Linking RISA Software with Revit 2017: Beyond the Basics

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RISA Technologies

Class summary

The Link between RISA and Revit has existed for more than a decade now, and has seen widespread adoption in the structural engineering community. As the Link evolves, it continues to make the integration more tight and effective between structural analysis and Building Information Modeling (BIM). However, users of the RISA-Revit Link may not already be aware of the full array of features that the Link provides, beyond simple import/export capabilities. This class aims to teach the user about advanced troubleshooting and workflow techniques to improve their use of the RISA-Revit Link, with the aim of cutting down on errors and frustration. Also included will be a sneak peek at the RISAConnection-Revit Link which is currently under development, and which will enable users to get Steel Connection Design software for their Revit model.

Key learning objectives

At the end of this class, you will be able to:

- Learn how to resolve common errors in linking models
- Learn how to comfortably use advanced features of the RISA-Revit Link
- Understand complex workflows between RISA and Revit
- See the future of Steel Connection Design in Revit

Revit Link Status Update

- RISA-Revit 2016 Link v4 (v14.3) still available until Revit 2018
  (14.3 and 17.0 are functionally identical)
- Update to RISA-Revit 2017 Link (v17.1) to be released in December
  (Mostly Bug Fixes)
- Update to RISA-Revit 2017 Link (v17.2) to be released Spring 2017
  (Will include RISAConnection Link)
- RISA-Revit 2018 Link (v18.0) to be released Spring 2017
  (Will be functionally identical to v17.2)

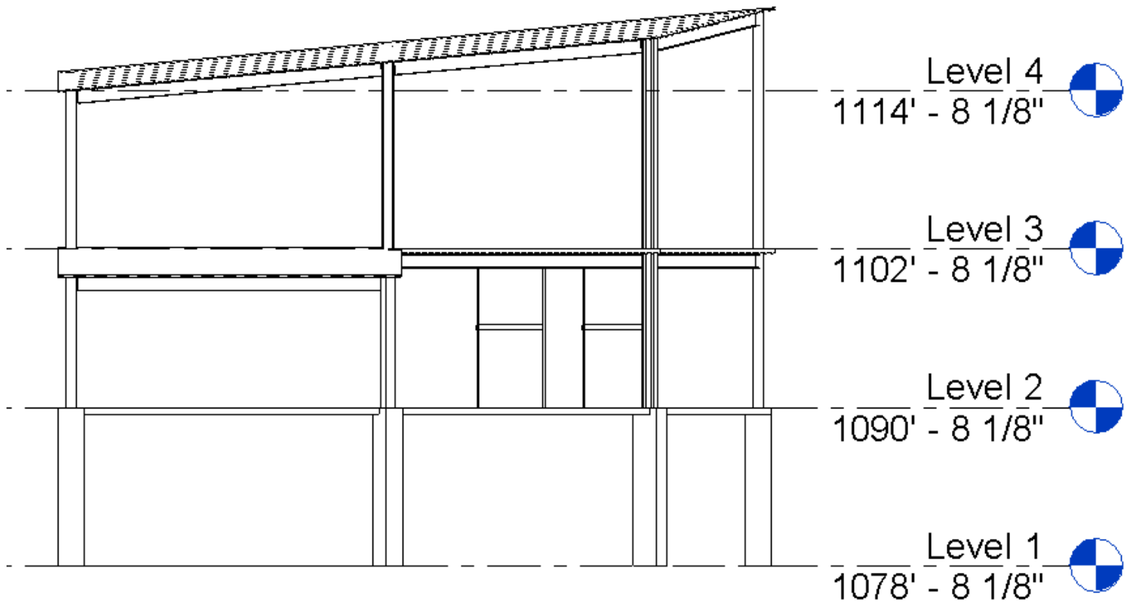
Today's Topics

- Coordinate Systems
- Sloped Framing (RISAFloor)
- Managing Levels
- Elevated Slabs (RISAFloor ES)
- Omitting Miscellaneous Elements
- Model Backups

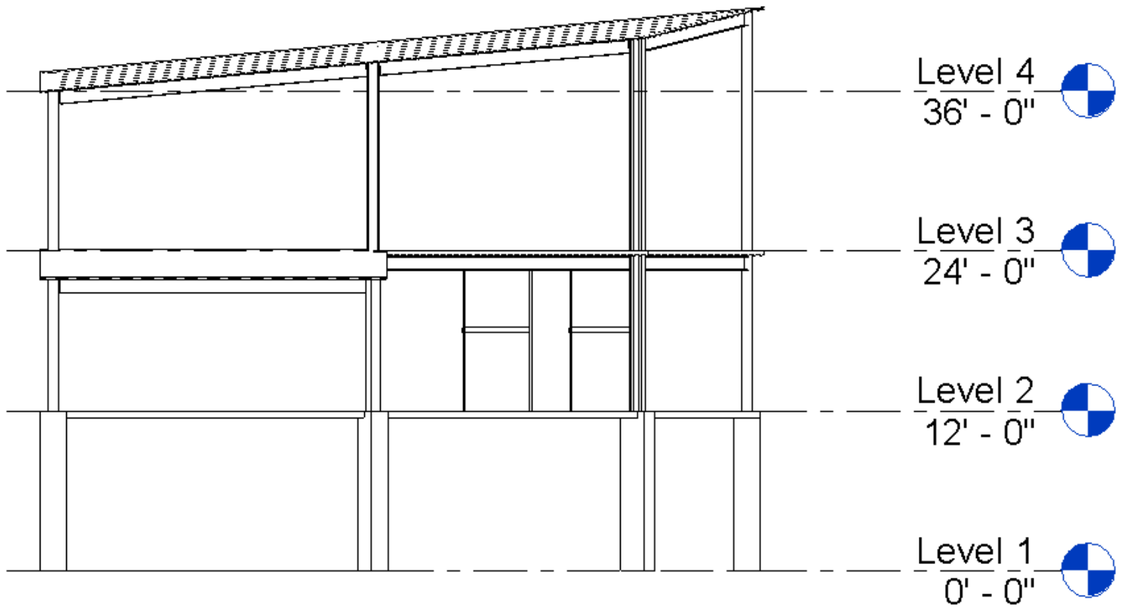
Today's Topics (Continued)

- RISA-3D Only Members
- Custom Families
- Showing RISA Member Labels in Revit
- Linking Multiple Models
- Steel Connections

