

Autodesk®

Revit® 2025 BIM Management

Template and Family Creation



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Creating Custom Templates

Custom templates can save you time and effort when creating similar projects by providing an efficient way to apply your organization's graphic and documentation standards. Templates can include items such as levels, views, sheets, schedules, and annotation types for text, dimensions, and tags. A custom title block is a typical family that is added to templates that ensures that sheets are created with the appropriate information. You may also want to add rule-based view filters and view templates to project template files for improved workflow within the project.

Learning Objectives

- Create project templates.
- Use resource projects to store additional system families, details, schedules, and other data.
- 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.
- Set up visibility/graphic override filters for various categories of elements.
- Create and apply view templates.

1.1 Preparing Project Templates

A project template is a file that contains settings and information to establish a consistent starting point for new projects. The goal is to save time by using company standards, enabling you to concentrate on the design. For example, predefined levels (as shown in Figure 1–1 for a residential project) and the associated plan views and elevations provides a starting point for a model.

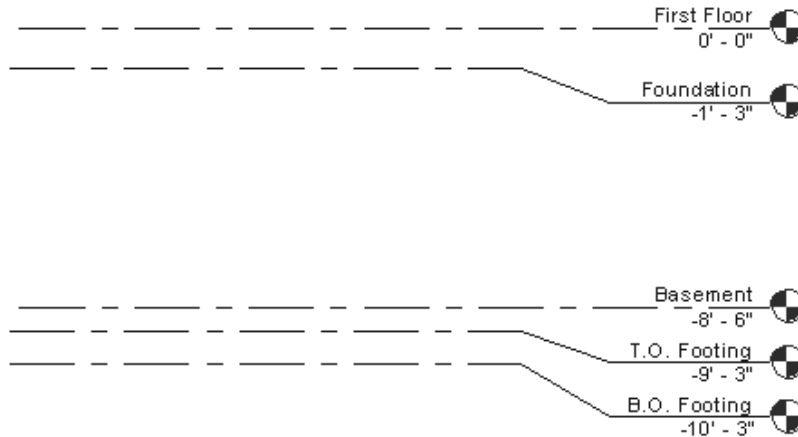





Figure 1–1

- Some items in a project template include:
 - **Project views:** Levels, schedules, legends, sheets, plan views, and view templates.
 - **Project-based settings:** Project units, object styles, fill patterns, line styles, discipline-specific settings, etc.
 - **Families:** System families, component families, custom families, and title blocks.
 - **Print settings:** Define printers and print settings.
 - **Annotation types:** Dimension style, text, arrowheads, and tags.
- If you provide constant work to a specific client (e.g., a school system or government entity), you can create a template specific to their projects with associated title blocks and other information.
- You can also store items such as sheets, schedules, families, and drafting views (details) in a separate resource file and add the elements to the current project, as needed.
- As you create new templates, families, and title blocks, it is recommended that you save them in a safe location where they will not be deleted and are outside of the Revit file structure.

How To: Create a Project Template File

Note: Project templates are located in the `C:\ProgramData\Autodesk\RVT 2025\Templates\English (Metric) or English-Imperial` folder.

- In the *File* tab, expand  (New) and click  (Project).
 - Alternatively, on the Revit Home screen, click  (New...) in the *MODELS* area, as shown in Figure 1–2.

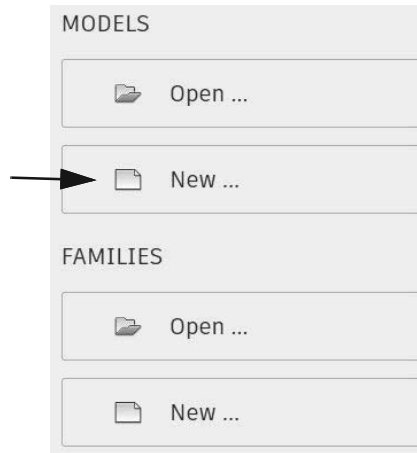


Figure 1–2

- In the *New Project* dialog box, in the *Template file* area, click **Browse...** to browse to a location where the template file is stored or, from the drop-down list, either select a template file or select **<None>** (as shown in Figure 1–3) to use a blank project file.

Note: To save time, use an existing project or template that includes some of the basics you need rather than starting from scratch. If using an existing project or template, make sure to clean up and purge all existing project data that is not standard.

- In the *Create new* area, select **Project template**, as shown in Figure 1–3.
 - Project template files have the extension **.rte**.

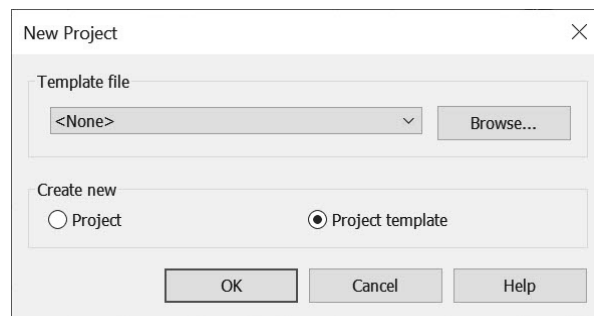


Figure 1–3

4. Click **OK**.

- 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 1–4. Choosing the **<None>** option requires all settings to be defined and updated versus choosing a predefined template that is similar to your needs.

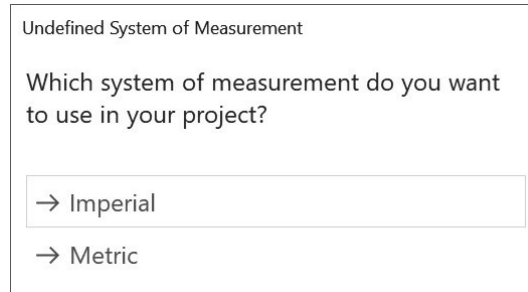





Figure 1–4

5. Add settings, families, views, etc. to the new template file, as needed.
6. In the Quick Access Toolbar, click  (Save). Alternatively, from the File menu, select  (Save As) >  (Template).
7. In the *Save As* dialog box, navigate to the folder you want to save your template to. In the *File name* field, type the desired file name, and click **Save**.

Managing Settings

Most of the customized settings stored in a template file are found in the *Manage* tab > *Settings* panel, as shown in Figure 1–5. These settings include Materials, Object Styles, and Additional Settings (e.g., Line Styles, Fill Patterns, Annotations, etc.).

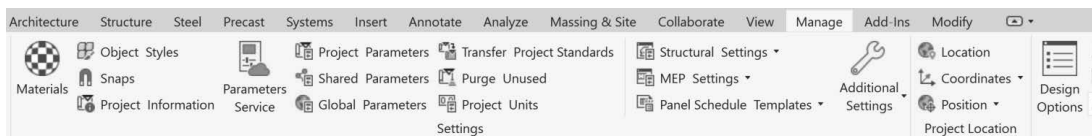


Figure 1–5

- Specific Structural Settings, MEP Settings, and Panel Schedule Templates are also included in the *Settings* panel.

For more information on managing settings, refer to the following sections in **Appendix A Additional Management Tools**:

- **A.1 Project Browser Organization**
- **A.2 General Settings**
- **A.3 Creating Object Styles**
- **A.4 Creating Fill Patterns**
- **A.5 Creating Materials**
- **A.6 Settings for Mechanical Projects**
- **A.7 Settings for Electrical Projects**
- **A.8 Settings for Structural Projects**

Families in Templates

There are two kinds of families that can be set up in template files: *system families*, such as the duct shown in Figure 1–6, and *component families*, such as the air terminal shown in Figure 1–6.

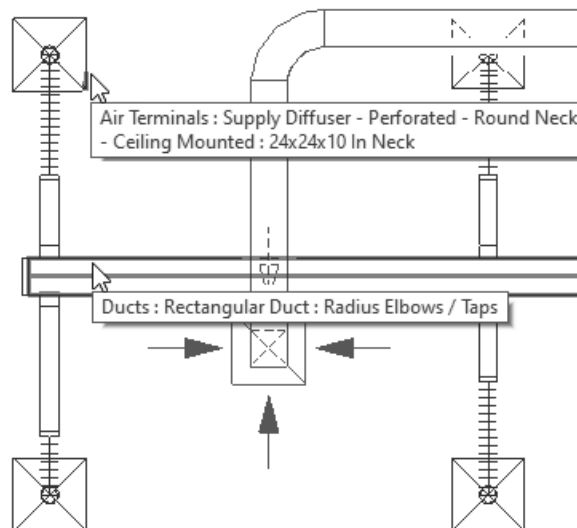


Figure 1–6

Note: For more information on setting up system families, see **Chapter 3 Custom System Families**.

System Families are families that are predefined in Revit projects and templates. Unlike external loadable families, system families can be created by duplicating existing types and modifying the *Type Parameters*, as shown in Figure 1–7. This can only be done within a project and helps to establish the company standard for the families set up in a template file. System families include walls, wall foundations, floors, structural slabs, ceilings, stairs, railings, and roofs. They also include duct, pipe, cable tray, and conduit types, along with some annotation types, such as text and dimensions, and datum families, like reference lines, grids, and levels.

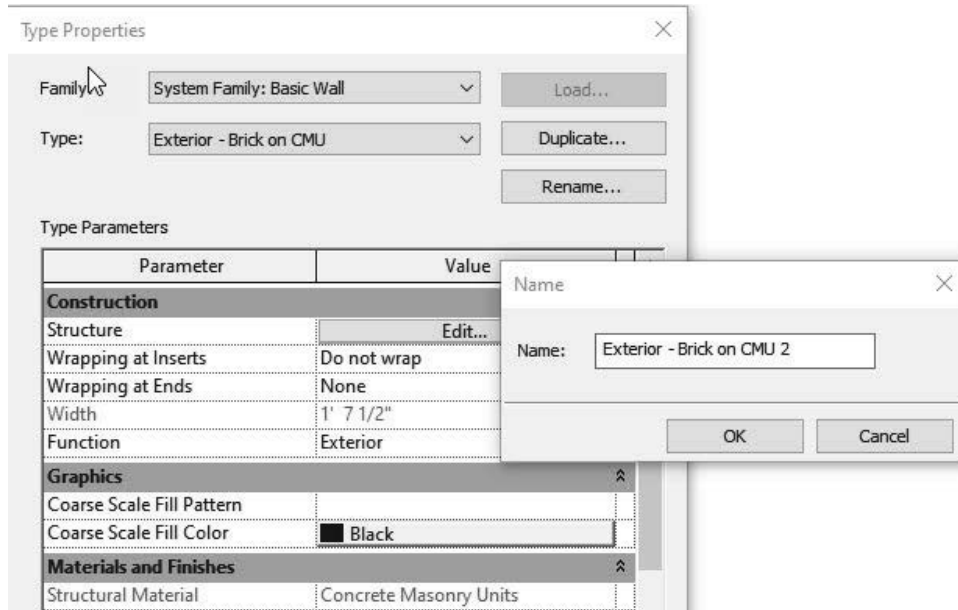




Figure 1–7

Note: For more information on creating component families, see **Chapter 4 Component Family Concepts**.

Component Families are external loadable families that are created outside of a project and can be loaded directly in a template file with types and sizes that are used frequently. Component families include elements such as furniture, trees, beams, columns, mechanical equipment, and electrical fixtures, as well as tags, labels, markers, and symbols.

How To: Load a Family from the Revit Library

- In the *Insert* tab>*Load from Library* panel, click  (Load Family).
 - Alternatively, start a loadable family command, such as **Door** or **Electrical Fixture**, then in the *Modify* contextual tab>*Mode* panel, click  (Load Family).

Note: To use the *Load Family* method, you must install the **Autodesk Revit 2025 Content** in your desired language from the Autodesk website. Go to the Autodesk.com website and search **Autodesk Revit 2025 Content**.

2. In the *Load Family* dialog box, locate the folder that contains the family or families you want to load, as shown in Figure 1–8. To load more than one family at a time, hold <Ctrl> while selecting.
 - The program remembers the last-used folder. If the *Load Family* dialog box does not default to the Revit Library folder, click on **Imperial Library** in the *Places* panel.
 - If the *Load Family* dialog box does not default to the Revit Library folder, click on **Imperial Library** in the *Places* panel.

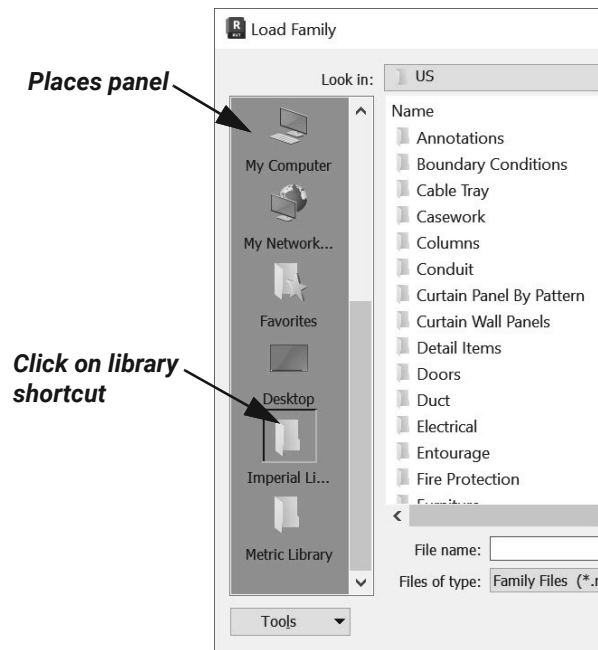



Figure 1–8

3. Click **Open**.
 - When inserting a family using a loadable family command, after you load the family your cursor will have the loaded element at the end of the cursor to prompt you to place the element. You will need to press <Esc> twice or click  (Modify) to end the command.

4. For some families, the *Specify Types* dialog box displays, as shown for a door in Figure 1–9. Select the types you want to include in your project and click **OK**.
- To select more than one type, hold <Ctrl> as you select.
 - You can use the drop-down lists under the columns to filter the sizes.

