CERTIFICATE COURSE IN BIM MODELLING

Architecture Track

Certificate Course in BIM Modelling (Architecture Track)

Topic Overview

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DAY 2

Basic 3D modeling : staircase, railing, roof, ceiling

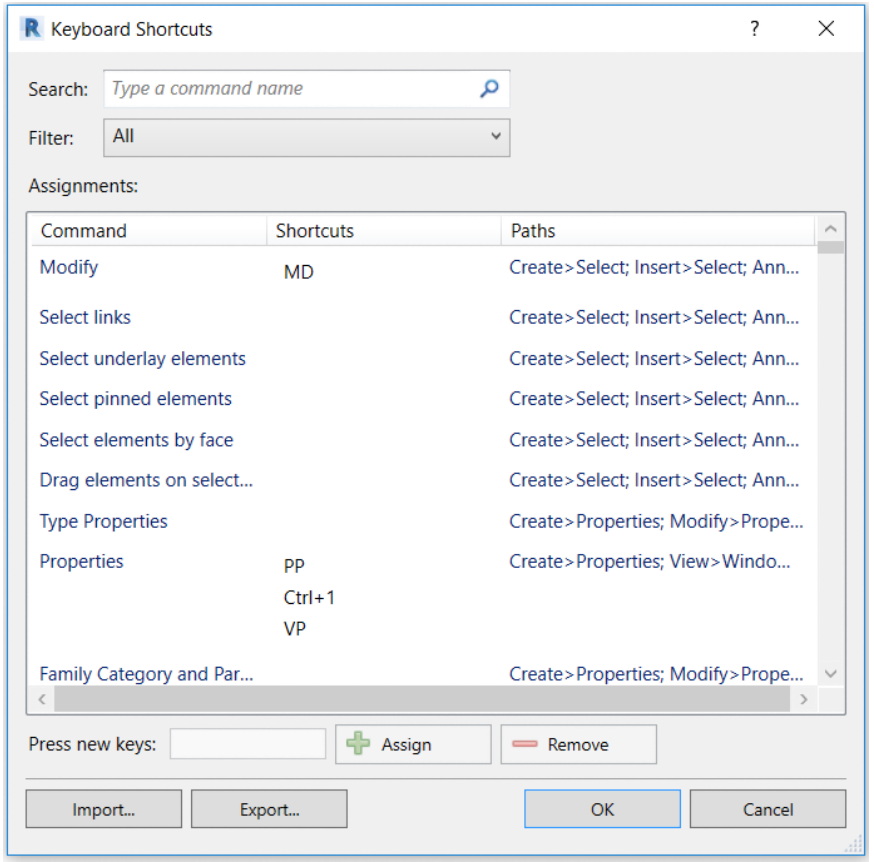
Keyboard Shortcuts

Applications Menu	
Ctrl+N	New
Ctrl+O	Open
Ctrl+S	Save
Ctrl+P	Print
Architecture>Build	
WA	Wall
DR	Door
WN	Window
CM	Place a Component
CL	Column
Architecture>Model	
GP	Create Group
LI	Model Line
Architecture>Room & Area	
RM	Room
RT	Tag Room
Architecture>Datum	
LL	Level
GR	Grid
Architecture>Work Plane	
RP	Reference Plane
Annotate>Dimension	
DI	Aligned Dimension
EL	Spot Elevation
Annotate>Detail	
DL	Detail Line
Annotate>Text	
TX	Text
FR	Find/Replace
Annotate>Tag	
TG	Tag by Category
Collaborate>Synchronize	
RL/RW	Reload Latest
ER	Editing Requests

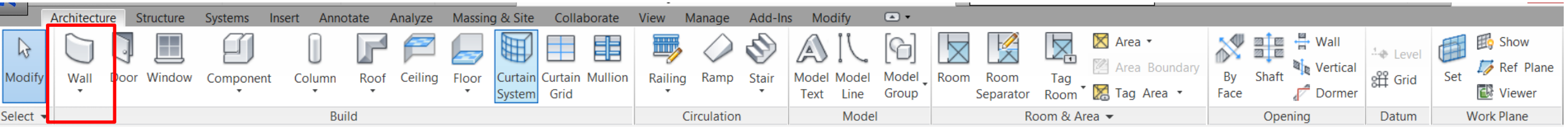
View>Graphics	
VG/VV	Visibility/Graphics
TL	Thin Lines
RR	Render
RD	Render in Cloud
RG	Render Gallery
View>Windows	
WC	Cascade Windows
WT	Tile Windows
PP	Properties
KS	Keyboard Shortcuts
Manage>Settings	
UN	Project Units
SU	Sun and Shadow Settings
Modify>Clipboard	
MA	Match Type Properties
Modify>Geometry	
CP	Cope: Apply Notching
PT	Paint
RC	Cope: Remove Notching
SF	Split Face
Modify>Modify	
AL	Align
AR	Array
CO/CC	Copy
CS	Create Similar
DE	Delete
DM	Mirror - Draw Axis
MM	Mirror - Pick Axis
MV	Move
OF	Offset
PN	Pin
RE	Scale
RO	Rotate
SL	Split Element
TR	Trim/Extend to Corner
UP	Unpin

