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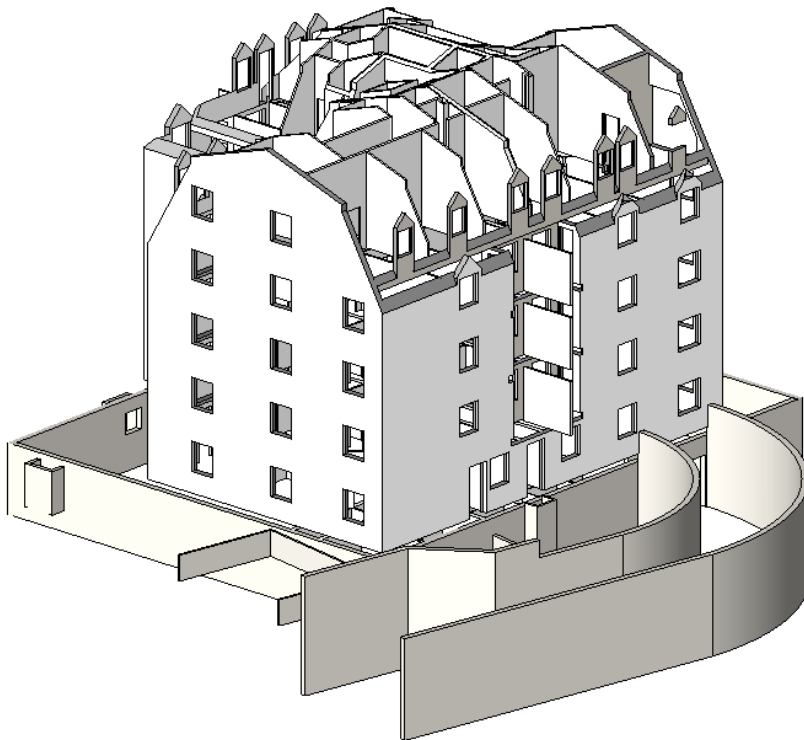
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# Walls

Walls can function as interior, exterior, foundation, retaining, soffit, or core-shaft. All walls have a structure that can be defined through the type properties of the wall. In addition, various instance and type properties can be specified to define the appearance of the wall.

3D view of walls



## Walls Workflow

Adding and modifying walls is one of the primary functions you perform. Walls include layers of various materials that give the wall a thickness and each material has information within it so that the walls will be properly represented depending on how it is viewed within Revit.

This chapter sequentially describes how to create walls and then perform advanced techniques with them.

# Walls Overview

Walls are basic components of most building plans and models. You can create simple walls that have standardized settings. You can also create compound walls with different components and materials. With Revit, the materials in walls can provide much internal information since they are built up from layers of materials that give walls thickness. When you draw walls within Revit, the default assumes you create walls clockwise.

There are six wall functions:

- Interior - a wall inside of a building, or the inside surface of an object
- Exterior - a wall outside of a building, or the outside face of a surface
- Foundation - wall foundations are members of the structural foundation category. The structural base of a building that provides stability and rigidity
- Retaining - a wall that holds back earth
- Soffit - the exposed underside of an architectural element
- Core-Shaft - the structural part of a compound wall or other host element

**Location Line** - You create a wall by drawing the Location Line of the wall in a plan view, ceiling plan view, or 3D view. Revit Architecture applies the thickness, height, and other properties of the wall around the location line of the wall. The Location Line is a plane in the wall that does not change, even if the wall type changes.

You have six options to choose from in the Location Line. For example, if you draw a wall and specify its location line as Core Centerline, the Location Line remains there, even if you select that wall and change it to another type or change its structure. Another example is if you specify the location line as Finish Face: Interior and draw the wall from left to right, the location line displays on the exterior side of the wall. If you draw from right to left, the location line displays on the interior side of the wall. You can also change the Location Line.

## Adding Walls

- 1 In a floor plan view or 3D view, click Home tab ► Build panel ► Wall.
- 2 Click Place Wall tab ► Element panel, and select the desired wall type from the Type Selector drop-down.
- 3 To change the properties of the wall, click Place Wall tab ► Element panel ► Element Properties drop-down ► Instance Properties or Type Properties.

For descriptions of wall properties and their values, see [Wall Properties](#) on page 40.

- 4 On the Options Bar, specify wall design options:
  - Level (3D views only): Choose a level as the base constraint. You can choose a non-story level. See Levels.
  - Height: Set the height of a wall to go up to a level. The default value is Unconnected, which allows you to specify a value for Height.




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**NOTE** When you draw a foundation wall type, the option name is displayed as Depth.

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- Location Line: Specify the location line of the wall as Wall Centerline, Core Centerline, Finish Face: Exterior, Finish Face: Interior, Core Face: Exterior, or Core Face: Interior.

5 Create the wall, using one of the following methods:

- **Draw the wall:** By default, Line is active. (If it is not active, click Place Wall tab ► Draw panel ►  (Line), or select another draw tool.) See Sketching. As you draw a wall, you can quickly set its length by entering a value on the keyboard, taking advantage of the listening dimension feature. See Listening Dimensions. If you want to flip the orientation of the wall about its location line, press the *Spacebar* as you draw the wall. This works for all wall drawing tools, such as rectangles, circles, and 3-point arcs.
- **Pick Lines** (): Select existing lines. Lines can be model lines or edges of elements, such as roofs, curtain panels, and other walls.
- **Pick Faces** (): Select either a massing face or a generic model face. The generic model could be created as in-place or family file based. See Creating Walls from Mass Faces.

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**TIP** To highlight all vertical faces on the mass or generic model, press *Tab*. Click to place walls simultaneously on each highlighted face.

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6 Add dimensions if desired. See Placing Permanent Dimensions.

## Modifying Walls

After creating a wall, you can modify it by changing the wall type or resizing the wall.

### Changing Wall Types

When you activate the Wall tool to place walls, you can use the Type Selector drop-down to select different types of walls.

## Understanding Compound Walls

A compound wall is a wall that consists of multiple vertical layers. Each layer can use a different material (such as concrete, insulation, and interior finish) and have a different function (such as structure, thermal layer, and substrate).

You can have many different compound wall types, such as walls with corrugated metal finish, reveals, and cornices. See [Advanced Walls](#) on page 16, and particularly the sections on [Wall Sweeps](#) on page 30 and [Wall Reveals](#) on page 35 for more detailed information about this topic.

## Sketching Wall Shapes

In Revit Architecture, you can sketch straight, curved, or circular walls and you can add openings or cuts to walls. Also, you can specify properties for dimensioning, snapping, and locking walls. For descriptions of the different sketch tools, see Sketching.

## Defining Wall Shapes or Openings

When you draw a wall by picking 2 points, Revit Architecture draws a rectangular wall. Your design, however, may call for different shapes or even openings in the wall. Revit Architecture allows you to modify the shape

of the wall or add openings to it by selecting the wall and editing its elevation profile. To edit a wall's elevation profile, the view must be parallel and can be either a section or elevation view.

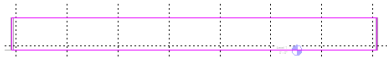
## Modifying Wall Elevations

1 After drawing a wall, click **Modify**. Then click the wall to select it.

2 Click **Modify Walls** tab ► **Modify Wall** panel ► **Edit Profile**.

If necessary, select the elevation view in which you want to see the wall. By default, Revit Architecture allows you to see the center plane in the appropriate elevation. For example, if you select the north wall, Revit Architecture allows you to switch to either the North or South elevation view.

Your screen should appear something like this in sketch mode:



The 4 lines that appear represent the wall in an elevation view.

3 Edit the wall as desired.

For example, you can delete the lines and then sketch a completely different shape. You can split the existing lines and add arcs. Or you can draw openings or holes in the rectangle.

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**TIP** As you move and edit the rectangle, datum planes appear to indicate the original shape and size of the wall when you entered sketch mode. If the sketched lines snap to the datum planes, the endpoints of the lines automatically align to the planes, unless you explicitly unlock them. If you unlock the sketched lines, you can modify them independently of the datum planes. If you exit sketch mode with the sketched lines still aligned, then as you move a datum handle, the sketched lines move with it.

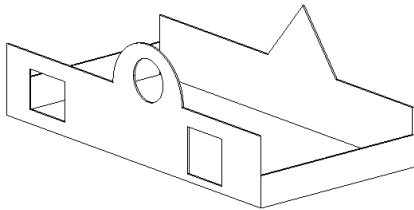
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4 When you are finished, click **Finish Wall**.

Revit Architecture returns you to the last active view.

After modifying walls shapes, your design might look something like this:

**Design with non-rectangular walls and cut openings**



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**NOTE** If you want to revert an edited wall to its original shape, select the wall in a view and click **Modify Walls** tab ► **Modify Wall** panel ► **Reset Profile**.

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## Attaching Walls to Other Components

Walls do not directly attach to roofs, ceilings, and other modelling components through their properties. Use the **Attach** option of the **Top/Base** tool to explicitly join walls to other modelling components.

When attaching walls, consider the following guidelines:

- You can attach wall tops to non-vertical reference planes.

- You can attach walls to in-place roofs or floors.
- If a wall's top is currently attached to a reference plane, attaching the top to a second reference plane detaches it from the first.
- You can attach walls that are parallel and directly above or below one another.

#### To attach walls to other components

- 1 In the drawing area, select the walls to which you want to attach another modelling component.
- 2 Click Modify Walls tab ► Modify Wall panel ► Attach.
- 3 Select a roof, floor, or ceiling to attach.

The selected walls attach to the selected modelling component, and Revit Architecture returns to Modify mode. Repeat this procedure as many times as needed to attach the walls.

## Detaching Walls from Other Components

The Detach Top/Base tool detaches walls from other modelling components or reference planes. This tool is most effective if you are in a view where you can select walls and the components to which they are attached.

#### To detach walls from other components

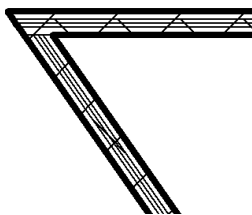
- 1 In the drawing area, select the walls to detach.
- 2 Click Modify Walls tab ► Modify Wall panel ► Detach.
- 3 Select the model components to detach from the walls.
- 4 If you want to detach the selected walls from all components at once, or if you are not sure which components are attached to the walls, on the Options Bar, click Detach All.  
The walls detach from any component to which they were previously attached.

## Joining Walls

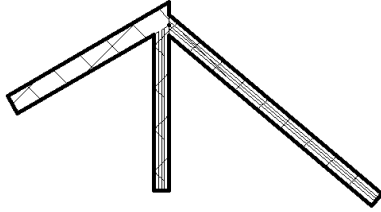
When you create walls, Revit Architecture automatically joins them at their intersections. You can edit wall joins when necessary. For best results, edit wall joins in a plan view.

