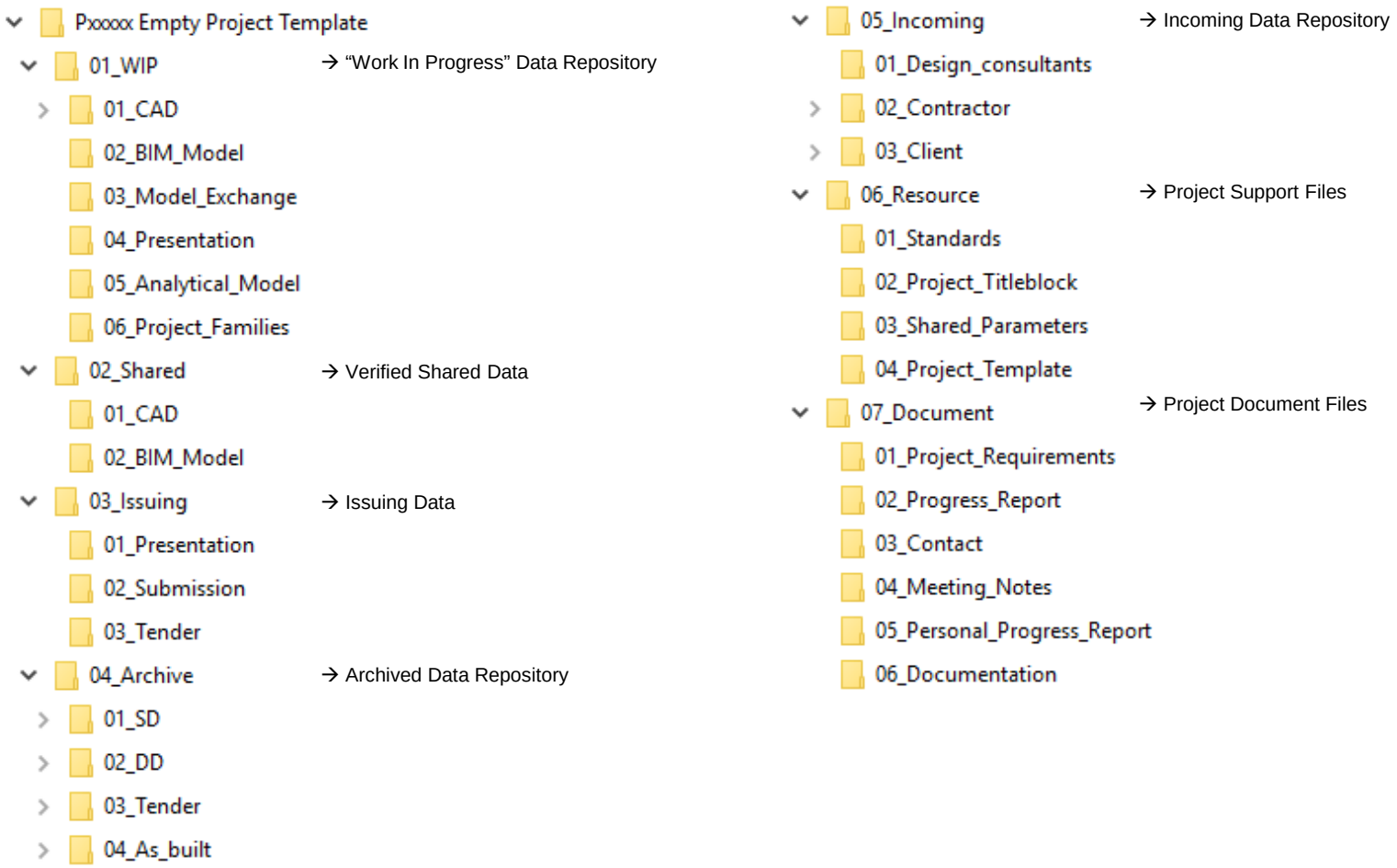
A DVANCED
C ONSTRUCTION
I NFORMATION
D EVELOPMENT

Basic Setting

▪ 1.0 Revit Setting and Configuration

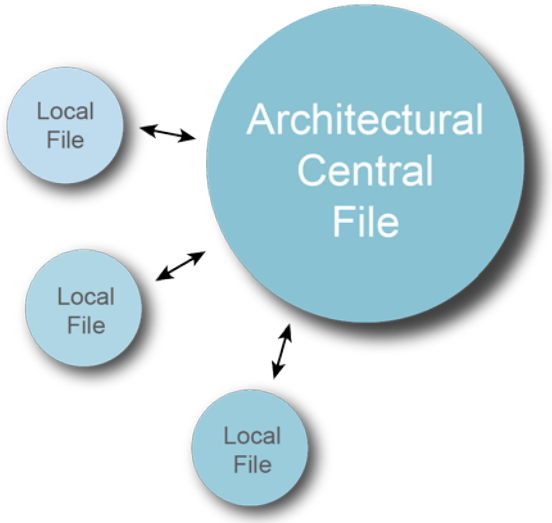
- Set up folder structure, file location



2.0 Revit Setting for Project Team Collaboration

- Create central model

The central model stores the current ownership information for all worksets and elements in the project, and acts as the distribution point for all changes made to the model. All users should save their own local file, edit locally in this workspace, and then synchronize with central to publish changes to the central model so that other users can see their work.



- Create worksets

When you work on a workshared project, you can specify an active workset to work with. Once you select the workset, all new model elements you create in the project, will then be contained in the active workset.

Workset Name	Descriptions
SITE	Landscaping, anything outside building
EXTERNAL ENVELOPE	Facade
VERTICAL TRANSPORTATION	Lift, staircase escalators
HIDDEN	Temporary elements for co-ordination but not for drawing production e.g. Structural walls at preliminary design stage
LEVEL L01	Project broken by levels

3.0 Naming Convention

- Model Files

Naming of model files shall be based on CIC BIM Standards. For full compliance, recommended character restrictions should be adopted.

Field 1: **Project** (1 to 8 alphanumeric)
User definable project reference coding.

Field 2: **Author** (3 alphanumeric)
Can use the list of agent responsible codes which can be downloaded from the Development Bureau web site.

Field 3: **Zone** (2 alphanumeric)
Identifier of which building, area, phase or zone of the project the model file relates to if the project is sub-divided by zones. For infrastructure (linear) the zone may be replaced by a location defined as a chainage and offset.

Field 4: **Level** (2 alphanumeric)
Identifier of which level, or group of levels, the model file relates to if the project is sub-divided by levels.

Field 5: **Type** (2 alphanumeric)
Document type, which will be M3 for 3D model files or QT for quantity take off.

Field 6: **Role** (2 alphabetic)
Indicates the discipline. For list of ID's refer to table below.

Field 7: **Description** (1 to 8 alphanumeric)
Descriptive field to define the type of data portrayed in the file. Avoid repeating information codified in other fields. Can be used to describe any part of the previous fields, or to further clarify any other aspect of the contained data.

ID	Discipline
AR	Architect
BS	Building Surveyor
CL	Client
CN	Contractor
CV	Civil Engineer
DR	Drainage Engineer
EE or EL	Electrical Engineer
FM	Facilities Manager
FS	Fire Services Engineer
GE	Geotechnical Engineer
GS	Geographical Information System Engineers or land surveyors
HY	Highways Engineer
IN	Interior Designer
LS	Land Surveyor
LA	Landscape Architect
ME	Building Services Engineer, MEP Engineer
MV or AC	Mechanical Ventilation & Air Conditioning Engineer
PL	Plumbing Engineer
PM	Project Manager
QS	Quantity Surveyor
SC	Sub-Contractor
ST	Structural Engineer
TP	Town Planner

3.0 Naming Convention

- View Naming

View naming shall be consistent across all references to that view. Renaming of views shall be carried out with care as any changes will be automatically reflected across all documentation.

Field 1: **Level** (Optional)
Concise description of the content and purpose of the view

Field 2: **Content**
Where appropriate, further clarification of the location of information shown

Name
LEVEL 1 – FLOOR PLAN
LEVEL 1 – CEILING PLAN
LEVEL 3 – DETAIL PLAN AT ELEVATOR 1
NORTH-SOUTH BUILDING SECTION
WALL SECTION 1
SOUTH ELEVATION

- Drawing Sheet Naming

Sheet naming shall be based on the Document and Drawing Numbering protocols established for the project. These names automatically match the text as it appears in the titleblock and any schedules.

3.0 Naming Convention

- Families Naming

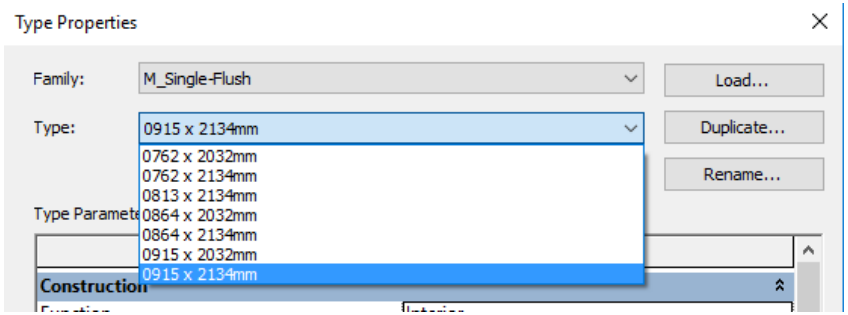
Format
<Category> - <Functional Type> - <Originator> - <Descriptor 1> - <Descriptor 2>

Family Name	DOR-SGL-AEC-Wood-w_Louver.rfa	Descriptions
Category	**DOR**-SGL-AEC-Wood-w_Louver.rfa	A Door, DOR is the short from of the Category type “door”
Functional Type	DOR-**SGL**-AEC-Wood-w_Louver.rfa	A Single Door, SGL is the short from of the functional type
Originator	DOR-SGL-**AEC**-Wood-w_Louver.rfa	AEC is the short from of the default Architecture-Engineering-Construction Industry. It can be replaced by the name of the creator in short from of three characters.
Descriptor 1	DOR-SGL-AEC-**Wood**-w_Louver.rfa	A door is made of Wood. An optional descriptive text
Descriptor 2	DOR-SGL-AEC-Wood-**w_Louver**.rfa	A door is built with Louver. This text further describes the Family
File Extension	DOR-SGL-AEC-Wood-w_Louver**.rfa**	Revit Family File Extension

- Type Naming

Type names should indicate the key differences between types (size, count, material) and, when applicable, reflect standard sizes. In some cases, you may base names on size difference, but use common terms rather than numbers.

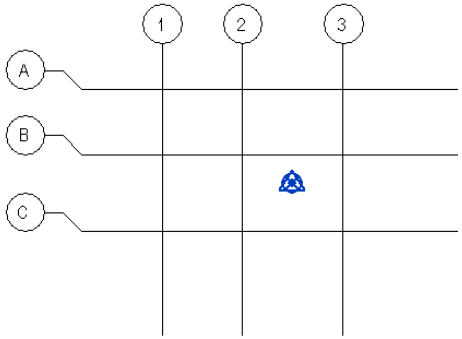
*Do not include the family name or category in the name.



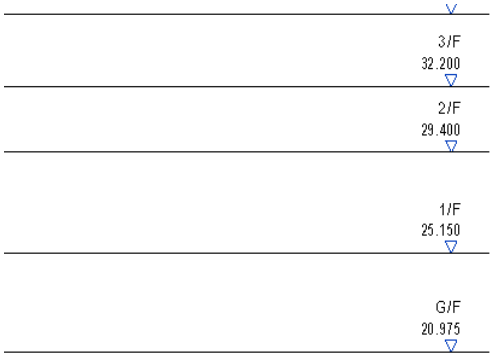
Below is an example of a Window Family with different Family Types

▪ 4.0 Define Grid, Level, Project Base Point and Survey Point

- Adding Grid



- Adding Level



- Project Base Point

- Survey Point

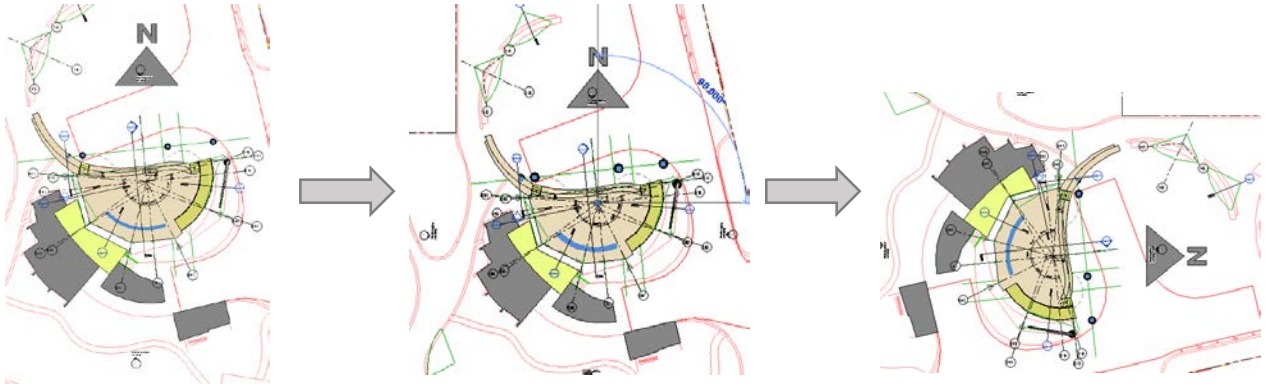
Grid	Grid are 3D elements that are visible only in views that intersect the grid extents. Structural columns automatically join to grid intersections.
Level	These elements are usually visible only in a 2D view. They can be used to move any model element that references them.
Project Base Point	Common point for Linking File (Usually Cross of Gridline)
Survey Point	Actual Geographical location according to survey plan

5.0 Define True North and Project North

- True North

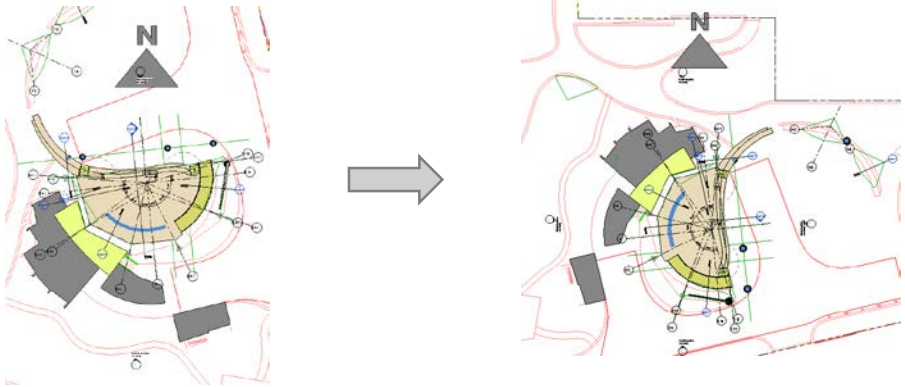
Specify an angle on the Options Bar or click in the view to define the angle.

To see the change reflected in a particular view, edit view properties to change the Orientation parameter to True North.



- Project North

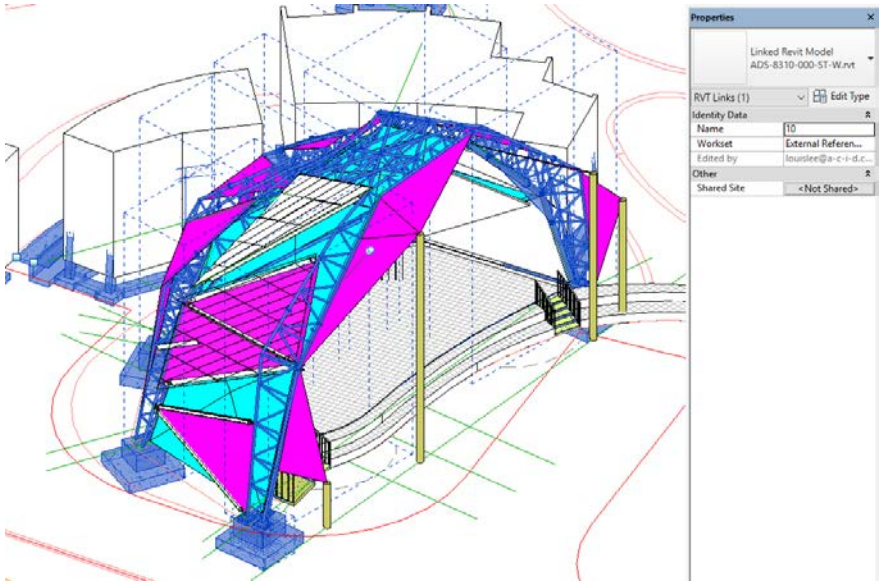
Model elements and detail elements rotate the specified angle in the drawing area. The view's Orientation property should always set to Project North.



6.0 Link Revit models from different disciplines

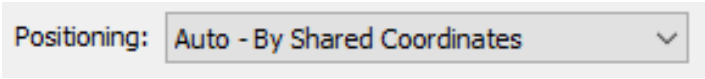
- Link Revit

The most straightforward method to insert a Revit link is to use the Link Revit tool on the Insert tab. It can connect link Revit models from different disciplines.



- Shared Coordinates

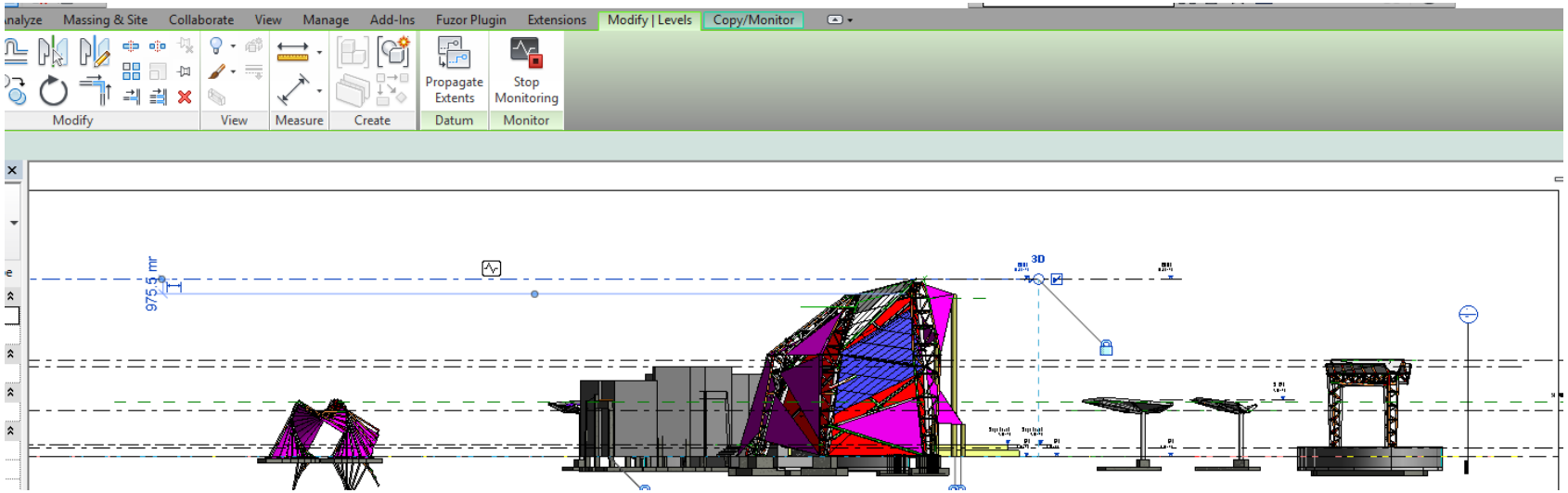
Defines the common coordinate system for all BIM data. DWG/DGN can also be inserted into Revit project but the common coordinate would be different.



▪ 7.0 Copy & Monitor Grid line & Level from Arch Model

- Copy & Monitor

When multiple teams collaborate on a project, effectively monitoring and coordinating work can help to reduce mistakes and abortive works.



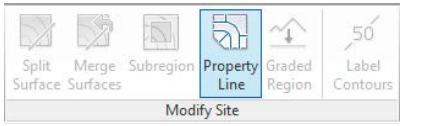
8.0 Create Location Plan & Boundary Line

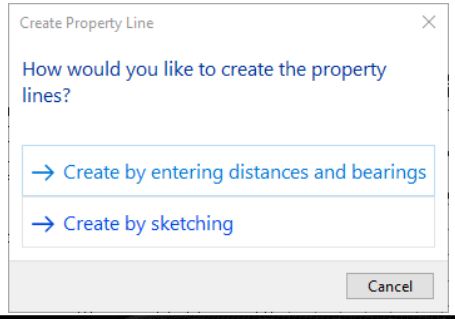
- Location Plan

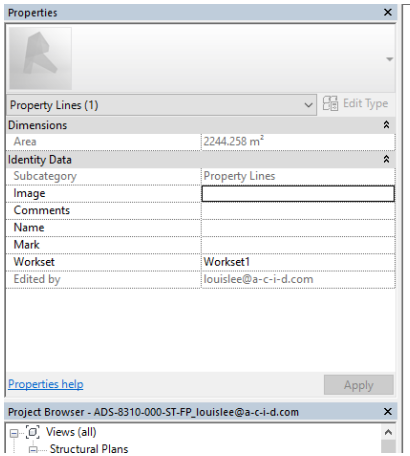
In the new project to Revit, open “Site” view in Floor Plans → Link Site plan CAD → the scale set up to 1:2000

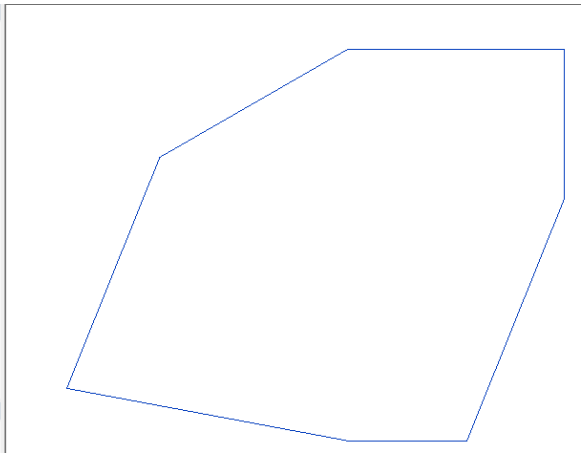
- Boundary Line

In the Plan view → Click Massing & Site tab → Modify Site panel → Click “Property Line” → Create by sketching









9.0 Phasing

- Phasing

To define project phases and apply phase filters to views and schedules to show various stages of work of project.

- Display of Phase Filters

All project/template contains the following default phase filters:

Phase Filters	Definition
None	Does not apply a phase filter to the view. The view displays all elements from all phases.
Show All	Shows new elements and existing, demolished, and temporary elements.
Show Complete	Shows the completed project, after demolition and new work have been performed in the current phase.
Show Demo + New	Shows demolished elements and all new elements added to the building model.
Show New	Shows all new elements added to the building model.
Show Previous + Demo	Shows existing elements and demolished elements.
Show Previous + New	Shows all original elements that were not demolished (Show Previous) and all new elements added to the building model (+ New).
Show Previous Phase	Shows all elements from the previous phase. In the first phase of a project, existing elements are new to that phase, so applying the Show Previous Phase filter causes no elements would be displayed.

9.0 Phasing

- Phase Status

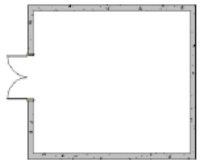
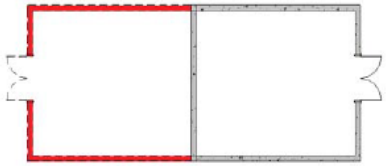
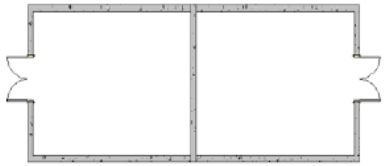
All project/template contains the following default phase Status:

Phase Filters	Definition
New	Element was created in the phase of the current view.
Existing	Element was created in an earlier phase and continues to exist in the current phase.
Demolished	Element was created in an earlier phase and demolished in the current phase.
Temporary	Element was created and demolished during the current phase.

- Graphic Override in phasing

Material for phasing features shall be set as follow:

Status	Material Name	Color Code
Existing	Phase - Exist	RGB 127-127-127
Demolished	Phase - Demo	RGB 250-000-000
New	Phase – New	RGB 080-080-080
Temporary	Phase - Temporary	RGB 000-000-127

	Phase Filter: Show Complete Phase: Existing
	Phase Filter: Show Complete Phase: New Construction
	Phase Filter: Show Demo + New Phase: New Construction
	Phase Filter: None Phase: New Construction

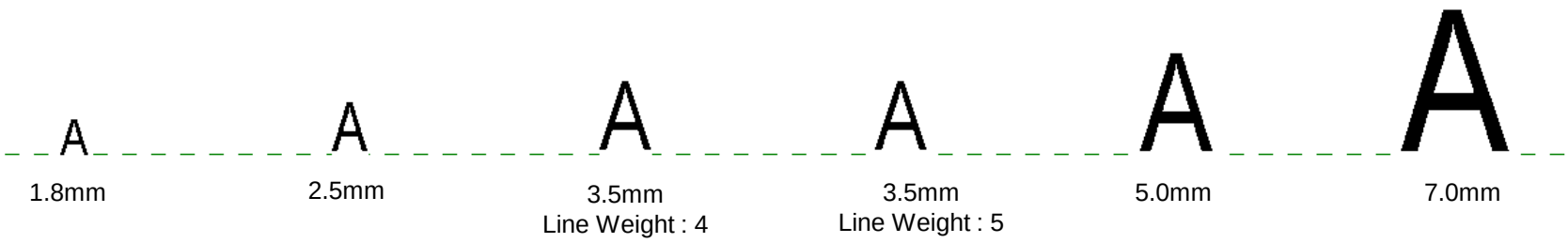
10.0 Define Text Font

-Text Assignment

All text shall be restricted to the following sizes (Fonts : Arial Narrow):

Text Height (mm) Plotted	Line Weight	Usage
1.8	2	General text, dimensions, notes – used on A3 & A4 size drawings
2.5	3	General text, dimensions, notes
3.5	4	Sub-headings,
3.5	5	General text, dimensions, notes – A0 drawings
5.0	7	Normal titles, drawing numbers
7.0	8	Major titles

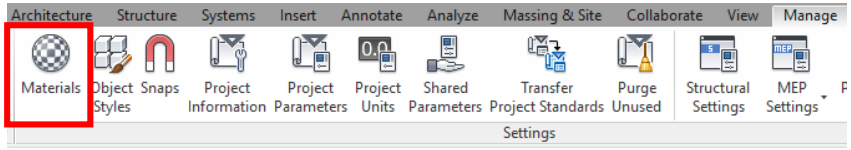
***Alternative text sizes shall not be used without the consent of the BIM Co-ordinator.**

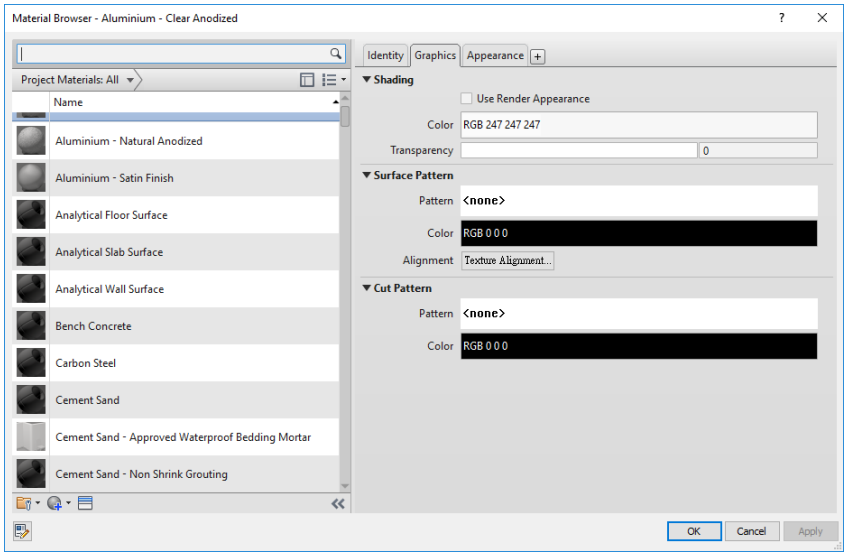


▪ 11.0 Material Setting

- Material Browser

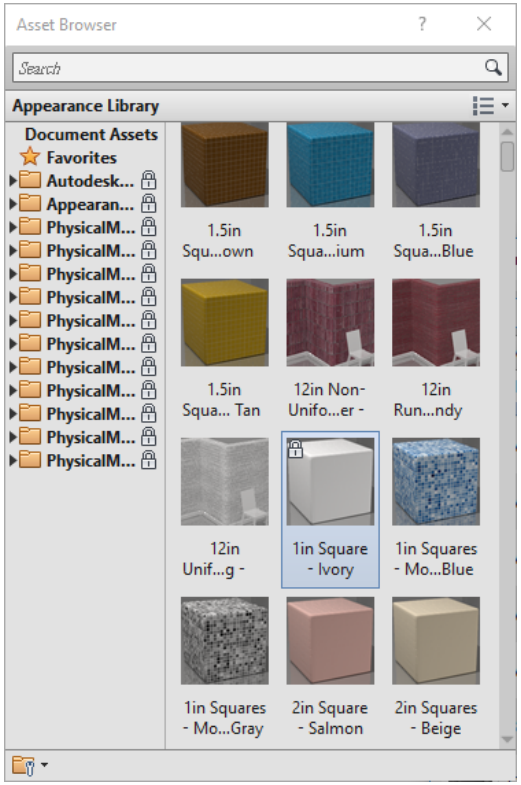
On the Manage tab → Settings Panel → Click “Materials” → Select Material in the left list → Set up Graphic in the Graphic tab on the right → Click “OK”





- Asset Browser

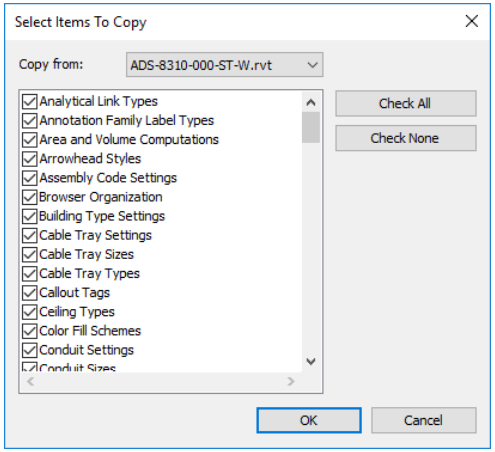
Material Browser → Click  → In the Asset Browser → Select the material double-click



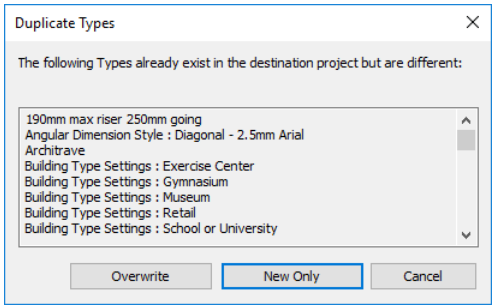
▪ 12.0 Transfer Project Standards from other project

- Transfer Project Standards

In the exercise project file there are some custom wall types you want to copy into a new project.



This is especially important to verify if you have more than two project files open to ensure that you copy from the expected file.



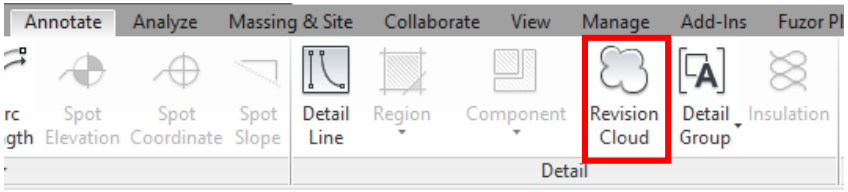
New Only will copy only walls that are not currently in the new project.

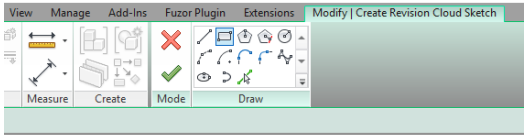
▪ 13.0 Drawing Revision

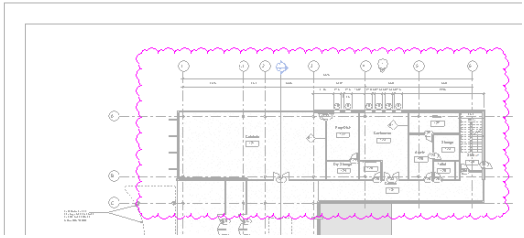
- Revision Cloud

Add a revision cloud to the current view or sheet to indicate design areas that have changed.

In the Sheets view → Annotate tab → Detail panel → Click " Revision Cloud" → Create Revision Cloud Sketch → Finish the edit mode

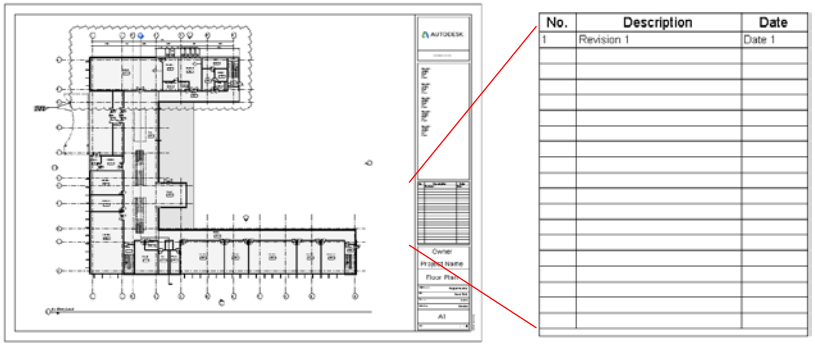






- Revision dialog

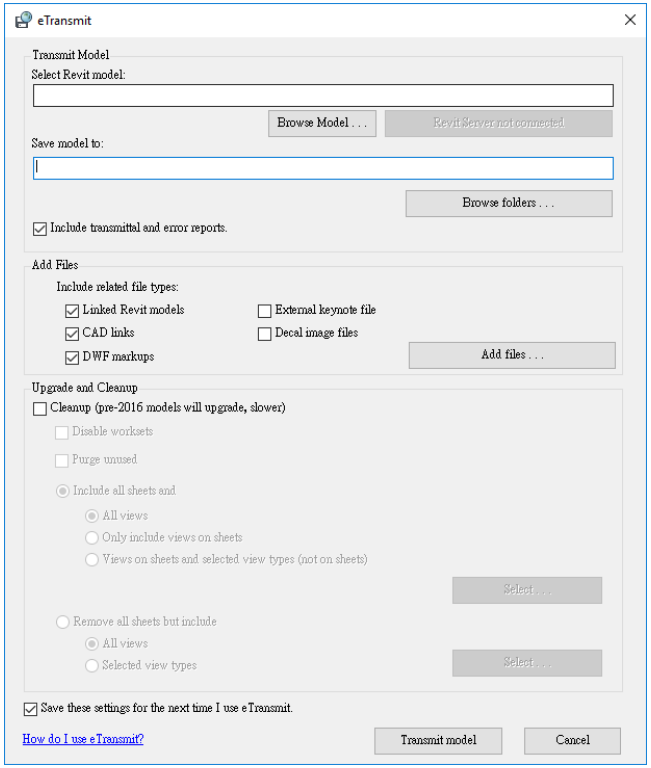
Specify the minimum arc length for revision clouds in the project on the Sheet Issues/ Revision dialog.



14.0 How to Archived Model

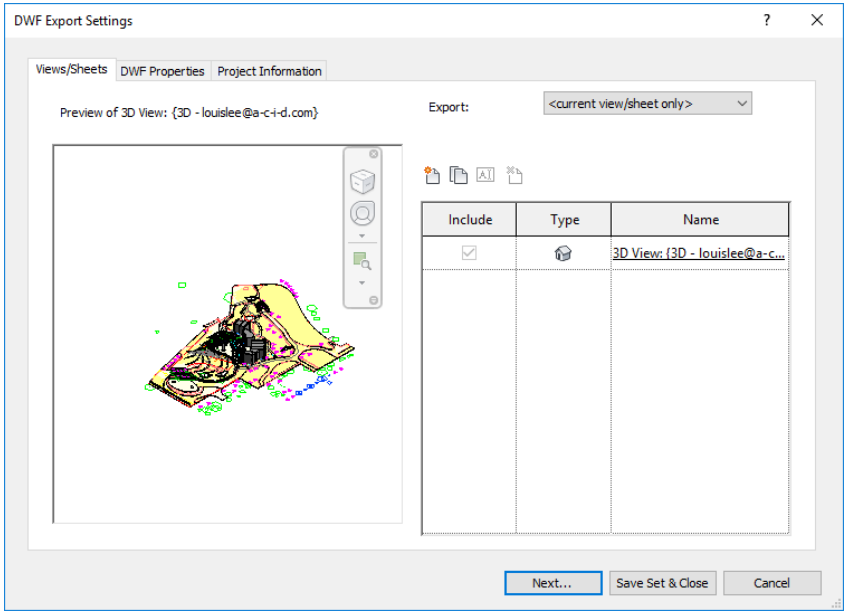
- eTransmit

With eTransmit for Revit software products, user can copy a Revit model and link files to a single folder for internet transmission.



- Export to DWF / DWFx

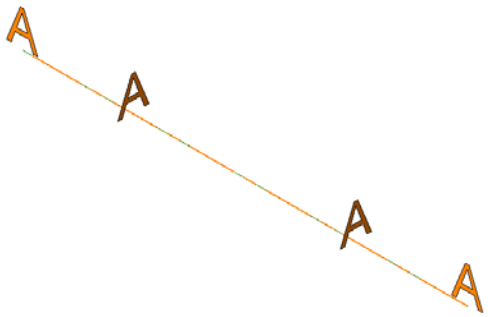
User can export a Revit model to DWF or DWFx format, so user can share the model with others who do not have Revit.



