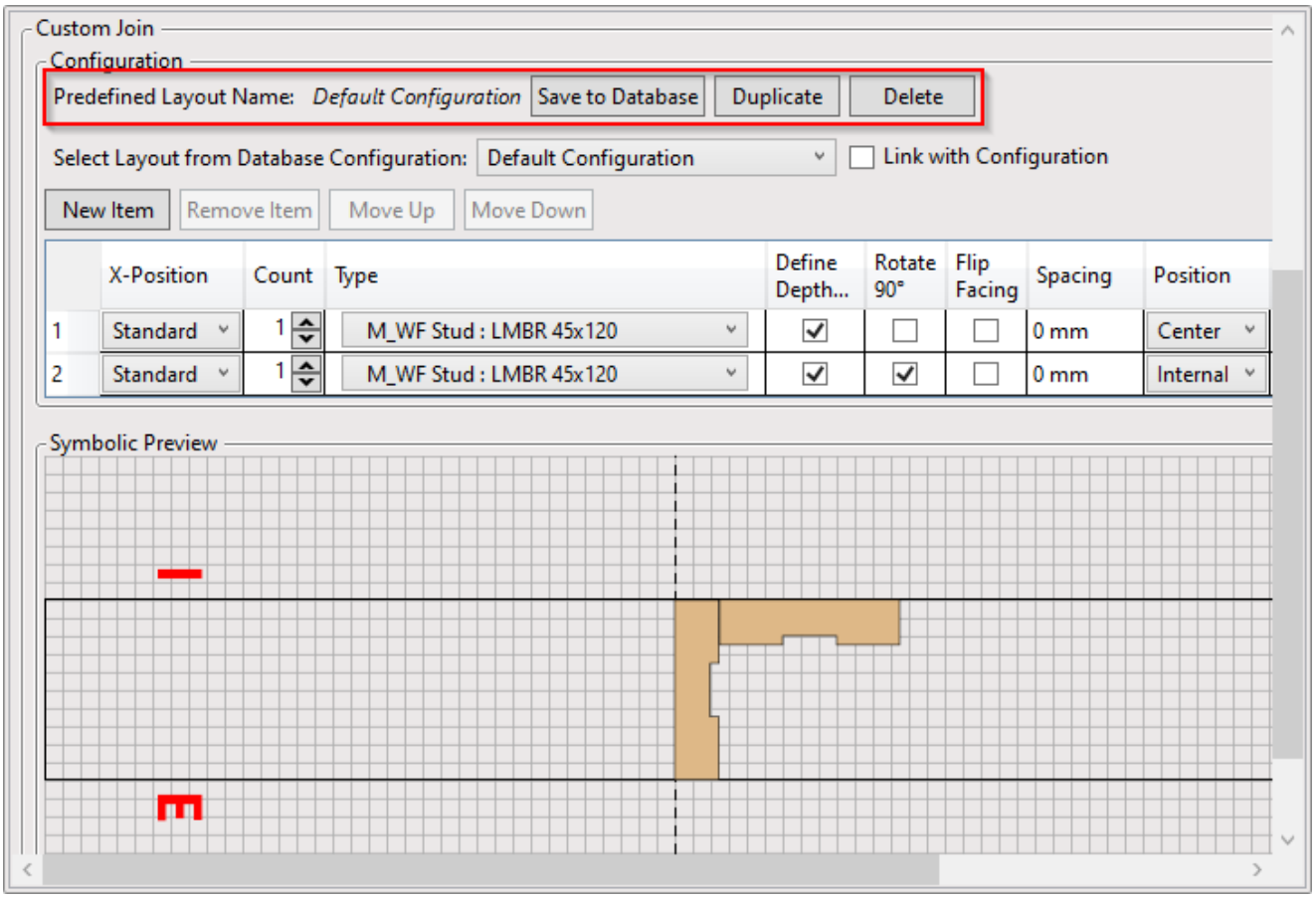
Custom Join

Modified on: Sun, 10 Jan, 2021 at 5:59 PM

Custom Join – is a multi-functional dialog where user can define rules for studs/joins including size, count, position, rotation, spacing, alignment etc. All these rules can be saved and used in other framing configurations or shared with other users. This type of dialog is used frequently in our products.

Predefined Layout Name



Predefined Layout Name – here you can check the predefined configuration name. Configurations saves all information listed down below. **Default Configuration** is a sample configuration that comes with the software.

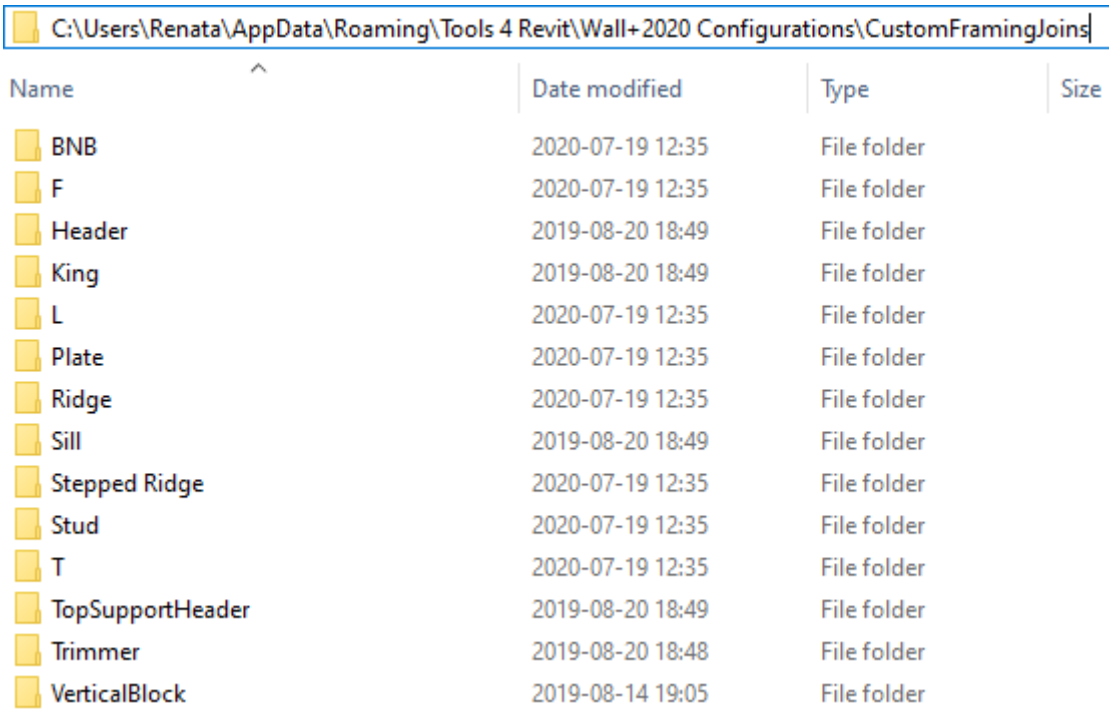
All modifications can be saved to the current configuration using **Save to Database**.

Duplicate – duplicates existing configuration in order to create a new one.

Delete – deletes configuration from the database.

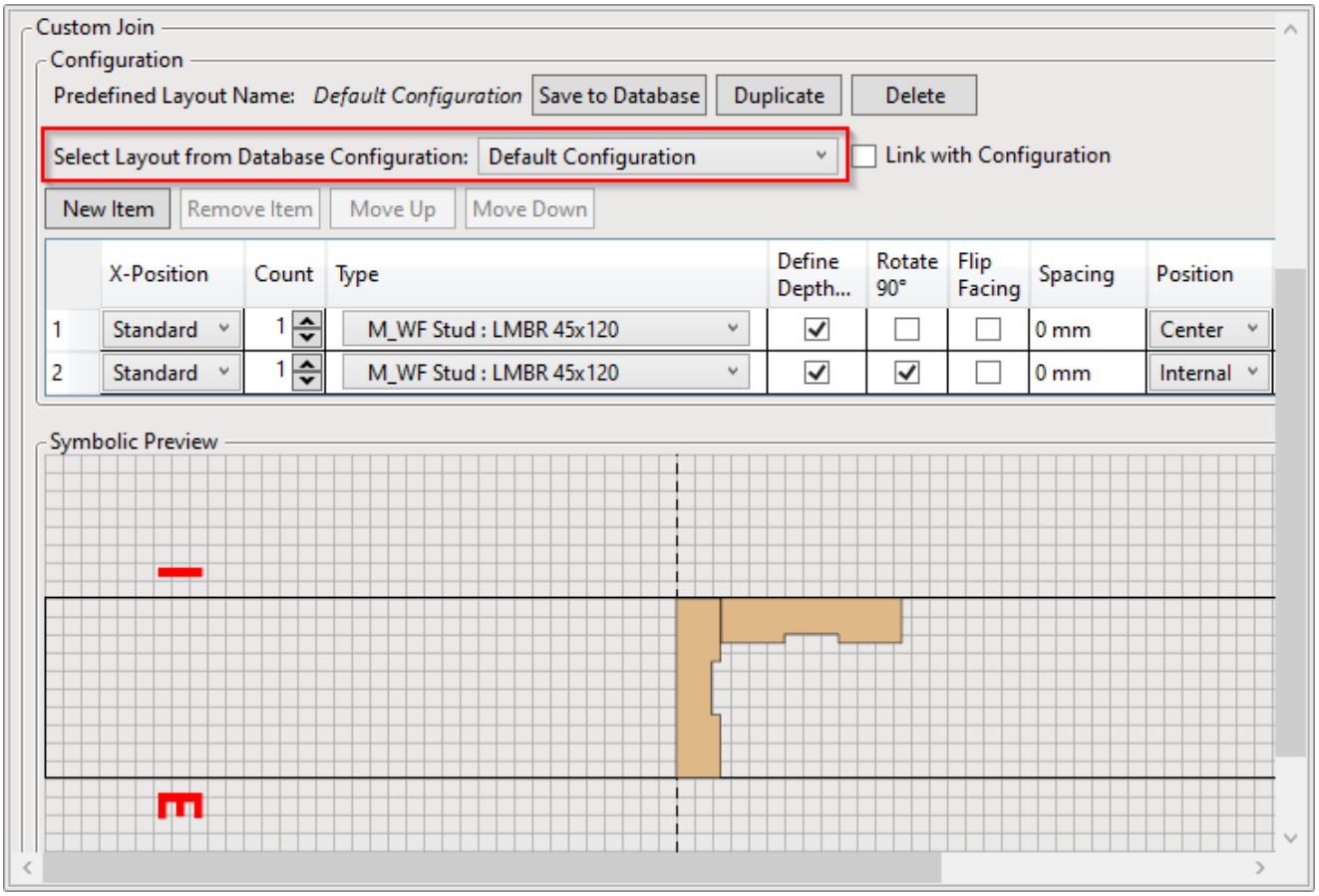
Default path to database with layout configurations is:
C:\Users\user name\AppData\Roaming\Tools 4 Revit\Wall+2021 (or other product and version) Configurations\CustomFramingJoins

Every configuration is created in a separate XML file and stored in corresponding folder.



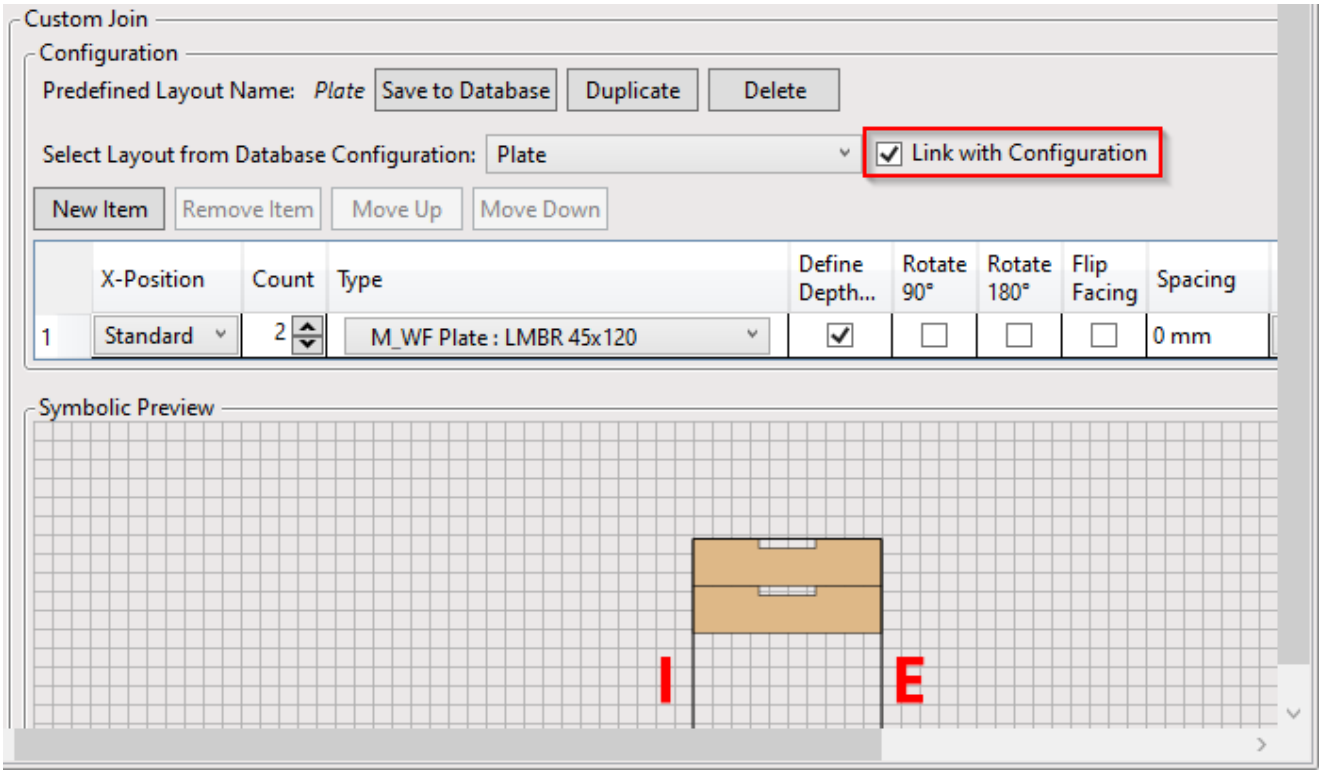
If needed you can modify the path to all configurations in **Wall+**, **Floor+** or **Roof+** → **Settings** → **Configuration Files' Location**.

Select Layout from Database Configuration



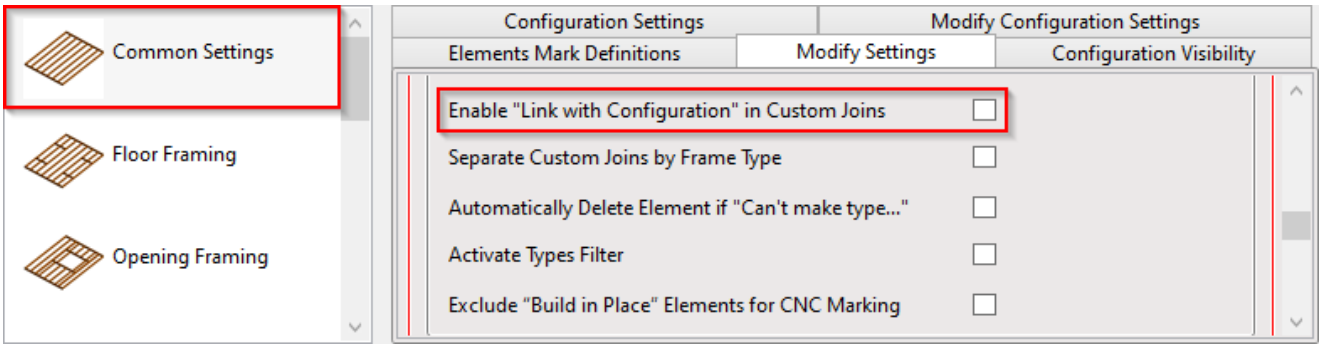
Select Layout from Database Configuration – select layout from the list.

Link with Configuration



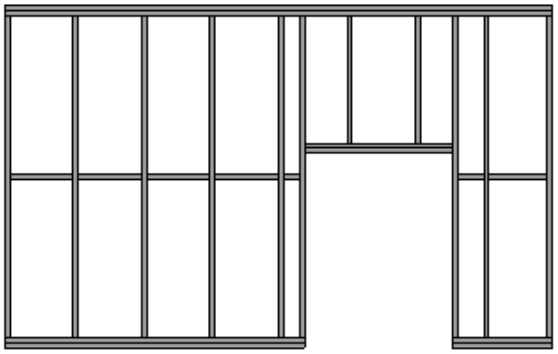
Link with Configuration – makes a link between selected layout in the current custom join and other custom joints were the same layout was used.

In order to use **Link with Configuration** switch this option in **Framing Configuration – Enable "Link to Configuration" in Custom Joins**:

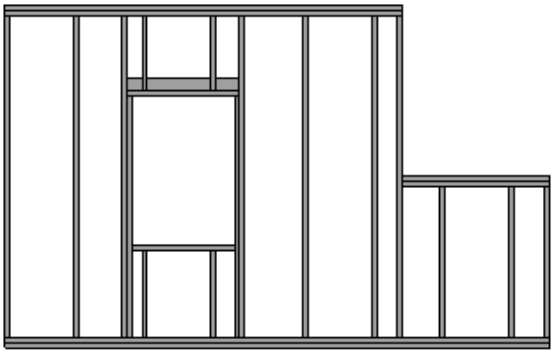


For example, were is two wall frames which is created using different configuration names. Now we need to make one top/bottom plate instead of two in all frames:

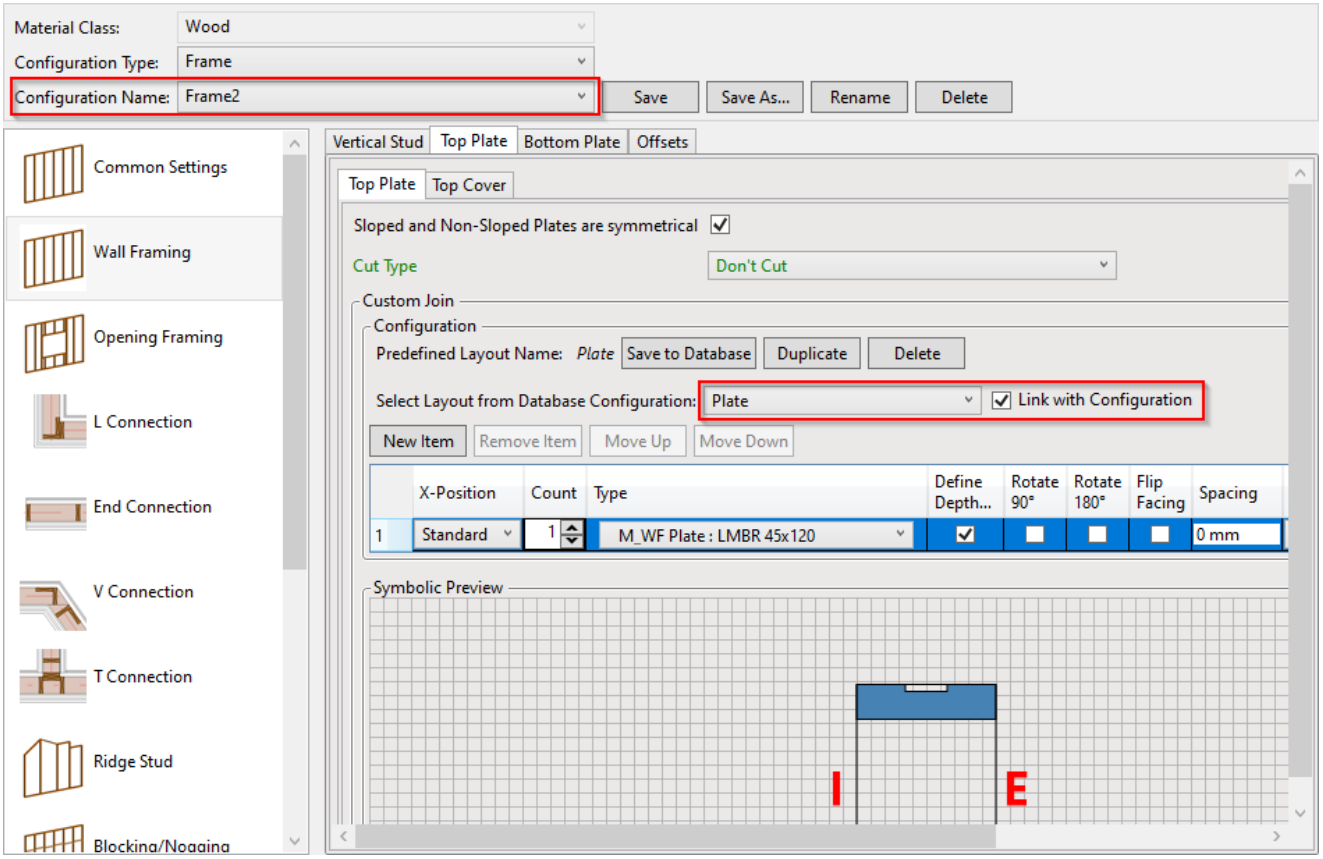
Configuration Name = *Frame1*



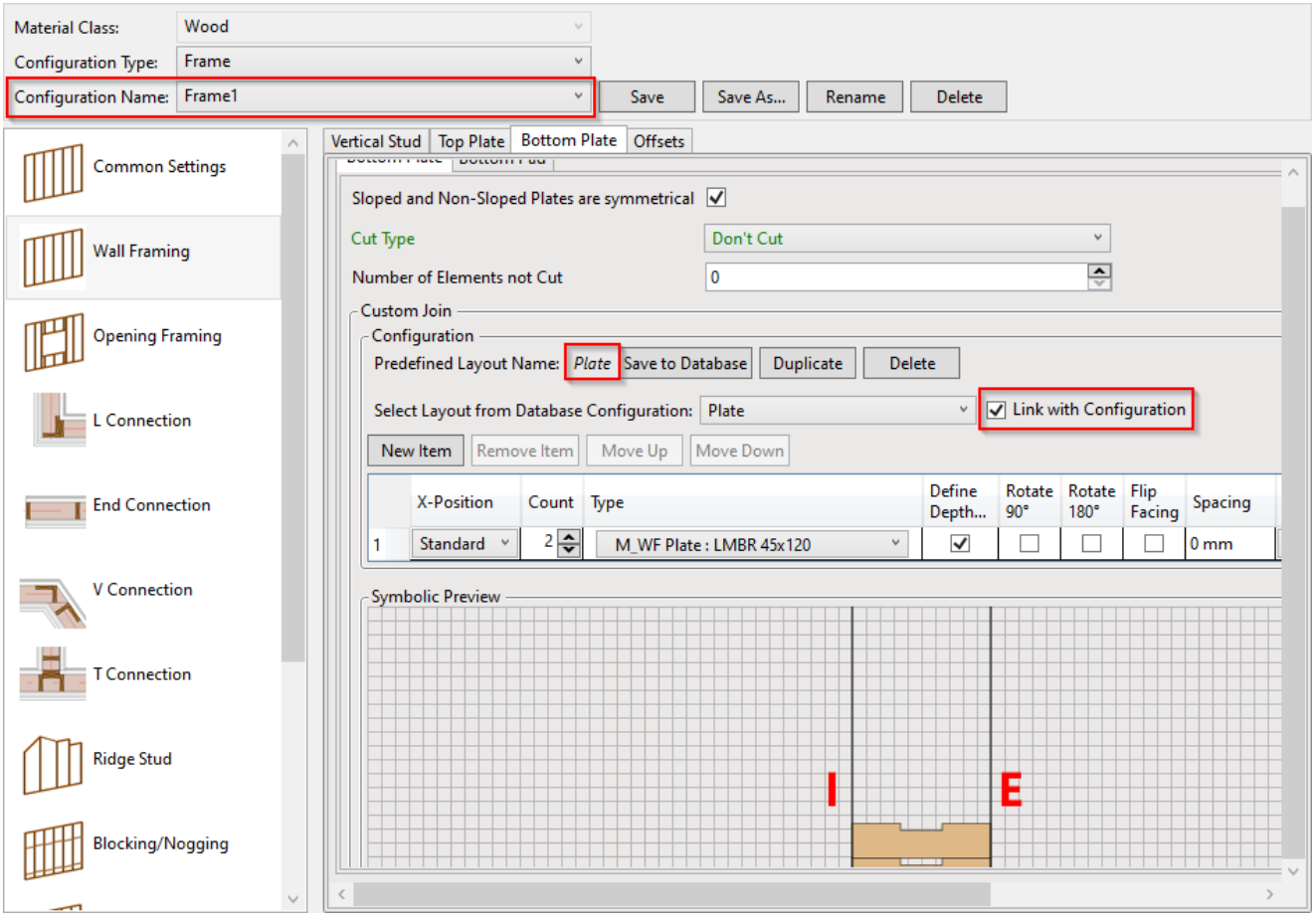
Configuration Name = *Frame2*



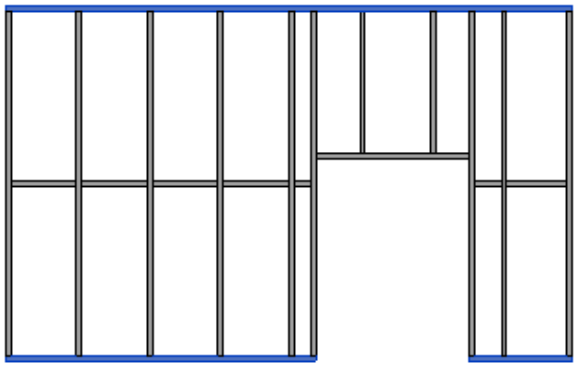
*Instead of changing top/bottom plates manually one by one for every configuration, just change the layout, save it and switch ON **Link with Configuration**:*

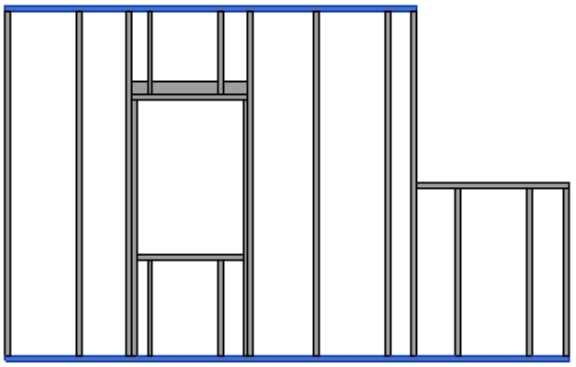


Now in other configuration make sure that Link with Configuration is switched ON too:

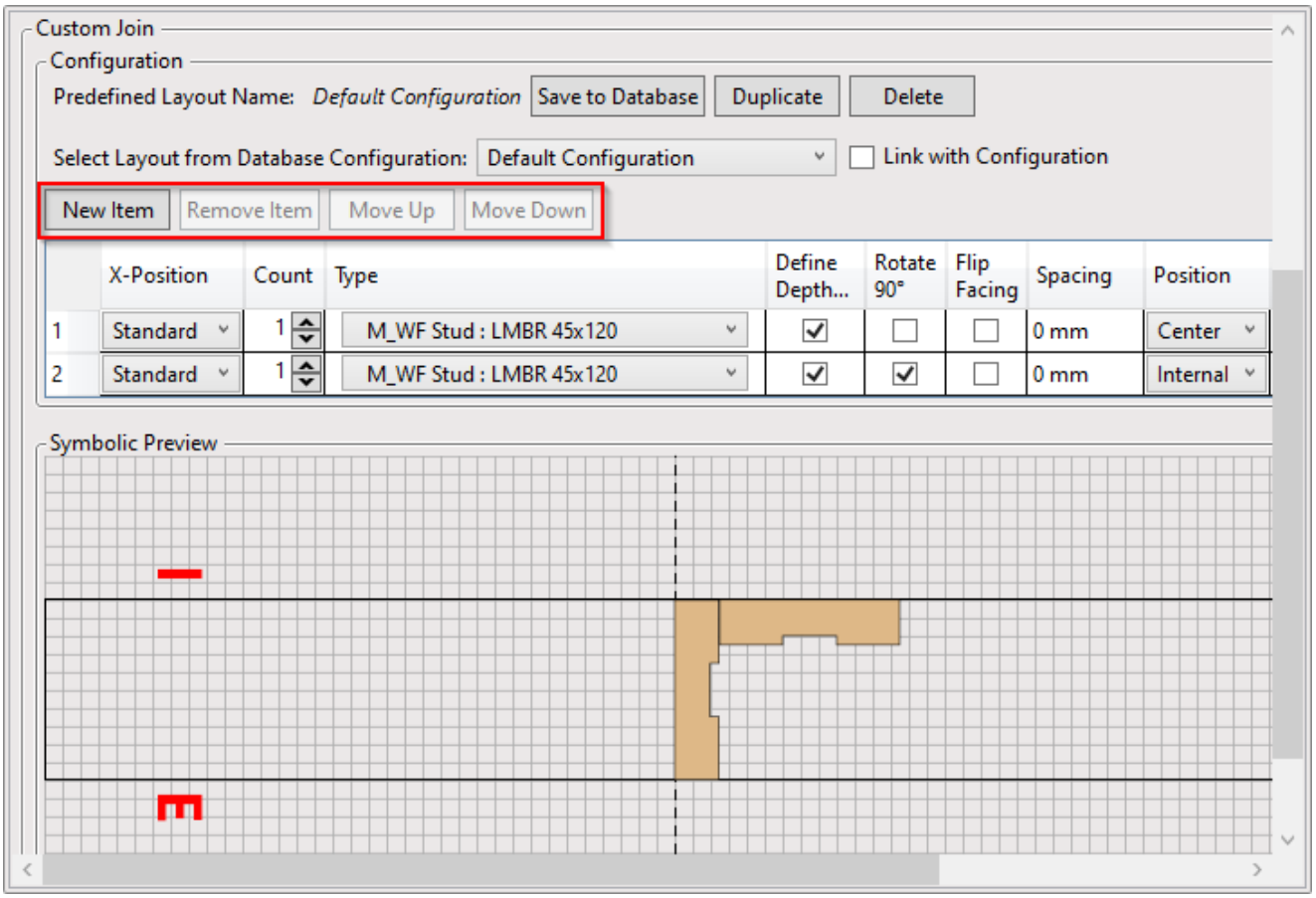


*After updating frames with **Update Frame using Wall Link**, modifying or creating new frames, top/bottom plates now will have one element instead of two:*





New Item, Remove Item, Move Up, Move Down



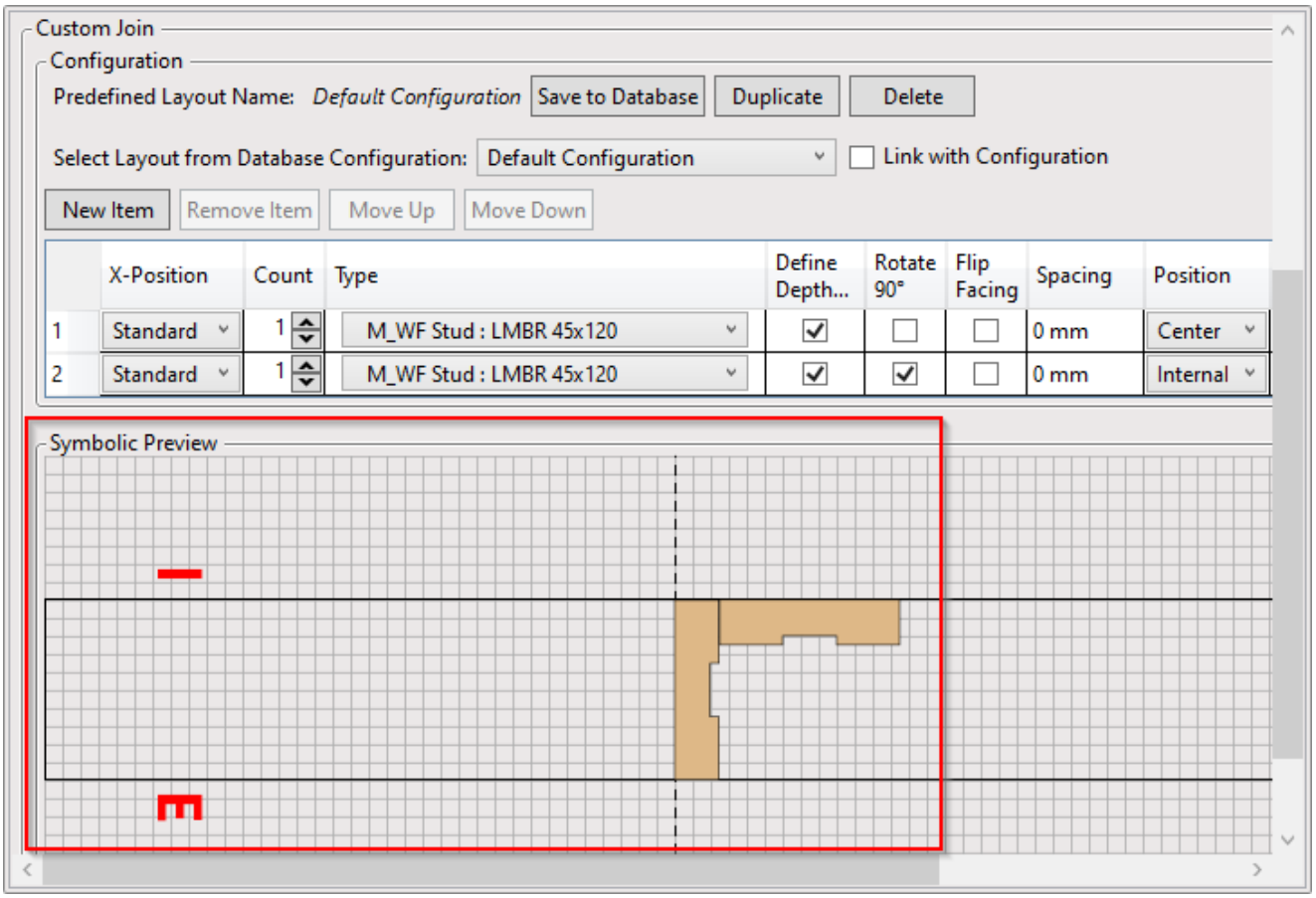
New Item – adds new stud/joist.

Remove Item – removes selected stud/joist.

Move Up – moves selected stud/joist up.

Move Down – moves selected stud/joist down.

Symbolic Preview



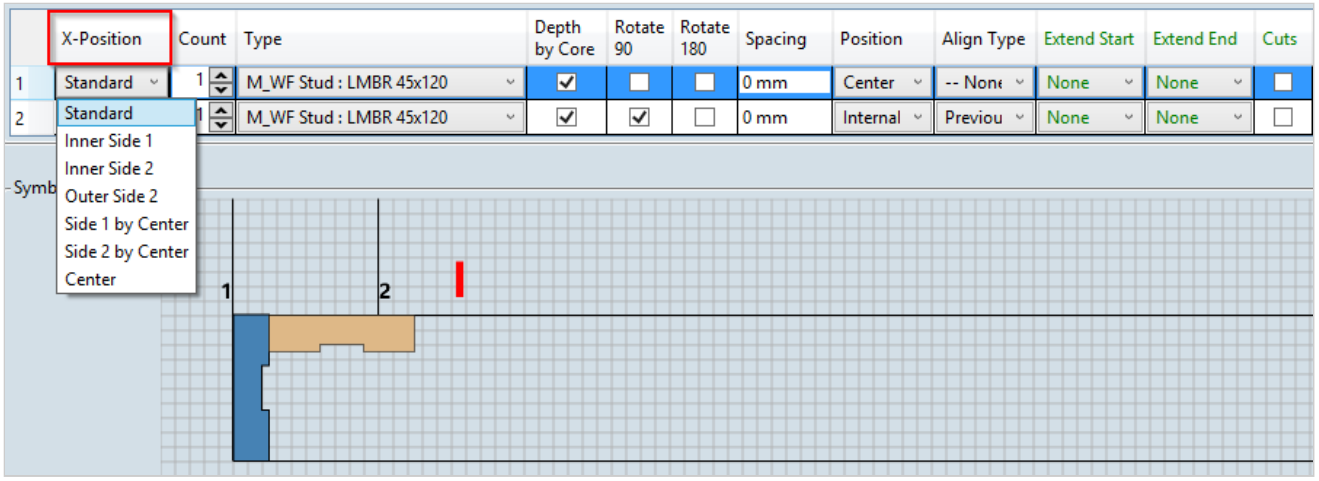
Symbolic Preview – shows symbolic preview of created situation. You can easily see the position, rotation, alignment type, and sample spacing. Preview in the picture above is for regular stud/joist. It will be a little bit different for headers, connections etc.

It does not show exact stud/joist sizes and spacing between them.

1 and **2** indicate the sides of the intersecting wall/floor/roof. These sides are used for stud/joist positioning.

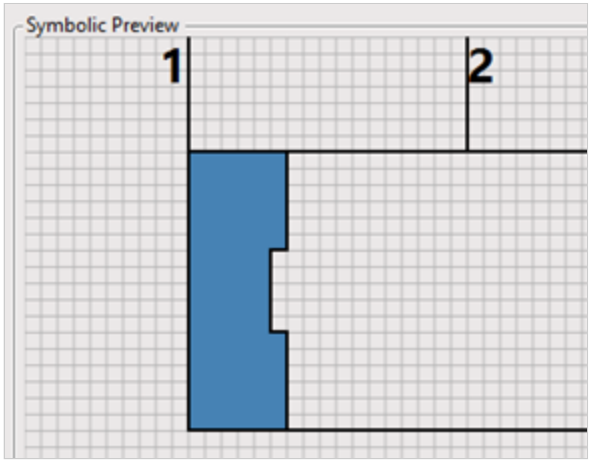
I or **E** indicate where the **Internal (Bottom)** or **External (Top)** sides of the wall/floor/roof are.

X-Position

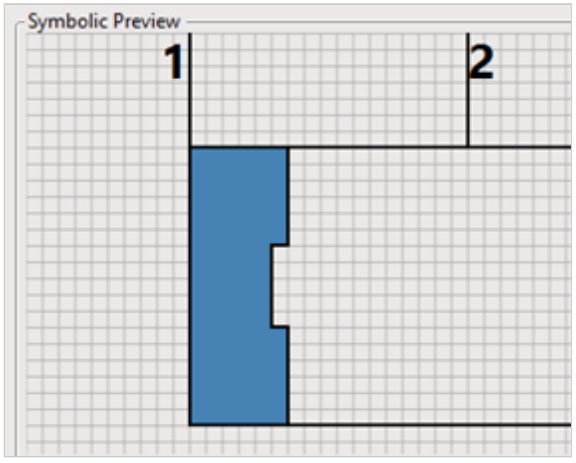


X-Position – controls stud/joist position related to intersecting wall/floor/roof.