Coordinate Systems

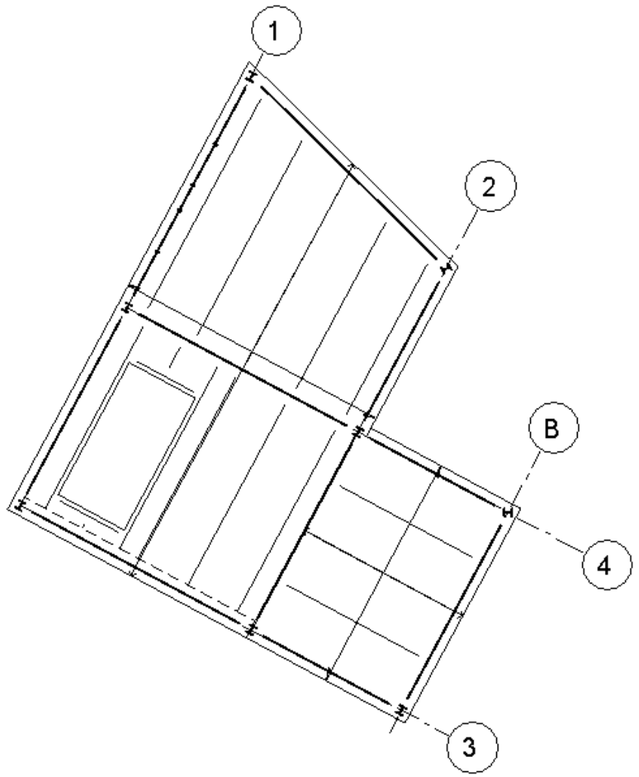


Survey Base Point

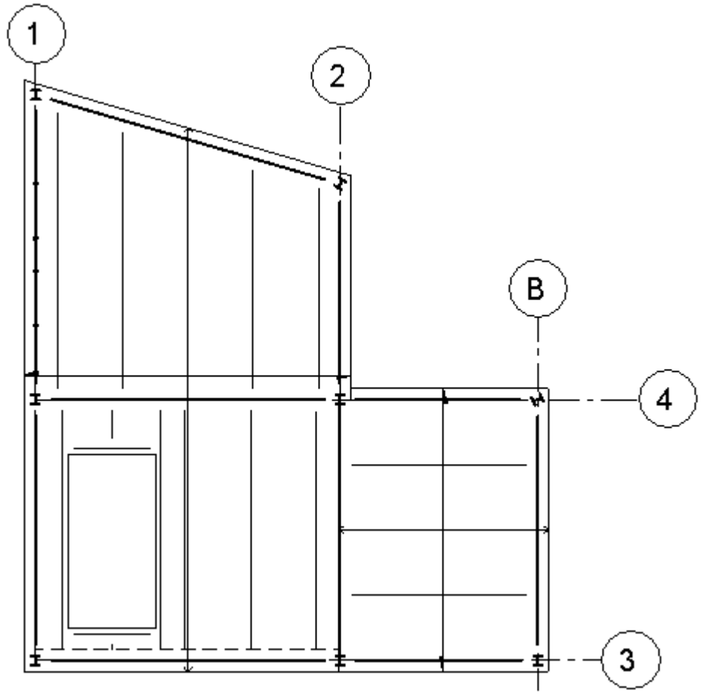


Project Base Point

Coordinate Systems

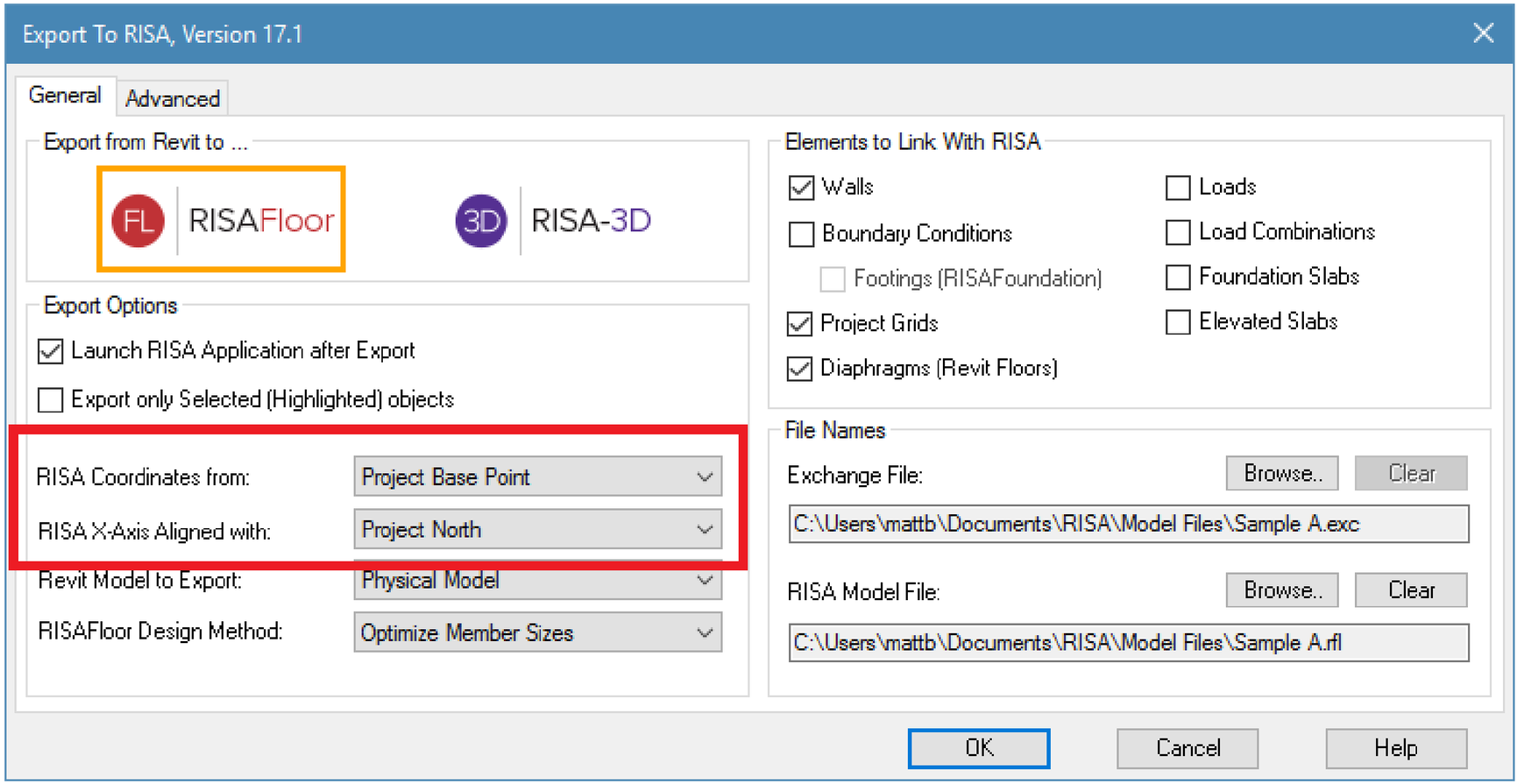


True North Orientation

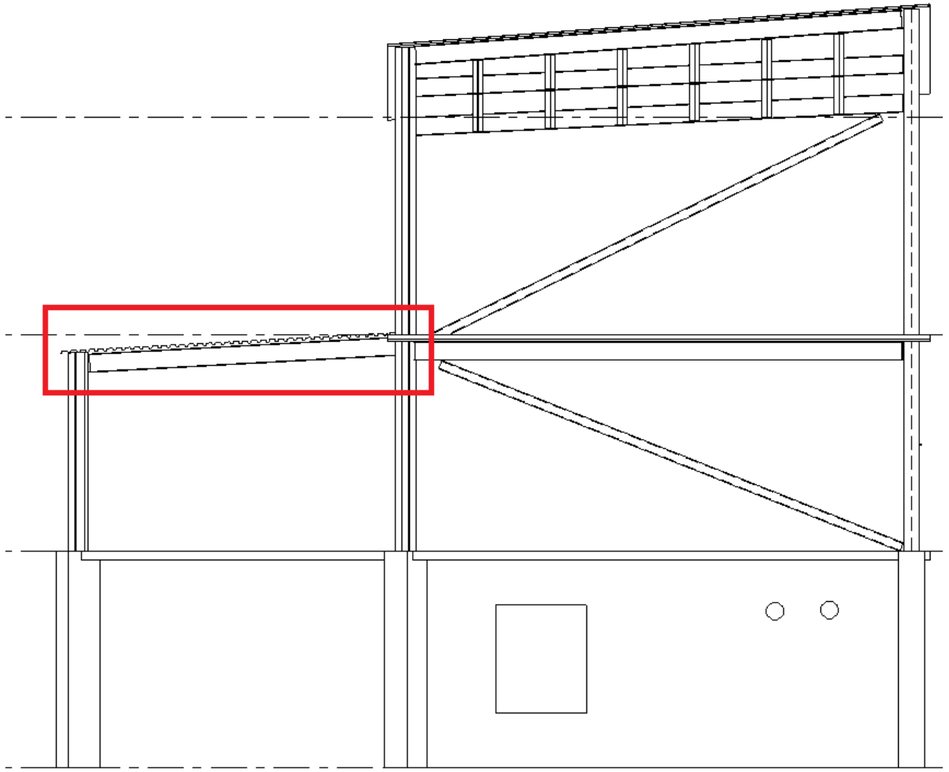


Project North Orientation

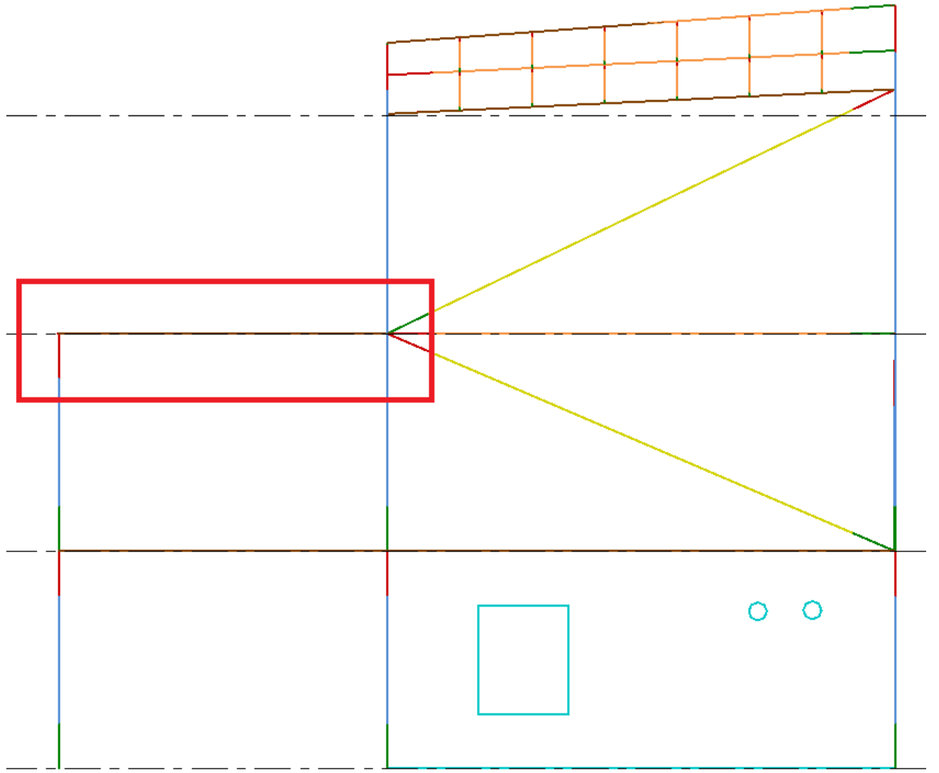
Coordinate Systems



Sloped Framing (RISAFloor)

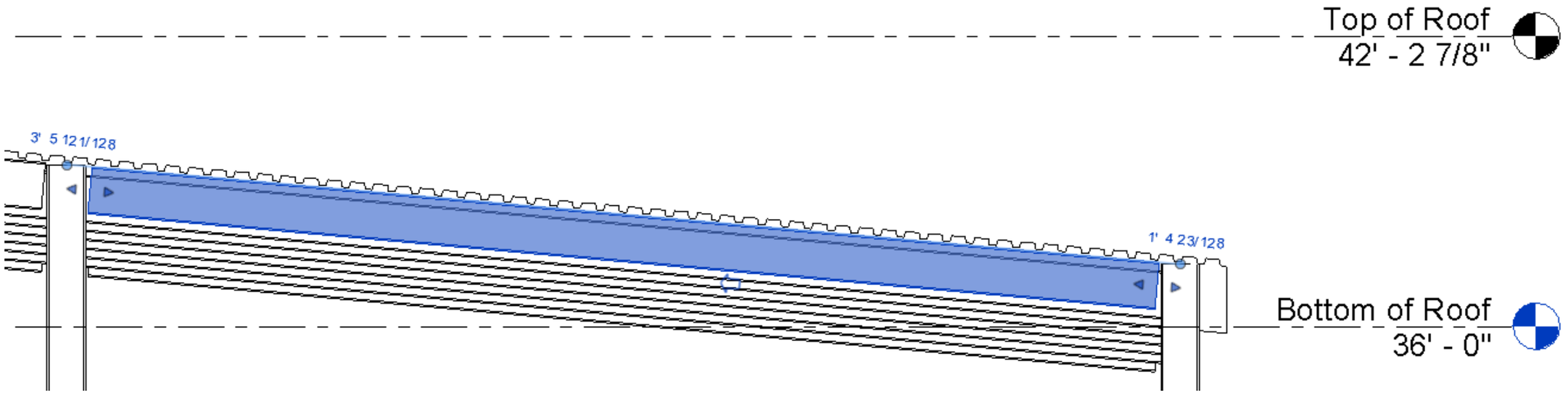


Physical Model (Sloped)



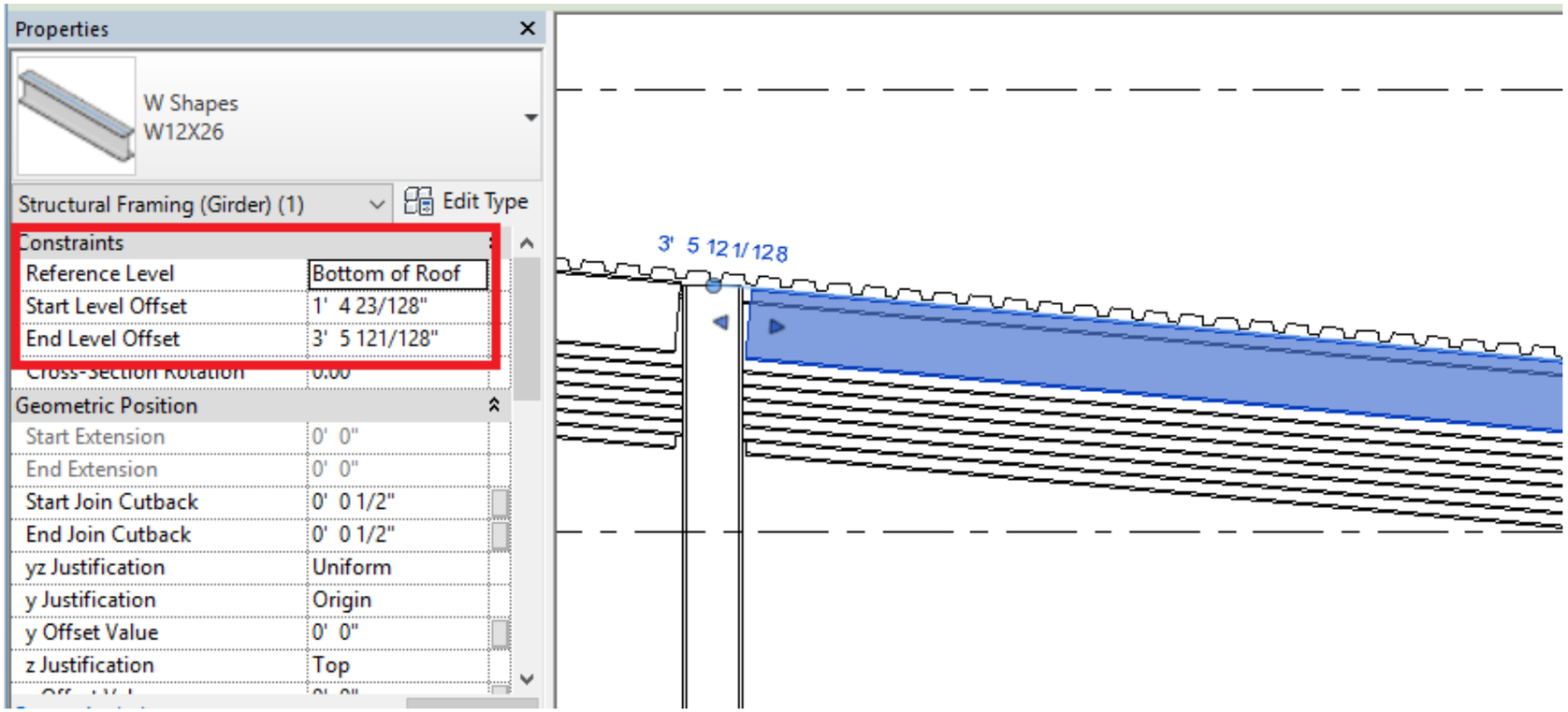
Analytical Model (Flat)

Sloped Framing (RISAFloor)



Member Offsets must be Positive

Sloped Framing (RISAFloor)



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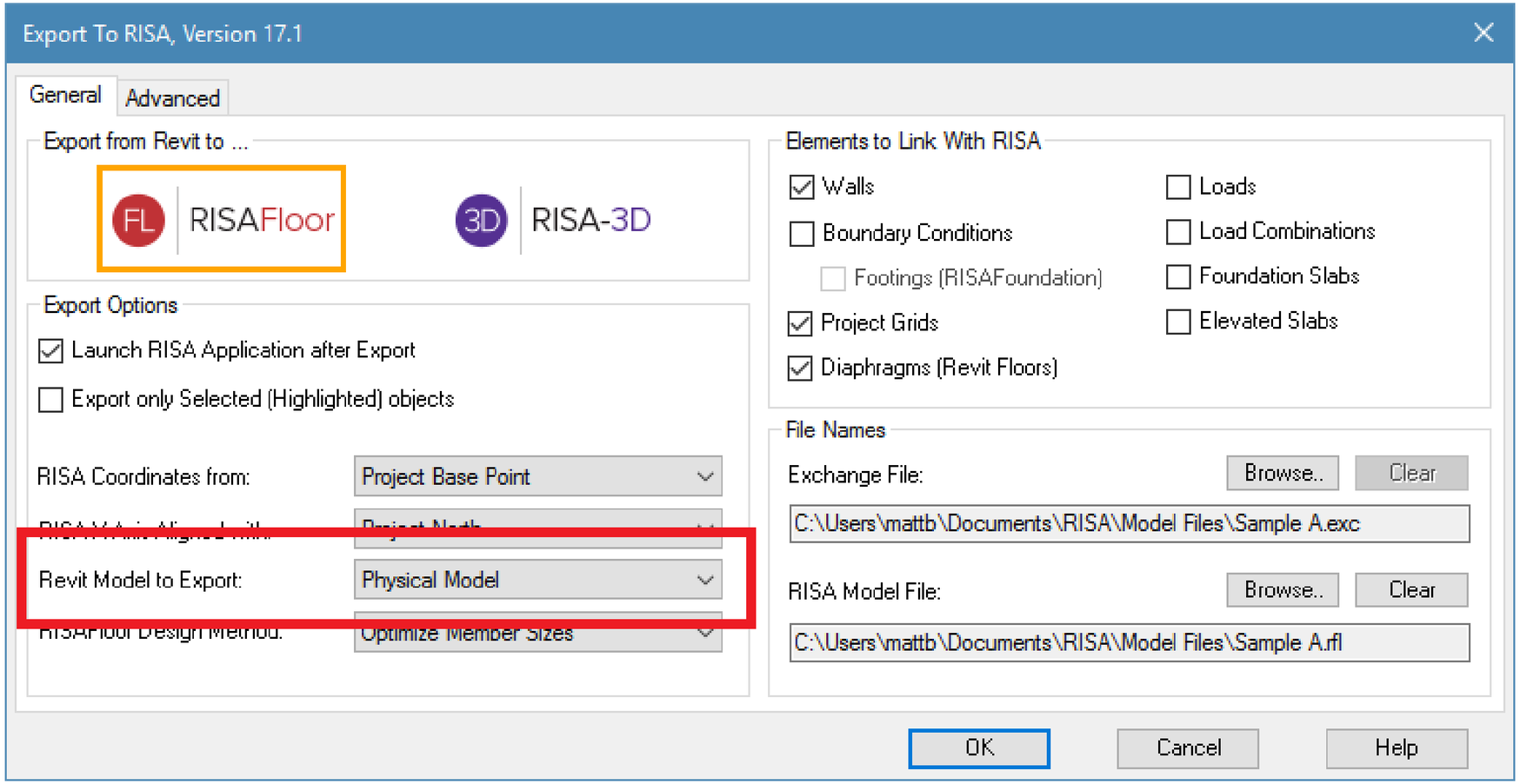
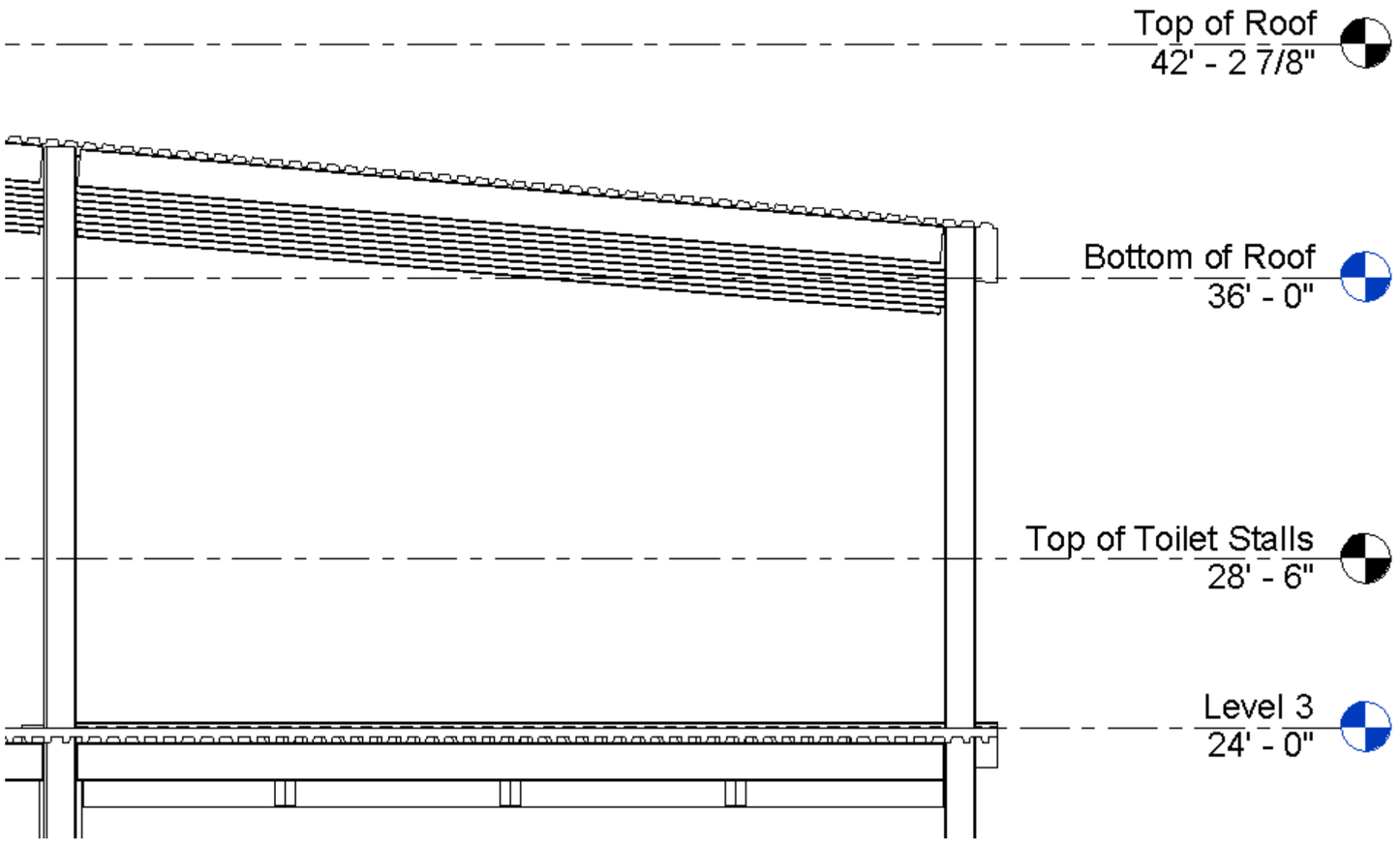
Sloped Framing (RISAFloor)



