

# **Profile Builder 2**

## Profile Builder 2

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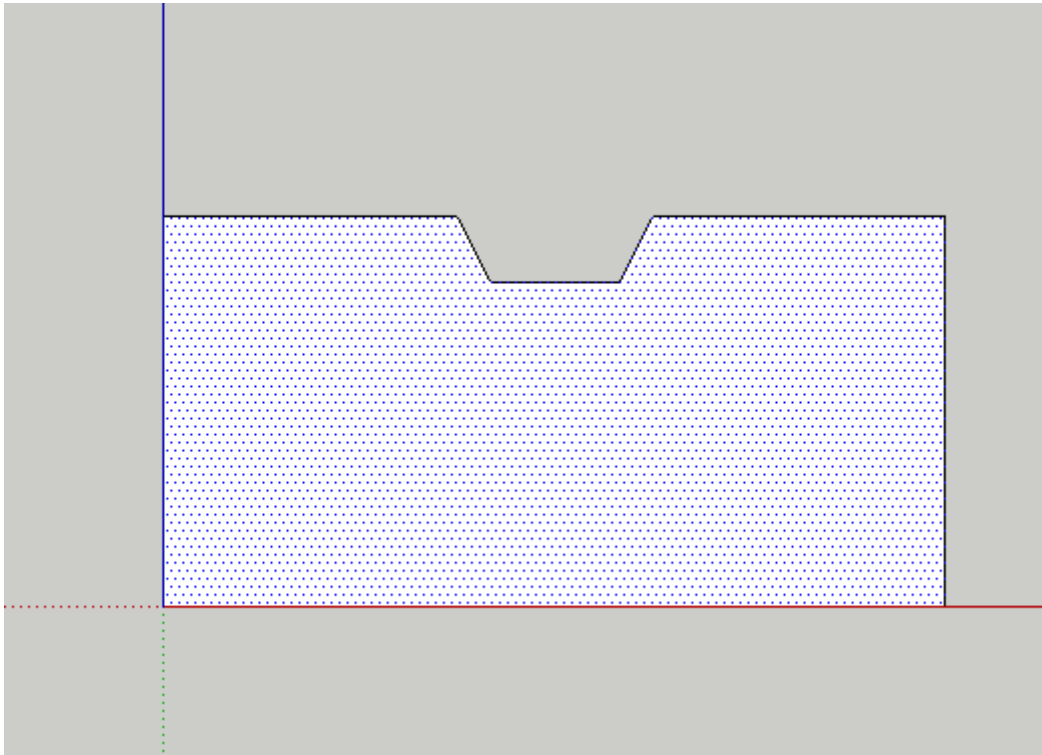
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# Profiles

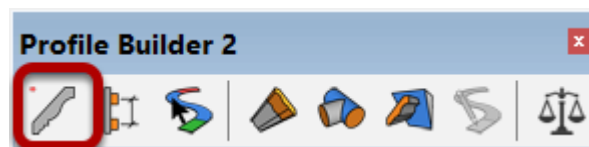
## Create a Profile from a Face

### Draw a Face with SketchUp



1. Draw any face in SketchUp at any location.
2. Select the Face.

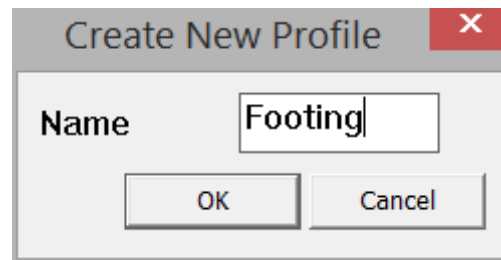
### Open the Profile Builder Dialog



### Click the 'New Profile' Button

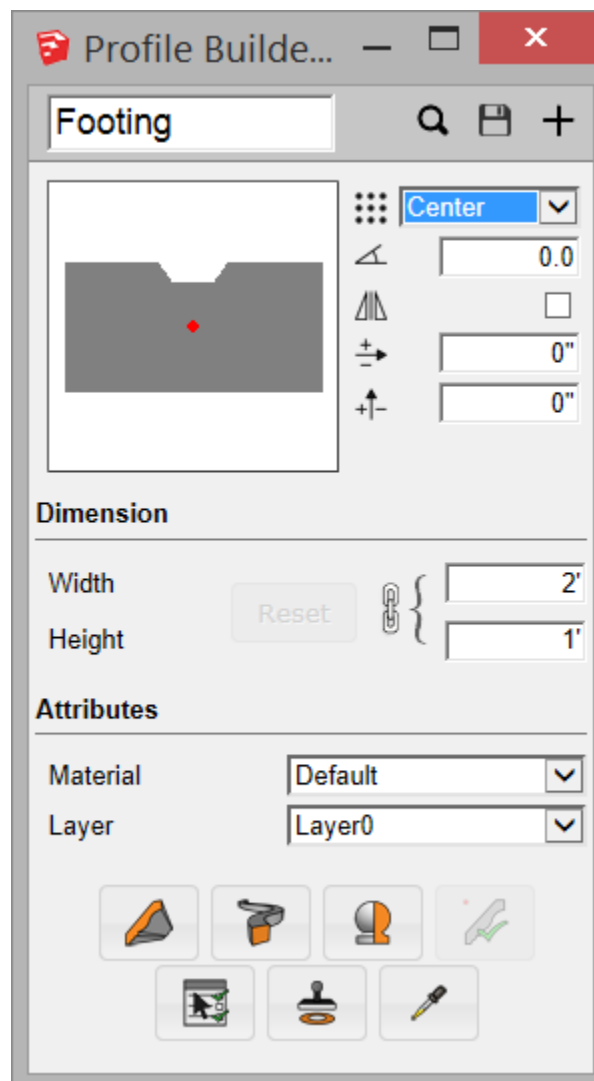


## Give the Profile a Name

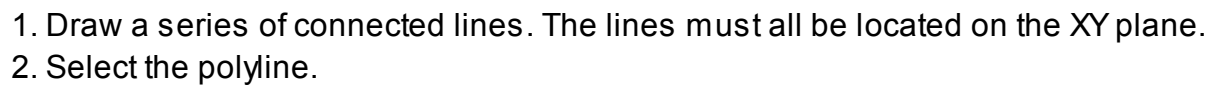


1. Type the name of the Profile and Click OK
2. All profiles must be given a name.

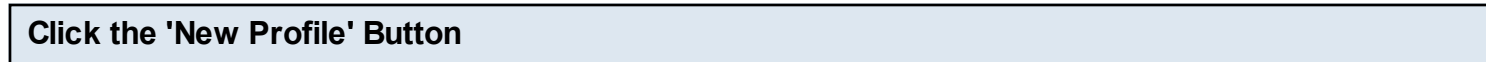
## Congratulations! You just made a Profile!



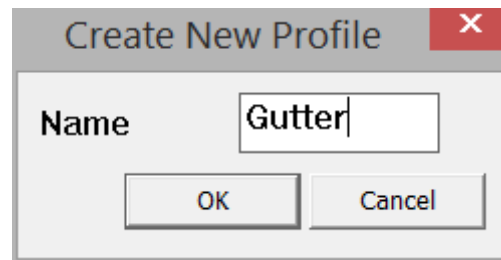
## Draw a Polyline with SketchUp



## Open the Profile Builder Dialog

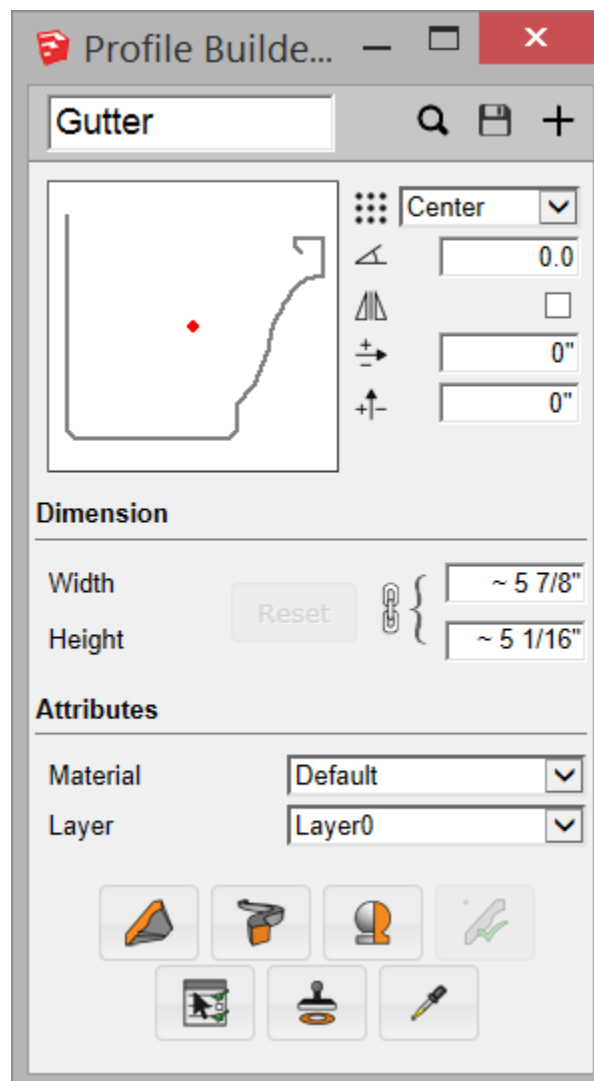


## Give the Profile a Name



1. Type the name of the Profile and Click OK
2. All profiles must be given a name.

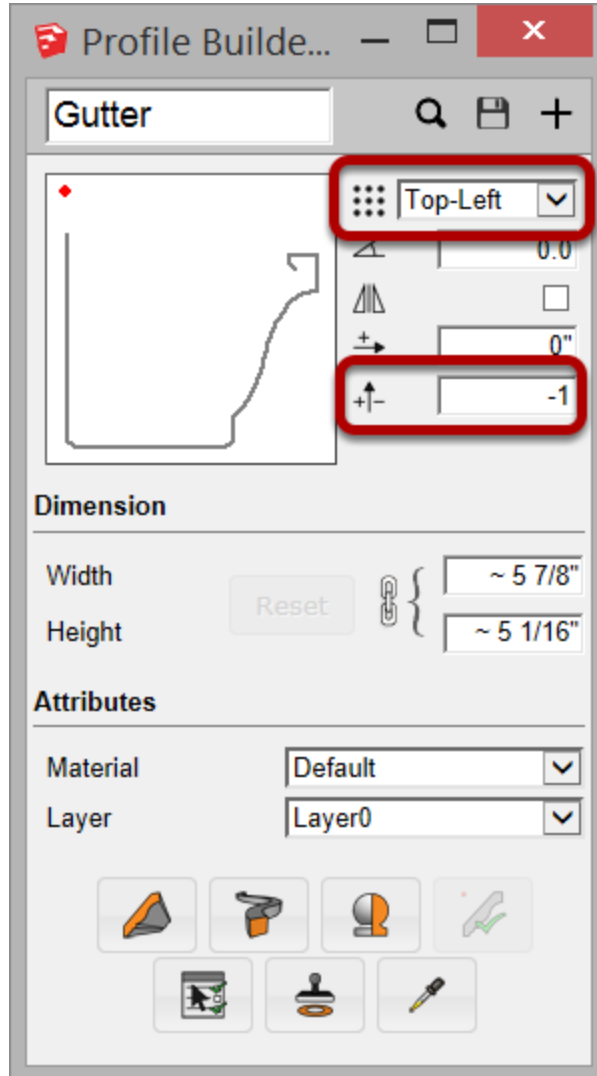
## Congratulations! You just made a Polyline Profile!





## Saving Profiles

### Choose the Default Profile Attributes

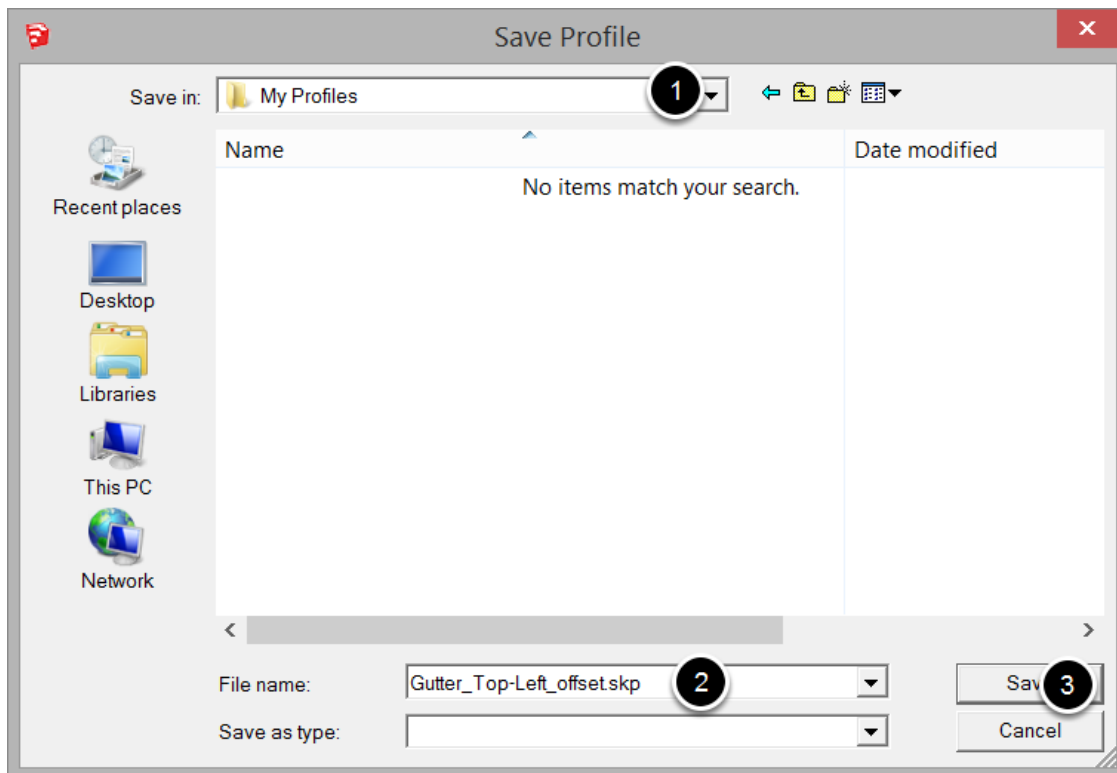


For this profile, the placement point was changed to 'Top-Left' and the Y Offset was changed to -1"

### Click the 'Save Profile' Button

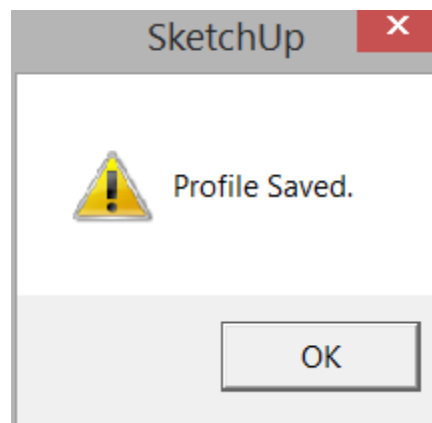


## Choose where to save the Profile



1. Select a Folder to save the Profile.
2. Choose a Name for the Profile. You may wish to use a name that also includes important attributes of the Profile.
3. Click 'Save' to save the profile as a SKP file.

## Congratulations! You just saved a Profile!

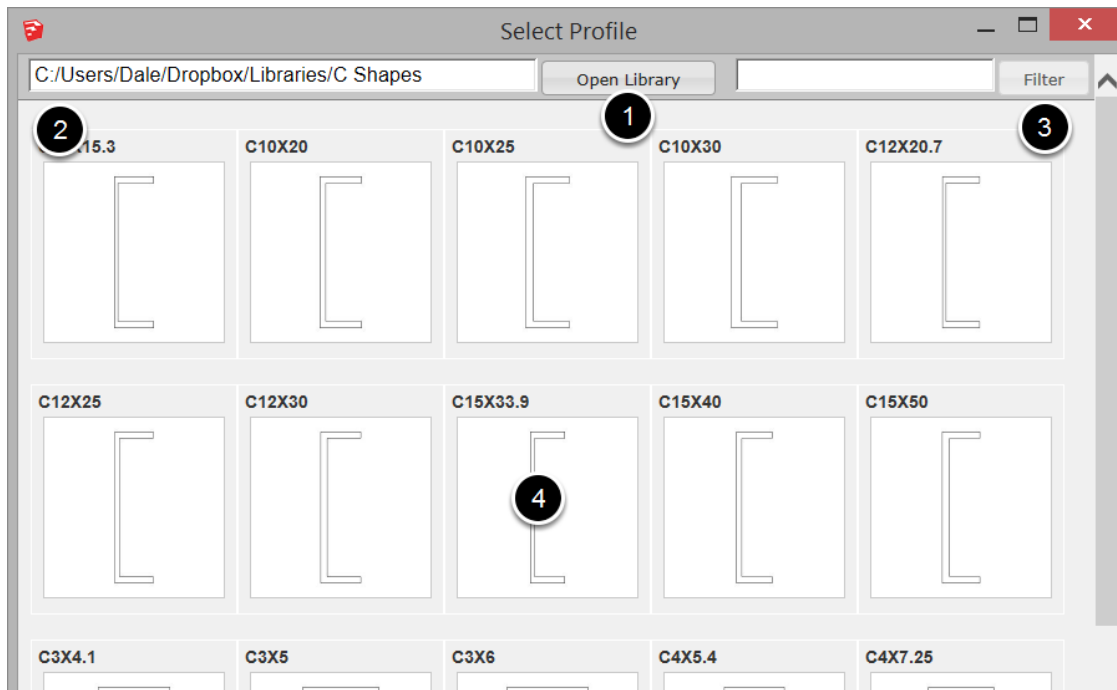


## Loading Profiles

Click the Profile Browser Button



### Finding a Profile



1. Click the Open Library button to choose a new library folder.
2. The current folder is shown at the top left.
3. Enter text to filter results.
4. Click a profile to load it.

### Loading Other Components as Profiles

Any SKP file that meets the following criteria can be loaded as a Profile into Profile Builder.

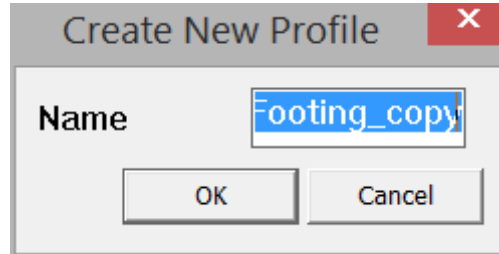
1. The file must contain a face that is not inside a group or component.
- OR
2. The file must contain a polyline that is not inside a group or component.

If more than one face or polyline is found, unexpected results or errors may occur.

## Copying a Profile

---

### Create a Copy of a Profile



1. Open the Profile Builder Dialog
2. Ensure that no SketchUp entities are selected.
3. Click the "New Profile" Button
4. A copy of the current profile will be created. Give the profile a name.

## Managing Profiles

---

### Editing Saved Profiles

Since profiles are stored as SKP files, to edit them, just open the SKP file, make the changes and then re-save.

Tip: Be sure that the SKP only has one face or polyline and it is not inside any group or component.

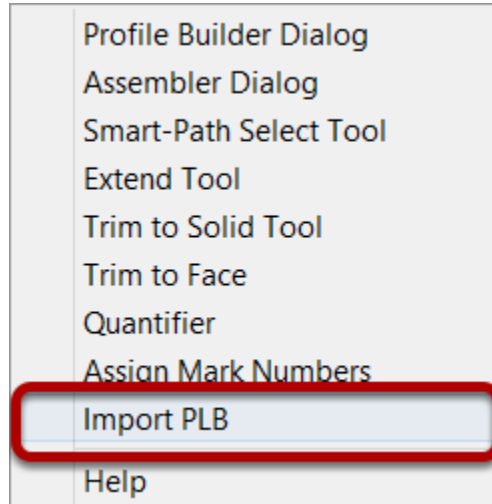
### Organizing Profiles

Instead of using Profile Library Files (PLB files) like in the original Profile Builder, your profiles should be stored in an organized system of folders on your local computer or server, similar to how you might store your SketchUp Component Library.

Profile folders can be stored at any location as long as you have security permissions to write files to that particular folder.

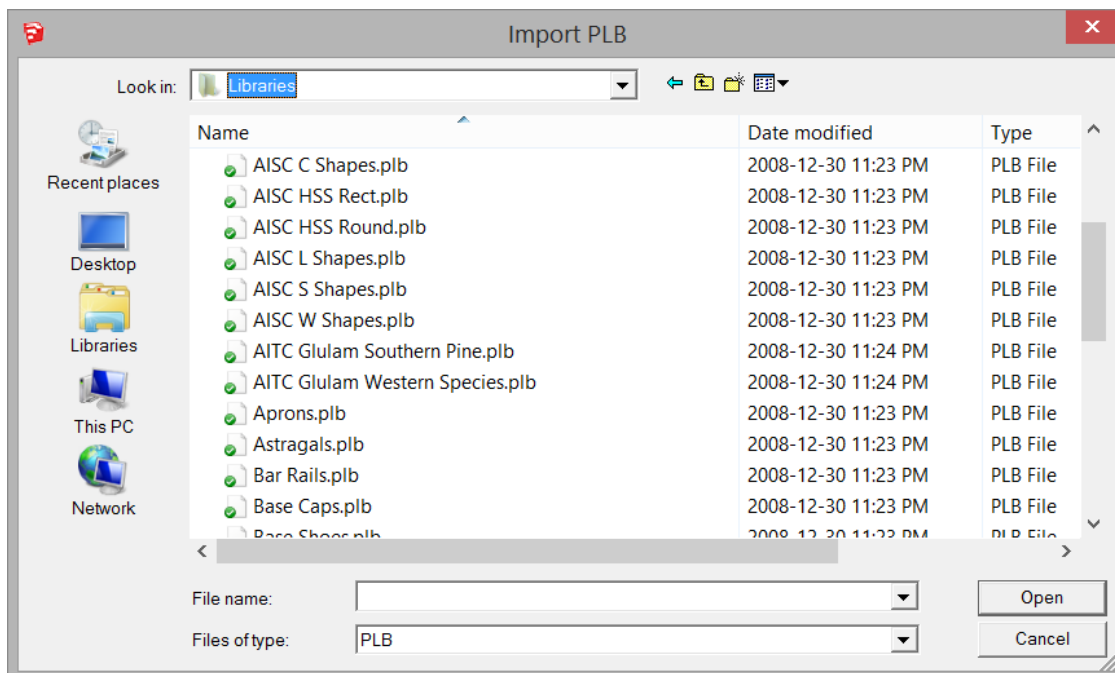
## Importing PLB files

### Select Import PLB File from the Profile Builder Menu



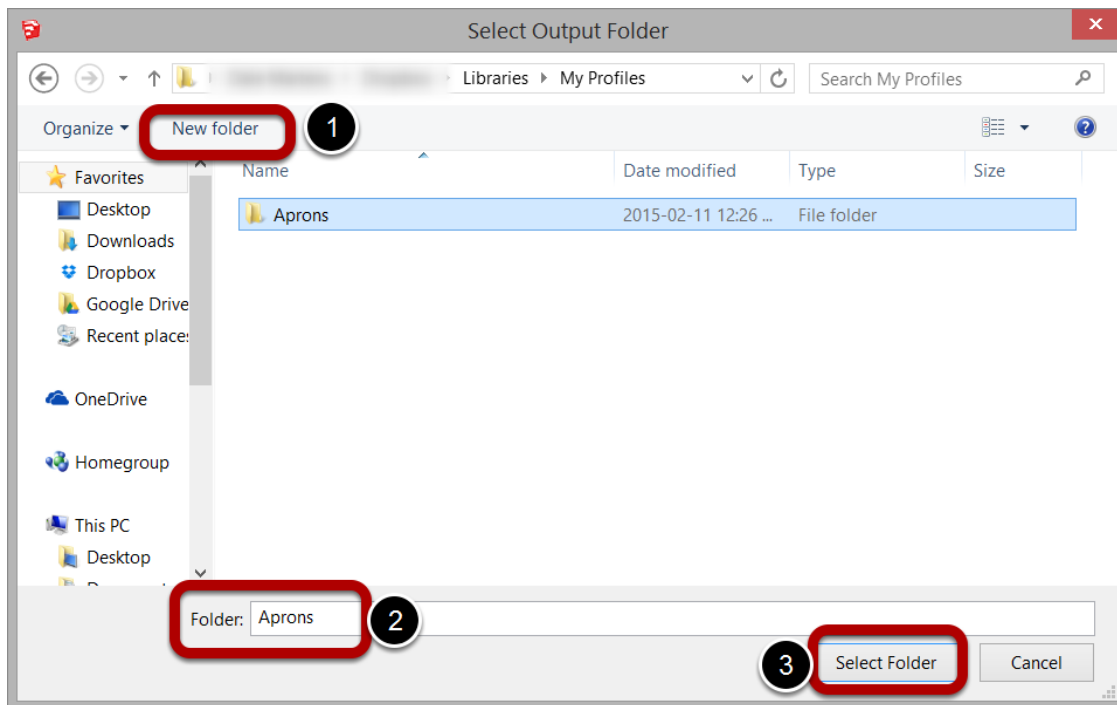
PLB files were used in the original version of Profile Builder to store a library of Profiles. These files are now obsolete but they can be imported and have the profiles converted to SKP files.

### Select the PLB file to import



The PLB file must have been created using the original version of Profile Builder.

## Select the Folder to Output the Profiles



Create a new folder if necessary and give it a name.  
A new SKP file will be created for each profile in the PLB file.

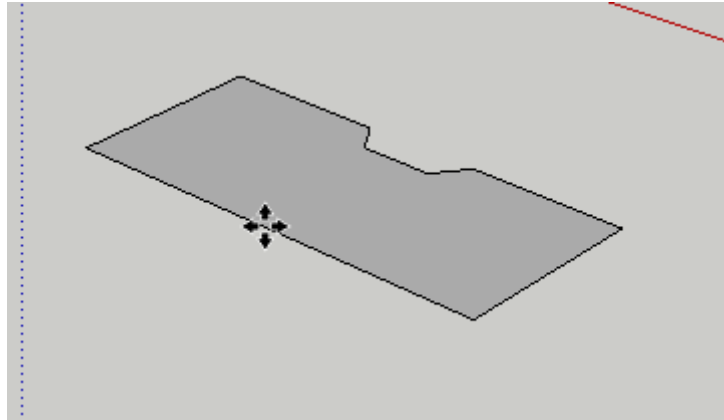
## Stamp Profile Tool

### Launch the Tool



1. Open the Profile Builder dialog.
2. Click the Stamp Profile Tool Button

### Stamp the Selected Profile



After launching the tool, a component will be created of the current profile.  
Click anywhere in your model to place the component.  
The component will automatically align to any face in your model.



# Profile Members

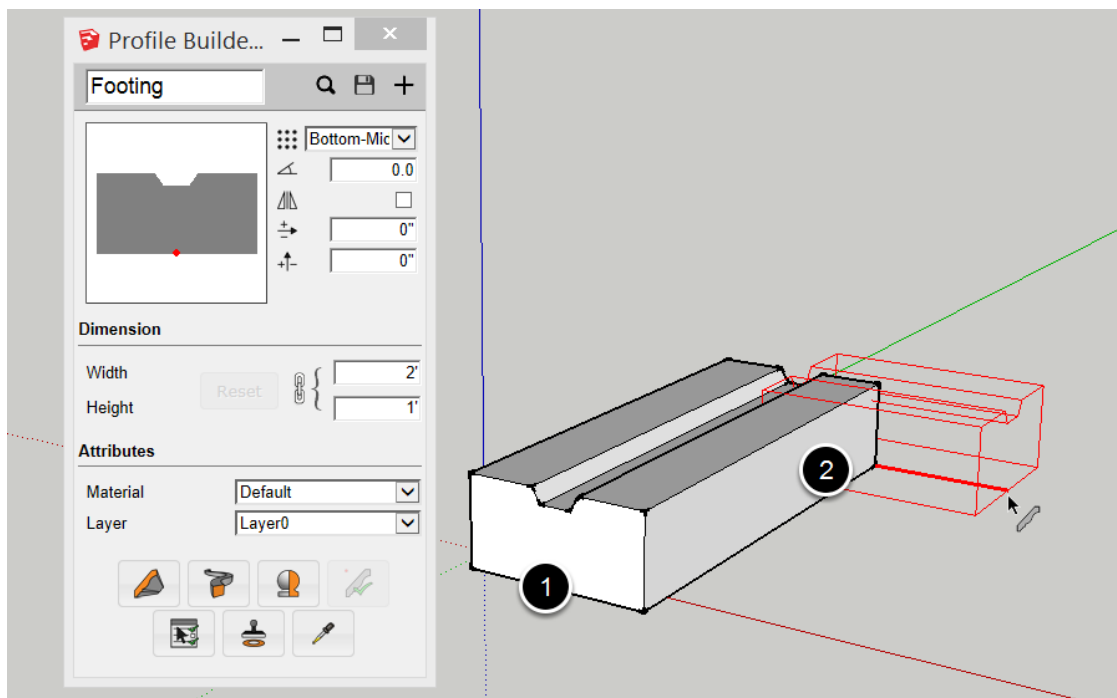
## Build Tool

### Launching the Build Tool



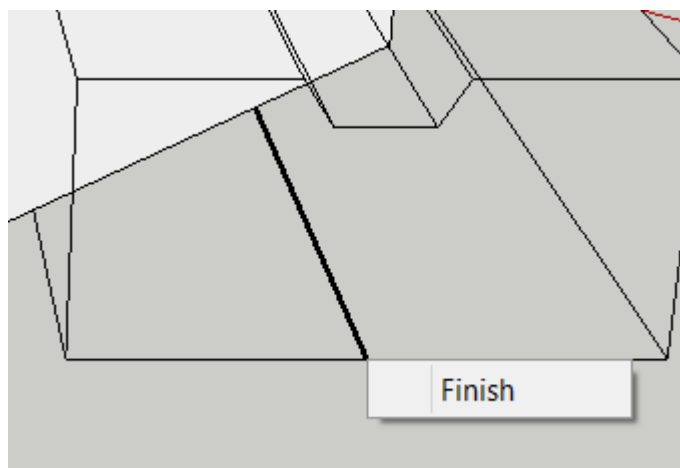
Open the Profile Builder Dialog.  
Then, click the Build Tool.

### Click Points to Build a Profile Member



1. Click a point in the model to define the start point of the member.
2. Continue clicking points to define the path of the member.

## Complete the Profile Member



Complete the member by:

1. Pressing ESC, ENTER, or RETURN

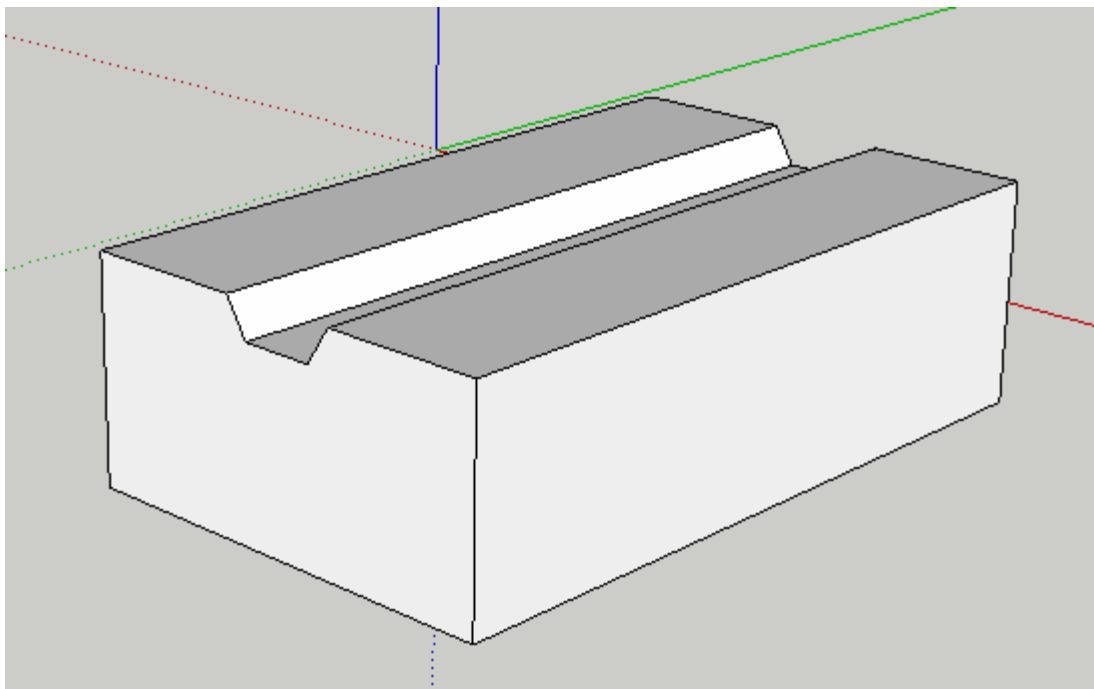
OR

2. Right-click and choose 'Finish' (shown above)

OR

3. Creating a closed path for the member.

**Congratulations! You just built a Profile Member!**



## Modifier Keys

Arrows Keys = Lock Axis

SHIFT = Lock Inference

CTRL / OPTION = Profile Member path Inferecing (PMPI)

HOME = Cycle Placement point

END = Cycle Rotation in 45 degree increments

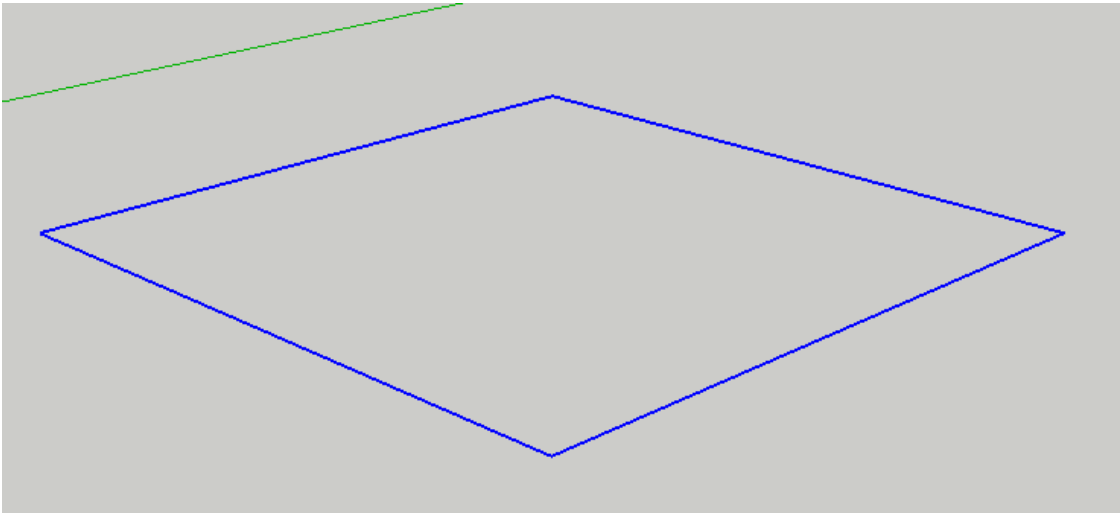
BACKSPACE = Undo the last path point

You can also enter values in the Measurements box to draw precisely

## Build Along Path

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### Select a Path



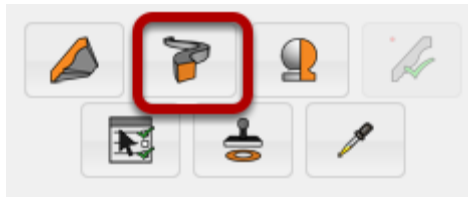
First, select a path.

You can select a series of edges using SketchUp's Select Tool

OR

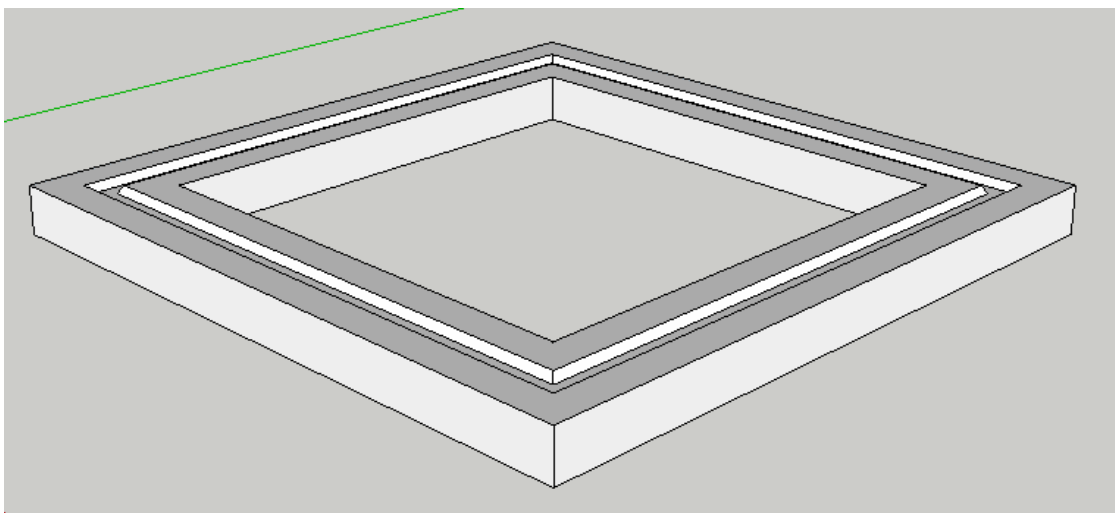
You can use the Profile Builder Smart-Path select tool to select the path AND control the direction of the path.