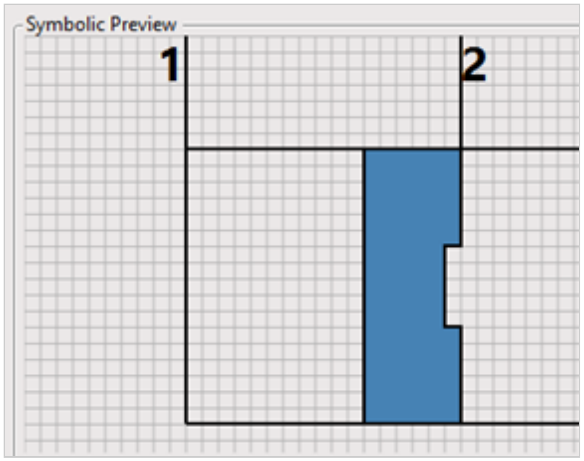
Standard – places the stud/joist without any alignment with intersecting wall/floor/roof:



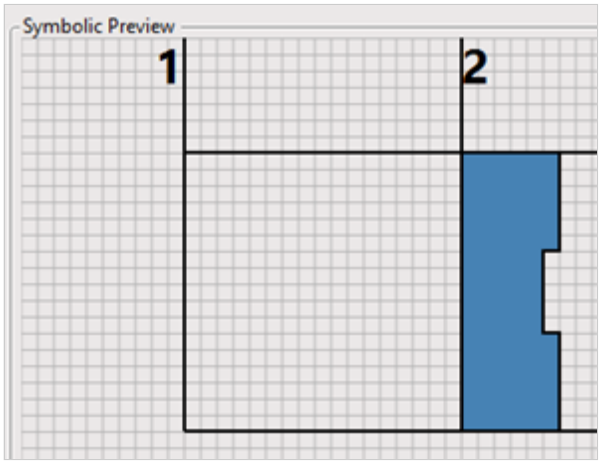
Inner Side 1 – places the stud/joist along inner side 1 of intersecting wall/floor/roof:



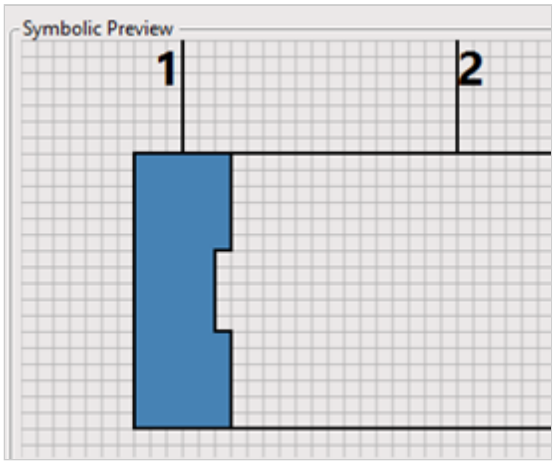
Inner Side 2 – places the stud/joist along inner side 2 of intersecting wall/floor/roof:



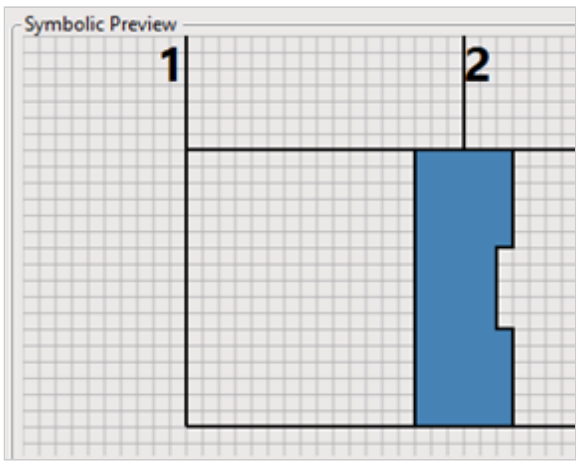
Outer Side 2 – place the stud/joist along outer side 2 of intersecting wall/floor/roof:



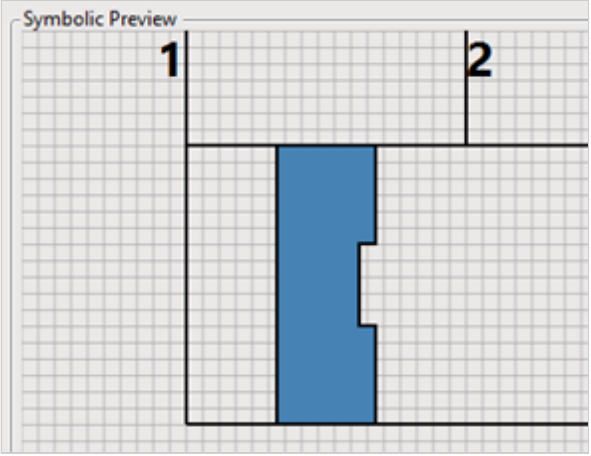
Side 1 by Center – centers the stud/joist with intersecting wall/floor/roof side 1:



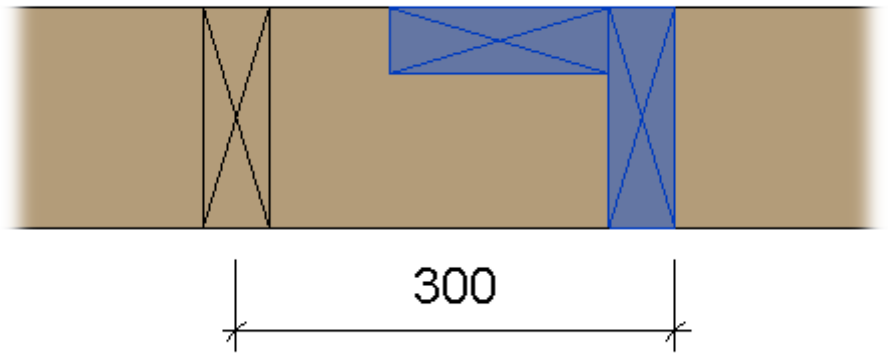
Side 2 by Center – centers the stud/joist with intersecting wall/floor/roof side 2:



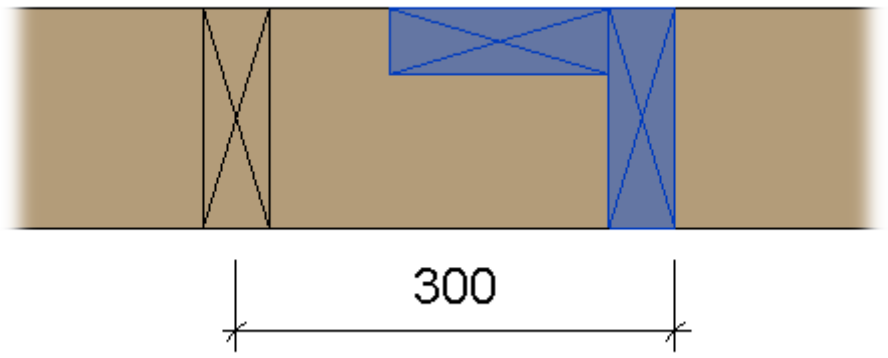
Center – places the stud/joist at center of intersecting wall/floor/roof:



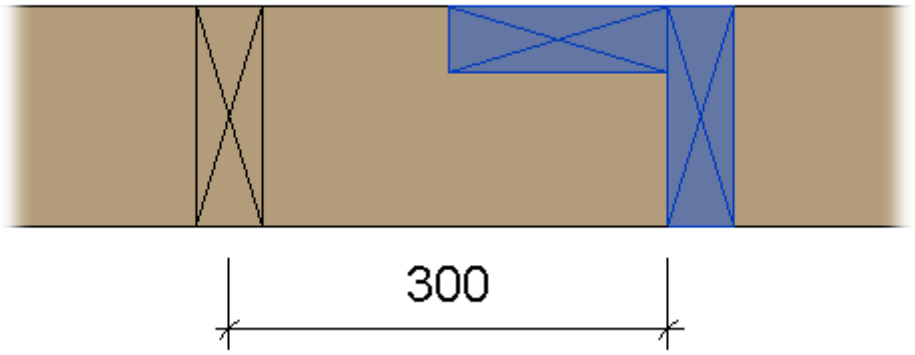
Example with floor/roof vertical block. First joist is added without any alignment:



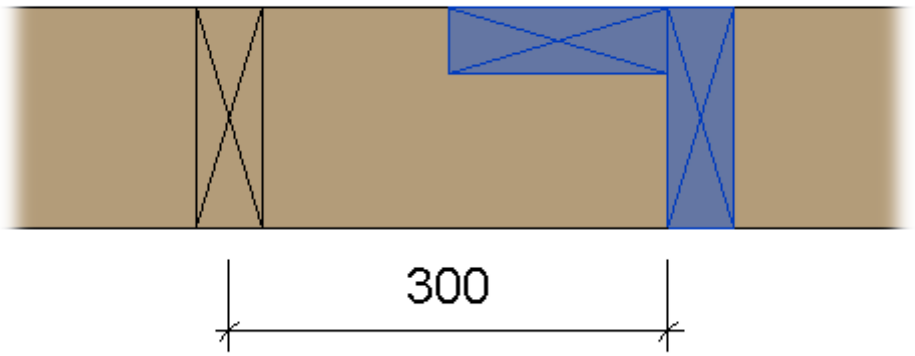
Example with floor/roof vertical block. ***Inner Side 1*** *– places the joist along its first inner side:*



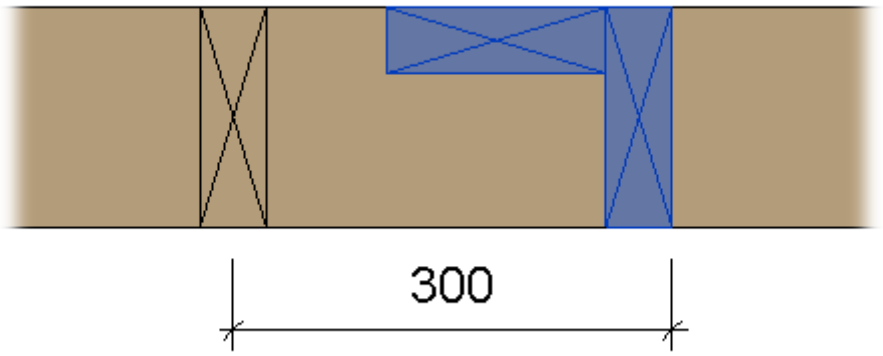
Example with floor/roof vertical block. ***Inner Side 2*** *– places the joist along its second inner side:*



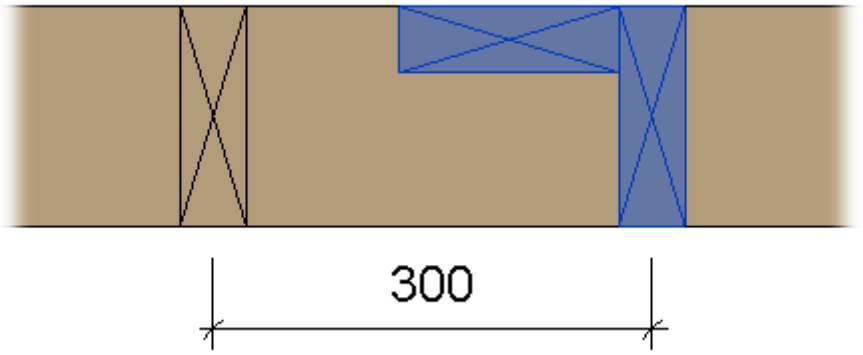
Example with floor/roof vertical block. ***Outer Side 1*** *– places the joist along its first outer side:*

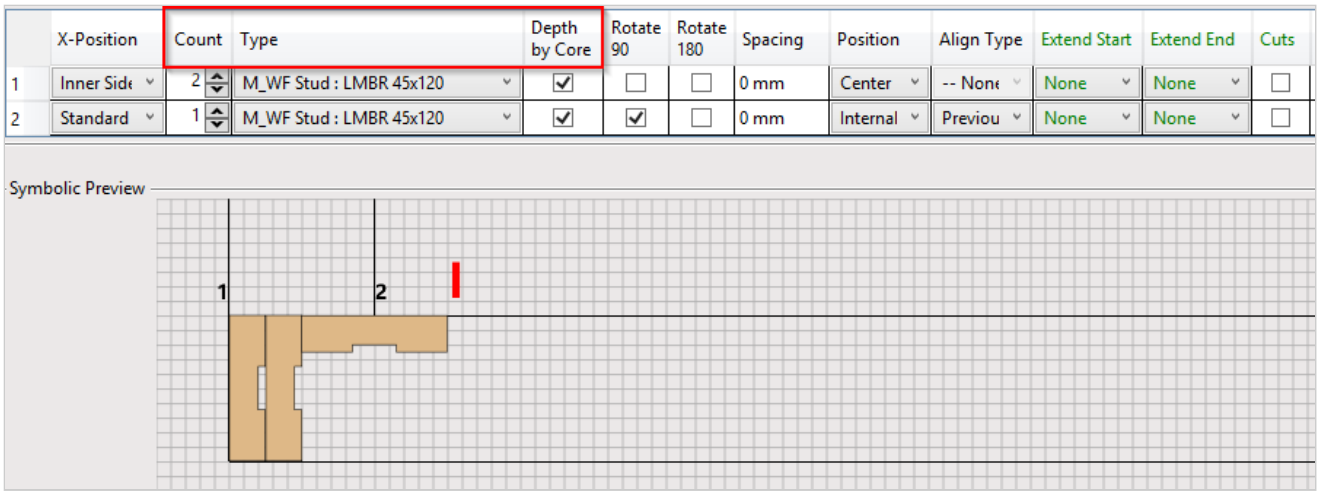


Example with floor/roof vertical block. ***Outer Side 2*** *– places the joist along its second outer side:*



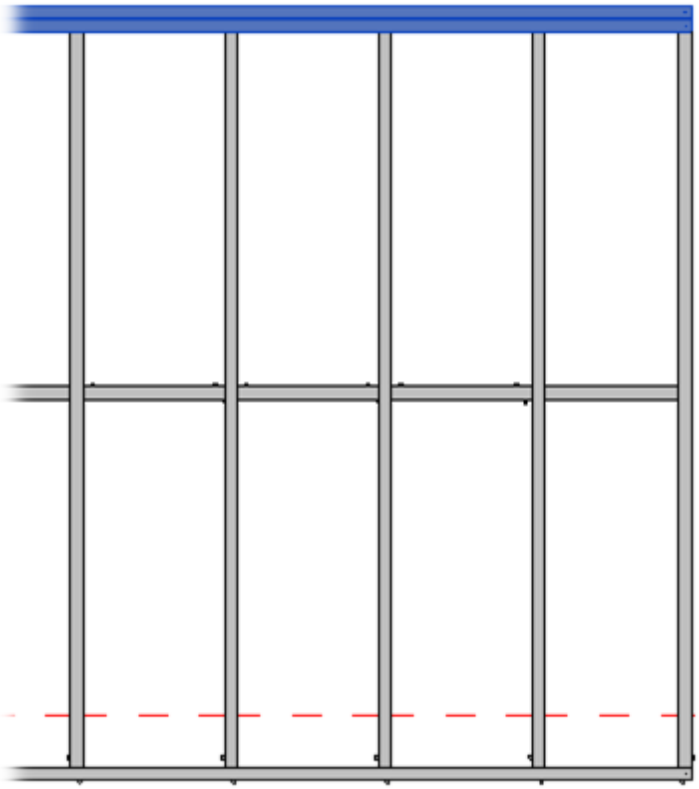
Example with floor/roof vertical block. ***Center*** *– places the joist along its center:*


300



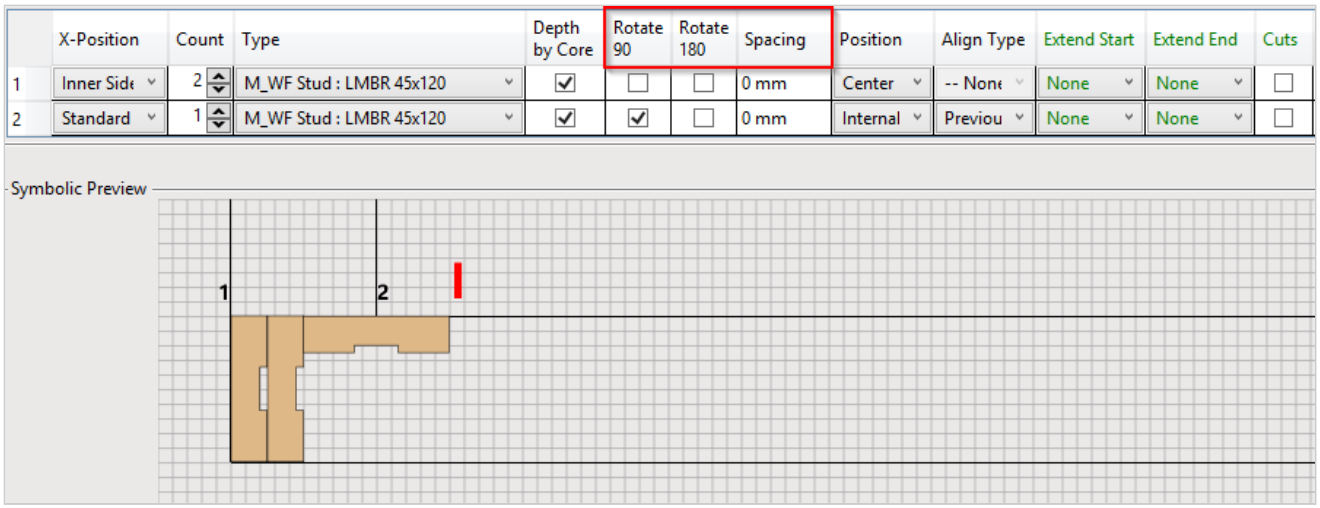
Count – defines the number of identical studs/joists.

Example, two top plates are used in wall framing:



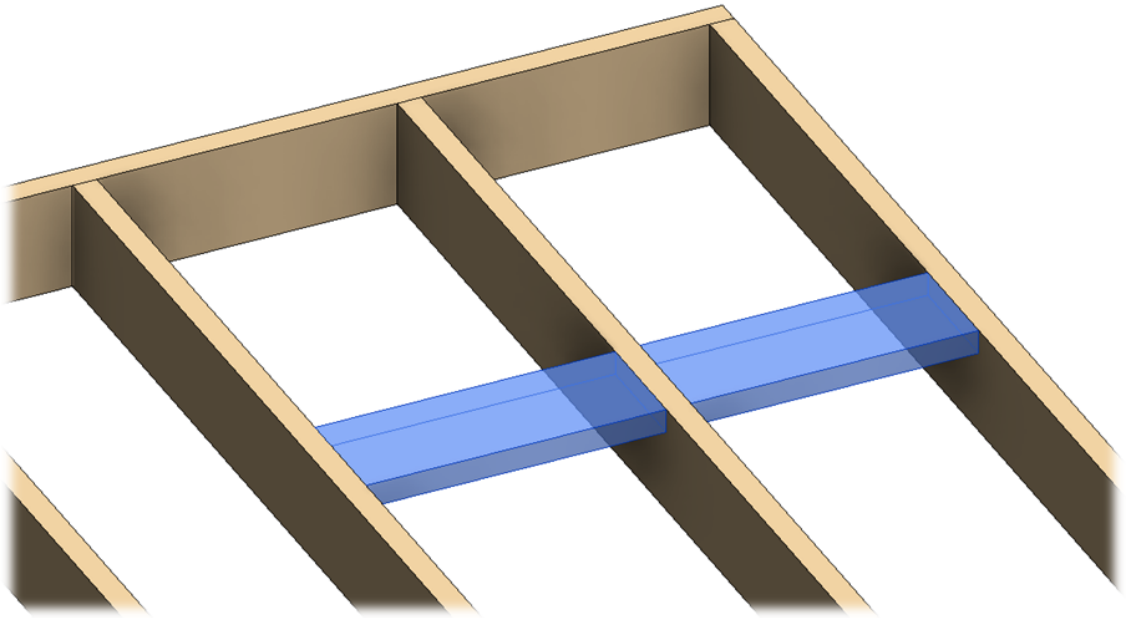
Type – selected stud/joist family and type. Default families are loaded together with the software. Any time can be loaded manually using **Wall+**, **Floor+** or **Roof+** → **Settings** → **Load Families** function.

Depth by Core – stud/joist size will be adjusted according to the wall/floor/roof layer thickness during wall/floor/roof framing process.

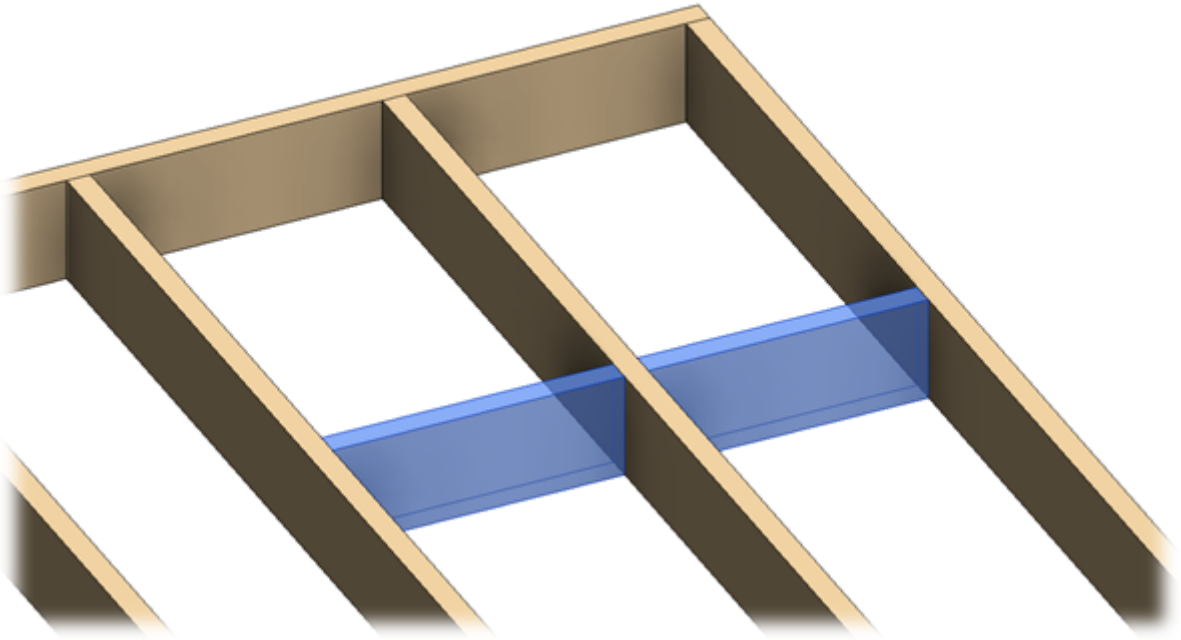


Rotate 90° – rotates selected stud/joist by 90 degrees.

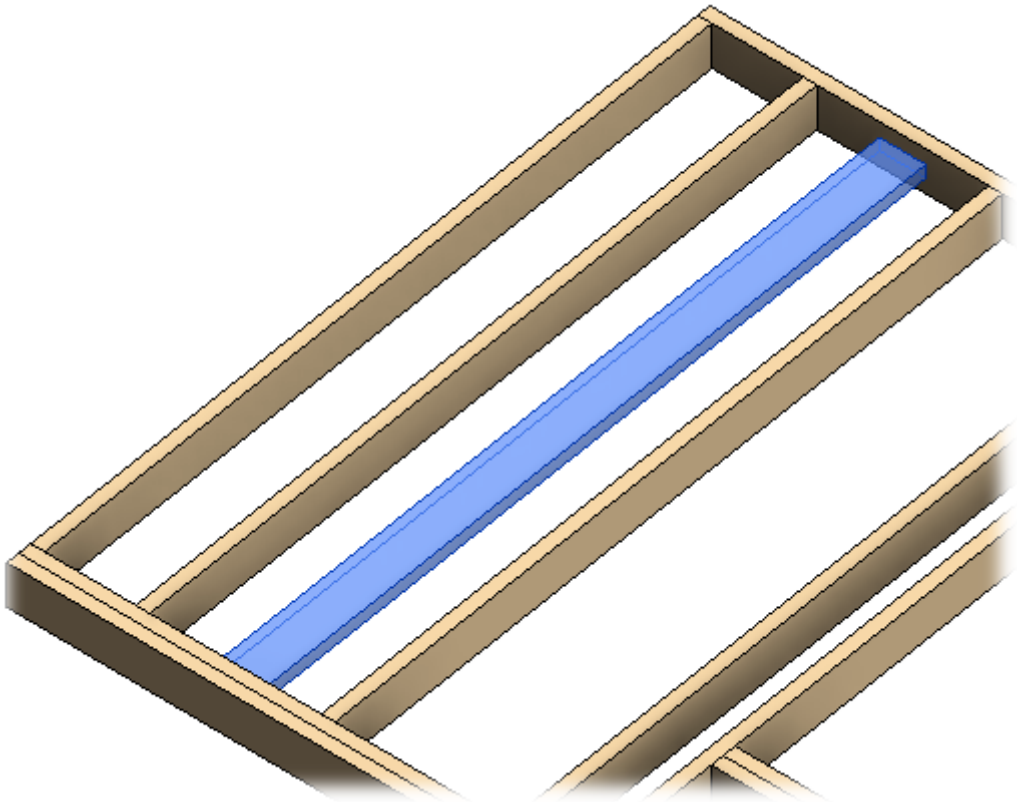
*Example with horizontal Joist/Rafter/Bridging: **Rotate 90°** is ON:*



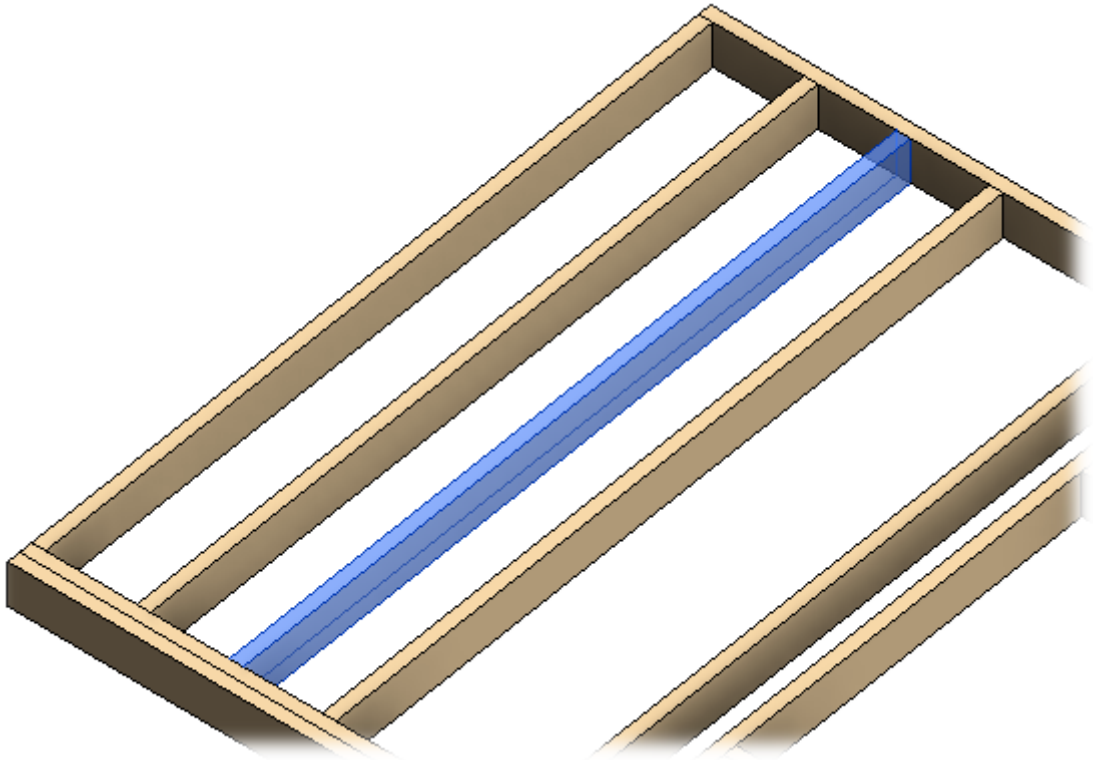
*Example with horizontal Joist/Rafter/Bridging: **Rotate 90°** is OFF:*



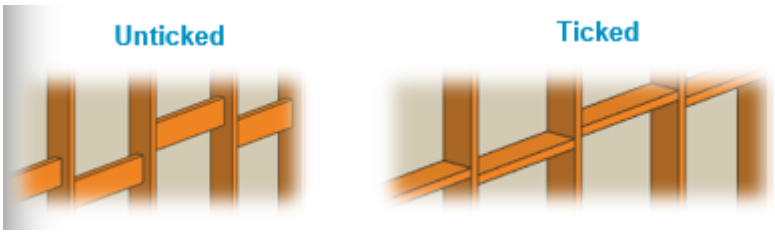
*Example with additional joist, **Rotate 90°** is ON:*



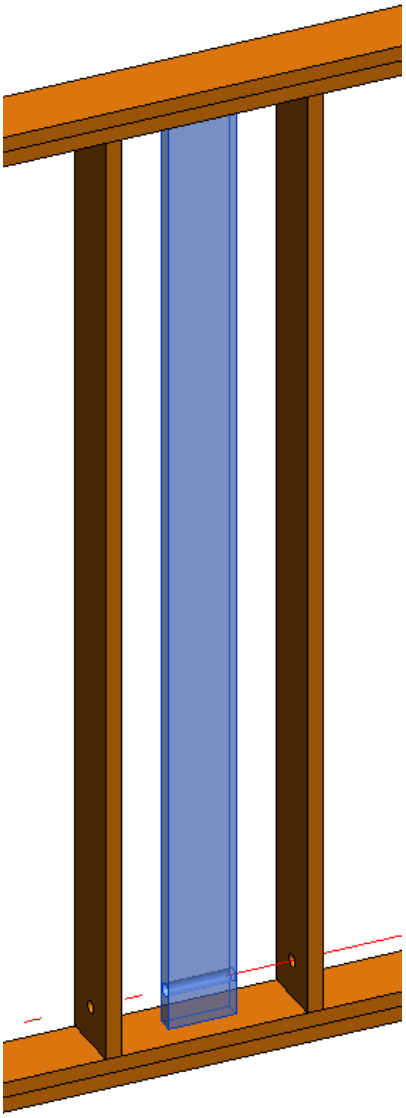
*Example with additional joist, **Rotate 90°** is OFF:*



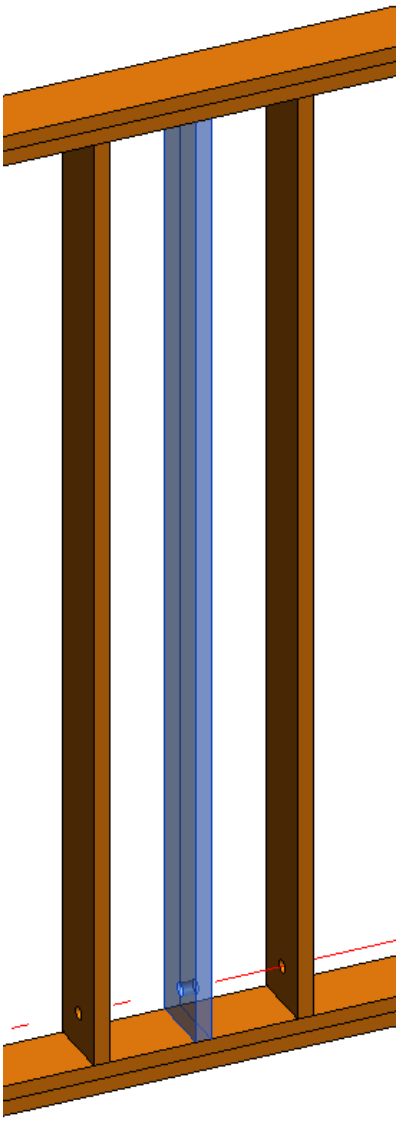
Wall example:



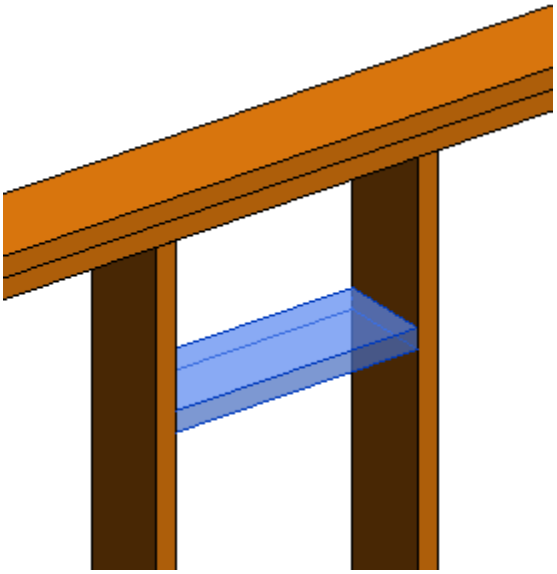
Example with additional stud if ticked:



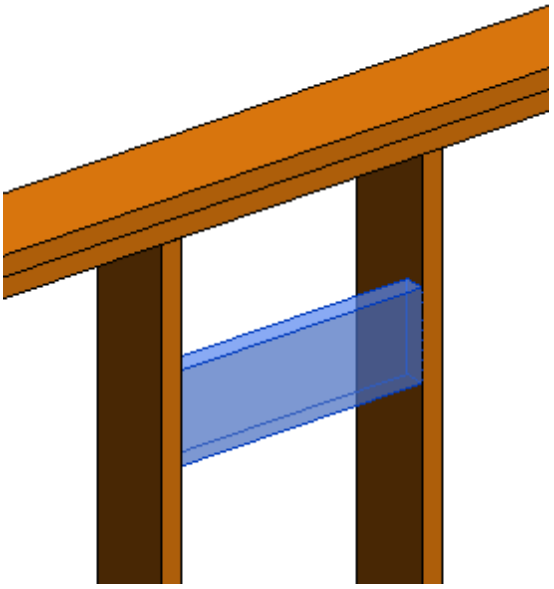
Example with additional stud if unticked:



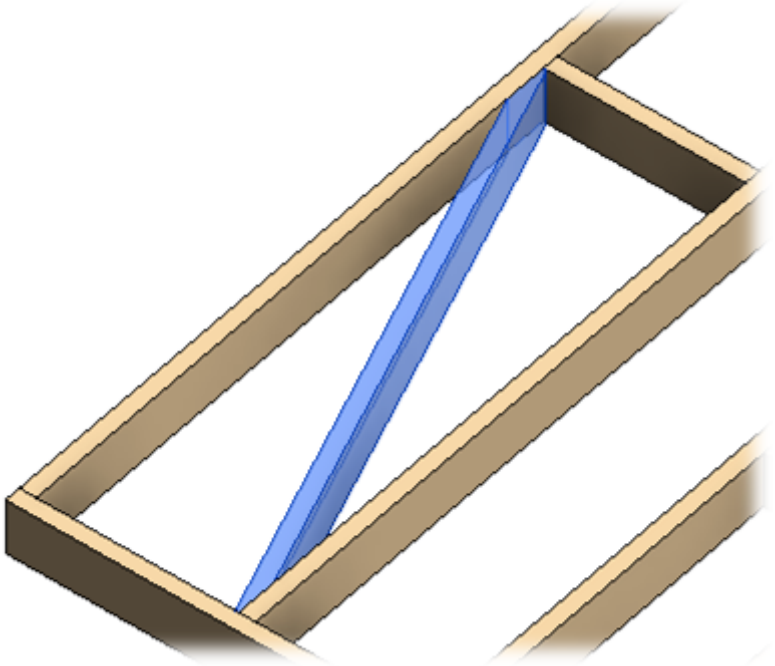
Example with additional bridging/nogging when ticked:



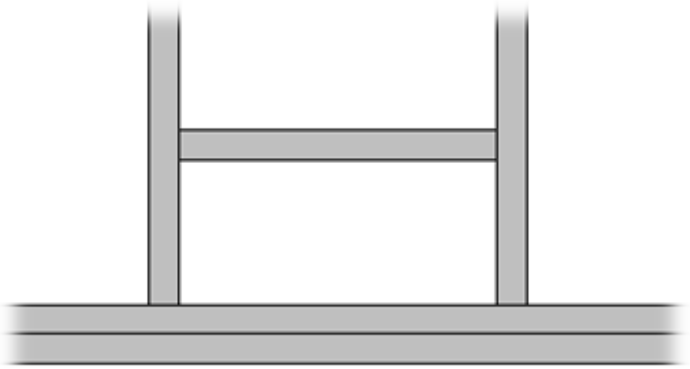
Example with additional bridging/nogging when unticked:



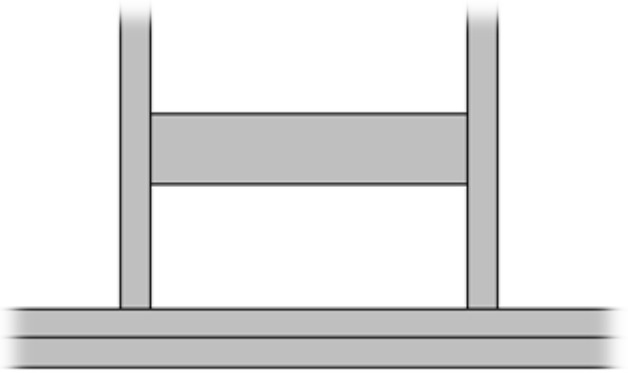
*Example with wood floor: when **Rotate 90°** is switched OFF:*



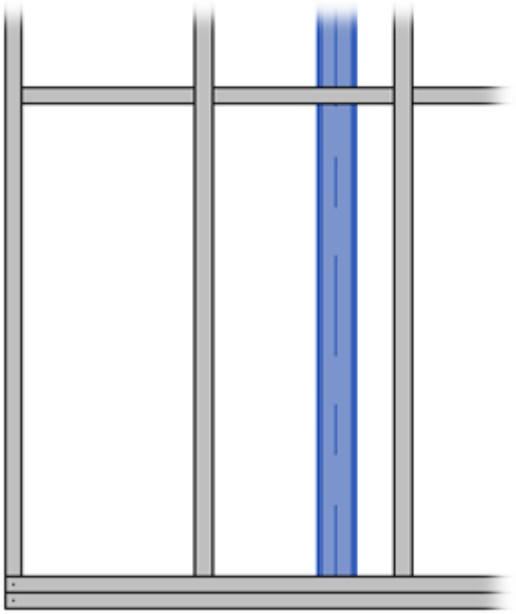
Example with metal frame:
Ticked:



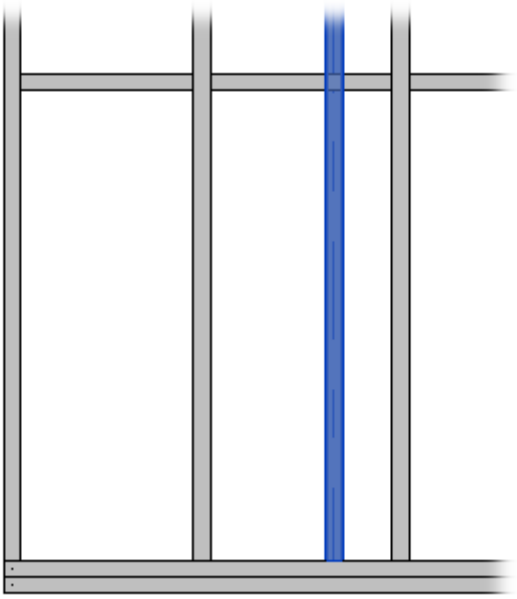
Unticked:



*Example with metal additional stud: **Rotate 90°** is ticked:*

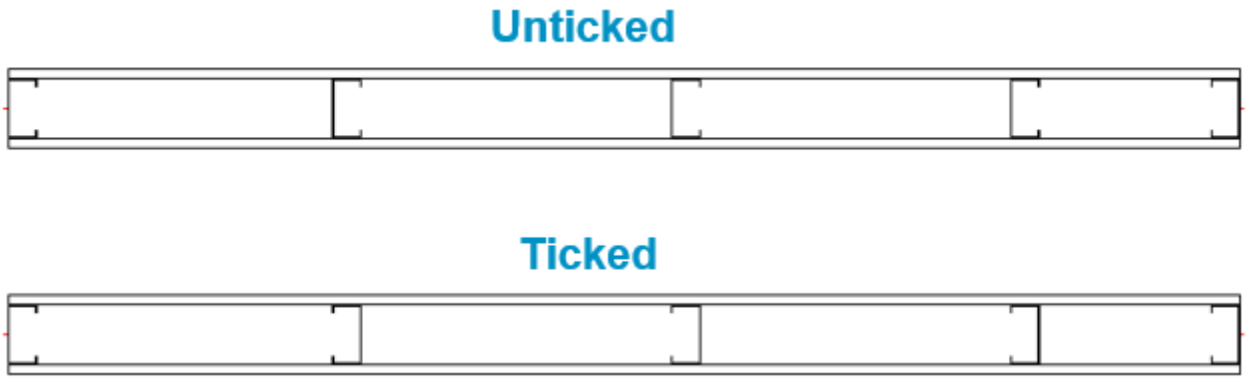


*Example with metal additional stud: **Rotate 90°** is unticked:*

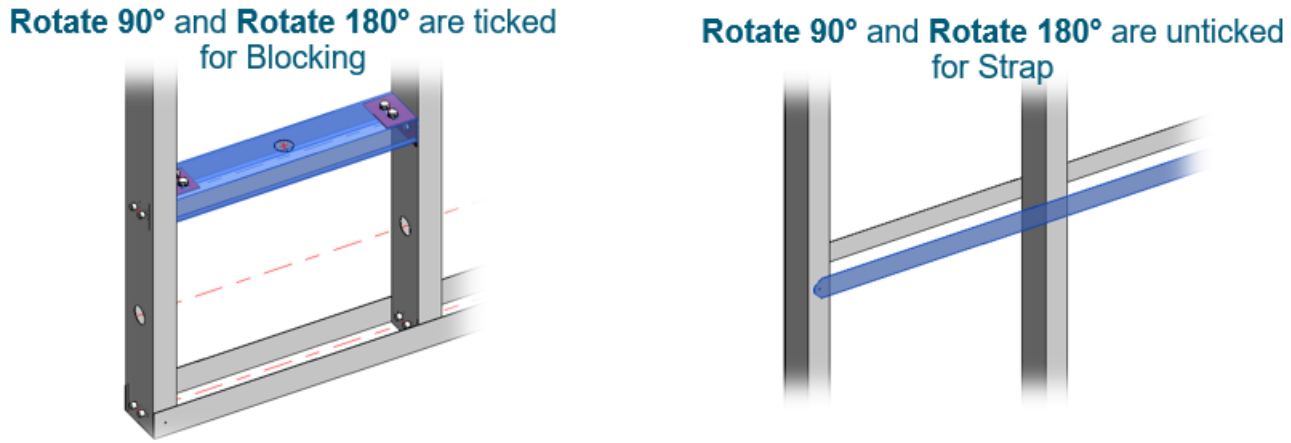


Rotate 180 – rotates selected stud/joist by 180 degrees. This option is important when the stud/joist is not symmetrically shaped. For rectangular studs/joists this option usually is not used.

