Design Options

33

After designing the majority of a project, use design options to develop alternative designs in the project. For example, you can use design options to adapt to changes in project scope, review other designs, or show variations to a client.
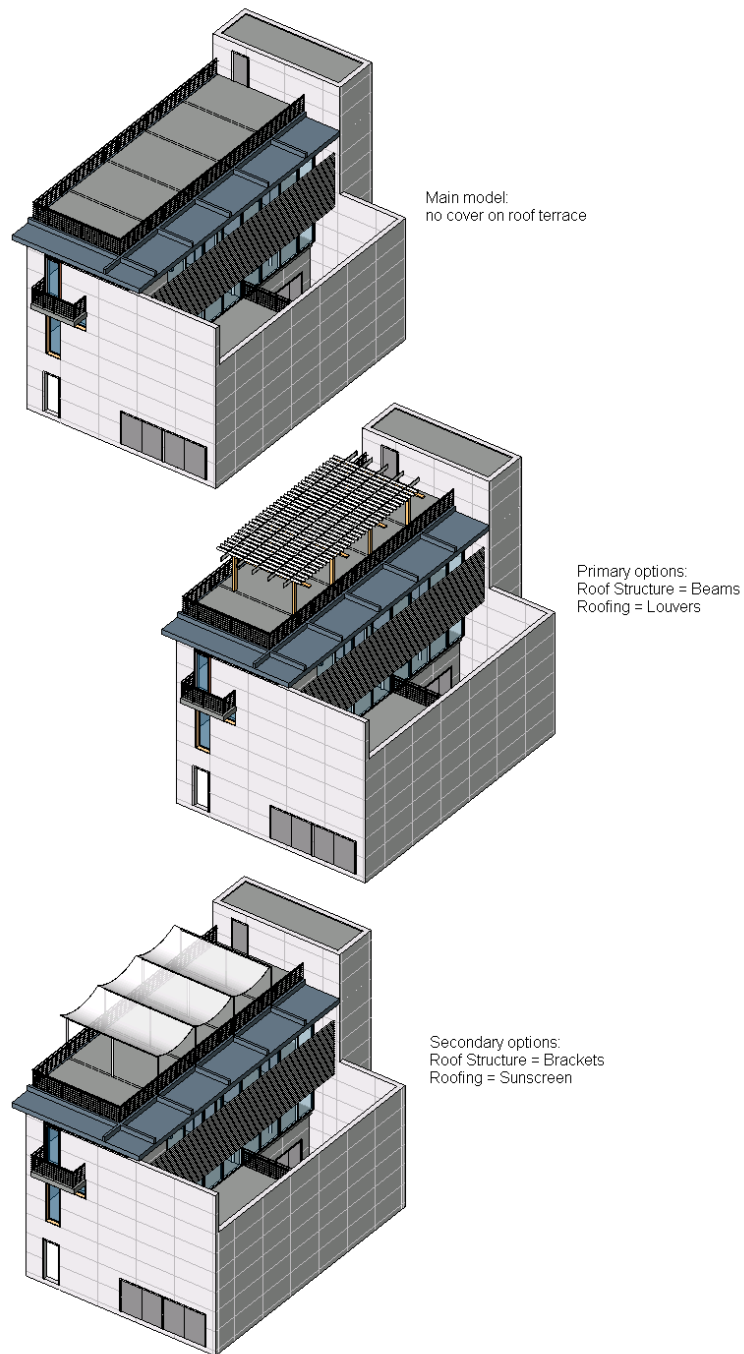
Design Option Overview

With design options, a team can develop, evaluate, and redesign building components and rooms within a single project file. Some team members can work on specific options, such as variations of a lobby, while the rest of the team continues with the main model.

Design options can vary in complexity. For example, a designer may want to explore alternatives for entry designs or structural systems for a roof. Design options tend to become more focused and simplified as a project progresses. They are typically used as follows:

- Changing the entry design

- Exploring different layouts for rooms or furniture

- Trying different window configurations

- Developing sustainable design alternatives

You can use design options to explore multiple designs as the project develops. At any time in the design process, you can have multiple sets of design options. Typically, each set of design options addresses a particular issue or area. For example, to explore possibilities for a pergola and sunshade for a roof terrace, you can create an option set called Roofing with multiple roofing designs (Sunscreen or Louvers). In addition, you can create an option set called Roof Structure with multiple structural designs (Brackets or Beams). After the final design is chosen, you can incorporate the chosen options into the main model and remove the alternatives.

Main model:
no cover on roof terrace

Primary options:
Roof Structure = Beams
Roofing = Louvers

Secondary options:
Roof Structure = Brackets
Roofing = Sunscreen

Design Option Workflow

In general, the process of using design options is as follows:

1 Decide on the areas for which you want to develop design options.

Example: You want to create one set of design options for the entry of a building and a second set of design options for the roof.

2   Create the building model, including all elements that will be common to all of the design options. (This is the main model.)

Example: Create the building first, including the foundation, floor, walls, and other parts of the building. Do not include any elements that will belong to the entry or the roof; those elements will be added using design options.

> NOTE If you add elements to a building and later decide that those elements should be part of a design option, you can move them to the design option. See Moving Elements from the Main Model to a Design Option Set on page 531.

3   Create a design option set for each area.

Example: You create one design option set named Entry and another design option set named Roof.

For instructions, see Creating Design Option Sets on page 527.

4   For each design option set, edit the primary option.

When you create a design option set, Revit Architecture also creates a primary option for the set. The primary option is typically the preferred design or the design that you think will be chosen. It will be displayed in project views by default. Other design options will appear in views only when you specify.

Edit the primary option to add elements to the design as desired. (See Editing a Design Option on page 529.) For an alternative approach, see Viewing the Main Model Without Design Options on page 538.

5   Create secondary options for each design option set.

You can create one or more secondary options for each set. See Adding Design Options on page 528.

Example: For the Entry option set, you create secondary options named Revolving Door and Two Double Doors.