Modify>View	
EH	Hide in View: Hide Elements
EOD	Override Graphics in View
LW	Linework
VH	Hide in View: Hide Category
Zoom	
ZA	Zoom All to Fit
ZE/ZF/ZX	Zoom to Fit
ZO/ZV	Zoom Out(2x)
ZP/ZC	Previous Pan/Zoom
ZR/ZZ	Zoom in Region
ZS	Zoom Sheet Size
Snaps	
PC	Snap to Point Clouds
SC	Centres
SE	Endpoints
SI	Intersections
SM	Midpoints
SN	Nearest
SO	Snap Off
SP	Perpendicular
SQ	Quadrants
SR	Snap to Remote Objects
ST	Tangents
SW	Work Plane Grid
SX	Points
SZ	Close
View Control Bar	
CX	Reveal Constraints
GD	Graphic Display Options
HL	Hidden Line
RY	Ray Trace
SD	Shaded
WF	Wireframe
Function Keys	
F1	Displays Revit Help
F7	Spelling
F8	Navigation Wheel
F10/Alt	Keytips
Spacebar	Flip or rotate 90 degrees selected elements
Tab	Cycles through snaps or chain of elements

You may customize your own keyboard shortcuts in Revit. The window is available at **View tab > Windows panel > User Interface > Keyboard Shortcuts** or simply type **KS**.



Stack Wall

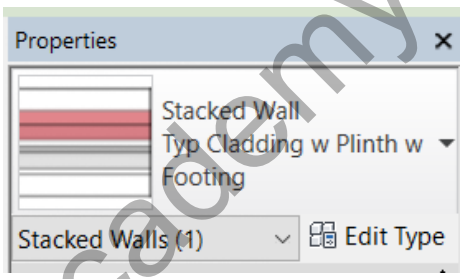


Architecture Tab > Wall

Stacked Wall : a **Wall** made up of different "Wall Types" **stacked** vertically on top of each other.

1. Wall > Stack Walls > Edit Type
2. At Type Properties, Edit Structure
3. Insert or Delete new Sub walls and assign the placement accordingly
4. Set the Height and Offset

1



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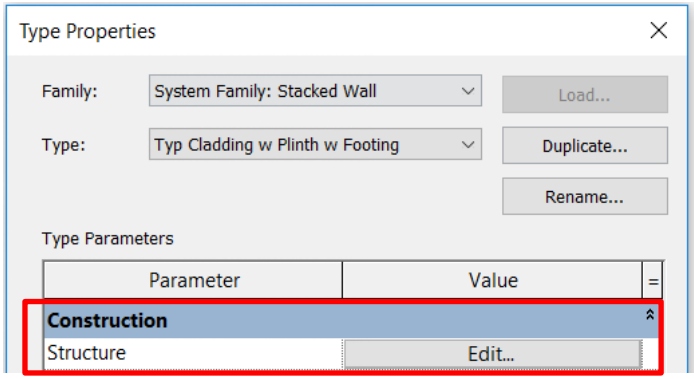

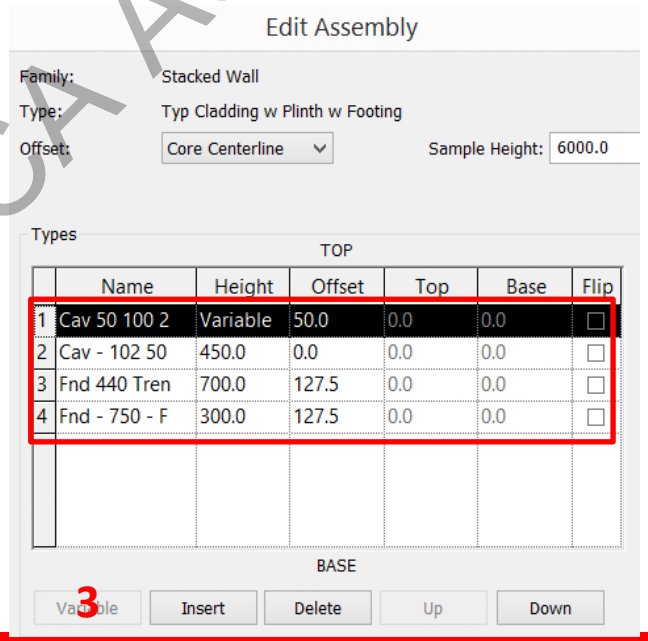

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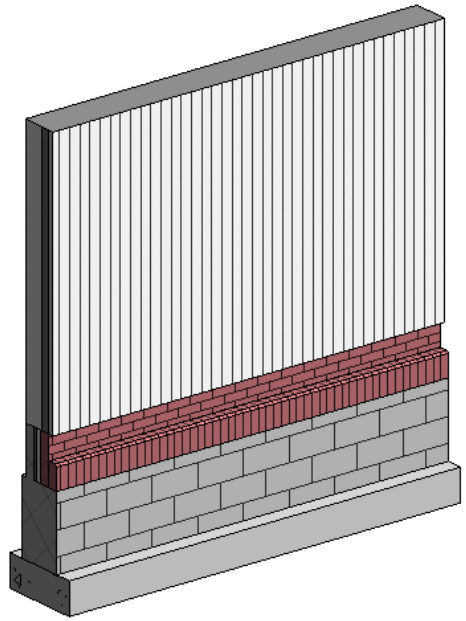
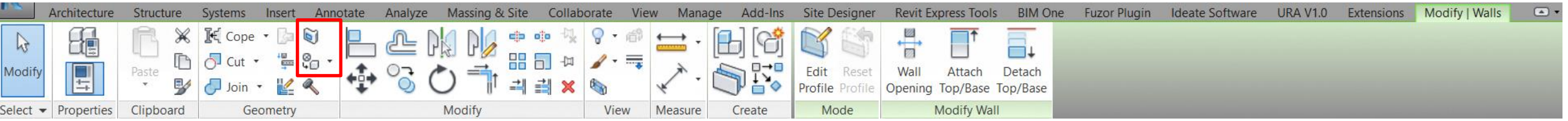