### Launch the Tool



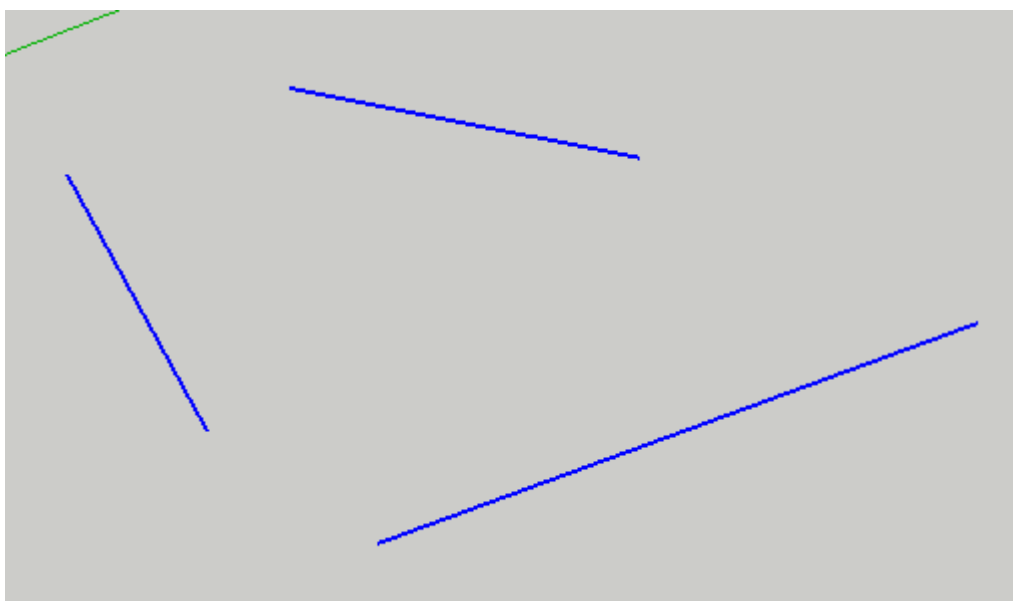
1. Open the Profile Builder Dialog.
2. Click the 'Build Along Path' icon.

**Congratulations! You just built a Profile Member along a Path!**

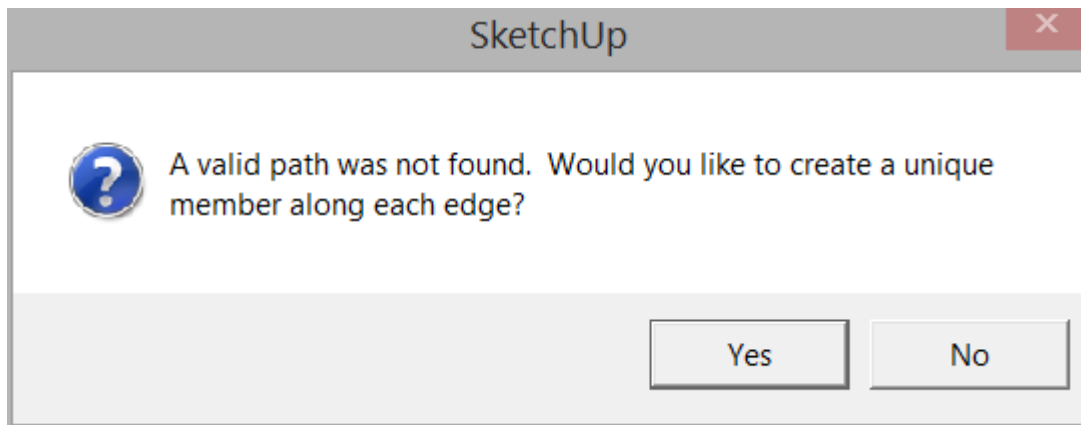


The currently selected Profile will be extruded along the selected path.  
Remember to use the Smart-Path select tool if you need to control the direction of the path.

### **Build Along Multiple Edges**

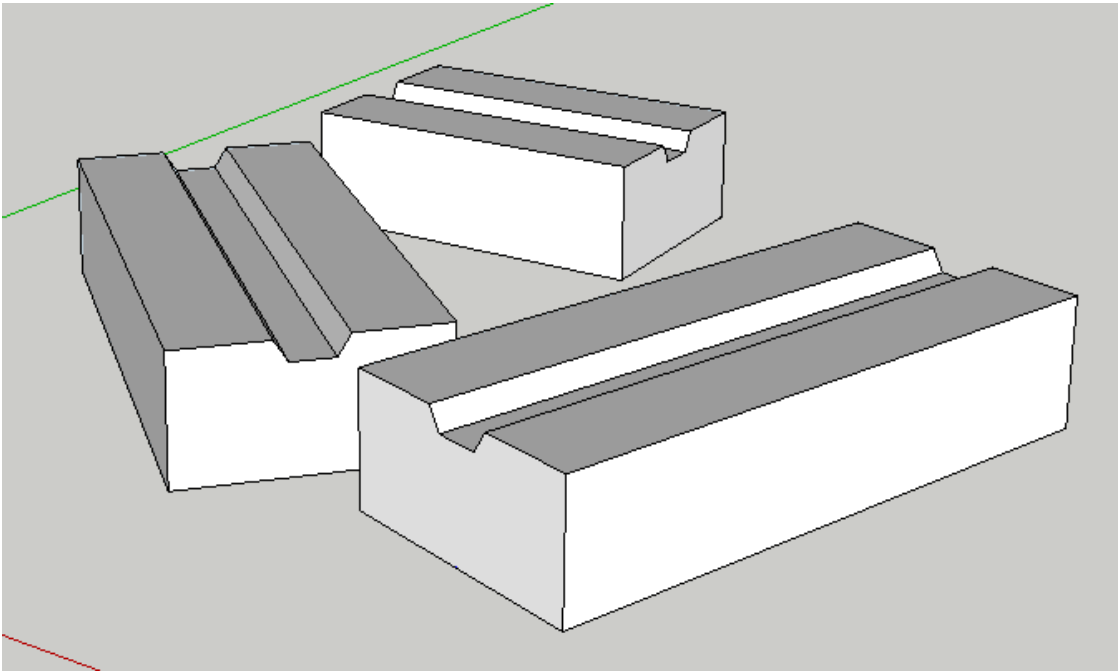


Select a series of edges that do not form a continuous path before launching the tool.



When you launch the tool, you will be asked whether you wish to create a unique Profile Member along each edge.

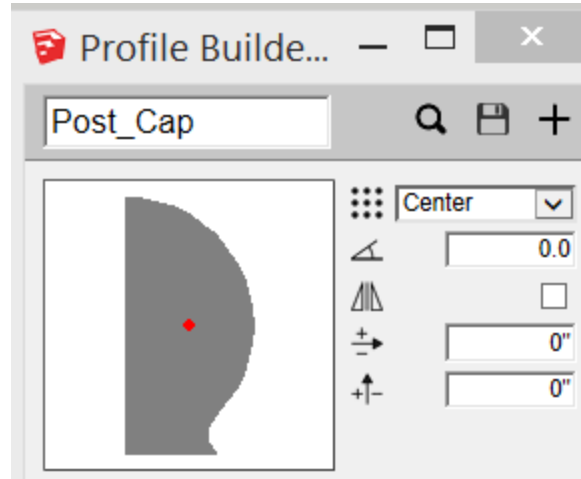
**Click 'Yes' to Create the Profile Members**



Click 'Yes' to create multiple members along each edge or "No' to cancel the tool operation.

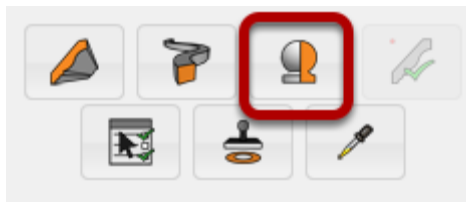
## Revolve a Profile

### Select a Profile



Create or Load a profile that you would like to revolve around an axis.

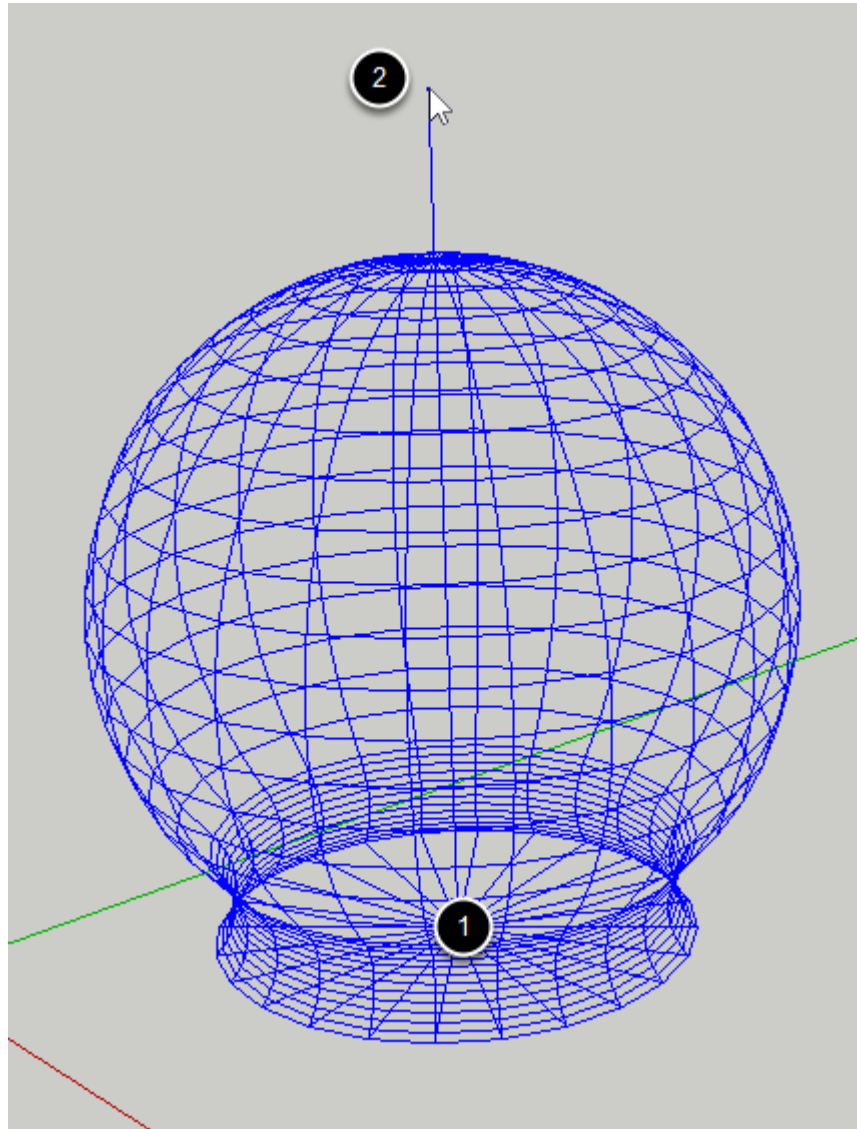
### Launch the Revolve Profile Tool



Click the 'Revolve Profile' button in the Profile Builder dialog.



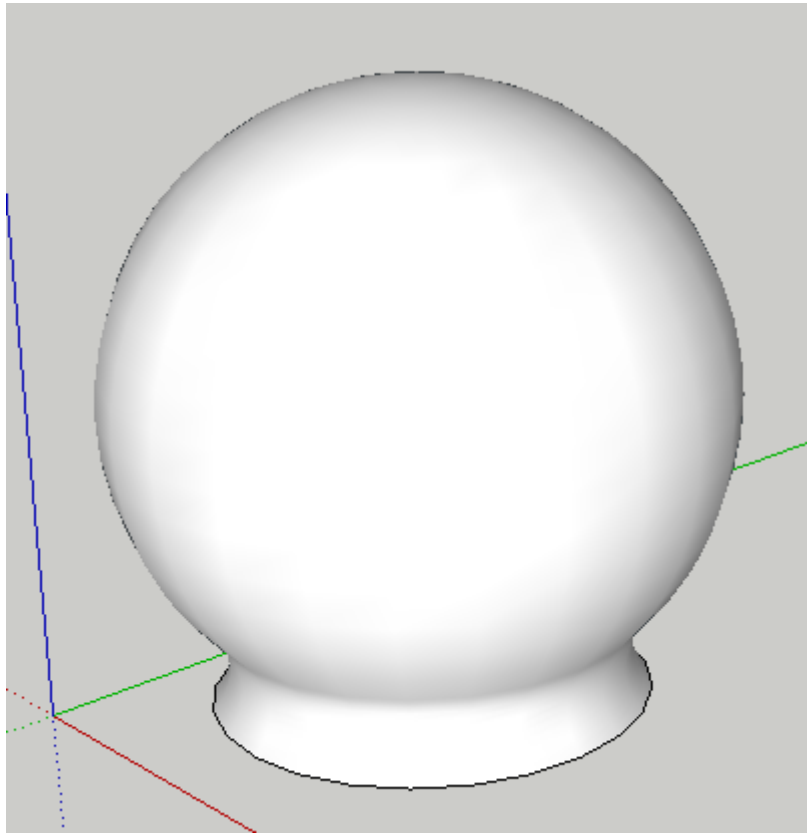
## Define the Revolve Axis



1. Click anywhere in the SketchUp model to set the origin of the revolve axis.
2. Click again to define the direction of the axis.

TIP: Use the Measurements box to set the number of sides.

**Congratulations! You just revolved a Profile!**



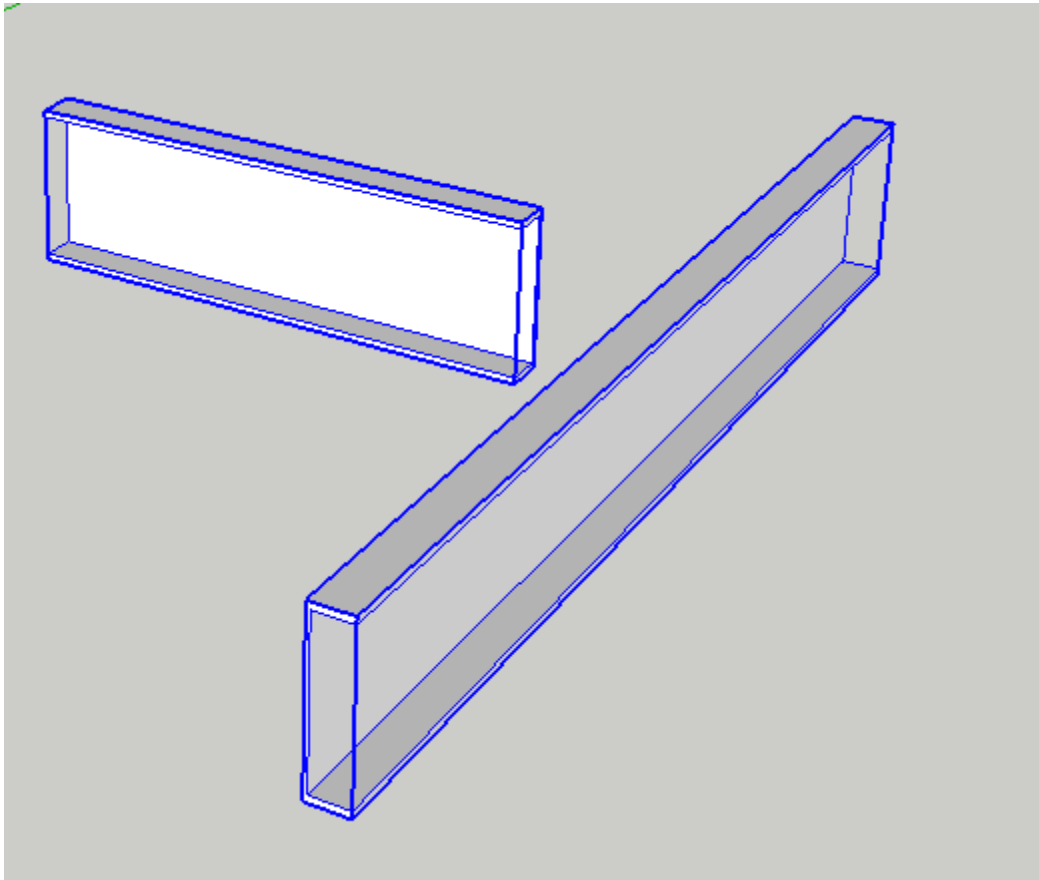
Note: No matter what settings you are using for the Profile, the profile will always be revolved about the bottom left corner of the Profile bounding box.

### **About Revolved Profile Members**

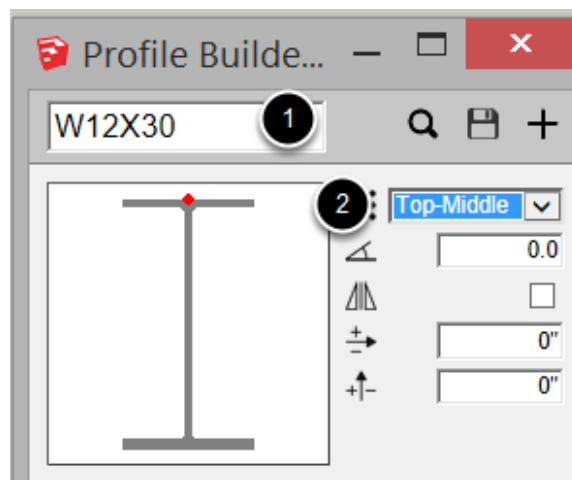
Revolved Profile Members behave just like other Profile Members except for one thing: You cannot edit the path of a Revolved Profile Member.

## Apply Attributes to Profile Member

Select Profile Member(s) to Edit



Set the Attributes



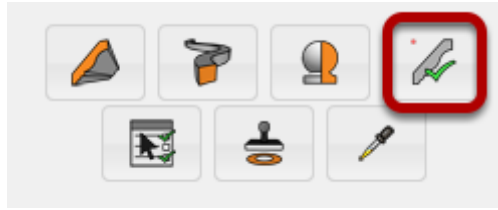
Open the Profile Builder Dialog and set the attributes.

In this example:

1. The Profile was changed to to a W12x30

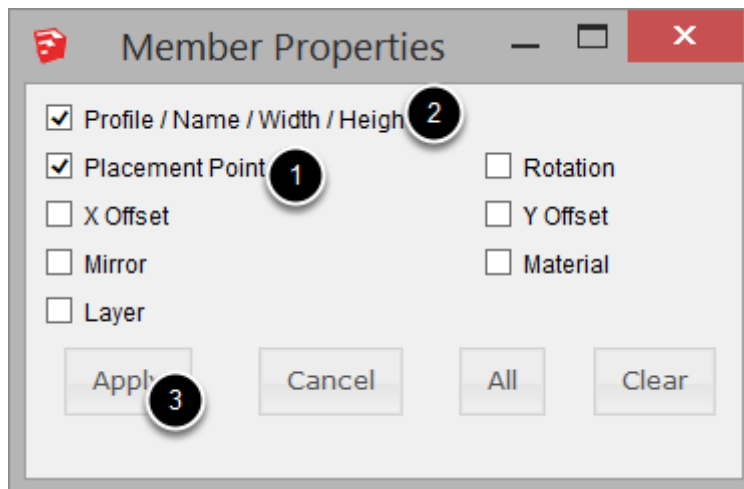
2. The Placement Point was changed to Top-Middle.

**Click the Apply Attributes Button**



Click the ApplyAttributes Button. (If no Profile Members are selected, the button will not be active)

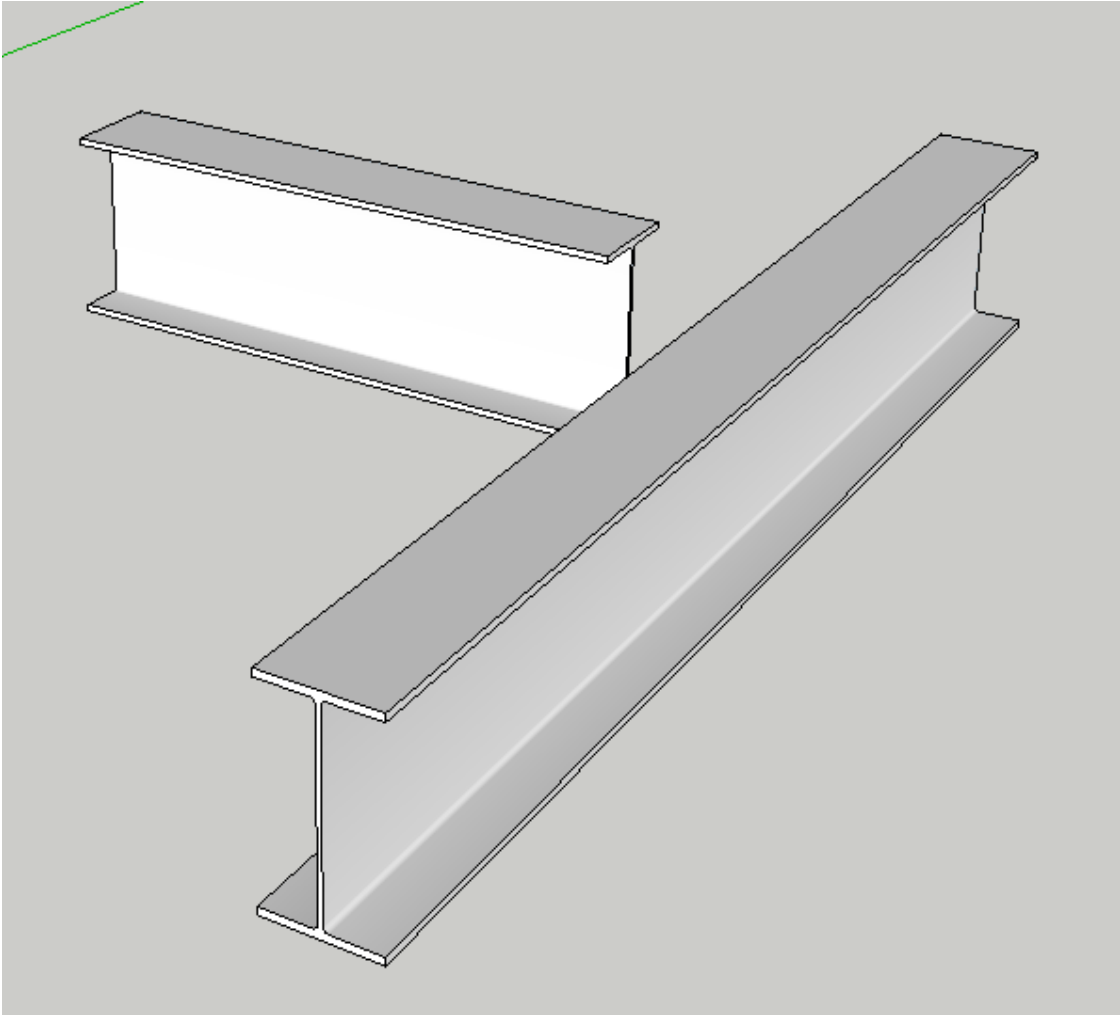
**Select the Attributes to Apply**



Check the boxes for the attributes that you wish to apply to the selected Profile Members. In this example:

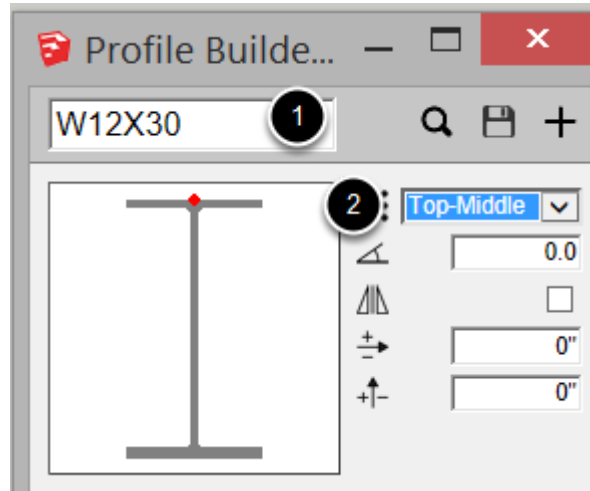
1. The Placement Point is checked.
2. The Profile is checked (this will also modify the member name, width, and height)
3. Click the Apply button to apply the checked attributes to the selected Profile Members.

**Congratulations! You just applied attributes to a Profile Member!**



## Select by Attributes

### Set the Attributes

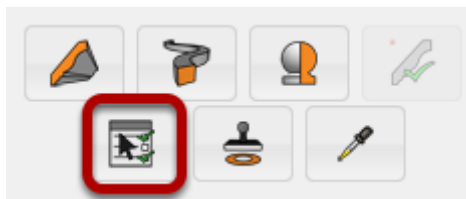


Open the Profile Builder Dialog and set the attributes.

In this example:

1. The Profile was changed to to a W12x30
2. The Placement Point was changed to Top-Middle.

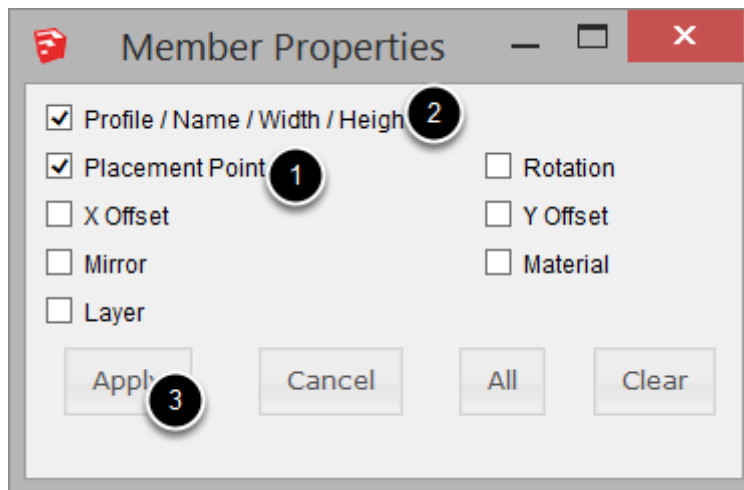
### Click the Select by Attributes Button



Click the 'Select by Attributes' Button.

TIP: First ensure that there are Profile Members within the current model context (active group or component)

## Select the Attributes to Filter the Selection



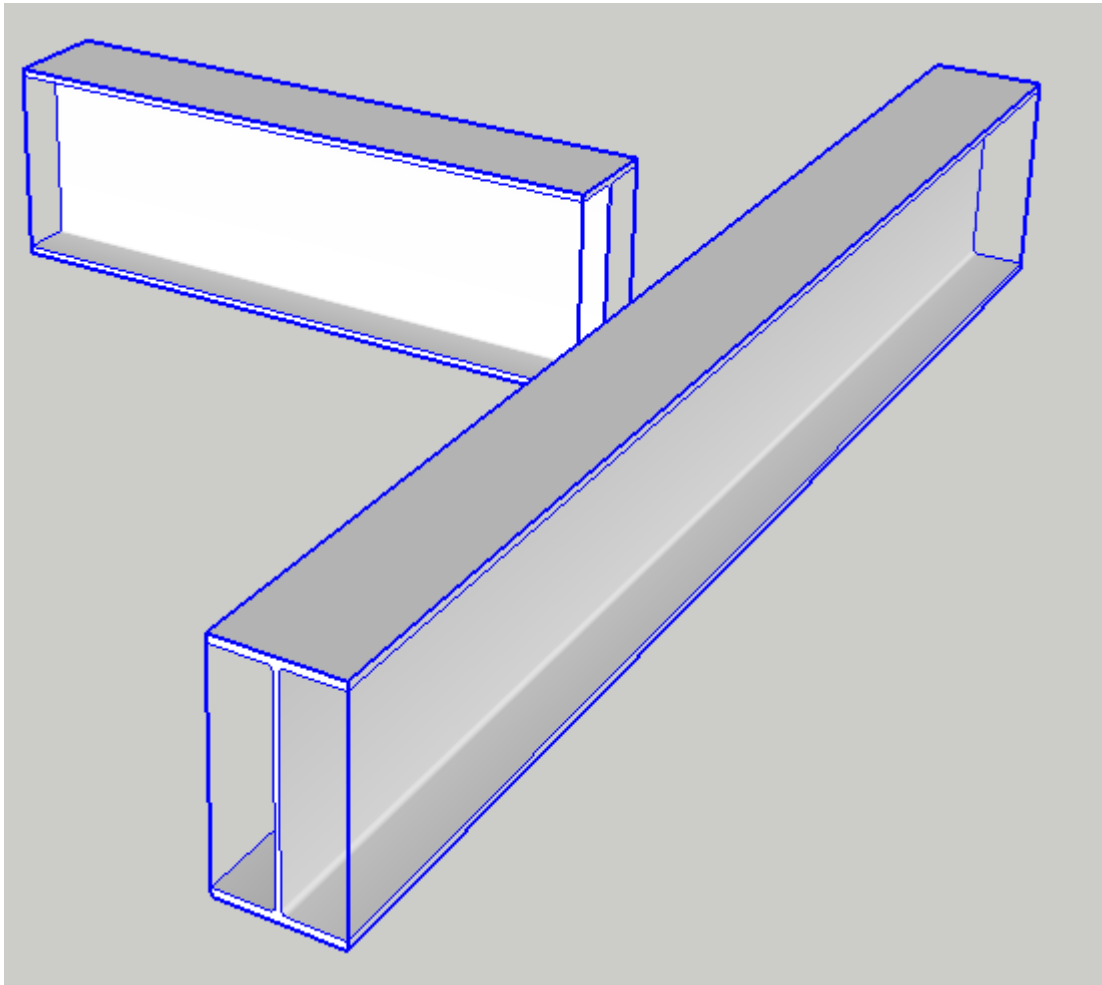
Check the boxes for the attributes that you wish to use as filters for the selection. In this example:

1. The Placement Point is checked.

2. The Profile is checked.

3. Click the Apply button to use the checked attributes as filters for selecting Profile Members.

**Congratulations! You just selected Profile Members by Attributes!**





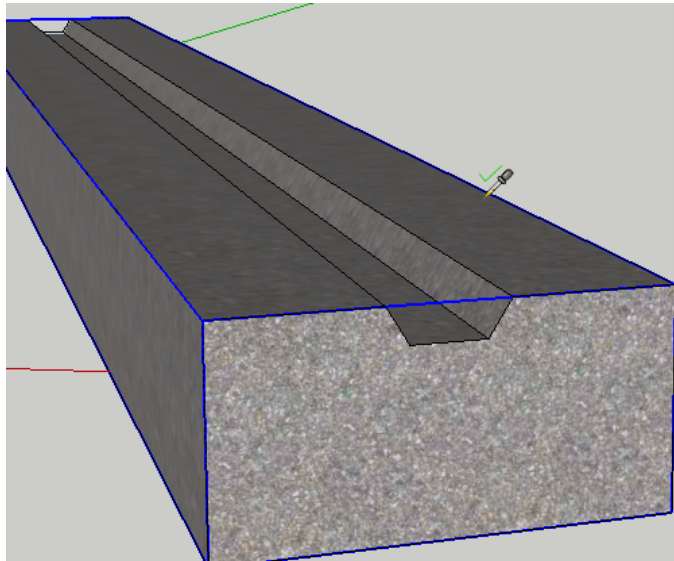
## Get Attributes from Profile Member

### Launch the Tool



Open the Profile Builder Dialog  
Click the 'Get Attributes' button

### Click a Profile Member on your Model



With the tool active, click on any Profile Member in your model.

Congratulations! You just got the Attributes from a Profile Member!

Profile Builder...

Footing

Bottom-Mic

0.0

0"

0"

Dimension

Width

Height

Reset

2'

1'

Attributes

Material

Concrete\_New

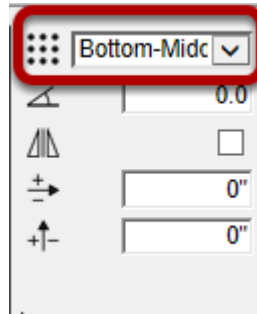
Layer

Concrete

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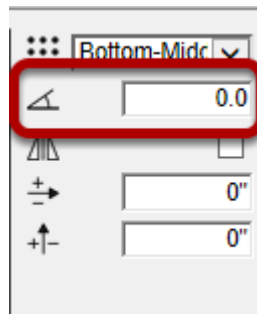
## Profile Member Attributes Reference

### Placement Point



The placement point controls the location of the path in relation to the profile

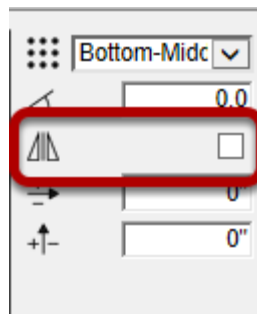
### Rotation



Rotation allows you to specify a rotation value to the Profile. The rotation should be set in degrees and will be applied counter-clockwise.

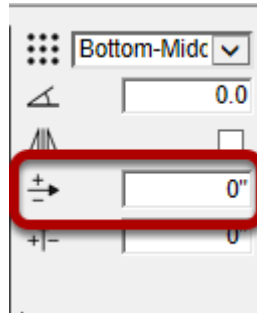
You can also specify a rotation as a V:H ratio (eg. 1:12)

### Mirror



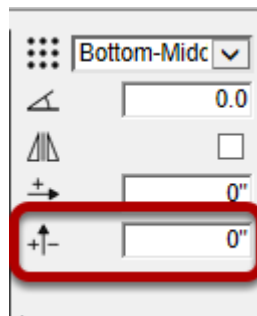
The mirror attribute allows you to mirror the orientation of the profile about the vertical axis.

## X Offset



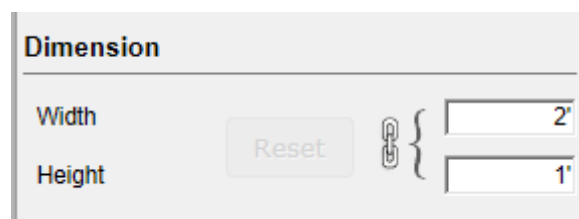
The X Offset value allows you to offset the location of the placement point in the horizontal direction.

## Y Offset



The Y Offset value allows you to offset the location of the placement point in the vertical direction.

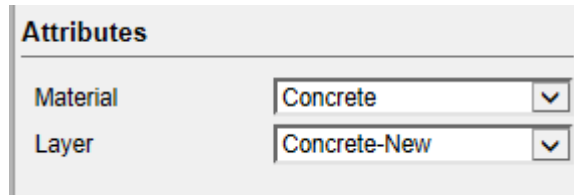
## Dimension Attributes



The width and height attributes allow you to scale the profile to your desired dimensions. By default, the width to height ratio is locked unless you click the Lock / Unlock button.

Click the 'Reset' button to return to the default scale of the Profile.

## Other Attributes



The image shows a software dialog box titled "Attributes". It contains two rows of settings. The first row is labeled "Material" and has a dropdown menu with "Concrete" selected. The second row is labeled "Layer" and has a dropdown menu with "Concrete-New" selected. Both dropdown menus have a small downward arrow icon on the right side.

Attributes	
Material	Concrete
Layer	Concrete-New

The Material and Layer attributes allow you to associate a default material and layer to be used when creating a Profile Member with this Profile.

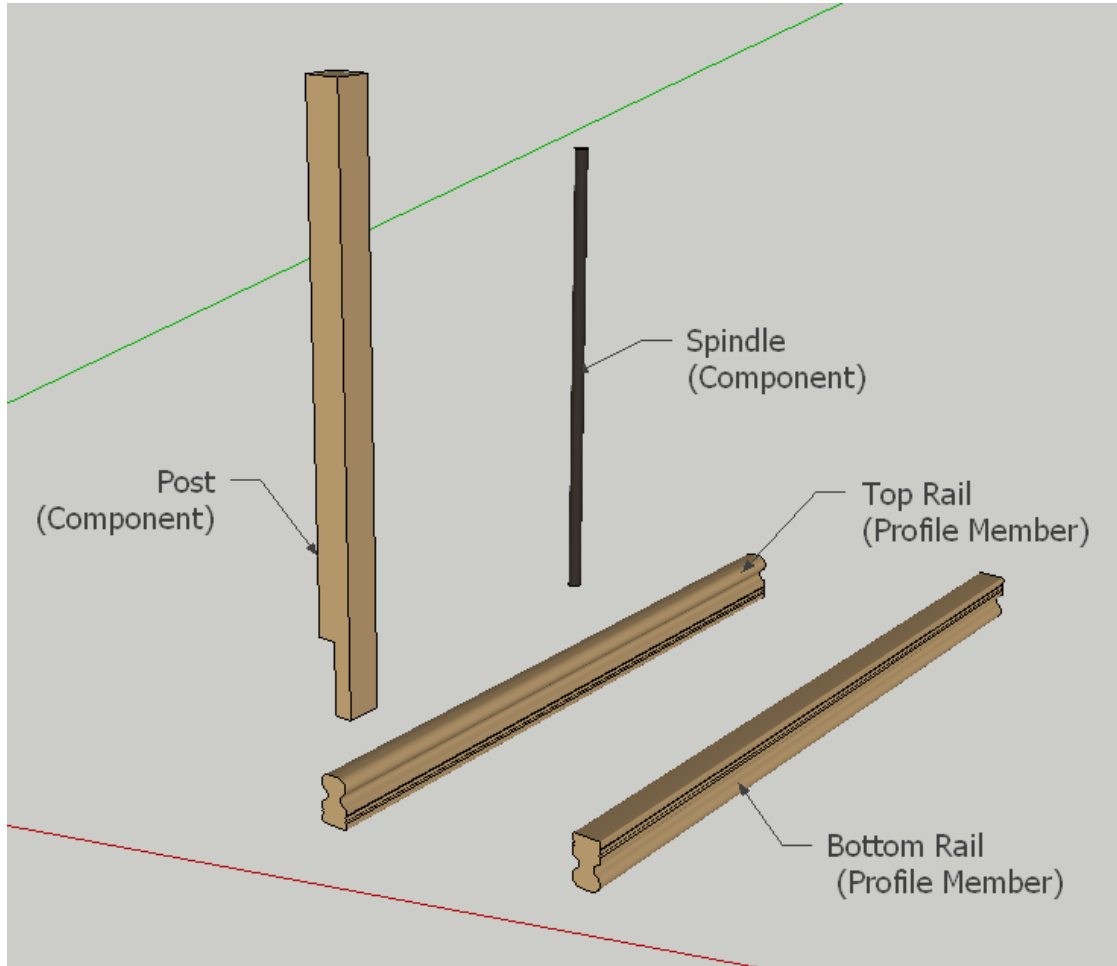
The Material will be applied to the faces of the Profile Member only, and not the object (Group or Component) itself.

