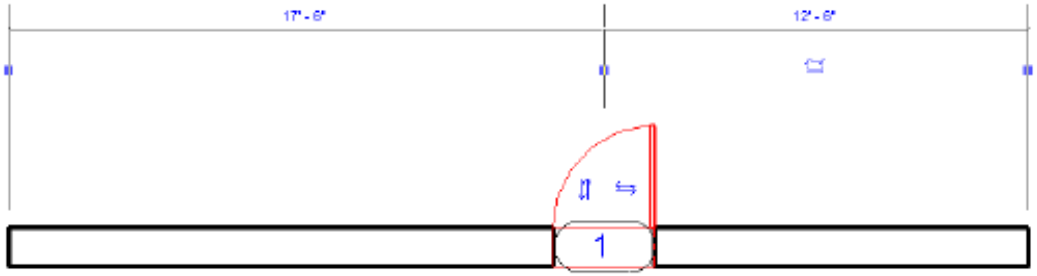


Adding Doors and windows

- Doors can be added to a building model in the plan, section, elevation or a 3D view, by clicking at the desired location.



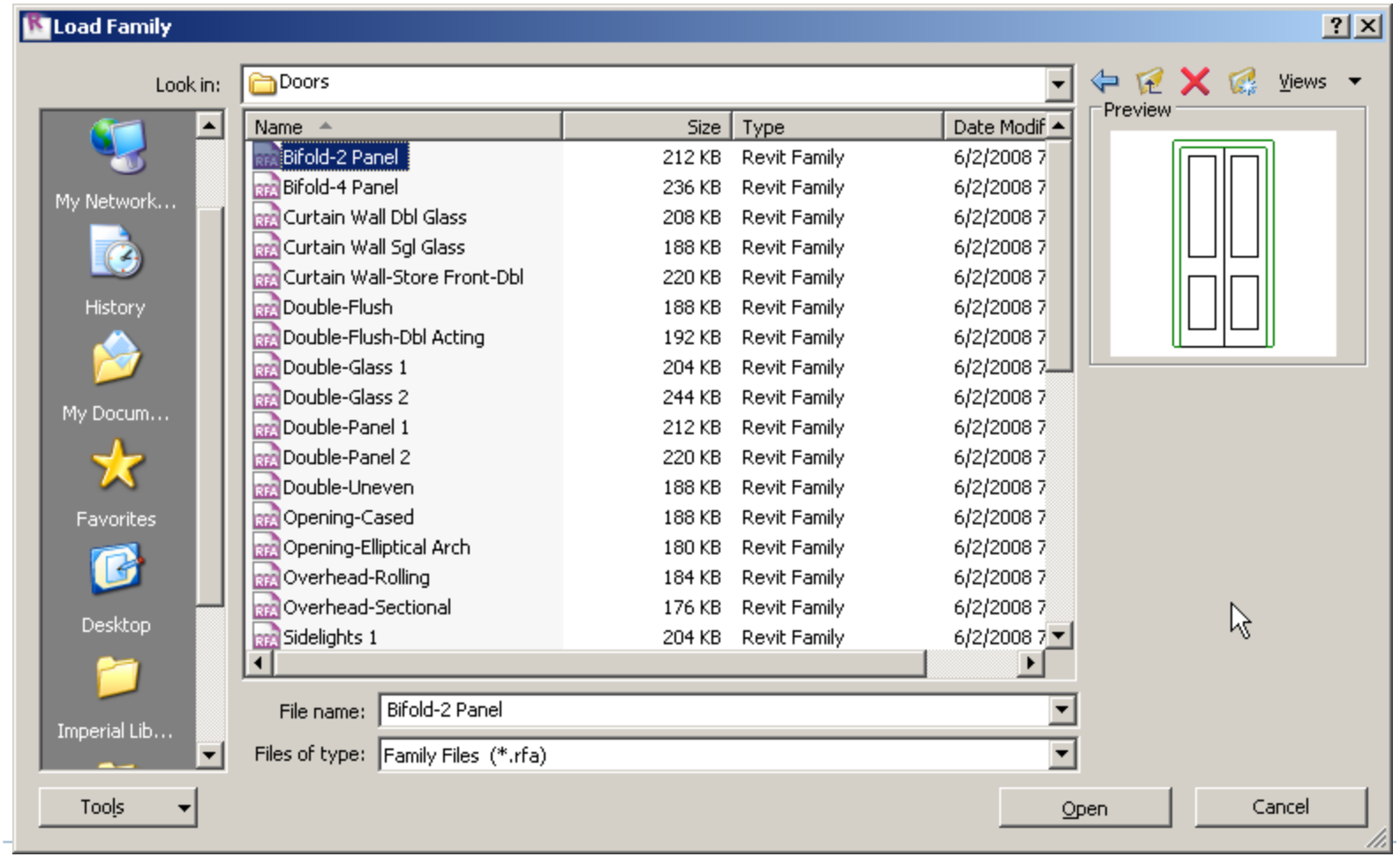
Adding a door to an existing wall



An added door and its controls

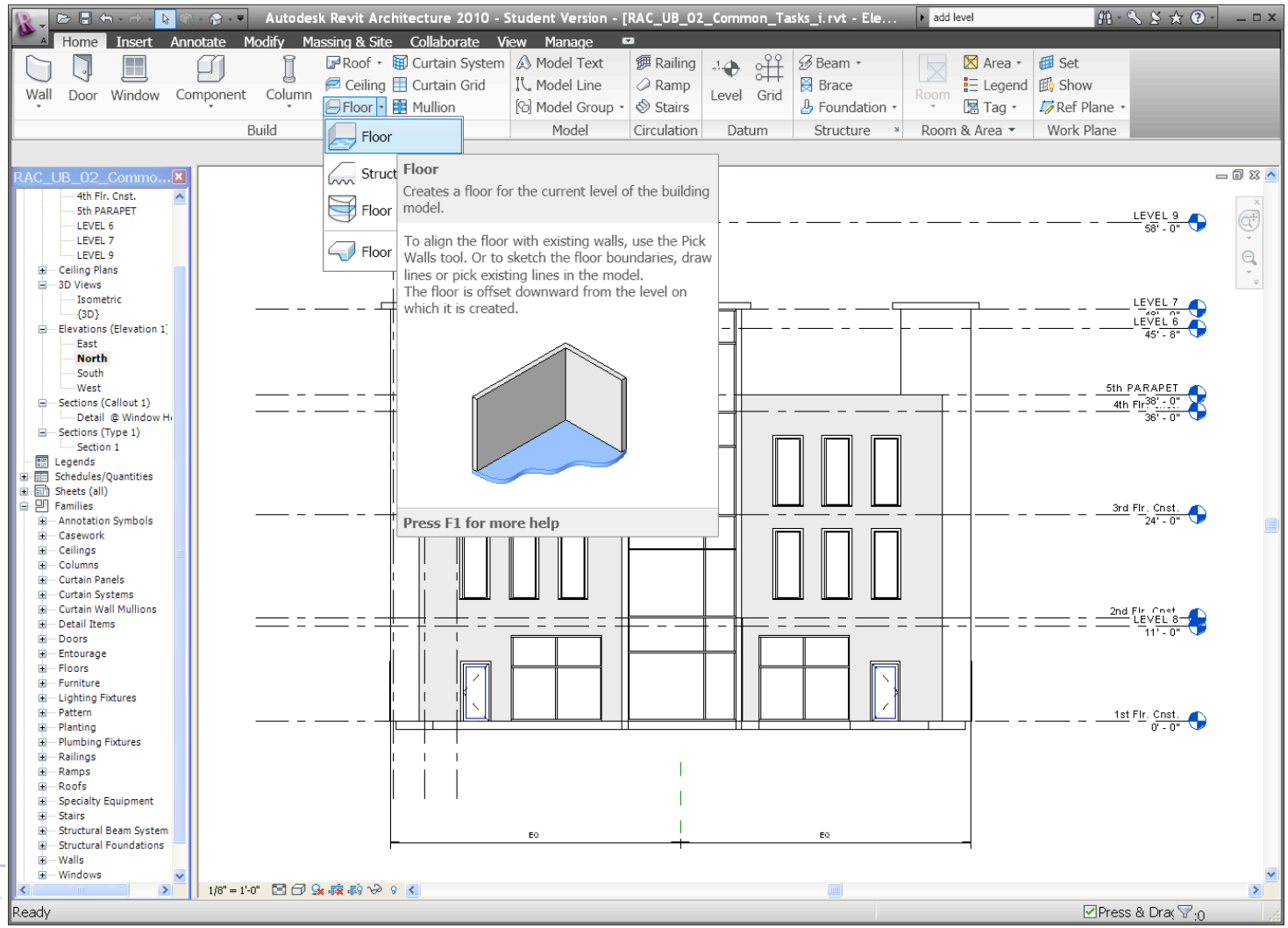
Additional Door and window types