15.0 3D Grid and Multi-segment for curved grid

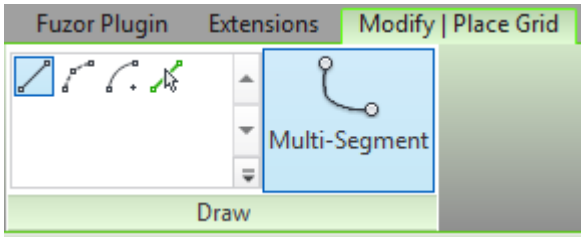
- 3D Grid

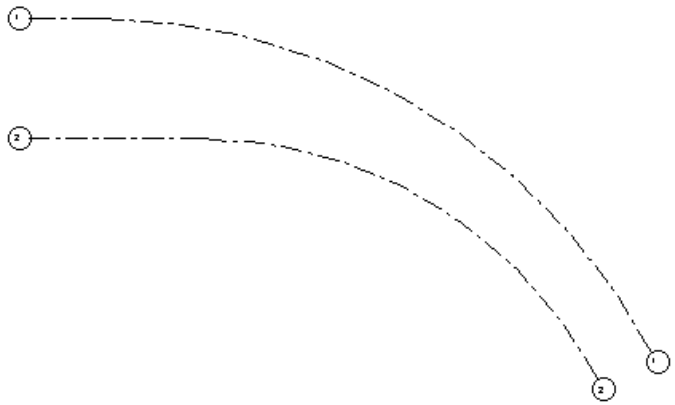
In Revit, users cannot display and draw grid line in 3D View, so need to create family (Template : Metric Generic Model line based) for the 3D Grid.



- Multi-segment grid

User can use Multi-Segment to sketch grids requiring more than one segment



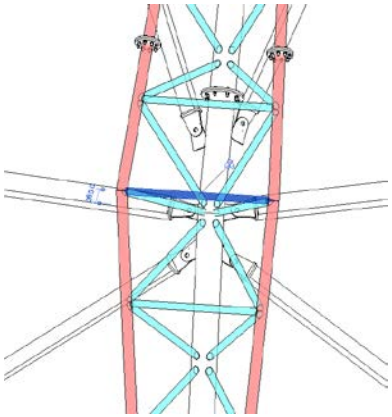
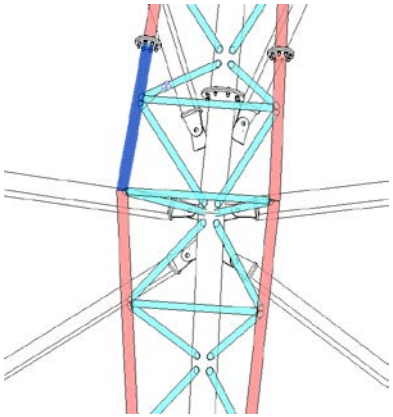
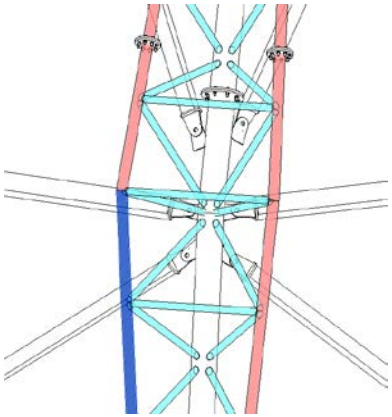
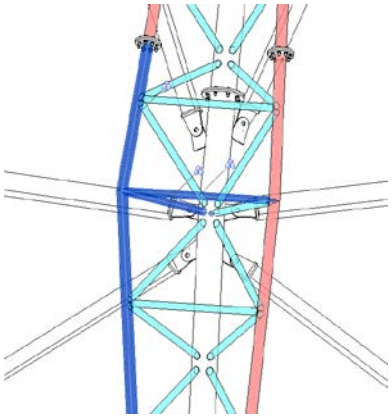


Skills for Modeling

▪ 1.0 Select Element in View

- Tab

Key	Action
CTRL	Select multiple elements
TAB	Cycle through the pre-highlight of elements to select among ones that are close to one another
TAB	Pre-highlight wall faces or wall centerlines when placing dimensions
TAB	Toggle between selecting a curtain wall or a glazed panel in a plan view
SHIFT + TAB	Reverse the order in which TAB cycles through the pre-highlighting of elements
CTRL + A	Select all rows in the Worksets dialog

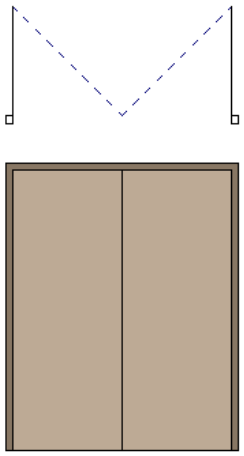





2.0 Detail Level & Visual Style

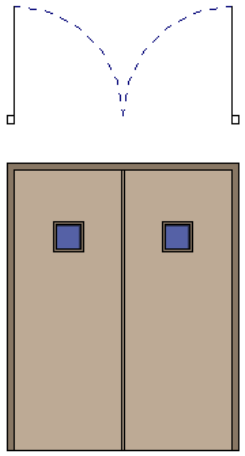
- Detail Level

Set the detail level for newly created views based on a view scale.

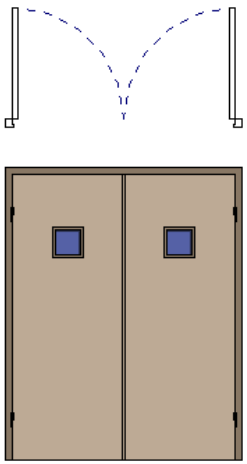
Coarse



Medium



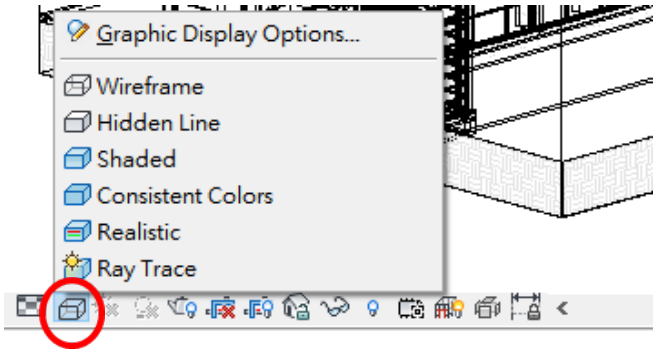
Fine

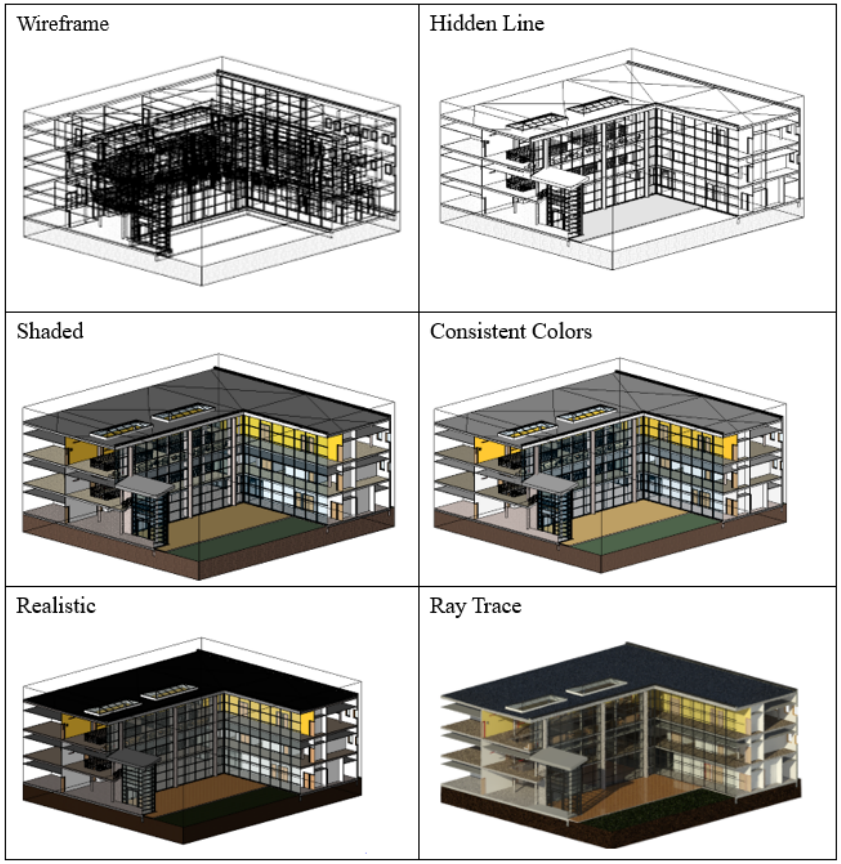


▪ 2.0 Detail Level & Visual Style

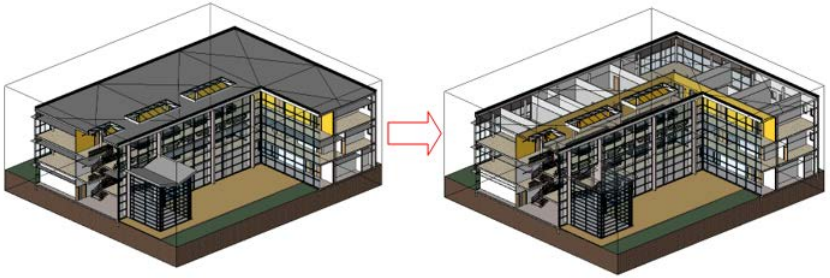
- Visual Styles - Specify graphic styles

You can control the display of the model with a visual style.





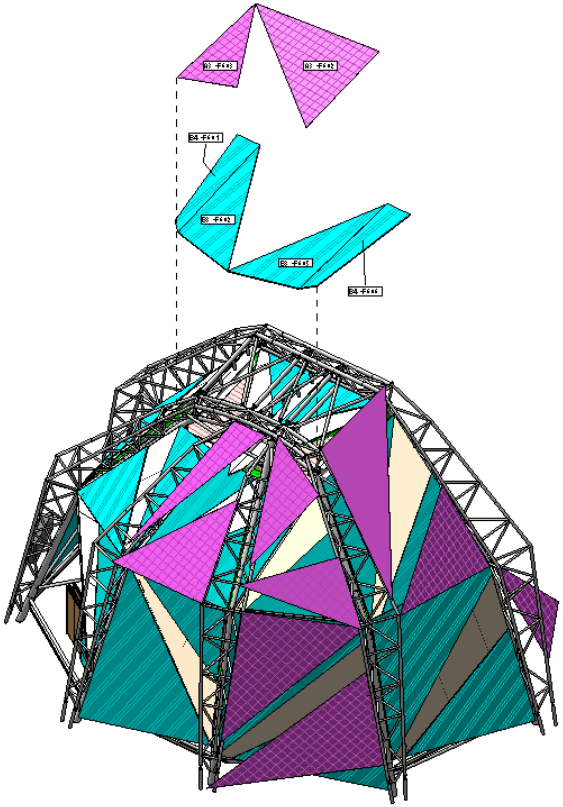
- Apply Transparency to Faces of Model Element Categories



3.0 Displace Element

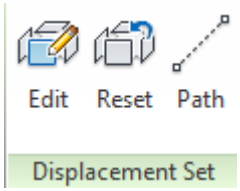
- Displace element

Displacing elements is a view-specific override much like hiding an element in a view affects that one view only. The changes made using Displacement will not affect the model or any other views of the model.



In the 3D view and click element → Modify tab → View panel → Click 

Display lines that connect exploded elements to their place of origin.



4.0 View properties control

- View Properties

The following properties are common to most view types.

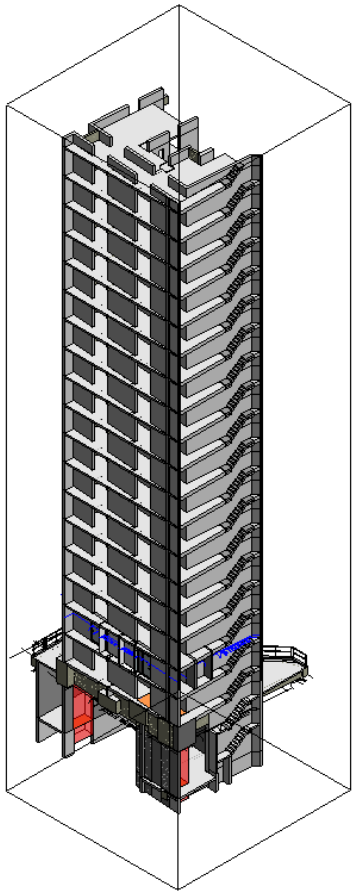
Name	Description
View Scale	Changes the scale of the view as it appears on the drawing sheet. Select a scale value from the list.
Detail Level	Applies a detail level setting to the view scale: coarse, medium, or fine. This setting overrides the automatic detail level setting for the view.
Underlay	Displays another slice of the model under the current plan view. That slice of the model can be from above or below the current level. The underlay appears dimmed and is visible even in hidden line. The underlay is useful to understand the relation of components on different floors.
Orientation	Switches the orientation of the project in the view between Project North and True North.
Discipline	Determine how elements display in the view.
Crop View	Select the Crop View check box to enable a crop boundary around the model. Select the boundary and resize it using the drag controls. As you resize the boundary, the visibility of the model changes. To turn off the boundary and maintain the cropping, clear the Crop Region Visible check box.
View Range	Within the view properties of any plan view, you can set the View Range. With View Range, you can control the specific geometric planes that define the boundaries of each view. These boundaries are set by defining the exact cut plane as well as the top and bottom clip planes.
Scope Box	If you draw a scope box in a view, you can associate the view's crop region with that scope box, so the crop region is visible and matches the scope box extents. This property is available for plan, elevation, and section views. When you select a scope box value for this property, the Crop Region and Crop Region Visible properties become read-only.

5.0 Use Section Box

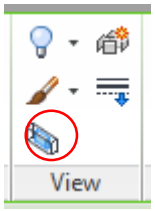
- Section Box

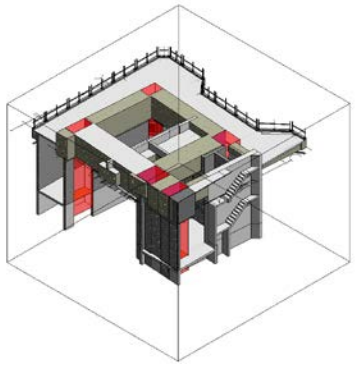
This will allow you to control how much of the project is shown and is helpful for creating cutaway visualizations in real time or in renderings.

- Once a section box is enabled in a 3D view;
- Select section box in order to stretch or rotate it according to your need;
- The section box is not considered a crop region;
- Section box is not affected when you use the Crop Region Visible command



New for the 2016 release is the Selection Box tool. This is an easy way to isolate selected elements in the current view and switch over to a 3D view with only these elements visible (it also works in a 3D view to isolate elements). The tool enables the 3D view section box, which will be set to reflect the selected objects only



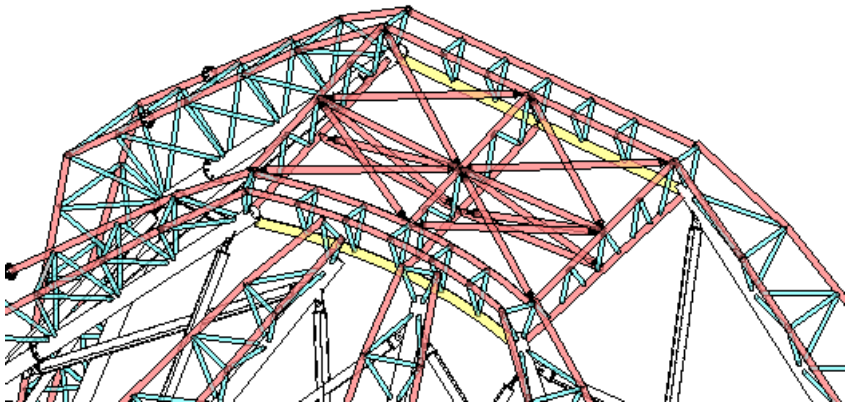


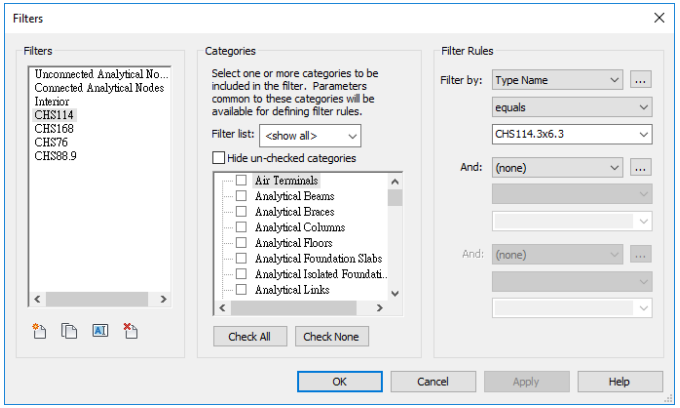
▪ 6.0 Filter setting under VV

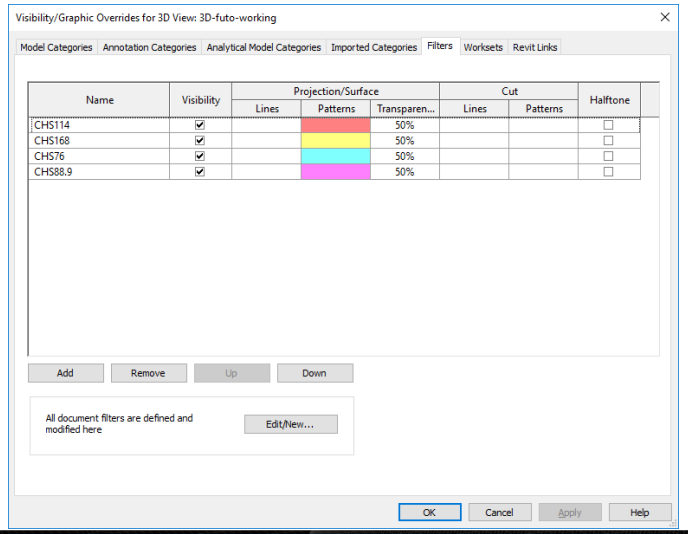
- Filter Setting

Filters are another view configuration and customization tool that can be developed and deployed in Revit project templates.

- Similar to the filters available in schedules;
- Could either display or hide elements matching user-specified criteria;
- Filters can also override the graphic appearance of elements within a view;
- The view filters is virtually limitless to the possible combination and application;





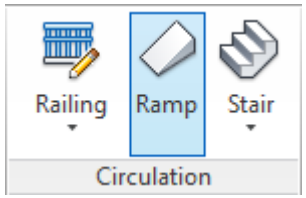


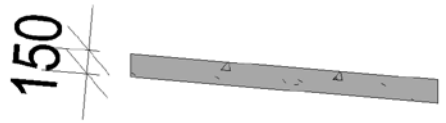
▪ 7.0 Ramp

- Ramp

Display

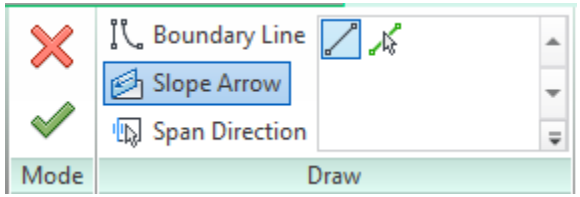
On the Architecture tab → On the Circulation panel → Click “Ramp”





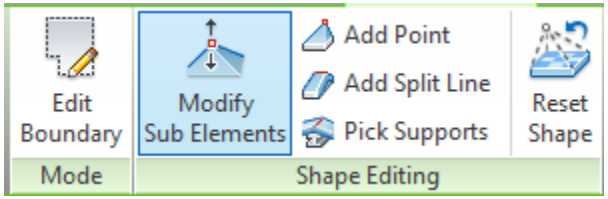
- Floor : Slope Arrow

On the Architecture tab → On the Build panel → Click “Floor” → Draw boundary line → Draw Slope Arrow



- Floor : Modify Sub Elements

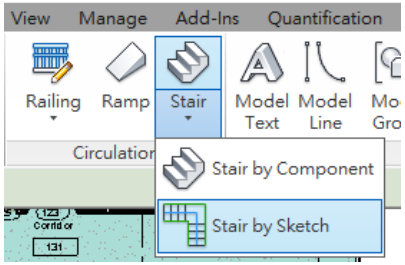
Click Floor element→ On the Shape Editing panel → Click “Modify Sub Elements”

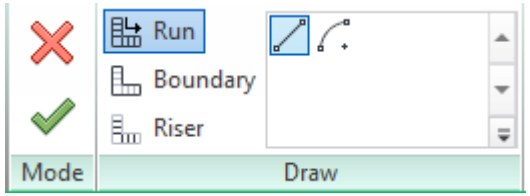


8.0 Stair

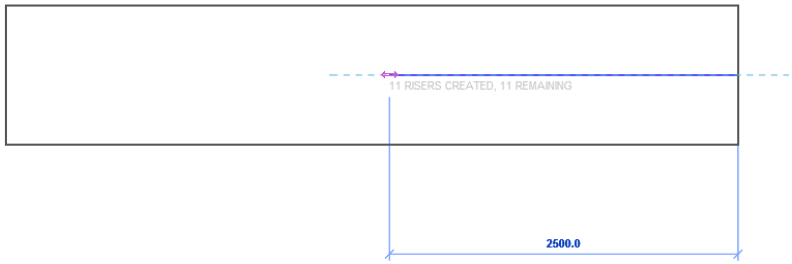
- Stair by Sketch

On the Architecture tab → On the Circulation panel →Stair drop-down → Click “Stair by Sketch” → On the Modify | Create Stairs Sketch tab → Draw panel → Click “Run”





When you finish the sketch, a railing is applied automatically. The Run tool limits the design of your stairs to straight runs, straight runs with landings, and spiral staircases. For more control when designing stairs, sketch the run by sketching the boundary and riser lines.

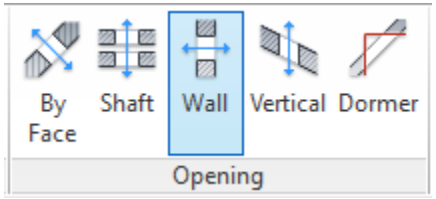


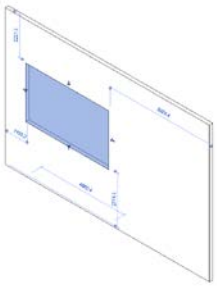
9.0 Opening

-Wall Opening

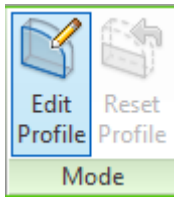
Based on wall element, Three type of wall opening shall be created:

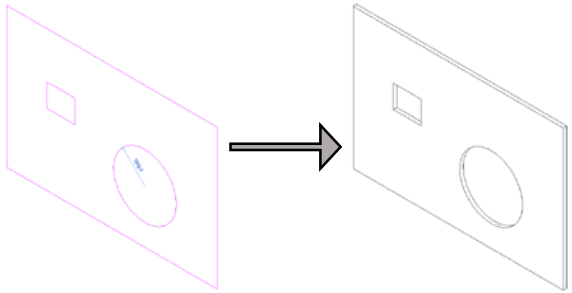
Type 1 : On the Architecture tab → Opening panel → Click “Wall” → Sketch Rectangular Straight Wall Opening on wall element



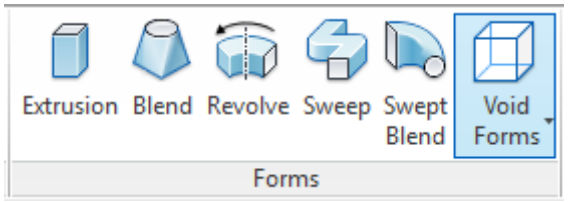


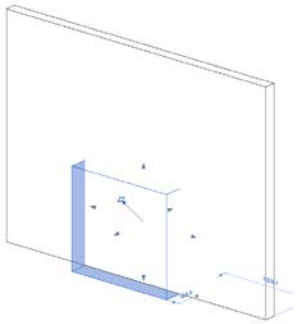
Type 2 : Select wall element → On the modify tab → Mode panel → Click “Edit Profile” →

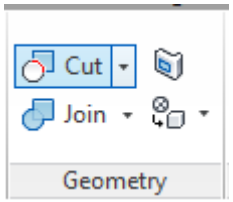


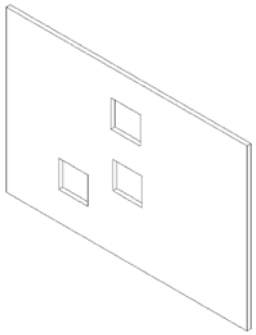


Type 3 : Create new family → Template : “Metric Generic Model wall based” → Sketch Void Forms based on wall → Cut Geometry wall and void forms → Load into project → On the Architecture tab → Build Panel → Component drop-down → Click “Place a component” → Click in the wall element









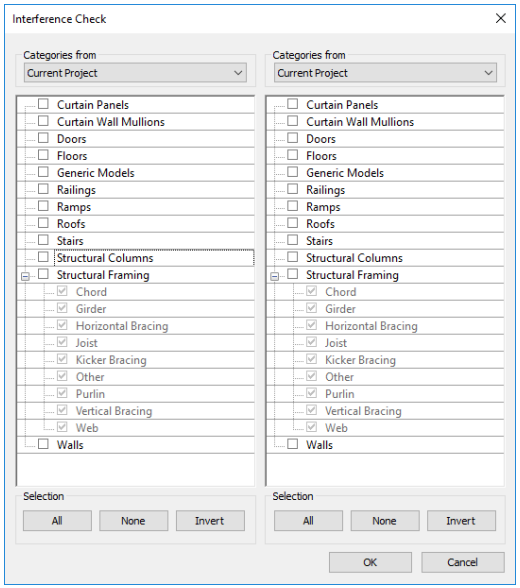
▪ 10.0 Interference check between Arch & Structural Model

- Elements Requiring Interference Checking

Some examples of elements that could be checked for interference include:

Structural girders and purlins	Roofs and floors
Structural columns and architectural columns	Specialty equipment and floors
Structural braces and walls	A linked Revit model and elements in the current model
Structural braces, doors, and windows	

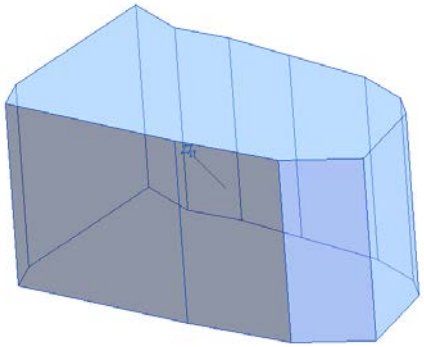
Click Collaborate tab → Coordinate panel → Interference Check drop-down → Click “Interference Check”

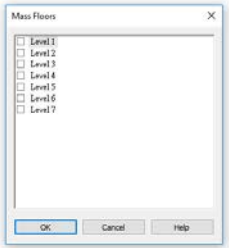


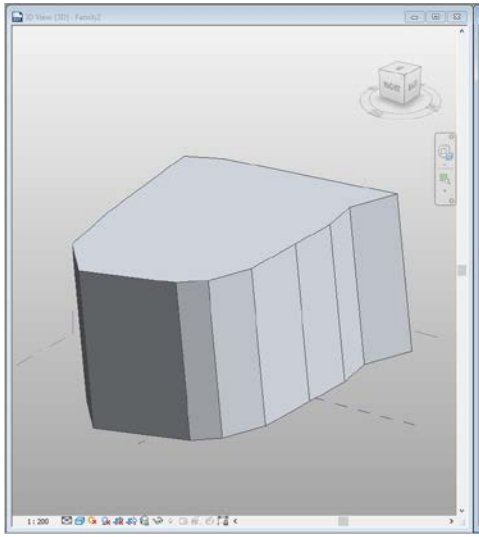
11.0 Place Mass / Void

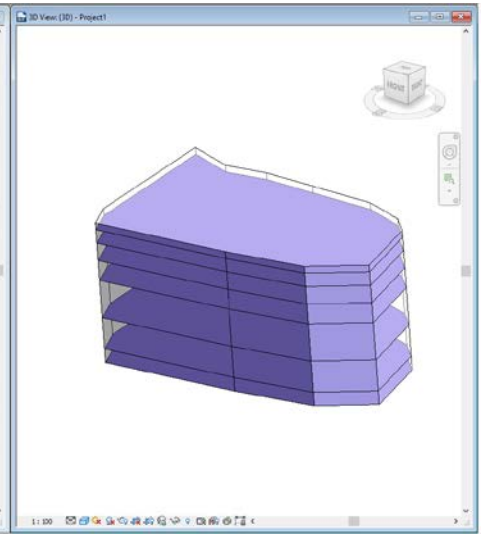
- Mass

During the conceptual design phase, create masses to explore ideas and perform early analyses. As the design matures, manipulate these forms to use as the basis for more detailed architecture.

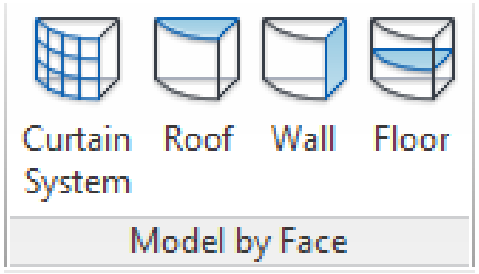






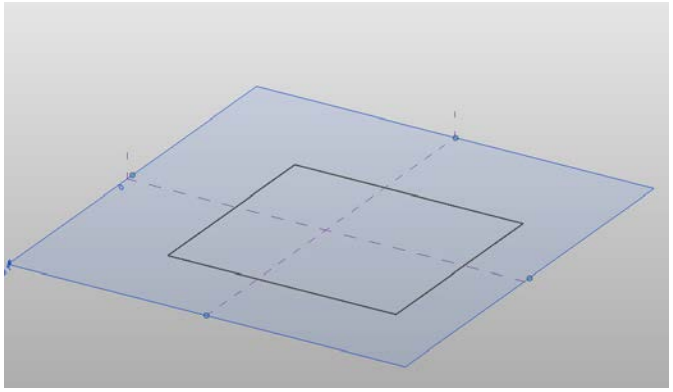


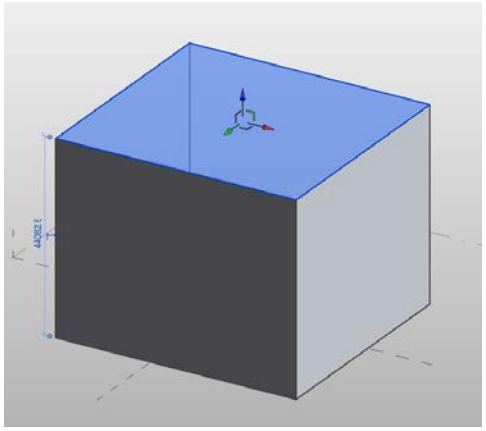
Create walls, floor, roof and curtain system from mass instances by picking lines or faces using the model by Face tool.

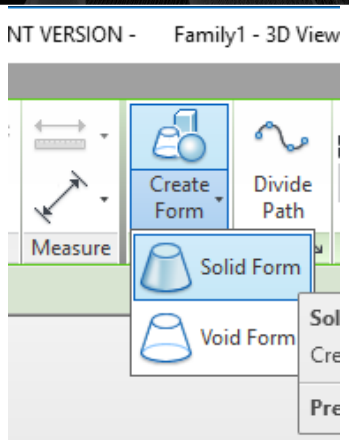


▪ 11.0 Place Mass / Void

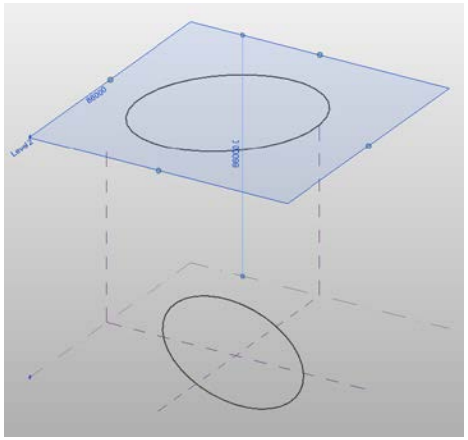
- Extrude = Shape + Height

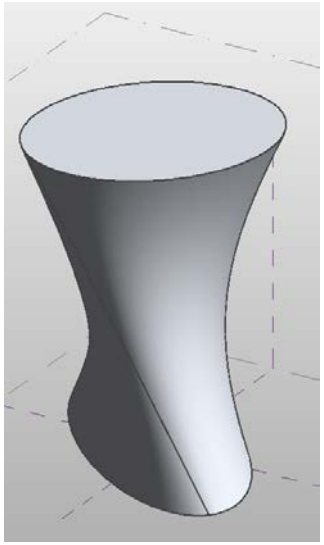




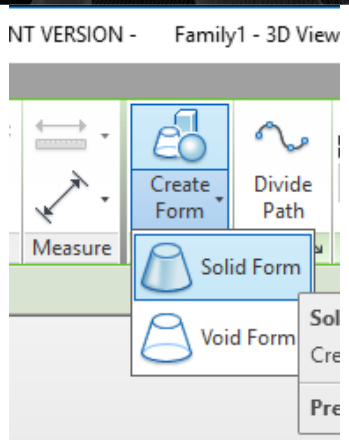


- Blend = Shape 1 + Shape 2 + Height

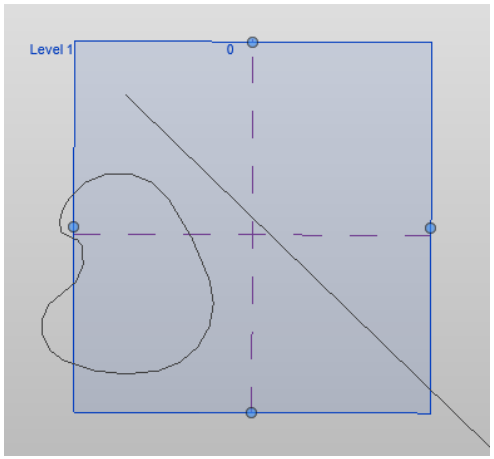


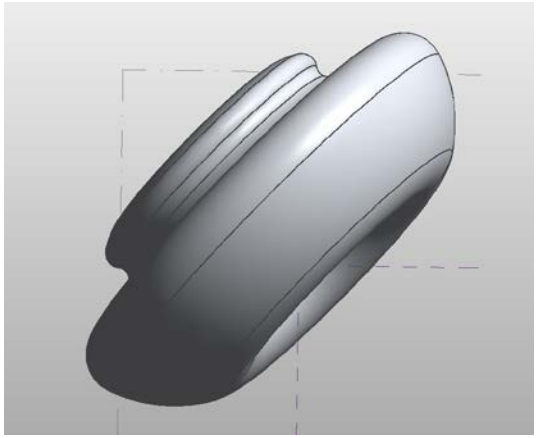


▪ 11.0 Place Mass / Void

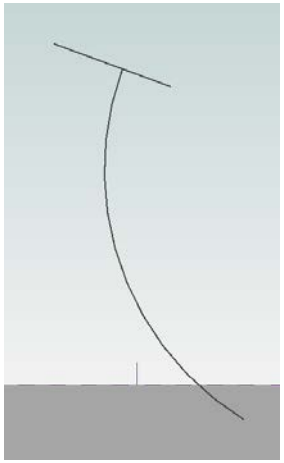


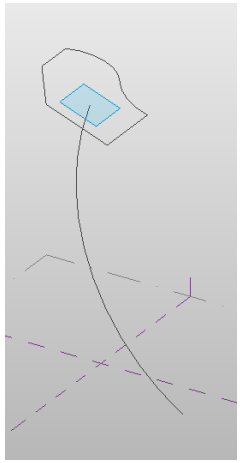
- Revolve = Shape + Axis

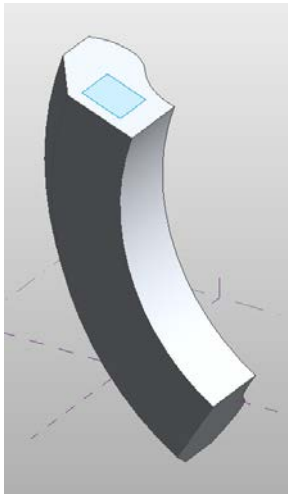




- Sweep = Shape + Path





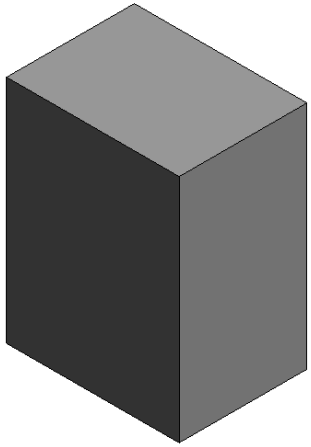


▪ 11.0 Place Mass / Void

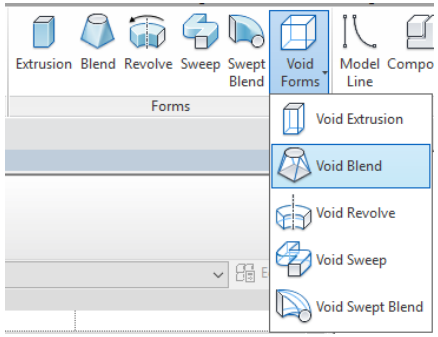
- Void

Create negative geometry (voids) to cut solid geometry with the Create Void tool.

