



What's new

in PowerPack for Revit 2023.1.1

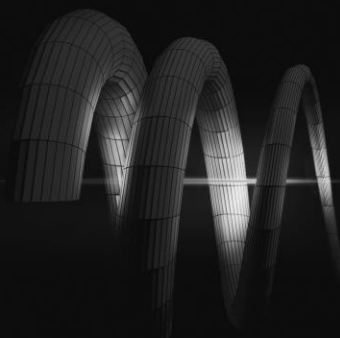


Table of Contents

1. Welcome to Graitec Powerpack for Revit 2023.1.1	3
1.1 General	3
1.2 Issue resolved.....	3
2. PowerPack Professional	4
2.1. Create Analytical Model on selection	4
2.1.1. Functionality	4
2.1.2. How to use the command	4
2.1.2. Benefits.....	5
2.2. Automate Analytical Model	6
2.2.1. Functionality	6
2.2.2. How to use the command.....	6
2.3. Analytical Assumptions.....	8
2.3.1. Walls	8
2.3.2. Curved Walls	9
2.3.3. Beams	9
2.3.4. Columns.....	10
2.3.4. Slabs/floors	10
2.3.5. Footings	11
2.3.6. Openings	11

1. Welcome to Graitec Powerpack for Revit 2023.1.1

1.1 General

GRAITEC is pleased to announce that the update for PowerPack for Revit 2023.1.1 is now available. This update adds multiple enhancements and new features in particular tools to help with the creation of the analytical model. Along with bug fixes that were affecting some geographic regions.



1.2 Issue resolved

A bug was discovered for the Spanish market that was causing the show clash button to go to the wrong coordinate. This issue has now been resolved in this update and the tool now works as expected.

2. PowerPack Professional

2.1. Create Analytical Model on selection

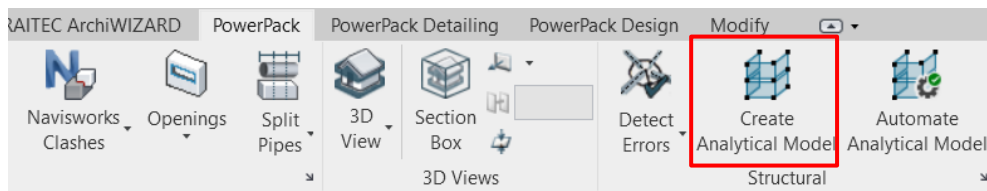
2.1.1. Functionality

Revit already allows you to create an analytical model from an existing physical model already modelled. It uses Dynamo scripts to do this, however, the tool is not fast enough and requires opening a window and several clicks.

That is the reason why we have created a direct command which allows the creation of an analytical model quickly on selection.

2.1.2. How to use the command

The tool is available in the **Powerpack Ribbon => Structural => Create Analytical Model**

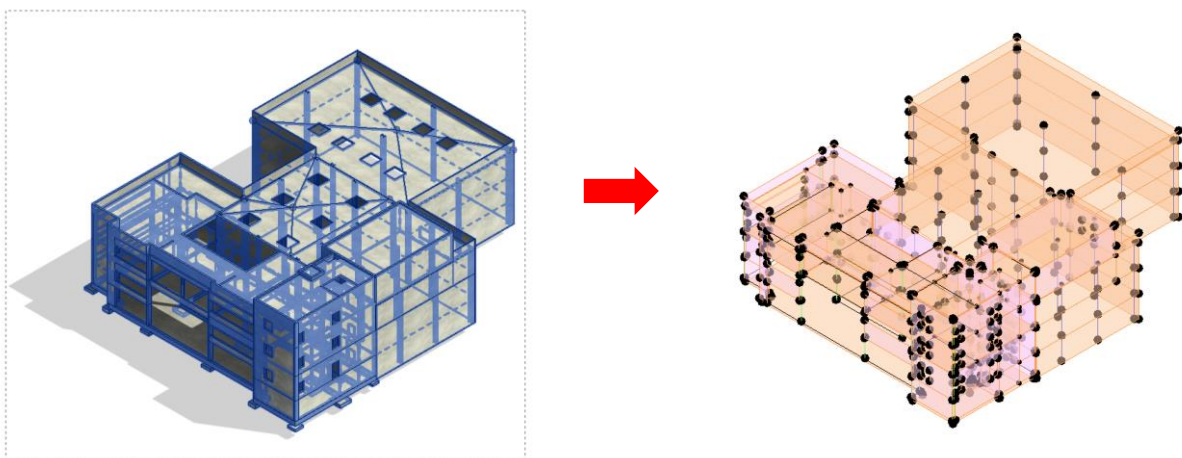


Command “Create Analytical Model” in Powerpack Ribbon

This tool creates analytical elements from a selection. By clicking on the command “Create Analytical Model”, you can select the structural elements you want to transform into an analytical model. It will generate analytical members, panels, and openings for selected pre-existing structural elements.