The Layer is applied to the Profile Member Instance (Group or Component). The faces of the object will be placed on the current active drawing layer.

# **PB Assembler**

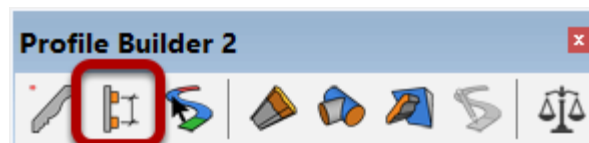
## Creating Assemblies

### Draw the Parts that will make up the Assembly

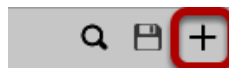


Draw a series of Profile Members and other Components that you wish to use for the assembly. In this example, we will make a railing composed of rails, posts and spindles.

### Open the PB Assembler

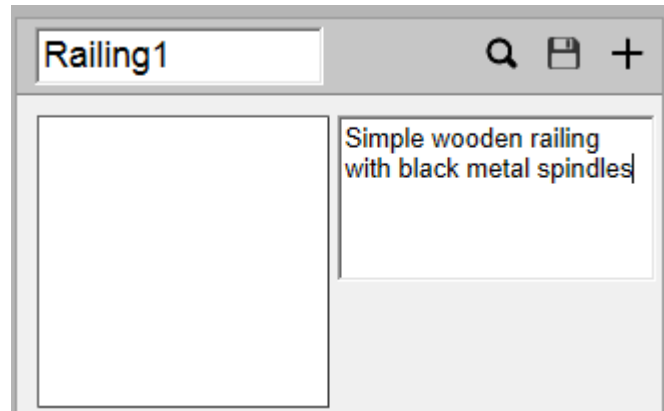


### Create a New Assembly

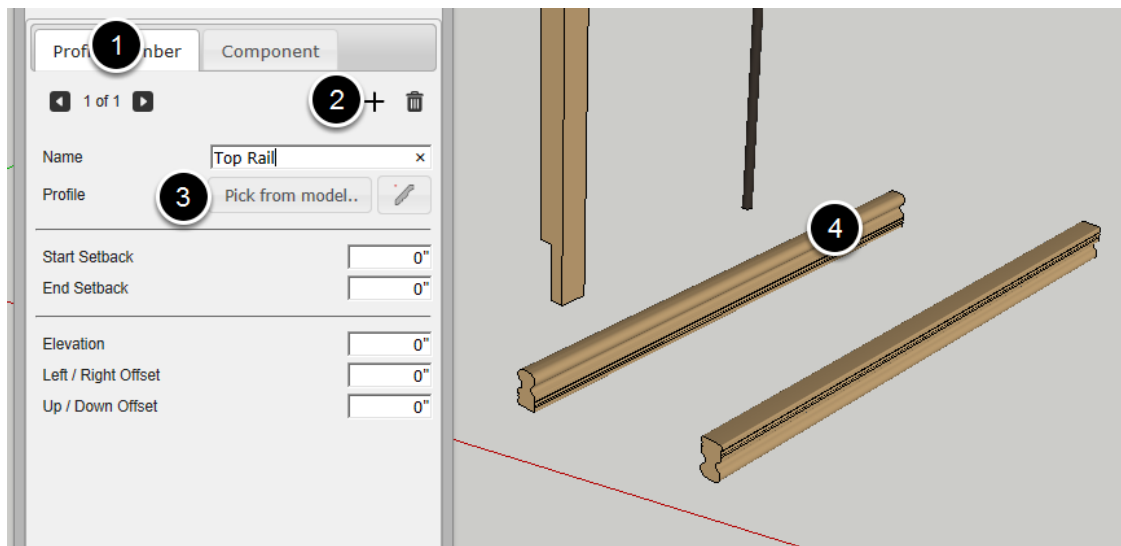


Click the 'New Assembly' button to create a new Assembly

## Give the Assembly a Name and Description



## Add a Profile Member to the Assembly

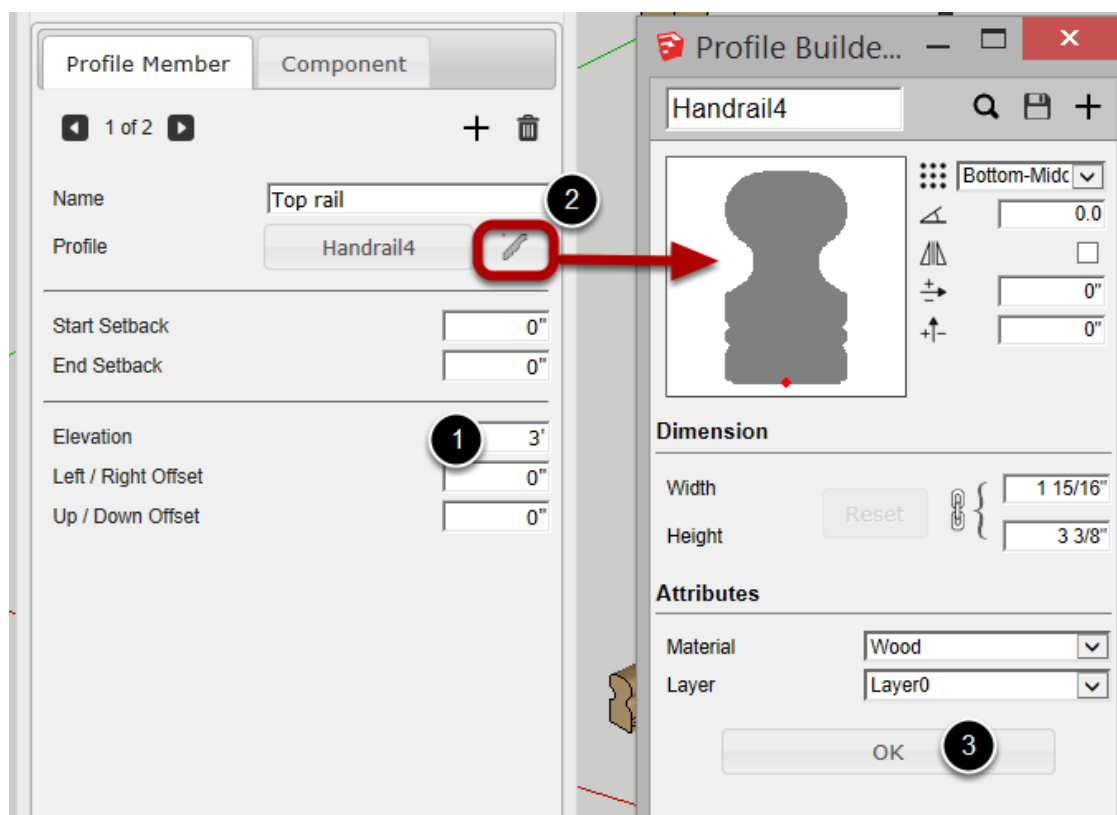


1. Click the Profile Member Tab.
2. Click the 'Add Profile Member' button.
3. Click the 'Pick from Model' button.
4. Click a Profile Member in your model to add it to the assembly.

Be sure to give the part a meaningful name.



## Edit the Profile Member part



1. Set the Elevation to 3 feet.
2. Edit the Profile Attributes if required.
3. Click 'OK' when finished editing

## Add the Bottom Rail Part

Simple wooden railing with black metal spindles

Profile Member Component

◀ 2 of 2 ▶ + 🗑️

Name Bottom Rail

Profile Handrail4 ✎️

Start Setback 0"

End Setback 0"

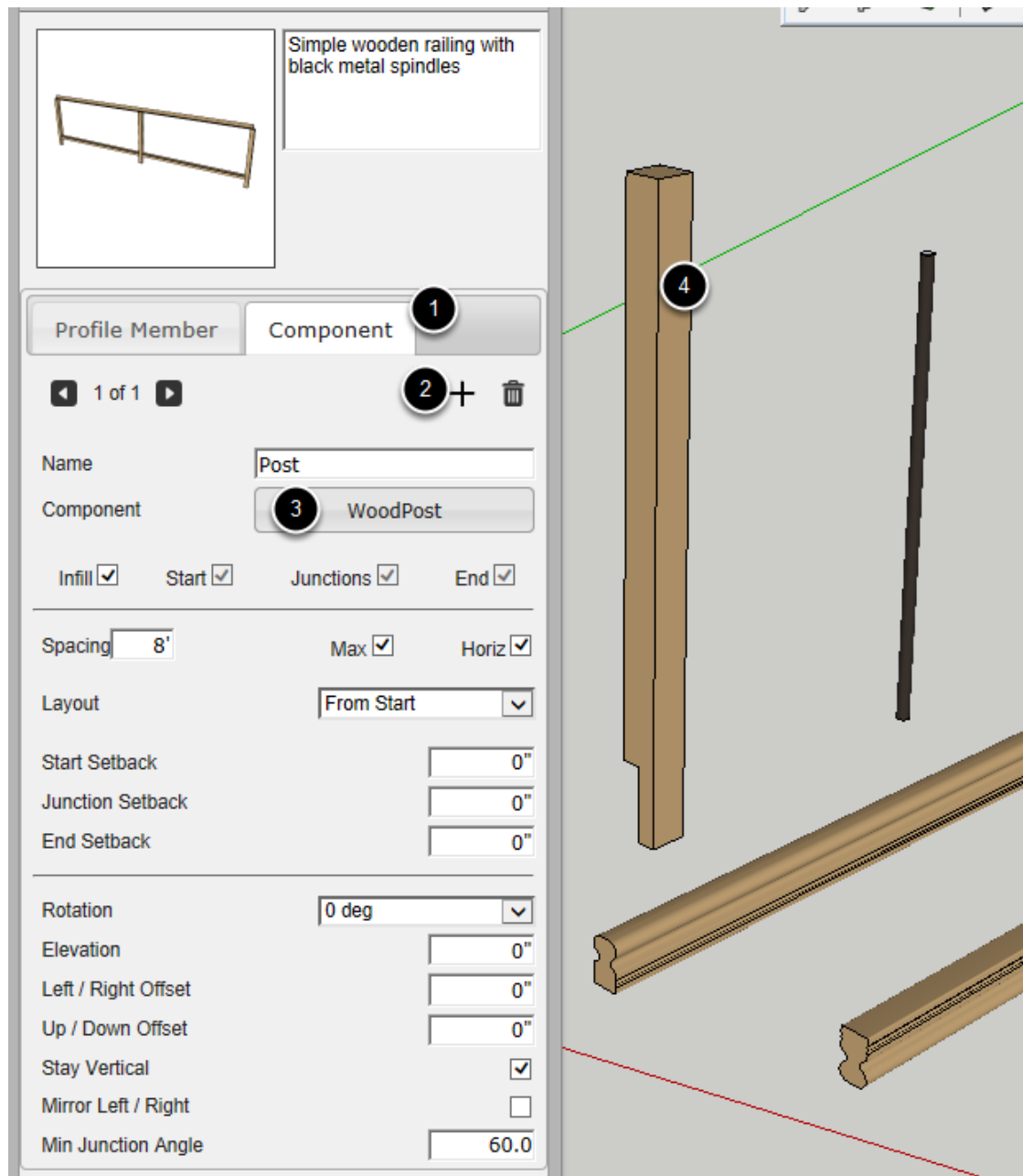
Elevation 4"

Left / Right Offset 0"

Up / Down Offset 0"

Repeat the previous steps to add the Bottom Rail.  
Set the elevation of the bottom rail at 4"

## Add a Component to the Assembly



1. Click on the 'Component' tab.
2. Click the 'Add Component' button.
3. Click the 'Pick from Model' button.
4. Click on a component in your model.

Be sure to give the component part a meaningful name.

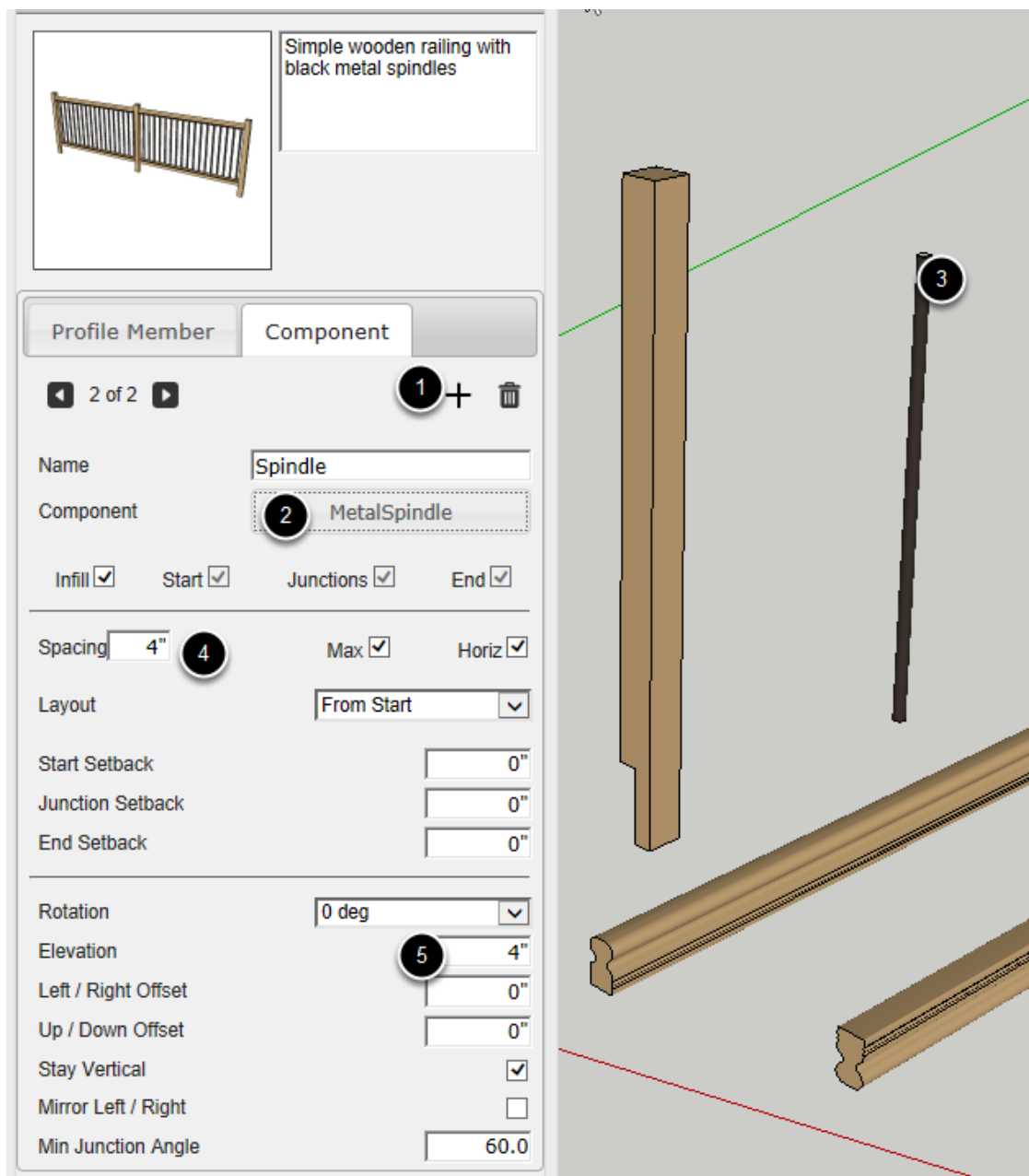
## Edit the Component Part

The screenshot shows the 'Edit the Component Part' dialog box with the 'Component' tab selected. The 'Name' field contains 'Post' and the 'Component' dropdown shows 'WoodPost'. The 'Infill', 'Start', 'Junctions', and 'End' checkboxes are all checked. The 'Spacing' field is highlighted with a red box and contains the value '6'. The 'Max' and 'Horiz' checkboxes are also checked. The 'Layout' dropdown is set to 'From Start'. The 'Start Setback', 'Junction Setback', and 'End Setback' fields are all set to '0'.

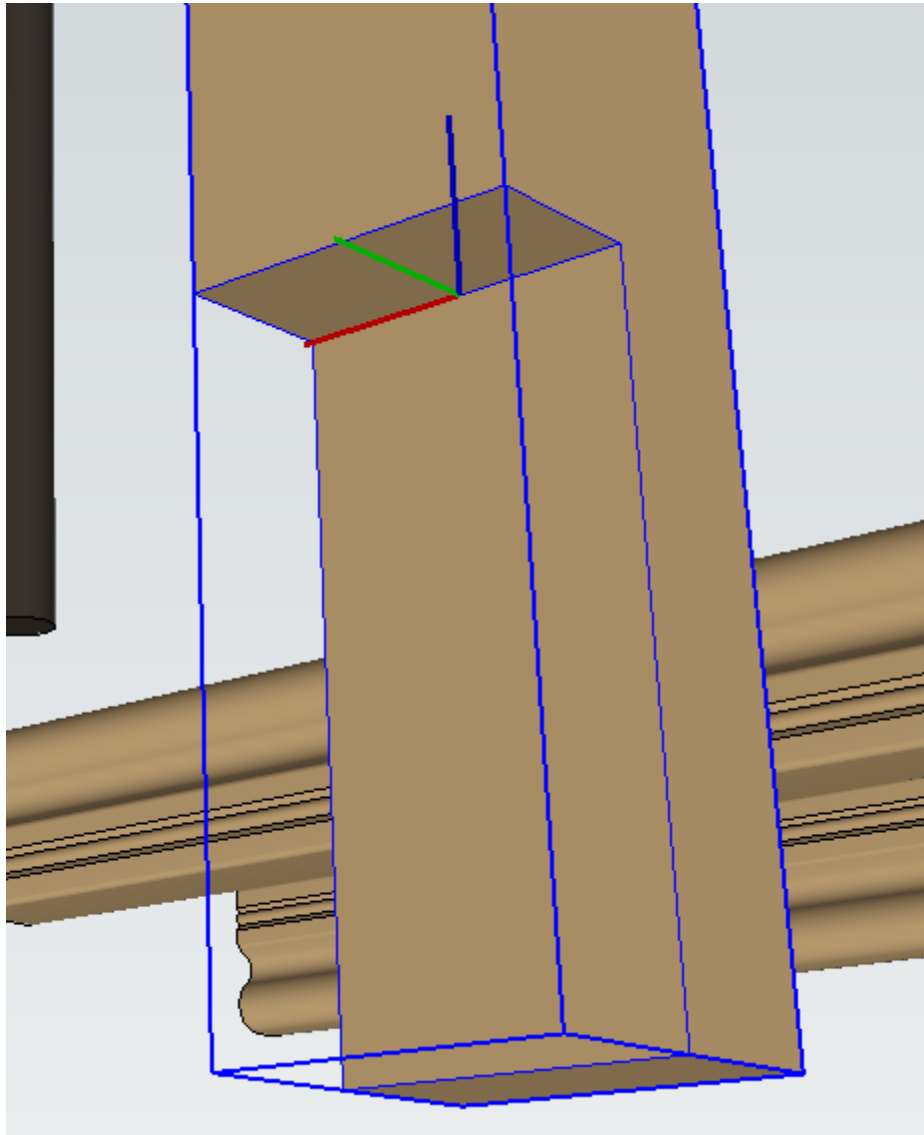
Field	Value
Name	Post
Component	WoodPost
Infill	<input checked="" type="checkbox"/>
Start	<input checked="" type="checkbox"/>
Junctions	<input checked="" type="checkbox"/>
End	<input checked="" type="checkbox"/>
Spacing	6'
Max	<input checked="" type="checkbox"/>
Horiz	<input checked="" type="checkbox"/>
Layout	From Start
Start Setback	0"
Junction Setback	0"
End Setback	0"

Change the spacing to 6'. Leave the other settings as is.

## Add the Metal Spindle Part



1. Click the 'Add Component' button.
2. Click the 'Pick from Model...' button.
3. Click the Metal Spindle Component.
4. Change the spacing to 4 inches.
5. Change the elevation to 4 inches.

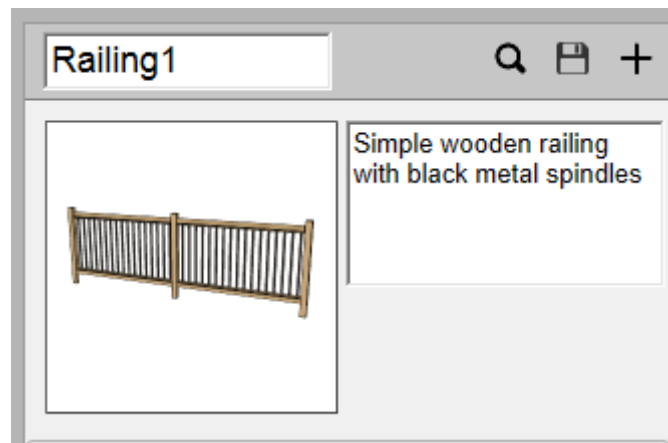


It will usually be necessary to edit the axis of the Component so that it is positioned correctly. To edit the axis of a component, right-click on the component in the SketchUp model and choose 'Change Axes' from the context menu.

The component will be positioned on the Assembly path as follows:

- The red axis will point in the direction of the path of the assembly (forward)
- The blue axis will point 'up'
- The green axis will point 'left' from the perspective of someone looking in the direction of the path.

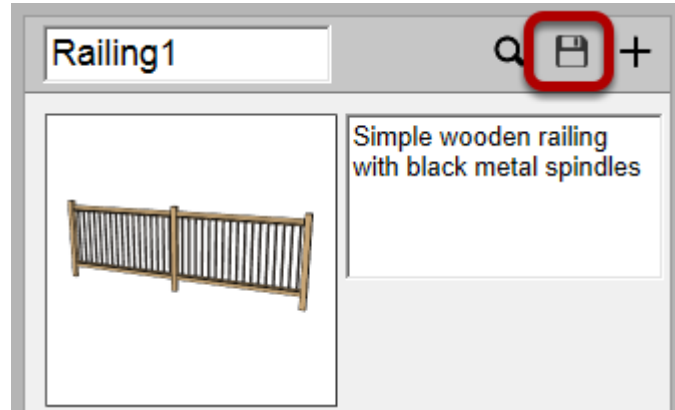
**Congratulations! You just created an Assembly!**



Now that you have created an assembly, you can save it, build it, or share it on the 3D Warehouse!

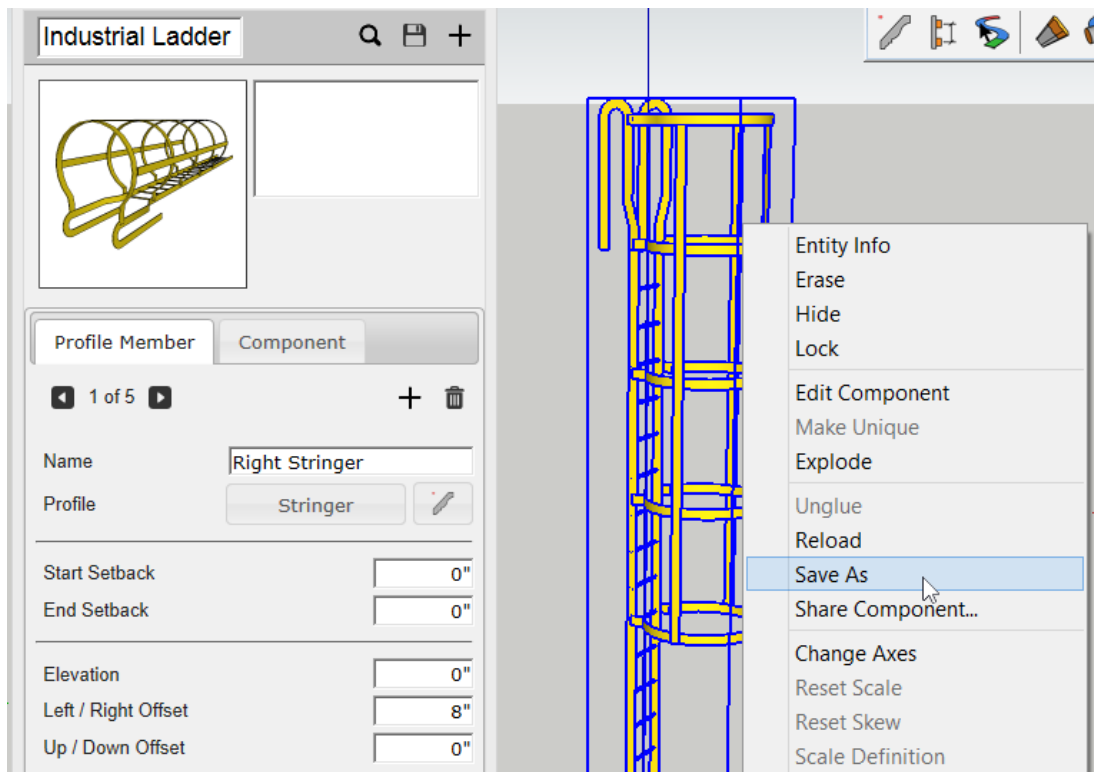
## Saving Assemblies

### Save the Assembly



Click the 'Save Assembly' button to save the assembly.  
A window will open asking where to save the Assembly.  
The assembly will be saved as a SketchUp component (SKP file).

### Save an Assembly Component



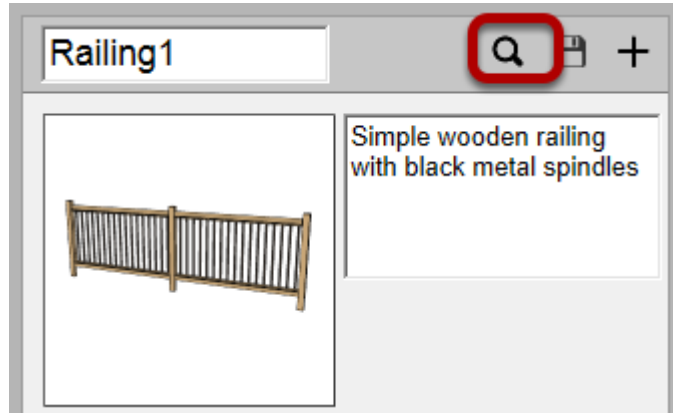
You can also save an Assembly by converting an Assembly to a Component and then using the right-click context menu to save the Component.



This is useful for creating specific prototype Assembly thumbnails for your library or before uploading to the 3D Warehouse.

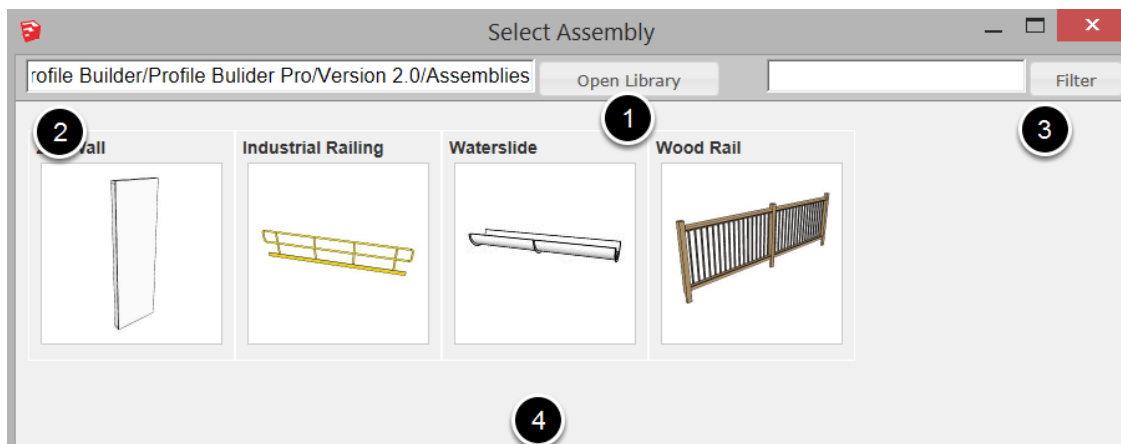
## Loading Assemblies

### Load an Assembly



Click the 'Assembly Browser' button.  
The Assembly Browser window will open.

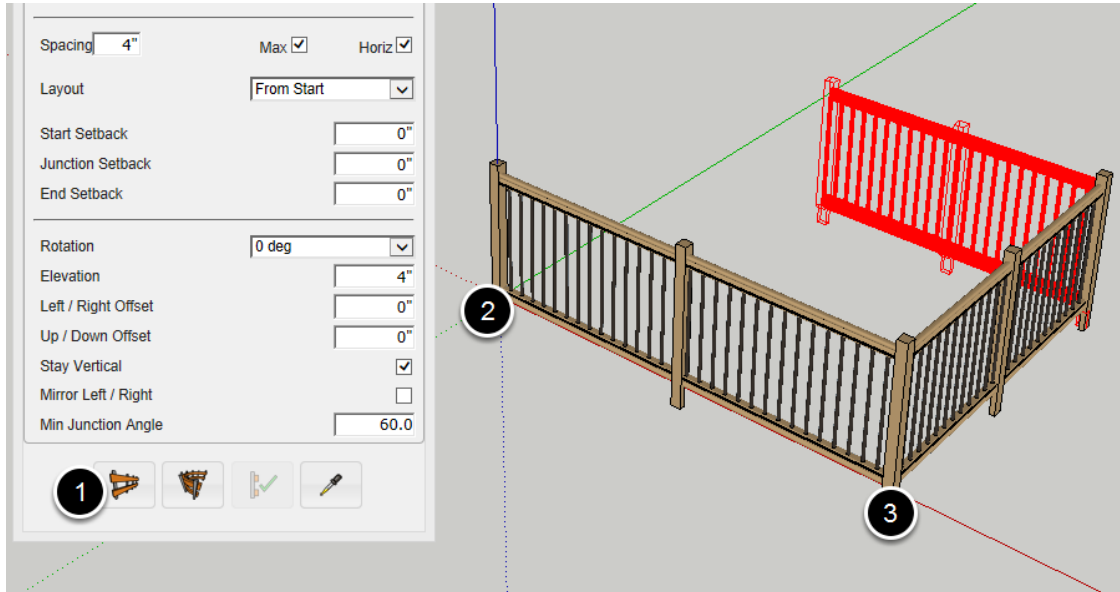
### Finding an Assembly



1. Click the Open Library button to choose a new library folder.
2. The current folder is shown at the top left.
3. Enter text to filter results.
4. Click an assembly thumbnail to load it.

## Build Assembly Tool

### Build an Assembly



Now that you have created an assembly, it is time to build it!

1. Click the 'Build Assembly' Button.
2. Click a point in the model to define the start of the assembly.
3. Continue clicking points to define the path of the assembly.

To complete the assembly:

Press ESC or RETURN or ENTER

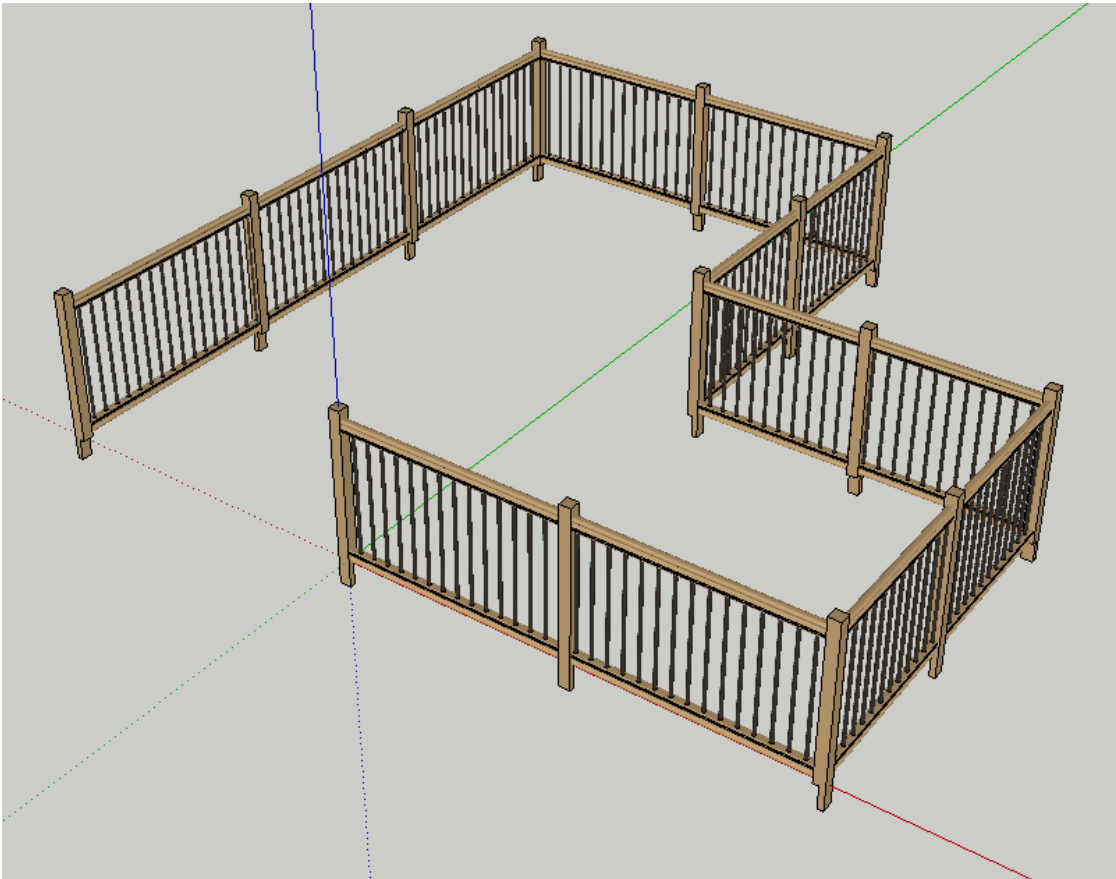
OR

Right-click and select 'Finish'

OR

Create a closed path for the Assembly.

**Congratulations! You just built an Assembly!**



### **Modifier Keys**

Arrows Keys = Lock Axis

SHIFT = Lock Inference

CTRL / OPTION = Profile Member or Assembly path Inferecing (PMPI)

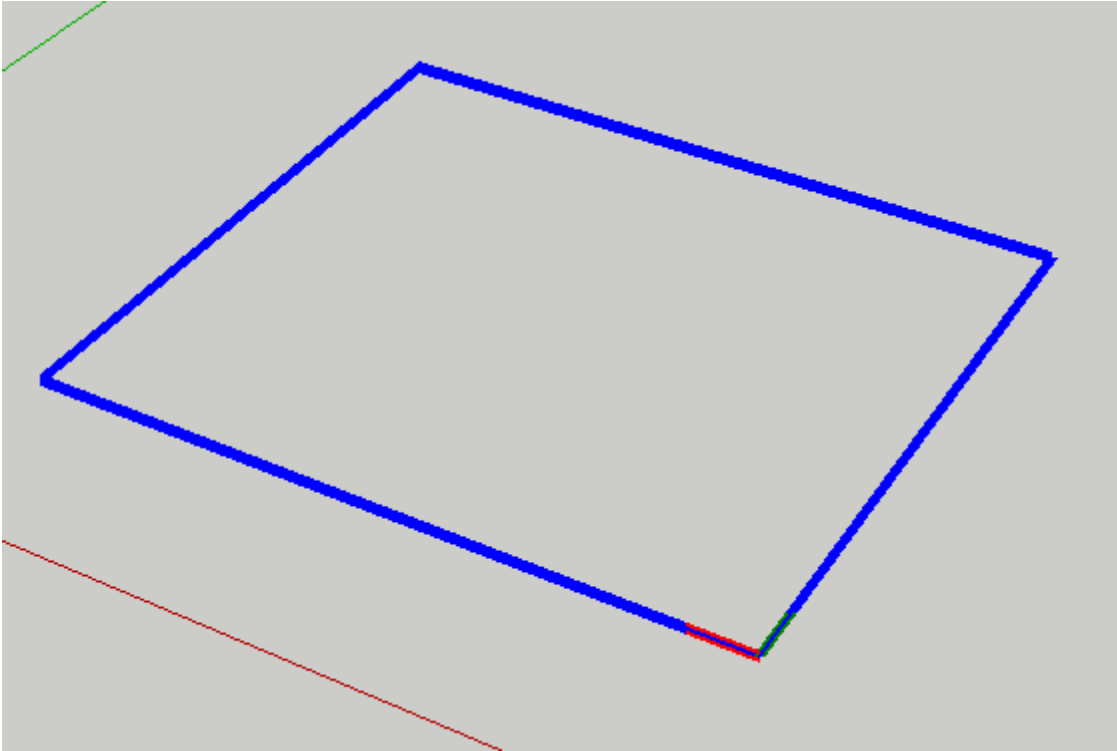
BACKSPACE = Undo the last path point

You can also enter values in the Measurements box to draw precisely.

