Autodesk®
Revit® 2016 BIM Management

Template and Family Creation

Visit the following websites to learn more about this book:

Creating Custom Templates

Custom templates can save you time and provide consistency in applying office standards when creating similar projects. Templates can include items such as levels, views, sheets, schedules, and annotation types for text, dimensions, and tags. A typical family that is added to templates is a custom title block, which helps you to ensure that sheets are created with the appropriate information.

Learning Objectives in this Chapter

- Create project templates.
- Create standard text and dimension types for use in your projects.
- Modify callout, elevation, and section tags and specify which tags are loaded in a template.
- Create title blocks including detail lines, text, labels, symbols, regions, and revision schedules.
- Apply and set view templates to views.
- Create view templates.
- Set up Visibility/Graphic override filters for various categories of elements.

1.1 Preparing Project Templates

A project template is a file that contains information that can be used over and over to create new projects. The goal is to save time by using standards, enabling you to concentrate on the design. Some items in a project template include:

- Levels
- Project-based settings (e.g., Project Units, Object Styles and discipline-specific settings, etc.).
- Annotation Types
- Sheets with associated title blocks
- Views and View Templates
- Schedules and Legends
- System Families
- Component Families

You can have several project templates for different types of projects or building types, such as residential, commercial, and industrial.

If you do a lot of work for a specific client (e.g., a school system), you can also create a template specifically for their projects with associated title blocks and other information.

Defining Levels in a project template is helpful. They could be just a few basic levels for a residential project (as shown in Figure 1–1), or 50 levels for a high-rise.
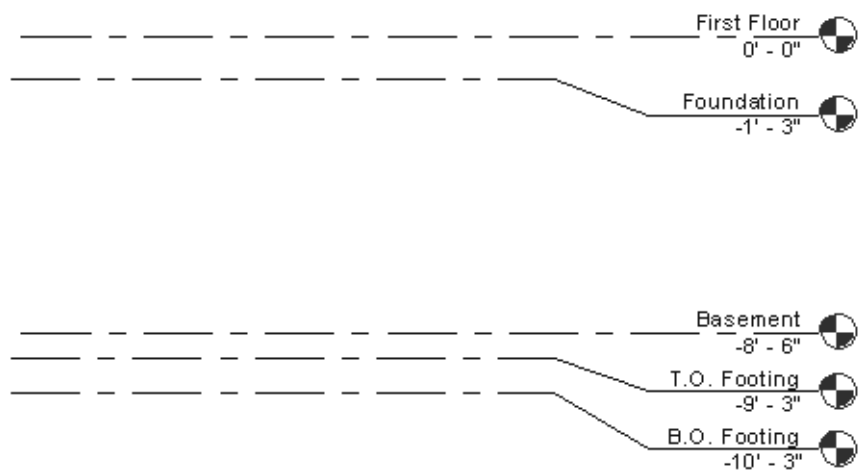

Figure 1–1

How To: Create a Project Template File

1. In the Application Menu, expand ▢ (New) and click
   ▣ (Project).
2. In the New Project dialog box, in the *Template File* area, select a template file to build from or select **None** to use a blank project file.
3. In the *Create new* area, select **Project template**, as shown in Figure 1–2.

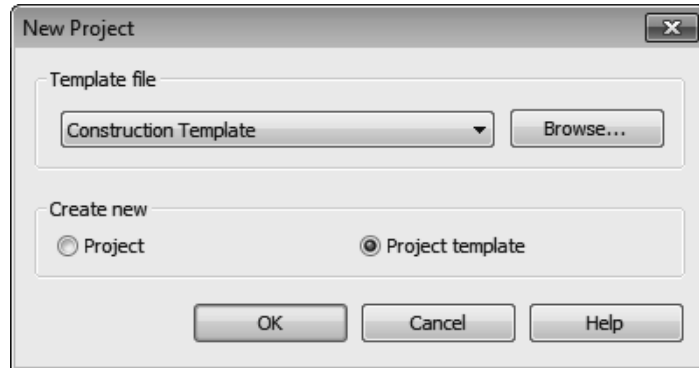*Project template files have the extension .RTE.*

Figure 1–2

4. Click **OK**.
5. Add settings, families, views, etc., as needed to the new file.
6. Save the project template file.

- To save time, use an existing project or template that includes some of the basics you need rather than starting from scratch.

- If you select <None> in the Template file list, you are prompted to specify the initial unit system for the project: **Imperial** or **Metric**, as shown in Figure 1–3.
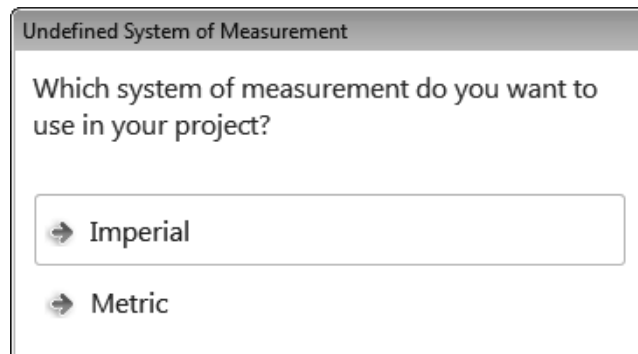

Figure 1–3

- If you need to modify the units type **UN** to quickly open the Project Units dialog box.

Managing Settings

Most of the settings stored in a template file are found in the *Manage* tab>Settings panel as shown in Figure 1–4. These settings include Units, Snaps, Temporary Dimensions, Object Styles (Lineweights, Line color, and Line patterns), Line Styles, Materials, Fill Patterns, etc.
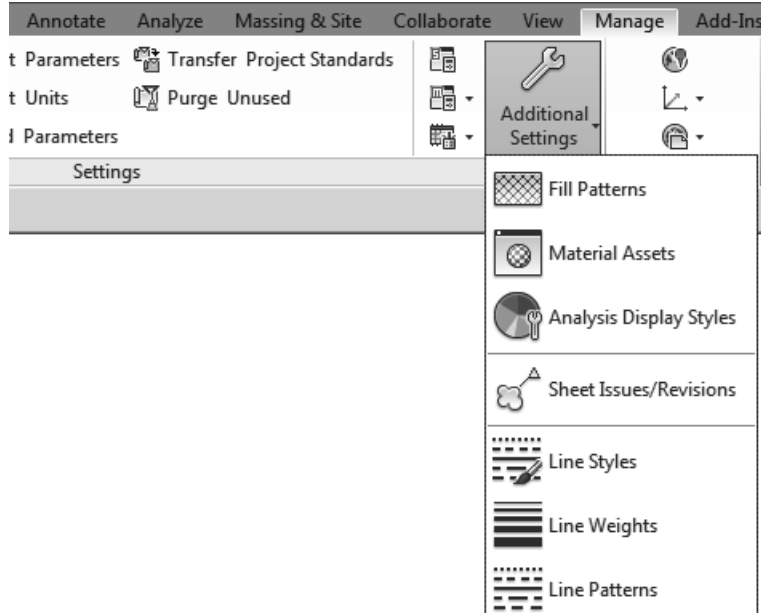

Figure 1–4

- Specific Structural Settings, MEP Settings, and Panel Schedule Templates are also included in this grouping.

Families in Templates

Walls, Wall Foundations, Floors, Slabs, Ceilings, and Roofs as well as Duct, Pipe, Cable Tray and Conduit types are created by duplicating and modifying an existing type as shown in Figure 1–5. These are known as System Families, because they are created in the system rather than in a separate family file.
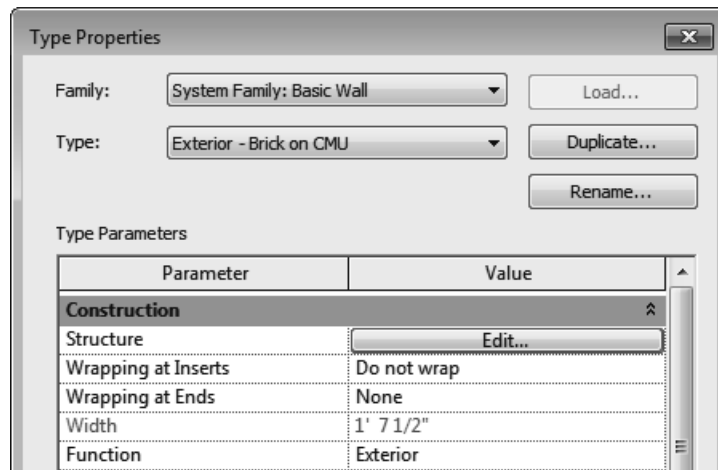

Figure 1–5

- Annotation Styles for text and dimensions are also system families and are modified in Type Properties.

- System Families can also be added when a project is in process, but it helps to have company standards created in the template.

- Component Families, such as furniture, trees, beams, columns, mechanical equipment, and electrical devices can be loaded directly in a template file if there are types and sizes that are used frequently. Otherwise, they can be loaded from a library as the project progresses.

Views and Sheets

You can create standard sheets and place empty views on the sheets. They are filled in as you proceed through a project. Views can be a few basic floor and/or ceiling plans for a residential project, as shown in Figure 1–6, or a more complex mix of Mechanical, Electrical, and Plumbing categories as shown in Figure 1–7.
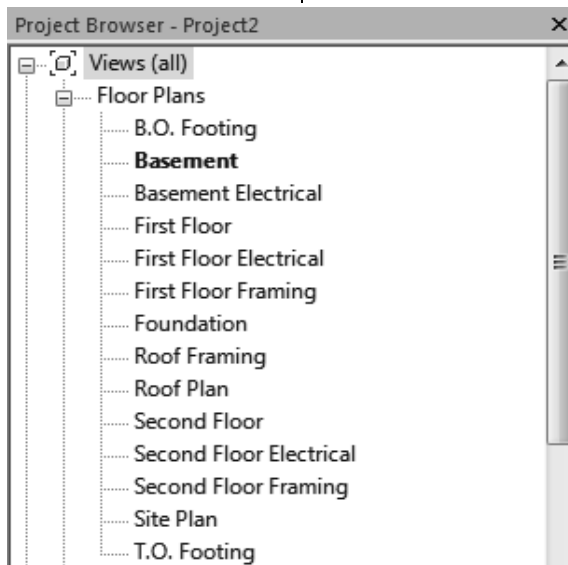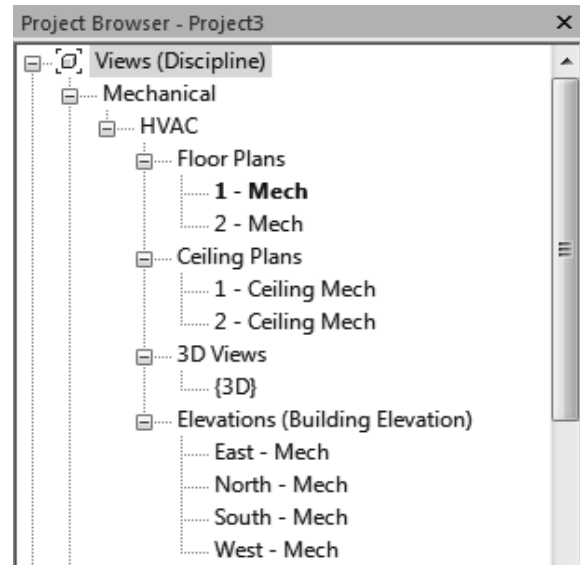

Figure 1–6

Figure 1–7

- You can create as many sheets as are typically used in a project or you can create a sheet schedule and populate it with sheet names that can be used as placeholder sheets.

Presetting a Starting View

When you create a project template or project, it can help to specify a starting view. This can be any of the standard views, such as plan, elevation, 3D view, or one that is specifically created. This is often a Drafting View (as shown in Figure 1–8), or a Legend View with information about the project or the cover sheet for the project.
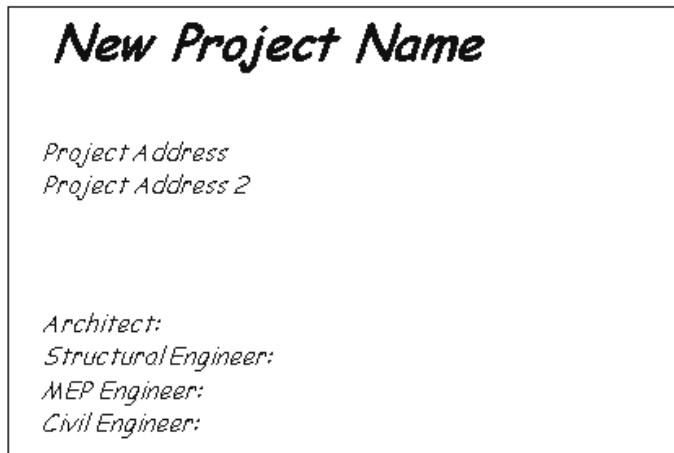

Figure 1–8

How To: Set a Starting View

1. Set up the view or sheet that you want to use as the starting view.

2. In the *Manage* tab>Manage Project panel, click (Starting View).

3. In the Starting View dialog box, select the view or sheet that you want to use as shown in Figure 1–9.
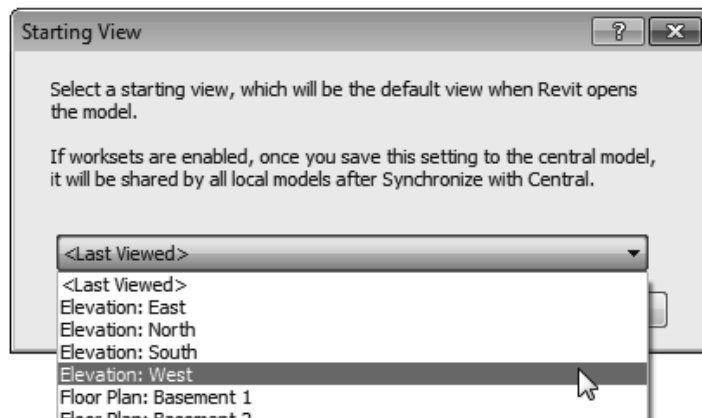

