CERTIFICATE COURSE IN BIM MODELLING

Architecture Track

Certificate Course in BIM Modelling (Architecture Track)

Topic Overview

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<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>
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DAY 3

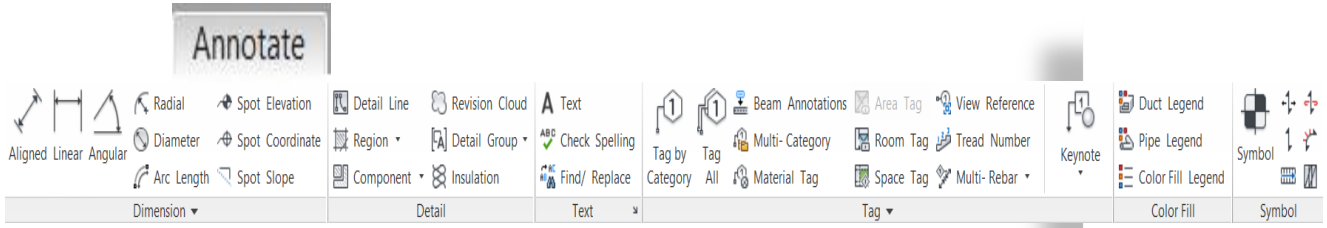
Basic Documentation: rooms, area, annotation, dimension, tags, schedule, sheets, titleblock, exporting files.

Documentation

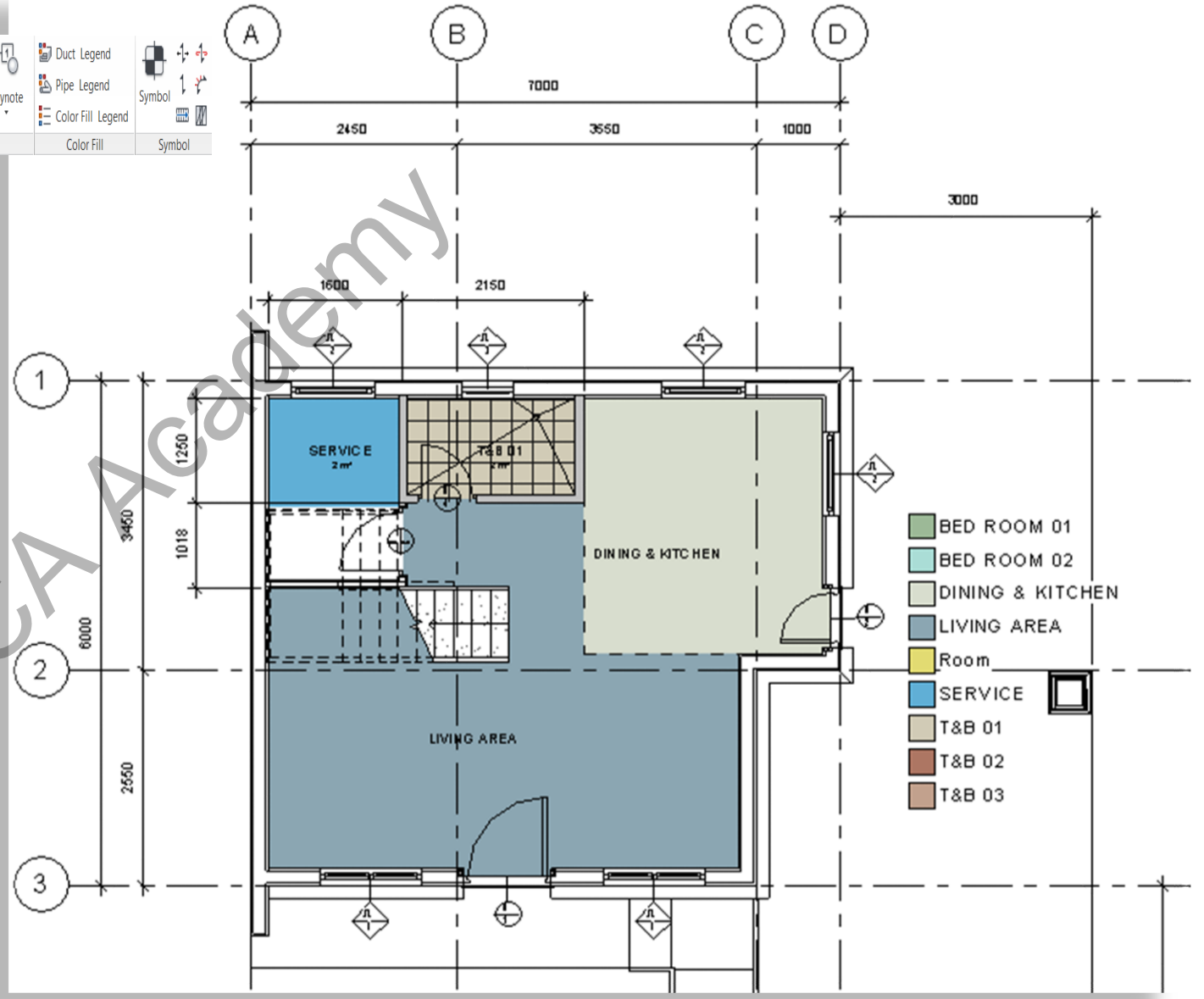
Quick Tips

OBJECT /ELEMENT	KEY BOARD SHORTCUT
DETAIL LINE	DL
MODEL LINE	ML
TEXT	TX
TAG	TG
SPOT ELEVATION	SE
DIMENSION	DI

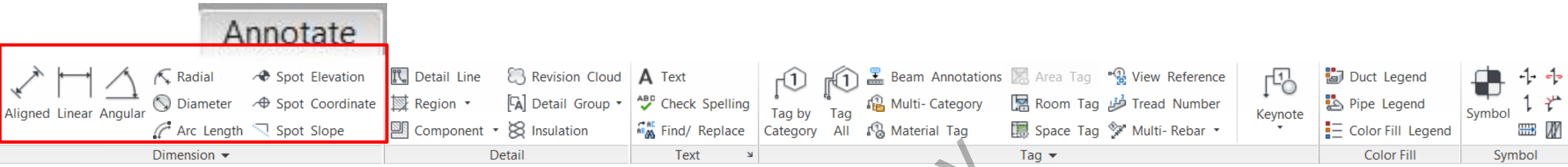
Documentation



- Place Annotation by adding Dimensions and Text
- Adding 2D details using Detail Lines and regions
- Create 2D detail component family
- Create multiple 2D details using group
- Add insulation detail
- Attached automatic tag to a category
- Define Room and create Room Separation
- Place a Color Fill Legend in a view



Documentation



Dimension

1. Annotate Tab > Dimension

Aligned, Places dimensions between parallel references or multiple points

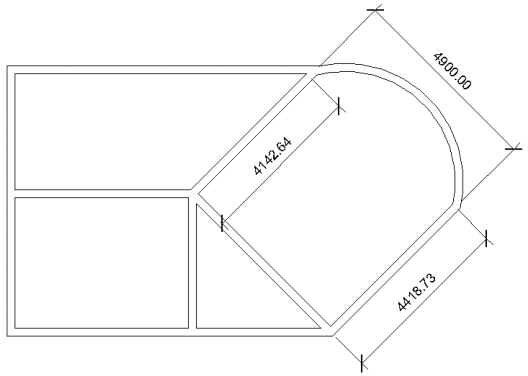
Linear, Places horizontal or vertical dimensions that measure the distance between reference points

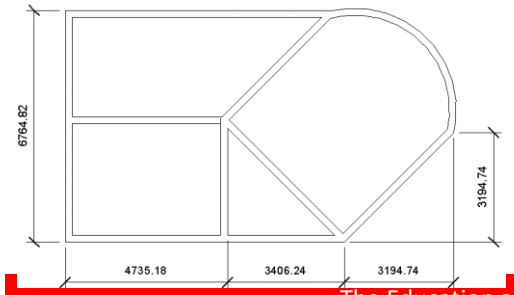
Angular, Places dimension that measures angle between reference points

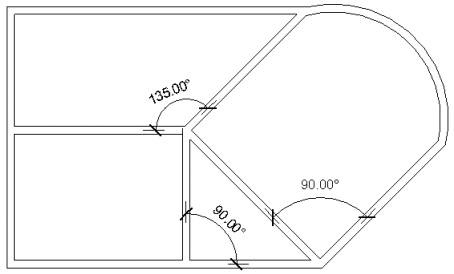
Radial, Places dimension that measures the radius of the **inner curve** or fillet

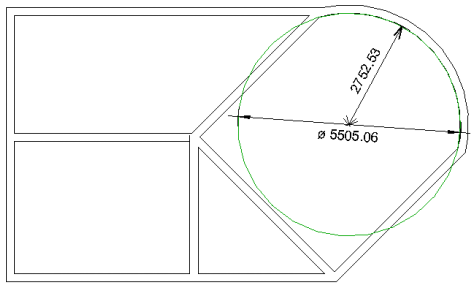
Diameter, Places dimension that measures the **diameter** of an arc or circle

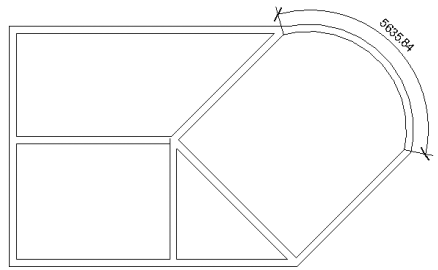
Arc Length, Places dimension that measures the **length of a curve wall** or other element