In general, any elements that will be modified or referenced in an option should belong to the design option instead of the main model. See Referencing Elements in Design Options on page 540 and Moving Elements from the Main Model to a Design Option Set on page 531.

6   Create views that display each design option.

By default, all project views display the main model with primary design options only. To see secondary options, create project views that show them. (These are called dedicated views.) You can then place these views on sheets to present the designs to clients. See Dedicating Views to Design Options on page 537.

7   Incorporate a design option into the main model.

After the client has selected the desired option for each option set, you can incorporate the selected designs into the main model. This process deletes the design option set, so the other options in the set are no longer available, and the selected option becomes part of the building model. See Incorporating a Design Option into the Main Model on page 536.

Design Options Terminology

Term	Description
Main model	The parts of the building model that are not defined using design options. The main model is the entire building model, excluding any design options.
Design option set	A collection of alternatives that addresses a particular design problem, such as a lobby or a floor layout. See Creating Design Option Sets on page 527.

Term	Description
Design option	One possible solution to the design problem. See Adding Design Options on page 528 and Working with Design Options on page 529.
Primary option	The preferred design option in the design option set. The primary option has a closer relationship to the main model than secondary options. Elements in the main model and in the primary option can reference each other. Only one design option in a set can be the primary option. All other options are secondary. By default, each project view displays both the main model and the primary option for each set. See Promoting a Secondary Option to the Primary Option on page 531.
Secondary option	A design option that is an alternative to the primary option in the set. Elements in a secondary option can reference elements in the main model. However, elements in the main model cannot reference elements in a secondary option. See Referencing Elements in Design Options on page 540.
Active option	The design option that you are currently editing. See Editing a Design Option on page 529 and Determining the Active Option on page 530.
Dedicated view	A view that is dedicated to a specific design option. When this view is active or added to a sheet, Revit Architecture shows the design option along with the main model. See Dedicating Views to Design Options on page 537.

Best Practices for Design Options

When implementing design options, consider the following strategies:

To prepare the main model for design options

In the main model create as much of the model as possible before adding any design options. Include elements that will be common to all design options. Use design options for only those parts of the model that will vary.

To create a design option

1 Create a design option set. See Creating Design Option Sets on page 527.

2 Add the design option. See Adding Design Options on page 528.

3 Add elements to the design option. See Editing a Design Option on page 529.

To facilitate cleanup

If main model elements need to clean up connections with secondary design option elements, move those elements from the main model to one or more design options in the set. You cannot join the geometry of elements that are part of a secondary option with elements that are part of the main model. For example, if walls in the main model need to attach to a roof in Roof Option 2, move the walls from the main model into Roof Option 2.

See Design Options and Wall Joins on page 543, Referencing Elements in Design Options on page 540, and Moving Elements from the Main Model to a Design Option Set on page 531.

To see and compare design options

Do either of the following:

■ Change the design option settings for a view. See Checking the Design Option Settings for a View on page 539.

■ For each design option that you want to compare, dedicate a view to the option. You can place these views on sheets for side-by-side comparisons or to show the design options to clients. See Dedicating Views to Design Options on page 537 and Viewing Multiple Design Options on page 538.

To detail or annotate a design option

Dedicate a view to the option. Then add details or annotations to the view. Details and annotations are view-specific; they belong to a view, not to a design option. See Annotating and Detailing Design Options on page 534.

**To create schedules for design options**

Create the desired schedule, duplicate it, and dedicate one schedule to each design option. Each schedule lists elements from the main model and elements from the specified design option. You create schedules that are dedicated to design options in the same way that you create dedicated views. See Dedicating Views to Design Options on page 537.

To incorporate a design option

After a design option is selected for implementation, incorporate it into the main model and delete all other options using the Accept Primary function. See Incorporating a Design Option into the Main Model on page 536.

Creating Design Option Sets

You begin the design option process by creating design option sets. A design option set is a collection of alternatives that address a particular design problem. For example, you can create one design option set to show different designs for the entry of a building. You can create another design option set for alternative roof configurations. Each design option set contains one primary option and one or more secondary options.
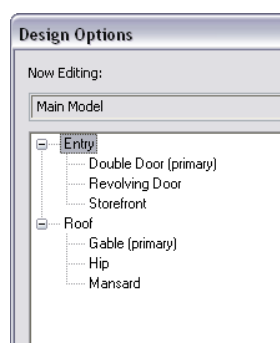
To create a design option set

1 Click Manage tab ➤ Design Options panel ➤ (Design Options).

2 In the Design Options dialog, under Option Set, click New.

By default, Revit Architecture names the new set Option Set 1 and creates a primary option in the set.

3 To rename the option set, select the option set name, and under Option Set, click Rename. Enter a name, and click OK.

4 To rename the primary option, select its name, and under Option, click Rename. Enter a name, and click OK.

5 Click Close.

Now you can edit the primary design option to add elements to it, and create secondary options for the design option set. See Editing a Design Option on page 529 and Adding Design Options on page 528.

By default, project views show the main model with the primary option for each set. If you want project views to show the main model only, with no design options, see Viewing the Main Model Without Design Options on page 538. To see a list of design option sets and design options defined for a project, click the Design Options drop-down list on the status bar.

Adding Design Options

A design option is one possible solution for a particular design issue. Each design option set contains one primary option and one or more secondary options. When you create a set, Revit Architecture also creates a primary option, which you must edit to add its elements. (See Editing a Design Option on page 529.) Use the following procedure to add secondary design options.

To add a design option

1 Click Manage tab ➤ Design Options panel ➤ (Design Options).

2 In the Design Options dialog, in the left-hand list, select the design option set to which you want to add an option.

3 Under Option, click New.

The default option name displays under the option set.

4 To rename the option, select the option name, and under Option, click Rename. Enter a name, and click OK.
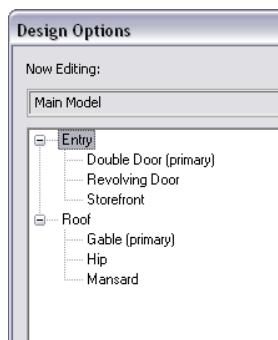
5 If you want this design option to be the primary option for the design set, click Make Primary.