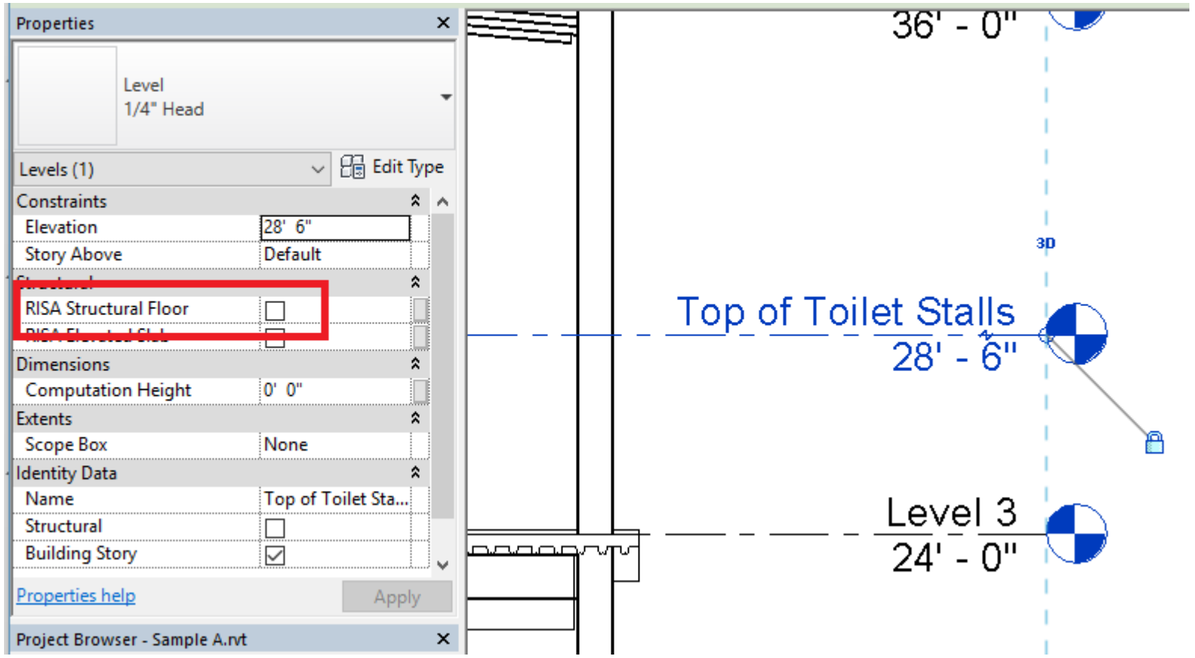
Managing Levels (RISAFloor)



Turn Off Non-Structural Levels

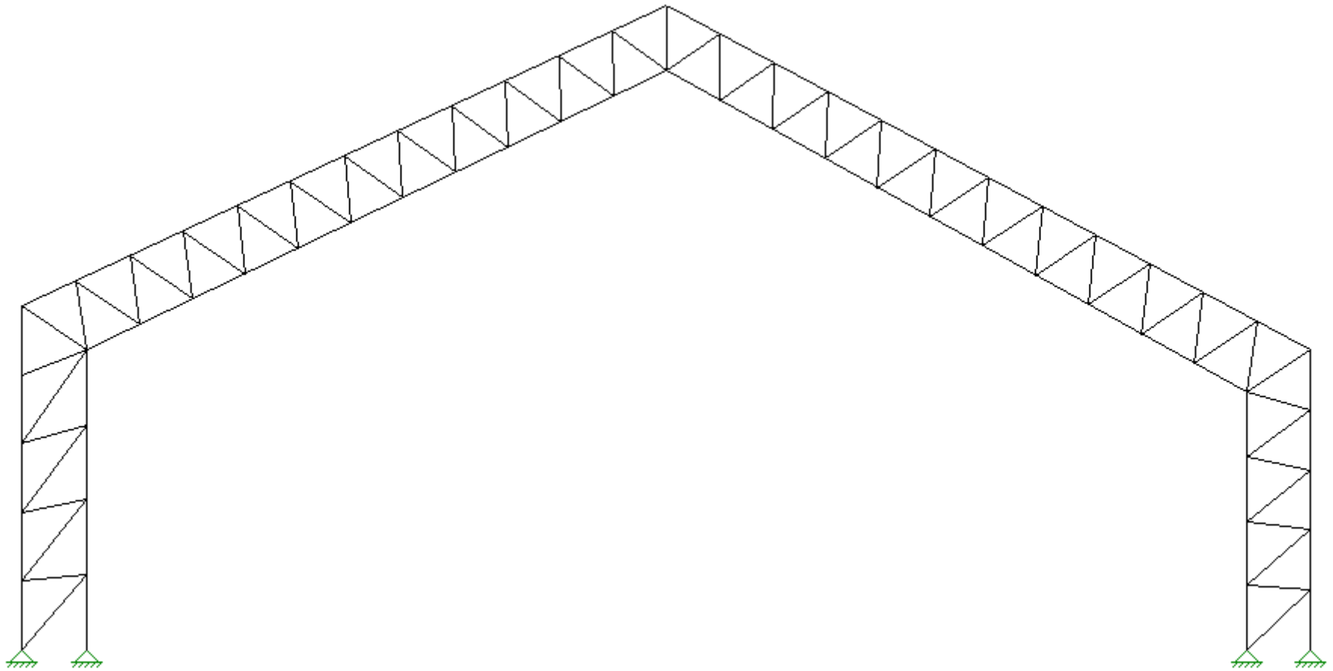
Managing Levels (RISAFloor)

RISA Parameters must be turned ON



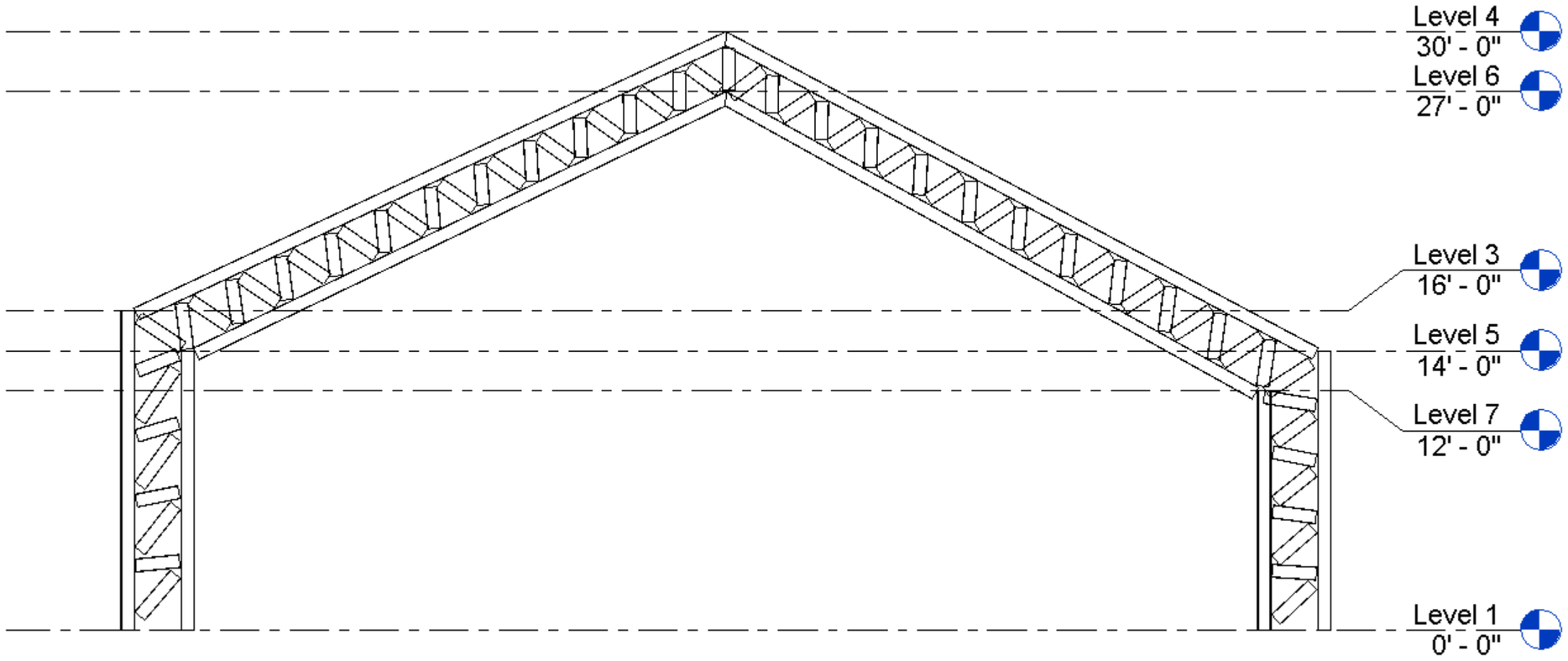
For Non-Structural Levels uncheck RISA Structural Floor

Managing Levels (RISA-3D)



RISA-3D does not have a concept of “Levels”

Managing Levels (RISA-3D)