## Build Assembly along Path

---

### Select a Path



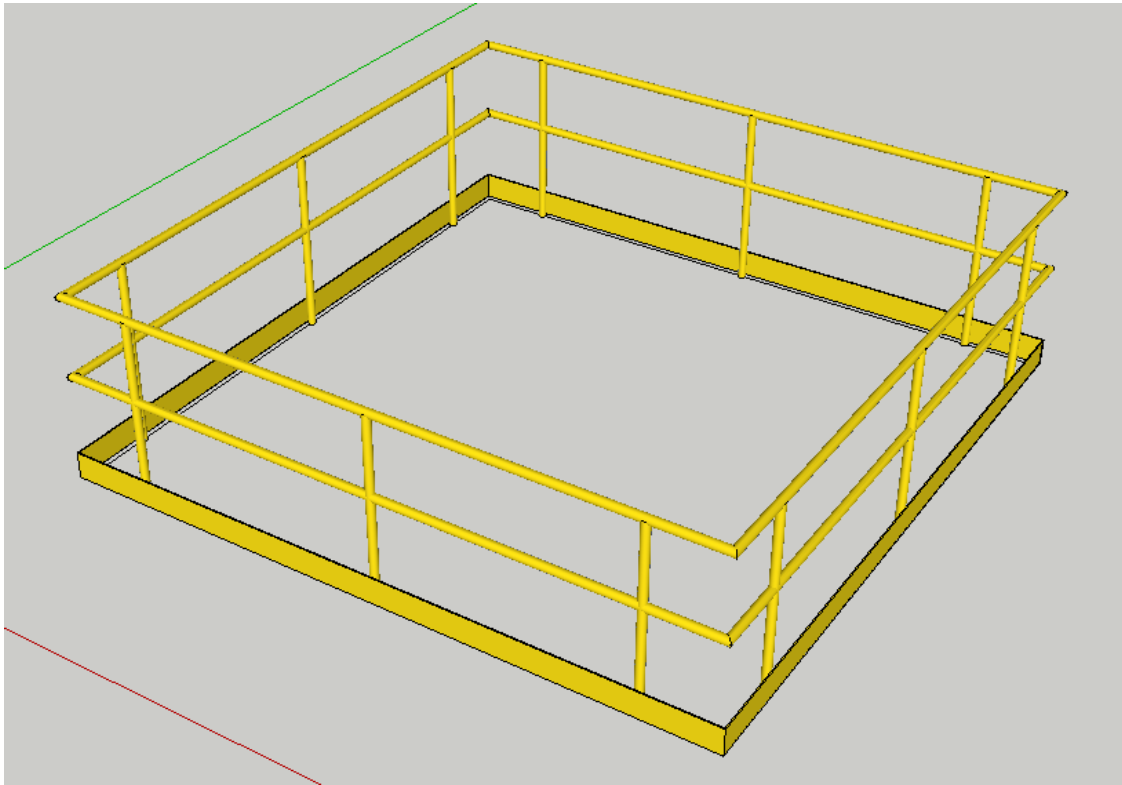
Select a series of connected edges or use the Smart-path select tool to choose a path.

### Build the Assembly



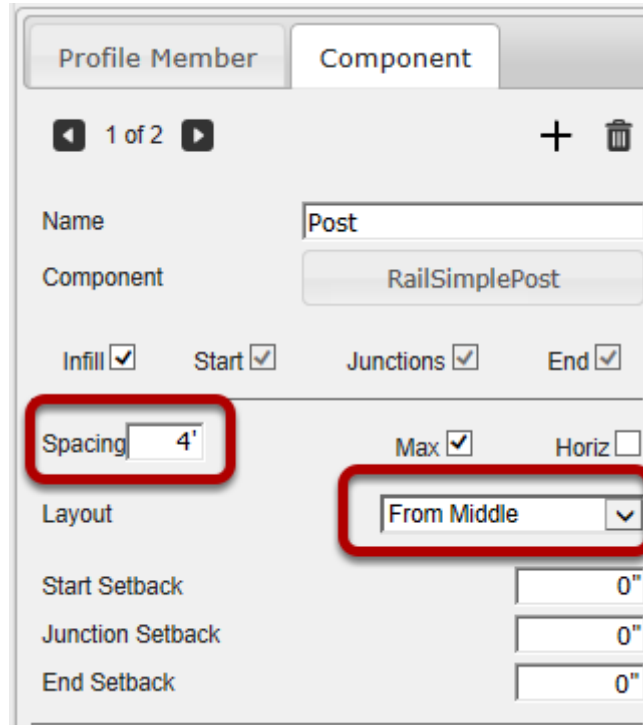
Click the 'Build Assembly Along Path' button.

**Congratulations! You just built an Assembly along a Path!**



## Apply Attributes to Assembly

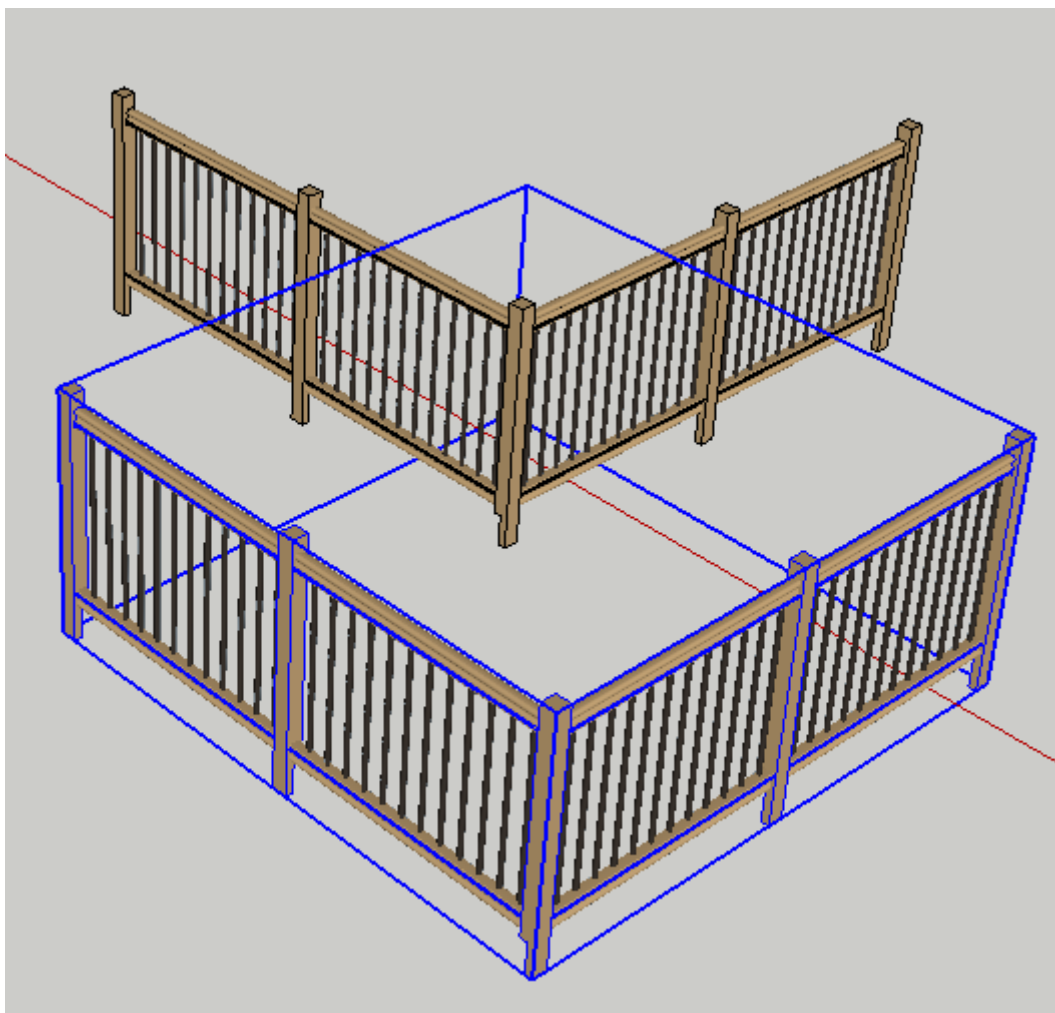
### Edit the Assembly Attributes



Change the attributes of the assembly.

In this example, the spacing of the posts was changed from 6' to 4'. and the Layout was changed to 'From Middle'

## Select an Assembly in your Model



You can also select multiple assemblies to apply the attributes to all of the selected assemblies at once.

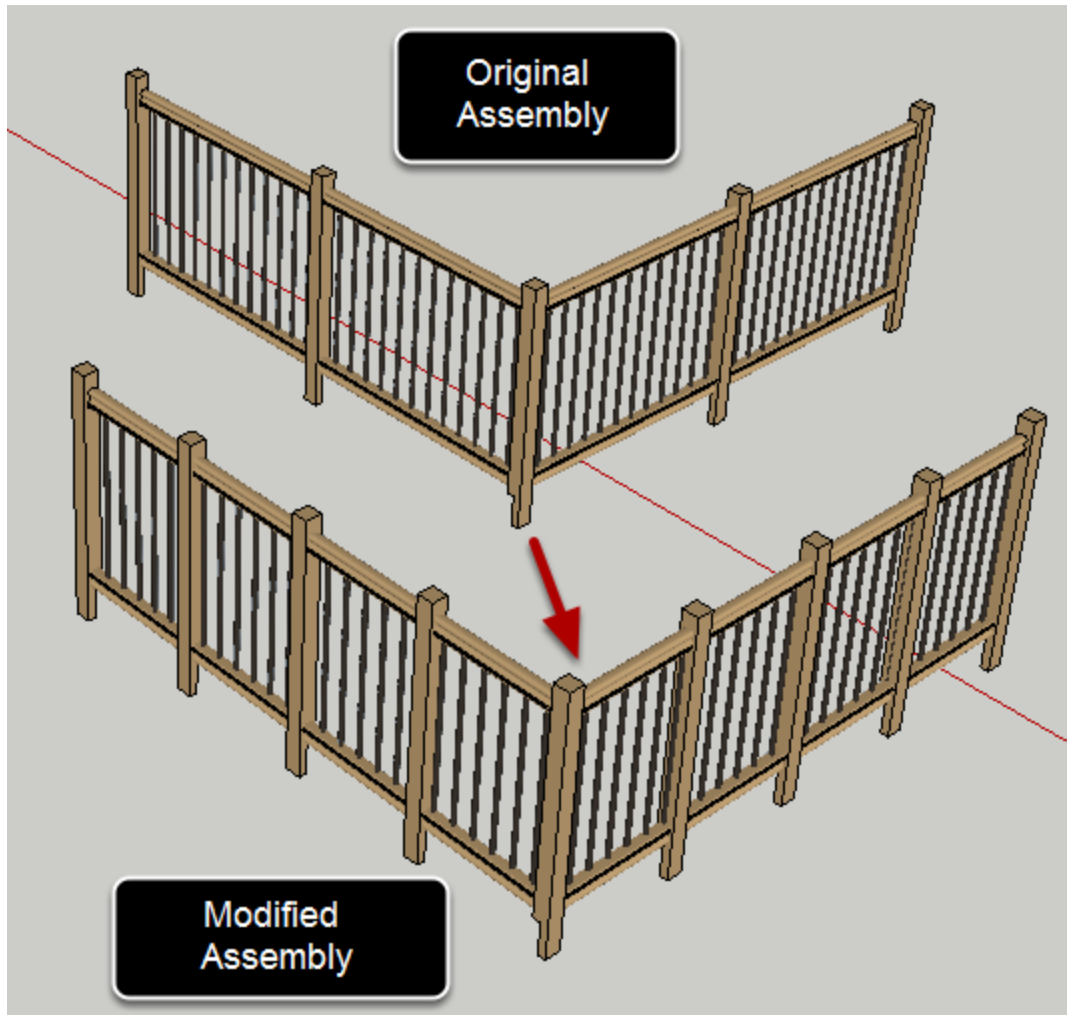
## Click the 'Apply Assembly Attributes' button



This button will only be active if you have an assembly selected.

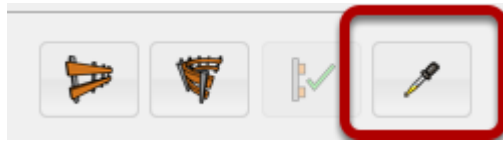


**Congratulations! You just applied attributes to an Assembly!**

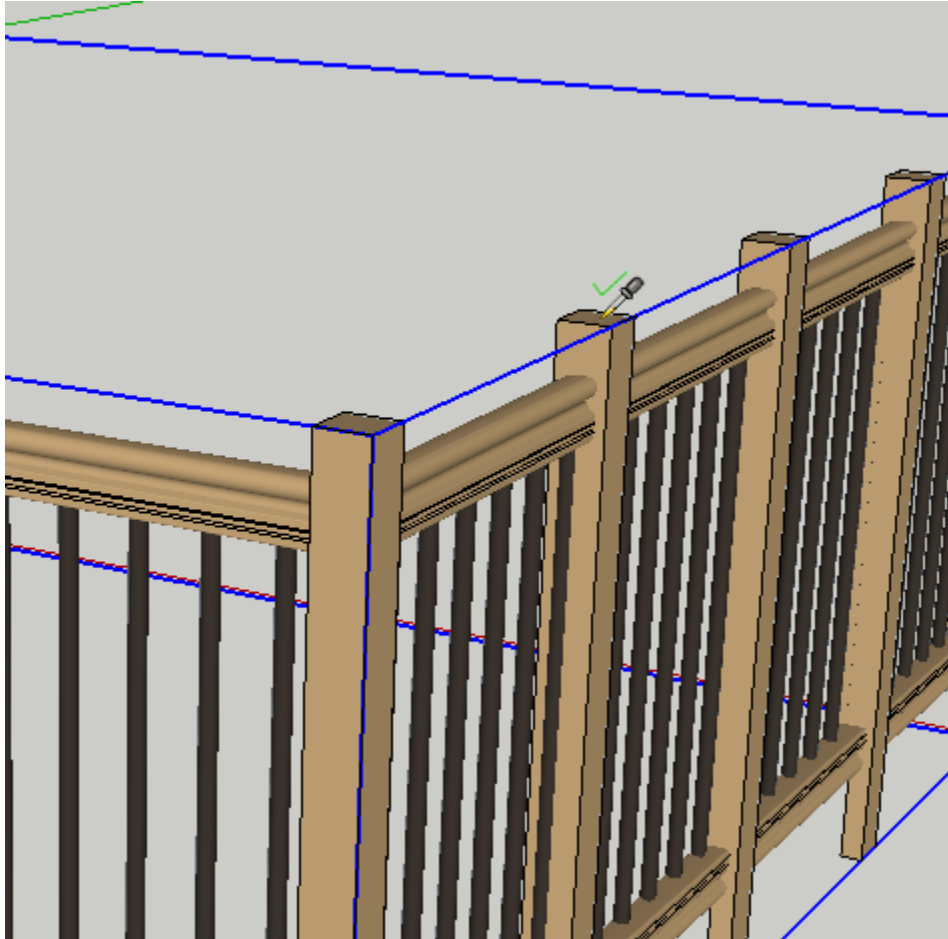


## Get Attributes from Assembly

Click the 'Get Assembly Attributes' button

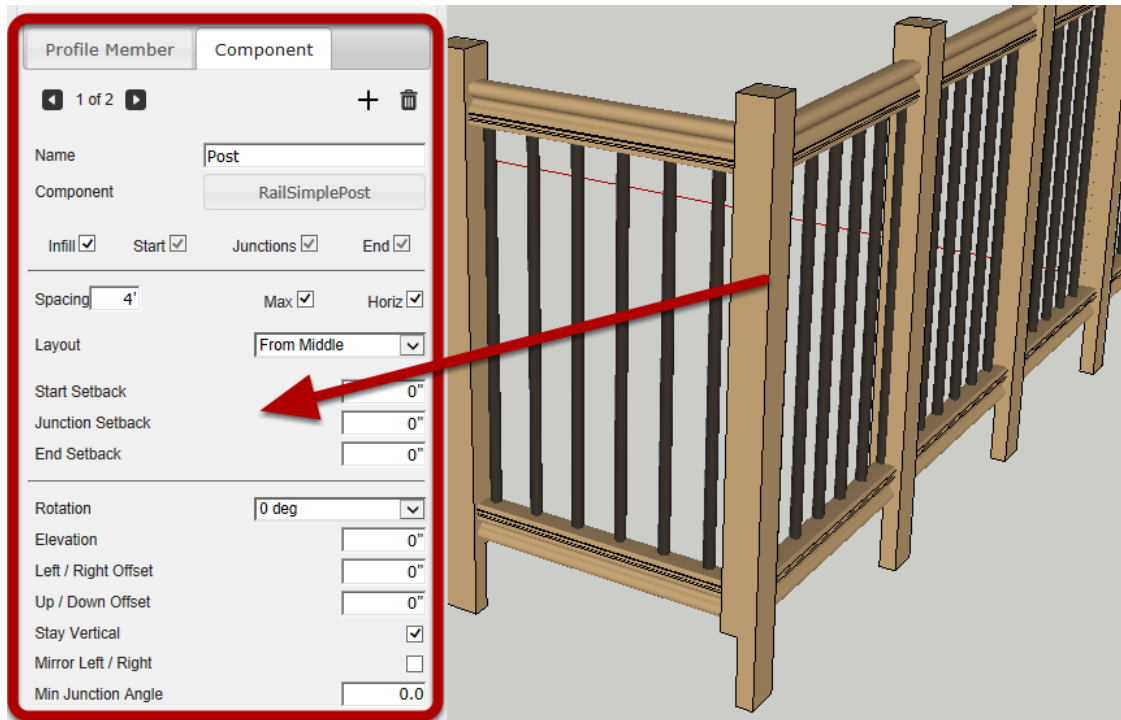


Click an Assembly in your Model



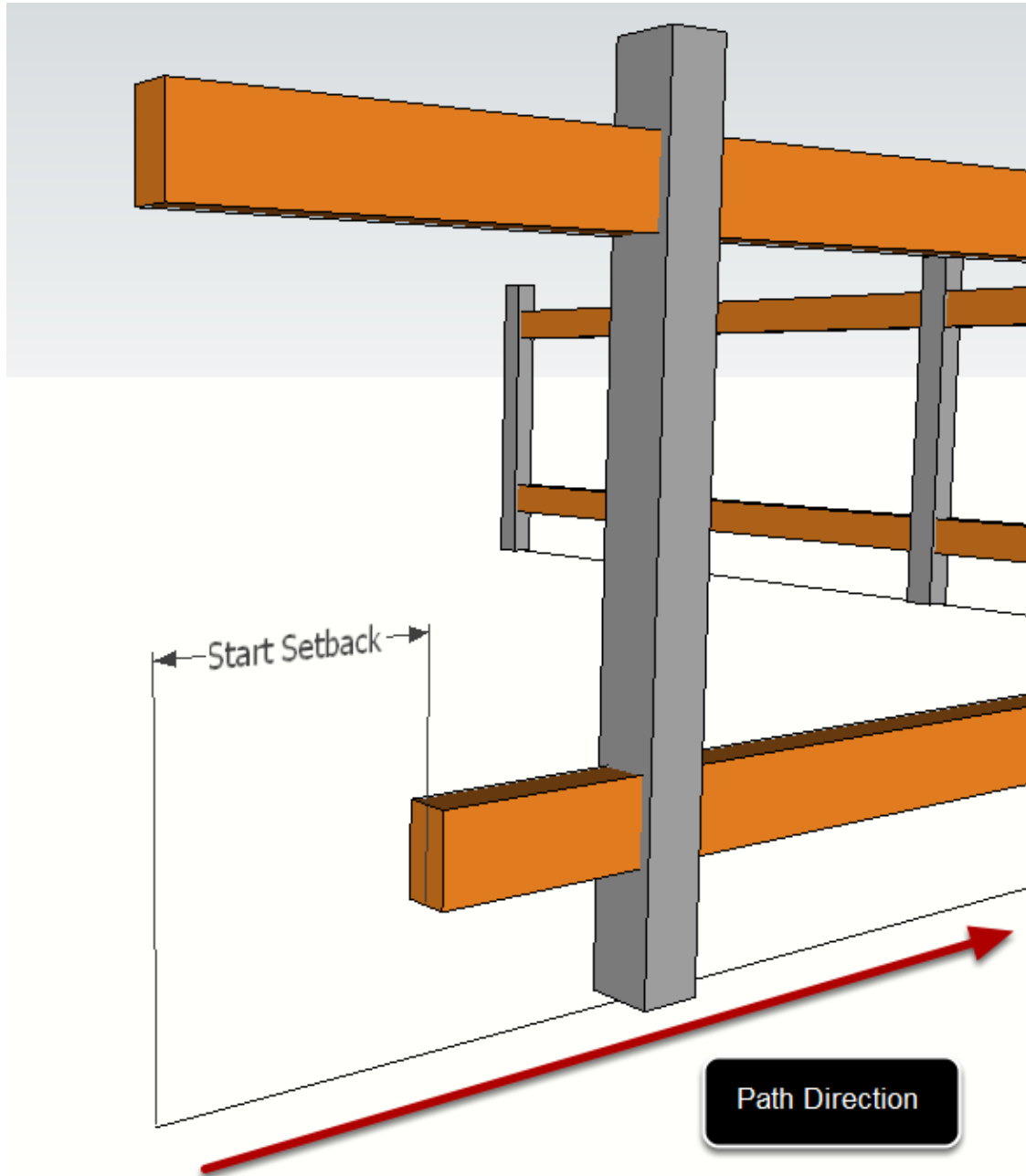
If there is an Assembly below the cursor (in the active context), it will become highlighted and the cursor will show a checkmark. Click the Assembly to load the attributes into the Assembler Dialog.

## Congratulations! You just got the Attributes of an Assembly!

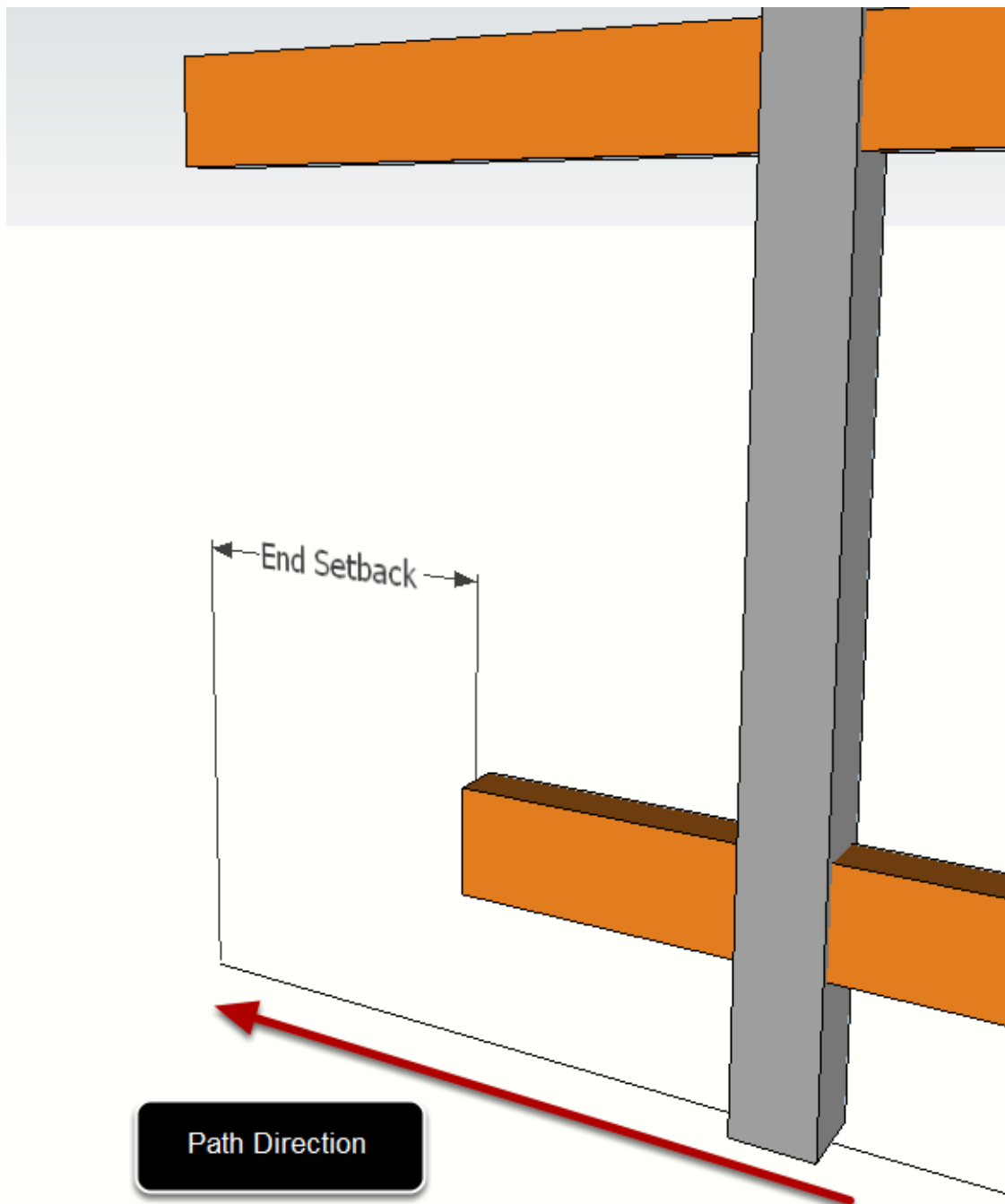


Typically before editing the attributes of an existing assembly, you would first load the existing attributes as shown above. Then, you can make changes and use the 'ApplyAttributes' button to modify the assembly.

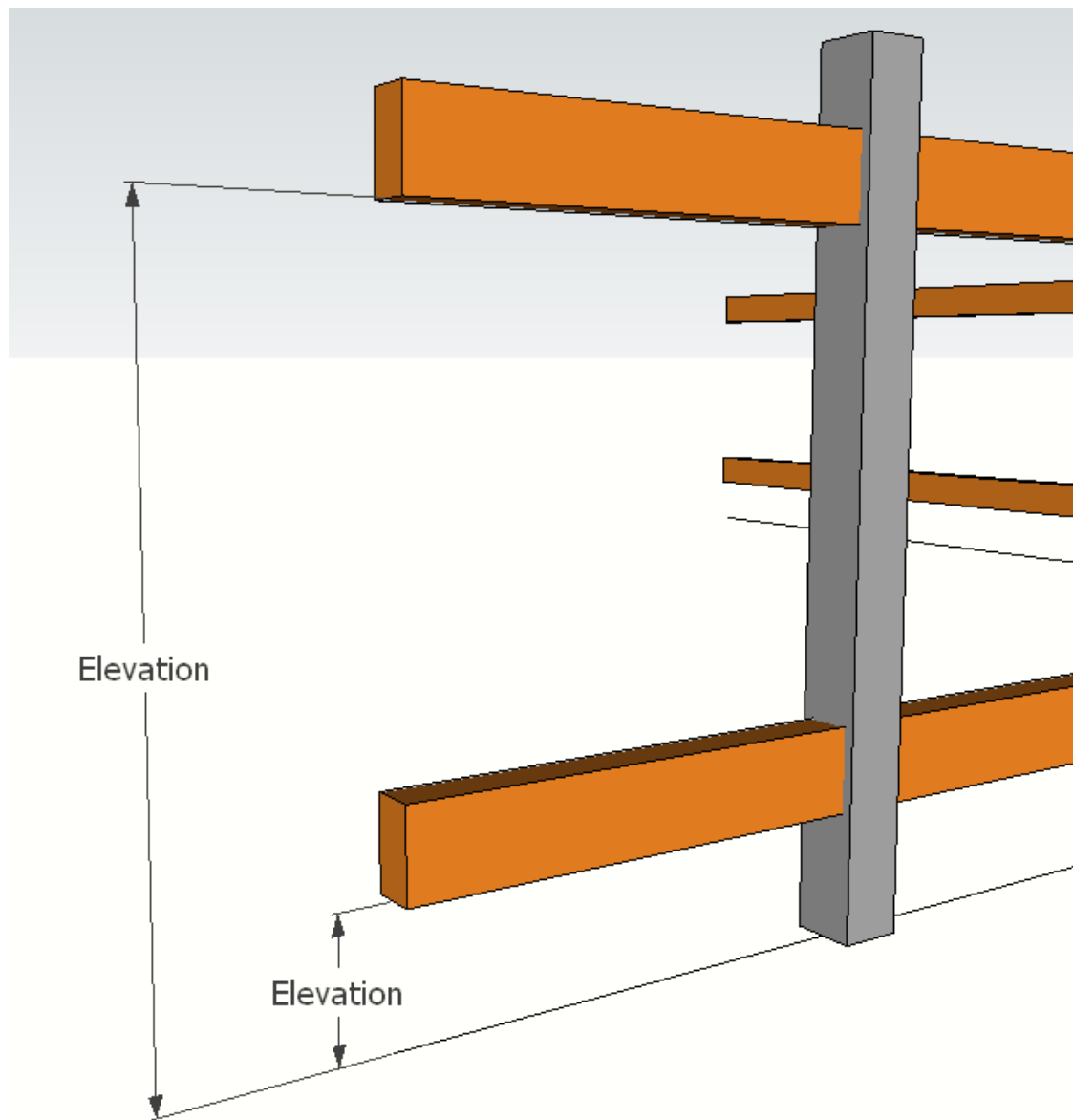
### Profile Member - Start Setback



Start Setback defines the distance from the start of the path that the Profile Member starts.

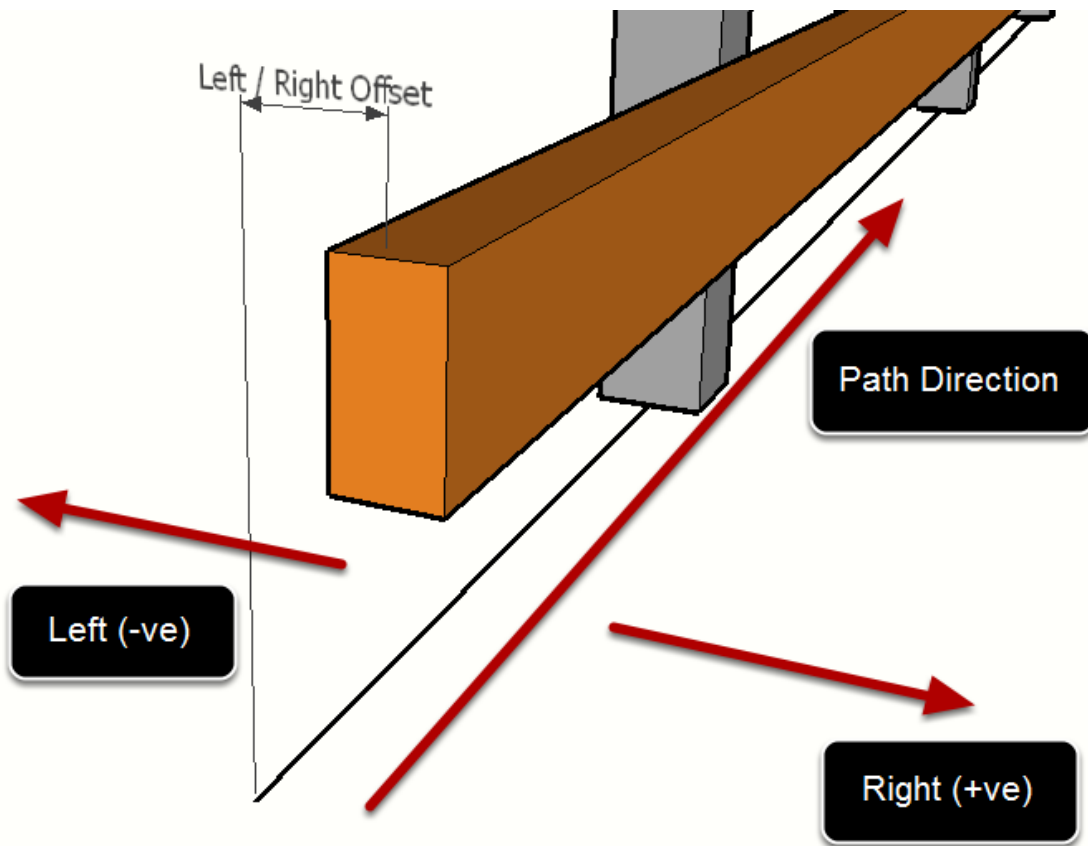


End Setback defines the distance from the end of the path that the Profile Member ends.

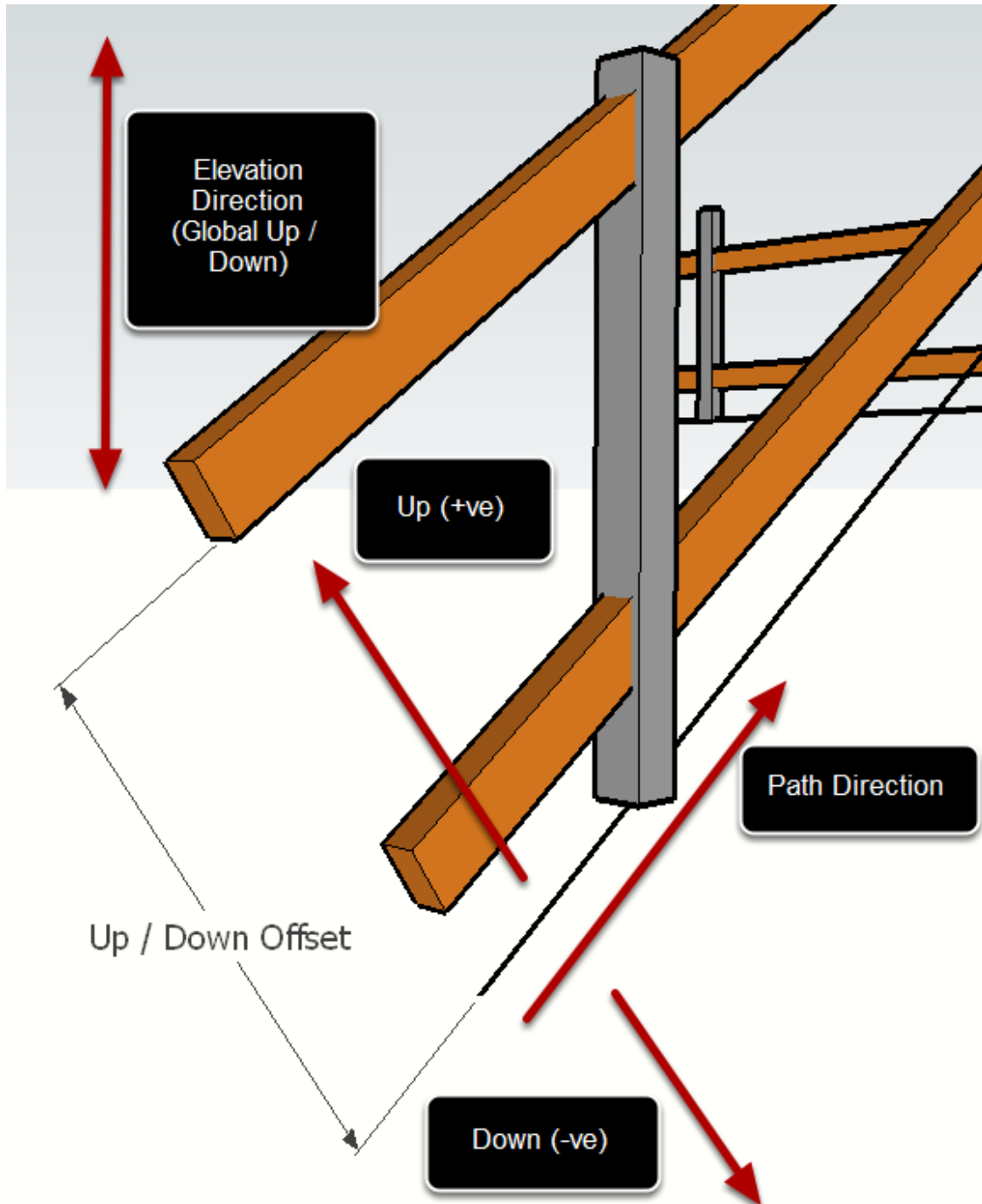


Elevation defines the height of the Profile Member path above the reference path of the Assembly.