The Make Primary button promotes a secondary option to the primary option. The former primary option becomes a secondary option.

NOTE Use caution with Make Primary, because references from the main model to the former primary option can be lost. After using Make Primary, check dimension references and tags to be sure they are referencing the correct elements. See Referencing Elements in Design Options on page 540.

6 To open the design option for editing, do the following:

    a   Select the design option in the list, and click Edit Selected.

    b   Click Close.

In the current view, elements in the main model display in halftone to distinguish them from the design option that you are editing. For further instructions, see Editing a Design Option on page 529.

TIP If the current view does not show the active option, check its design option settings. (See Checking the Design Option Settings for a View on page 539.) For the appropriate design option set, specify Automatic, or select the desired design option.

If the design option that you just created is a primary option, by default it displays in all project views that are not dedicated to other design options. If the option is secondary, it does not appear in any project views by default. See Viewing Design Options on page 537.

Working with Design Options

The following topics describe how to modify and work with design options.

Editing a Design Option

1 In the Project Browser, open a view where you can add the desired elements for the design option.

2 Prepare the view to show the active design option:

    a   Click View tab ➤ Graphics panel ➤ (Visibility/Graphics).

    b   In the Visibility/Graphics dialog, click the Design Options tab.

    c   For the appropriate design option set, in the Design Option column, select Automatic.

    d   Click OK.

3 Open the design option for editing.

To open a design option for editing

Do one of the following:

■ On the status bar, select the design option from the drop-down list.
If the status bar does not display the active design option, enable this feature by clicking View tab ➤ Windows panel ➤ User Interface drop-down ➤ Status Bar - Design Options.

■ Click Manage tab ➤ Design Options panel ➤ (Design Options). In the Design Options dialog, select the design option from the list, click Edit Selected, and click Close.

■ Click Manage tab ➤ Design Options panel, and select the desired design option from the drop-down list.

■ Click Manage tab ➤ Design Options panel ➤ (Pick to Edit), and select an element contained in the design option. Revit Architecture determines the design option to which the selected element belongs, and makes that design option active for editing.

4 Edit the design option as desired.

The model elements that you add now belong to the active option. For tips on using design options in various ways, see Considerations When Using Design Options on page 540.

NOTE You cannot add view-specific elements (such as keynotes, dimensions, and tags) to a design option. Instead, dedicate a view to the design option, and add the view-specific elements to the dedicated view. See Annotating and Detailing Design Options on page 534.

While you are editing the design option, you can move among project views as needed. When you change to a different view, you may need to change the design option settings for the view to see the active option. (See Checking the Design Option Settings for a View on page 539.)

5 When you are finished editing the design option, select Main Model from the Design Options drop-down list on the status bar.

Related topics

■ Viewing Design Options on page 537

■ Working with Design Options on page 529

■ Best Practices for Design Options on page 526

■ Considerations When Using Design Options on page 540

Determining the Active Option

The active option is the design option that is currently being edited. If you are editing an option, the current view displays the main model and the active option.

TIP If the current view does not show the active option, check its design option settings. (See Checking the Design Option Settings for a View on page 539.) For the appropriate design option set, specify Automatic, or select the desired design option.

To determine whether you are currently editing a design option, use one of the following methods:

■ **Status bar**: Check the status bar. It indicates the active design option. If the status bar displays Main Model, you are not currently editing a design option.

If the status bar does not display the active design option, enable this feature by clicking View tab ➤ Windows panel ➤ User Interface drop-down ➤ Status Bar - Design Options.

■ **Ribbon**: Click Manage tab ➤ Design Options panel. The drop-down list indicates the design option that is currently being edited. Changes that you make will affect the active option.
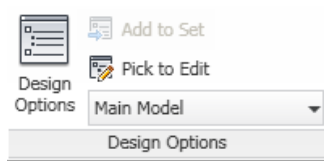
If the drop-down list displays Main Model, you are not currently editing a design option.

Related topics

■ Editing a Design Option on page 529

■ Selecting Elements in Design Options and the Main Model on page 533

Promoting a Secondary Option to the Primary Option

The primary option is the preferred design option in the set. Elements in the main model and in the primary option can reference each other. (See Referencing Elements in Design Options on page 540.)

Only one design option in a set can be the primary option. All other options are secondary. By default, each project view displays both the main model and the primary option for each set.

If you want to promote a secondary option to be the primary option, be aware that Revit Architecture attempts to move relationships from the former primary option to the new primary option. For example, suppose you create a dimension from a main model wall to a primary option wall. In a secondary option, the same wall has been moved slightly. When you promote the secondary option to be the primary option, Revit Architecture displays the same dimension between the main model wall and the moved wall. The dimension is updated to show the correct distance between the walls.

To promote a secondary option to be the primary option

1 Click Manage tab ➤ Design Options panel ➤ (Design Options).

2 In the Design Options dialog, select the secondary design option to promote.

3 Under Option, click Make Primary.

Revit Architecture promotes the selected secondary option to be the primary option. The Design Options dialog lists the design option with **(primary)** after its name. The former primary option is now a secondary option.

NOTE If you encounter the error message Elements in main model will be deleted, see Troubleshooting Issues with Design Options on page 545 for instructions.

4 Click Close.

5 In project views that display the main model with the new primary option, check dimension references and tags to be sure they are referencing the correct elements.

Moving Elements from the Main Model to a Design Option Set

The main model consists of the entire building model, excluding elements in any design options.

Elements in the main model cannot host or reference elements in secondary options. Therefore, elements in the main model do not change their shape or properties when you are looking at a view for a secondary option. For example:

■ If you sketch 4 walls in the main model and then sketch a roof in a secondary option, you cannot attach the walls to the roof.

■ To add a door or window to a design option, the host wall must also be part of the design option.

■ To add a skylight to a design option, the host roof must also be part of the design option.