Split Face & Paint



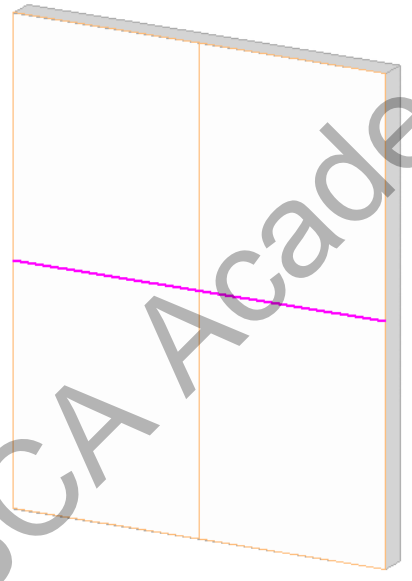
SF or Modify > Spilt Face

PT or Modify > Paint

Split Face : Divide the face of an element such as **wall, floor, column** into regions for the application of different materials

Paint : Apply a material to the face of an element

1



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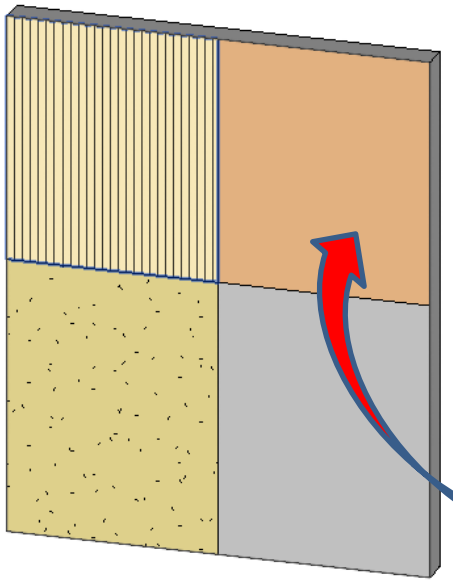
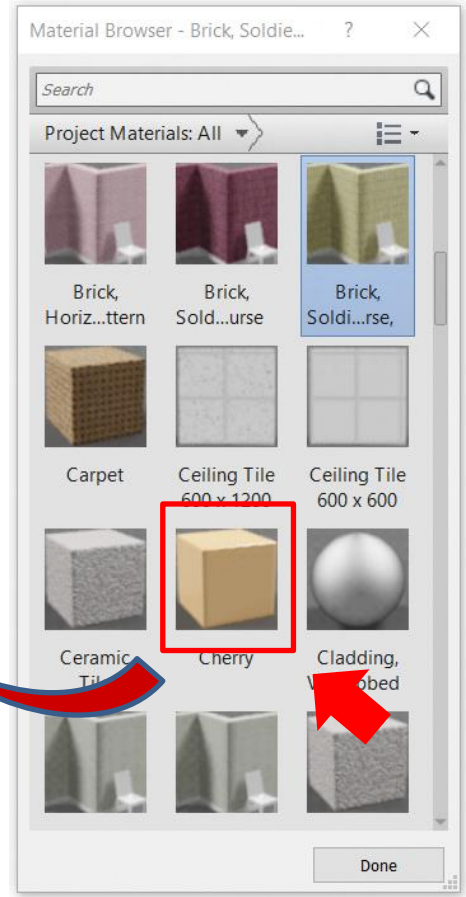
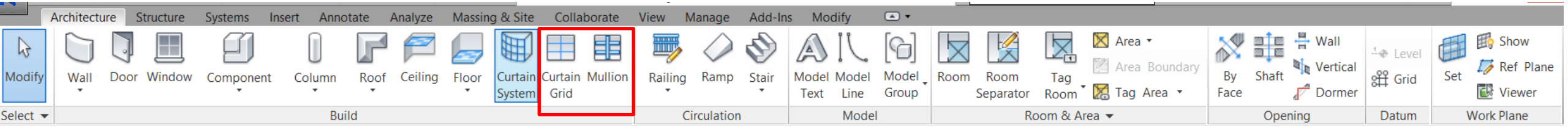