## Profile Member - Left / Right Offset



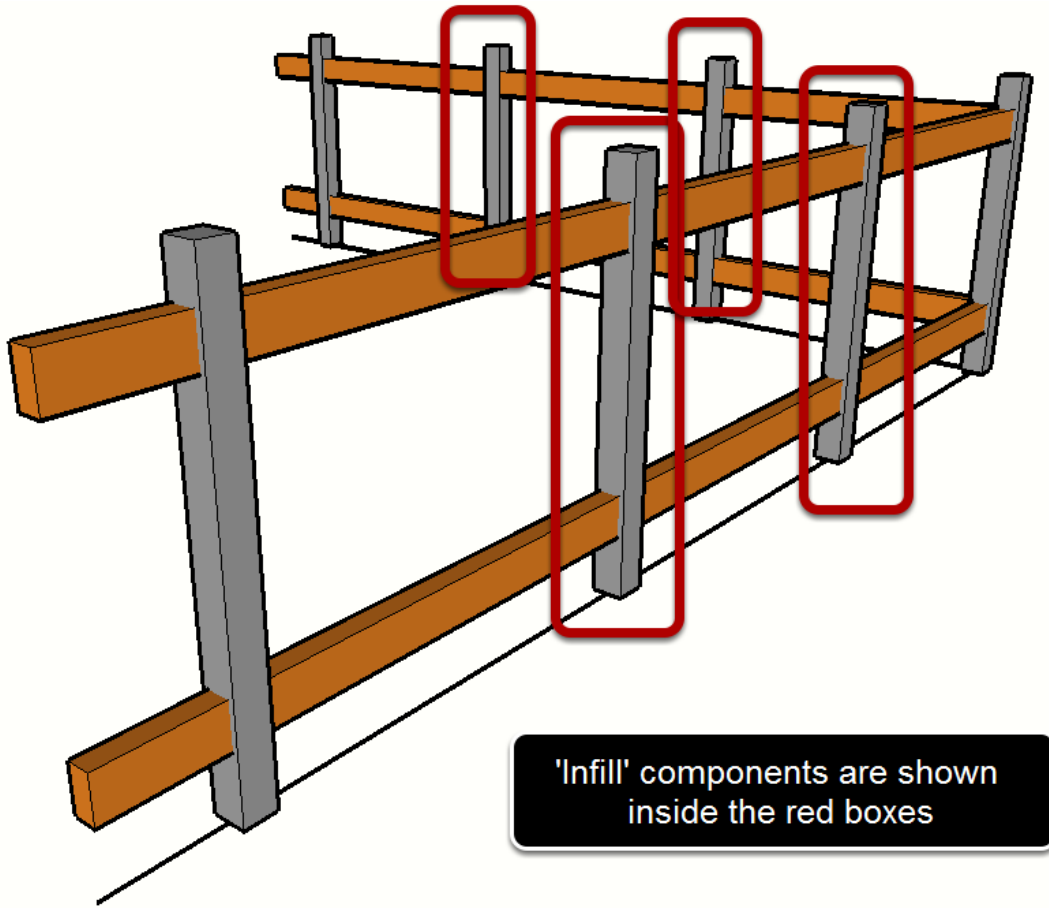
Left / Right Offset defines the horizontal offset of the Profile Member path relative to the Assembly path. Enter a positive value to offset to the right and negative value to offset to the left.



Up / Down Offset defines the (local) vertical offset of the Profile Member path relative to the Assembly path. Enter a positive value to offset up and negative value to offset down.

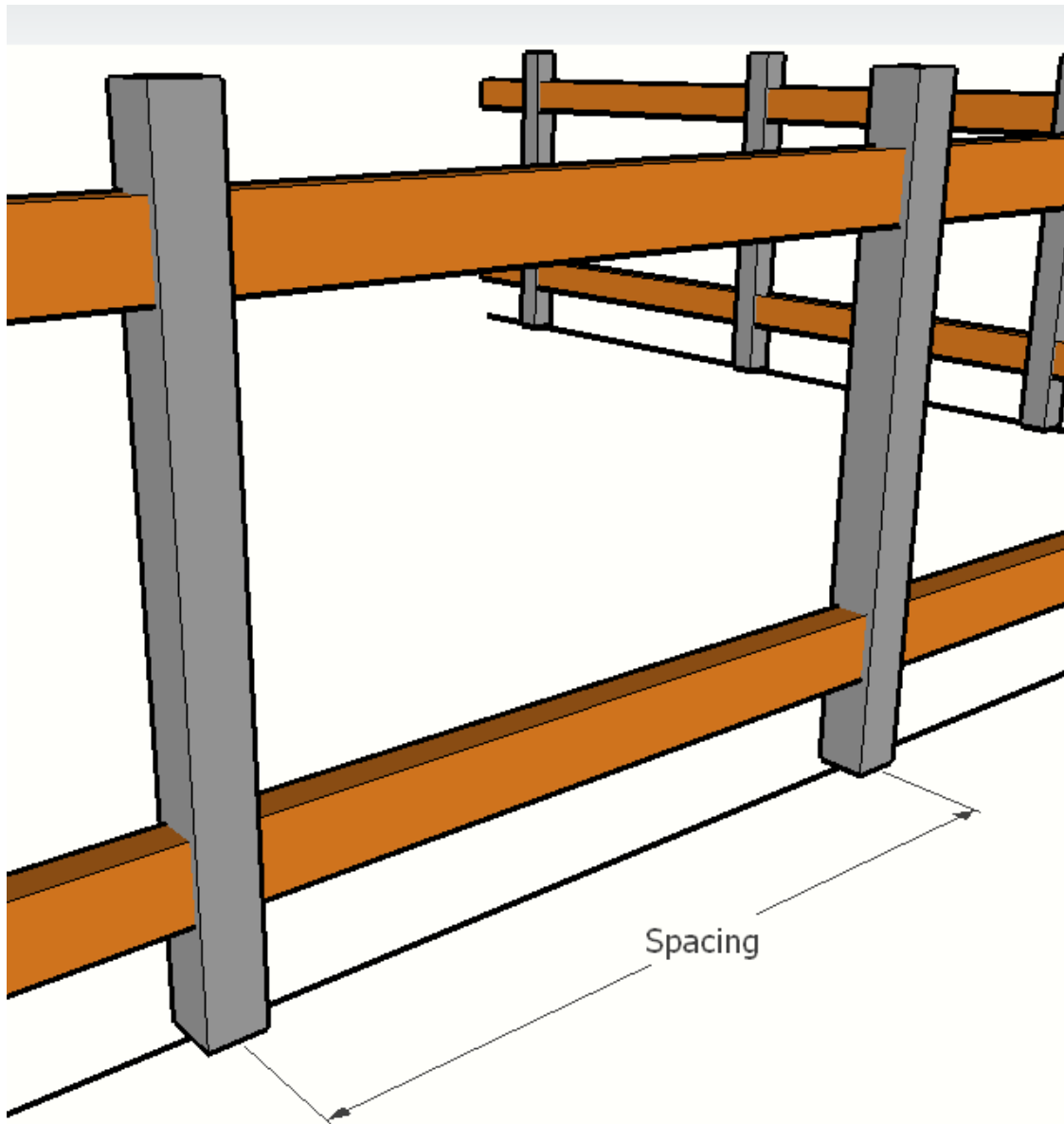
If the assembly path is always horizontal, then this is equivalent to the Elevation setting. However, for sloping paths, the effect is different since Up / Down works within the Local axis of the path, and Elevation works within the Global axis of the model.





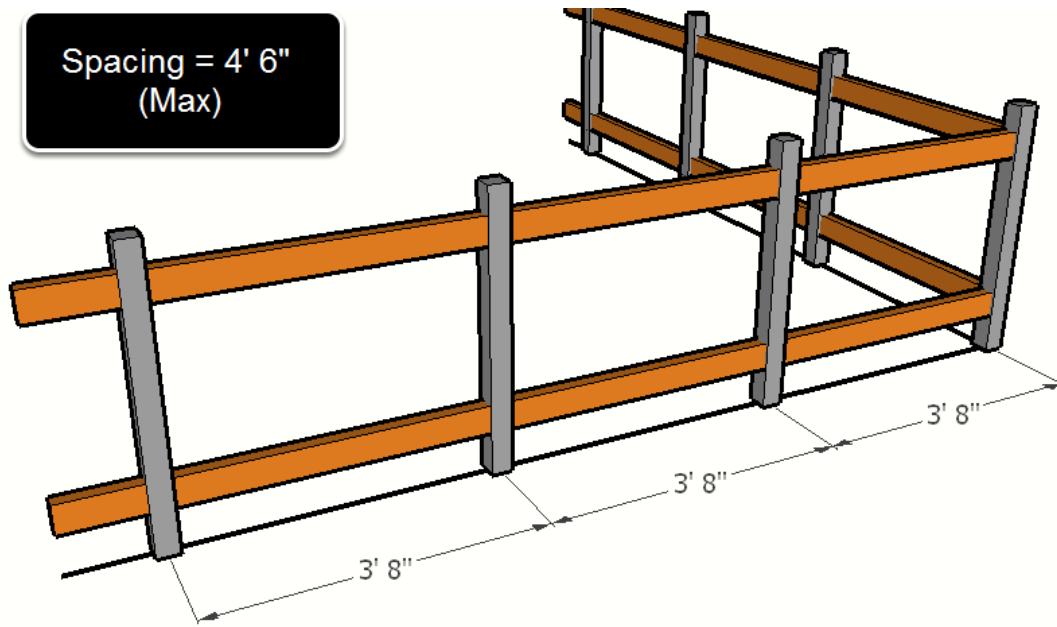
If the Infill box is checked, the component will be placed at regular intervals, defined by the following settings:

- Spacing
- Max (vs Fixed)
- Horizontal Distance (vs Distance along path)
- Layout (From Start or From Middle)



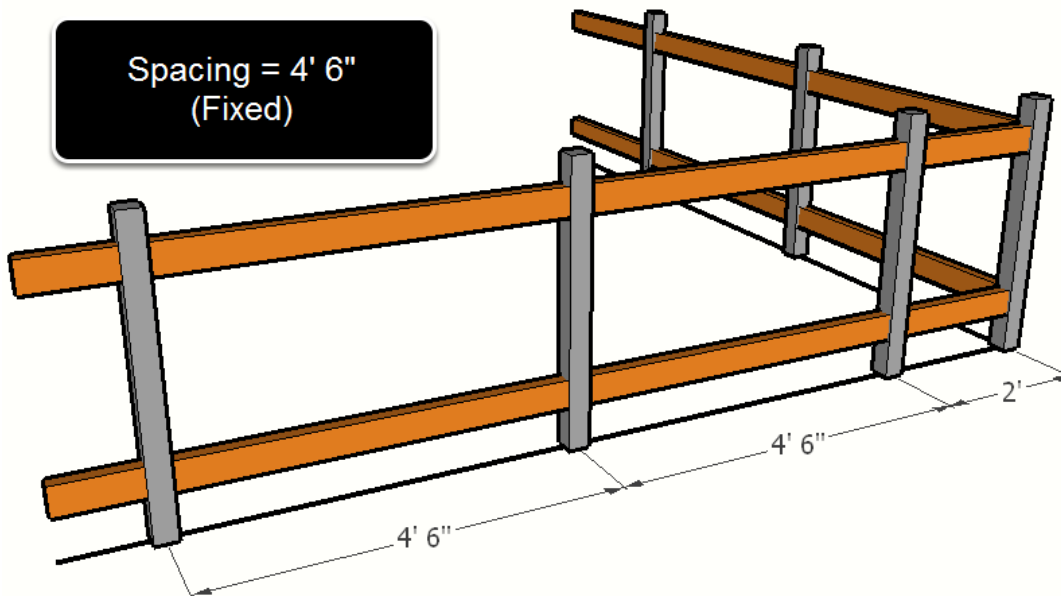
Spacing defines the distance between 'Infill' components.

## Component - Spacing (Max)



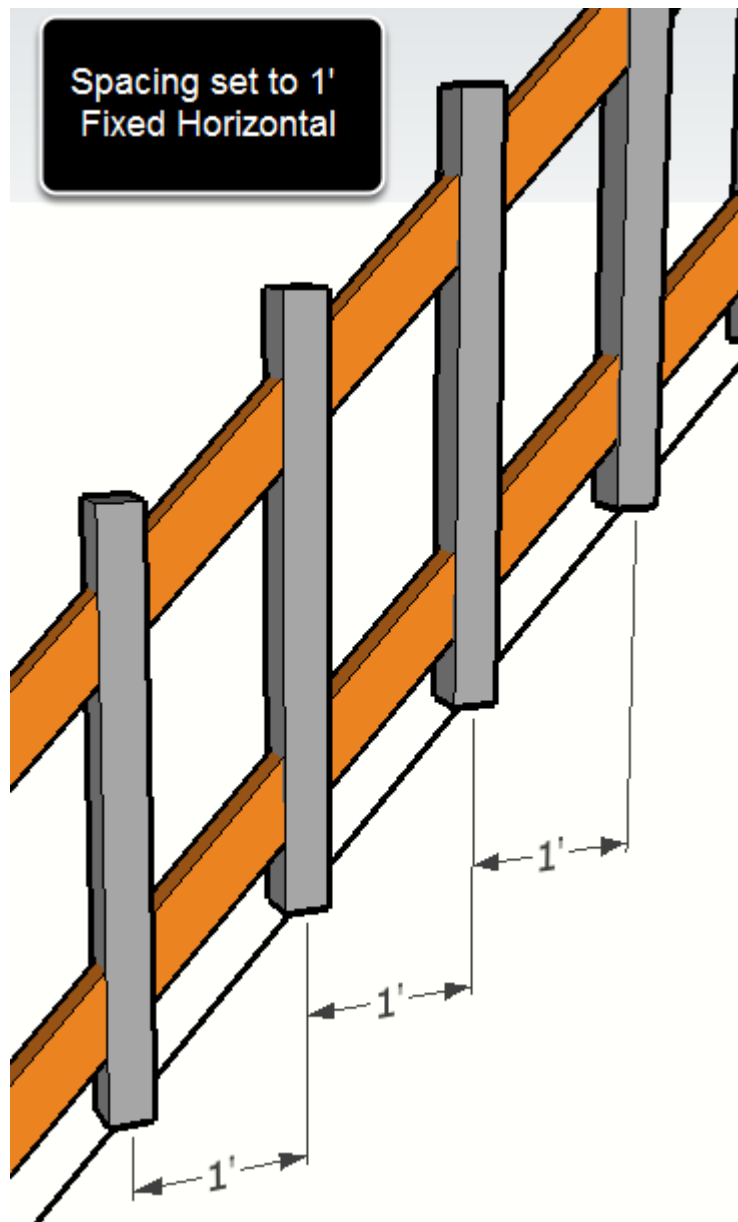
When 'Infill' components are set to 'Max' spacing, the spacing between infill components will not exceed the value entered for spacing and the components will be evenly distributed.

## Component - Spacing (Fixed)



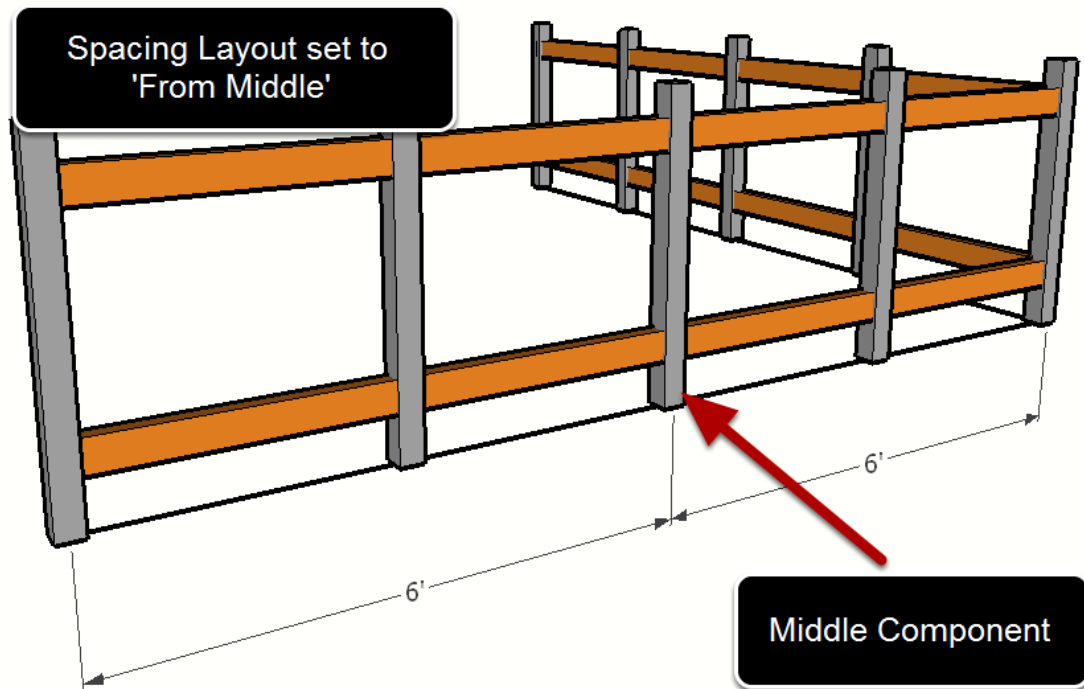
When 'Infill' components are set to 'Fixed' spacing (Max turned off) the spacing between infill components will be fixed to the value entered for spacing (where possible).

## Component - Spacing (Horizontal)



When 'Infill' components are set to 'Horizontal' spacing, the spacing will be measured horizontally. If this setting is turned off, then the spacing will be measured along the path of the Assembly.

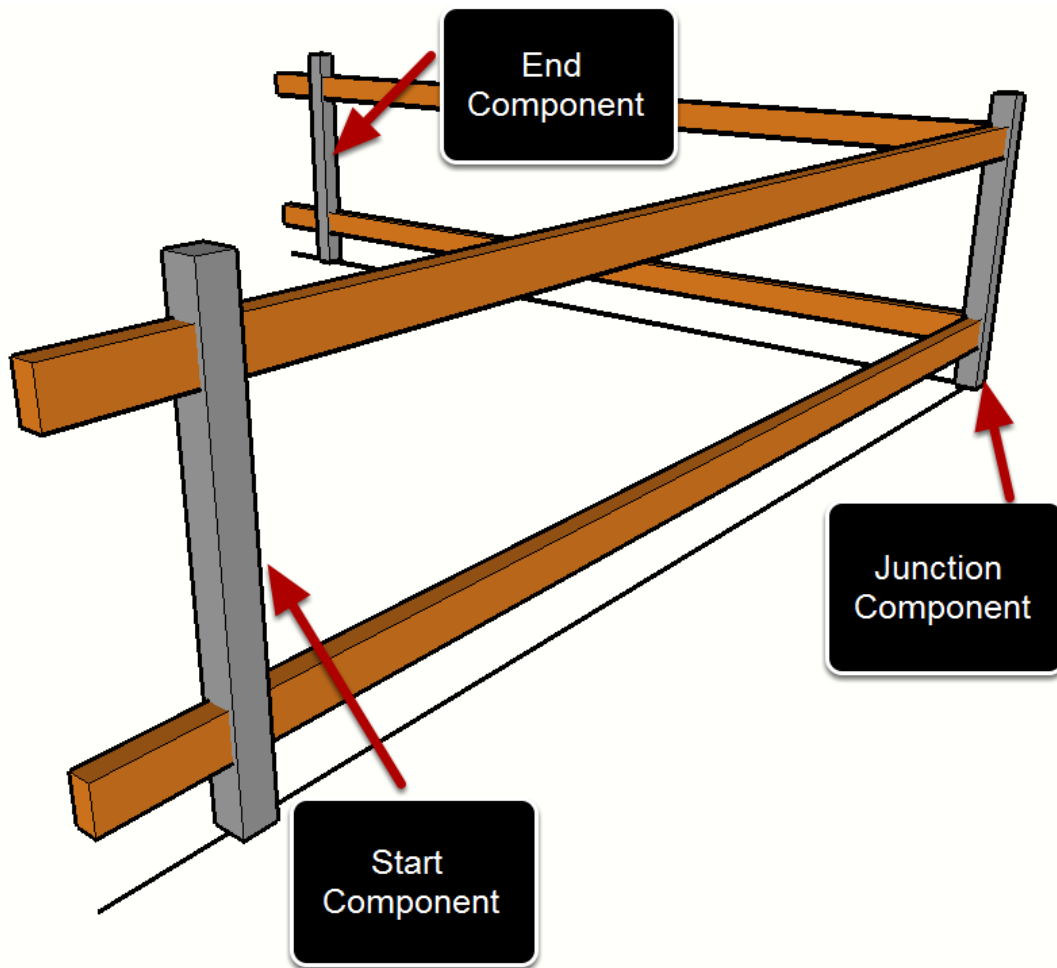
## Component - Spacing Layout



When the Layout is set to 'From Middle', a component will be placed at the middle point between two junctions and the remaining components will be laid out relative to the middle component.

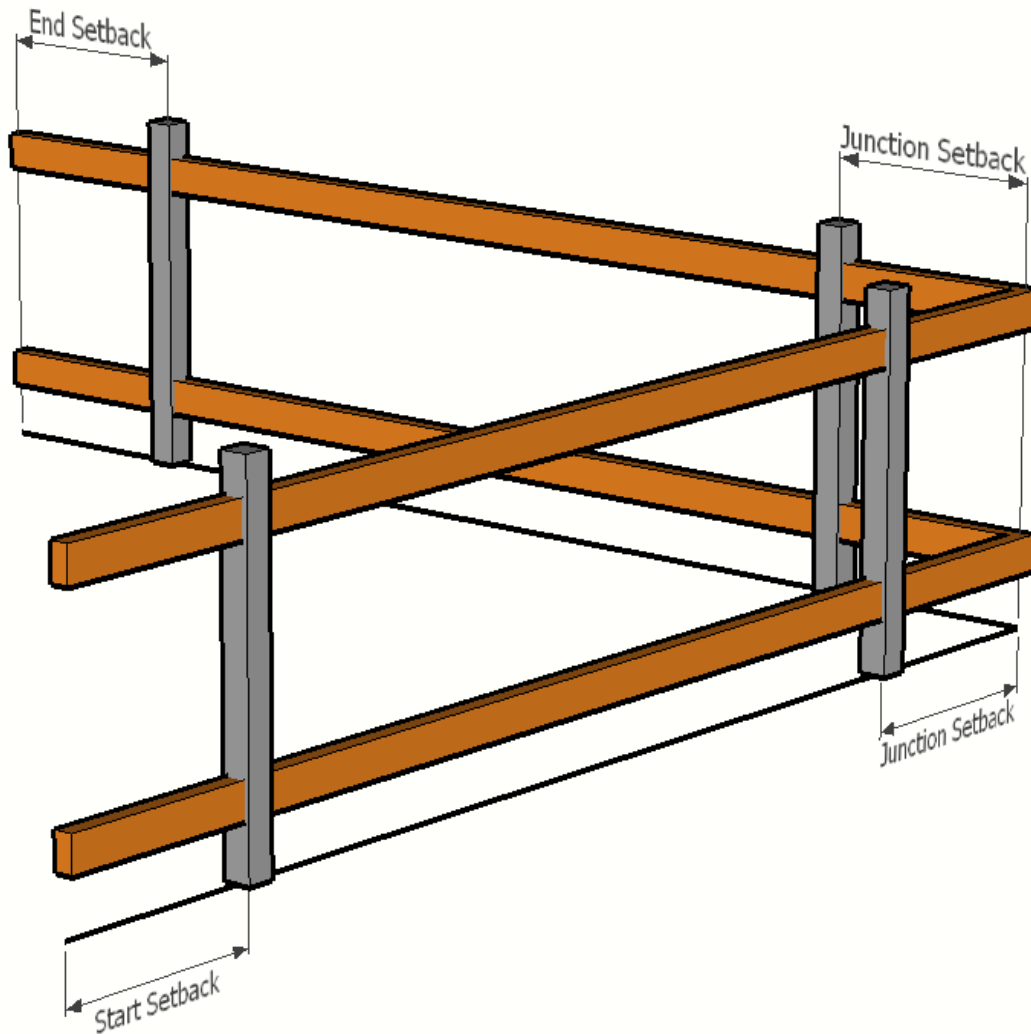
When the Layout is set to 'From Start', the components will be laid out relative to the start point between two junctions.

## Component - Start, Junctions, and End Checkbox



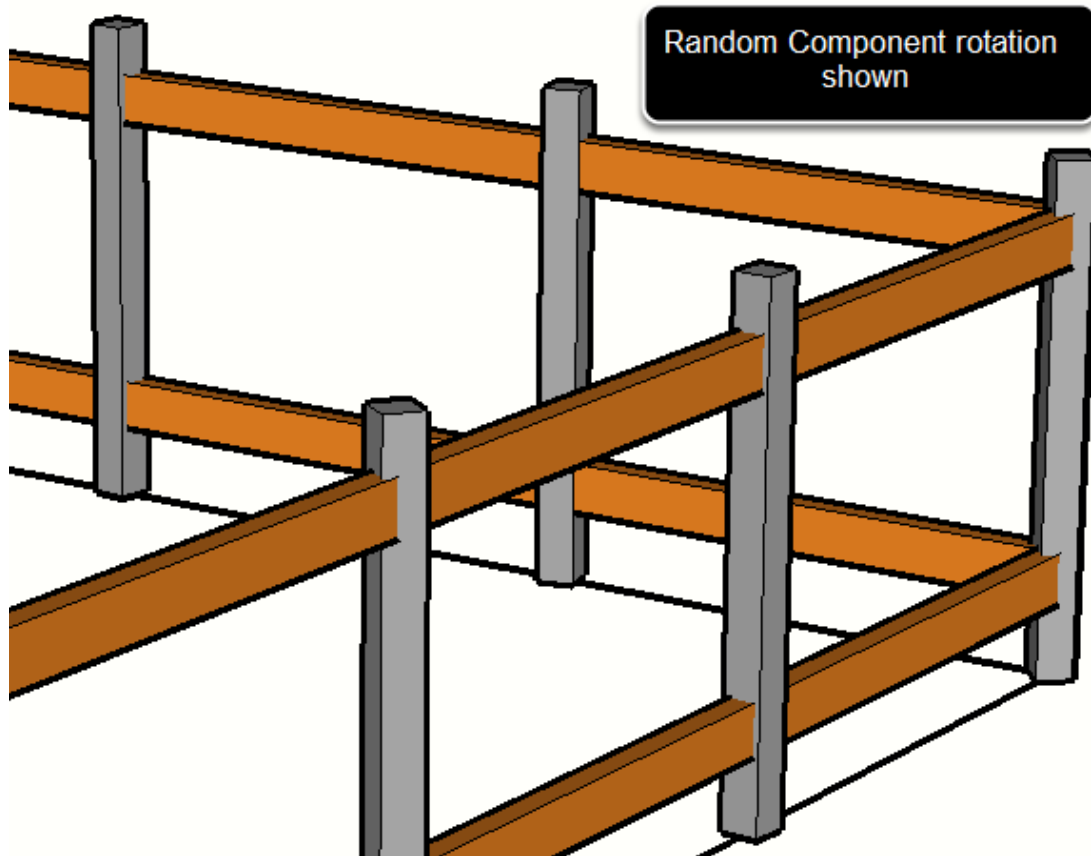
The Start, Junctions, and End checkboxes define whether to place components at the path start, path junctions, and at the path end.

## Component - Start Setback, Junction Setback, End Setback



Start setback defines the distance from the path start to place the component.  
Junction setback defines the distance from the path junctions to place the component.  
End setback defines the distance from the path end to place the component.

## Component - Rotation



The Rotation setting defines the rotation of the component about its Blue (up) axis. The options for rotation include:

- 0 deg (no rotation)
- 90 deg (1/4 turn)
- 180 deg (1/2 turn)
- 270 deg (3/4 turn)
- Average (no rotation except for at Junction locations. At junction locations, the component rotation will be averaged between the previous path edge and the next path edge)
- Smooth (This setting can be useful for curved or helical paths)
- Random (each component will be rotated randomly)

## Component - Elevation

The elevation setting of a component is equivalent to the elevation setting of a Profile Member. See the Profile Member Assembly attributes for further details.



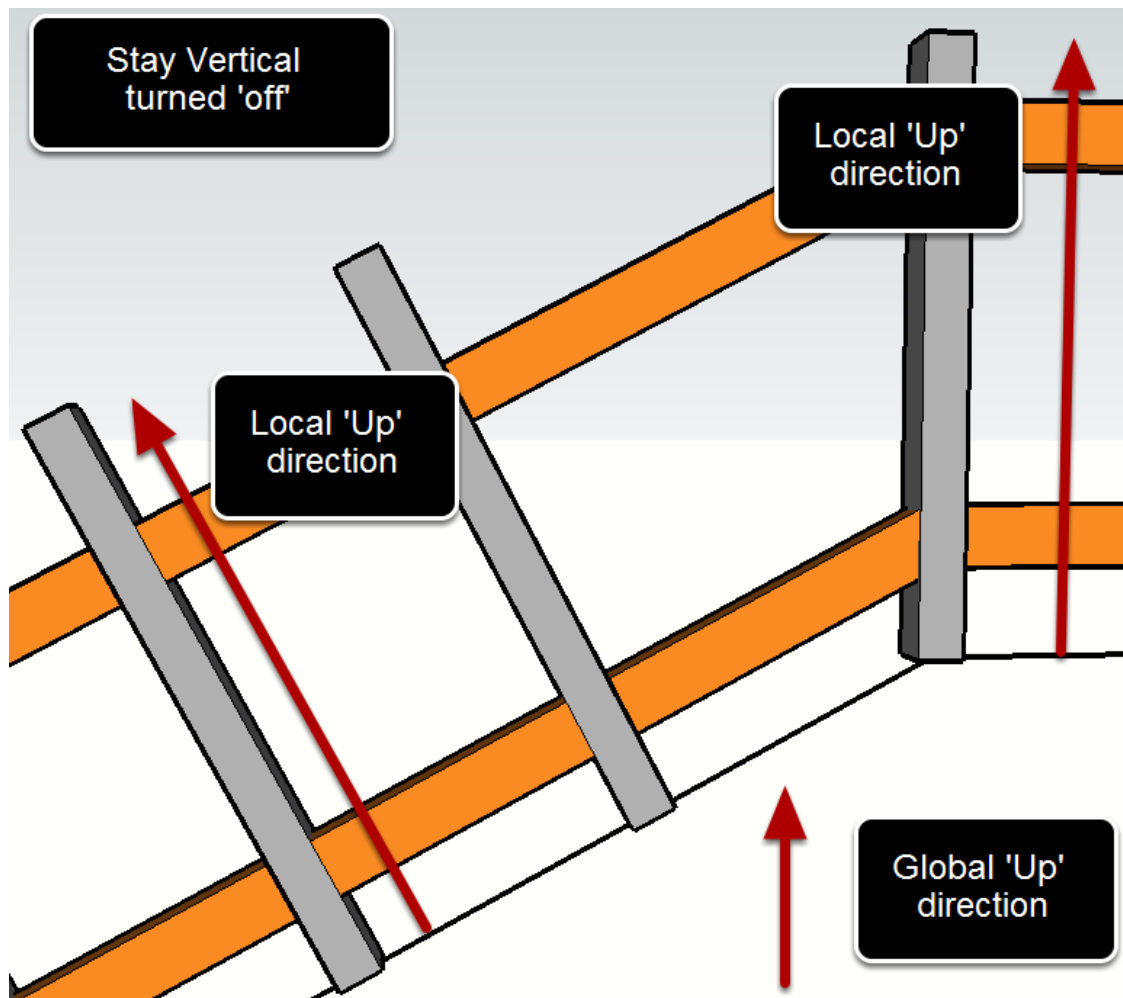
### Component - Left / Right Offset

The Left / Right offset setting of a component is equivalent to the Left / Right offset setting of a Profile Member. See the Profile Member Assembly attributes for further details.

### Component - Up / Down Offset

The Up / Down offset setting of a component is equivalent to the Up / Down offset setting of a Profile Member. See the Profile Member Assembly attributes for further details.

### Component - Stay Vertical

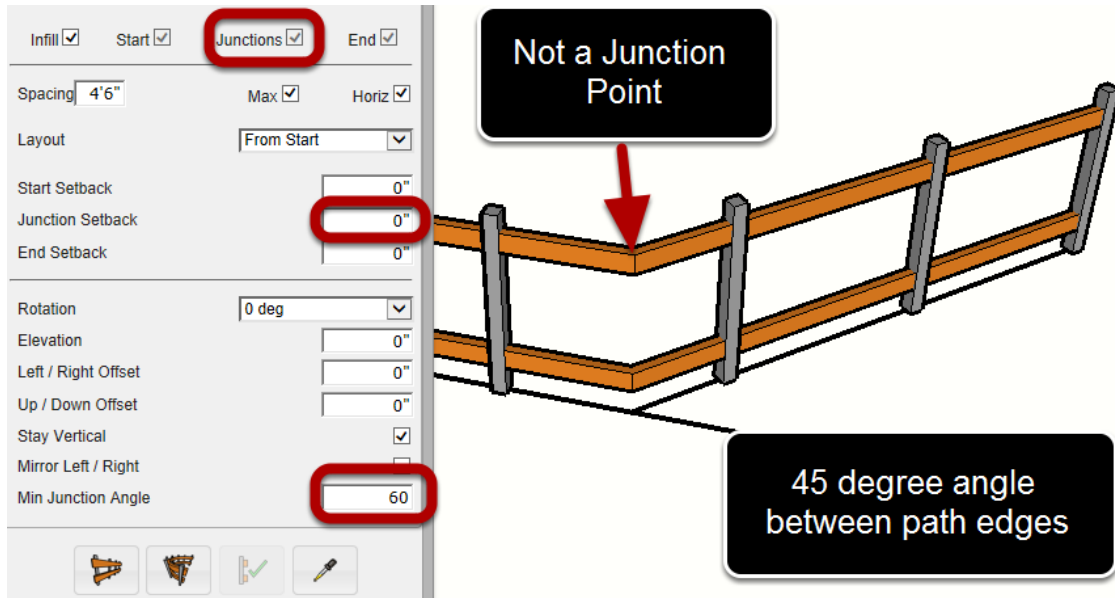


If the Component is set to 'Stay Vertical' then the Component's Blue axis will always point Up (globally), regardless of the path direction. If this setting is turned 'off', then the Blue axis will align with the local Up direction of the Assembly path.

## Component - Mirror Left / Right

If this setting is enabled, the Component will be mirrored about the Up direction of the Assembly path. This is similar to the SketchUp command to Flip the component along it's Green axis.

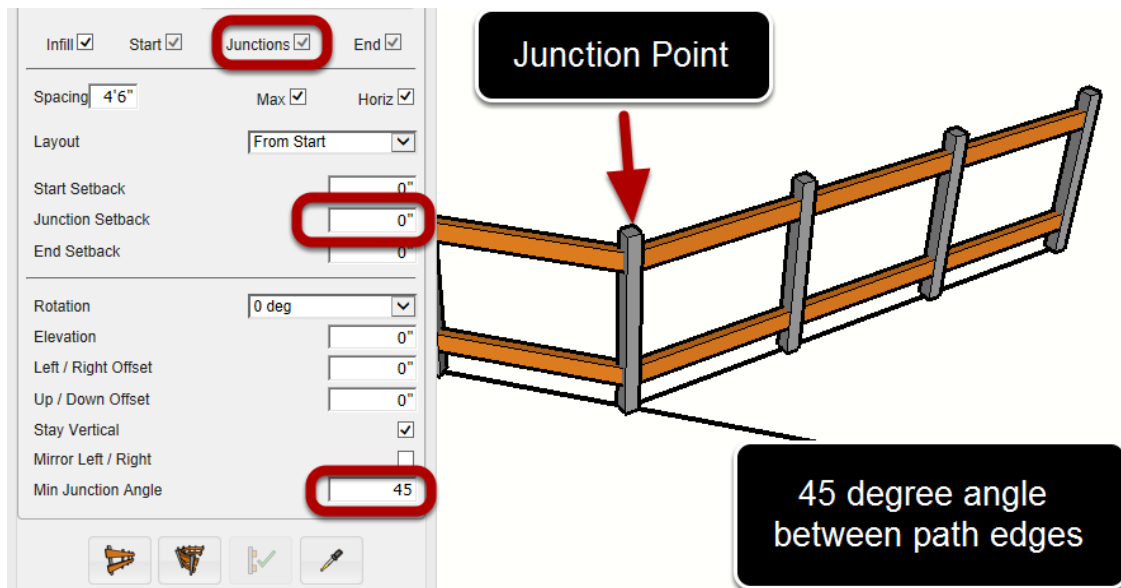
## Component - Minimum Junction Angle



Minimum Junction Angle sets the angle between edges that is required to form a junction point. If the angle between path edges is greater than the minimum angle, the vertex will be treated as a junction point.

A junction point is a discontinuity in the layout and spacing of an infill component. Junction points divide an assembly path into segments or curves. If the angle between edges is less than the minimum junction angle, the edges will be treated as a curve.

Components can be located specifically at junction points if the junction setback distance is set to zero.



By decreasing the minimum junction angle to 45 degrees, a junction point will be created every time the assembly path changes direction by an angle of 45 degrees or more.