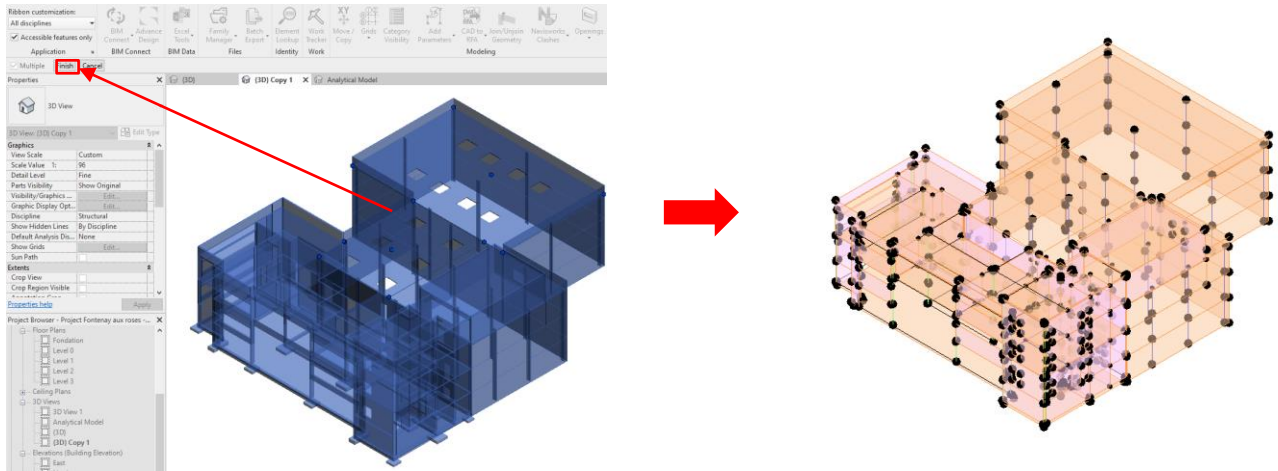
There are 2 methods available to use this tool:

- **Method 1: Selecting elements => Click on “Create Analytical Model” command**



Method 1 to use the command

- Method 2: Click on “Create Analytical Model” command => Selecting elements => Click on “Finish”