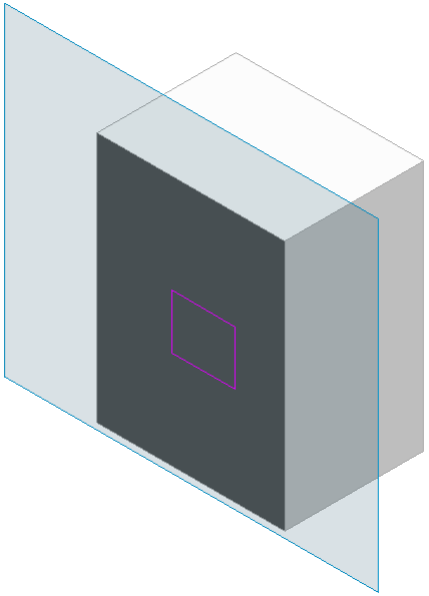
1. In the drawing area → Draw a closed loop that intersects solid geometry

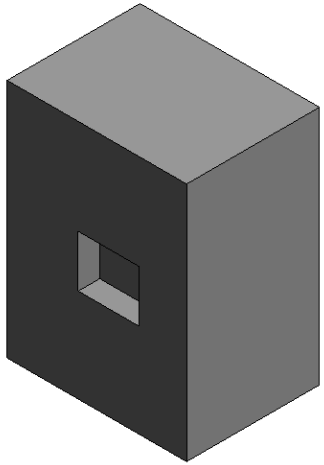


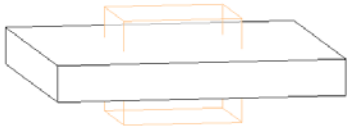
2. In the Create tab → Forms panel → Void Forms drop-down and click anyone



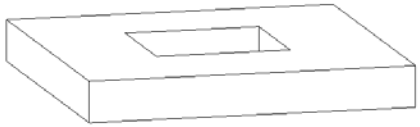
3. Sketch the void shape on work plane







UNCUT

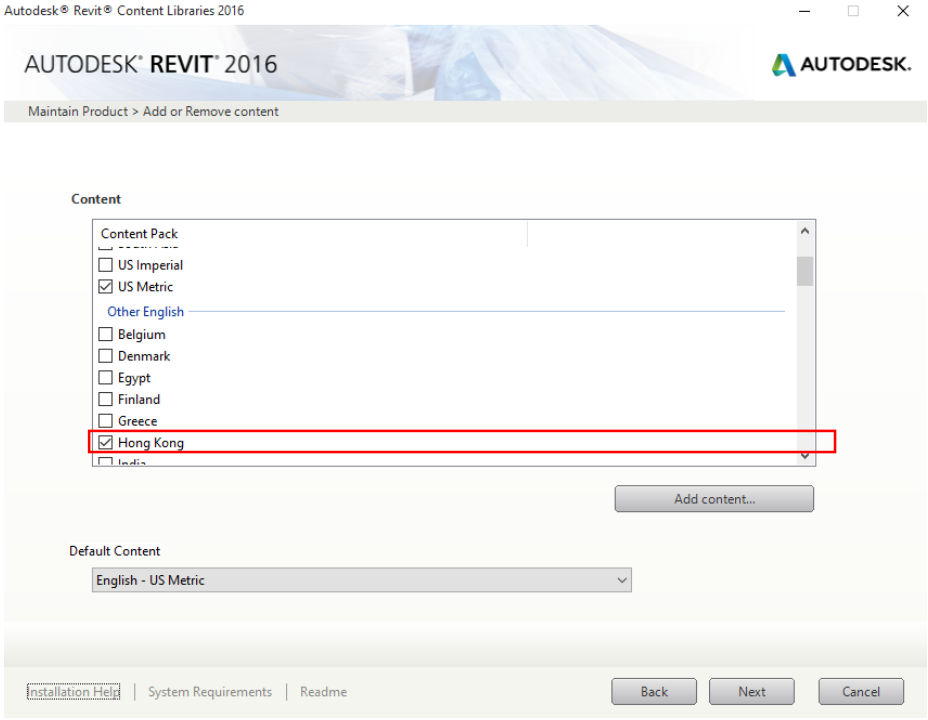


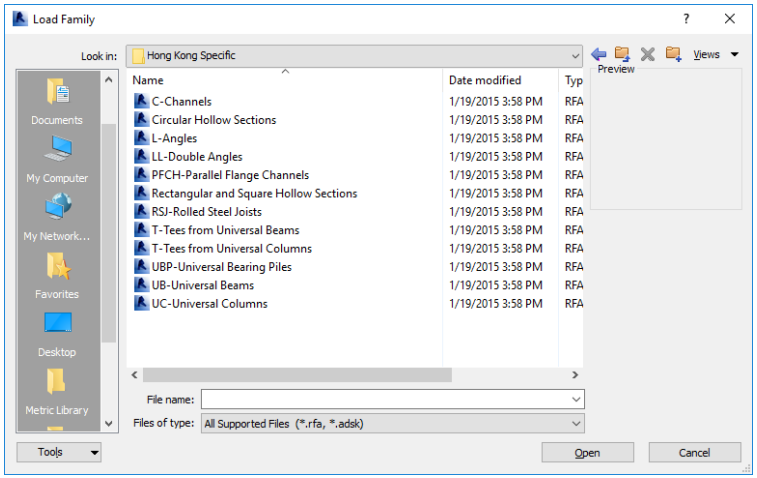
CUT

▪ 12.0 RC Structural elements

- Hong Kong family libraries / template

Can choose Hong Kong in content pack for download to Hong Kong standard family and the default content set US Metric.

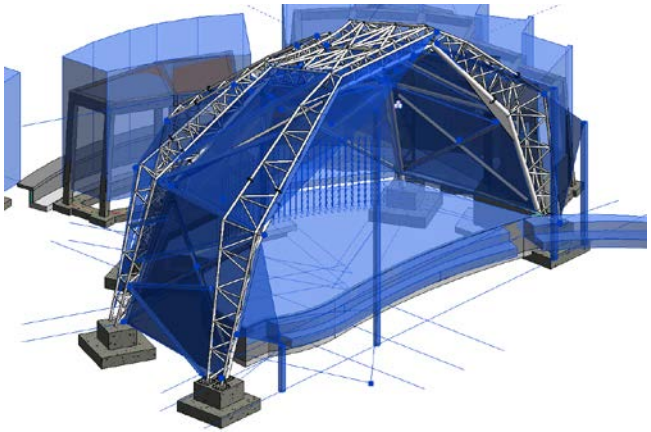


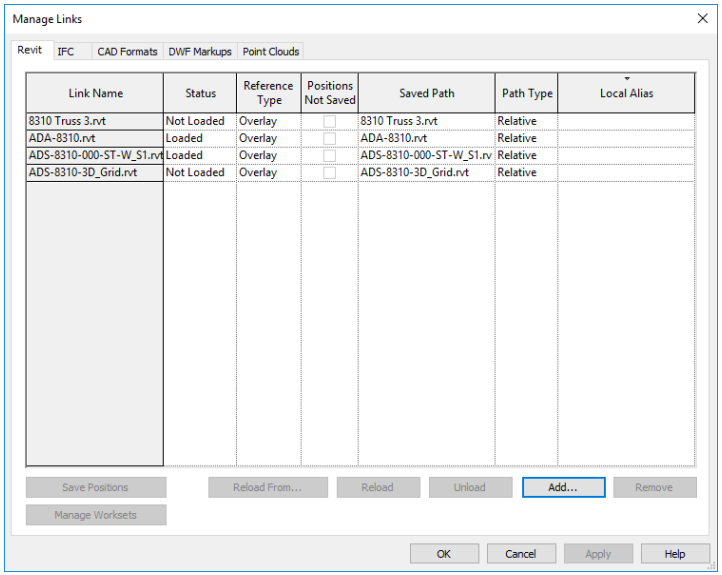


▪ 13.0 Link / Bind Model

- Link Model

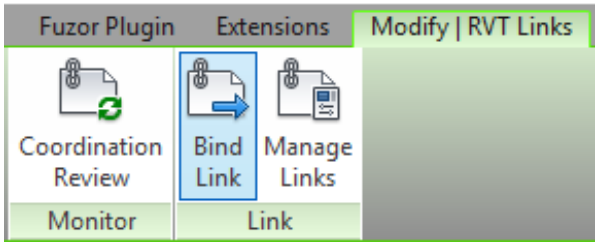
The most straightforward method to insert a Revit link is to use the Link Revit tool on the Insert tab. This exercise will take a different approach by using existing geometry instead in the project and converting it to two Revit links.

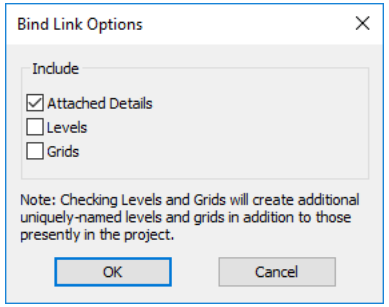




- Bind Link

Use the Bind Link tool to select the elements and datum from a linked model to convert to a group.



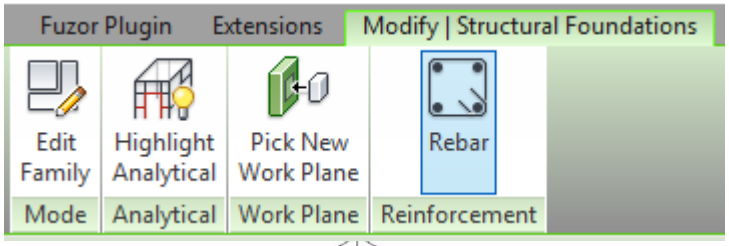


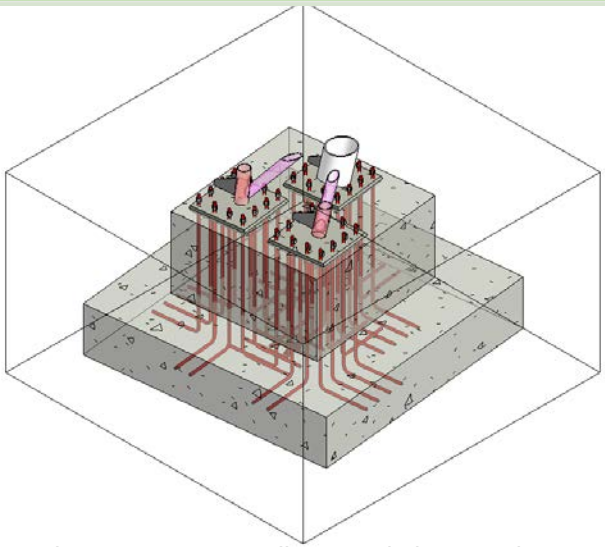
14.0 Placing Reinforcement – by 3D view

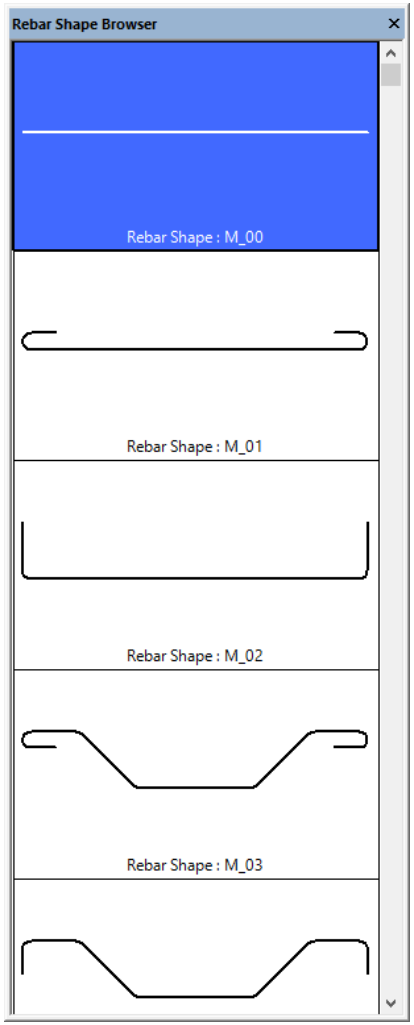
- Reinforcement

Use reinforcement tools to add reinforcement to structural elements*.

Click Structural element in plan view, elevation view or section view
→ In the Modify tab → Reinforcement panel → Click “Rebar”







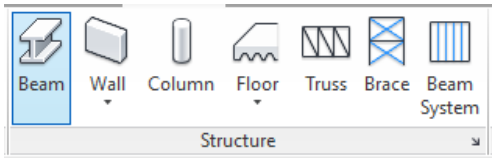
*Concrete columns, Beams, Walls, Foundations, and Structural floors

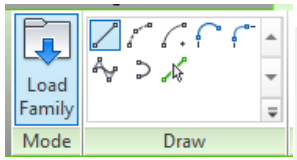
▪ 15.0 Direct build up a steel truss

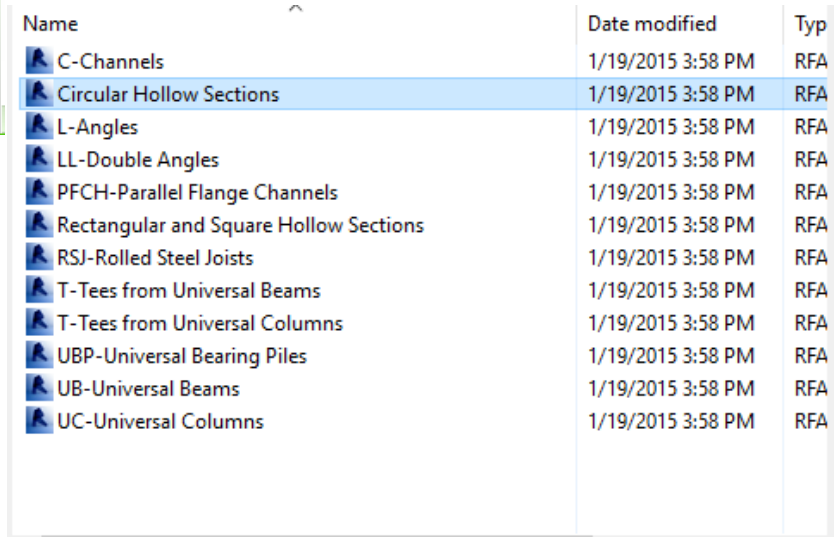
- Circular Hollow Sections (CHS)

In the 3D View → Click Structure tab → Structure panel → Click “Beam” → Click “Load Family”

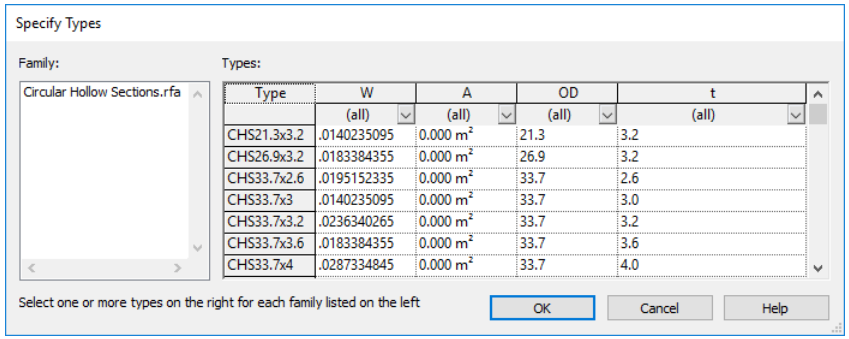
Family Link : C:\ProgramData\Autodesk\RVT 2016\Libraries\Hong_Kong\Structural Framing\Steel\Hong Kong Specific\Circular Hollow Sections.rfa



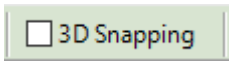




Select one or more types on the right for each family listed on the left



In the 3D view → Based on work plane or element line → Click “3D Snapping”



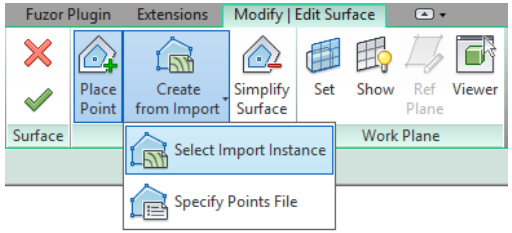
16.0 Toposurface

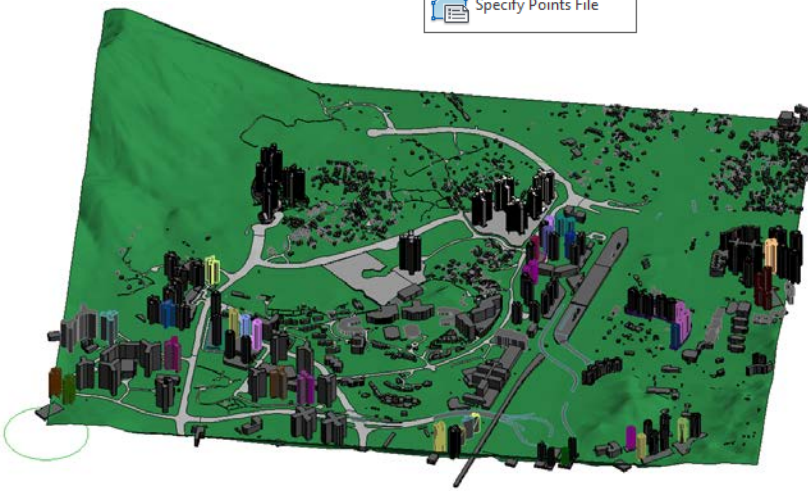
- Toposurface

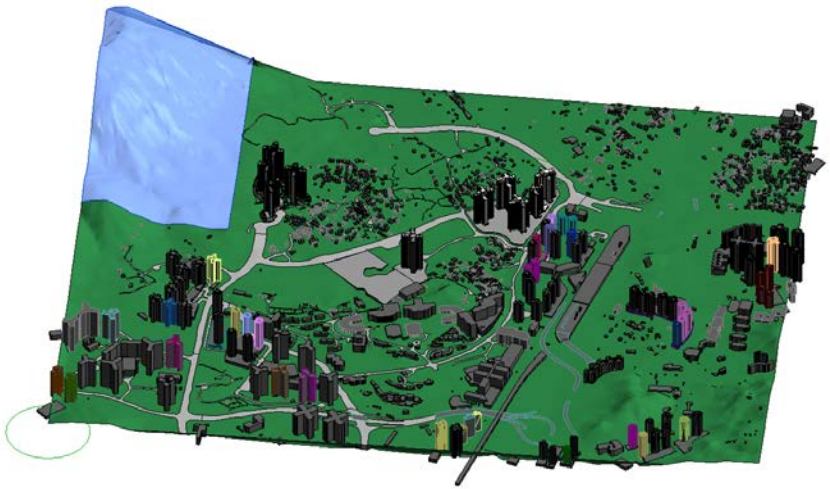
As its name suggests, a toposurface is a surface-based representation of the topography context supporting a project. It is not modeled as a solid in Revit Architecture. However, a toposurface will appear as if it were a solid in any section cut view.

Based on Topographic Survey Plan, Four type of topography shall be created:

1. Existing Ground - Import the 3D Map into Revit project.
2. Site Survey - Split Surface for site boundary on Existing Ground. (Existing Ground should be preserved)
3. Reference - Reference is modelled is modelled for calculation.
4. Excavation / Back Fill (e.g. Cut Slop, Berm /Platform) - The toposurface shall be split at different parts of the excavation profile.



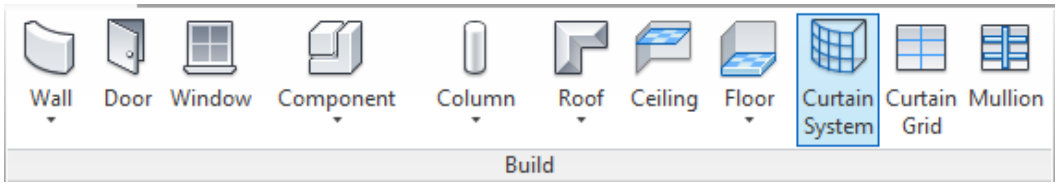


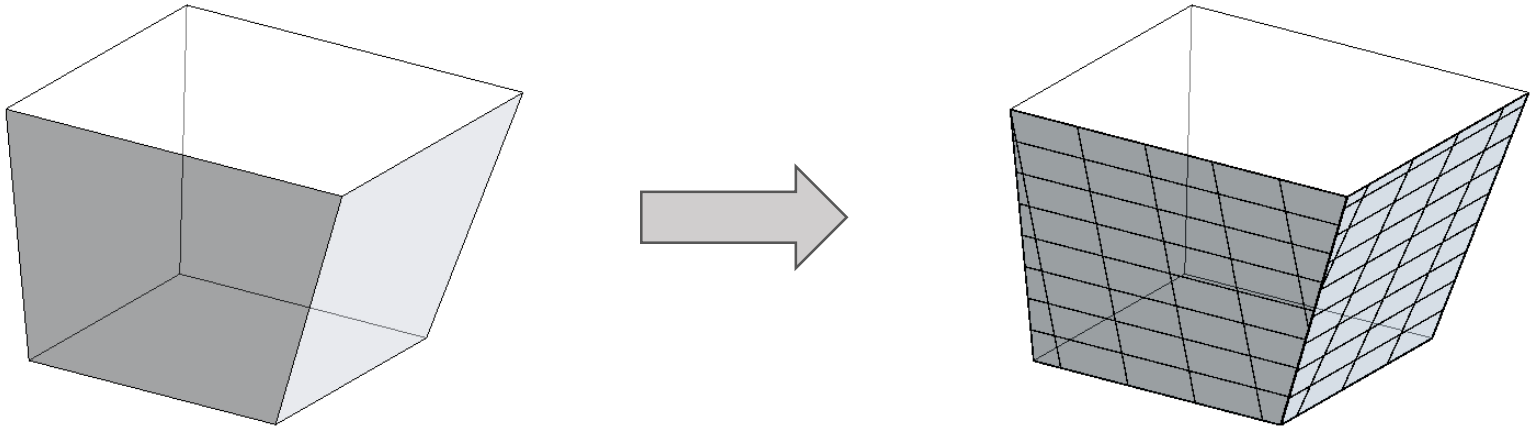


17.0 Curtain System

- Create a curtain system of a mass / generic models face

Based on mass / generic models → On the Architecture tab → Build panel → Click “Curtain System” → Pick a mass / generic models face to create curtain system

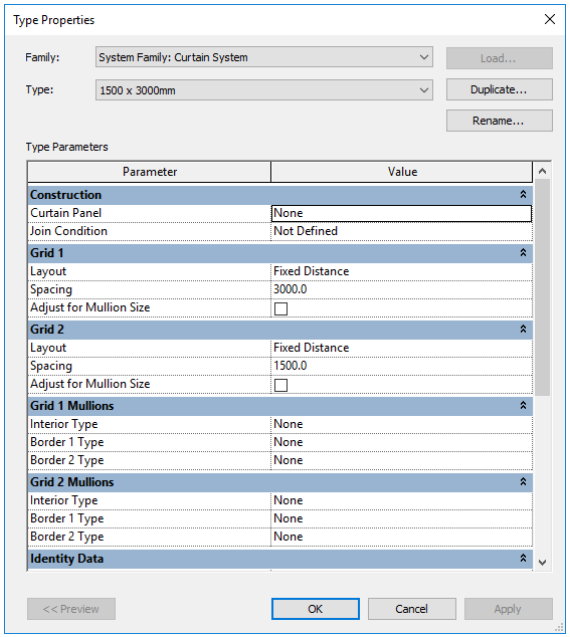


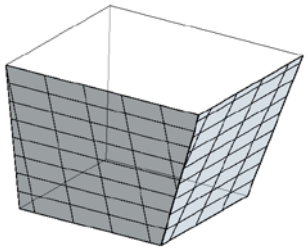


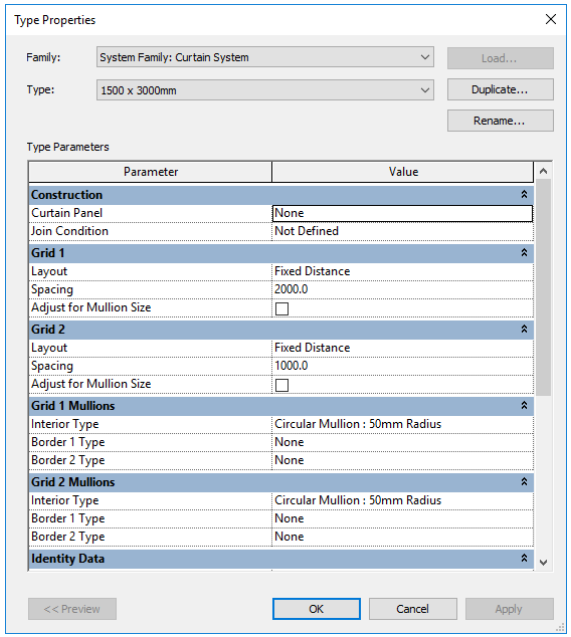
▪ 17.0 Curtain System

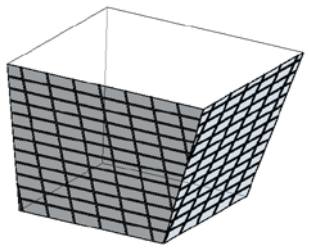
- Edit a curtain system

Select a curtain system → In the Properties Browser → Click “Edit Type” → User can edit the horizontal and vertical grid layout and spacing and choose the mullions type to follow the grid





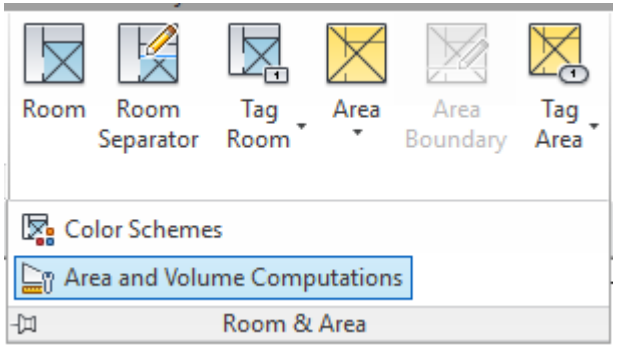


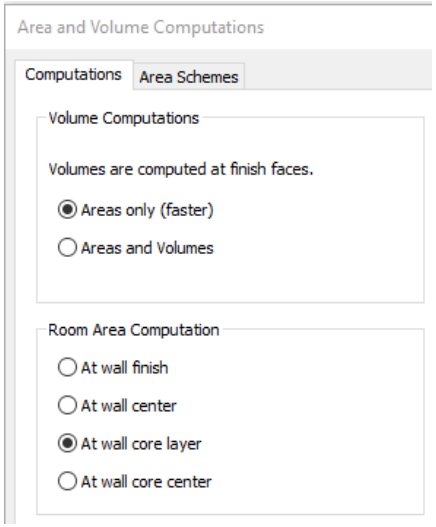


▪ 18.0 Room / Area

- Defining rooms in spaces

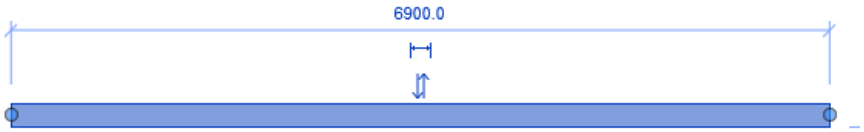
In the floor plan view → Architecture tab → Room & Area panel drow-down → Click “Area and Volume Computations” → In Room Area Computation → Click” At wall core layer”





- Set up room bounding (wall)

Click wall element → In the properties browser → Based on constraints → Click room bounding for architectural wall or unclick for structural wall

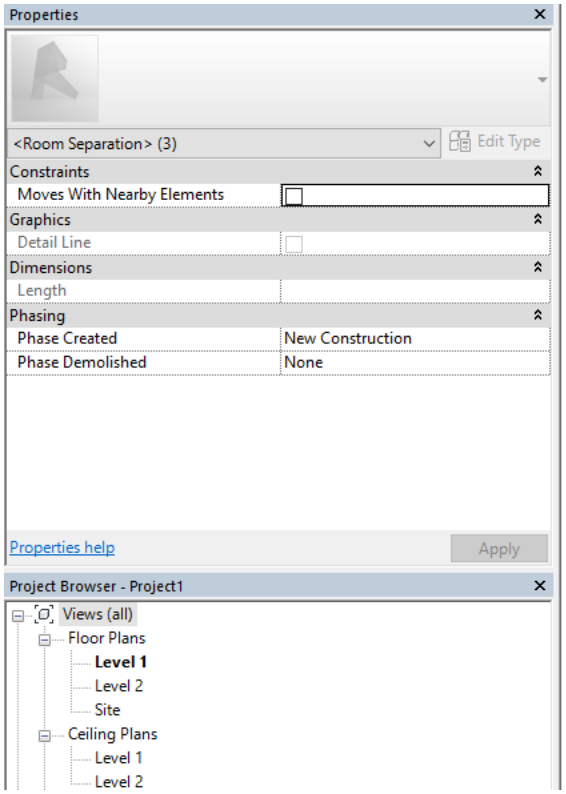


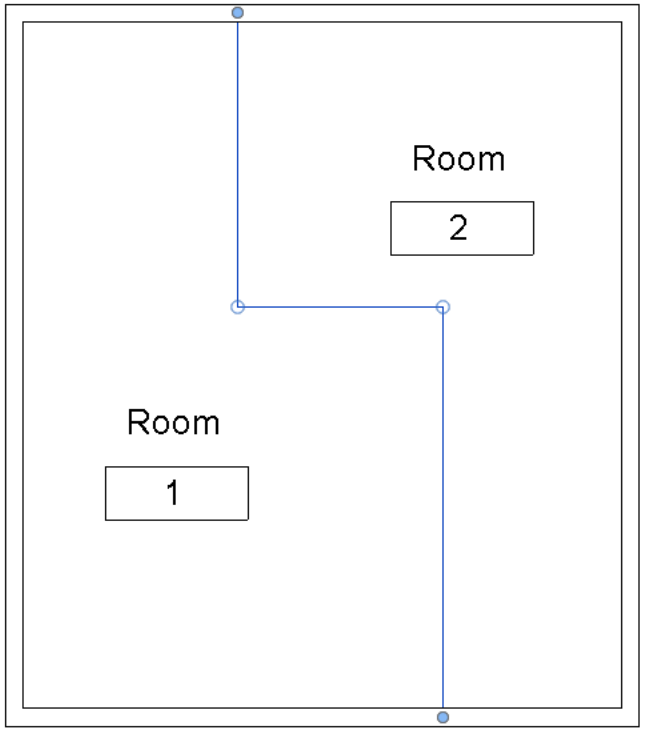
▪ 18.0 Room / Area

- Separation Line

Room boundaries are automatically defined by many tapes to model elements. User can add separation lines to add and adjust room boundaries.

Architecture tab → Room & Area panel → Click “Room Separator” → Draw the room separation line in plan view

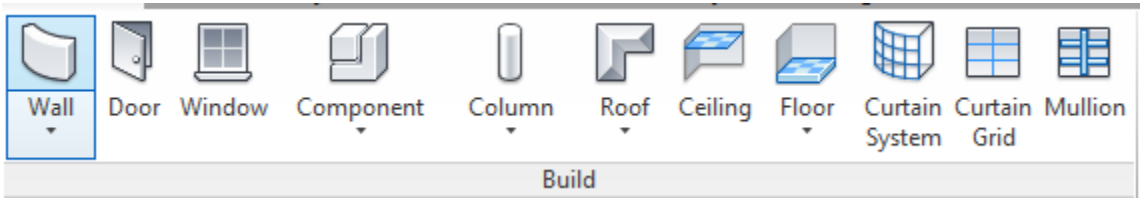




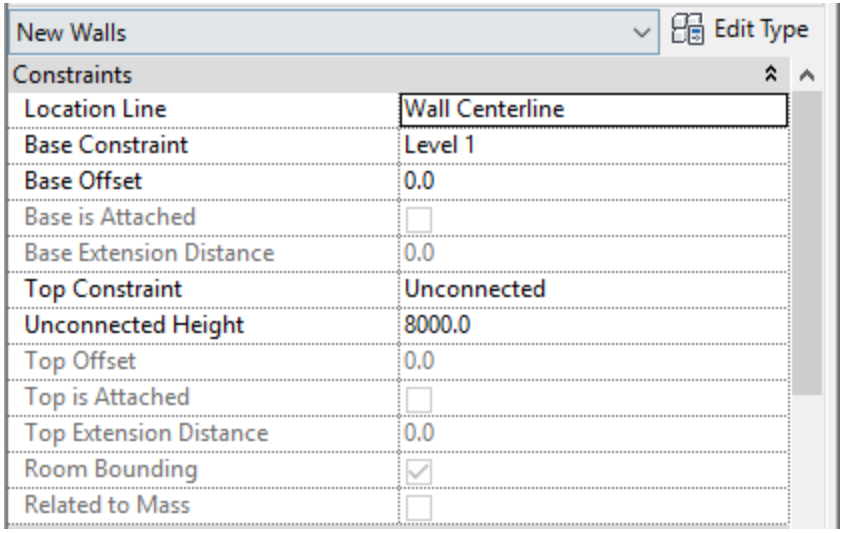
▪ 19.0 Wall, Door, Window

- Wall

On the Architectural tab → Click “Wall” → Choose draw tool from the draw gallery

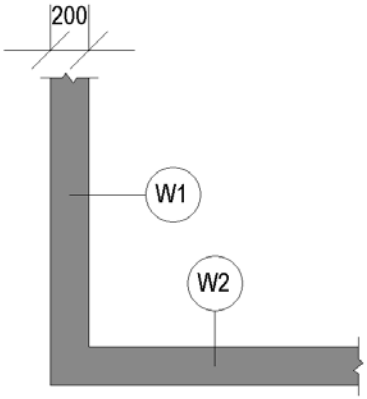


User can set a few parameters before user draw your wall.

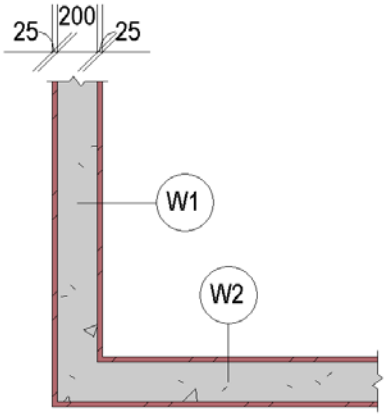


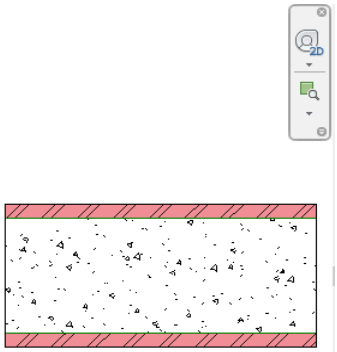
▪ 19.0 Wall, Door, Window

- Preliminary Design



- Detail Design / Coordination





- Set up material and add wall finish

Select Wall → In the Properties Browser → “Edit Type” → In “Structural” Parameter click “Edit”

Layers

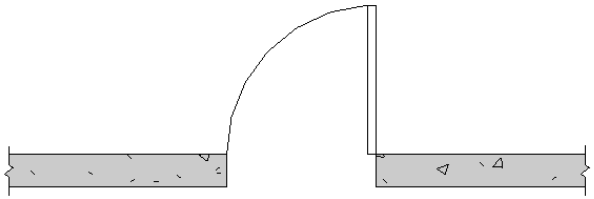
EXTERIOR SIDE

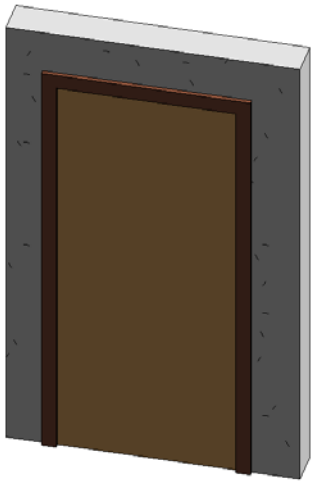
	Function	Material	Thickness	Wraps	Structural Material
1	Finish 1 [4]	Masonry - Brick	25.0	☑	☐
2	**Core Boundary**	**Layers Above Wrap**	**0.0**		
3	Structure [1]	Concrete, Cast-in-Place gr	200.0	☐	☑
4	**Core Boundary**	**Layers Below Wrap**	**0.0**		
5	Finish 2 [5]	Masonry - Brick	25.0	☑	☐

▪ 19.0 Wall, Door, Window

- Door

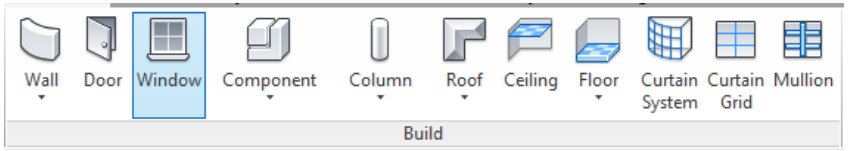
Based on walls element → On the Architecture tab → Click “Door”

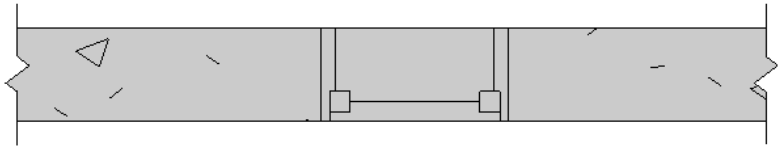


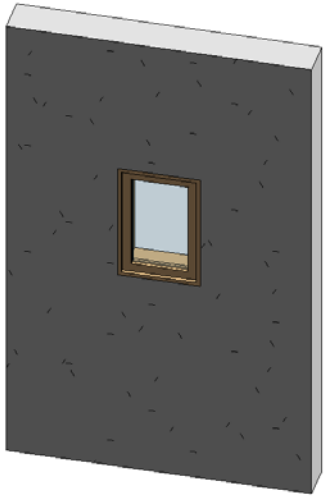


- Window

Based on walls element → On the Architecture tab → Click “Window”



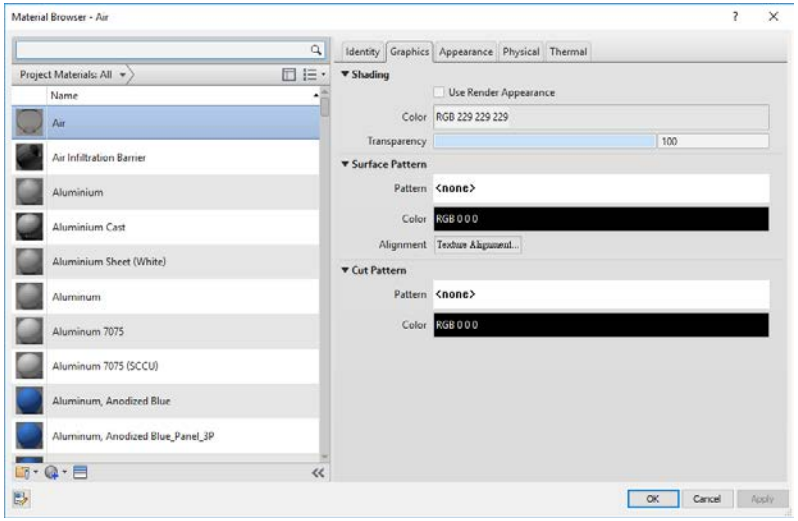


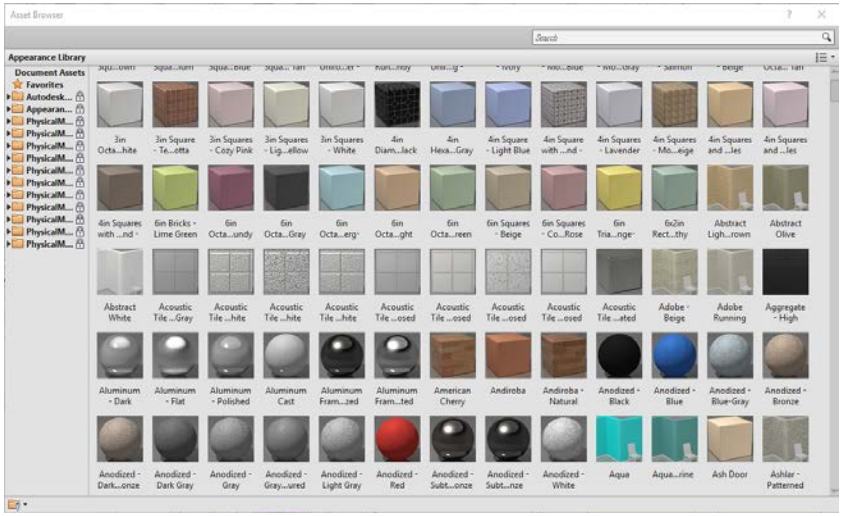


20.0 Apply material to Revit Model

- Materials Library

On the manage tab → Settings panel → Click “Materials” → Drop – down  → Click “Create new material” → Click 





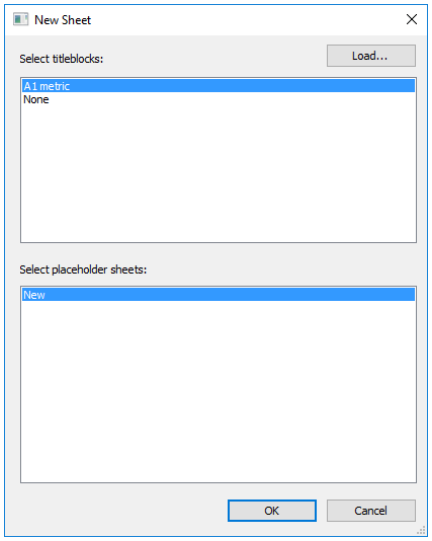
Double click a material to replaces the current asset in the editor with this asset → Right click to rename the materials → Edit the materials setting in the right tab → Click OK

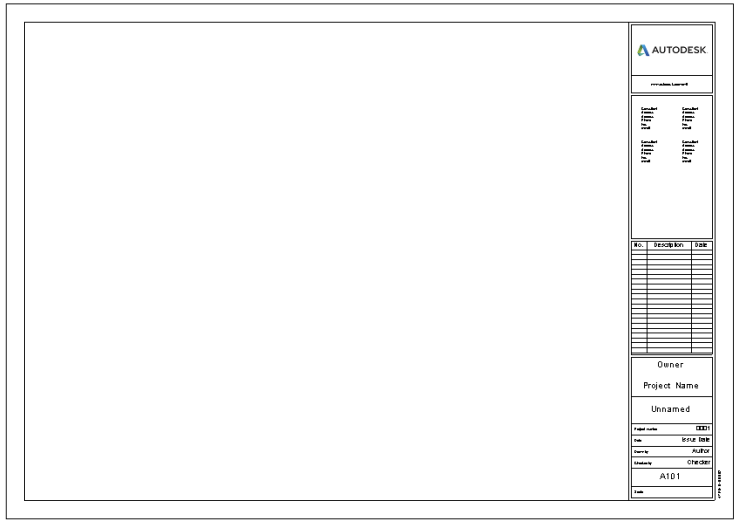
Skills for Create 2D Drawing

1.0 Create New Sheets in Revit

- Sheet

On the view tab → Sheet composition panel → Sheet → Select the sheet type





- To add views to a sheet

In the Project Browser, expand the list of views, locate the view, and drag it onto the sheet.