If main model elements need to reference and update with elements in a secondary option, you must move the main model elements into that design option. Then you can edit the design option to modify those elements as desired. (See Referencing Elements in Design Options on page 540.)

To move elements from the main model to a design option set

1 Open a project view that shows the elements to be moved.

2 Click Manage tab ➤ Design Options panel, and select Main Model from the drop-down list.

3 Select the main model elements to move.

4 Click Manage tab ➤ Design Options panel ➤ (Add to Set).

5 In the Add to Design Option Set dialog, for Add selection to, select the desired set.

    Revit Architecture lists the design options for the selected set.

6 Select one or more design options to which you want to add the elements.

    If you clear a check box, the elements are not added to the corresponding design option.

7 Click OK.

    Copies of the original elements are now in all selected design options in the set. The original elements are no longer part of the main model.

    TIP You can also add elements to a single design option by cutting the elements from the main model and pasting them into the same place in the design option. Use the Cut and Paste Aligned tools, as described in Moving Elements from One Design Option to Another on page 532.

Moving Elements from One Design Option to Another

NOTE You can also use this technique to move an element from the main model to a design option, as an alternative to the method described in Moving Elements from the Main Model to a Design Option Set on page 531.

1 Open a project view that will show the elements to move.

    If the elements belong to a secondary option, they may not be visible yet.

2 Prepare the view to show the active design option:

    a Click View tab ➤ Graphics panel ➤ (Visibility/Graphics).

    b In the Visibility/Graphics dialog, click the Design Options tab.

    c For the appropriate design option set, in the Design Option column, select Automatic.

    d Click OK.

3 Click Manage tab ➤ Design Options panel. From the drop-down list, select the design option in which the elements reside.

4 In the drawing area, select one or more elements, and press *Ctrl+X* (Cut).

See Selecting Elements in Design Options and the Main Model on page 533 and Selecting Elements on page 1407.

5 Click Manage tab ➤ Design Options panel. From the drop-down list, select the design option to which you want to add the elements.

6 Click Modify <Element> tab ➤ Clipboard panel ➤ Paste drop-down ➤ (Aligned to Same Place).

Revit Architecture moves the selected elements to the active option.

7 To finish editing the active option, click Manage tab ➤ Design Options panel, and select Main Model from the drop-down list.

Selecting Elements in Design Options and the Main Model

To avoid unintended results or confusion, when you are editing a design option, Revit Architecture prevents you from selecting elements in the main model. Similarly, when you are editing the main model, the software prevents you from selecting elements in a design option. However, you can explicitly allow these functions, if needed (for example, to add dimensions between a main model element and a design option element).

To select elements in design options when editing the main model

■ On the status bar, clear Exclude Options. Now you can select the desired elements from the design option.

This option is available when you are viewing the main model and a design option but not editing the design option.

To select elements in the main model when editing a design option

■ On the status bar, clear Active Only. Now you can select elements in the main model and other option sets.

This option is available when you are editing a design option.

To determine the design option to which an element belongs

1 Move the cursor over the element to highlight it.

2 If the element does not highlight when you move the cursor over it, on the status bar, clear Exclude Options or Active Only. Then move the cursor over it again.

The status bar and tooltip for the highlighted element indicate the category, family, and type of the element. If the element belongs to a design option, they also indicate the design option set and the design option to which the element belongs, using the following format:

(<design option set> : <design option>) : <category> : <family> : <type>

If the element belongs to the main model, the status bar and the tooltip do not show design option information.

Duplicating a Design Option

Suppose you are creating a series of design options, and several elements will be common to many of them. In this case, you can create a design option that contains all of the common elements, then create copies of it, and modify the individual design options to develop each design further. This strategy can streamline the process of developing design options and reduce duplication of effort.

To duplicate a design option

1 Create the design option and add the elements that will be common to multiple design options. See Adding Design Options on page 528.

2 Click Manage tab ➤ Design Options panel ➤ [icon] (Design Options).

3 In the Design Options dialog, select the design option from the list.

4 Under Option, click Duplicate.

Revit Architecture creates a copy of the selected design option named Copy of <design option>.

5 To rename the duplicate design option, select the option name, and under Option, click Rename. Enter a name, and click OK.

6 If needed, repeat steps 4 and 5 to create more copies of the design option.

Now you can edit the duplicate design options to modify them as desired. Changes made to a duplicate design option affect only that design option. See Editing a Design Option on page 529.

Annotating and Detailing Design Options

Annotations and details (such as keynotes, dimensions, and tags) are view-specific elements. They cannot be part of a design option. To document a design option, first dedicate one or more views to the option. (See Dedicating Views to Design Options on page 537.) Then add the desired annotations and details to the dedicated views. (See Annotating on page 881.)

If you want similar views for each option to have similar documentation and details, use the following procedure.

To create duplicate detailed views for design options

1 In a view that shows the main model and a design option, add the annotations and details that you want to appear in similar views for all design options.

2 With the view active in the drawing area, click View tab ➤ Create panel ➤ Duplicate View

drop-down ➤ [icon] (Duplicate with Detailing).

This tool creates a copy of the view, including annotations and details. Repeat this step to create a copy of the view for each design option.

3 Dedicate each duplicate view to a different design option. (See Dedicating Views to Design Options on page 537.)

4 Rename each duplicate view to indicate the design option that it displays. (See Renaming Views on page 811.)

5 In the view for each design option, modify the annotations and details as appropriate.

If you add a new annotation or detail to a dedicated view, it displays in that view only.

6 (Optional) For side-by-side comparisons of the design options, add a sheet, and add the views to the sheet.

(See Sheets on page 975.)

Deleting Design Options and Option Sets

When you delete a single design option, Revit Architecture removes the following from the project:

■ All elements that belong to the design option.

■ All views whose Visible in Option property specifies the design option. (See Deleting Views Associated with Design Options on page 536.)

■ (Optional) Views that are dedicated to the design option; that is, views whose design option settings include the design option. (See Checking the Design Option Settings for a View on page 539.) When you delete a design option, Revit Architecture displays a list of these dedicated views. You can instruct Revit Architecture to delete these views or to preserve them.