# Tools

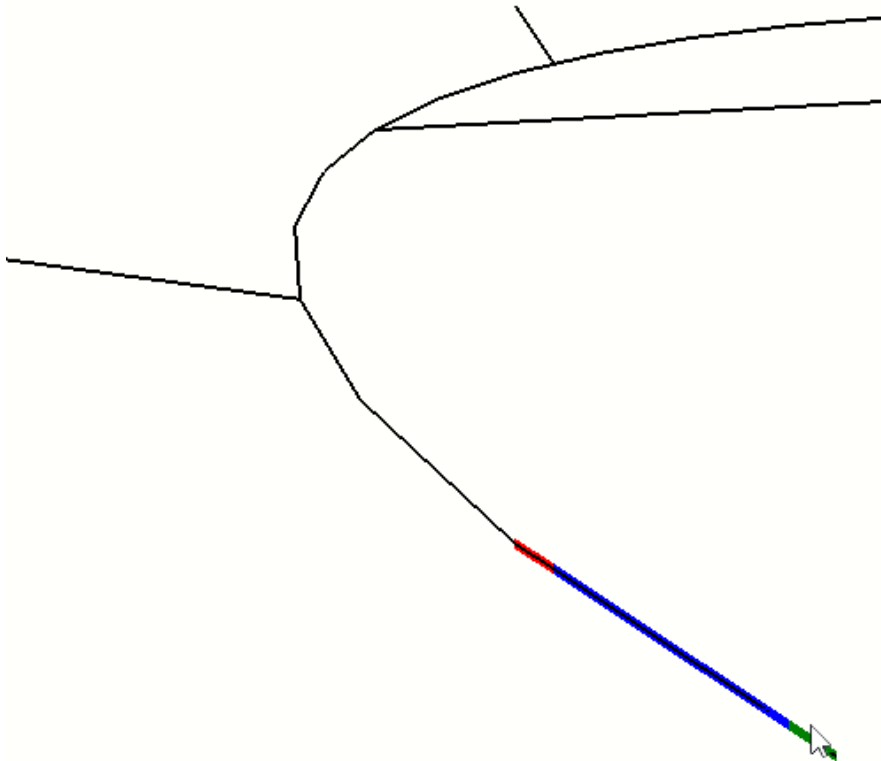
## Smart-Path Select

### Launch the Tool



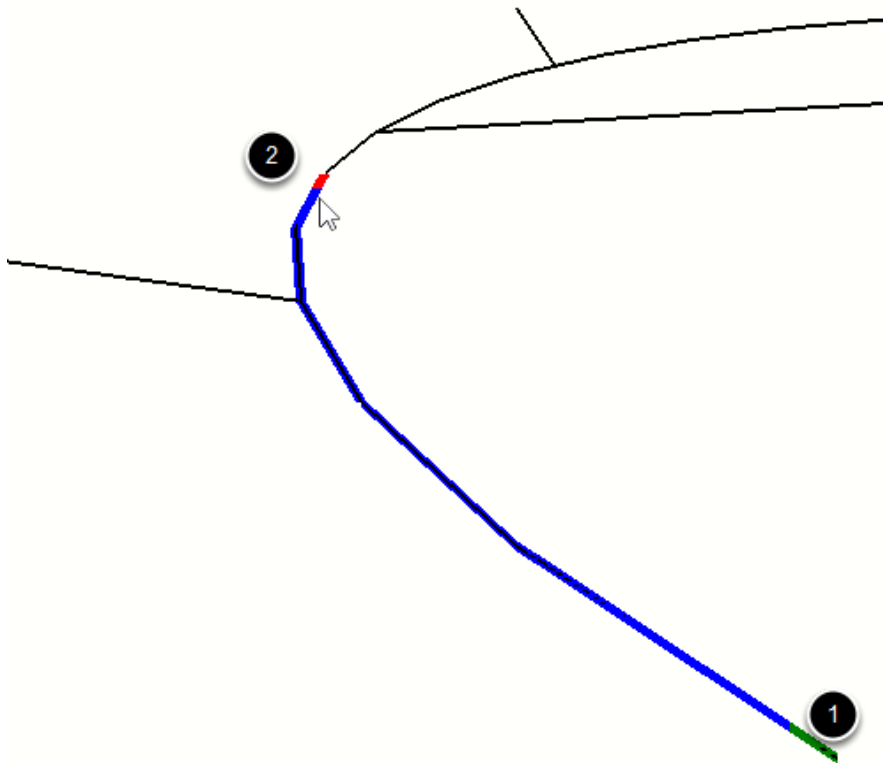
The Smart-Path Select tool makes it easy to select a complex series of connected edges.

### Select the First Edge of the Path



Hover the mouse over an edge in your model. The vertex that the mouse is closest to will turn green representing the start position of the path. The end of the path will be colored red.

Click another Edge on the Path

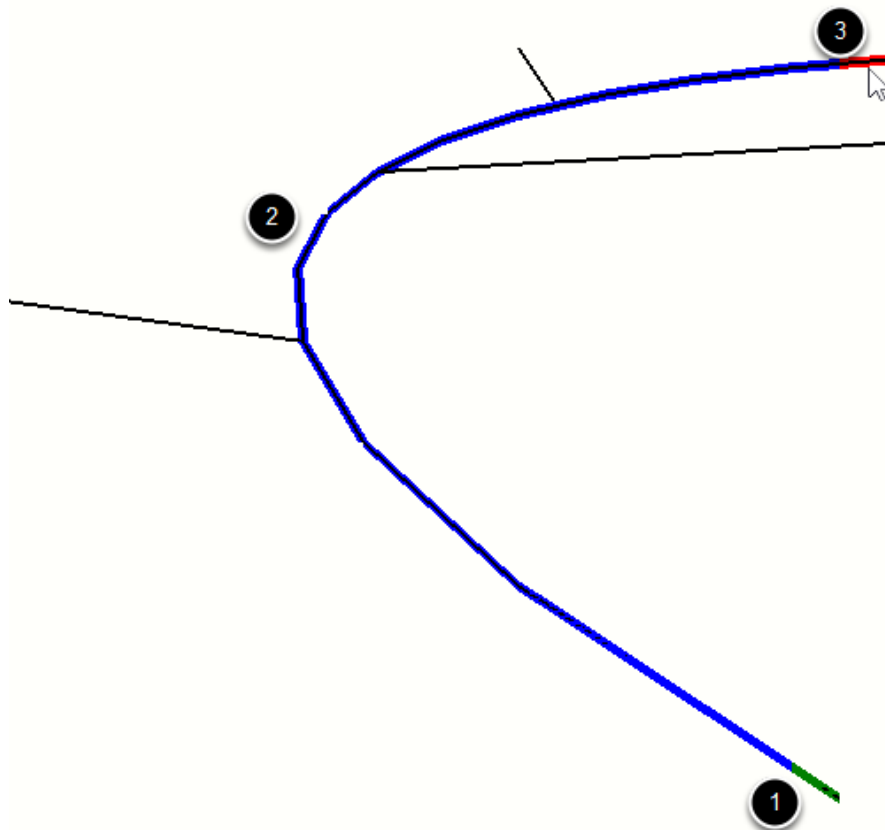


1. Click the first edge.
2. Click another edge along the path.

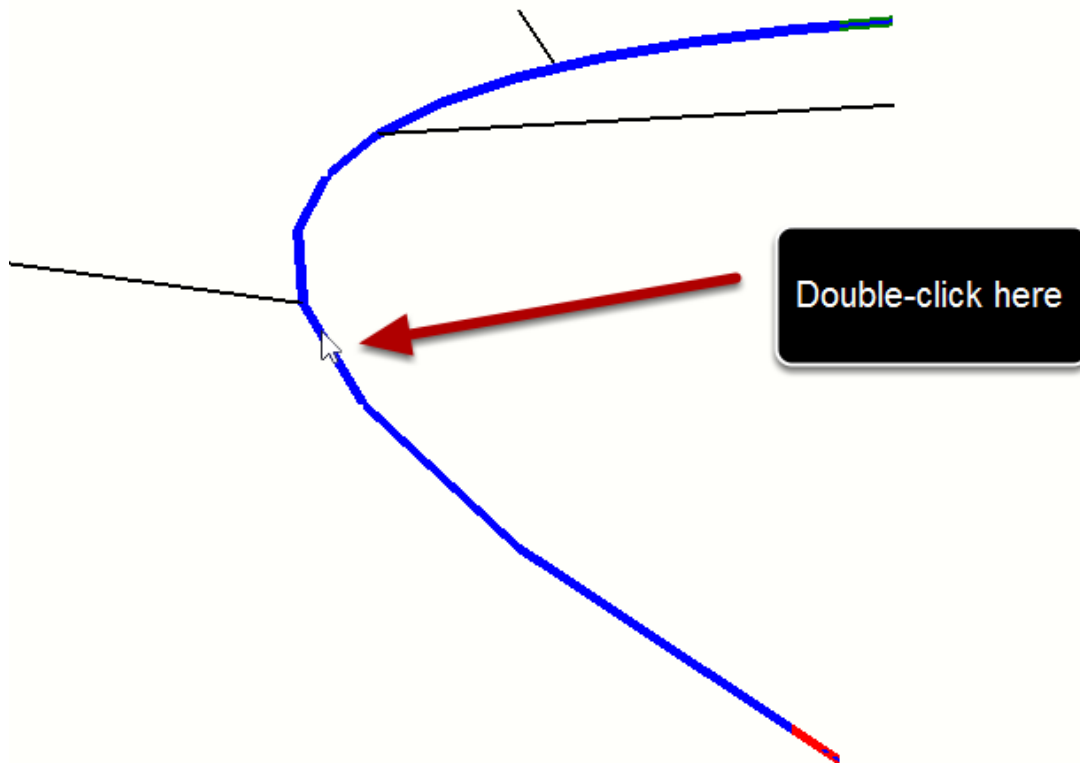
When you click on the next edge, all edges along the path between the two edges will also become selected.

TIP: If the first edge you click is a boundary edge, the tool will try to find other boundary edges along the path.

Continue clicking edges along the path



## Double-click an edge to select a Smart-path



1. Double-clicking on a middle edge will select the edges as shown.

The selected path will generally be the one with the smallest angles between the edges.

## Modifier Keys

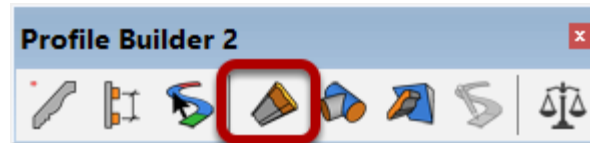
ESC = clear selection

ENTER or RETURN = complete selection (optional)

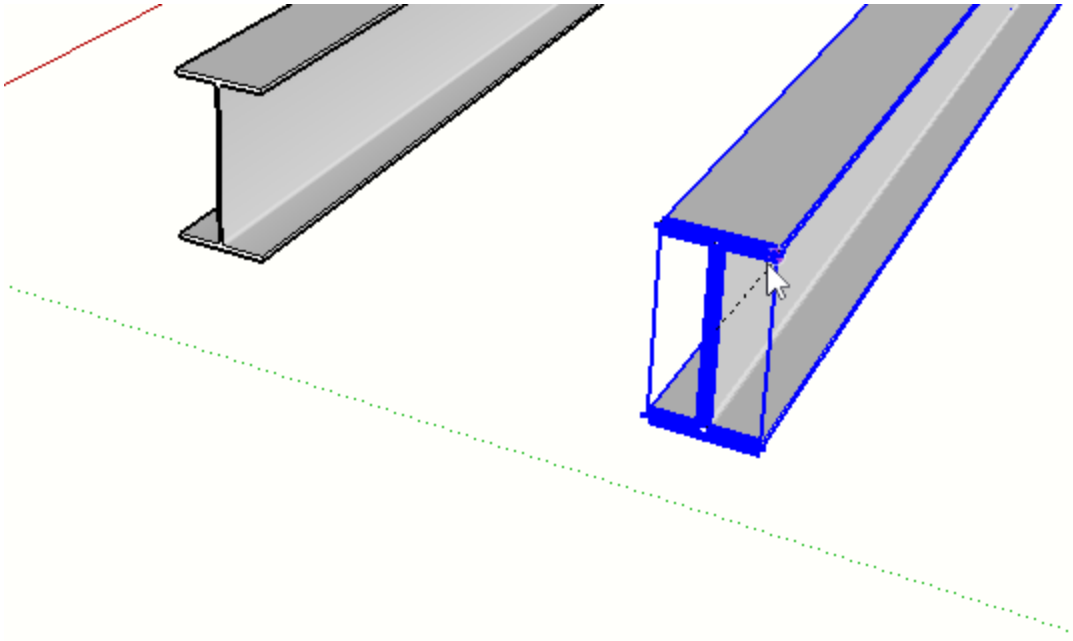


## Extend Profile Member

Launch the Tool

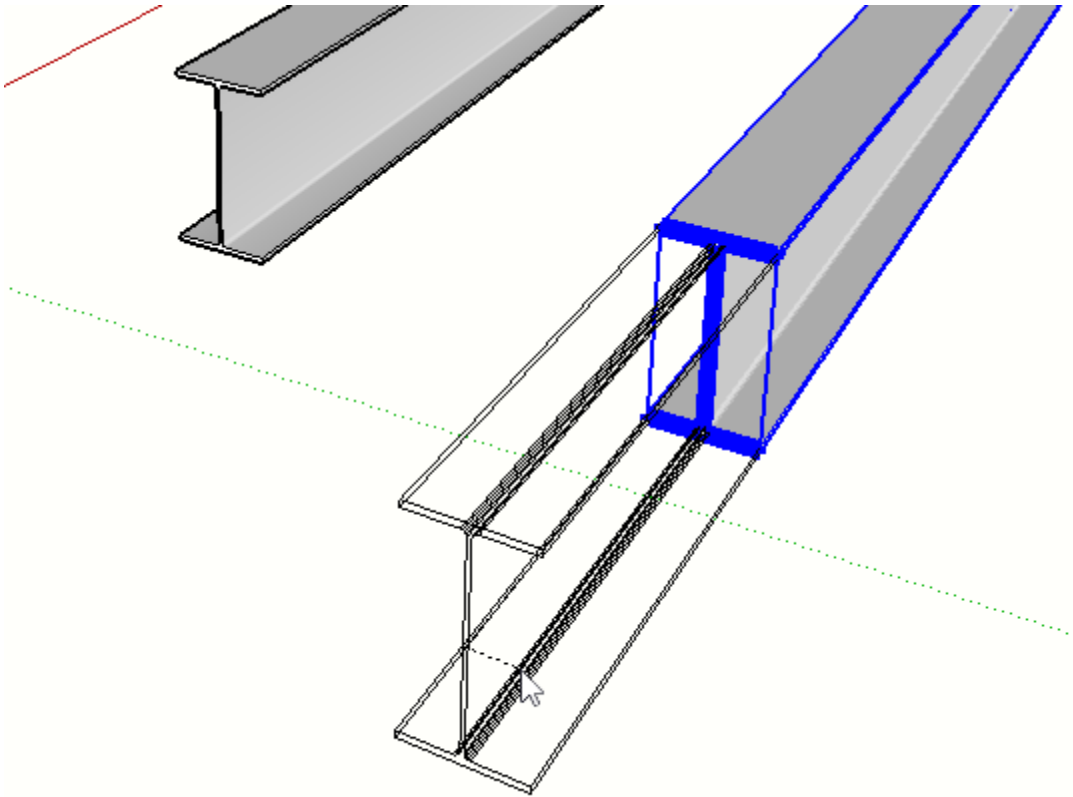


Click the end of a Profile Member to Modify

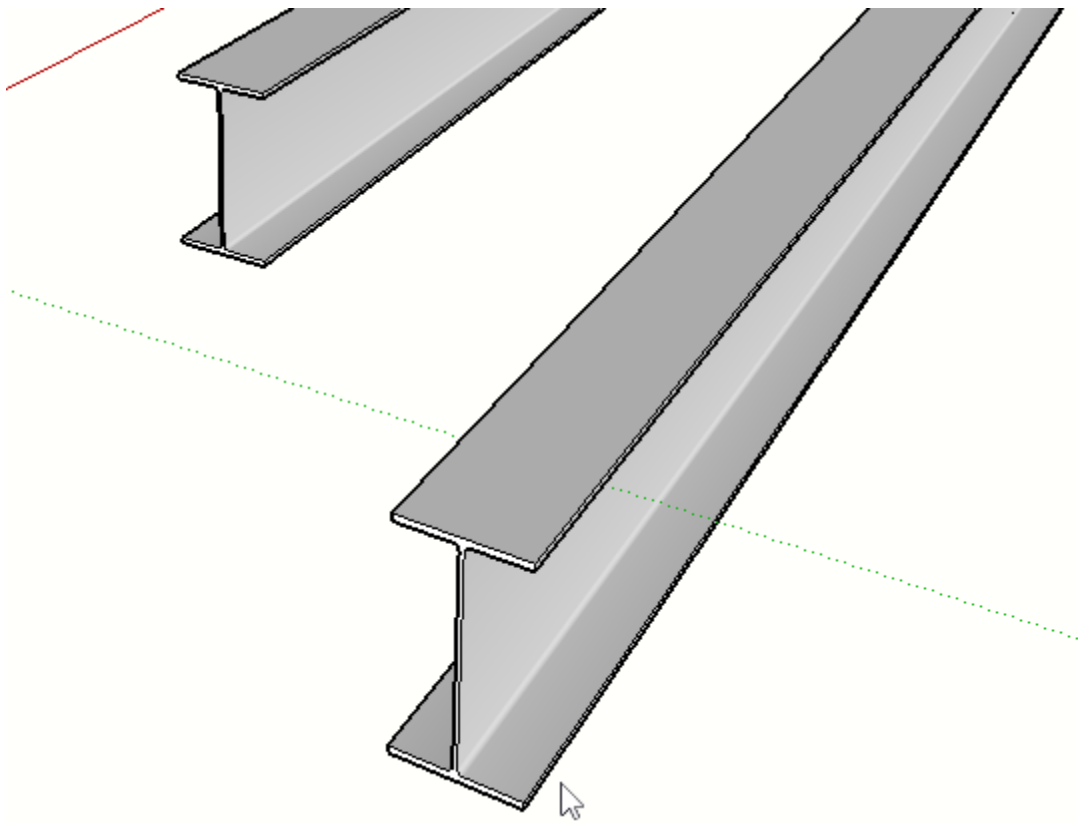


The selected end of the Profile Member becomes highlighted.

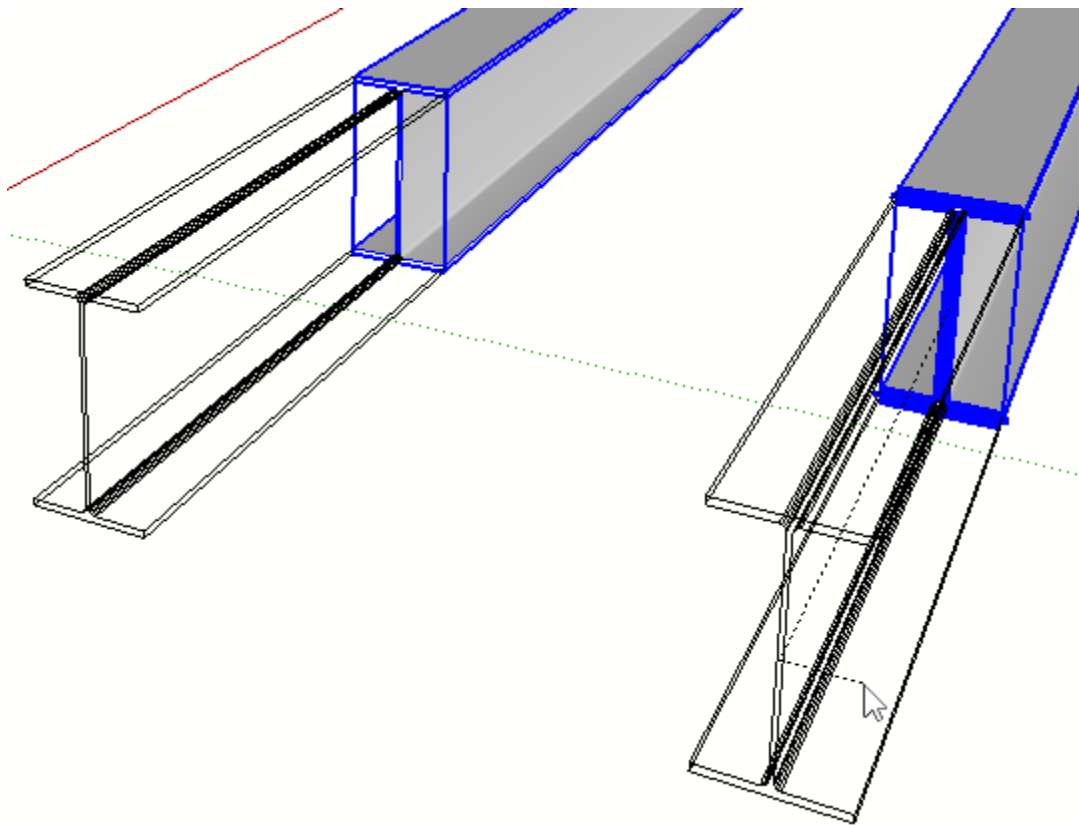
Move the mouse to define the extension distance



Click again to complete

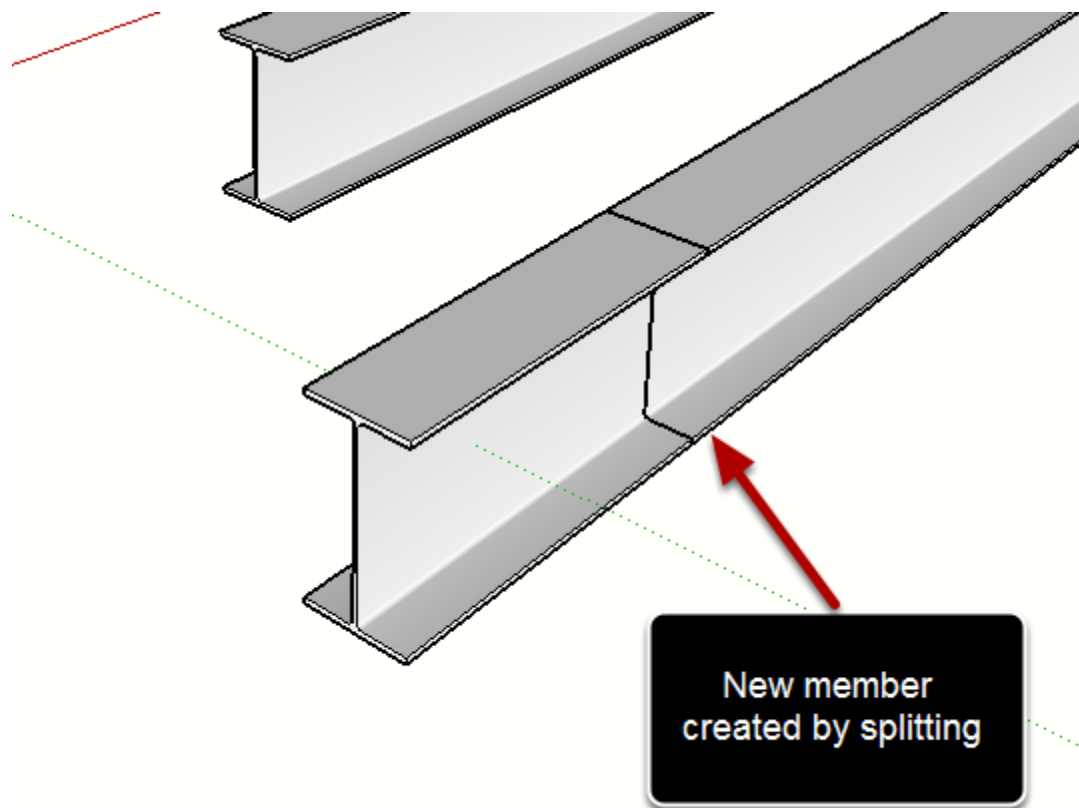


## Extending Multiple Members



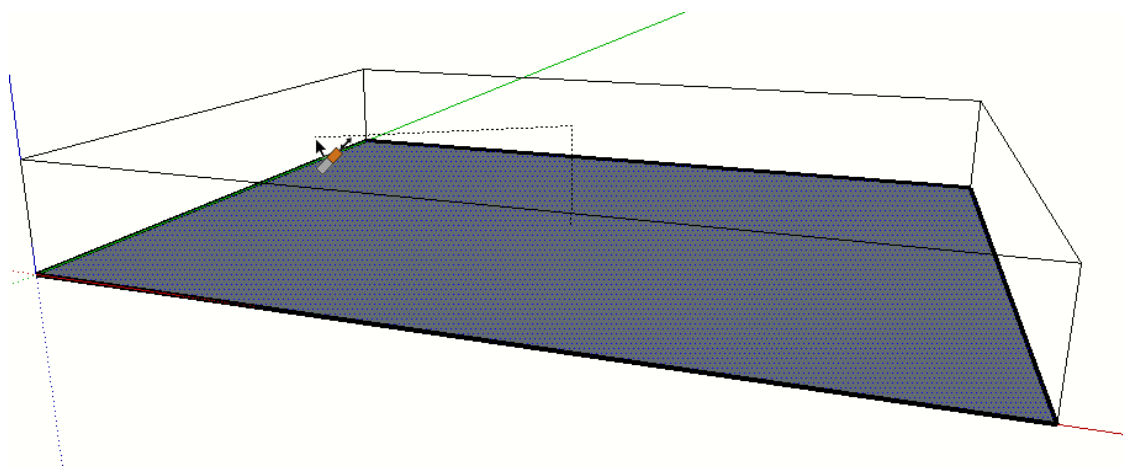
If you have multiple Profile Members selected prior to launching the tool, you can modify them all at the same time.

## Splitting Members



Press CTRL / OPTION to toggle splitting mode.

## Thicken a Face into a Profile Member

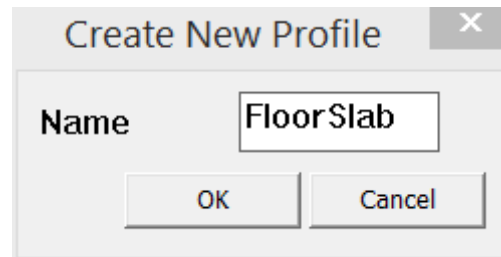


1. Draw a Face
2. Launch the tool
3. Click the face

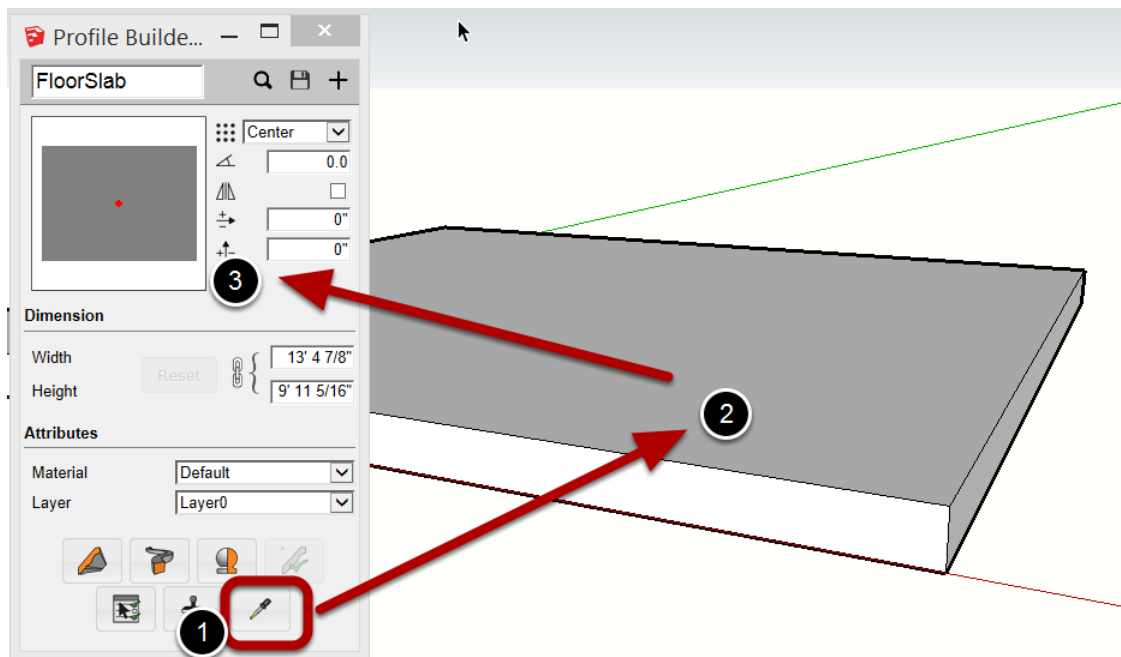
4. Thicken or extrude the face using the tool.

This feature can be useful for creating solid slabs or panels.

#### Enter a Name for the Profile

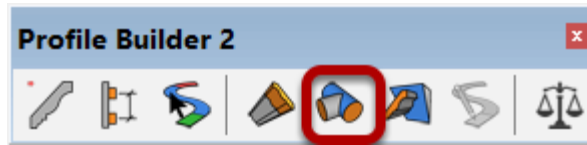


#### The result will be a Profile Member



## Trim Profile Member to Solid

### Launch the Tool



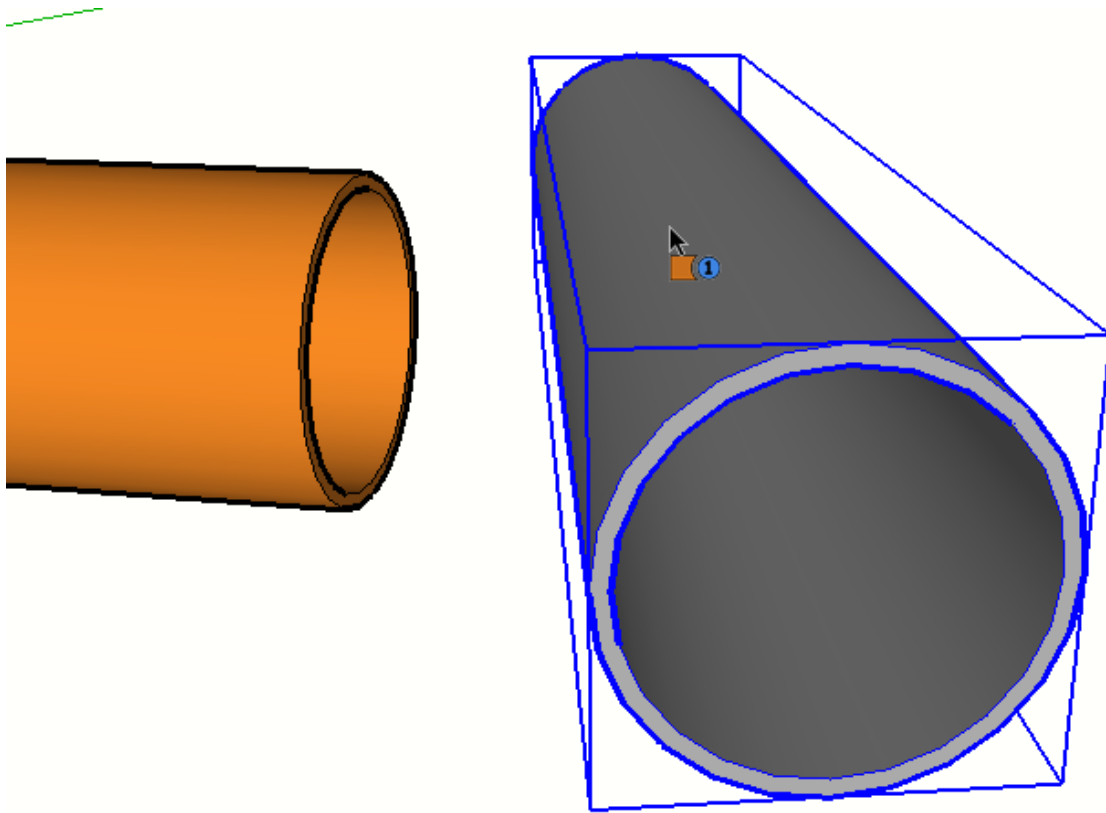
This tool requires SketchUp Pro because it uses the Solid Tools API features that are only available inside SketchUp Pro.

### Ensure that Profile Members are Solids



The Profile Member must be a solid. Any Profile Member created from a 2D face (not a polyline) will automatically be a solid. However, it is highly recommended to use the Solid Inspector SketchUp extension (by ThomThom) to check for solid objects and to help fix any non-solid objects. This extension is available on the SketchUp Extension Warehouse.

## Select a Solid Object to trim to

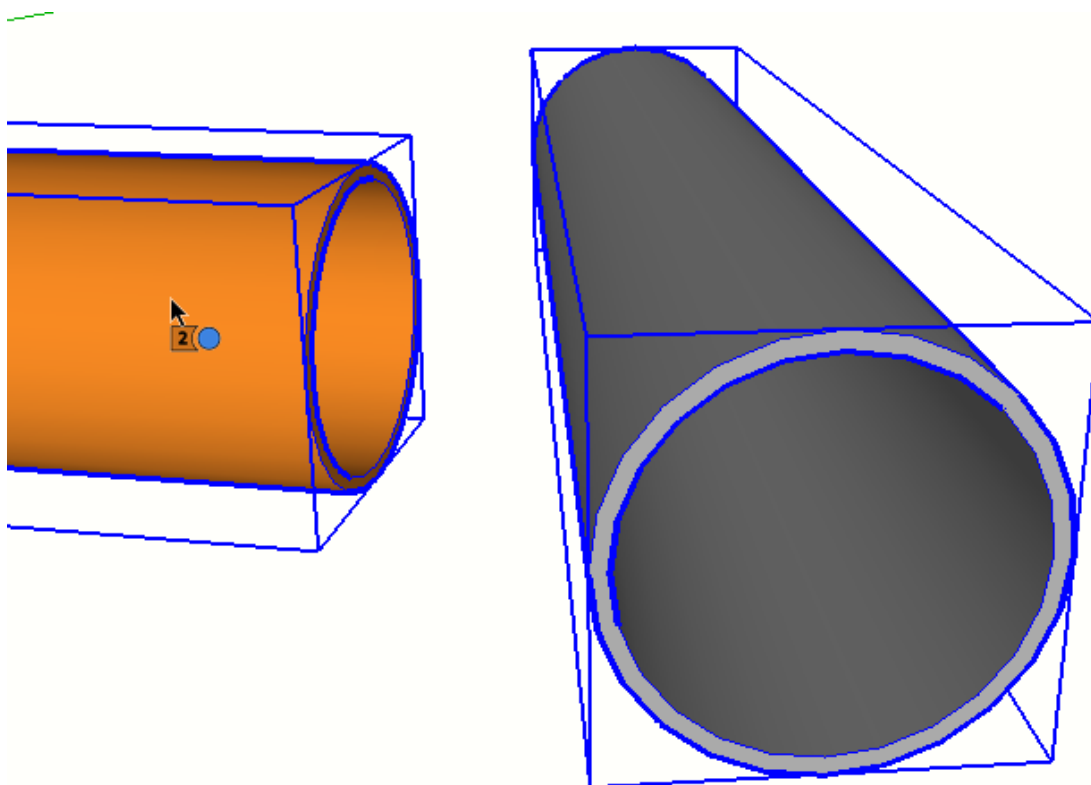


The object does NOT have to be Profile Member but it must be a solid.

As you hover the mouse, the object will highlight to indicate that it is a valid solid.



**Click the end of a Profile Member to Trim**



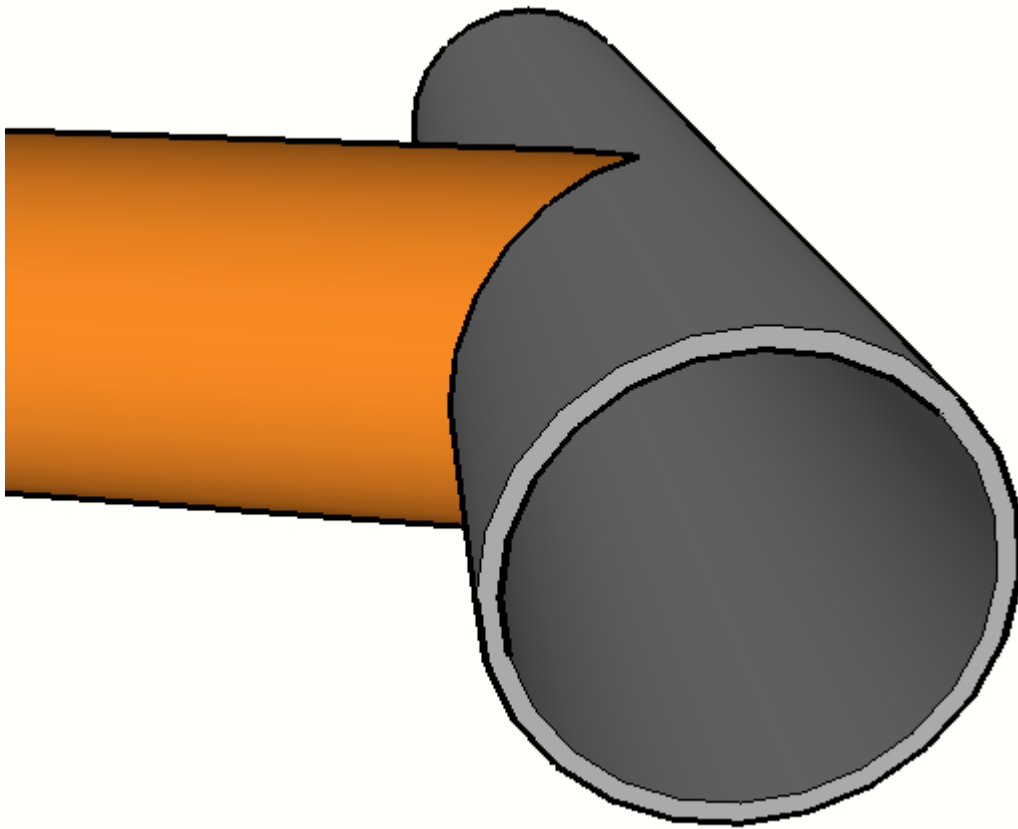
As you hover the mouse over a Profile Member, it will become highlighted indicating that it is a valid solid.

Click on the end of a Profile Member to select it.

Continue clicking other Profile Members ends for trimming if desired.

Press ESC to reset the tool.