The following are examples of valid wall joins that you can edit:

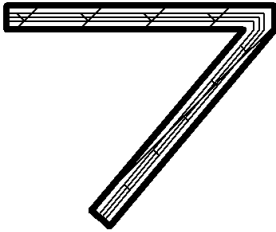
#### Walls at acute angles



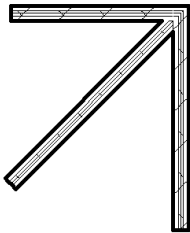
Several walls joined together



Walls squared off at angle

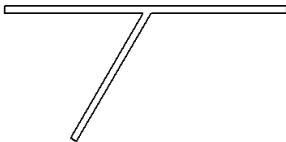


Walls squared off at 90 degrees



You cannot square off the join of one wall that is joined with the interior of another wall, because there is only one configuration for the join. You can change the visibility of the line separating the 2 walls by cleaning the wall join.

**Interior wall join**



**Related topics**

- Design Options and Wall Joins

## Editing Wall Joins

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**NOTE** The Wall Joins tool is not recommended for complex wall joins (for example, a wall join with more than 4 walls, a wall join on many floors, or a wall join that is in more than one workset). For more information, see Editing Complex Wall Joins.

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1 Click Modify tab ► Edit Geometry panel ► Wall Joins.

2 Move the cursor over the wall join and click.

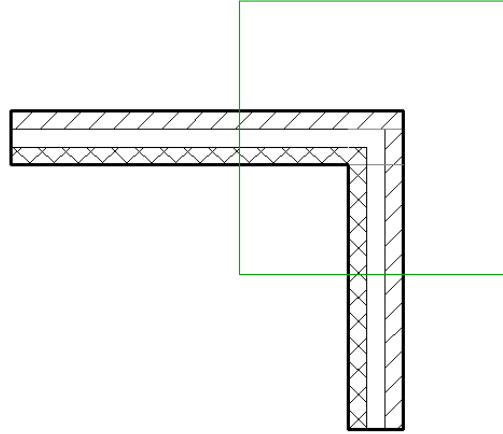


A square encloses the wall join.

3 On the Options Bar, select a join type:

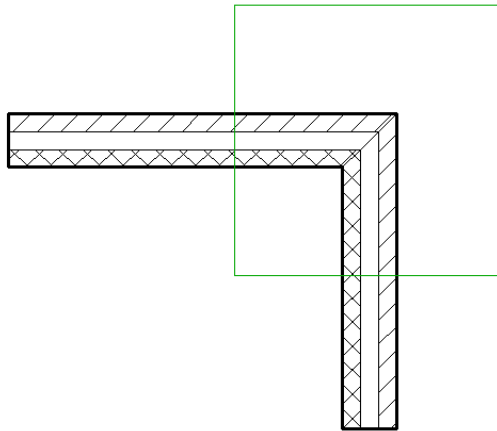
- **Butt:** Creates a butt joint between the walls. This is the default join type.

**Butt join**



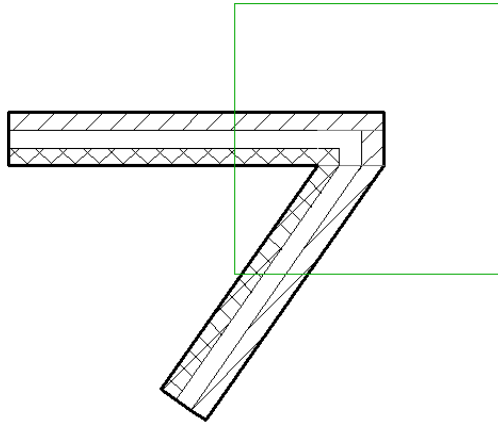
- **Miter:** Creates a miter joint between the walls. All wall joins less than 20 are mitered.

**Miter join**



- **Square off:** Squares a wall end to 90. This option is not available for walls already joined at 90.

### Squared off join



## Editing Complex Wall Joins

Revit Architecture does not recommend using the Wall Joins tool to edit a complex wall join. Complex wall joins are those that, for example, have more than 4 walls, are on many floors, or exist in more than 1 workset. Complex wall joins can produce a large number of configurations, and you may have to step through hundreds of configurations to find the desired one.

### To edit a complex wall join

- 1 If applicable, set all involved worksets to editable. See Making Worksets Editable.
- 2 Use the drag controls on the wall ends to move the walls out of the join.
- 3 Drag the wall ends back into the join using the snapping feedback to create the desired configuration.
- 4 Prevent walls from joining.

For more information, see Disallow Wall Joins.

## Changing the Order of a Wall Join

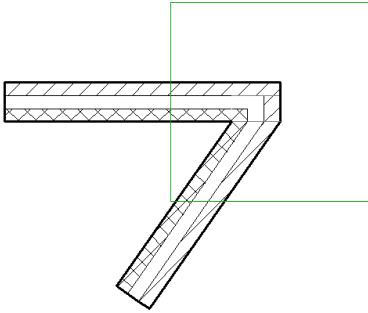
Changing wall order affects the display of a wall join by changing which wall butts up against another.

### To change wall join order

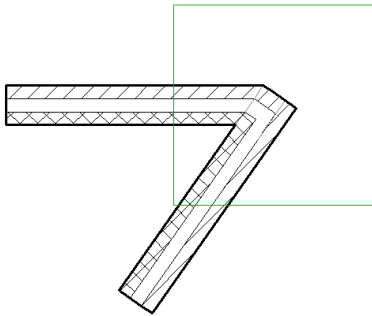
- 1 In a plan view, click Modify tab ► Edit Geometry panel ► Wall Joins.
- 2 Move the cursor over the wall join and click.  
A square encloses the wall join.
- 3 On the Options Bar, click Previous or Next to cycle through the wall join order options.
- 4 When the drawing area displays the desired wall join configuration, click Modify tab ► Selection panel ► Modify.

The following images show wall joins and the available wall join order options.

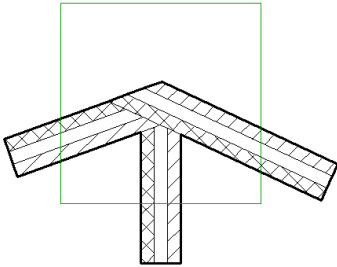
Current wall join



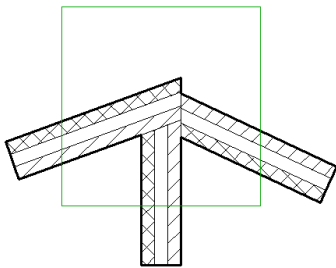
Display after changing order



Current wall join



Display after changing order (note difference in the imaginary lines depicting the wall) ends.



## Cleaning Wall Joins

Cleaning up wall joins affects display in a plan view only. If multiple plan views of the same join are open, the tool only affects the plan view in which you issued the clean up.

## To clean wall joins

1 In a plan view, click **Modify** tab ► **Edit Geometry** panel ► **Wall Joins**.

2 Move the cursor over the wall join and click.

A square encloses the wall join.

3 On the **Options Bar**, for **Display**, select one of the following options:

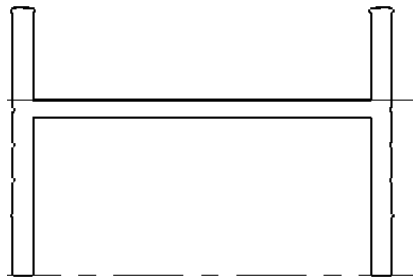
- **Clean Join** displays a smooth join. Imaginary solid lines appear to indicate where the walls actually end. The lines only appear while editing the wall join; they do not print and go away when you finish cleaning the join.

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**NOTE** The wall join looks significantly different in 3D view if the walls are at a different height.

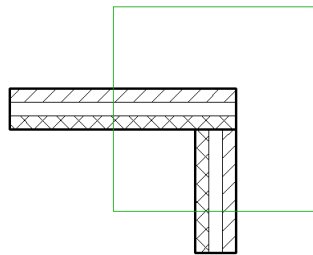
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### Clean join



- **Don't Clean Join** displays the wall ends butting up against one another.

### Don't Clean Join



- **Use View Setting** cleans wall joins depending on how the property **Wall Join Display** is set. See **View Properties**.

4 When you finish making wall join edits, click **Modify** or press *Esc* to exit the tool.

## Joining Parallel Walls that Contain Inserts

If you join 2 parallel walls and one of them has an insert (such as a window), the insert cuts through the joined wall.

If 2 walls are joined at an obtuse angle, you can place 2 inserts near the join if the join is mitered. If the join is squared off, Revit Architecture notifies you that it cannot place both inserts.

### To join parallel walls with inserts

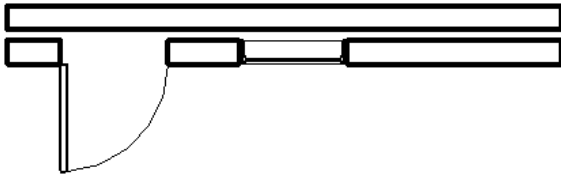
1 In a plan view, place the walls less than 6 inches apart.

2 Click **Modify** tab ► **Edit Geometry** panel ► **Join**.

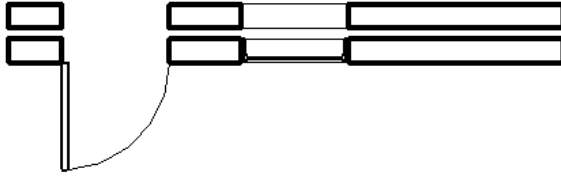
3 Select the walls to join.

The inserts cut openings in the joined walls. Any geometry around the insert, such as a frame, does not appear on the joined wall.

The following image shows 2 parallel walls in plan view, one with inserts (a door and a window), before the walls are joined.



The following image shows the walls after they are joined using the Join Geometry tool.



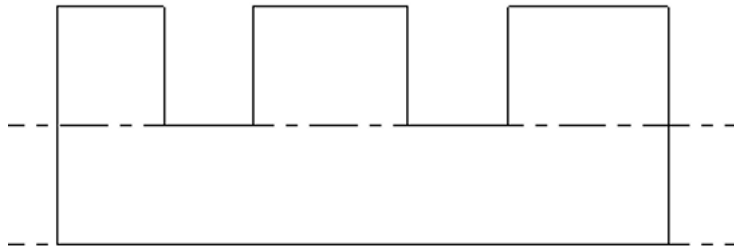
## Creating Walls with Mid-End Faces

You can join walls to mid-end faces. To create mid-end faces, you edit the wall's elevation profile.

