CERTIFICATE COURSE IN BIM MODELLING

Architecture Track

Certificate Course in BIM Modelling (Architecture Track)

Topic Overview

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<tr><td>Starting a BIM project: Project template, Insert files, Project base point, Grids & Levels, Create views</td><td>Basic 3D modeling : staircase, railing, roof, ceiling</td></tr>
<tr><td rowspan="2">PM</td><td>Site & Mass Modelling</td><td rowspan="2">(Assignment – 3D part)</td><td>Family editor interface & simple family creation</td></tr>
<tr><td>Basic 3D modeling : Wall, floor, ramp, doors & windows</td><td>Basic 2D elements: rooms, area, annotation, dimension, tags, schedule, sheets, titleblock, exporting files.</td></tr>
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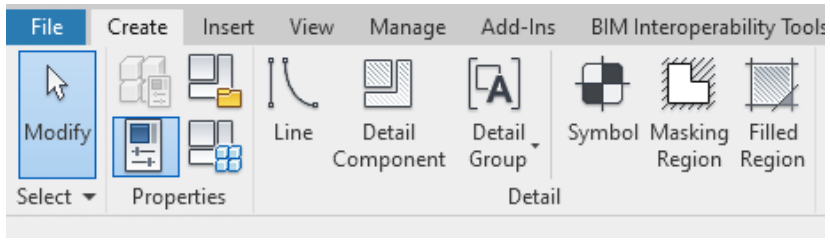
DAY 3

Family editor interface & simple family creation: Object Library-3D & Typical Details-2D

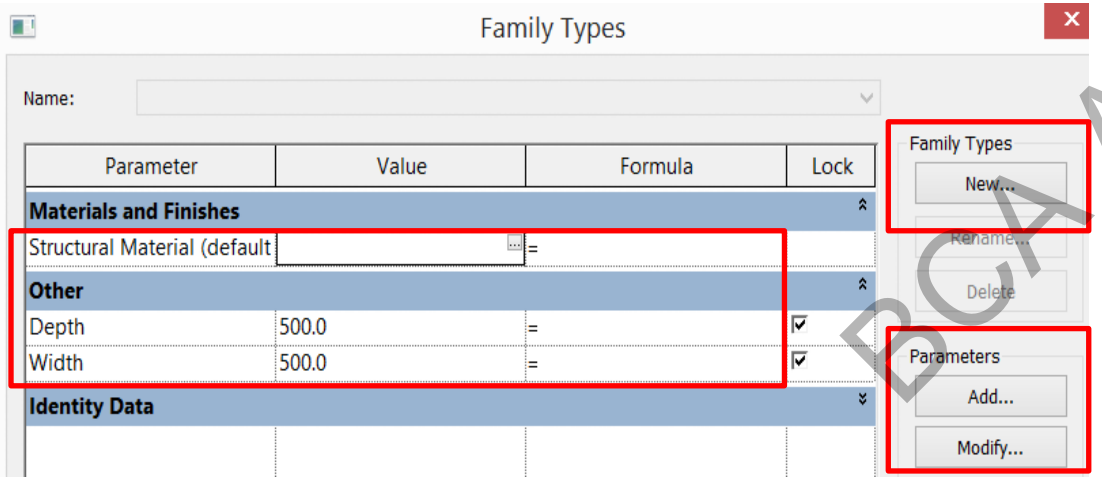
Important



- Symbolic **Line**, not part of the actual geometry of the family. Symbolic lines are visible parallel to the view in which you sketch.
- **Detail Component**, Detail components are line-based 2D elements that you can add to detail views or drafting views.
- **Detail Group**, which can contain view-specific elements (such as text and filled regions).
- **Symbol**, Use annotation symbols in views and legends to communicate design details.
- **Masking Region**, Masking regions are view-specific graphics that can be used to obscure elements in a view.
- **Filled Region**, view-specific graphic with a boundary line style and fill pattern within the closed boundary

Important

Family Types, allows to enter a parameter value for existing family types, add parameter to a family or creates new type within the family