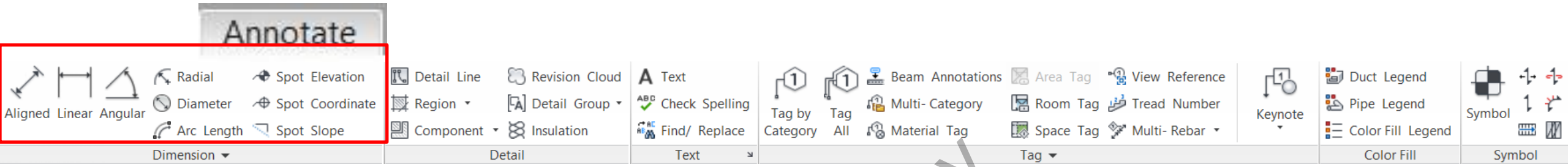








Documentation



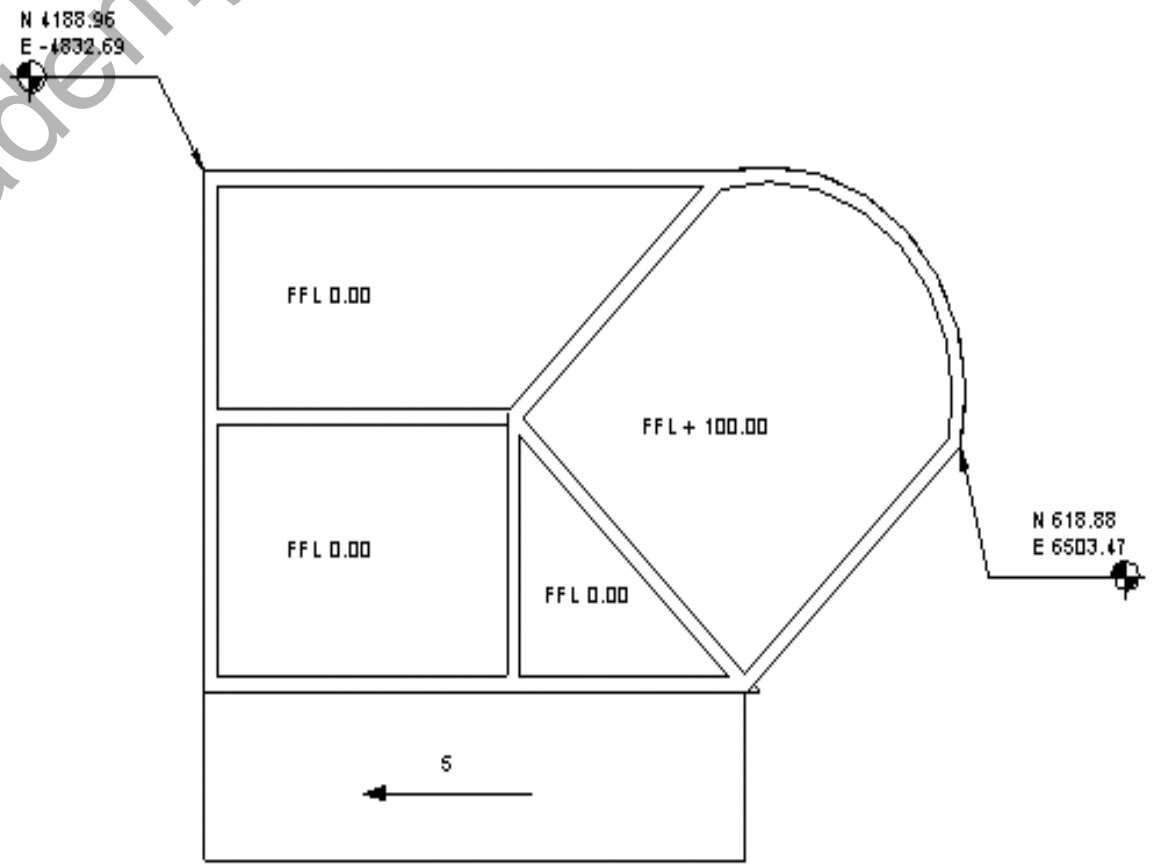
Dimension

1. Annotate Tab > Dimension

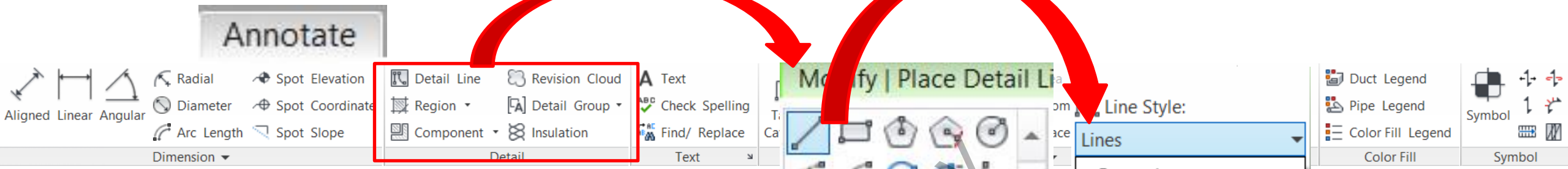
Spot Elevation, Display the elevation of a selected point

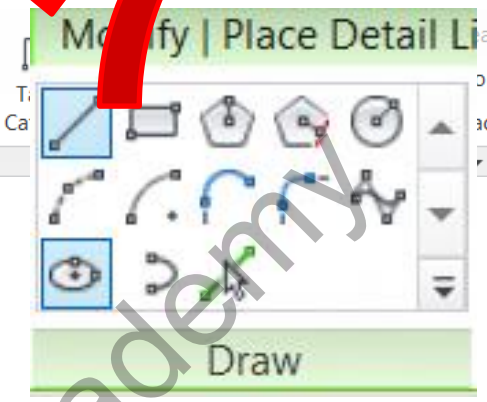
Spot Coordinates, Display the North/South and East/We coordinates of a project

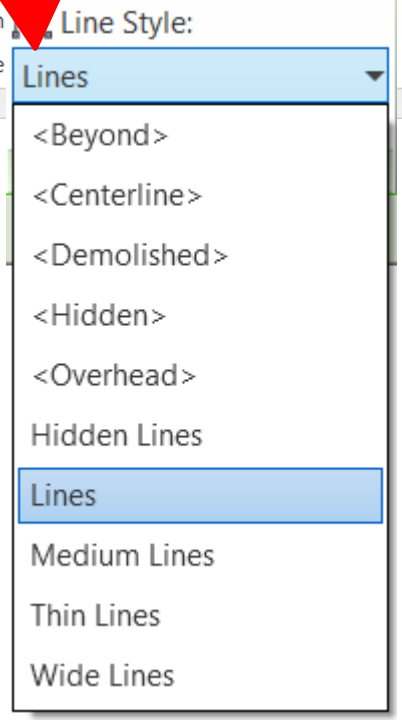
Spot Elevation, Display the slope of the specific point on a fac or an edge of a model element



Documentation







Detail Line

Create view specific lines

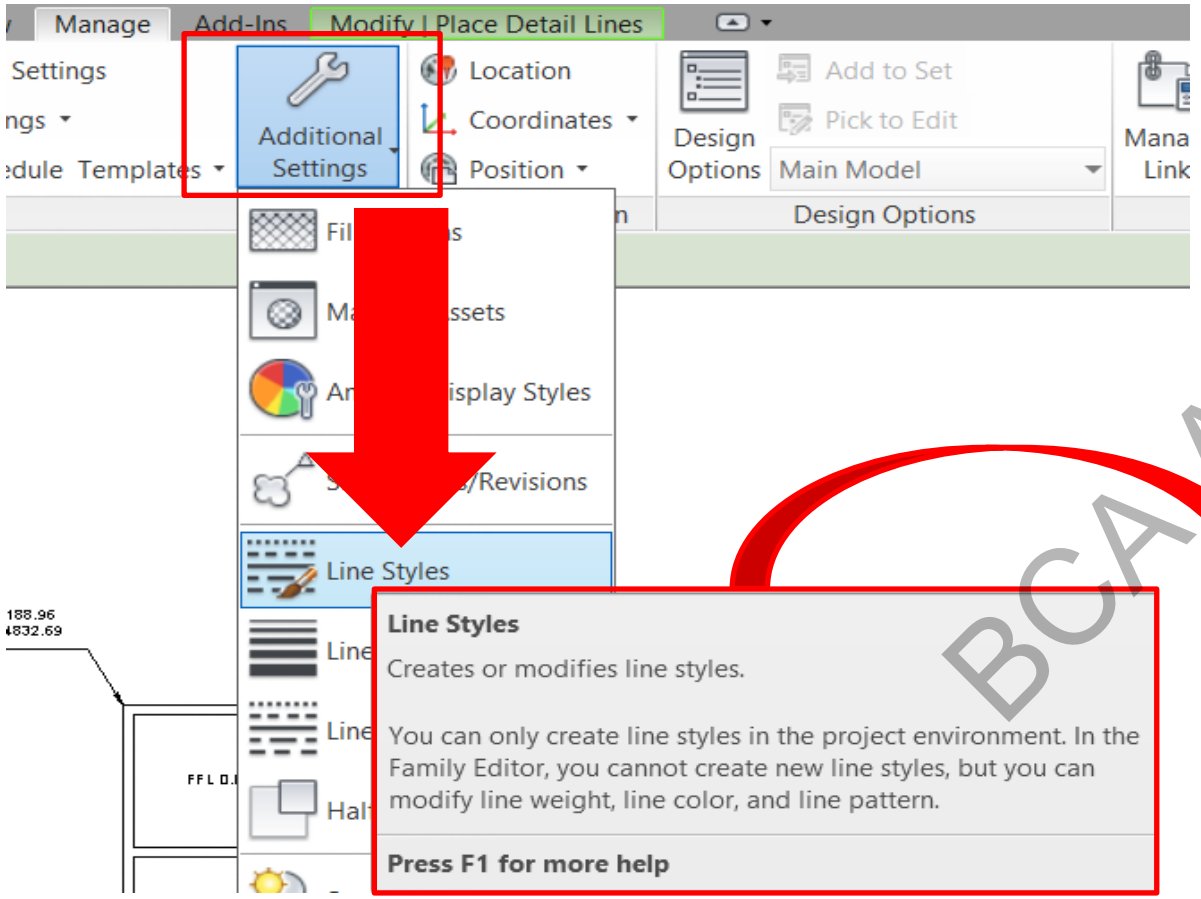
1. **Annotate Tab > Detail Line**
2. **Select Line Style**