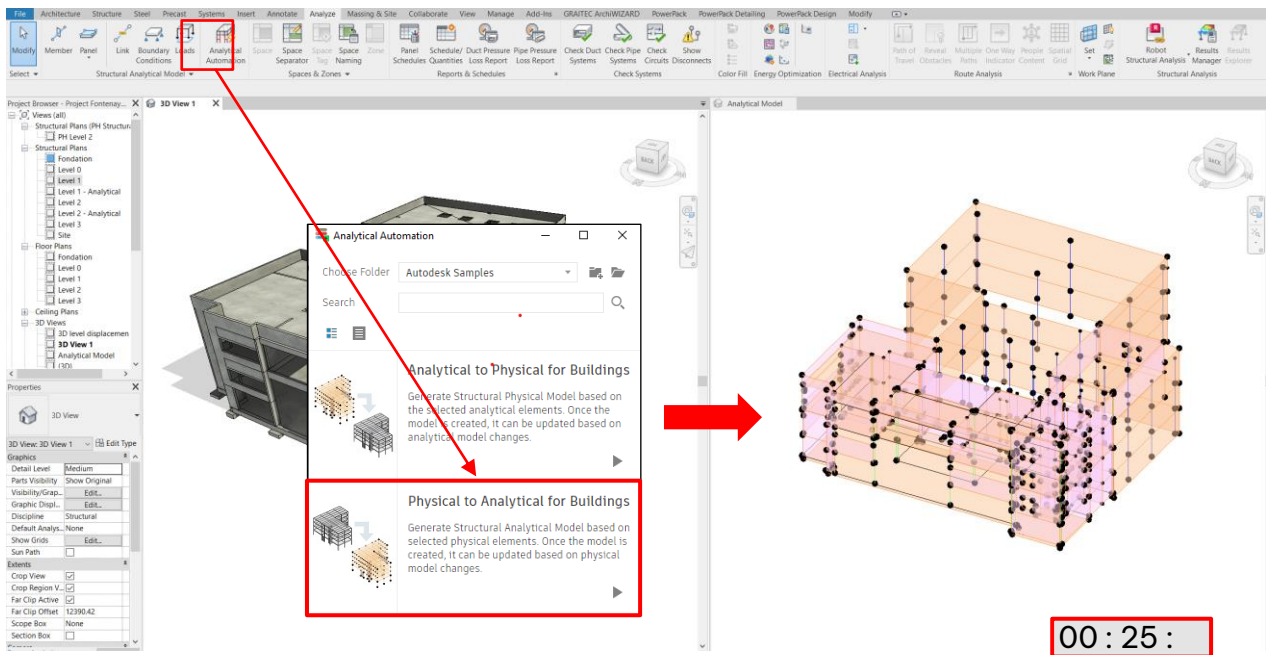


Method 2 to use the command

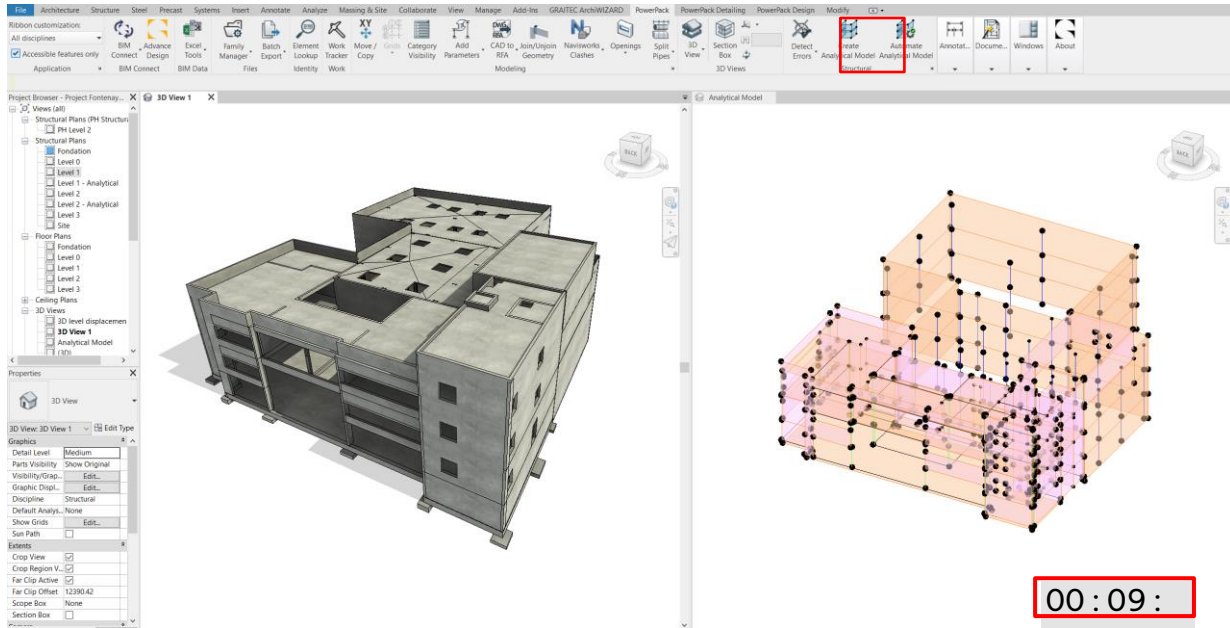
The analytical model will be generated automatically using one of the two methods. The result is an unconnected model on which users will have to make some modifications to connect the model using the Align option and others.