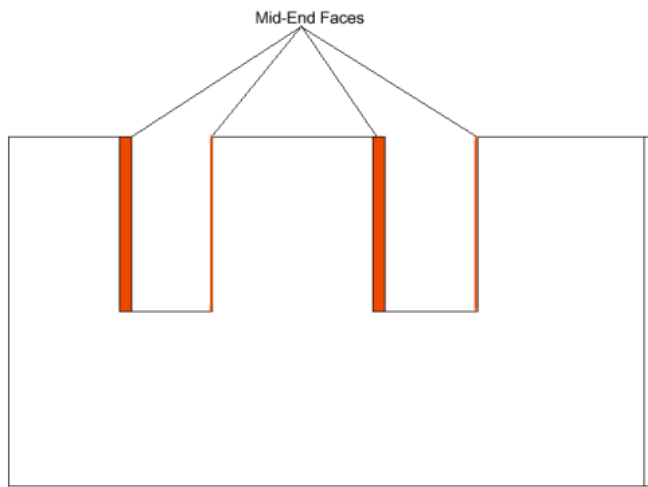
### To create mid-end faces

- 1 Draw a wall with several levels.
- 2 Select the wall and click Modify Walls tab ► Modify Wall panel ► Edit Profile.
- 3 Add vertical lines in between the wall ends.

#### Sample wall elevation profile



- 4 Open a 3D view.

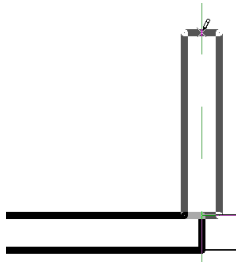


Notice the mid-end face is created at a vertical segment of the elevation profile to allow other walls to form a corner join.

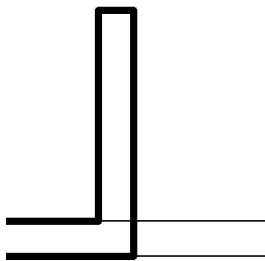
## Joining Walls to Mid-End Faces

You can join a wall to a mid-end face. As you drag one of the attached walls, the sketch updates and maintains the join.

**Adding wall to mid-end face**

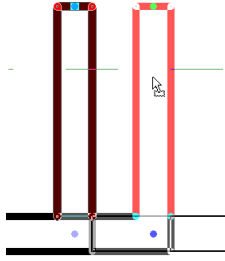


**2 walls join with cleaned join**



Drag one of the joined walls and the wall join moves with it.

Wall join updates (note the join moves with the preview wall)

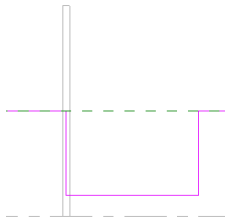


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**NOTE** Join a wall to another wall with mid-end faces and start to edit the elevation profile of the wall with mid-end faces. The vertical line in the wall's sketch is aligned to the center line of the joined wall, not the actual face of the wall. This is only temporary while you are editing the sketch. When you leave sketch mode, the join cleans up by going to one of the end faces.

---

Sample elevation profile of mid-end face (note the sketch line in the middle of the joined wall, not at the face)



## Joins with Non-Editable Walls

Non-editable walls can be joined and unjoined in the following ways:

- You can join or unjoin an editable wall to the side face of a non-editable wall or to a corner where 2 or more non-editable walls are already joined.
- You can delete an editable wall that is joined to a non-editable wall, except as noted below.
- You cannot join or unjoin an editable wall to a non-editable wall if that would change the shape of the non-editable wall.
- You cannot join an editable wall to the end of a non-editable wall. Revit Architecture keeps the walls close together but does not join them and issues a warning. At a later time, you can join the walls if they are both editable.
- A wall can resize, even if it is not editable. This happens if you move the wall to which it is joined.

For more information on editability status and worksharing, see Working in a Team.

## Preventing Wall Ends from Joining

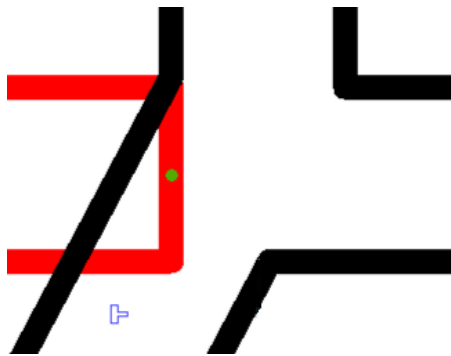
In construction, you might have small expansion spaces that you want to keep between walls. In these cases, you need to prevent wall ends from joining. You can do this by disallowing wall joins.

2 horizontal walls with 3/8-inch expansion space between them

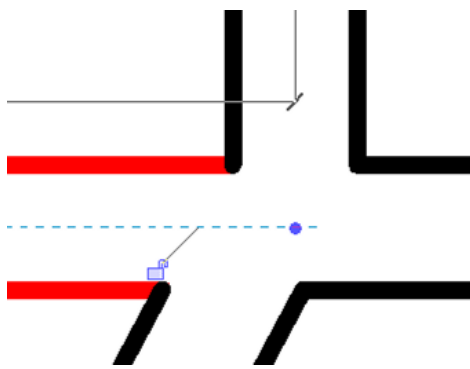


Disallowing joins is also useful for resolving complex joins. For example, if you add a wall to a complex join and it produces undesired results, you can disallow joins on the added wall and then use the Join Geometry tool to clean the join between this wall and other walls.

#### Selected wall with disallowed join




#### Wall cleaned up after Join Geometry used



#### To prevent a join on a wall end

- 1 Select the wall.
- 2 Right-click the wall end control where you want to disallow the join.
- 3 Click Disallow Join from the shortcut menu.

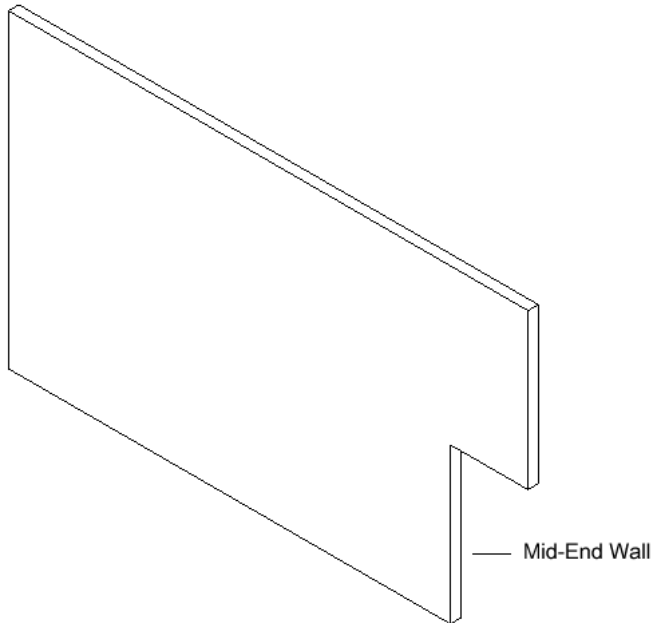
The end of the wall cannot join to the end of another wall. If you want to allow the join, you can select the wall, right-click the wall end control, and click Allow Join from the shortcut menu, or right-click  (Allow Join) above the end of the wall.

## Preventing a Join on a Mid-End Wall Face

You can prevent mid-end wall faces from joining to another wall. See [Creating Walls with Mid-End Faces](#).






## Profile of a Mid-End Wall



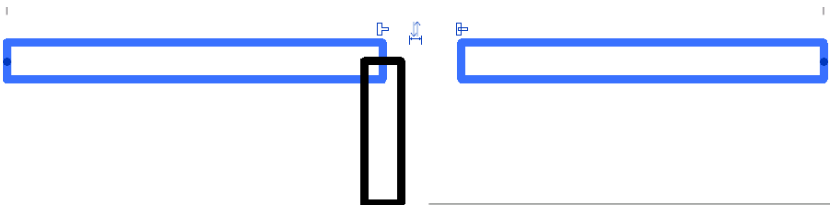
### To disallow a join on a mid-end wall face


1 Select the wall.

2 Click  (Disallow Join) above the mid-end wall face, or right click and click Disallow Join from the shortcut menu. Notice  changes to .

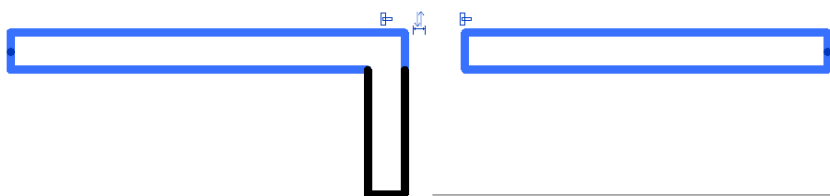
The mid-end wall cannot join to the end of another wall.

#### Selected mid-end wall with join disallowed



If you want to allow the join, click  above the mid-end wall face or right-click and click Allow Join from the shortcut menu.

#### Selected mid-end wall with join allowed



You can switch between the allow join or disallow join states by clicking the join icons.

## Aligning Walls

When you draw 2 collinear walls of different widths, Revit Architecture aligns their centerlines. If you wish to align the side faces of the walls, use the Align tool. See [Aligning Elements](#).

## Splitting Walls

You can split walls using the Split tool. See [Splitting Walls and Lines](#).

## Advanced Walls

This section includes information about walls that are of a more advanced nature. A wall often has one or more components and can include brick, concrete, studs, air gaps, and insulation. This section includes information about retaining walls, arc walls, vertically compound and vertically stacked walls, wall sweeps, wall reveals, and modeling walls.

## Retaining Walls

- 1 In a plan view or 3D view, click Home tab ► Build panel ► Wall.
- 2 Click Place Wall tab ► Element panel, and select the desired wall type from the Type Selector drop-down.
- 3 Click Place Wall tab ► Element panel ► Element Properties drop-down ► Type Properties.
- 4 In the Type Properties dialog, select Retaining for the Function parameter.
- 5 Click OK.

---

**NOTE** A retaining wall is automatically set to be non-room bounding. See [Rooms](#).

---

- 6 Sketch the retaining wall.  
For more information about the sketching tools, see [Sketching](#).
- 7 Add dimensions if desired.  
See [Placing Permanent Dimensions](#).

## Arc Walls

When you sketch arc walls, Revit Architecture displays a temporary angular dimension to help you precisely place the wall in the project.

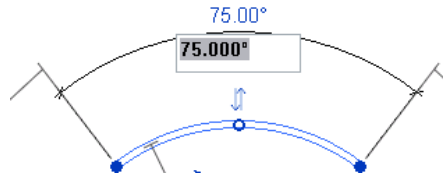
Revit Architecture treats a full-circle wall as 2 arcs joined together. You can cut inserts at this join, but you cannot drag an insert from one part of the wall onto the join.