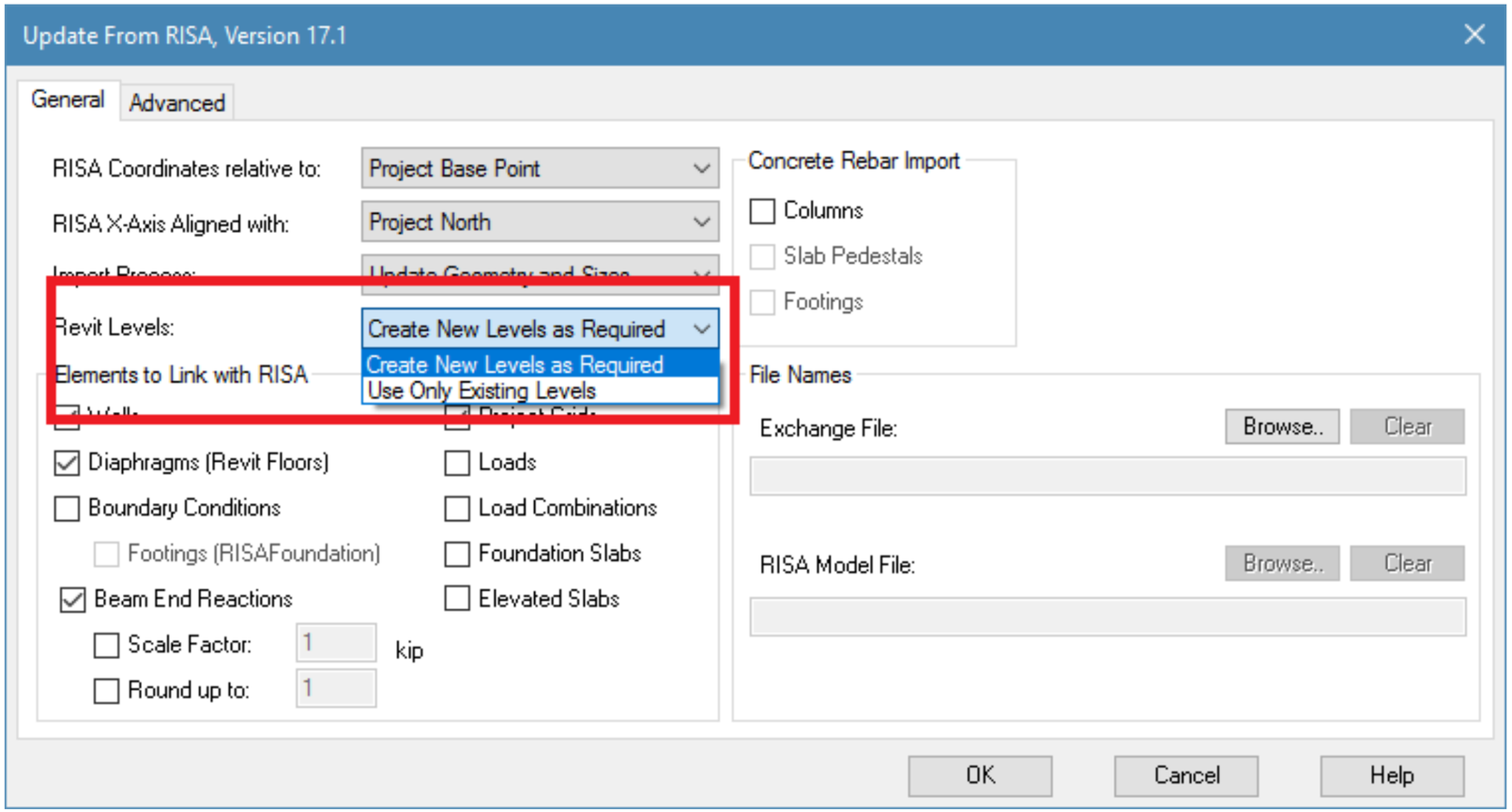


The RISA-Revit Link creates Levels where it needs them…

Managing Levels (RISA-3D)

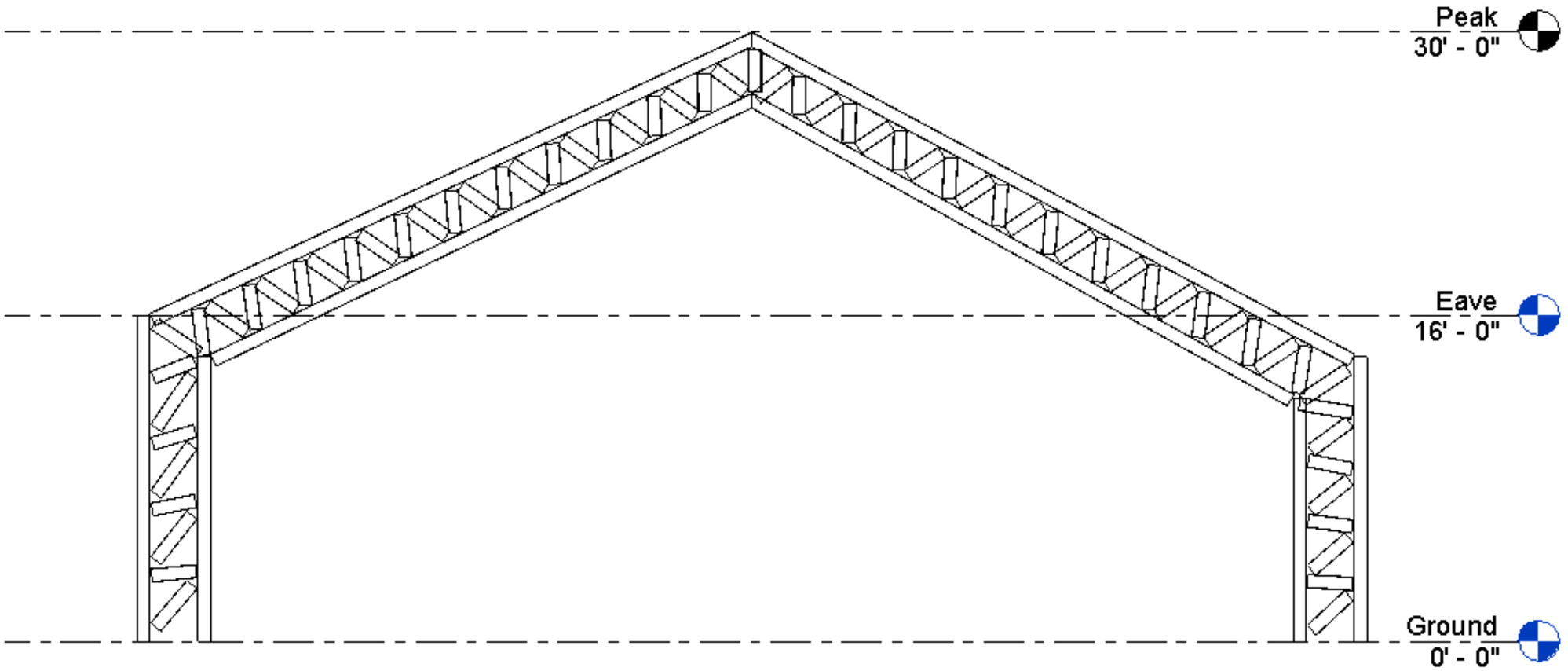
…Unless you Pre-define your Levels in Revit…

Managing Levels

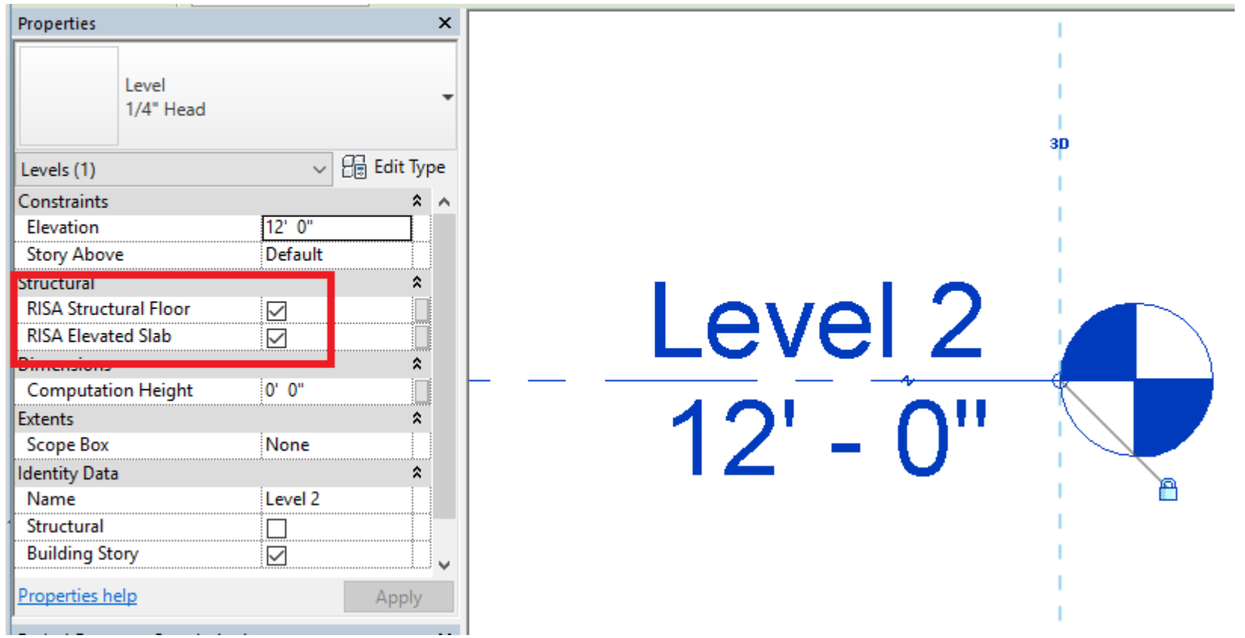


…and then choose the “Use Only Existing Levels” option

Managing Levels (RISA-3D)



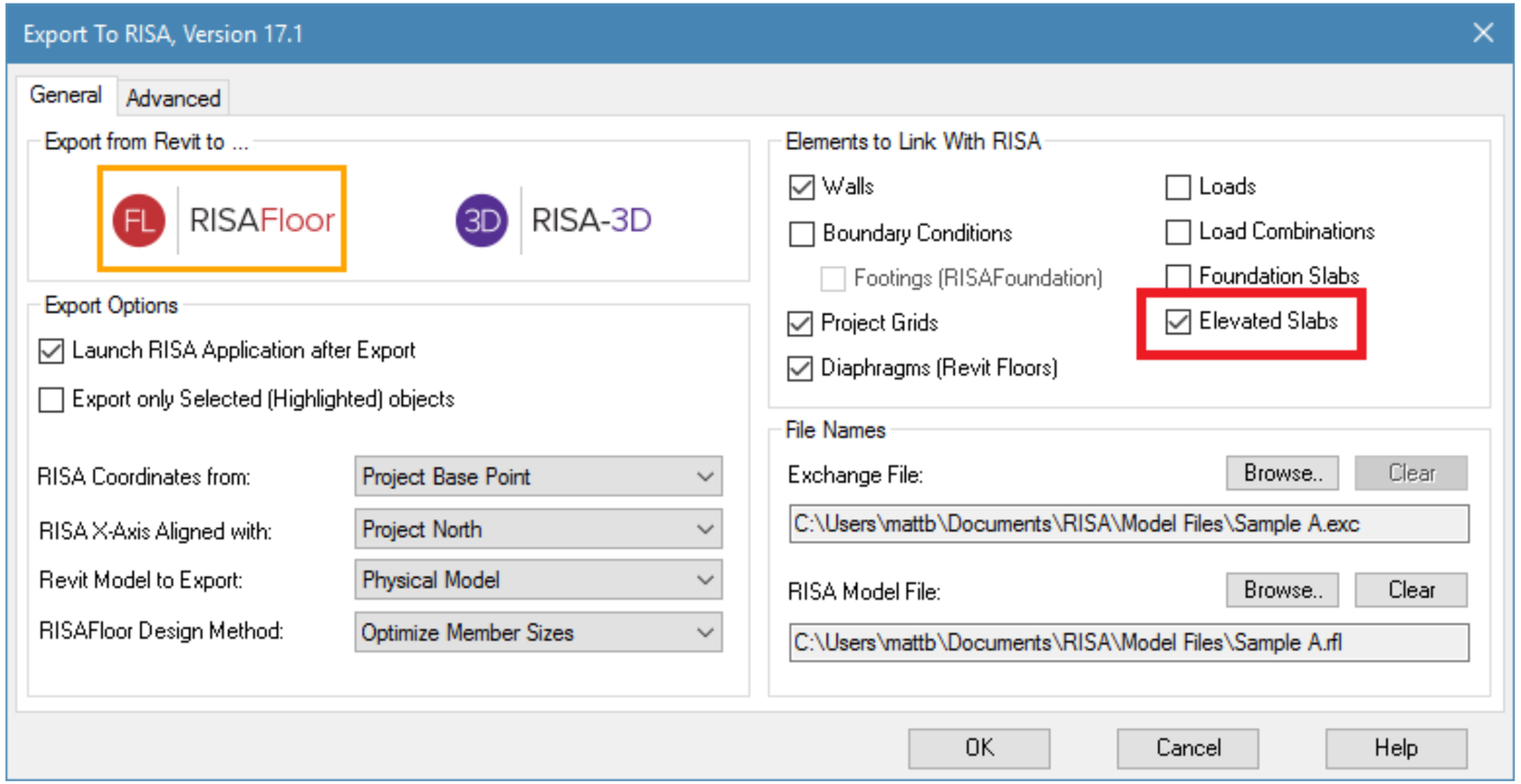
Elevated Slabs (RISAFloor ES)



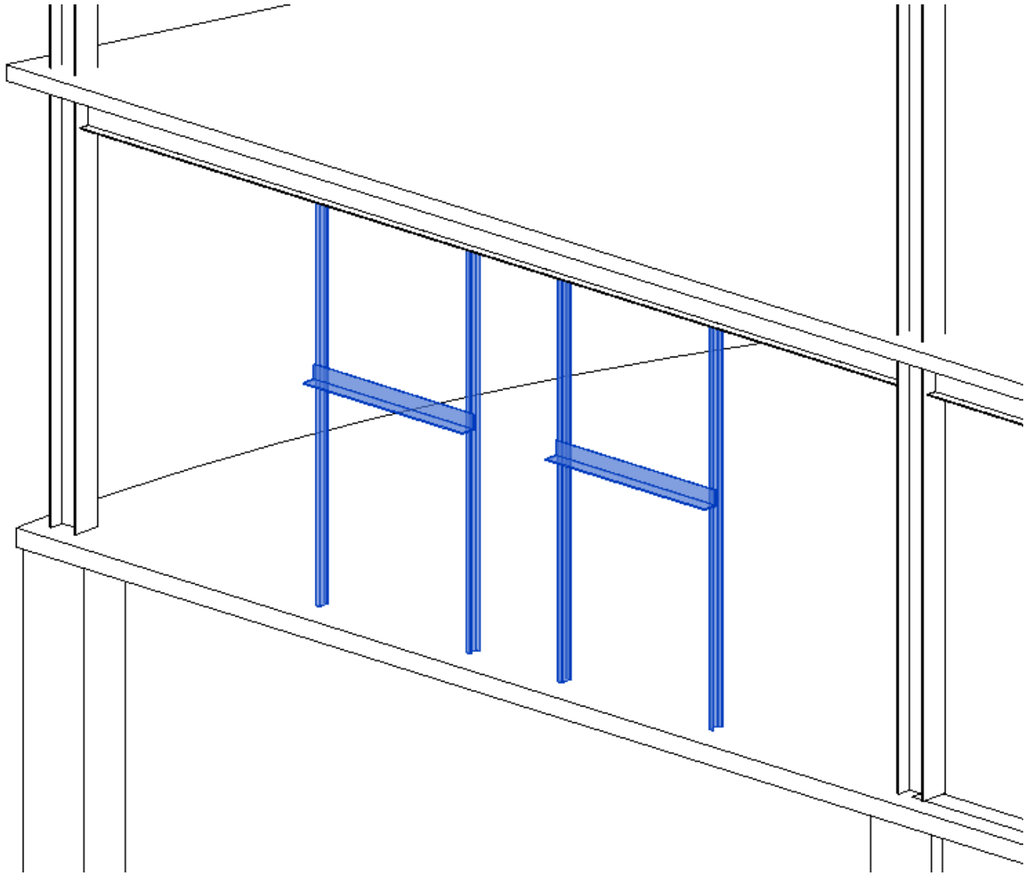
RISA Parameters must be turned ON

Level must be marked as RISA Elevated Slab

Elevated Slabs (RISAFloor ES)