2.1.2. Benefits

This tool speeds up the process of creating an analytical model compared to native Revit method by using Dynamo script in Revit. **Our tool is 2 times faster than the Revit method.** See the comparison below:



Duration of the process using Revit “Analytical Automation”



Duration of the process using PowerPack “Create Analytical Model”

2.2. Automate Analytical Model

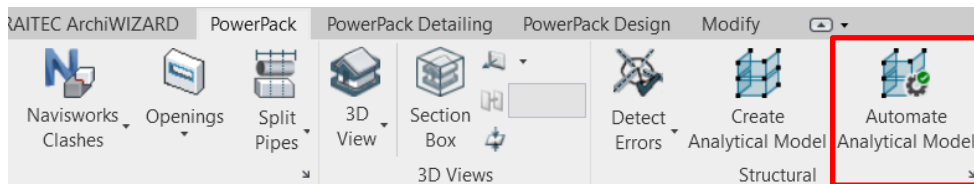
2.2.1. Functionality

To facilitate the creation of analytical models for engineers in Revit, we have designed this tool which allows you to create an analytical model in real-time while modelling a building. It is similar to the Revit 2022 real-time creation method.

This new command automates the process of generating an analytical model from the physical model. By activating this tool, analytical elements will be added and associated with newly created structural elements. Of course, keeping the characteristics of the physical element.

2.2.2. How to use the command

The tool is available in the **Powerpack Ribbon => Structural => Automate Analytical Model**



Command “Automate Analytical Model” in Powerpack Ribbon

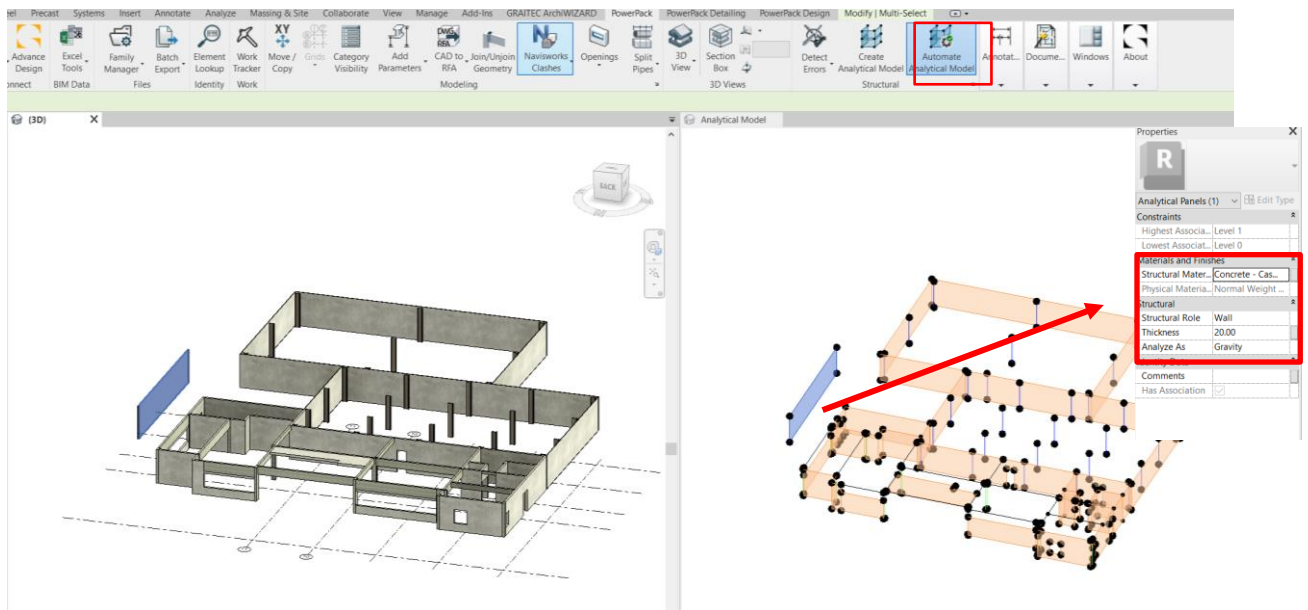
The button highlighted means that the command is activated.



Command activation

Once the command is activated, all the information of newly created physical elements will automatically be updated to their analytical elements. Furthermore, any changes made to the physical model will automatically update the analytical model:

- Creating structural elements;
- Moving structural elements;
- Adding opening.



Information on the analytical elements is automatically updated

Unlike the process of creating analytical members and panels using Revit's “*structural analytical model*” tools, this method does not require users to redefine the material or structural role. This saves time and is easy to use, while also helping to avoid potential errors.

As long as the command is active, all the structural elements created are added. It is necessary to deactivate the command when you do not want to create an analytical model by clicking on “Automate Analytical Model”. The button highlighted means that the command is activated.