Example with metal wall studs:

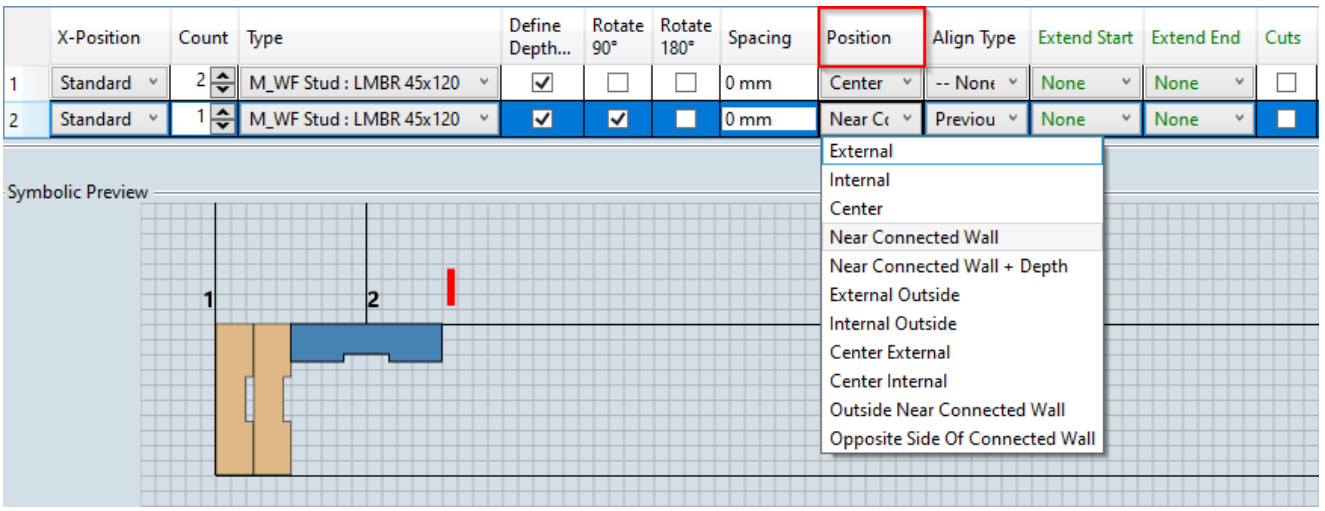


Example with metal wall blocking, strap:



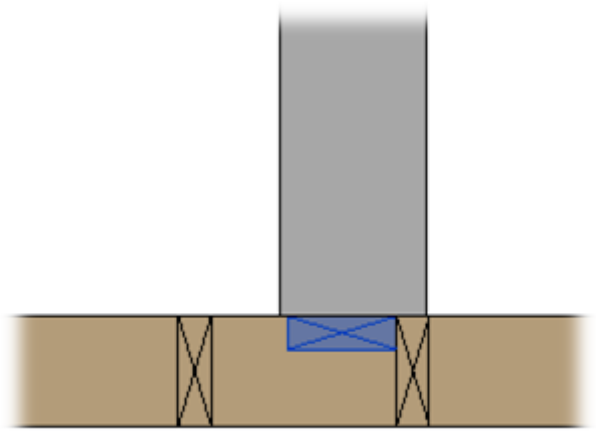
Spacing – distance between the selected stud/joist and the previous stud/joist.

Position



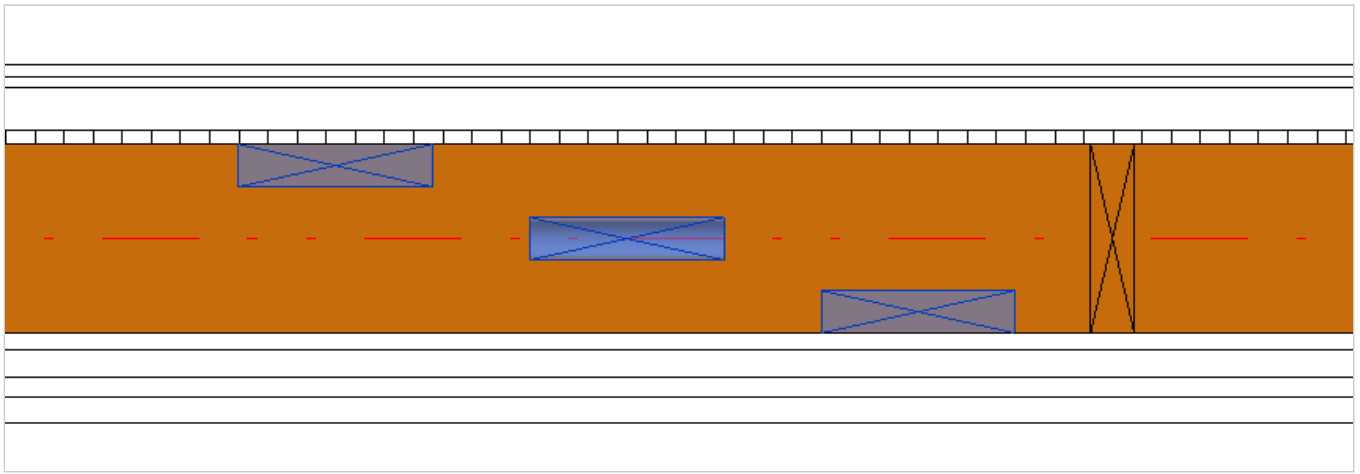
Position – stud/joist can be positioned along the **Center, External**, **Internal, External Outside, Internal Outside, Center External, Center Internal** wall/floor/roof face, or **Outside Near Connected Wall**. The possible option values depend on **Rotate 90** selected value.

Near Connected Wall – option used if the stud/joist must always be near the side where another wall connects.

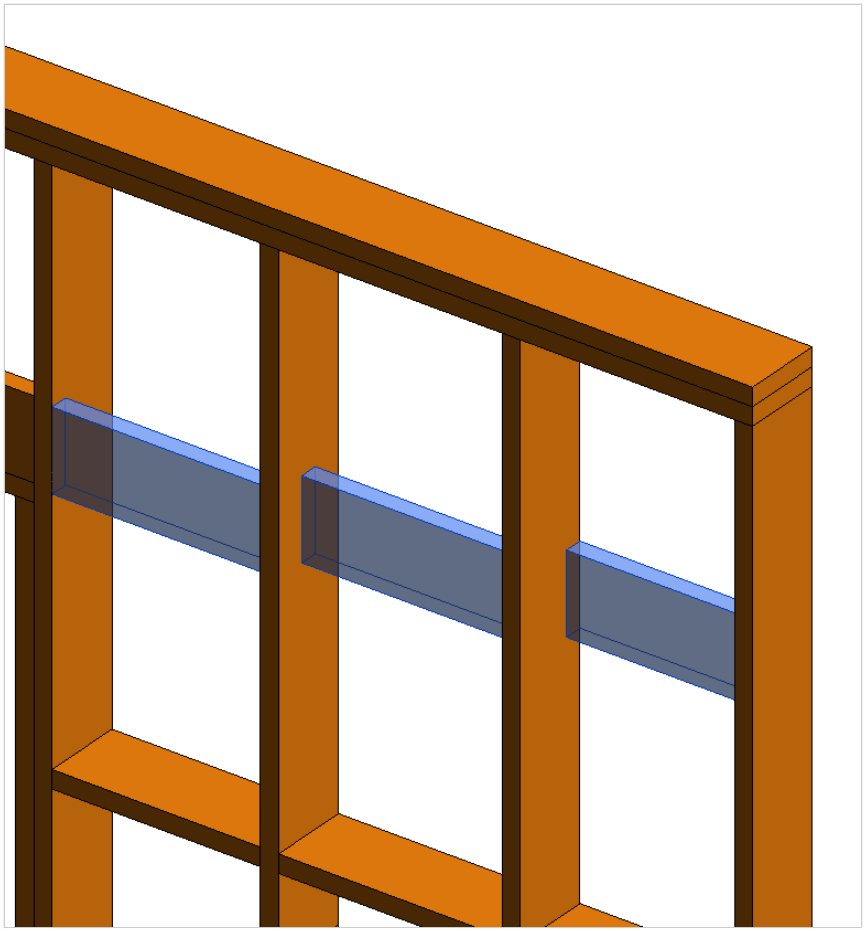


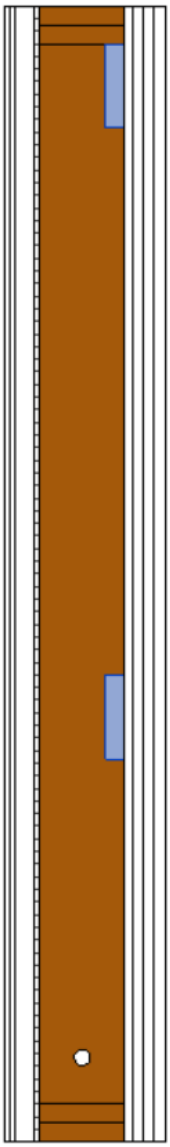
Near Connected Wall + Depth – option used if the stud/joist must always be near the side where other wall/floor/roof connects, and the stud/joist depth must be the same as connected wall/floor/roof layer thickness.

Example with floor:

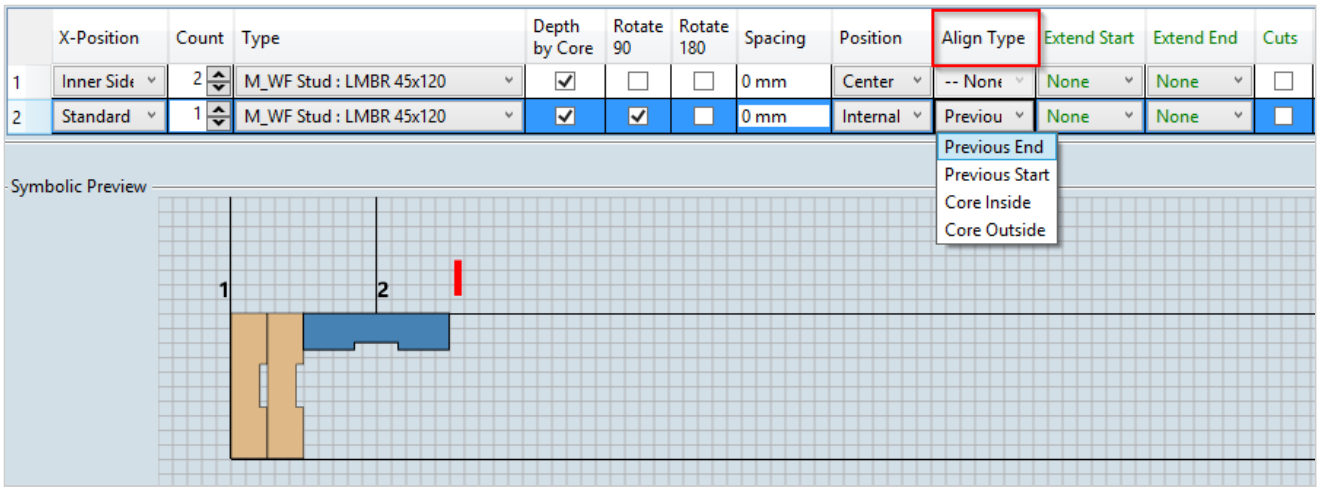


Example with wall:

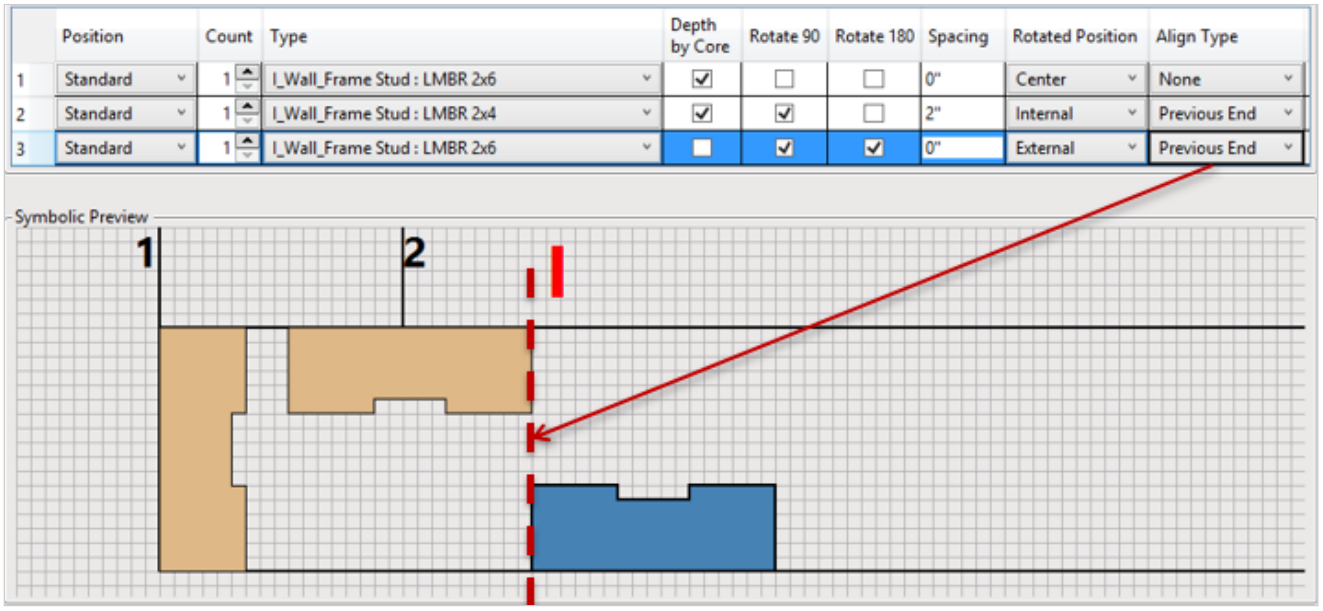


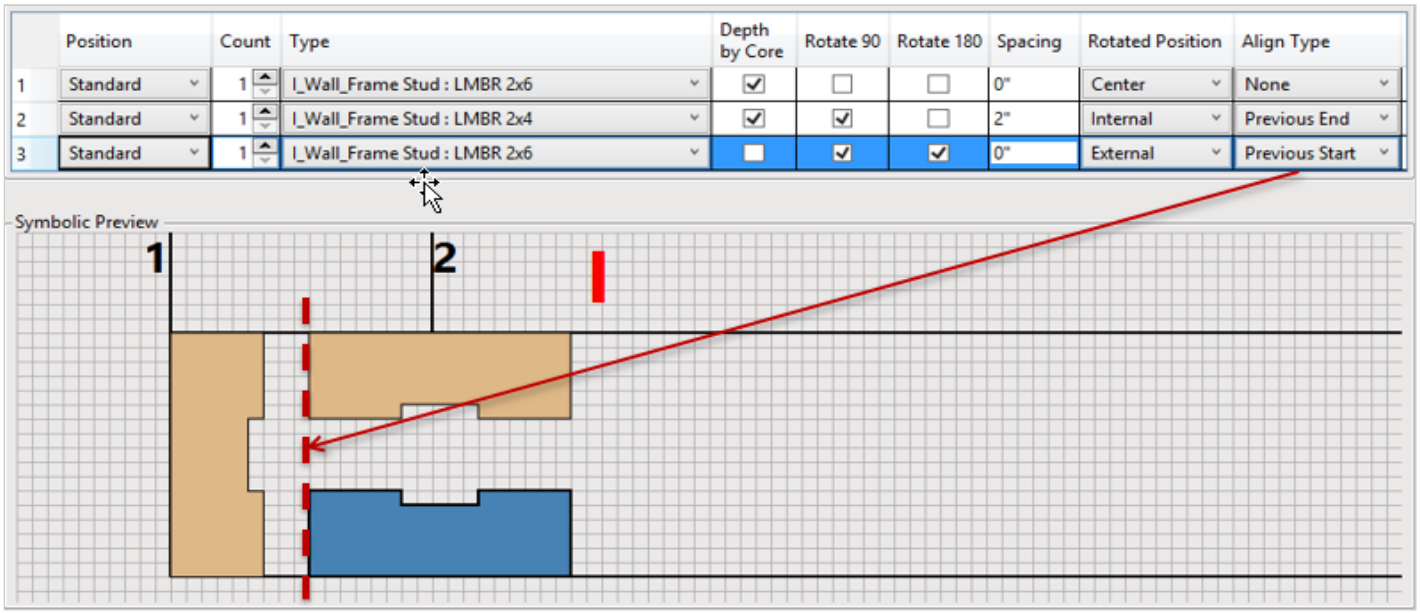


Align Type



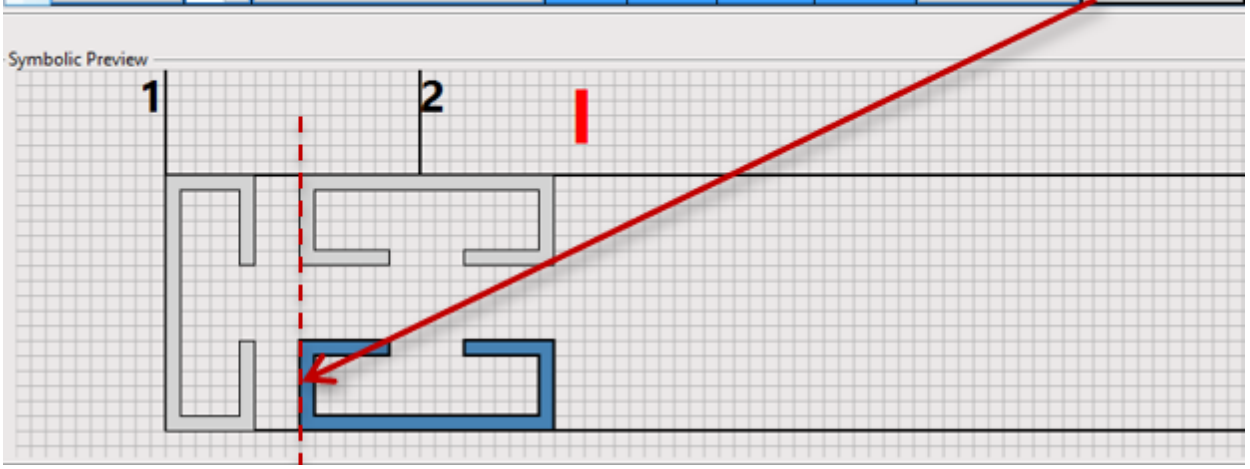
Align Type – the selected stud/joist can be aligned with the previous stud's/joist's End or Start, core inside or core outside.



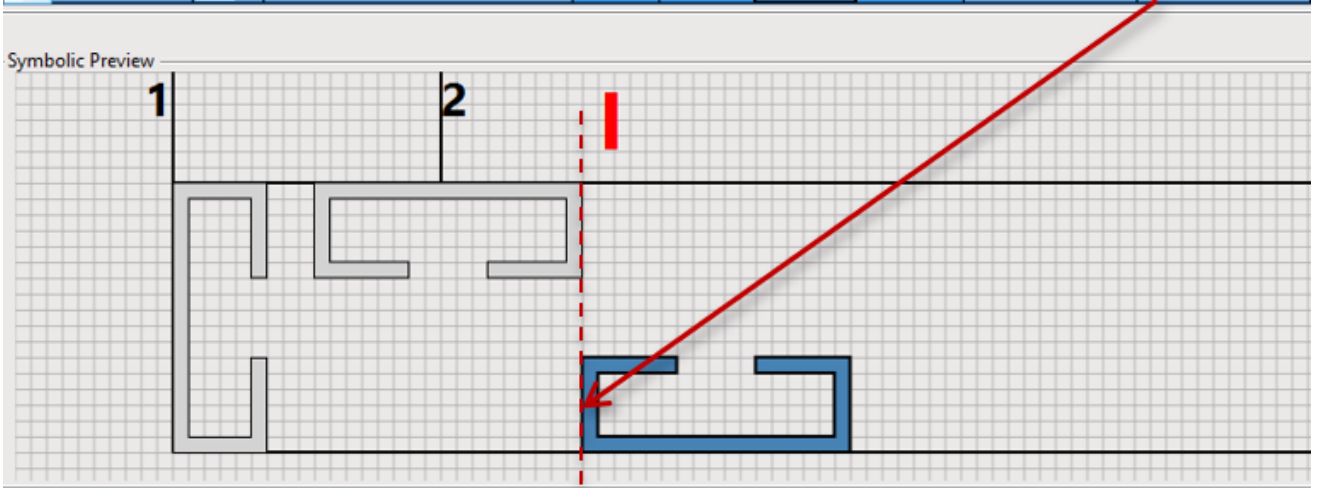


Example with metal:

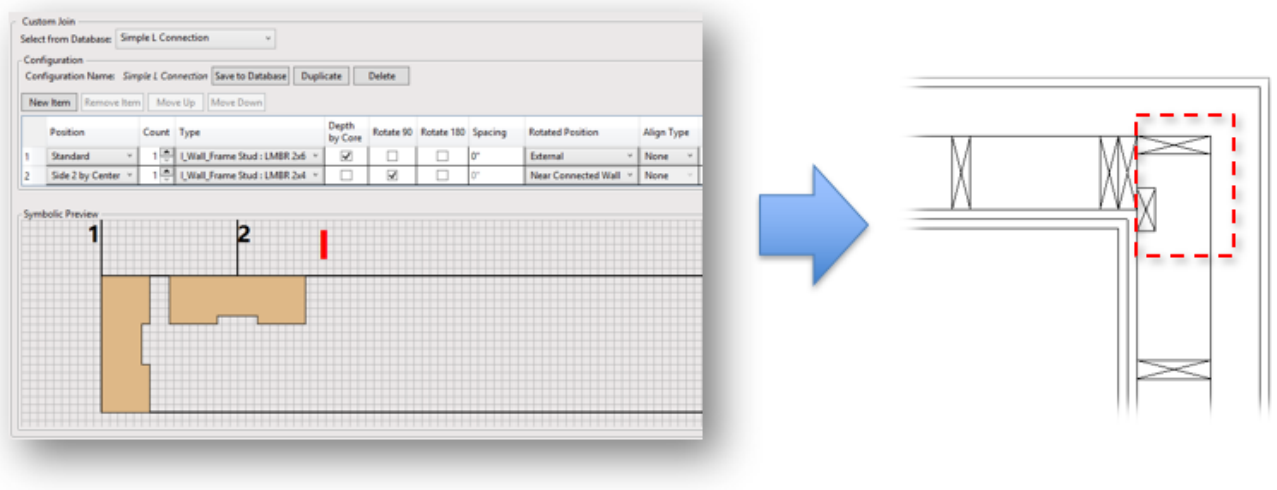
	Position	Count	Type	Depth by Core	Rotate 90	Rotate 180	Spacing	Rotated Position	Align Type
1	Standard	1	I_MF Stud-Joist : 600S162-43	☑	☐	☐	0"	Center	None
2	Standard	1	I_MF Stud-Joist : 600S162-43	☑	☑	☐	2"	Internal	Previous End
3	Standard	1	I_MF Stud-Joist : 600S162-43	☐	☑	☑	0"	External	Previous Start

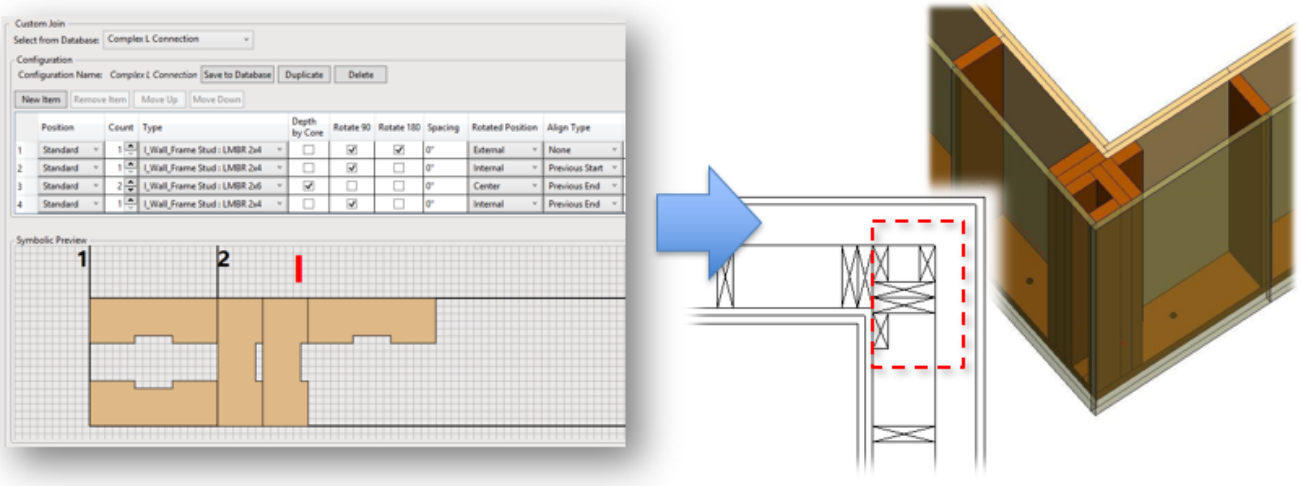


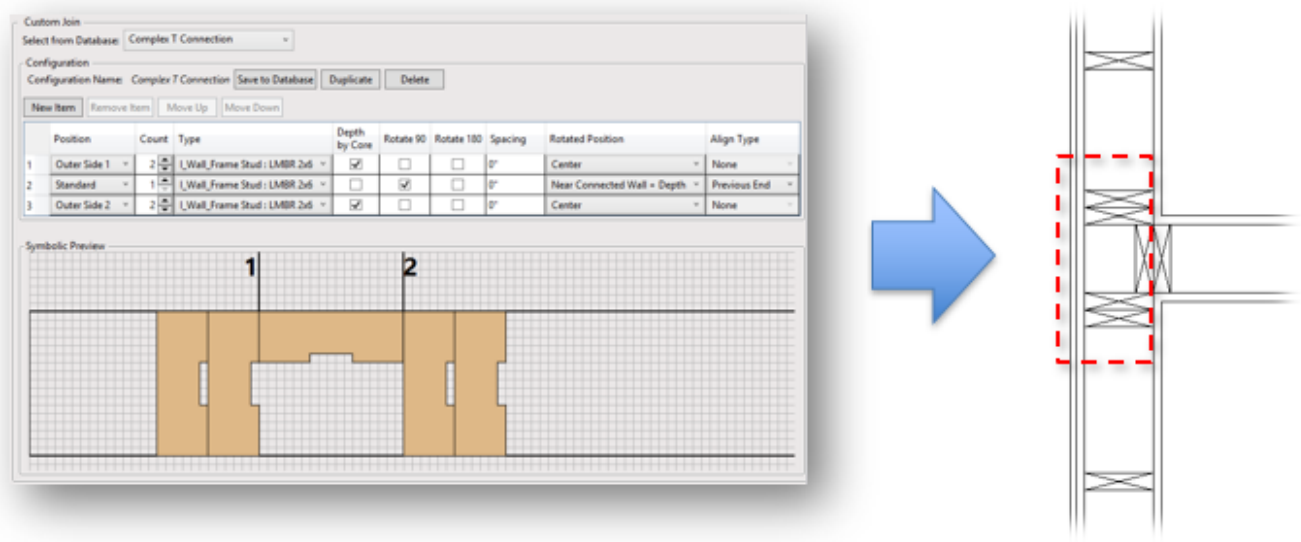
	Position	Count	Type	Depth by Core	Rotate 90	Rotate 180	Spacing	Rotated Position	Align Type
1	Standard	1	I_MF Stud-Joist : 600S162-43	☑	☐	☐	0"	Center	None
2	Standard	1	I_MF Stud-Joist : 600S162-43	☑	☑	☐	2"	Internal	Previous End
3	Standard	1	I_MF Stud-Joist : 600S162-43	☐	☑	☑	0"	External	Previous End



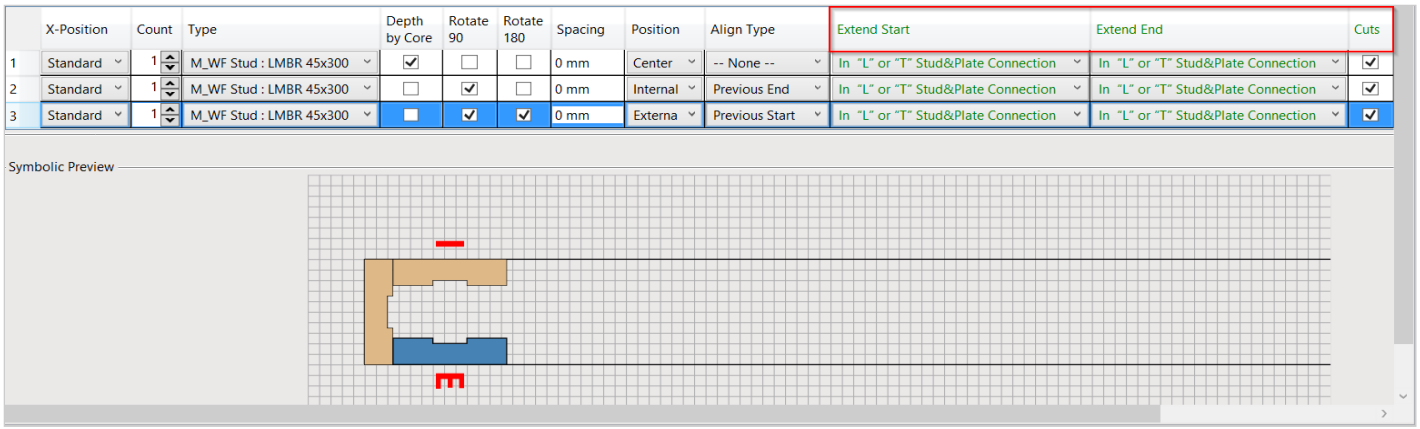
Samples of various wall joins







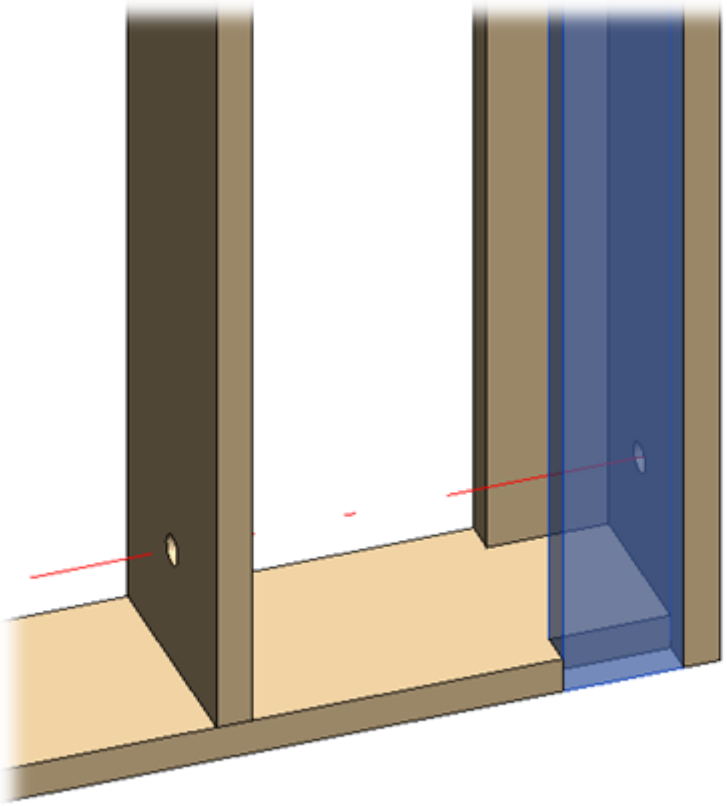
Extend Start, Extend End, Cuts



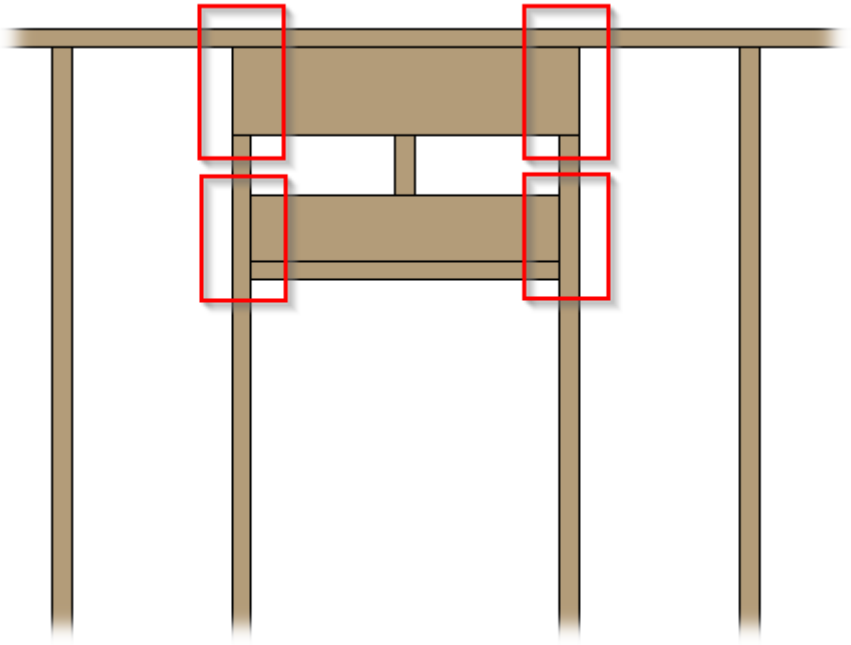
Extend Start, Extend End – controls start/end stud/joist connection with other elements from the wall/floor/roof frame. It can extend and cut both sides of the beam depending on the L or T connection with other beams.

Cut – select if stud/joist should cut the connected plate.

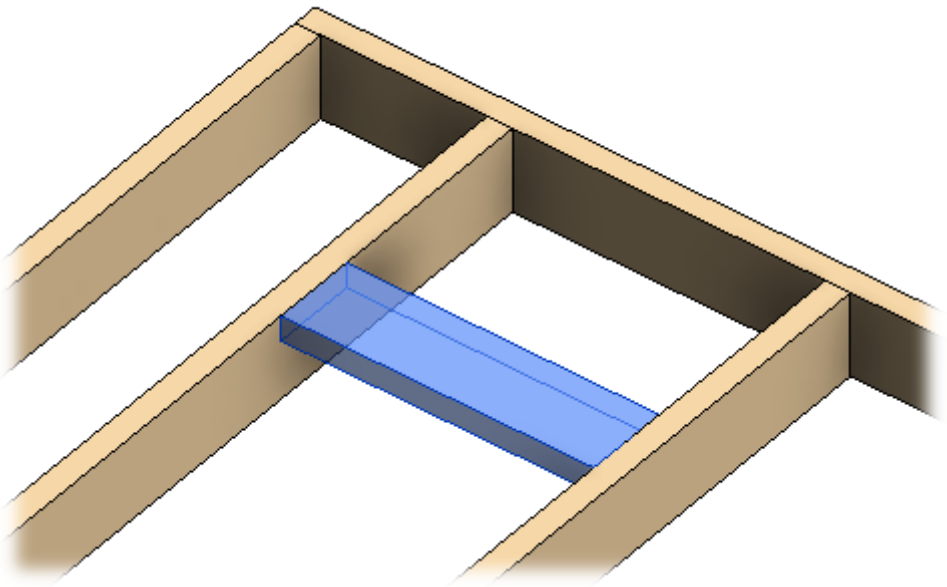
Example: Wall+ finds that end stud/joist is connected with plate in "L" connection. In this case, it is extended in both sides and cuts the plate:



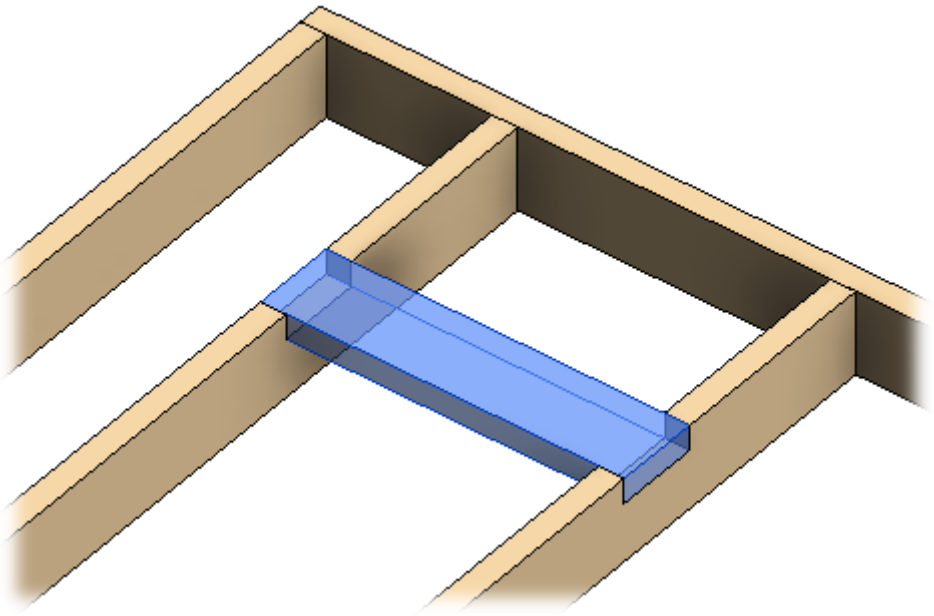
Example: opening Top Support is connected with Trimming Joists in "L" connection. In this case, it is extended on both sides and cut. Header is not extended.