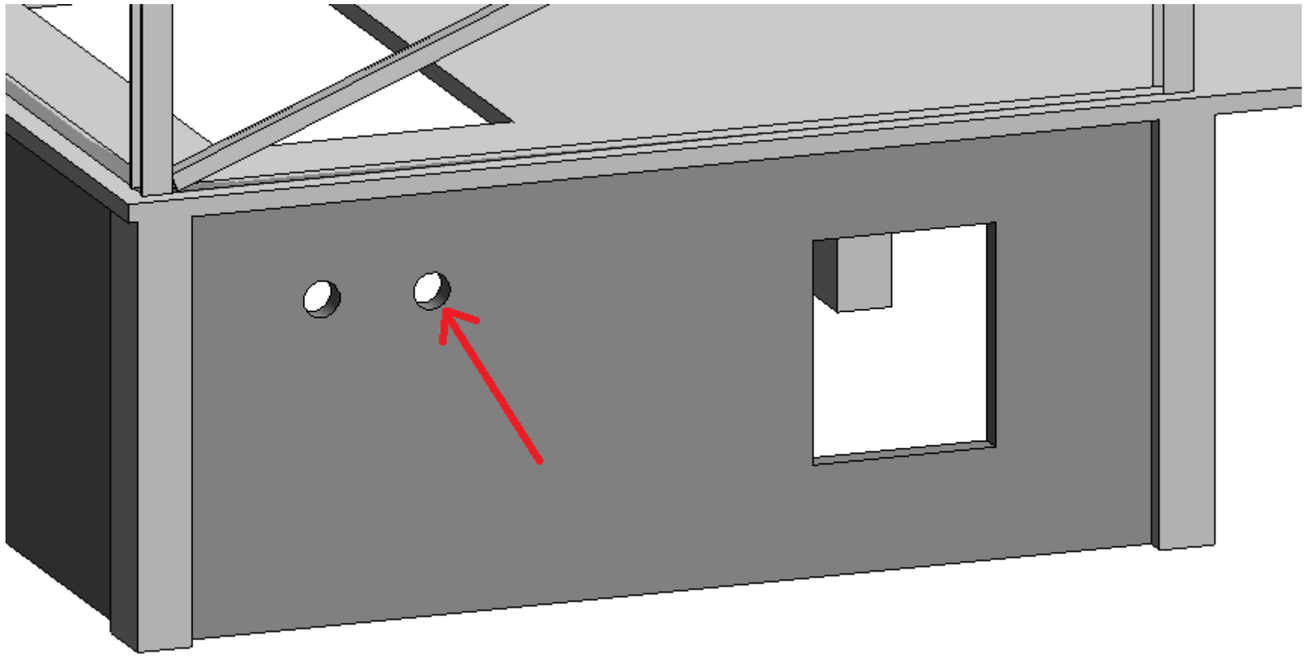


Omitting Miscellaneous Elements



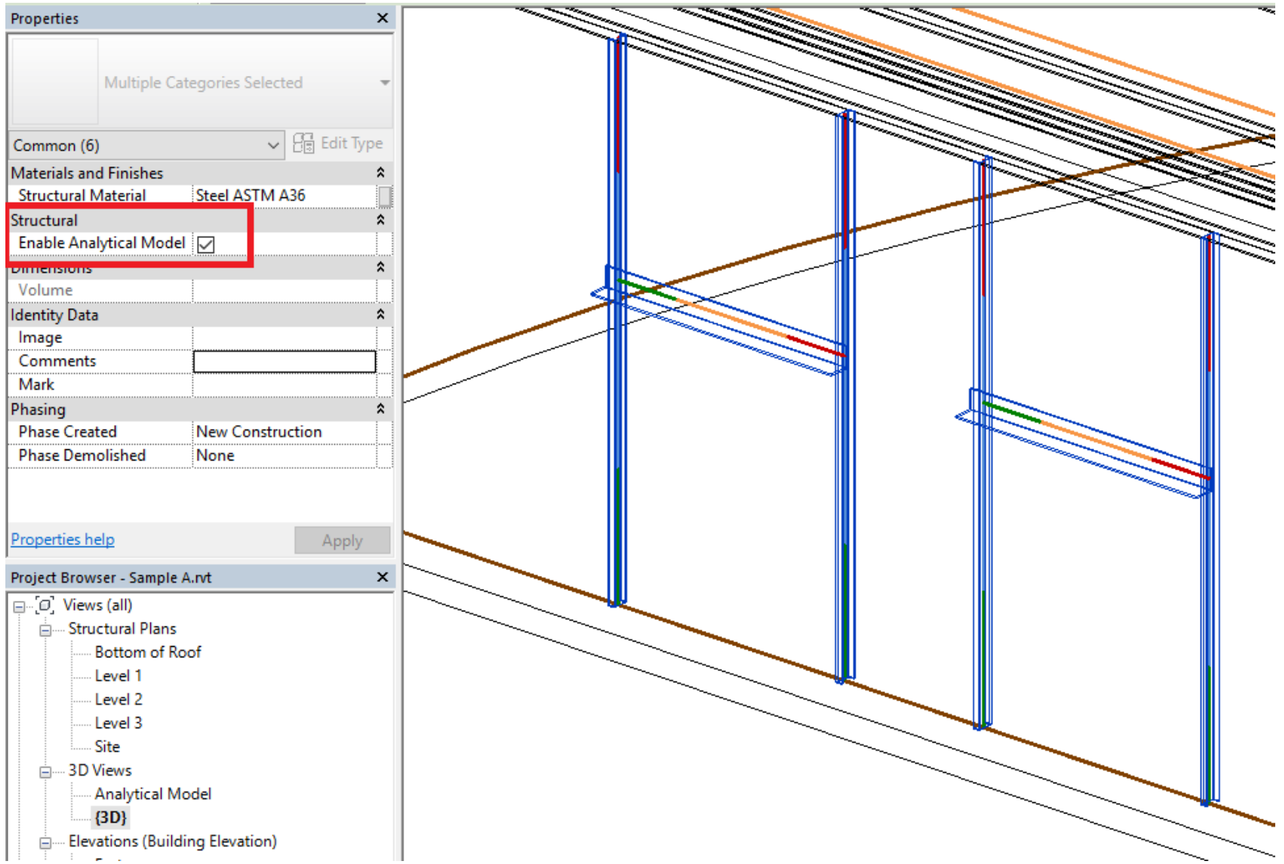
Some elements are not part of the “Building” analysis and design

Omitting Miscellaneous Elements



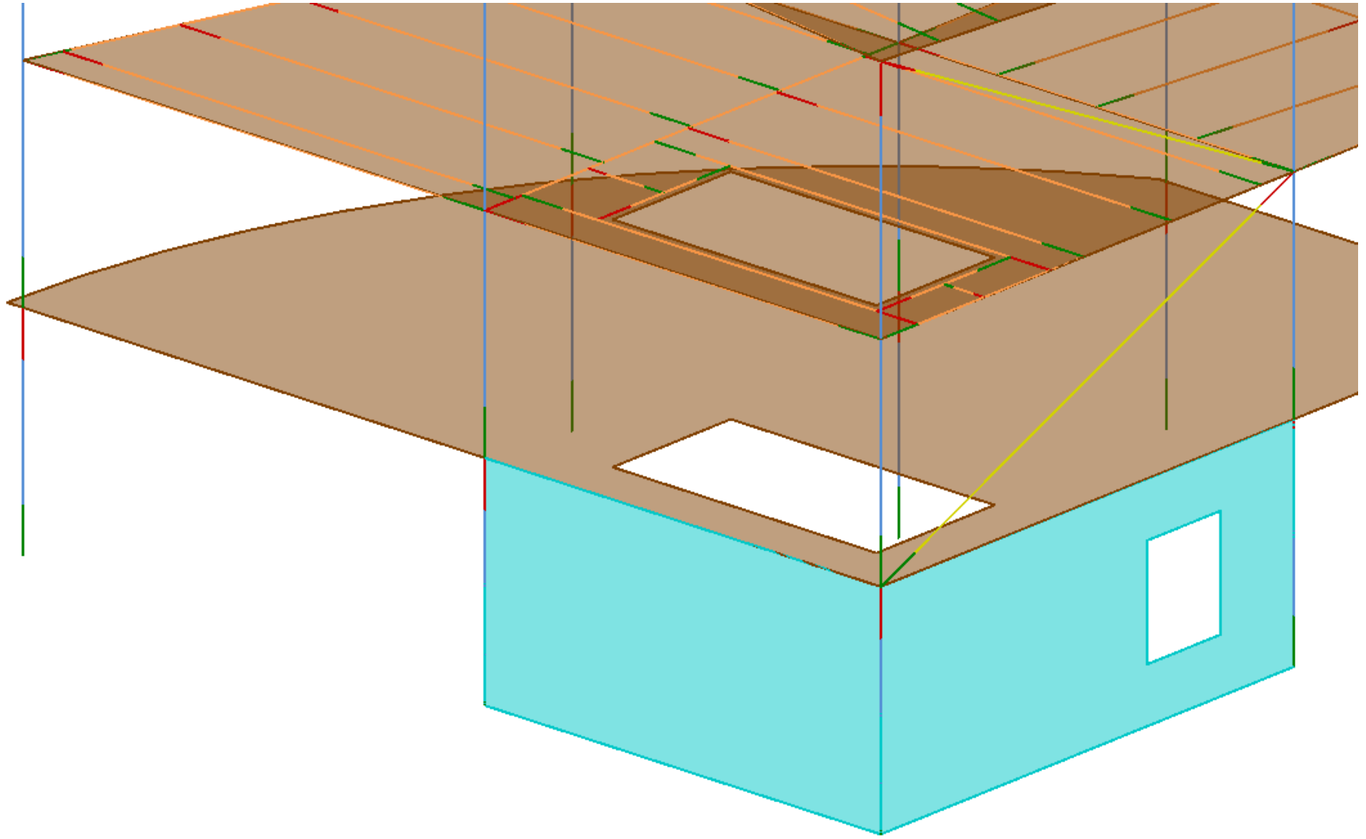
Fascia steel, nonstructural walls, and small openings are important for drawings but they hinder the analysis

Omitting Miscellaneous Elements



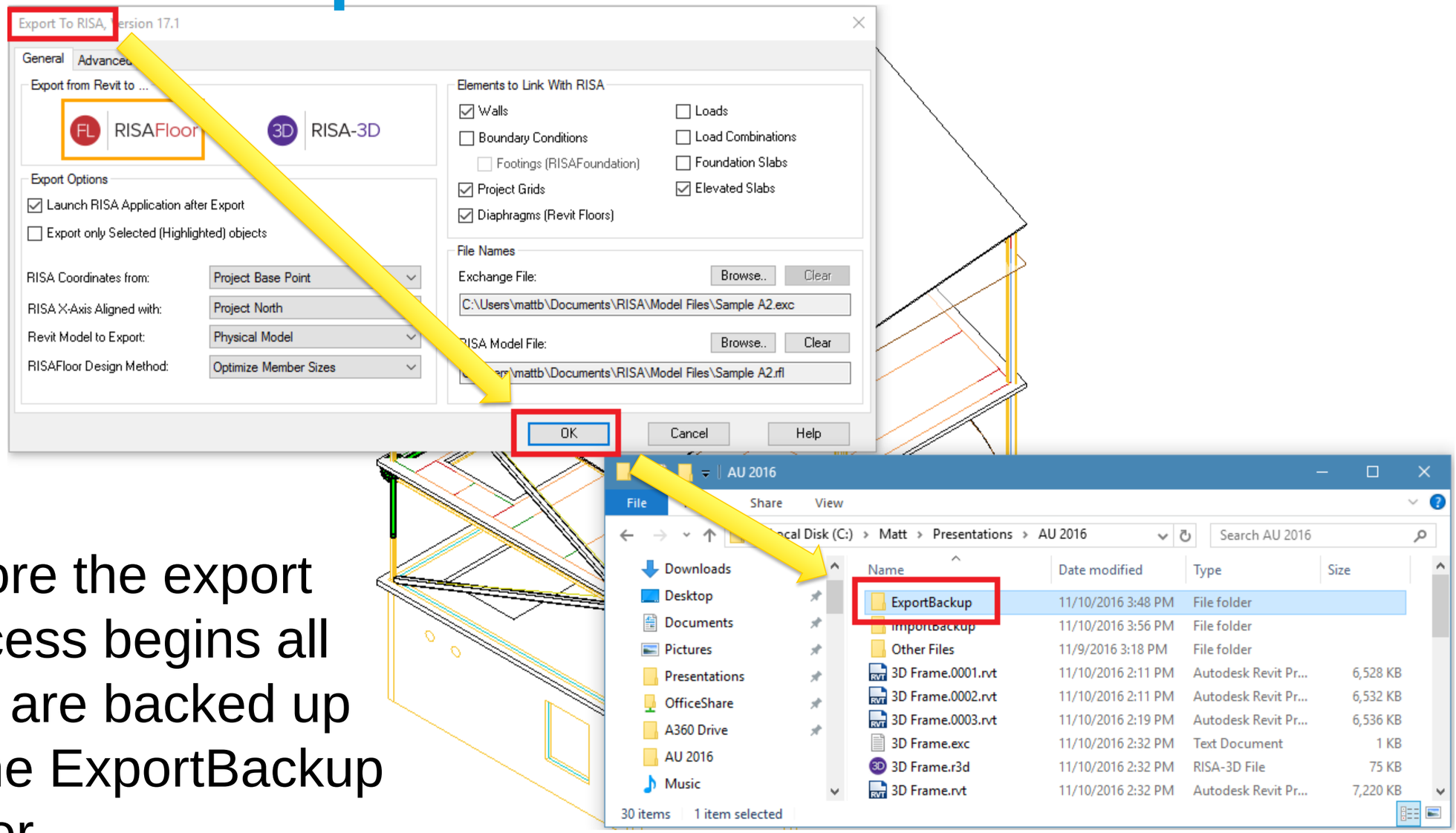
Uncheck the “Enable Analytical Model” box for these elements