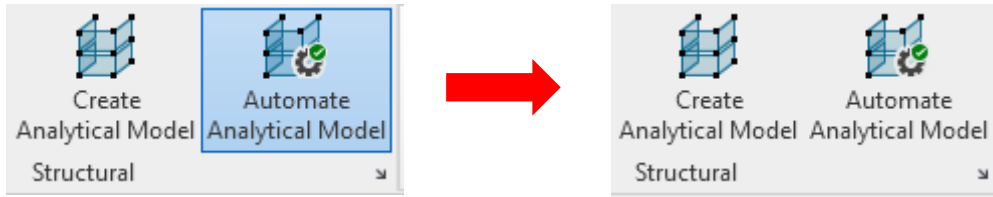


Figure 9 – Deactivate the command

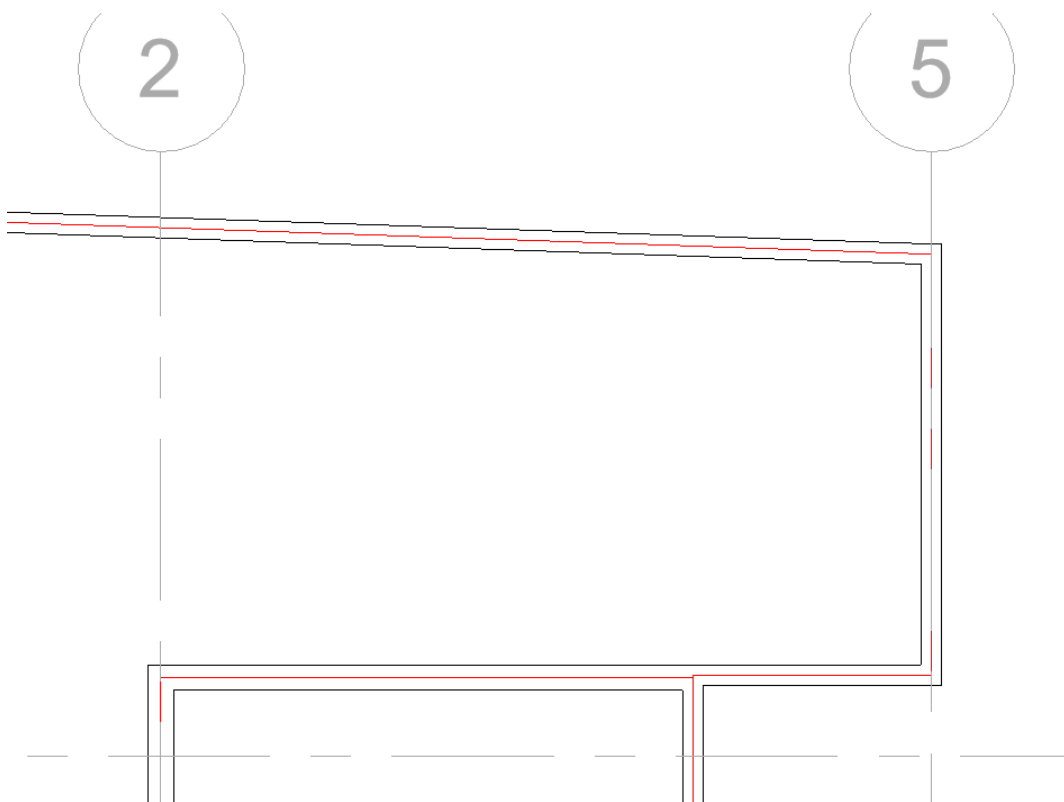
2.3. Analytical Assumptions

When using “Create Analytical Model”, the geometric characteristics and materials used are preserved. Furthermore, the analytical model is associated with its structural counterpart. However, it will not update automatically with the structural model, so changing the parameters in one of the two models does not change them in the other. Same for elements added after executing this command.

When using “Automate Analytical Model” it is important to know that all the elements created when the command is activated are connected.

