

## RISA Webinar Q&A

## Using RISA to Design a Building From Foundation to Roof

June 3, 2010

- **Q**: Can you choose a semi-rigid diaphragm?
- A: Currently we only have rigid or flexible diaphragms as options. We are considering adding semi-rigid as an option in the future.
- 0: Do you need to use a particular block for the columns, and should all of the imported information be on one layer?
- A: Any block will work. You just need to make sure that it has an insertion point specified at its center. The imported information should be separated in layers as you can see in the "Import" dialog.
- **Q**: This wind load generator should be in RISA-3D.
- A: The wind load generation is also available for RISA-3D models that are not linked to RISAFloor. Within RISA-3D go to Insert > Wind Load. Automatic generation of wind or seismic loads require that you define Diaphragms within RISA-3D.
- O: Can you sort the code check via right click?
- A: Yes, if you right-click within a spreadsheet one of the options available is "Sort"
- **0**: Those toolbar buttons look different than mine?
- A: You can customize your toolbars by going to the Tools menu and choosing "Customize Toolbar". You can add or remove functions to customize the toolbar to meet your requirements.
- **Q**: How are the columns represented segment wise due to Revit transfer?
- A: It depends on how you have modeled the columns in Revit. In general, the link will translate the physical column segments literally but it is easy to adjust this in RISAFloor by controlling splices on column stacks.
- **Q:** Does RISA do column load corrections when calculating the loads and reactions?
- A: Everything in the model is done via finite element analysis so statics must always be obeyed. As a result, the column force must always match the reaction value.
- **0**: In the presented model of the 2 buildings does RISA recognize shielding effects and account for them?
- A: RISA conservatively does not account for shielding affects. Each diaphragm receives a full wind load as though it were standing on its own.
- **Q**: Does the column size generated match the pier size?
- A: Columns are designed separately from pedestals. The program forms no size correlation between them during optimization.

- Q: Does the Wind Load Generator combine Windward, Leeward and Roof pressures all in one load case?
- A: The wind load generator does combine windward and leeward pressures to determine a MWFRS load. Currently it does not address the uplift (roof) pressures.
- **Q**: Which program designed the column sizes?
- A: Gravity columns were designed in RISAFloor. Lateral columns were initially sized in RISAFloor based on the gravity loads applied to them. These columns are then designed in RISA-3D for both the gravity and lateral loads.
- 0: I did not recall our stipulating the column material for all the floors...did I miss that or was it skipped?
- **A:** The model was imported from Revit. The materials had been predefined on the Revit side. However, you can always adjust them in RISA after importing.
- **Q**: Which version of RISAFloor was used?
- A: Version 4.1.3.1 Beta. This is a special version that we recently released specifically for use with the Revit 2011 link. It has additional functionality enabled for the Revit 2011 Link.
- **Q:** How does the round tripping with Revit affect loading that was placed in the Revit model? Can the Revit loading information be transferred into the RISA model and then back into the Revit model?
- A: Yes, but with some limitations. Revit inherently handles loading differently from RISA, so it's not always apples-to-apples. You can read more about this in the RISA-Revit Link User's Manual.
- **Q:** What versions of each program are required to transfer models back and forth from program to program?
- A: The RISAFloor, RISA-3D, and RISAFoundation versions must all be matched. The current matched versions are 8.1.3 (3D), 4.1.3 (Floor), and 2.1.3 (Foundation) respectively. RISAFloor 4.1.3.1 Beta also works with 8.1.3 and 2.1.3.
- O: Could this have been analyzed with RISA-3D and Foundation only? By importing a DXF floor by floor into RISA-3D? If not, which parts would not work?¬
- A: The DXF importer in RISA-3D will not import on a floor-by-floor basis, since RISA-3D has no concept of "floors". RISA-3D's DXF importer is designed to import 3-dimensional CAD models and is typically used for more complex industrial geometries. Also, RISA-3D on its own does not support two separate diaphragms at the same level, nor does it support steel joists or composite steel beams.
- **Q**: Can you freeze individual beam designs?
- A: You can freeze individual beams in RISAFloor by defining them explicitly (i.e. call out a W24x55 instead of "Wide Flange"). There is an option to freeze the entire model in RISAFloor in the Global Parameters/Solution Tab as well.
- **Q:** For columns that are not part of the lateral force system, do they pick up any secondary forces due to sway of the lateral force system?
- A: Columns that are defined as "Gravity" do not pick up the "leaning column effect." If you wish to account for this you can always define the columns as Lateral. If they are defined with a pinned base then they will contribute negligibly to the lateral force system in RISA-3D but they will pick up the secondary effects.

- **Q:** Does RISA currently allow for API exchange of data or are the spreadsheets (cut and paste) the only way to get data out of the RISA model. I would like to try and export load information out of RISA into my design software.
- A: There is currently no RISA API. You can copy/paste from the spreadsheets or you can write a Flat File, which is a keyword delimited text output. You can write flat files by going to the "Print a Report" option.

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