Omitting Miscellaneous Elements



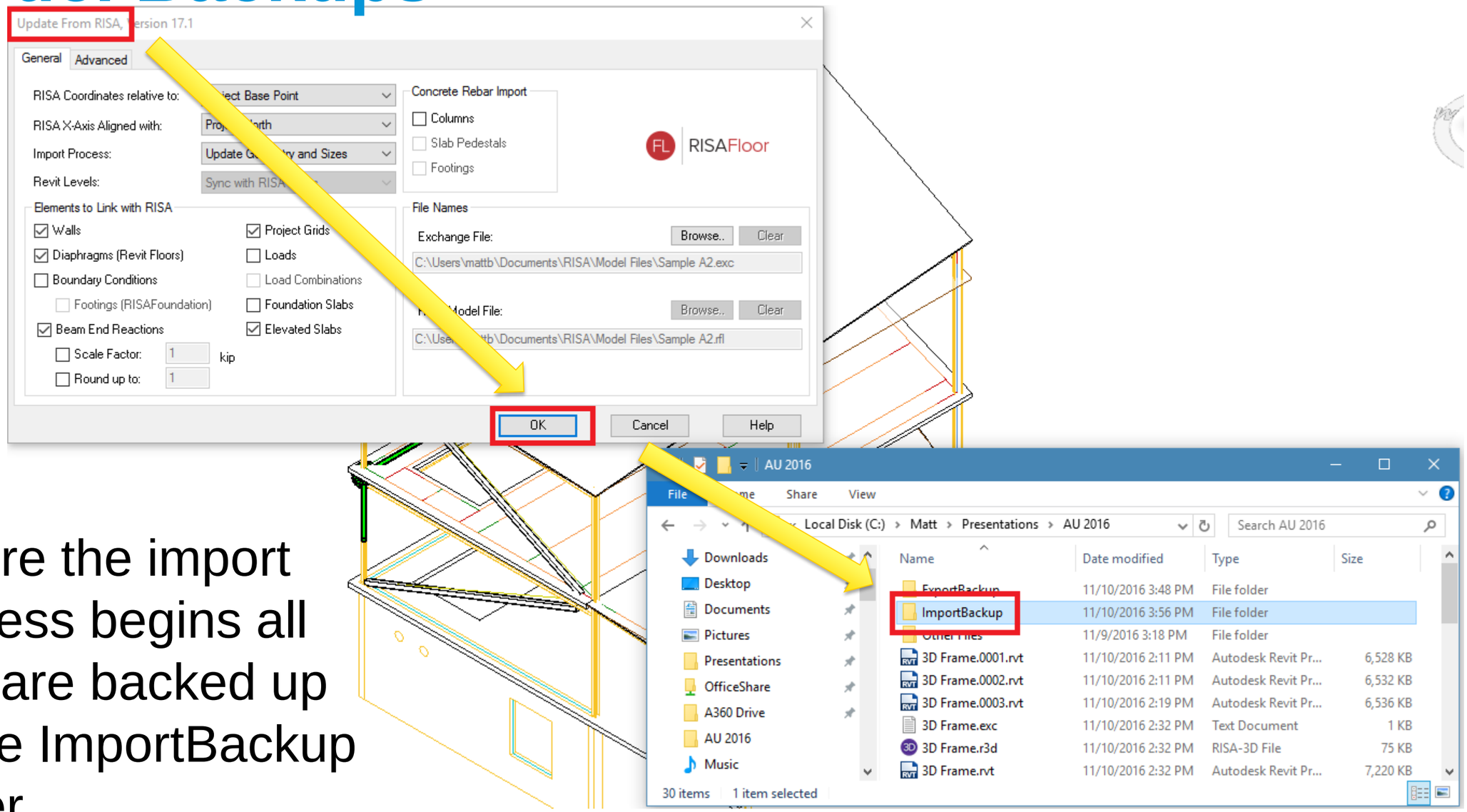
All “Non-Analytical” elements are ignored by the RISA-Revit Link

Model Backups



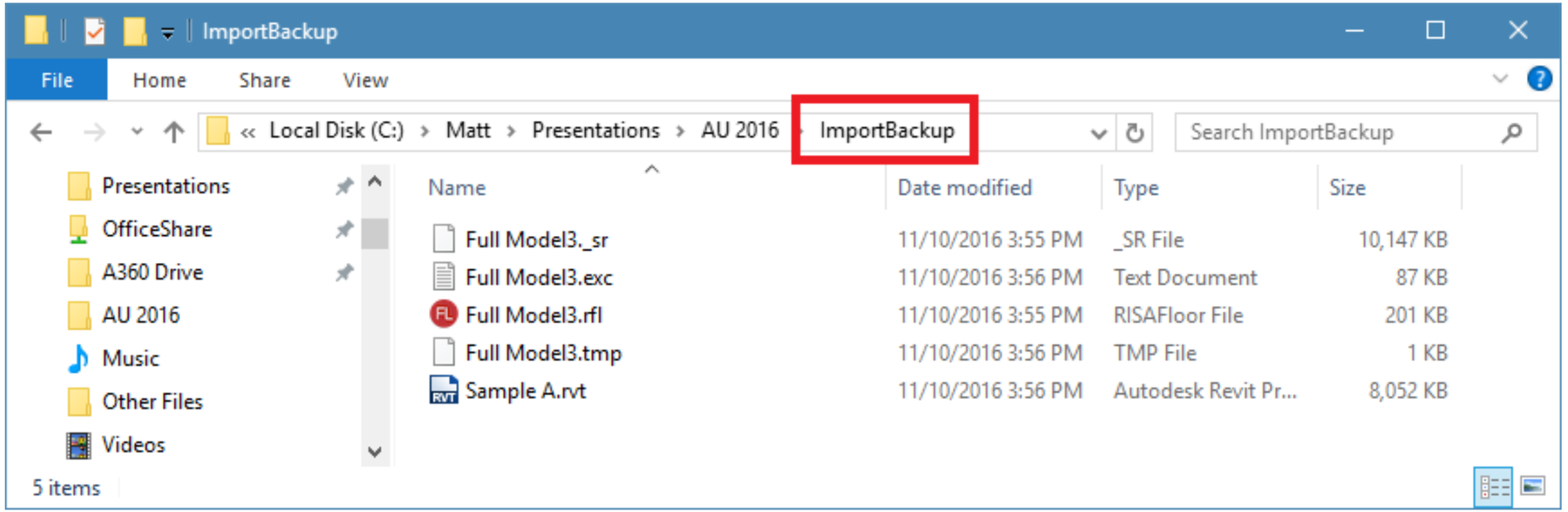
Before the export process begins all files are backed up to the ExportBackup folder

Model Backups



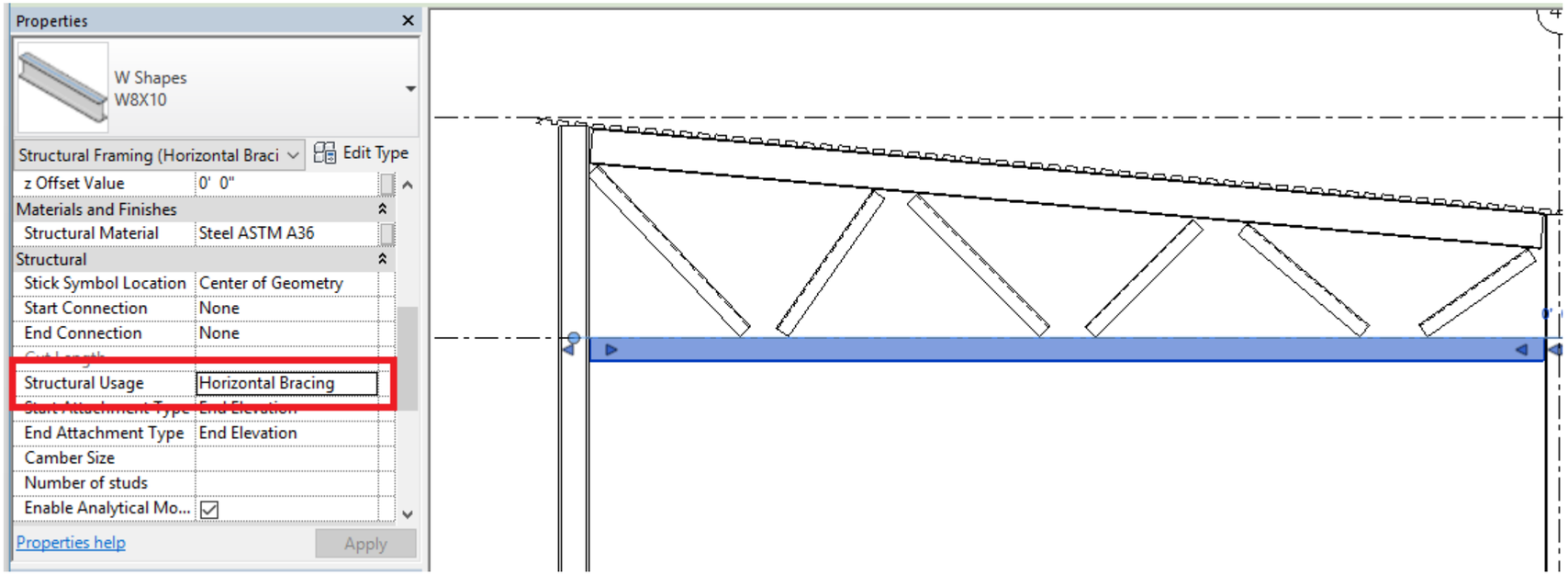
Before the import process begins all files are backed up to the ImportBackup folder

Model Backups



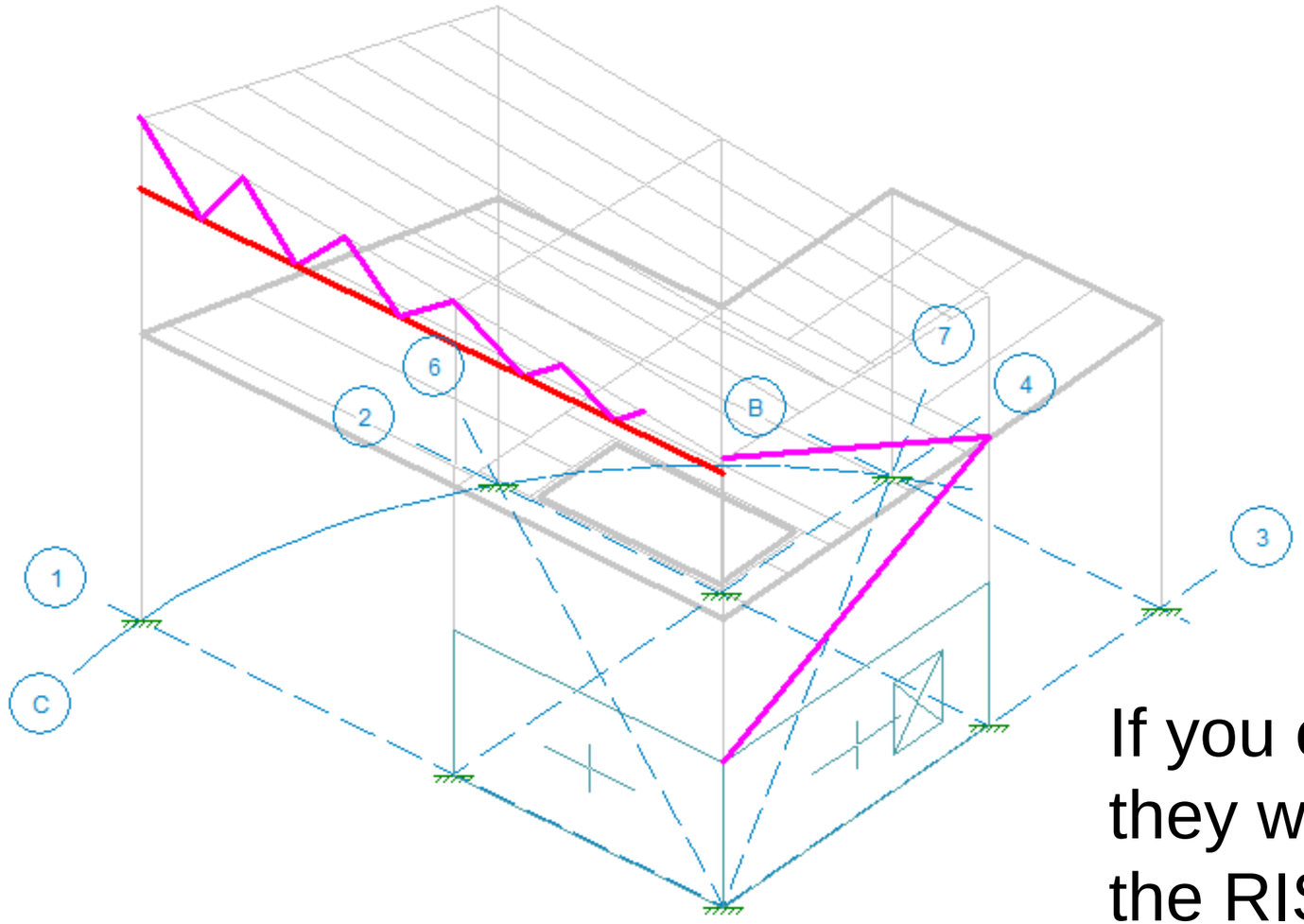
This backup allows you to “Undo” an import or export by replacing all of your files (.rvt, .exc, .rfl, .r3d, etc…) with what they were immediately before the import/export operation