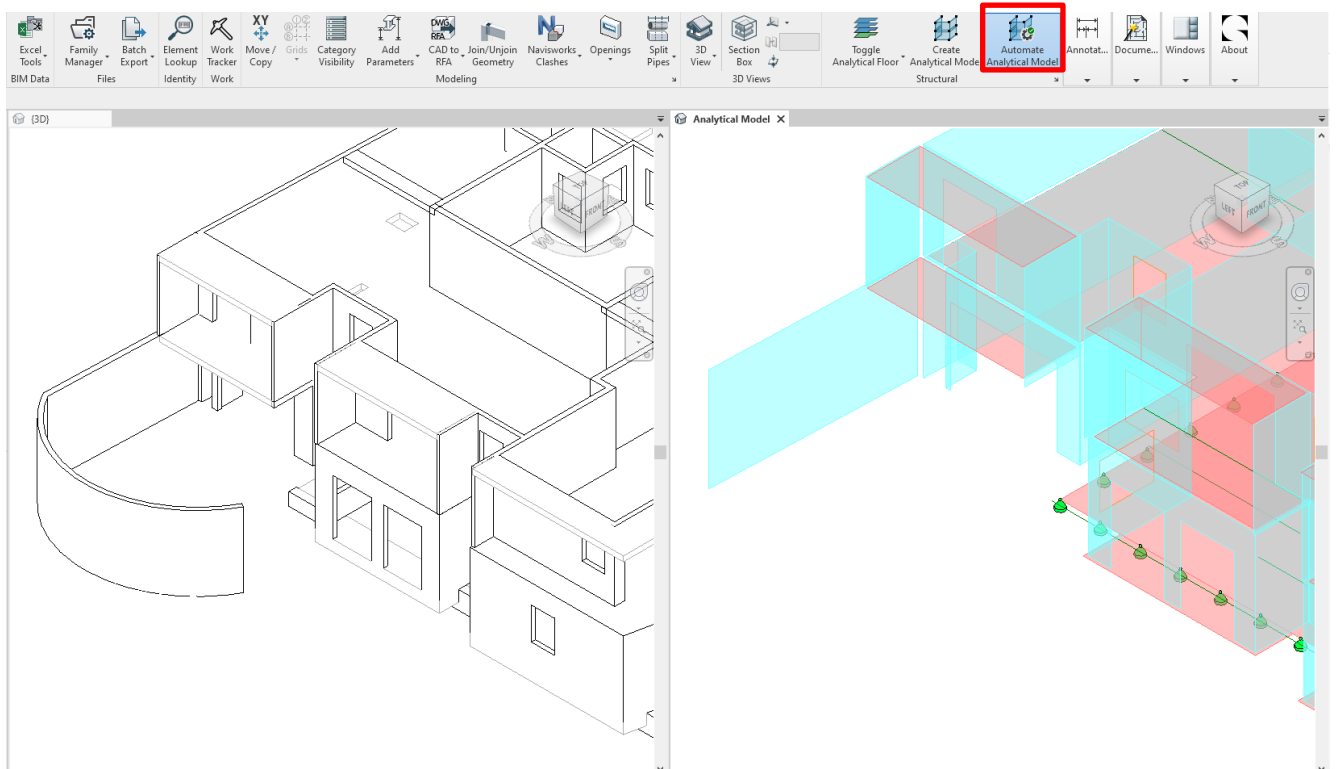
2.3.1. Walls

Walls created by both commands are converted to an analytical panel at the axis/centreline of the wall.