You can place sketched asymmetrical openings on arc walls using in-place families.

## Adding Arc Walls

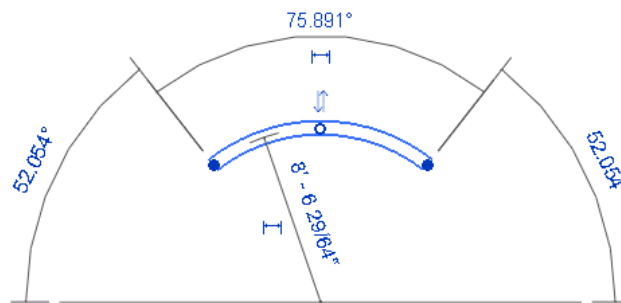
- 1 In a floor plan or 3D view, click Home tab ► Build panel ► Wall.
- 2 Click Place Wall tab ► Draw panel, and select one of the arc tools.
- 3 Sketch the arc wall.  
For more information, see [Sketching](#).

- 4 If necessary, change the value of the angular dimension to increase or decrease the size of the arc.
  - a Click Place Wall tab ► Select panel ► Modify.
  - b In the drawing area, select the arc wall.
  - c Click the angular dimension value, enter a new value, and press *Enter*.



## Resizing Arc Walls

- 1 Select the arc wall.



- 2 Drag the end controls to change the arc length.
- 3 On the Options Bar, select Keep Concentric to change the radius of the arc while keeping the radius concentric, or clear Keep Concentric to retain existing end conditions such as end point location or tangency to a straight wall.
- 4 Drag the middle control.

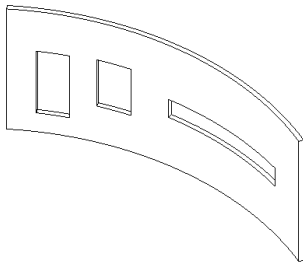
## Cutting Openings in Arc Walls

You can cut square or rectangular openings into arc walls. As you sketch openings in an arc wall, permanent dimensions appear. If the wall has a top constraint set to a level, dimensions appear from both the top and base constraints. If the wall has a top constraint that is explicit, dimensions appear from the base constraint only.

### To cut openings in arc walls

- 1 In a 3D or elevation view, select an arc wall.
- 2 Click Modify Walls tab ► Modify Wall panel ► Create Opening.
- 3 Sketch square or rectangular openings in the arc wall.
- 4 When you are finished, click any white space in the drawing area, or press *Esc* twice.

The following image shows an arc wall with several openings.



## Embedded Walls

Walls can be embedded into a host wall, so that the embedded wall is associated with the host wall. The behavior of an embedded wall is similar to that of a window; the embedded wall does not resize if you resize the host wall. If you rotate the host wall, the embedded wall moves with it. To embed walls, you do not have to edit the profile of the host wall, cut a hole in it, and then insert a wall into that hole; you can use the Cut Geometry tool.

For additional information, see Curtain Elements.

## Vertically Compound Walls

The structure of vertically compound walls is defined using either layers or regions. The following image shows the Edit Assembly dialog.

**NOTE** To access the Edit Assembly dialog, select a wall and click Modify Walls tab ► Element panel ► Element Properties drop-down ► Type Properties. In the Type Properties dialog, click Edit for the Structure parameter.

**Layer rows: correspond to wall layers or regions**

Layers				
EXTERIOR SIDE				
	Function	Material	Thickness	Wraps
1	Finish 1 [4]	Masonry - Brick	0' 3 5/8"	<input checked="" type="checkbox"/>
2	Finish 2 [5]	Masonry - Concrete	0' 3 5/8"	<input checked="" type="checkbox"/>
3	Thermal/Air Layer	Misc. Air Layers - Ai	0' 3"	<input checked="" type="checkbox"/>
4	Membrane Layer	Air Barrier - Air Infil	0' 0"	<input checked="" type="checkbox"/>
5	Substrate [2]	Wood - Sheathing -	0' 0 3/4"	<input checked="" type="checkbox"/>
6	<b>Core Boundary</b>	<b>Layers Above Wra</b>	<b>0' 0"</b>	
7	Structure [1]	Metal - Stud Layer	0' 6"	<input type="checkbox"/>
8	<b>Core Boundary</b>	<b>Layers Below Wrap</b>	<b>0' 0"</b>	
9	Membrane Layer	Vapor / Moisture Ba	0' 0"	<input checked="" type="checkbox"/>
10	Finish 2 [5]	Fabric	0' 0 1/2"	<input checked="" type="checkbox"/>

A layer is assigned to one row. It has a constant thickness and extends the height of the wall. You can change its thickness in the row assigned to it.

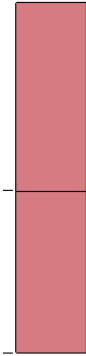
**Wall layer: constant thickness and extends the height of the wall**



A region is any shape in the wall that does not meet the criteria of a layer. Regions can have either constant or variable thickness. In a row assigned to a region, if region has a constant thickness, a numeric value

appears for it. If the region has a variable thickness, the value is variable. You cannot change a region's thickness in the row that is assigned to it. Note that the thickness value appears shaded, indicating that it is unavailable for modification. You can only change its thickness and height graphically in the preview pane.

**Regions: neither region extends the full height of the wall**



Because core thickness can vary in vertically compound walls, the core centerline and core face location lines are determined by the core thickness at the bottom of the wall. For example, if the wall core is thicker at the top than at the bottom, and you specify the location line as Core Centerline, the centerline of the core is measured between the core boundaries at the bottom.

You can add wall sweeps or reveals to vertically compound walls. See [Wall Sweeps](#) on page 30 and [Wall Reveals](#) on page 35.

You can use various tools to modify the structure of vertically compound walls.

## Accessing Vertically Compound Wall Tools

- 1 In the drawing area, select the wall and click Modify Walls tab ► Element panel ► Element Properties drop-down ► Type Properties.
- 2 In the Type Properties dialog, click Preview to open the preview pane.  
All changes you make to the wall occur in the preview pane.
- 3 Below the preview pane, for View, select Section: Modify type attributes.
- 4 Click Edit for the Structure parameter.  
Notice the tools that display at the bottom right of the dialog under Modify Vertical Structure.

---

**NOTE** The vertically compound wall tools are available in the section preview only. Use them to modify the wall type only, not an actual wall instance.

---

## Sample Height

The sample height is the height of the wall in the preview pane only. You can specify any value for the sample height, but it should be high enough to allow you to create the desired wall structure. The sample height does not affect the height of any walls of that type in the project.

## Modify Tool

To change a vertically compound wall, in the Edit Assembly dialog, click Modify. (See [Accessing Vertically Compound Wall Tools](#) on page 19.) Then highlight and select either outer boundaries of the sample wall

or borders between regions in the preview pane. Watch for tool tips and status bar messages that indicate what you are highlighting.

After you select a boundary, you can change thickness, set layer extension, or constrain a region's distance from the top or bottom of the wall.

### Changing Thickness

If you select an outer vertical boundary of the sample wall, a temporary dimension displays. If you change the value of the temporary dimension, the thickness of the layer or region immediately adjacent to the boundary changes.

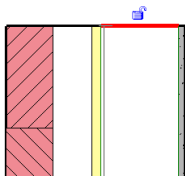
If you select a vertical border between regions, 2 temporary dimensions appear which control the thickness of the regions to the left and right of the border.

### Allowing Layer Extension

If you select the horizontal outer boundary at the top or bottom of a layer, you can specify whether that layer can be extended.

Select a horizontal boundary at the top of the wall, and a padlock displays. A locked padlock indicates that the selected layer cannot be extended. Click the padlock to unlock it, and the layer can be extended.

#### Unlocked layer indicating extendability



When you unlock layers for extension, 2 instance properties of the wall become enabled: Top Extension Distance (for layers at the top of the wall) or Base Extension Distance (for layers at the bottom of the wall). You can enter values for these properties in the selected wall's Element Properties, or you can drag the unlocked wall layers in a view.

---

**NOTE** Unlocked layers must be adjacent. For example, you cannot have one layer locked and its adjacent layers unlocked.

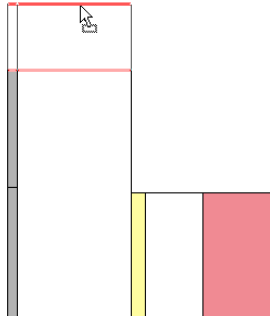
---

To drag wall layers, modify them in section, 3D, and elevation views.

#### To drag wall layers

- 1 Place the cursor at the top or bottom of the wall and press *Tab* until you highlight the shape handle for the extendable layers.  
Watch the status bar to be sure you are highlighting the shape handle.
- 2 Click to select the shape handle.
- 3 Drag the shape handle up or down.

### Dragging layers with the shape handle



---

**TIP** If you join 2 walls and they both have a vertical extension, the extended portions will be horizontally joined. The extension joins must be the same, top-to-top or bottom-to-bottom.

---

### Constraining a Region

To constrain a region a certain distance from the top or bottom of a wall, click the horizontal border between 2 regions. A blue control arrow displays. Clicking the arrow alternates the constraint from the top to the bottom and displays a temporary dimension that you can edit.

When a region is constrained to the bottom of a wall, the region is always the same distance from the bottom regardless of how high the wall becomes. Likewise, when a region is constrained from the top, the region is always the same distance from the top.

Use constraints to keep a trim border or a brick soldier course at a specific height at the top of a building or a CMU a specific distance from the base of the building. See [Split Region Tool](#) on page 21.

#### Soldier Course Constrained to Top of Wall

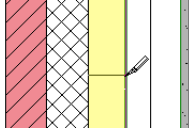


## Split Region Tool

When editing [vertically compound walls](#), the Split Region tool divides a wall layer (or regions) horizontally or vertically into new regions. When you split a region, the new regions assume the same material as the original.

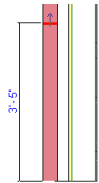
- To split a layer or region horizontally, highlight one of the borders. A preview split line displays when you highlight a border.

### Horizontal split preview



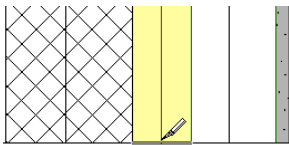
After you split a region or layer horizontally, click the border between the regions. A blue control arrow displays with a temporary dimension. If you click the arrow, it switches the constraint and its temporary dimension between the top and bottom of the wall. See [Modify Tool](#) on page 19.

### Blue control arrow displayed when border is selected



- To split a layer or region vertically, highlight and select a horizontal boundary. That boundary can be the outside boundary, or an inside boundary created if you previously split horizontally.