When you delete a design option set, Revit Architecture removes all of its design options, their elements, and associated views (as for deleting a design option).

If you are ready to incorporate a design option into the main model, do not use these Delete procedures for the undesired options. Instead, see Incorporating a Design Option into the Main Model on page 536 for instructions.

NOTE You cannot delete a primary option. If you want to delete a primary option, you must first demote it to a secondary option (by promoting a secondary option to be primary). When the undesired option is a secondary option, you can then delete it. See Promoting a Secondary Option to the Primary Option on page 531. If you want to delete a primary option, and it is the only option in the set, delete the design option set.

To delete a design option

1 Click Manage tab ➤ Design Options panel ➤ ▥ (Design Options).
2 If you are currently editing a design option, click Finish Editing.
3 In the Design Options dialog, select the design option to delete.
4 Under Option, click Delete.
5 If the design option has one or more dedicated views (or views for which the Visible in Option property is set), the Delete Dedicated Option Views dialog lists the associated views. Do the following:

 a Clear the check boxes for any views that you do not want to delete.

 For these views, the design option settings on the Visibility/Graphics dialog will be changed to Automatic for the related design option set.

 NOTE If the Visible in Option property for a view specifies the unwanted design option, you cannot clear its check box in the Delete Dedicated Option Views dialog. If you do not want to delete this view when deleting the design option, cancel the delete operation. Change the Visible in Option property for that view to specify another design option or All. (See Deleting Views Associated with Design Options on page 536.) Then repeat this procedure to delete the unwanted design option.

 b Click Delete to delete the design option and the selected views.

 Revit Architecture deletes the selected design option and the selected views.

To delete a design option set

1 Click Manage tab ➤ Design Options panel ➤ (Design Options).

2 If you are currently editing a design option, click Finish Editing.

3 In the Design Options dialog, select the design option set to delete.

4 Under Option Set, click Delete.

5 At the confirmation prompt, click Yes.

6 If the design options in the set have dedicated views (or views for which the Visible in Option property is turned on), the Delete Dedicated Option Views dialog lists the associated views. Do the following:

    a Clear the check boxes for any views that you do not want to delete.

    b Click Delete to delete the design options in the set and the selected views.

Revit Architecture deletes the entire design option set, including all of its design options, their elements, and the selected views.

Deleting Views Associated with Design Options

To indicate that a view should be deleted when a design option is deleted, specify the Visible in Option property for the view. The Visible in Option property provides a way to associate a view with a particular design option, even when the view's design option settings specify multiple design options (one for each set).

When you delete a design option, Revit Architecture displays a list of the views to be deleted. See Deleting Design Options and Option Sets on page 535.

To set the Visible in Option property for a view

1 In the Type Selector of the Properties palette, select the view name.

2 Under Graphics, locate the Visible in Option property.

3 For Visible in Option, click in the Value column, and select the desired design option from the list.

You can select only one design option for one set.

Incorporating a Design Option into the Main Model

After choosing a design option to implement, you can incorporate it into the main model and delete other options that are no longer necessary.

NOTE Accepting the primary option deletes all secondary options and the design option set. You can undo this action, but you should be sure that you do not need any other options. Consider making a backup copy of the project before proceeding.

To incorporate a design option into the main model

1 Click Manage tab ➤ Design Options panel ➤ (Design Options).

2 If you are currently editing a design option, click Finish Editing.

3 In the Design Options dialog, select the design option set that includes the desired option.

4 If the desired option is secondary, select the design option in the list, and click Make Primary to promote it to the primary option.

5 Under Option Set, click Accept Primary to incorporate the primary option into the main model.

Revit Architecture prompts you to confirm this action.

6 Click Yes.

Revit Architecture incorporates the primary option into the main model and deletes the design option set.

7 Click Close.

If you need to undo this action, on the Quick Access toolbar, click ↰ (Undo).

Viewing Design Options

When you create a design option set, Revit Architecture displays the main model and the primary option in all project views by default. To see secondary options with the main model, you must do one of the following:

■ Edit the option.

■ Change a view's display option settings.

■ Dedicate views to the design option.

Dedicating Views to Design Options

To see secondary options with the main model, create duplicate views that are dedicated to those options. These views are called dedicated views. A dedicated view typically displays a specified design option for each set.

You can dedicate all kinds of views (including schedules) to a specified design option. For example, you can create one schedule for the primary option and another schedule for a secondary option. Each schedule lists elements that are in the main model as well as elements that are in the specified design option.

To create a dedicated view

1 Open a view that you want to dedicate to a design option.

By default, the view displays the primary option with the main model.

2 In the Project Browser, right-click the view name, and do the following.

If you want the duplicate view to...	then...
include model elements only, with no annotations or detailing,	click Duplicate View ➤ Duplicate.
include model elements as well as annotations and details from the original view,	click Duplicate View ➤ Duplicate with Detailing.

Revit Architecture creates a duplicate view.

3 Rename the duplicate view, using a name that indicates the design options displayed in the view.

For example, the following 3D view names indicate the design options that will be displayed in each view. (See Renaming Views on page 811.)
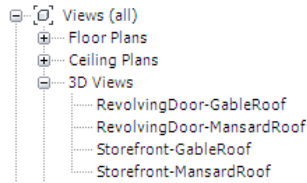
4 Specify design options for the view, as follows:

  a In the Project Browser, right-click the duplicate view name, and click Properties.

  b In the Properties palette, for Visibility/Graphics Overrides, click Edit.

    The Visibility dialog displays the Design Options tab. It lists each design option set, and, for each set, the design option that the view is currently displaying.

    A value of Automatic indicates the following:

     ■ When no design option is being edited, the view displays the primary option.

     ■ When a design option is being edited, the view displays the active option.

  c For each design option set, select the design option to display in this view.

    If you have created multiple design option sets, the view displays one option for each set.

The view displays the main model and a selected design option for each set.

5 Repeat Steps 2–4 for each combination of design options that you want to show in individual views.

For each dedicated view, you can now do the following:

■ Modify the view, for example, to add annotations and details for design options. See Annotating on page 881.