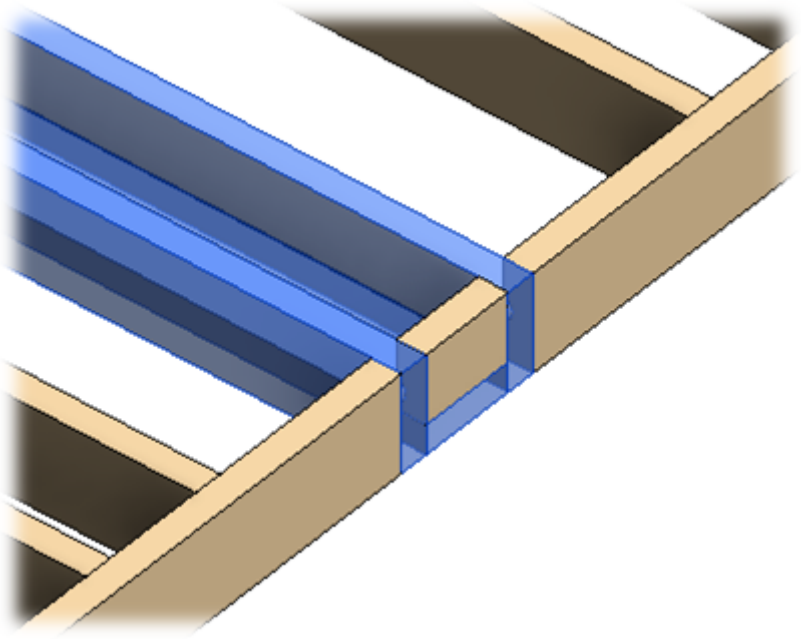
Example with blocking/nogging/bridging: ***Extend Ends*** *is switched OFF:*



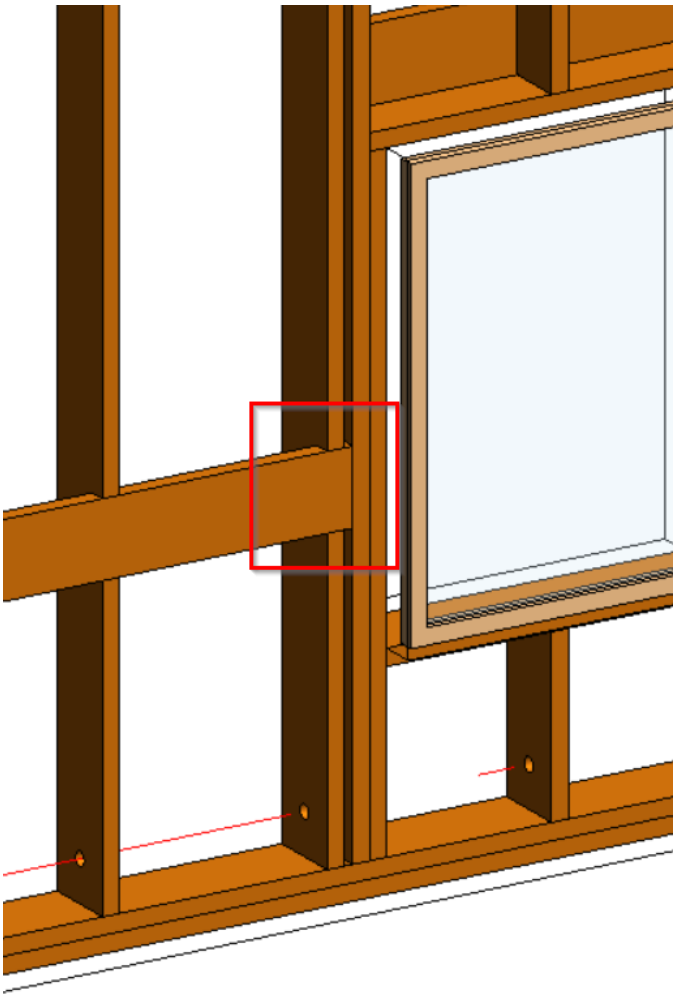
Example with blocking/nogging/bridging: ***Extend Ends*** *is switched ON:*



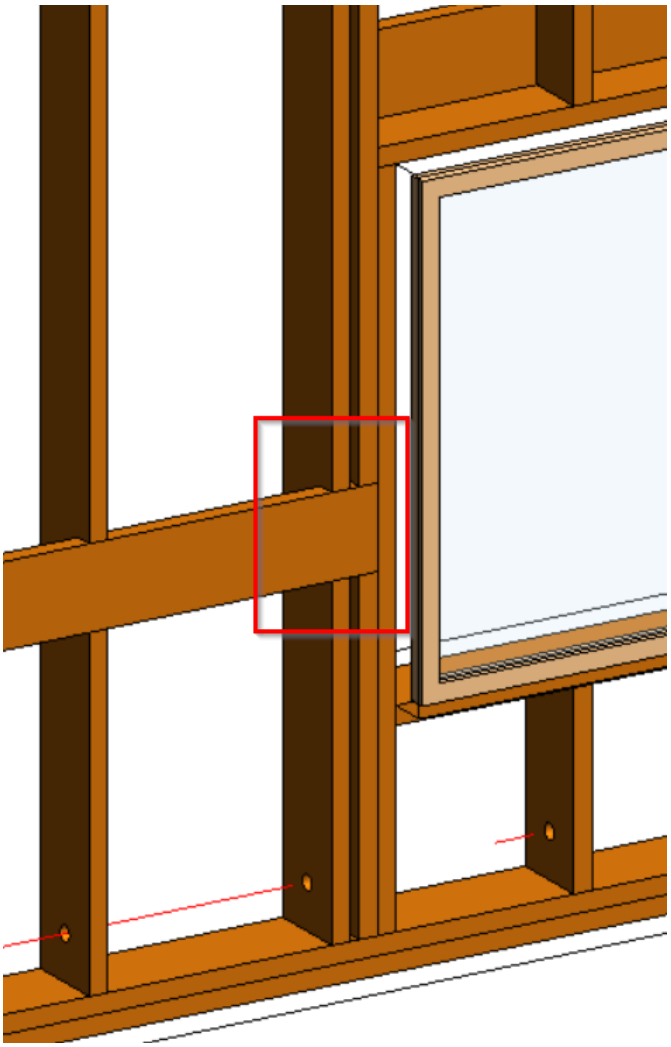
*Example: **Roof+** finds that joists from block are connected with top and bottom plates in "T" connection. In such cases, it is extended and cut.*



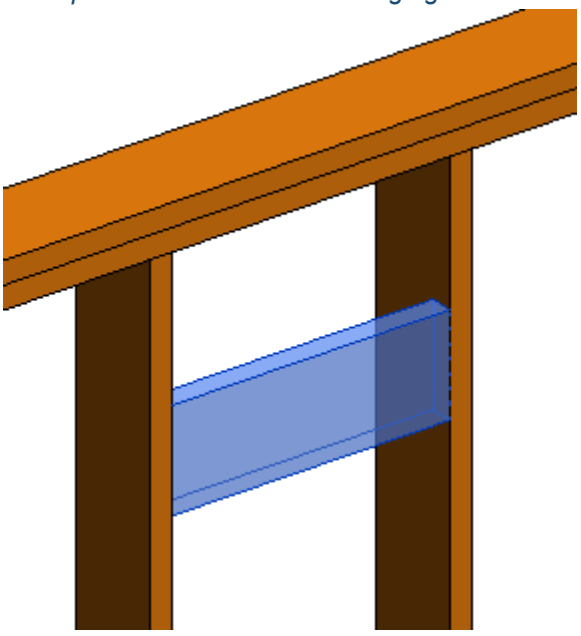
*Example with a wall: when **Extend Ends** is switched OFF...*



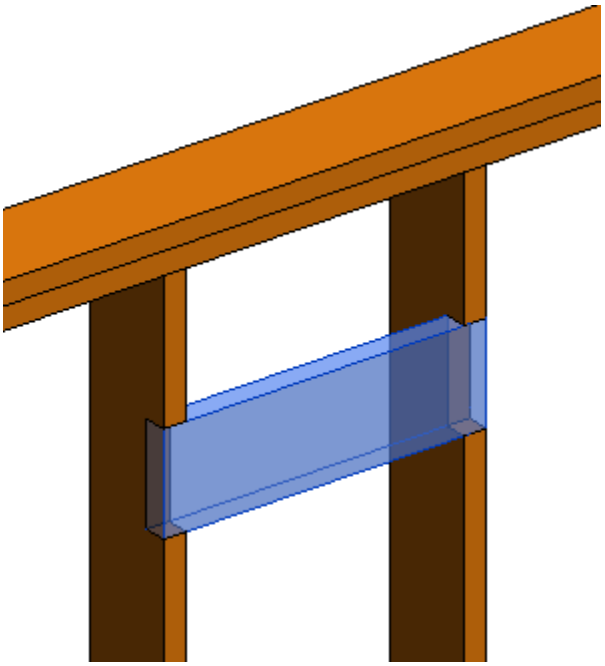
*...and when **Extend Ends** is switched ON:*



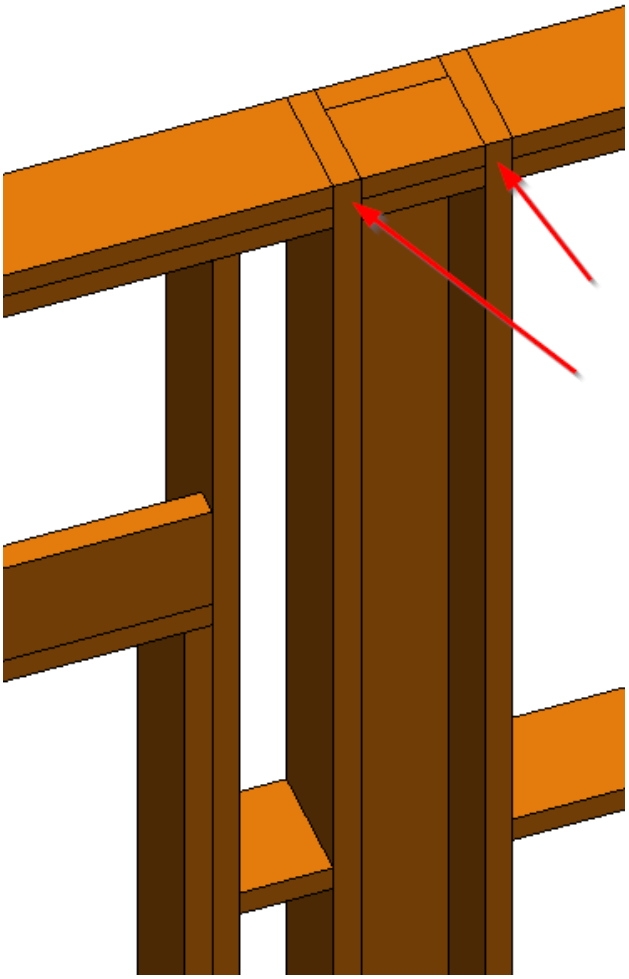
*Example with wall additional bridging: **Extend Ends** is switched OFF:*



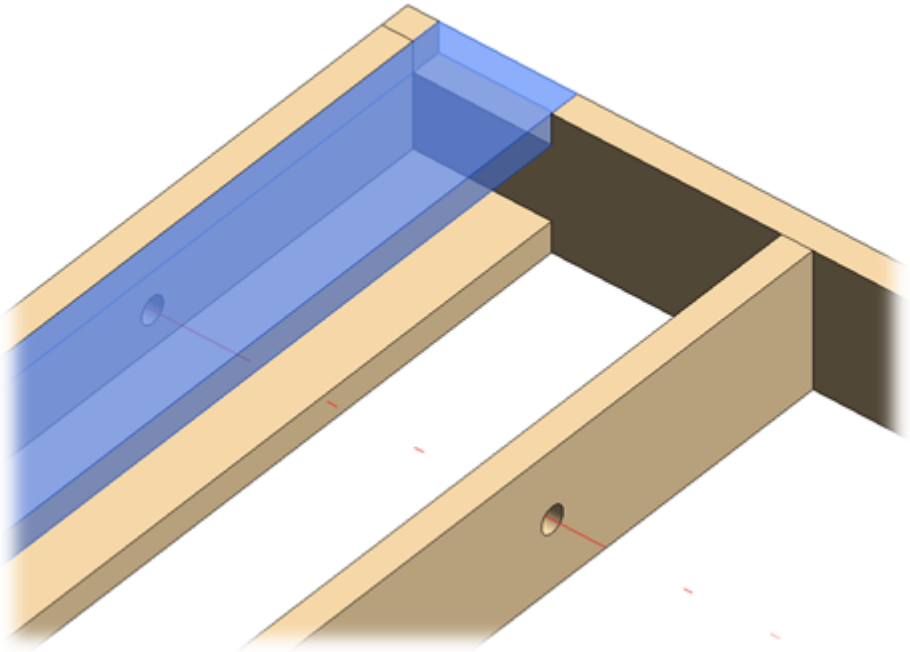
*Example with wall additional bridging: **Extend Ends** is switched ON:*



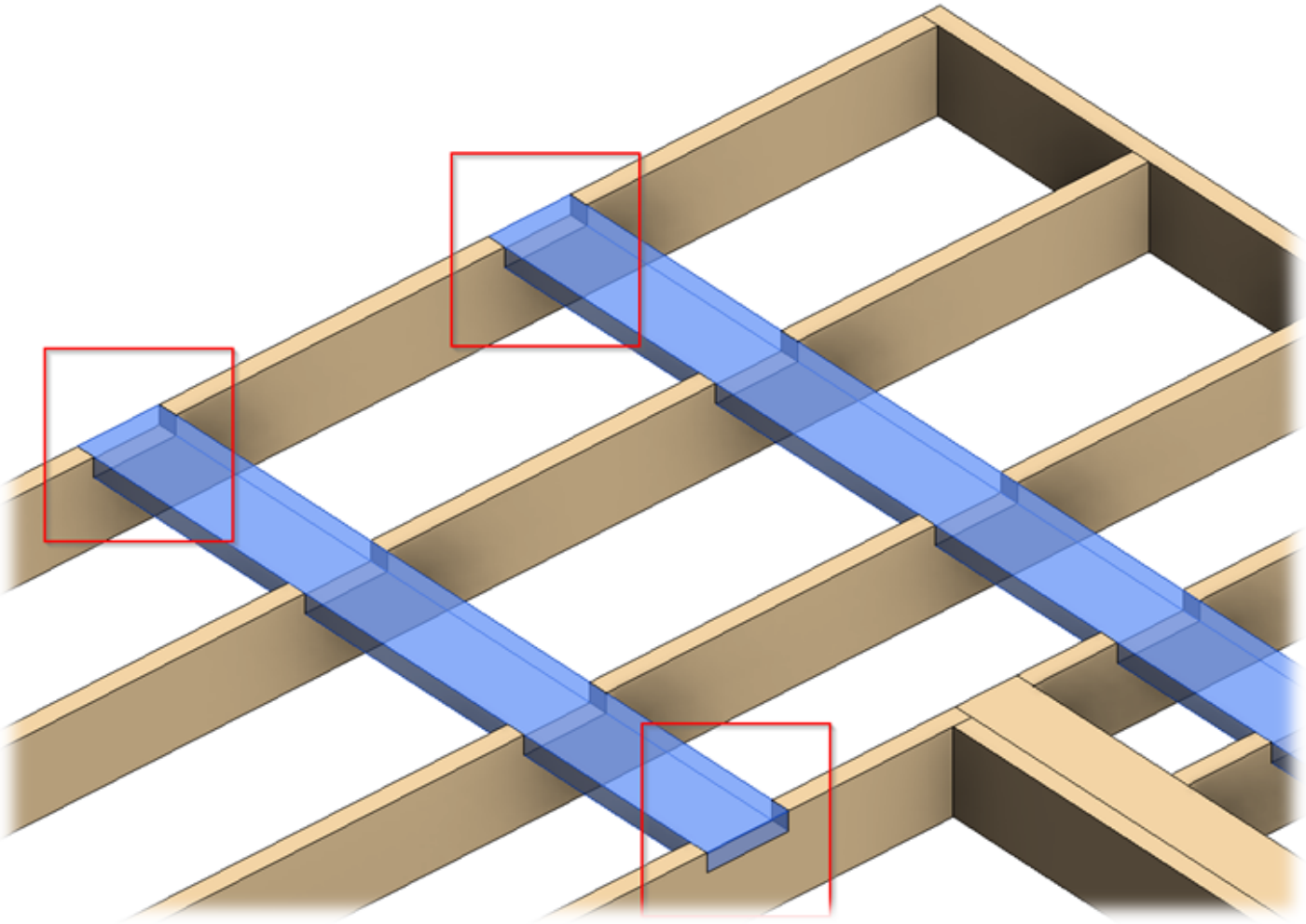
*Example: **Wall+** finds that studs from block are connected with top and bottom plates in "T" connection. In such cases, it is extended and cut.*



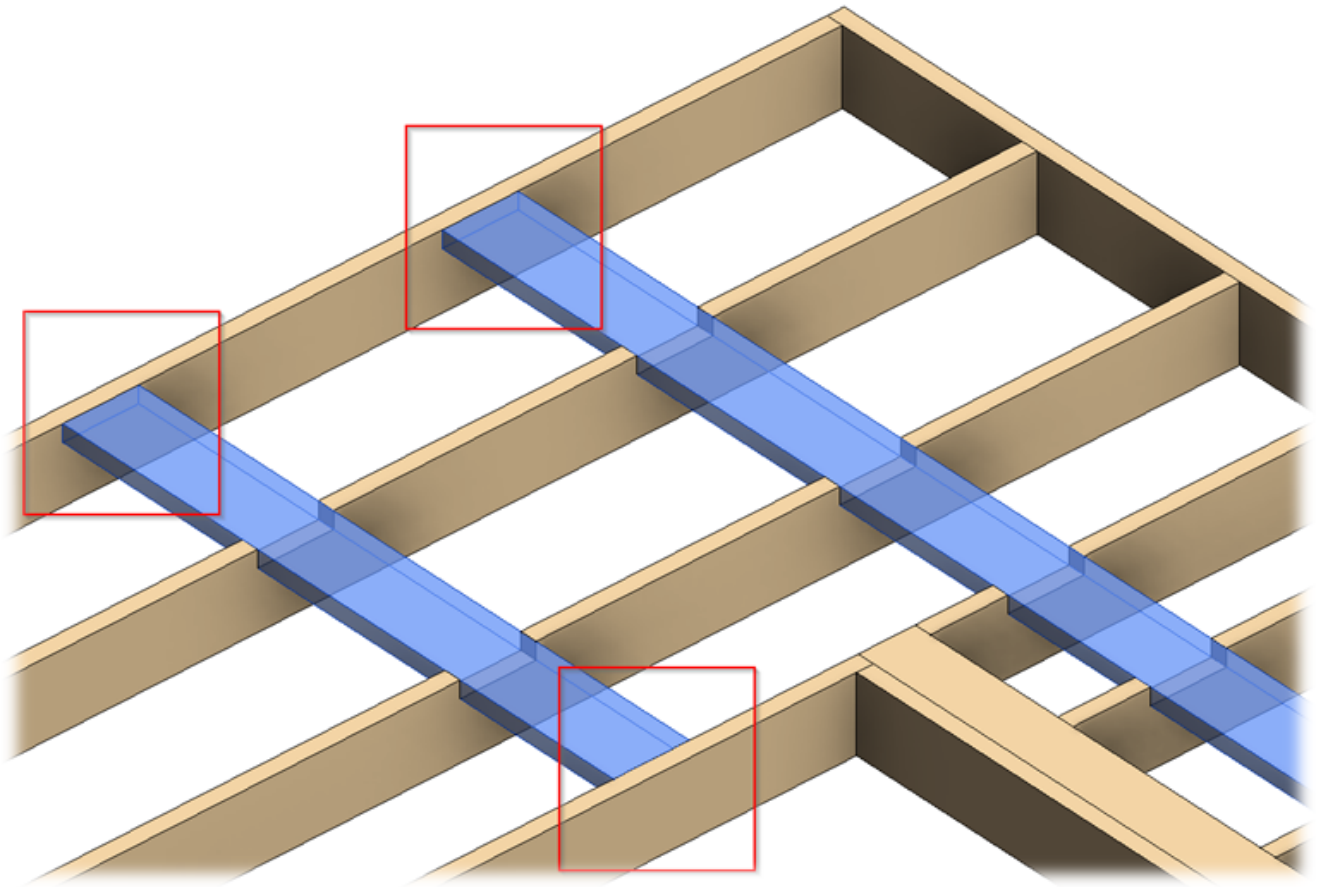
*Example: **Floor+** finds that end joist is connected with rim joist in "L" connection. In this case, it is extended on both sides and cuts:*



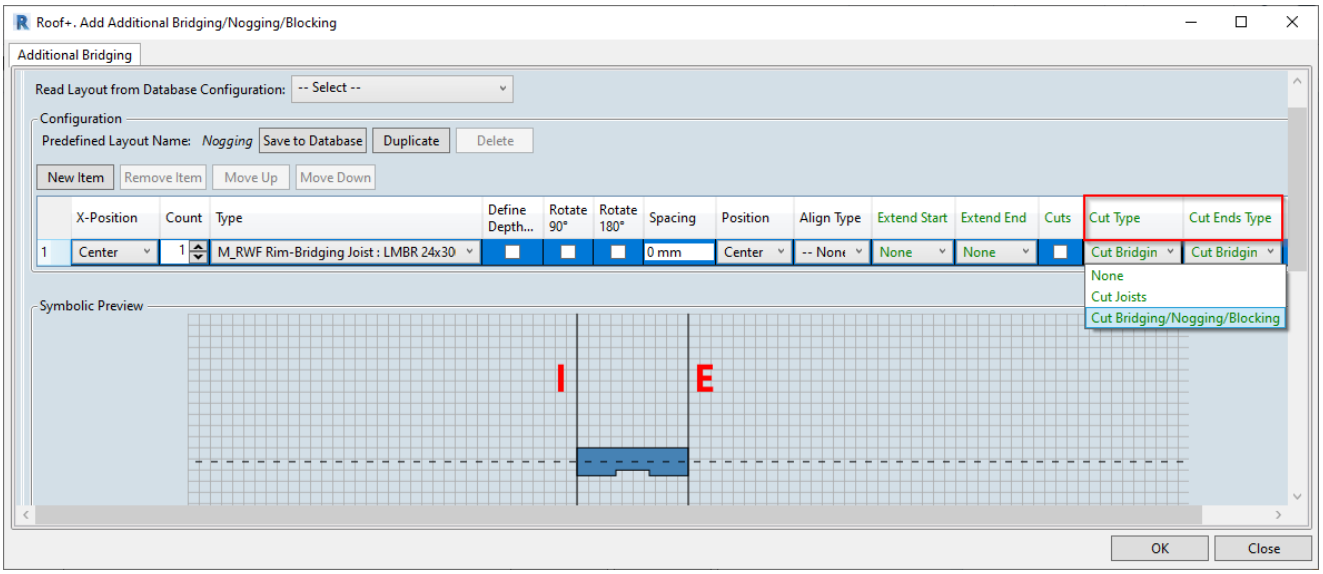
*Example with floor: when **Extend Ends** is ON:*



*Example: when **Extend Ends** is OFF:*



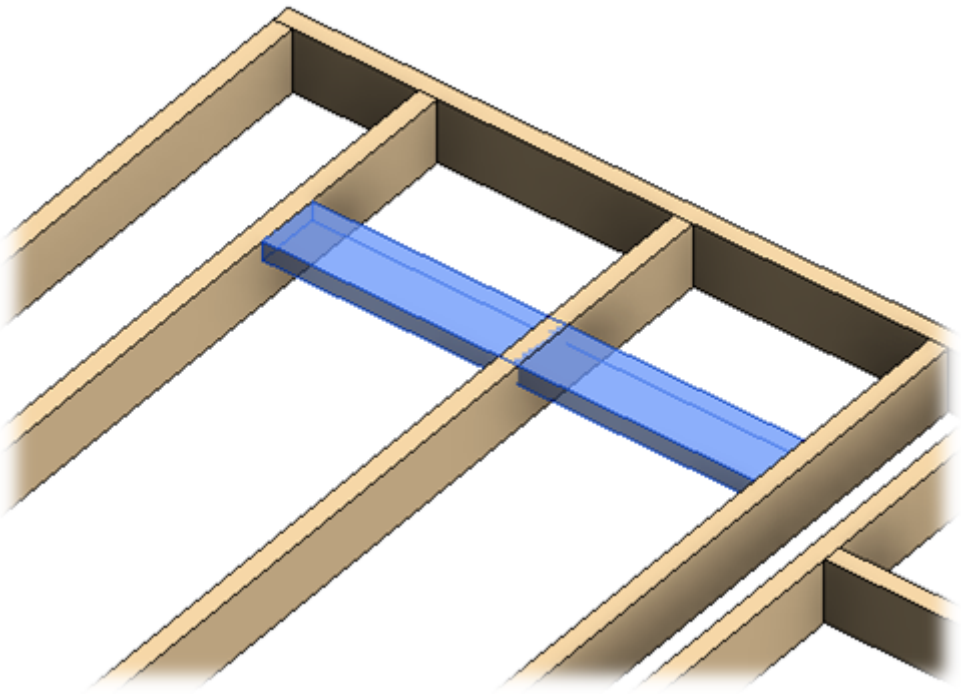
Cut Type



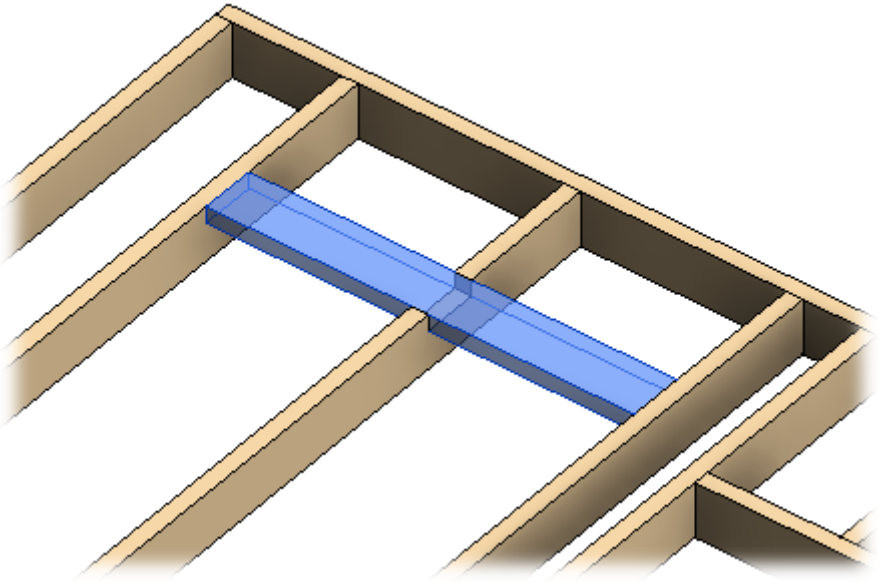
Cut Type – select blocking/nogging/bridging and joist connection cutting type.

Possible options:

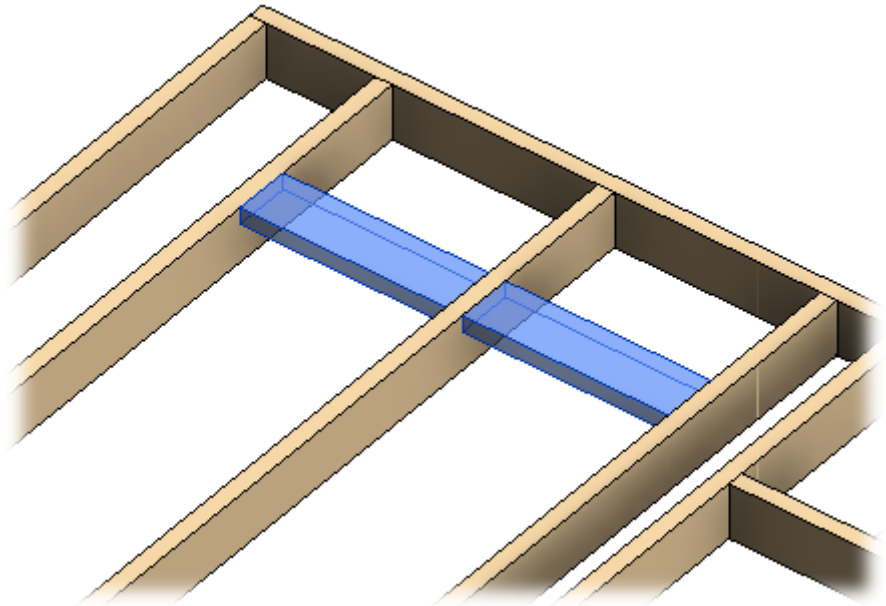
*Example: when **Cut Type = None***



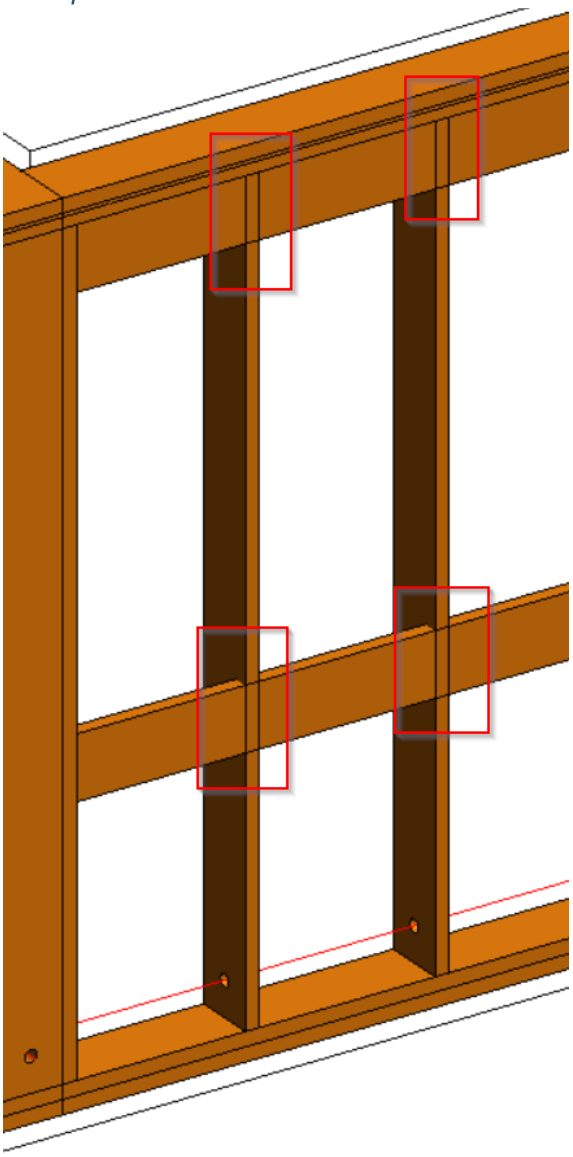
*Example: when **Cut Type = Cut Joists***



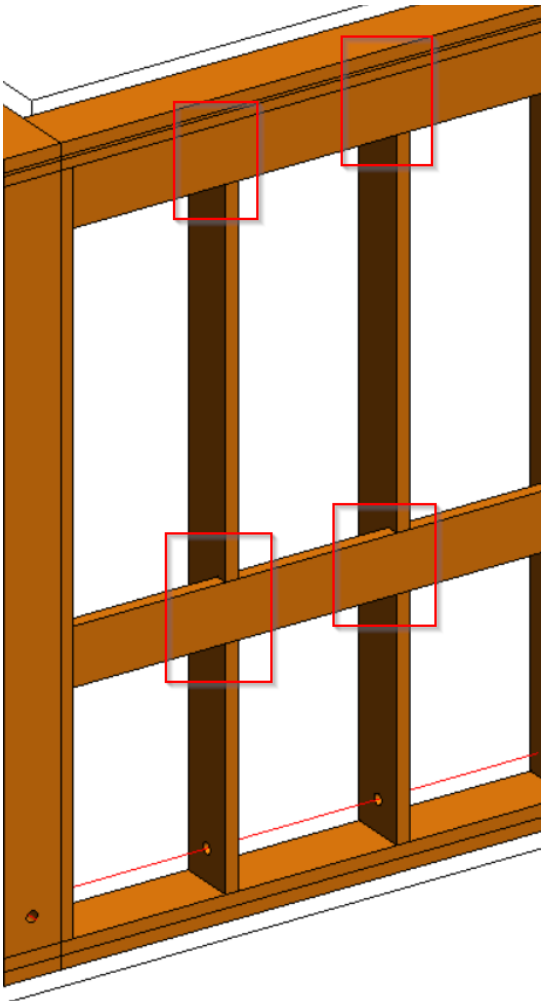
*Example, when **Cut Type = Cut Bridging/Nogging/Blocking***



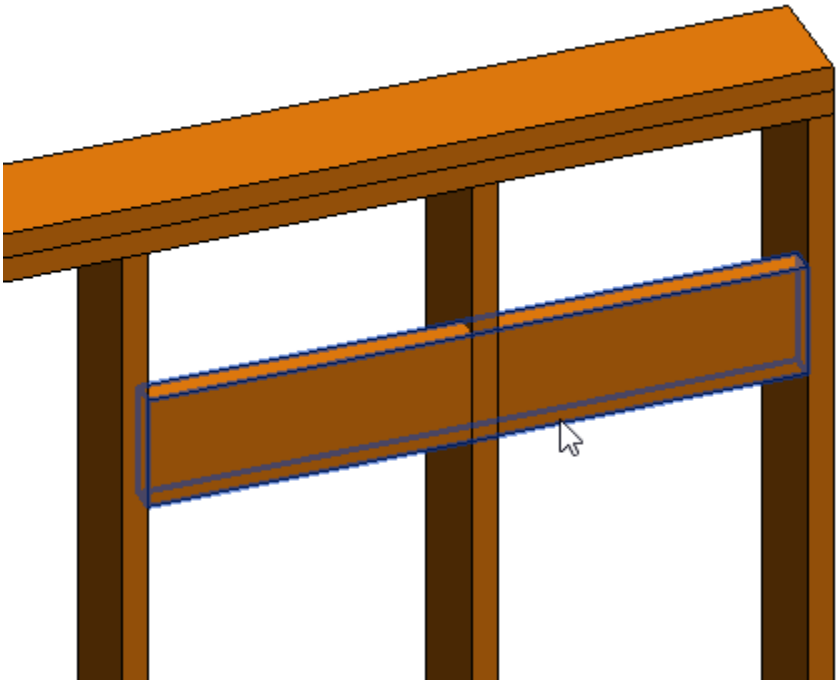
*Example with wall: When **None** is selected:*



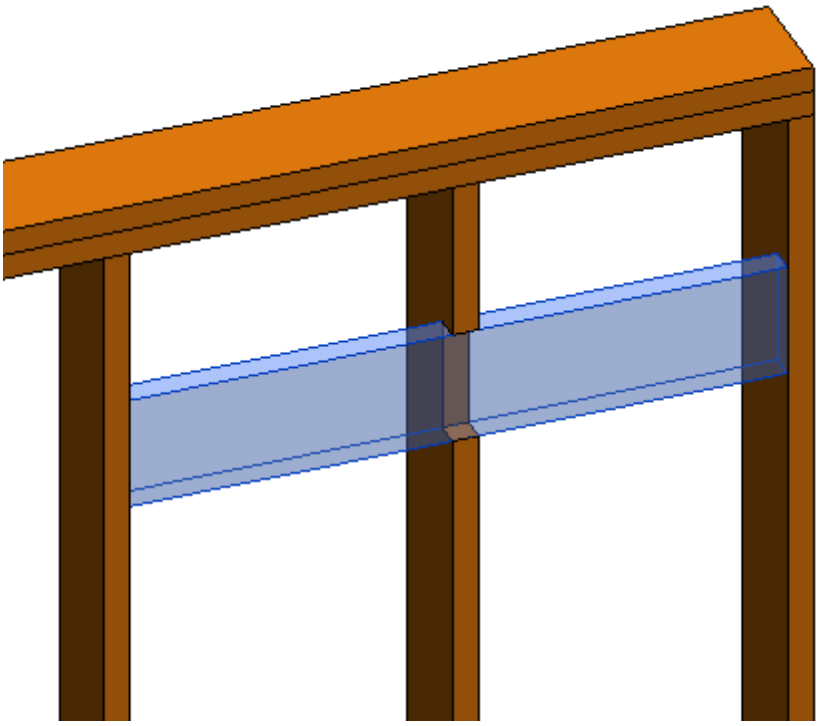
*Example: When **Cut Studs** is selected:*



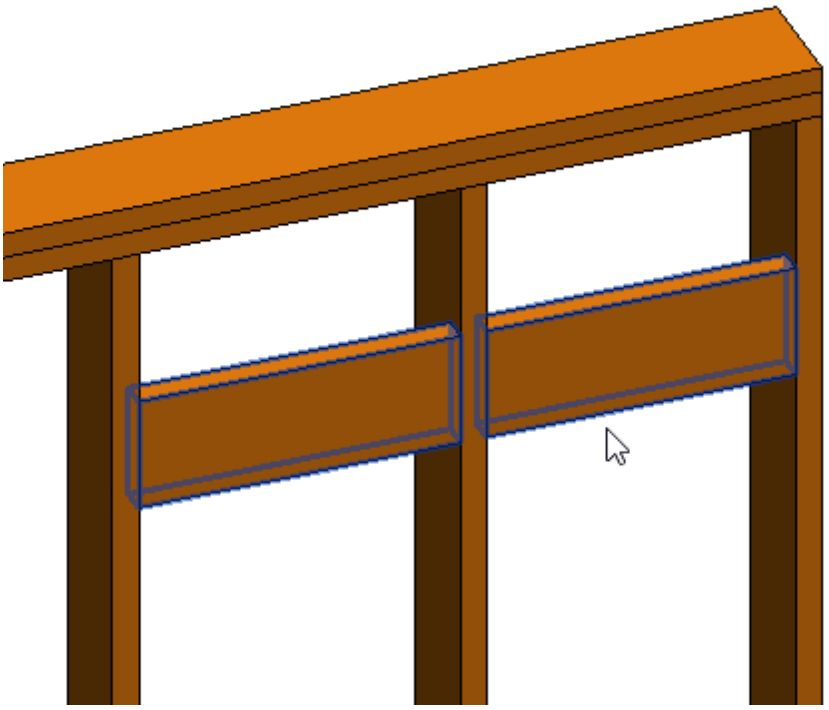
*Example with wall additional bridging: when **Cut Type = Don't Cut***



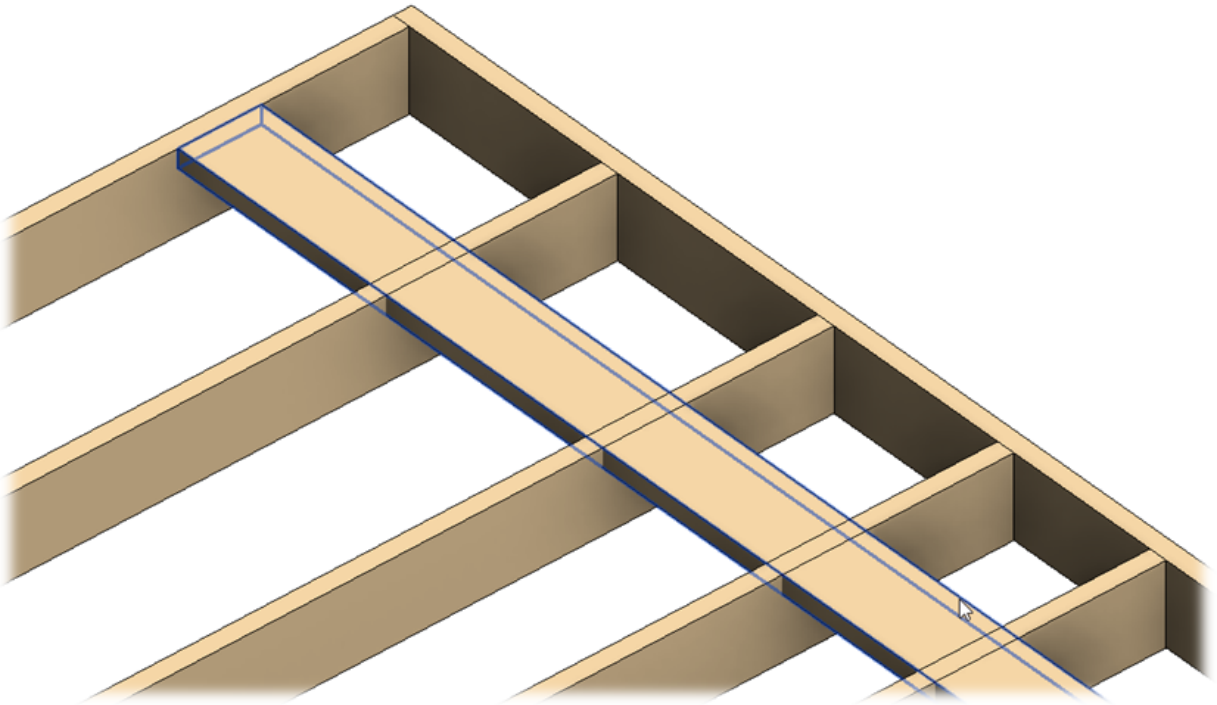
*Example with wall additional bridging: when **Cut Type = Cut Studs***



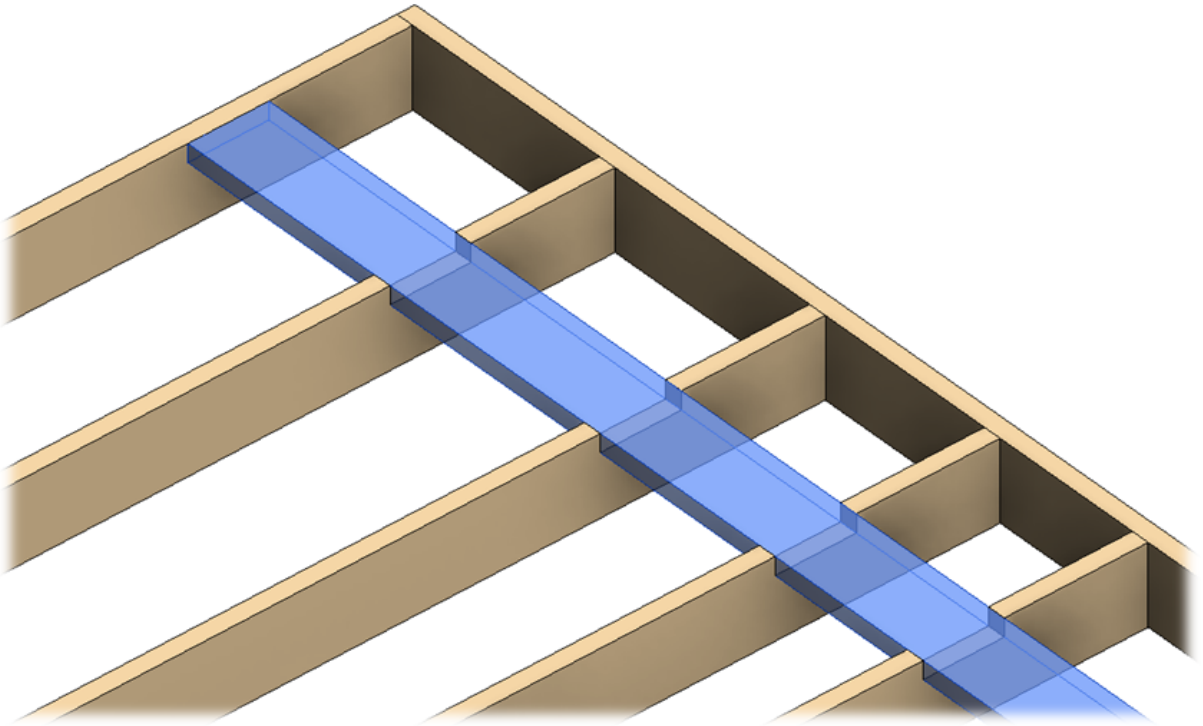
*Example with wall additional bridging, when **Cut Type = Cut Additional Element***



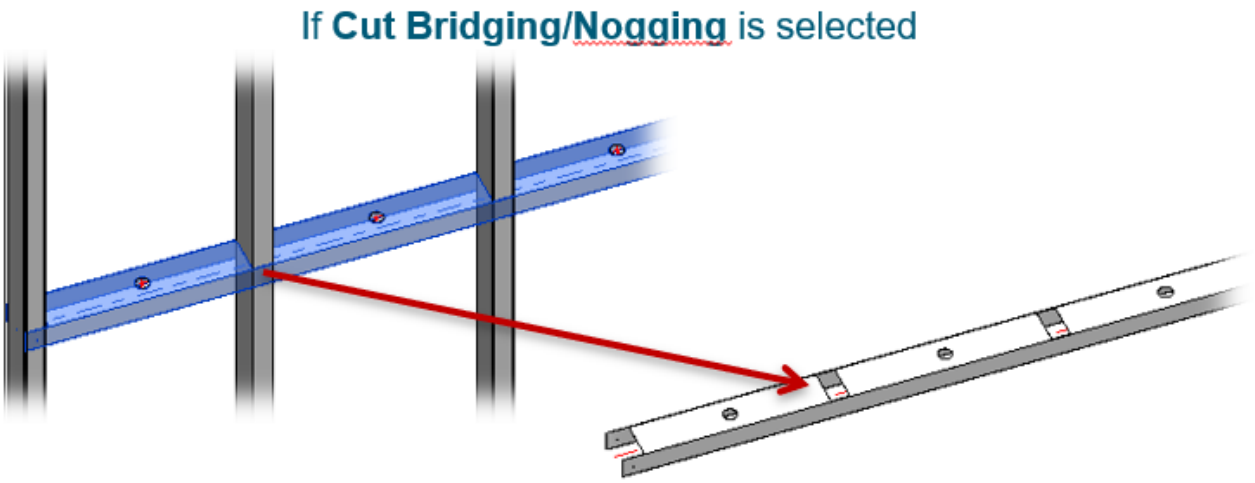
*Example with floor: when **Don't Cut** is selected:*