### Vertical split preview



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**TIP** It is helpful to zoom in on the outer horizontal boundary to split it vertically.

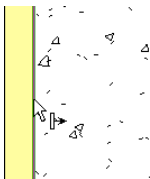
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## Merge Regions Tool

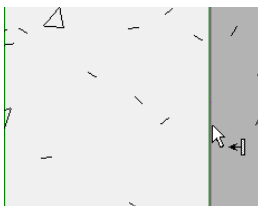
When editing [vertically compound walls](#), the Merge Regions tool merges wall regions together horizontally or vertically into new regions. Highlight a border between regions and click to merge them.

When you merge regions, the position of the cursor when you highlight a border determines which material prevails after the merge.

### The material from the right region prevails when you merge



### The material from the left region prevails when you merge





## Assign Layers Tool

When editing [vertically compound walls](#), the Assign Layers tool assigns a row to a layer or region. (It assigns the number, material, and function of that row.)

It is more useful to assign layers to regions vertically, rather than horizontally. For example, you might split finish layer 1 into several regions. Then you could assign another finish row to some of those regions and create an alternating pattern, such as brick over concrete.

You should familiarize yourself with the layer functions of compound walls. See [Applying a Function to a Layer of a Compound Structure](#). Also see [Layer Assignment Rules](#) on page 23.

### To assign wall layers:

- 1 Click a row number to select it.

All regions currently assigned to that row appear selected in the preview pane.

---

**NOTE** If the row does not have any regions assigned to it, it appears as a line in the preview pane, and its thickness is 0.

---

- 2 Click Assign Layers.
- 3 Highlight a region boundary.
- 4 Click the boundary to assign the row to that region.
- 5 Continue clicking other regions to continue assigning, or click Assign Layers to exit.

## Layer Assignment Rules

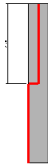
When assigning layers in walls, consider the following guidelines:

- Rows of the sample wall in the preview pane must remain in a sequential order from left to right. To test the sample wall, select row numbers sequentially and observe the selection in the preview pane. If the layers do not highlight in an order from left to right, Revit Architecture cannot produce this wall.
- A row cannot be assigned more than one layer.
- You cannot have the same row assigned to regions on both sides of the core.
- You cannot apply a thickness to a membrane layer.
- Non-membrane layers cannot have a thickness smaller than 1/8" or 4 mm.
- A layer in the core must have a thickness greater than 0. You cannot specify a layer in the core as a membrane layer.
- The exterior and interior core boundaries and the membrane layer cannot rise up and down.

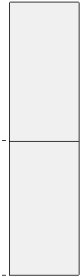
**Invalid boundary for core boundaries or membrane layers**



- You can add thickness only to a layer that is straight from the top of the wall to the bottom. You cannot add thickness to a complex layer, such as the one shown in the following image.



- You cannot split a wall horizontally and then move the outside boundary of one of the regions independently of the other. For example, if you select the left outer boundary of the lower region, the left outer boundary of the upper region is also selected.



- Layer function priorities cannot ascend from the core boundary to the finish face. For example, you cannot have a finish layer in the core boundary and then a structure layer at the exterior side.

## Sweeps and Reveals Tools

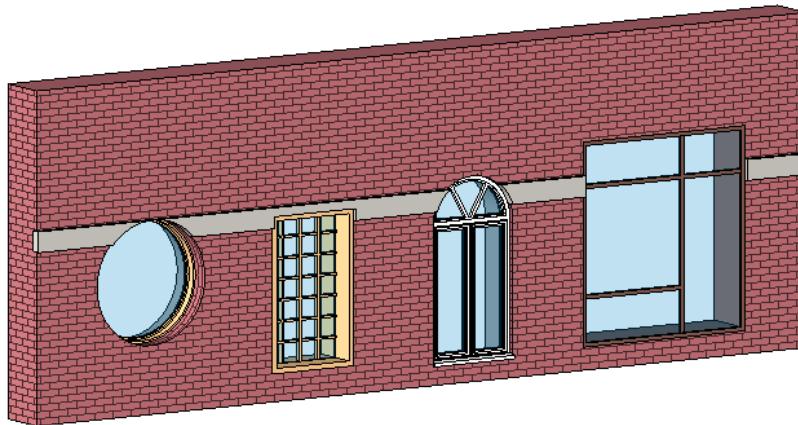
When editing [vertically compound walls](#), the Sweeps and Reveals tools control placement and display of sweeps or reveals on the wall.

### To add a sweep to the wall structure:

- 1 In the Edit Assembly dialog, click Sweeps.
- 2 In the Wall Sweeps dialog, click Add.
- 3 Select a profile from the list.  
For example, select Parapet Cap-Precast.
- 4 Specify a material for the sweep.
- 5 For Distance, specify the distance from either the top or base of the wall (select top or base in the From column).
- 6 For Side, specify the interior or exterior of the wall.
- 7 Specify a value, if necessary, for Offset.  
A negative value moves the sweep toward the wall core.
- 8 Select Flip to measure the distance from the top of the sweep profile rather than the bottom.
- 9 For Setback, specify the sweep setback distance from inserts, such as windows and doors.
- 10 Select Cuts Wall if you want the sweep to cut geometry out of the host wall.  
When a sweep is offset and embedded in the wall, it cuts the geometry from the wall. In complex models with many sweeps, you can increase performance by clearing this option.
- 11 Select Cuttable if the sweep should be cut by wall inserts.

In the image below, see how the sweep is cut by the windows.

**Wall sweep with Cuttable option selected**



12 Click OK.

**To add a reveal to the wall structure:**

- 1 In the Edit Assembly dialog, click Reveals.
- 2 In the Reveals dialog, click Add.
- 3 Select a profile from the list.

---

**NOTE** There is no material choice for reveals. The material for the reveal is the same as the material it is cutting.

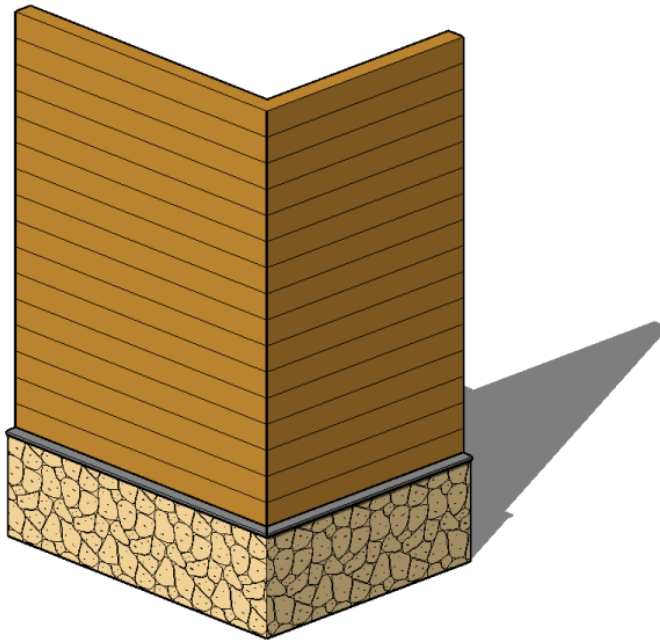
---

- 4 For Distance, specify the distance from either the top or base of the wall (select top or base in the From column).
- 5 For Side, specify the interior or exterior of the wall.
- 6 Specify a value, if necessary, for Offset.  
A negative value moves the reveal toward the wall core.
- 7 Select Flip to measure the distance from the top of the reveal profile rather than the bottom.
- 8 For Setback, specify the reveal setback distance from inserts, such as windows and doors.
- 9 Click OK.

## Vertically Stacked Walls

Revit Architecture features a stacked wall type which is one wall that includes several different subwalls stacked on top of each other. All subwalls in a stacked wall are attached and have joined geometry to each other; the subwalls can only be types in the Basic Wall system family. For example, you can have a stacked wall comprising an Exterior Brick on Metal Stud and an Exterior CMU on Metal Stud that are attached and joined.

Using stacked wall types, you can define different wall thicknesses at different heights. You define its structure using Type Properties.



### Specifying Instance Parameters of Subwalls

When you define the structure of the stacked wall type, you indirectly change instance parameters of the individual subwalls that compose the stacked wall. That is, when you specify the height, offset, top, and base of the stacked wall, you are also specifying Unconnected Height, Location Line Offset, Top Extension Distance, and Base Extension Distance, respectively, of the subwalls. The only instance parameters you can directly specify for subwalls are Room Bounding and Structural Usage; values for the remainder are inherited from the stacked wall type and are read-only.

## Defining the Stacked Wall Structure

You can make various changes to a stacked wall to change its structure:

- You can add or delete walls.
- You can move subwalls up or down the height of the stacked wall.
- You can define a reference line for the entire stacked wall, and then offset each subwall from that reference line.

---

**IMPORTANT** Define the structure of vertically stacked walls before placing any instances in the project. Height conflicts may occur when previously placed instances are lower than the defined height of the type.

---

#### To define the structure of a stacked wall:

- 1 Access the properties of a vertically stacked wall.  
For example, in the Project Browser, under Families ► Walls ► Stacked Wall, right-click a stacked wall type, and click Properties. Alternatively, if you have placed a stacked wall in the project, select it in the drawing area and click Modify Walls tab ► Element panel ► Element Properties drop-down ► Type Properties.
- 2 In the Type Properties dialog, click Preview to open the preview pane. All changes you make to the wall display in the preview pane.

The preview pane displays the wall in section view.

**3** Click Edit for the Structure parameter.

A table shows the different wall types that compose the stacked wall. Every stacked wall has at least one subwall in it.

**4** In the Edit Assembly dialog, specify an offset reference.

This establishes an imaginary reference line to align all the subwalls of the stacked wall. For example, if you select Finish Face Exterior, each subwall piece aligns to its finish face. This value becomes the Location Line value of each subwall.

**5** Enter a value for Sample Height.

This is the height of the wall in the preview pane. This value changes when you insert subwalls whose unconnected height is greater than the sample height.

**6** Under Types, click a row in the Type table to select a subwall, or click Insert to add a new subwall to the main wall.

**7** For Name, select the desired subwall type.

**8** For Height, specify an unconnected height for the subwall.

---

**NOTE** One subwall is required to have a variable height. Its height changes relative to the heights of the other subwalls. You cannot edit the Height field when the subwall is variable. To change the height of the variable subwall, change another subwall to variable by selecting its row and clicking Variable.

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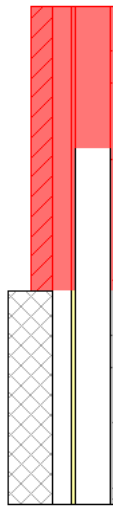
**9** For Offset (for the selected subwall), specify the distance to offset the horizontal location line of the subwall from the reference line (Offset) of the main wall.