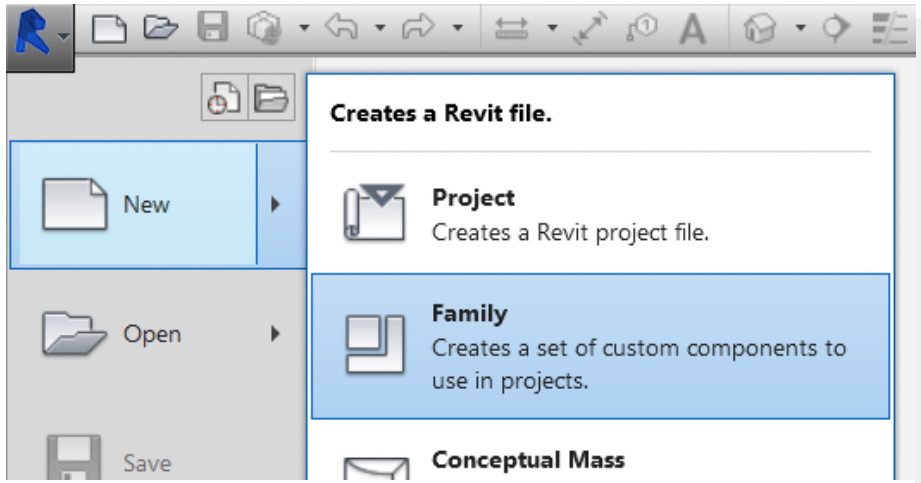


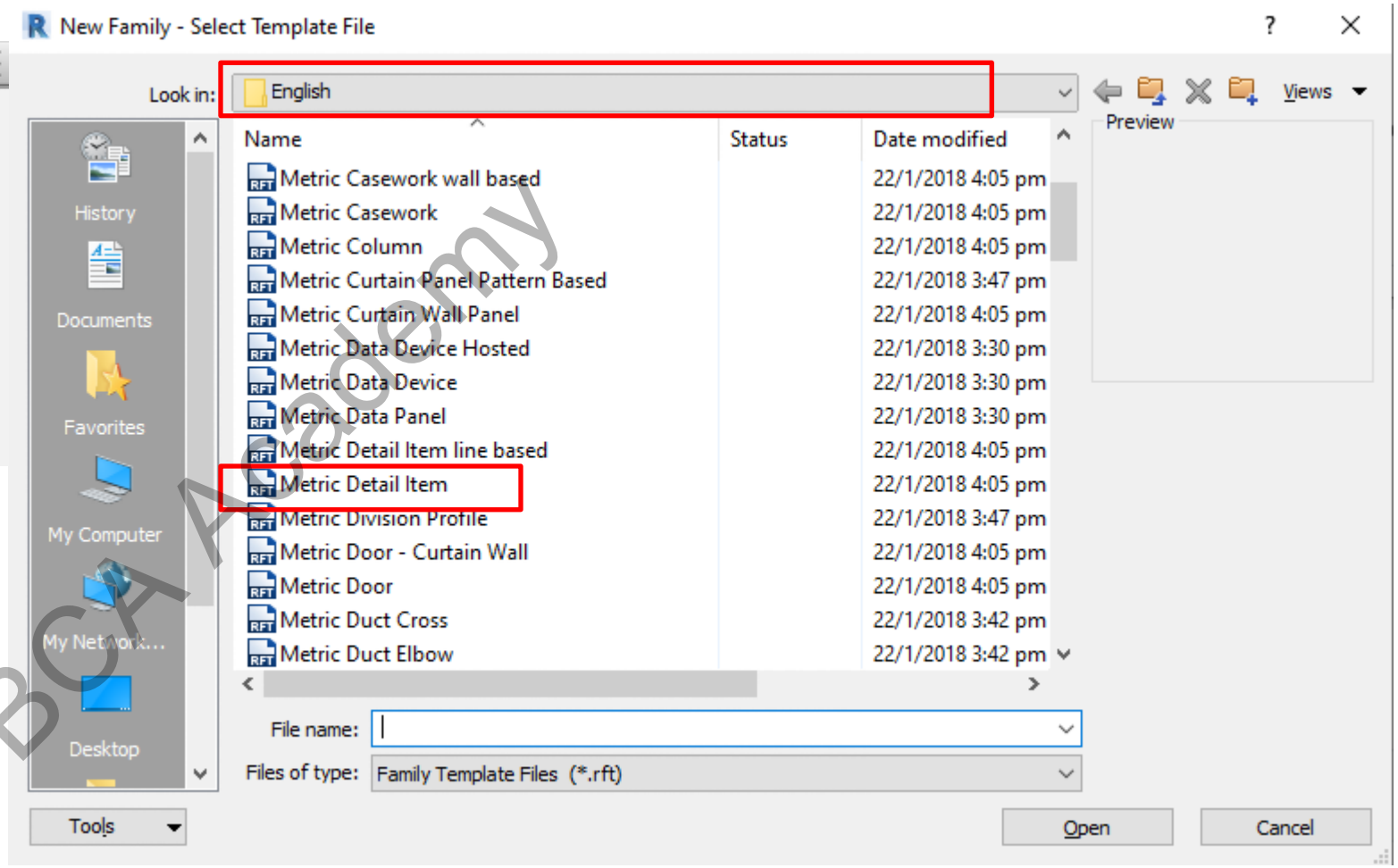
Lock, to lock the geometry to a controlled reference plane