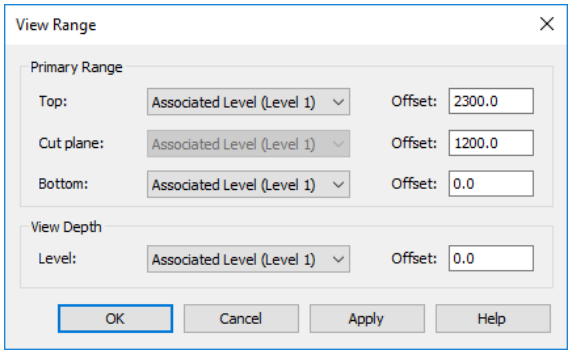
- Modify a View on a Sheet

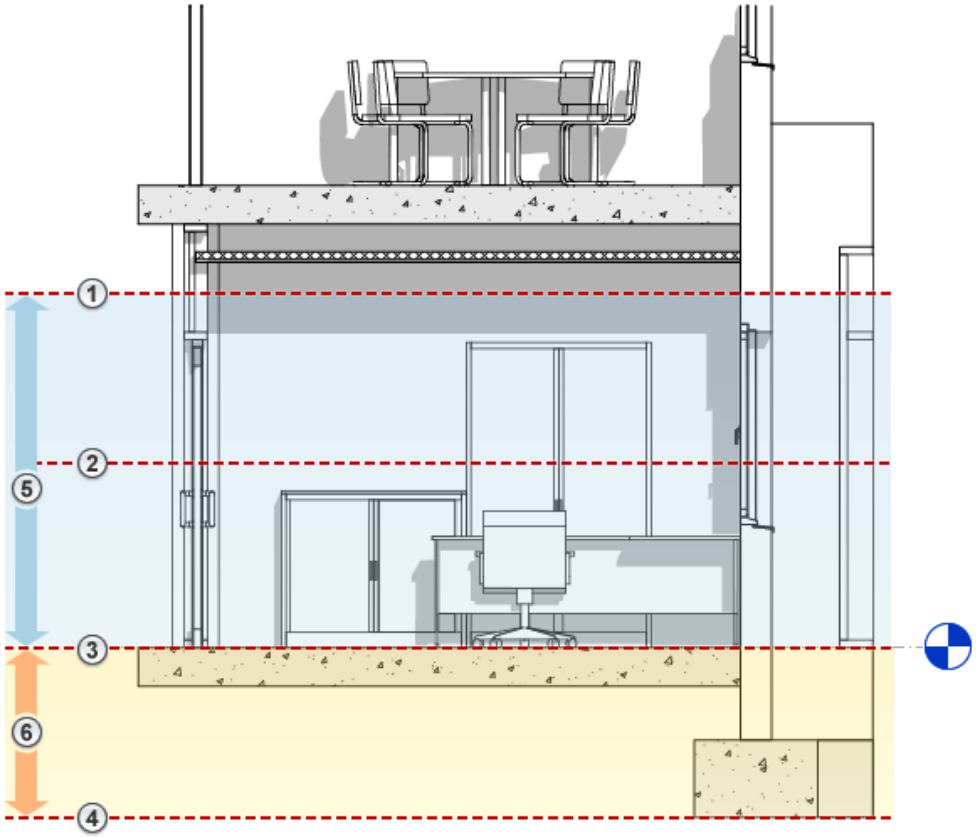
1. In the drawing area, select a view on the sheet.
2. Click Modify | Viewports tab → Viewport panel → Activate View
3. Change the scale of the view. On the View Control Bar, for Scale, select the desired scale.
4. To deactivate the view on the sheet, double-click outside of the view, or right-click, and click Deactivate View.

▪ 2.0 View Range Setting

- View Range

In the properties browser → Under extents → View Range → Click “Edit”





1. Top
2. Cut plane
3. Bottom
4. Offset
5. Primary Range
6. View Depth

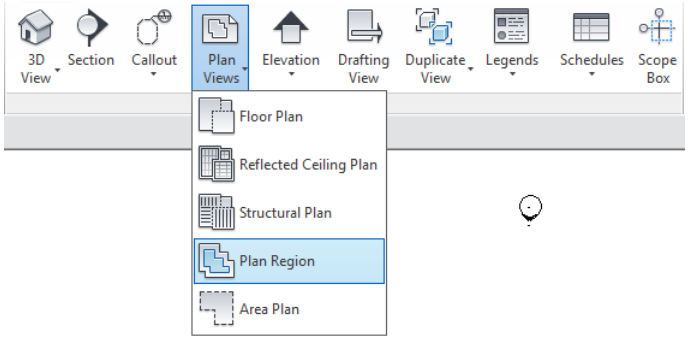
▪ 3.0 Show Part View (Plan Region)

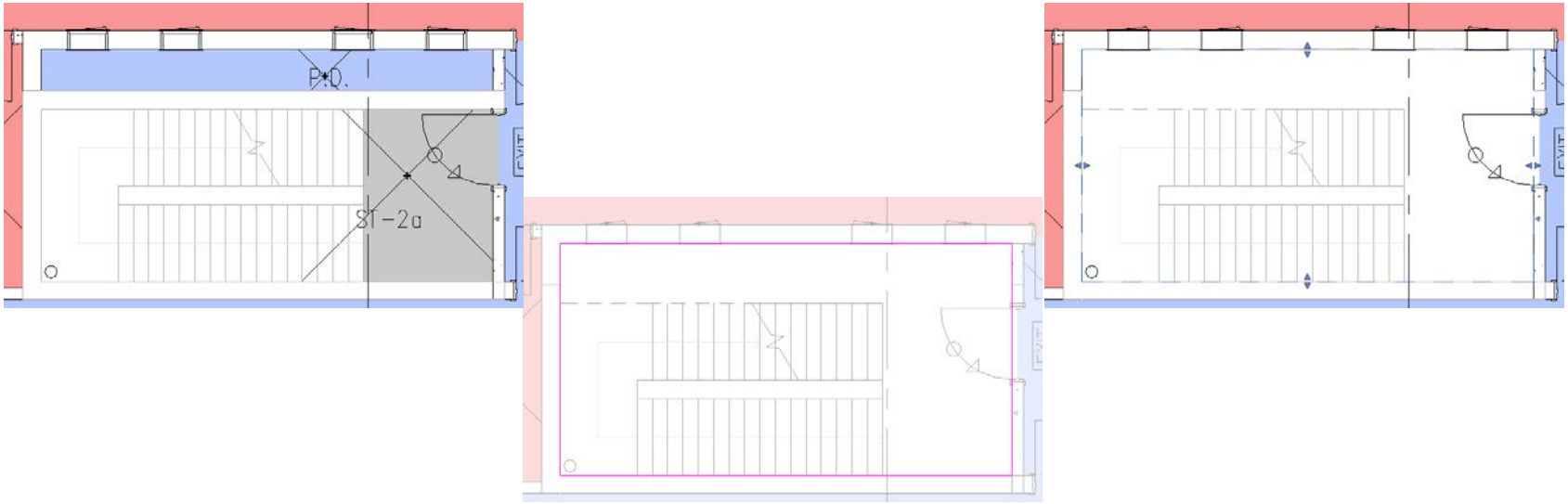
- Using Plan Region

The Plan Region tool allows user to sketch a boundary line within which the View Range dialog box will be available to make specific changes.

- Create Plan Region

On the view tab → Create panel → Drop-down plan view →Click “Plan Region”→ Sketch the boundary → Set the plan region view range





▪ 4.0 Show Crop Region & How to Crop View

- Using Crop Region

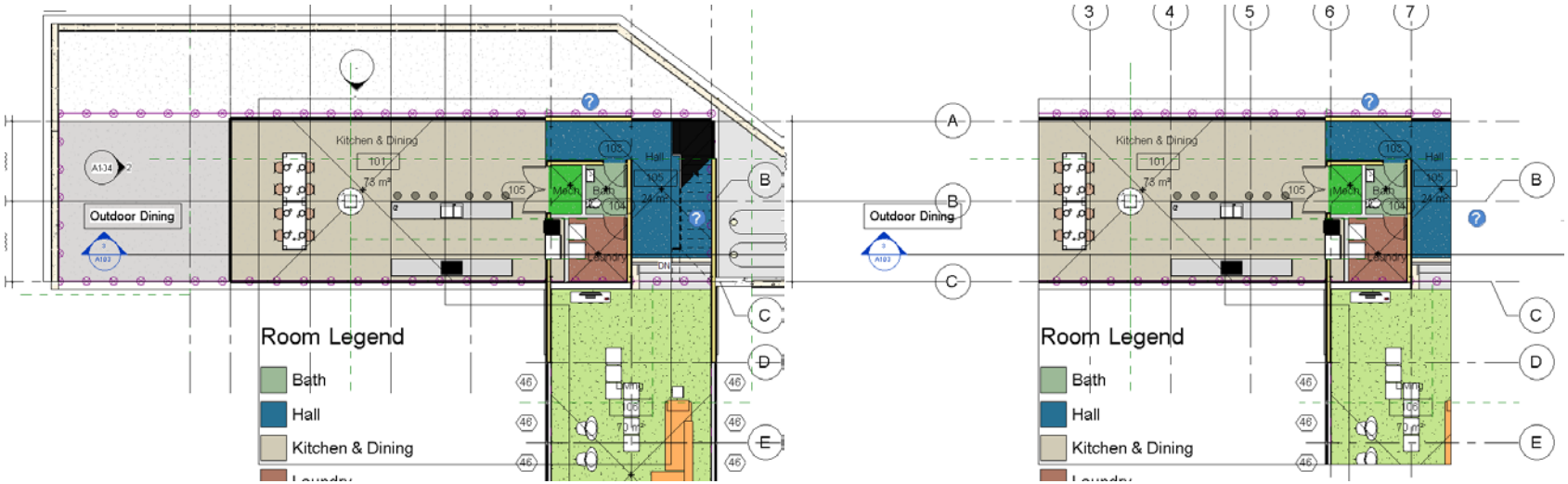
With the exception of schedules and drafting views, the extents of all views can be limited using crop regions.

- Show Crop Region

In the view control bar → Click “Show Crop Region” and Click “Crop Region”

- Edit a Crop Region

In the plan, elevation, or section view → select a crop region → In the Edit modify | <view> tab → Model panel → Edit Crop



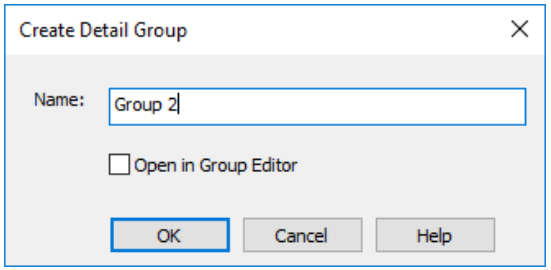
5.0 Create Detail Group

- Using Detail Group

Detail groups are similar to blocks in AutoCAD and are a quick alternative to creating detail component families. Like modeled groups, these are a collection of graphics that contain detail lines, detail components, or 2D elements.

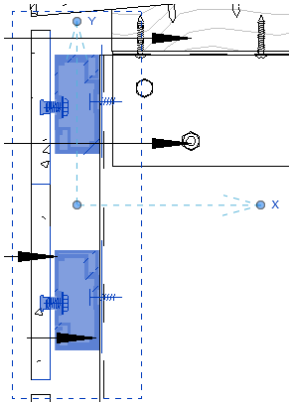
- Create Detail Group

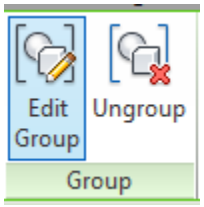
Select 2D element → On the modify tab → Create panel → Click “Create Group”

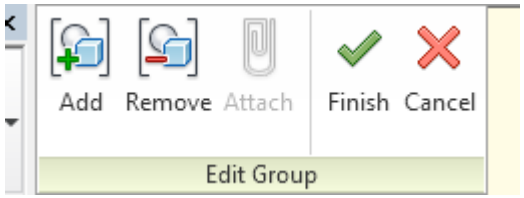


- Edit Detail Group

Click the detail group → In the modify | detail groups → Group panel → Click “Edit Group” → Add or Remove the element in the group







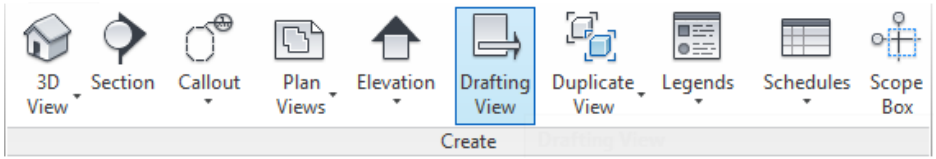
6.0 Drafting View

- Using Drafting View

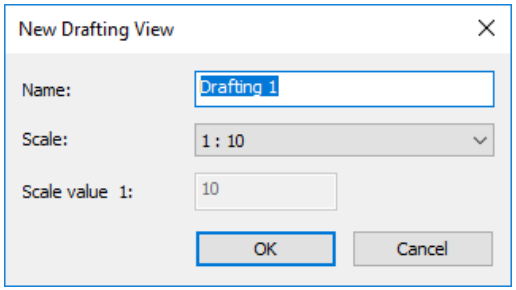
Drafting views give user the ability to draw without first creating a reference to something in your project.

- Create Drafting View

On the View tab → Create panel → Click “Drafting View” → In the new drafting view browser → Set up view name and scale



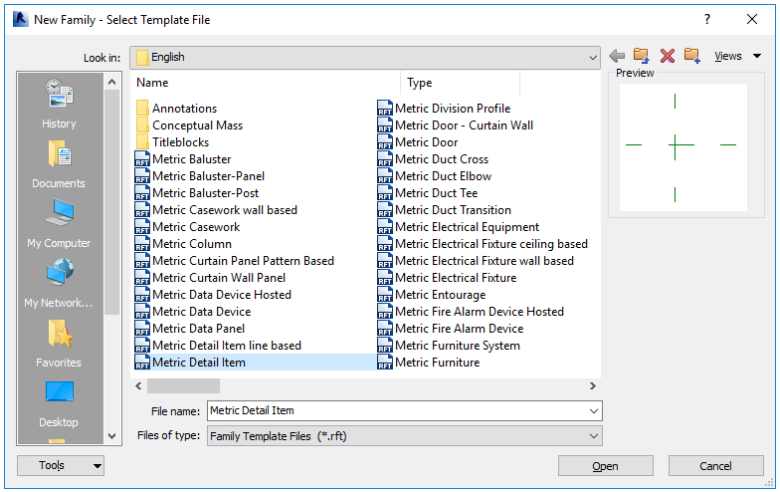
User can refer to this view when creating an elevation, section, detail, and so on that would normally rely on an actual view of the model.



▪ 7.0 Explode Import CAD Drawing to Create Detail Item from CAD

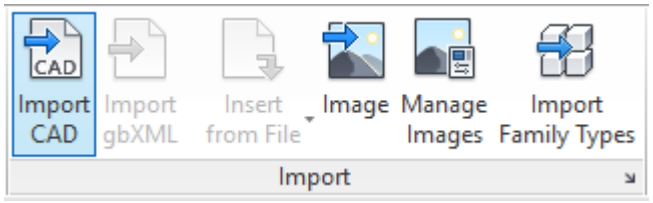
- Create Detail Item family

Create new families → Select template file : Metric Detail item

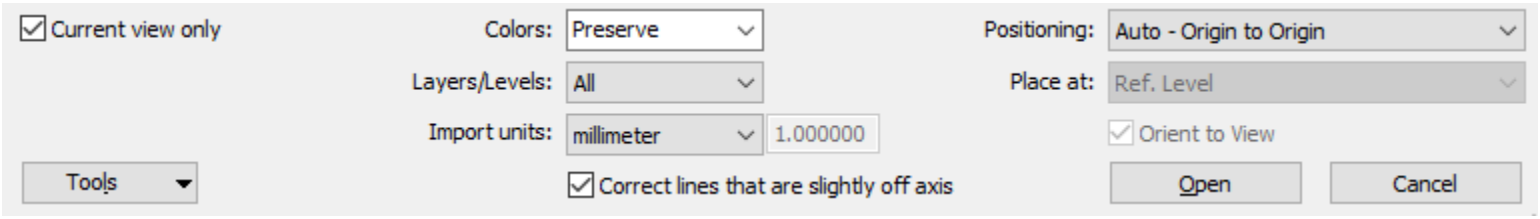


- Import CAD file

On the Insert tab → Import panel → Click “Import CAD”



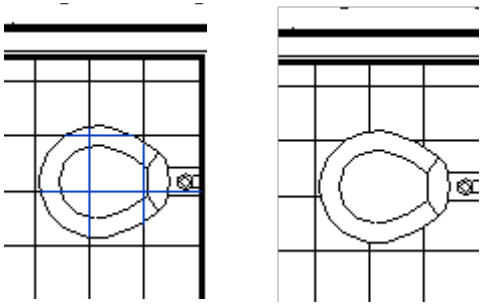
1. Click “Current view only”
2. Set up the import units follow the CAD drawing units



8.0 Masking Region Under Detail Panel

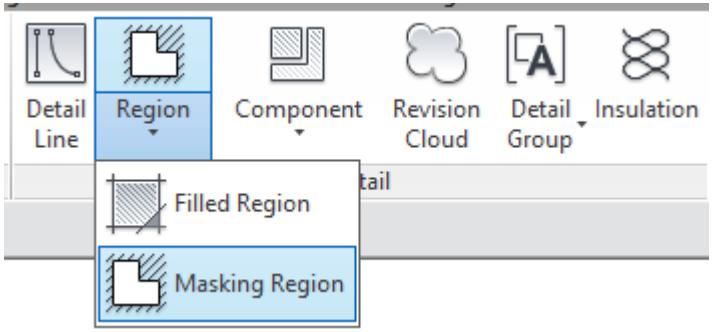
- Masking Regions

Typically used to “hide” or mask certain content from a view that user don’t want shown or printed.

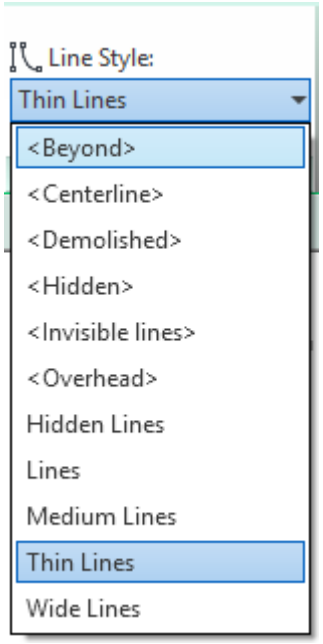


- Create Masking Regions

On the annotate tab → Detail panel → Region drop – down → Click “Masking Region”



Create Masking Region Boundary → Select line type

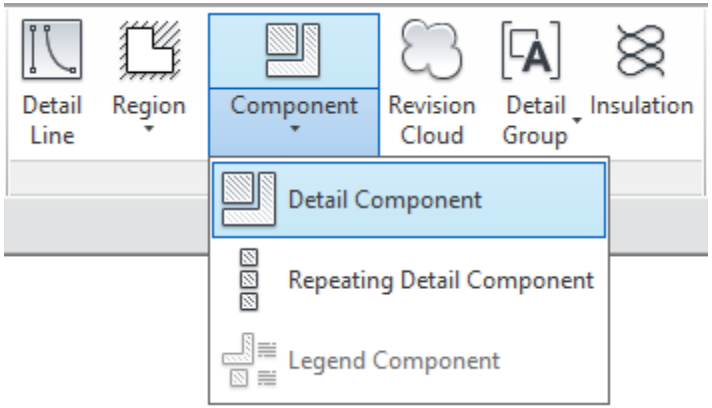


9.0 Detail Component

- Detail Component

They are most often used in drafting views; however, detail components can also be placed in plan, elevation, and section views.

On the annotate tab → Detail panel → Component drop – down → Click “Detail Component”



1. Select Detail Component from the Component drop-down menu list located on the Annotate tab.
2. Use the Type Selector to choose from detail components that are already inserted into the model.

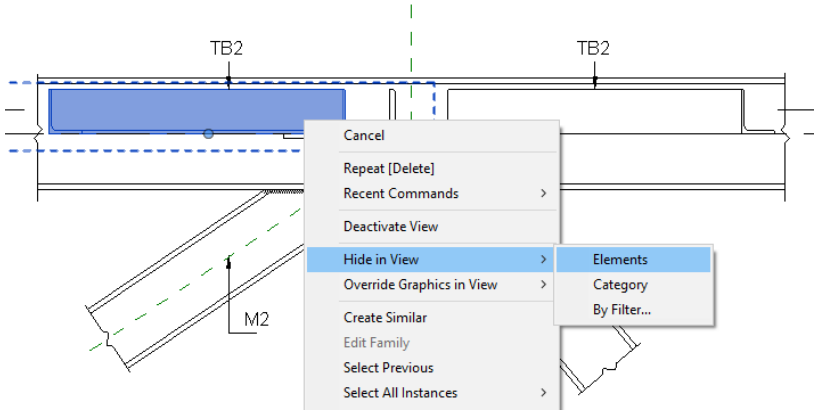
10.0 Hide in Viewv

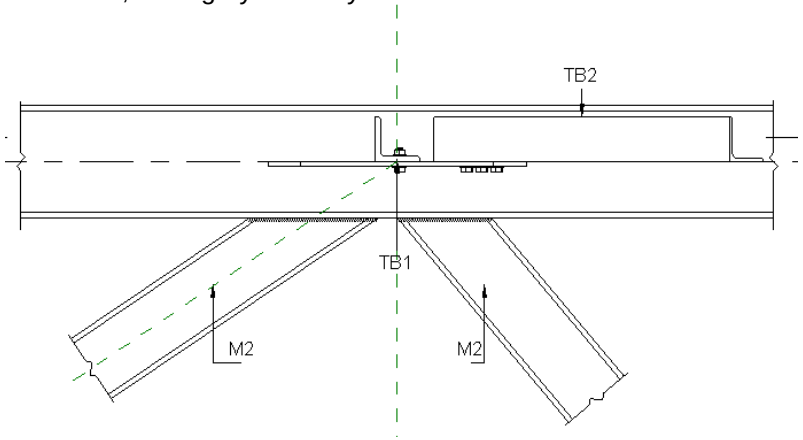
- Hide in View

User can hide individual elements or categories of elements in a view permanently or temporarily.

- Use Hide in View

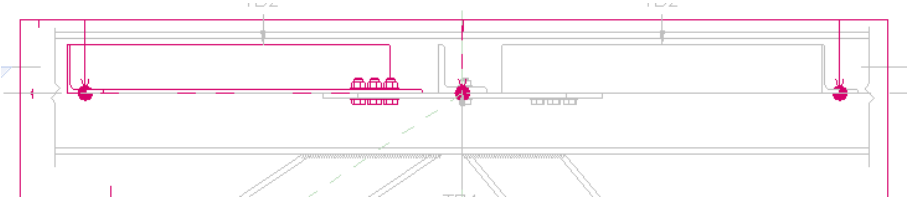
In the View → Right Click the element → Click “Hide in View” → Choose “Elements”, “Category” and “By Filter”

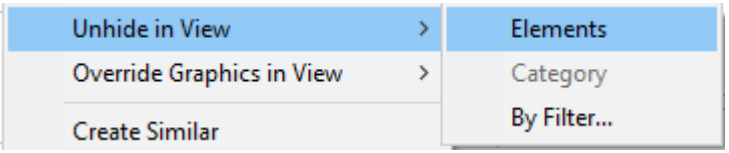




- Unhide in View

On the View Control Bar → Click  → Right click the hide element → Click “Unhide in View” → Choose “Elements”, “Category” and “By Filter”

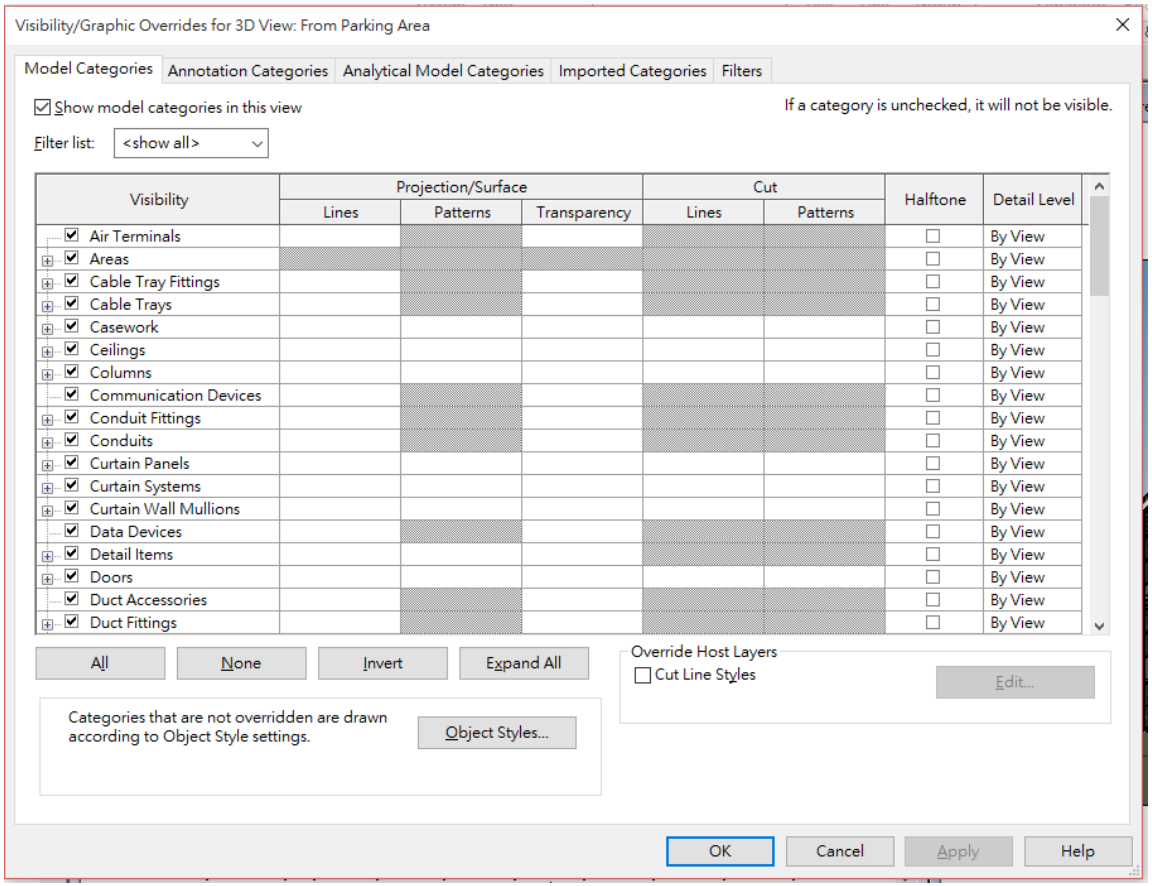




▪ 11.0 Control Visibility / Properties of Element in View

- Visibility Graphics(VV/VG)

Controls the visibility and graphic display of model elements, datum elements, and view specific elements for each view in a project. The Visibility/Graphic Overrides dialog box allows overrides of elements in two essential ways: visibility (turn object categories on/off) and graphics (customize line thickness, color, and fill pattern).



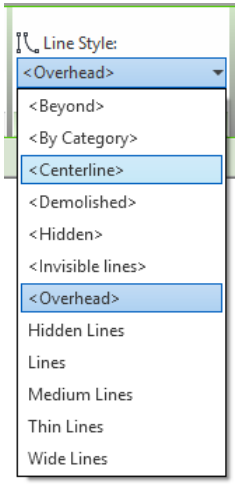
▪ 12.0 Linework

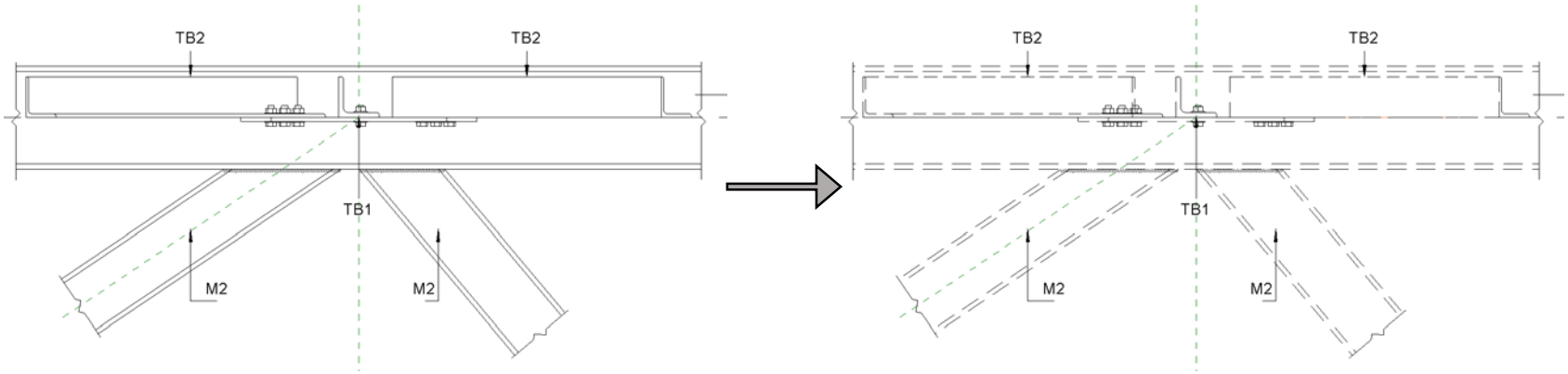
- Linework*

The Linework tool allows you to modify the edges of model elements in a view-specific context.

- Use the Linework

On the Modify tab → View panel → Linework → Choose the line style in the selector panel



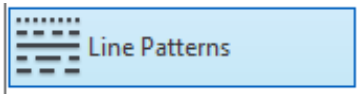


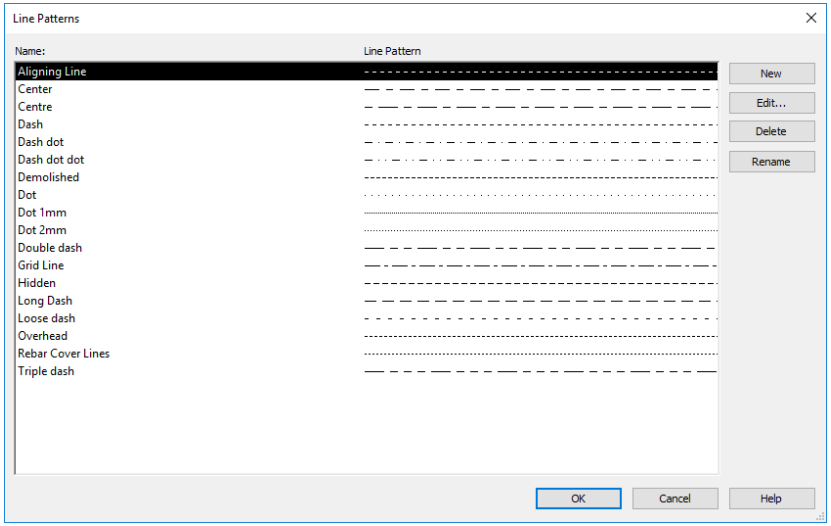
*This tool is not available in a drafting view because it works only on model elements.

▪ 13.0 Create & Edit New Line Patterns & Line Styles

- Set up Line Patterns

On the manage tab → Settings panel → Drop – down additional settings → Click “Line Patterns”





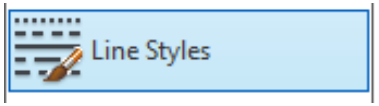
Click “New” → Made up of dashes, dots, and spaces

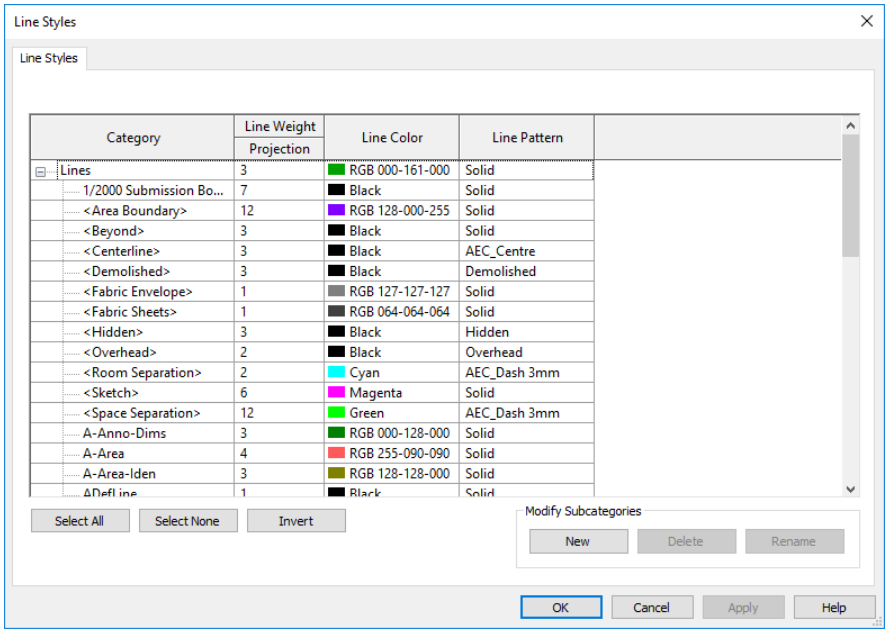
Name	1		2		3		4		5		6		7		8	
	Type	Value	Type	Value	Type	Value	Type	Value	Type	Value	Type	Value	Type	Value	Type	Value
Demolished	Dash	3	Space	1.5												
Elevation	Dash	2	Space	1												
Grid Line	Dash	12	Space	3	Dash		Space	3								
Hidden	Dash	4	Space	2												
Overhead	Dash	2.5	Space	1.5												
Window	Dash	6	Space	3	Dash	3	Space	3								
AEC_Centre	Dash	12	Space	4	Dash	4	Space	4								
AEC_Dash	Dash	1.5	Space	1.5												
AEC_Dash 3mm	Dash	3	Space	3												
AEC_Dash 3mm Loose	Dash	3	Space	6												
AEC_Dash 9mm	Dash	9	Space	4												
AEC_Dash Dot 3mm	Dash	3	Space	2	Dot		Space	2								
AEC_Dash Dot 6mm	Dash	6	Space	4	Dot		Space	4								
AEC_Dash Dot Dot 6mm	Dash	6	Space	4	Dot		Space	4	Dot		Space	4				
AEC_Dot 4mm	Dot		Space	4												
AEC_Dot 1mm	Dot		Space	1												
AEC_Dot 2mm	Dot		Space	2												
AEC_Double Dash	Dash	15	Space	4	Dash	6	Space	4	Dash	6	Space	4				
AEC_Hidden 2mm	Dash	2	Space	1												
AEC_Triple Dash	Dash	15	Space	4	Dash	6	Space	4	Dash	6	Space	4	Dash	6	Space	4

▪ 13.0 Create & Edit New Line Patterns & Line Styles

- Set up Line Styles

On the manage tab → Settings panel → Drop – down additional settings → Click “Line Styles”





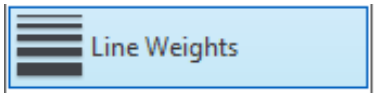
Click “New” → Set line weight, color, and patterns

Category	Line Weight Projection	Line Colour	Line Pattern
Lines	3	RGB 000-161-000	Solid
Area Boundary	12	RGB 128-000-255	Solid
Beyond	3	Black	Solid
Centreline	3	Black	AEC_Centre
Demolished	3	Black	Demolished
Hidden	3	Black	Hidden
Overhead	2	Black	Overhead
Room Separation	12	Cyan	AEC_Dash 3mm
Sketch	6	Magenta	Solid
Space Separation	12	Green	AEC_Dash 3mm
Axis of Rotation	12	Blue	AEC_Centre
Hidden Lines	3	RGB 000-161-000	AEC_Dash 3mm
Insulation Batting Lines	3	Black	Solid
Lines	3	RGB 000-161-000	Solid
Medium Lines	5	Black	Solid
Thin Lines	1	Black	Solid
Wide Lines	10	Black	Solid
General			
AEC_1-Solid	1	Black	Solid
AEC_3-Solid	3	Black	Solid
AEC_5-Solid	5	Black	Solid
AEC_6-Solid	6	Black	Solid
AEC_7-Solid	7	Black	Solid
AEC_8-Solid	8	Black	Solid
AEC_9-Solid	9	Black	Solid
AEC_10-Solid	10	Black	Solid
Architectural			
AEC_10-DPC	10	Magenta	Solid
AEC_10-DPM	10	RGB 000-128-000	AEC_Double Dash
Structural			
AEC_8-RNF_Mesh	8	Black	AEC_Dash Dot 6mm
AEC_11-Rebar	11	Black	Solid

▪ 14.0 Line Weight setting

- Line Weights

On the view tab → Sheet Composition panel → Sheet → Select the sheet type



Line Weights

Model Line Weights | Perspective Line Weights | Annotation Line Weights

Model line weights control line widths for objects like walls and windows in orthographic views. They depend on view scale.