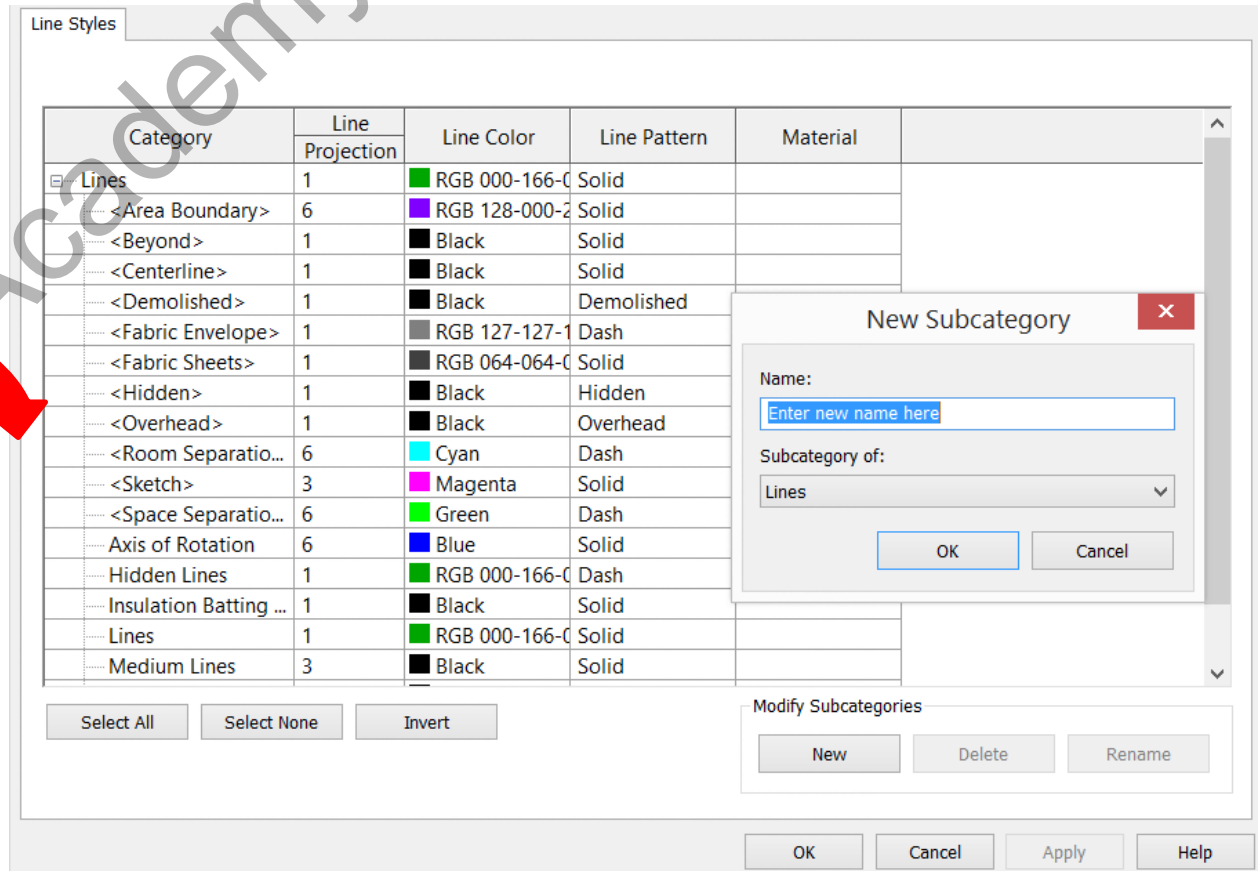
Line
Square
Polygon
Circle
Start-End-Radius-Arc
Center-ends-Arc
Tangent-ends-Arc
Fillet Arc
Spline
Ellipse
Partial Ellipse

Documentation

Additional Line Style

1. Manage Tab > Additional Settings
2. Line Styles > New
3. Name
4. Line Projection
5. Line Color
6. Line Pattern
7. Ok





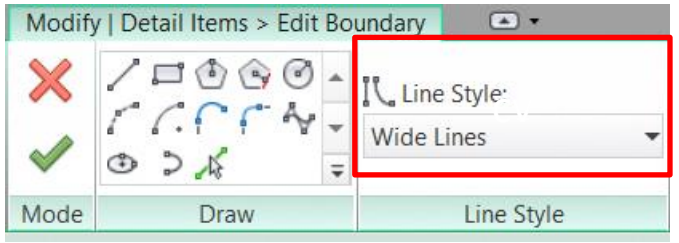
Documentation

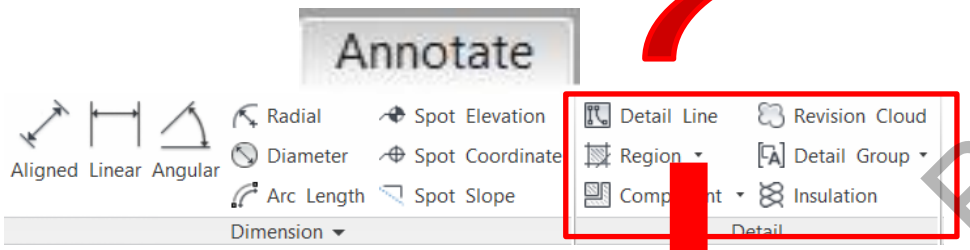
Region

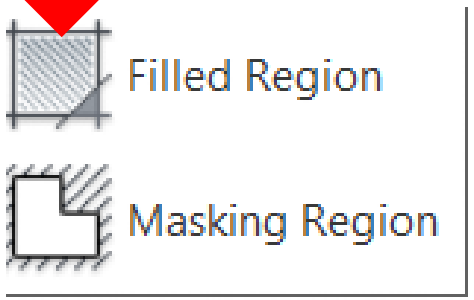
Filled Region, creates a 2D view-specific graphic with a fill pattern and a boundary line

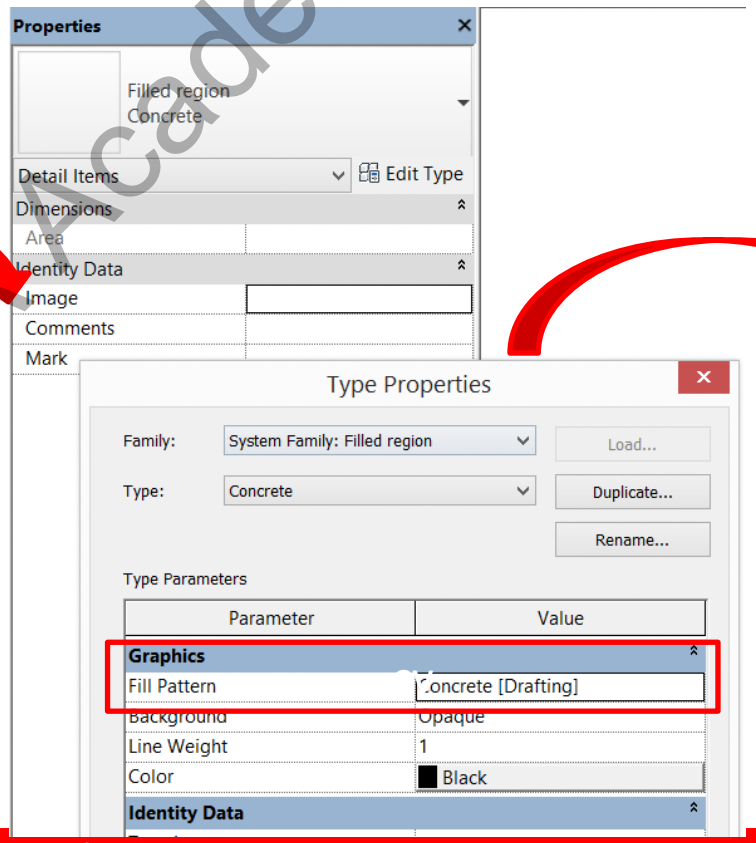
Mask Region, Create a graphics that obscures element to a family or project

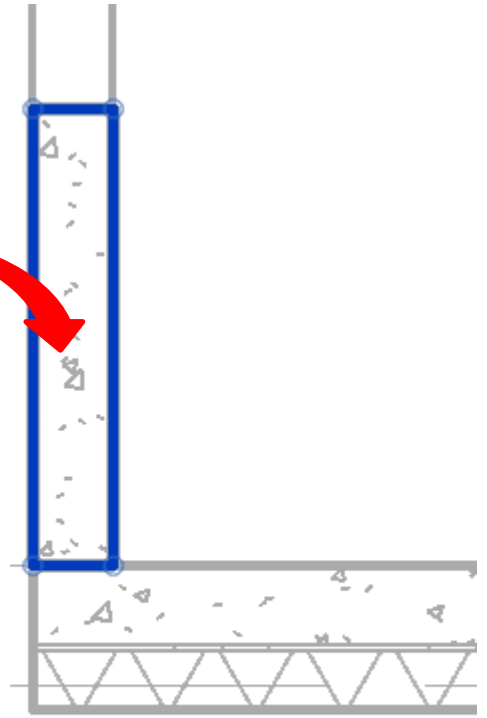
1. **Annotate Tab > Region**
2. **Filled Region / Mask Region**
3. **Properties > Edit Type**
4. **Duplicate**
5. **Fill Pattern**
6. **Line Styles**
7. **Draw to sketch 2D graphics**







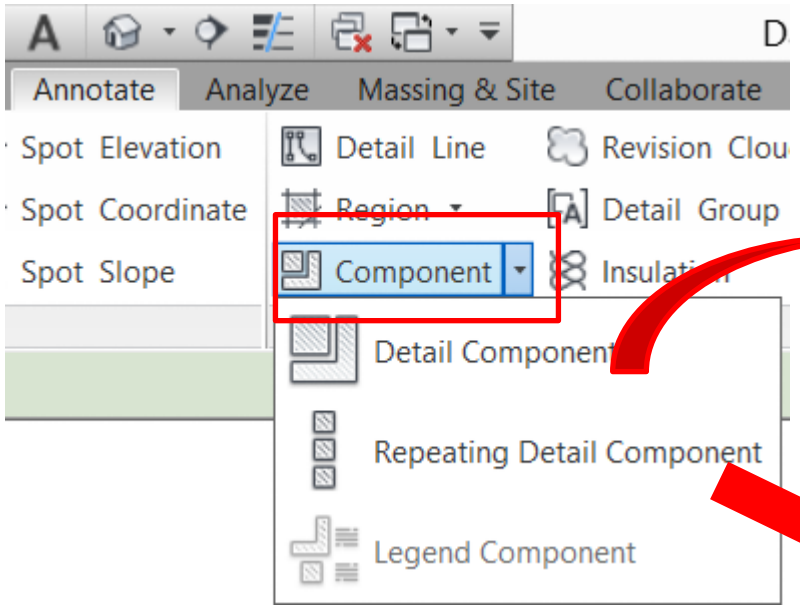


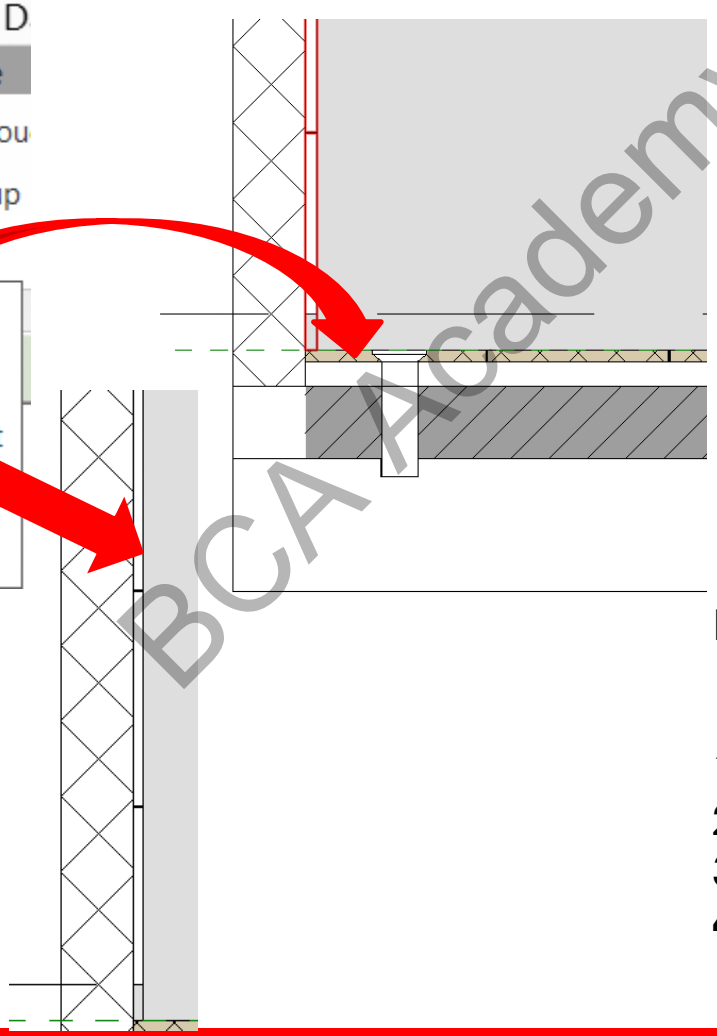


Documentation

Component

Detail Component, add a view specific 2D component a view





1. **Annotate Tab > Component**
2. **Detail Component**
3. **Load Family > Architecture**
4. **Detail Item**