■ Modify a design option. See Editing a Design Option on page 529.

■ Place the view on a sheet to share the design options with clients. See Sheets on page 975.

Related topics

■ View Tags in Dedicated Views for Design Options on page 539

■ Deleting Views Associated with Design Options on page 536

Viewing the Main Model Without Design Options

If you want to be able to view the main model only, with no design options, create an empty design option and make it the primary option. (See Adding Design Options on page 528.) If you are using multiple design option sets, create an empty option for each set, and make it the primary option for each set.

By default, all project views will then display the main model only. To display other design options, see Viewing Design Options on page 537.

Viewing Multiple Design Options

A project view can display only one design option for each set. To view and compare design options side-by-side, dedicate a view to each design option. (See Dedicating Views to Design Options on page 537.) Then place the views on a sheet. (See Adding Views to a Sheet on page 978.)

Checking the Design Option Settings for a View

1 Open a project view in which you want to see or edit a design option.

2 Click View tab ➤ Graphics panel ➤ ⌐⌐⌐ (Visibility/Graphics).

3 In the Visibility/Graphics dialog, click the Design Options tab.

The tab lists each design option set, and, for each set, the option that the view is currently displaying.

A value of Automatic indicates the following:

■ When no design option is being edited, the view displays the primary option.

■ When a design option is being edited, the view displays the active option.

4 If the desired design options are not selected, select the appropriate design option for each set, and click OK.

The view is now dedicated to the selected design options.

View Tags in Dedicated Views for Design Options

View tags are the symbols that represent other views or drawings, such as elevations, callouts, and sections. For example, in a floor plan, the following symbol indicates an elevation. (For more information about view tags, see Section, Elevation, and Callout View Tag Setup on page 856.)

You can control whether these tags are visible in views based on design options. For example, if a section view applies only to Option 1, the section tag should not appear in a view that is dedicated to Option 2.

The visibility of a view tag is determined by a property called Visible in Option.

■ If you create a view while editing the main model, Visible in Option (for the view tag) is set to All. The tag is visible in the view for all design options.

■ If you create a view while you are editing a design option, the view tag's Visible in Option property is set to the active option. If you change the value of Visible in Option, the view tag is visible in views for the specified option only.

For example, if you create an elevation to display a particular design option, you may want to specify that its elevation tag is visible in a floor plan that is dedicated to the design option.

Changing the Visibility of a View Tag for Design Options

1 Open a project view in which the view tag displays.

2 Check the design option settings for the view. (See Checking the Design Option Settings for a View on page 539.) For the design option set, select the design option that you plan to assign to the view tag.

3 In the project view, select the view tag to display its properties in the Properties palette.

NOTE If the Visible in Option property does not display in the Properties palette, you may not have selected the entire view tag. See Selecting View Tags on page 857.

4 For Visible in Option, do the following:

If you want to...	then...
make the view tag visible for all design options	select All.
make the view tag visible for one option only	select that design option.

Considerations When Using Design Options

The following topics describe important considerations when working with design options.

Unsupported Elements for Design Options

Levels: You cannot add levels to a design option. If you add a level to a building model while you are editing a design option, Revit Architecture adds the level to the main model. The level displays in halftone, indicating that it is not part of the design option. (See Halftone/Underlay on page 1574.)

Views: You cannot add views to a design option. However, you can dedicate views to design options.

Annotations and details: You cannot add view-specific elements (such as annotations and details) to a design option. View-specific elements belong to the views in which they are created.

If you add a view-specific element while you are editing a design option, Revit Architecture adds the element to the current view, not to the design option. The view-specific element displays in halftone, indicating that it is not part of the design option. To see the view-specific element and the design option, change the design option settings for the view. (See Checking the Design Option Settings for a View on page 539.)

To annotate or detail a design option, dedicate a view to the option. Then add annotations and details to the view. (See Annotating and Detailing Design Options on page 534.) View-specific elements can reference elements in a design option. For example, you can dimension elements in a design option.

Referencing Elements in Design Options

In Revit Architecture, elements can reference each other in many ways, including the following:

■ Explicit constraints (such as locked alignments and dimensions) guarantee that the defined relationships will be maintained. Conflicts cause errors and must be resolved.

■ Looser constraints (such as dimensions and alignments that are not locked) are often maintained unless a conflict occurs, in which case these constraints may be removed without notice.

■ Implied constraints (such as a wall attached to a roof, or 2 walls joined at a corner) are also maintained unless a conflict occurs.

These explicit and implied constraints require that each element knows about the other. That is, one element must reference the other element.

When you are referencing elements in design options, consider the following guidelines:

■ Elements in the main model and in the primary option can reference each other.

■ Elements in a secondary option can reference elements in the main model. See Selecting Elements in Design Options and the Main Model on page 533.

■ Elements in the main model cannot reference elements in a secondary option. Therefore, elements in the main model do not change their shape or properties when you are editing a secondary option. For

example, if you sketch 4 walls in the main model and then sketch a roof in a secondary option, the walls do not regenerate and attach to the roof.

■ If main model elements need to update with and reference elements in secondary options, move the main model elements into each design option (or selected options) in the design option set. Then edit each design option to modify those elements as desired for each design. See Moving Elements from the Main Model to a Design Option Set on page 531.

■ View-specific elements can reference elements in design options. For example, you can dimension elements in a view that is dedicated to a design option. See Annotating and Detailing Design Options on page 534.

Interdependent Elements in Design Options

Elements that depend on another element must be in the same design option. Interdependent elements include the following:

■ Inserts that cut their hosts (such as windows in walls or skylights in roofs)

■ Host sweeps and their hosts (such as wall sweeps and walls)

■ Topographical surfaces and building pads

■ Curtain panels, mullions, and grids

If you add the host to a design option, the hosted element is automatically included. If you try to add the hosted element without the host, Revit Architecture warns you that the host must also be added.

When you create groups or arrays, selected elements must be in the active option. If no design option is active, they must be in the main model.

If you add elements to a group, the elements must be in the same design option as the group.

Design Options and Rooms

A room is a model element, so you can add rooms to a design option. As a general rule, the perimeter, area, and volume of the room are defined by the room-bounding elements available to that option. These room-bounding elements include elements in the main model, elements in primary options of other option sets, and elements in the secondary option itself. However, a room in a secondary option cannot reference elements that are defined in other secondary options.

Room-bounding elements can include walls, room separation lines, roofs, floors, ceilings, columns, and curtain systems whose Room Bounding property is turned on. (See Rooms on page 435 and Room-Bounding Elements on page 439.)

For information about errors regarding rooms in design options, see Option Conflict Between Rooms on page 546 and Room Option Conflict on page 547.

Room Areas and Perimeters for Design Options

When determining the perimeter and area of a room, Revit Architecture uses the following rules:

■ A room placed in the main model is defined by room-bounding elements in the main model and all primary options. The room ignores walls and room separation lines that belong to secondary options.

■ A room placed in a design option is defined by room-bounding elements in that option, in the main model, and in primary options of other option sets. The room ignores walls and room separation lines that belong to secondary options of other option sets.

If the shape, size, or location of the room is the same in different options, and you want properties assigned to the room to be the same for all options, keep the room in the main model.

If you want a room to vary in shape, size, or location in each design option, or to have different room properties (such as occupancy) in each design option, add the room to each design option in the set. To do this, you can use either of the following methods:

■ Move an existing room from the main model to one or more design options in the set. (See Moving Elements from the Main Model to a Design Option Set on page 531.)

■ Use the Copy and Paste Aligned tools to copy a room between design options (similar to the technique described in Moving Elements from One Design Option to Another on page 532).

If you want the shape, size, or location of a room to vary among different options of multiple option sets, do the following:

1 In the main model, use room separation lines to divide the space into rooms. (Do not, however, add room elements to the main model.)

2 Create one option set for each of these rooms.

3 In the design options for a set, add the rooms.

You can then create dedicated views to display different combinations of the design options from each set. (See Dedicating Views to Design Options on page 537.)
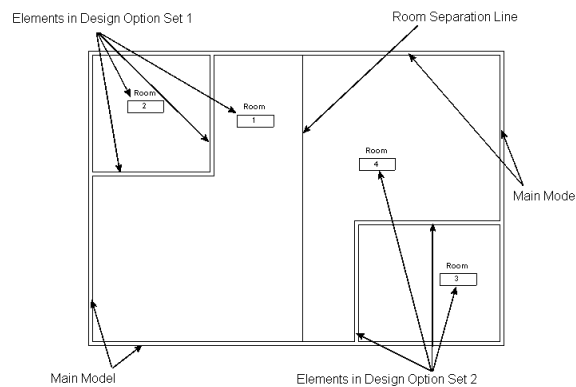
Room Schedules for Design Options

When you create a new view, such as a room schedule, by default its design option settings are set to Automatic. (See Checking the Design Option Settings for a View on page 539.) As a result, the room schedule lists all rooms in the main model and all primary options.

To create a room schedule for a design option, create a schedule view and dedicate it to the design option. (See Dedicating Views to Design Options on page 537 and Creating a Schedule or Quantity on page 772.) The room schedule will then list all rooms in the main model and in the specified design options for each option set.

Room Tags for Design Options

A room is a model element. You can add a room to a design option. A room tag, however, is a view-specific annotation element. When you tag a room that is part of a design option, the room tag is part of the view, not part of the design option.

By default Revit Architecture displays room tags for rooms that you add to a design option. If you later create a dedicated view for that design option, room tags display if you create the view using View tab ➤ Create

panel ➤ Duplicate View drop-down ➤ (Duplicate with Detailing).

If room tags do not display in a dedicated view (for example, because you created the view using View tab ➤ Create panel ➤ Duplicate View drop-down ➤ Duplicate), you can add room tags to the view. See Tagging a Room on page 444.

Room Volumes for Design Options

When you use design options, Revit Architecture computes room volumes using the following rules:

- To define the perimeter of the room, Revit Architecture uses the walls and room separation lines that are room-bounding for the design option. (See Design Options and Rooms on page 541.)

- To define the upper and lower boundaries of the room, Revit Architecture uses ceilings and floors defined in the current design option, in primary options of other option sets, and in the main model.

Design Options and Worksets

You can enable worksharing so that team members can work on different parts of a project at the same time. For a workshared project, all design options and design option sets are included in a Project Standards workset called Design Options. (See Setting Up Worksets on page 1230.)

To edit an element in a design option, the element and its design option must be editable. See Borrowing Elements on page 1237.

Design Options and Area Analysis

You cannot add area schemes to design options. To perform area analysis with different design options, create multiple area schemes. Create an area plan for each area scheme, and set the area plan view visibility to show the desired options. While editing the main model, create all area calculation boundaries and tags in that area plan view.

For more information about area analysis, see Area Schemes on page 467.

Design Options and Wall Joins

The cleanup of joins between walls in the main model and walls in the primary option works the same way as when all walls are in the main model. To avoid incorrect wall joins between the main model and secondary options, move the wall from the main model to the design option set. See Moving Elements from the Main Model to a Design Option Set on page 531.
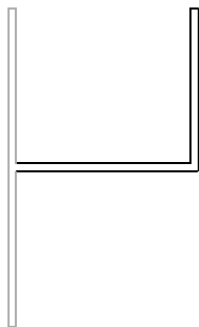
Walls in the main model
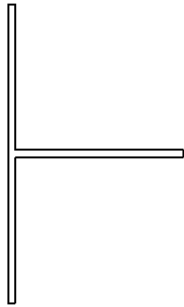
A wall added in the primary option; join cleans up properly
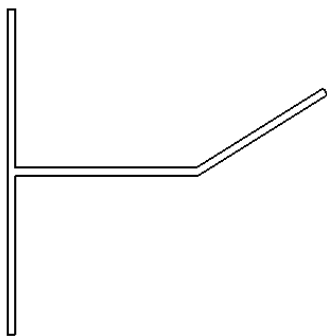
A wall in a secondary option joined to the main model

To avoid the above problem with wall joins in a secondary option, add the horizontal wall to that option. The wall join then cleans up properly, as shown. See Working with Wall Joins on page 227.