A positive value moves the subwall toward the exterior side (left side in the preview pane) of the main wall. For example, if the reference line of the main wall is set to Wall Centerline, and you specify 1" for all subwall offsets, each subwall is aligned 1" to the left of the centerline of the main wall.

**10** If enabled, enter a value for the Top or Base Extension Distance.

This value raises or lowers a wall layer that is unlocked at the top or bottom. A positive value moves the layer up; a negative value moves it down. This value corresponds to the value for the Top or Base Extension Distance instance parameters for the subwalls. For more information on unlocking layers, see [Vertically Compound Walls](#) on page 18.

If you specify an extension distance for a subwall, the subwall below it attaches to it. For example, suppose you specify a Base Extension Distance of 2 feet for the top subwall. The top of the next subwall down moves up to attach to the modified wall above it. The value for Top Extension Distance of the lower subwall is Attach. For example, in the following image, the top wall is highlighted in red. It has a positive base extension distance. The lower subwall attaches to it.



**11** To flip the subwall about the reference line (Offset) of the main stacked wall, select Flip.

**12** To rearrange rows, select a row and click Up or Down.

**13** To delete a subwall type, select its row and click Delete.

If you delete a subwall with an explicit height, the variable subwall extends to the height of the other subwalls. If you delete a variable subwall, the subwall above it becomes variable. If there is only one subwall, you cannot delete it.

**14** Click OK.

## Breaking Up a Vertically Stacked Wall

The subwalls of a stacked wall are closely tied together. However, you may want to control them independently. Use the Break Up tool to accomplish this.

To access the Break Up tool, right-click a stacked wall instance, and click Break Up.

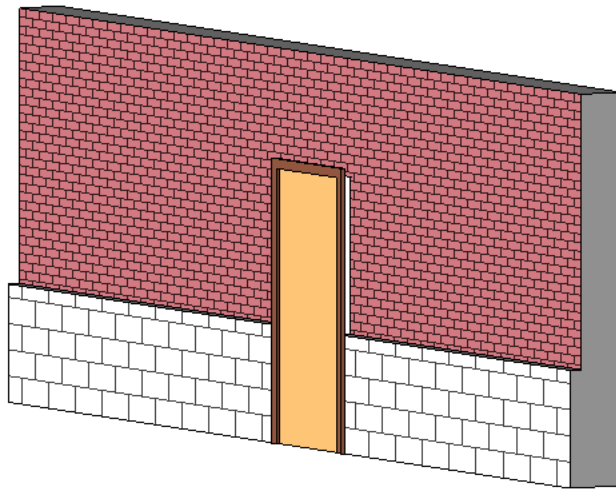
Once a stacked wall is broken up, the subwalls become walls on their own. There is no reassemble tool to restack such a wall. When you break up a stacked wall, the base constraint and base offset of each subwall is the same as that of the stacked wall. You can then edit instance properties for any of the walls.

## Vertically Stacked Wall Notes

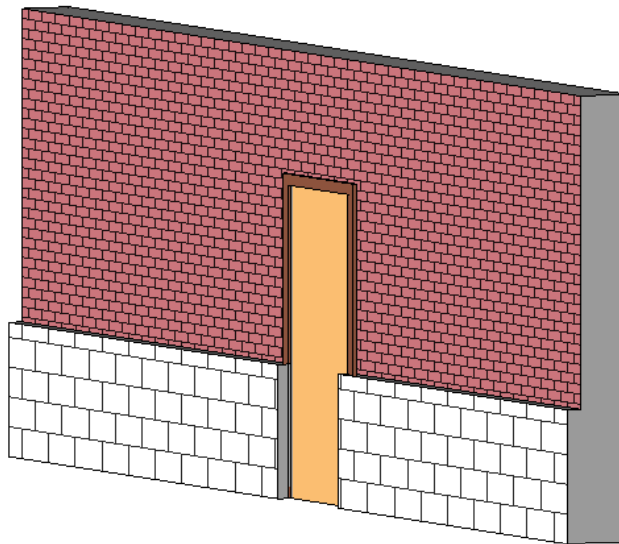
When using vertically stacked walls, consider the following guidelines:

- All subwalls use the same base constraint and base offset as the stacked wall. This means that a subwall can be on a certain level, but is actually based on the same level as its associated stacked wall. For example, if a stacked wall is based on Level 1 but one of its subwalls is on Level 7, the Base Level of that subwall is Level 1.
- You can edit the Type Properties of a basic wall that is also a subwall. To access the type properties of the basic wall, in the Type Selector, select the basic wall type, and click Element Properties drop-down ► Type Properties.
- When you create a wall schedule, the vertically stacked wall does not schedule, but its subwalls do.

- When you edit the elevation profile of a stacked wall, you edit one main profile. If you break up the stacked wall, each subwall retains its edited profile.
- When you highlight a vertically stacked wall in the drawing area, the entire wall highlights first. Press *Tab* to highlight the component subwalls. Using a pick box selects only the stacked wall.
- You can embed a vertically stacked wall.
- Subwalls can host wall sweeps; stacked walls cannot.
- Subwalls cannot be in different phases, worksets, or design options from that of the stacked wall.
- To place inserts in a vertically stacked wall, you may need to use the Pick Primary Host tool to switch between the vertically stacked wall and one of the walls that compose it. For example, the door panel in the following illustration is outside the upper wall because the main host of the door is the bottom subwall.

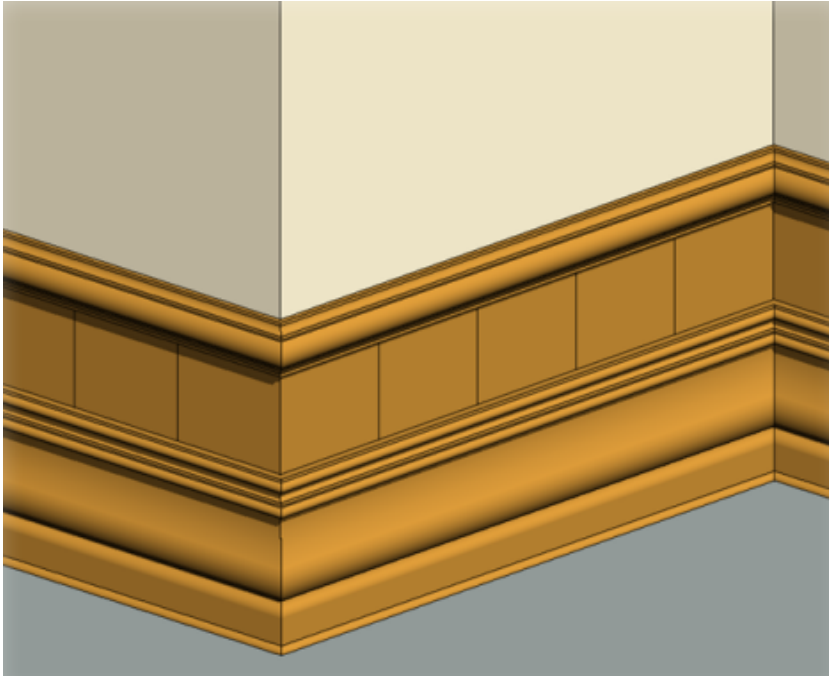


To place the door properly, select the door and click **Modify Doors** tab ► **Host panel** ► **Pick Primary Host**. Place the cursor on the wall, and select one of the component walls. You may need to press *Tab* to select the desired wall.



## Wall Sweeps

A wall sweep is a horizontal or vertical projection from a wall, often decorative in nature. Examples of wall sweeps include baseboards along the bottom of a wall or crown molding along the top of a wall. You can add a wall sweep to a wall from a 3D or elevation view.



You can schedule wall sweeps. Integral wall sweeps, which are part of the wall type definition, can not be scheduled independently. For more information on creating schedules, see Schedule Views.

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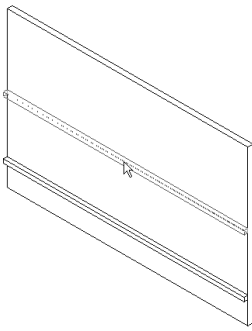
**NOTE** If you create wall sweeps at different heights and then later set them to the same height, the sweeps miter at the joins.

---

## Adding Wall Sweeps

- 1 Go to a 3D or elevation view.
- 2 Click Home tab ► Build panel ► Wall drop-down ► Wall Sweep.
- 3 Click Place Wall Sweep tab ► Element panel, and select the desired type of wall sweep from the Type Selector drop-down.
- 4 Select the orientation of the wall sweep: Horizontal or Vertical.
- 5 Place the cursor over the wall to highlight the wall sweep location. Click to place the wall sweep.
- 6 Add the wall sweep to adjacent walls, if needed.  
Revit Architecture preselects the wall sweep location on each adjacent wall.  
If you are in a 3D view, you can add a wall sweep to all exterior walls by using the ViewCube to rotate the view. For more information, see ViewCube.
- 7 To start a wall sweep in a different location, click Place Wall Sweep tab ► Profile panel ► Finish Current. Move the cursor to the desired location on the wall, and click to place the wall sweep.
- 8 To finish placing wall sweeps, click Modify.





#### Related topics

- [Changing the Wall Sweep Profile](#) on page 31
- [Returning Wall Sweeps Back to the Wall](#) on page 31
- [Adding or Removing Segments from a Wall Sweep](#) on page 32
- [Adding a Wall Reveal](#) on page 36

## Changing the Wall Sweep Profile

- 1 Select a wall sweep in a 3D or elevation view, or click Home tab ► Build panel ► Wall drop-down ► Wall Sweep.
- 2 Click Modify Wall Sweeps tab (or Place Wall Sweep tab) ► Element panel ► Element Properties drop-down ► Type Properties.
- 3 For Profile, select the desired profile type.
- 4 Click OK.

## Returning Wall Sweeps Back to the Wall

After placing a wall sweep, you can return its ends back toward the wall.

---

**NOTE** This procedure is also available for wall reveals.

---

- 1 In a 3D or elevation view, select the wall sweep segment. Be sure it is not already joined to another segment.
- 2 Click Modify Wall Sweeps tab ► Wall Sweep panel ► Modify Returns.  
The Straight Cut and Return options appear on the Options Bar. The Straight Cut is a perfectly squared off edge. This option is not available if the sweep end is already in this state.
- 3 Select Return and type an angle value in the text box next to it (for example 45).

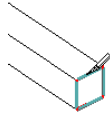
---

**NOTE** A positive return angle moves the sweep end toward the wall. A negative value moves the sweep end away from the wall. For reveals, a positive return value moves the reveal end away from the wall, and a negative value moves the end toward the wall.