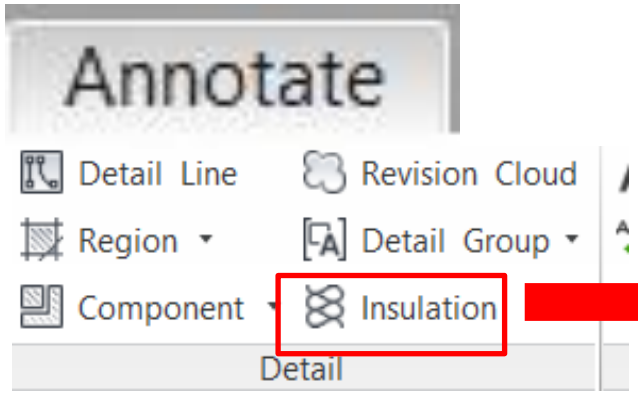
Repeating Detail Component,
repeat a detail component along the path

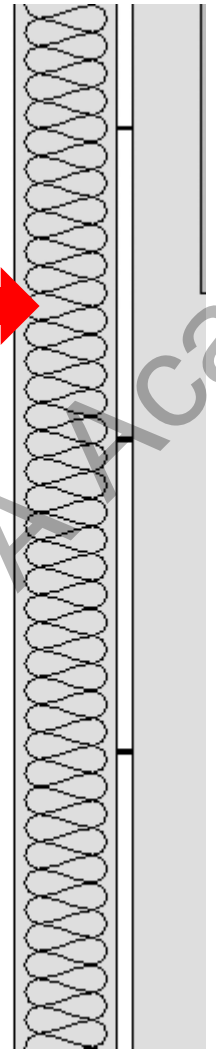
1. **Annotate Tab > Component**
2. **Repeating Detail Component**
3. **Place Detail Component**
4. **Sketch Vertical or Horizontal Direction**

Documentation

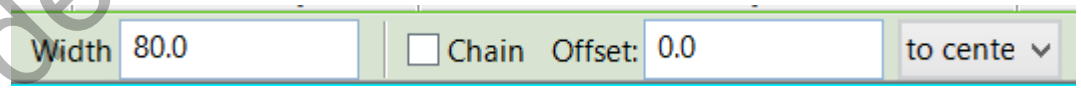
Insulation

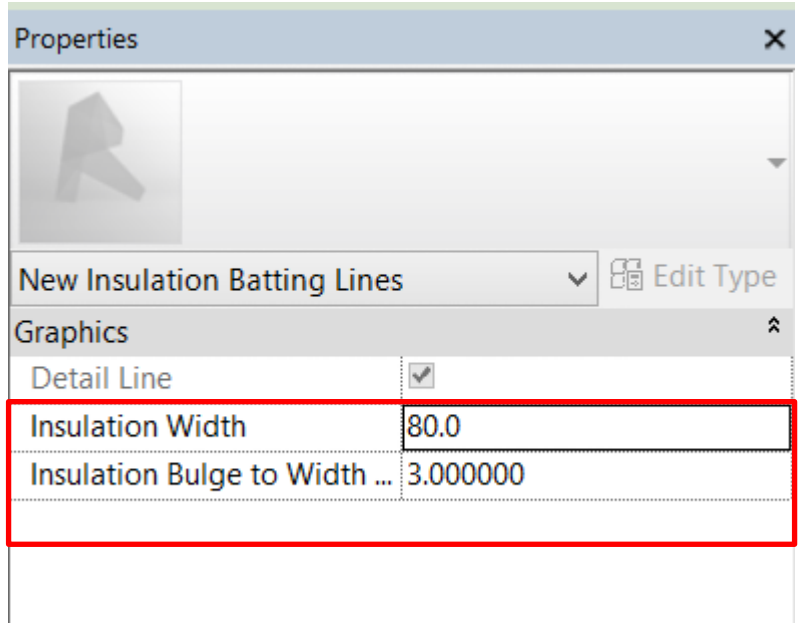
Insulation, Place a Batt Insulation graphics in a 2d view