Figure 1–9

4. Click **OK**.

Setting Default Template Files

If your company uses several different templates, you can create a list that displays in the New Project dialog box, as shown in Figure 1–10. The top five templates also display on the Recent Files page.
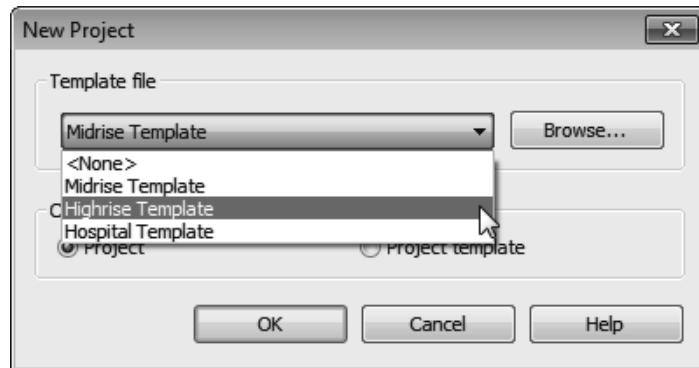

Figure 1–10

- To set the project template file list, in the Application Menu, click **Options**. In the Options dialog box, in the left pane, select **File Locations**, as shown in Figure 1–11. Specify the

  Name and *Path* for each template. Use ✚ (Add Value) to select additional templates.
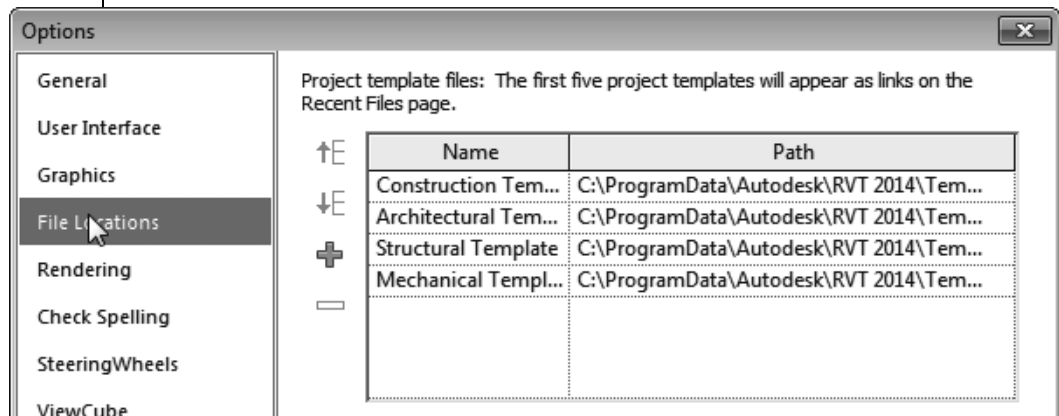

Figure 1–11

- Use ⬆ (Move Rows Up) and ⬇ (Move Rows Down) to order the templates. Move the templates that are used most often to the top.

- If you do not require a template anymore, select it and click

  ━ (Remove Value).

1.2 Customizing Annotation Types

You can customize Annotation types in your project template file including dimensions, text types, and tags, as shown in Figure 1–12.
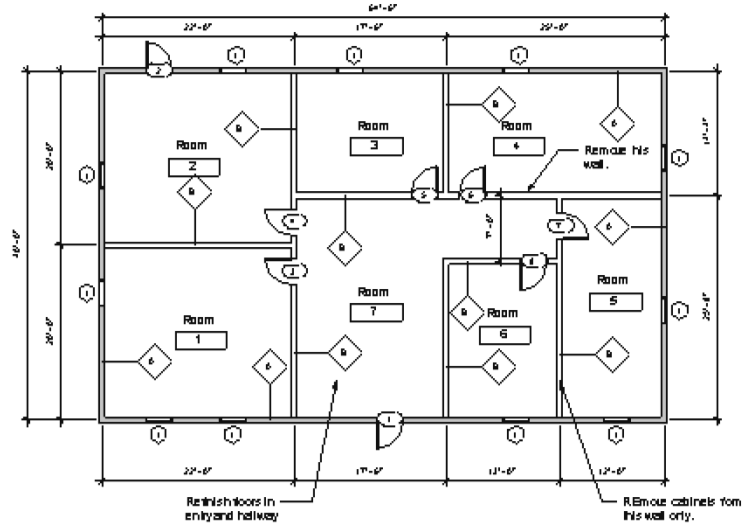

Figure 1–12

Text, Dimensions, and Arrowheads are all system families. This means they have a standard set of parameters, which you can modify and save as a type. Callout, Section, and Elevation tags can be modified within the Autodesk Revit software. Most other tags are created using families.

Creating Text Types

Text types are used to standardize text formatting (such as the font, text height, etc.), as shown in Figure 1–13. They can be created for to both annotative text and Model Text.

Figure 1–13

• The **Text** command places text at the height you need for the final plot. The view scale controls the height of the standard text in the views.

- The **Model Text** command places text that is typically used on the building, such as the signage shown in Figure 1–14. Text types for Model Text should be the full height of the text and are not affected by the view scale.

Figure 1–14

How To: Create a Text Type

1. Start the **Text** command. In Properties, click 🔲 (Edit Type) or in the *Annotate* tab>Text panel title, click ⌄ (Text Types). For **Model Text** you first have to place an instance, select it, and modify the type properties.
2. In the Type Properties dialog box, click **Duplicate...**.
3. Type a new name and click **OK**.The new type is activated.
4. Modify the parameters as needed for the new type, as shown for annotation text in Figure 1–15.

Parameter	Value
Graphics	⌃
Color	■ Black
Line Weight	1
Background	Opaque
Show Border	☐
Leader/Border Offset	5/64"
Leader Arrowhead	Arrow 30 Degree
Text	⌃
Text Font	Arial
Text Size	1/4"
Tab Size	1/2"
Bold	☐
Italic	☐
Underline	☐
Width Factor	1.000000

Figure 1–15

5. Click **OK** to finish.

Creating Dimension Types

Dimensions are one of the more complex system families in terms of the number of parameters you can modify. You can create types for each dimension method.

How To: Create Dimension Types

1. In the *Annotate* tab>Dimension panel, expand the Dimension panel title (as shown in Figure 1–16), and click 🔧 next to the dimension type you want to create.
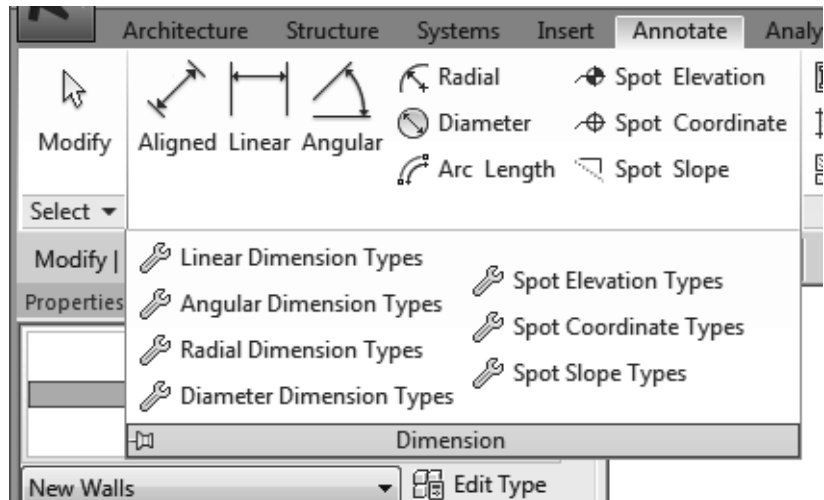

Figure 1–16

2. In the Type Properties dialog box, click **Duplicate...**.
3. Type a new name and click **OK**. The new type is activated.
4. Modify the parameters as needed for the new type.
5. Click **OK** when you are finished.

Dimension Type Options

The dimension type parameters include the *Graphics* of the dimension (such as **Tick Mark** and **Line Weight**), as shown in Figure 1–17, for Linear dimensions, and the *Text* formatting (scroll down in the Type Parameter dialog box to view).

Values for parameters (such as text size, witness line extension, etc.) are the actual plot size for these elements. The view scale controls how large they are in the specific view.
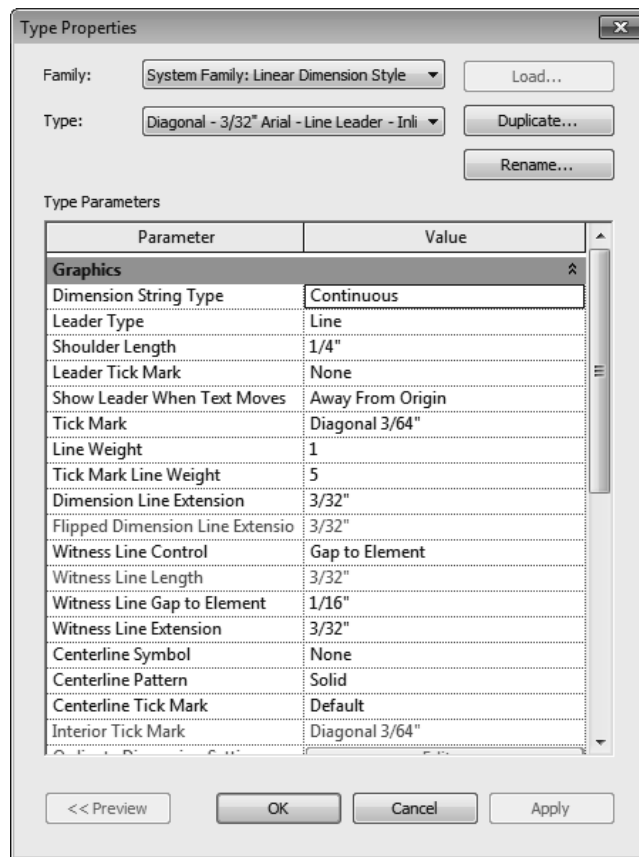

Figure 1–17

- For Linear dimensions, you can specify a *Leader Type, Shoulder Length, Leader Tick Mark, and Show Leader When Text Moves* that is used when the text is pulled away from the dimension string. You can also specify the text inserted for **Equality Text** (the default is still EQ).

- You can specify a *Text Background* option. If you set the value to **opaque**, it automatically masks any elements behind the text. If it is set to **transparent**, anything the text overlaps is still visible.

- If you are dimensioning doors and windows by their widths rather than their centers, you can also have the opening height displayed with the dimension. Select the **Show Opening Height** option.

Creating System Tags

Callout, Elevation, and Section tags can be modified to suit an office standard. Using these tags is frequently a two-step process. Set up the tag itself and then associate it with a related command.

How To: Create Callout, Elevation, and Section Tags

1. In the *Manage* tab>Settings panel, expand ✎ (Additional Settings) and click ⬭ (Callout Tags), ⬆ (Elevation Tags), or ◇ (Section Tags).
2. In the Type Properties dialog box, click **Duplicate...**.
3. Type a new name and click **OK**. The new type is activated in Type Properties.
4. Modify the parameters as needed for the new type. In the example of an Elevation Tag shown in Figure 1–18, a new type was created and a new Elevation Mark was selected.
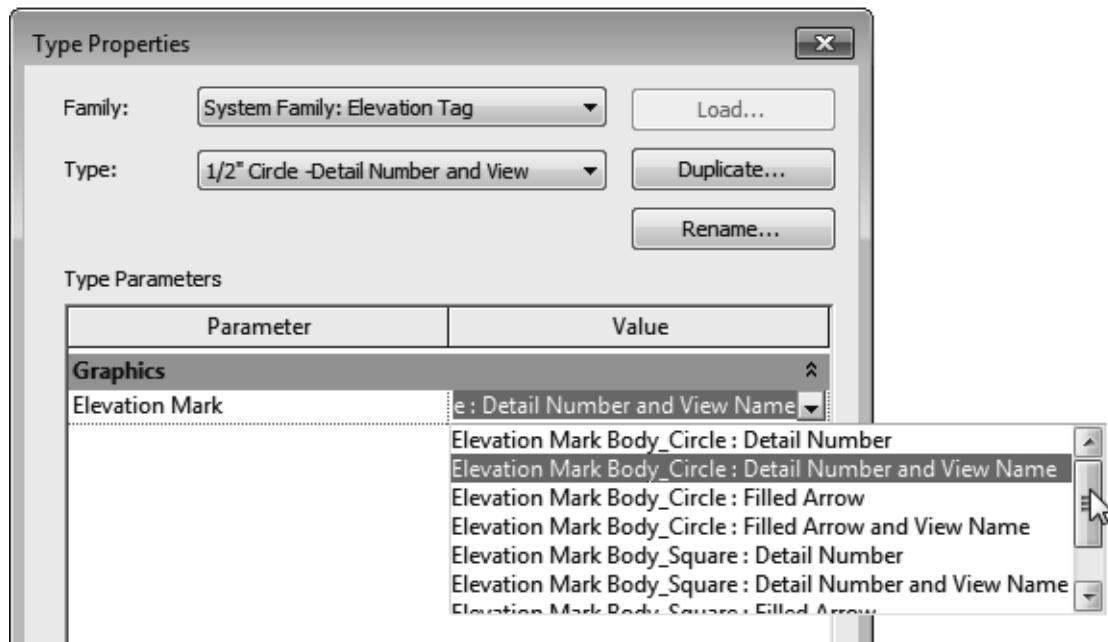

Figure 1–18

5. Click **OK** when finished.

6. Click ⬭ (Callout), ⬆ (Elevation), or ◇ (Section) as required.

7. In Properties, click ▦ (Edit Type).
8. In the Type Properties dialog box, duplicate and name the new view type.

9. Specify the related tag(s) values. When you select the value

   click [...] (Browse). This opens the Type Properties for the tag in which you can select a different type, as shown in Figure 1–19. (You can also create tag types in this dialog box.)
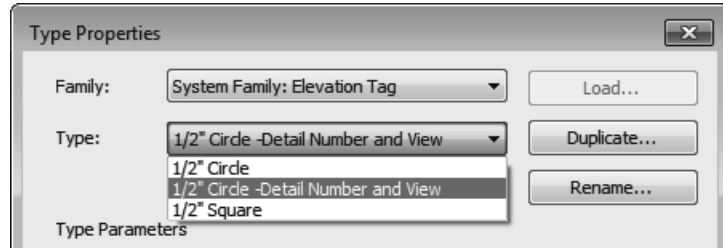

Figure 1–19

10. Click **OK** to apply the tag type.
11. Modify the other parameters as needed and click **OK** to close the Type Properties dialog box and continue using the command.

Type Specific Tag Parameters

The **Callout Tags** parameters specify a *Callout Head* and the *Corner Radius* of the callout box, as shown in Figure 1–20.
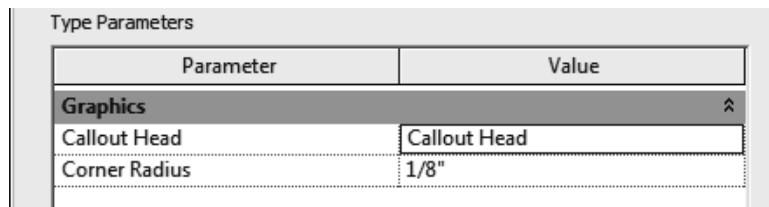

Figure 1–20

The **Elevation Tags** parameter is the *Elevation Mark*. You can select from a variety of types that come with the Autodesk Revit software, as shown in Figure 1–21. For example, you might want to set the exterior elevation mark to display a square body and the detail number on the sheet where it is placed.
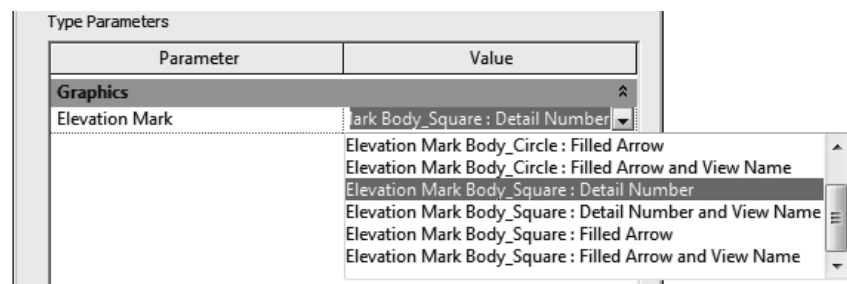

Figure 1–21

The **Section Tags** parameters include both the *Section Head* and *Section Tail*, as well as the *Broken Section Display Style*, as shown in Figure 1–22.

Figure 1–22

Loading Tags in a Template

You can load tags, such as door, window, and wall tags (as shown in Figure 1–23), from the libraries that are included with the software in the *Annotations* folder, or from a specified network drive, into a project template. Having the specific tags required for your projects increases adherence to company standards.
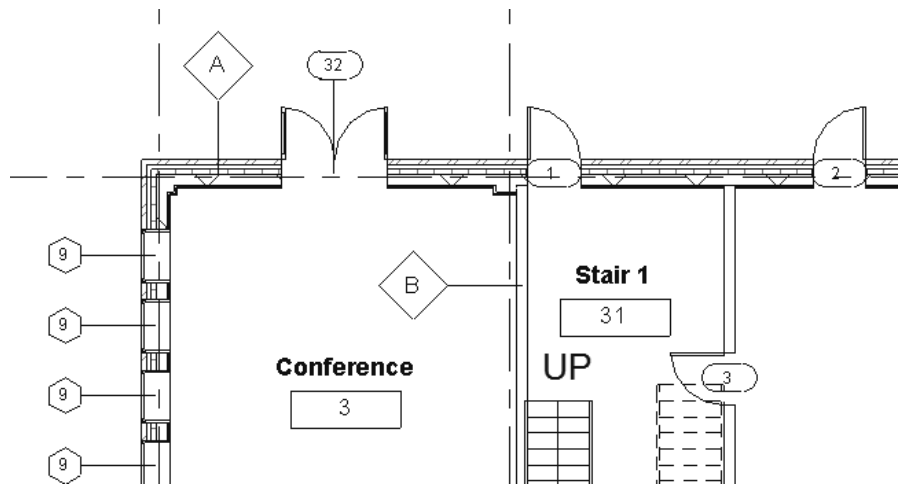

Figure 1–23

Tags are created as separate family files (RFA) and stored in the assigned library (frequently on a network drive). In the Loaded Tags and Symbols dialog box (shown in Figure 1–24), you can easily load the tags you need from the Library into the project template Therefore, when you start the **Tag** command, the one you need is available.
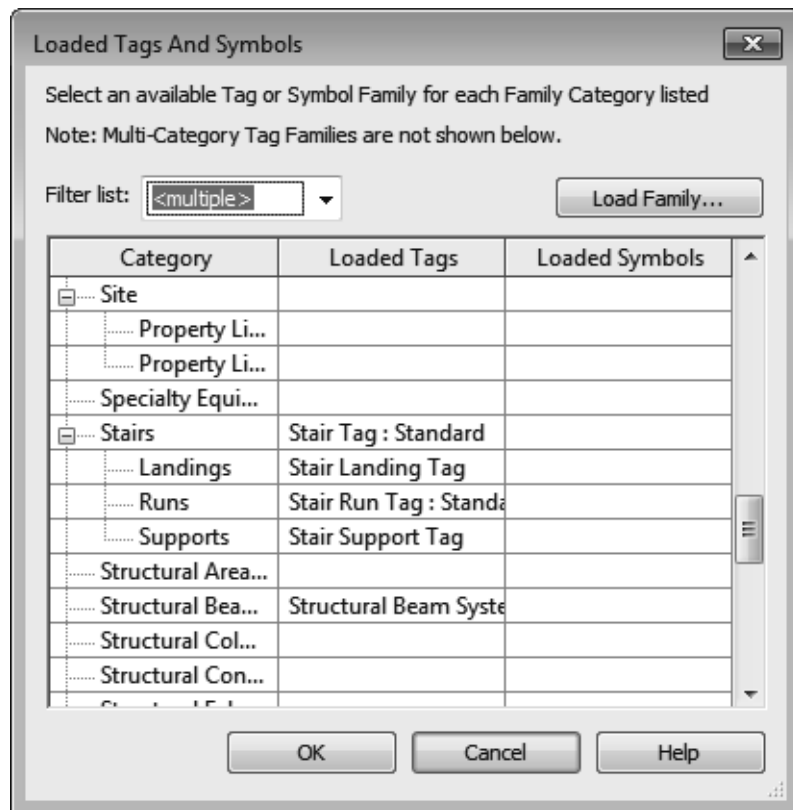
Figure 1–24

- Some elements, such as Floors and Structural Fabric Reinforcement, have both tags and symbols. They can both be specified in this dialog box.

How To: Specify Loaded Tags

1. In the *Annotate* tab>Tag panel, expand the panel title and click (Loaded Tags).
2. In the Tags dialog box, Use the *Filter* field to limit the types of tags you are looking for by discipline.
3. Click **Load Family...**.
4. In the Load Family dialog box, navigate to the appropriate library and folder.
5. Select the required tags and click **Open**. Hold <Ctrl> or <Shift> to select multiple tags.
6. When you have loaded all of the tags that you typically need for a project, click **OK**.

Practice 1a

Prepare Templates (All Disciplines)

Practice Objectives

- Create a new project template file and specify the units and levels.
- Set up text and dimension types and load tags.

Estimated time for completion: 15 minutes

In this practice you will create a new project template file, modify the units, snaps, temporary dimensions, and add several new levels. You will create several text types, add a dimension style that uses arrows (as shown in Figure 1–25), and load typical tags into the project template file.

1/8" Arial   *1/8" Hand*
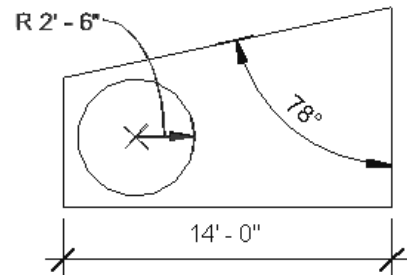
3/32" Arial   *3/32" Hand*

1/4" Title

R 2' - 6"

78°

14' - 0"

Figure 1–25

Task 1 - Establish a project template file.

1. In the Application Menu, expand ☐ (New) and click ☐ (Project).

2. In the New Project dialog box, select an existing template file similar to your primary discipline. In the *Create New* area, select **Project template** and click **OK**.

3. In the Quick Access Toolbar, click ☐ (Save) and save the template in the practice files folder as **Midrise-Template.rte**.

4. In the *Manage* tab>Settings panel, click ☐ (Project Units) or type **UN**.

5. In the Project Units dialog box, set the *Length* formats as follows:

Length:	Units	Feet and Fractional Inches
	Rounding	To the nearest 1/16"
	Suppress 0 feet	Check
Angle:	Rounding	0 decimal places

6. Click **OK** to close the Units dialog box.

7. Open an elevation view.

8. Change Level 2 to **16'-0"**. Add three more levels above the current levels at **12'-0"** apart. Add two levels below Level 1 and set them **10'-0"** apart. Rename them as **Basement 1** and **Basement 2**, as shown in Figure 1–26.
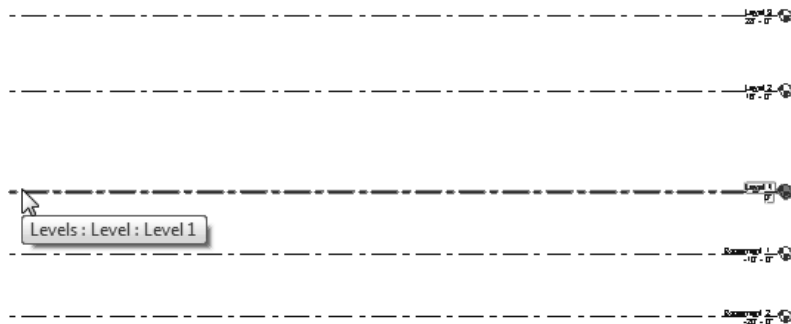

Figure 1–26

- If you draw the levels using (Level), you can select the **Make Plan View** option in the Options Bar to create the associated views.
- If you copy the existing levels, you need to create the plan views and ceiling plan views. In the *View* tab>Create panel, expand (Plan Views) and click (Floor Plan), (Structural Plan), and/or (Reflected Ceiling Plan).
- **MEP only:** Rename above ground levels and corresponding views to match the other levels in the HVAC sub-discipline (3 - Mech, 4 - Mech, etc) and expand the ??? node and select all of the new ceiling plans. In Properties, change the *Sub-Discipline* to **HVAC**.

9. Switch back to the original plan view and save the project template.

Task 2 - Preset annotation types.

1. Create the following text types:

1/8" Arial	Use the default, but set the *Height* to **1/8"**.
1/8" Hand	Use a hand-lettering *Font*, such as **Comic Sans MS**, and select *Italic*.
3/32" Hand	Same as above with a *Height* of **3/32"**.
1/4" Title	Use the font of your choice, in bold.
1" Title	Duplicate **1/4" Title** and change the *Height* to **1"**

2. Create or modify a Linear Dimension type and change the Units Format *Rounding* to the **nearest 1/8"**. Modify the angular dimension type to use arrowheads. Modify other parameters if required.

3. Load the following tags from the Revit Library into the discipline-specific project template:

Architecture:

Folder	Tag Name
Architectural	Casework, furniture, and furniture systems
Civil	Parking and planting

MEP:

Folder	Tag Name
Fire Protection	Sprinkler
Electrical	Lighting fixture and panel name

Structure:

Folder	Tag Name
Architectural	Wall and Floor
Structural	Select any different Structural tags you might want to use in place of those already loaded.

4. Save the project template.

1.3 Creating Title Blocks

Title blocks contain information about the company and consultants designing the project, project information, and sheet-specific information, as shown in Figure 1–27. This information might include but is not limited to the following: the project name, address, number, sheet number, revisions, and other parameters. Some of these parameters never change, some are project-specific, and some are sheet-specific.

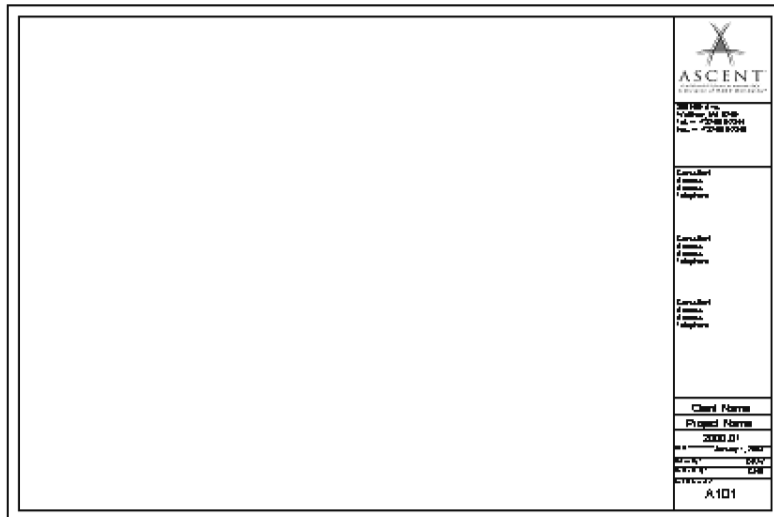*Labels and Revision Schedules are specifically used in title blocks.*

Figure 1–27

- Create the title block by sketching detail lines and adding text, symbols, and regions, as well as image files for company logos. The variable information is stored in labels.

Autodesk Revit 2016 BIM Management: Template and Family Creation

How To: Create a Title Block

You can select from several preset sizes or create a custom size.

1. In the Application Menu, expand ☐ (New) and click ☐ (Title Block).
2. In the New Title Block - Select Template File dialog box, select a template file size from the list and click **Open**. A new family file opens and the Family tools display in the Ribbon, as shown in Figure 1–28.
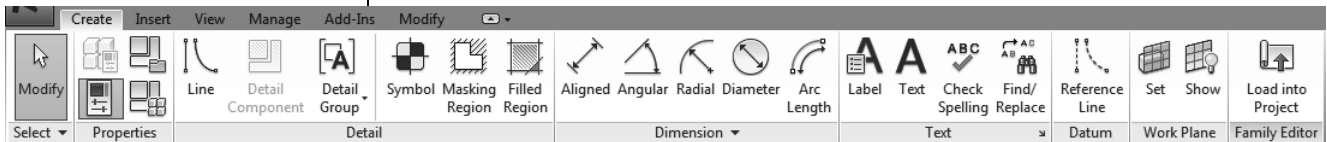

Figure 1–28

- If you select a template with a standard size, a rectangle of that size displays in the view.
- If you select **New Size**, a rectangle with dimensions displays. Edit the dimensions to modify the size.

3. Add lines, filled regions, symbols, text, labels, etc., as needed.
4. Save the file and close it.

- You can use dimensions to help place the elements in the title block family, they are not displayed when the title block is inserted.

Adding Labels

Labels are not just text but elements that are assigned to specific parameters and can be added to title blocks or tags. They can change without modifying the rest of the elements. For example, you would use annotation text for the words **Drawn By:** and a label for the initials of the person who did the work (by default displaying DRW in Figure 1–29), because that varies from sheet to sheet.

Figure 1–29

- The title block template comes with one text type and one label type already defined. You can create additional types in Properties by duplicating types. The **Text** and **Label** parameters are similar, but you must create separate types for each of them.

How To: Create a Label

1. In the Family Editor, in the *Create* tab>Text panel, click

   ⬛A (Label).

2. In the *Modify | Place Label* tab>Format panel, specify the alignments: **Left**, **Center**, **Right**, **Top**, **Center Middle**, or **Bottom**, as shown in Figure 1–30.
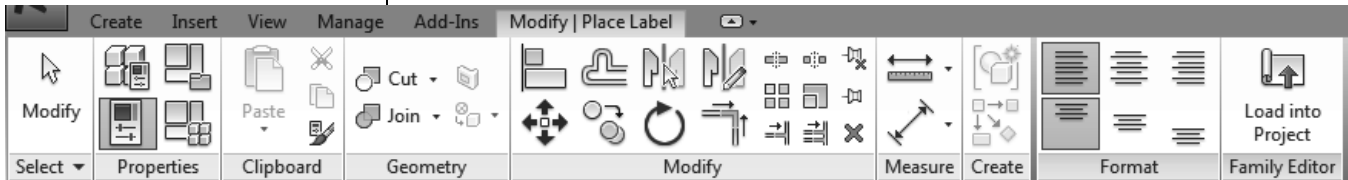

Figure 1–30

3. Click in the view window to place the label, as shown in Figure 1–31.

Figure 1–31

4. In the Edit Label dialog box shown in Figure 1–32, select a label in the *Category Parameters* list and double-click or click

   ⬛ (Add parameter(s) to label). You can select more than one by holding down <Ctrl> or <Shift>.
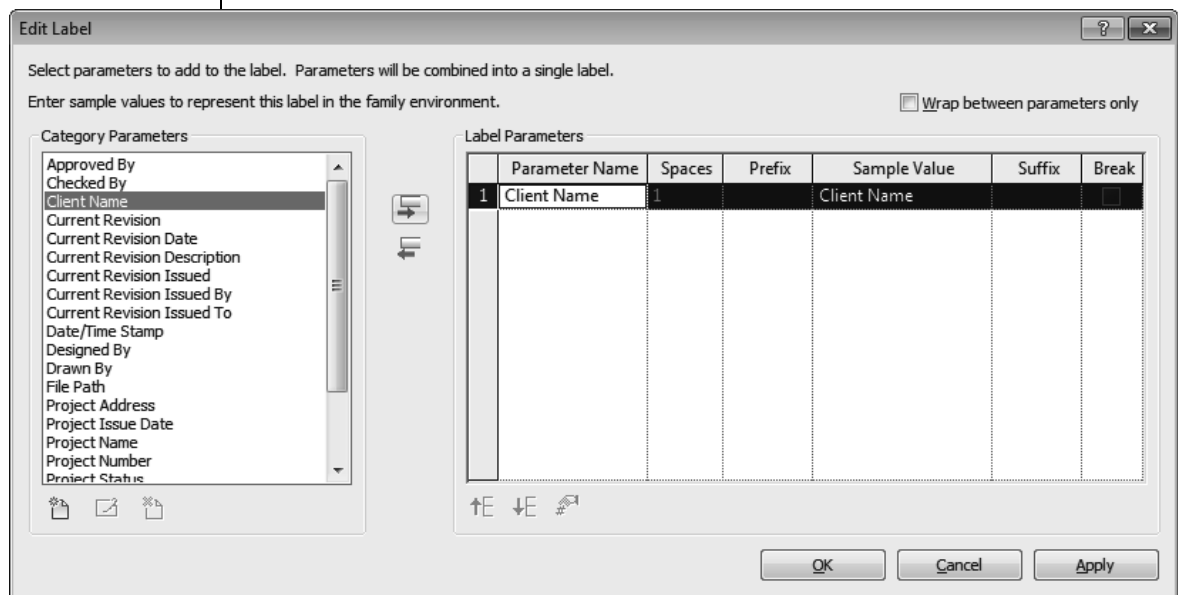

Figure 1–32

5. Enter the *Sample Value* and specify any other options as needed.

    -   If you are using several parameters in one label, select **Wrap between parameters only** and **Break** (in column) options to separate them while still permitting a word wrap.

    -   Click ⬚ (Add Parameter) to create a new parameter for the project.

    -   Click ↑E (Move parameter up) and ↓E (Move parameter down) to reorder multiple parameters.

    -   If you select a numerical parameter, click ⚲ (Edit parameter's units format) to change, if necessary.

6. Click **OK** when you have finished editing the label.
7. While still placing the label, rotate or stretch it as needed (as shown in Figure 1–33), or select a point for an additional label.

Figure 1–33

-   You can also rotate or stretch a label once it has been placed in the title block.

Adding Revision Schedules

A table of revisions included in a project and/or sheet is typically added to a company title block, as shown in Figure 1–34. In the Autodesk Revit software, you can create a Revision Schedule that is then linked to the Revision Table in the project.

No.	Description	Date

Figure 1–34

How To: Add Revision Schedules to Title Blocks

1. In the Family Editor, in the *View* tab>Create panel, click

   (Revision Schedule).
2. In the Revision Properties dialog box, select the fields you want to use. Several are already selected for you, as shown in Figure 1–35.
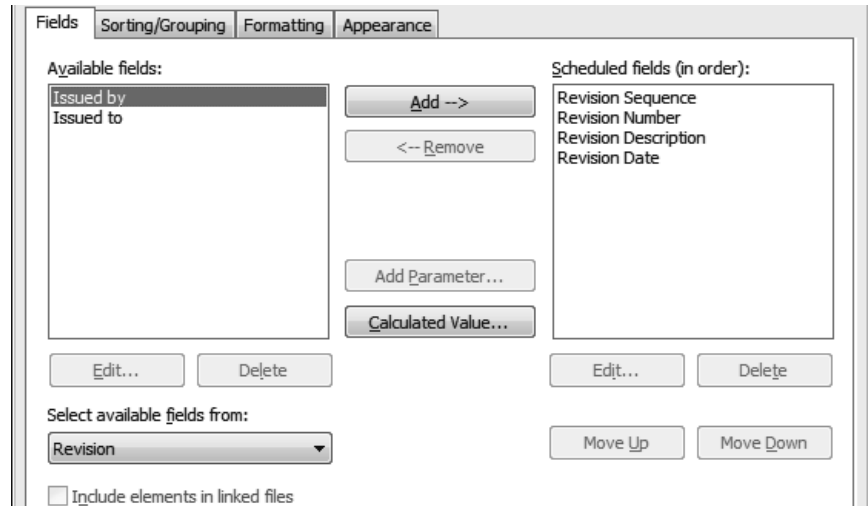

Figure 1–35

3. Modify the options in the *Sorting/Grouping* and *Formatting* tabs as needed.
4. In the *Appearance* tab, select how you want to build the schedule: from the **Top-down** or **Bottom-up**. You can also set the *Height* to **Variable** or **User-Defined**.
5. Click **OK**. The schedule view displays.
6. In the Project Browser, open the Sheet view (it has no name).
7. Drag and drop the schedule onto the sheet and modify the controls, as shown in Figure 1–36.

If the height is set to ***User-Defined****, an additional control is displayed at the bottom of the schedule. Use it to set the height of the schedule.*
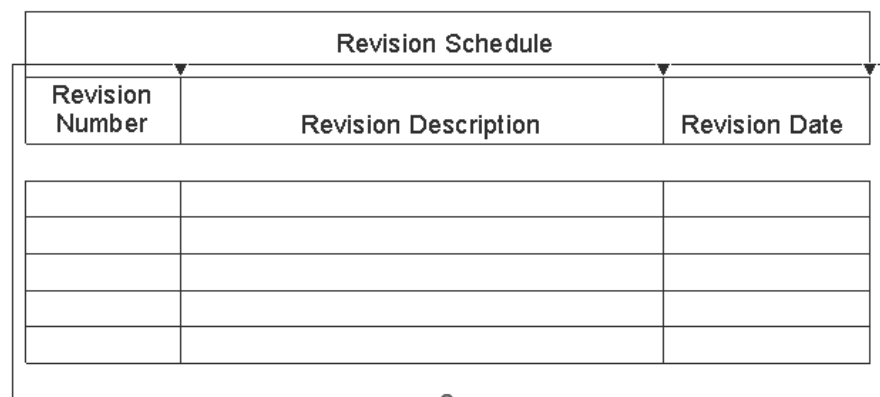

Figure 1–36

• In the Options Bar, you can change the *Rotation on the Sheet* to **None**, **90° Clockwise**, or **90° Counterclockwise**.

Adding Sheets to Project Templates

You can set up project templates using the custom title block in two ways. Add all or most of the sheets typically needed for a project, or create a Sheet List Schedule that can be used to automatically create sheets when they are needed.

In most cases, it is best to create sheets that are always used in projects in the template and even put typical views on them, as shown in Figure 1–37. Note that the view is empty in the template, but as you draw elements in the project they automatically display in the view and on the sheet.
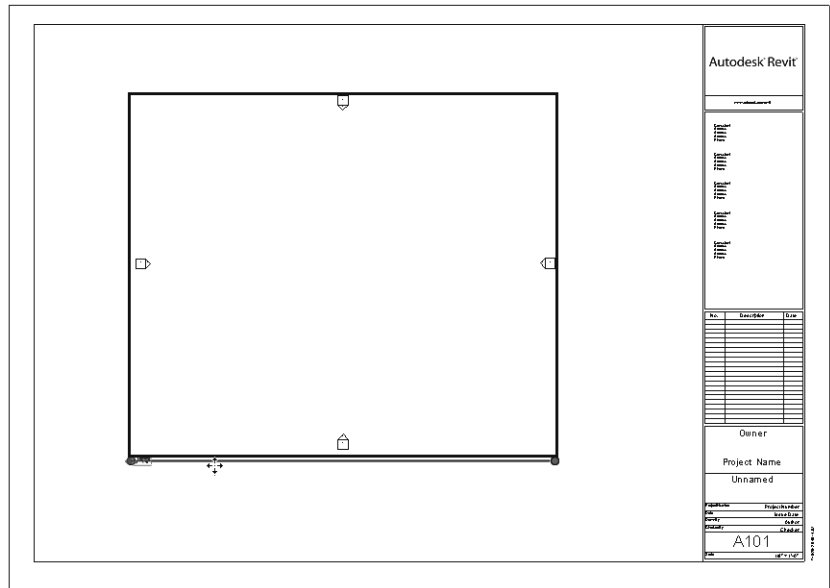

Figure 1–37

How To: Load a Title Block into a Project Template

1. Open the project template.
2. Return to the custom title block family. In the Family Editor panel, click ⬆ (Load into Project).
3. In the Load into Projects dialog box, select the project you want the title block loaded into and click **OK**. If only one project is open, it is loaded into the project automatically.
4. The title block is now available when you create a sheet.

• If the title block family is not open, select *Insert* tab>Load from Library panel and click ⬇ (Load Family) to access it, or click **Load...** in the New Sheet dialog box.

- When you save a title block, it should be on the network where everyone has access to it. That way, it is not deleted if someone reinstalls the Autodesk Revit software. Set the default location for the family template files in the Options dialog box, in the *File Locations* tab, as shown in Figure 1–38.
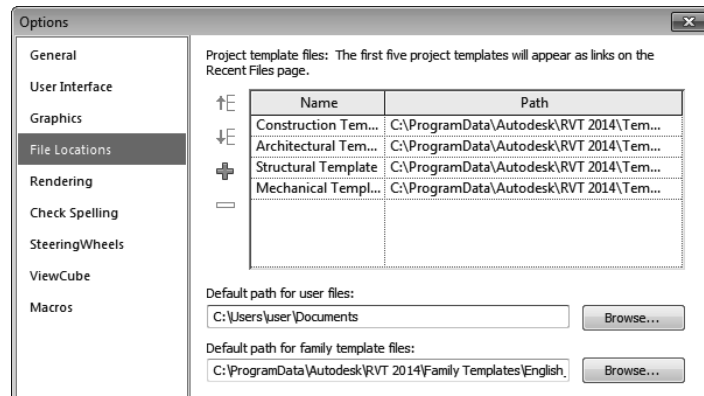

Figure 1–38

Practice 1b

Create Title Blocks (All Disciplines)

Practice Objectives

*   Draw a custom title block including detail lines, text, labels, and a revision table.
*   Set up sheets in the template using the new title block.

Estimated time for completion: 15 minutes

In this practice you will create a new title block by adding lines, text, labels, logo, and a Revision Schedule similar to Figure 1–39. You will then load it into a project template file and create several standard sheets.
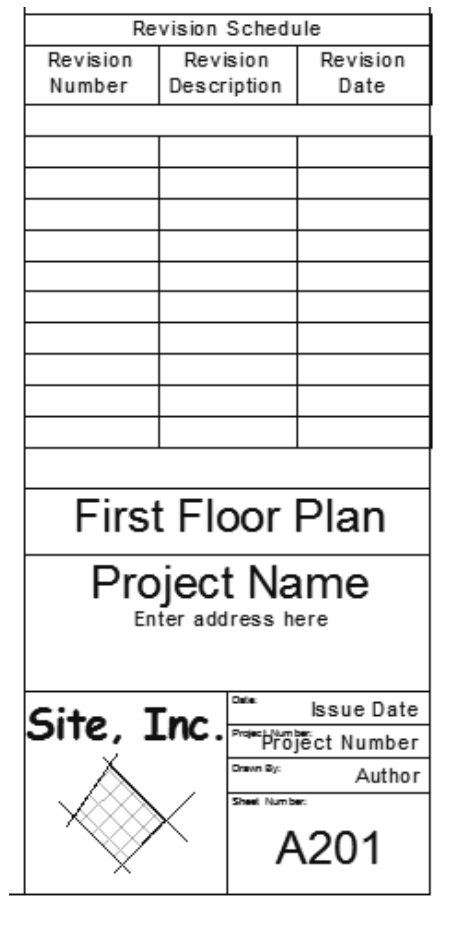
Figure 1–39

Task 1 - Create a title block.

1. In the Application Menu, expand ☐ (New) and click ☐ (Title Block).

2. In the New Title Block - Select Template File dialog box, select **D - 36 x24.rft** and click **Open**.

3. In the *Create* tab>Detail panel, click $\bigwedge$ (Line) and create lines on the inside of the existing rectangle **1/4"** away from the top, bottom, and right sides. Draw a line **1"** away on the left margin. Trim the lines as needed.

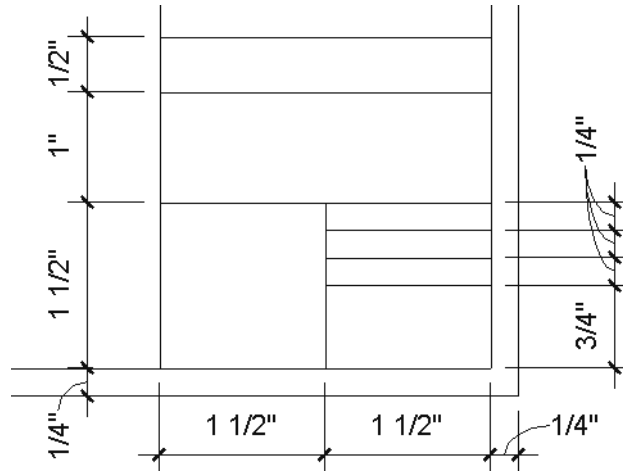4. Draw lines in the lower right corner of the title block, as shown in Figure 1–40.

Figure 1–40

5. In the *Create* tab>Text panel, click **A** (Text).

6. In Properties, click (Edit Type) and create the following Text types:

Type Name	Font	Size	Bold	Background
Arial 1/16"	Arial	1/16"	No	Transparent
Title	Comic SansMS	1"	Yes	Transparent
Logo	Your choice	1/4"	Yes	Transparent

7. In the *Create* tab>Text panel, click (Label).

8. In Properties, click ⊞ (Edit Type) and create the following Label types:

Type Name	Font	Size	Bold	Background
Arial 1/8"	Arial	1/8"	No	Transparent
Arial 1/4"	Arial	1/4"	No	Transparent

9. Create a graphic and company name of your own design in the lower left box, for example Jepson+Johnson Architects. as shown in Figure 1–41. Using the following steps, add text, labels, and graphics to the title block.
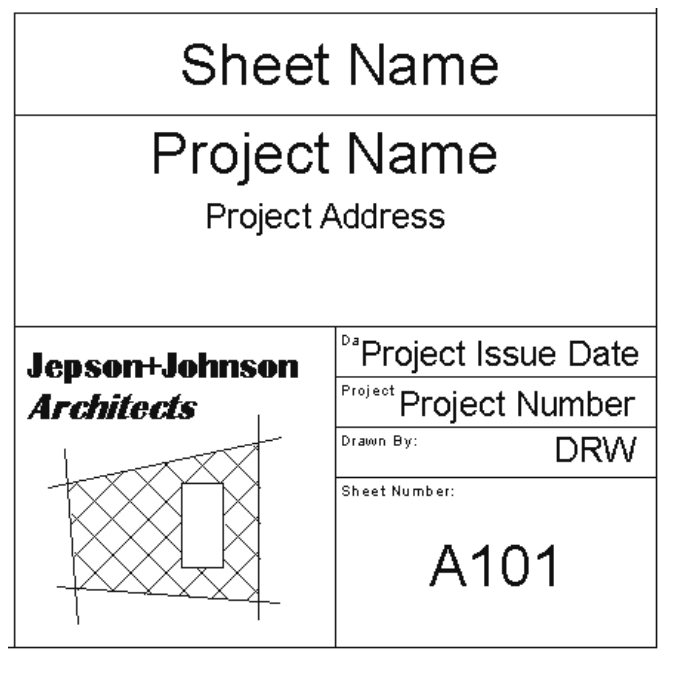

Figure 1–41

- Use **A** (Text) with the *text type* **Arial 1/16"** to add text in the lower right spaces for the *Date*, *Project Number*, *Drawn By*, and *Sheet Number*.

- Use ▤A (Label) with the *label type* **Arial 1/4"** and

   ☰ (Align Center) justification to add the *Sheet Name*, *Project Name*, and *Sheet Number*. Move and stretch the labels to fit in the title block.

- Using the *label type* **Arial 1/8"** and ☰ (Align Center) justification, add the *Project Address* below the *Project Name*.

- Using the *label type* **Arial 1/8"** and ≣ (Align Right) justification, add the *Project Issue Date*, *Project Number*, and *Drawn By*.

- Add the **Logo** text in the box on the lower left side, shown as Site, Inc. in the title block. Draw lines and add a filled region for a graphic logo as needed.

10. Save the title block in the practice files folder as **TBLK-D.rfa**.

Task 2 - Add a Revision Schedule.

1. In the title block Family Editor, in the *View* tab>Create panel, click (Revision Schedule).

2. In the Revision Properties dialog box, *Fields* tab, set up the fields as shown in Figure 1–42.

Figure 1–42

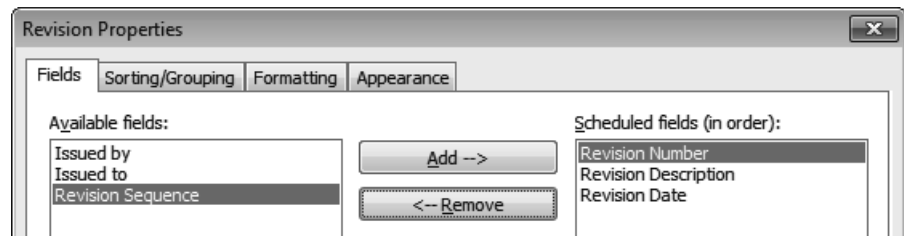3. Accept the defaults for the *Sorting/Grouping* and *Formatting* tabs.

4. Select the *Appearance* tab and change the *Height* to **User defined**.

5. Click **OK**.

6. In the Project Browser, expand *Views (all)* to display the *Schedules* and *Sheets (all)* areas, as shown in Figure 1–43. In the *Sheets (all)* area, open the **-** view.
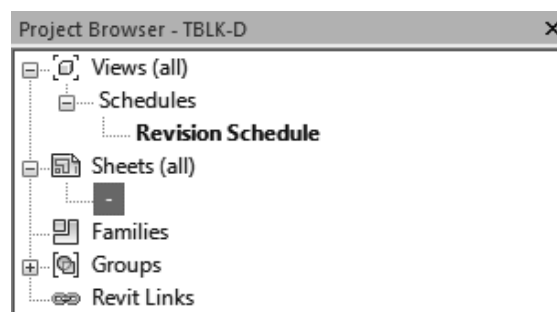

Figure 1–43

7. Drag and drop the Revision Schedule onto the sheet.

8. Move it above the sheet name and resize it to display several lines, as shown in Figure 1–44.

Revision Schedule		
Revision Number	Revision Description	Revision Date
Sheet Name		

Figure 1–44

9. Save and close the title block.

Task 3 - Set up sheets in a project template using the new title block.

---

1. Open the project template **Midrise-Template.rte** that you created in the previous practice. If you did not complete the previous practice, open the template found in the practice files folder:

   - .../*Architectural*/**Midrise-Template-Architectural.rte**
   - .../*MEP*/**Midrise-Template-MEP.rte**
   - .../*Structural*/**Midrise-Template-Structural.rte**

2. In the *View* tab>Sheet Composition panel, click (Sheet).

3. In the New Sheet dialog box, click **Load...**.

4. In the Load Family dialog box, navigate to the practice files folder, select **TBLK-D.rfa** (that you just created), and click **Open**. If you did not complete the previous task, open the title block found in the corresponding practice files folder:

   - .../*Architectural*/**TBLK-D-Architectural.rfa**
   - .../*MEP*/**TBLK-D-MEP.rfa**
   - .../*Structural*/**TBLK-D-Structural.rfa**

5. Select the title block that you just loaded and click **OK**.

6. In the Project Browser, select the sheet and rename it as **CS000 – Cover Sheet**.

7. Using the **Title** text type, add placeholder text for the project name and address, as shown in Figure 1–45.

Project Name

Project Address
City, State, Zip

Figure 1–45

8. In the *Manage* tab>Manage Project panel, click (Starting View).

9. In the Starting View dialog box, select **Sheet: CS000 - Cover Sheet** as shown in Figure 1–46.
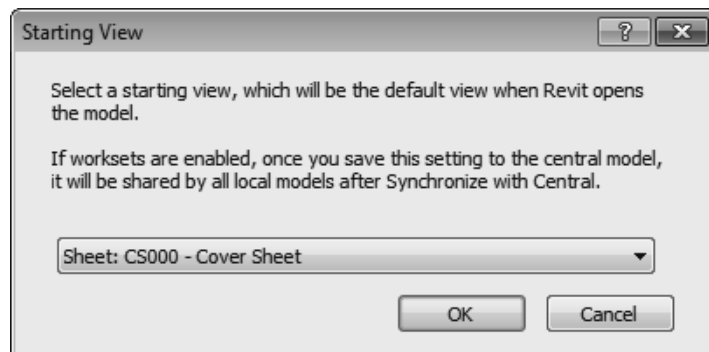

Starting View

Select a starting view, which will be the default view when Revit opens the model.

If worksets are enabled, once you save this setting to the central model, it will be shared by all local models after Synchronize with Central.

Sheet: CS000 - Cover Sheet

OK   Cancel

Figure 1–46

10. Create another sheet with the new title block and name it according to your discipline:
   • **A201 – First Floor Plan**
   • **M201 - First Floor Plan Mechanical**
   • **E201 - First Floor Plan Electrical**
   • **P201 - First Floor Plan Plumbing**
   • **S201 - First Floor Plan Structural**

No elements are on the view, but it acts as a placeholder on the sheet. Elements are displayed as they are drawn.

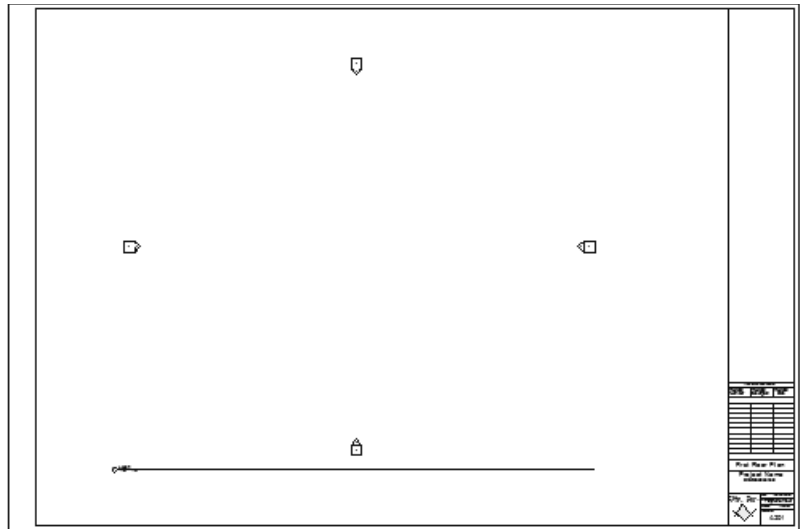11. Open this sheet view. Drag the associated **Level 1** floor plan view onto the sheet, as shown in Figure 1–47.

Figure 1–47

1.4 View Templates

View templates enable you to specify all of the view properties and visibility options for a view by selecting another view or a view template as a base. For example, you can create a furniture plan view template that sets the scale, detail level, and visibility of objects so that everything except the furniture displays in halftone, as shown in Figure 1–48.
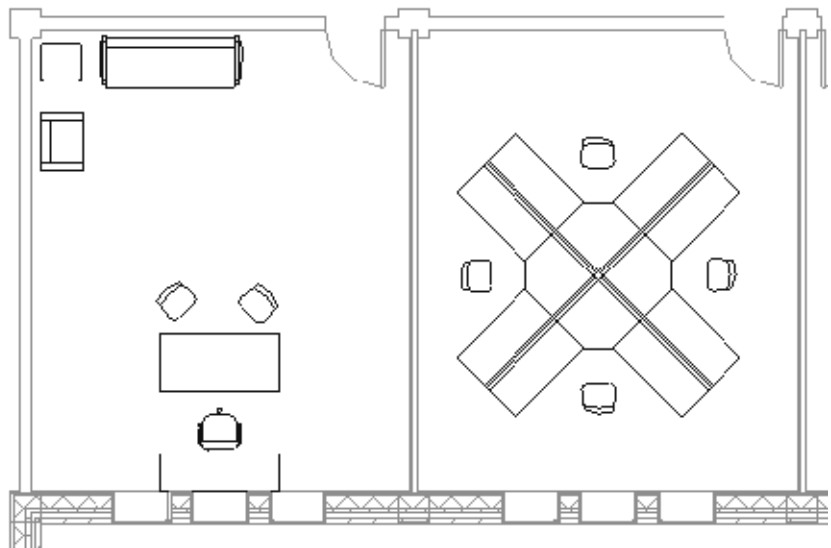

Figure 1–48

View templates can be applied to specific views when you create a project template file and as you work in a project. You can also specify a view template in view properties that restricts you from making changes, such as the Detail Level shown in Figure 1–49. This is useful for views that have been set for printing.
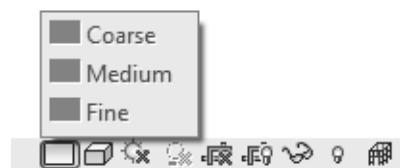

Figure 1–49

Applying View Templates

There are two typical ways to use view templates. The first is while you are working to display different view parameters in the same view. For example, you might want to display the spaces in a section and use a view template to switch to the mechanical layout in the same section, as shown in Figure 1–50. You can continue to make changes to the views even after the view template has been applied. The other way is to preset a view using a default view template so you cannot make changes to it.
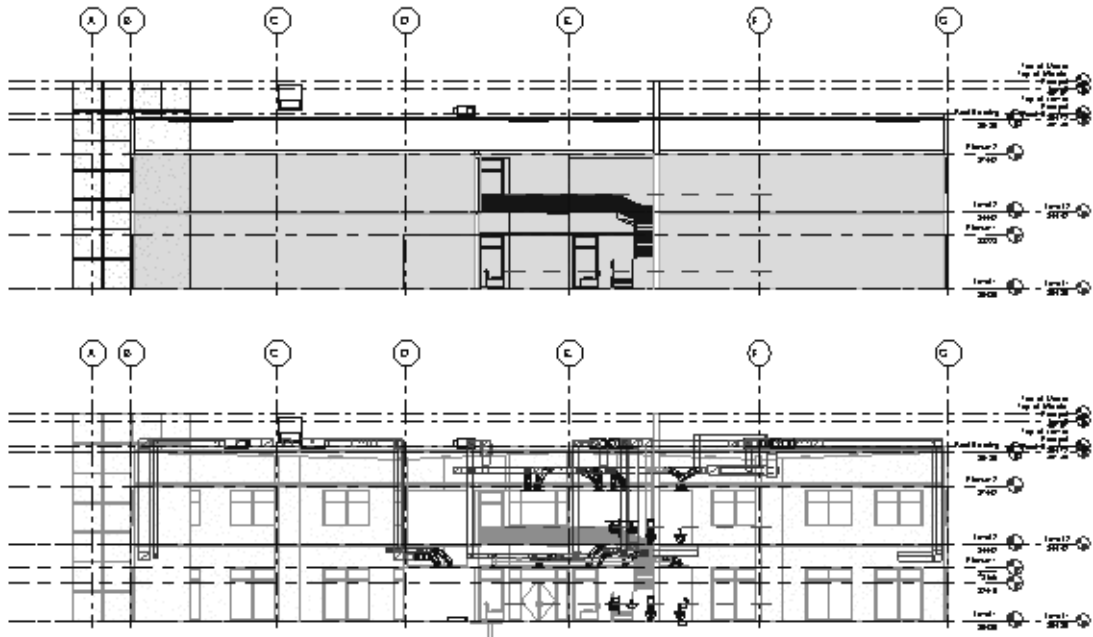
Figure 1–50

How To: Apply a Temporary View Template Override

1. Select one or more views in the Project Browser. (Hold down <Ctrl> or <Shift> to select multiple views.)
2. Right-click in the Project Browser and select **Apply Template Properties**, or on the *View* tab>Graphics panel, expand

    (View Template) and click (Apply Template Properties to Current View).
3. In the Apply View Template dialog box, select the view template you want to use from the *Names* list, as shown in Figure 1–51. Several standard view templates are available when you create a project using one of the Autodesk Revit project templates.
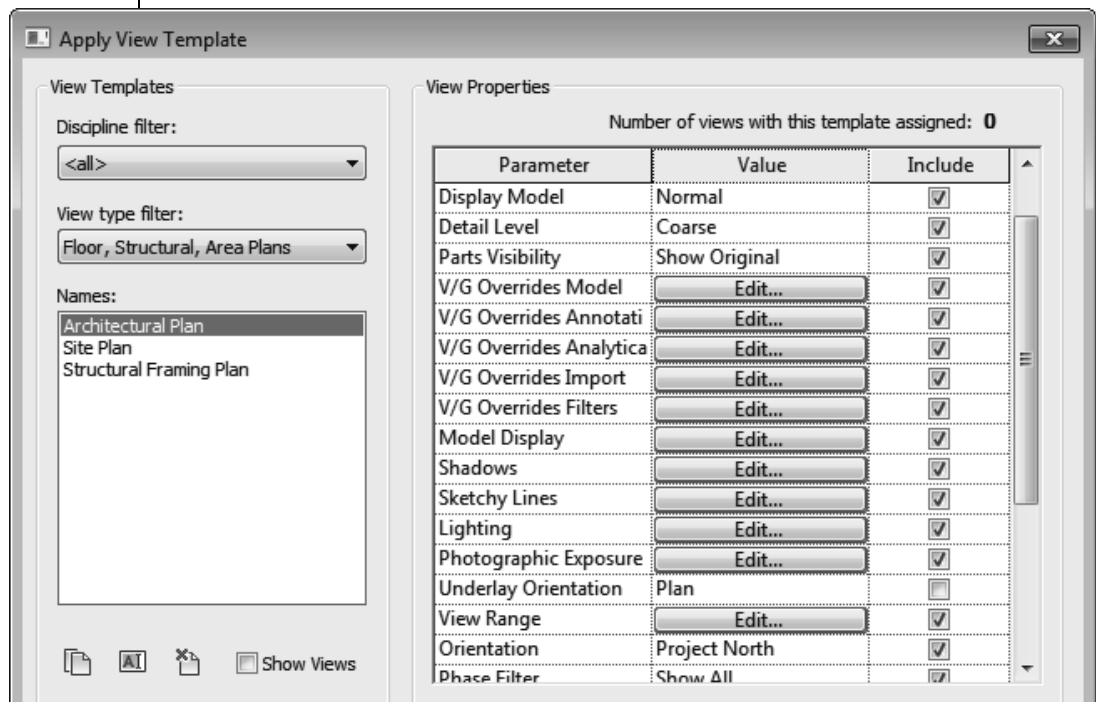
Figure 1–51

4. If you do not want the entire view template to be applied to the selected view, clear the check mark in the *Include* column for the parameters you do not want to include. You can also create overrides to the view template by changing parameter values.

5. Click **OK** to finish.

• To limit the number of view templates that display, filter the list by selecting an option in the Discipline filter and View type filter drop-down lists, as shown in Figure 1–52.
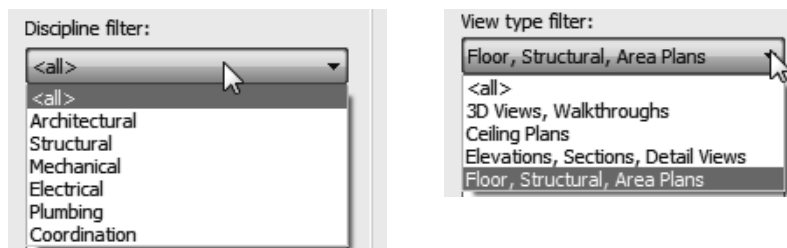

Figure 1–52

• You can apply view templates to any view as many times as required, unless it is set as the default template in the view properties.

• If you want to start a new view template based on an existing view, select **Show Views**. The *Names* list expands to include all of the related views in the project.

Hint: Temporary View Properties

As you are working, it can be helpful to temporarily override the view. You can do this by selecting a view template from the View Control Bar, as shown in Figure 1–53
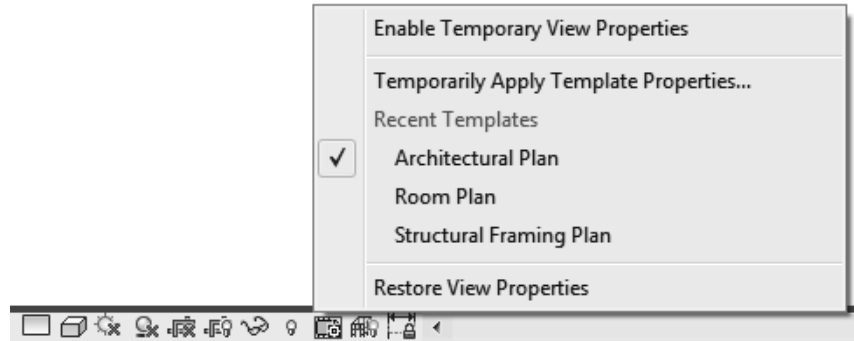

Figure 1–53

1. In the View Control Panel, expand (Temporary View Properties) and select **Enable Temporary View Properties**.
2. Expand expand (Temporary View Properties) again and select **Temporarily Apply Template Properties**. Alternatively, if you have already used the process, you can select from a list of view templates, as shown in Figure 1–53.
3. In the dialog box, select the view template you want to apply and click **OK**.
4. When you are finished, expand (Temporary View Properties) and select **Restore View Properties**.

How To: Set the Default View Template for a View

1. Select one or more views in the Project Browser.
2. In Properties, in the *Identity Data* section, click the button next to *View Template*, as shown in Figure 1–54. The name on the button varies according to any template that has already been applied.

Figure 1–54

3. In the Apply View Template dialog box, select the appropriate template and click **OK**.
4. The view is now locked using the parameters set in the view template.

- View Templates can also be set by the type properties of a view. For example, in a view's Type Properties, duplicate a view type, such as Space Plan shown in Figure 1–55. Apply the appropriate template and select **New views are dependent on template**.
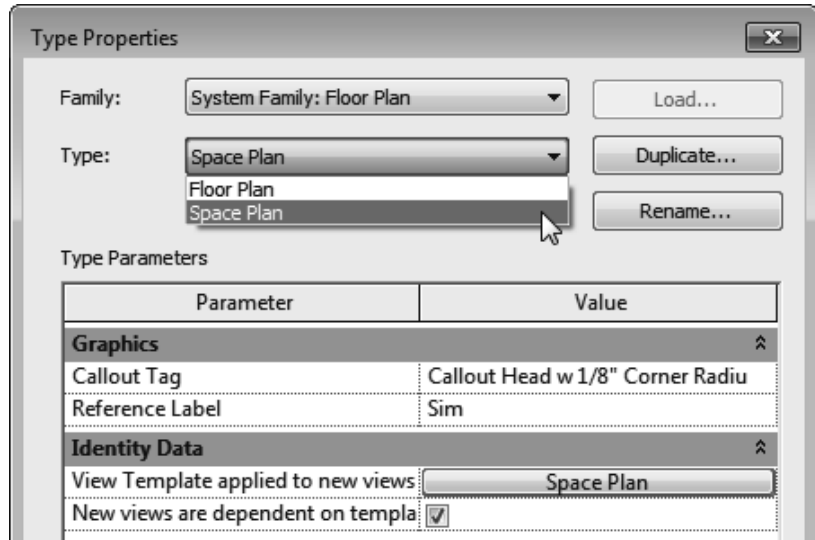

Figure 1–55

- When you use the View type, the view modifies to match the view template and is also placed in its own group in the Project Browser, as shown in Figure 1–56.
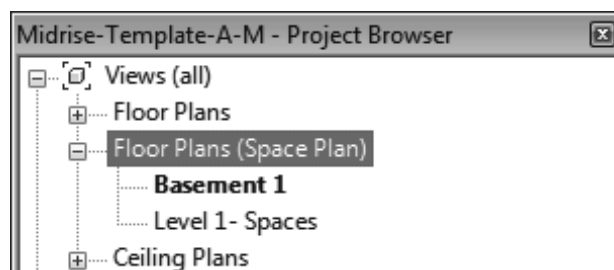

Figure 1–56

Creating View Templates

Many view templates come with the Autodesk Revit software, but you might need to create your own custom view types that are best applied by view template. You can create a view template from the view settings in an existing view or through the View Template dialog box.

How To: Create a View Template from an Existing View

1. Set up a view the way you want it with *Scale*, *Detail Level*, *Visibility Graphic Overrides*, and other *View Settings*.
2. In the Project Browser, right-click on the view and select **Create View Template from View** or, on the *View* tab> Graphics panel, expand (View Template) and click (Create Template from Current View).
3. In the New View Template dialog box, type a name for the view template.
4. Click **OK**.
5. In the View Template dialog box, make other adjustments as needed and click **OK**.

How To: Create a View Template

1. In the *View* tab>Graphics panel, expand (View Template) and click (Manage View Templates).
2. In the Apply View Template dialog box, in the *Names* list, select a view similar to the one you want to create and click (Duplicate).
3. In the New View Template dialog box, type a new name for the view template and click **OK**.