There are 16 model line weights. Each can be given a size for each view scale. Click on a cell to change line width.

	1 : 10	1 : 20	1 : 50	1 : 100	1 : 200	1 : 500	1 : 2000
1	0.1300 mm	0.1300 mm	0.1300 mm	0.0600 mm	0.0600 mm	0.0600 mm	0.0600 mm
2	0.1500 mm	0.1500 mm	0.1500 mm	0.1300 mm	0.0600 mm	0.0600 mm	0.0600 mm
3	0.1800 mm	0.1800 mm	0.1800 mm	0.1500 mm	0.1300 mm	0.0600 mm	0.0600 mm
4	0.2000 mm	0.2000 mm	0.2000 mm	0.1800 mm	0.1500 mm	0.1300 mm	0.0600 mm
5	0.2500 mm	0.2200 mm	0.2200 mm	0.2000 mm	0.1800 mm	0.1500 mm	0.0600 mm
6	0.3500 mm	0.2500 mm	0.2500 mm	0.2200 mm	0.2000 mm	0.1800 mm	0.1300 mm
7	0.4000 mm	0.3500 mm	0.3500 mm	0.2500 mm	0.2200 mm	0.2000 mm	0.1500 mm
8	0.5000 mm	0.4000 mm	0.4000 mm	0.3500 mm	0.2500 mm	0.2200 mm	0.1800 mm
9	0.6000 mm	0.5000 mm	0.5000 mm	0.4000 mm	0.3500 mm	0.2500 mm	0.2000 mm
10	0.7000 mm	0.6000 mm	0.6000 mm	0.5000 mm	0.4000 mm	0.3500 mm	0.2200 mm
11	1.0000 mm	0.7000 mm	0.7000 mm	0.6000 mm	0.5000 mm	0.4000 mm	0.2500 mm
12	1.4000 mm	1.0000 mm	1.0000 mm	0.7000 mm	0.6000 mm	0.5000 mm	0.3500 mm
13	2.0000 mm	1.4000 mm	1.4000 mm	1.0000 mm	0.7000 mm	0.6000 mm	0.4000 mm
14	3.0000 mm	2.0000 mm	2.0000 mm	1.4000 mm	1.0000 mm	0.7000 mm	0.5000 mm
15	4.0000 mm	3.0000 mm	3.0000 mm	2.0000 mm	1.4000 mm	1.0000 mm	0.6000 mm
16	5.0000 mm	4.0000 mm	4.0000 mm	3.0000 mm	2.0000 mm	1.4000 mm	0.7000 mm

Add... Delete

OK Cancel Apply Help

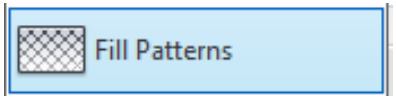
▪ 15.0 Fill Pattern

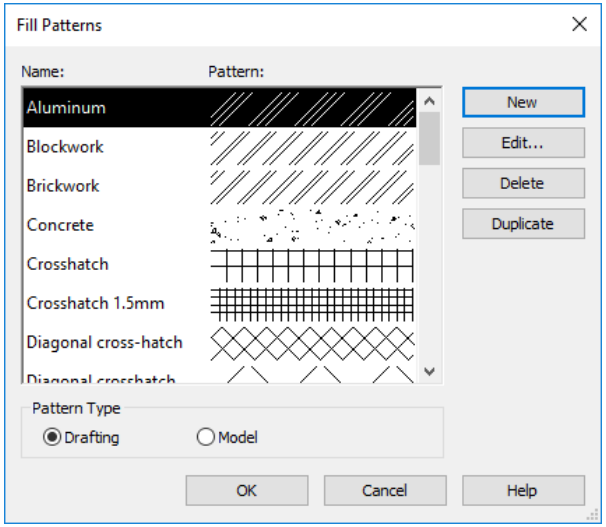
- Fill Pattern

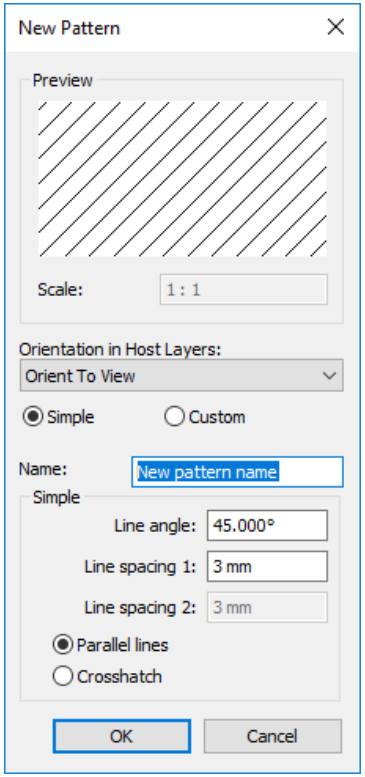
Materials are often represented with simple hatch patterns. For any material used, user can define a surface pattern and a cut pattern.

- Set up Fill Pattern

On the manage tab → Settings panel → Additional settings drop – down → Click “Fill Pattern”







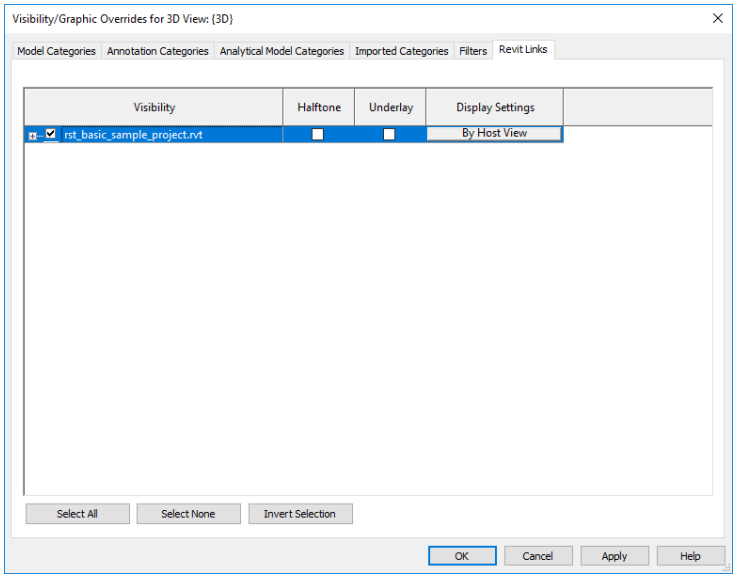
- Sketch Fill Pattern

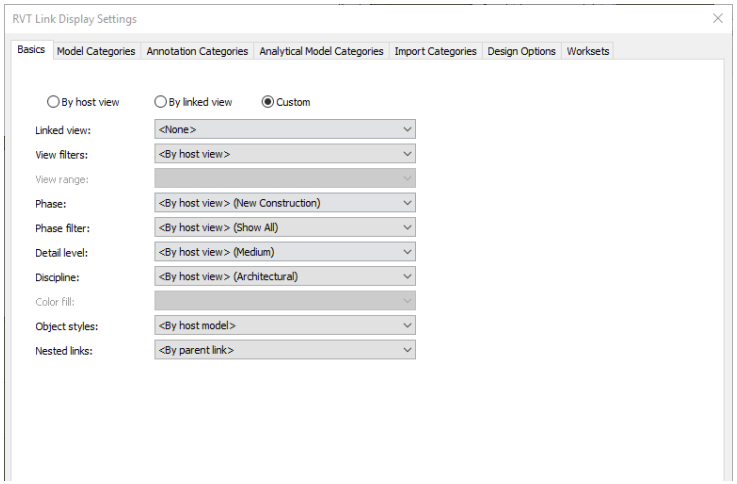
On the annotate tab → Detail panel → Drop – down region → Click “Fill Pattern”

▪ 16.0 RVT Link Display Settings

- Display Settings

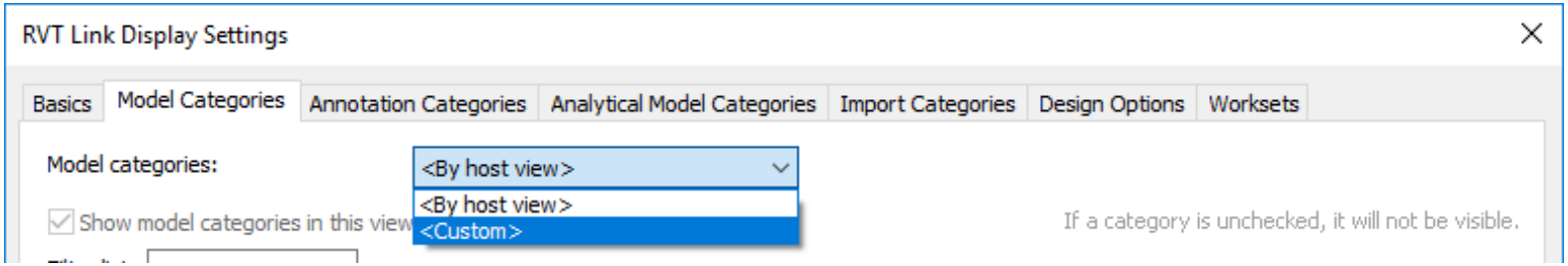
On the view→ Click VV (Visibility/Graphic Overrides) → Click Revit Links tab → Choose the link and click the button in the display settings





To begin customizing the display of elements in the linked file, user must first choose the custom option in the Basics tab.

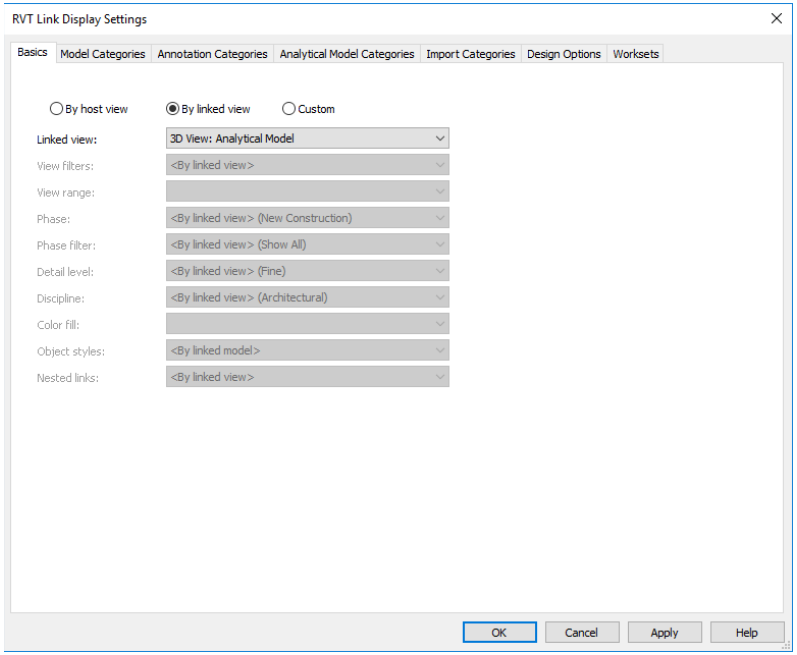
Select the Model Categories tab and choose <Custom> in the drop-down list at the top of the dialog box

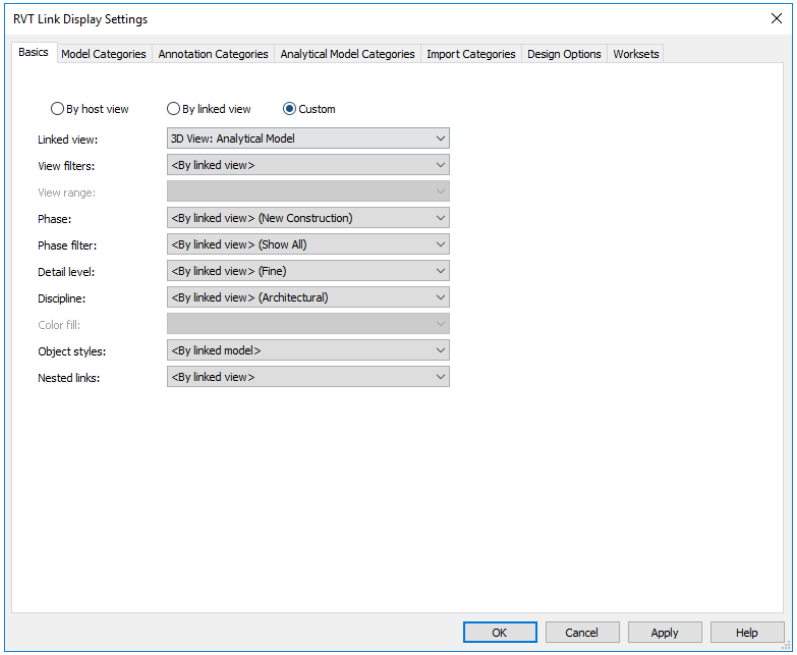


▪ 17.0 Linked View

- Linked View

Select the view in the linked model whose display settings user want to use for the linked model in the current host view.



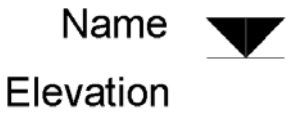


For example, if the selected view has a filter applied, then that filter will apply to the linked model in the current host view, too.

18.0 Change Level Head Family & Adjust Unit Format

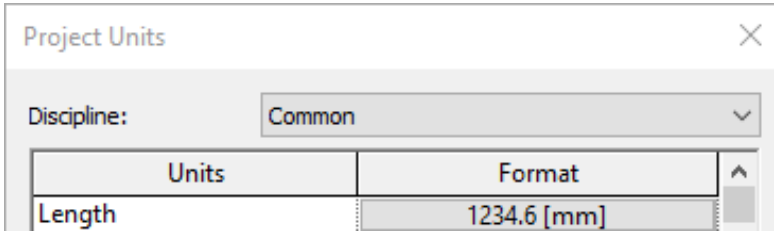
- Level Head

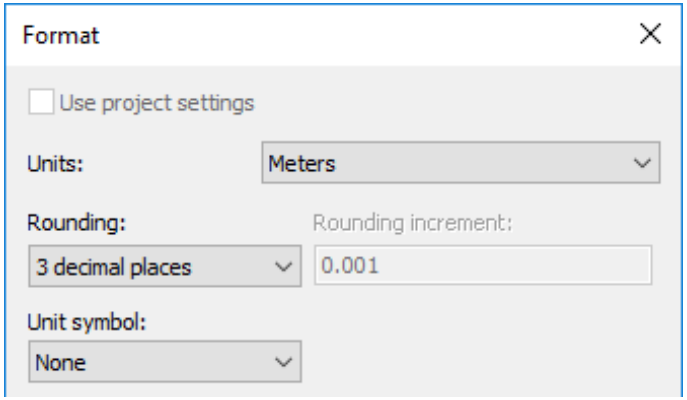
Open the Family “M_Level Head – Triangle”
Family Path : C:\ProgramData\Autodesk\RVT 2017\Libraries\US Metric\Annotations



- Set up unit format

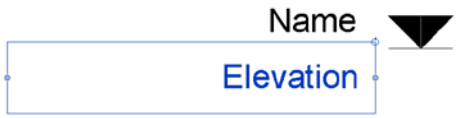
In the Manage tab → Settings panel → Click “Project Units” → Choose Length and click the button in the format → Edit the unit and rounding

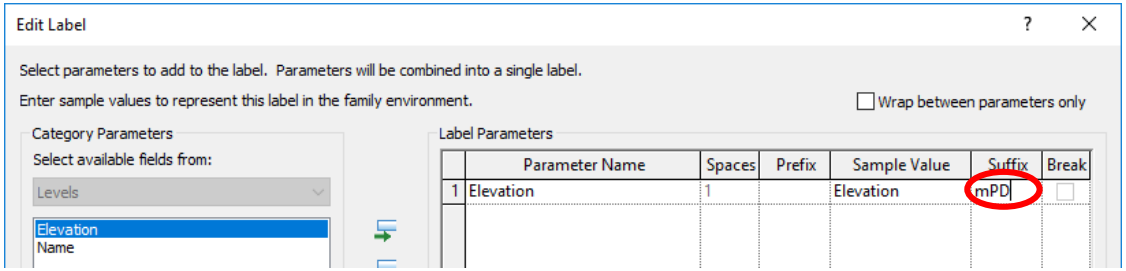




- Set up unit symbol

Click “Elevation” → In the modify tab → Click “Edit Label” → Label Parameters → Add a suffix to the parameter value by adding a text string in this column.

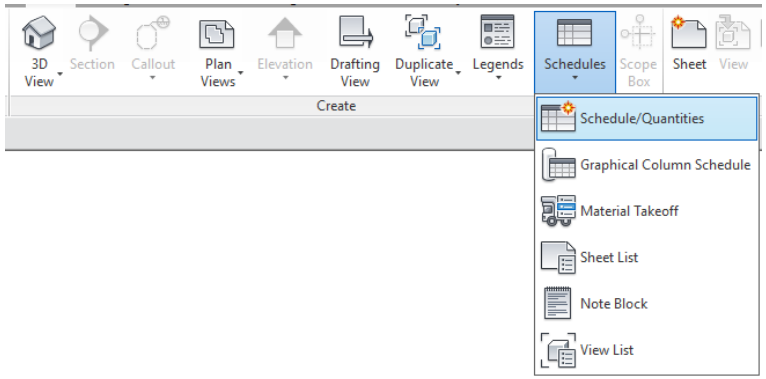


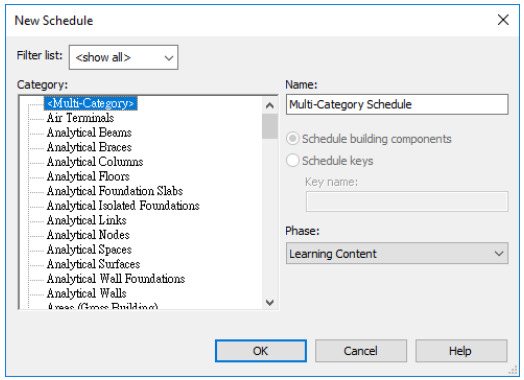


▪ 19.0 Create Schedule

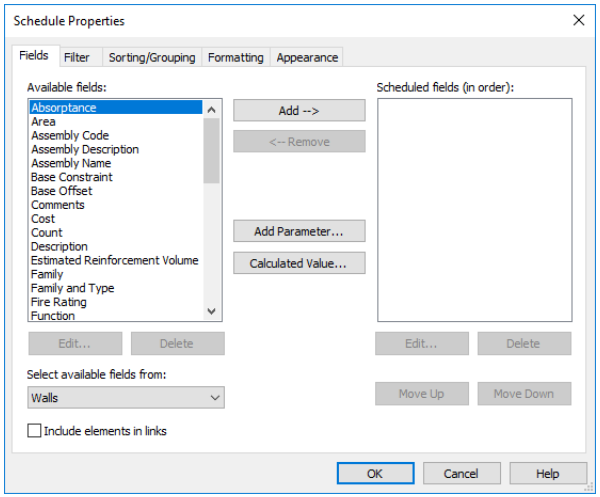
- Schedule

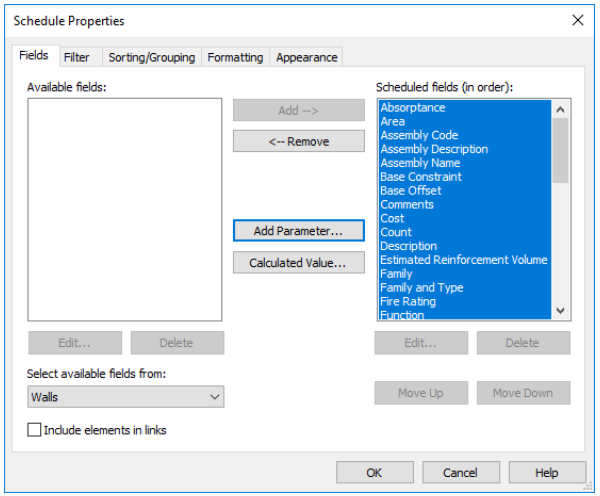
On the view tab → Create panel → Schedules drop – down → Click “Schedule/Quantities” → Select Category





Add the fields from Available fields to Scheduled fields: Select parameter in Available fields box → Click “Add”

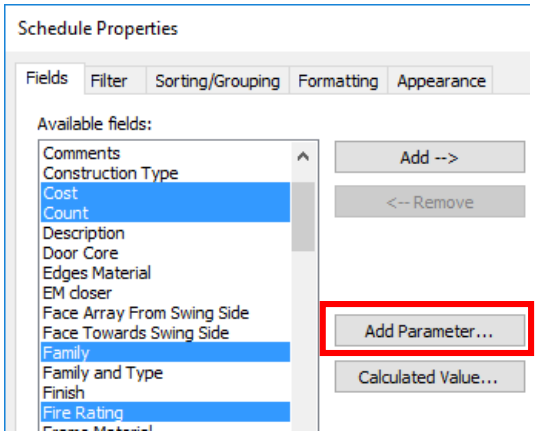


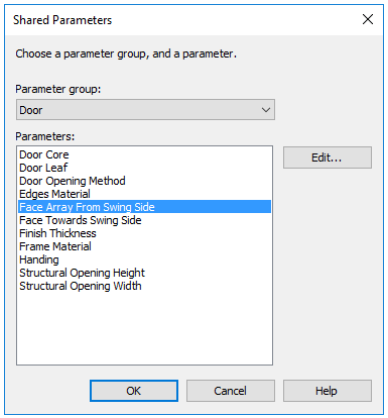


▪ 19.0 Create Schedule

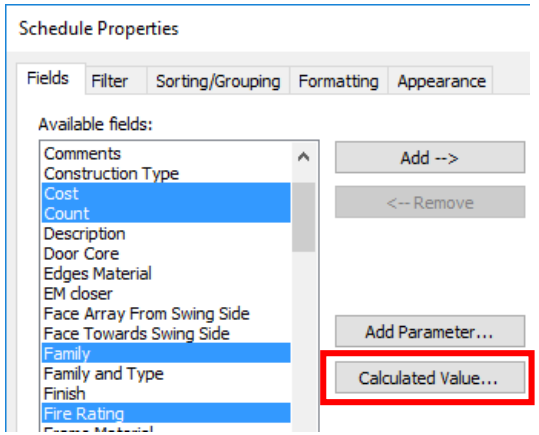
- Add Parameter

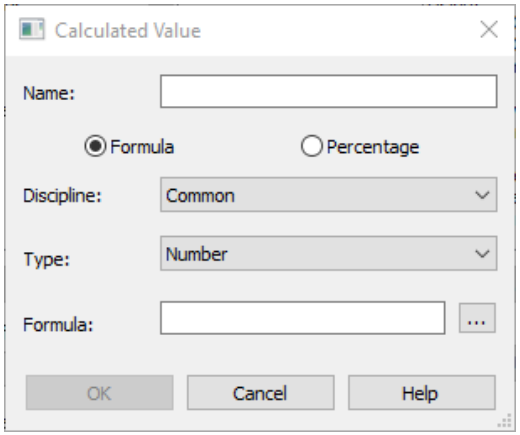
Click “Add Parameter” → Pick “Share Parameter” → Click “Select” → Choose a parameter group, and a parameter → Click OK





- Calculated Value

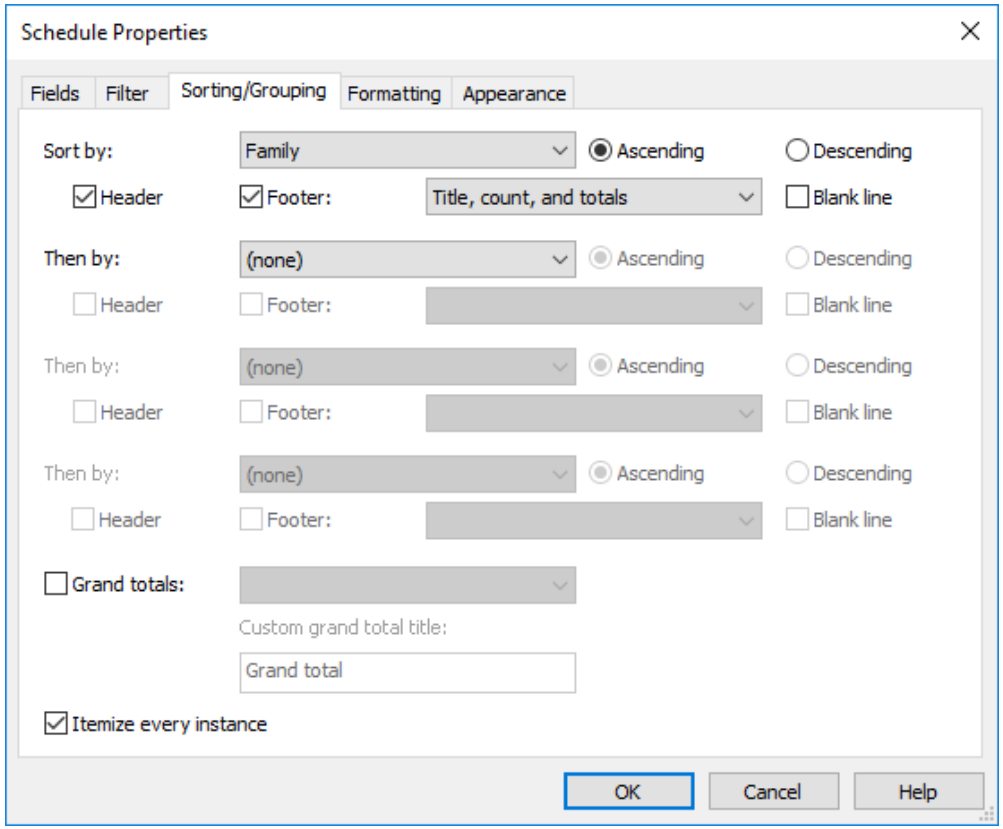


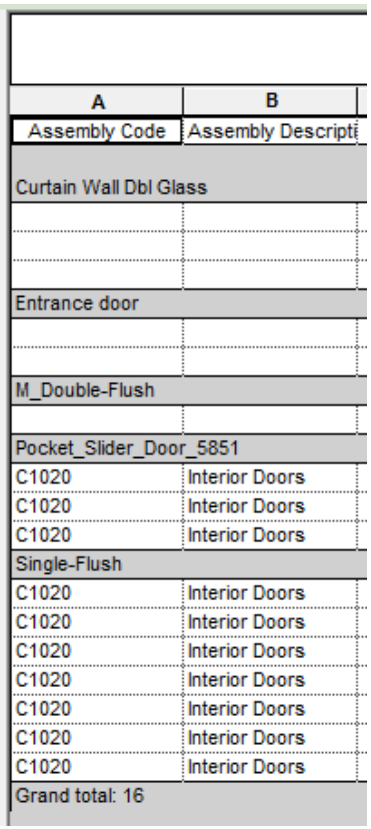


▪ 20.0 Group the Header at Schedule

- Header at Schedule

See examples of sorting and grouping for schedules, including itemizing instances, sorting, and totals.



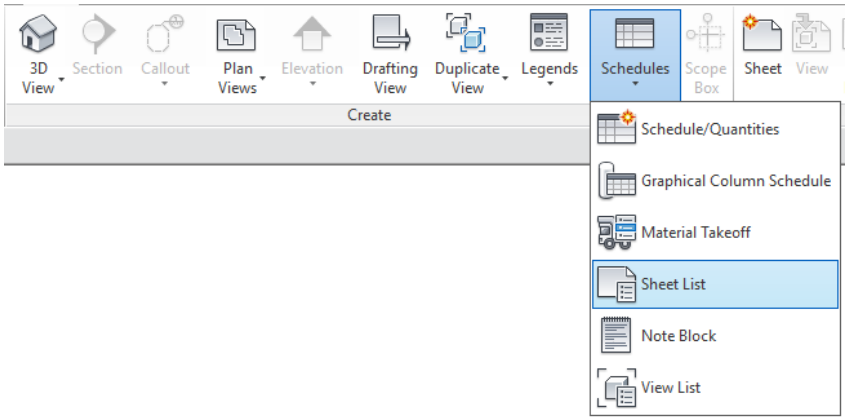


A	B
Assembly Code	Assembly Descripti
Curtain Wall Dbl Glass	
Entrance door	
M_Double-Flush	
Pocket_Slider_Door_5851	
C1020	Interior Doors
C1020	Interior Doors
C1020	Interior Doors
Single-Flush	
C1020	Interior Doors
C1020	Interior Doors
C1020	Interior Doors
C1020	Interior Doors
C1020	Interior Doors
C1020	Interior Doors
C1020	Interior Doors
Grand total: 16	

▪ 21.0 Create Sheet List

- Sheet List

On the view tab → Create panel → Schedules drop – down → Click “Sheet List”



<Sheet List>

A	B	C	D	E	F	G	H	I	J
Approved By	Checked By	Count	Current Revision Is	Designed By	Drawn By	Guide Grid	Sheet Issue Date	Sheet Name	Sheet Number
Approver	JLH	1	No	Designer	SM	<None>	07/24/12	Plans	A102
Approver	JLH	1	No	Designer	SM	<None>	07/30/12	Elev./Sec./Det.	A104
Approver	JLH	1	No	Designer	SM	<None>	11/15/12	Elevations/Secti	A103
Approver	JLH	1	No	Designer	SM	<None>	11/15/12	Elev./ Stair Secti	A105
Approver	JLH	1	No	Designer	SM	<None>	11/16/12	Site Plan	A101
Approver	JLH	1	No	Designer	SM	<None>	11/16/12	Title Sheet	A001

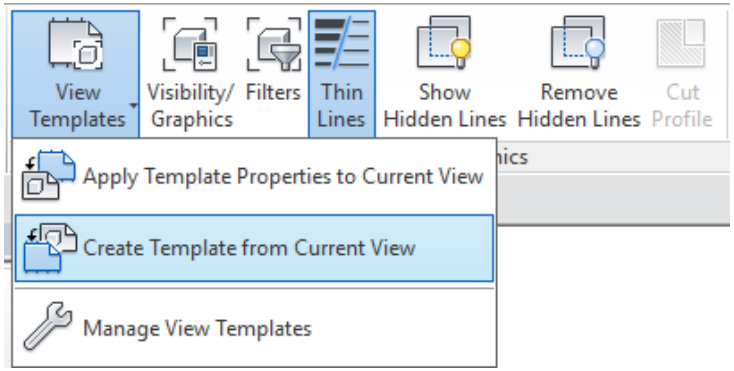
▪ 22.0 Create New View Template

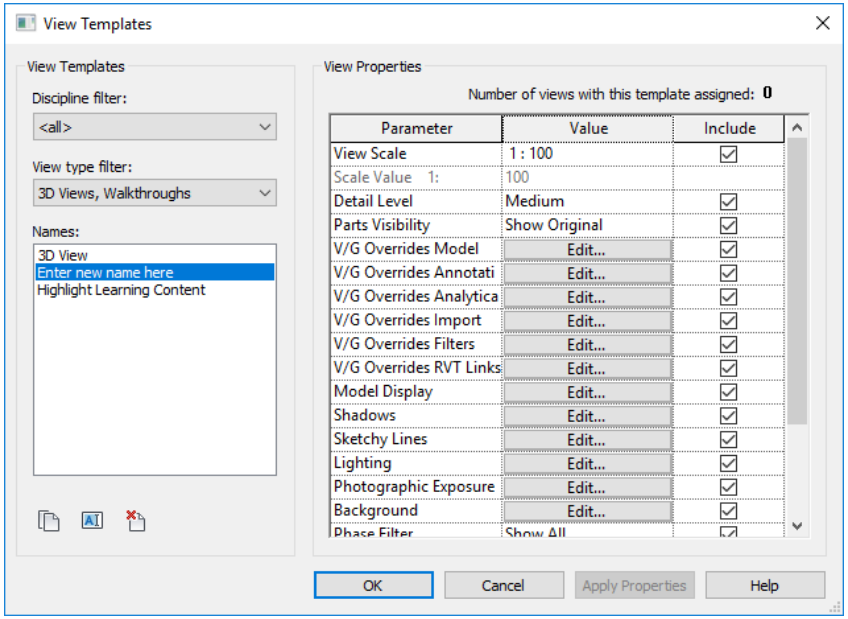
- View Template

A view template is a collection of view properties, such as view scale, discipline, detail level, and visibility settings.

- Create View Template

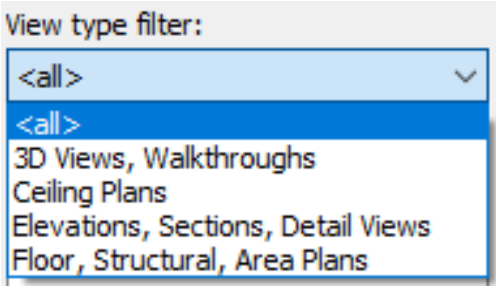
On the View tab → Graphics panel → View Templates drop – down → Click “Create Template from Current View”





- Apply View Template

Click “Apply Template from Current View” → View type filter drop – down → Select <all>

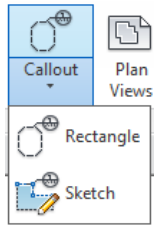


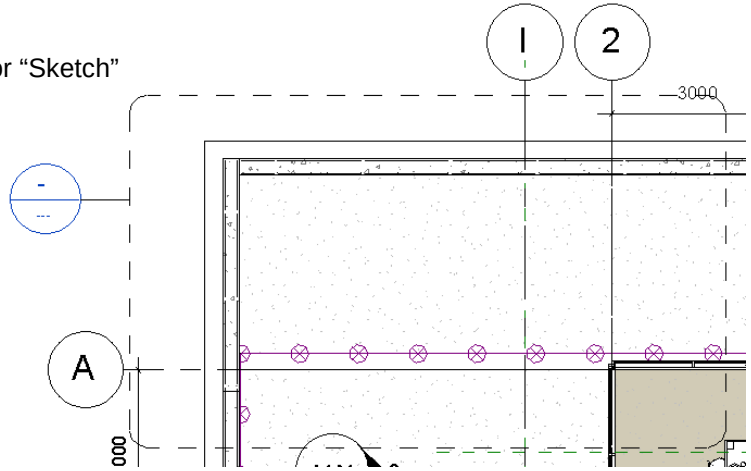
23.0 Callout

- Callout

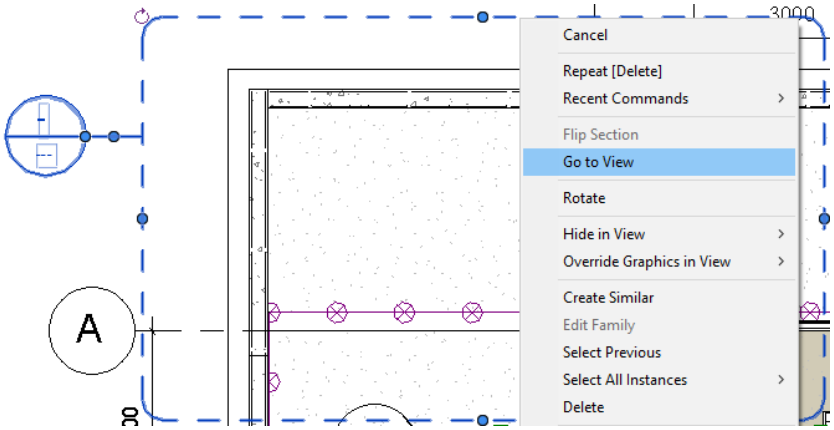
Shows some portion of another view at a larger scale. In a construction document set, use callouts to provide an orderly progression of labeled views at increasing levels of detail.