1. **Annotate Tab > Insulation**

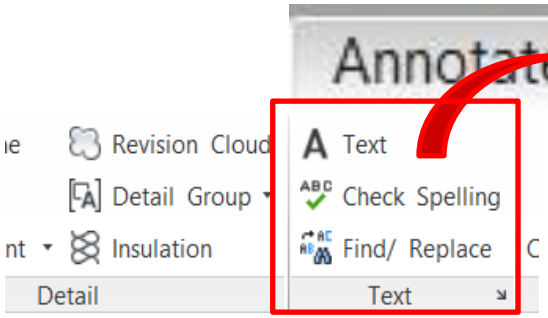


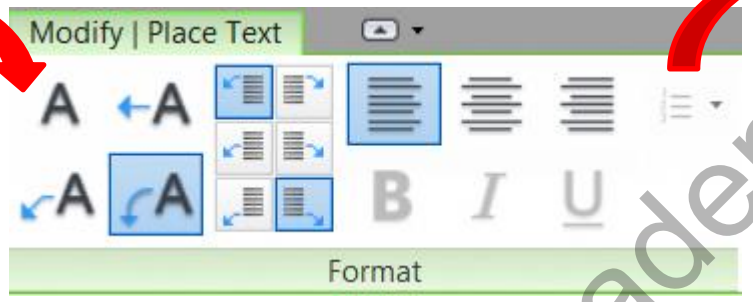


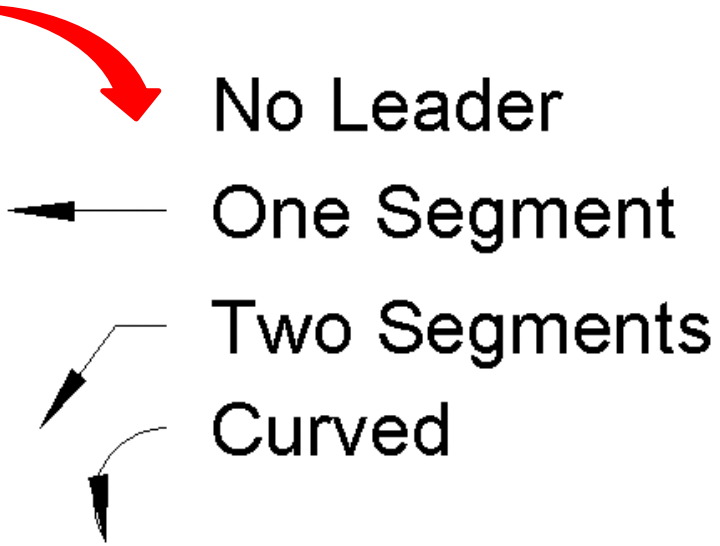
Documentation

Text

Text, add text annotation (Notes) to a current view



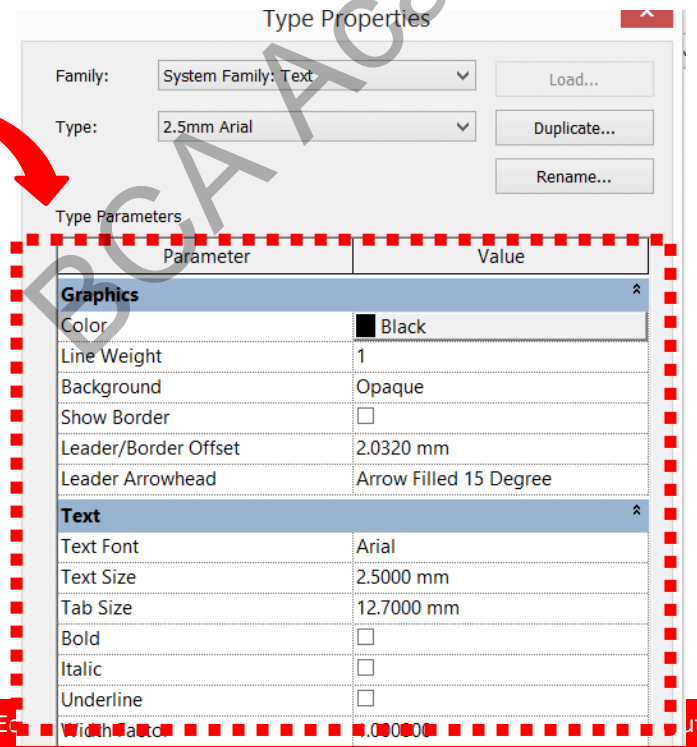




1. **Annotate Tab > Text**
2. **Properties > Text Type**

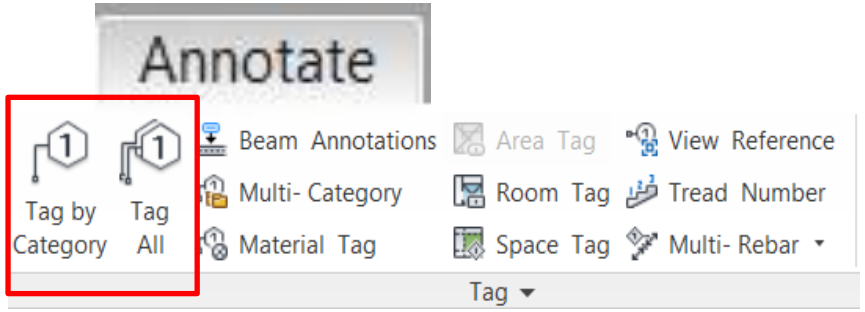
To Add/ Edit Text Type

3. Edit Type > Duplicate or Rename



Documentation

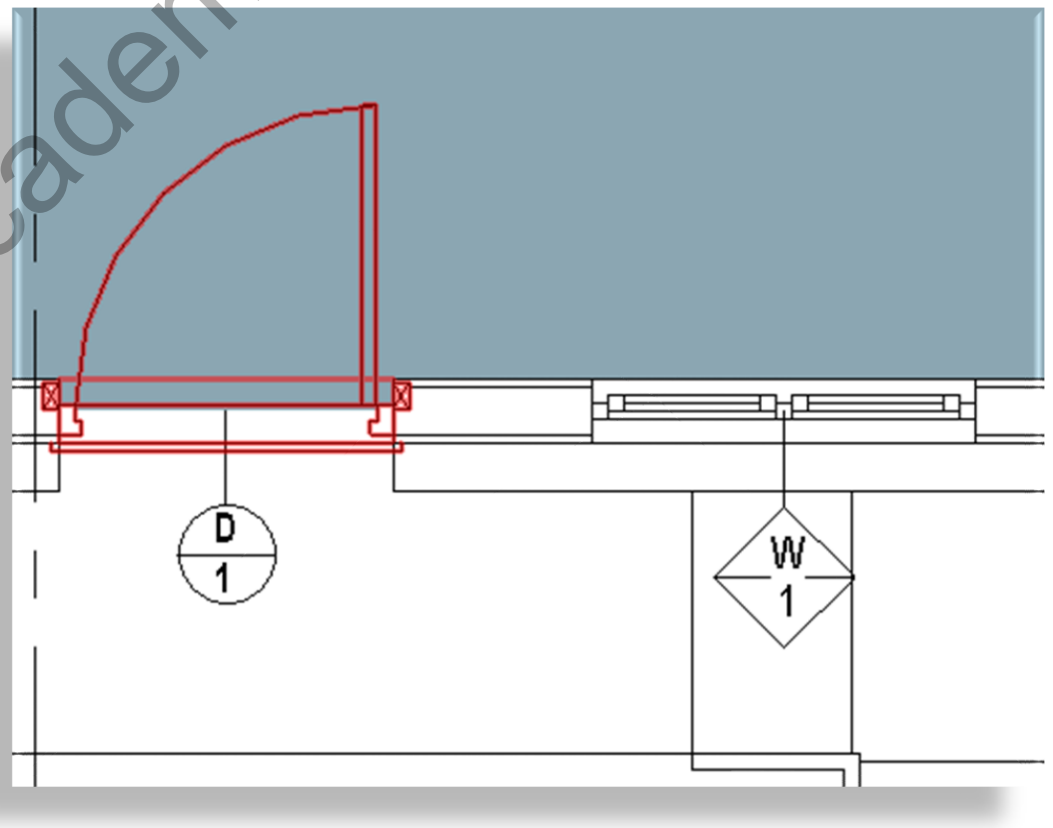
Tag



Tag by Category, attached tag by element category
Tag All, add tags to a multiple element in one step

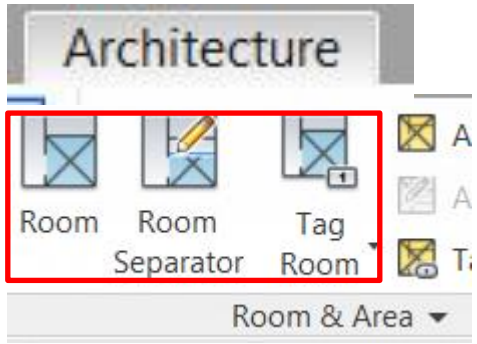
1. Annotate Tab > Tag by Category
2. Load Tag > Architecture Annotation
3. Select the specific category to tag
4. Pick the element

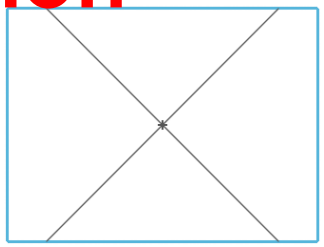
1. Annotate Tab > Tag All
2. To Tag All Not Tagged
3. All object in the current view or
4. Include elements from linked files
5. Select tag under Category ad Loaded Tag
6. Ok

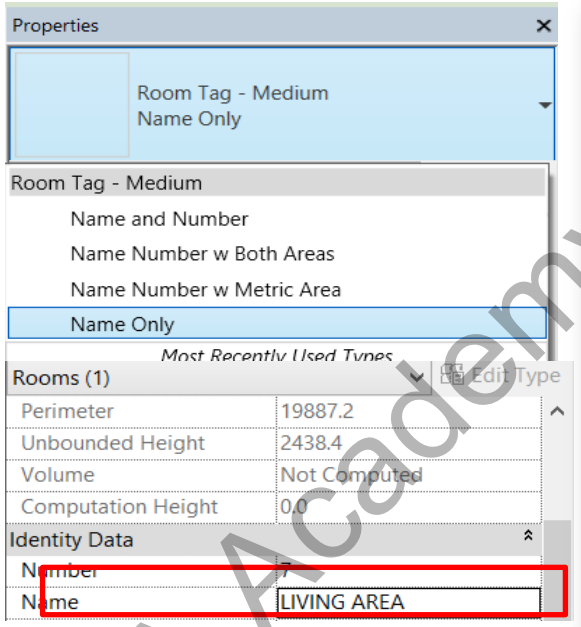


Documentation

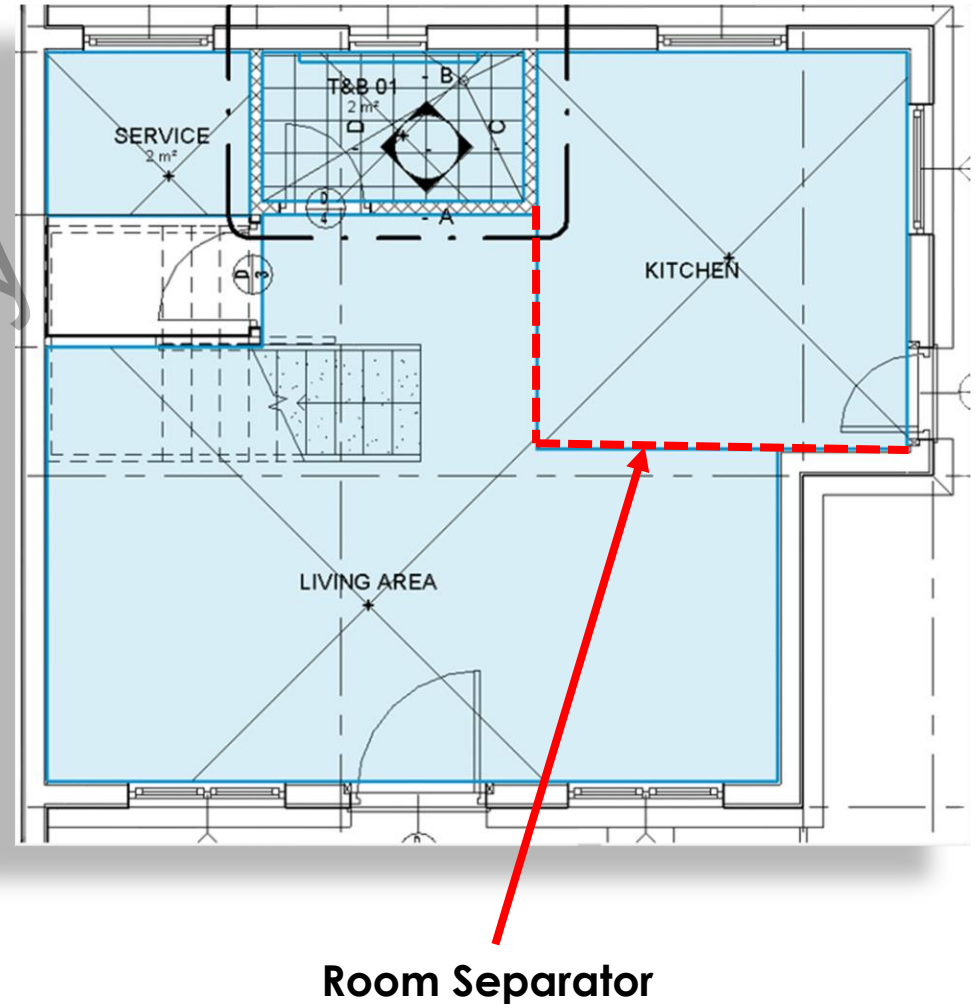
Room







1. Architecture Tab > Room
2. Properties, select Room Tag
3. Create a room in a properly bounded elements such as wall and room separation line (To place a Room Tag when creating a room in a view, select Tag on placement Option)
4. In properties bar under Identity Data Name: Give Name to a Room
5. Architecture > Tag Room
6. Add and Delete Room in Room Schedule

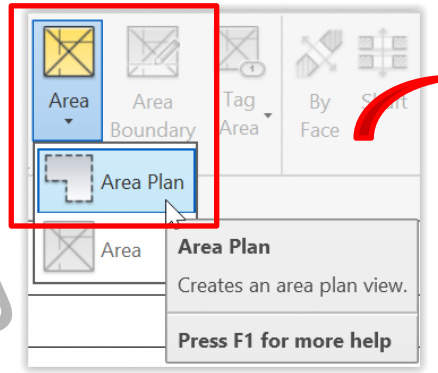


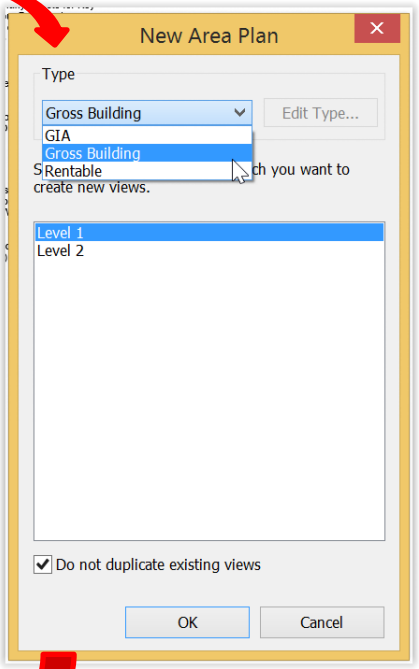
Documentation

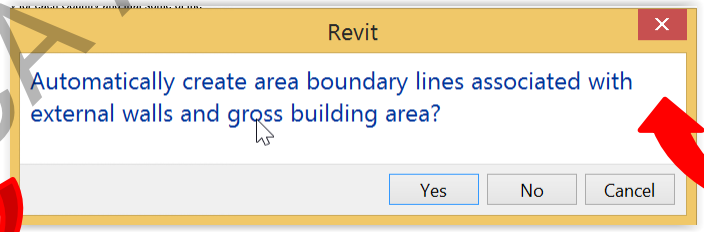
Area

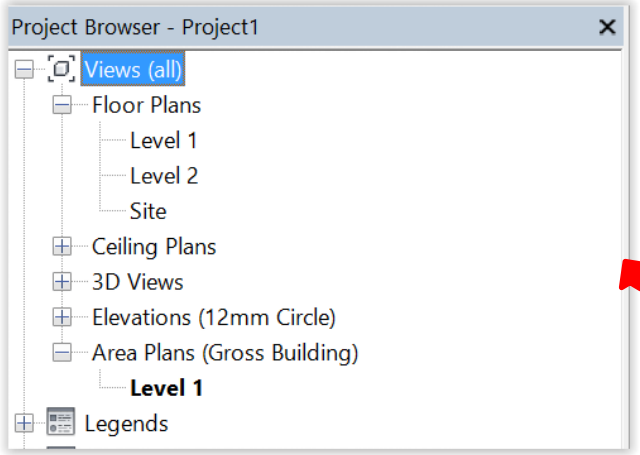
1. Click Home tab - Room & Area panel - Area drop-down - Area Plan.
2. In the New Area Plan dialog, for Type, select an area scheme.
3. Select a level area plan view.
4. For Scale, select the area plan scale.
5. Click OK.