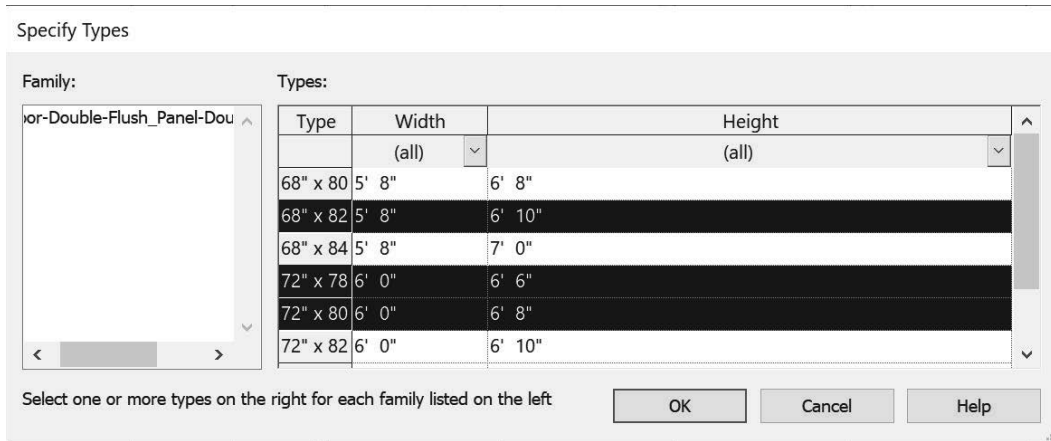


Figure 1–9

5. Once the families are loaded, in Properties, expand the Type Selector, as shown in Figure 1–10, and select the type you want to use.

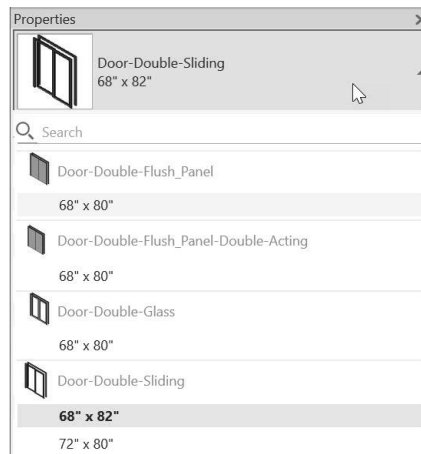


Figure 1–10




Hint: Using Families with This Learning Content

For the practices in this learning content, all families that are used have been provided with the practice files. This was done to ensure that all users can easily locate and use the required files to successfully complete all practices. In general, it is recommended that you use families from the provided Autodesk Revit Content via downloaded content or the cloud, or from your own custom company library.

How To: Use Load Autodesk Family

In addition to loading families from the installed Revit Library, you can also load families from the Autodesk online library using the **Load Autodesk Family** command. A connection to the Internet is required.

1. In the *Insert* tab>*Load from Library* panel, click  (Load Autodesk Family).
2. In the *Load Autodesk Family* dialog box, filter your search by typing in what kind of family you are looking for or click on a category in the *Browse* section, as shown in Figure 1–11.

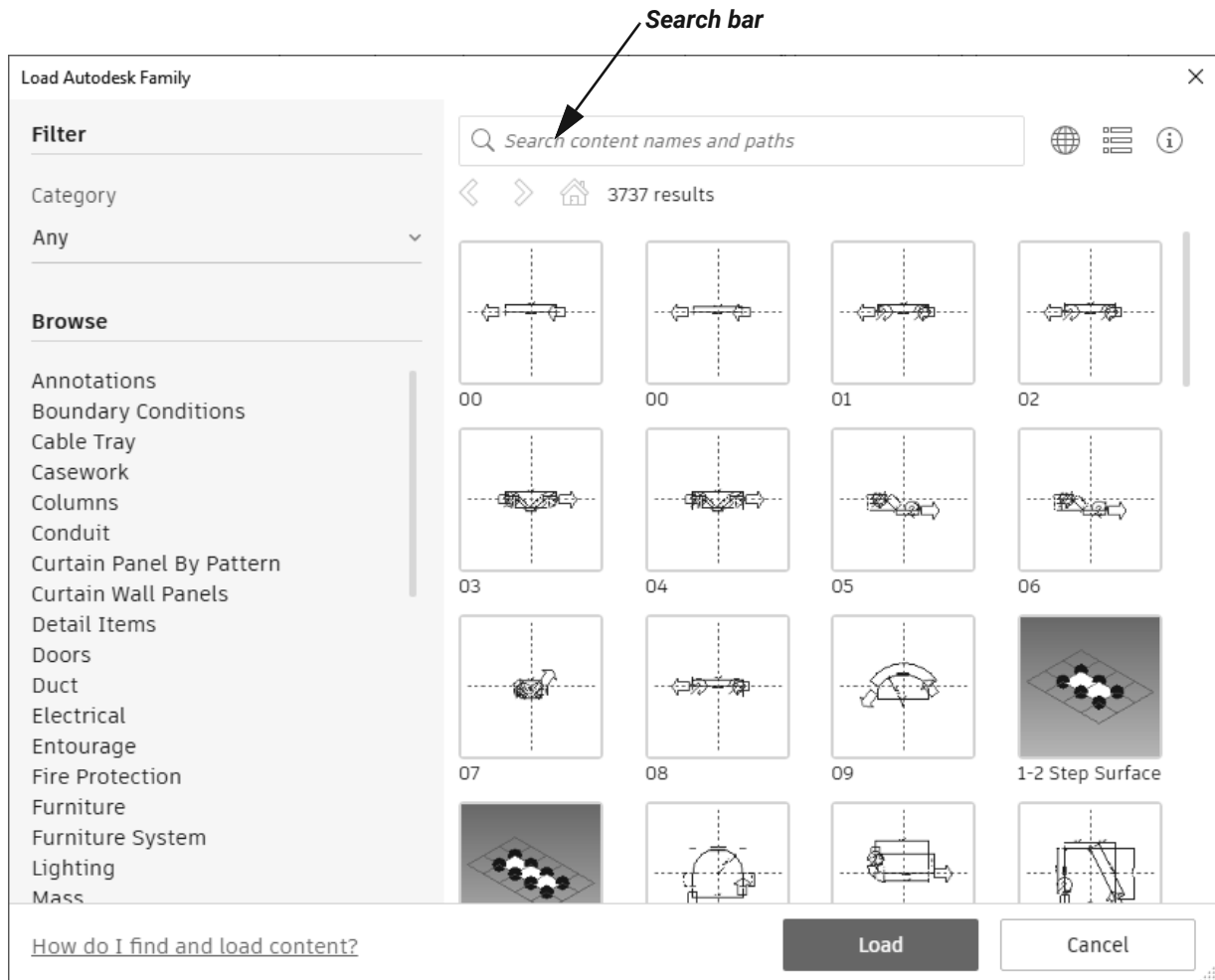


Figure 1–11

3. You can select as many families from the category as needed, and then click **Load** to load them into your project.

Review Loaded Families

You can review which families have already been loaded to determine which families still need to be loaded.

How To: Review the Loaded Families

1. In the Project Browser, expand the **Families** node.
2. Expand various nodes within the Families node, such as the **Cable Trays>Cable Tray with Fittings** node shown on the left in Figure 1–12, to verify which families (in this case, which cable tray families) have been loaded into the template.
3. Select the family name, such as **Channel Cable Tray**, to review its Properties, as shown on the right in Figure 1–12.

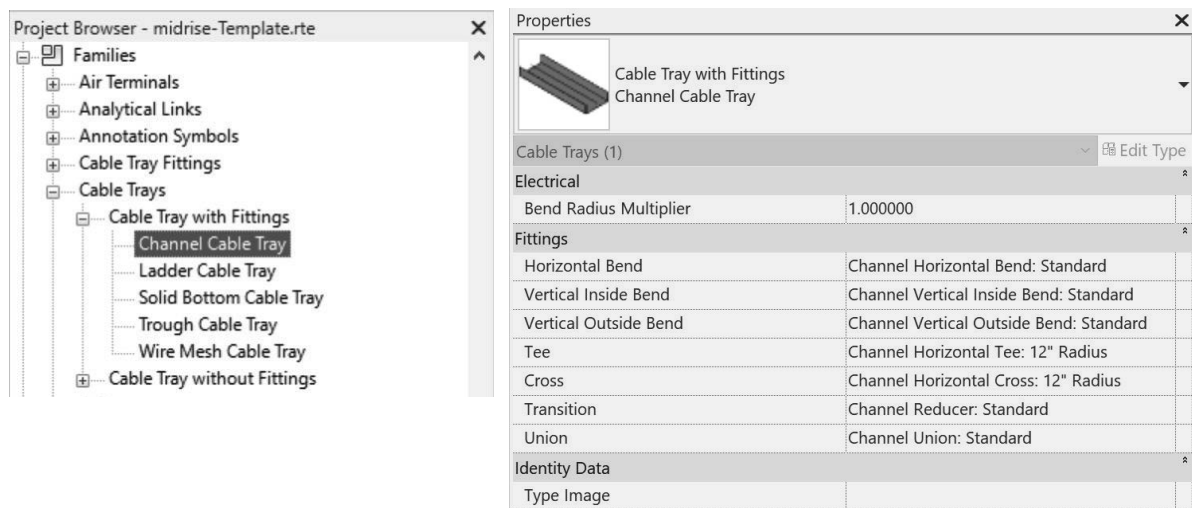


Figure 1–12

- Alternatively, you can start a command like **Door**, **Air Terminal**, or **Plumbing Fixture** to verify from the Type Selector which families are loaded. If a family is not loaded, a dialog box will display (as shown in Figure 1–13). Click **Yes** to launch the *Load Family* dialog box.

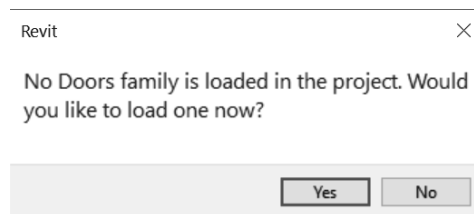


Figure 1–13

Purging Unused Components

You can clean up a template by removing unnecessary or duplicated elements from a project, including individual component types, as shown in Figure 1–14.

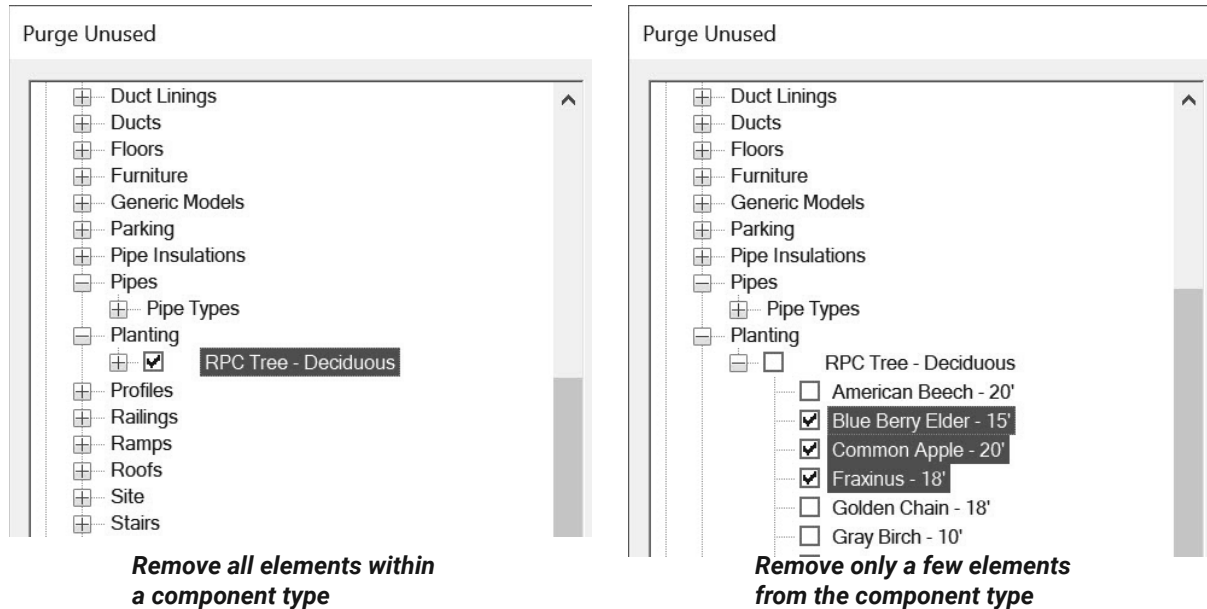


Figure 1–14

- Some elements are nested in other elements, and it might require several rounds of purging the project to remove them.
- Duplicate elements or assets that have been copied into the template will typically have a number or a number in brackets at the end of the name, as shown in Figure 1–15. Always verify the element before purging a potential duplicate component.

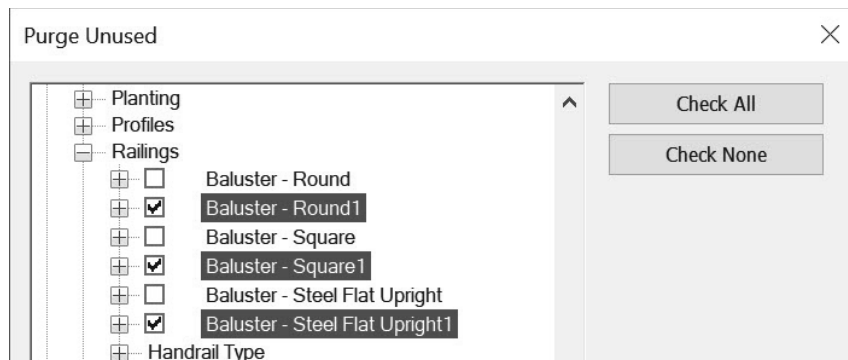



Figure 1–15

How To: Purge Unused Elements

1. In the *Manage* tab>*Settings* panel, click  (Purge Unused).
2. The *Purge Unused* dialog box opens and all elements will be selected. Click **Check None** to clear the selection.
3. Select only the elements that you want to purge.
4. Click **OK**.

Purging unused components not only helps simplify the component list, but also, more importantly, reduces the project file size.

Using Resource Projects

Although you can use a template file to start a project, you might also want to have resource projects that include additional system and component families, pre-drawn details (as shown in Figure 1–16), schedules, and sheets. You can then copy these elements into a new template or the current project, as needed.