1. Select Split Face (SF), click on the surface, draw the splitting line and close the edit mode

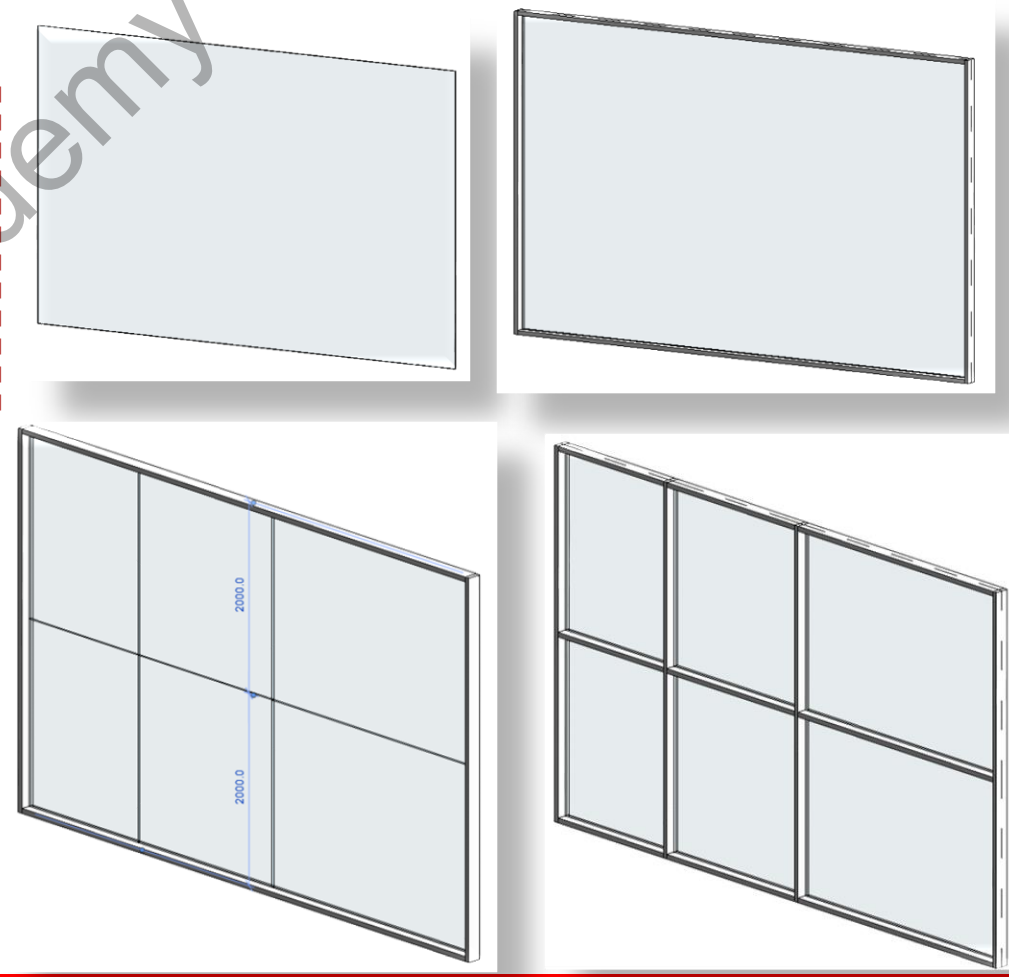
2. Select Paint (PT), choose material and click on the surface to apply

Curtain Wall



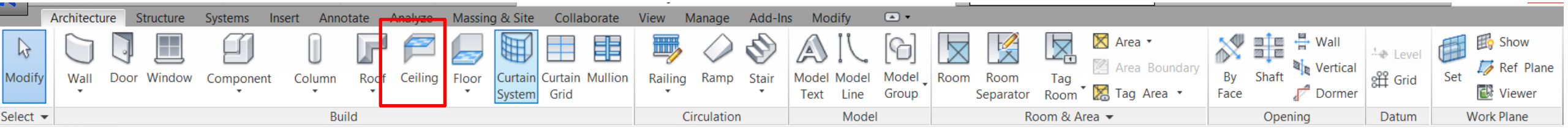
Architecture Tab > Wall

Curtain Wall 1 : has no grids or mullions. There are no rules associated with this wall type - provides the most flexibility
Exterior Glazing : has preset grids. The grid rules can be changed if the setting is not suitable
Storefront : has preset grids and mullions. The grid and mullion rules can be changed if the settings are not suitable



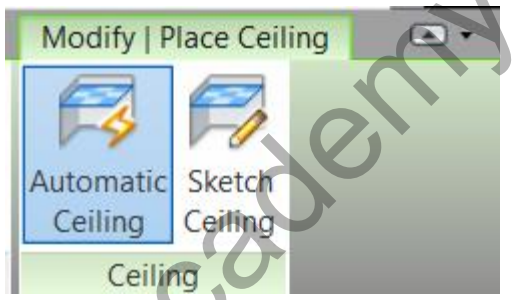
1. Create new curtain walls
2. Adjust the placement and orientation of curtain walls
3. Define curtain wall type properties to automatically place curtain grids and mullions
4. Adjust panels / mullions to suit design needs

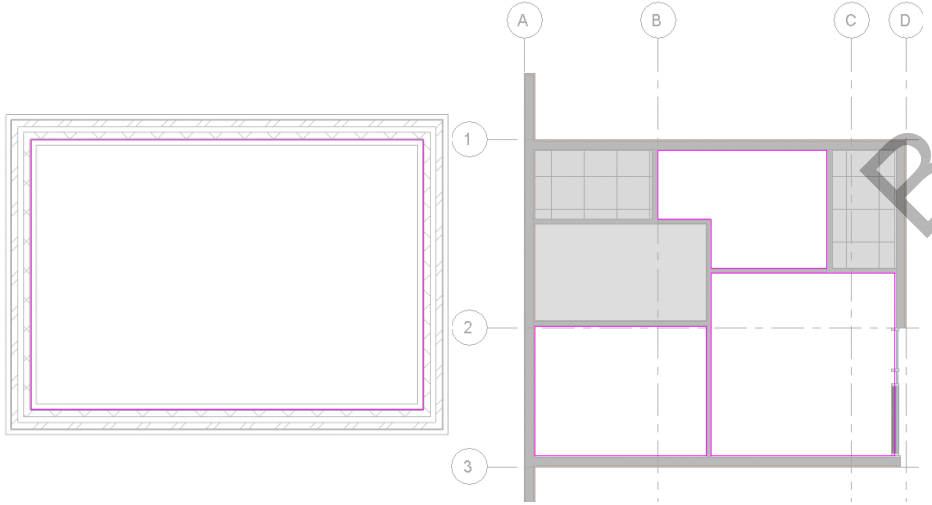
Ceiling

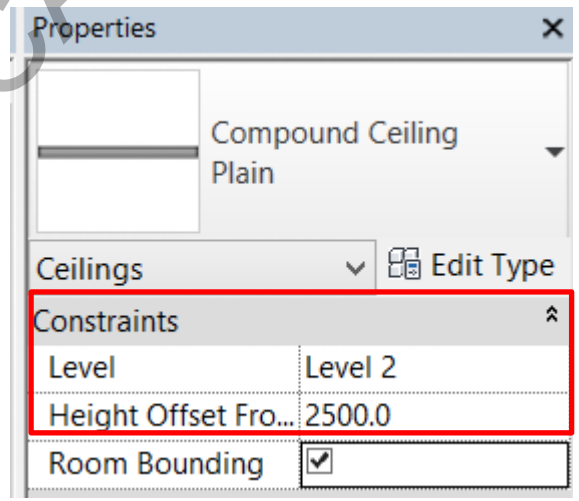


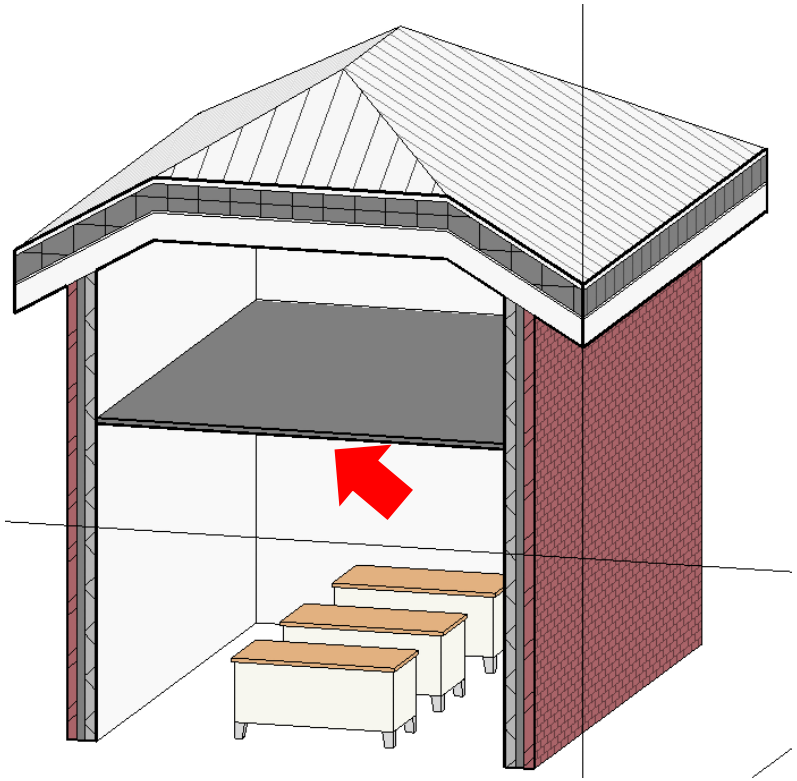
Architecture Tab > Ceiling

1. Go to Floor Plan / Ceiling Plan
2. Create ceiling by Automatic Ceiling or by Sketch Ceiling

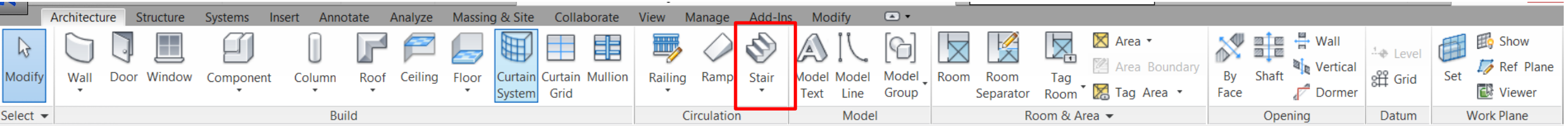








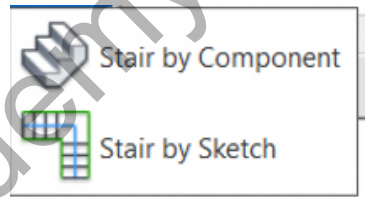
Stair

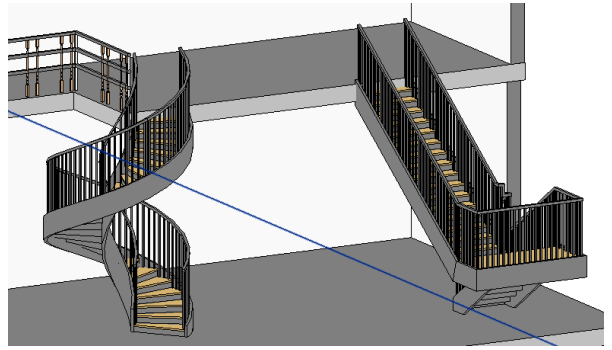


Architecture Tab > Stair

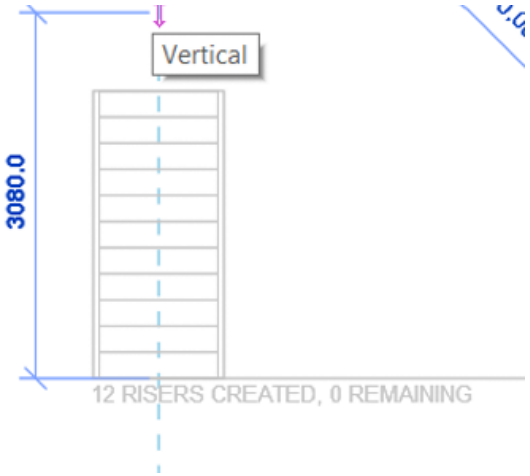
Stair by Component : add a stair to the building model by creating a common run and landing

Stair by Sketch : add a stair in a building by sketch

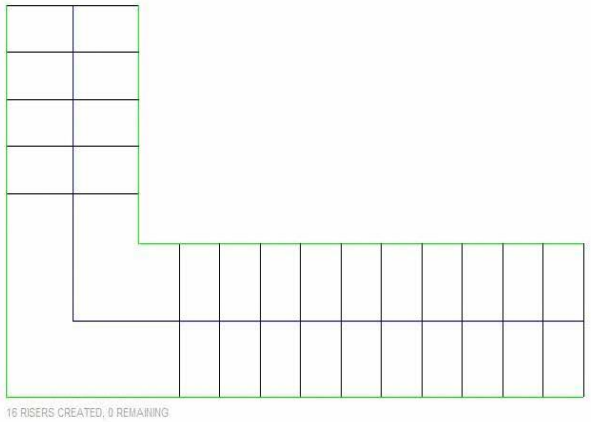




1. Create stairs by sketching run lines
2. Flip a stair direction and move a stair into place
3. Create stairs with multiple runs and complex layouts (for example, L-shaped, U-shaped, and curved stairs)
4. Adjust or remove railings as desired

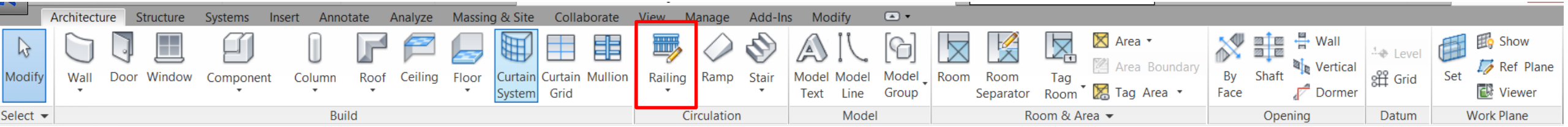


▪By Components



▪By Sketch

Railing

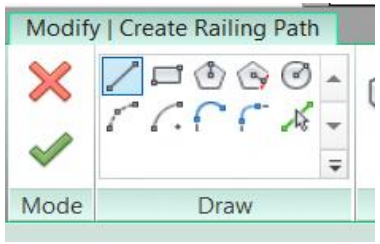


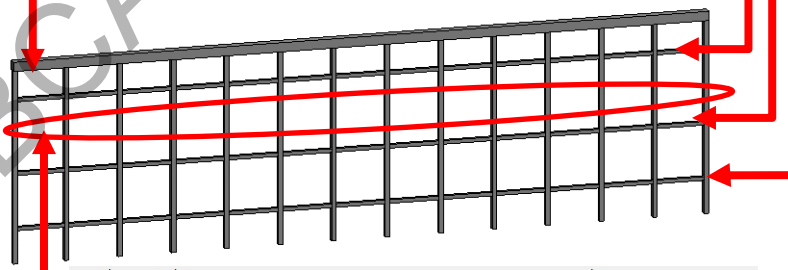
Architecture Tab > Railing

1. Open the Railing tool
2. Specify offset and sketch the railing boundary
3. Edit Rail Structure (horizontal)
4. Edit Baluster Placement (vertical)
5. Specify Height and Type for Top Rail

Type Parameters

Parameter	Value
Construction	
Railing Height	1100.0
Rail Structure (Non-Continuous)	Edit...
Baluster Placement	Edit...
Baluster Offset	0.0
Use Landing Height Adjustment	No
Landing Height Adjustment	0.0
Angled Joins	Add Vertical/Horizontal Segment
Tangent Joins	Extend Rails to Meet
Rail Connections	Trim
Top Rail	
Height	1100.0
Type	Rectangular - 50x50mm





Family: Railing
Type: 1100mm Balcony

Rails

	Name	Height	Offset	Profile	Material
1	Top Rail	900	0.0	Square Handrail : 20m	<By Category>
2	Mid Rail	500.0	0.0	Square Handrail : 20m	<By Category>
3	Bottom Rail	200.0	0.0	Square Handrail : 20m	<By Category>

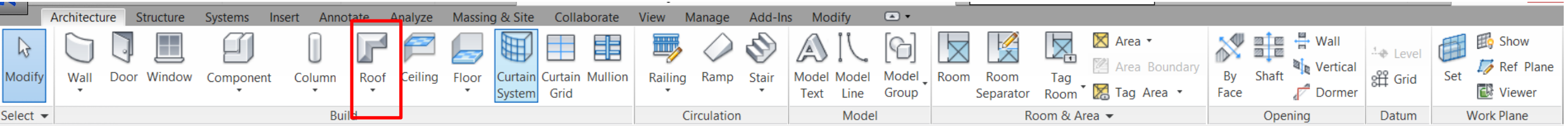
Insert | Duplicate | Delete | Up | Down

Family: Railing Type: 1100mm Balcony

Main pattern

	Name	Baluster Family	Base	Base offset	Top	Top offset	Dist. from previous	Offset
1	Pattern sta	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Regular b	Baluster - Square :	Host	0.0	Top Rail	0.0	300.0	0.0
3	Pattern en	N/A	N/A	N/A	N/A	N/A	0.0	N/A

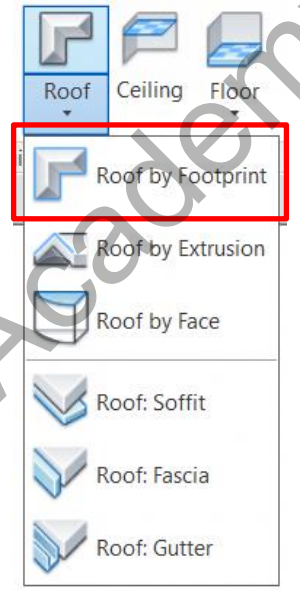
Roof



Architecture Tab > Roof

1. At the Roof Level, select Roof: by Footprint
2. Set Overhang value
3. Create Roof by sketching the boundary
4. Ensure that the lines are enclosed in a loop, close the edit mode by selecting the green tick – Roof is created

1



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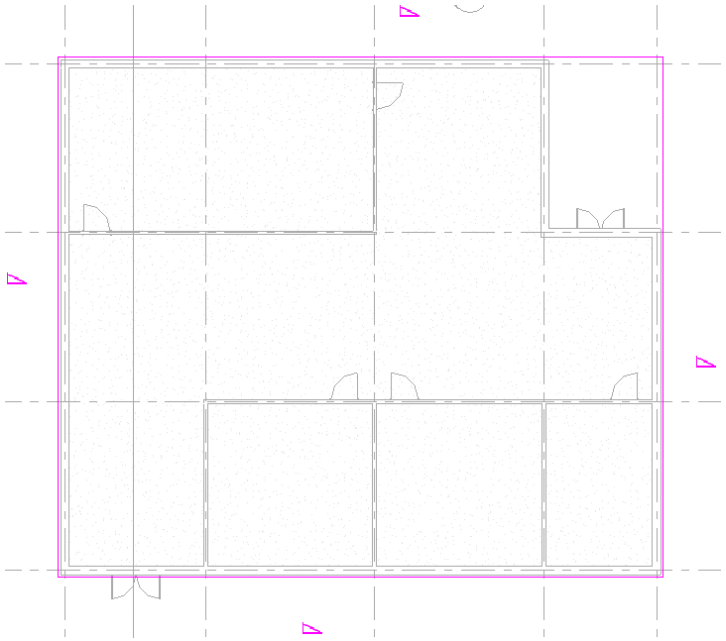

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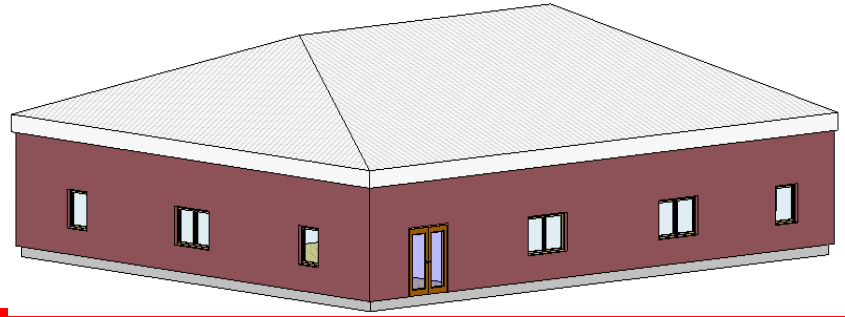

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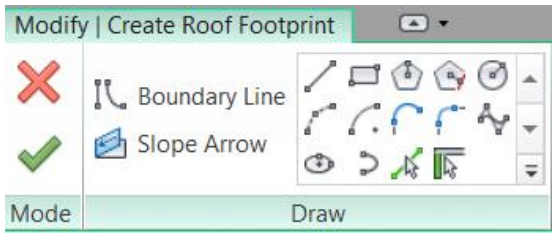
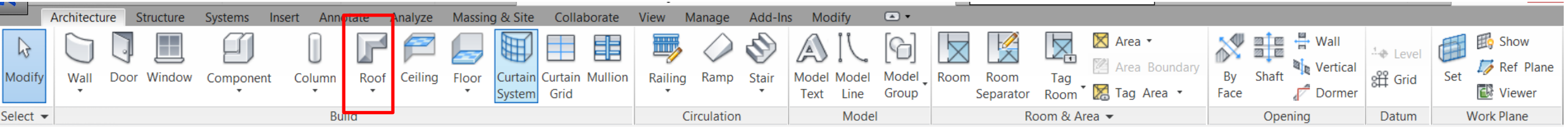
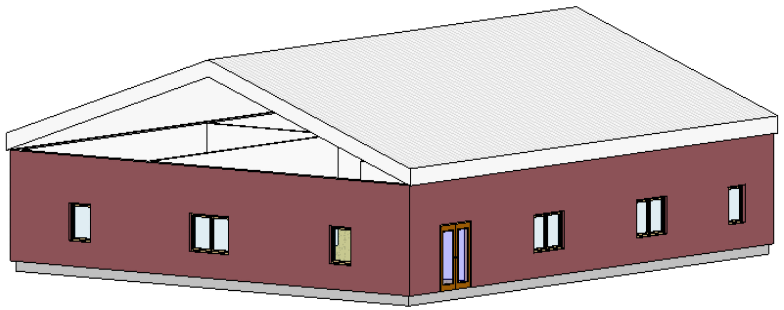


Roof



5. Click on the created Roof > Edit Footprint
6. Select one side of roof and change the slope value
7. Select the other two side of the roof and uncheck Defines Roof Slopes



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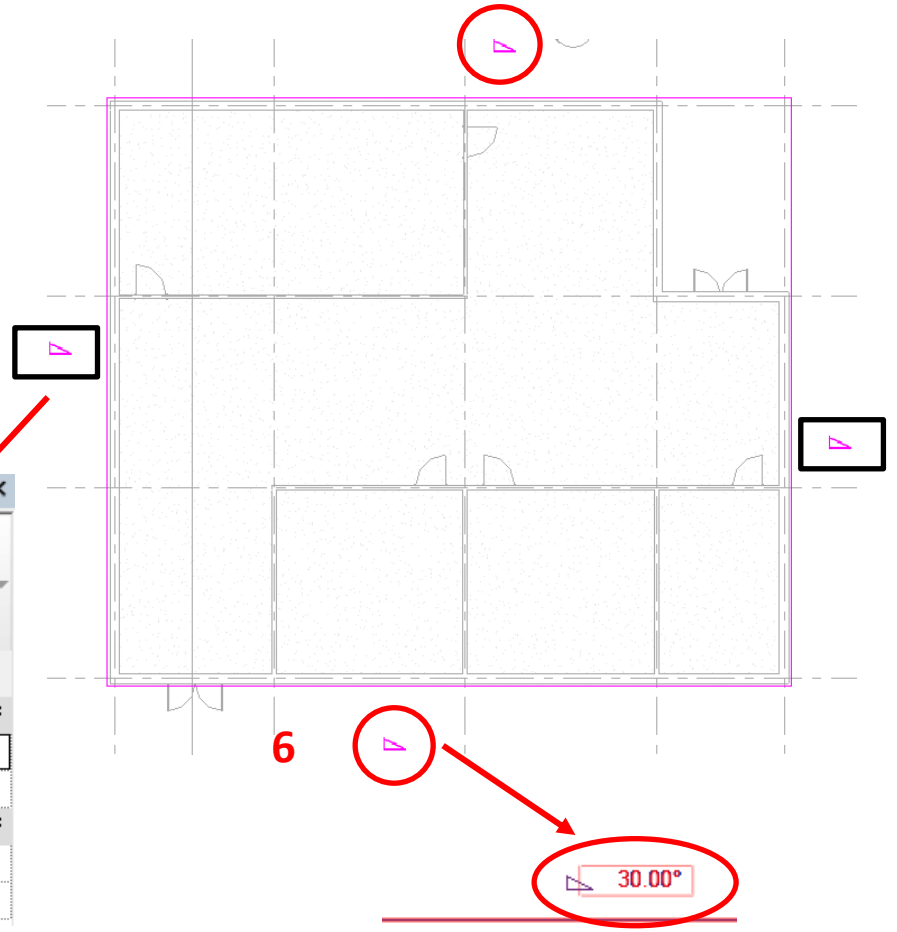
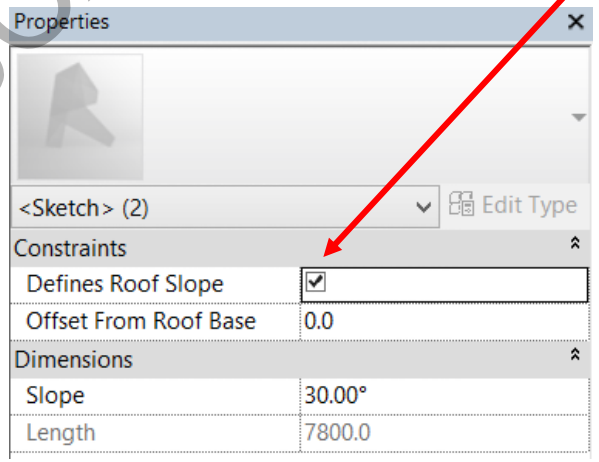
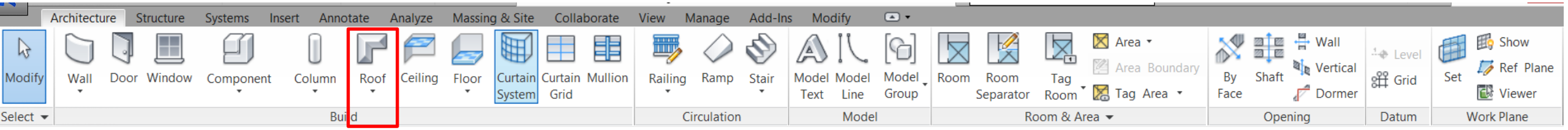




7

Roof



8. Change Roof height
9. Change Roof Rafter Cut Option
10. Change Roof properties (Edit type > duplicate..)
11. Connect Walls to Roof
    a. Select the Walls to connect
    b. Click Modify > Attach Top / Base
    c. Select the Roof to connect