Troubleshooting Issues with Design Options

The following topics provide information about issues, errors, and warnings that you may encounter when working with design options.

Elements in Main Model Will Be Deleted

Issue: This error may occur when you attempt to promote a secondary option to be the primary option. An element (or dimension or other object) in the main model conflicts with an object in the secondary option that is being promoted.

Solution:

1   In the error dialog, click Expand, and then expand the error messages until you can identify the objects that are causing the error.

2   Select the check boxes for the objects.

3   At the bottom of the error dialog, click Delete and Make Primary.

Following this procedure usually resolves the conflicts by deleting the objects and replacing them with the same or similar objects defined in the newly promoted design option. If you continue to have problems, contact customer support.

Highlighted Elements Overlap

Issue: This warning may occur when you copy an element from the main model to a design option. In this case, the element exists in the main model and in the design option. As a result, these 2 elements overlap.

Solution: To resolve the issue, delete the element from the main model or from the design option.

If you tried to move an element from the main model to a design option, cut the element from the model (instead of copying the element), or use the Add to Set tool. See Moving Elements from One Design Option to Another on page 532 or Moving Elements from the Main Model to a Design Option Set on page 531.

Incorrect Wall Joins

Issue: Walls in the main model can join with walls in a primary option. However, main model walls cannot join with walls in a secondary option.

Solution: If wall joins are not behaving as expected, consider whether the walls need to be moved from the main model to one or more secondary options.

See Design Options and Wall Joins on page 543 and Moving Elements from the Main Model to a Design Option Set on page 531.

Inserts in Design Options

Issue: The following message displays: An insert in a design option cannot be hosted by an element in the main model.

This error occurs when you try to add a hosted component to a design option without its host. In order for a hosted component to be part of a design option, its host must also be part of the design option. The host cannot belong to the main model. For example, you cannot add a window to a design option unless the

host wall is also part of the design option. You cannot add a skylight to a design option unless the host roof is also part of the design option.

The error can also appear when you try to move a hosted component from the main model to a design option without its host. (See Interdependent Elements in Design Options on page 541 and Moving Components to Different Hosts on page 277.)

Solution: To resolve the issue, move the host element to the design option. Then you will be able to add the hosted component to the design option. See Moving Elements from the Main Model to a Design Option Set on page 531.

If you later incorporate the selected design option into the main model, the host element again becomes part of the main model. See Incorporating a Design Option into the Main Model on page 536.

None of the Created Elements Are Visible in This View

Issue: This error occurs when you add an element to a design option, but the element will not be visible in the current view. This may be due to visibility of elements for the view or design option settings for the view.

Solution: To resolve the issue, try the following:

■ Check visibility of elements in the view.

Click View tab ➤ Graphics panel ➤ ⌐□ (Visibility/Graphics). On the Model Categories tab and Annotation Categories tab, check the Visibility settings for the types of elements that you added. If visibility for these elements is turned off, select the Visibility check box to make them visible. See Visibility and Graphic Display in Project Views on page 795.

■ Check design option settings for the view.

Click View tab ➤ Graphics panel ➤ ⌐□ (Visibility/Graphics). On the Design Options tab, check the settings for each design option set. If they are not set to Automatic or to the active option, change the settings. See Checking the Design Option Settings for a View on page 539.

None of the Selected Elements Can Be Added to This Option Set

Issue: This error appears when you have attempted to move an element from the main model to one or more design options.

Solution: Expand the error message to determine a more specific cause and possible solutions.

Option Conflict Between Rooms

Issue: This warning appears when either of the following occurs:

■ You add a room to the primary option, and the main model already contains a room in the same space.

■ You add a room to the main model, and the primary option already contains a room in the same space.

Solution: To resolve the issue, delete the room from the main model or from the primary option. If the room should be defined in the primary option instead of the main model, see Moving Elements from the Main Model to a Design Option Set on page 531.
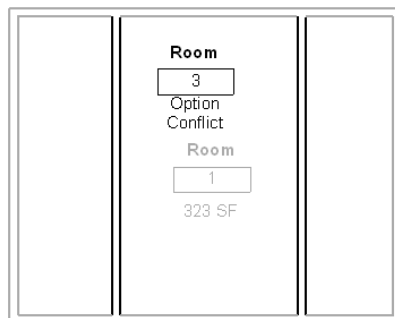
Room Option Conflict

Issue: This message appears in a drawing when conflicts occur between rooms in the main model and rooms in a secondary design option.

For example, if the main model contains rooms, and you place rooms into the same space in a design option, the boundaries of the rooms in the main model might overlap the boundaries of the rooms in the design option.

For example, suppose the main model contains the following room.
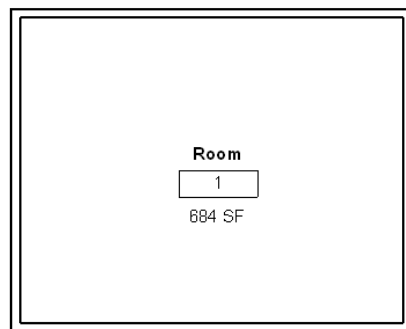
When a room is added to a design option, the room tag reports an option conflict.

NOTE If you have created a room schedule, the Room Area column in the schedule also displays an Option Conflict.

To learn the cause of the option conflict, select the room tag in the plan view, or, in a room schedule, select a cell in a row that shows a conflict. Then click Modify | Room Tags tab ➤ Warning panel ➤ (Show Related Warnings). A warning dialog displays, which you can expand to read about the conflict and learn possible remedies for it.

Solution: In general, to correct room option conflicts, add the conflicting main model room to the design option set. This removes the room from the main model and resolves the conflict. See Moving Elements from the Main Model to a Design Option Set on page 531.