- Doors can be added by loading from Family

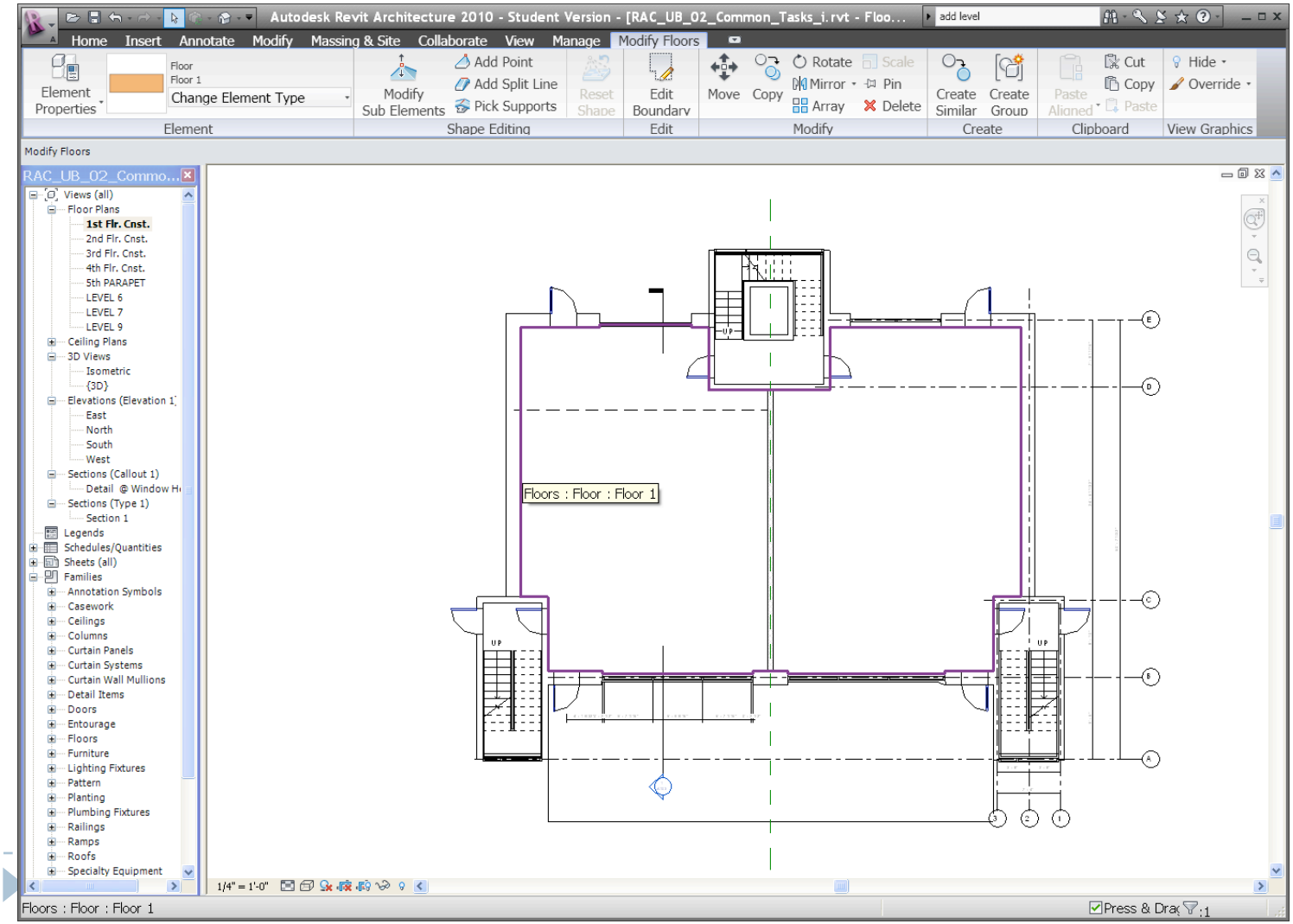


Floor

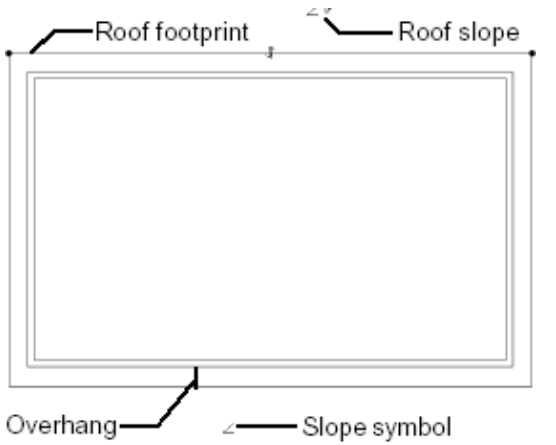
- Floor has to be sketched based on lines, walls