---

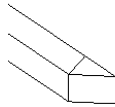
- 4 Highlight the wall sweep end.

#### Highlighted wall sweep end



5 Click to apply the new return value.

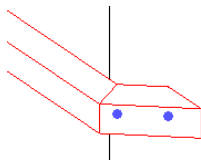
#### Applied return value



In this example, the option Straight Cut becomes available. Select that option, and click the sweep end to apply a straight cut to the sweep.

After you change the return, you can drag the end of the sweep or reveal to extend the return. Select the wall sweep, and use the blue dot drag control.

#### Drag the right blue control



## Changing the Wall Sweep Type

- 1 In the drawing area, select a wall sweep.
- 2 Click Modify Wall Sweeps tab ► Element panel, and select the desired wall sweep from the Type Selector drop-down.

If the desired wall sweep type is not listed in the Type Selector, you can load additional profile families. Click Insert tab ► Load from Library panel ► Load Family.

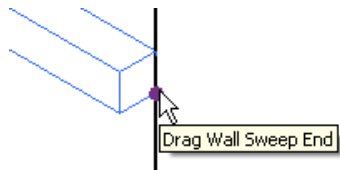
## Adding or Removing Segments from a Wall Sweep

You can continue an existing sweep onto new walls, or remove segments from existing wall sweeps.

- 1 Open a 3D view and select the desired wall sweep.
- 2 Click Modify Wall Sweeps tab ► Wall Sweep panel ► Add/Remove Walls.
- 3 Select the walls to continue adding to or removing from the wall sweep.

## Resizing Unconnected Wall Sweeps

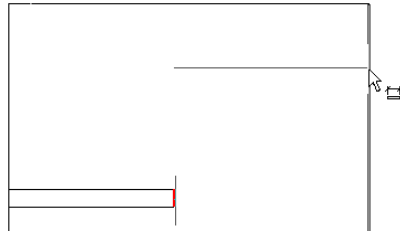
- 1 In a 3D or elevation view, select the wall sweep.
- 2 Drag the wall sweep end to resize it.



## Dimensioning to a Wall Sweep

1 Place a dimension between the wall sweep end face reference and another reference.

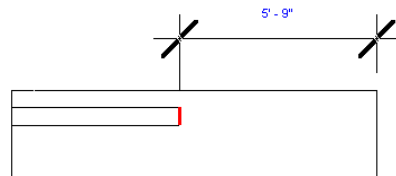
**Dimension references between wall sweep end face and wall**



2 To change the dimension value, drag the wall sweep's shape handle.

The dimension value adjusts accordingly.

**Selected shape handle on sweep**



## Changing a Wall Sweep's Horizontal or Vertical Offset

**To move a single wall sweep segment**

- 1 Select the segment.
- 2 Move it up or down (horizontal wall sweeps) or side to side (vertical wall sweeps).

**To move a multi-segmented wall sweep**

- 1 Place the cursor over the wall sweep and press *TAB* to select the shape handle of the wall sweep. Watch the status bar to know when you are highlighting the shape handle.
- 2 Click to select the shape handle.
- 3 Move the wall sweep up or down (horizontal wall sweeps) or side to side (vertical wall sweeps). This affects the offset of all segments of the wall sweep, so the segments are symmetrical.

## Wall Sweep Properties

You can modify several properties for wall sweeps, including profiles and offsets.

## Modifying Wall Sweep Properties

- 1 In a 3D or elevation view, select a wall sweep and click Modify Wall Sweeps tab ► Element panel ► Element Properties.
- 2 In the Instance Properties dialog, edit wall sweep instance parameters.
- 3 Click Edit Type to edit wall sweep type parameters.  
Changes made to type properties affect all wall sweeps of this type in the project. You can click Duplicate to create a new wall sweep type.
- 4 When you are finished, click OK.

## Wall Sweep Type Properties

Name	Description
<b>Constraints</b>	
Cuts Wall	When selected, the sweep will cut geometry out of the host wall if there is an overlap. Setting this value to No can increase performance on large building models with many sweeps.
Cut by Inserts	When selected, inserts such as doors and windows cut geometry out of the sweep. See <a href="#">Sweeps and Reveals Tools</a> on page 24.
Default Setback	This value specifies the distance the sweep is set back from each intersecting wall insert.
<b>Construction</b>	
Profile	Specifies the profile family used to create the wall sweep.
<b>Materials and Finishes</b>	
Material	Sets the material of the wall sweep.
<b>Identity Data</b>	
Subcategory of Walls	By default, wall sweeps are set to the Wall Sweep subcategory of walls. In the Object Styles dialog, you can create new Wall subcategories and subsequently select one here. This allows you to modify wall sweep style at a project level using the Object Styles dialog.
Keynote	Add or edit the wall sweep keynote. Click in the value box to open the Keynotes dialog. See Keynotes.
Model	The model type of the wall sweep.
Manufacturer	The manufacturer for the wall sweep's materials
Type Comments	Specific building or design comments.
URL	Link to a web page (such as a manufacturer's web page).
Description	Description of the wall sweep.

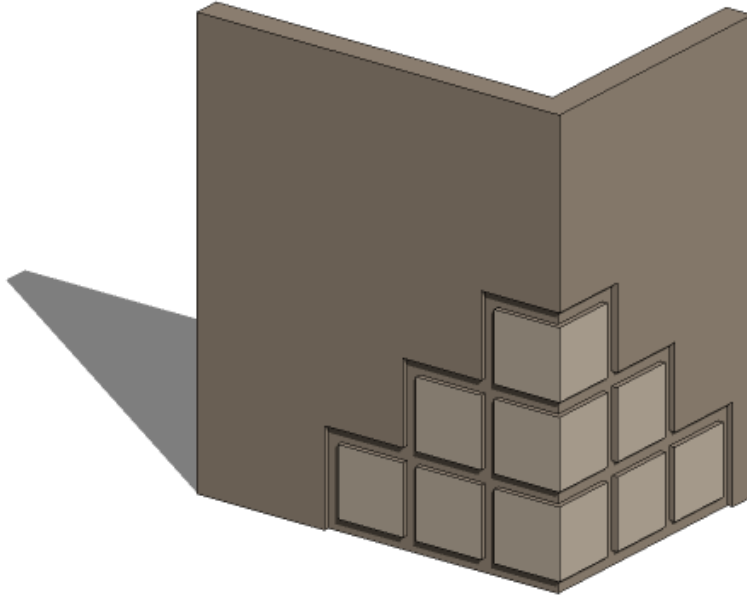
Name	Description
Assembly Description	Description of the assembly based on the assembly code selection.
Assembly Code	Unifomat assembly code selected from a hierarchical list.
Type Mark	A value to designate the particular wall sweep. This value must be unique for each wall sweep in a project. Revit Architecture warns you if the number is already used but allows you to continue using it. You can see the warning using the Review Warnings tool. See Reviewing Warning Messages.
Cost	Cost of the materials for constructing the wall sweep. This information can be included in a schedule.

## Wall Sweep Instance Properties

Name	Description
<b>Constraints</b>	
Offset From Wall	The distance from the wall face.
Level	The level of the wall sweep. This property only appears for horizontal wall sweeps.
Offset From Level	The wall sweep's offset from the level. This property only appears for horizontal wall sweeps.
<b>Dimensions</b>	
Length	The length of the wall sweep. This is a read-only parameter.
<b>Identity Data</b>	
Comments	Enter comments for the wall sweep.
Mark	A value to designate the particular wall sweep. This value must be unique for each wall sweep in a project. Revit Architecture warns you if the number is already used but allows you to continue using it. You can see the warning using the Review Warnings tool. See Reviewing Warning Messages.
<b>Phasing</b>	
Phase Created	The phase when the wall sweep was created.
Phase Demolished	The phase when the wall sweep was demolished.

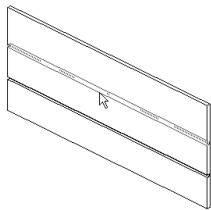
## Wall Reveals

A wall reveal is a decorative cutout in a wall. You can add a reveal to a wall from a 3D or elevation view. Reveals can be horizontal or vertical.



## Adding a Wall Reveal

- 1 Go to a 3D or non-parallel elevation view.
- 2 Click Home tab ► Build panel ► Wall drop-down ► Reveal.
- 3 Click Place Reveal tab ► Element panel, and select the desired wall reveal from the Type Selector drop-down.
- 4 Select the orientation of the wall reveal: Horizontal or Vertical.
- 5 Place the cursor over the wall to highlight the wall reveal location. Click to place the reveal.
- 6 Add the reveal to adjacent walls if needed.  
Revit Architecture preselects the reveal location on each adjacent wall.
- 7 To finish placing wall reveals, click in the view away from the wall.



### Related topics

- [Changing the Wall Reveal Profile](#) on page 37
- [Moving Wall Reveals Away from or Towards the Wall](#) on page 37
- [Changing the Wall Reveal Type](#) on page 37
- [Wall Reveal Properties](#) on page 37

## Adding or Removing Segments from a Wall Reveal

You can continue an existing reveal onto new walls, or remove segments from a reveal.

- 1 Open a view that displays the reveal, and select the reveal.
- 2 Click Modify Reveals tab ► Reveal panel ► Add/Remove Walls.
- 3 Select the walls to continue adding to or removing from the reveal.
- 4 To exit the Add/Remove Walls tool, press *Esc* twice.

## Changing the Wall Reveal Profile

- 1 Select a wall reveal in a 3D or elevation view, or click Home tab ► Build panel ► Wall drop-down ► Reveal.
- 2 Click Modify Reveals tab (or Place Reveal tab) ► Element panel ► Element Properties drop-down ► Type Properties.
- 3 For Profile, select the desired profile type.
- 4 Click OK twice.

## Moving Wall Reveals Away from or Towards the Wall

After placing a wall reveal, you can move its ends away from or toward the wall. The procedure is the same as moving wall sweeps back to the wall. See [Returning Wall Sweeps Back to the Wall](#) on page 31.

## Changing the Wall Reveal Type

- 1 In the drawing area, select a wall reveal.
- 2 Click Modify Reveals tab ► Element panel, and select the desired wall reveal from the Type Selector drop-down.

If the desired wall reveal type is not listed in the Type Selector, you can load additional profile families. Click Insert tab ► Load from Library panel ► Load Family.

## Wall Reveal Properties

You can modify several properties for wall reveals, including profiles and offsets.