Equal Symbol, to equally spaced the value dimension parameter from centre to left and right

Reference Plane, control the Dimension Parameter of the family

Architectural Family Creation





1. File > Family
2. Family Template Files (*.rft)
3. Choose Template

Architectural Family Creation

- Create Detail item using Different Line
- Masking Region or Filled Region
- Reference Plane
- Lock Line or Group Detail in a reference plane
- Dimension & Dimension Label (Parametric)
- Controlling the Graphics Visibility using Family Parameter, Parameter Type <Yes/No> Visibility Graphics Override
- Will the family need to accommodate multiple sizes
- How should the family display in different views

Architectural Family Creation

- **For best results when creating a family, use this workflow: Part 1**
  - Before beginning family creation, plan your family. Identify requirements regarding family sizes, how the family displays in different views, whether a host is required, the detail level to be modeled, and the origin of the family. Planning a Loadable Family.
  - Create a new family file with the appropriate family template. Choosing a Family Template.
  - Define subcategories for the family to help control the visibility of the family geometry. Creating Family Subcategories.
  - Create the family skeleton, or framework:
    - Define the origin (the insertion point) of the family. Defining the Family Origin.
    - Lay out reference planes and reference lines to aid in sketching component geometry. Laying Out Reference Planes and Using Reference Lines.
    - Add dimensions to specify parametric relationships. Dimensioning Reference Planes and Lines.
    - Label dimensions to create type or instance parameters or 2D representation. Labeling Dimensions to Create Parameters.
    - Test, or flex, the skeleton. Flexing the Family Framework.

Architectural Family Creation

- **For best results when creating a family, use this workflow: Part 2**
  - Define family type variations by specifying different parameters. Creating Family Types.
  - Add a single level of geometry in solids and voids, and constrain the geometry to reference planes. Creating Family Geometry.
  - Flex the new model (types and hosts) to verify correct component behavior. Testing the Family.
  - Repeat previous steps until the family geometry is complete.
  - Specify 2D and 3D geometry display characteristics with subcategory and entity visibility settings. Managing Family Visibility and Detail Level.
  - Save the newly defined family, and then load it into a project for testing. Testing the Family.

Architectural Family Creation – 2D

- **For best results when creating a family, use this workflow: Part 3**
  - An annotation label is a text placeholder added to tags or title blocks.
  - You create a label as part of a tag or title block family while in the Family Editor. When you place the tag or title block in the project, you place substitution text for the label, and the text appears as part of the family.
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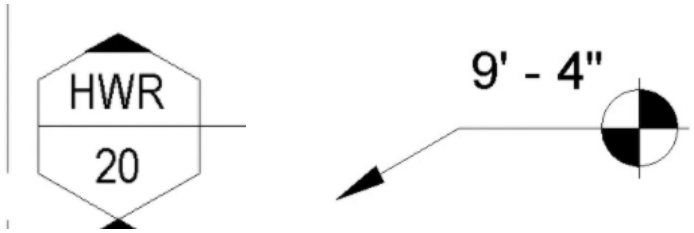
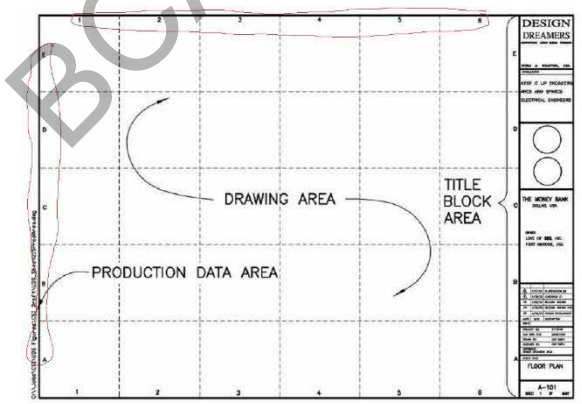
Architectural Family Creation – 2D

1. Click New Annotation Symbol or Title Block.
2. In the displayed dialog, select the appropriate template for the family you are creating.
3. In the Family Editor, click Create tab Text panel (Label).
4. In the Type Selector, select the label type.
5. On the Format panel, select the vertical and horizontal justification.
6. In the drawing area, click to position the tag. For example, in a generic model tag template, place the cursor at the intersection of the two reference planes. The Edit Label dialog opens.
7. Edit the label parameters

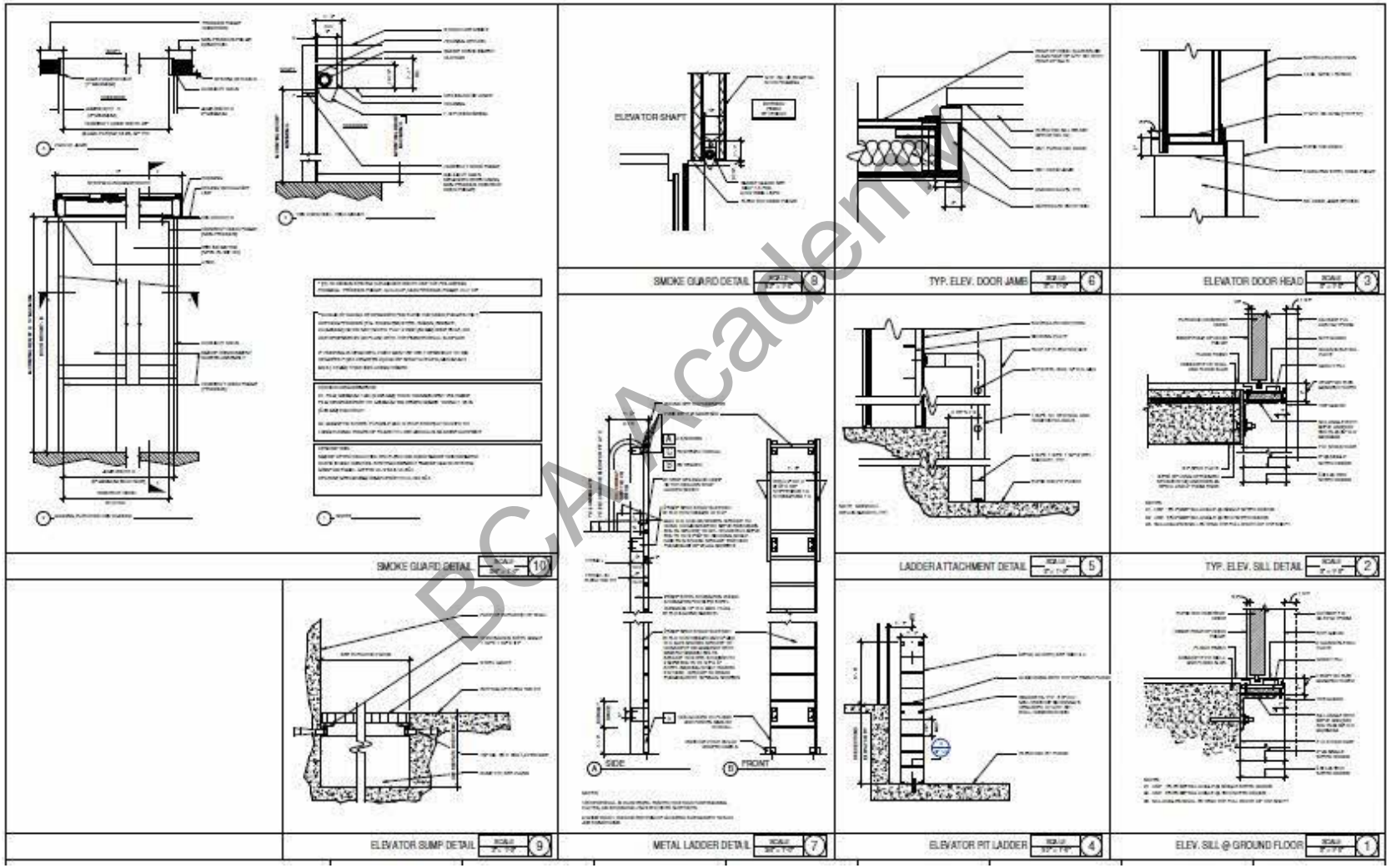




No.	Description	Date
1	Revised Floor Plan	12-4-06
2	Revised Elevations	12-6-06

Question

- 3D or 2D

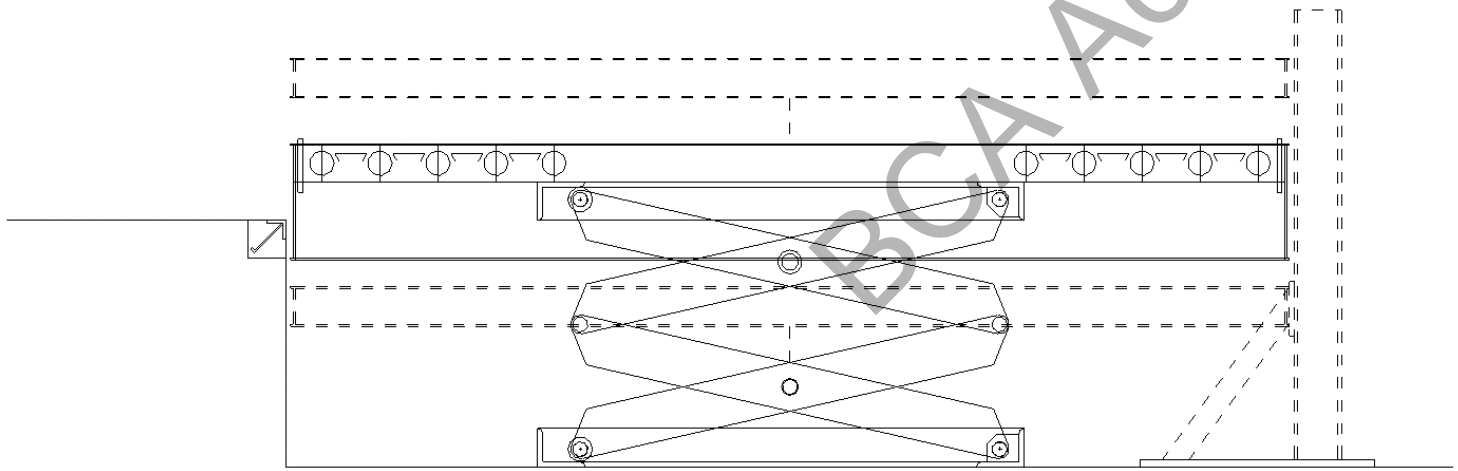


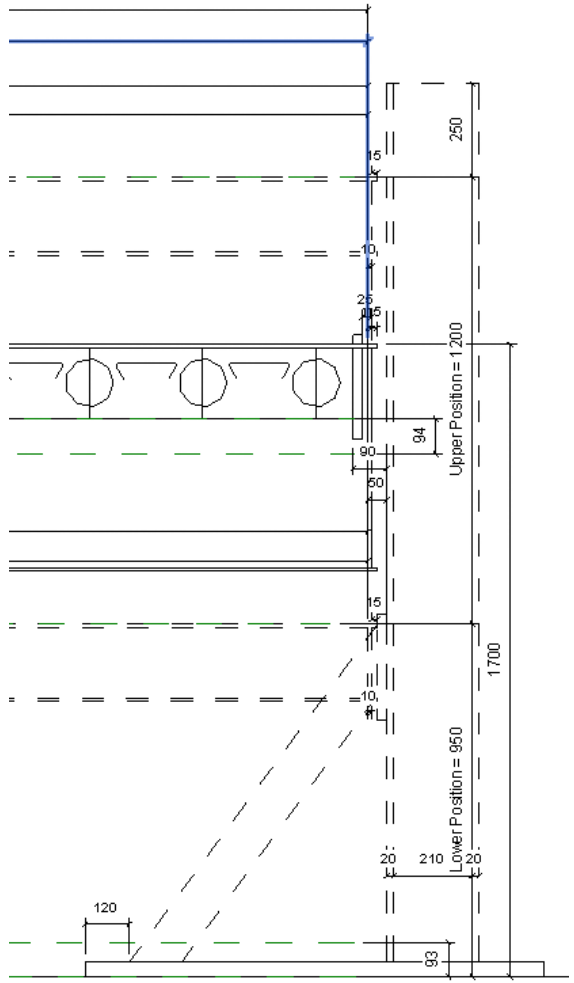
Simple Family Creation