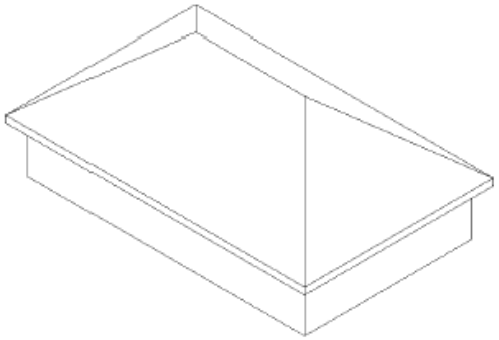


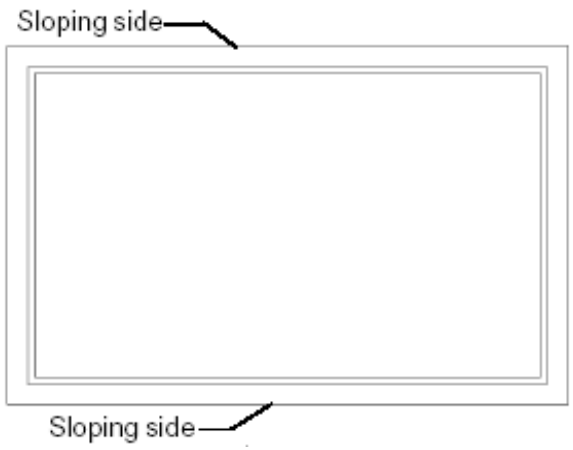
Floor

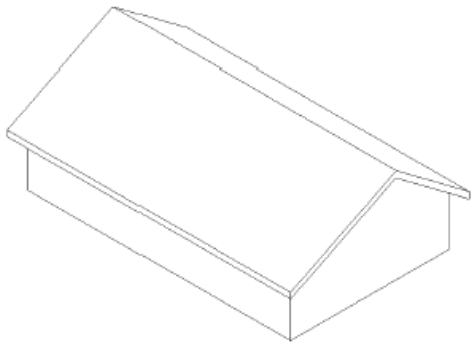

Autodesk Revit Architecture 2010 - Student Version - [RAC_UB_02_Common_Tasks_i.rvt - Floo...
Home
Insert
Annotate
Modify
Massing & Site
Collaborate
View
Manage
Modify Floors
Element Properties
Floor
Floor 1
Change Element Type
Element
Modify Sub Elements
Add Point
Add Split Line
Pick Supports
Reset Shape
Edit Boundary
Shape Editing
Edit
Move
Copy
Rotate
Mirror
Array
Scale
Pin
Delete
Modify
Create Similar
Create Group
Create
Paste Aligned
Cut
Copy
Paste
Clipboard
Hide
Override
View Graphics
Modify Floors
RAC_UB_02_Commo...
Views (all)
Floor Plans
1st Flr. Cnst.
2nd Flr. Cnst.
3rd Flr. Cnst.
4th Flr. Cnst.
5th PARAPET
LEVEL 6
LEVEL 7
LEVEL 9
Ceiling Plans
3D Views
Isometric
{3D}
Elevations (Elevation 1)
East
North
South
West
Sections (Callout 1)
Sections (Type 1)
Section 1
Legends
Schedules/Quantities
Sheets (all)
Families
Annotation Symbols
Casework
Ceilings
Columns
Curtain Panels
Curtain Systems
Curtain Wall Mullions
Detail Items
Doors
Entourage
Floors
Furniture
Lighting Fixtures
Pattern
Planting
Plumbing Fixtures
Railings
Ramps
Roofs
Specialty Equipment
Floors : Floor : Floor 1
1/4" = 1'-0"
Floors : Floor : Floor 1
Press & Drag

Roof Types

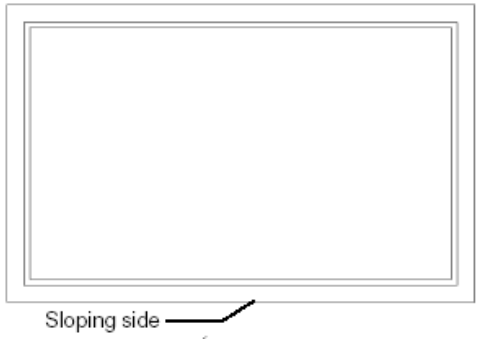

Roof footprint
Roof slope
Overhang
Slope symbol



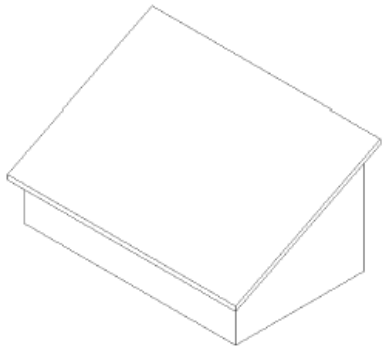

Sloping side
Sloping side



Roof Types

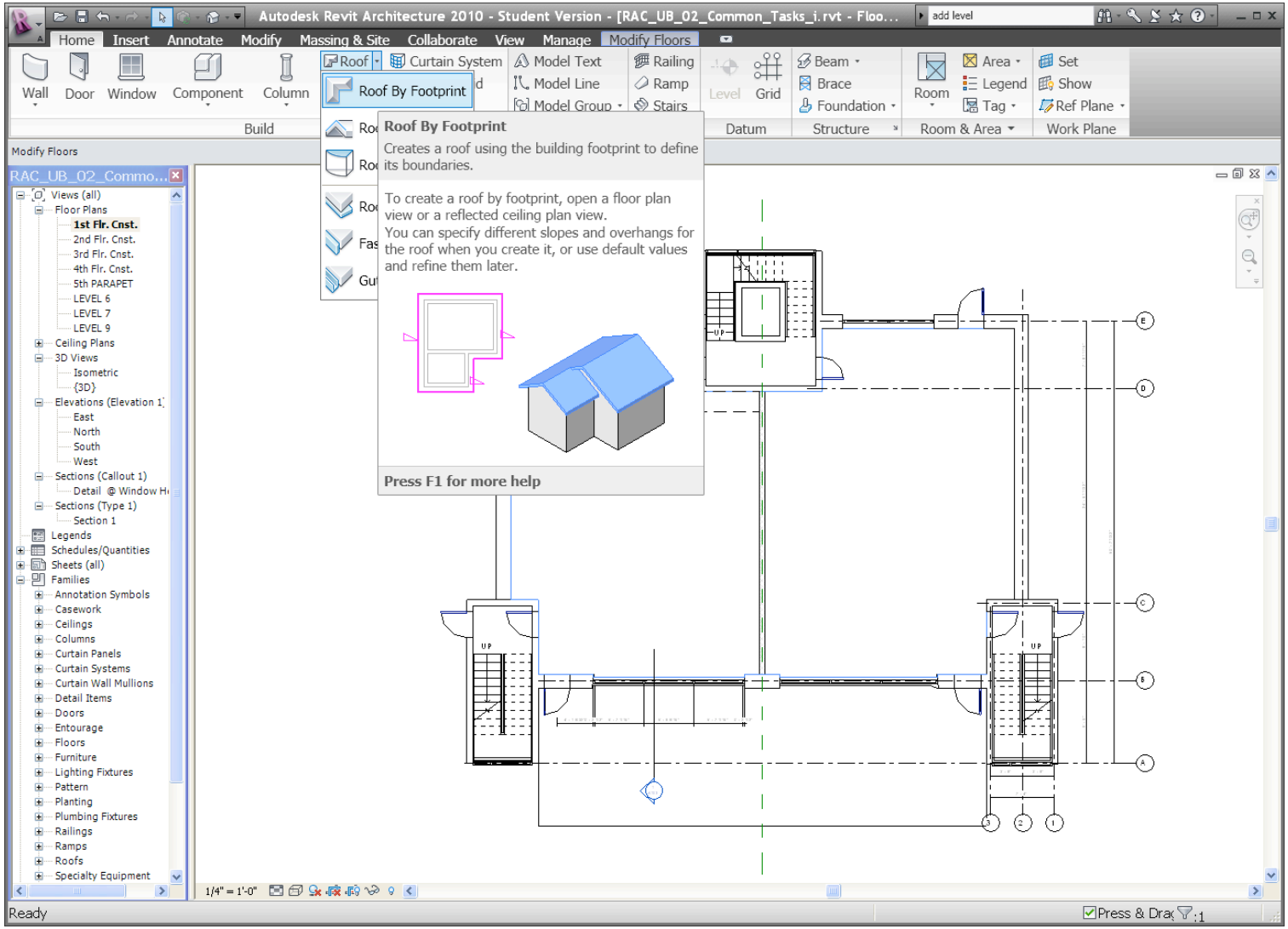


Specifying the sloping side

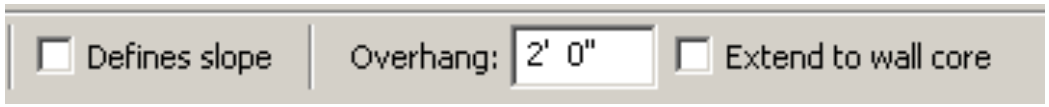


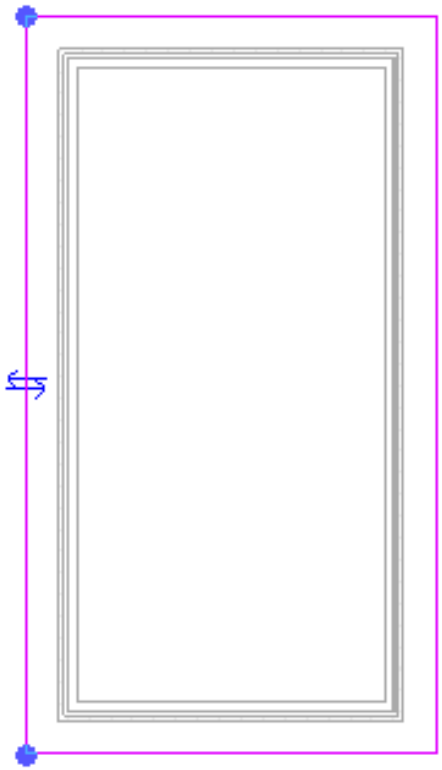
Shed roof

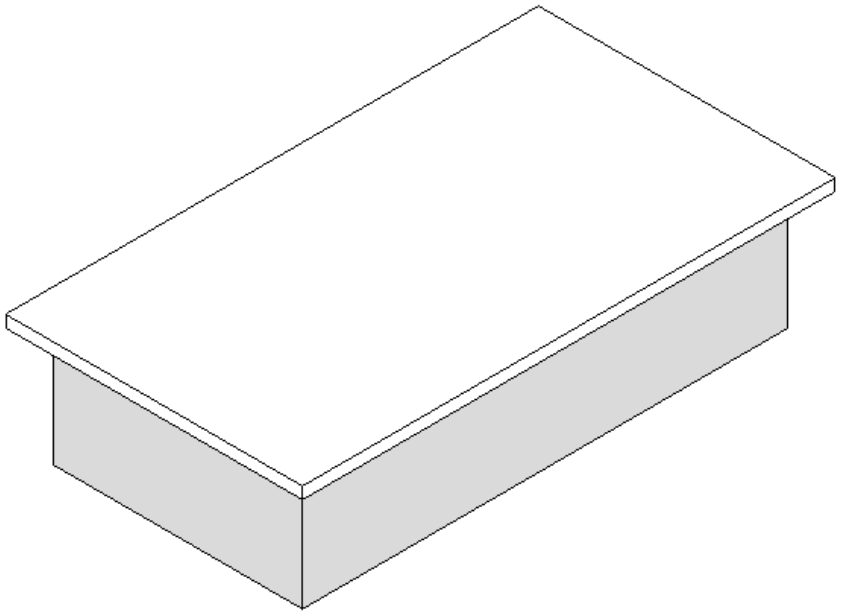
Roof by Footprint



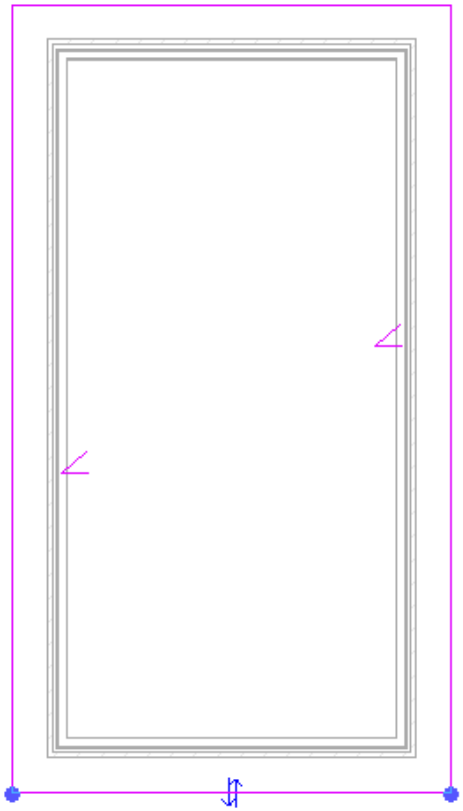
Roof by Footprint (Flat)

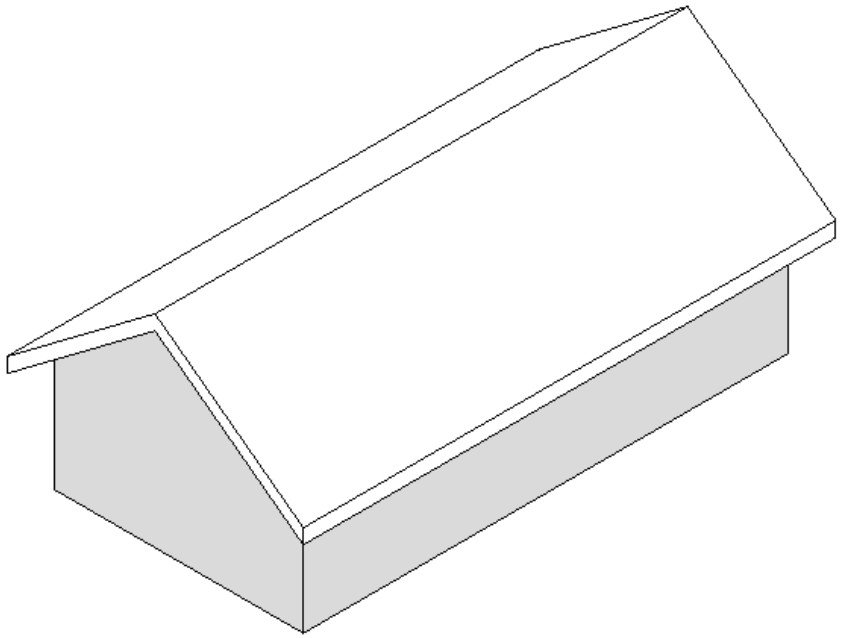




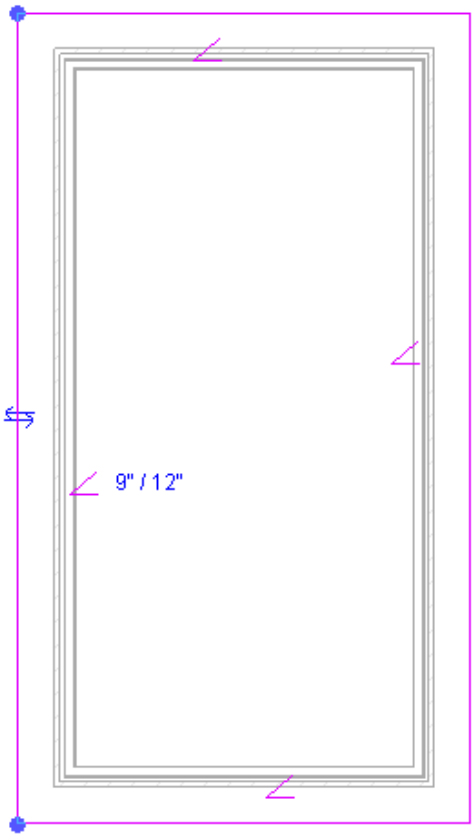


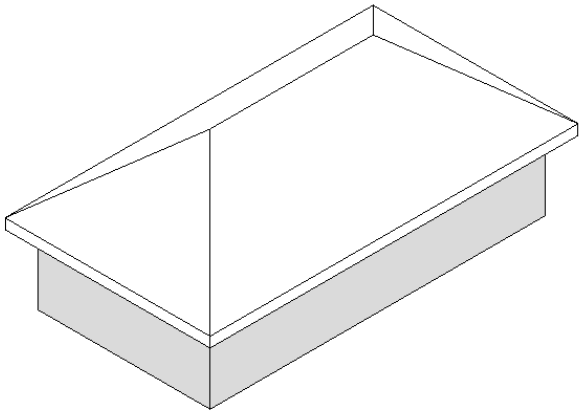
Roof by Footprint (Gable)

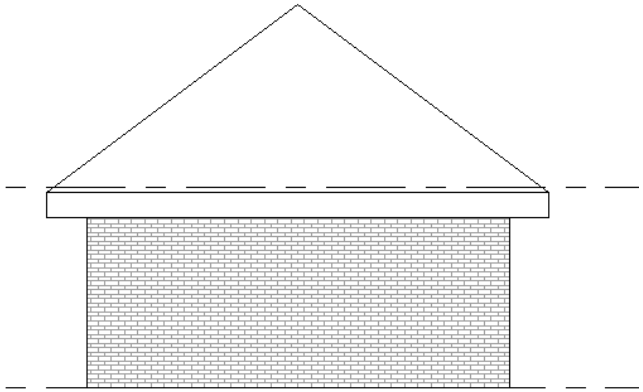




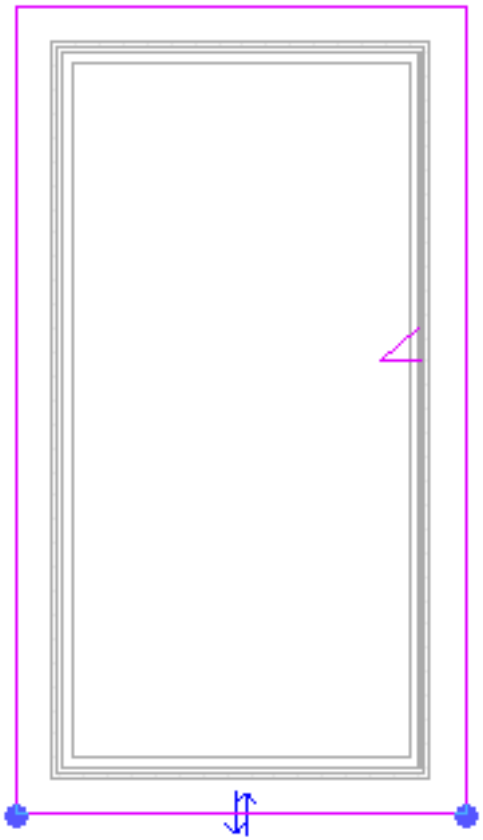
Roof by Footprint (Hip)

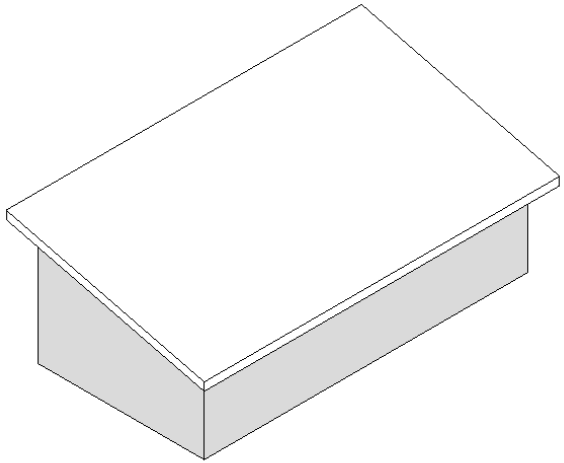


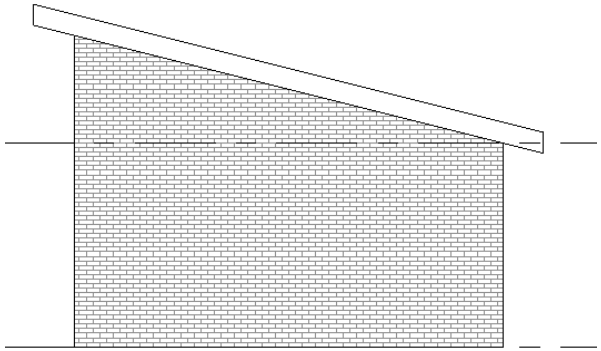




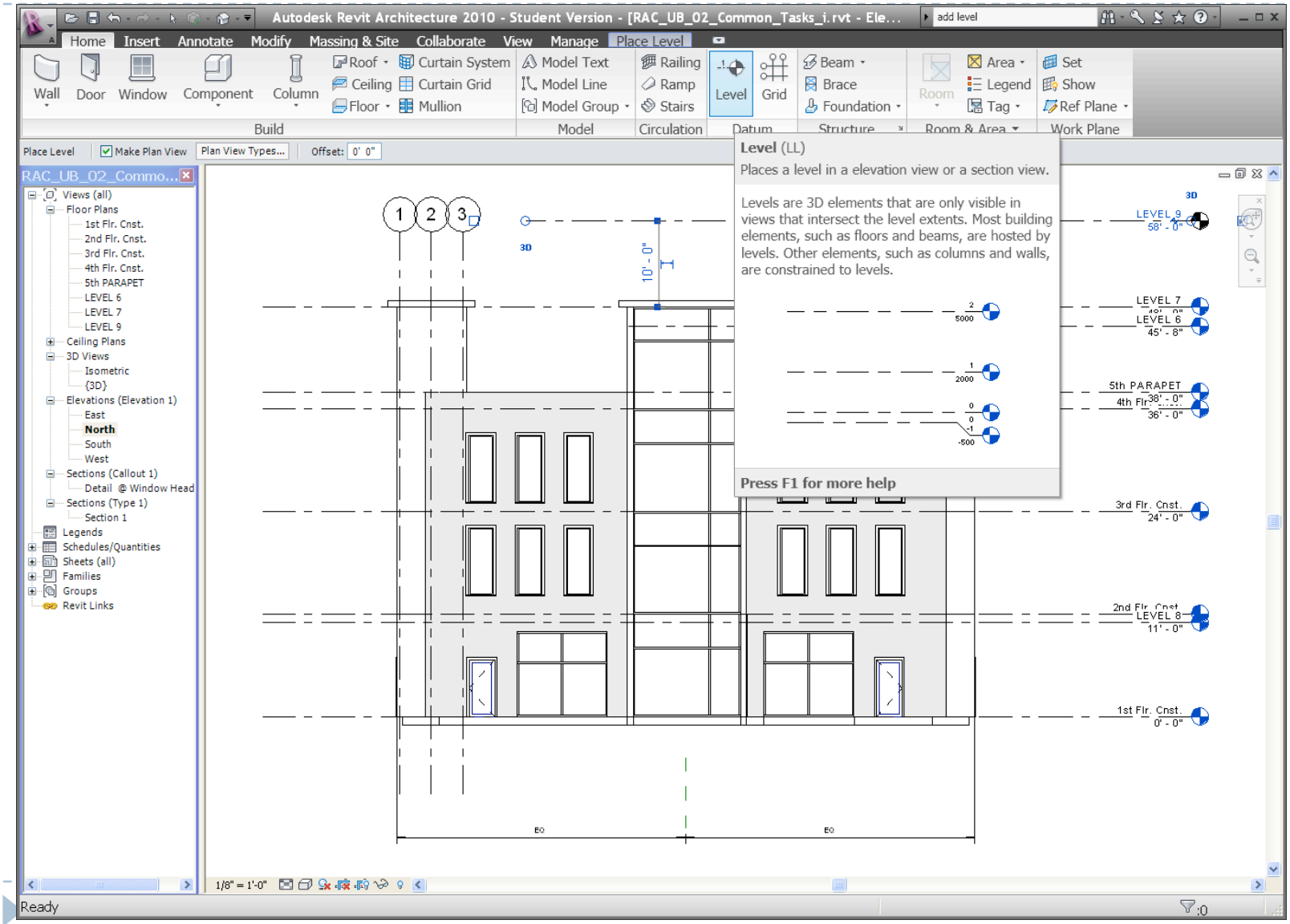
Roof by Footprint (Shed)







Adding Levels



Editing (copy, move, others)