**Congratulations! You just trimmed a Profile Member to a solid!**

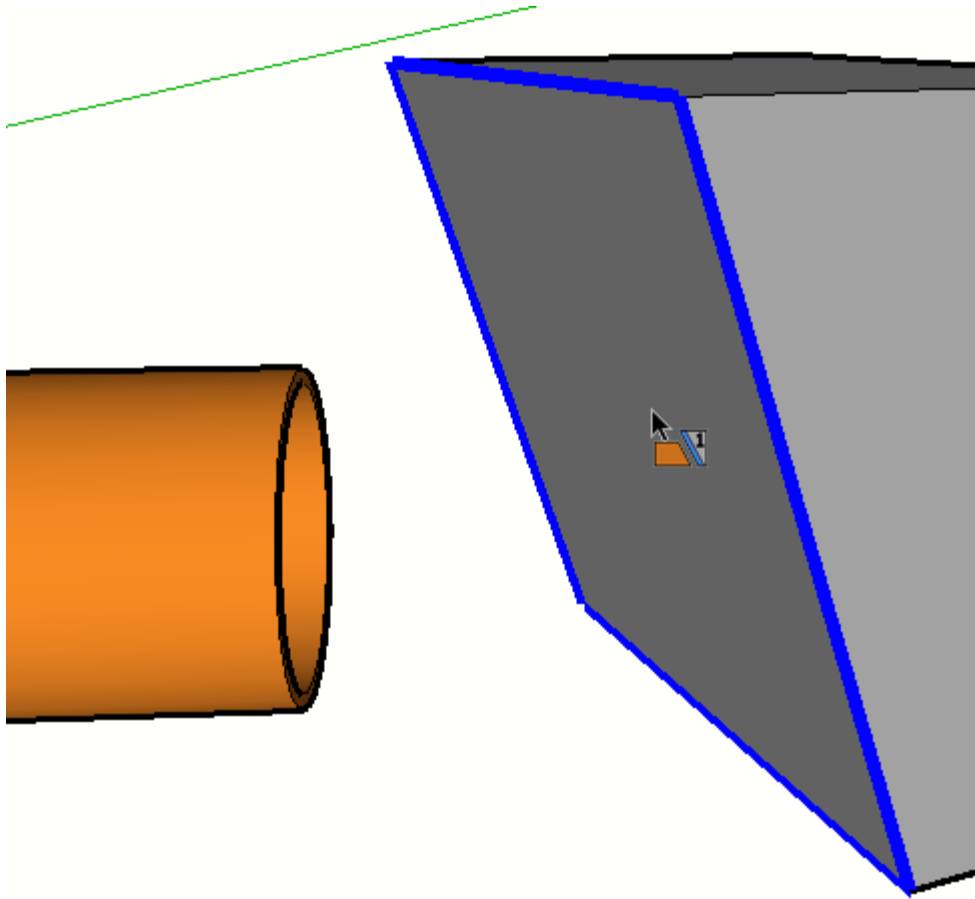


## Trim Profile Member to Face

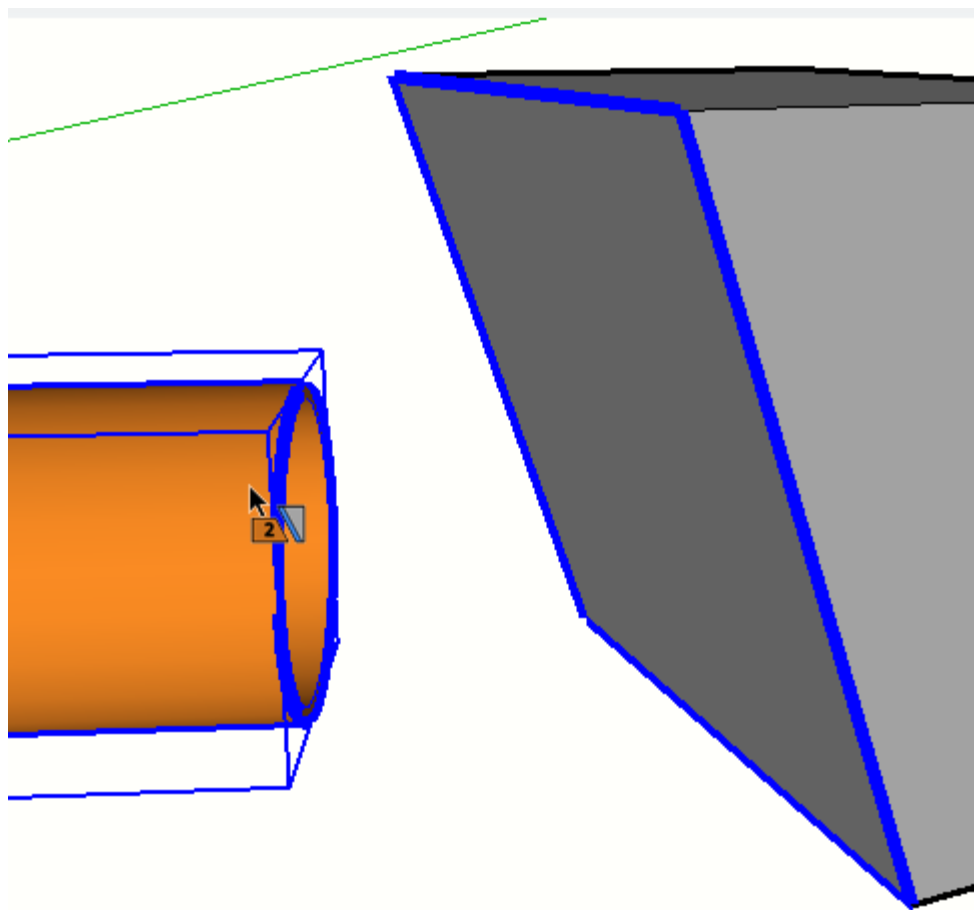
Launch the Tool



Click any Face in your model to trim to



## Select the End of a Profile Member

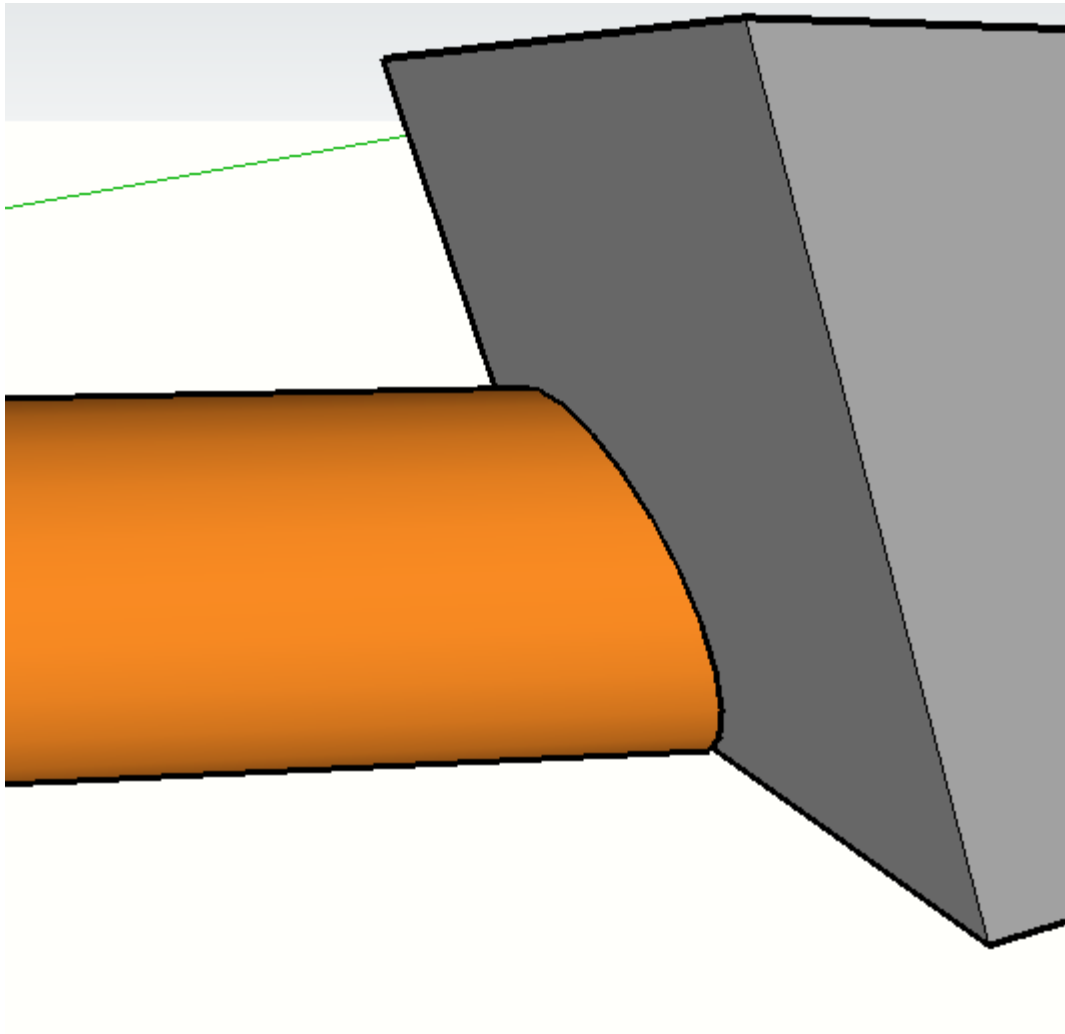


The Profile Member does not need to be a solid.  
Click on the end of a Profile Member to select it.

Continue clicking additional Profile Member ends for trimming if desired.

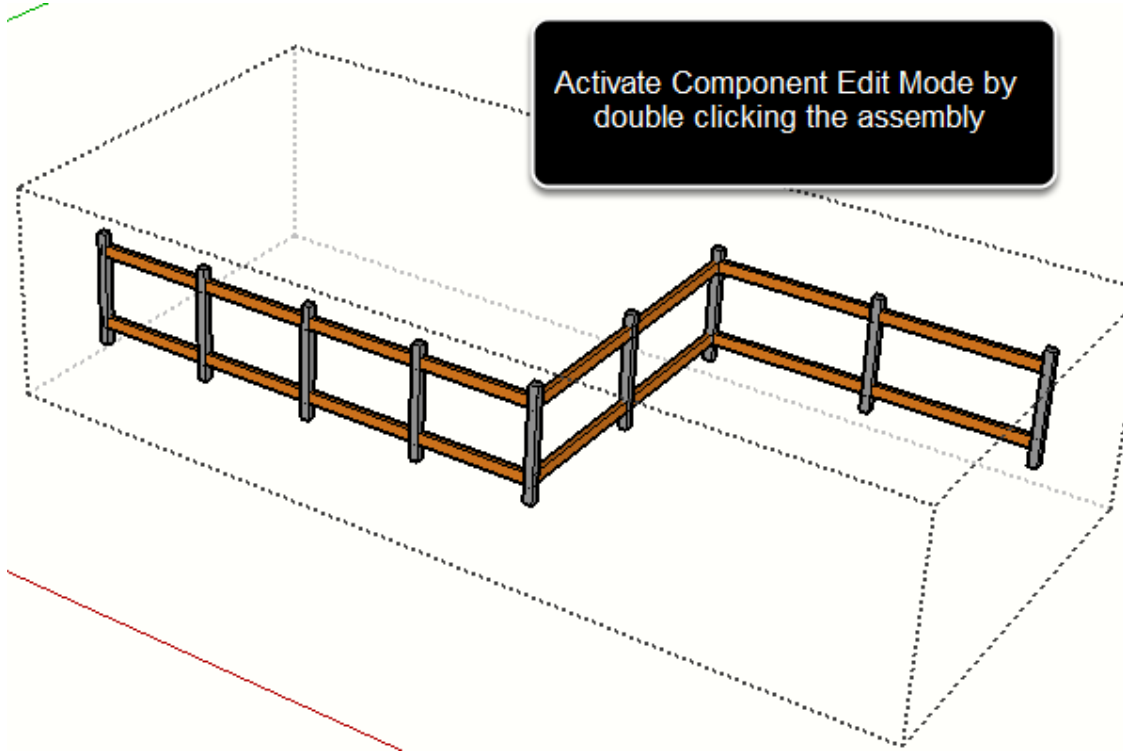
Press ESC to reset the tool.

**Congratulations! You just trimmed a Profile Member to a Face!**

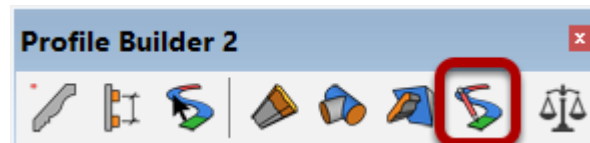


## Edit Path Tool

Double-click a Profile Member or Assembly

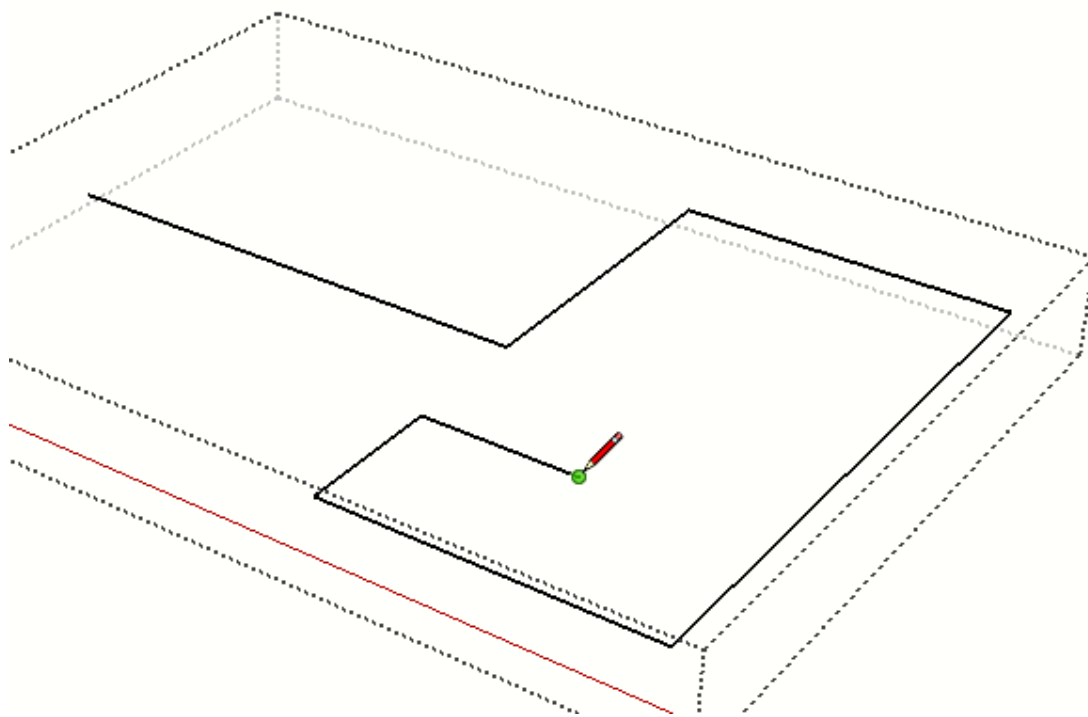


Launch the Tool



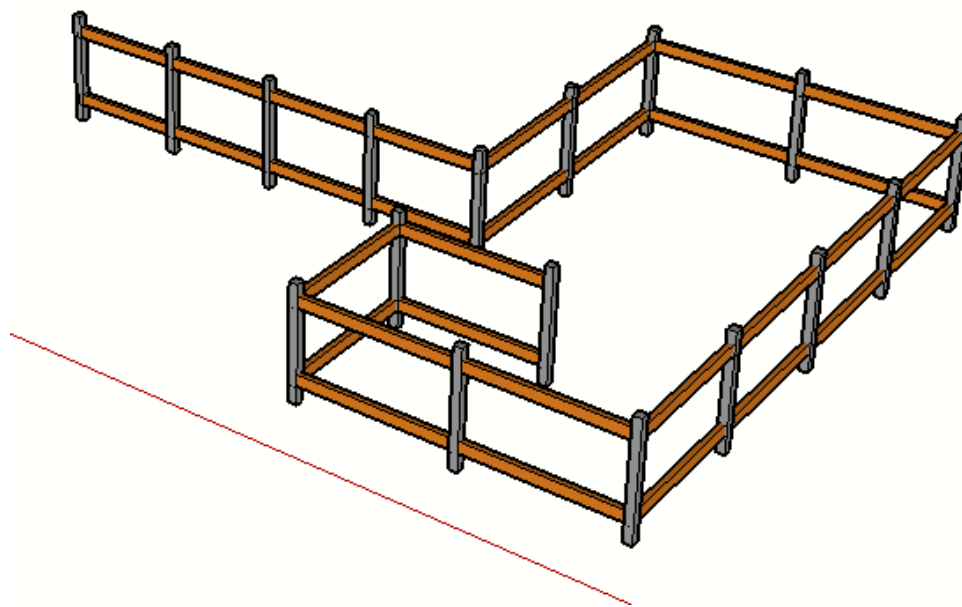
You must be inside 'Component / Group' edit mode prior to using this feature. If you are not inside a valid Profile Member or Assembly, the toolbar icon will be grayed and inactive.

## Edit the Path of the Profile Member or Assembly



Use the various drawing tools in SketchUp to edit the path.

## Close Component Edit Mode to Update the Profile Member or Assembly



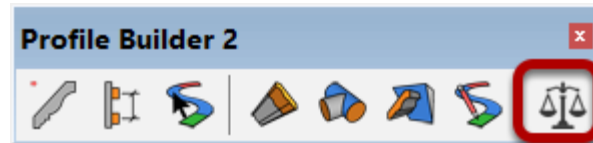
The Profile Member or Assembly will be re-built to follow the new path.

# Quantifier

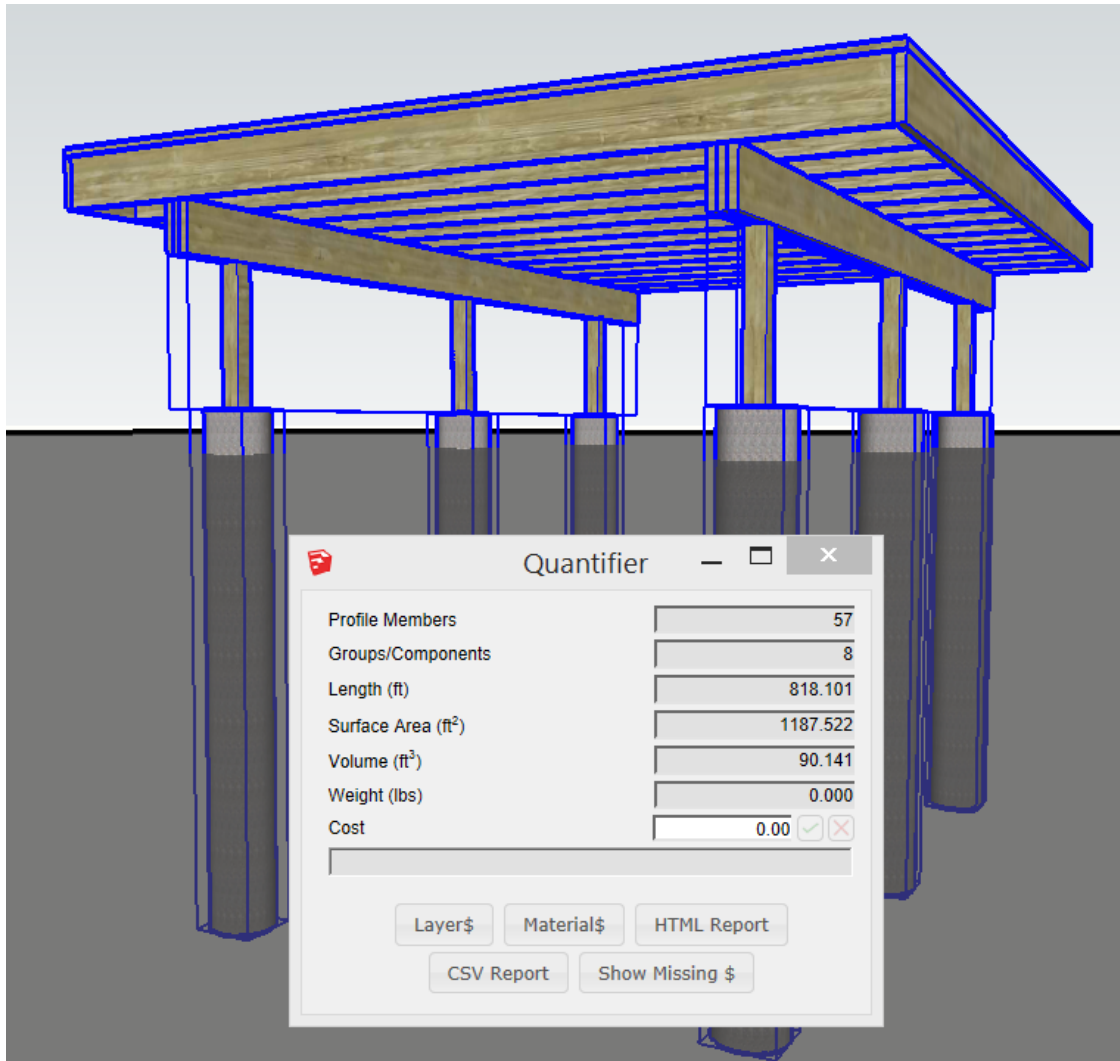


## Usage

### Launching the Tool



### Select Profile Members or other Objects in your model



Select Profile Members, Components, or Groups and the Quantifier dialog will instantly report the quantities of the selection.

## Tips for using the Quantifier

An 'Object' below refers to a Profile Member, Group, or Component.

- Model objects using Profile Members as much as possible to get the most accurate quantity reports.
- Avoid using the SketchUp scale tool on an Object. Rather, first double-click to enter Component edit mode and then scale the faces and edges inside the Object.
- Avoid using the SketchUp push / pull tool to modify the length of a Profile Member. Rather, use the Path Edit tool or the Extend tool.
- Put Objects with different physical properties on different Layers. For example, put objects made out of Concrete on a 'Concrete' layer and put objects made out of 'Wood' on a 'Wood' layer, and so on. This will result in accurate weight and cost estimates as long as the layer quantity properties have been set correctly.

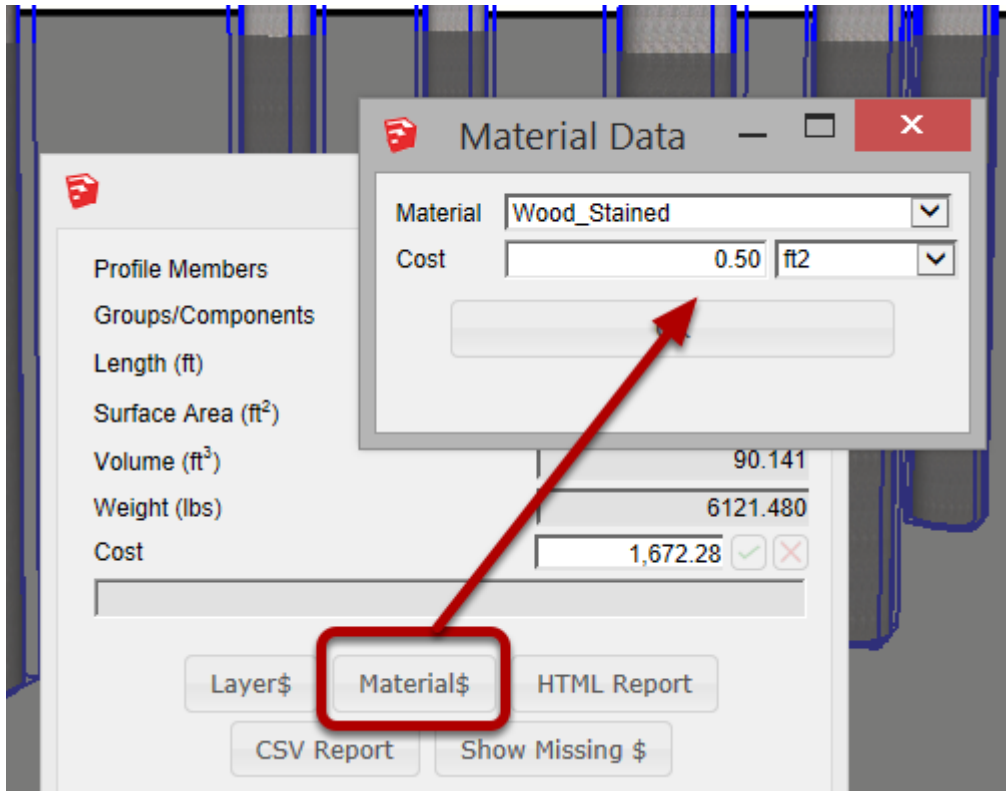
## Cost and Weight Data

### Layer Cost Data (Layer\$)

The screenshot shows a software interface with a 'Layer Data' dialog box open. The dialog box has a title bar with a red icon, a minus sign, a maximize button, and a close button (X). Inside the dialog, there are three input fields: 'Layer' with a dropdown menu showing 'ConcretePiles', 'Weight' with a text box containing '2300' and a unit dropdown showing 'kg/m3', and 'Cost' with a text box containing '490' and a unit dropdown showing 'm3'. Below these fields is an 'OK' button. A red arrow points from the 'Layer\$' button in the main interface to the 'Layer' dropdown in the dialog box. The main interface has a sidebar on the left with a red icon and a list of items: 'Profile Me', 'Groups/C', 'Length (ft)', 'Surface Area (ft²)', 'Volume (ft³)', 'Weight (lbs)', and 'Cost'. The main area on the right shows values for these items: 'Surface Area (ft²)' is 1187.522, 'Volume (ft³)' is 90.141, 'Weight (lbs)' is 0.000, and 'Cost' is 0.00 with green and red checkmark buttons. At the bottom of the main interface, there are four buttons: 'Layer\$' (highlighted with a red rectangle), 'Material\$', 'HTML Report', 'CSV Report', and 'Show Missing \$'.

Unit weight and unit costs may be associated to a particular Layer in your model. All Objects on that Layer will use the assigned unit weights and costs in their particular quantity calculations.

## Material Cost Data (Material\$)

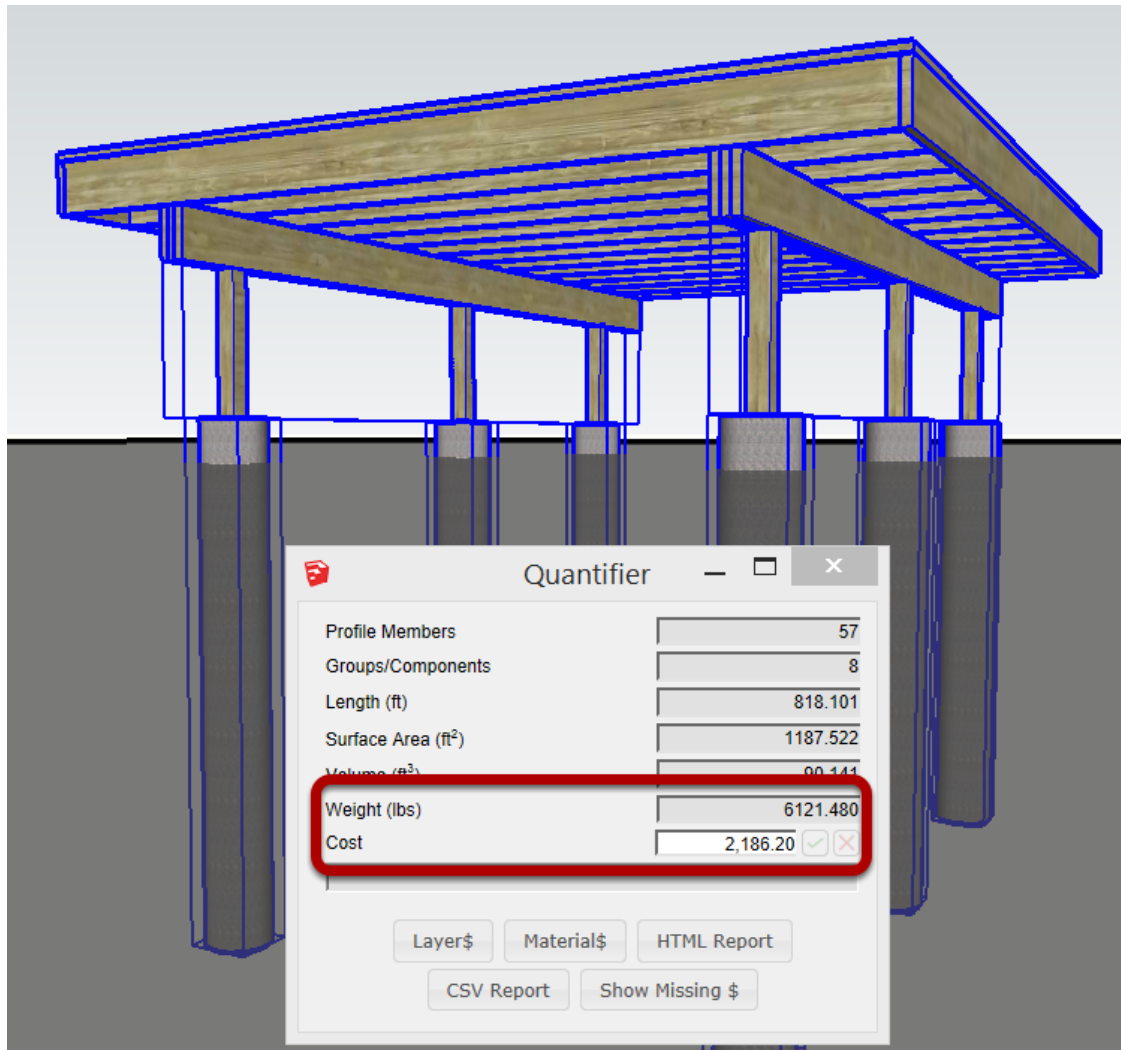


Costs per unit area may also be associated with a particular Material in your model. This feature is best used to calculate costs for surface finishes such as:

- Paint
- Flooring
- Tile
- Coatings

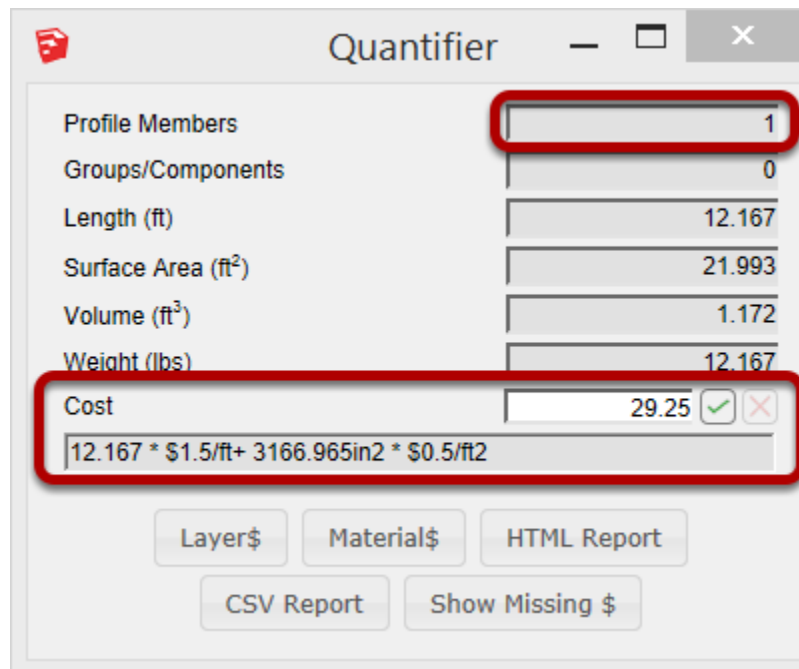
An object can have cost input from both Layers and Materials at the same time.

## Instant Cost Estimates



Once cost and weight data has been assigned, getting a cost and weight estimate is simply a matter of selecting the Objects that you are interested in.

## Checking the Cost Calculation



The Quantifier dialog box displays various measurements and a cost calculation. The 'Profile Members' value is 1, and the 'Cost' is 29.25. The cost calculation formula is  $12.167 * \$1.5/\text{ft} + 3166.965\text{in}^2 * \$0.5/\text{ft}^2$ . The dialog also includes buttons for 'Layer\$', 'Material\$', 'HTML Report', 'CSV Report', and 'Show Missing \$'.

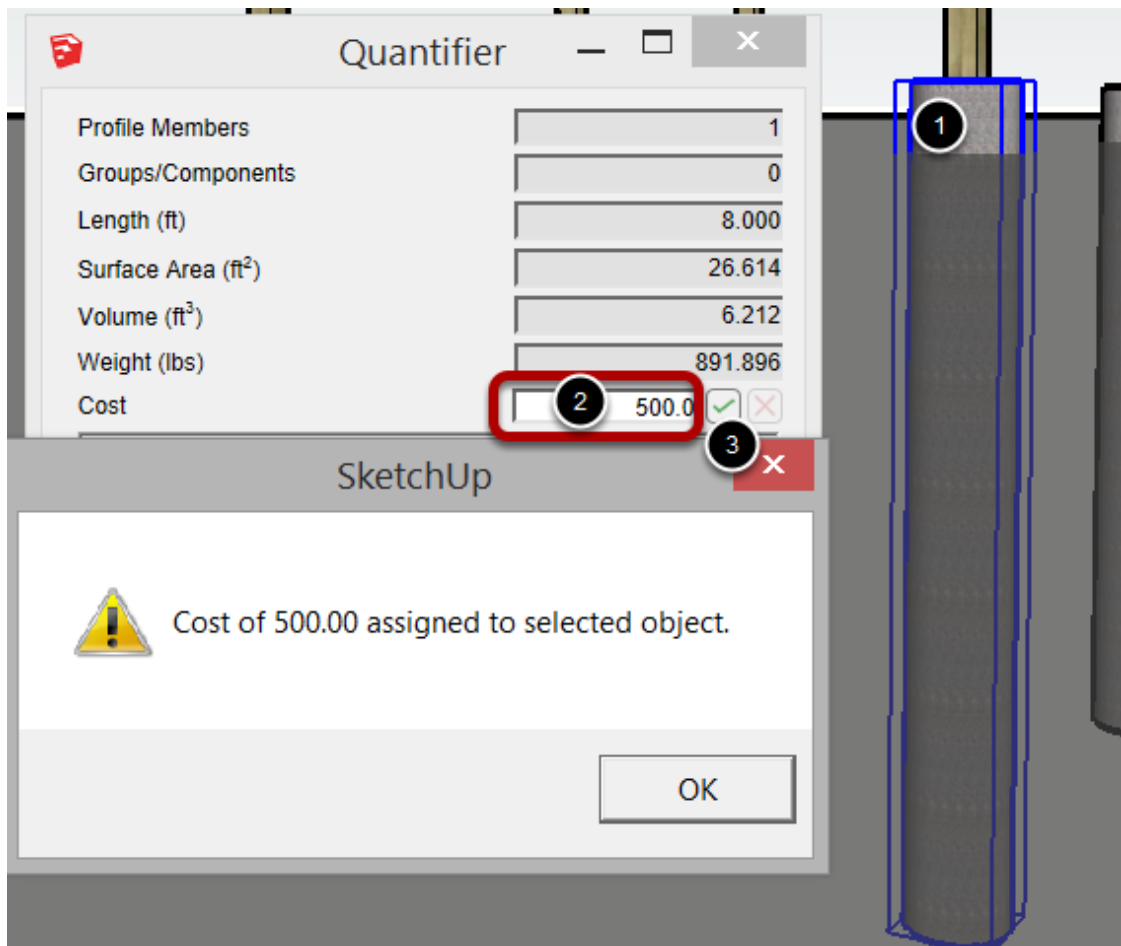
Measurement	Value
Profile Members	1
Groups/Components	0
Length (ft)	12.167
Surface Area (ft <sup>2</sup> )	21.993
Volume (ft <sup>3</sup> )	1.172
Weight (lbs)	12.167
Cost	29.25

Cost Calculation Formula:  $12.167 * \$1.5/\text{ft} + 3166.965\text{in}^2 * \$0.5/\text{ft}^2$

Buttons: Layer\$, Material\$, HTML Report, CSV Report, Show Missing \$

If you select a single Object, you can view the cost calculation and see if everything looks good.

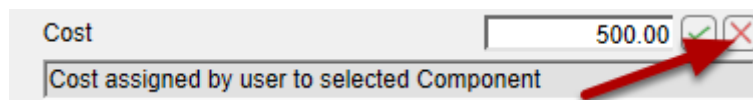
## Assigning a Cost to an Object



If you select a single Object, you can assign a cost to it directly and over-ride the calculated cost.

1. Select an Object
2. Input a Cost
3. Click the checkmark to apply.

## Removing the Assigned cost

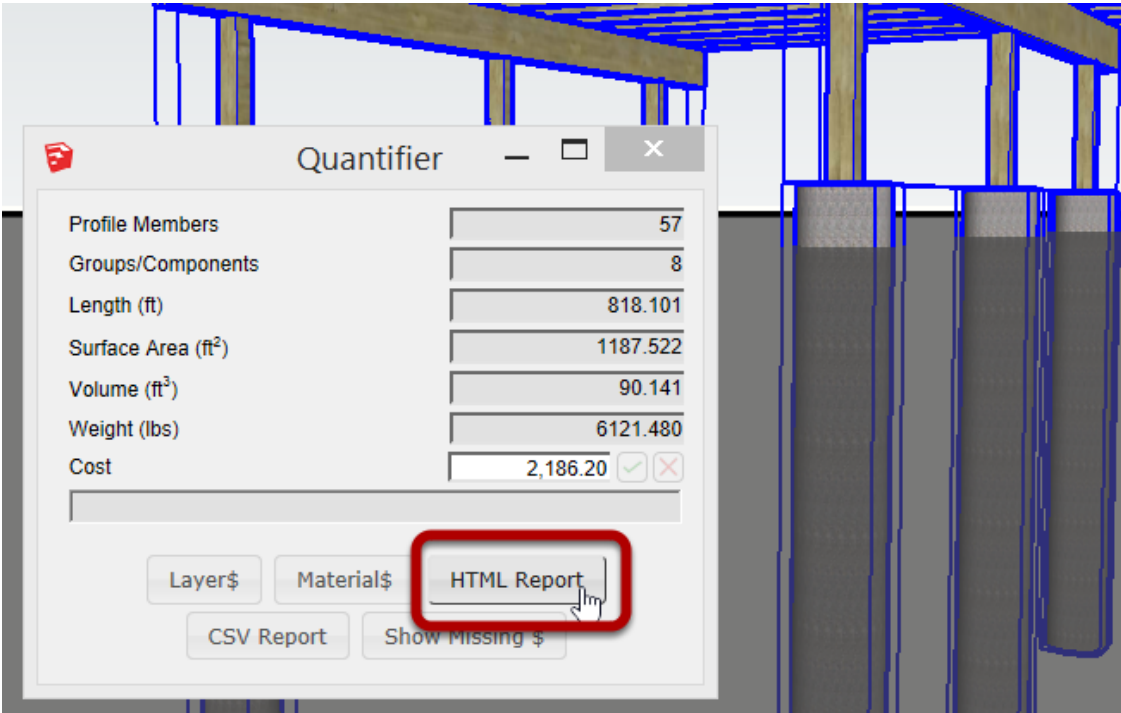


Select the object again to check the cost that as been assigned.