On the view tab → Create panel → Callout drop – down → Click “Rectangle” or “Sketch”





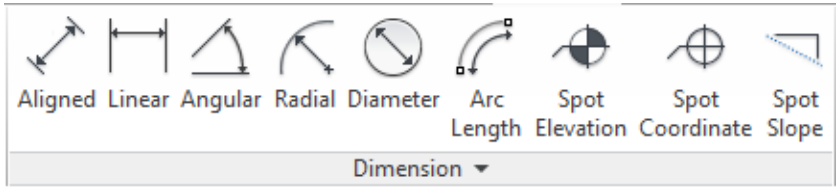
Right click callout boundary → Click “Go to View”



▪ 24.0 3D Dimension / 2D Dimension

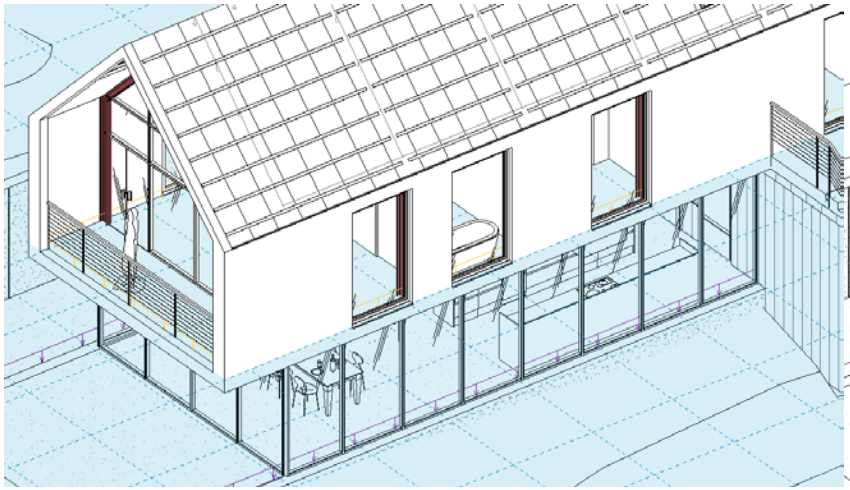
- Dimension

On the annotate tab → Dimension panel → Choose the dimension type and click it

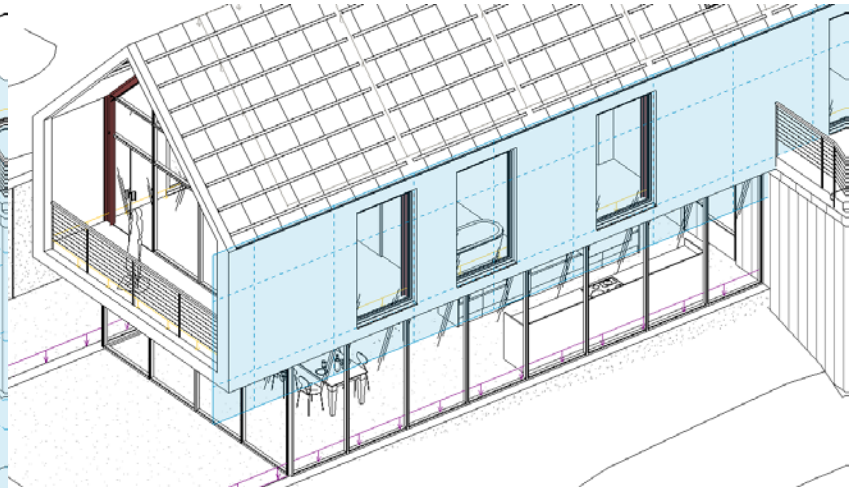


- Create Dimension in 3D View

In the work plane panel → Click “Set” → Set the work plane in the 3D view → Use the Dimension tool



Horizontal Plane



Vertical Plane

Output

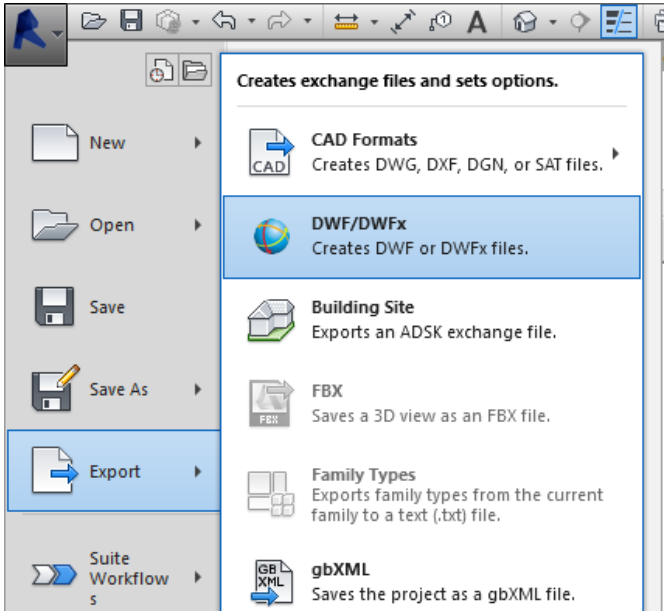
▪ 1.0 Export Revit project

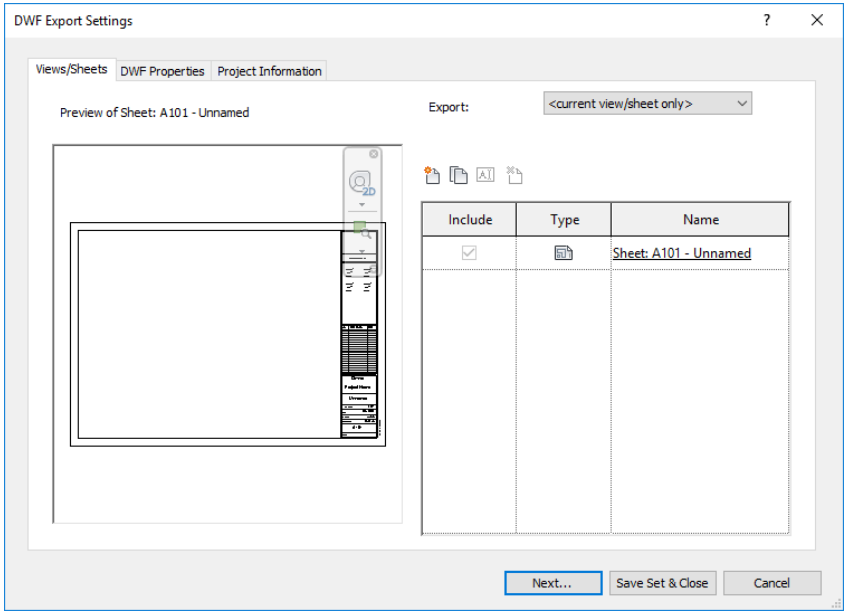
- DWF/ DWFx

User can view files in DWF/ DWFx format. If user export sheets to DWFx and the markups are linked back into Revit, the markups will be automatically placed on the corresponding sheet.

- Export DWF/ DWFx

Select the Application Menu → Choose Export → DWF/ DWFx → In the DWF Export Settings dialog box → Select the sheet or view and click “Next”

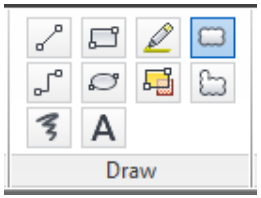




▪ 1.0 Export Revit project

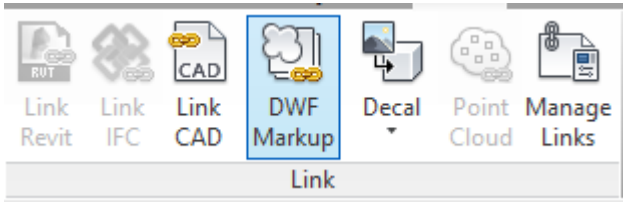
- Markup in Autodesk Design Review

Open the DWFx → Choose the Markup & Measure tab → Draw panel

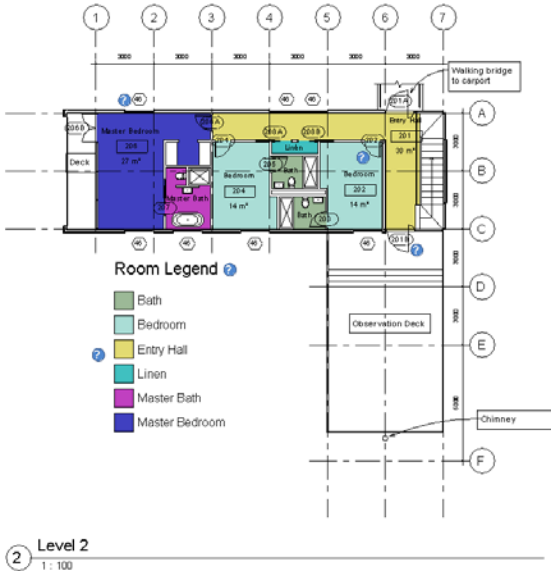


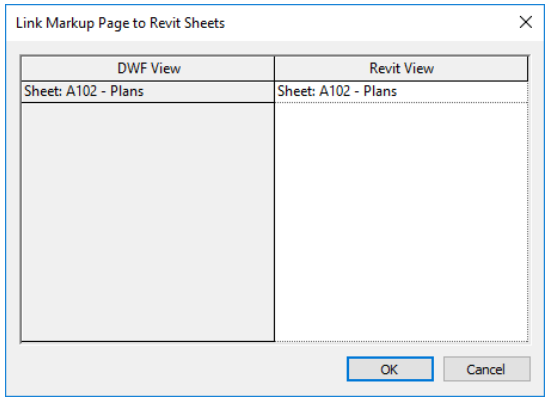
- Insert Markup to Revit

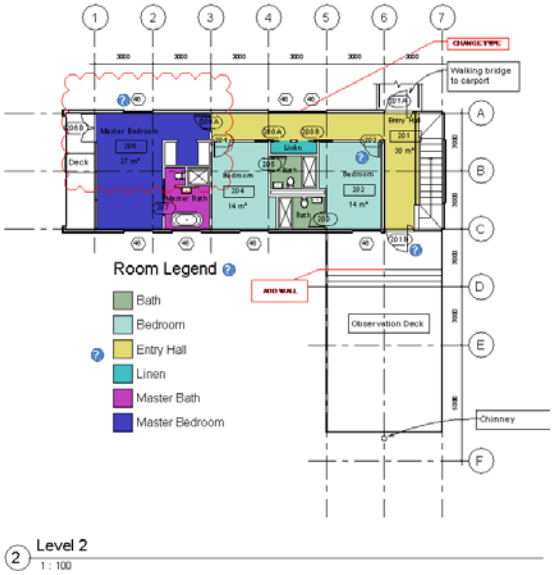
On the Insert tab → Link panel → Click “DWF Markup”



In the Link Markup Page to Revit Sheets dialog box → Select the markup view



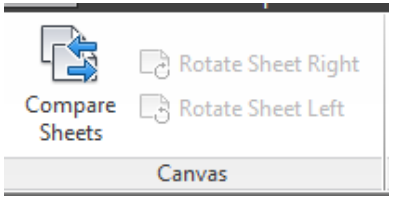




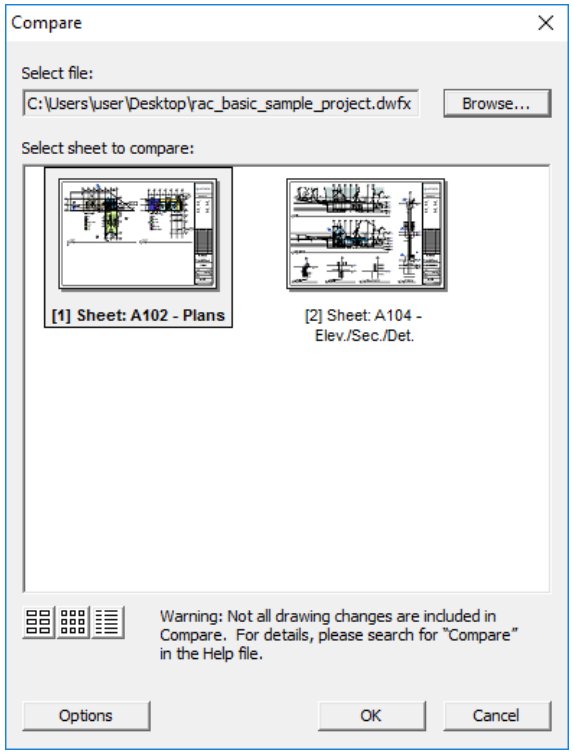
▪ 2.0 Compare different version

- Compare Sheets

In the Autodesk Design Review → On the tools tab → Canvas panel → Click “Compare Sheets”



In the Compare dialog box → Select file → Select sheet to compare → Click “OK”



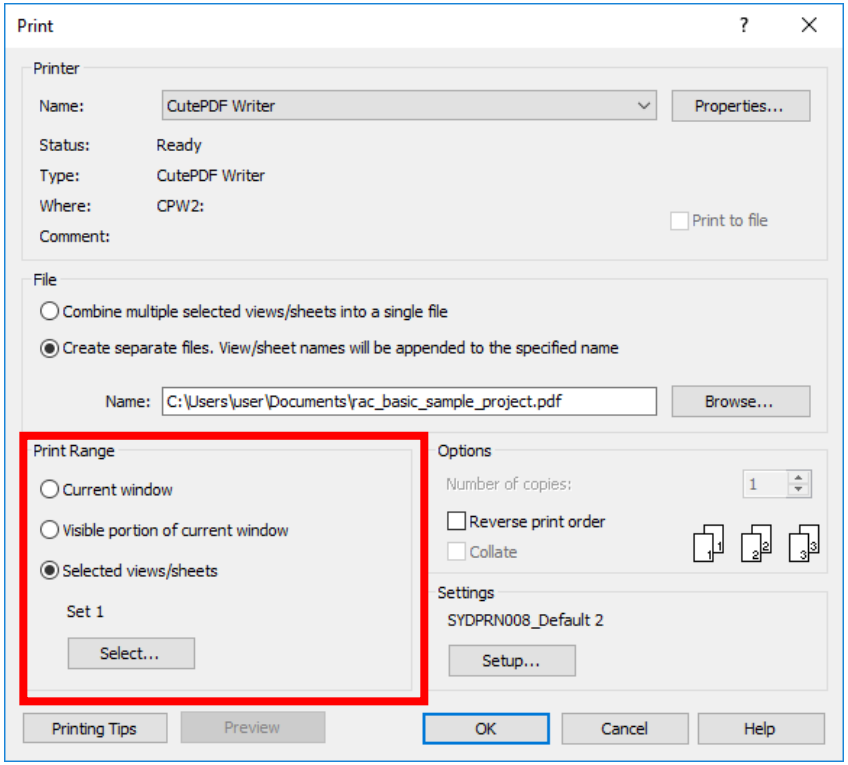
▪ 3.0 Print setup for hardcopy

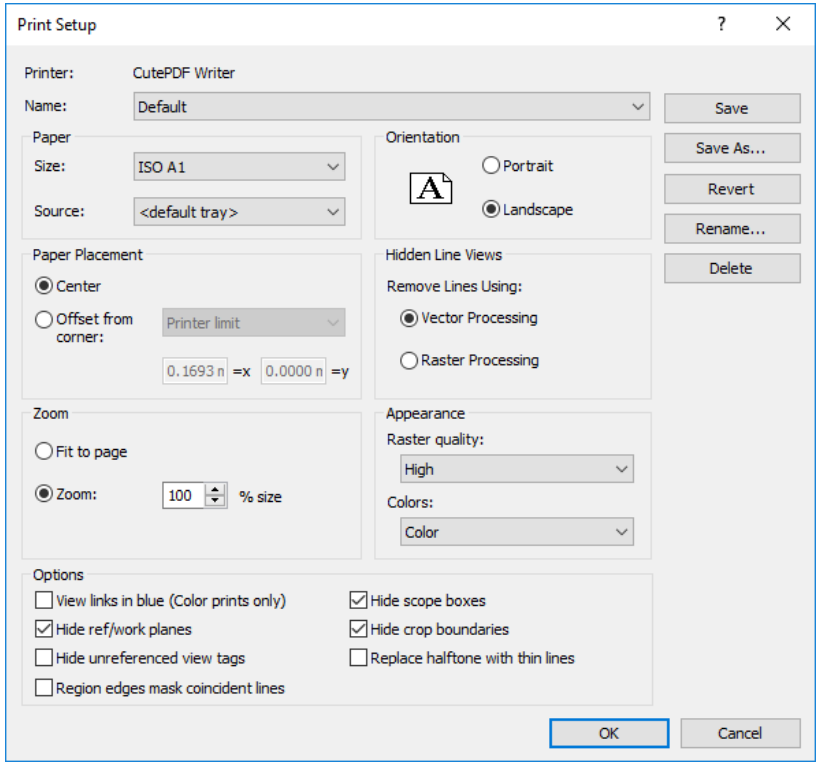
- Print PDF

1. Select the application menu → Choose print → Click print → In the printer panel → Select printer

2. Print range panel → Choose Selected view/sheets → Click "Select" → Select view and sheets

3. In the settings panel → Click "Setup" → Follow sample print setup dialog box setting

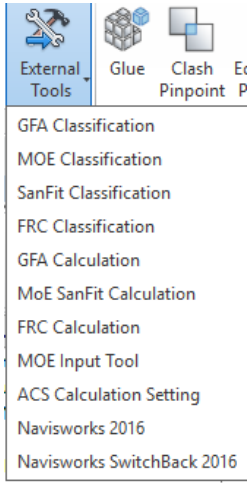




▪ 4.0 ACS Plugins – GBP Submission

- Automatic Calculation System

Automatic calculations refer to a script or plug-in which will automatically refer to the statutory tables for GBP Submission and perform the calculation, returns with a result and fill in the requirement schedule such as Site Coverage & Plot Ratio, List of GFA Concession, Fire Resistance, Provision of Exit Doors & Exit Routes, Provision of MOE, Sanitary Fitments calculation etc.



FIRE RESISTANCE REQUIREMENT FOR ELEMENTS OF CONSTRUCTION

LEVEL	NAME	CLASS	FRP REQ'D	R.C. WALL => 1% V.R.		R.C. SLAB		R.C. BEAM		R.C. COLUMN		R.C. STAIR	
				THK.	COVER TO STEEL	THK.	COVER TO STEEL	THK.	COVER TO STEEL	THK.	COVER TO STEEL	THK.	COVER TO STEEL
G/F	LOADING / UNLOADING		60	75	15	100	20	200	30	200	25	95	20
G/F	MAIN ENTRANCE	1a (Residential - House type dwellings)	60	75	15	100	20	200	30	200	25	95	20
G/F	SHOP	4a (Commercial - Business facilities)	60	75	15	100	20	200	30	200	25	95	20
1/F	TRANSFER PUMP ROOM		120	100	25	125	25	200	40	300	35	125	35
1/F	ELECTRICAL ROOM		120	100	25	125	25	200	40	300	35	125	35
1/F	TBE ROOM		120	100	25	125	25	200	40	300	35	125	35
1/F	MAIN SWITCH ROOM		120	100	25	125	25	200	40	300	35	125	35
1/F	TRANSFORMER ROOM		240	180	25	170	45*	280	60*	450	35	170	55*
2/F	SPRINKLER PUMP RM		120	100	25	125	25	200	40	300	35	125	35
2/F	MAIN SWITCH ROOM		120	100	25	125	25	200	40	300	35	125	35
2/F	TRANSFORMER ROOM		240	180	25	170	45*	280	60*	450	35	170	55*
3/F	FS PUMP RM		120	100	25	125	25	200	40	300	35	125	35
3/F	CLEANSING WATER PUMP RM		120	100	25	125	25	200	40	300	35	125	35
5/F	E/M ROOM		120	100	25	125	25	200	40	300	35	125	35
5/F	E/M ROOM		120	100	25	125	25	200	40	300	35	125	35
5/F	E/M ROOM		120	100	25	125	25	200	40	300	35	125	35
5/F	READING ROOM	5a (Assembly - Places of Public Entertainment)	60	75	15	100	20	200	30	200	25	95	20
5/F	SWIMMING POOL	5a (Assembly - Places of Public Entertainment)	60	75	15	100	20	200	30	200	25	95	20
5/F	GYMNASIUM	5d (Assembly - Other Assembly Premises)	60	75	15	100	20	200	30	200	25	95	20
6/F	E/M ROOM		120	100	25	125	25	200	40	300	35	125	35
6/F	SKY GARDEN		60	75	15	100	20	200	30	200	25	95	20
7/F LOWER FLOOR	REFUGE FLOOR	1a (Residential - House type dwellings)	120	100	25	125	25	200	40	300	35	125	35
7/F LOWER FLOOR	REFUGE FLOOR	1a (Residential - House type dwellings)	120	100	25	125	25	200	40	300	35	125	35
8/F	DOMESTIC	1b (Residential - Flats)	60	75	15	100	20	200	30	200	25	95	20
LIFT MACHINE ROOM LEVEL	LIFT MACHINE ROOM		120	100	25	125	25	200	40	300	35	125	35
LIFT MACHINE ROOM LEVEL	METER ROOM		120	100	25	125	25	200	40	300	35	125	35
EMERGENCY GENERATOR & WATER PUMP ROOM	LIFT MACHINE ROOM		120	100	25	125	25	200	40	300	35	125	35
EMERGENCY GENERATOR & WATER PUMP ROOM	PUMP ROOM		120	100	25	125	25	200	40	300	35	125	35

▪ 4.0 ACS Plugins – GBP Submission

SITE COVERAGE & PLOT RATIO CALCULATION

(A) GENERAL:

CLASS OF SITE:	A
SITE AREA (SQ.M.)	786.46
BUILDING HEIGHT (M)	1145 >61m
PERMITTED NON-DOMESTIC SC (%)	60
PERMITTED DOMESTIC SC (%)	33.33
PERMITTED NON-DOMESTIC PR:	15
PERMITTED DOMESTIC PR:	9

(D) REMAINING NON-DOMESTIC G.F.A.:

(E) NON-DOMESTIC G.F.A. CALCULATION:

(F) ACTUAL PLOT RATIO FOR NON-DOMESTIC::

ACTUAL NON-DOMESTIC GFA (SQ.M):	128.013
ACTUAL NON-DOMESTIC PR:	128.013/7316.46
	0.182

(G) ACTUAL TOTAL PLOT RATIO::

REMAINING DOMESTIC PR:	(15-0.182)=14.81
	7.903
ACTUAL DOMESTIC GFA (SQ.M):	5578.883
ACTUAL DOMESTIC PR:	5578.883/7316.46
	7.614<7.903

(H) DOMESTIC SITE COVERAGE CALUILATION:

ACTUAL DOMESTIC	784.318
SITE COVERAGE OVER 15M (SQ.M):	
ACTUAL DOMESTIC	784.318/786.46=99.90
SITE COVERAGE (M%)	33.33<99.33

(J) NON-DOMESTIC SITE COVERAGE CALCULATION:

ACTUAL NON-DOMESTIC	386.822
SITE COVERAGE OVER 15M (SQ.M):	
ACTUAL NON-DOMESTIC	386.822/786.46=99.90
SITE COVERAGE (M%)	91.629<99

(C) ACTUAL TOTAL G.F.A. CALCULATION FOR DOMESTIC:

DOMESTIC ACCOMMODATION	
OVERALL DOMESTIC GFA (SQ.M):	5451.558
OVERALL NON-DOMESTIC GFA (SQ.M):	128.013
OVERALL TOTAL GFA (SQ.M):	5451.558+128.013
	5580.155
DOMESTIC LIFT SHAFT AREA (SQ.M)	212.420
MAXIMUM EXEMPTED GFA (SQ.M):	5580.155x3.5%
	195.305
ACTUAL EXEMPTED GFA (SQ.M):	212.420<195.305x3.5%
	72.915 (MAX. 195.305)
ACTUAL DOMESTIC GFA (SQ.M):	5451.558-72.915
	5378.643

(B) DOMESTIC G.F.A. CALCULATION

TOTAL DOMESTIC GFA

ID	NAME	AREA (SQ.M)	STOREY	TOTAL AREA (SQ.M)
1	FLOOR AREA	229.860	24	5492.654
2	MAIN ENTRANCE	76.951	1	76.951
5	FLOOR AREA	209.809	1	209.809
				5779.714

UNDER OUTLINE ZONING PLAN

ZONE	-R(A)
PROPOSED USE	-RESIDENTIAL & SHOP ON G/F (ALWAYS PERMITTED)
PERMISSIBLE BUILDING HEIGHT	=140mPD
PROPOSED BUILDING HEIGHT	=135.240+PD<140mPD

(K) RECREATIONAL FACILITIES AREA CALCULATION

5/F RECREATIONAL FACILITIES DIAGRAM

ID	NAME	AREA (SQ.M)
1	RECREATIONAL FACILITIES FLOOR AREA	279.69

(N) BALCONY AREA CALCULATION

48.622 x 4%=1.952 sm. or 2.0 sm. WHICHEVER IS THE GREATER

GREEN BALCONY AREA CALCULATION (UNIT A)

Number	Name	Area
AB	BAL	1.995 m² <2.000 s.m.

33.662 x 4%=1.322 sm. or 2.0 sm. WHICHEVER IS THE GREATER

GREEN BALCONY AREA CALCULATION (UNIT B)

Number	Name	Area
BB	BAL	1.997 m² <2.000 s.m.

43.625 x 4%=1.721 s.m. or 2.0 s.m. WHICHEVER IS THE GREATER

GREEN BALCONY AREA CALCULATION (UNIT C)

Number	Name	Area
CB	BAL	1.999 m² <2.000 s.m.

SCHEDULE OF UFA & UPS UNIT A (FOR 39/F) EXEPTED AREA (BALCONY)

Number	Name	Area
AB	BAL	2.464 m²

SCHEDULE OF UFA & UPS UNIT B (FOR 39/F) EXEPTED AREA (BALCONY)

Number	Name	Area
BB	BAL	2.567 m²

(O) OUTILITY PLATFORM AREA CALCULATION

TOTAL UTILITY PLATFORM & GREEN BALCONY AREA (UNIT A)

Number	Name	Area
AB	BAL	1.995 m²
AU	UTIL	1.469 m²
TOTAL		3.464 m²

TOTAL UTILITY PLATFORM & GREEN BALCONY AREA (UNIT B)

Number	Name	Area
BB	BAL	1.997 m²
BU	UTIL	1.500 m²
TOTAL		3.497 m²

TOTAL UTILITY PLATFORM & GREEN BALCONY AREA (UNIT C)

Number	Name	Area
CU	UTIL	1.500 m²
CB	BAL	1.999 m²
TOTAL		3.499 m²

SCHEDULE OF UFA & UPS UNIT A (FOR 39/F) EXEPTED AREA (UTILITY PLATFORM)

Number	Name	Area
AU	UTIL	1.064 m²

SCHEDULE OF UFA & UPS UNIT B (FOR 39/F) EXEPTED AREA (UTILITY PLATFORM)

Number	Name	Area
BU	UTIL	1.500 m²

EXEMPTED U.P. AREA CALCULATION UNDER JP#2 (UNIT A)

Number	Name	Area
AU	UTIL	1.469 m² <1.500 s.m.

EXEMPTED U.P. AREA CALCULATION UNDER JP#2 (UNIT B)

Number	Name	Area
BU	UTIL	1.500 m² <1.500 s.m.

EXEMPTED U.P. AREA CALCULATION UNDER JP#2 (UNIT C)

Number	Name	Area
CU	UTIL	1.500 m² <1.500 s.m.

(Q) EXEMPTED AREA CALCULATION FOR LIFT SHAFT

LIFT SHAFT SCHEDULE

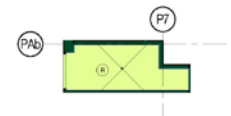
AREA (SQ.M)	STOREYS	TOTAL AREA (SQ.M)
4.085	26	106.21
4.085	26	106.21
		212.42

(R) AREA DIAGRAM FOR REFUSE CHAMBER

AREA CALCULATION FOR REFUSE CHAMBER

REFUSE STORAGE & MATERIAL RECVERY CHAMBER AREA CALCULATION

Number	Name	Area
R	REFUSE STORAGE MATERIAL RECOVERY CHAMBER	13.517 m²



REFUSE AREA DIAGRAM

1 : 100

LIST OF GFA CONCESSION

AREA OF GFA CONCESSIONS	
Name	AREA (SQ.M)
TBE ROOM	23.455 m²
POTABLE & FLUSHING WATER TANK TRANSFER PUMP ROOM	37.307 m²
ELECTRICAL ROOM	9.720 m²
MAIN SWITCH ROOM	20.494 m²
TRANSFORMER ROOM	25.753 m²
TRANSFORMER ROOM	22.446 m²
SPRINKLER PUMP RM.	27.943 m²
ELECTRICAL ROOM	3.950 m²
FILTRATION PLANT ROOM	49.183 m²
CLEANSING WATER PUMP RM	19.653 m²
WATER METER RM.	3.500 m²
ELECT. RM.	2.849 m²
ELEC. RM.	1.457 m²
EMERGENCY GENERATOR ROOM	25.980 m²
NON-ESSENTIAL GENEARATOR RM.	16.745 m²
LOADING/ UNLOADING	24.500 m²
METER ROOM	2.821 m²
REFUSE STORAGE MATERIAL RECOVERY CHAMBER	13.517 m²
METER ROOM	2.010 m²
TOTAL	333.284 m²

SCHEDULE OF MNIMUM NUMBER & WIDTH OF EXIT DOOR & EXIT ROUTE FROM EACH FLOOR

LEVEL	FLOOR CAPACITY	MIN. NO. OF EXIT ROUTE		MIN. TOTAL WIDTH OF				MIN. WIDTH OF EACH			
		REQ'D	PRO'D	EXIT DOORS		EXIT ROUTES		EXIT DOOR		EXIT ROUTE	
				REQ'D	PRO'D	REQ'D	PRO'D	REQ'D	PRO'D	REQ'D	PRO'D
5/F		2	2	1750	1750	2100	2100	850	875	1050	1050
26/F	39	2	2	1750	1750	2100	2100	850	875	1050	1050

SCHEDULE OF DISCHARGE VALUE

	DISCHARGE VALUE OF STAIRCASE IN A SPRINKLERED BUILDING	DISCHARGE VALUE OF STAIRCASE IN A SPRINKLERED BUILDING	DISCHARGE VALUE OF STAIRCASE IN A SPRINKLERED BUILDING	DISCHARGE VALUE OF STAIRCASE IN A SPRINKLERED BUILDING			DISCHARGE VALUE OF STAIRCASE IN A SPRINKLERED BUILDING	DISCHARGE VALUE OF STAIRCASE IN A SPRINKLERED BUILDING
STAIR NO.	WIDTH OF STAIRCASE (mm)	PERMITTED	PERMITTED	CALCULATED PERMITTED	CALCULATED WIDTH OF STAIRCASE	CALCULATED PERMITTED	TOTAL NO. OF FLOOR SERVED ABOVE G/F	ACTUAL
ST-1		0					40	

SCHEDULE OF SANITARY FITMENTS PROVISIONS

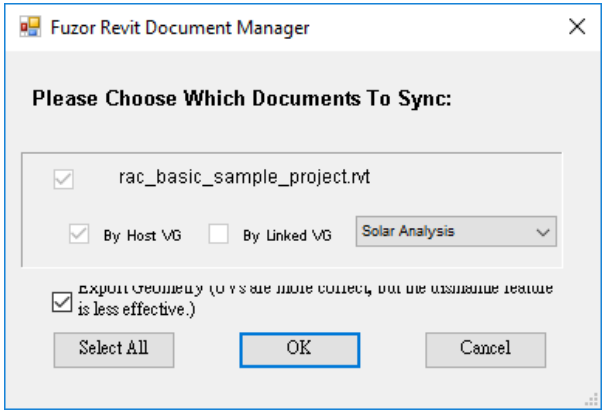
LOCATION	USE	AREA (SQ.M)	CAPACITY			W.C.				BASIN				URINAL		BATH			
			TOTAL	M	F	M		F		M		F				M		F	
						REQ'D	PRO'D	REQ'D	PRO'D	REQ'D	PRO'D	REQ'D	PRO'D	REQ'D	PRO'D	REQ'D	PRO'D	REQ'D	PRO'D
5/F	SHOP/DEPARTMENT STORE	57.167	5	3	2	1	1	1	1	1	1	1	1	0		0	0		
5/F RECREATIONAL FASCILITIES GYMNASIUM	DOMESTIC	40.730	14	7	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5/F RECREATIONAL FASCILITIES READING ROOM	DOMESTIC	38.192	39	20	19	2	2	2	1	2	2	2	2	2	2	2	2	2	2
5/F RECREATIONAL FASCILITIES RECEPTION/LOBBY	DOMESTIC	51.515	6	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5/F RECREATIONAL FASCILITIES SWIMMING POOL	DOMESTIC	67.93	50	16	16	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1/F - 3/5/F (DOMESTIC) (LARGEST UNIT) * UNIT A	DOMESTIC		10	-	-	2	2	0	-	2	2	0	-	0	-	2	2	0	-
1/F - 3/5/F (DOMESTIC) (LARGEST UNIT) * UNIT B	DOMESTIC		7	-	-	1	2	0	-	1	2	0	-	0	-	1	2	0	-
1/F - 3/5/F (DOMESTIC) (LARGEST UNIT) * UNIT C	DOMESTIC		9	-	-	2	2	0	-	2	3	0	-	0	-	2	2	0	-
39/F (DOMESTIC) UNIT A	DOMESTIC		8	-	-	1	1	0	-	1	1	0	-	0	-	1	1	0	-
39/F (DOMESTIC) UNIT B	DOMESTIC		9	-	-	2	2	0	-	2	2	0	-	0	-	2	2	0	-

▪ 5.0 Export Revit model to Fuzor

- Fuzor

In the 3D view → On the Fuzor Plugin tab → Click “Launch Fuzor 2017 Ultimate”

In the Fuzor Revit Documents Manager dialog box → Choose the link file to sync → Select By Linked VG and choose the view



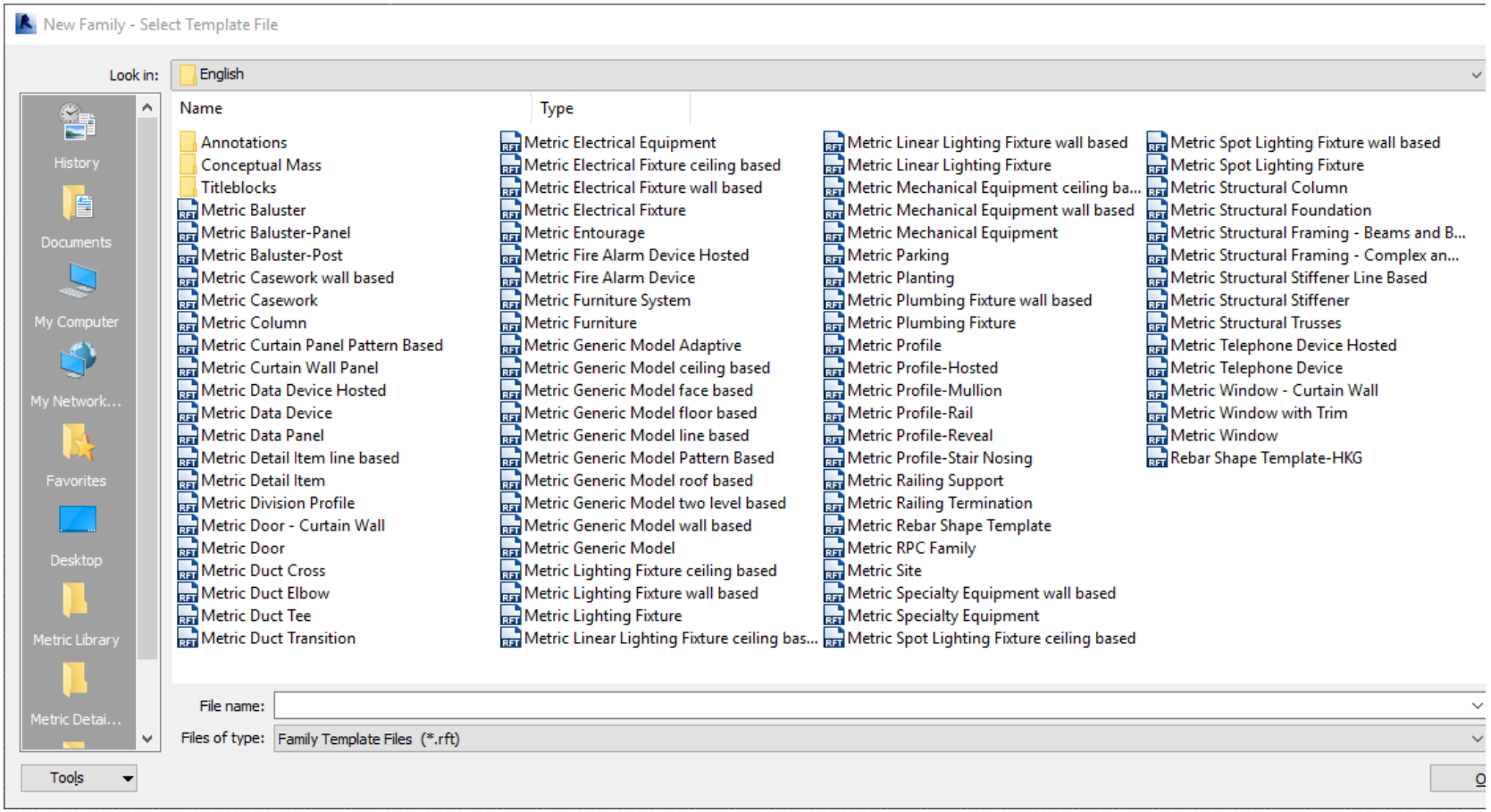
In the Fuzor panel → Click the document tab → On the Fuzor Project Panel → Click Save to Export CHE file for Fuzor

Family

▪ 1.0 Select Suitable Template for Creating New Family

- Create New Family

In the start menu → Families panel → Click “New” → Choose the suitable template*

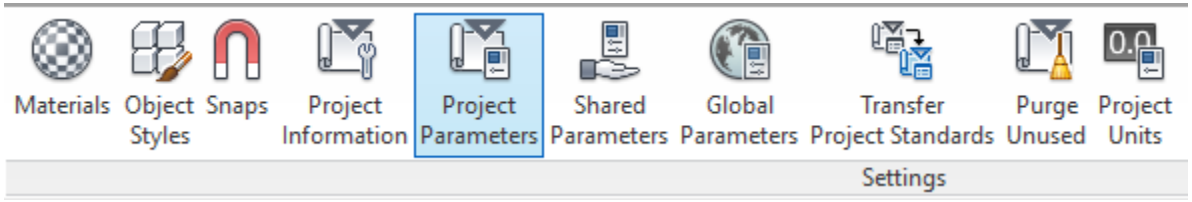


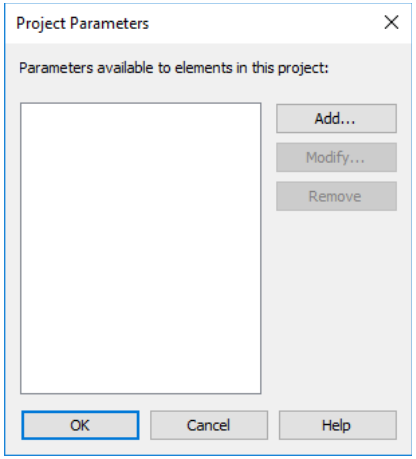
*Family Path : C:\ProgramData\Autodesk\RVT 2016\Family Templates\English

▪ 2.0 Shared Parameter & Project Parameter

- Create Project Parameter

On the Manage tab → Settings panel → Click “Project Parameters” → Click “Add”





- Click “Project parameter” (1)

- Set the Name (2)

This is used for describing the parameter as well as referencing it in schedules and the Properties palette.

- Choose type of parameter (3)

Choosing between project and shared parameter is the first choice you’ll need to make. We’ll get to shared parameters later, so for now, leave it at the default of Project Parameter.