Architectural Family Creation

Detail Item

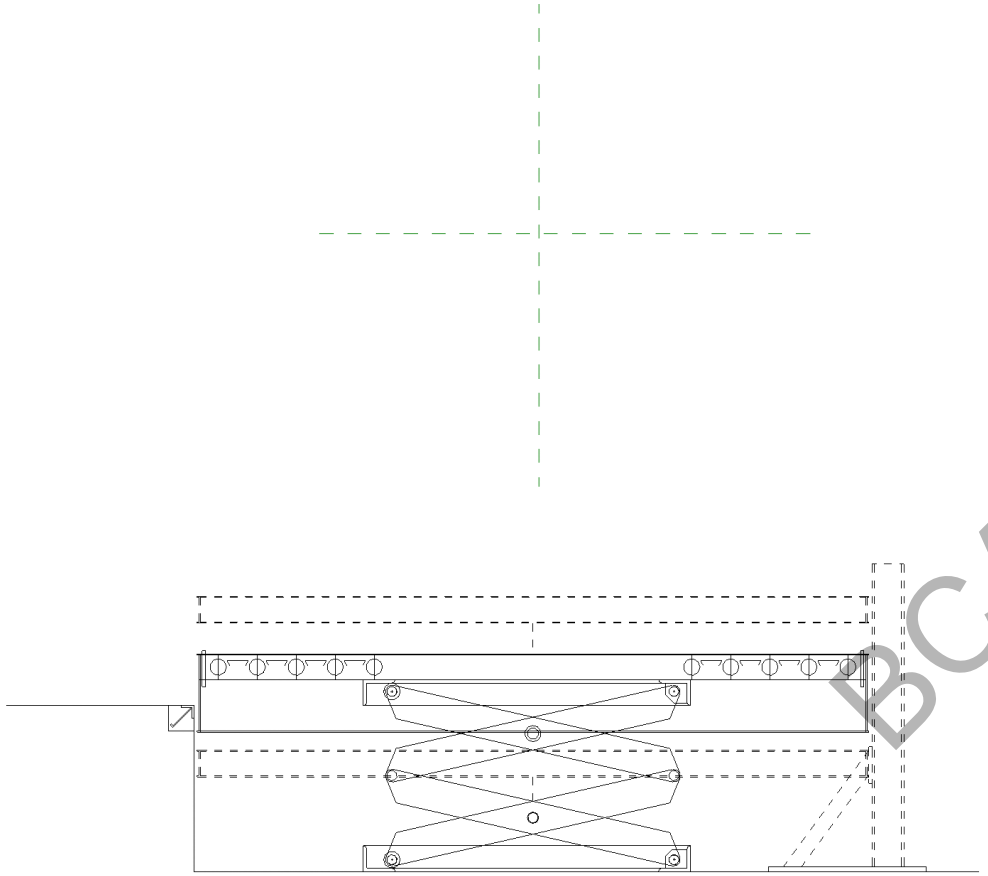
- Create Detail item using the basic symbolic line only
- Assign parametric dimensions
- Adding Masking Region and Filled Region
- Override the visibility graphics of a Detail Item