4. Select the new view template as shown in Figure 1–57, and modify the View Properties parameter values as needed.
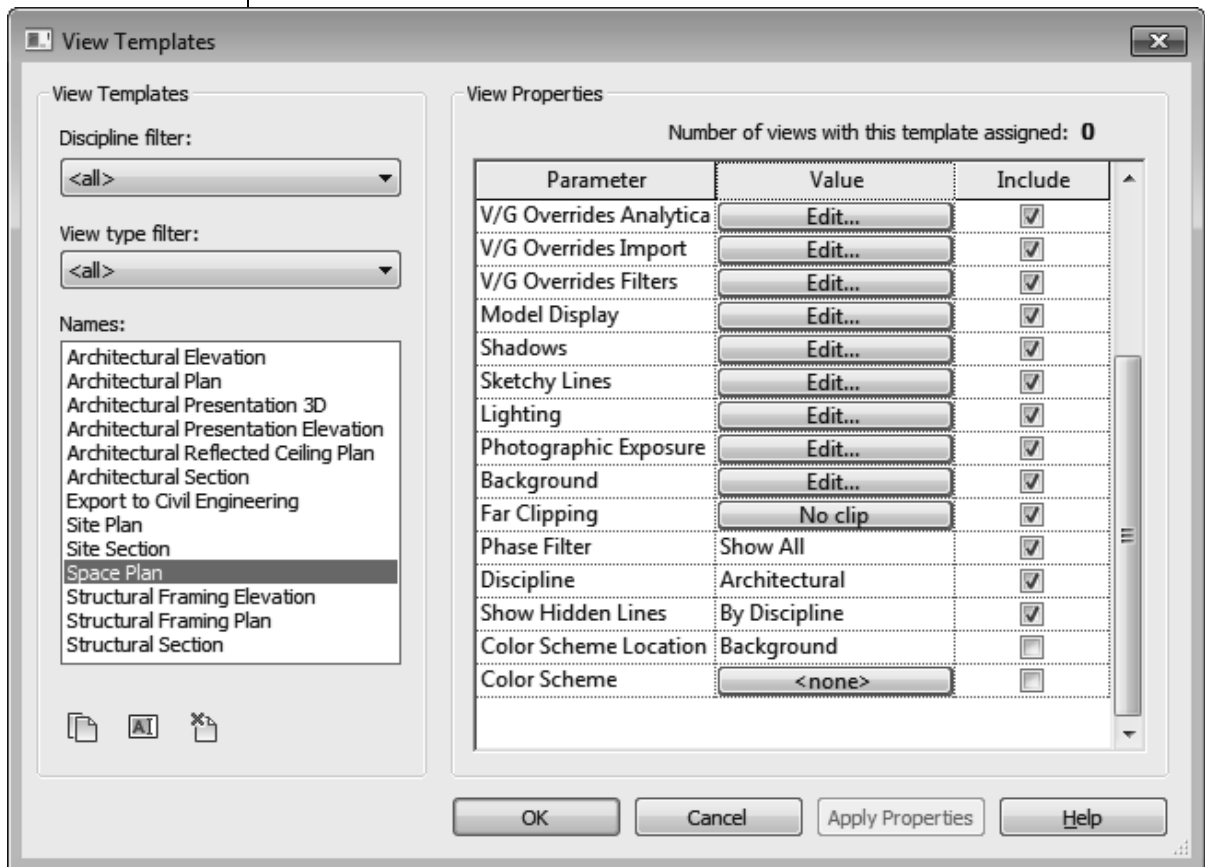

Figure 1–57

5. Click **OK** to finish.

• Not all view types have the same view parameters. For example, 3D views have options for Rendering and Perspectives that plans do not have. When you apply a view template across view types, only the options that are mutual are updated.

• The only parameter saved to a view template for schedule views is the appearance of the schedule.

> **Hint: Setting the View Scale-to-Detail Level Correspondence**
>
> One of the parameters in views is the *Detail Level*. There are three options: **Coarse**, **Medium**, and **Fine**. You can modify the table of scales that are related to the levels. In the *Manage* tab>
>
> Settings panel, expand ✎ (Additional Settings) and select **Detail Level**. The View scale-to-detail level correspondence dialog box opens, as shown in Figure 1–58.
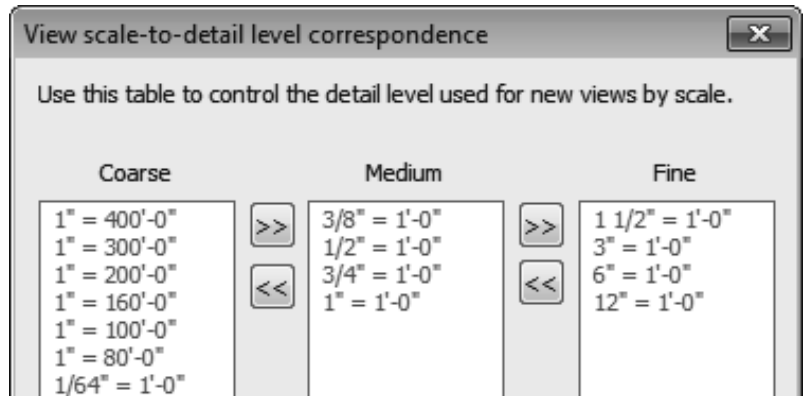>
>
>
> **Figure 1–58**

Visibility/ Graphic Overrides Filters

Visibility/Graphic Overrides filters can speed up the process of specifying categories that are modified in View Templates. You might want to display certain elements in halftone, or with a different color or lineweight in specific views. For example, a fire evacuation plan might have walls with different fire ratings that display with thicker lineweights, as shown in Figure 1–59. By creating these filters and then applying them in a view template, you can reuse them without having to recreate them each time.
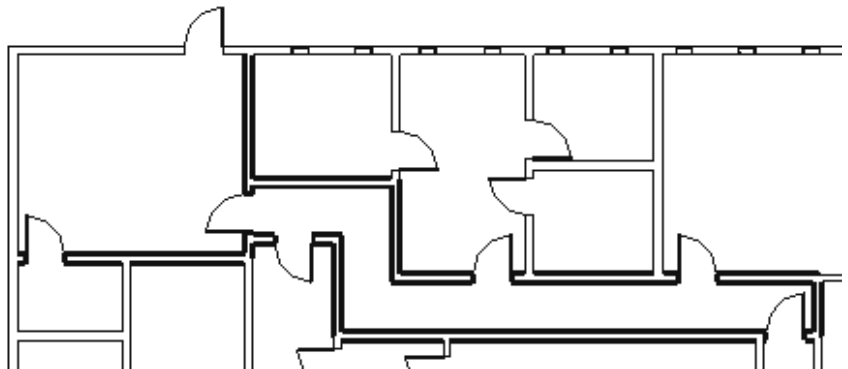

Figure 1–59

How To: Create Filters

1. In the *View* tab>Graphics panel, click 🔲 (Filters). The Filters dialog box opens as shown in Figure 1–60.

If you are using the non-discipline specific version of the Autodesk Revit software, an additional Filters dialog box opens in which you can create new filters, edit, rename, or delete them without having to open the full Filters dialog box.
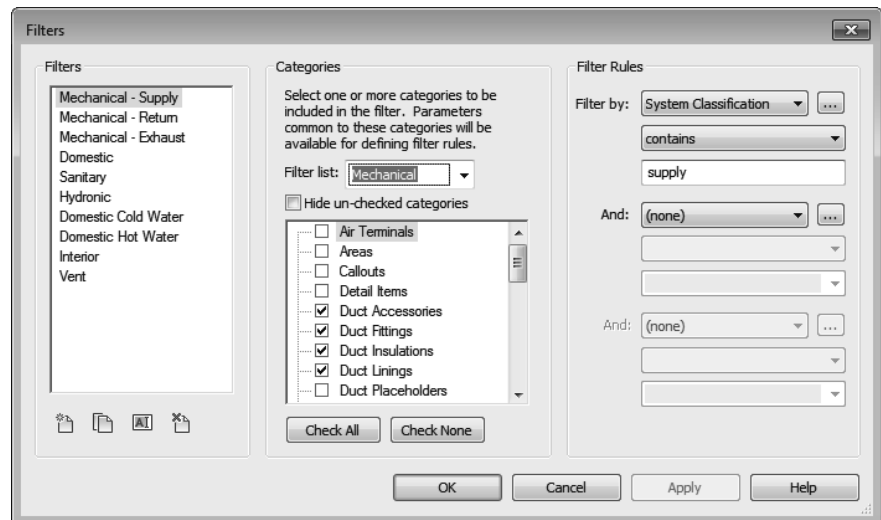

Figure 1–60

2. In the *Filters* area, click 📄 (New) or 📄 (Duplicate). Name the new filter and click **OK**.
3. In the *Categories* area, filter the list by discipline and then select the categories to include in the filter. Use **Check All** and **Check None** to help select the categories.
4. In the *Filter Rules* area, select what you what to *Filter by*, the filter operator(s), and the value for the filter. If more than one category is selected, the *Filter by* list is limited to parameters shared by the categories you selected. You can create more than one filter rule. They are applied in order. Set *Filter by* to **None** if you do not want to filter by parameters. Filter operators are shown in Figure 1–61.
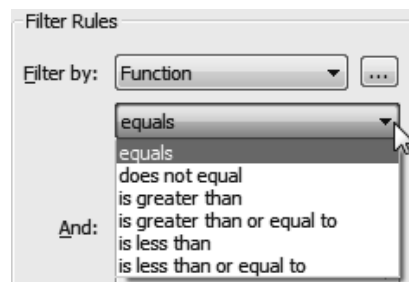

Figure 1–61

5. Click **Apply** to save the changes and remain in the dialog box, or click **OK** to finish.

How To: Apply Visibility/Graphic Overrides Filters

1. Type **VG** or **VV** or in the *View* tab>Graphics panel, click

   (Visibility/Graphics) to open the Visibility/Graphic Overrides dialog box. Select the *Filters* tab, as shown in Figure 1–62.

Visibility/Graphic Overrides for Floor Plan: Level 1

Model Categories	Annotation Categories	Analytical Model Categories	Imported Categories	Filters

Name	Visibility	Projection/Surface			Cut		Halftone
		Lines	Patterns	Transparen...	Lines	Patterns	
Furniture	☑						☑
Interior	☑						☐

Add   Remove   Up   Down

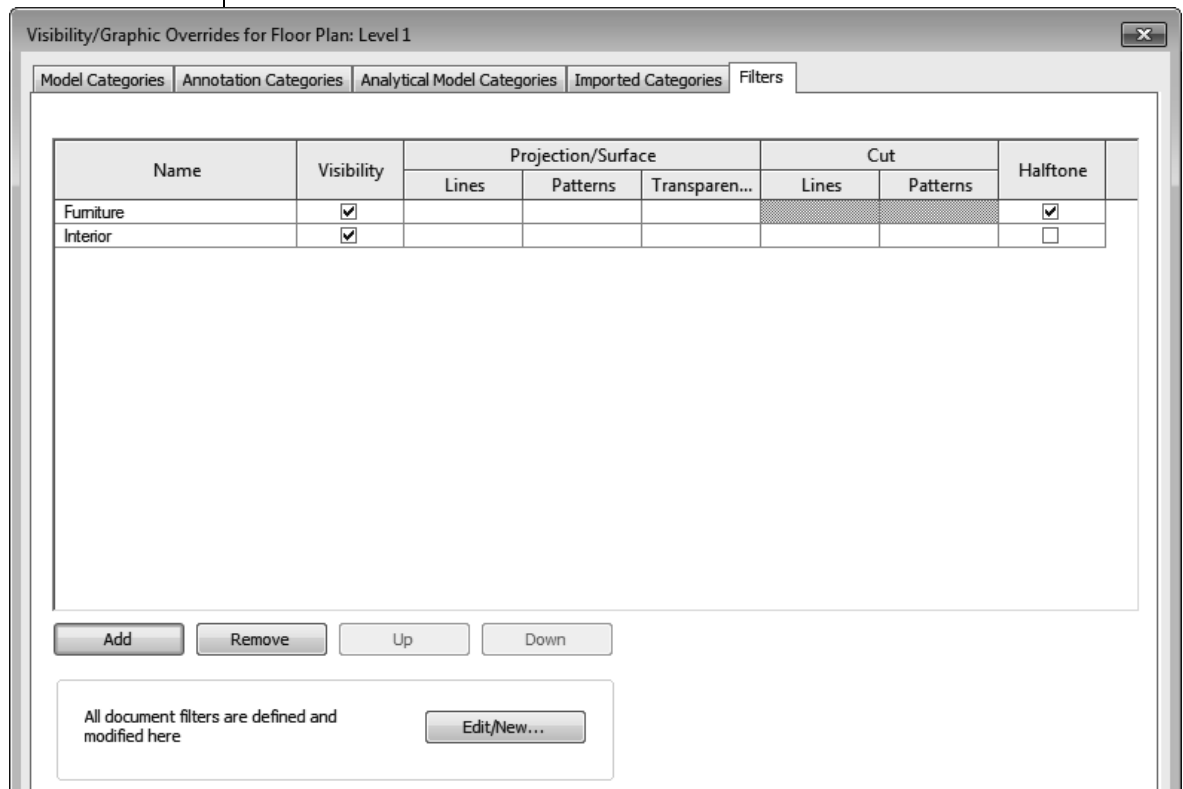All document filters are defined and modified here   Edit/New...

Figure 1–62

2. Click **Add** to add a filter to the list.
3. In the Add Filters dialog box, select the filter(s) you want to add and click **OK**.
   - If the filter you want is not defined, click **Edit/New...** to open the Filters dialog box, where you can define a new filter or edit an existing one.
4. In the Visibility/Graphic Overrides dialog box, assign the overrides you want for the filter. For example, you might want items to be **Halftone**, as shown in Figure 1–63.

Name	Visibility	Projection/Surface			Cut		Halftone
		Lines	Patterns	Transparen...	Lines	Patterns	
Furniture	☑						☑
Interior	☑						☐

Figure 1–63

5. Click **OK**.

Practice 1c

View Templates for Architectural and Structural Projects

Practice Objectives

- Create visibility filters.
- Create a view template and apply it to several views.

Estimated time for completion: 15 minutes

In this practice you will create filters that you will use in a structural view template, and apply the view template to several structural plan views, as shown in Figure 1–64. When the filter is working correctly you can add the same information to a project template file.
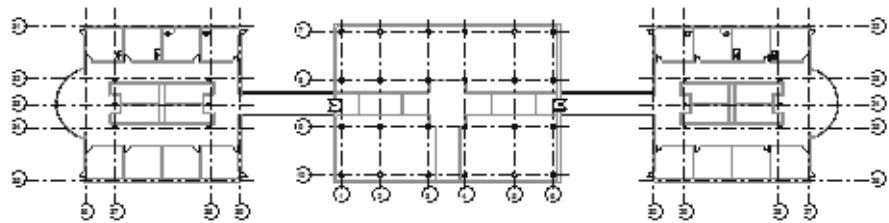

Figure 1–64

Task 1 - Create filters.

1. Open the project found in the practice files folder:

    - *.../Architectural/***Office-Architectural.rvt**
    - *.../Structural/***Office-Structural.rvt**

2. In the *View* tab>Graphics panel, click ⬚ (Filters).

3. In the Filters dialog box, click ⬚ (New), name the new filter **All But Structural**, and click **OK**.

4. In the *Categories* area, set the *Filter list* to **Architecture** and **Structure**.

5. Click **Check All**, and clear **Columns**, all categories starting with **Analytical**, **Structural**, and **Walls**. Click **Apply**.