RISA-3D Only Members



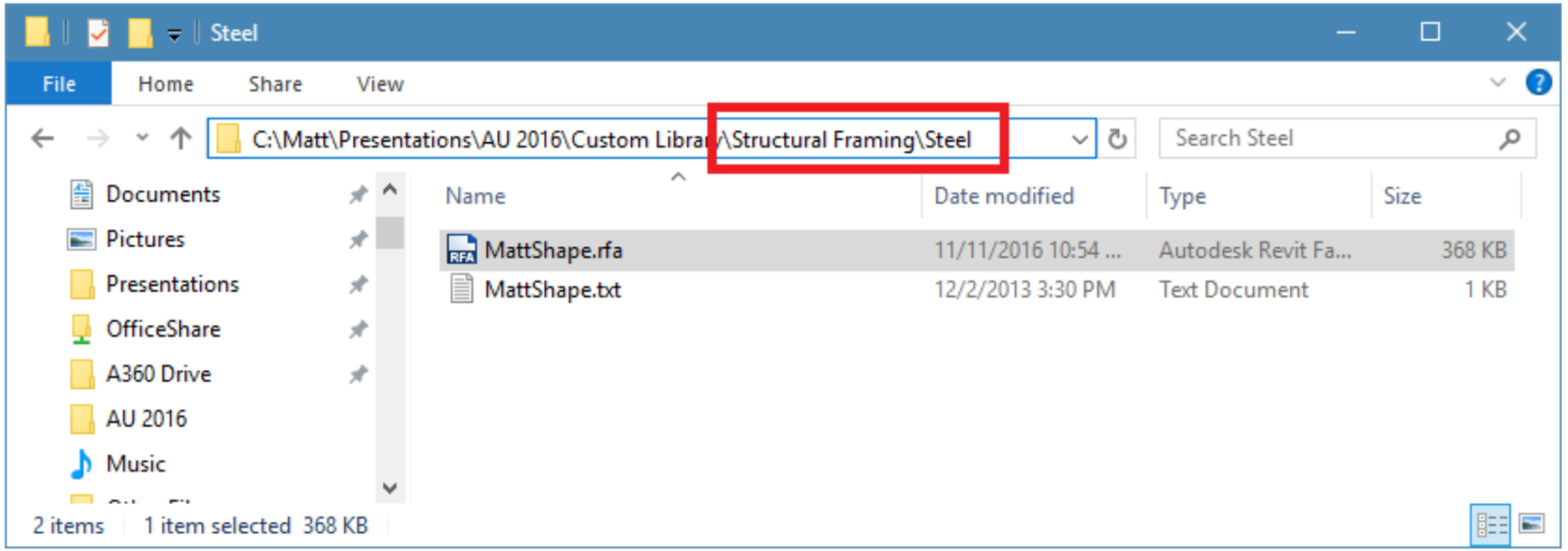
Beams designated as “Horizontal Bracing” and Braces in Revit both export to RISA-3D only.

RISA-3D Only Members



If you export these to RISAFloor they will appear when you go to the RISA-3D model through the Director menu

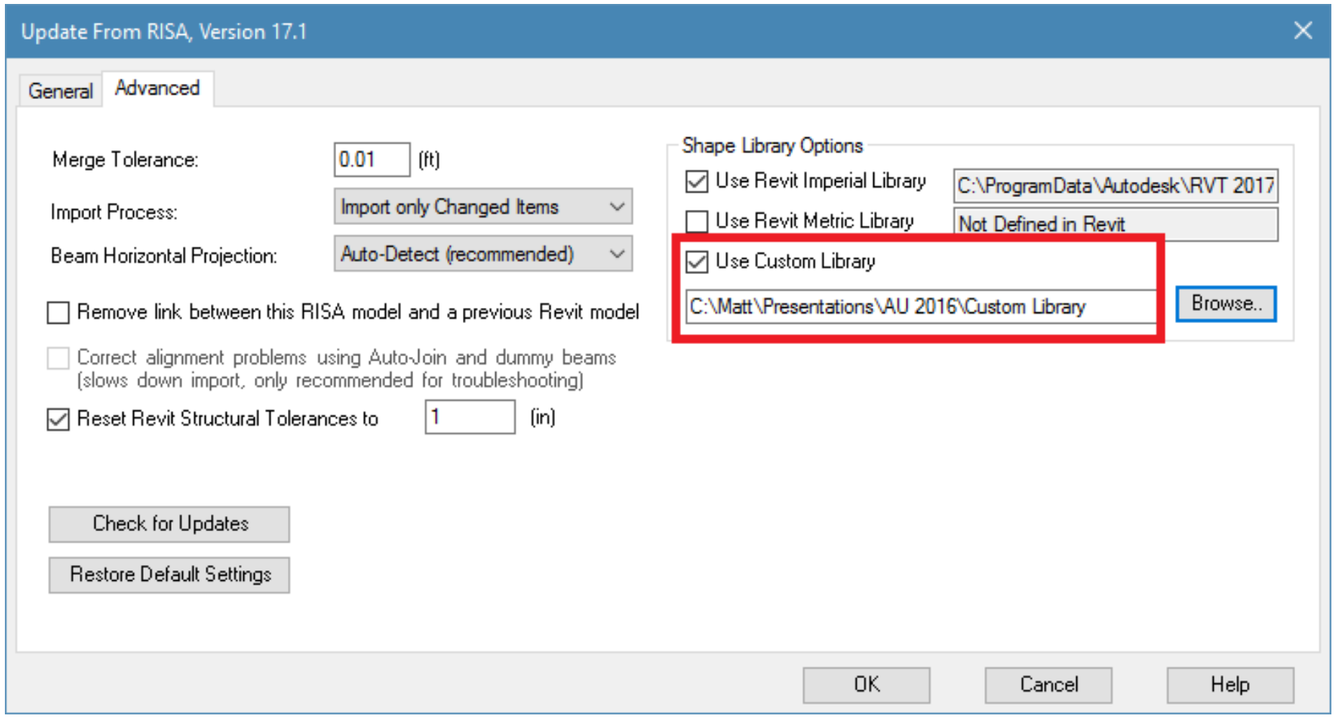
Custom Families



Custom families must be placed in the same folder structure as the Revit Default Families.

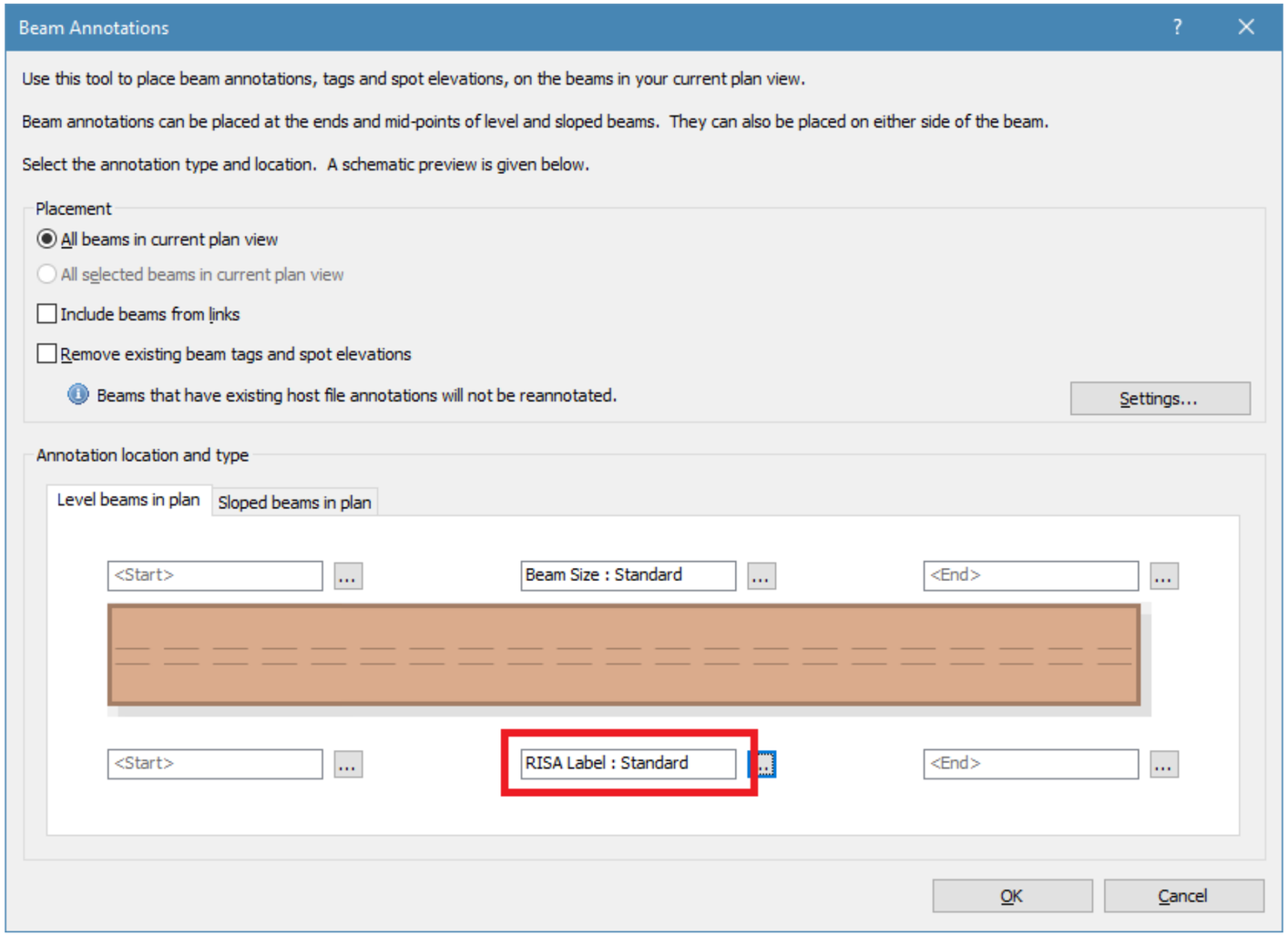
For example, a Steel Beam family must be under:
…\Structural Framing\Steel\

Custom Families

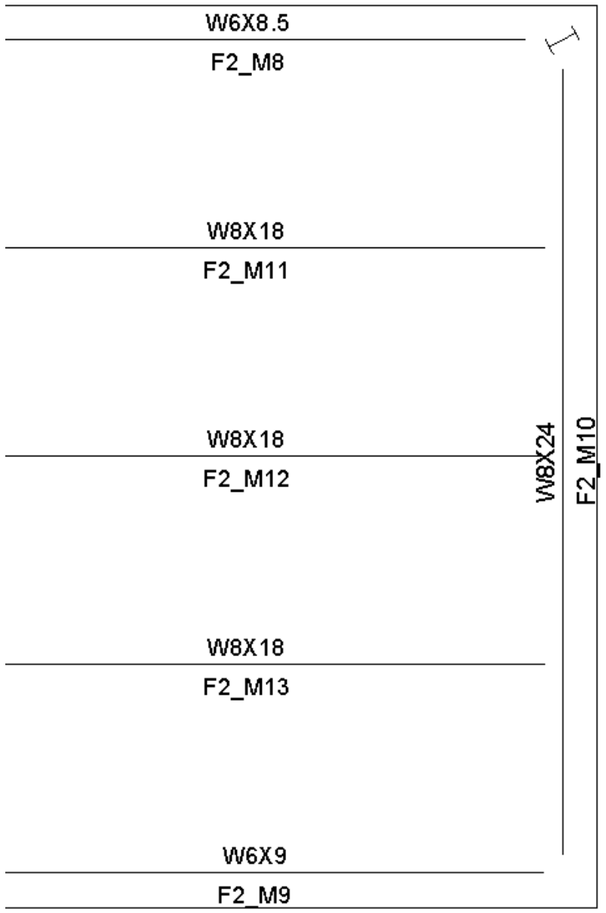


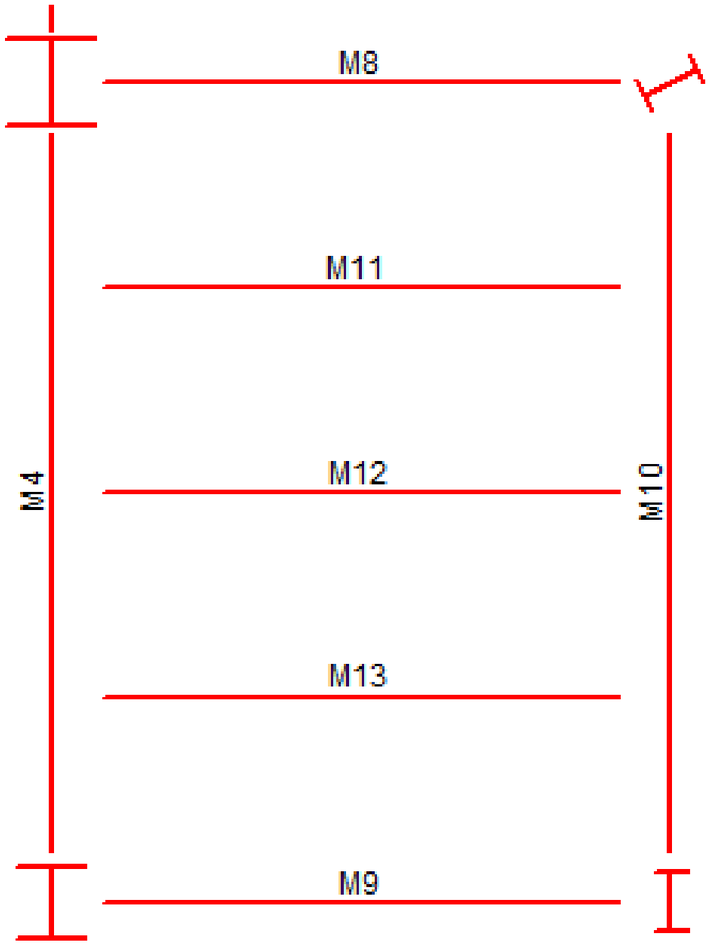
In the Import Options, Browse to the folder one level up from the “Structural Framing” folder