## Modifying Wall Reveal Properties

- 1 In a 3D or elevation view, select a wall reveal and click Modify Reveals tab ► Element panel ► Element Properties.
- 2 In the Instance Properties dialog, edit wall reveal instance parameters.
- 3 Click Edit Type to edit wall reveal type parameters.  
Changes made to type properties affect all wall reveals of this type in the project. You can click Duplicate to create a new wall reveal type.
- 4 When you are finished, click OK.

## Wall Reveal Type Properties

Name	Description
<b>Constraints</b>	
Default Setback	A length value whose default is 0.0. When set to positive or negative values, the ends of the wall reveal curve pull back or push forward by the designated amount when they are interrupted at an insert. This allows you to quickly set wall reveals properly near window or door trims. This value is overwritten when you pull the ends manually.
<b>Construction</b>	
Profile	The profile family used to create the reveal.

## Wall Reveal Instance Properties

Name	Description
<b>Constraints</b>	
Offset from wall	The distance from the wall face. This setting changes the depth of the reveal.
Level	The reveal's level. This property only appears with horizontal reveals.
Offset from level	The reveal's offset from the level. This property only appears with horizontal reveals.
<b>Dimensions</b>	
Length	The length of the reveal.

## Wall Best Practices

This section includes tips with working with Revit in the most efficient way.

Refer to the Autodesk white paper, **Model Performance Technical Note**, for additional information about Revit best practices.

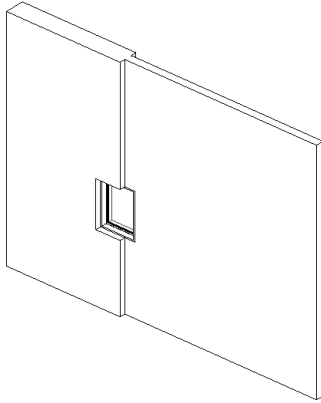
## Tips for Adding Walls

- When creating the exterior walls of a multi-level building to which you want to add windows before adding the roof, specify Unconnected Height as the height of the wall on the next level. This ensures that the wall is high enough to add windows and doors.
- To flip the orientation of the wall between exterior and interior, select the wall and click the blue flip controls that are displayed near it. The flip controls always are displayed on the side that Revit Architecture interprets as the exterior side.
- Walls do not automatically attach to other modelling components, such as roofs and ceilings. You must explicitly attach them using the Attach and Detach tools. See Attach Top/Bottom and Detach Top/Bottom.
- As you draw a wall, you can offset it from the cursor by specifying a value for Offset on the Options Bar. You can specify to which location line the offset is measured.



- You can access wall type properties from the Project Browser. In the Project Browser, expand Families, expand Walls, expand a wall family, and right-click wall type. Click Properties to access the Type Properties dialog, where you can modify wall properties.
- If you rename or create a wall type, indicate the function in the name and specify the Function Type property (interior, exterior, foundation, retaining, soffit, or core-shaft) in the Type Properties dialog.
- The top constraint for interior partition walls is set, by default, to the level above.
- You can drag inserts, such as windows and doors, between 2 walls.

**Window placed at a join between 2 walls**

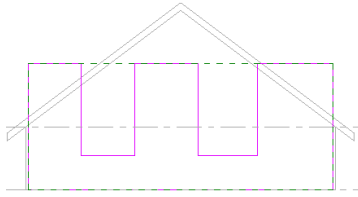


- When an insert is placed between hosts of unequal thickness (as shown above), you can resize the thickness of the insert relative to its hosts. Select the insert and click Pick Primary Host. Select the host you want the insert to resize to match. The insert resizes to the selected host's thickness. If you later delete the host, you delete the insert as well.
- If you select Radius on the Options Bar, and then join the end of a straight wall to the end of another straight wall, a fillet is created between the walls at the specified radius.

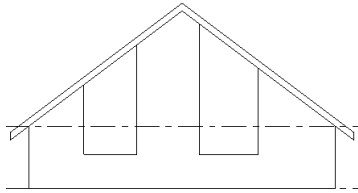
## Tips for Defining Wall Shapes or Openings

- If you are defining a shape on a wall that is not horizontal or vertical in a plan view, you should draw a section parallel to the wall before going into the elevation sketch mode. When you go into sketch mode, the Go To View dialog appears. Revit Architecture suggests the section view as the optimal view for editing the sketch. Click Open View to open that view.
- You cannot edit the elevation profile of an arc wall.
- While you edit the elevation profile of a wall attached to another element, the wall temporarily reverts to its shape and height prior to attaching it. For example, if you edit the profile of a wall attached to a roof, the wall assumes its unconnected height prior to attaching to the roof. As a result, you may find the wall is not at the right height to complete the elevation profile edits. To change the height, while in sketch mode, click Modify Walls > Edit Profile tab ► Element panel ► Wall Properties. Change the Unconnected Height of the wall.  
As you edit the elevation profile, keep in mind that after you finish the sketch, the wall top or bottom attaches only where horizontal lines are coincident with the reference planes in the sketch.

Sample edited profile in sketch mode (note top sketch lines that are coincident with reference planes)



Finished wall attached to roof (non-coincident horizontal lines from sketch did not attach)



## Tips for Models and Files

- Avoid over modeling or over constraining your model (and walls) to keep the size smaller and less complicated.
- Be judicious in showing wall layer information in views and minimize the level of detail whenever possible.

## Wall Properties

Walls have properties based on whether they are interior or exterior walls. You can modify the properties of one wall type and set them for all walls of that type. You can also select an instance of a wall and change its parameters only.

---

**NOTE** Be aware that the type names do not update upon changing parameters. For example, you could set the width of a 200 mm exterior wall to 250 mm and its name will not change.

---

## Wall Type Properties

Name	Description
<b>Construction</b>	
Structure	Click Edit to create compound walls. See Compound Structure.
Wrapping at Inserts	Sets the layer wrapping of walls at inserts. See Layer Wrapping.
Wrapping at Ends	Sets the layer wrapping of wall end caps. See Setting Layer Wrapping.
Width	Sets the width of the wall.
Function	The purpose of a wall: exterior, interior, retaining, foundation, soffit, or core-shaft. Before creating a wall, you can click Element Properties to see the default instance

Name	Description
	values for function. See Adding Interior and Exterior Walls and <a href="#">Retaining Walls</a> on page 16. The value should be set to Soffit when the wall is attached to a ceiling. In this case, the attachment is made to the surface of the ceiling, regardless of the shape of the ceiling. Function can also be used in scheduling and to create filters that simplify a model when exporting.
<b>Graphics</b>	
Coarse Scale Fill Pattern	Sets a fill pattern for a wall in a coarse-scale view. See View Properties.
Coarse Scale Fill Color	Applies a color to the fill pattern for a wall in a coarse-scale view.
<b>Identity Data</b>	
Model	Generally, this is not an applicable property for walls.
Manufacturer	Generally, this is not an applicable property for walls.
Type Comments	A field for placing general comments about the wall type.
URL	Link to a web page.
Description	Description of the wall.
Assembly Description	Description of the assembly based on the assembly code selection.
Assembly Code	Uniformat assembly code selected from hierarchical list.
Type Mark	A value to designate the particular wall. Generally, this is not an applicable property for walls. This value must be unique for each wall in a project. Revit Architecture warns you if the number is already used but allows you to continue using it. You can see the warning using the Review Warnings tool. See Reviewing Warning Messages.
Fire Rating	Fire rating of the wall.
Cost	Cost of the materials for constructing the wall.

## Wall Instance Properties

Name	Description
<b>Constraints</b>	
Location Line	A location line for the wall at the specified plane. The wall location line remains the same for that wall, even if the type changes.
Location Line Offset (for walls used as panels only)	Offsets the wall panel the specified distance and in a direction perpendicular to the face of the curtain wall.
Base Constraint	The base level of the wall. For example, Level 1.

<b>Name</b>	<b>Description</b>
Base Offset	The wall's height from its base constraint. This property is available only when the Base Constraint is set to a level.
Base Is Attached	Indicates whether the base of the wall is attached to another model component, such as a floor. This is a read-only value.
Base Extension Distance	The distance you have moved the base of the layers in a wall. See Compound Structure. This parameter is enabled when layers of a wall are extendable.
Top Constraint	Wall height extends to value specified in Unconnected Height.
Unconnected Height	The height of the wall when it is sketched.
Top Offset	The offset of the wall from the top level. This parameter is enabled only when the Top Constraint is set to a level.
Top is Attached	Indicates whether the wall top is attached to another model component, such as a roof or ceiling. This is a read-only value.
Top Extension Distance	The distance you have moved the top of the layers in a wall. See Compound Structure. This parameter is enabled when layers of a wall are extendable.
Room Bounding	If selected, the wall is part of a room boundary. If cleared, the wall is not part of a room boundary. This property is read-only before creating a wall. After you draw the wall, you can select it and then modify this property.
Related to Mass	Indicates that the element was created from a mass element. This is a read-only value.
<b>Structural</b>	
Structural Usage	The structural usage of the wall. This property is read-only before creating a wall. After you draw the wall, you can select it and then modify this property.
<b>Dimensions</b>	
Length	The length of the wall. This is a read-only value.
Area	The area of the wall. This is a read-only value.
Volume	The volume of the wall. This is a read-only value.
<b>Identity Data</b>	
Comments	Specific comments added to describe the wall.
Mark	A label applied to a wall. Usually a numeric value. This value must be unique for each wall in a project. Revit Architecture warns you if the number is already used but allows you to continue using it. You can see the warning using the Review Warnings tool. See Reviewing Warning Messages.
Categorize as	Indicates whether the wall panel should schedule as a curtain panel or a wall.
<b>Phasing</b>	

Name	Description
Phase Created	The phase when the wall was created.
Phase Demolished	The phase when the wall was demolished.

## Troubleshooting Walls

### Slow Performance

In Revit 2010, multi-threaded methods for printing and wall join cleanup have been made available. Multi-threaded hidden line removal for printing has been enabled by default.

- Due to the operating system overhead of maintaining multiple threads, multiprocessing of wall join cleanups can experience a minor degradation when only 2 CPU cores are present, but up to a 27% performance increase when 4 hyper-threaded CPU cores are present. Because 2 CPU core systems remain the most common configuration of Revit systems as reported by CIP data, multiprocessing of this features is OFF by default.
- To enable multiprocessing for wall join cleanup, add the following entries to the Revit.ini file:  
`[PerformanceOptimizations] ParallelWallJoins=ON`
- To disable multiprocessing for wall join cleanup, you may omit any entries in the [PerformanceOptimizations] section of the Revit.ini file, or explicitly set the state of either one or both multiprocessing optimizations: `[PerformanceOptimizations] ParallelWallJoins=OFF`  
`ParallelPrintProcessing=OFF`

### Avoid File Corruption

- After creating walls, audit files so Revit will review data structures and correct problems found within the model.



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