Architectural Family Creation

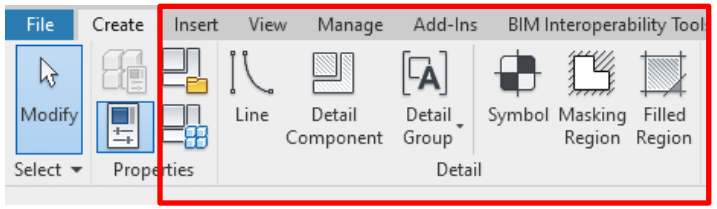
Detail Item



PLAN/ELEVATION/SECTION OR CALLOUT

- In the Family Editor, sketch reference planes for placing the detail component. (Drawing Area)
- Use tools on the Create tab to create the shape of the detail component. A detail component is displayed in a symbolic form and is not shown in 3D. Click the Line tool to sketch the symbol.

  Tip: You can change the order of objects in the family by using the detail component draw order tools.

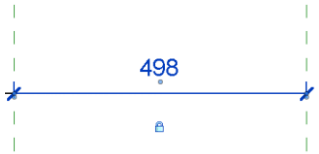


- For lines, select the line and click Modify >> Lines tab >> Mode panel >>(Visibility Settings), and select the views in which the object will be visible.
- Lock the lines in the Reference Lines
- Save the detail component