To remove the assigned cost, click the X.

# Quantity Reports

## Create an HTML Report



To create an HTML report, select some objects and click the HTML report button.

## Viewing the Report

Profile Builder Report

Show 20 entries

Search:

Select table

Layer	Container	Component Name	Object Name	Object Material	Profile	Width (in)	Height (in)	Length (ft)	Volume (ft³)	Area (ft²)	Segments	Surface Area (ft²)	Weight (lbs)	Object Cost	Surface Material Cost	Total Cost
ConcretePiles		Group91#2	12inPile	Concrete	12inPile	12.000	12.000	8.000	6.212	6.212	1	26.614	891.896	86.19	0.00	86.19
ConcretePiles		Group91#3	12inPile	Concrete	12inPile	12.000	12.000	8.000	6.212	6.212	1	26.614	891.896	86.19	0.00	86.19
ConcretePiles		Group91#4	12inPile	Concrete	12inPile	12.000	12.000	8.000	6.212	6.212	1	26.614	891.896	86.19	0.00	86.19
ConcretePiles		Group91#5	12inPile	Concrete	12inPile	12.000	12.000	8.000	6.212	6.212	1	26.614	891.896	86.19	0.00	86.19
ConcretePiles		Group91#6	12inPile	Concrete	12inPile	12.000	12.000	8.000	6.212	6.212	1	26.614	891.896	86.19	0.00	86.19
ConcretePiles		Group91#1	12inPile	Concrete	12inPile	12.000	12.000	8.000	6.212	6.212	1	26.614	891.896	86.19	0.00	86.19
Wood		Group#32		Default	-	36.000	4.500	16.000	0.000	48.000	-	0.000	16.000	24.00	0.00	24.00
Wood	Group#32	Group81#2	2x10	Default	2x10	1.500	9.250	16.000	1.542	12.333	1	28.859	16.000	38.43	14.43	38.43
Wood	Group#32	Group81#3	2x10	Default	2x10	1.500	9.250	16.000	1.542	12.333	1	28.859	16.000	38.43	14.43	38.43
Wood	Group#32	Group81#1	2x10	Default	2x10	1.500	9.250	16.000	1.542	12.333	1	28.859	16.000	38.43	14.43	38.43
Wood	Group#32	Post & Pile		Default	-	0.000	3.500	2.230	0.000	0.650	-	0.000	2.230	3.34	0.00	3.34
Wood	Group#32/Post & Pile	Group85#1		Default	4x4	3.500	3.500	2.230	0.190	0.650	1	2.771	2.230	4.73	1.39	4.73
Wood	Group#32	Post & Pile		Default	-	0.000	3.500	2.230	0.000	0.650	-	0.000	2.230	3.34	0.00	3.34
Wood	Group#32/Post & Pile	Group85#1		Default	4x4	3.500	3.500	2.230	0.190	0.650	1	2.771	2.230	4.73	1.39	4.73
Wood	Group#32	Post & Pile		Default	-	0.000	3.500	2.230	0.000	0.650	-	0.000	2.230	3.34	0.00	3.34
Wood	Group#32/Post & Pile	Group85#1		Default	4x4	3.500	3.500	2.230	0.190	0.650	1	2.771	2.230	4.73	1.39	4.73
Wood		Group89#4	2x6	Default	2x6	1.500	5.500	14.292	0.819	6.550	1	16.788	14.292	29.83	8.39	29.83
Wood		Group89#5	2x6	Default	2x6	1.500	5.500	14.292	0.819	6.550	1	16.788	14.292	29.83	8.39	29.83
Wood		Group85#3	2x10	Default	2x10	1.500	9.250	16.125	1.554	12.430	1	29.083	16.125	38.73	14.54	38.73
Wood		Group84#1		Default	2x10	1.500	9.250	12.167	1.172	9.379	1	21.993	12.167	29.25	11.00	29.25

Showing 1 to 20 of 65 entries

Previous 1 2 3 4 Next

Sort columns by clicking the column heading.

To sort by multiple columns, hold SHIFT when clicking additional columns.



Search for a set of Objects using the Search field.

Click the 'Select Table' button to select the table so you can copy and paste it into another application such as Excel.

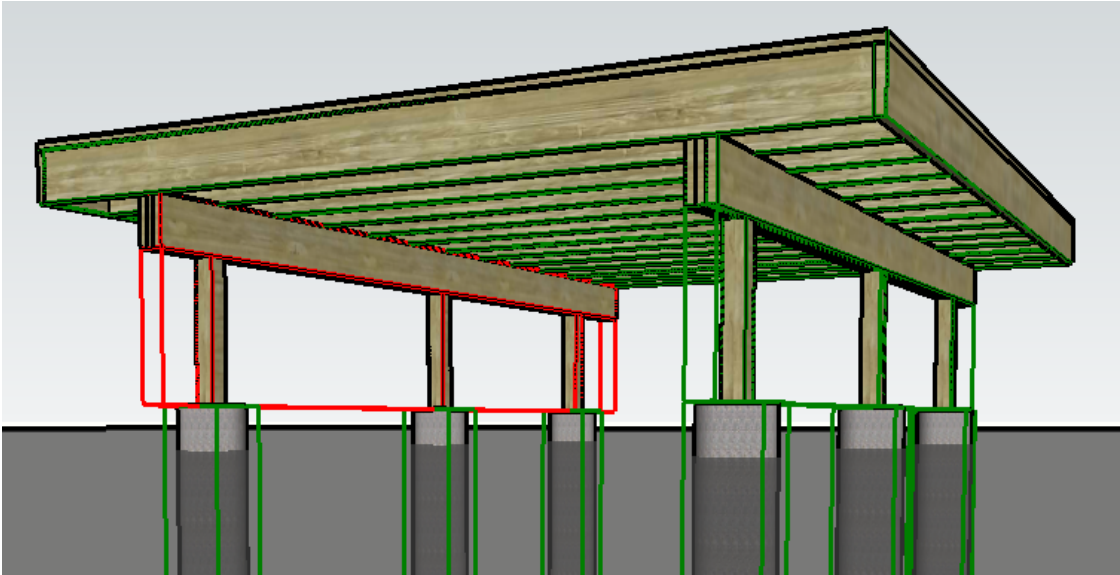
### **CSV Report**

To export a CSV report, click the CSV Report button.

CSV reports may be opened directly by spreadsheet applications such as Excel.

## Show Missing Cost Data

### View Objects that do not have Cost Data

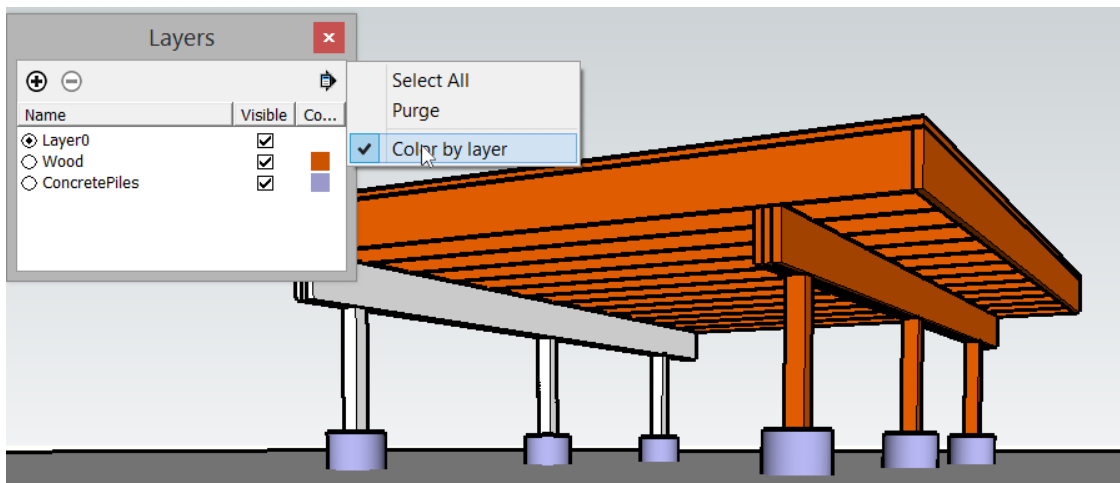


Click the 'Show Missing \$' button.

Objects that do not have cost data associated with them will be highlighted in red.

Objects with valid cost data will be highlighted in green.

### Use 'Color by Layer' to Check Cost Data



Use SketchUp's Color by Layer setting to check which Layer (and weight / cost data) a particular Object is associated with.

Note: If the Object is nested inside other Groups and Components, the Layer of the Object might

be determined by one of the Parent Group or Components.

## Quantity Reference

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### Length

Profile Members: Length = length of the Profile Member path

Groups / Components: Length = maximum dimension of the Object's bounding box

### Surface Area

All Objects: Surface Area = Sum of all areas of the faces inside the Object

### Area

2D Profile Members: Area = Volume / (least of Length, Profile Width, Profile Height)

1D Profile Members: Area = Length \* (greatest of Profile Width, Profile Height)

### Volume

When it is important to know the volume and weight of a particular object, make sure that the Object is modeled as Profile Member or as a solid object. In a solid object, each edge bounds exactly two faces.

Profile Members: Volume = Area of the Profile multiplied by the length of the member.

Solid Groups / Components that contain no child Objects: Volume = volume of the solid (same as value calculated by SketchUp)

Solid Groups / Components with child Objects: Volume = volume the mesh (calculated by Profile Builder)

Non-Solid Groups / Components: Volume = estimated volume of the mesh

### Weight

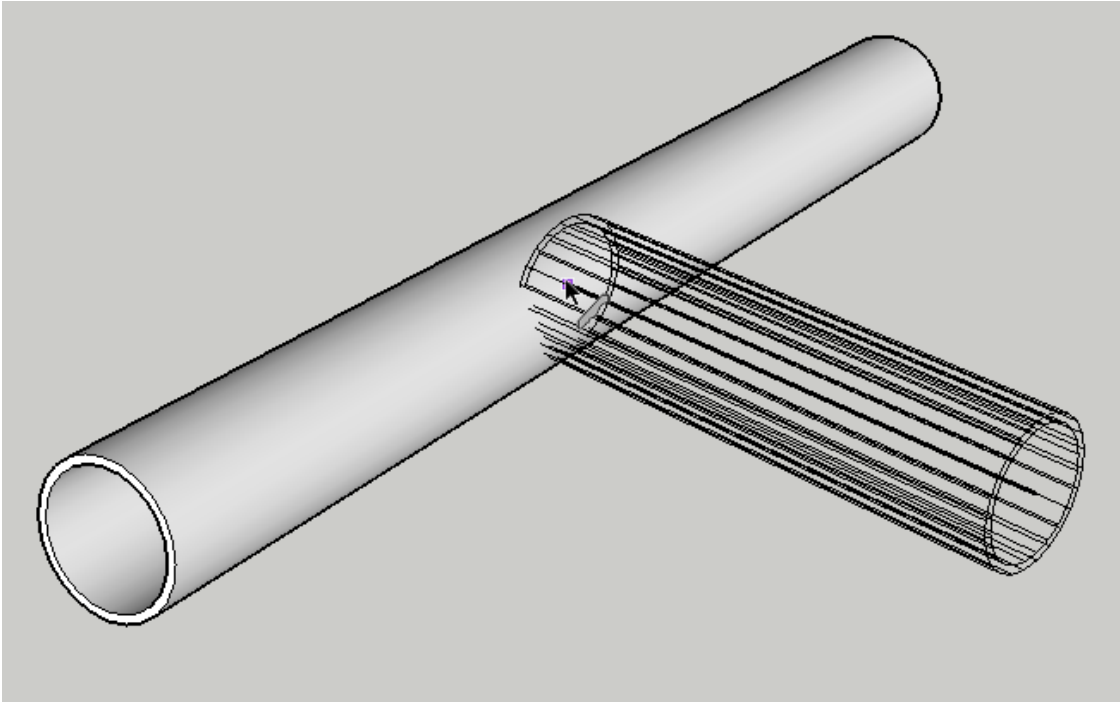
The weight calculation will depend on the unit weight data assigned to the layer that the Object is associated with. The weight will be based on the unit weight multiplied by either the length, area or volume.

### Cost

The cost calculation will depend on the cost data assigned to the layer that the Object is associated with. To view the cost calculation, select a single object in your model with the Quantifier tool activated.

# **Profile Member Path Inferencing (PMPI)**

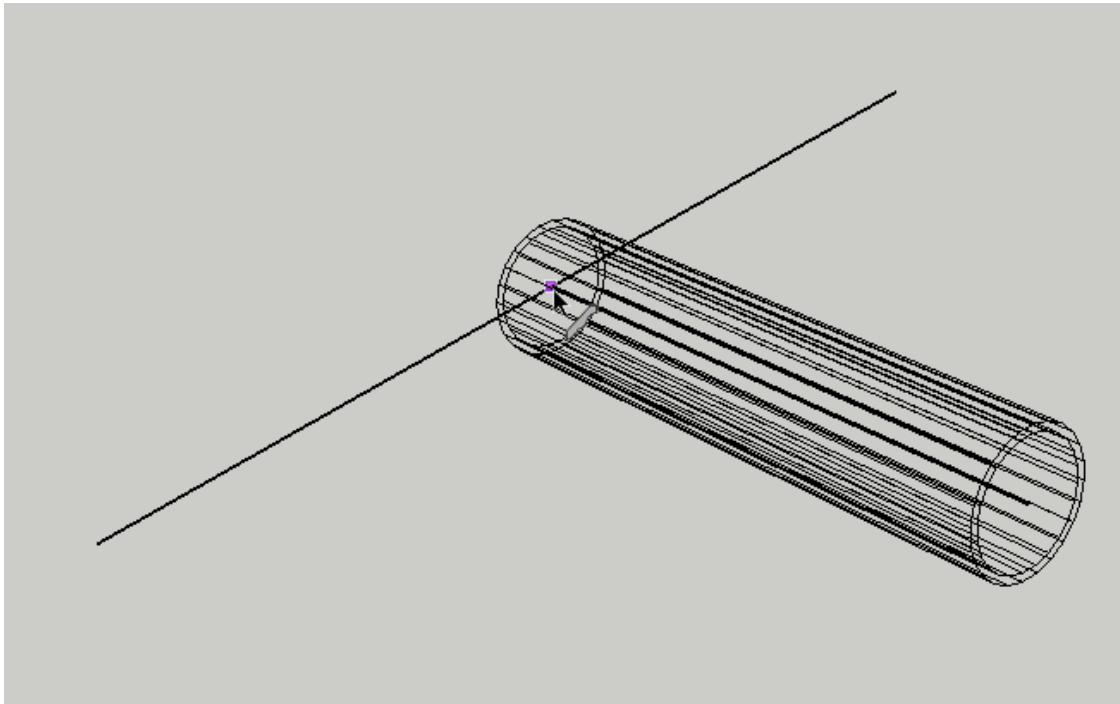
### Profile Member Path Inferencing



In order to connect Profile Members precisely, use PMPI.

Activate PMPI within a tool by hovering the cursor over a Profile Member and pressing the CTRL button (Windows) or OPTION (Mac).

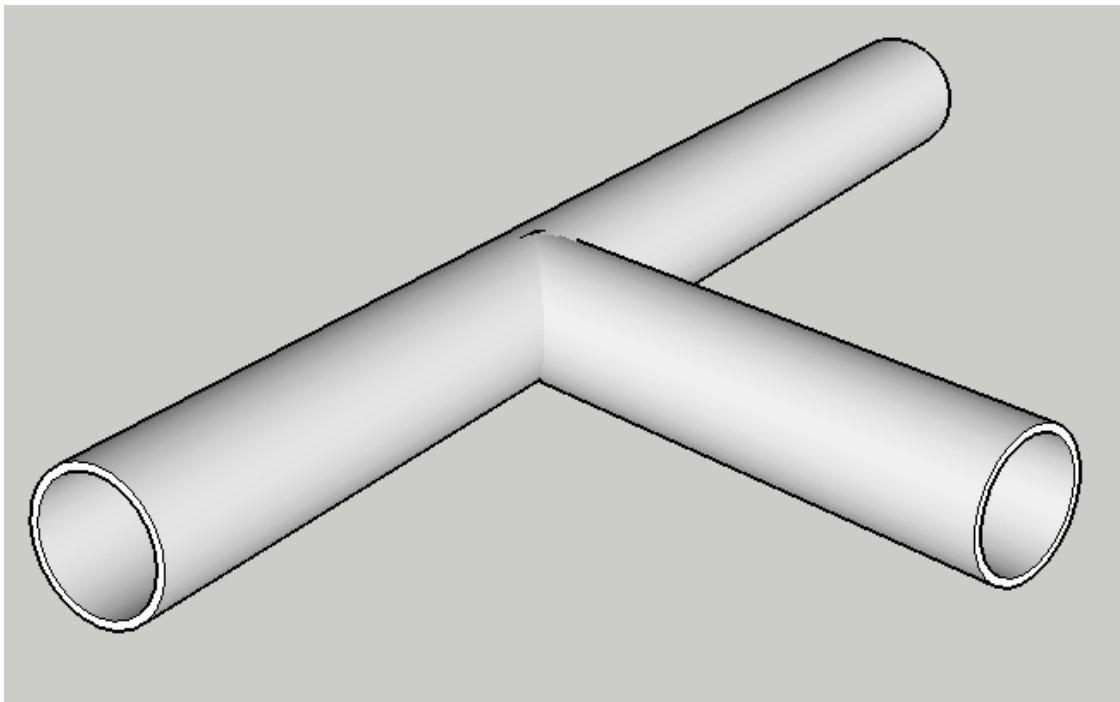
## Replace a Profile Member with its Path

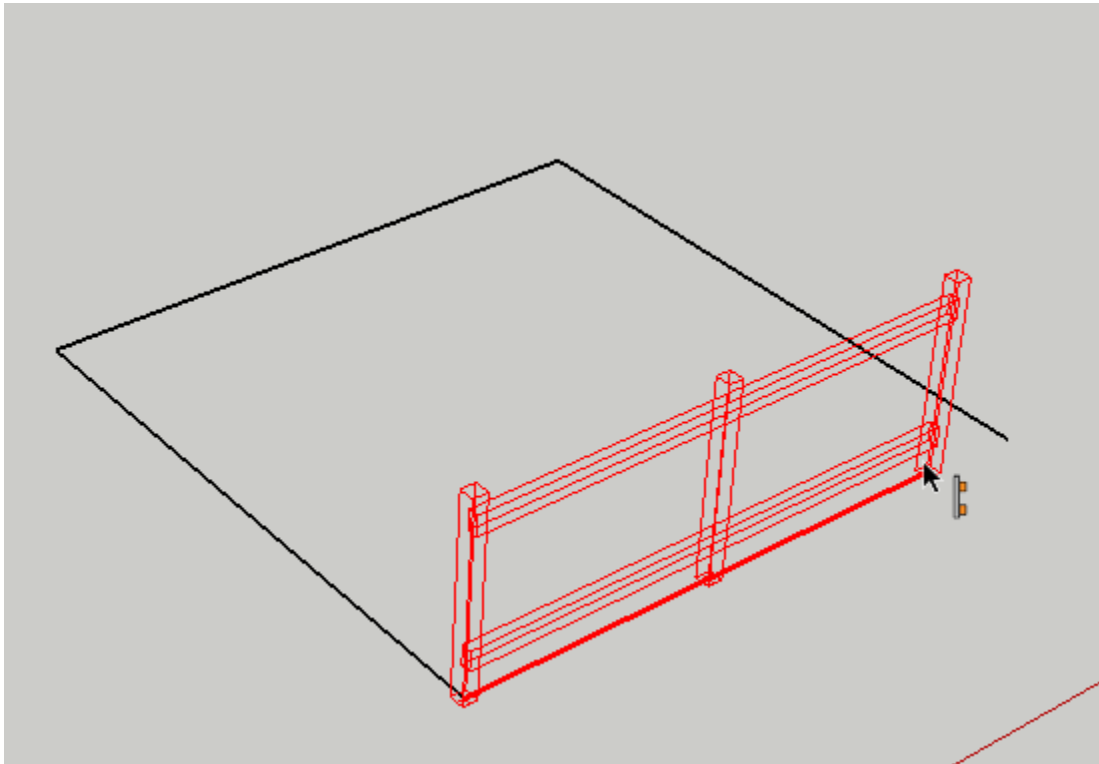


After activating PMPI, the Profile Member will be temporarily replaced by its path so you can inference to the path.

In the example above, PMPI is used to connect two pipes at their centerlines.

## Congratulations! You just used PMPI!

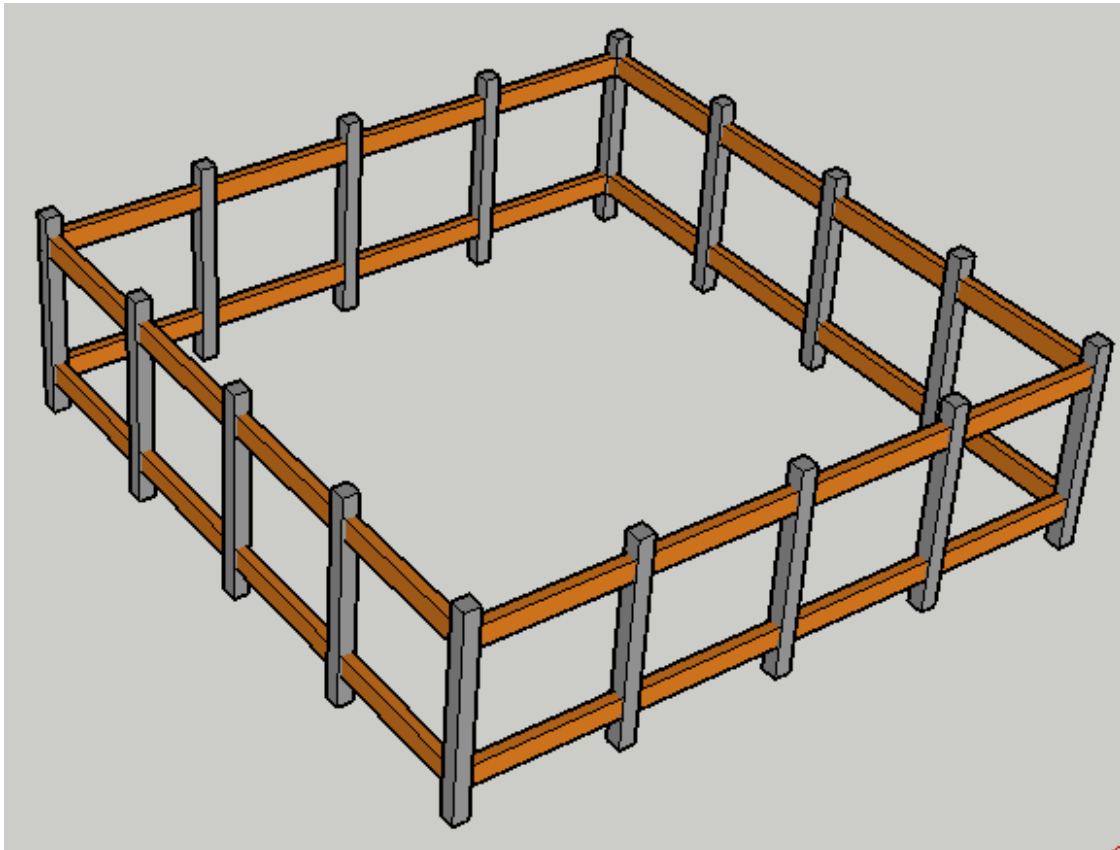




PMPI can be used when building an Assembly.



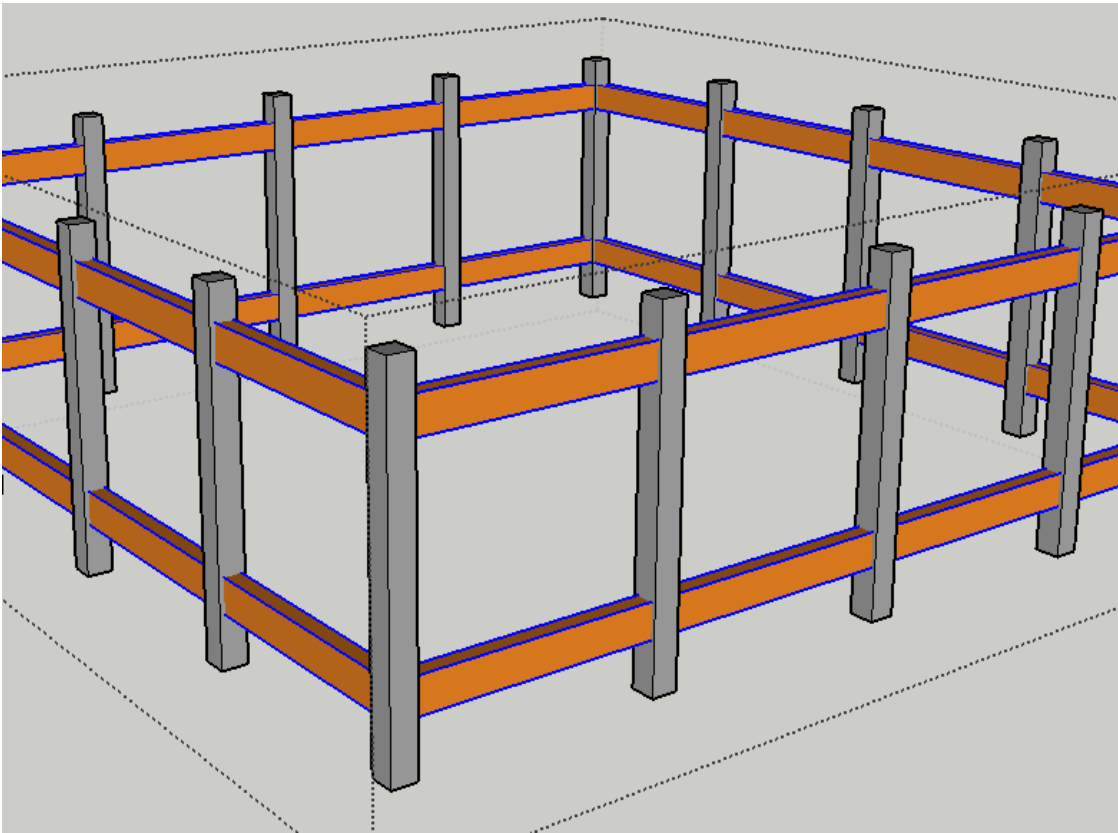
**Congratulations! You just used PMPI when building an Assembly!**



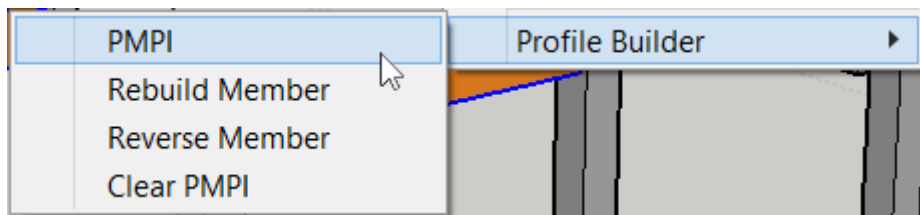
A common use of PMPI is to make it easier to draw a closed path.

## PMPI outside a Tool

### Select Profile Members

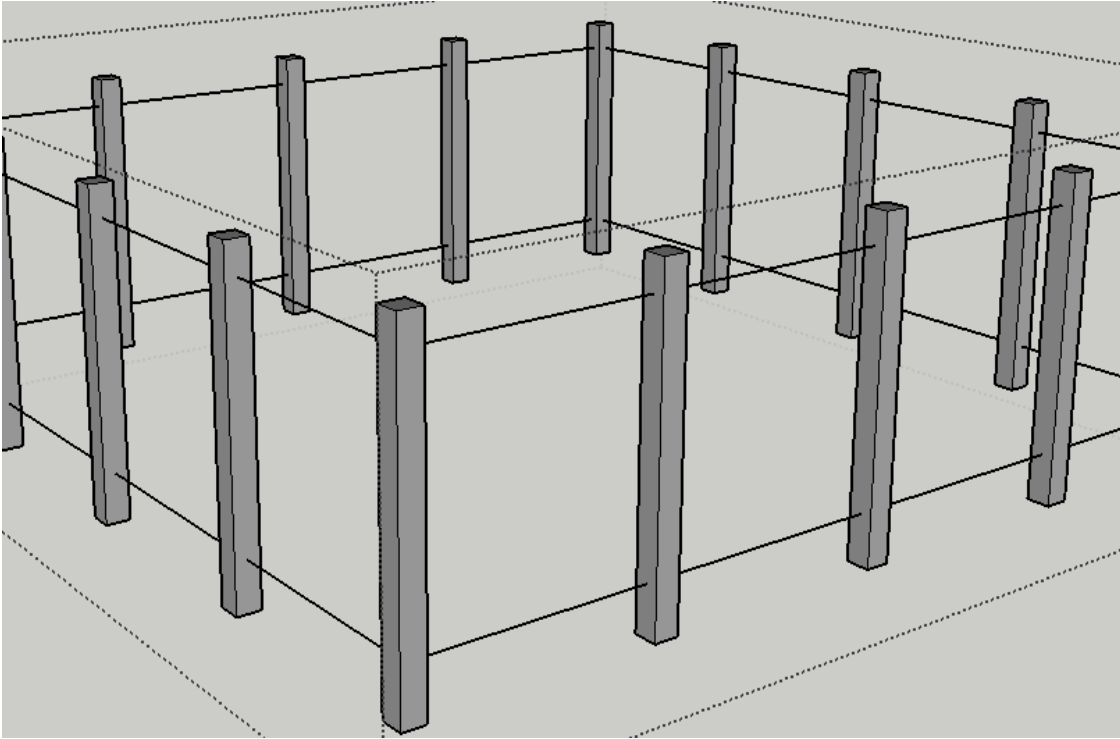


### Use the Right-Click Context Menu



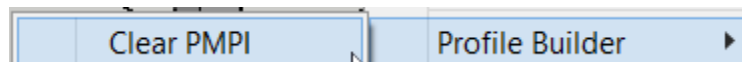
Choose PMPI from the Profile Builder context menu.

## PMPI Activated



PMPI will stay activated until it is cleared.

## Clearing PMPI

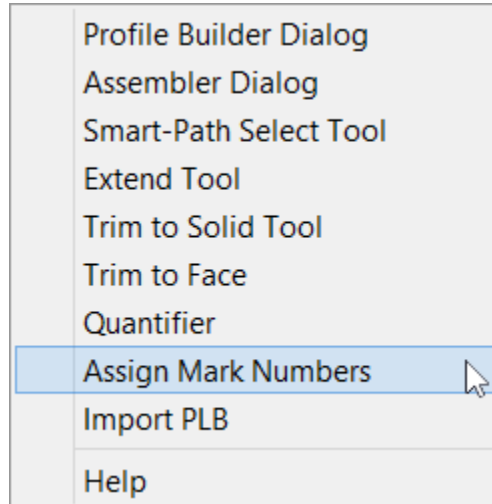


Use the Right-click context menu to clear PMPI.

# **Assign Mark Numbers (Batch Rename)**

## Assign Mark Numbers to Profile Members

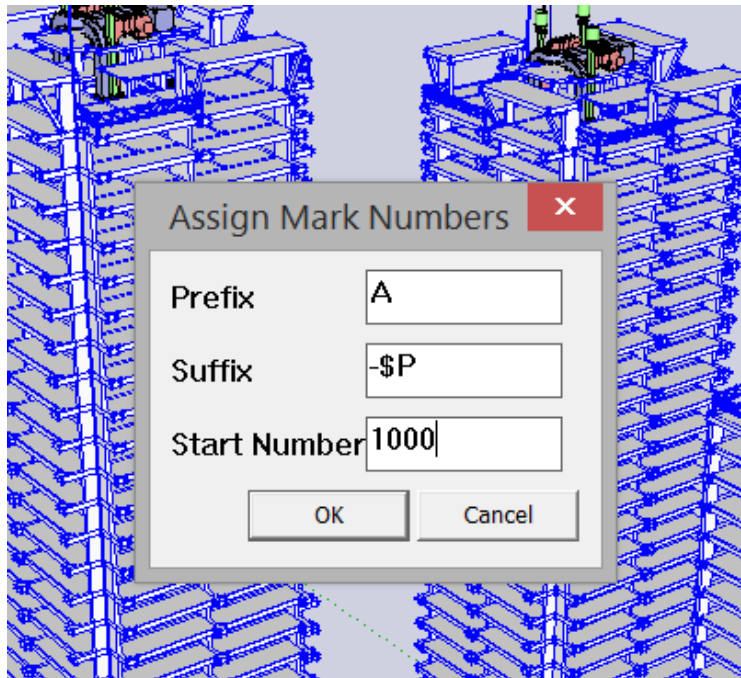
### Launching the Tool



First select Profile Members within your model and then launch the tool.

Select the tool from the Profile Builder menu.

### Input Naming Parameters



Prefix = first part of name

Suffix = last part of name

Start Number = the first number

If you input \$P, the profile name will be substituted and included in the new name.

**Batch Renaming of Component Definitions**

Layer	Prefix (A)	Container	Component Name	Object Name
Es-Cimentación		EA 3D-Estructura/Group#500	A1207-500x1500	500x1500
Es-Cimentación		EA 3D-Estructura/Group#500	A1208-500x1500	500x1500
Es-Cimentación		EA 3D-Estructura/Group#500	A1209-500x1500	500x1500
Es-Cimentación		EA 3D-Estructura/Group#500	A1210-500x1500	500x1500
Es-Cimentación		EA 3D-Estructura/Group#500	A1211-500x1500	500x1500
Es-Cimentación		EA 3D-Estructura/Group#500	A1212-500x1500	500x1500
Es-Cimentación		EA 3D-Estructura/Group#500	A1213-500x1500	500x1500

When using this tool, the Component Definition name will be renamed for each selected Profile Member.

SketchUp Groups also have an internal Component Definition that will also be renamed when using this tool.

# Release Notes

## What's New in Profile Builder 2

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### New Features

- Added ability to set the width and height of a Profile
- Added ability to set the Layer and Material associated with a Profile. Auto-UV mapping will be applied if material has a texture.
- Added Profile Browser (note: Profiles are now stored as SKP files, PLB files are no longer used but can be imported and converted to SKP files)
- 1 Dimensional polyline Profiles are now supported. Select a Polyline prior to creating a profile to create a 1D Profile
- New Extend Tool
- New Trim Profile Member to Solid Tool
- New Trim Profile Member to Face Tool
- New Smart-Path Select Tool
- New Revolve Profile Tool - revolve a profile 360 degrees around any axis
- New Stamp Profile Tool - place a profile in your model as a component
- New Quantifier Tool - Instant quantity reporting of selected entities
- New HTML reports using jquery DataTables plugin
- New cost estimating features (assign quantities and costs associated with layers and materials)
- Show objects with missing cost data
- New Assembler Tool - create, save, and build parametric assemblies comprised of Profile Members and Components
- Profile Members are now allowed to be converted to components and they will still be recognized as Profile Members
- Profile Members can now have their direction reversed using the right-click context menu
- PMPI now works for Profile Members nested inside other groups or components
- Added ability to copy of a Profile - click the 'Add Profile' button with nothing selected
- You can now select an existing Profile Member prior to using the 'Build Along Path' tool. The path of the selected Profile Member will be used to define the path for the new Profile Member.
- V:H ratios can be used for Profile rotation input (eg: 1:12)
- New UI

### Workflow Changes / Changes to Previous Features

- PLB files are no longer used. Each profile is stored as a unique SKP file (which can of course be edited)
- Use right-click, Enter key, or ESC to complete a Profile Member when building
- Edit Path of Profile Member is moved to PB2 toolbar.
- To Edit the path of a Profile Member (or Assembly), first double-click the Member, then click the toolbar button
- Use arrow keys to lock axis when using build tools



- Use Home & End to cycle placement point and rotation when using build tool
- Use Backspace key to undo the previously selected path point when using the build tool
- Removed Smooth angle setting (now always set at 30 degrees).

### Bug Fixes

- Closed paths now always result in closed Profile Members
- Follow-me API no longer used to create Profile Members
- Profile Members will now orient correctly along twisting or helical paths
- When using the build tool, the preview orientation is now always correct
- Much faster building of Profile Members.