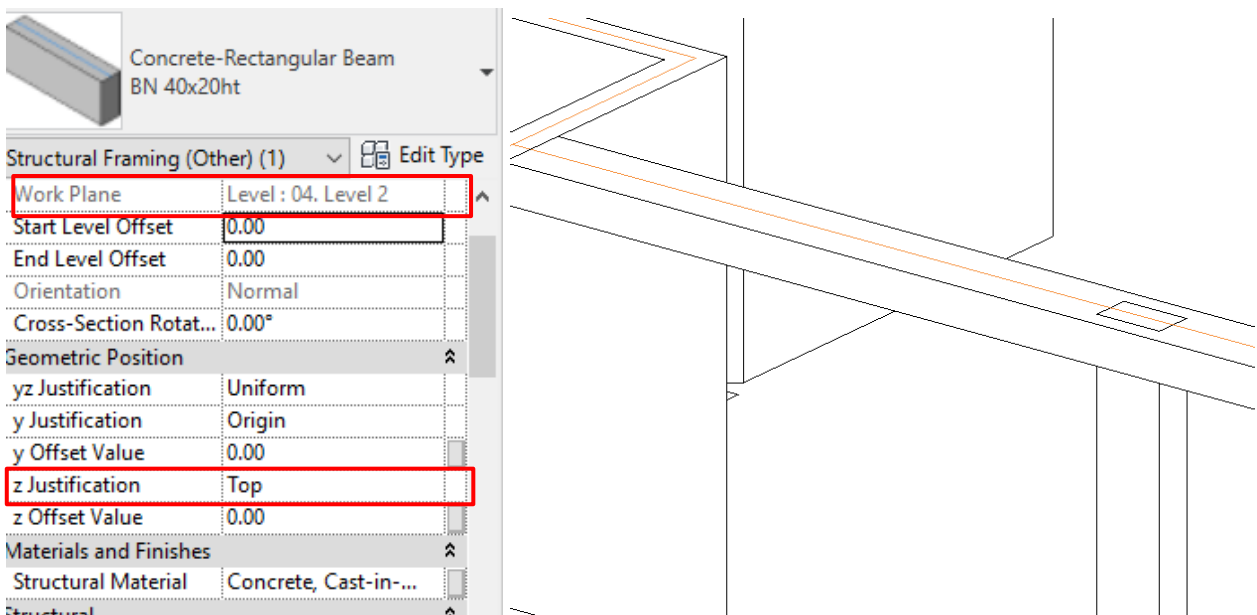
2.3.2. Curved Walls

Curved walls are currently not supported.



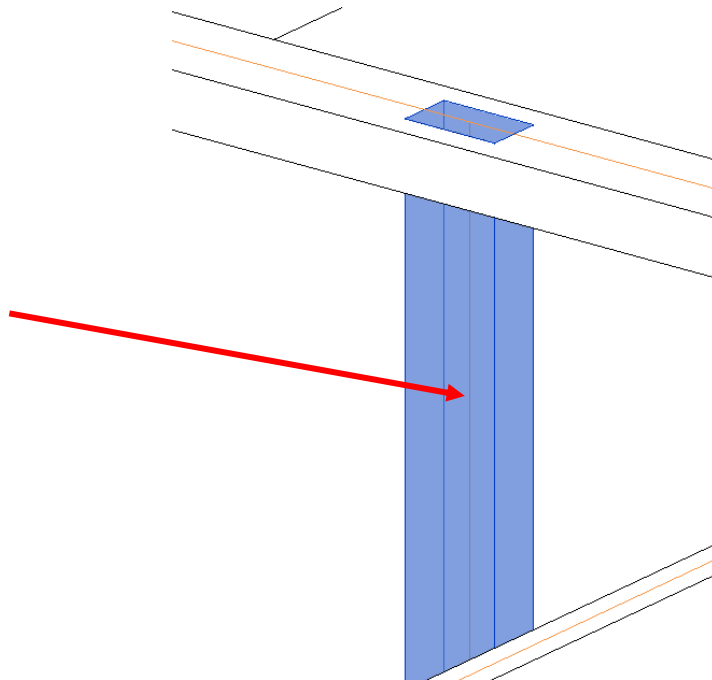
2.3.3. Beams

Beams are converted to an analytical member according to the “z justification” point chosen at the level where they are placed.



2.3.4. Columns

Columns are converted automatically to an analytical member at the level where they are placed. The analytical member is at the center of the element.



2.3.4. Slabs/floors

Slabs/floors are converted automatically to an analytical panel at the level where they are placed.

Properties

R

Analytical Panels (1) Edit Type

Constraints

Highest Associated L...	04. Level 2
Lowest Associated Le...	04. Level 2

Materials and Finishes

Structural Material	Concrete - Cast-in-...
Physical Material Asset	Normal Weight Concr.