   Revit Architecture prompts you to automatically create area boundary lines associated with all external walls. See Area Boundaries.
6. Select one of the following:
   - Yes: RAC places the boundary lines along the exterior walls of a closed loop.
   - No: You sketch the area boundary lines.





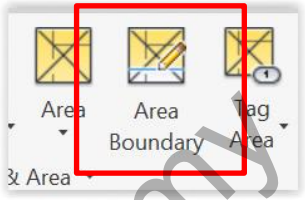


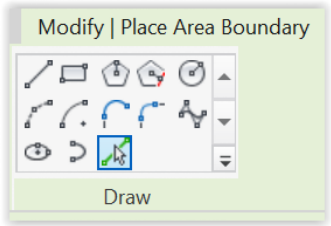


Documentation

Area

1. Project Browser – Area Plan - Open area plan view.
2. Click Home tab - Room & Area panel - Area Boundary.
3. Draw or pick the area boundaries.



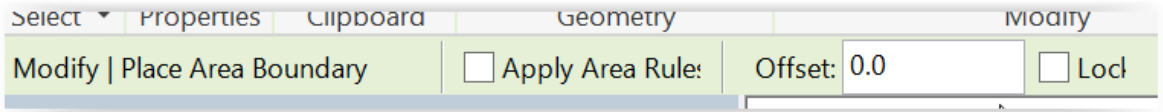


To Draw area boundary:

1. Area Boundary Tab – Draw panel and select a sketch tool 
2. Use the sketch tools to complete the boundary
3. All shape must in close loop

To Pick area boundary:

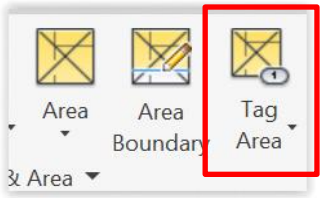
1. Area Boundary Tab – Draw panel – Pick Lines 
2. If you don't wish any of the RAC area rules, : on Options Bar – clear Apply Area Rules and specify the offset.

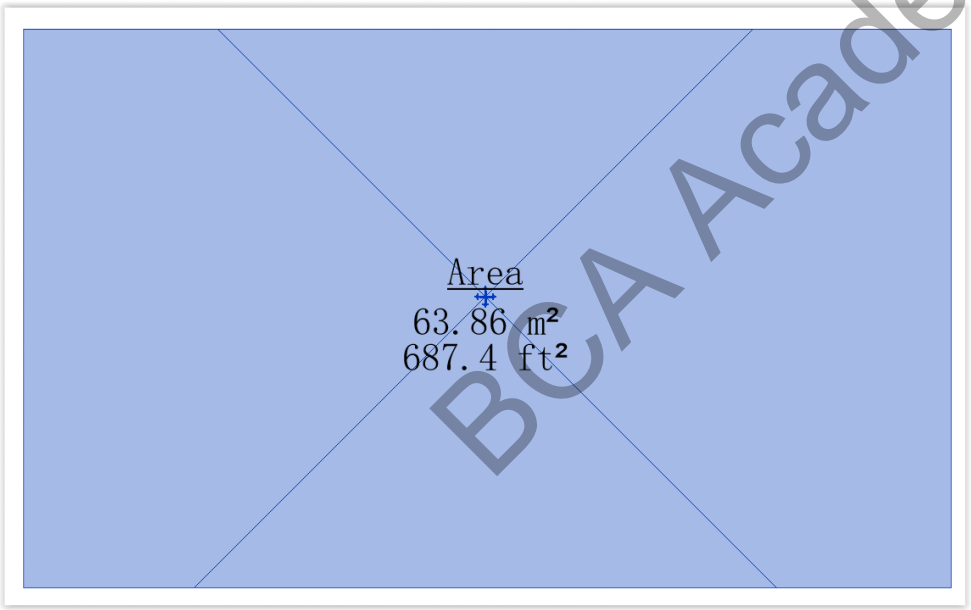


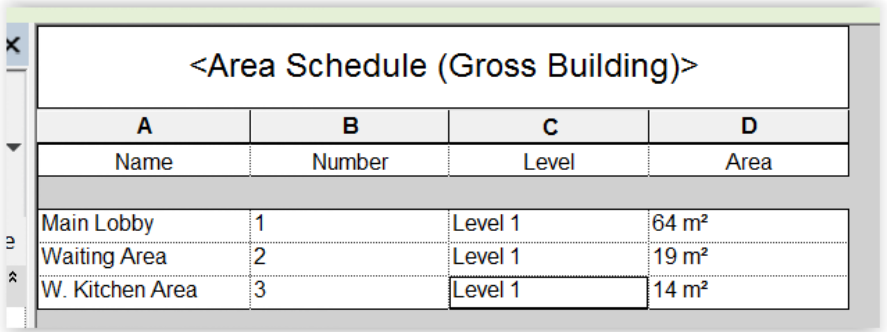
Documentation

Area

1. In properties bar under Identity Data Name: Give Name to a Room
2. Architecture > Tag Room
3. Add and Delete Room in Room Schedule





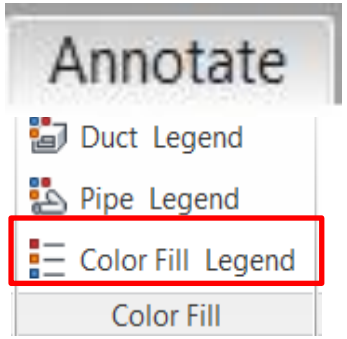


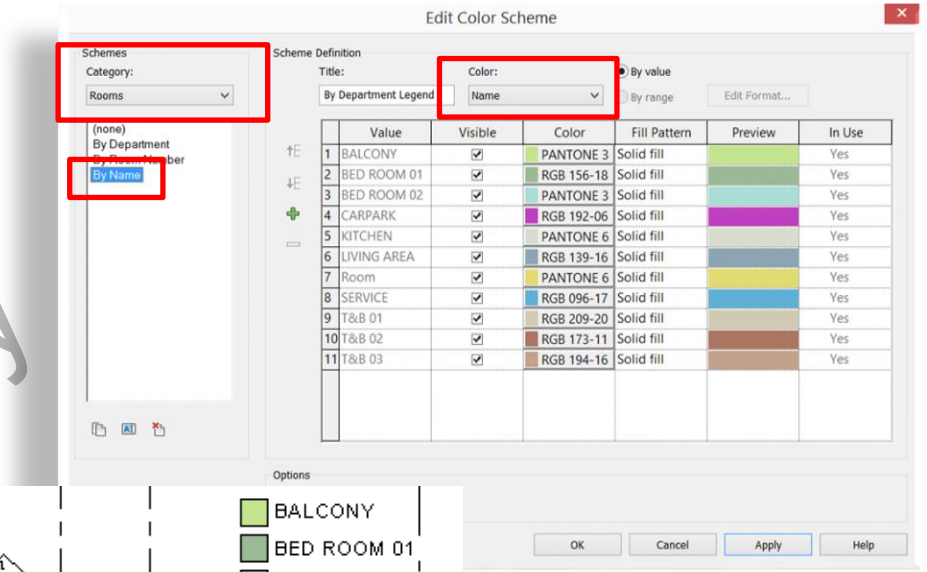
<Area Schedule (Gross Building)>

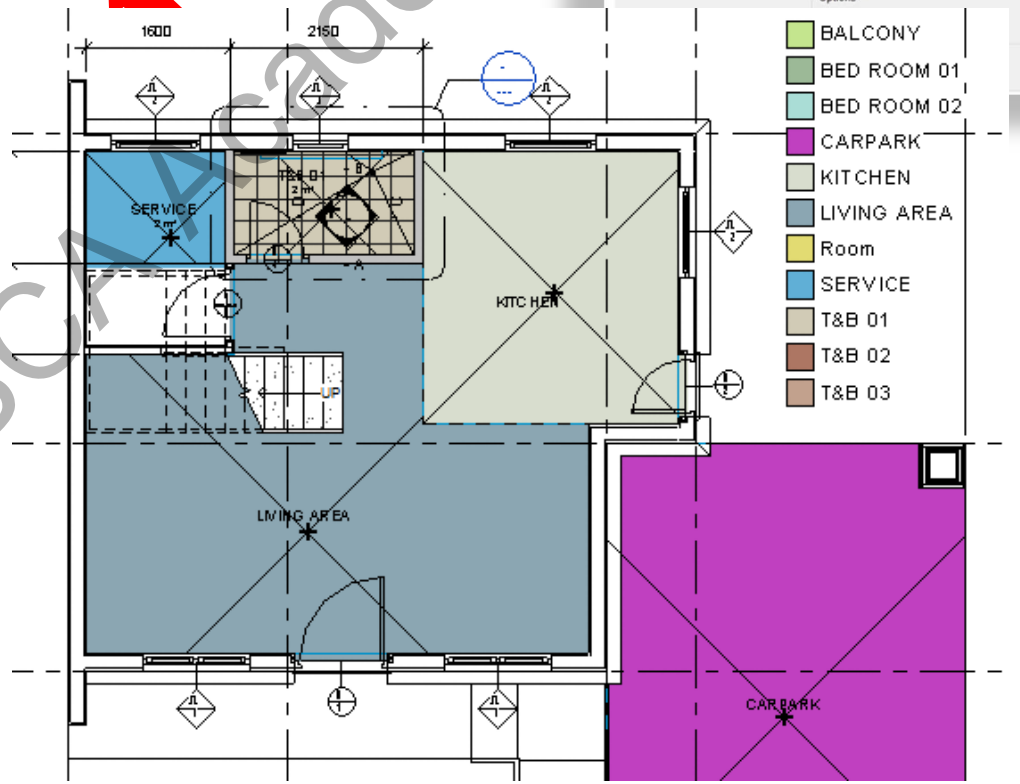
A	B	C	D
Name	Number	Level	Area
Main Lobby	1	Level 1	64 m²
Waiting Area	2	Level 1	19 m²
W. Kitchen Area	3	Level 1	14 m²

Documentation

Color Fill Legend







1. **Open a floor plan or section view**
2. **Click Annotate Tab > Color Fill Legend**
3. **Click in the drawing area to place the color fill legend**

To modify the color scheme of the color fill legend do the following

4. **In the drawing area select the legend**
5. **Click Edit Scheme**
6. **In the Edit Color Scheme dialog, select a different color schem from the list or create a new color scheme**