Showing RISA Member Labels in Revit

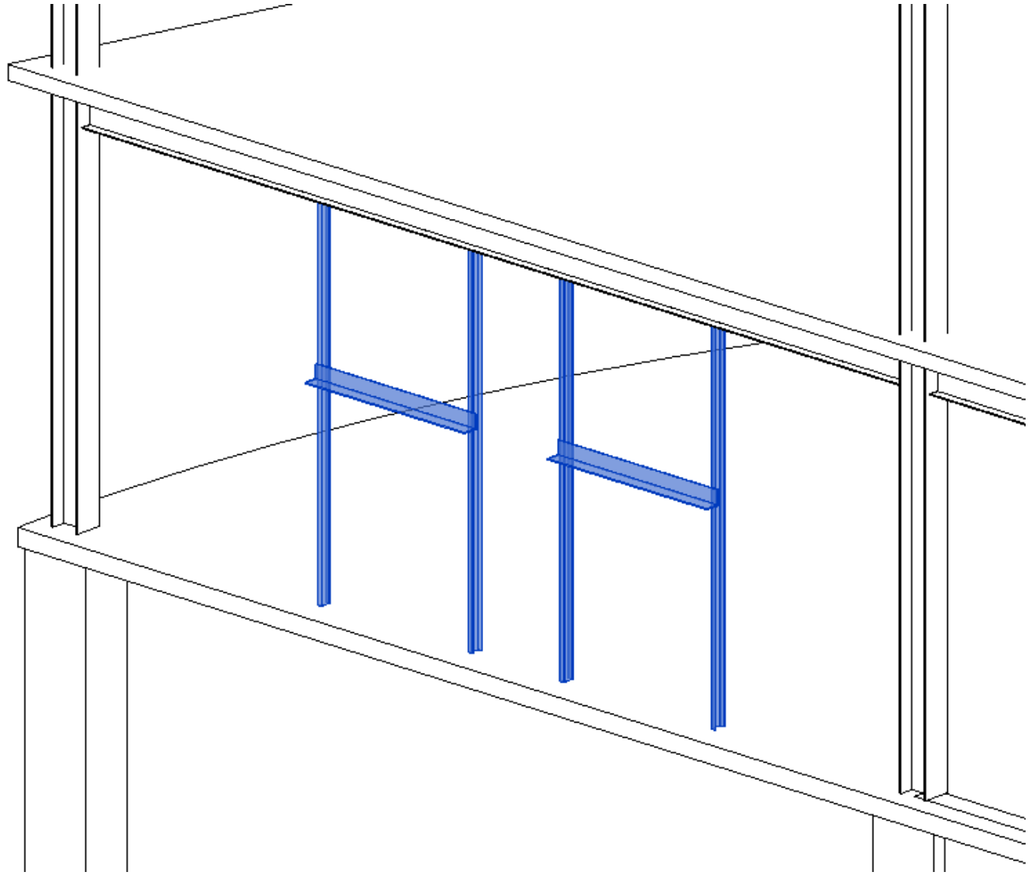


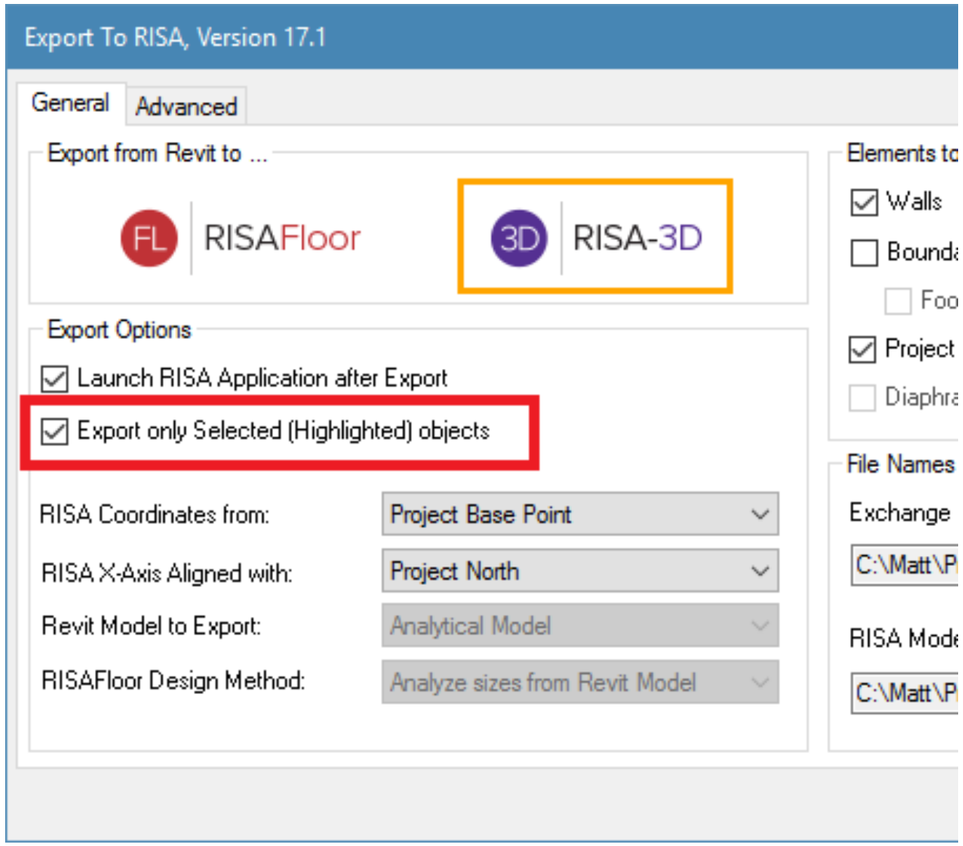
Showing RISA Member Labels in Revit





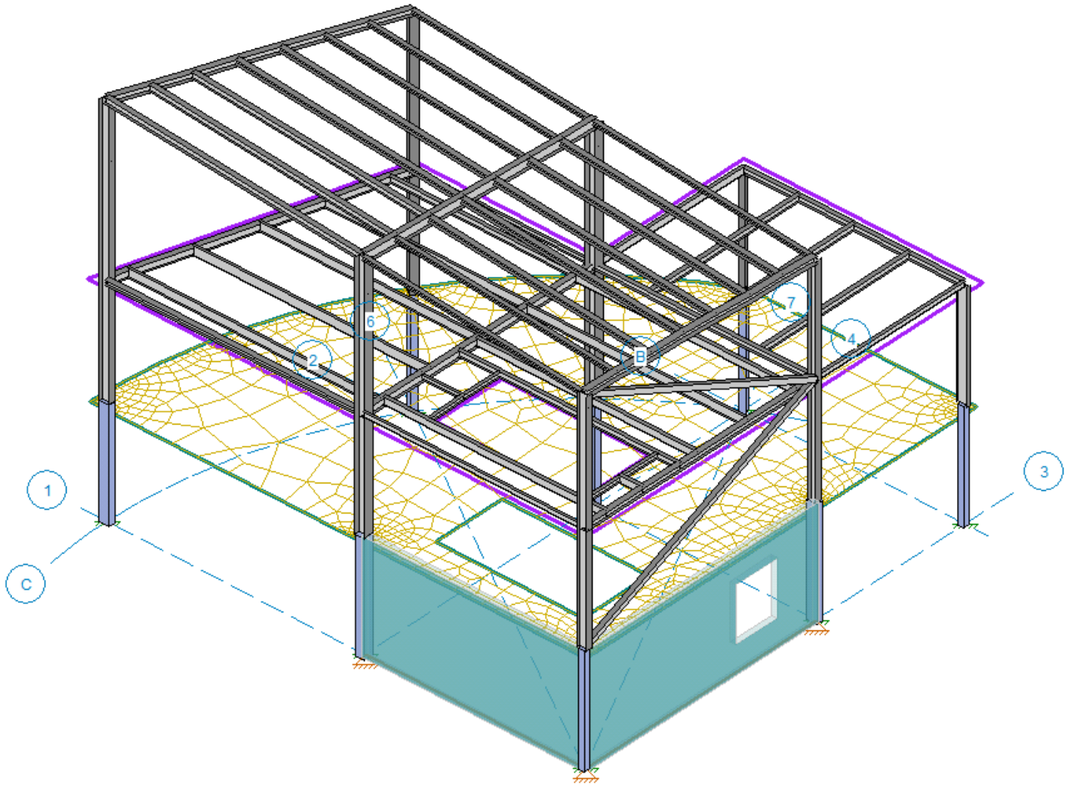
Linking Multiple Models



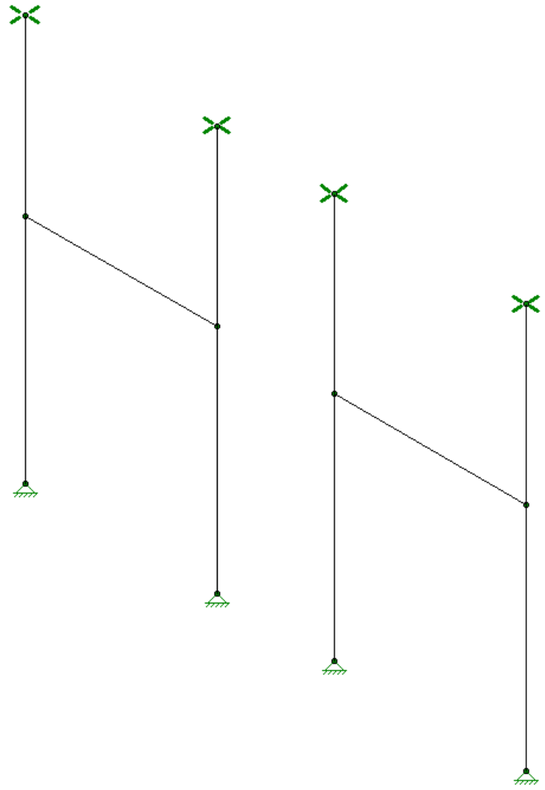


Portions of a Revit model may each be linked to different RISA models

Linking Multiple Models

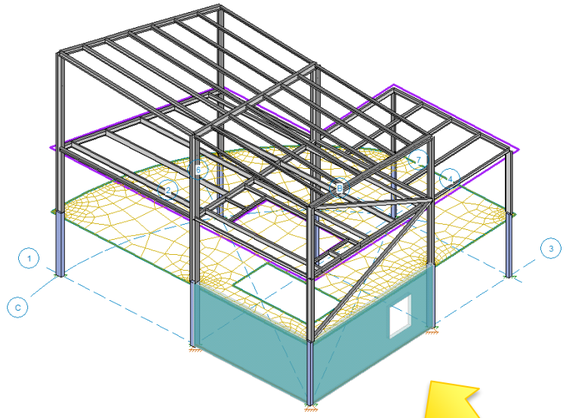


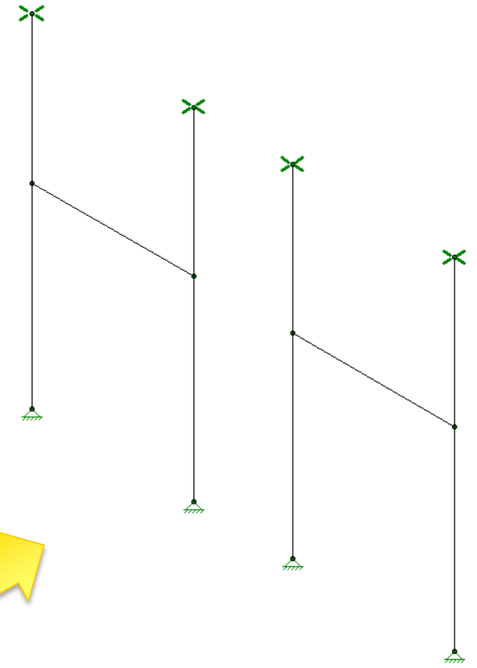
RISAFloor model of
Entire Building

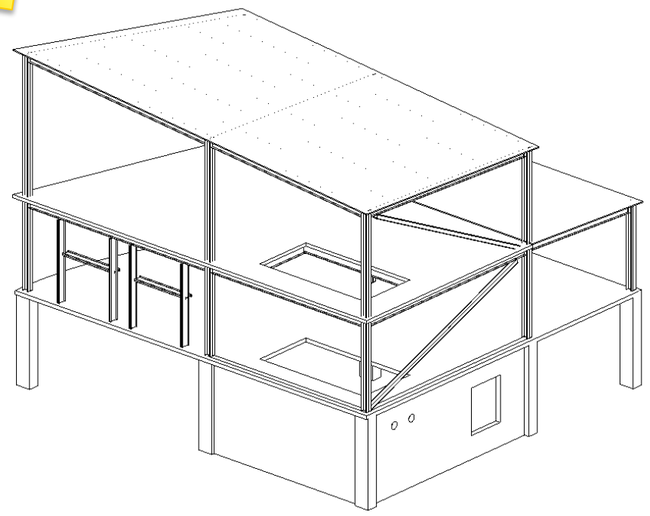


RISA-3D Model of
Misc Framing

Linking Multiple Models







Caution:

It is easy to make mistakes with this workflow

How did I do?

- Your class feedback is critical. Fill out a **class survey** now.
- Use the AU mobile app or fill out a class survey online.
- Give feedback after each session.
- AU speakers will get feedback in real-time.
- **Your feedback results in better classes and a better AU experience.**