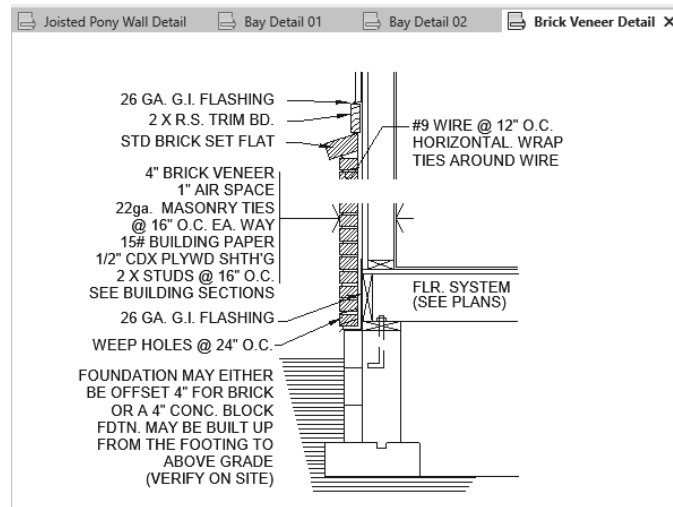




Figure 1–16

- To copy drafting views (details), sheets, schedules, or reports into the current project, use **Insert Views from File**.
- To copy system families (e.g., wall, floor, duct, pipe, wire types, etc) or annotations (e.g., text and dimension styles, materials, etc.), use **Transfer Project Standards**. Make sure that both the template/model you want to copy from and the host template/model you are copying to are open. Also, ensure that the host template/model is the active project before you start copying.
- To copy component families from a resource project, use **Copy to the Clipboard** and either **Paste Aligned to Selected Levels** or **Paste Aligned to Selected Views**.

How To: Insert Views from an Existing Project

1. In the *Insert* tab>*Load from Library* panel, expand  (Insert from File) and click  (Insert Views from File).
2. In the *Open* dialog box, select the project file you want to copy from.
3. In the *Insert Views* dialog box, select the views you want to insert into the current project, as shown in Figure 1–17.
 - In the lower left corner, you can select **Preview selection** to preview your selection.

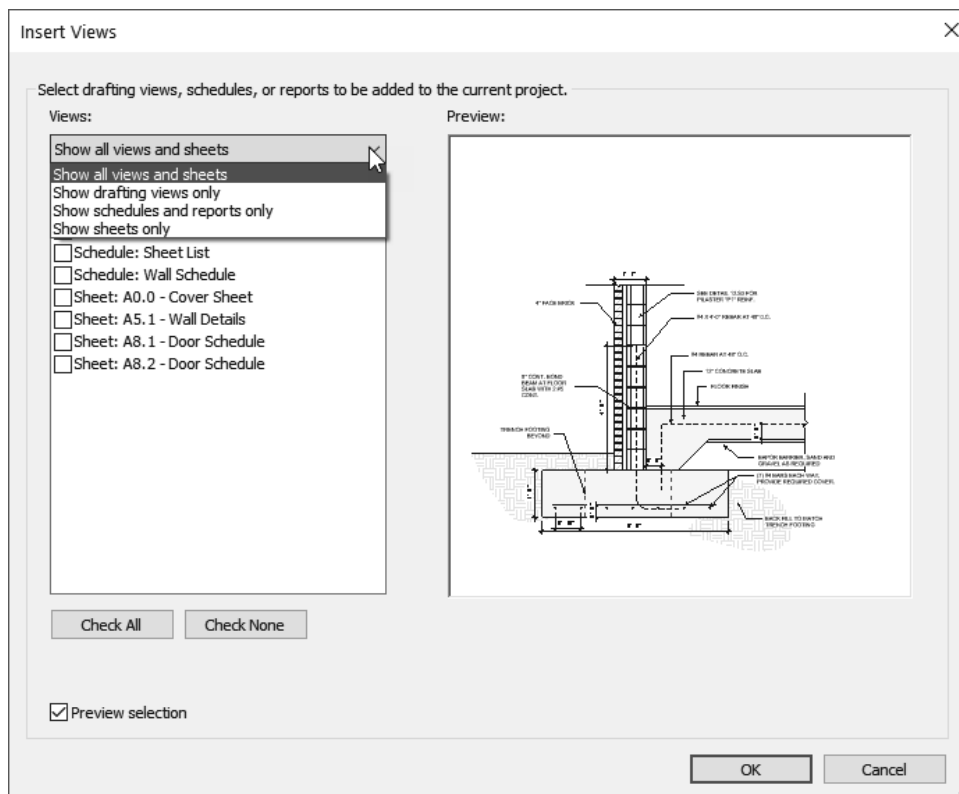



Figure 1–17

4. Click **OK**. The views are added to the file.
 - Schedules are completed with the information in the current project. Sheets are added, but do not include any views.

How To: Transfer Project Standards

1. Open the project from which you want to transfer information.
2. Switch to the current project you are copying to.
3. In the *Manage* tab>*Settings* panel, click  (Transfer Project Standards).
4. In the *Transfer Project Standards* dialog box, expand the *Copy from* drop-down list and select the file to copy from.

Note: Click **Check None** or **Check All**, as needed.

5. Select the items you want to copy into the current project, as shown in Figure 1–18, then click **OK**.

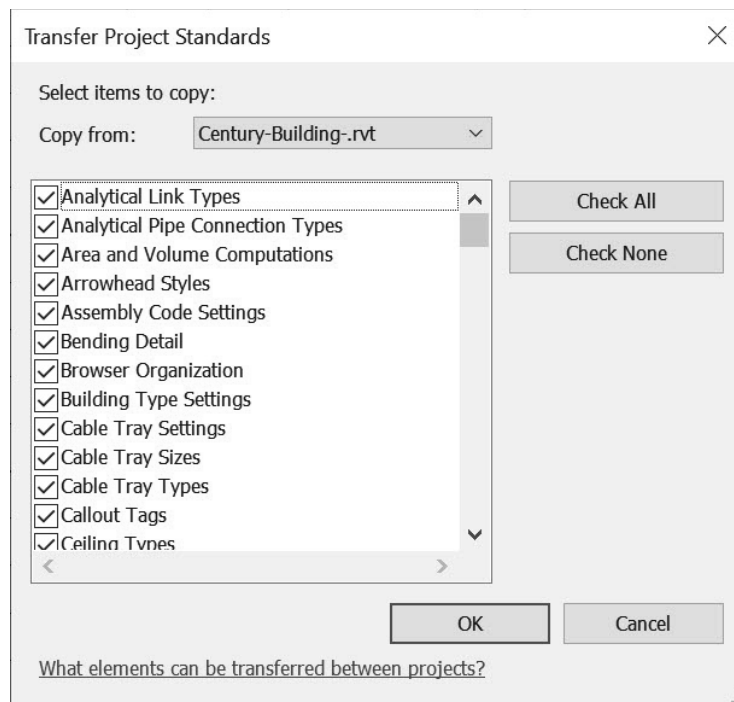


Figure 1–18

- All types of the selected category will be copied. You do not have the option to select individual types.

- If the *Duplicate Types* dialog box displays (shown in Figure 1–19), choose **Overwrite** or **New Only** to update the existing project.

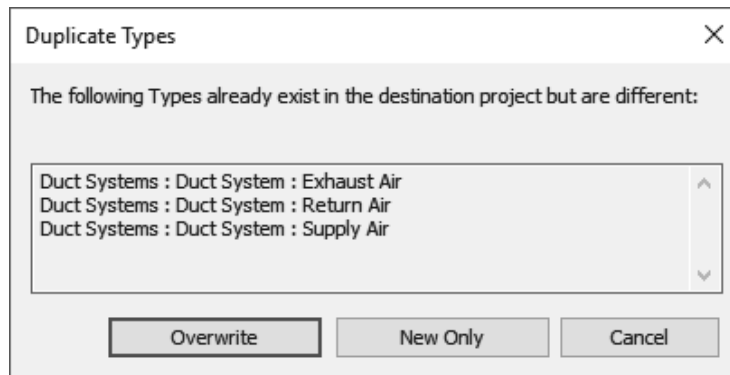


Figure 1–19

- Floor, ceiling, and elevation section plan view types and Revit link visibility settings cannot be transferred and need to be set up manually.

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 1–20.

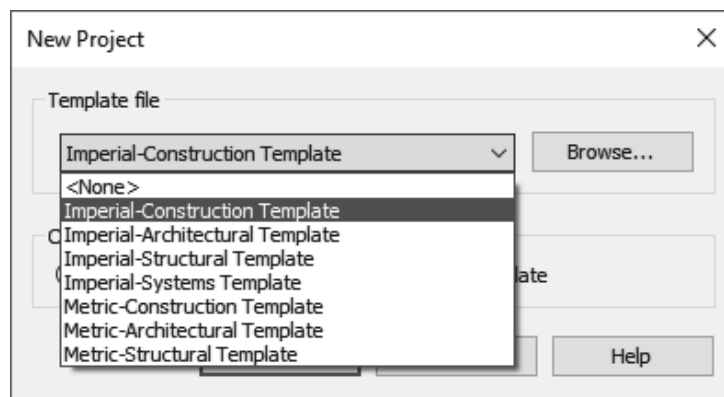


Figure 1–20

How To: Set the Default Template Files List

1. In the *File* tab, click **Options**.
2. In the *Options* dialog box, in the left pane, select **File Locations**, as shown in Figure 1–21.

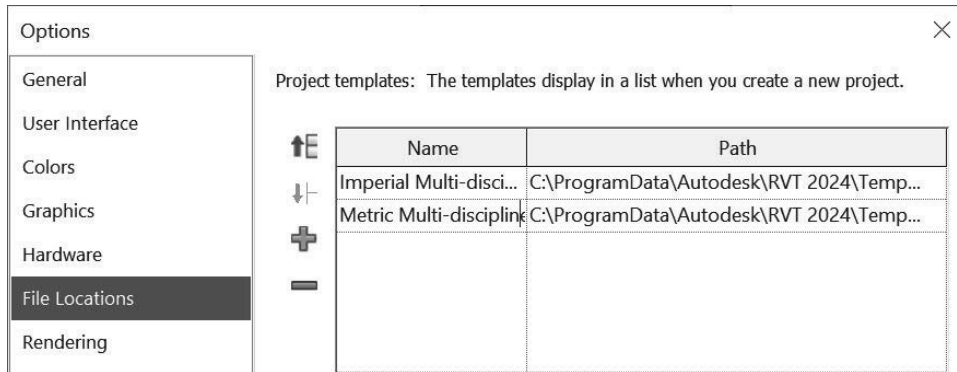







Figure 1–21

- Use  (Add Value) to add additional templates (RTE).
 - To put your templates in order, use  (Move Rows Up) and  (Move Rows Down). Move the templates that are used most often to the top.
 - Use  (Remove Value) if you do not need a template anymore.
3. Once the template is loaded, you can click on the name in the *Name* column to change it or leave it with its default file name. You can also click on any of the other names in the *Name* column and change them if needed.
 4. To update a template, click on the file path in the *Path* column and select the  (Browse) button.
 5. In the *Browse for Template File* dialog box, navigate to the correct folder, select the template file, and click **Open**.

Practice 1a

Prepare Project Templates – Architecture

Practice Objectives

- Create a new project template file.
- Add levels with plan views.
- Review existing system and component families.
- Load a component family.
- Insert views and transfer project standards from a resource project.

In this practice, you will create a new template file based on an existing template and add several levels to the project. You will review the existing system and component families and load a component family. You will then insert views and transfer project standards from a resource project, as shown for text types before and after in Figure 1–22.

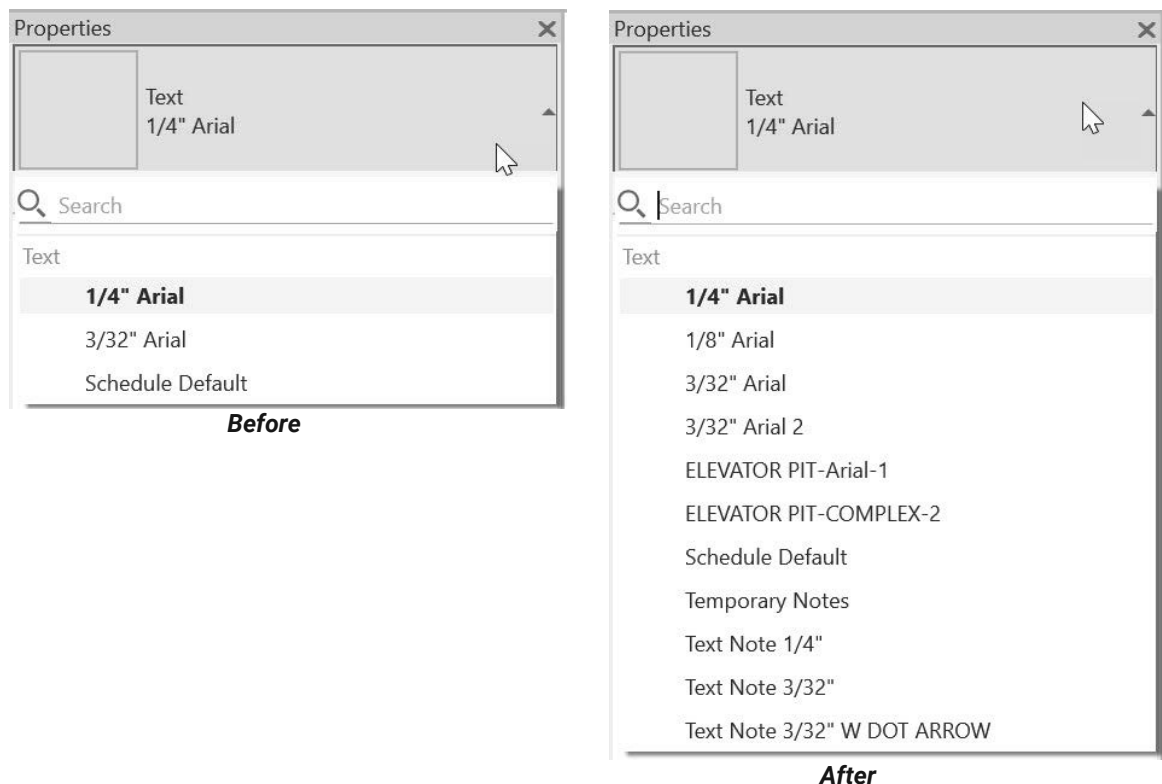




Figure 1–22

Task 1: Establish a project template file.