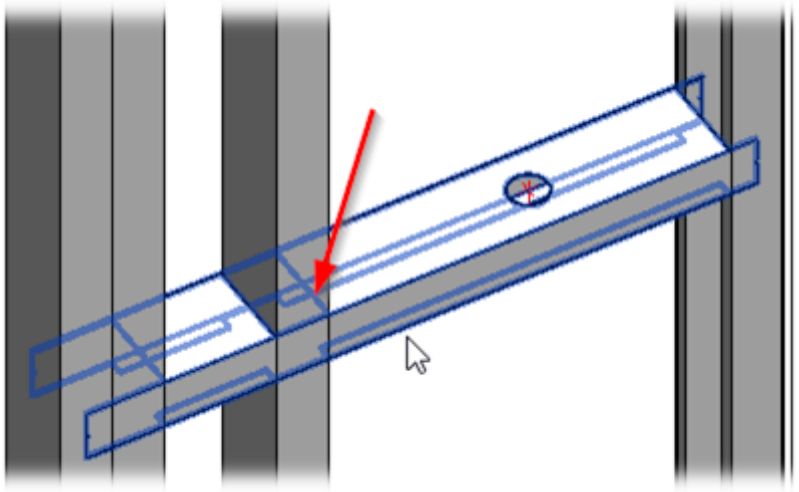
*Example: when **Cut Joists** is selected:*



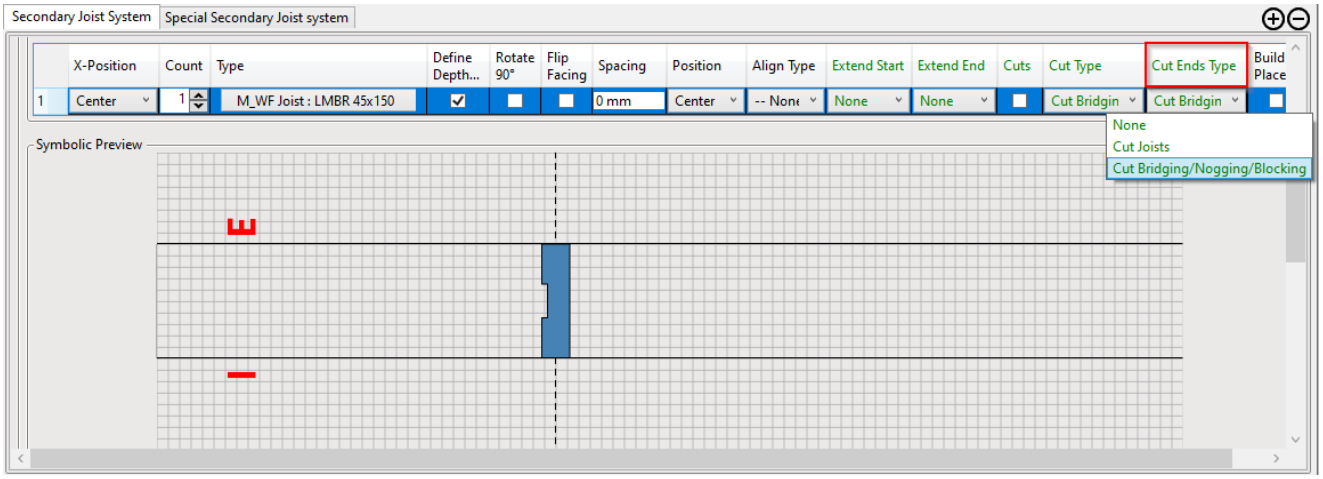
Example with metal wall bridging/nogging:



*Example with metal wall frame , when **Cut Type = Cut Additional Element***

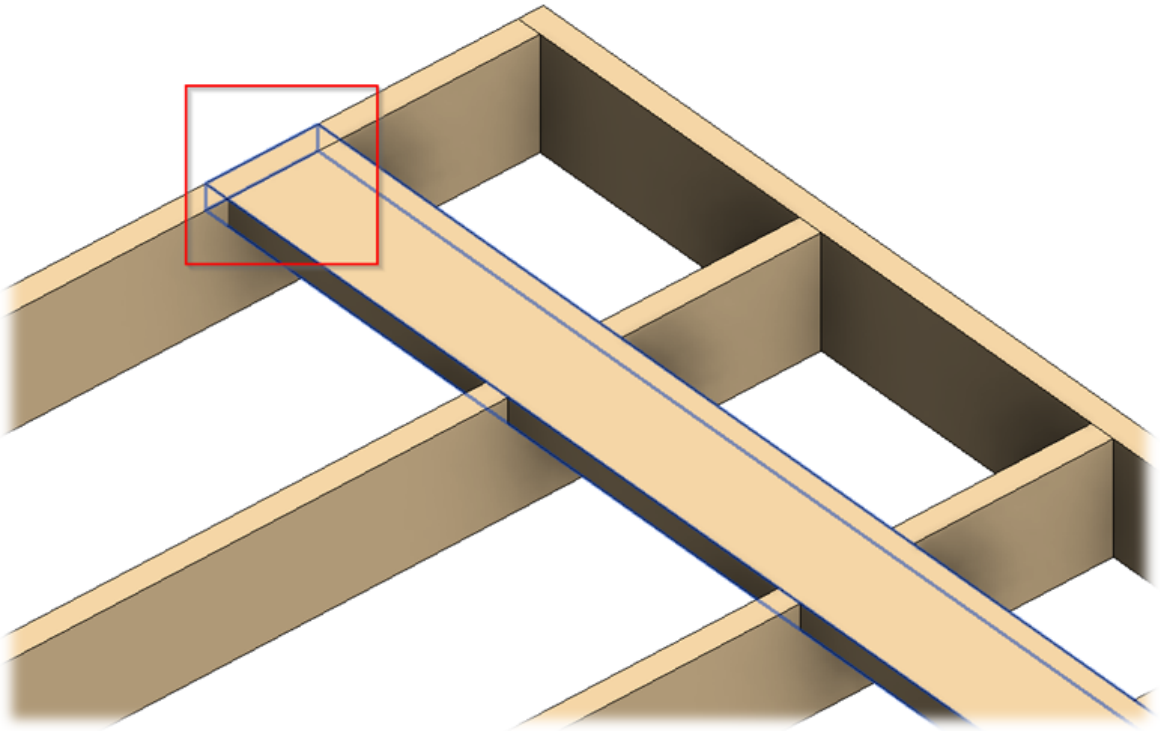


Cut Ends Type

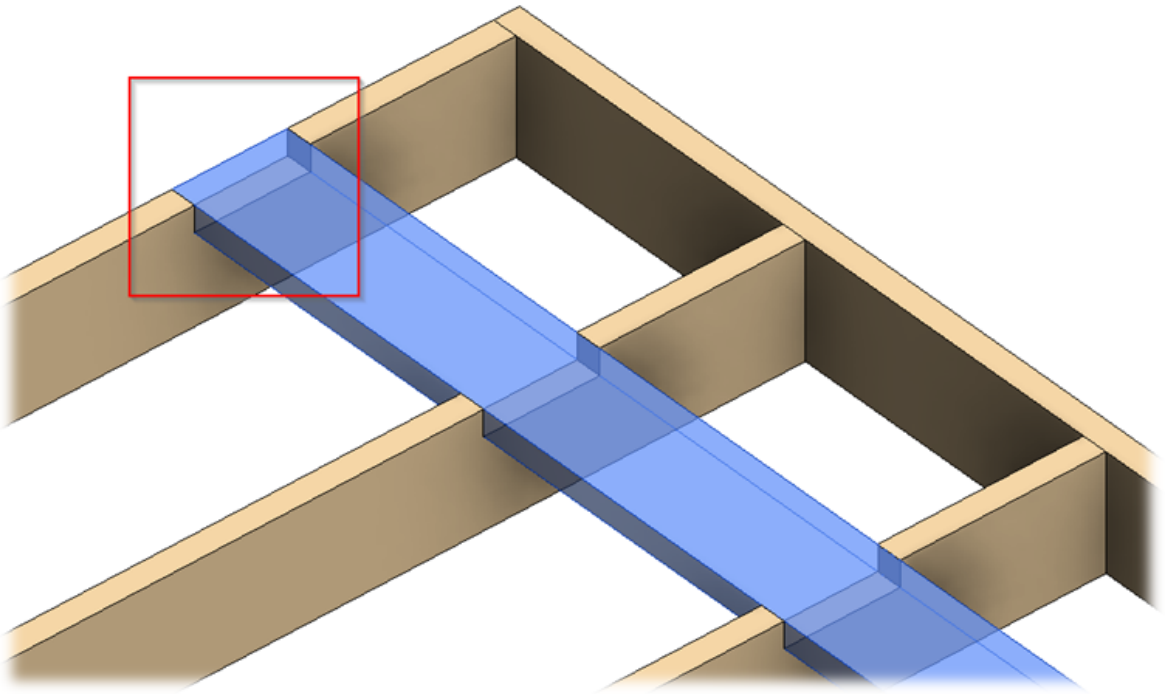


Cut Ends Type – select bridging/nogging end cutting type.

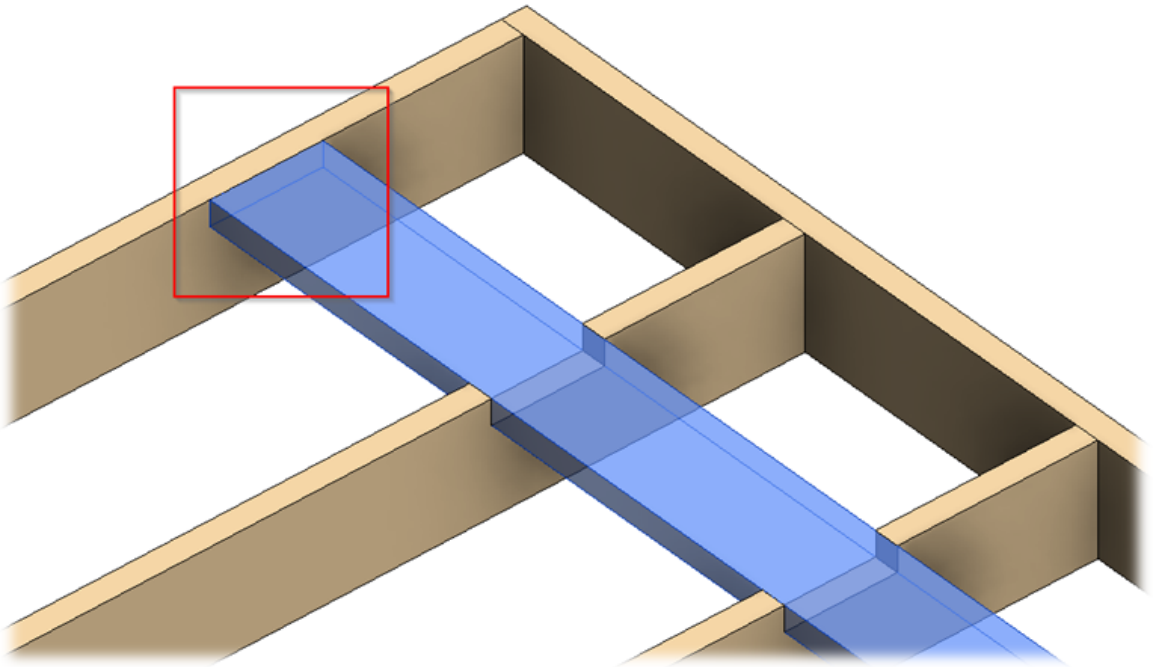
*Example: when **Don't Cut** is selected:*



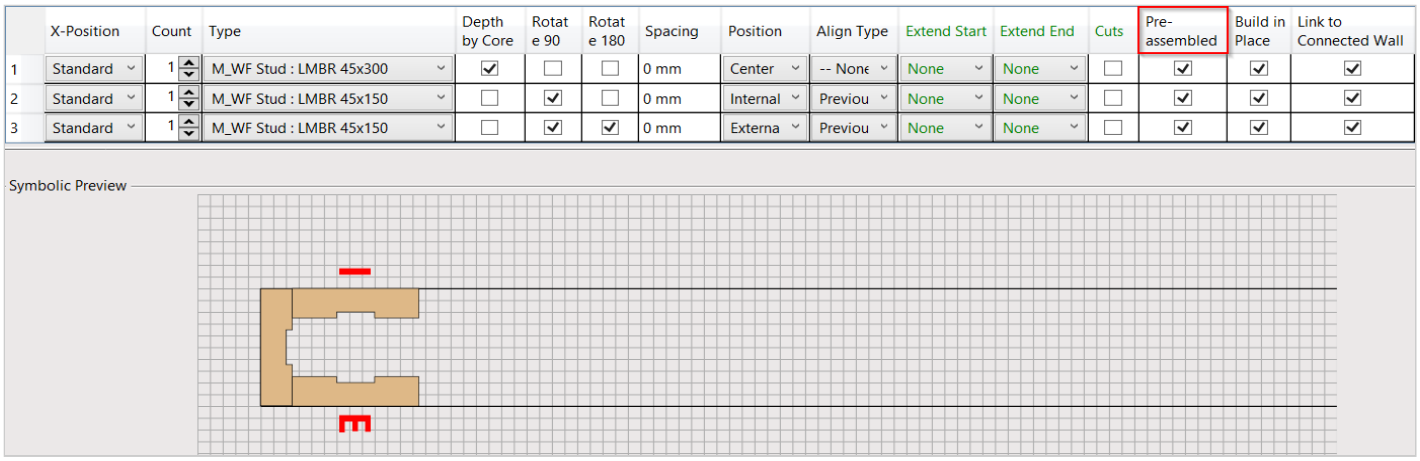
*Example: when **Cut Joists** is selected:*



*Example: when **Cut Bridging/Nogging/Blocking** is selected:*



Preassembled



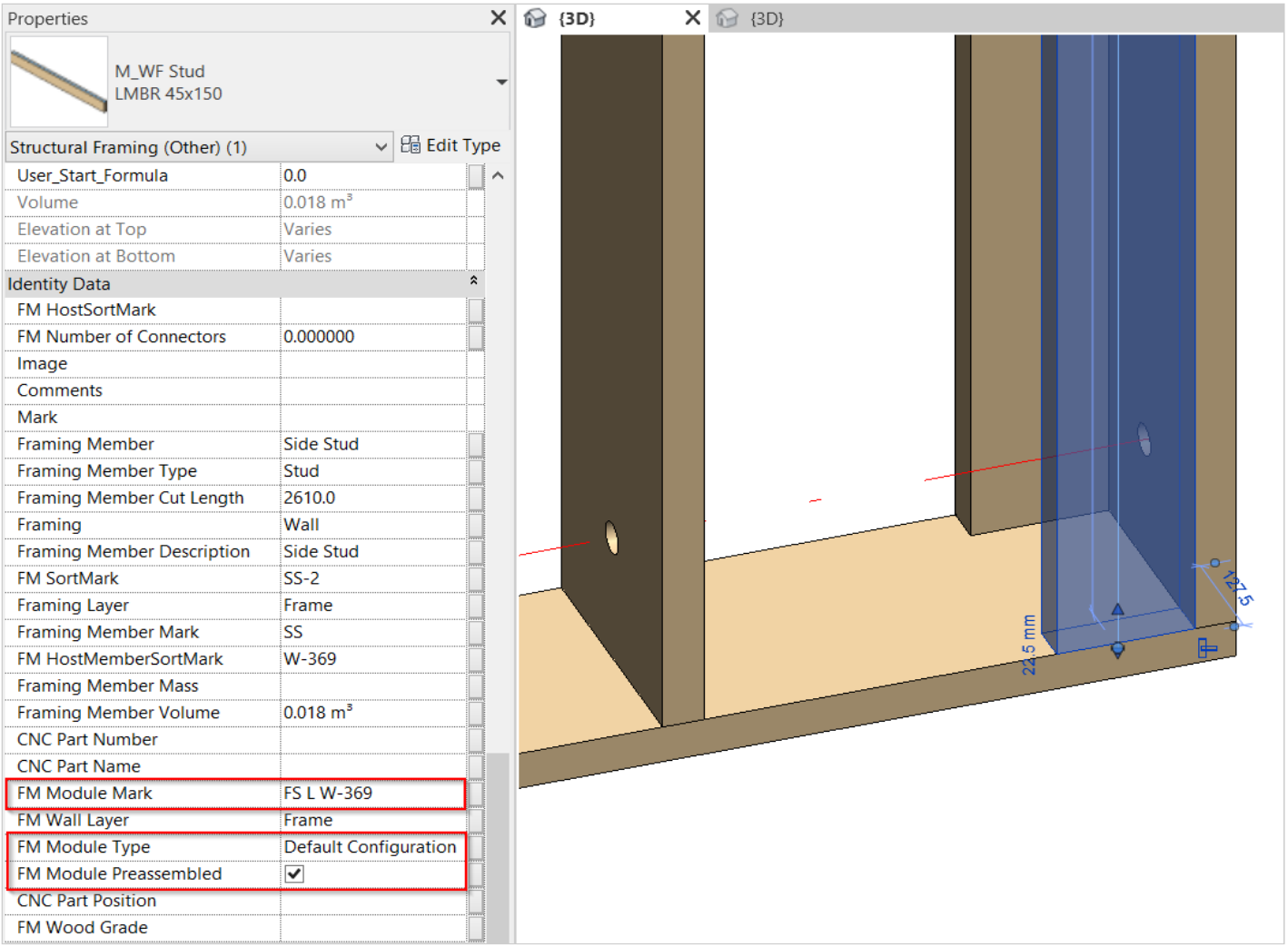
Fills information into these parameters:

FM Module Type – writes configuration name.

FM Module Mark – writes **FS** (Frame Start) or **FE** (Frame End) values + **L** (Left) or **R** (Right) + **Mark** (from Wall/Floor/Roof).

FM Module Preassembled – writes Yes/No if element is/is not included into preassembly.

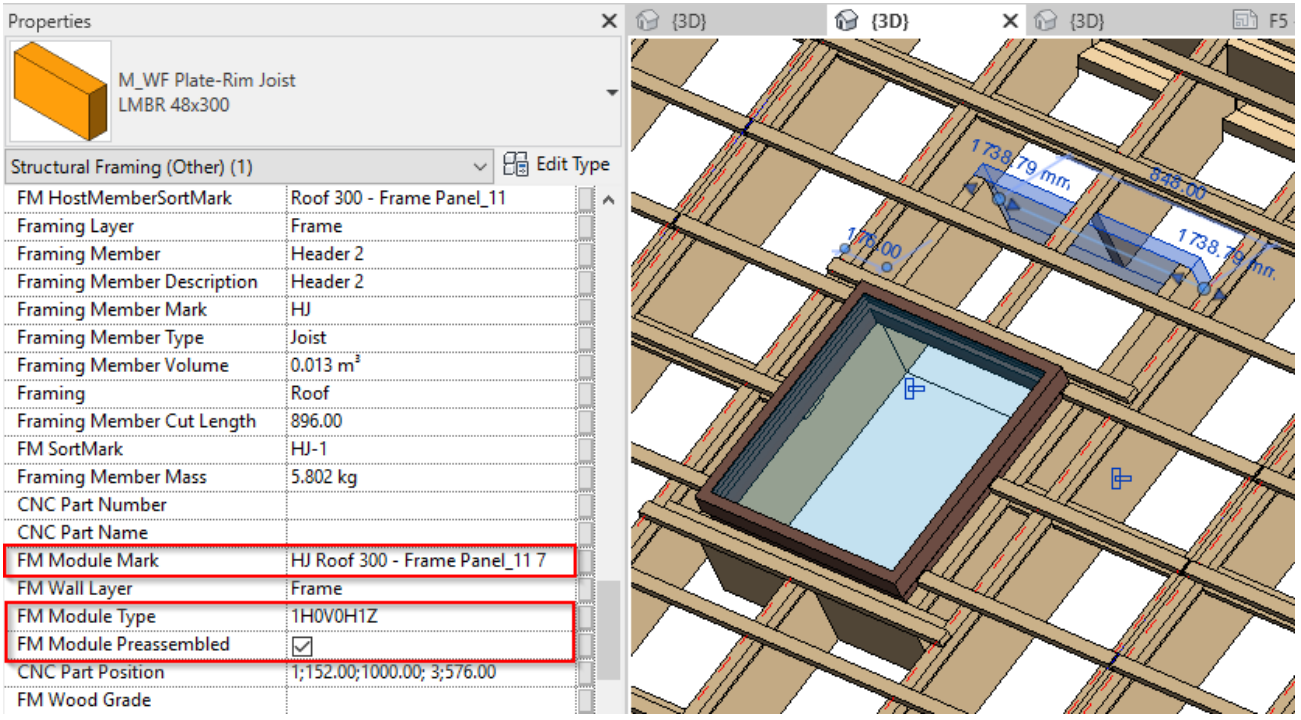
*Example: Free end stud/joist is included into the preassembling so **FM Module Type** parameter has end connection configuration value, **FM Module Mark** parameter contains **FS** (Frame Start) + **L** (Left) + current wall **Mark** value (it can be seen near **FM HostMemberSortMark**).*



Example with roof opening:

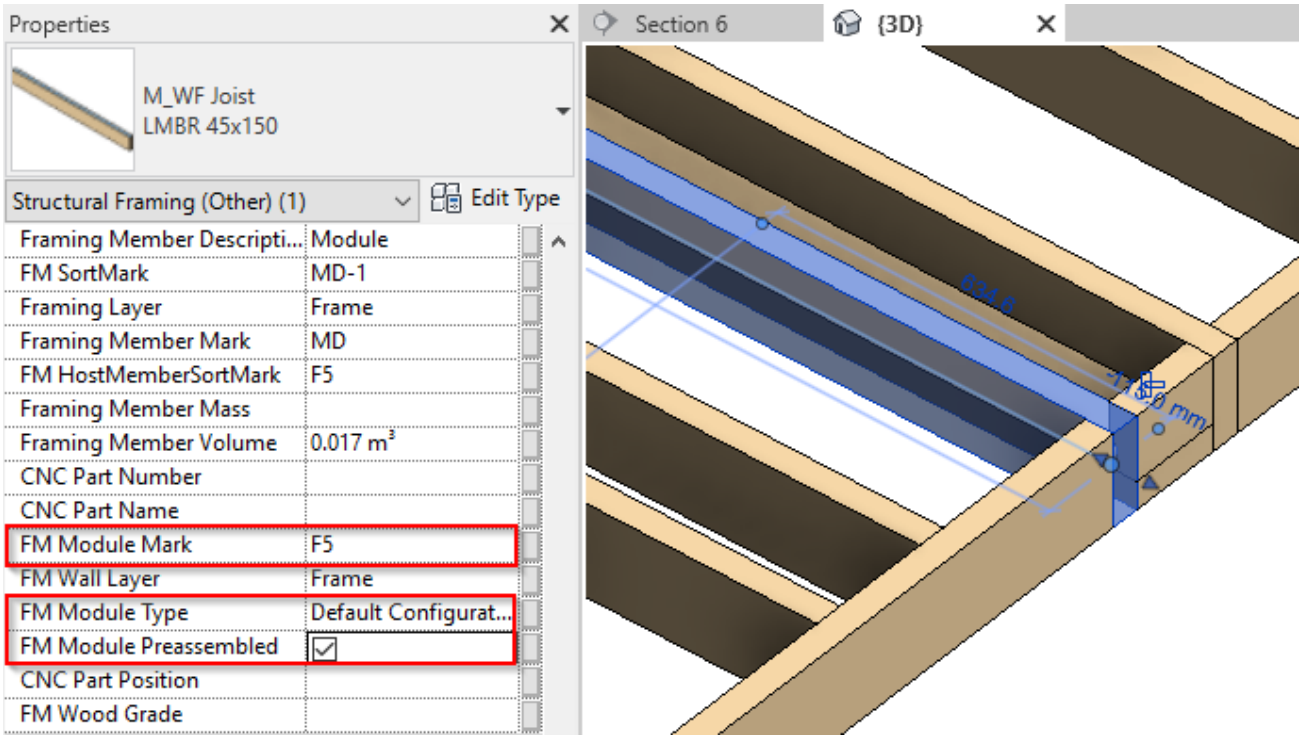
FM Module Mark *– writes* ***Framing Member Mark*** *+* ***Mark*** *(from Roof) +* ***Mark*** *(from Opening).*

Opening Header2 is included in the preassembly so ***FM Module Type*** *parameter has opening framing configuration name,* ***FM Module Mark*** *parameter contains* ***Framng Member Mark*** *parameter value + current roof* ***Mark*** *value (can be seen near* ***FM HostMemberSortMark****) + current window* ***Mark****.*



Example with floor/roof vertical block:

FM Module Type *– writes configuration name.*
FM Module Mark – *writes roof mark.*



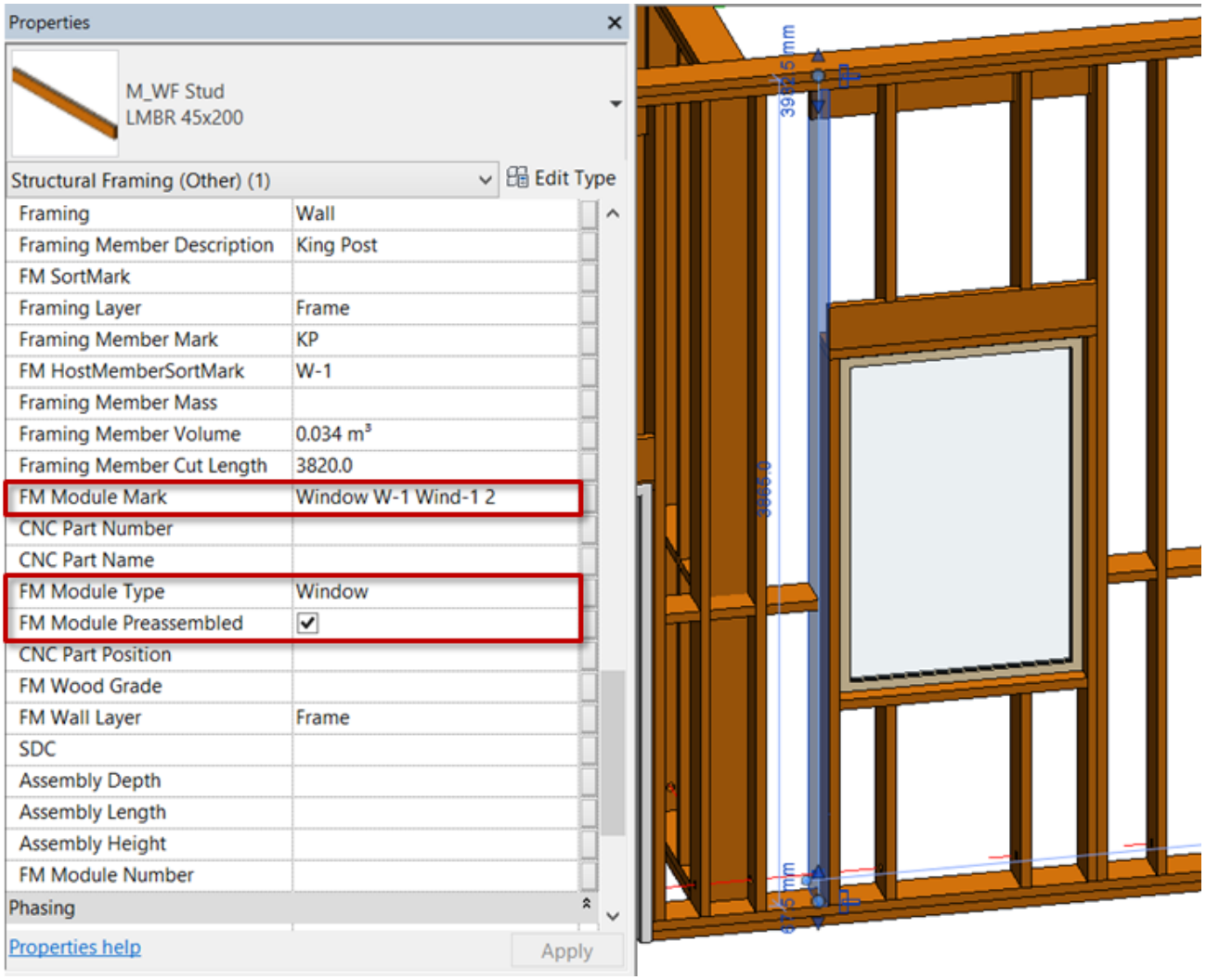
Example with wall king stud:

FM Module Type
For Windows, Doors and Openings – writes opening type (Window, Door, Opening, JoinedOpening).
For Connections – writes join configuration name.

FM Module Mark *– writes* ***FM Module Type*** *+* ***Mark*** *(from Wall) +* ***Mark*** *(from Window, Door or Opening) + unique number.*

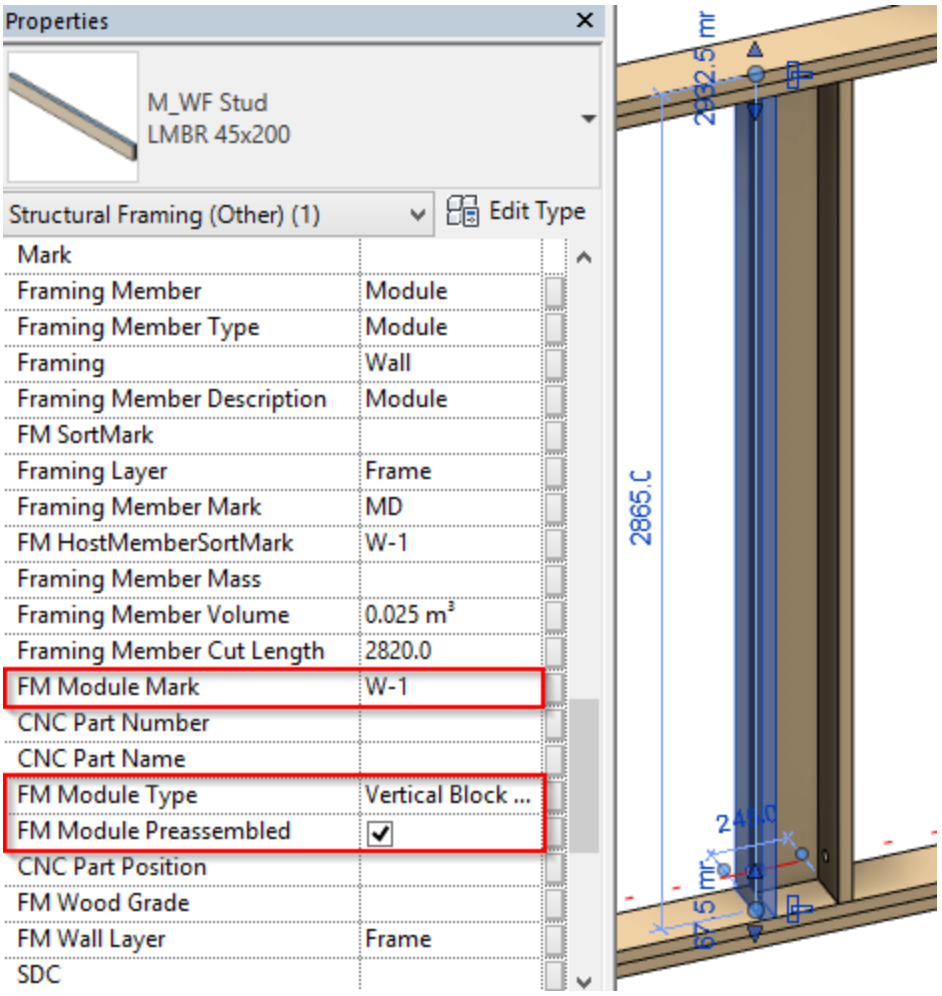
FM Module Preassembled – *writes Yes/No if element is (or is not) included in the preassembly.*

King is included in preassembly so ***FM Module Type*** *parameter has Window value because this King belongs to the window,* ***FM Module Mark*** *parameter contains* ***FM Module Type*** *parameter value (Window) + current wall* ***Mark*** *value (it can be seen near* ***FM HostMemberSortMark****) + current window Mark + unique number.*



Example with wall vertical block:

FM Module Type *– writes configuration name.*
FM Module Mark – *writes wall mark.*



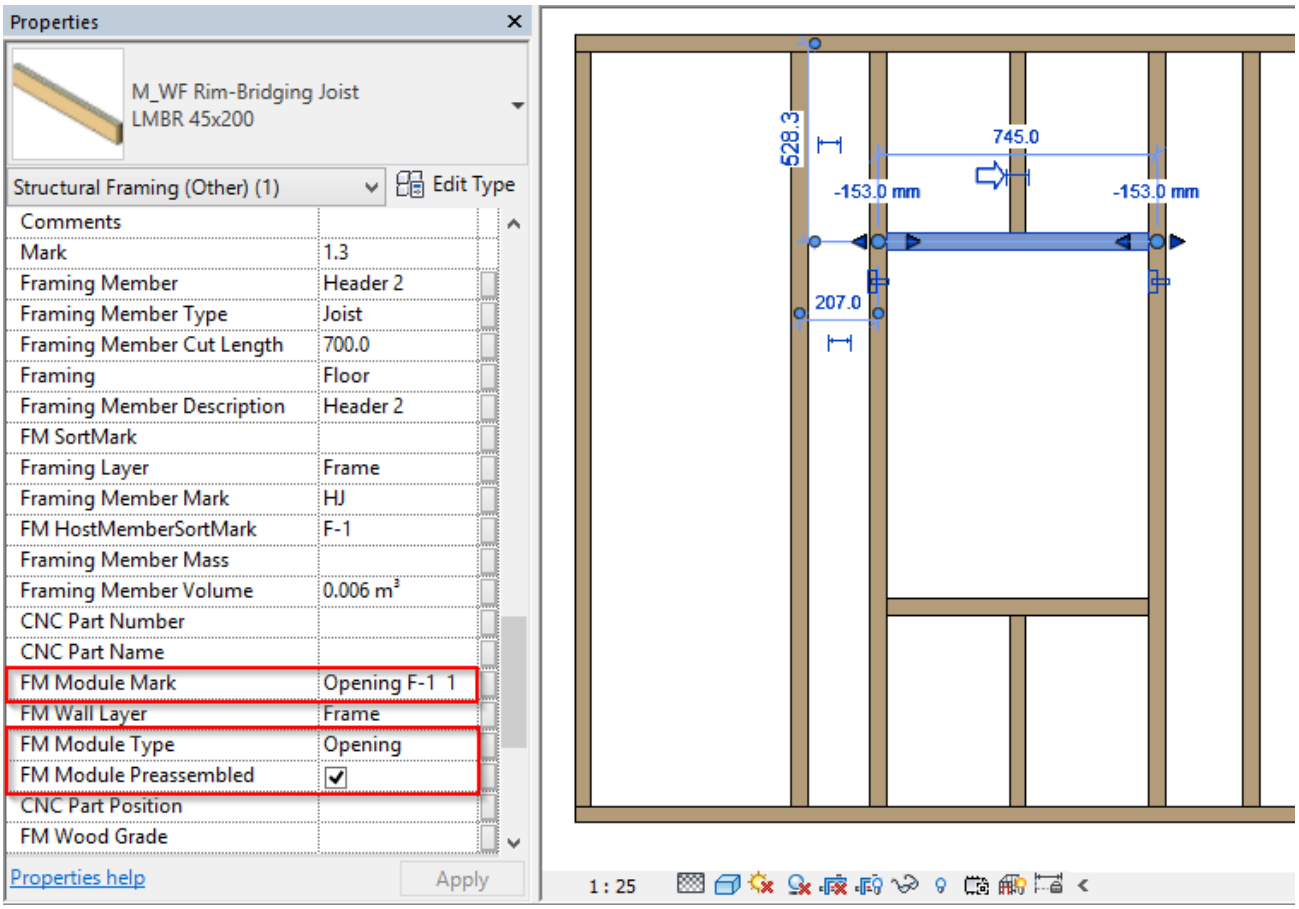
Example with floor opening:

FM Module Type
For Openings – writes opening type.
For Connections – writes join configuration name.

FM Module Mark – writes **FM Module Type** + **Mark** (from Floor) + **Mark** (from Opening) + unique number.

FM Module Preassembled – writes Yes/No if element is (or is not) included in the preassembly.

Example:
*Header2 is included in preassembly so **FM Module Type** parameter has Opening value, **FM Module Mark** parameter contains **FM Module Type**parameter value (Opening) + current floor **Mark** value (F-1, can be seen near **FM HostMemberSortMark**) + current window **Mark** + unique number.*



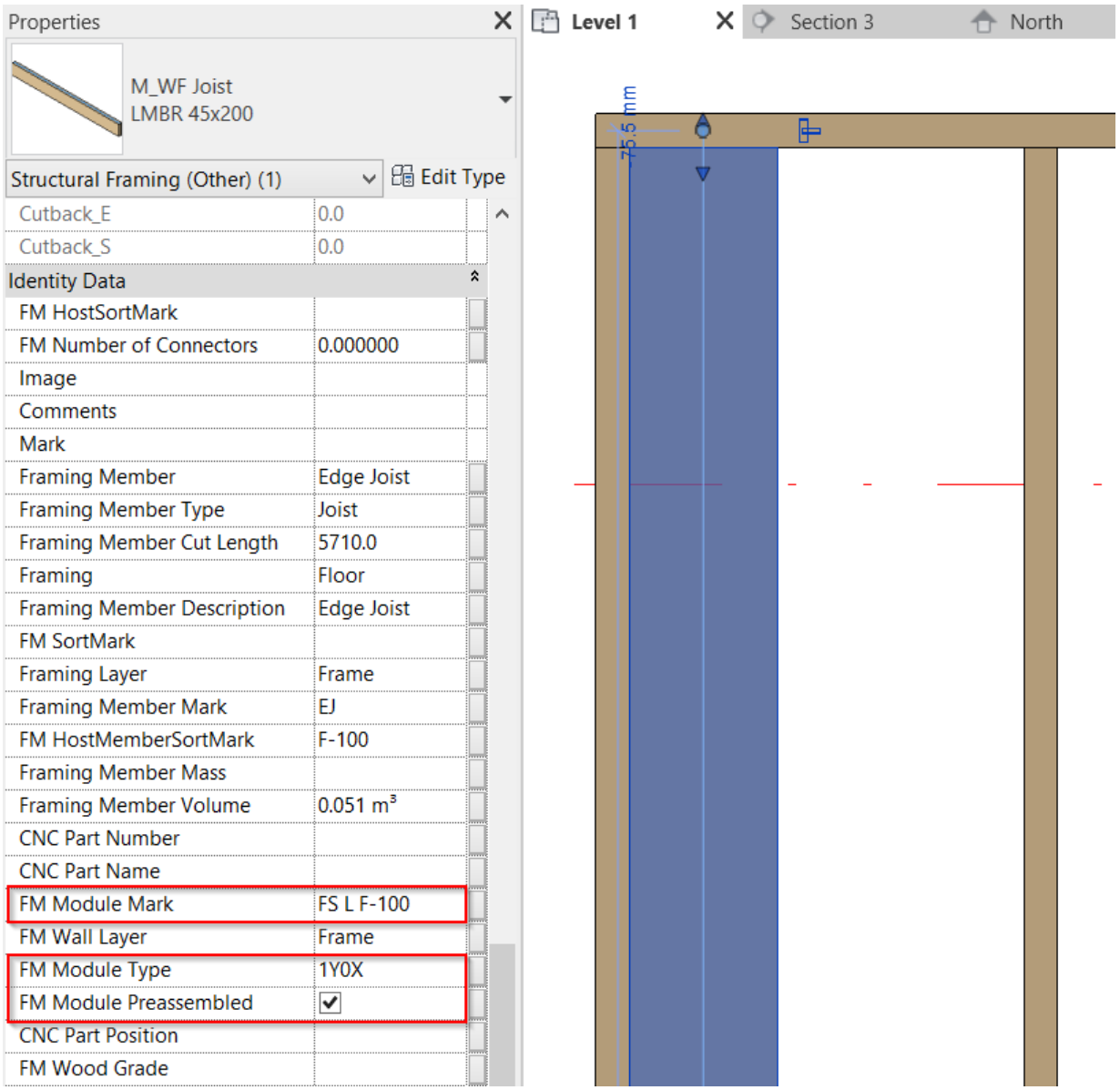
Example with floor end connection:

FM Module Type – writes end connection configuration name.

FM Module Mark – writes **FS** (Frame Start) or **FE** (Frame End) values + **L** (Left) or **R** (Right) + **Mark** (from Floor).

FM Module Preassembled – writes Yes/No if element is/is not included into preassembly.