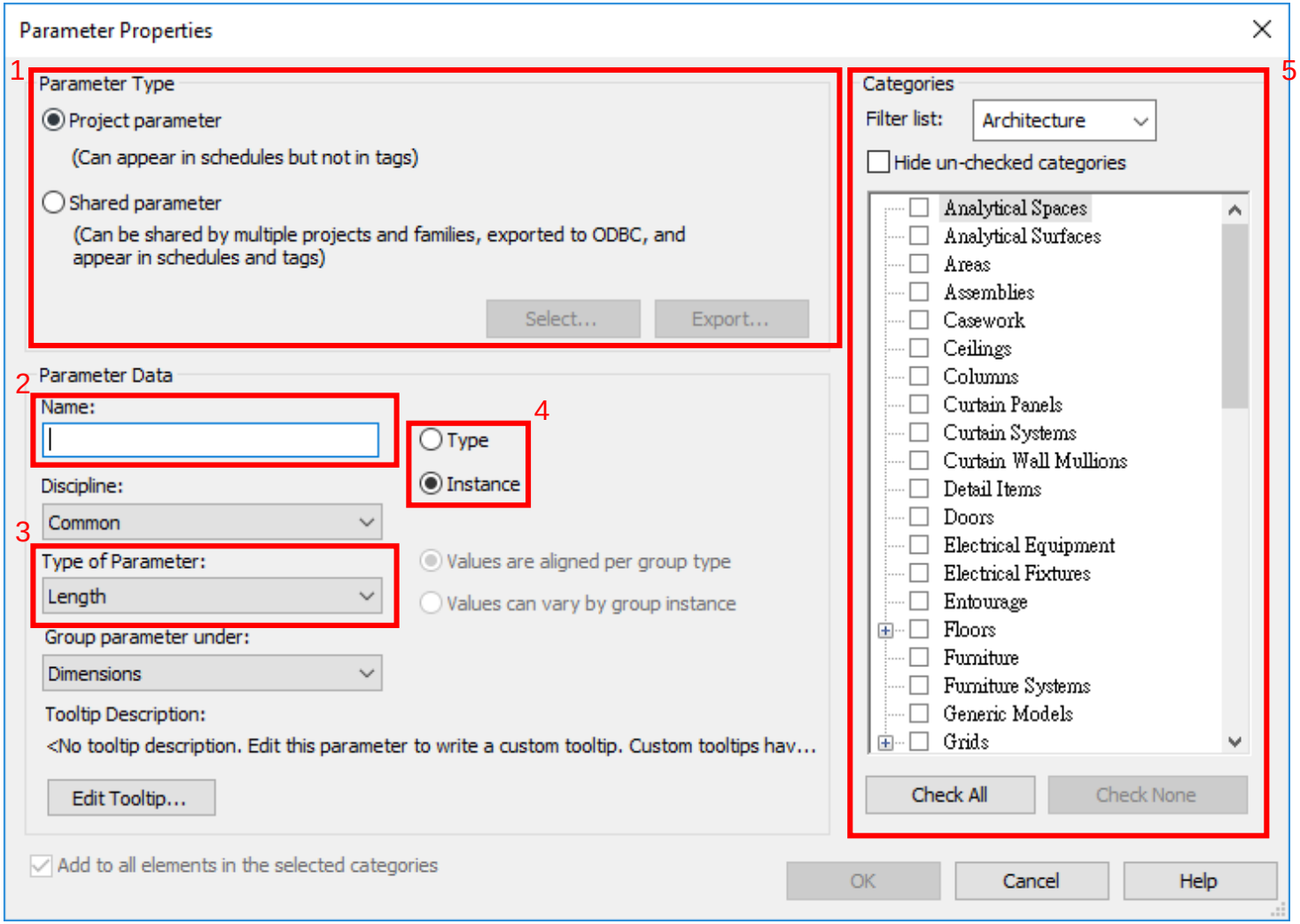
- Click “Type” or “Instance” (4)

Set to Instance. This setting controls the uniqueness of the parameter itself. Both parameter types can be mixed within a given family. In this example, use an instance parameter because a user wants to designate whether something is reusable on an element-by-element basis.

- Select Categories (5)

Categories is the list of element types in which this new property will appear. This is where you define all the category types you’ll associate with the new parameter. Category selections are flexible. If you decide you need to change categories after you create your parameter, you can easily come back to the Project Parameters tool and modify your selection.

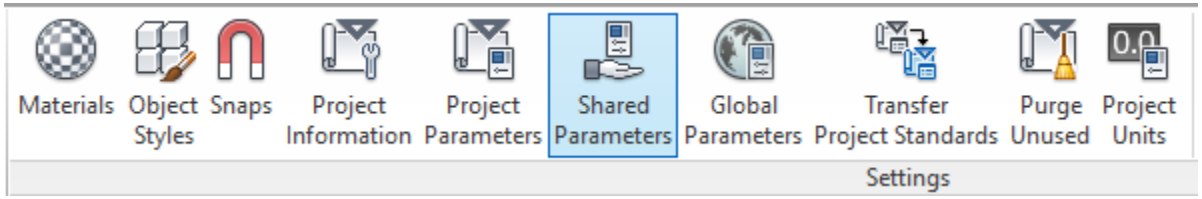
▪ 2.0 Shared Parameter & Project Parameter



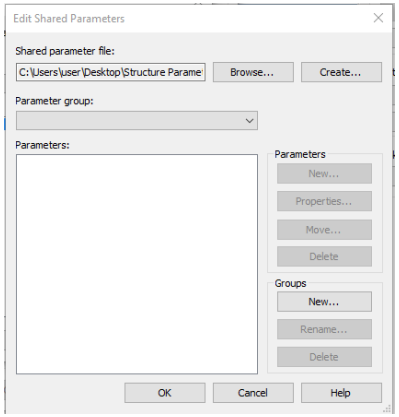
▪ 2.0 Shared Parameter & Project Parameter

- Create Shared Parameter

On the Manage tab → Settings panel → Click “Shared Parameters” → Click “Create”



In the Edit Shared Parameters Dialog, user can create a Parameter group and add new parameters in Parameter group



- Create New Parameter Group

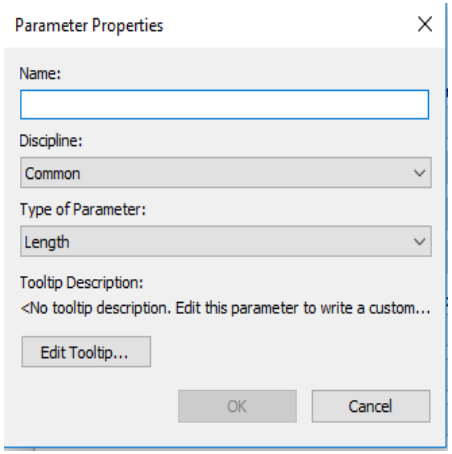
In Group panel → Click “New” → Set the group name

- Create New Parameters

In Parameter panel → Click “New” → Set parameter name → Choose type of parameter

- Set up Shared Parameter in Project

On the Manage tab → Settings panel → Click “Project Parameters” → Click “Add” → Click “Shared parameter” (1) → Click “Type” or “Instance” (4) → Select Categories (5)



- Project Parameter vs. Shared Parameter

	Project Parameter	Shared Parameter
Appear in schedule	O	O
Be used in tags	X	O
Be used in multiple projects + families	X	O
Be used in Key schedule to drive main schedule	O	X

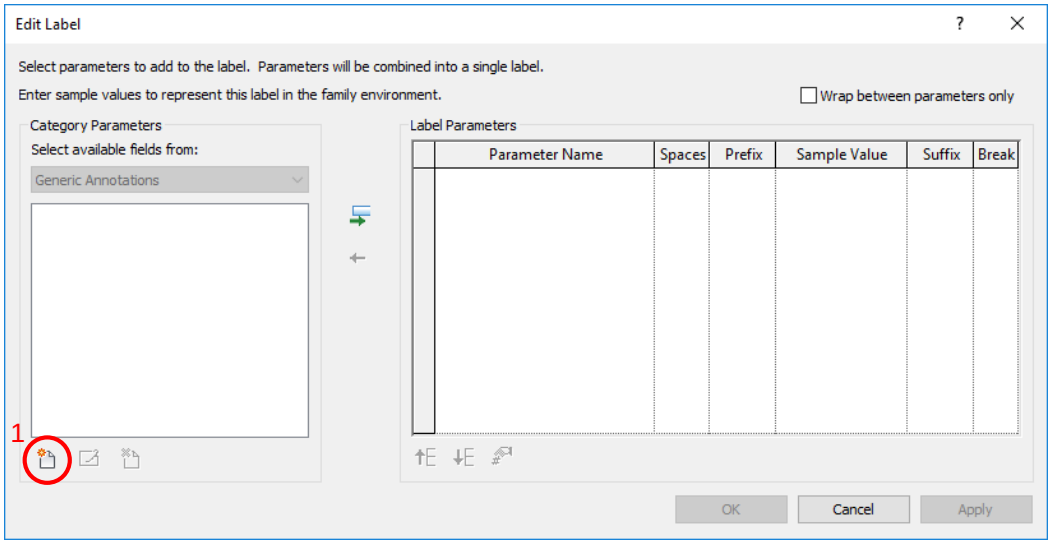
▪ 3.0 Create Tag Family

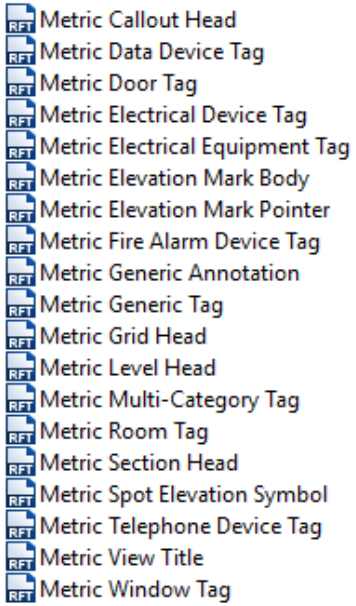
- Tag Family

Select the application menu → Choose “New” → Click “Family → Choose the family template in the Annotations folder → Use the suitable template

- Create Tag Family

On the Create tab → Text panel → Click “Label” → In the Edit Label dialog box → Click “Create” (1)





- Set up Parameters

If user want to be able to both schedule and tag your parameter, it will need to create a shared parameter

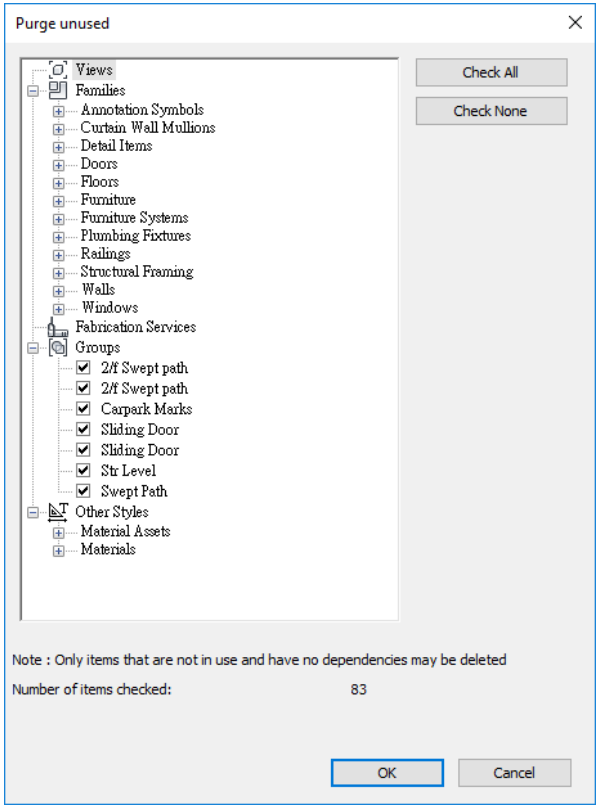
*Family Path : C:\ProgramData\Autodesk\RVT 2016\Family Templates\English\Annotations

4.0 Purge Unused Items

- Purge Unused

If your file is very large, it can take several minutes to run, but eventually user will be presented with a list of all the unused elements within your file.

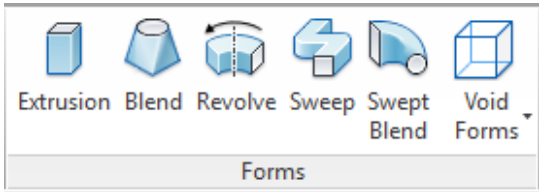
On the Manage tab → Settings panel → Click “Purge Unused” → In Purge unused dialog box → Click the item as user will delete it

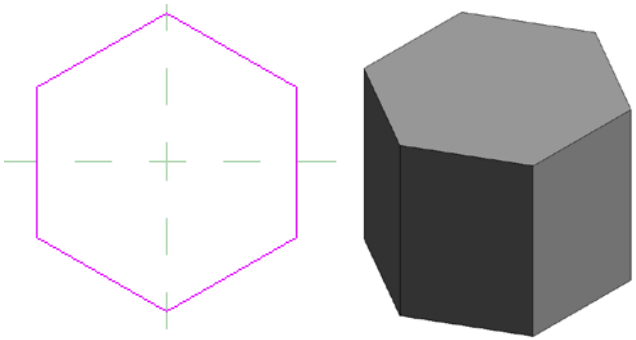
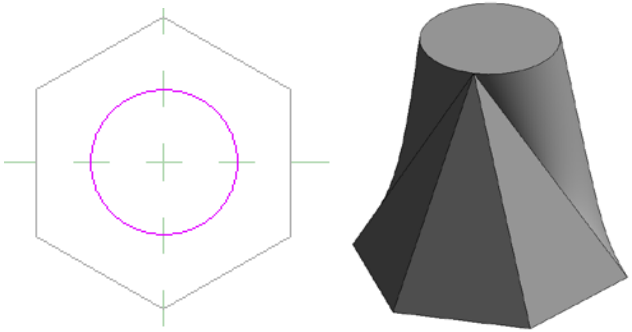


5.0 Making Family Tools

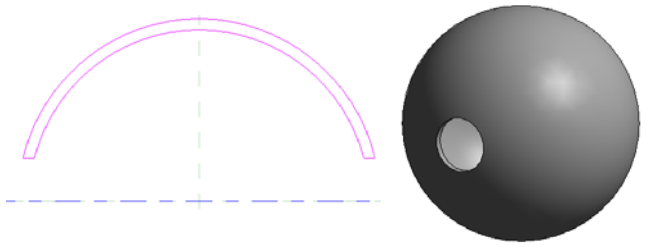
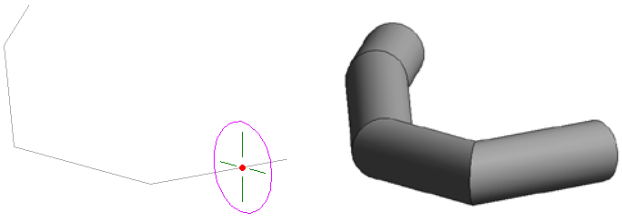
- Family Tools

There are five discrete geometry types in the Family Editor: Extrusion, Sweep, Blend, Revolve, and Swept Blend. Both solid and void forms can be modeled from these shapes.



	Example	Description
Extrusion		A solid or void extrusion is the easiest form to create. You sketch a 2D profile of the form on a work plane, and then extrude that profile perpendicular to the plane on which you sketched it. Click “Extrusion” → Sketch the profile
Blend		The Blend tool blends 2 profiles (boundaries) together. For example, if you sketch a large rectangle and a smaller rectangle on top of it, Revit LT blends the 2 shapes together. Click “Blend” → Sketch the base profile →Click “Edit Top” on the Modify tab → Sketch the Top profile

5.0 Making Family Tools

	Example	Description
Revolve		A revolve is a form that user create by revolving a shape around an axis. User can revolve the shape in a circle or any fraction of a circle. If the axis touches the revolve shape, the result is a solid. Click “Revolve” → Sketch the revolve → Sketch a closed loop → Click “Axis Line” on the Modify tab → Specify the start and endpoint of the axis at the desired orientation
Sweep		Create a 3D shape by sweeping a 2D profile along a path. Click “Sweep” → Click “Sketch Path” → Sketch a single closed or single open path → Click “Select Profile” on the Modify tab → Click Edit Profile → Sketch the profile
Swept Blend		The Swept Blend tool allows you to create a blend that has 2 different profiles and then sweep it along a path. Click “Swept Blend” → Click “Sketch Path” → Sketch a path → Click “Select Profile 1” on the Modify tab → Click Edit Profile → Sketch the profile → Click “Select Profile 2” on the Modify tab → Click Edit Profile → Sketch the profile

6.0 Introducing Generic Model Under Family

- Generic Model

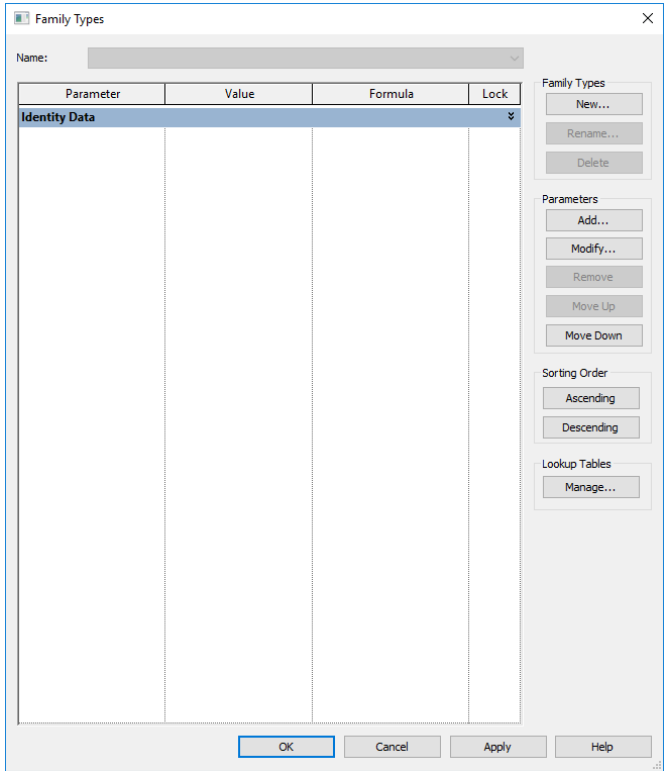
If no suitable template for create family, we suggest use generic model template to create it. Generic model haven't any information and default parameters, so user need set up the parameters in family for family information

Select the Application menu → Choose New → Click "Family" → Choose the family template "Metric Generic Model"*

- Generic Model Type

Generic Model template have different base template

- Metric Generic Model Adaptive
- Metric Generic Model ceiling based
- Metric Generic Model face based
- Metric Generic Model floor based
- Metric Generic Model line based
- Metric Generic Model Pattern Based
- Metric Generic Model roof based
- Metric Generic Model two level based
- Metric Generic Model wall based
- Metric Generic Model



*Family Path : C:\ProgramData\Autodesk\RVT 2016\Family Templates\English

7.0 Work Plane / Reference Plane / Reference Line

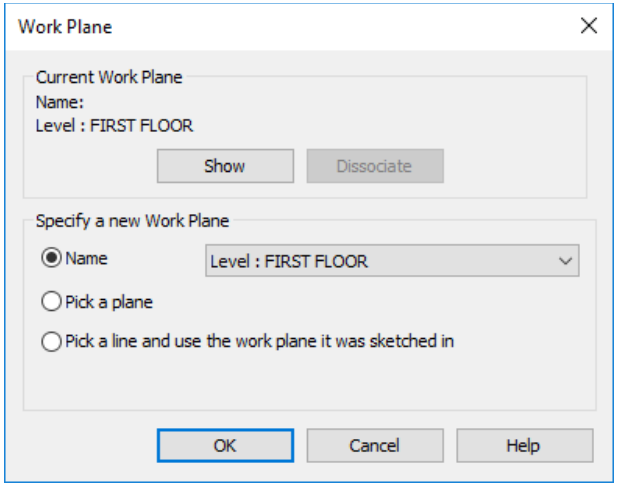
- Work Planes

A work plane is a virtual 2-dimensional surface, it is used in the following ways :

1. As the origin for a view
2. For sketching elements
3. For enabling tools in particular views, such as Rotate and Mirror in a 3D view
4. For placing work plane-based components

- Set Work Planes

On the Architecture/ Structure/ Systems tab → Work Plane panel → Click “Set”

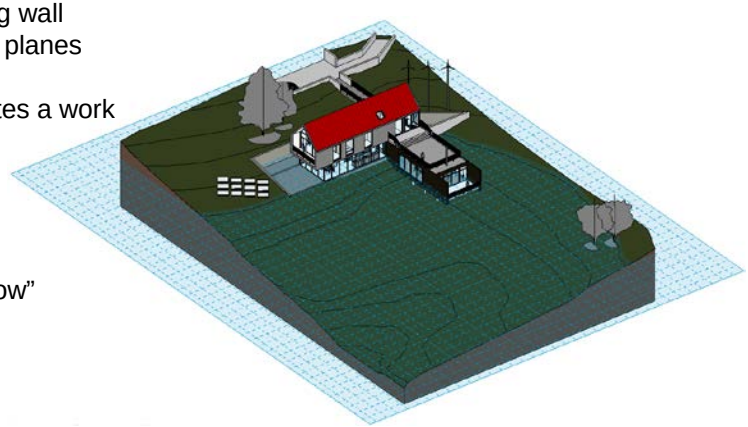


In the Work Plane dialog box :

1. Click “Name” → Select plane follow from the list, includes level, grid or reference plane
2. Click “Pick a plane” → Select any plane that can be dimensioned, including wall faces, faces in linked models, extrusion faces, levels, grids, and reference planes
3. Click “Pick a line and use the work plane it was sketched in” → Revit creates a work plane that is coplanar with the work plane of the selected line

- Show Work Planes

On the Architecture/ Structure/ Systems tab → Work Plane panel → Click “Show”



7.0 Work Plane / Reference Plane / Reference Line

- Reference Plane

These define a single plane that can be set to host sketch lines or geometry

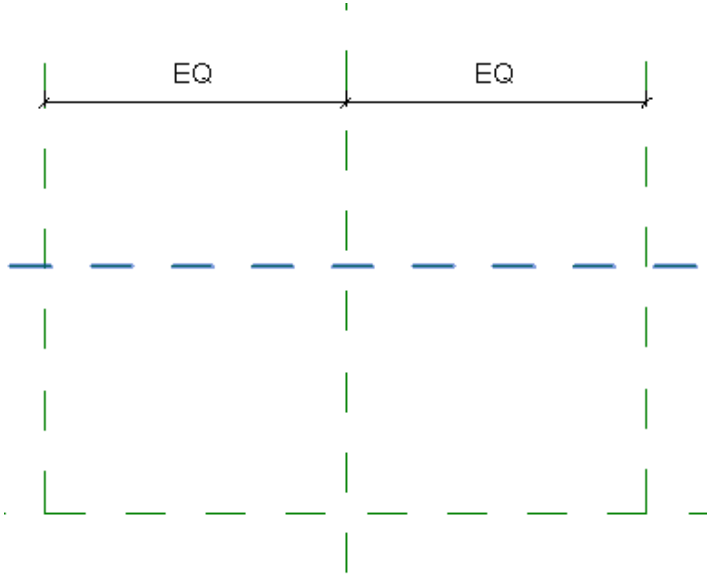
They're best for controlling linear geometric relationships—that is to say, geometry that will flex in a linear fashion. Reference planes don't have endpoints. This is important because user don't want to use reference planes for controlling angular or directional relationships.

- Reference Line

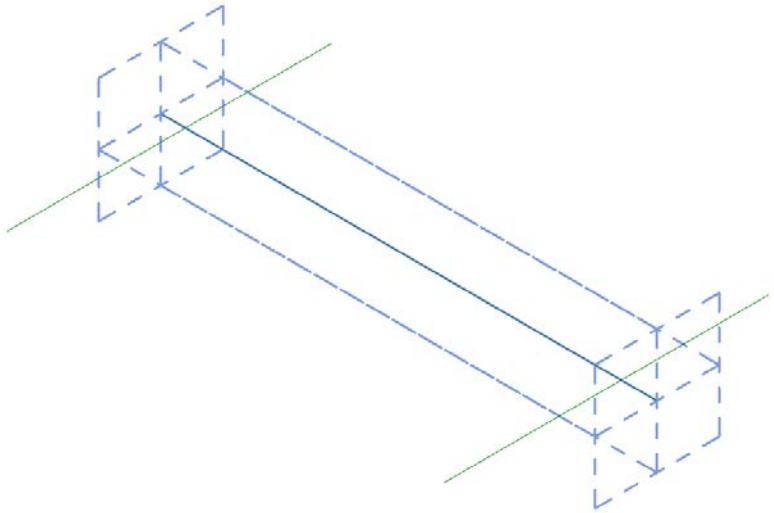
By definition these datum objects have endpoints and are great for controlling angular and directional relationships

They can have four axes of reference, two along the length of the line (which are perpendicular to each other) and one at each end that is perpendicular to the line. User can also creates curved reference lines, but they have only planes that may be used for hosting at each end. There are no references along the curved line.

- Reference Plane Sample :



- Reference Line Sample :



▪ 8.0 Change Generic Model to Structural Elements

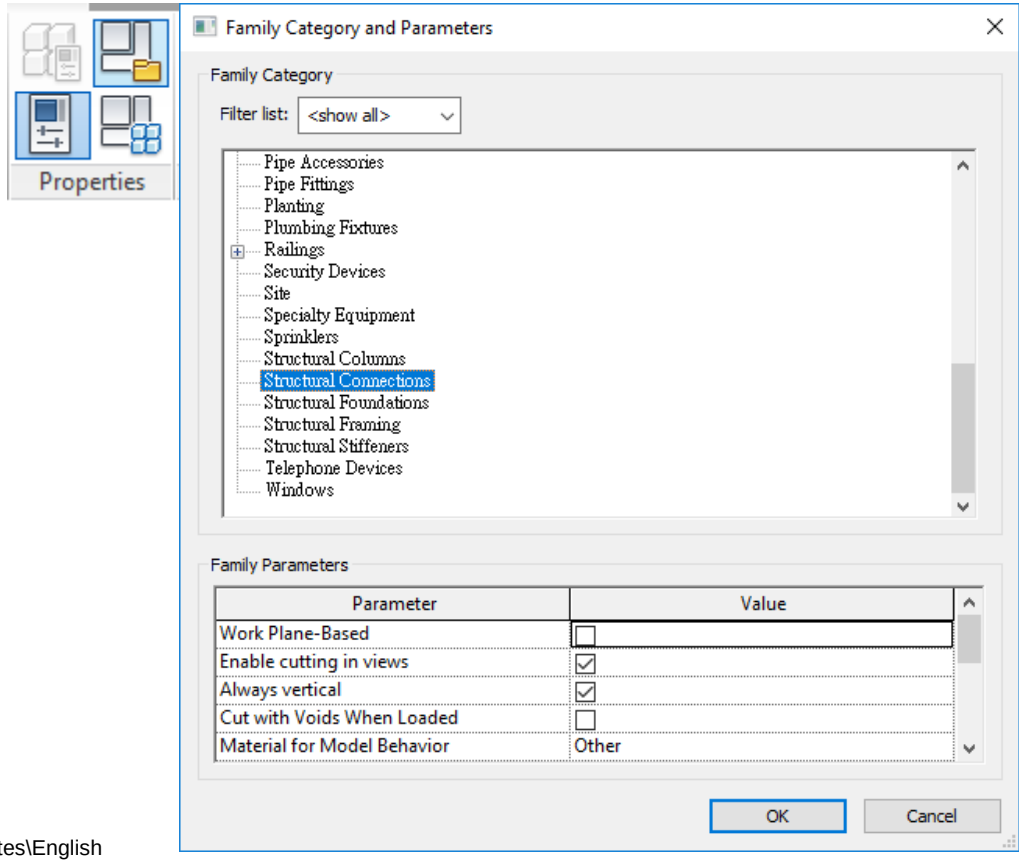
- Change the category

Select the Application menu → Choose New → Click “Family” → Choose the family template “Metric Generic Model”* → On the Create tab → Properties panel → Click “Family Category & Parameters” → In the dialog box → Select the Structural Connections on the list

- Change the category when no suitable family template

1. Air Terminals
2. Cable Tray Fittings
3. Communication Devices
4. Conduit Fittings
5. Duct Accessories
6. Duct Fittings
7. Lighting Devices
8. Nurse Call Devices
9. Pipe Accessories
10. Pipe Fittings
11. Security Devices
12. Sprinklers
13. Structural Connections

*Family Path : C:\ProgramData\Autodesk\RVT 2016\Family Templates\English

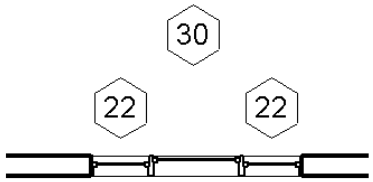


9.0 Nested Family

- Nested Family

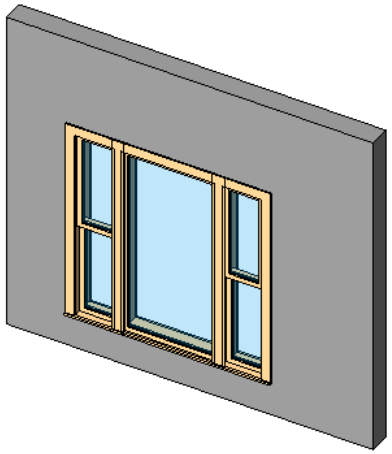
User can nest (insert) families within other families to create new families that contain the combined family geometry

- Nested and shared families loaded into a project



<Window Schedule>

A	B
Family	Type Mark
Gang_Fixed Host	30
Double Hung_Shared	22
Double Hung_Shared	22



Notice the double hung windows are tagged and scheduled separately. The fixed window that was the host is not included in the schedule and not tagged. However, notice the ganged window name, Gang _ Fixed Host, is listed with the subcomponents. This window represents the main window composed of the of the 3 subcomponent windows.

In order to get both the fixed and double hung sub-component windows to tag and schedule, the same triple window family was created, but this time a new window family is used as the host family and both the fixed window and the double-hung windows loaded as shared families. Notice the difference in the tagging and scheduling.

When user create a nested family of shared components, the first decision user need to make is what category the host family is belongs to. This decision has many downstream implications for tagging, scheduling, and ODBC information, as described in the examples below.

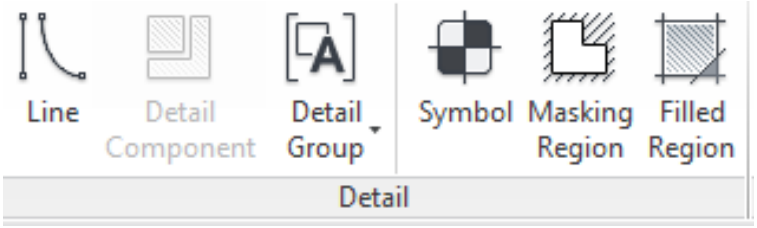
▪ 10.0 Symbol / Leader with Text

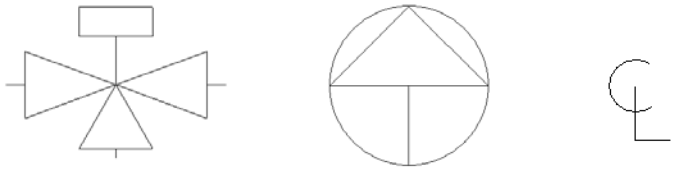
- Placing Annotation Symbols

Much like detail components, annotation symbols are families that contain only 2D graphics including lines, text, and fill or masking regions

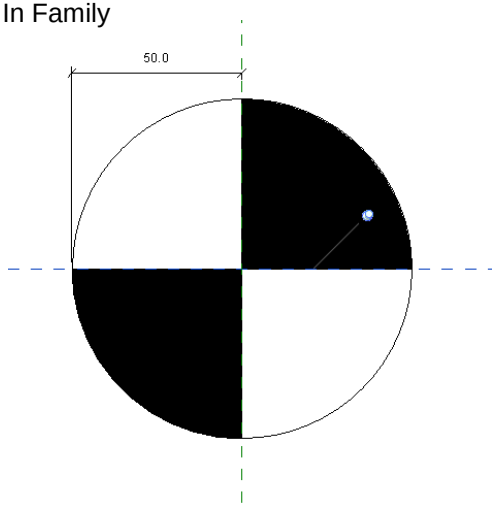
- Create Symbol

Select the Application menu → Choose New → Click “Family” → Choose the family template “Metric Generic Annotation”* → On the Create tab → Detail panel → Click “Line” for draw symbol and Click “Filled Region” for fill the pattern in symbol (User draw the symbol scale need 1:1)

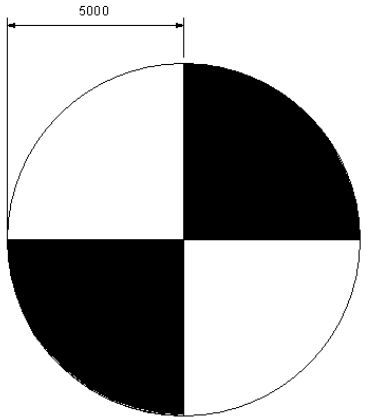




- In Family



- In Project (1:100)

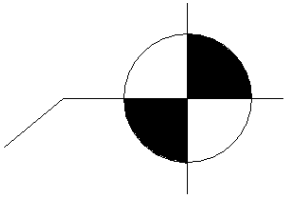


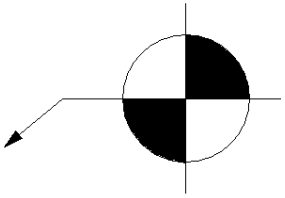
*Family Path : C:\ProgramData\Autodesk\RVT 2016\Family Templates\English\Annotations

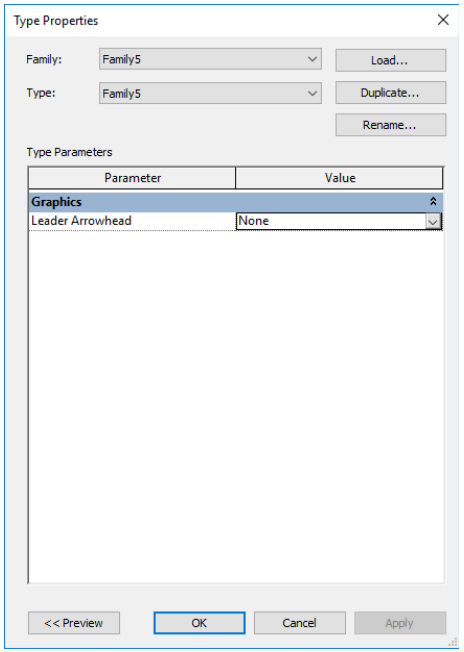
▪ 10.0 Symbol / Leader with Text

- Add Leader

In the project → Click the symbol element → On the Modify tab → Leader panel → Click “Add” → And click the symbol element → Click “Edit Type” in the Properties browser → Choose the Leader Arrowhead type

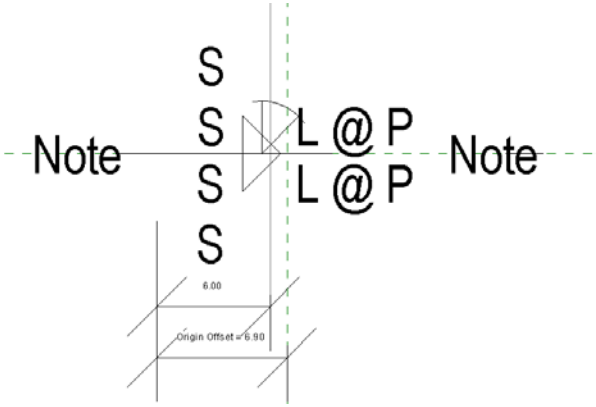




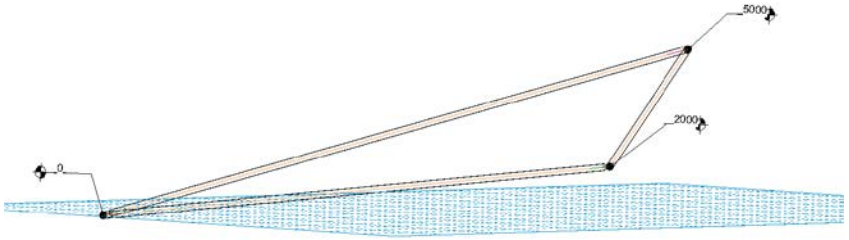


- Add Text

In the Family → On the Create tab → Text panel → Click “Label” → Add the parameter in family



▪ 11.0 3 Point Set Up Plane

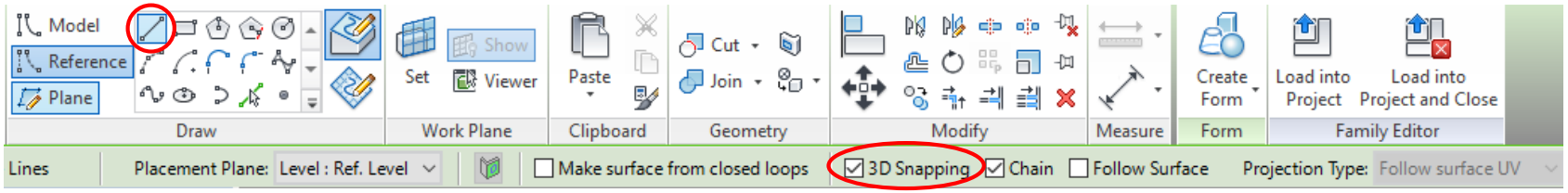


- Unique a Work Plane

If user can't set up the unique work plane, we suggest create a 3 point family to supply user find the plane

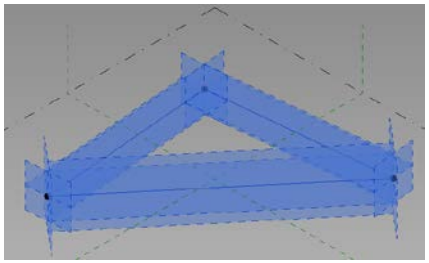
- Create family

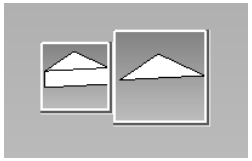
Select the Application menu → Choose New → Click "Family" → Choose the family template "Metric Generic Model Adaptive"* → On the Create tab → Draw panel → Click "Reference" → Choose "Line" and Click "3D Snapping" → Draw the triangle in view and Click it → Click "Create Form" on the modify tab and choose face solid form

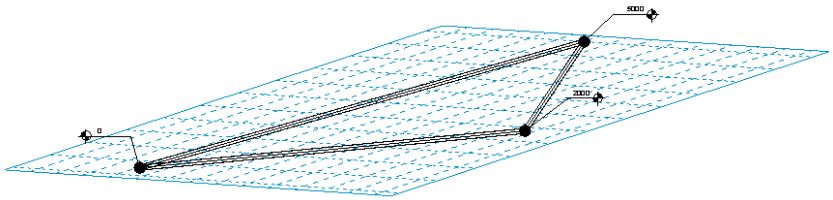


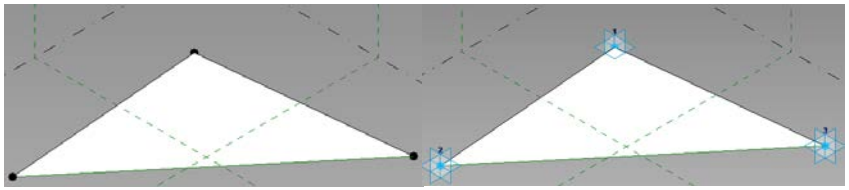
- Use the 3 point family

Select 3 reference point → Click "Make Adaptive" on the modify tab → Click "Load into Project" → Click "Component" and use it → Click "Set" on the architecture tab and click "pick a plane" → Pick a face to set up unique plane









*Family Path : C:\ProgramData\Autodesk\RVT 2016\Family Templates\English

Annotation

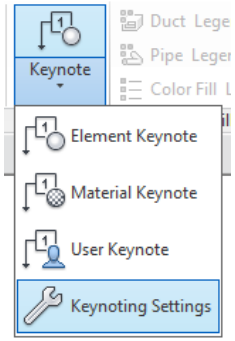
▪ 1.0 Apply Keynote for All Structural Materials

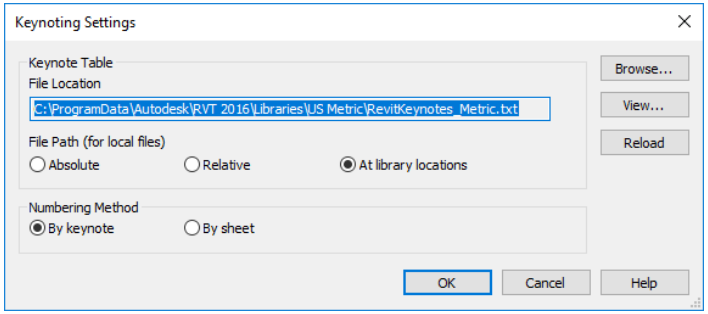
- Keynotes

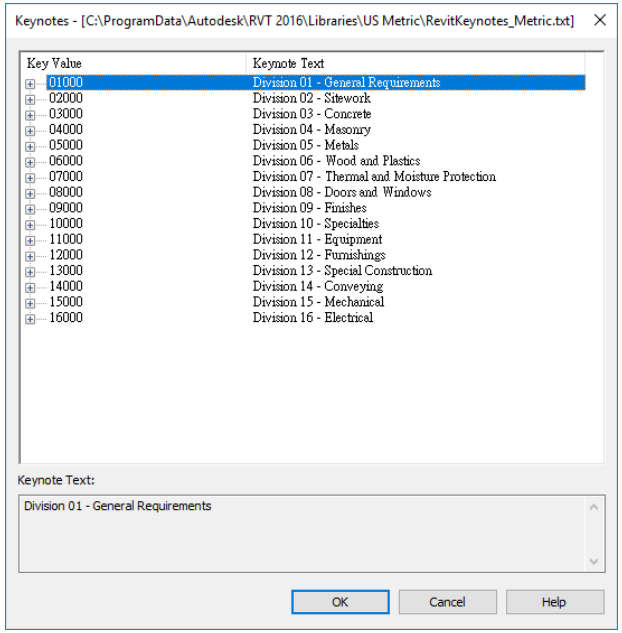
A keynote parameter is available for all model elements (including detail components) and materials. User can tag each of these elements using a keynote tag family. The keynote value is derived from a separate text file that contains a list of keynotes.