1. On the Home screen, click **New...** in the *MODELS* area, or if currently in a model, in the *File* tab, expand  (New) and click  (Project).
2. In the *New Project* dialog box, click **Browse...**. Navigate to the practice files *Architectural>RTE* folder, select **Imperial-Architectural Template.rte**, and click **Open**.
3. In the *New Project* dialog box, in the *Create new* area, select **Project template**, as shown in Figure 1–23, and click **OK**.

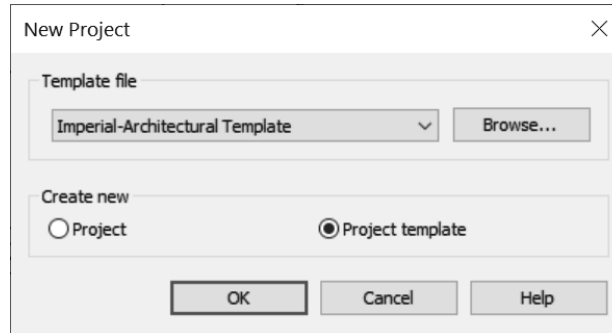


Figure 1–23

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

Task 2: Add default levels.

1. Open an elevation view.
2. Click on the level head and rename *Level 1* to **Floor 1** and *Level 2* to **Floor 2**. Click **Yes** to rename the corresponding views.
3. Change the **Floor 2** height to **16'-0"**, as shown in Figure 1–24.

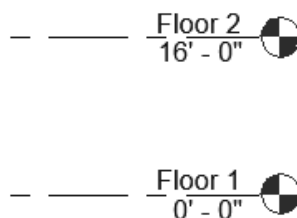



Figure 1–24

4. In the *Architecture* tab>*Datum* panel, click  (Level).
5. In the *Modify | Place Level* tab>*Plan Views* panel, select the checkbox for the **Create Plan View** option, as shown in Figure 1–25, and click **Plan View Types**.

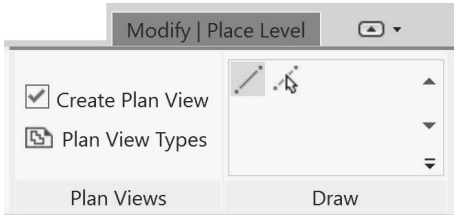


Figure 1-25

- 6. In the *Plan View Types* dialog box, click **Structural Plan** to deselect it (so that only the **Ceiling Plan** and **Floor Plan** view types are selected), as shown in Figure 1-26, and click **OK**.

Note: If you have Structural Tabs and Tools turned off in Revit Options>User Interface, you will not see the Structural Plan in the Plan View Types dialog box.

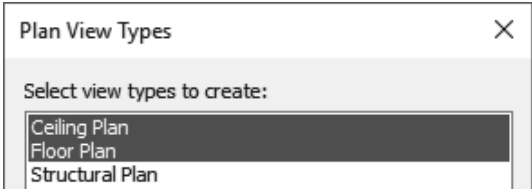


Figure 1-26

- 7. Add three more sequential levels above **Floor 2** with a distance of **12'-0"** between each level, and two levels named **Basement 1** and **Basement 2** below **Floor 1** with a distance of **10'-0"** between them. Make sure to click **Yes** to rename the corresponding views. Figure 1-27 shows the completed levels.

Note: Scale change and dimensions are added for clarity.

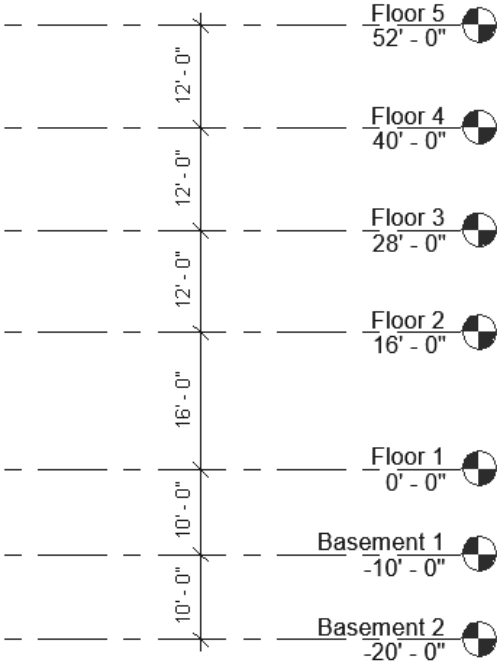




Figure 1-27

8. Return to the **Floor 1** plan view.
9. Save the template.

Task 3: Load a component family.

1. In the *Insert* tab>*Load from Library* panel, click  (Load Family).
 - Using the **Load Family** command, you can load any type of component. However, if you use a specific command such as **Column** or **Door**, you can only load that type of family.
2. In the *Load Family* dialog box, navigate to the practice files *Architectural*>*RFA* folder and select the **Doric Column.rfa** family to load, then click **Open**.
3. Save the template.

Task 4: Review family elements in the template.

1. In the *Annotate* tab>*Text* panel, click  (Text).
2. Expand the list in the Type Selector. Only a few text types are available, as shown in Figure 1–28.

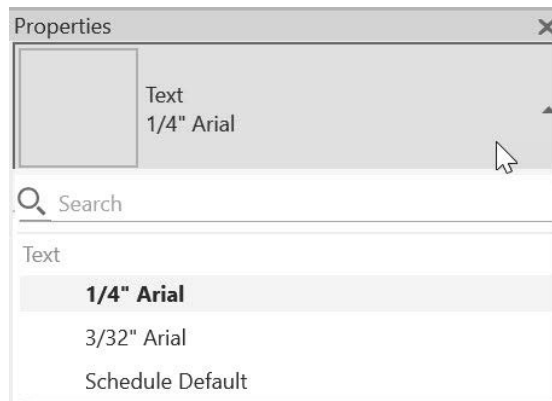






Figure 1–28

3. In the *Architecture* tab>*Build* panel, select  (Component) and review the list of families in the Type Selector.
4. Click  (Modify).
5. In the *Architecture* tab>*Build* panel, expand **Column** and click  (Column: Architectural) and note that **Doric Column** is showing in the Type Selector.
6. Click  (Modify).

7. In the Project Browser, expand the **Families>Columns** node and note that **Doric Column** is listed there as well, as shown in Figure 1–29. Continue to expand nodes within the Project Browser to see what other families are loaded in the project.

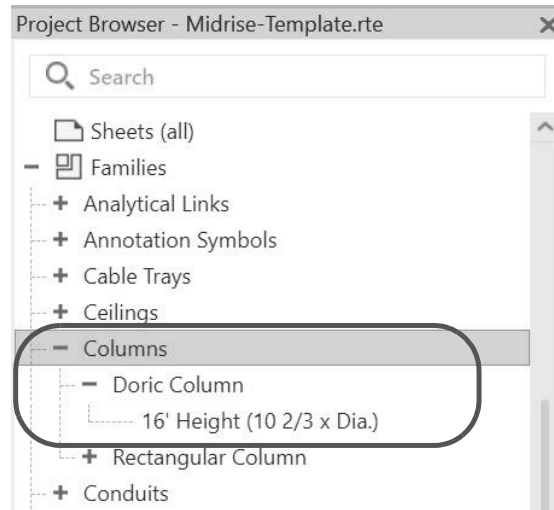





Figure 1–29

Task 5: Use Transfer Project Standards.

Note: Using *Transfer Project Standards* to copy elements from a Revit model requires the model to be open when performing this task.

1. In the *File* tab, expand  (Open) and click  (Project).
2. In the *Open* dialog box, navigate to the practice files *Resource Project* folder and select **Construction Resource Project.rvt**. Click **Open**.
3. Make the **Midrise-Template.rte** file the active project. You can do so by clicking on the **Floor 1** view tab.
4. In the *Manage* tab>*Settings* panel, click  (Transfer Project Standards).
5. In the *Transfer Project Standards* dialog box, in the *Select items to copy* area, note that the *Copy from* drop-down list is set to **Construction Resource Project.rvt**, which is the project that was just used for inserting a view from a file.

- Click **Check None** to deselect everything in the list, then select **Text Types** (as shown in Figure 1–30) and click **OK**.

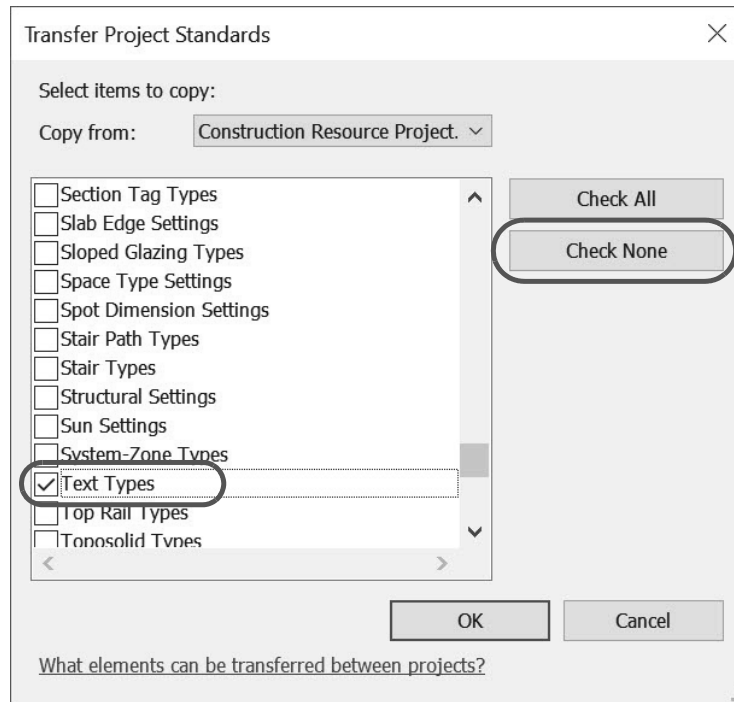


Figure 1–30

Note: If the *Duplicate Types* dialog box displays, select **New Only** because you do not want to overwrite existing text types in your template.

- Start the **Text** command and look at the expanded list of text types that are now available, as shown in Figure 1–31.

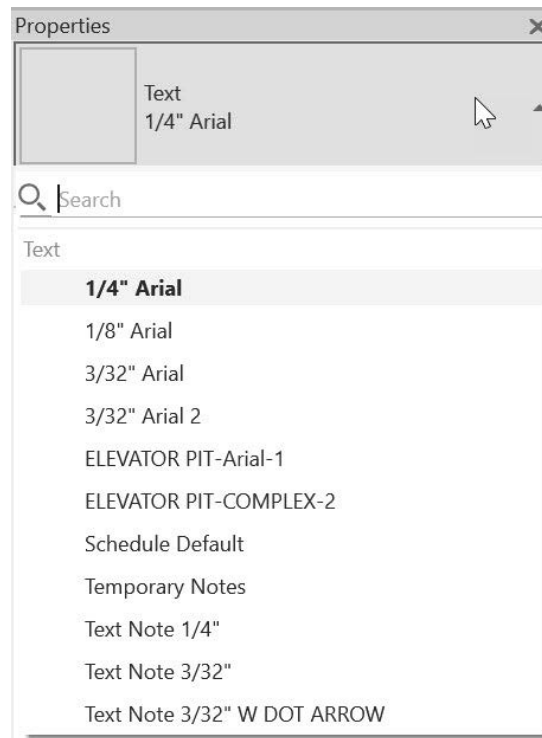





Figure 1–31

8. Click  (Modify).
9. Save the template.

Task 6: Copy information from a resource project.

Note: Inserting views from another Revit model does not require the model to be open when performing this task.

1. Close any open views or projects other than the template file.
2. In the *Insert* tab>*Load from Library* panel, expand  (Insert from File) and click  (Insert Views from File).
3. In the *Open* dialog box, navigate to the practice files *Resource Project* folder, select **Construction Resource Project.rvt**, and click **Open**.
4. In the *Insert Views* dialog box, set the *Views* drop-down list to **Show all views and sheets**.

5. Select one or two drafting views and one or two schedules from the list, as shown in Figure 1–32.

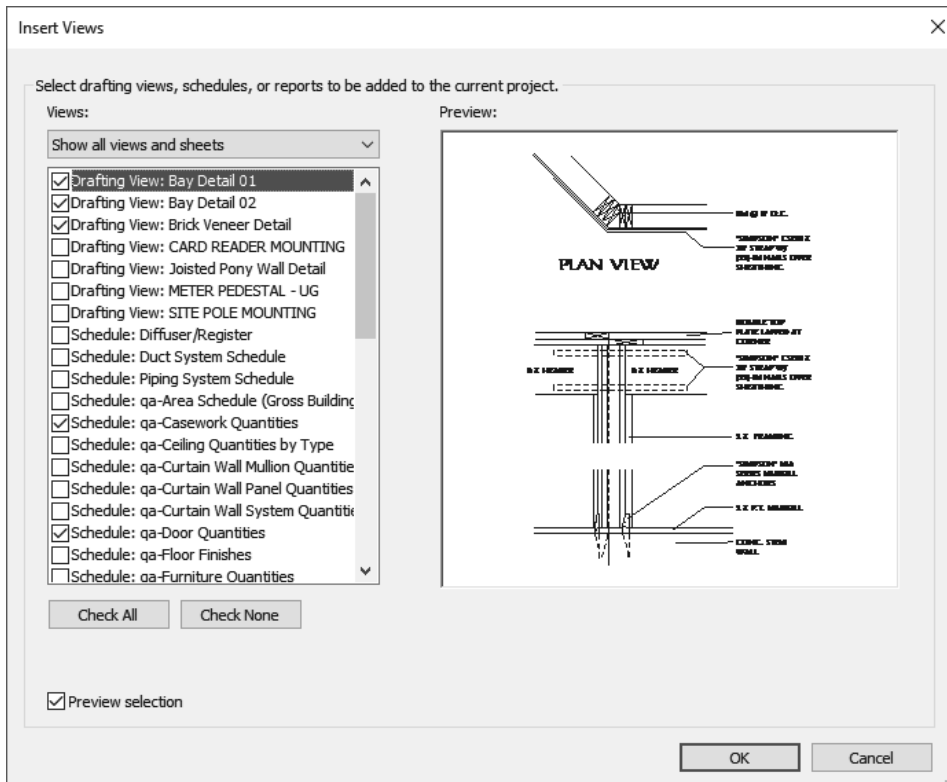



Figure 1–32

6. Click **OK**.
7. If the Duplicate Types warning displays, click **OK** and close any warning messages that pop up.
8. In the Project Browser of your template file, review the new drafting views and schedules that are added.
9. Return to the floor plan view.
10. Save the template.

Task 7: Purge duplicate elements.

Note: This task would normally be done at the end of template creation. This is for practice purposes only.

1. In the *Manage* tab>*Settings* panel, click  (Purge Unused).
2. In the *Purged Unused* dialog box, click **Check None**, then expand **Doors>Single-Flush**. Select **32" x 84"1** and **34" x 84"1**, as shown in Figure 1–33.

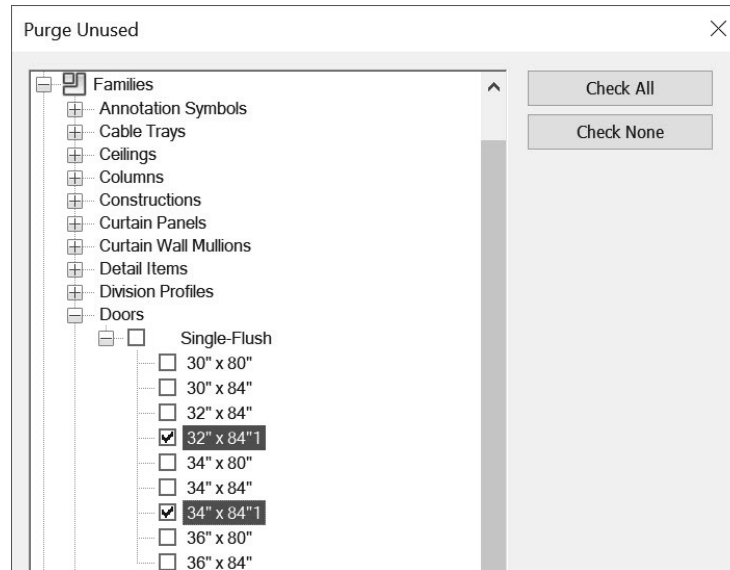


Figure 1–33

3. Click **OK** to remove them from the template.
4. Open the *Purge Unused* dialog box again. Expand **Doors>Single-Flush** and note that the deleted elements are no longer displayed.
5. Save and close the template file.

End of practice

Practice 1b

Prepare Project Templates – MEP

Practice Objectives

- Create a new project template file.
- Review existing system and component families.
- Load a component family.
- Insert views and transfer project standards from a resource project.

In this practice, you will create a new template file based on an existing template. You will review the existing system and component families and load a component family. You will then insert views and transfer project standards from a resource project, as shown for text types before and after in Figure 1–34.

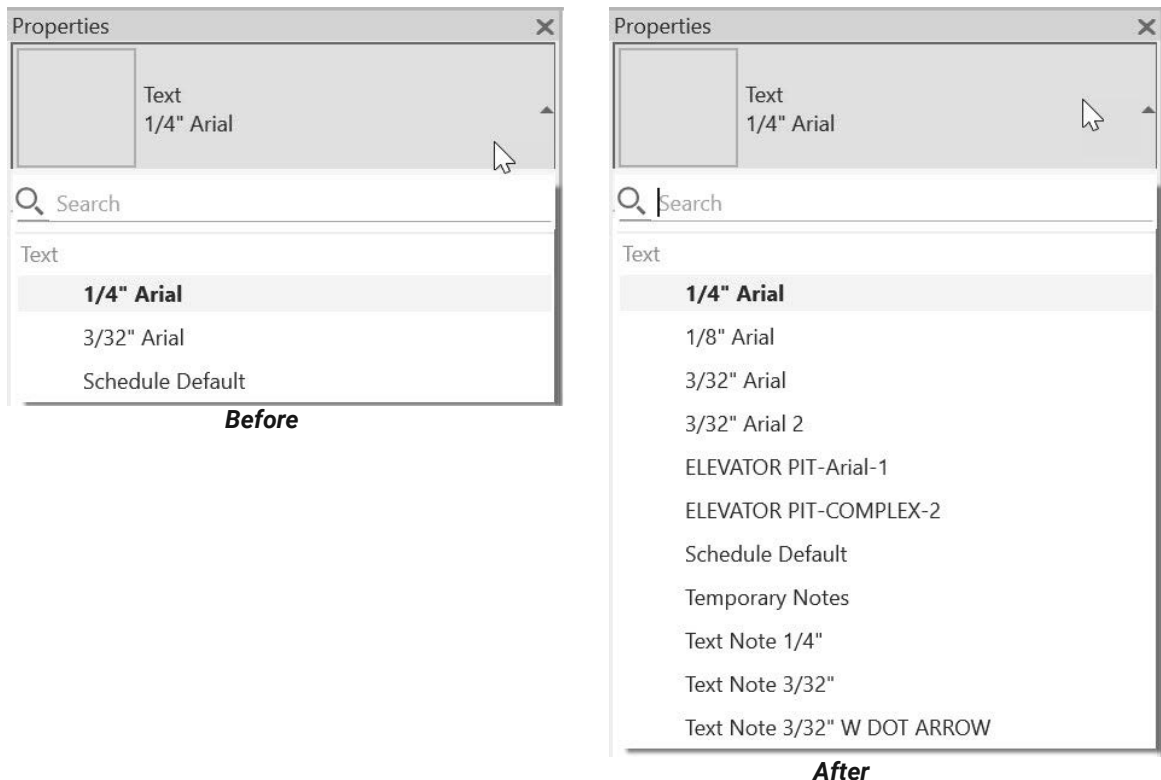




Figure 1–34

Task 1: Establish a project template file.

1. On the Home screen, click **New...** in the *MODELS* area, or if currently in a model, in the *File* tab, expand  (New) and click  (Project).

2. In the *New Project* dialog box, click **Browse...**. Navigate to the practice files *MEP>RTE* folder, select **Imperial-Systems Template.rte**, and click **Open**. This template will have electrical, mechanical, and plumbing views and families in it.
 - There are additional templates specifically for the mechanical, plumbing, and electrical disciplines but for the purpose of this practice, the systems template will be used.
3. In the *New Project* dialog box, in the *Create new* area, select **Project template** (as shown in Figure 1–35) and click **OK**.

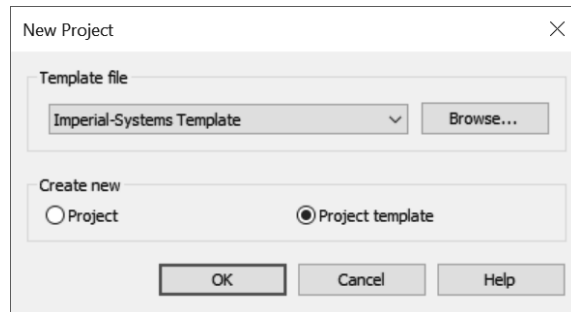






Figure 1–35

4. In the Quick Access Toolbar, click  (Save) and save the template in the practice files *MEP>RTE* folder as **Midrise-Template.rte**.
5. In the *Systems* tab>*Mechanical* panel, click  (Mechanical Equipment). Note that **Indoor AHU - Horizontal - Chilled Water Coil** is showing in the Type Selector.
6. Click  (Modify).

Task 2: Add MEP-specific levels.

Note: MEP templates typically do not have additional levels. Levels are created using **Copy/Monitor** with a linked file.

1. Open an elevation view.
2. In the *Architecture* tab>*Datum* panel, click  (Level).
3. In the *Modify | Place Level* tab>*Plan Views* panel, select the checkbox for the **Create Plan View** option, as shown in Figure 1–36, and click **Plan View Types**.

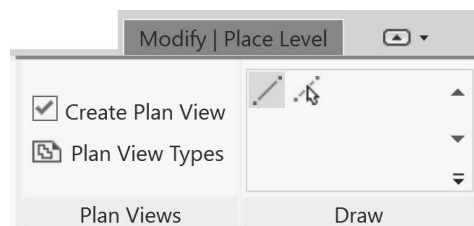


Figure 1–36

- In the *Plan View Types* dialog box, click **Structural Plan** to deselect it (so that only the **Ceiling Plan** and **Floor Plan** view types are selected), as shown in Figure 1–37, and click **OK**.

Note: If you have *Structural Tabs and Tools* turned off in *Revit Options > User Interface*, you will not see the *Structural Plan* in the *Plan View Types* dialog box.

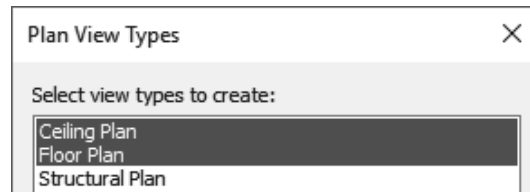


Figure 1–37

- Add a level called **Mech Reference 2** and change the level height to **9'-9"**. Make sure to click **Yes** to rename the corresponding views. Figure 1–38 shows the completed levels.

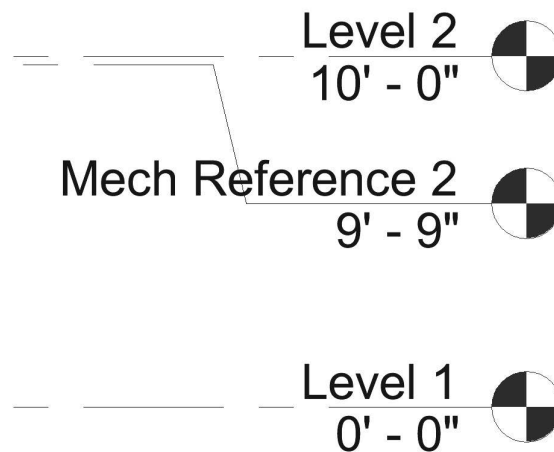




Figure 1–38

- Save the template.

Task 3: Load a component family.

- In the *Insert* tab > *Load from Library* panel, click  (Load Family).
 - By using the **Load Family** command, you can load any type of component. If you use a specific command, such as **Mechanical Equipment**, you can only load that type of family.
- In the *Load Family* dialog box, navigate to the practice files *MEP > RFA* folder and select the **Indoor AHU - Horizontal - Chilled Water Coil.rfa** family to load, then click **Open**.
- Save the template.

Task 4: Review family elements in the template.

1. In the *Annotate* tab>*Text* panel, click  (Text).
2. Expand the list in the Type Selector. Only a few text types are available, as shown in Figure 1–39.

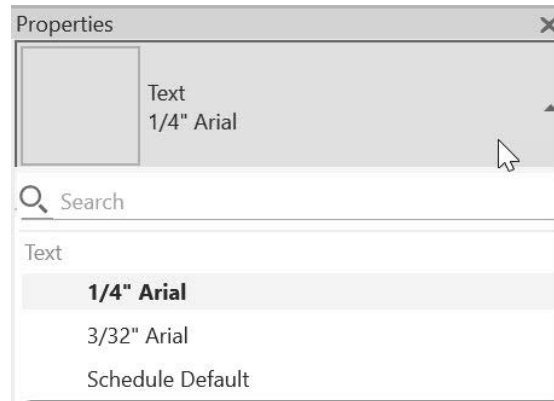






Figure 1–39

3. In the *Systems* tab>*Model* panel, select  (Component) and review the list of families in the Type Selector.
4. Click  (Modify).
5. In the *Systems* tab>*Mechanical* panel, click  (Mechanical Equipment). Note that **Indoor AHU - Horizontal - Chilled Water Coil** is showing in the Type Selector.
6. Click  (Modify).

7. In the Project Browser, expand the **Families>Mechanical Equipment** node and note that **Indoor AHU - Horizontal - Chilled Water Coil** is listed there as well, as shown in Figure 1–40. Continue to expand nodes within the Project Browser to see what other families are loaded in the project.

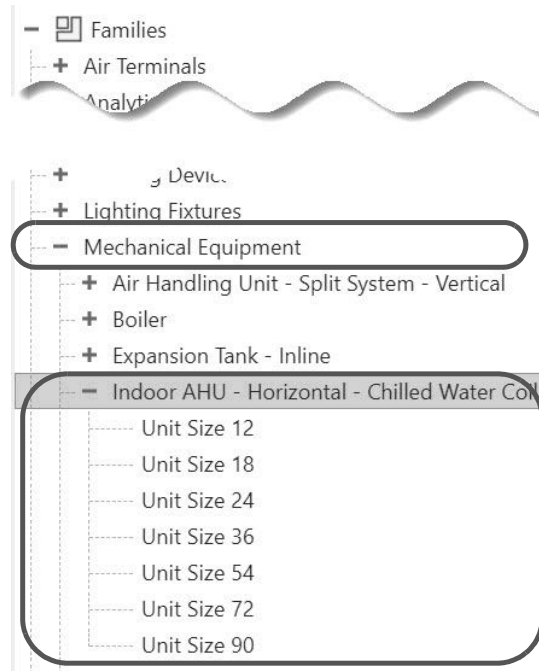





Figure 1–40

Task 5: Use Transfer Project Standards.

Note: Using *Transfer Project Standards* to copy elements from a Revit model requires the model to be open when performing this task.

1. In the *File* tab, expand  (Open) and click  (Project).
2. In the *Open* dialog box, navigate to the practice files *Resource Project* folder and select **Construction Resource Project.rvt**. Click **Open**.
3. Make the **Midrise-Template.rte** file the active project. You can do so by clicking on the **Floor 1** view tab.

4. In the *Manage* tab>*Settings* panel, click  (Transfer Project Standards).
5. In the *Transfer Project Standards* dialog box, in the *Select items to copy* area, note that the *Copy from* drop-down list is set to **Construction Resource Project.rvt**. Click **Check None** to deselect everything in the list, then select **Text Types** (as shown in Figure 1–41) and click **OK**.