6. Click ⬚ (New). Name the new filter **Non-Structural Walls** and click **OK**.

7. In the *Categories* area, click **Check None** and select **Walls**.

*In the non-discipline specific Autodesk Revit software, an additional Filters dialog box opens. Click **New...** and name the new filter. Select **Define Criteria** and click **OK**. This opens the full Filters dialog box.*

8. In the *Filter Rules* area, set *Filter by* to **Structural Usage**, **equals**, and **Non-bearing**, as shown in Figure 1–65.
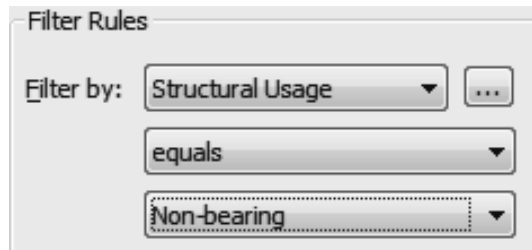

Figure 1–65

9. Click **OK** to close the Filters dialog box.

Task 2 - Create a View Template.

1. In the Project Browser, in the Floor Plans area, right-click on the **Level 1** view and select **Create View Template From View**.

2. Name the new view template **Structural Plan** and click **OK**.

3. In the View Templates dialog box, set the *View Scale* to **1/16"=1'-0"** and the *Detail Level* to **Coarse**.

4. Next to **V/G Override Filters**, click **Edit...** The Visibility/Graphic Overrides dialog box opens with the *Filter* tab selected.

5. Click **Add**.

6. In the Add Filters dialog box, select the two filters you just created and click **OK**.

7. Place a check mark in the *Halftone* column for both filters. Continue working in the Visibility/Graphics Overrides dialog box.

8. In the *Annotation Categories* tab, turn off everything except Grids and all Structural annotations and tags.

9. In the *Model Categories* tab, turn off items, such as **Casework**, **Furniture**, **Furniture Systems** and **Plumbing**, and **Mechanical equipment**.

10. Click **OK** to close the Visibility/Graphic Overrides dialog box, and click **OK** to complete the view template.

Task 3 - Apply a View Template to several views.

1. In the *Floor Plans* area, use *Duplicate with Detailing* on the **Level 1**, **Level 2**, **Level 3**, and **Level 4** views. Rename them as **Level 1 - Structural**, **Level 2 - Structural**, **Level 3 - Structural**, and **Level 4 - Structural**.

2. Select the new Structural views.

3. Right-click and select **Apply View Template**.

4. In the Apply View Template dialog box, select the **Structural Plan** view template you just created and click **OK** to apply it.

5. Look at the different views and compare them to the standard floor plan views. Finish with the **Level 1** view.

6. Save the project.

Practice 1d

View Templates for MEP Projects

Practice Objectives

- Create visibility filters.
- Create a view template and apply it to several views.

Estimated time for completion: 15 minutes

In this practice you will create velocity based filters for ductwork that you will use in a mechanical view template, and apply the view template to a duplicated plan view, as shown in Figure 1–66. When the filter is working correctly, you can add the same information to a project template file.
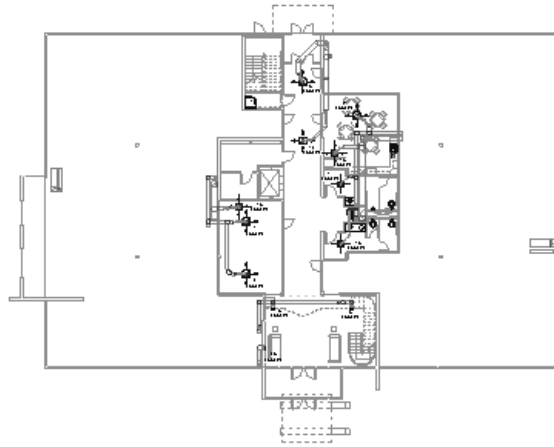

Figure 1–66

Task 1 - Create filters.

1. In the ...*MEP*\\ practice files folder, open **Office-MEP.rvt**.

2. In the *View* tab>Graphics panel, click ⬚ (Filters).

3. If you are using the non-discipline specific version of the Autodesk Revit software, an additional Filters dialog box opens. Click **New...**, name the new filter, select **Define Criteria**, and click **OK**. This opens the full Filters dialog box.

4. If you are using the Autodesk Revit MEP software, in the Filters dialog box, click ⬚ (New), name the new filter **Mechanical - Low Velocity**, and click **OK**.

5. In the *Categories* area, set the *Filter list* to **Mechanical**. Select **Ducts** and **Flex Ducts**.

6. In the *Filter Rules* area, set *Filter by* to **Velocity**, **is less than or equal to**, and **900 FPM**, as shown in Figure 1–67.
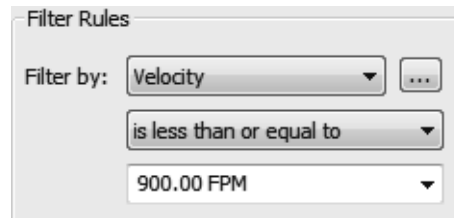

Figure 1–67

7. Click **Apply** and remain in the Filters dialog box.

8. Select the new **Mechanical-Low Velocity** filter and click

   ▢ (Duplicate). Right-click on the duplicated filter and click

   ▣ (Rename). In the Rename dialog box type
   Mechanical-Medium/High Velocity and click **OK**.

9. In the *Filter Rules* area, set *Filter by* to **Velocity**, **is greater than**, and **1900 FPM**, as shown in Figure 1–68.
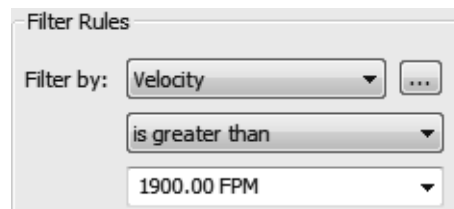
Figure 1–68

10. Click **OK** twice to close the Filters dialog boxes.

Task 2 - Create a View Template.

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1. In the Project Browser, in the *Mechanical>Floor Plans* area, right-click on the **1 - Mech** view and select **Create View Template From View**.

2. Name the new view template **Velocity Duct Plan** and click **OK**.

3. Next to **V/G Override Filters**, click **Edit...** The Visibility/Graphic Overrides dialog box opens with the *Filter* tab selected.

4. Click **Add**.

5. In the Add Filters dialog box, select the two filters you just created and click **OK**.

6. For the **Mechanical-Low Velocity** filter, in the *Projection/Surface>Lines* column, select **Override**.

7. In the Line Graphics dialog box, change *Weight* to **6** and the *Color* to an orange, as shown in Figure 1–69. Click **OK**.
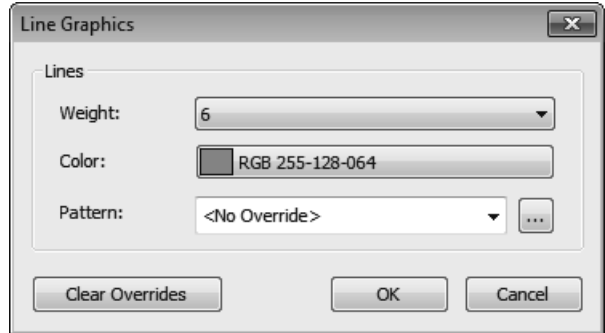

Figure 1–69

8. Repeat for the **Mechanical-Medium/High Velocity** filter and set the *Weight* to **6** and the *Color* to a green. Click **OK**.

9. In the Visibility/Graphics Overrides dialog box, move the new filters to the top of the list. For **Mechanical-Exhaust**, in the *Visibility* column, clear the checkbox as shown in Figure 1–70.
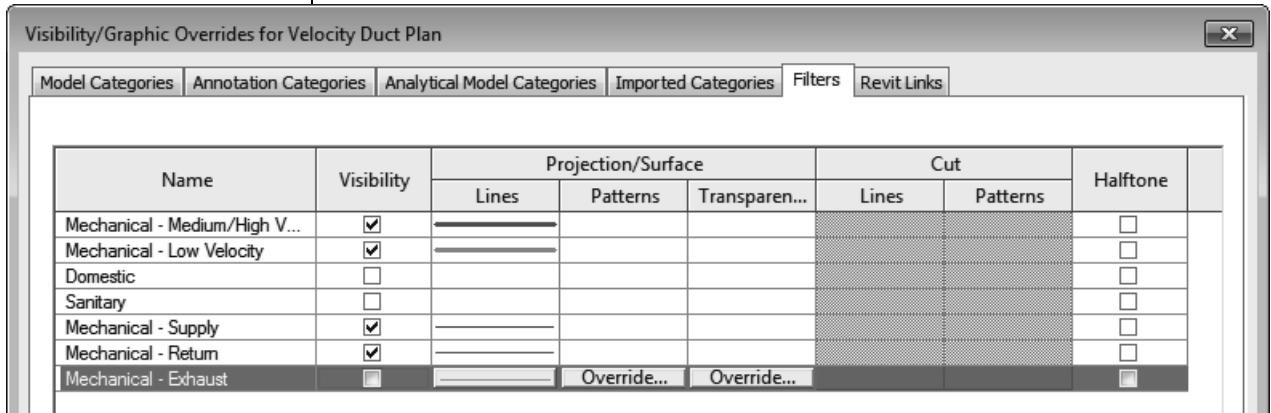
Figure 1–70

10. Click **OK** to close the Visibility/Graphic Overrides dialog box, and click **OK** to complete the view template.

Task 3 - Apply a View Template the views.

1. In the Project Browser, use *Duplicate with Detailing* to duplicate the **1 - Mech** view. Rename it **1 - Mech - Velocity.**

2. Right-click and select **Apply View Template**.

3. In the Apply View Template dialog box, select the **Velocity Duct Plan** view template you just created and click **OK** to apply it.

4. Compare the new floor plan view with the existing **1 - Mech** view.

5. Duplicate the **2 - Mech** view, rename it as **2 - Mech - Velocity**, and apply the same view template to it.

6. Finish with the **1 - Mech** view.

7. Save the project.

Chapter Review Questions

1. Which of the following items are NOT set in a template file?

   a. Units

   b. Annotation Types

   c. Title blocks

   d. Keyboard Shortcuts

2. What is a label?

   a. A text type used in title blocks.

   b. A dimension with text instead of numbers.

   c. A type of text with variable information.

3. When you want to create new Text Types, such as those shown in Figure 1–71, you need to copy an existing one.

A FANCY FONT AT 1/4"

A HAND LETTERING FONT AT 1/8"

A HAND LETTERING FONT AT 5/32"

Figure 1–71

   a. True

   b. False

4. Which of the following enables you to assign a view template consistently to a view so that no changes can be made to the view parameters?

   a. In the View Status Bar, lock the view.

   b. In Properties, select a View Template.

   c. In the Project Browser, right-click on the view and select **Lock**.

   d. In the Apply View Template dialog box, select a template.

5. Which of the following parameters are included in a View Template (as shown in Figure 1–72)? (Select all that apply.)
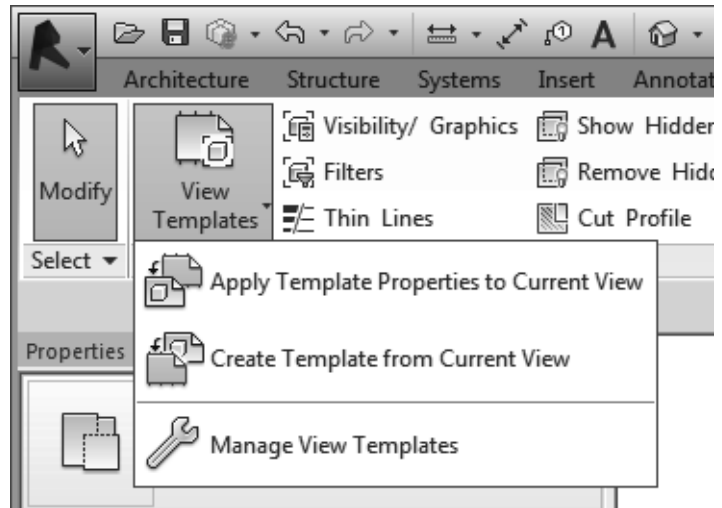
Figure 1–72

a. View Scale

b. V/G Overrides

c. Project Units

d. Detail Level

Command Summary

Button	Command	Location
Templates		
	Callout Tags	• **Ribbon:** *Manage* tab>Settings panel> expand Additional Settings
	Elevation Tags	• **Ribbon:** *Manage* tab>Settings panel> expand Additional Settings
	Floor Plan	• **Ribbon:** *View* tab>Create panel> expand Plan Views
	Loaded Tags	• **Ribbon:** *Annotate* tab>Tag panel> expand the panel title
	Project Units	• **Ribbon:** *Manage* tab>Settings panel • **Shortcut:** UN
	Section Tags	• **Ribbon:** *Manage* tab>Settings panel> expand Additional Settings
Annotation		
	Dimension Types	• **Ribbon:** *Annotate* tab>Dimensions panel>expand the panel title
	Text	• **Family Editor** • **Ribbon:** *Create* tab>Text panel
Title Blocks		
	Label	• **Family Editor** • **Ribbon:** *Create* tab>Text panel
	New Title Block	• **Application Menu:** expand New> Title block
	Revision Schedule	• **Family Editor** • **Ribbon:** *View* tab>Create panel
View Templates		
	ApplyTemplate Properties to Current View	• **Ribbon:** *View* tab>Graphics panel> expand View Templates • **Project Browser:** (*right-click on a view*) **Apply Template Properties...**
	Create View Template From View	• **Ribbon:** *View* tab>Graphics panel> expand View Templates • **Project Browser:** (*right-click on a view*)
	Manage View Templates	• **Ribbon:** *View* tab>Graphics panel> expand View Templates
	Temporary View Properties	• View Control Bar