Structural

Structural Role	Floor
Thickness	20.00
Analyze As	Gravity

Identity Data

Comments

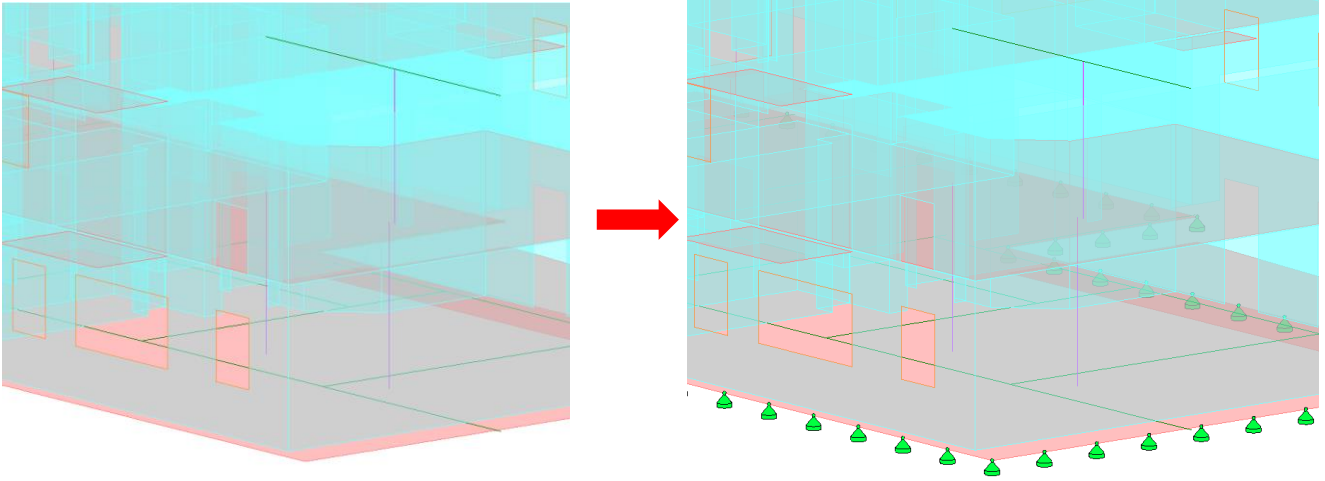
Has Association

04. Level 2
553

03. Level 1
283

2.3.5. Footings

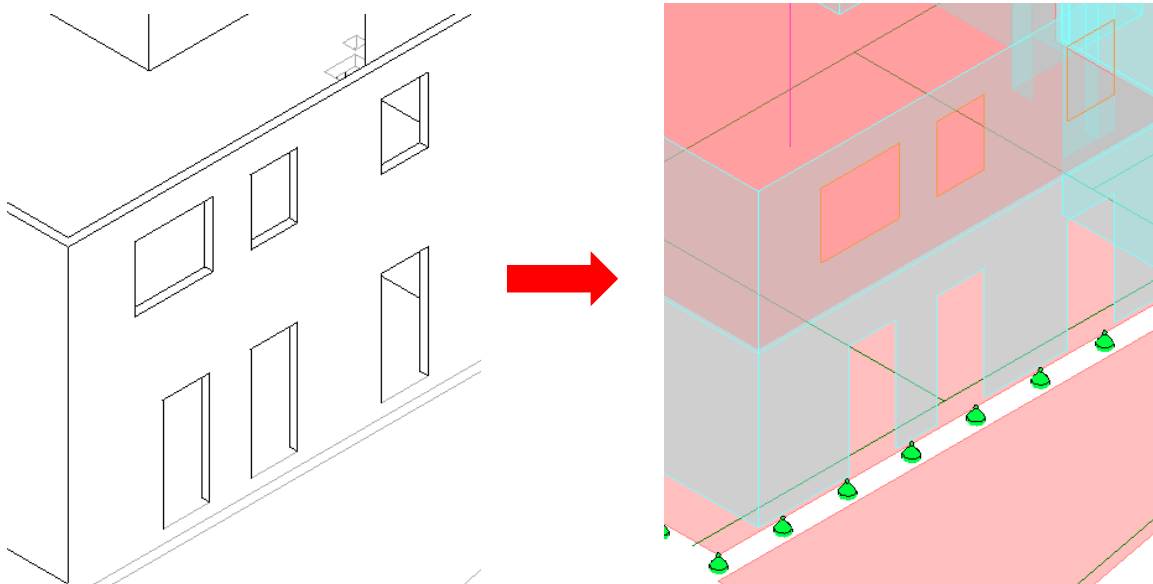
Footings are not supported by these commands. You need to set them through boundary conditions tools.



2.3.6. Openings

2.3.6.1. Using “Create Analytical Model”

All openings in the physical model are realized when using this command. By face, shaft, wall, vertical, family openings, windows, and door openings are all supported.



2.3.6.2. Using “Automate Analytical Model”

Adding openings (By face, shaft, wall, vertical, windows, and door openings) to the physical model is updated automatically on the analytical model.