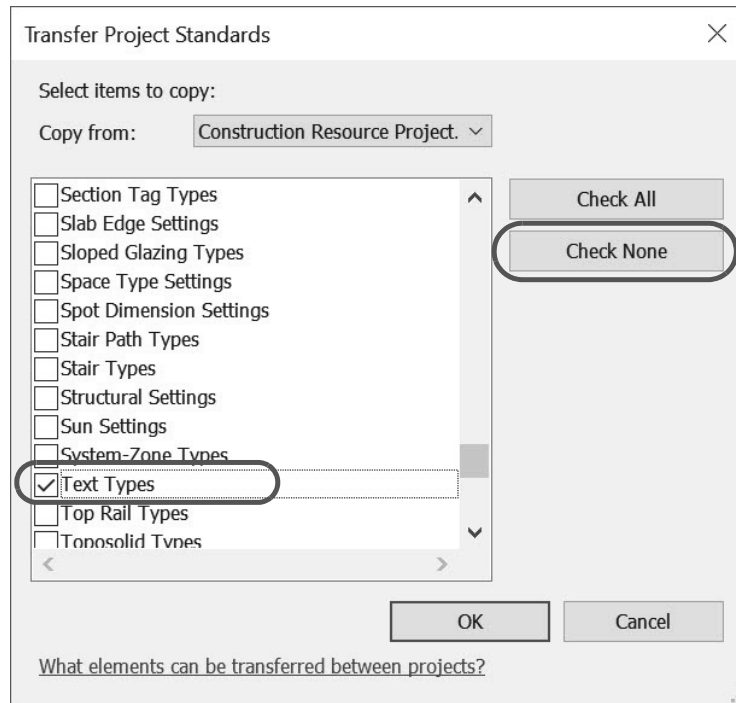


Figure 1–41

Note: If the *Duplicate Types* dialog box displays, select **New Only** because you do not want to overwrite existing text types in your template.

6. Start the **Text** command and look at the expanded list of text types that are now available, as shown in Figure 1–42.

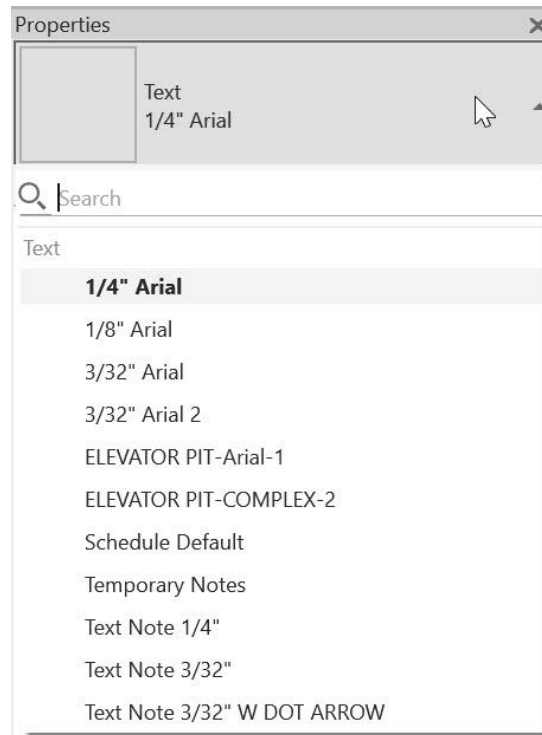





Figure 1–42

7. Click  (Modify).
8. Save the template.

Task 6: Copy information from a resource project.

1. Close any open projects other than the template file.
2. In the *Insert* tab > *Load from Library* panel, expand  (Insert from File) and click  (Insert Views from File).
3. In the *Open* dialog box, navigate to the practice files *Resource Project* folder, select **Construction Resource Project.rvt**, and click **Open**.
4. In the *Insert Views* dialog box, set the *Views* drop-down list to **Show all views and sheets**.

5. Select one or two drafting views and one or two schedules from the list, as shown in Figure 1–43.

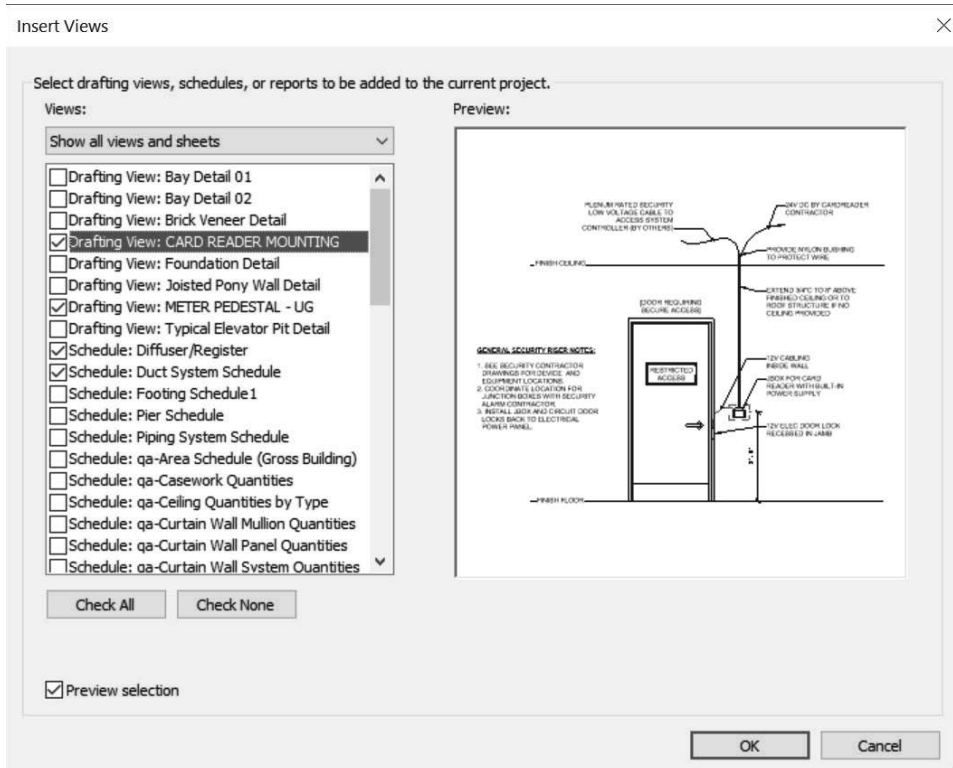



Figure 1–43

Note: If you started with the systems or electrical template, the drafting views will be in the Coordination section in the Project Browser.

6. Click **OK**.
7. If the Duplicate Types warning displays, click **OK** and close any warning messages that pop up.
8. In the Project Browser of your template file, review the new drafting views and schedules that are added.
9. Return to the floor plan view.

Task 7: Purge duplicate elements.

Note: This task would normally be done at the end of template creation. This is for practice purposes only.

1. In the *Manage* tab>*Settings* panel, click  (Purge Unused).
2. In the *Purge Unused* dialog box, click **Check None**, then expand **Air Terminals>Exhaust Grill**. Select **24 x 24 Face 12 x 12 Connection1**, as shown in Figure 1–44.

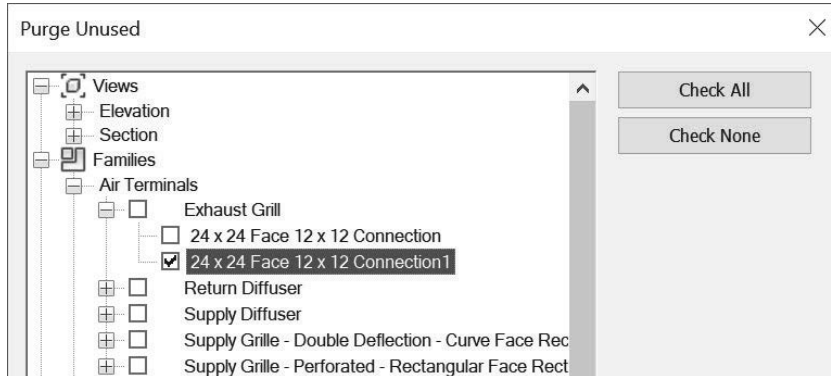


Figure 1–44

3. Click **OK** to remove it from the template.
4. Open the *Purge Unused* dialog box again. Expand **Air Terminals>Exhaust Grill** and note that the deleted element is no longer displayed.
5. Save and close the template file.

End of practice

Practice 1c

Prepare Project Templates – Structure

Practice Objectives

- Create a new project template file.
- Add levels with plan views.
- Review existing system and component families.
- Load a component family.
- Insert views and transfer project standards from a resource project.

In this practice, you will create a new template file based on an existing template and add several levels to the project. You will review the existing system and component families and load a component family. You will then insert views and transfer project standards from a resource project, as shown for text types before and after in Figure 1–45.

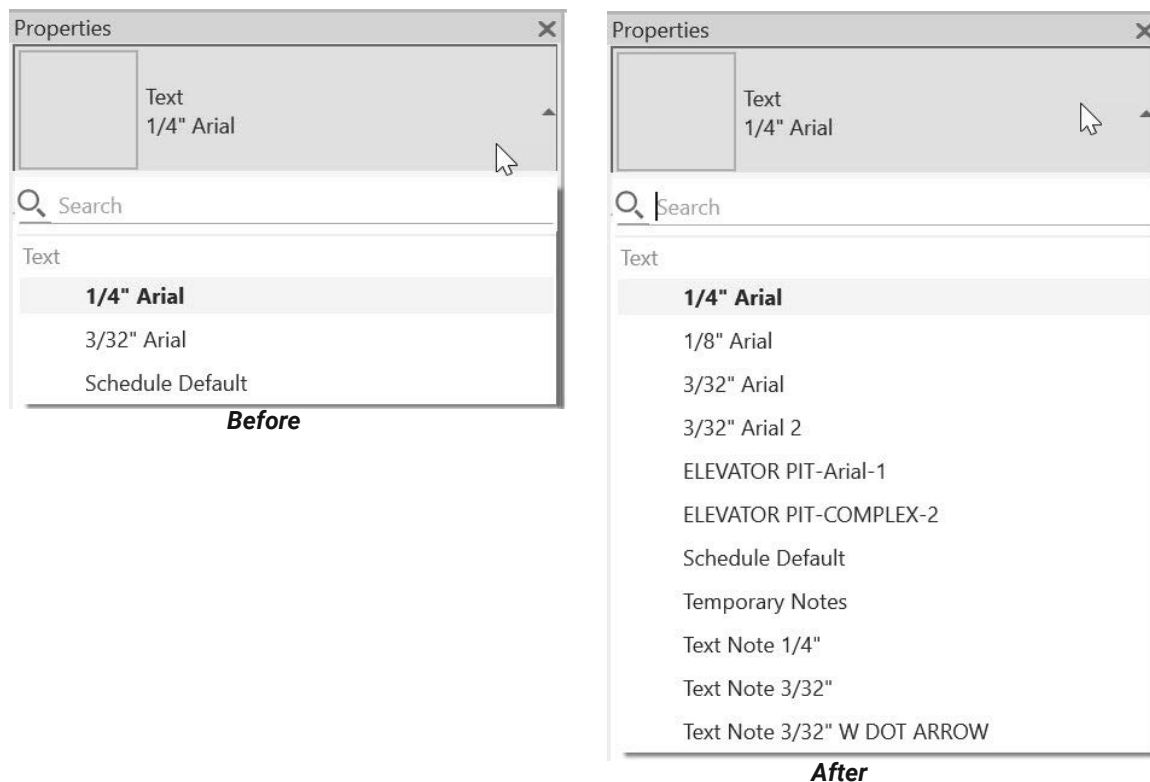




Figure 1–45

Task 1: Establish a project template file.

1. On the Home screen, click **New...** in the *MODELS* area, or if currently in a model, in the *File* tab, expand  (New) and click  (Project).
2. In the *New Project* dialog box, click **Browse....** Navigate to the practice files *Structural>RTE* folder, select **Imperial-Structural Template.rte**, and click **Open**.
3. In the *New Project* dialog box, in the *Create new* area, select **Project template** (as shown in Figure 1–46) and click **OK**.

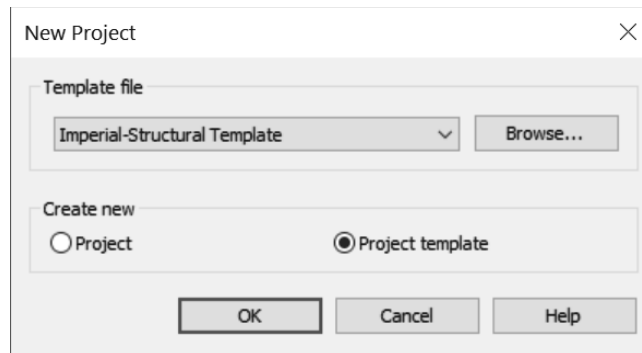


Figure 1–46

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

Task 2: Add default levels.

1. Open an elevation view.
2. Click on the level head and rename *Level 1* to **Ground Floor** and *Level 2* to **TOS-Floor 1**. Click **Yes** to rename the corresponding views.

3. Change the **TOS-Floor 1** height to **14'-7"**, as shown in Figure 1–47.

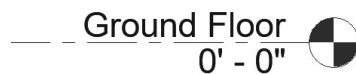



Figure 1–47

4. In the *Structure* tab>*Datum* panel, click  (Level).
5. In the *Modify | Place Level* tab>*Plan Views* panel, select the checkbox for the **Create Plan View** option, as shown in Figure 1–48, and click **Plan View Types**.

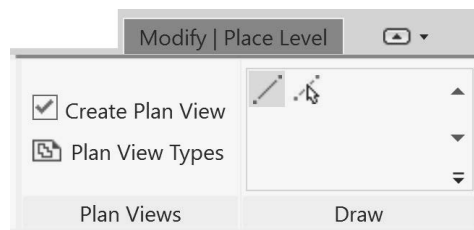


Figure 1–48

6. In the *Plan View Types* dialog box, click **Ceiling Plan** and **Floor Plan** to deselect them (so that only the **Structural Plan** view type is selected), as shown in Figure 1–49, and click **OK**.

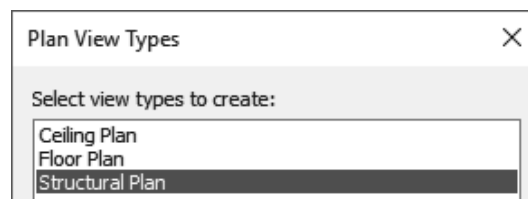


Figure 1–49

7. Add three more sequential levels above **TOS-Floor 1** with a distance of **15'-0"** between each level, and one level below **Ground Floor** named **T.O. Footing** with a distance of **15'-0"** between them. Make sure to click **Yes** to rename the corresponding views. Figure 1–50 shows the levels completed.

Note: Scale change and dimensions are added for clarity.

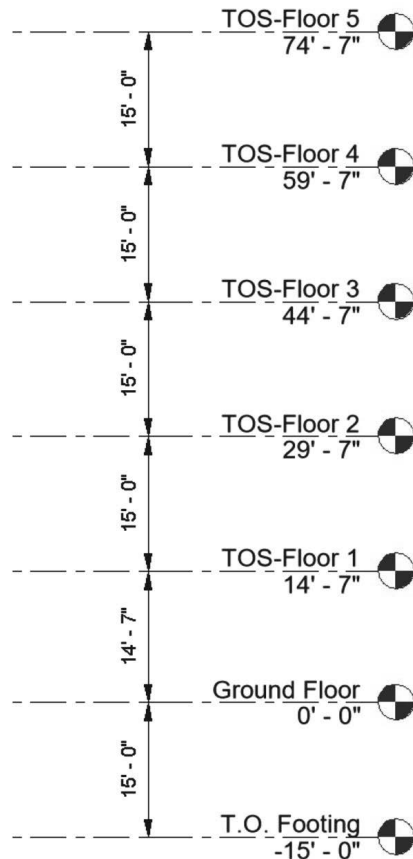




Figure 1–50

8. Return to the Ground Floor plan view.
9. Save the template.

Task 3: Load a component family.

- In the *Insert* tab > *Load from Library* panel, click  (Load Family).
 - By using the **Load Family** command, you can load any type of component. If you use a specific command, such as **Column** or **Truss**, you can only load that type of family.
- In the *Load Family* dialog box, navigate to the practice files *Structural* > *RFA* folder, select **Pipe-Column.rfa**, and click **Open**.
- In the *Specify Types* dialog box, select **Pipe8STD** and click **OK**.
- Save the template.

Task 4: Review family elements in the template.

1. In the *Annotate* tab>*Text* panel, click  (Text).
2. Expand the list in the Type Selector. Only a few text types are available, as shown in Figure 1–51.

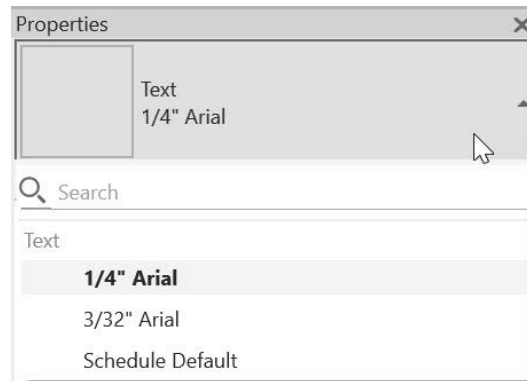






Figure 1–51

3. In the *Structure* tab>*Model* panel, select  (Component) and review the list of families in the Type Selector.
4. Click  (Modify).
5. In the *Structural* tab>*Structure* panel, select  (Column). Note that **Pipe8STD** is displayed in the Type Selector.
6. Click  (Modify).
7. In the Project Browser, expand the **Families>Structural Columns>Pipe-Column** node and note that **Pipe8STD** is listed there as well, as shown in Figure 1–52. Continue to expand nodes within the Project Browser to see what other families are loaded in the project.

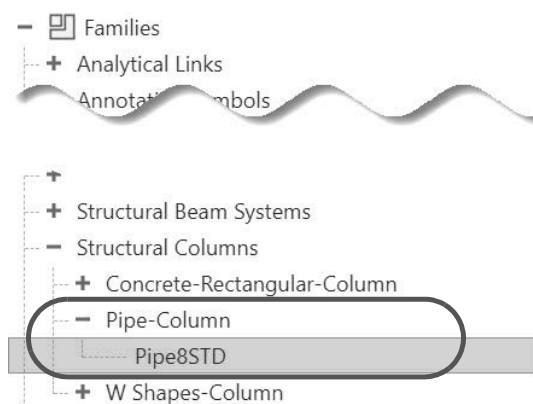





Figure 1–52

Task 5: Use Transfer Project Standards.

Note: Using **Transfer Project Standards** to copy elements from a Revit model requires the model to be open when performing this task.

1. In the *File* tab, expand  (Open) and click  (Project).
2. In the *Open* dialog box, navigate to the practice files *Resource Project* folder and select **Construction Resource Project.rvt**. Click **Open**.
3. Make the **Midrise-Template.rte** file the active project. You can do so by clicking on the **Floor 1** view tab.
4. In the *Manage* tab>*Settings* panel, click  (Transfer Project Standards).
5. In the *Transfer Project Standards* dialog box, in the *Select items to copy* area, note that the *Copy from* drop-down list is set to **Construction Resource Project.rvt**, which is the project that was just used for inserting a view from a file. Click **Check None** to deselect everything in the list, then select **Text Types** (as shown in Figure 1–53) and click **OK**.

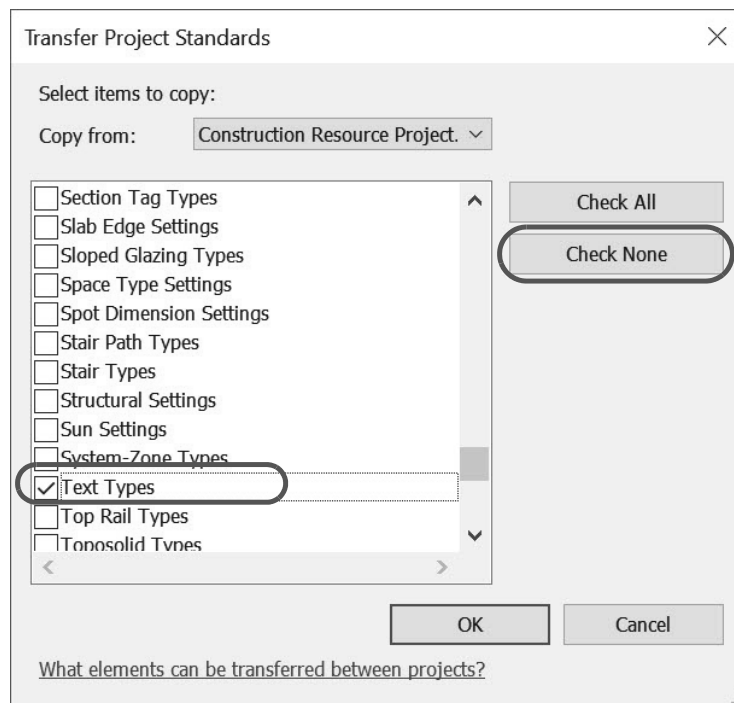


Figure 1–53

Note: If the *Duplicate Types* dialog box displays, select **New Only** because you do not want to overwrite existing text types in your template.

6. Start the **Text** command and look at the expanded list of text types that are now available, as shown in Figure 1–54.

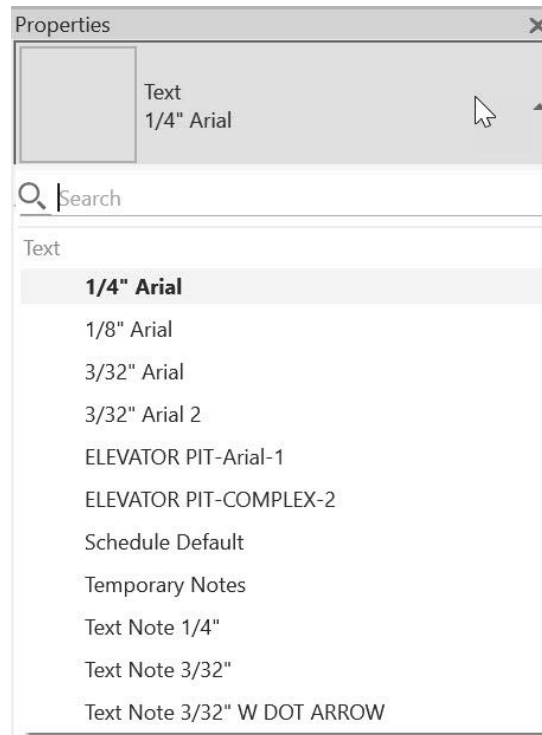




Figure 1–54

7. Click  (Modify).

Task 6: Copy information from a resource project.

1. Close any open projects other than the template file.
2. In the *Insert* tab>*Load from Library* panel, expand  (Insert from File) and click  (Insert Views from File).
3. In the *Open* dialog box, navigate to the practice files *Resource Project* folder, select **Construction Resource Project.rvt**, and click **Open**.
4. In the *Insert Views* dialog box, set the *Views* drop-down list to **Show all views and sheets**.

5. Select one or two drafting views and one or two schedules from the list, as shown in Figure 1–55.

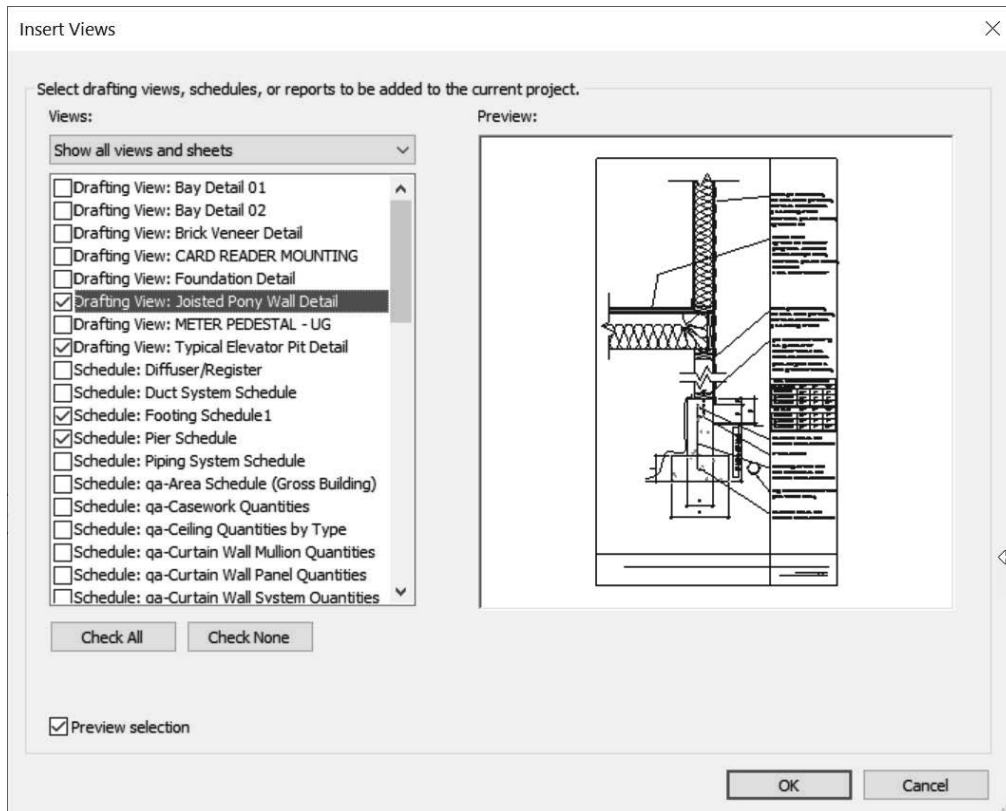



Figure 1–55

6. Click **OK**.
7. If the Duplicate Types warning displays, click **OK** and close any warning messages that pop up.
8. In the Project Browser of your template file, review the new drafting views and schedules that are added.
9. Return to the floor plan view.

Task 7: Purge duplicate elements.

Note: This task would normally be done at the end of template creation. This is for practice purposes only.

1. In the *Manage* tab>*Settings* panel, click  (Purge Unused).
2. In the *Purge Unused* dialog box, click **Check None**, then expand **Floors>Floor**. Select **1 1/2" Metal Roof Deck1** and **3" LW Concrete on 2" Metal Deck 2**, as shown in Figure 1–56.

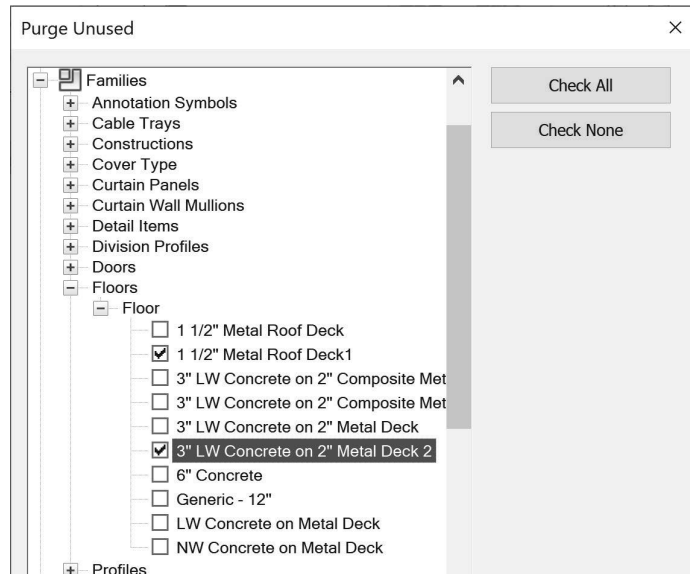


Figure 1–56

3. Click **OK** to remove them from the template.
4. Open the *Purge Unused* dialog box again. Expand **Floors>Floor** and note that the deleted elements are no longer displayed.
5. Save and close the template file.

End of practice

1.2 Customizing Annotation Types

Establishing annotation style types is an important part of template creation. You can customize annotation types in your project template file, including dimensions, text, arrowheads, and tags. Figure 1–57 shows the different types of annotations. Within each annotation type, you can customize font, text size, background, leaders, etc.

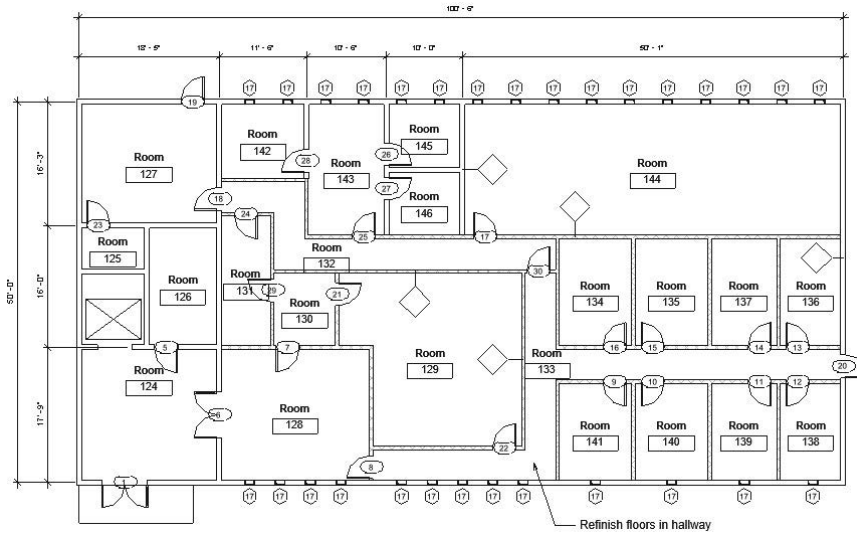


Figure 1–57

Text, Dimensions, and Arrowheads are all system families and are depicted with the label **System Family** in front of the name in their Type Properties (as shown in Figure 1–58) and component families. This means they have a standard set of parameters, which you can modify and save as a type.

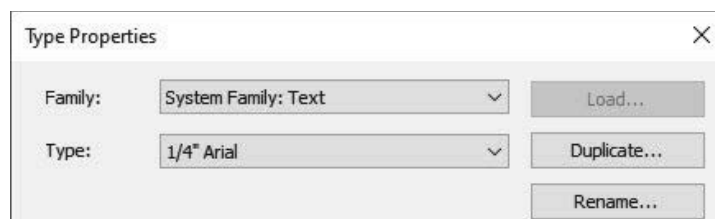


Figure 1–58

Callout, section, and elevation tags can be modified in Revit. Most other tags, like door, window, and beam tags, are created using component families.

Creating Text Types

Text types are used to standardize text formatting (such as the font, text height, etc.), as shown in Figure 1–59. They can be created for both annotative text and model text.

ARIAL AT 1/4"
 CITY BLUEPRINT AT 1/8"
ARIAL AT 3/32", BOLD

Figure 1–59

- The **Text** command places 2D text at the height you need for the final plot. The view scale controls the height of the standard text in the views.
- The *Text Size* parameter represents the height of an upper case letter. (Verify that the text in projects created in earlier versions of the software displays as expected.)
- The **Model Text** command places work plane based 3D text that is typically used on buildings, walls, doors, or signs, as shown in Figure 1–60. Text types for model text should be the actual height of the final signage element and are not affected by the view scale.

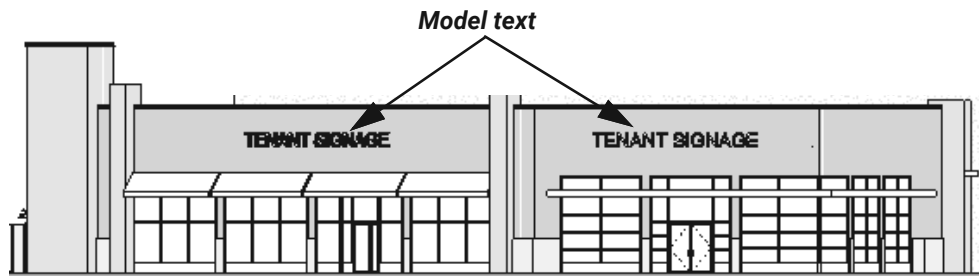




Figure 1–60

How To: Create a Text Type

1. Start the **Text** command.
2. In Properties, click  (Edit Type) or in the *Annotate* tab>*Text* panel title, click  (Text Types).
3. In the *Type Properties* dialog box, click **Duplicate....**
4. Type a new name and click **OK**. The new type is activated.



- Modify the parameters as needed for the new type, as shown for annotation text in Figure 1–61.

Type Parameters	
Parameter	Value
Graphics ^	
Color	Black
Line Weight	1
Background	Opaque
Show Border	<input type="checkbox"/>
Leader/Border Offset	5/64"
Leader Arrowhead	Arrow 30 Degree
Text ^	
Text Font	Arial
Text Size	1/4"
Tab Size	1/2"
Bold	<input type="checkbox"/>
Italic	<input type="checkbox"/>
Underline	<input type="checkbox"/>
Width Factor	1.000000

Figure 1–61

- Click **OK** to finish.

How To: Create a Model Text Type

- In the *Architecture* tab>*Model* panel, click  (Model Text). Alternatively, in the *Structure* tab>*Model* panel, click  (Model Text).
- In the *Edit Text* dialog box, keep the default text and click **OK**, then place the text in the view.
- Select the model text and from Properties, click **Edit Type**.
- In the *Type Properties* dialog box, click **Duplicate...**
- Type a new name and click **OK**. The new type is activated.
- Modify the parameters as needed for the new text type.
- 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. They include options for the Dimension Text, Dimension Line, Tick Marks, and Witness Lines. You can specify information such as the units, color, and all of the gap sizes between elements, as shown in Figure 1–62.

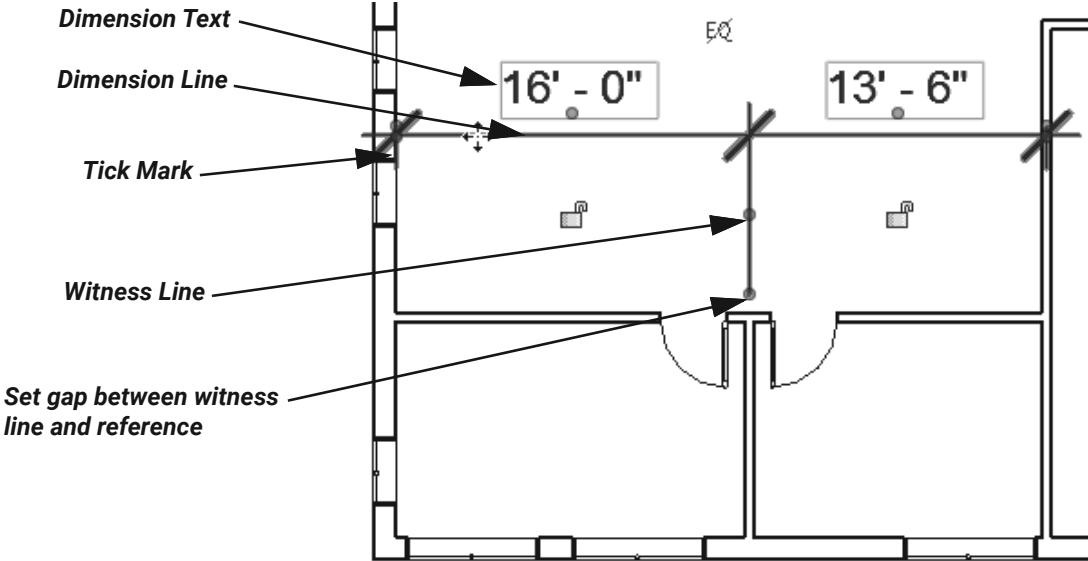



Figure 1-62

- You can add a suffix or prefix to a dimension type by creating a type-driven dimension style. Duplicate the dimension style and specify a set prefix and suffix within the type parameters. This eliminates the need for users to manually modify the dimension every time they need to add a prefix or suffix.

How To: Create Dimension Types

- In the *Annotate* tab>*Dimension* panel, expand the *Dimension* panel title (as shown in Figure 1-63) and click the dimension type with the  icon next to it that you want to create.

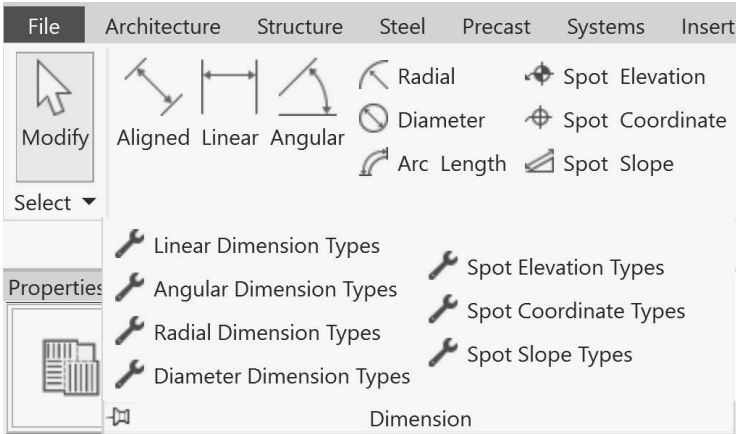


Figure 1-63

- In the *Type Properties* dialog box, click **Duplicate...**

Note: You create separate types for each dimension method.

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 in Figure 1–64.
 - 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.
 - Specify a prefix or suffix for *Primary Units*, as shown in Figure 1–64.

The screenshot shows the 'Type Properties' dialog box for a 'System Family: Linear Dimension Style'. The 'Type' is 'Linear - 3/32" Arial (TYP)'. The 'Type Parameters' table is as follows:

Parameter	Value
Text Size	3/32"
Text Offset	1/16"
Read Convention	Up, then Left
Text Font	Arial
Text Background	Opaque
Show Opening Height	<input type="checkbox"/>
Suppress Spaces	<input type="checkbox"/>
Identity Data	
Workset	Dimension Styles
Edited by	CherisseB
Primary Units	
Units Format	1' - 6" (Default)
Dimension Prefix	
Dimension Suffix	(TYP)
Alternate Units	
Alternate Units	None
Alternate Units Format	1235 [mm]
Alternate Units Prefix	
Alternate Units Suffix	
Other	

Buttons at the bottom: << Preview, OK, Cancel, Apply.

Figure 1–64

5. Click **OK** when you are finished.
 - For linear dimensions, you can specify a *Leader Type*, *Shoulder Length*, and *Leader Tick Mark*, as well as the *Show Leader When Text Moves* option 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 **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 **Show Opening Height**.

Labeling Dimensions

If you have a distance that needs to be repeated multiple times, such as the *Wall to Window* label shown in Figure 1–65, a *clearance distance*, or one where you want to use a formula based on another dimension, you can apply a label to a dimension and associate a global parameter to it.

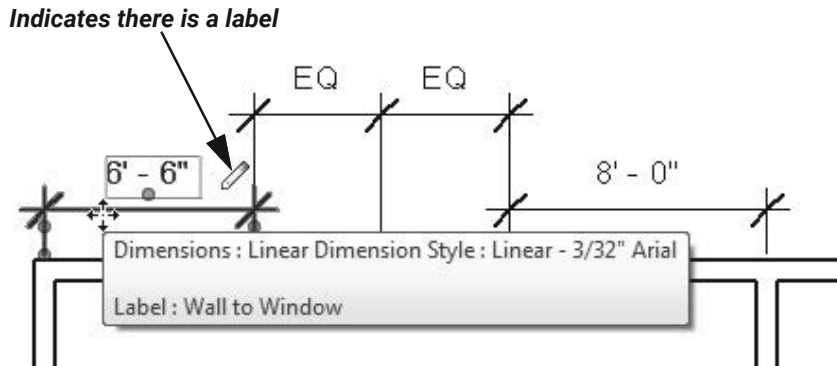


Figure 1–65

- To apply an existing label to a dimension, select the dimension and in the *Modify | Dimensions* tab > *Label Dimension* panel, select the label in the drop-down list, as shown in Figure 1–66.

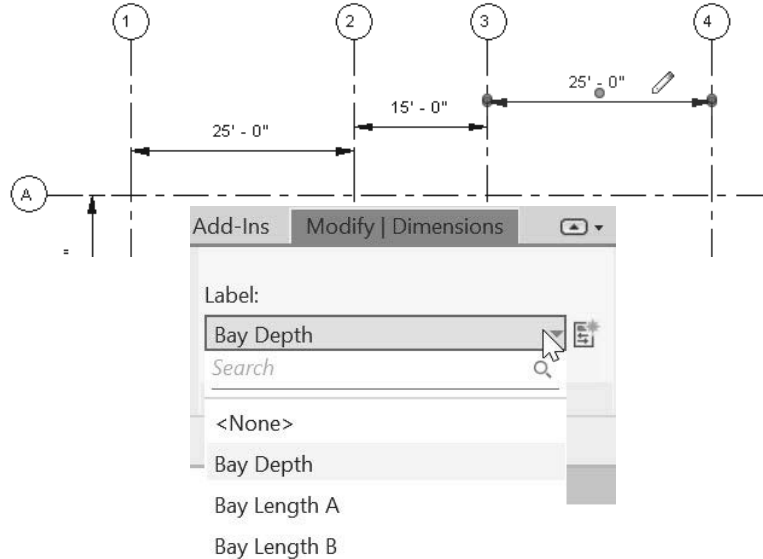



Figure 1–66

How To: Create a Label

1. Select a dimension.
2. In the *Modify | Dimensions* tab > *Label Dimension* panel, click  (Create Parameter)
3. In the *Global Parameter Properties* dialog box, type in a *Name*, as shown in Figure 1–67, and click **OK**.

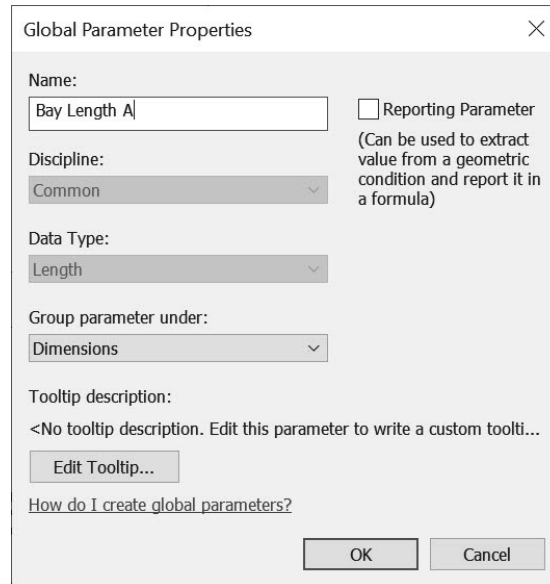



Figure 1–67

4. The label is applied to the dimension.

How To: Edit the Label Information

1. Select a labeled dimension.
2. Click  (Global Parameters), as shown in Figure 1–68.

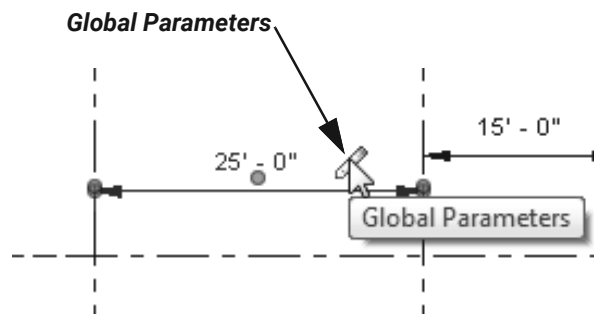


Figure 1–68