Documentation

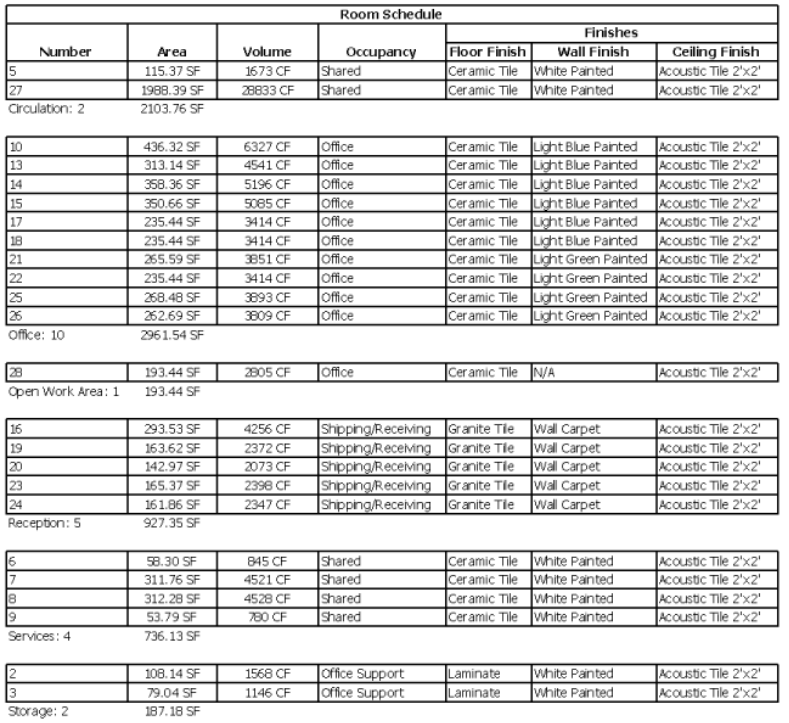
Schedule

A schedule is a tabular display of information, extracted from the properties of the elements in a project.

Types of Schedules

You can create several types of schedules:

- Schedules (or Quantities)
- Key Schedules
- Material Takeoffs
- Annotation Schedules (or Note Blocks)
- Revision Schedules (see Revision Schedules on Sheets)
- View Lists (see Using View Lists)
- Drawing Lists (see Drawing Lists)

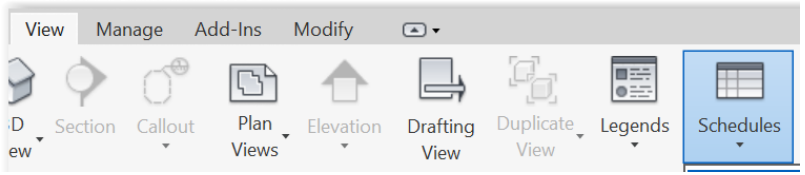


Room Schedule						
				Finishes		
Number	Area	Volume	Occupancy	Floor Finish	Wall Finish	Ceiling Finish
5	115.37 SF	1673 CF	Shared	Ceramic Tile	White Painted	Acoustic Tile 2'x2'
27	1988.39 SF	28833 CF	Shared	Ceramic Tile	White Painted	Acoustic Tile 2'x2'
Circulation: 2	2103.76 SF					
10	436.32 SF	6327 CF	Office	Ceramic Tile	Light Blue Painted	Acoustic Tile 2'x2'
13	313.14 SF	4541 CF	Office	Ceramic Tile	Light Blue Painted	Acoustic Tile 2'x2'
14	358.36 SF	5196 CF	Office	Ceramic Tile	Light Blue Painted	Acoustic Tile 2'x2'
15	350.66 SF	5085 CF	Office	Ceramic Tile	Light Blue Painted	Acoustic Tile 2'x2'
17	235.44 SF	3414 CF	Office	Ceramic Tile	Light Blue Painted	Acoustic Tile 2'x2'
18	235.44 SF	3414 CF	Office	Ceramic Tile	Light Blue Painted	Acoustic Tile 2'x2'
21	265.59 SF	3851 CF	Office	Ceramic Tile	Light Green Painted	Acoustic Tile 2'x2'
22	235.44 SF	3414 CF	Office	Ceramic Tile	Light Green Painted	Acoustic Tile 2'x2'
25	268.48 SF	3893 CF	Office	Ceramic Tile	Light Green Painted	Acoustic Tile 2'x2'
26	262.69 SF	3809 CF	Office	Ceramic Tile	Light Green Painted	Acoustic Tile 2'x2'
Office: 10	2961.54 SF					
28	193.44 SF	2805 CF	Office	Ceramic Tile	N/A	Acoustic Tile 2'x2'
Open Work Area: 1	193.44 SF					
16	293.53 SF	4256 CF	Shipping/Receiving	Granite Tile	Wall Carpet	Acoustic Tile 2'x2'
19	163.62 SF	2372 CF	Shipping/Receiving	Granite Tile	Wall Carpet	Acoustic Tile 2'x2'
20	142.97 SF	2073 CF	Shipping/Receiving	Granite Tile	Wall Carpet	Acoustic Tile 2'x2'
23	165.37 SF	2398 CF	Shipping/Receiving	Granite Tile	Wall Carpet	Acoustic Tile 2'x2'
24	161.86 SF	2347 CF	Shipping/Receiving	Granite Tile	Wall Carpet	Acoustic Tile 2'x2'
Reception: 5	927.35 SF					
6	58.30 SF	845 CF	Shared	Ceramic Tile	White Painted	Acoustic Tile 2'x2'
7	311.76 SF	4521 CF	Shared	Ceramic Tile	White Painted	Acoustic Tile 2'x2'
8	312.28 SF	4528 CF	Shared	Ceramic Tile	White Painted	Acoustic Tile 2'x2'
9	53.79 SF	780 CF	Shared	Ceramic Tile	White Painted	Acoustic Tile 2'x2'
Services: 4	736.13 SF					
2	108.14 SF	1568 CF	Office Support	Laminate	White Painted	Acoustic Tile 2'x2'
3	79.04 SF	1146 CF	Office Support	Laminate	White Painted	Acoustic Tile 2'x2'
Storage: 2	187.18 SF					

Documentation

Schedule

A schedule is a tabular display of information, extracted from the properties of the elements in a project.



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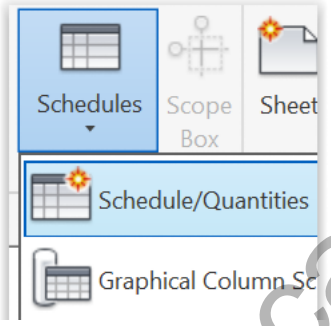
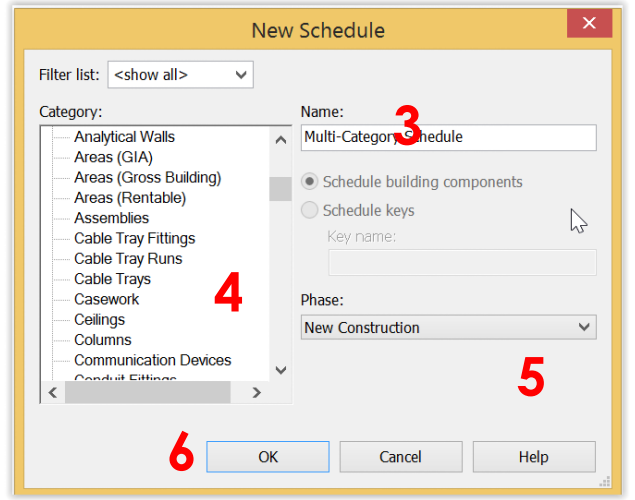
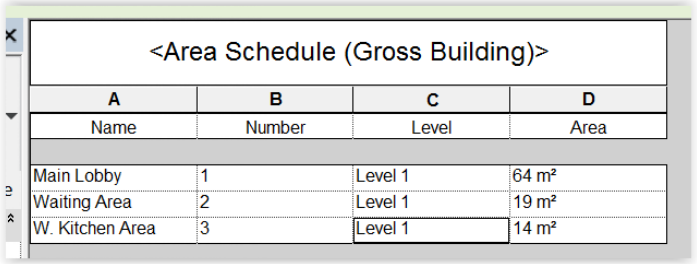


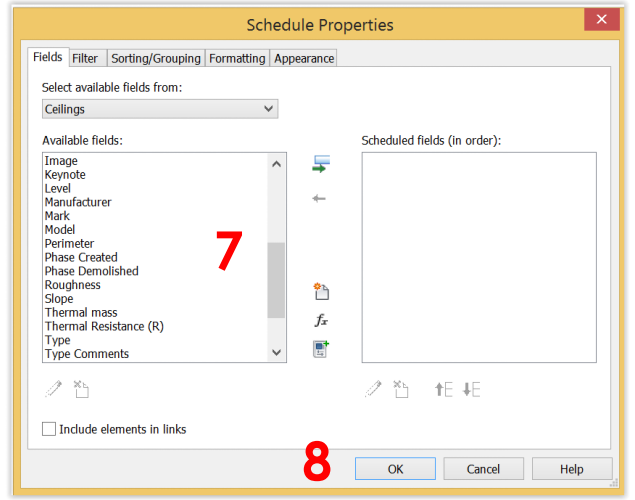
2

Creating a Schedule or Quantity

1. Click View tab - Create panel -Schedules drop-down - Schedule/Quantities.
2. In the New Schedule dialog, select a component from the category list.
3. A default name appears - change as necessary.
4. Select Schedule building components
5. Specify the phase.
6. Click OK.
7. Specify the schedule properties.
8. Click OK





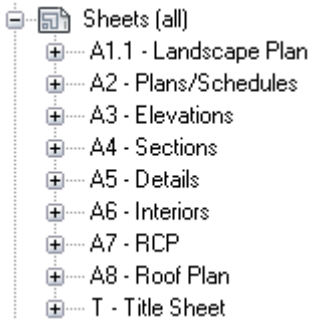


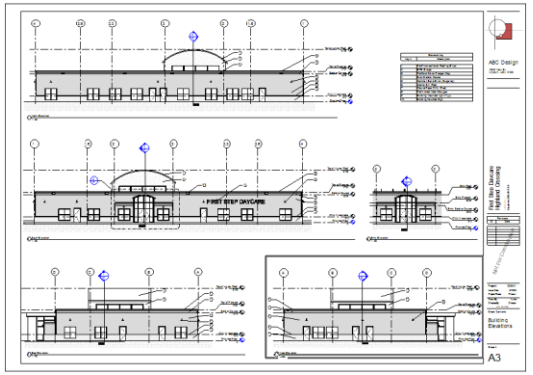
Documentation

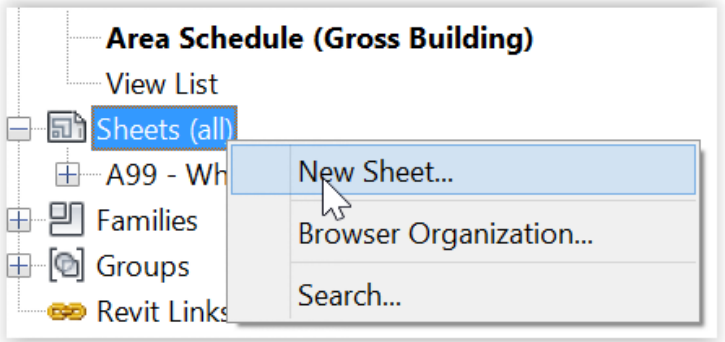
Sheets & Titlebolck

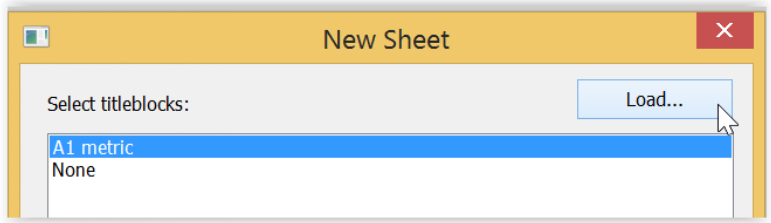
A sheet is an individual page of a construction document set. In Revit Architecture, you create a sheet view and place multiple drawings or schedules on each sheet view.