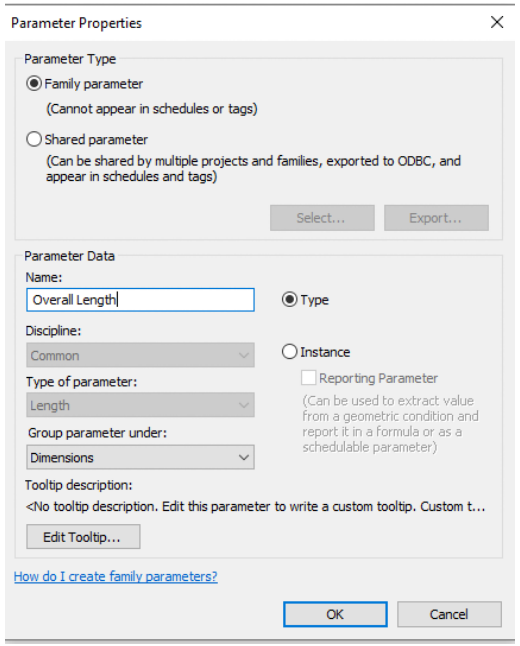
Architectural Family Creation

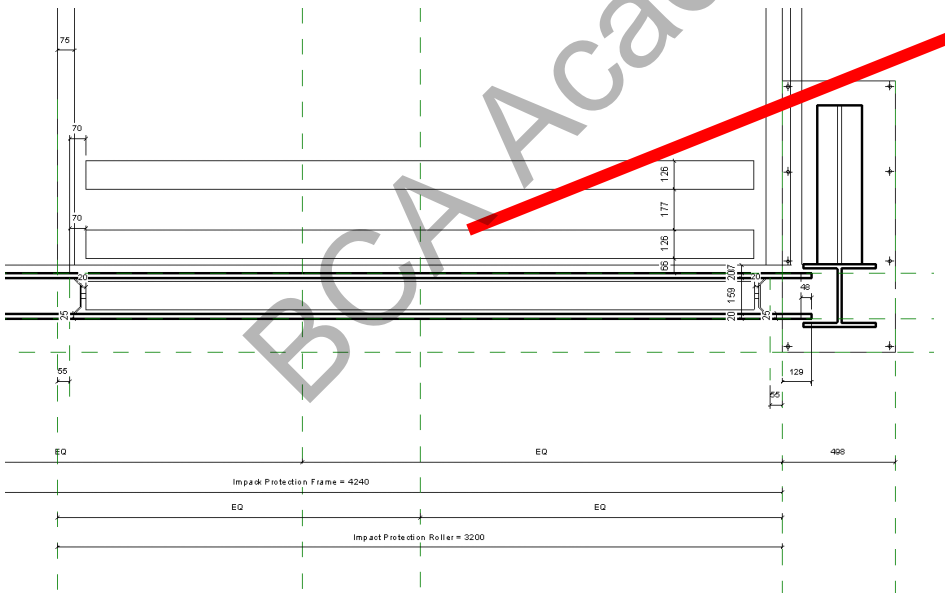
Detail Item

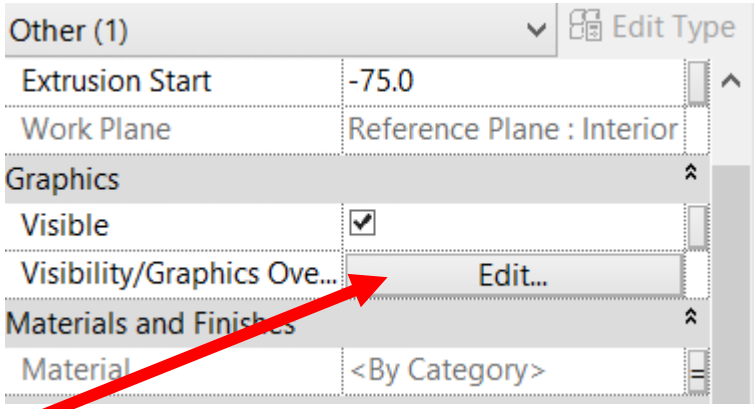
- Assign parametric dimensions

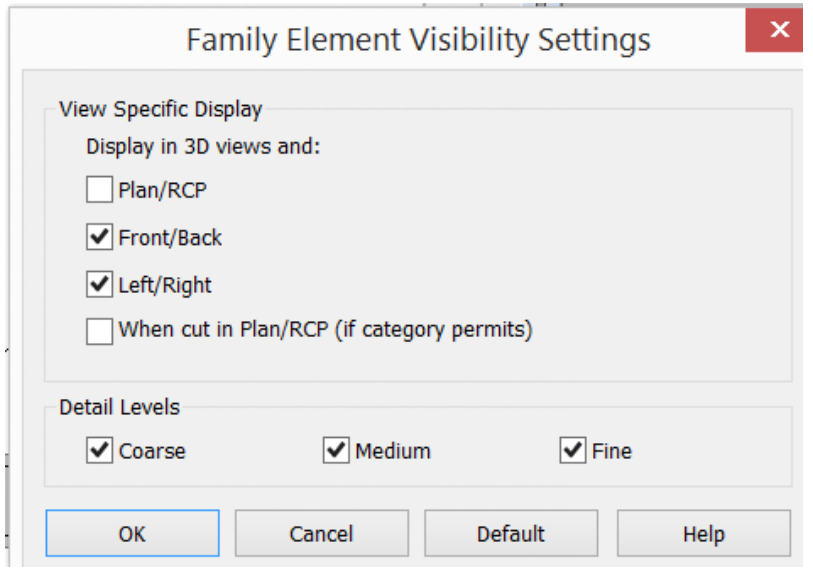


1. Select Dimension >> Label >> Create new parameter
2. Name the parameter
3. Check Parameter as Type or Instance
4. Click OK









- Overriding Visibility Graphics