- Keynoting Settings

1. On the annotate tab → Tag panel → Keynote drop – down → Click “Keynoting Settings” → In the Keynoting Settings browser → Go to file location to edit Keynote file (User can click “View” open the keynote list)



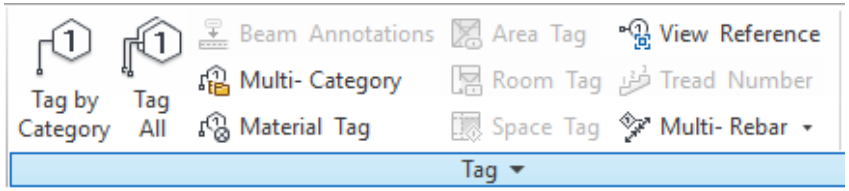




▪ 2.0 Tag

- Tag

It is Annotation for identifying elements in a drawing. Tags are text labels for elements such as doors, walls, windows, rooms, and several other objects that architects typically need to refer to in a set of drawings.



- Tag By Category

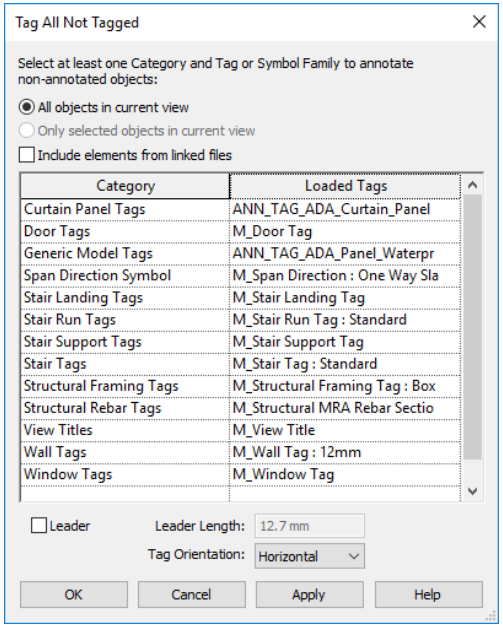
The Tag By Category button is possibly one of the most frequently used Tag commands

On the Annotate tab → Tag panel → Click “Tag By Category” → Click a single element in 2D view

- Tag All

The Tag All button, which activates the Tag All Not Tagged command, will do exactly that: tag all the untagged elements of a selected category within a given view

On the Annotate tab → Tag panel → Click “Tag All” → Select the element categories to tag all → Can click Leader to tag (if it is link file, click include elements from linked files)

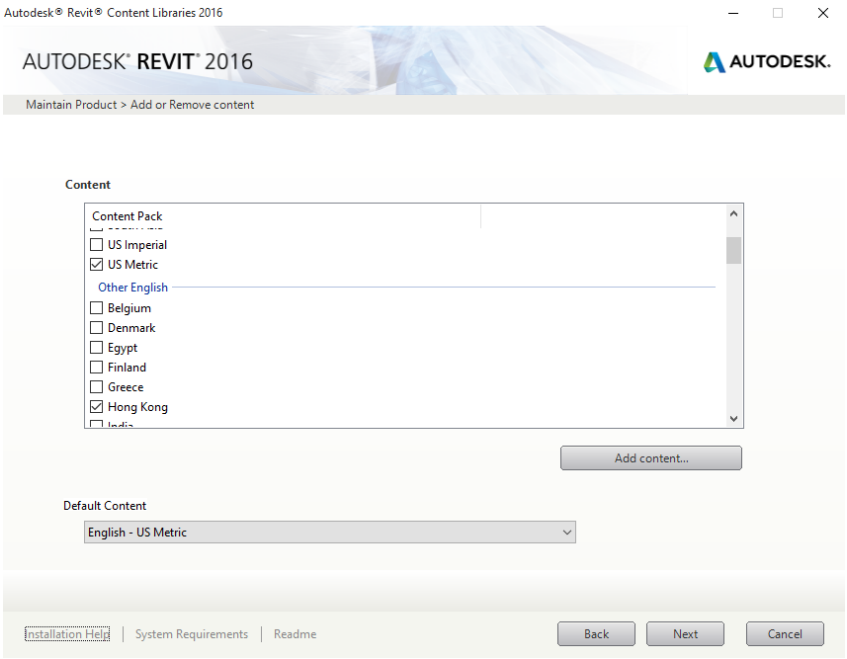


Steel

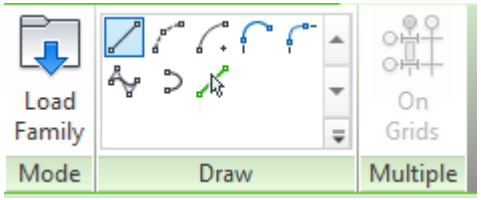
1.0 Load Structural Steel Family

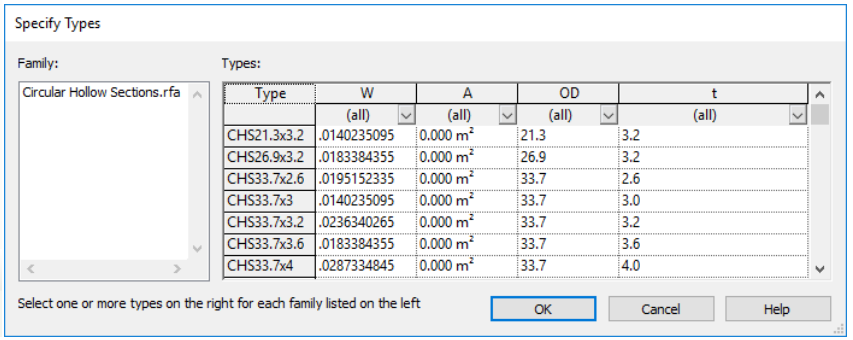
- Steel

Suggest to choose Hong Kong in content pack for download to Hong Kong standard steel and the default content set US Metric as install Revit.



On the Structural tab → Structure panel → Click “Beam” → On the modify tab → Click “Load Family” → Choose the family by structural framing*



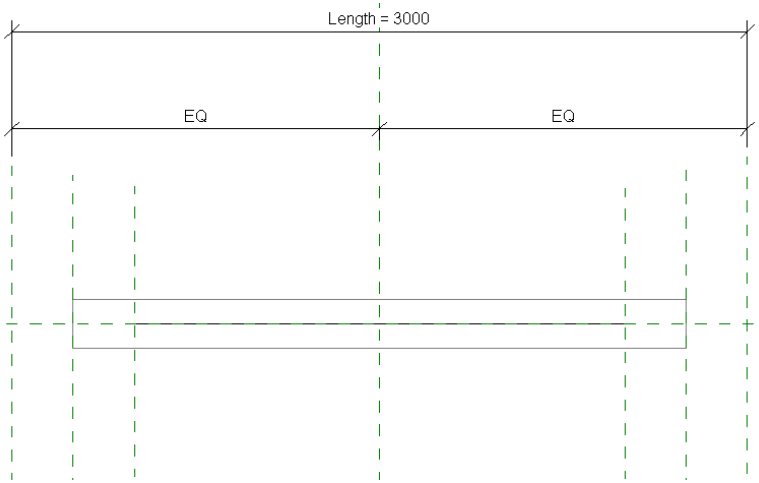


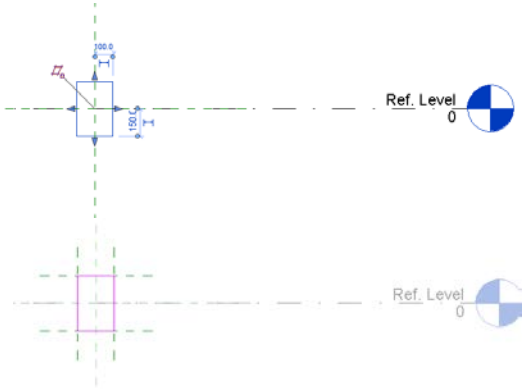
*Family Path : C:\ProgramData\Autodesk\RVT 2016\Libraries\Hong_Kong\Structural Framing\Steel\Hong Kong Specific

▪ 2.0 Create Steel Family - Beams and Braces & Detail Item

- Create Steel Family

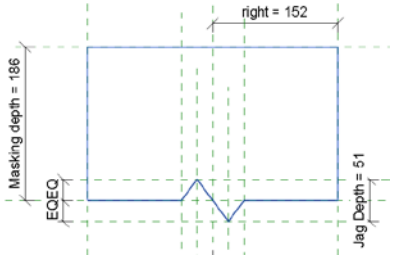
Select the Application menu → Choose New → Click “Family” → Choose the family template “Metric Structural Framing - Beams and Braces” → Go to elevation view – Left or Right → Click element → In the Modify tab → Click “Edit Extrusion”

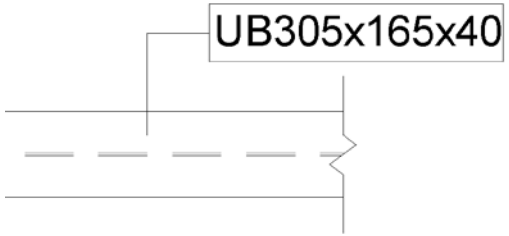




- Detail Item – Break Line

On the Annotate tab → Detail panel → Component drop – down → Click “Detail Component” → Choose the family category by Detail Item → Choose “M_Break Line”* (Need modify this family for Circular Hollow Sections)



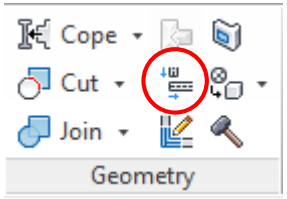


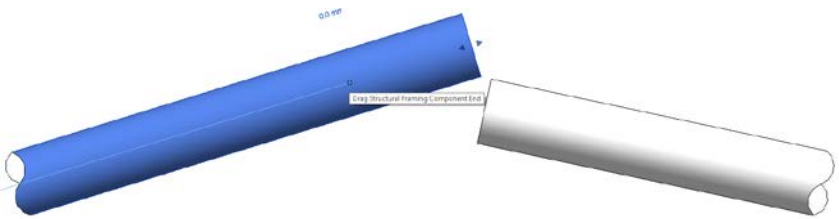
*Family Path : C:\ProgramData\Autodesk\RVT 2016\Libraries\Hong_Kong\Detail Items\Div 01-General

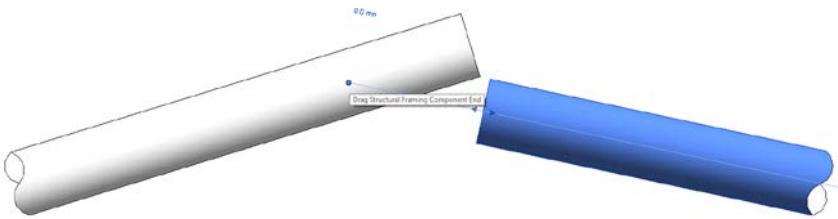
▪ 3.0 Steel connection at corner

- Steel Join

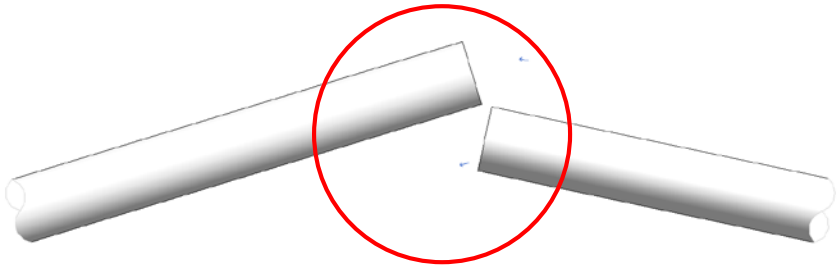
Confirm Structural Framing end point same location → On the Modify tab → Geometry panel → Click

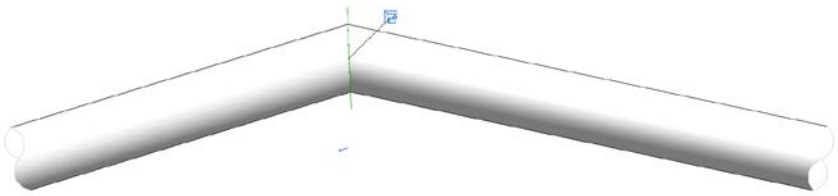






Click the arrow, a longer beam is cut back from a shorter beam

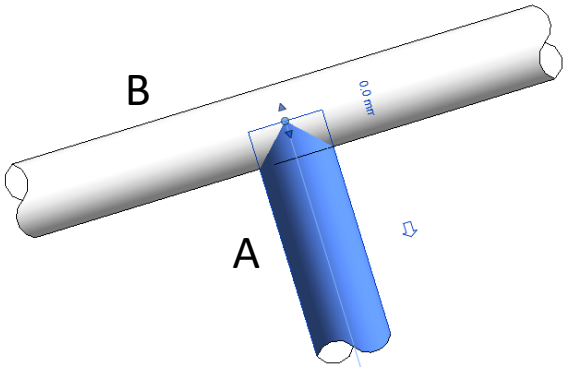


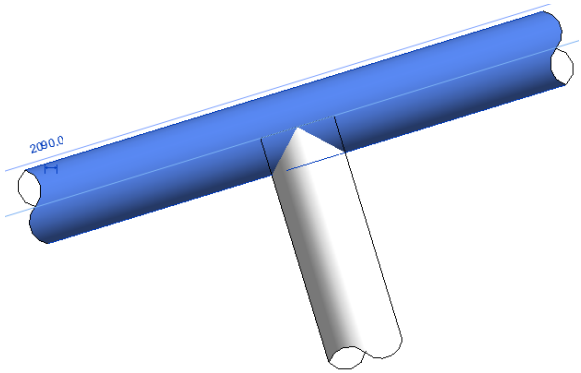


▪ 4.0 Copping Steel Member

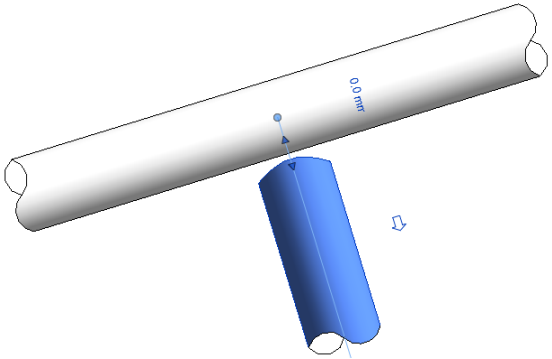
- Cope

Coping applies to steel beams and column, such as locations where beams frame into grids → On the Modify tab → Geometry panel → Click “cope”

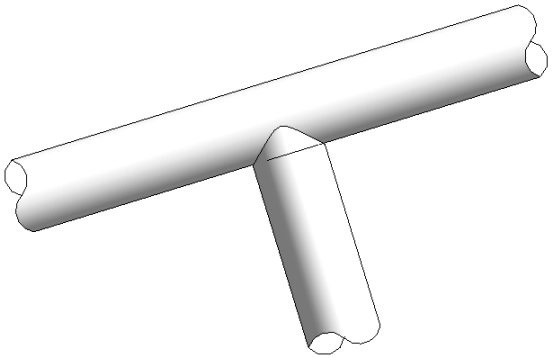




First click A, then click B → Select A element → In the Properties → Structural list → Set up the coping Distance to 1



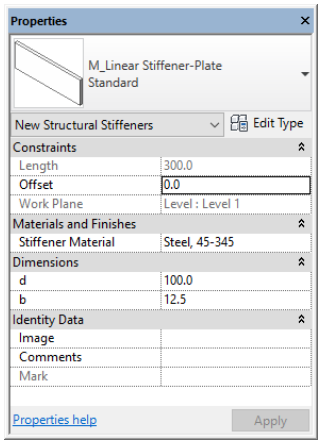
Structural	
Stick Symbol Location	Center of Geometry
Start Connection	None
End Connection	None
Cut Length	334.9
Structural Usage	Other
Coping Distance	1.0
Camber Size	
Number of studs	
Enable Analytical Model	☑

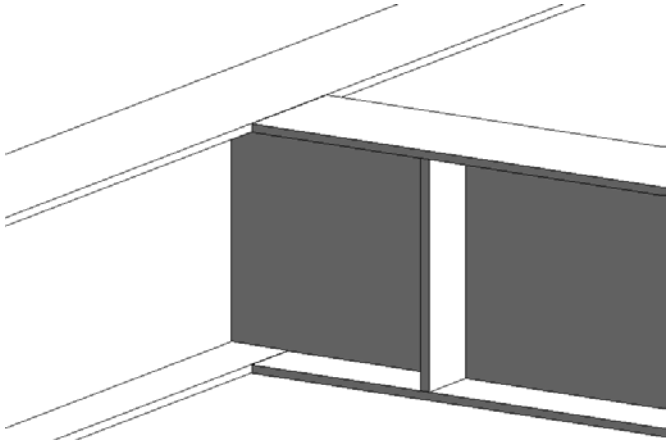


▪ 5.0 Connection Details/ Stiffener, Gusset Plate

- Structural Stiffener

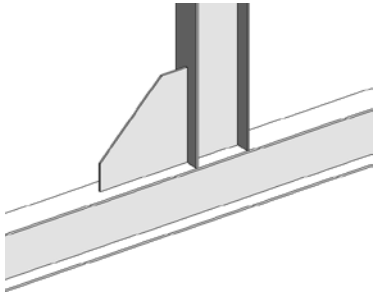
On the Structure → Model panel → Component drop – down → Click “Place a Component” → On the Properties palette → Type selector drop – down → Select a stiffener type





- Gusset Plate

On the Structure → Model panel → Component drop – down → Click “Place a Component” → Click “Load Family” → Choose the family on Structural Connections*

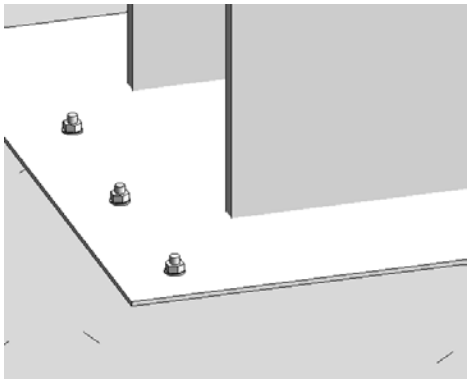


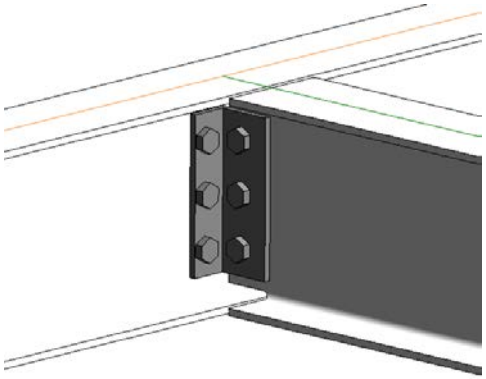
*Family Path : C:\ProgramData\Autodesk\RVT 2016\Libraries\Hong_Kong\Structural Connections\Steel

6.0 Load & Create Bolt Detail

- Load Bolt & Nuts

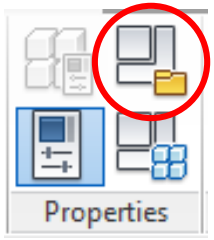
On the Structure → Model panel → Component drop – down → Click “Place a Component” → Click “Load Family” → Choose the family on Structural Connections*

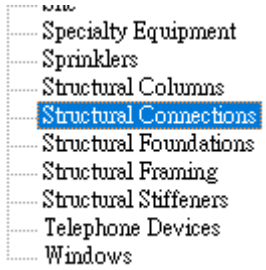




- Create Bolt & Nuts

Select the Application menu → Choose New → Click “Family” → Choose the family template “Metric Generic Model face based” → On the Create tab → Properties panel → Click “Family Category & Parameters” → Click Structural Connections on the Family Category list



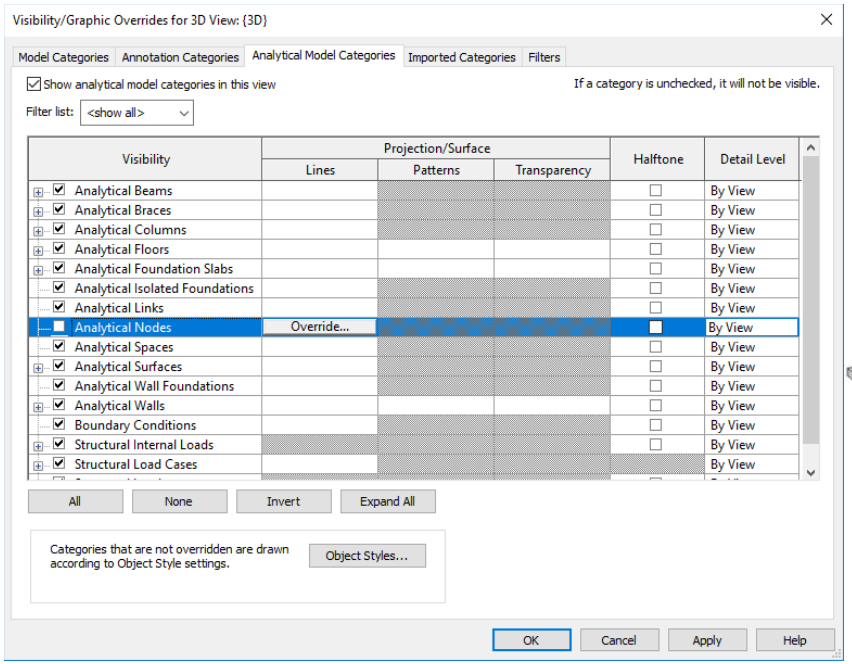


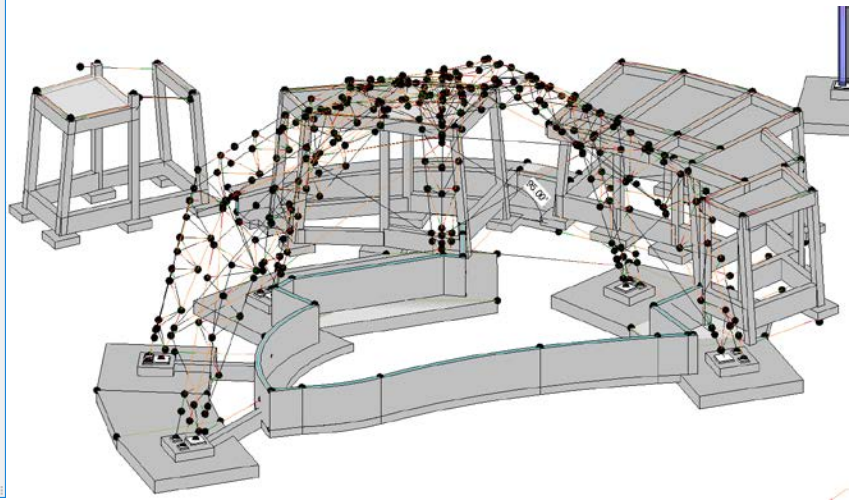
*Family Path : C:\ProgramData\Autodesk\RVT 2016\Libraries\Hong_Kong\Structural Connections\Mounting Parts\Anchor Bolts

▪ 7.0 Edit Analytical Model Node

- Analytical Model

In the view → Open Visibility / Graphic Overrides → On the Analytical Model Categories → Click “Analytical Nodes” → Click 



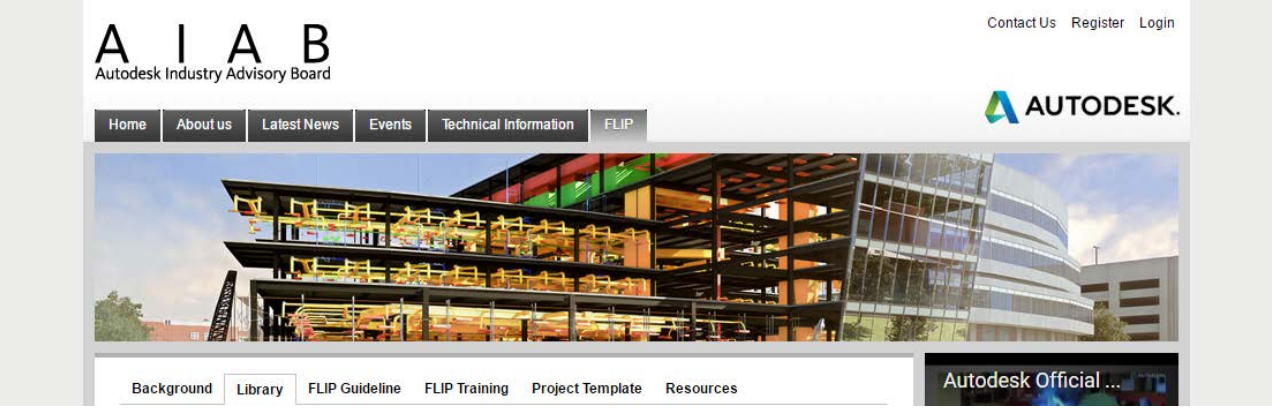


Miscellaneous

1.0 Family Library Interchange Program

- FLIP

Family Library Interchange Program (FLIP) is the collaboration between Autodesk Far East Ltd and local BIM Consultant Advanced Construction Information Development Ltd (A.C.I.D.) and Synnex Technology International (HK) Ltd.



It is a well-organized web-based platform that standardized and localized Families are stored and categorized according to strict guidelines. Naming convention, styles, level of details and parametric properties are systematically organized according to local practices.

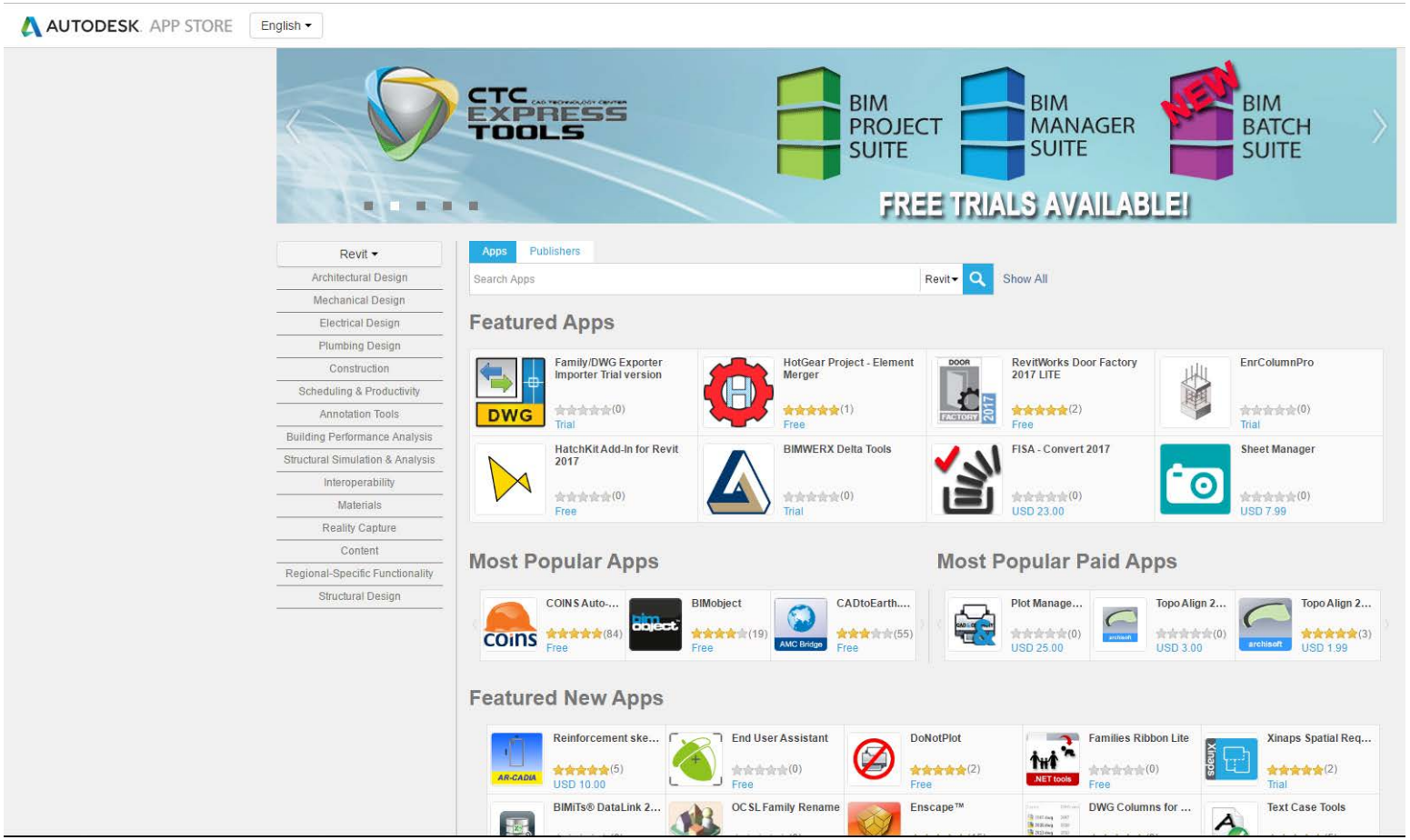
Suggested Family Type for use with the FLIP System based on FLIP-specific naming convention system and technical consideration for the local market

Website : http://www.aiab.org/index.php/flip-guideline

2.0 Exchange Apps

- Exchanges Apps

Autodesk Exchange Apps is an online resource where you can browse and purchase Apps (including product-specific content such as models, training materials, and eBooks) – and is available to several Autodesk Products.



3.0 Revit Formulas for "everyday" usage

- Exponentiation

X^Y = X ^ Y

- Circles with pi π

Usage in Revit = pi()
Circumference = pi() * (Radius * 2)
Circumference = pi() * Diameter
Circle Area = pi() * Radius ^ 2

- Conditional statements

Conditional statement uses this structure:
IF (<condition>, <result-if-true>, <result-if-false>)

Supported Conditional Operators
< Less than
> Greater than
= Equal
/ Divide
AND Both statements are true
OR One of the statements is true
NOT Statement is false

- More Revit Formulas

Website : http://www.revitforum.org/tutorials-tips-tricks/1046-revit-formulas-everyday-usage.html

- Round Function In Formulas

ROUND(x)

round (23.4) = 23
round (23.5) = 24
round (23.6) = 24
round (-23.4) = -23
round (-23.5) = -23
round (-23.6) = -24

ROUNDDOWN(x)

rounddown (23.0) = 23
rounddown (23.5) = 23
rounddown (23.9) = 23
rounddown (-23.0) = -23
rounddown (-23.5) = -24
rounddown (-23.9) = -24

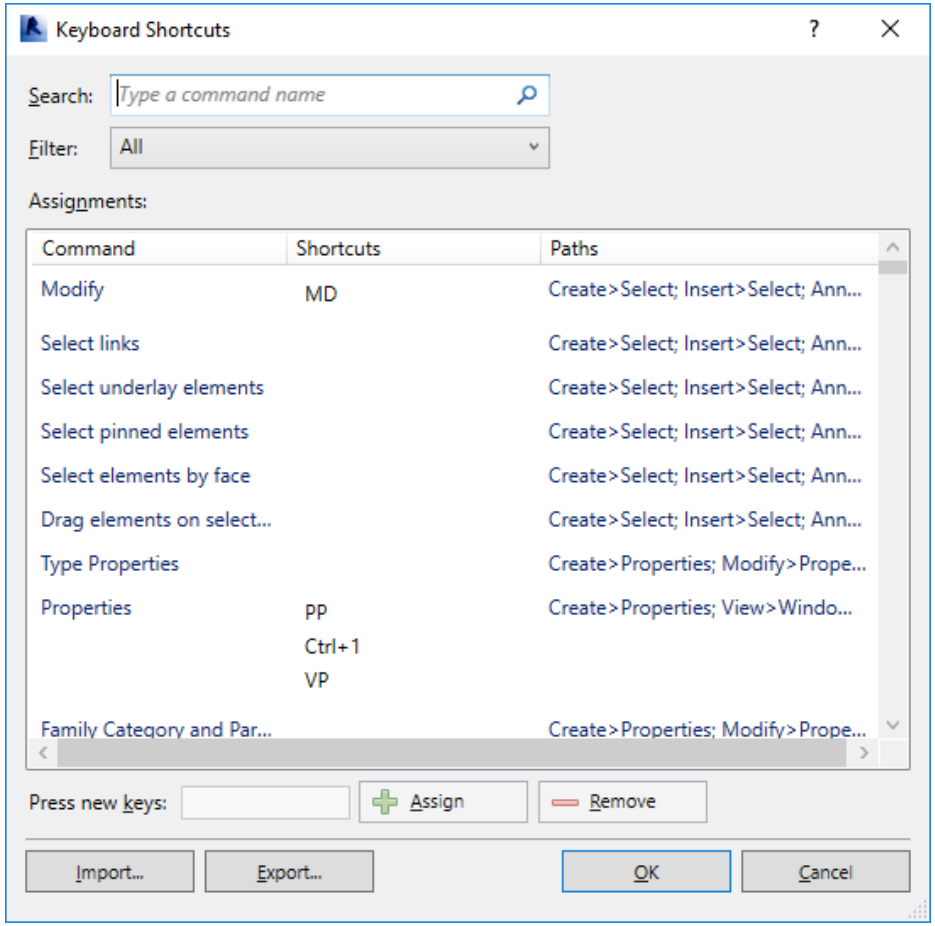
ROUNDUP(x)

roundup (23.0) = 23
roundup (23.5) = 24
roundup (23.9) = 24
roundup (-23.0) = -23
roundup (-23.5) = -23
roundup (-23.9) = -23

▪ 4.0 Keyboard shortcut

- Keyboard Shortcuts (K+S)

You can edit your keyboard shortcuts without the hassle of rooting through your hard drive looking for a TXT file

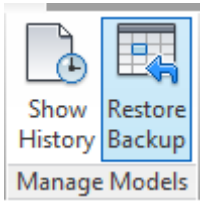


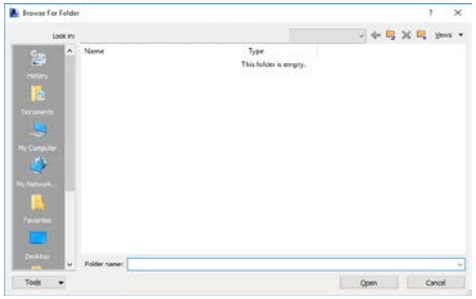
▪ 5.0 Recover Collapse Model from Existing and Backup Version

- Restore a Previous Version of a Server-Based Central Model

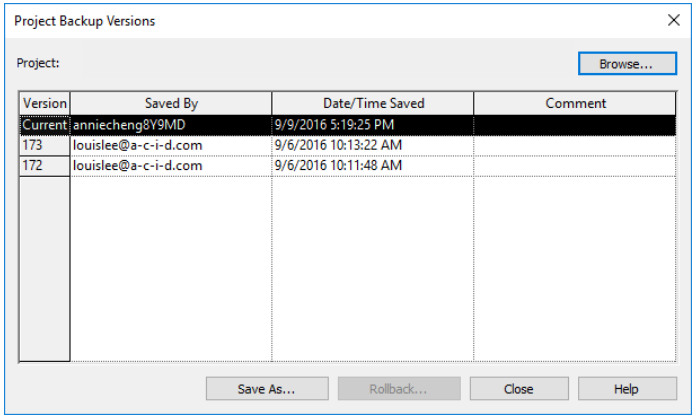
When using server-based worksharing, you can restore an earlier version of a central model

Locate the backup folder for the central model, and copy this folder to another location → On the Collaborate tab → Manage Models panel → Click “Restore Backup” → In the Browse for Folder dialog, navigate to the copy of the backup folder for the central model → Click Open.





Select the file version whose date and time correspond most closely to the period user wish to roll back to → Click Save As to save this older version as a new model



Thank you !