1. In Revit project - Add a sheet using one of the following methods:
   - In the Project Browser, right-click Sheets (all), and click New Sheet.
   - Click View tab - Sheet Composition panel - New Sheet.
2. Select a title block, as follows:
   a. In the Select a Titleblock dialog, select a title block from the list.
   b. If the list does not show the desired title block, click Load. In the Library folder, open the Titleblocks folder, or navigate to the folder where the title block resides. Select the title block to load, and click Open.
3. Click OK.







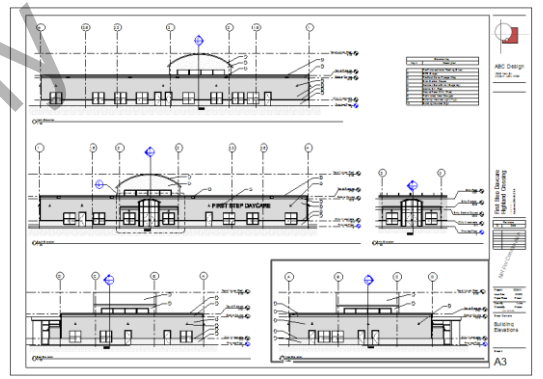


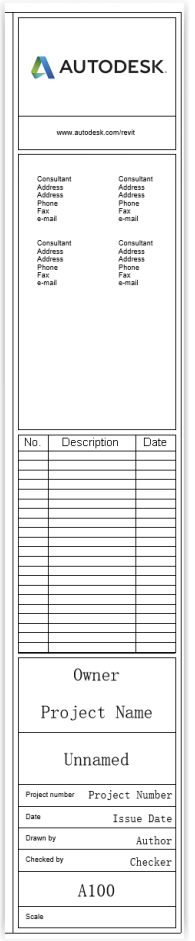
Documentation

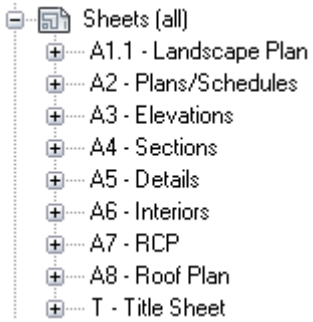
Sheets & Titlebolck

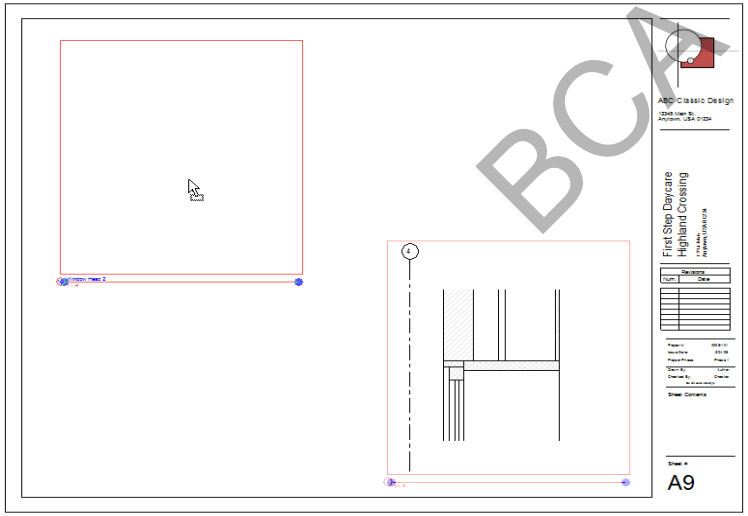
A sheet is an individual page of a construction document set. In Revit Architecture, you create a sheet view and place multiple drawings or schedules on each sheet view.

4. Enter information in the title block of the sheet.
   See Specifying Title Block Information for Sheets.
5. Add views to the sheet. (By Drag and Drop)
6. Project Browser – locate the view – drag onto the sheet
7. Change the default number and name that Revit Architecture assigned to the sheet.









*As you move the cursor over the sheet in the drawing area, a viewport for the selected view moves with it. Click to place the viewport in the desired location

Exporting

Over View

Revit supports export to several computer-aided design (CAD) formats.

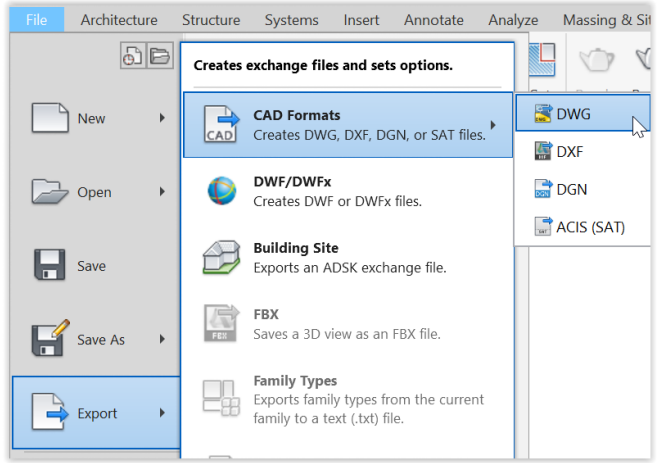
- DWG (drawing) - AutoCAD® and other CAD applications.
- DXF (data transfer) - open format supported by many CAD applications. A DXF file is a text file that describes a 2D drawing. The text is not encoded or compressed, so DXF files are generally large. If you use DXF for 3D drawings, you may need to perform some cleanup to make the drawings display correctly.
- DGN - MicroStation of Bentley Systems, Inc.
- SAT - ACIS, a solid modeling technology that is supported by many CAD applications.

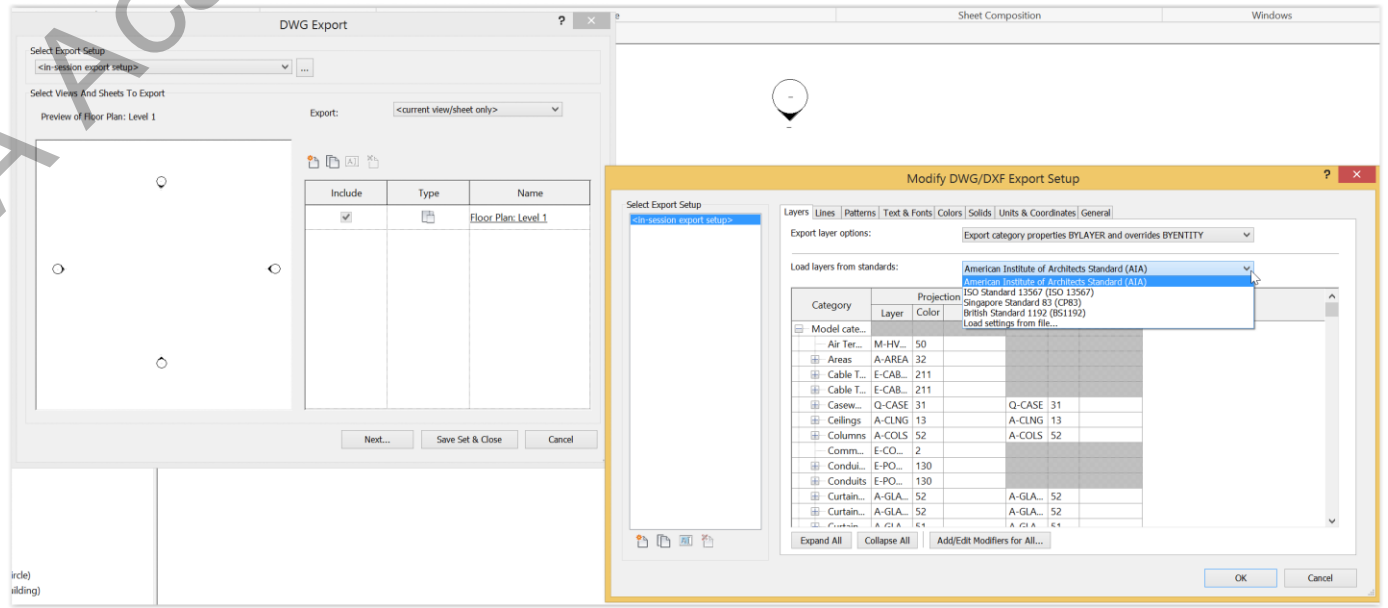
Exporting

DWG/DXF

Export one or more view to DWG / DXF

1. File Tab – Export – CAD Format or DXF
   - DWG/ DXF: Select Export Setup – Load layers from standards
2. Select the view and sheet to export
3. Click Next – If you are ready to export
4. In the Export CAD format dialog do following
   - Select folder for the export files
   - Change the file naming
   - Select Single file or Several file references
5. Click OK





Exporting

Exporting schedule

To export a schedule:

1. Open a schedule view.
2. Click - Export – Reports - Schedule. (.txt format only)
3. In the Export Schedule dialog, specify a name and directory for the schedule, and click Save. The Export Schedule dialog appears.
4. Under Schedule appearance, select export options: No Changes
   - Export column headers: specifies whether Revit Architecture column headers export.
   - One row: only the bottom column header exports.
   - Multiple rows, as formatted: all column headers export, including grouped column header cells.
   - Export group headers, footers, and blank lines: specifies whether sort group header rows, footers, and blank lines export.
   - Under Output options, specify how you want to display the data in the output file:
   - Field delimiter: specifies whether fields in the output file are separated by tabs, spaces, commas, or semi-colons.
   - Text qualifier: specifies whether the text in each field of the output file should be enclosed by a single or double quote, or no annotation.
5. Click OK.