*Example: Edge joist is included into the preassembling, so **FM Module Type** parameter has end connection configuration value, **FM Module Mark** parameter contains **FS** (Floor Start) + **L** (Left) + current floor **Mark** value (it can be seen near **FM HostMemberSortMark**).*



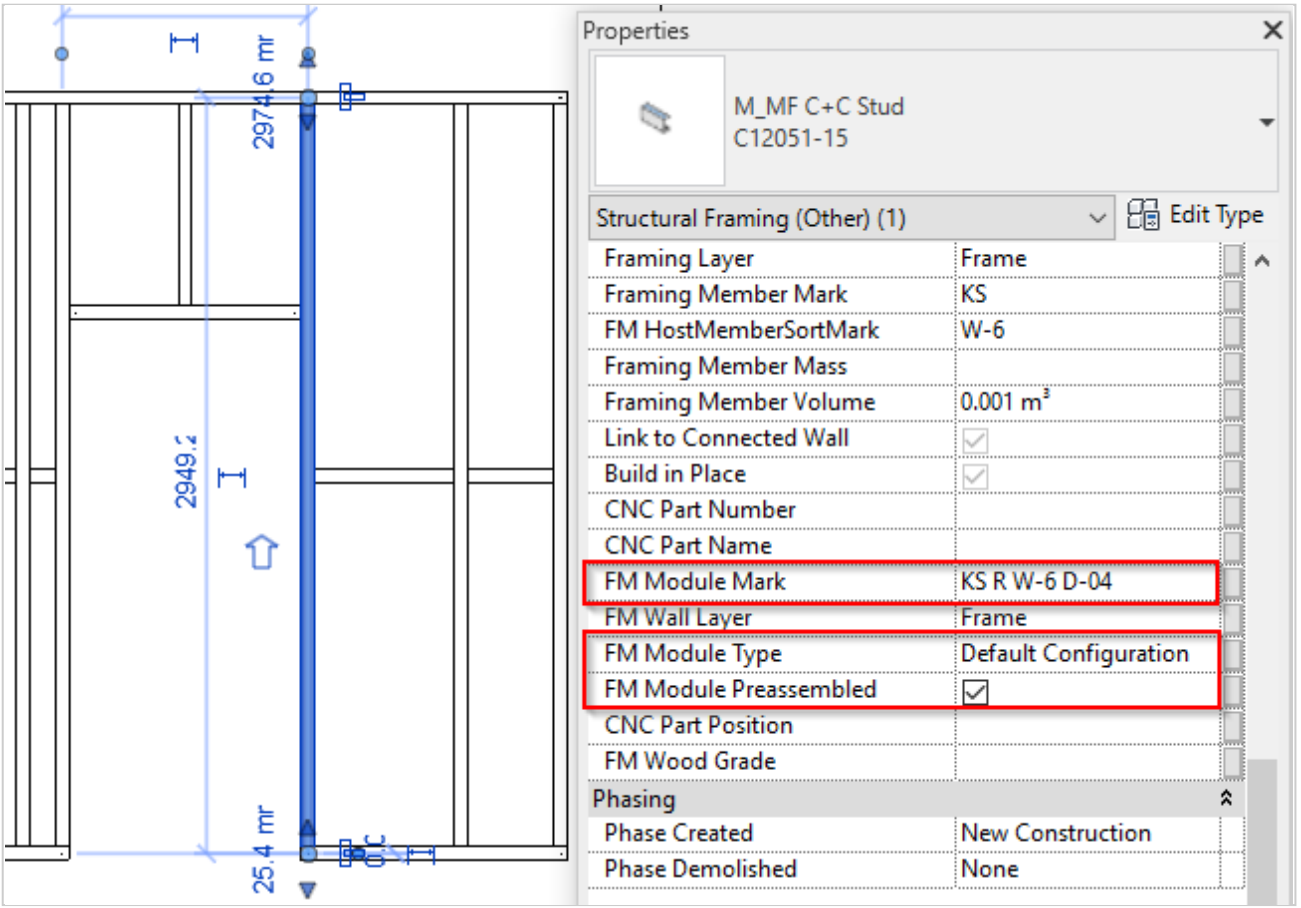
Example with metal opening king:

FM Module Type
For Windows, Doors, and Openings – writes opening type.
For Connections – writes join configuration name.

FM Module Mark – writes **Framing Member Mark** + **Left** or **Right** + **Mark** (from Wall) + **Mark** (from Window, Door or Opening).

FM Module Preassembled – writes Yes/No if element is (or is not) included in the preassembly.

Example:
*King is included in the preassembly so **FM Module Type** parameter has Door value, because this King belongs to the door, **FM Module Mark** parameter contains **Framing Member Mark** parameter value + Right value + current wall **Mark** value (can be seen near **FM HostMemberSortMark**) + current door **Mark**.*



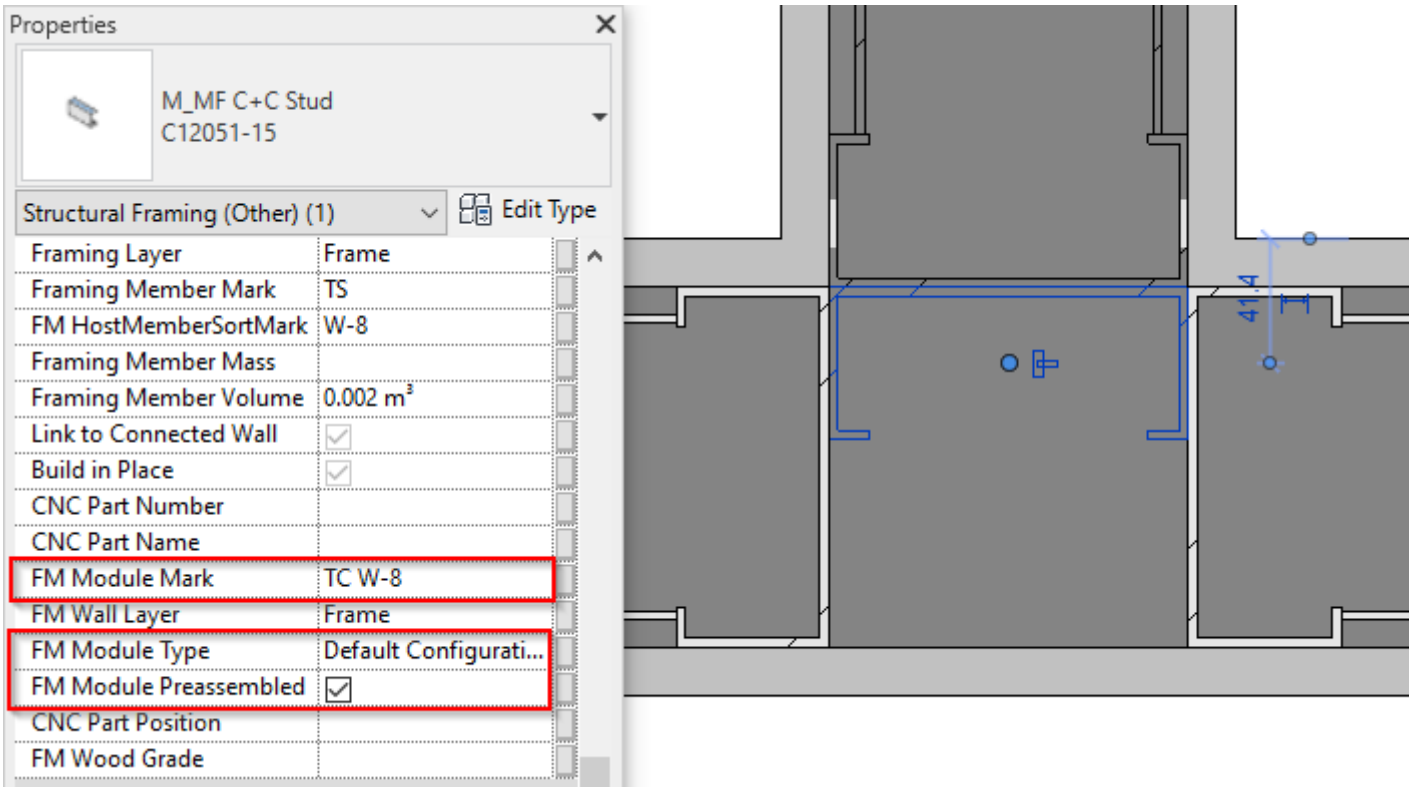
Example with metal T connection:

FM Module Type – writes connection configuration name.

FM Module Mark – writes **FS** (Frame Start), **FE** (Frame End) or **TC** (T Connection) values + **L** (Left) or **R** (Right) + **Mark** (from Wall).

FM Module Preassembled – writes Yes/No if element is/is not included into preassembly.

*Example: T stud is included into the preassembling so **FM Module Type** parameter has T connection configuration value, **FM Module Mark** parameter contains **TC** (T Connection) + current wall **Mark** value (it can be seen near **FM HostMemberSortMark**).*

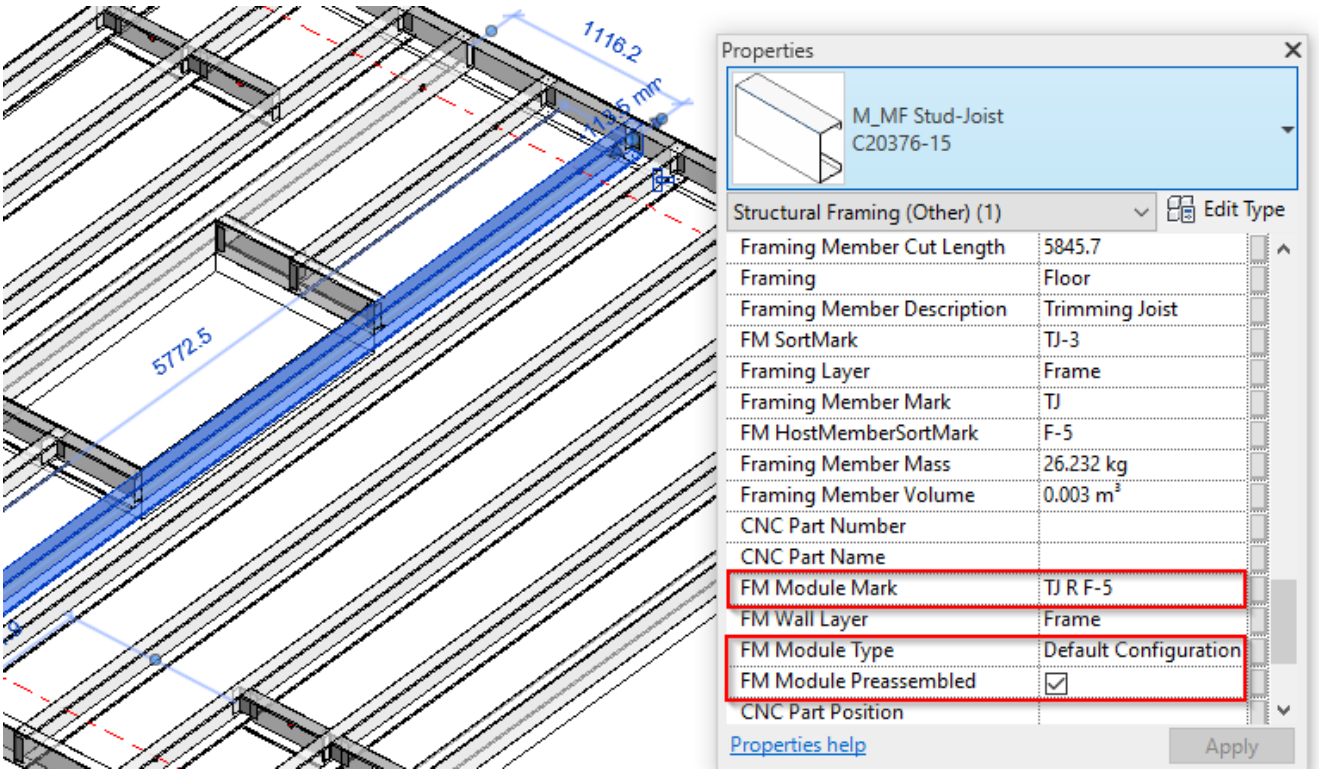


Example with metal floor opening trimming joist:

FM Module Type
For Openings – writes opening configuration name.
For Connections – writes join configuration name.

***FM Module Mark** – writes **Framing Member Mark** + **Left** or **Right** value + **Mark** (from Floor).*

***FM Module Preassembled –** writes Yes/No if element is (or is not) included in the preassembly.*



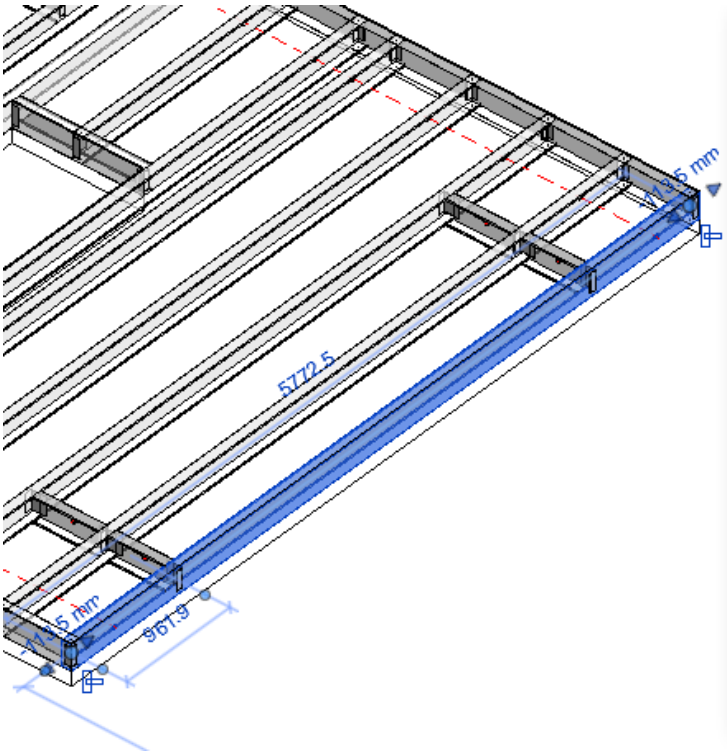
Example with metal floor end connection:

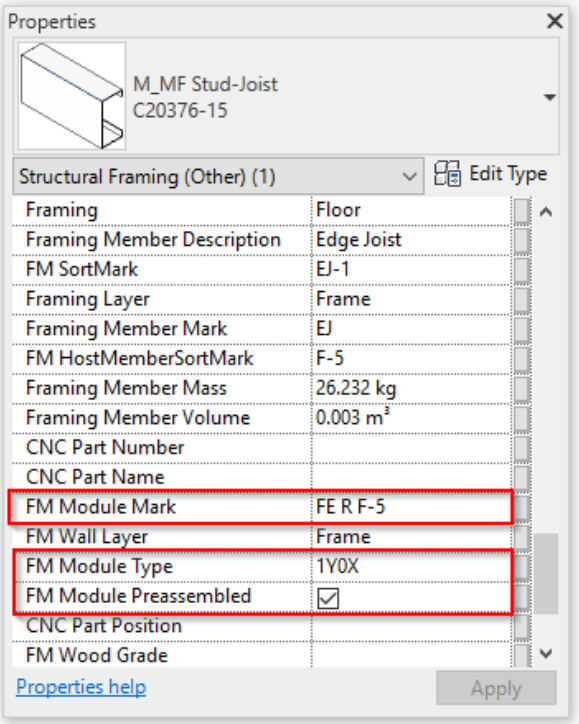
FM Module Type – writes end connection configuration name.

FM Module Mark – writes **FS** (Frame Start) or **FE** (Frame End) values + **L** (Left) or **R** (Right) + **Mark** (from Floor).

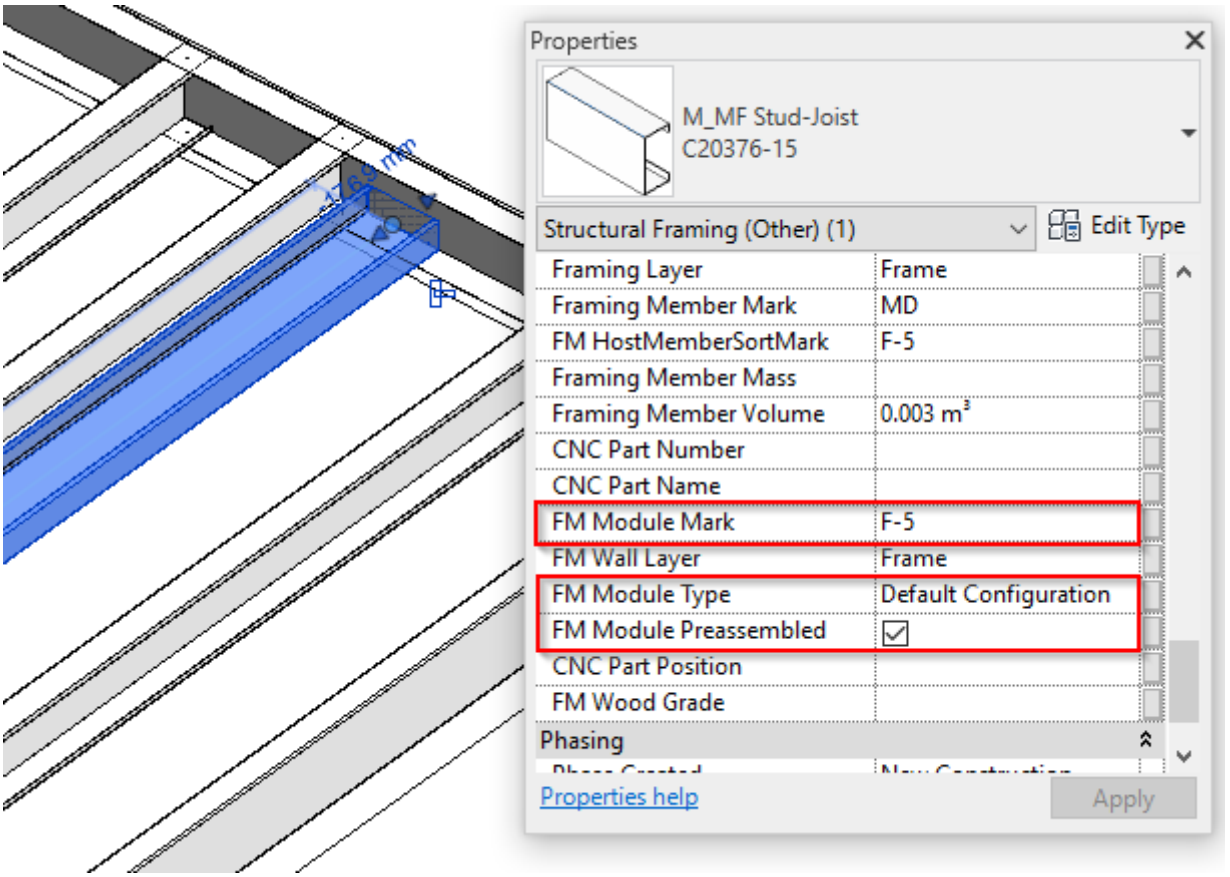
FM Module Preassembled – writes Yes/No if element is/is not included into preassembly.

*Example: Edge joist is included into the preassembling, so **FM Module Type** parameter has end connection configuration value, **FM Module Mark** parameter contains **FS** (Floor Start) + **L** (Left) + current floor **Mark** value (it can be seen near **FM HostMemberSortMark**).*





Example with additional floor joist:
***FM Module Type** – writes configuration name.*
***FM Module Mark –** writes floor mark.*



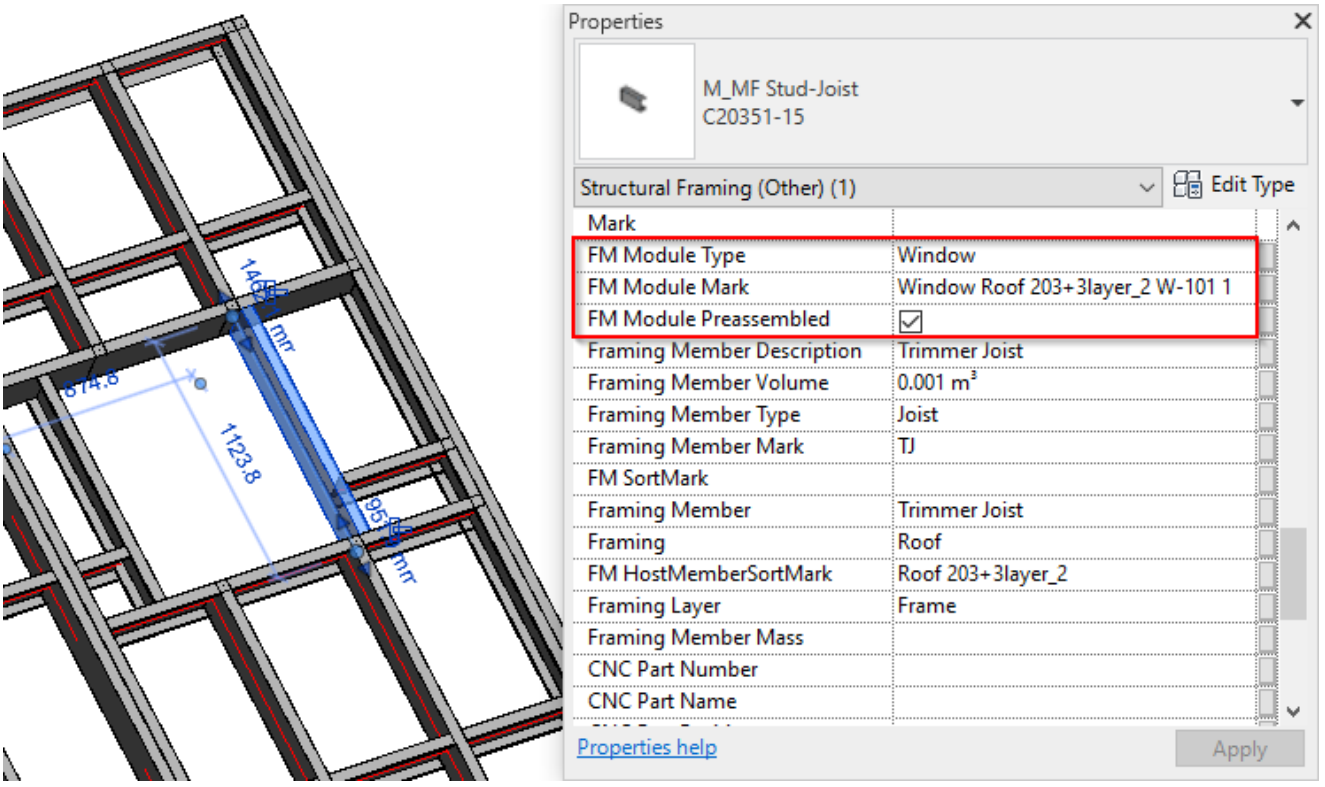
Example with metal roof:

FM Module Type *– writes opening type name.*

FM Module Mark *– writes* ***FM Module Type*** *+* ***Mark*** *(from Roof) +* ***Mark*** *(from Opening) + unique number.*

FM Module Preassembled – *writes Yes/No if element is (or is not) included in the preassembly.*

Example:



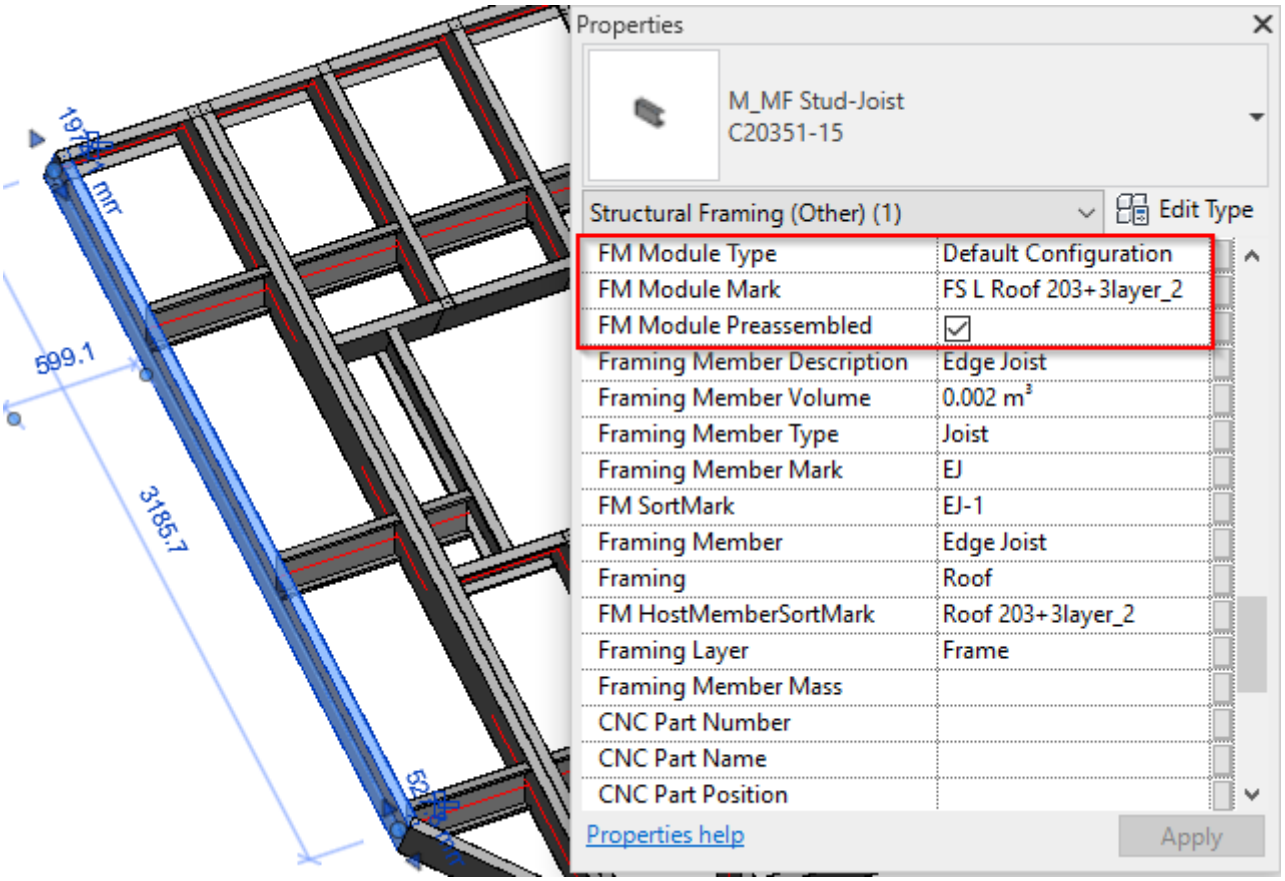
Example with roof edge:

FM Module Type *– writes end connection configuration name.*

FM Module Mark *– writes* ***FS*** *(Frame Start) or* ***FE*** *(Frame End) values + **L** (Left) or **R** (Right) + **Mark** (from Roof).*

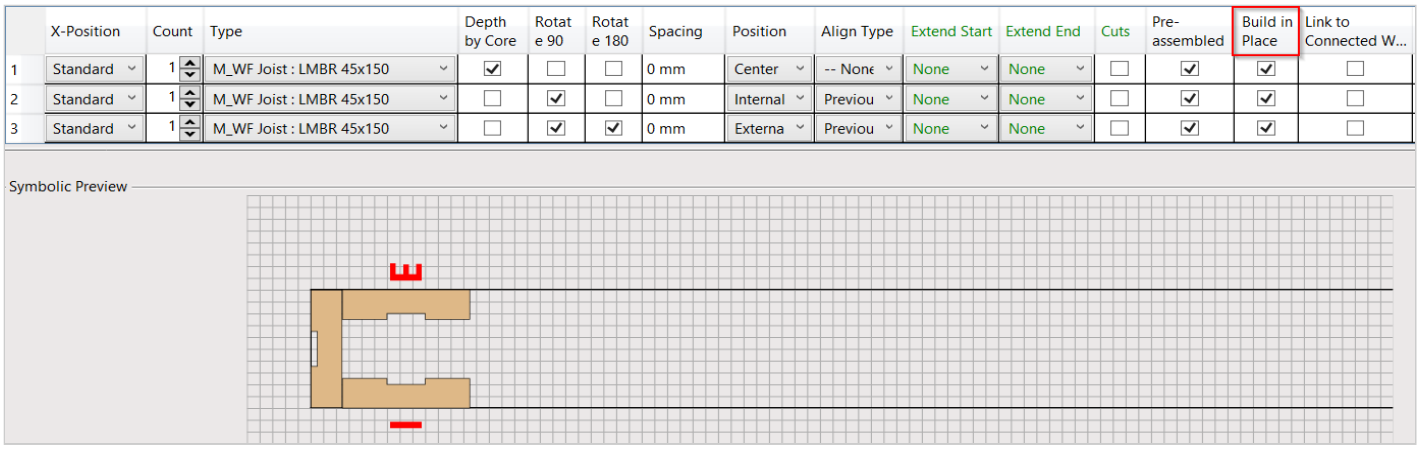
FM Module Preassembled – *writes Yes/No if element is/is not included into preassembly.*

*Example: Edge joist is included into the preassembling, so **FM Module Type** parameter has end connection configuration value, **FM Module Mark** parameter contains **FS** (Roof Start) + **L** (Left) + current roof **Mark** value (it can be seen near **FM HostMemberSortMark**).*



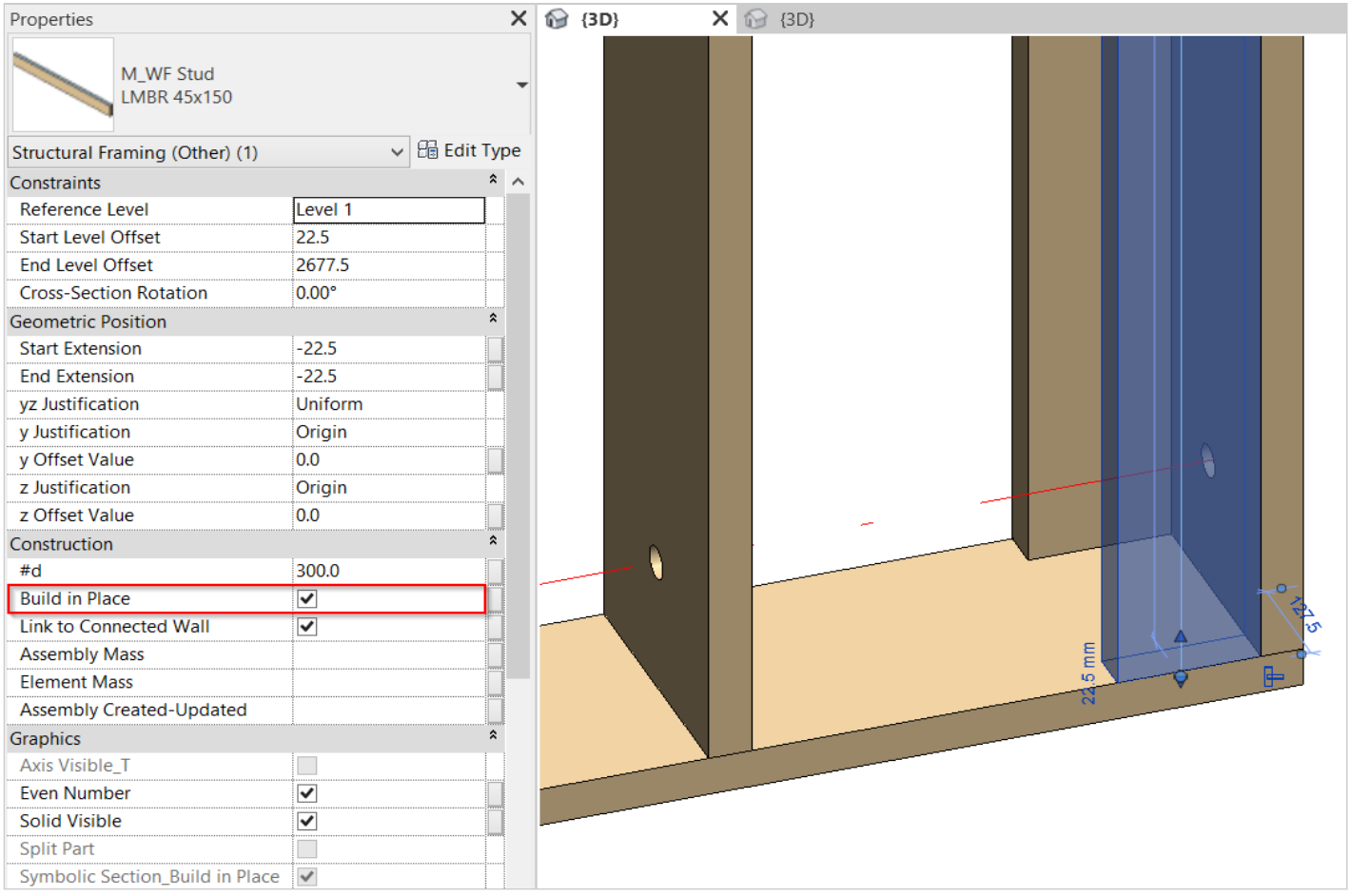
All these parameters can later be used in the schedules and view filters.

Build in Place

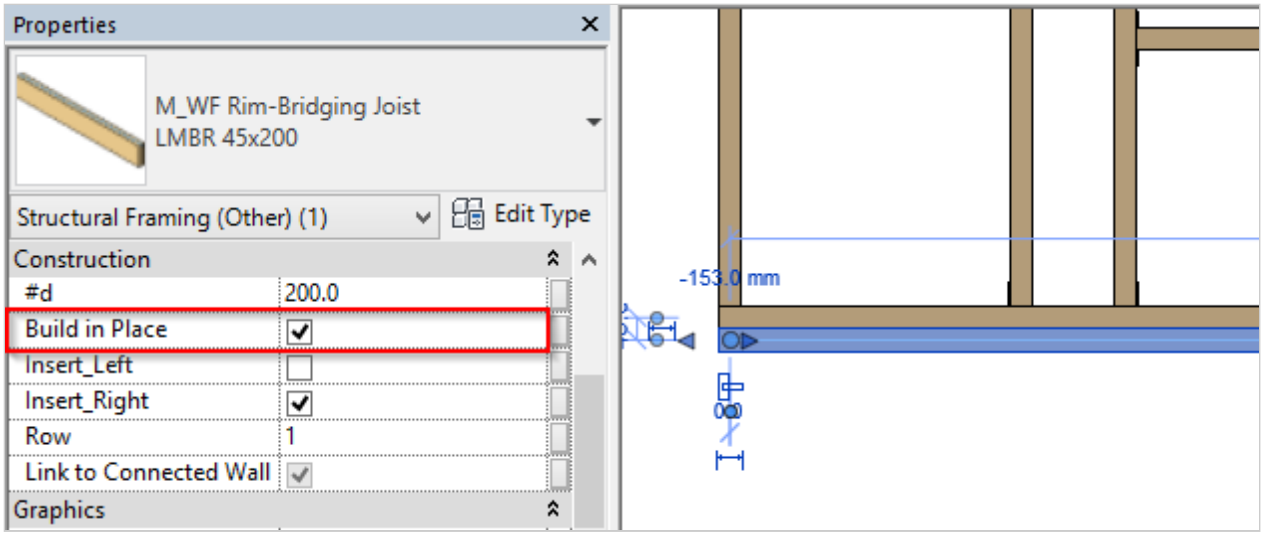


Build in Place – writes Yes/No information into beam instance parameter if the beam is built-in-place or is prefabricated with whole wall/floor/roof frame.

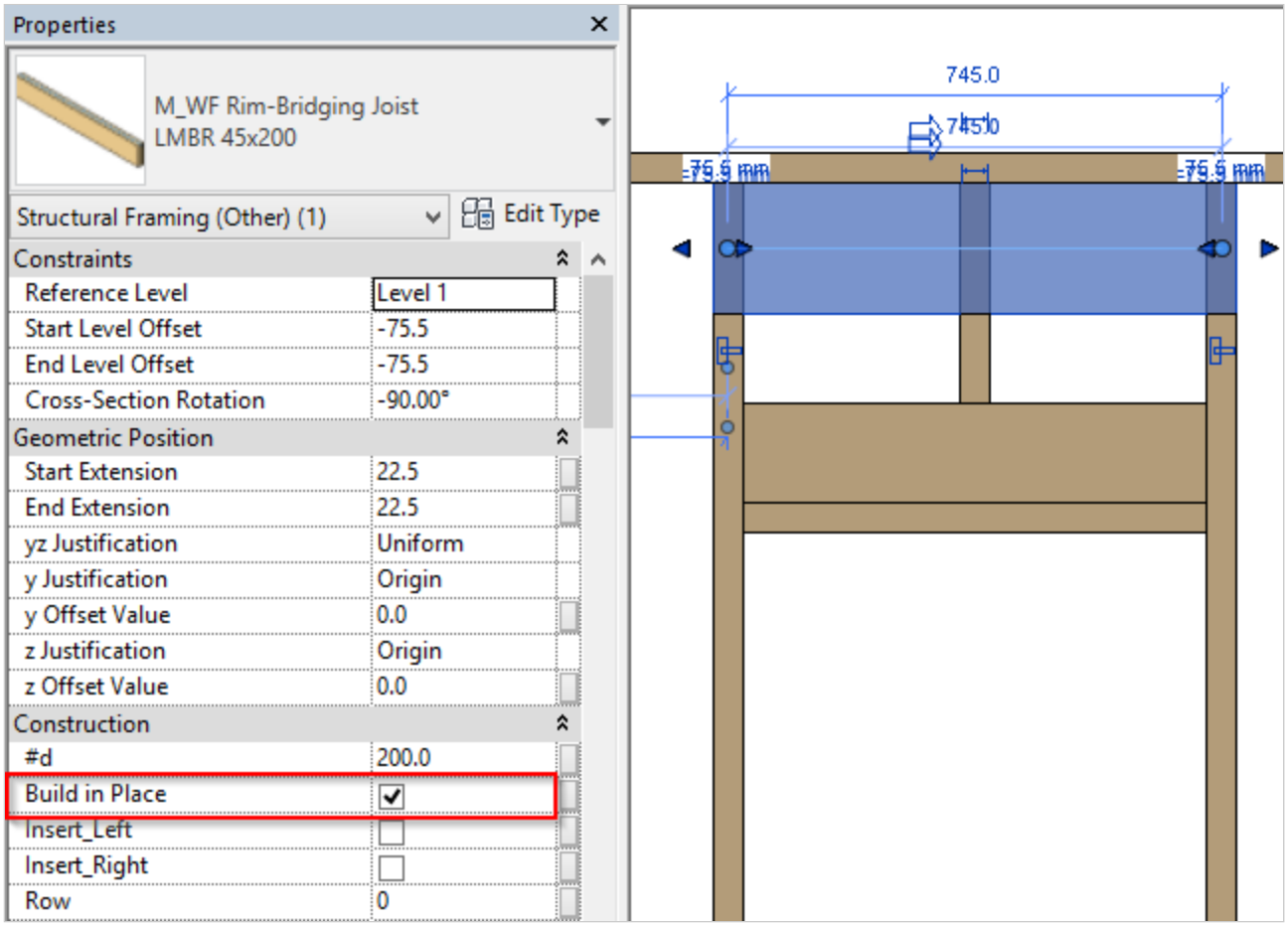
Example with wall corner studs:

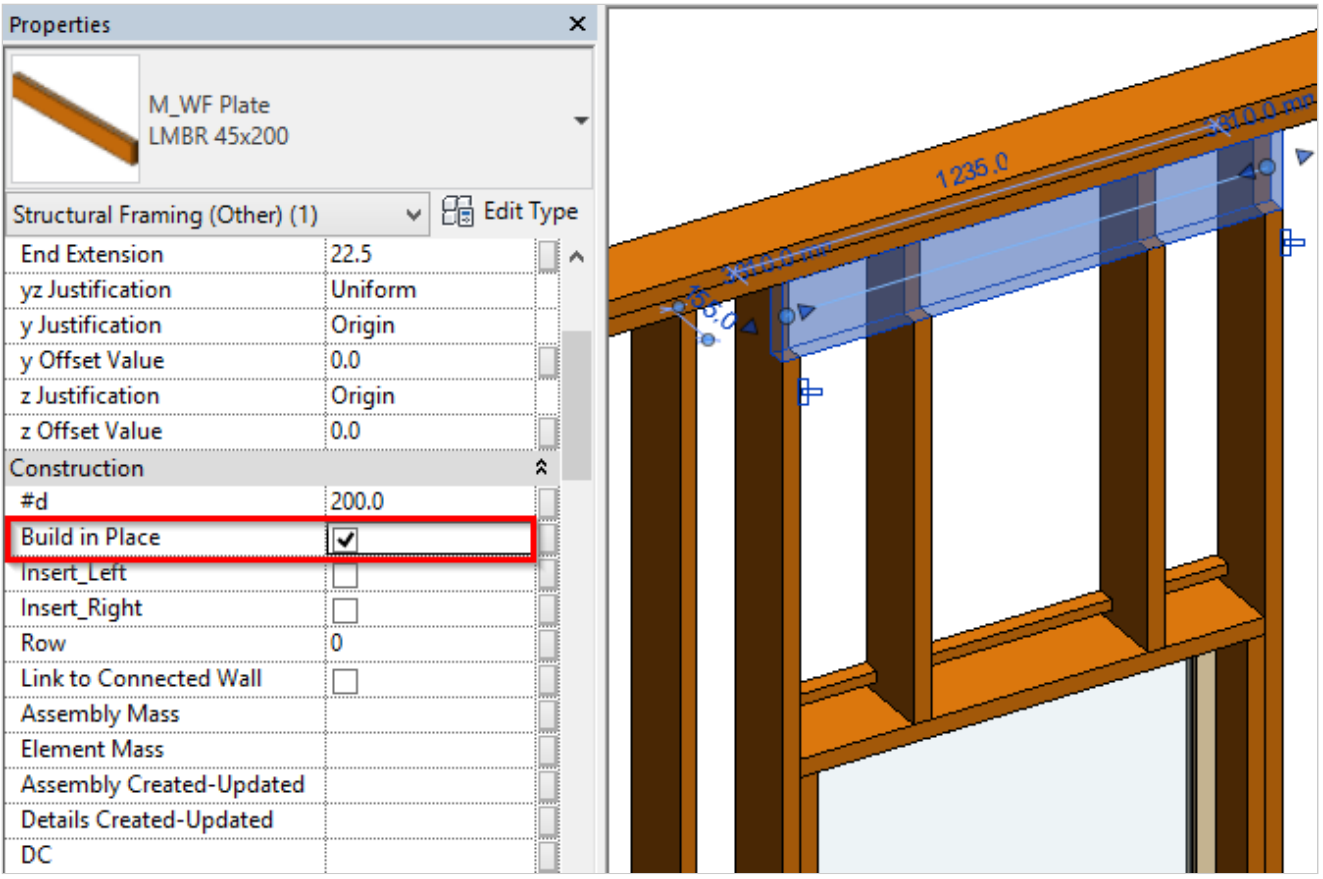


Example with bottom rim joist:

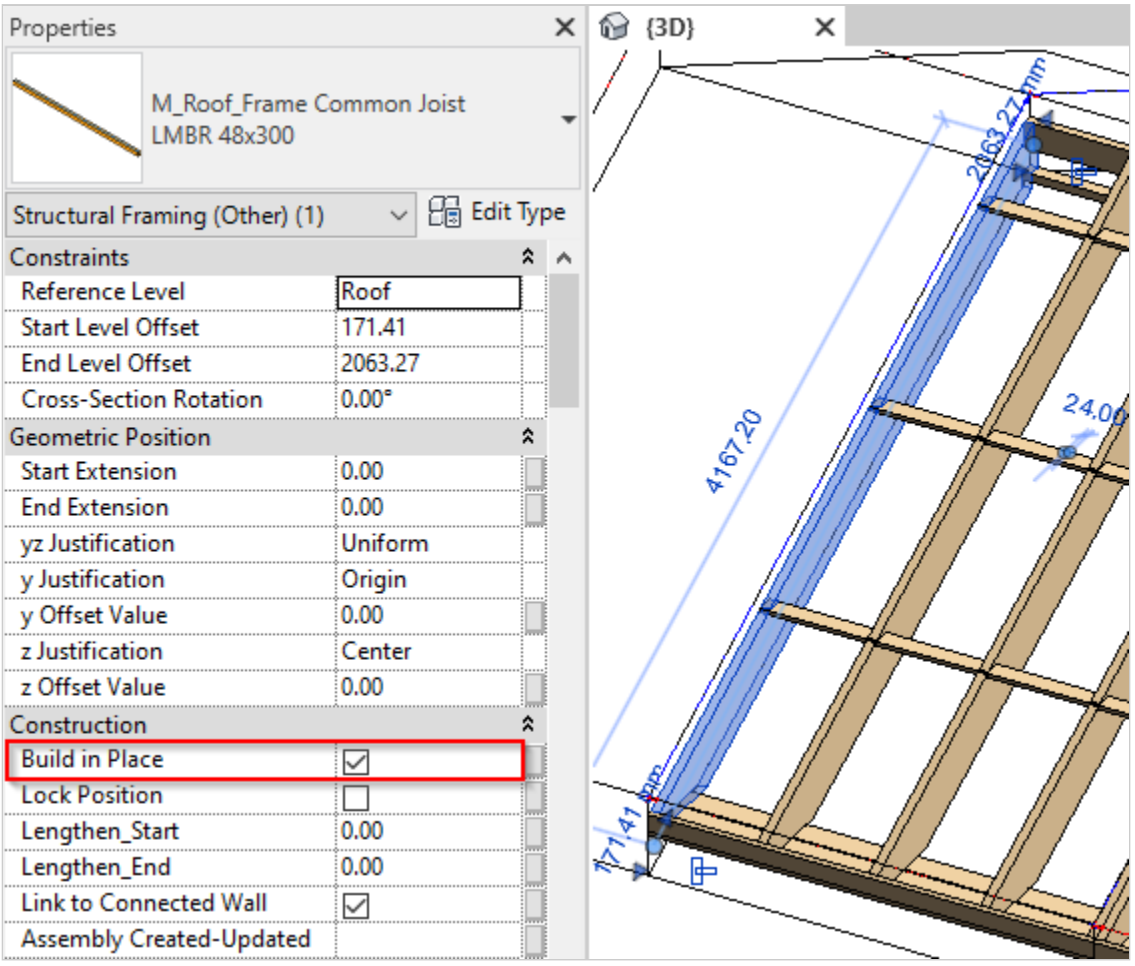


Example with opening top header:

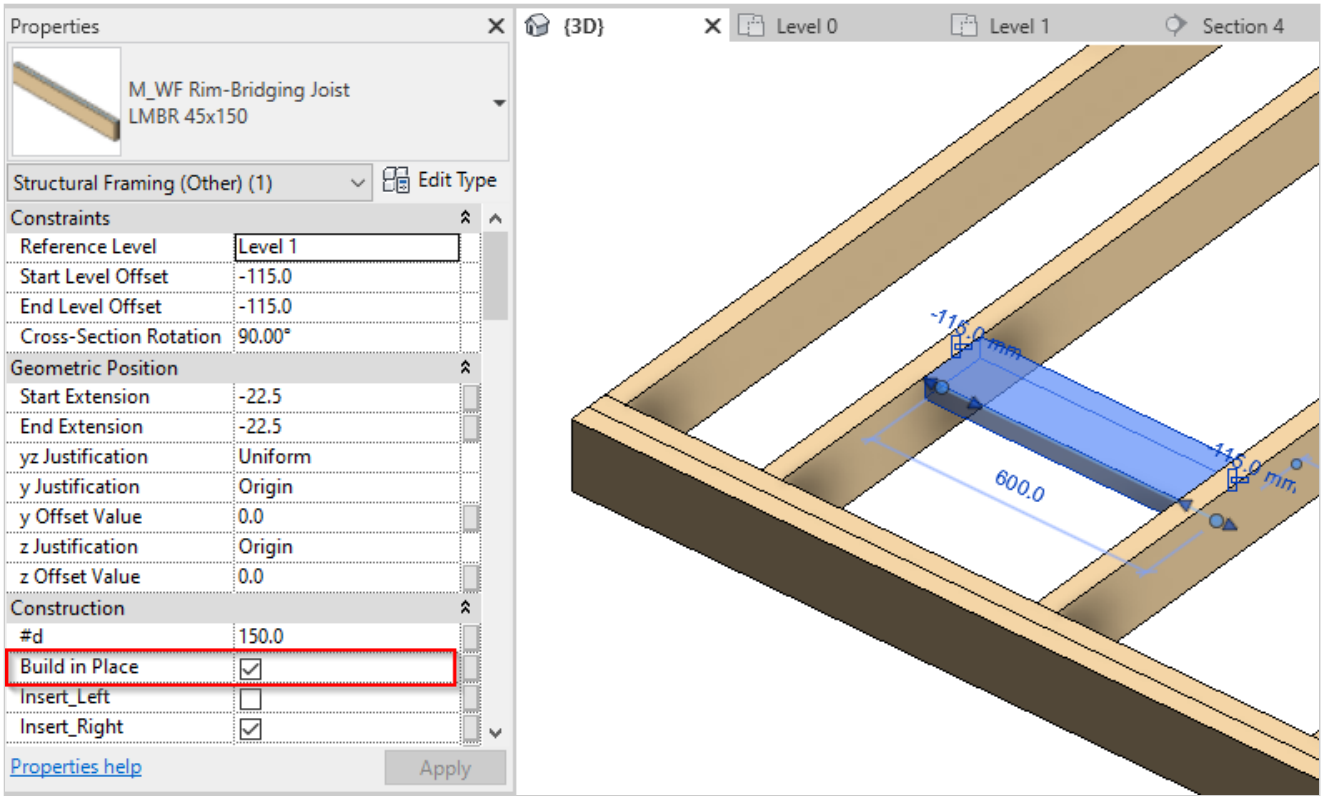




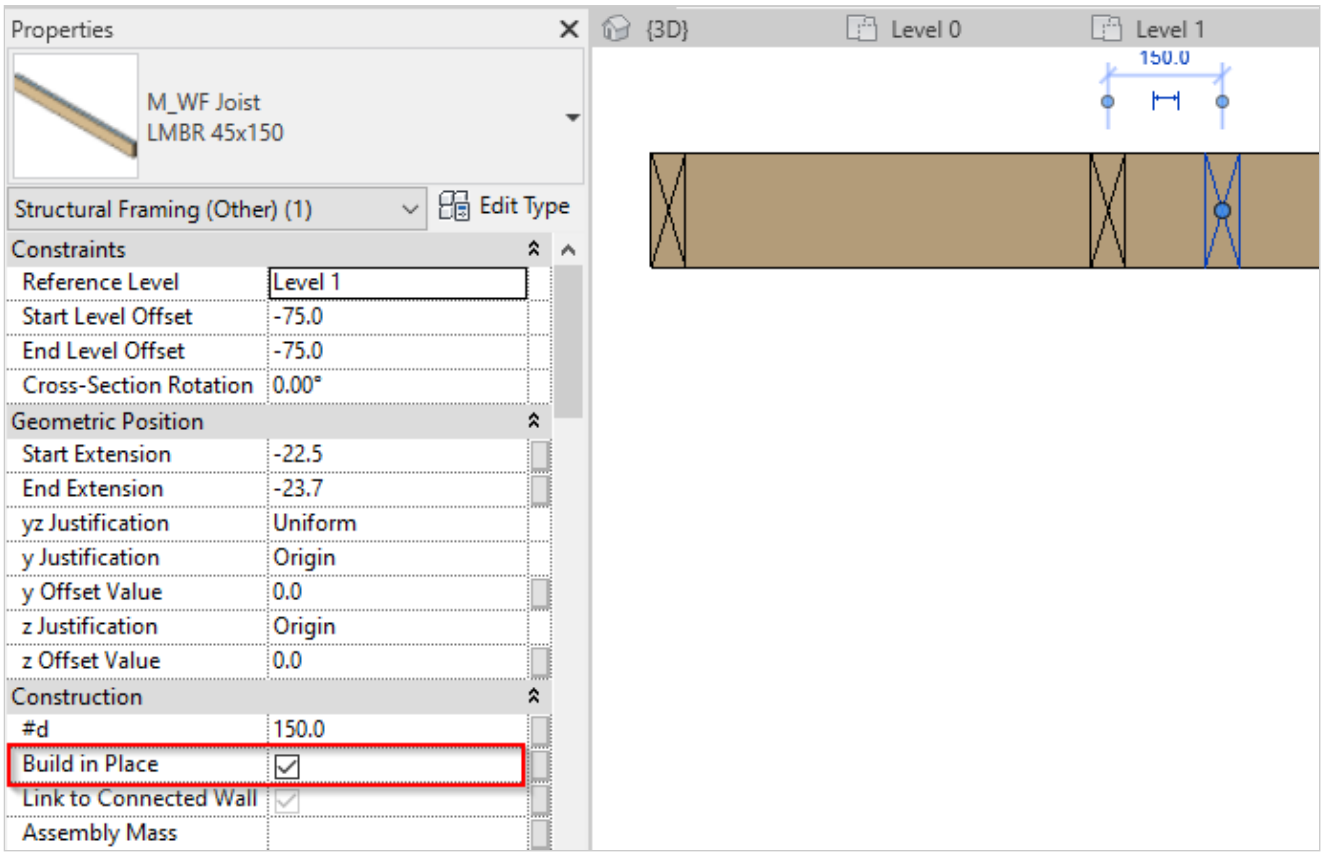
Example with roof end:



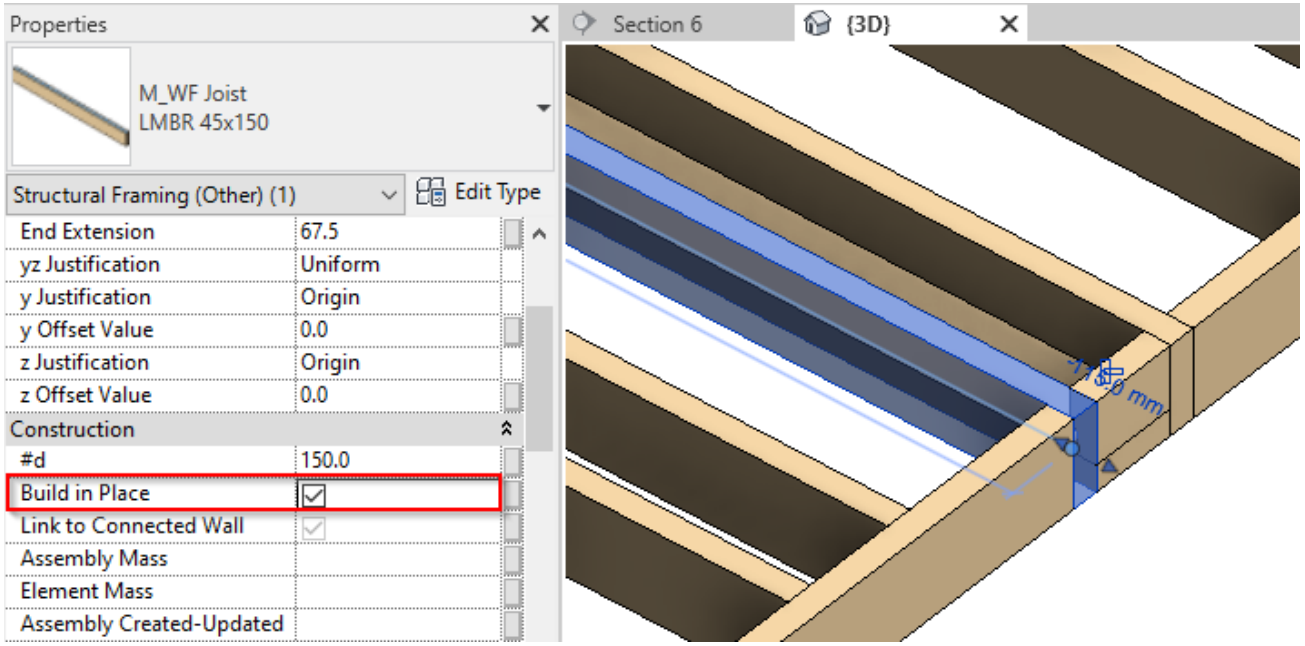
Example with floor bridging:



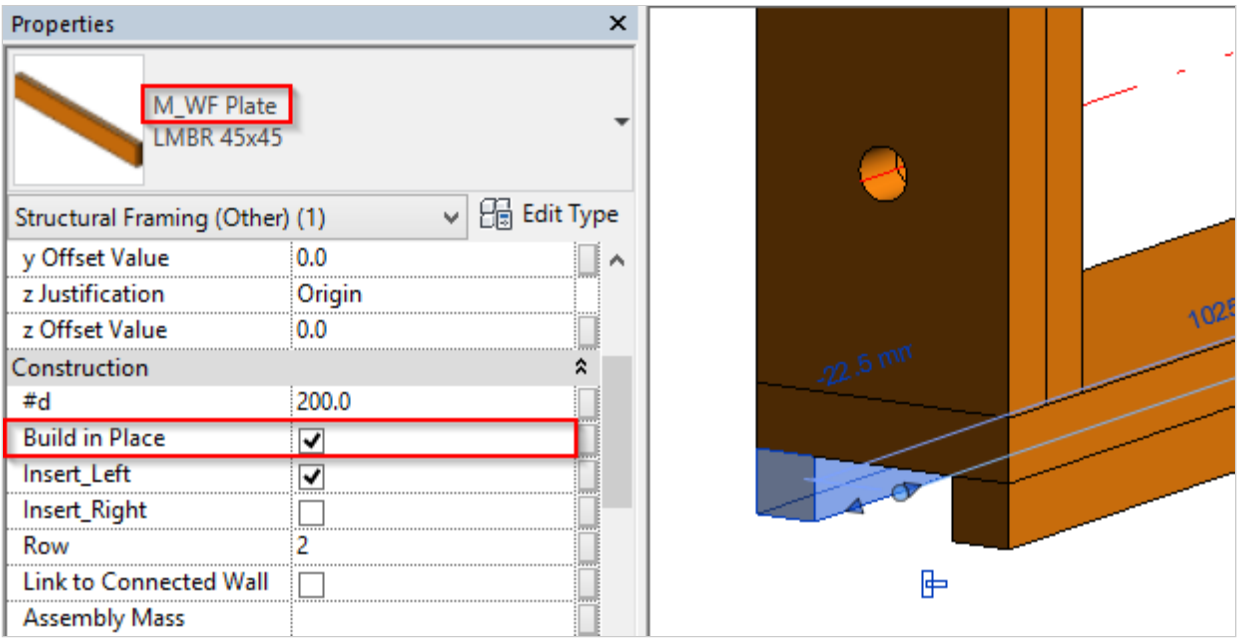
Example with floor additional joist:



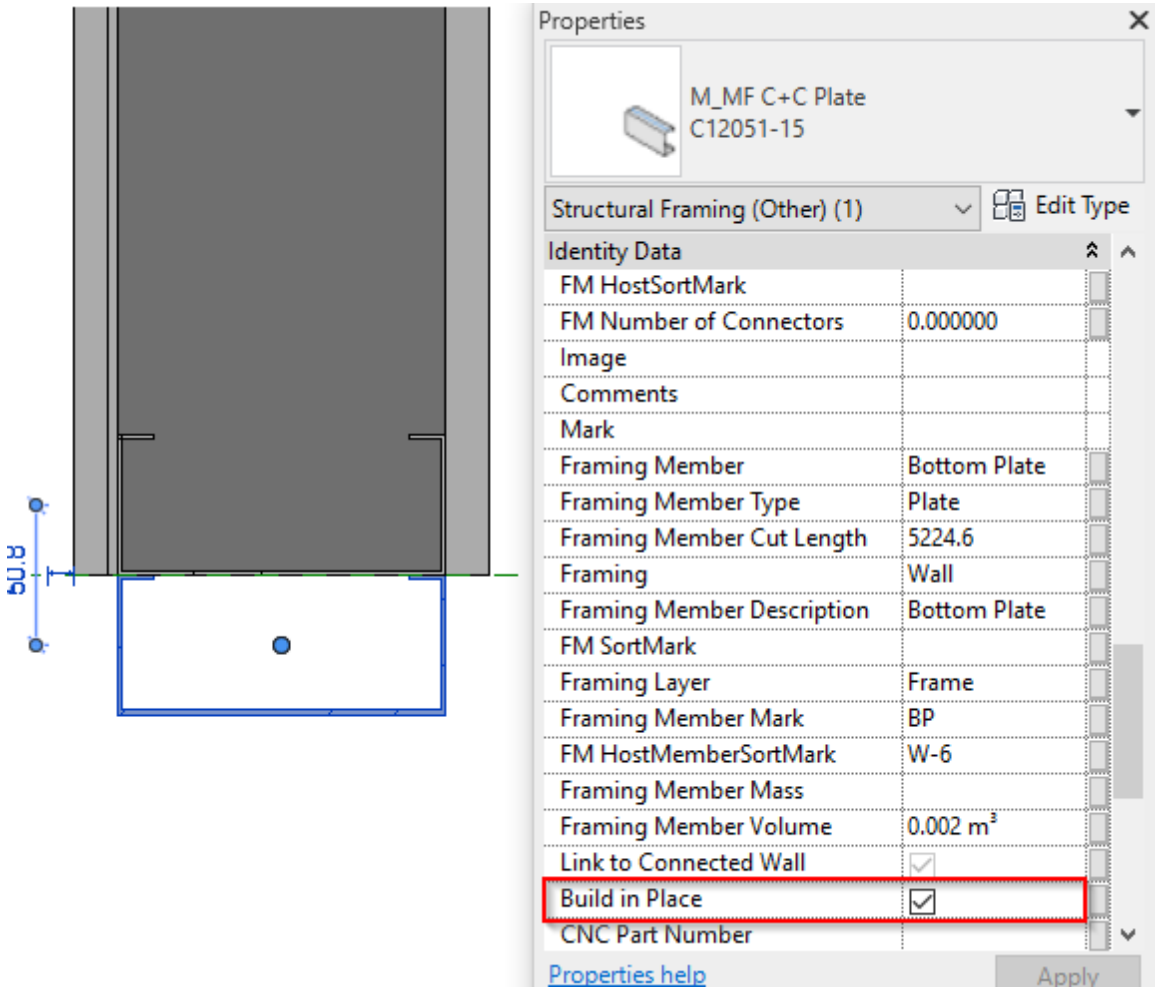
Example with floor/roof vertical block:



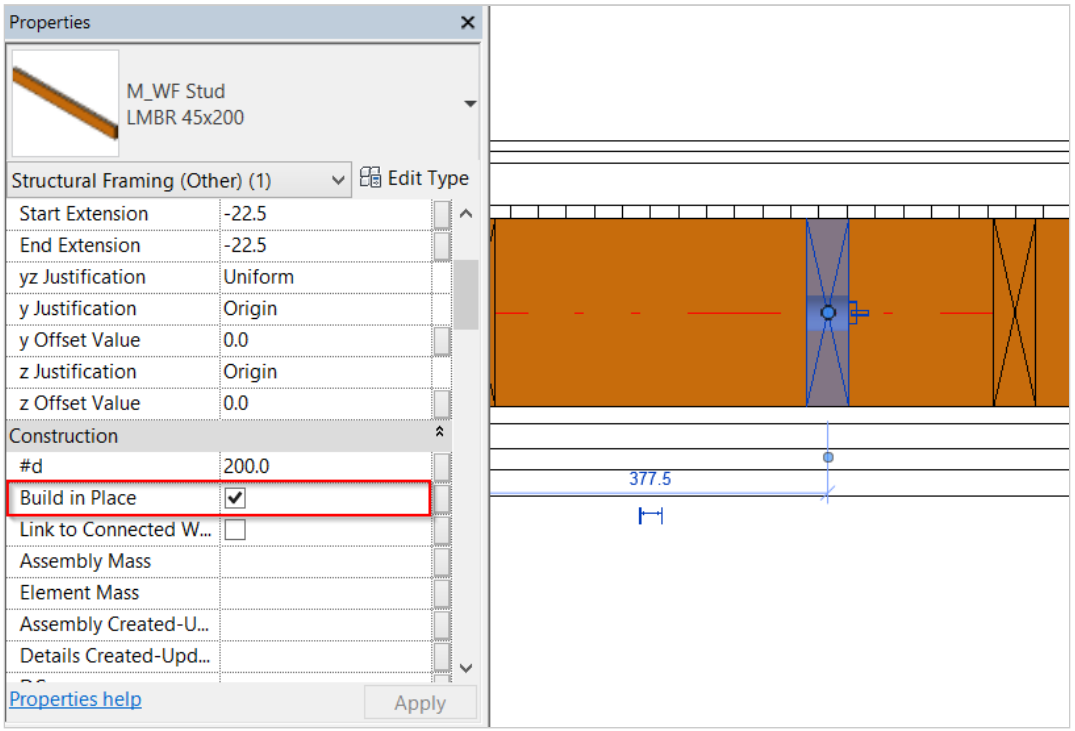
Example with wall bottom pad:



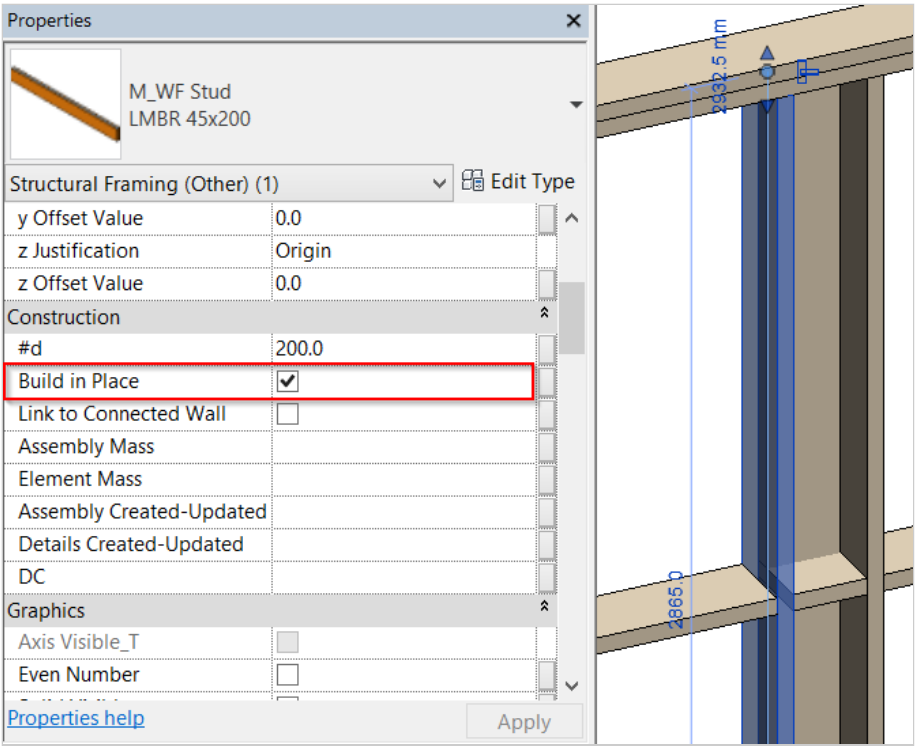
Example with metal wall bottom pad:



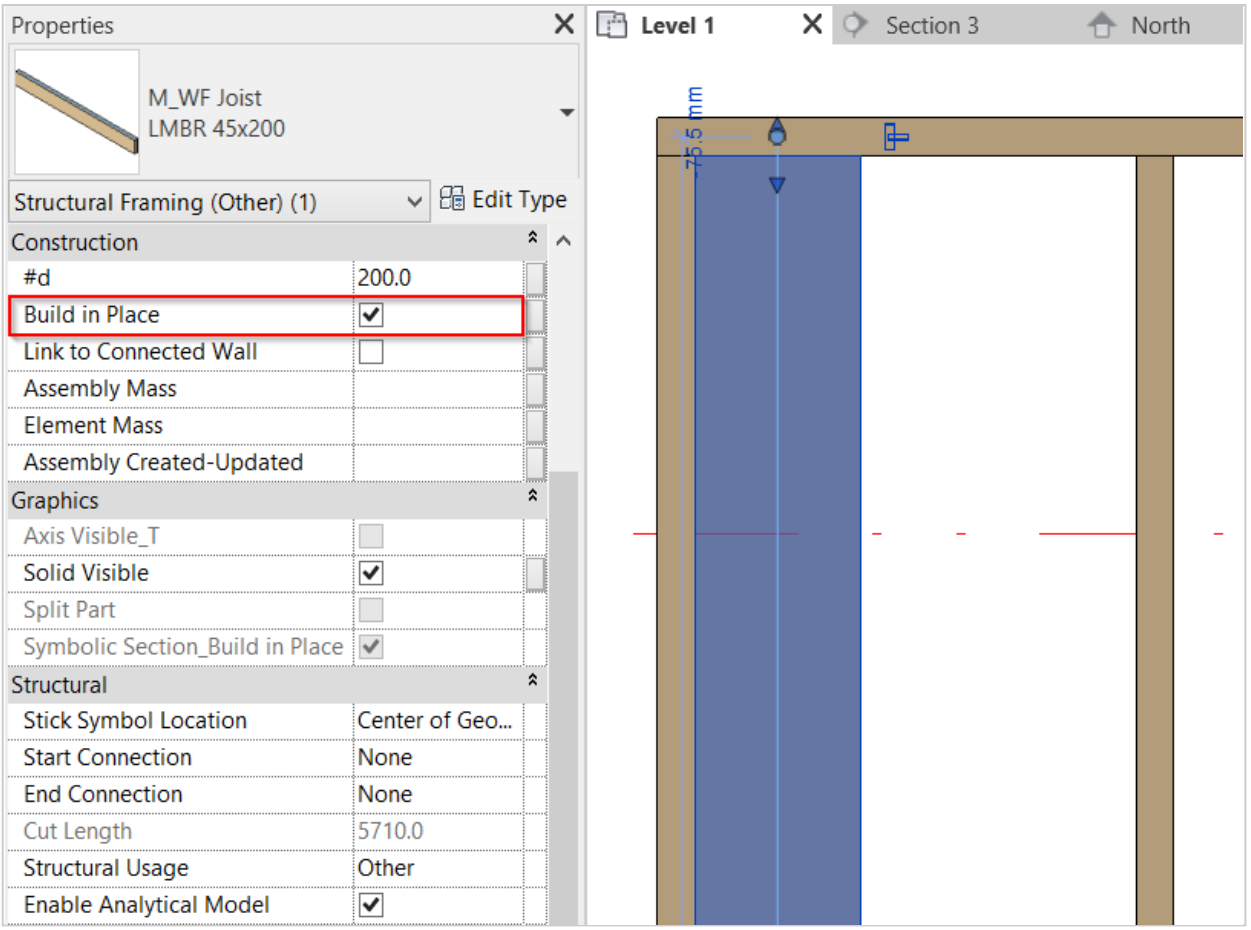
Example with wall additional stud:



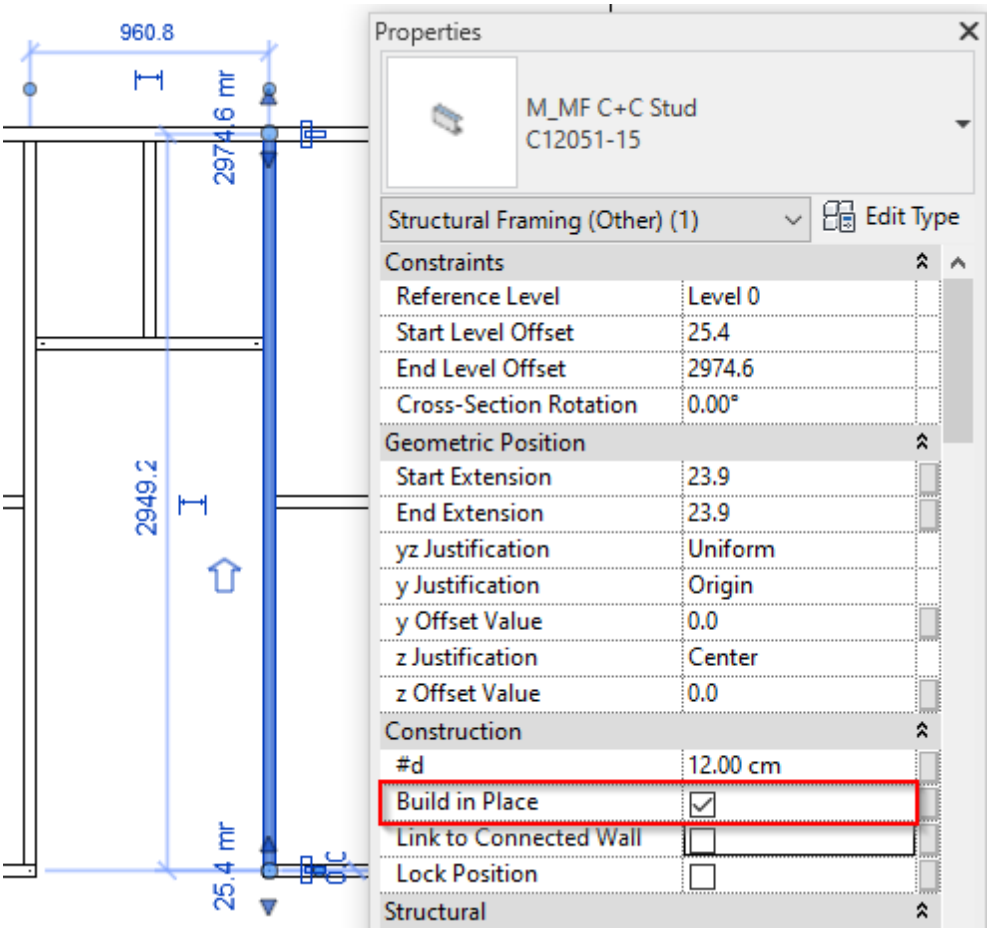
Example with wall vertical block:



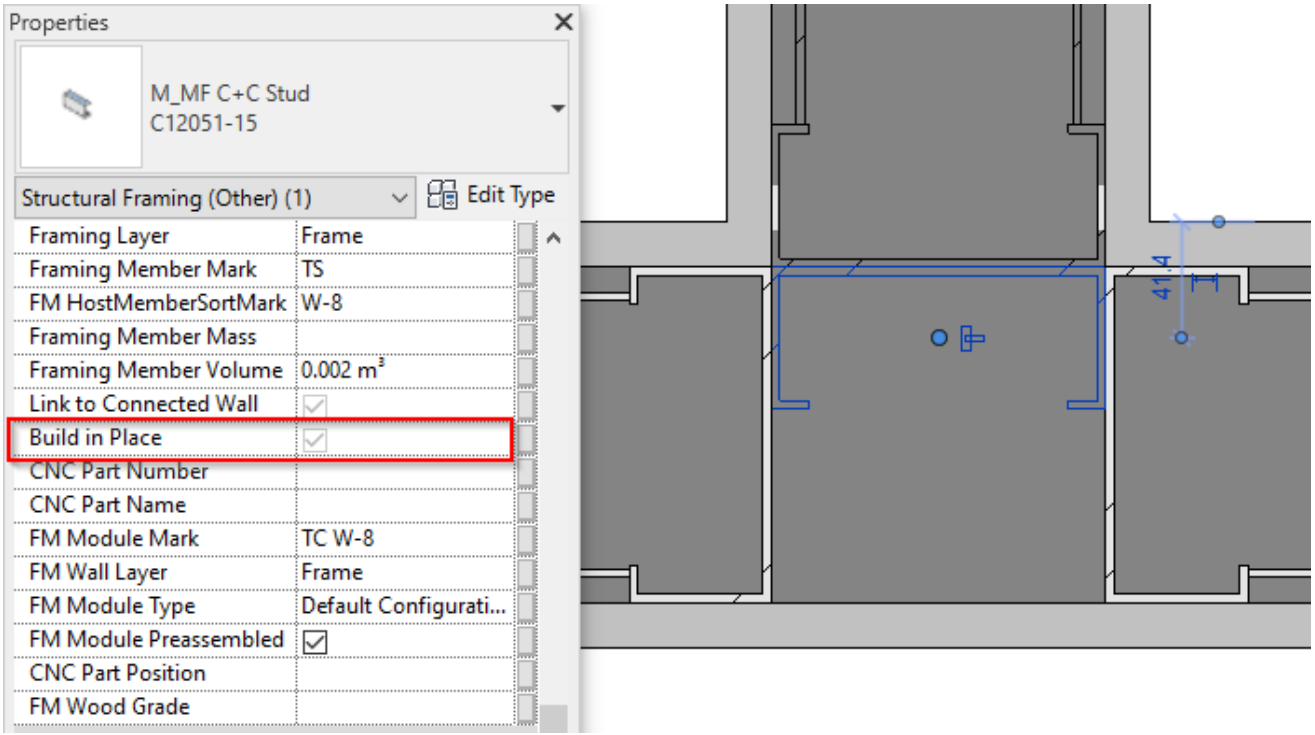
Example with floor end connection:



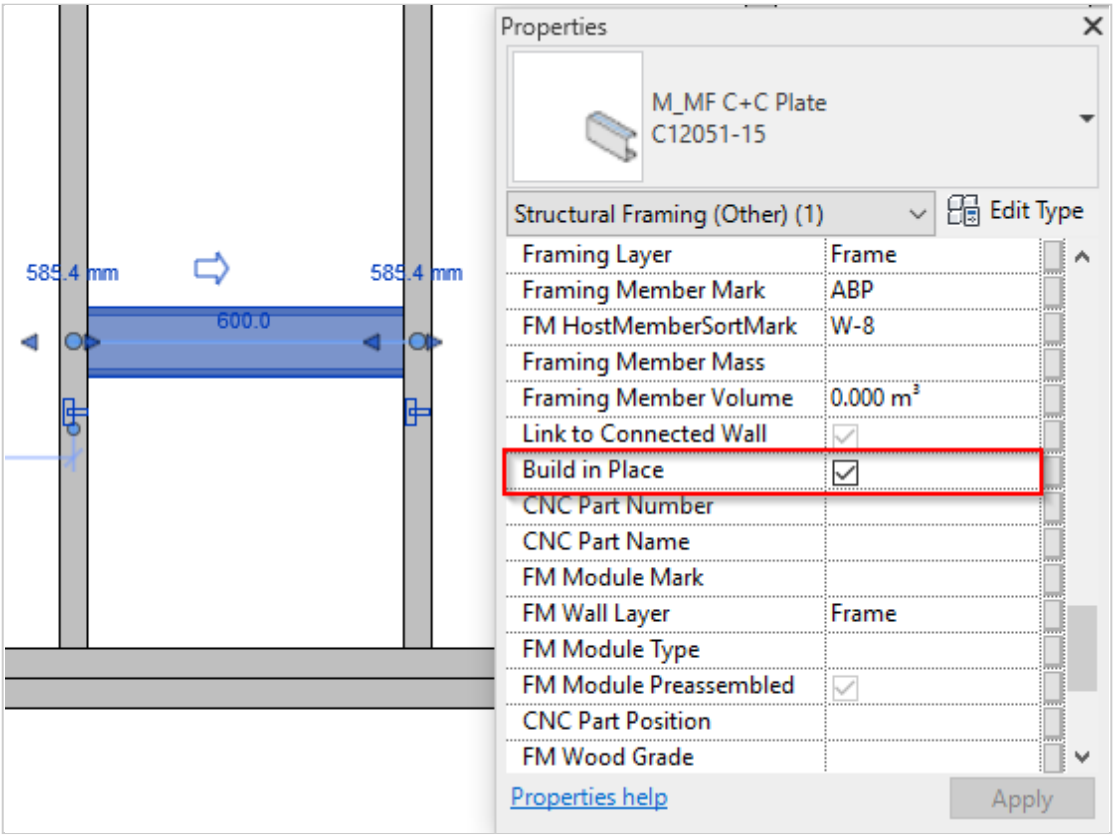
Example with metal opening king stud:



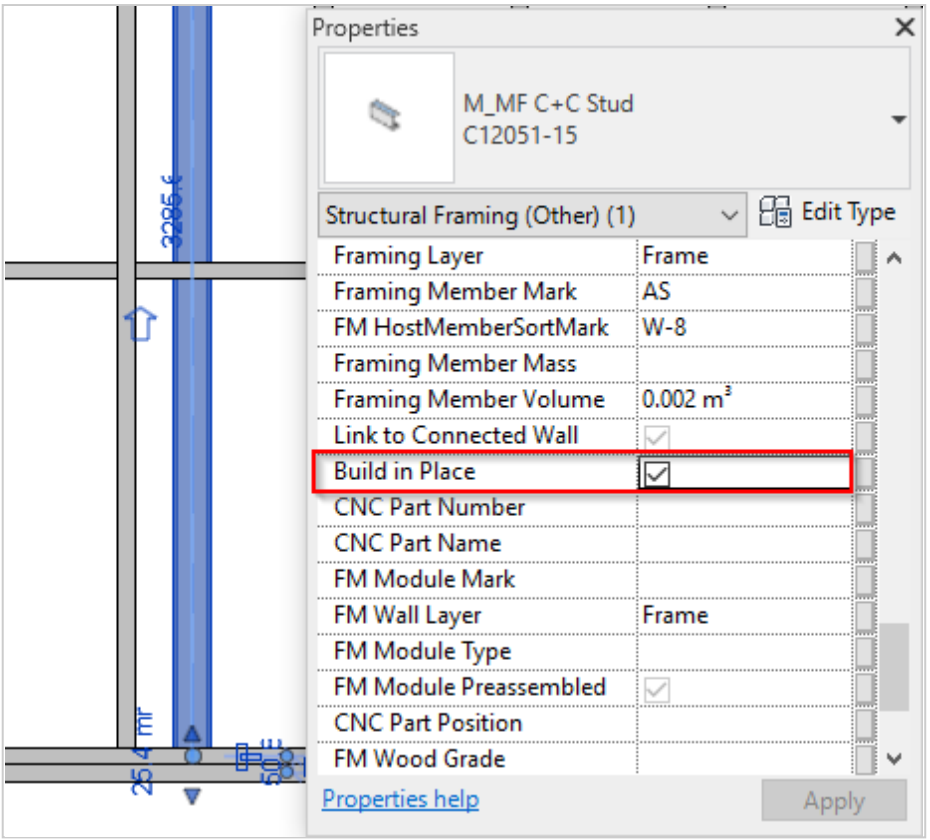
Example with T connection:



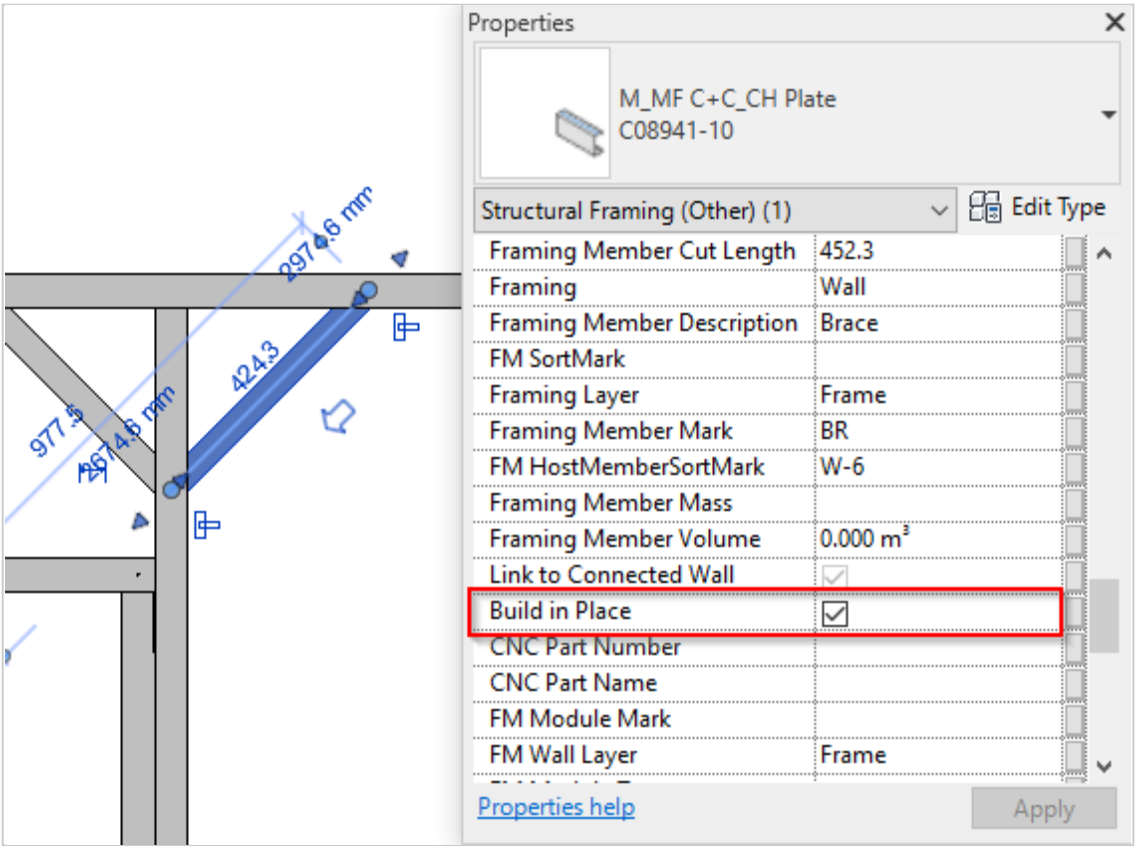
Example with metal bridging:



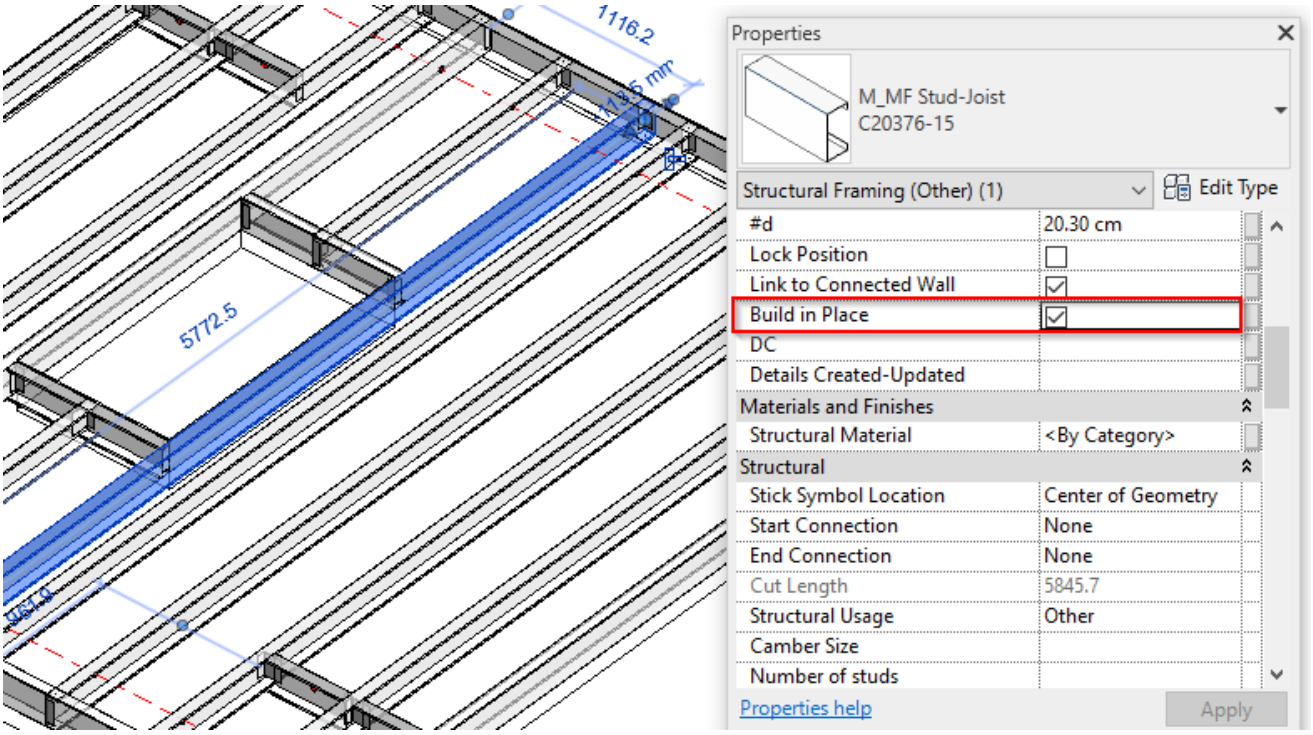
Example with metal additional stud:



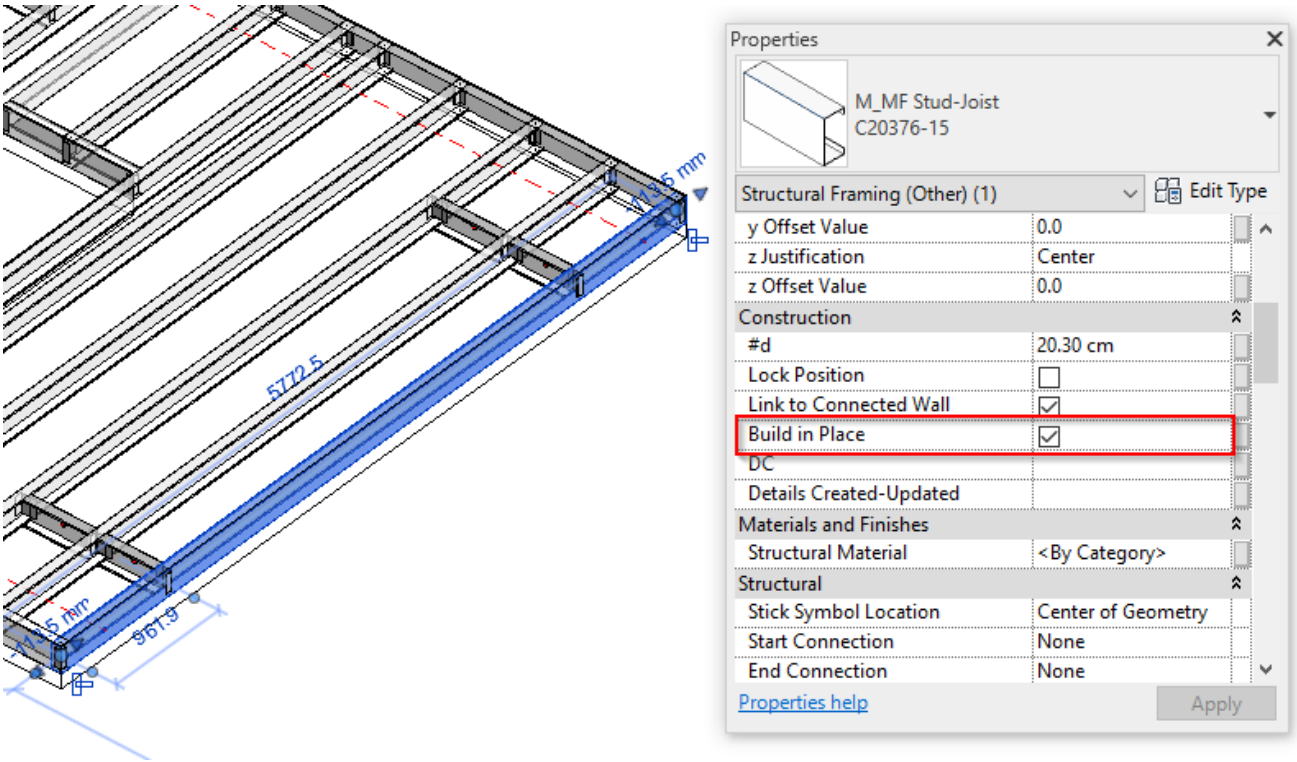
Example with metal frame corner brace:



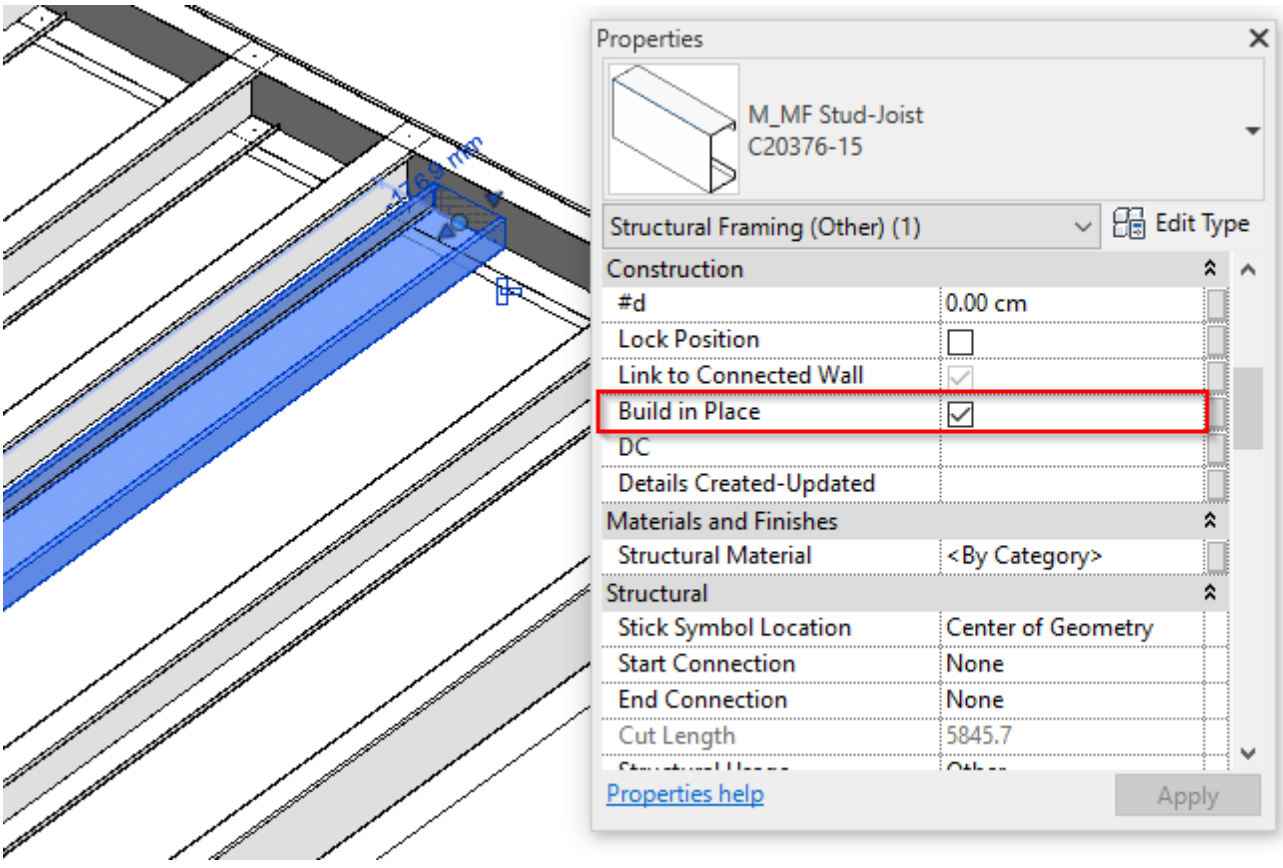
Example with metal floor opening trimming joist blocking:



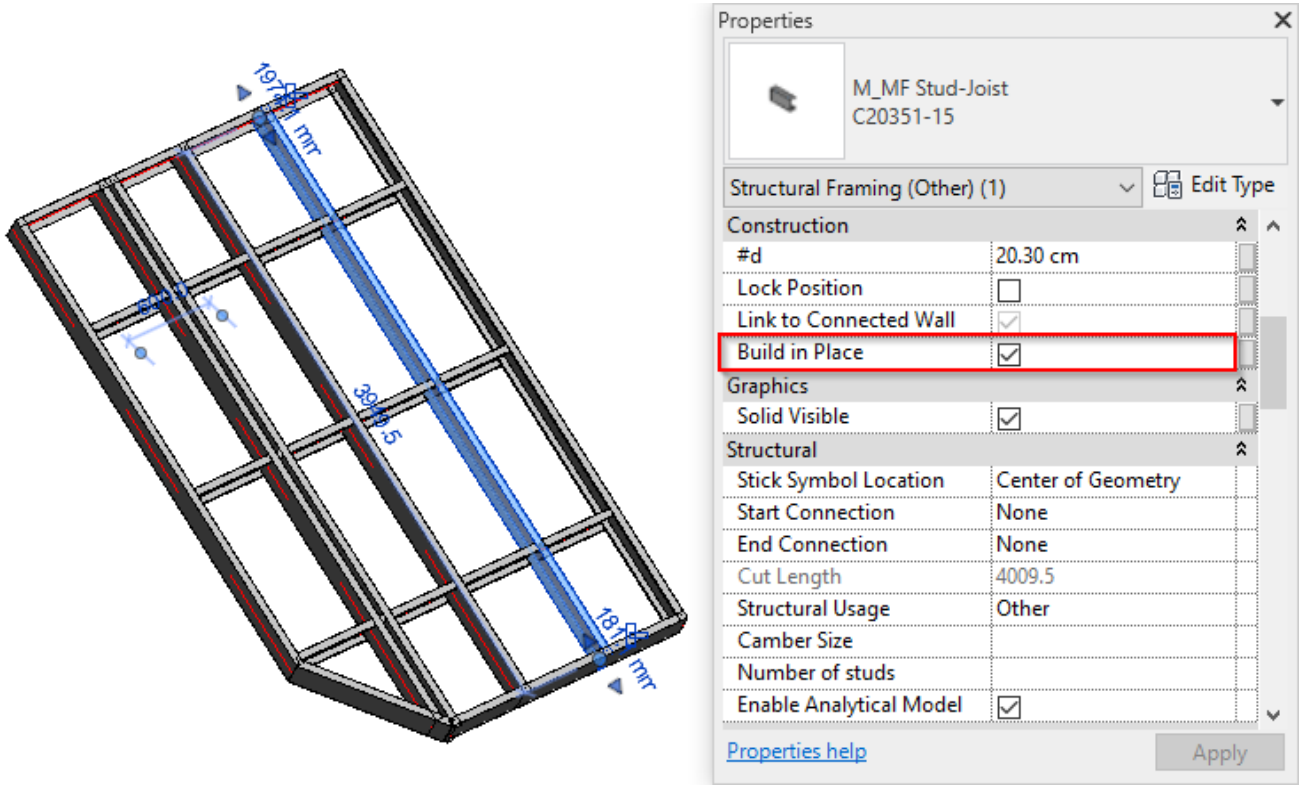
Example with metal floor end:



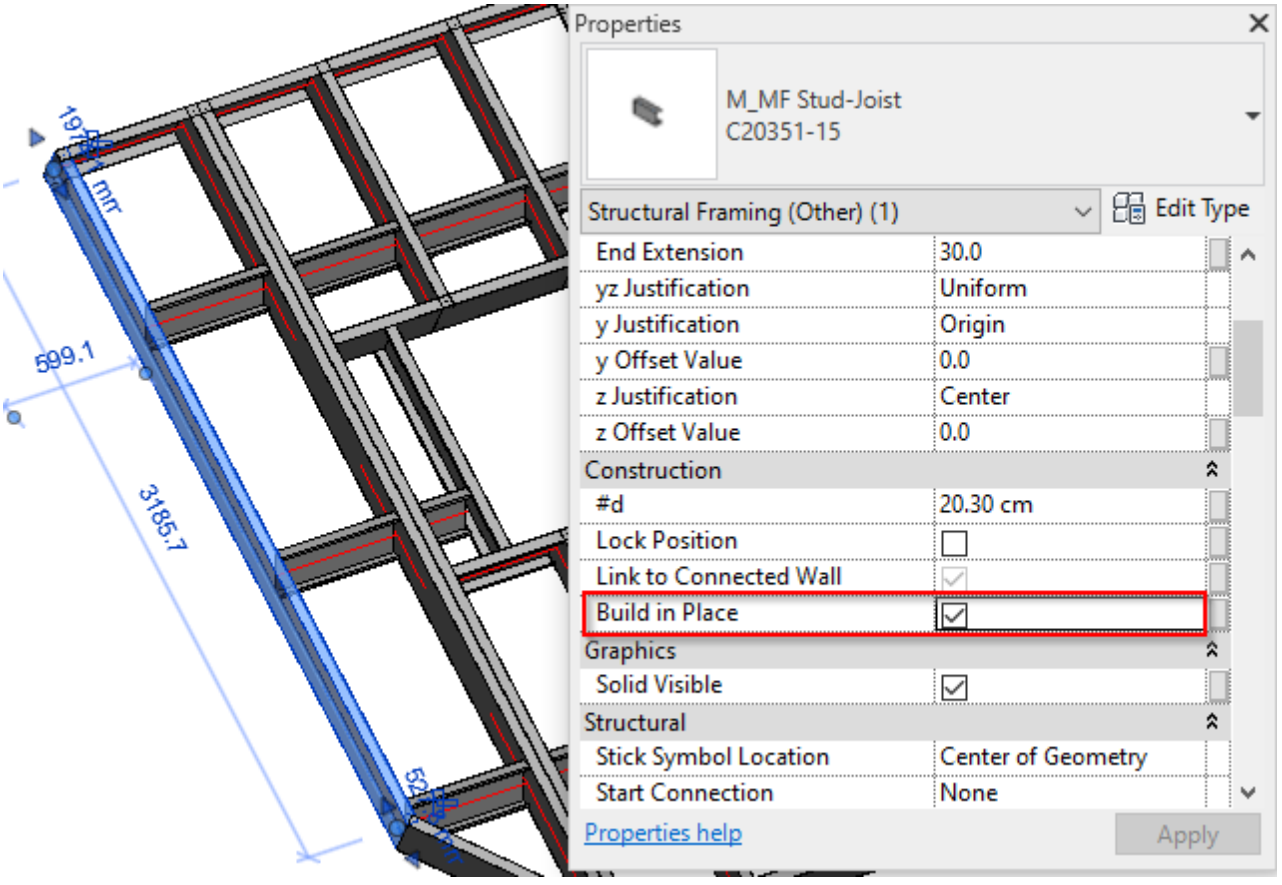
Example with metal floor additional joist:



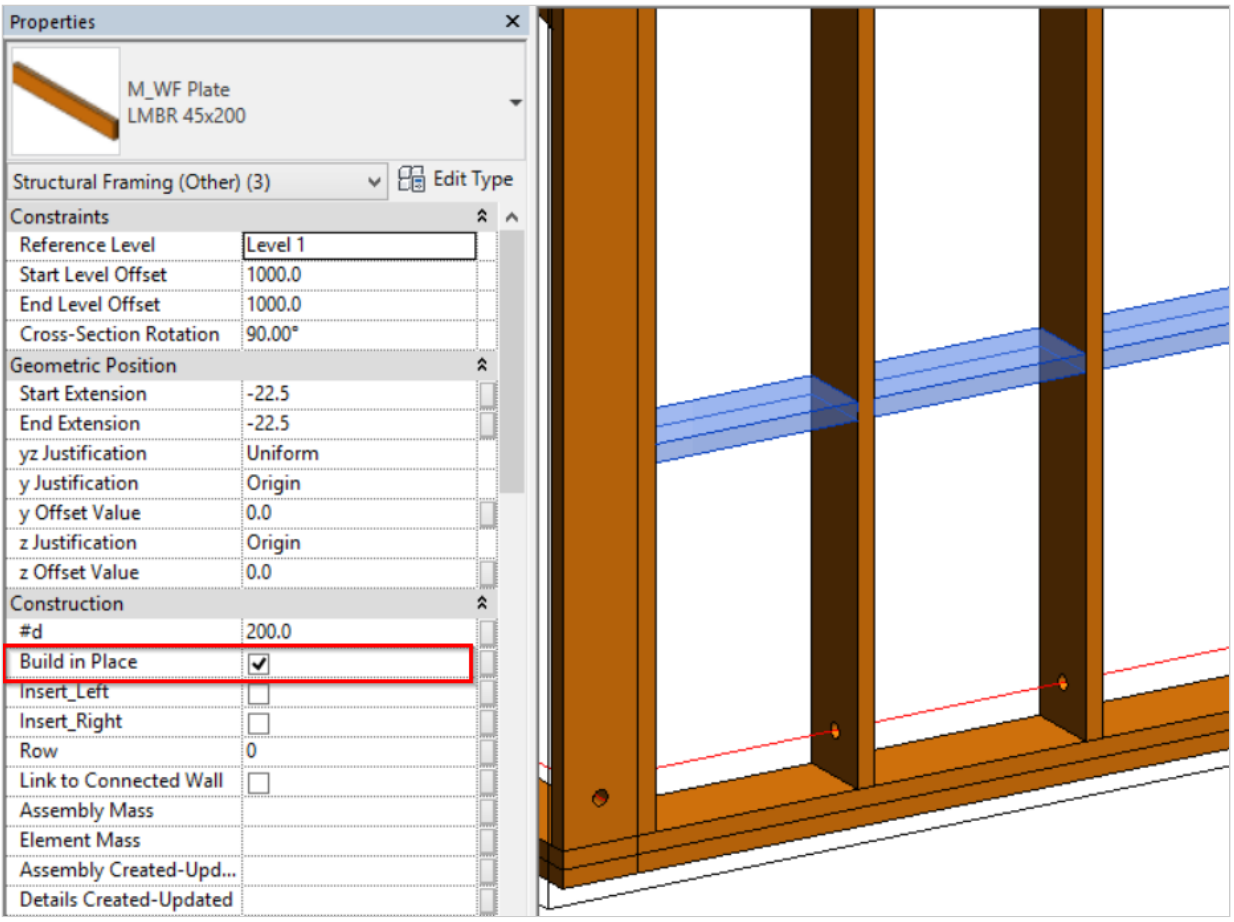
Example with metal roof:



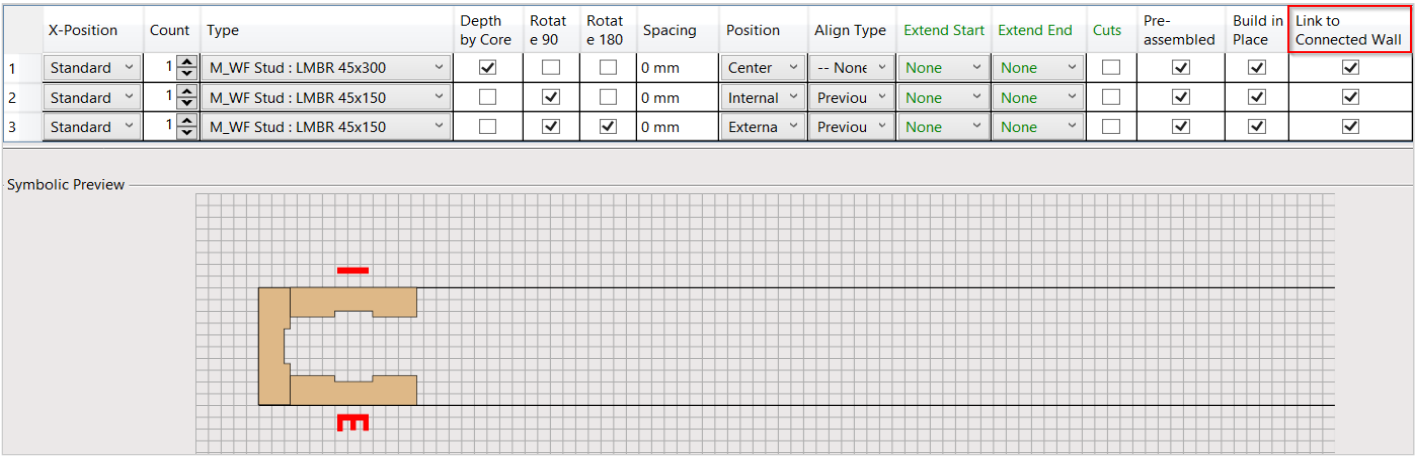
Example with metal roof ed:



Example with wall additional blocking:

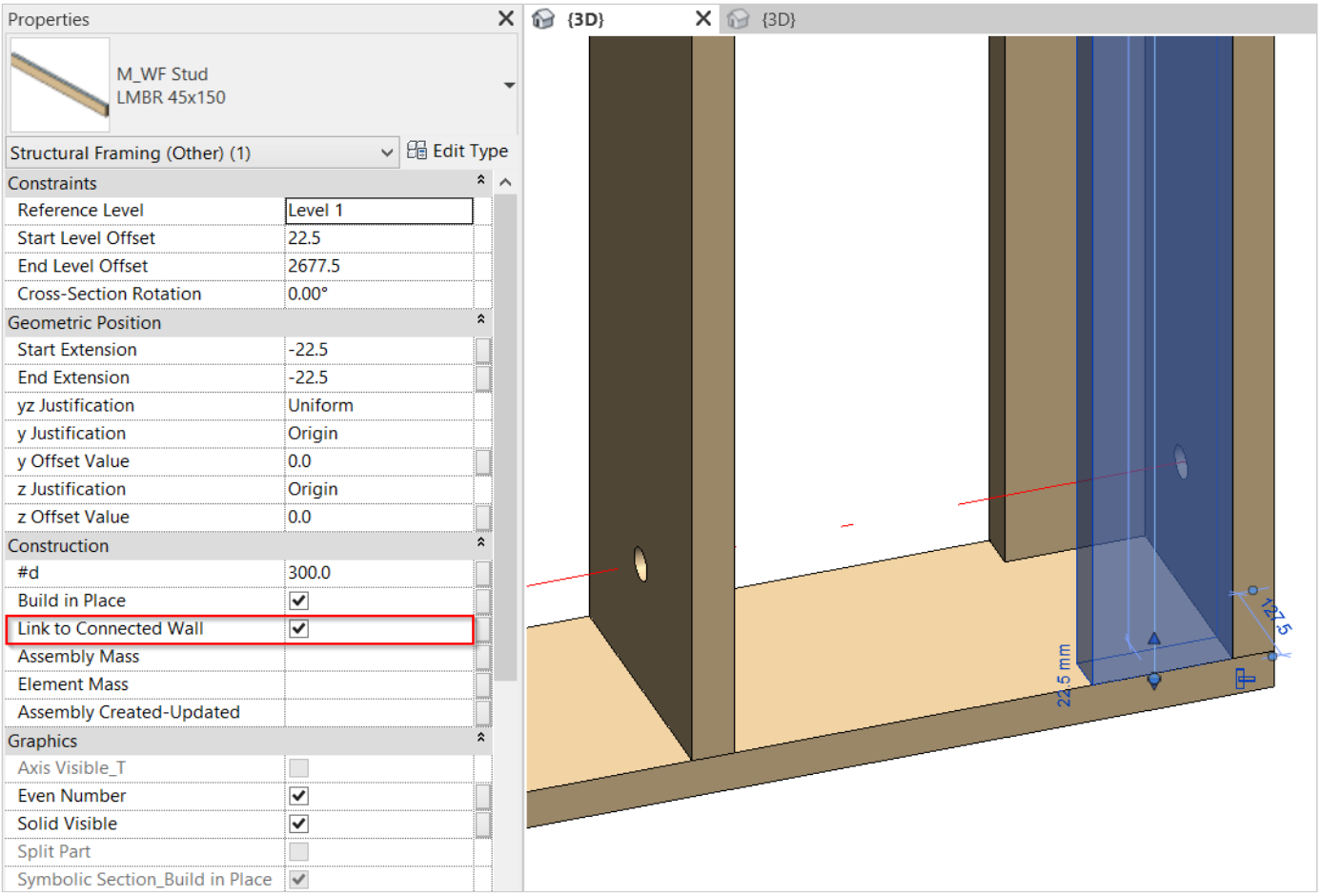


Link to Connected Wall/Floor/Roof

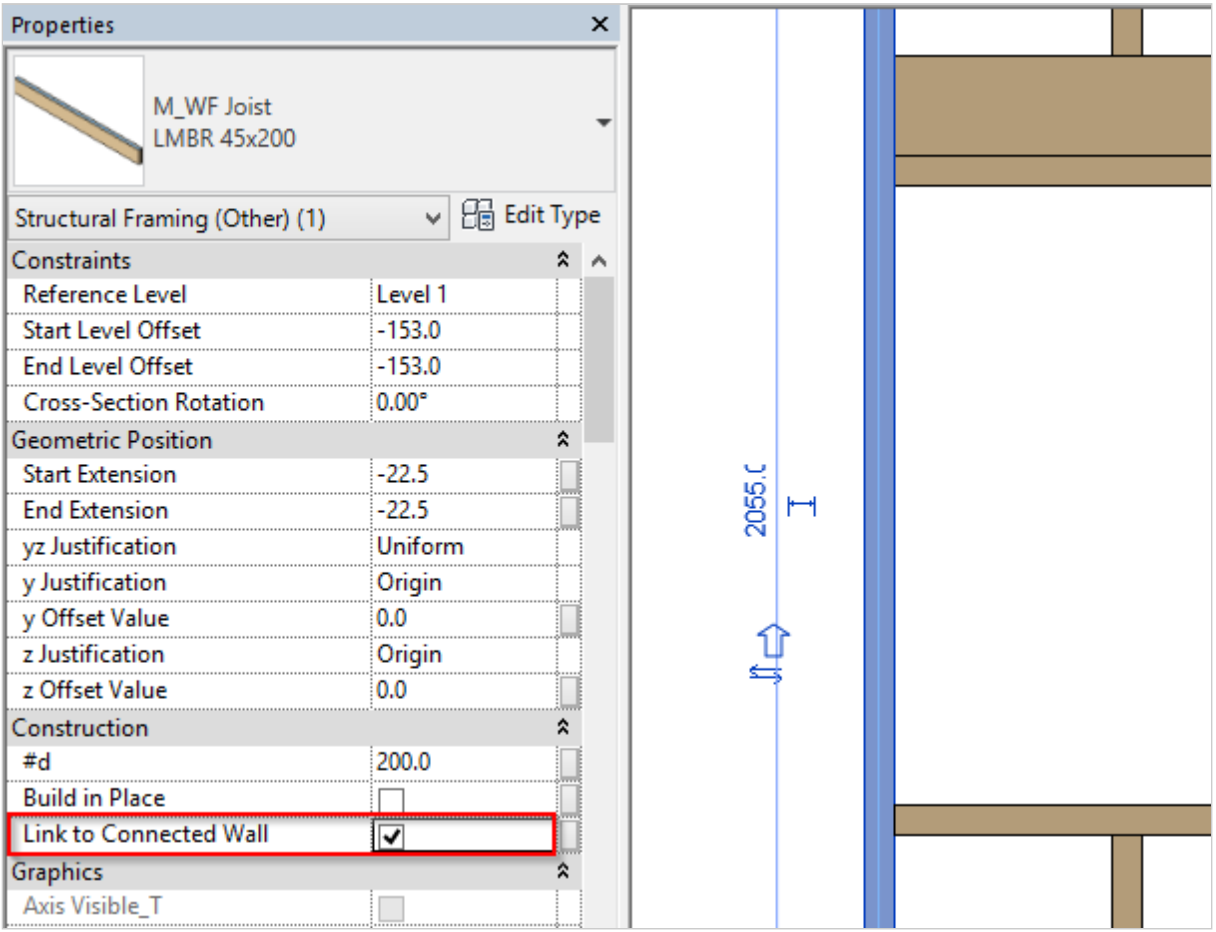


Link to Connected Wall/Floor/Roof – choose this option if end stud/joist is near wall/floor/roof corner and the element should be prefabricated and connected to an intersecting wall/floor/roof.

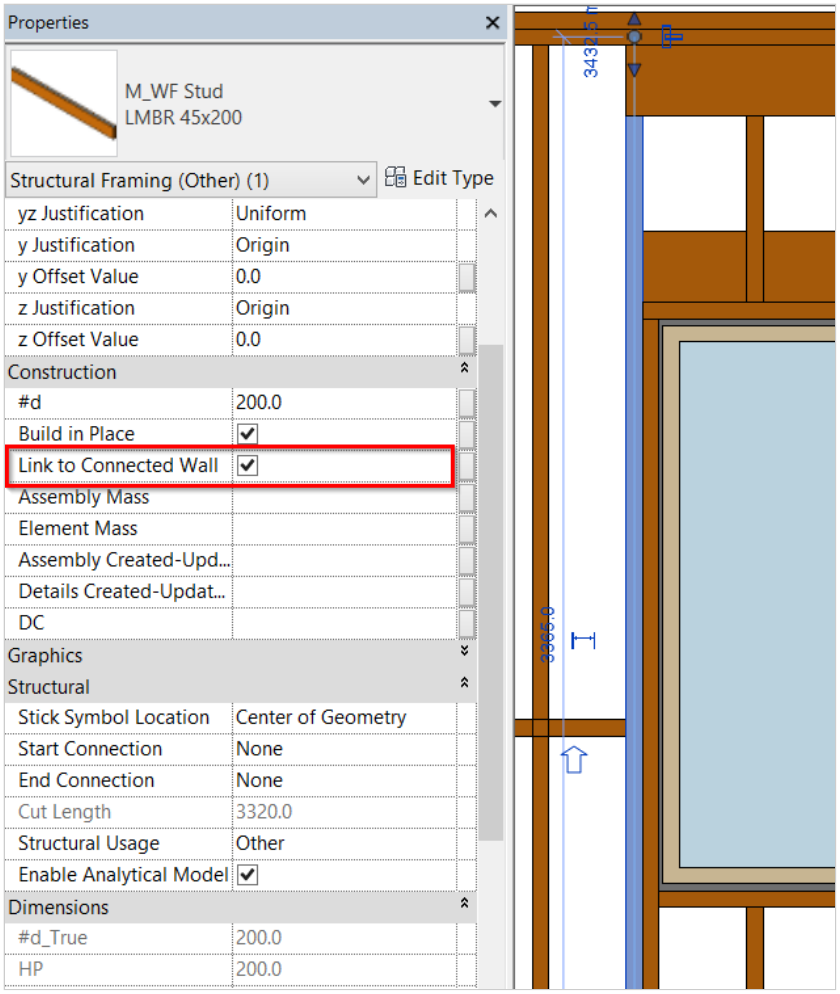
Example with wall corner:



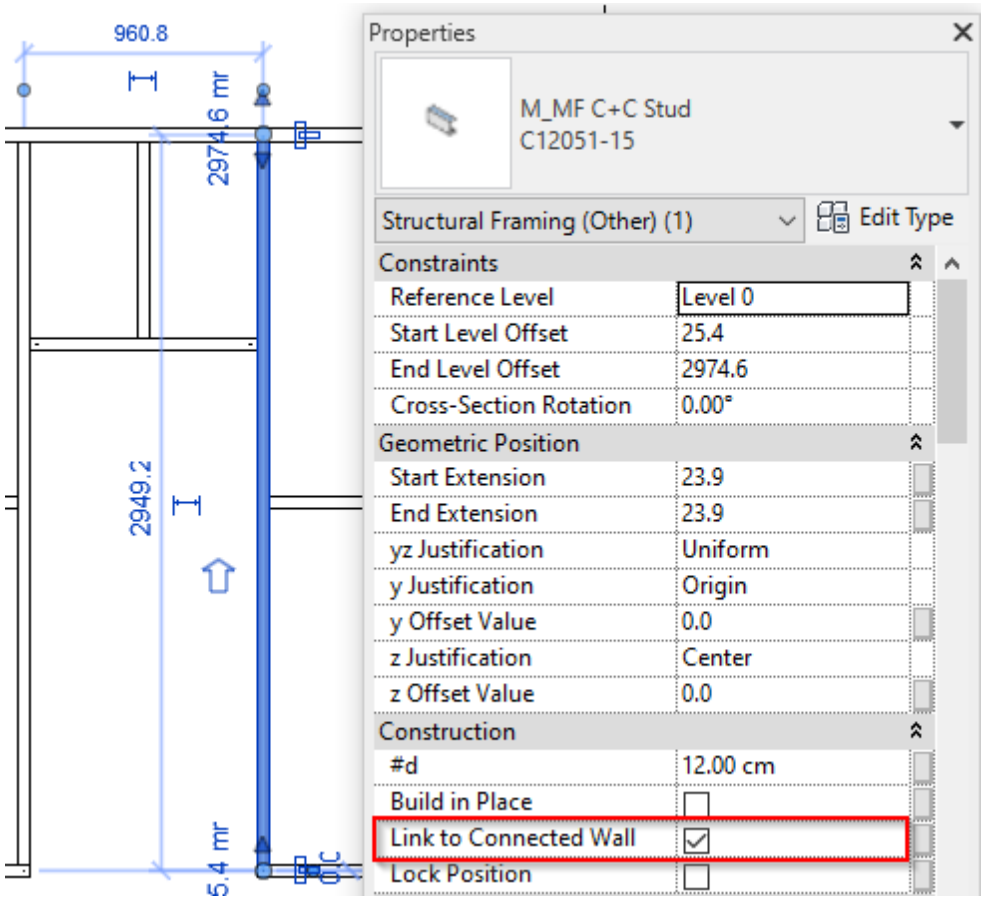
Example with opening trimming joist:



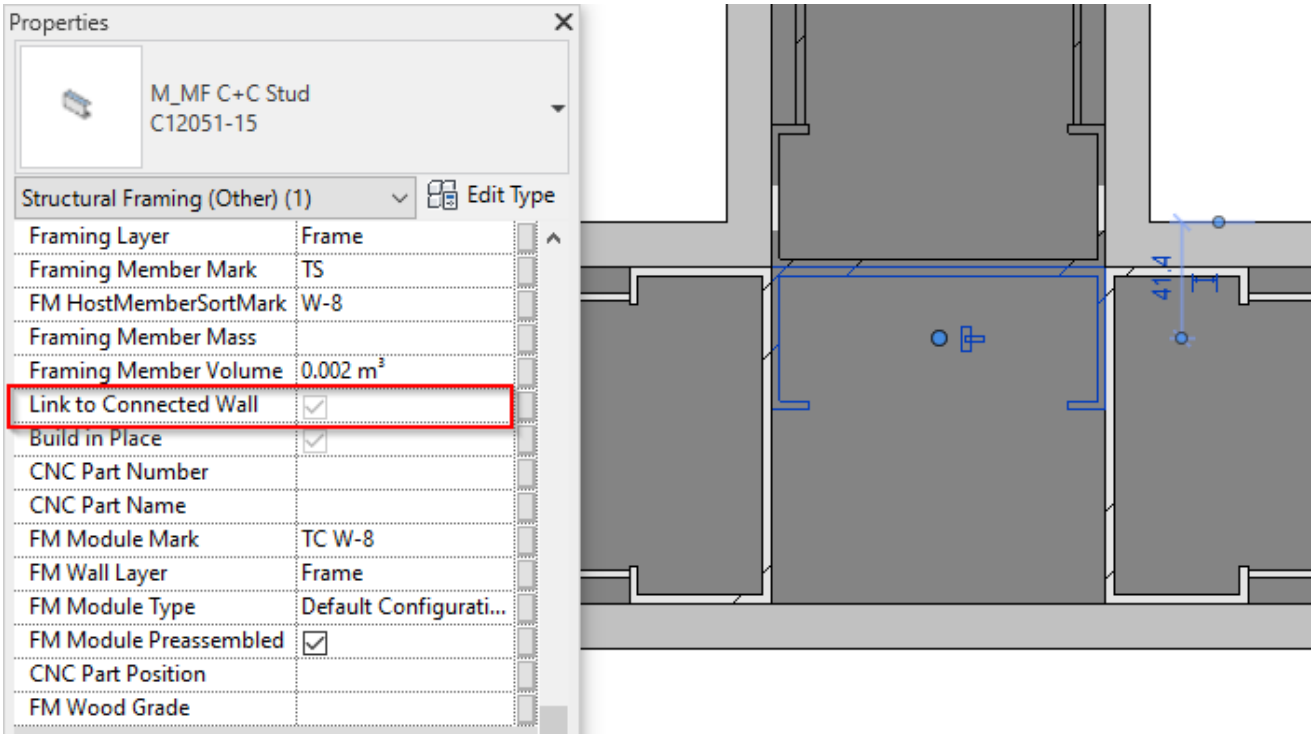
Example with opening king stud:



Example with metal opening king stud:



Example with metal T connection:



Example with metal floor opening trimming joist: