

USING THE REVIT PLUGIN v17.0 WITH DIANA FINITE ELEMENT ANALYSIS

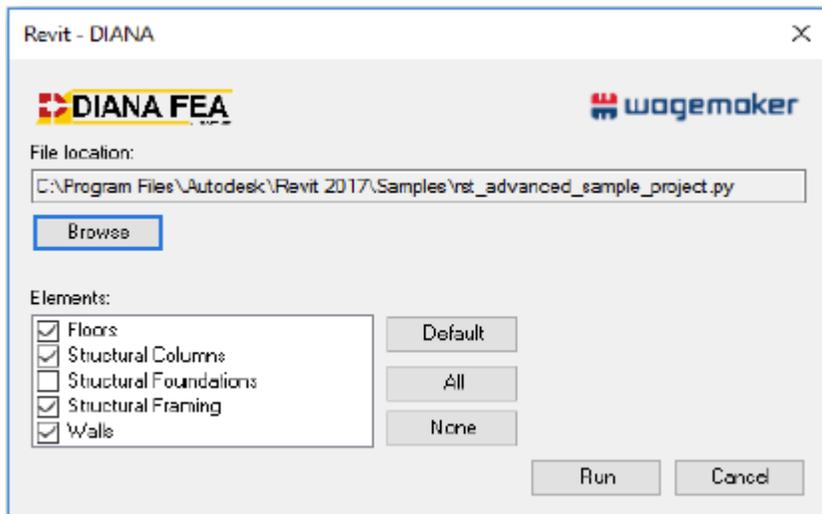
Please note that the plug-in only works in a Revit project and not families. The project must be saved to run the plug-in.

METHOD OF USE

Once the plugin is installed, you can find it in the Revit DIANA FEA panel under Add-Ins as REVIT DIANA.



When clicking on the REVIT DIANA button the following menu appears:



(Nb. The plug-in works only in saved project files. So keep in mind that the active document is a project and that the project is stored)

In this menu the 'File location' shows the default location of the project. The output file (*.py) will be stored at this location, the location can be changed by clicking on 'Browse'.

The user should check which 'Elements' are to be exported from the different categories available, eg. 'Floors', 'Structural Columns', 'Structural Framing' and 'Walls' by default ('Default'). 'Structural Foundations' can be added by clicking on the corresponding checkbox or 'All'. Alternatively, click the 'None' button to deselect all categories. Please note that only 'Run' can be clicked when there is at least one category checked.

The user can then choose to run the script with 'Run', or to abort the process with 'Cancel'. When you click on 'Run', a python script will be generated that can be read by DIANA.

(Nb. The plug-in works only in saved project files. So keep in mind that the active document is a project and that the project is stored)

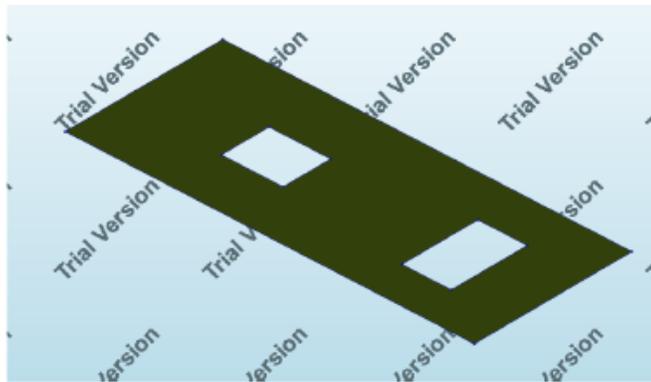
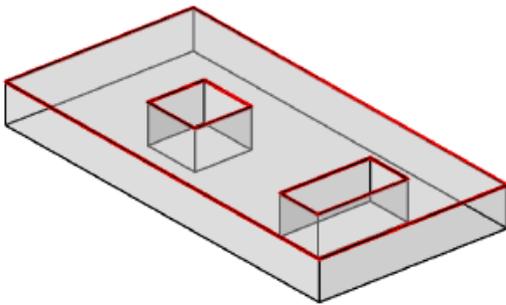
RESULT

The output of the Revit plug-in is a python file (script) that can be read by DIANA. Once this script has been processed, the analytical lines of the model of the pre-selected categories are included.

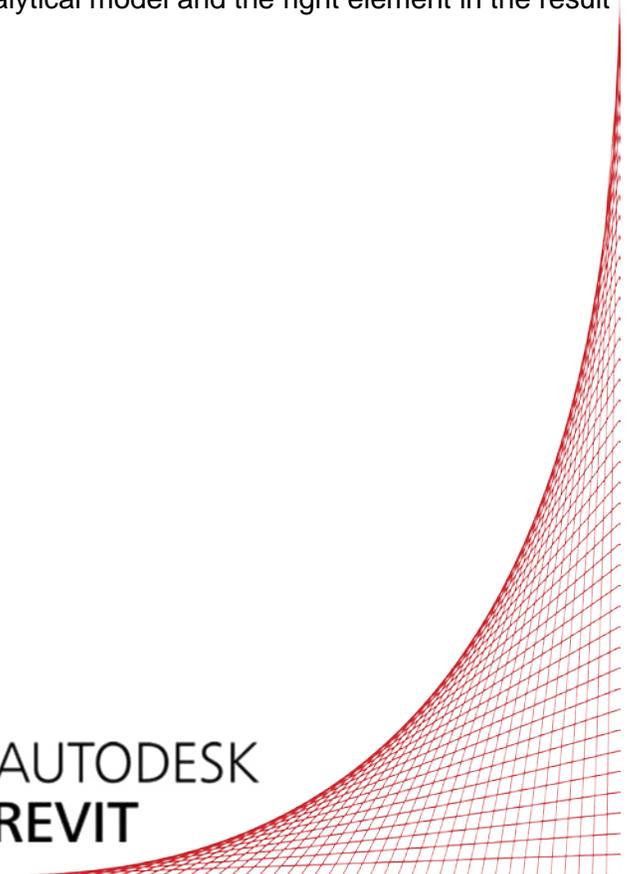
ELEMENTS

- Once this script is read into DIANA, the next step is to create the category:

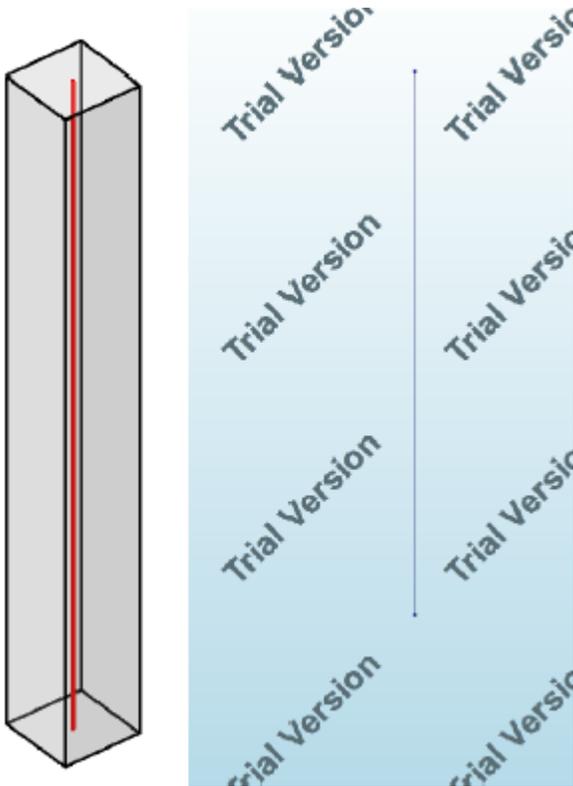
Floors: Every floor in Revit is in a DIANA 'Sheet' created the outline of corresponding to the analytical lines of the floor in Revit. The 'Thickness' of this sheet is the same as the thickness of the floor in Revit;



(Nb. In the images, the red line in the left-element analytical model and the right element in the result of the import in DIANA)

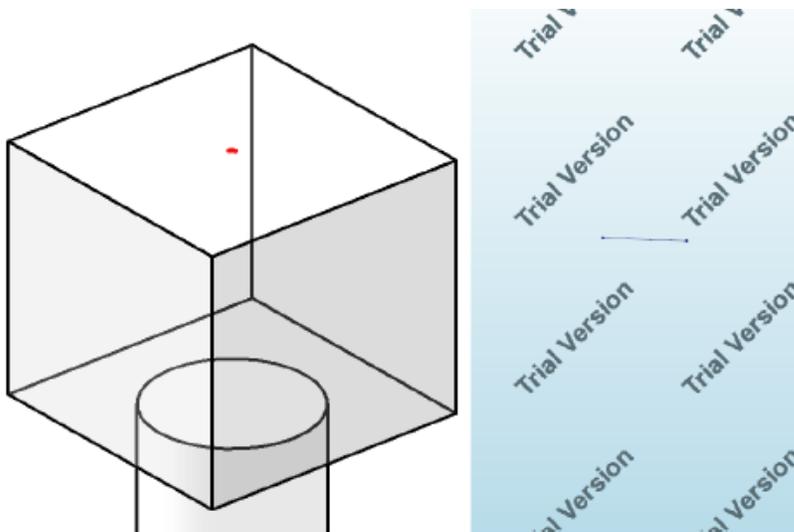


- **Structural Columns:** For each structural column in Revit - a 'Wire' is created in DIANA, with the start and end point the same as the start and end point of the analytical line in Revit;

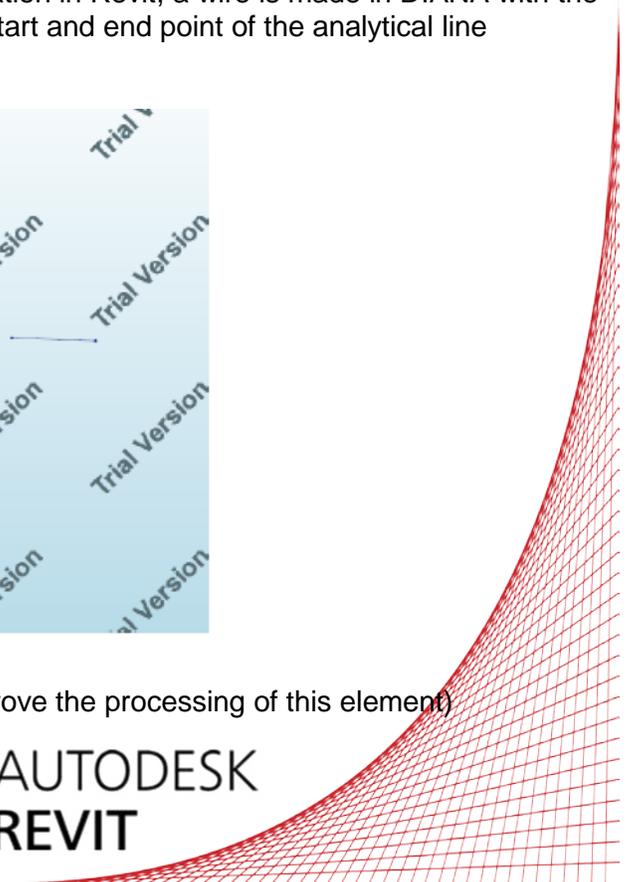


- **Structural Foundation:**

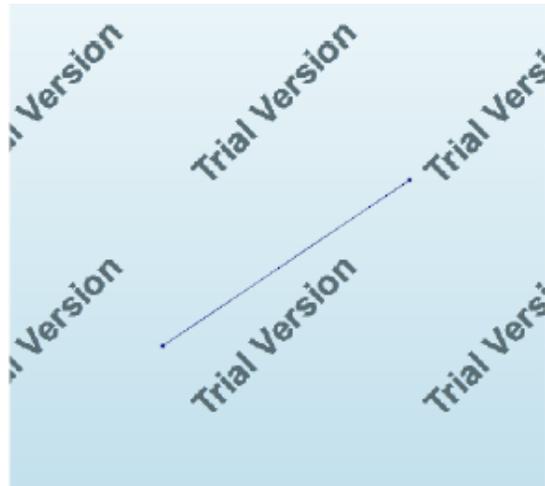
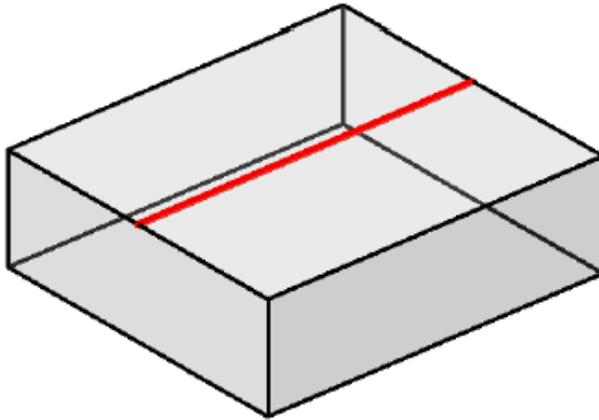
- *Isolated:* For every structurally isolated foundation in Revit, a wire is made in DIANA with the start and end point the same position as the start and end point of the analytical line representing the isolated foundation in Revit:



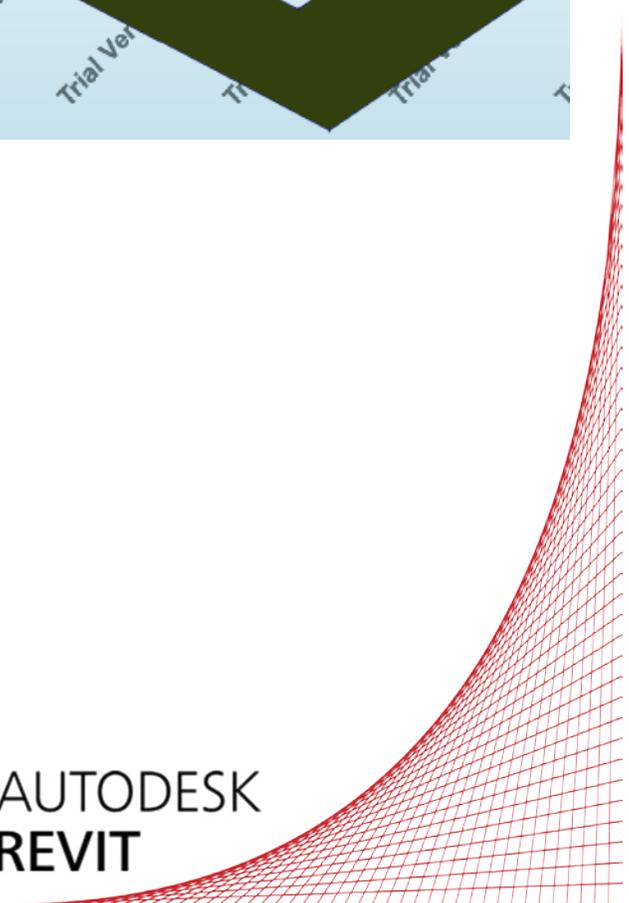
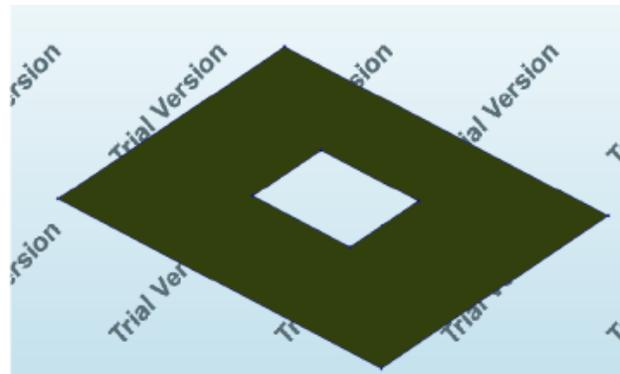
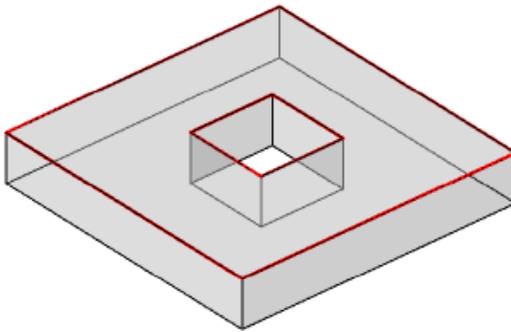
(Nb. Further development is underway to improve the processing of this element)



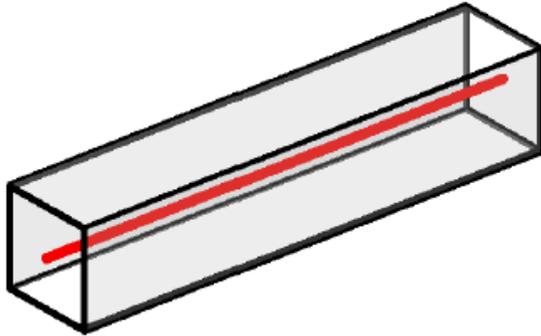
- *Wall*: For every structural foundation wall in Revit, a 'Wire' is created in DIANA with the start and end at the same points as the analytical line in Revit;



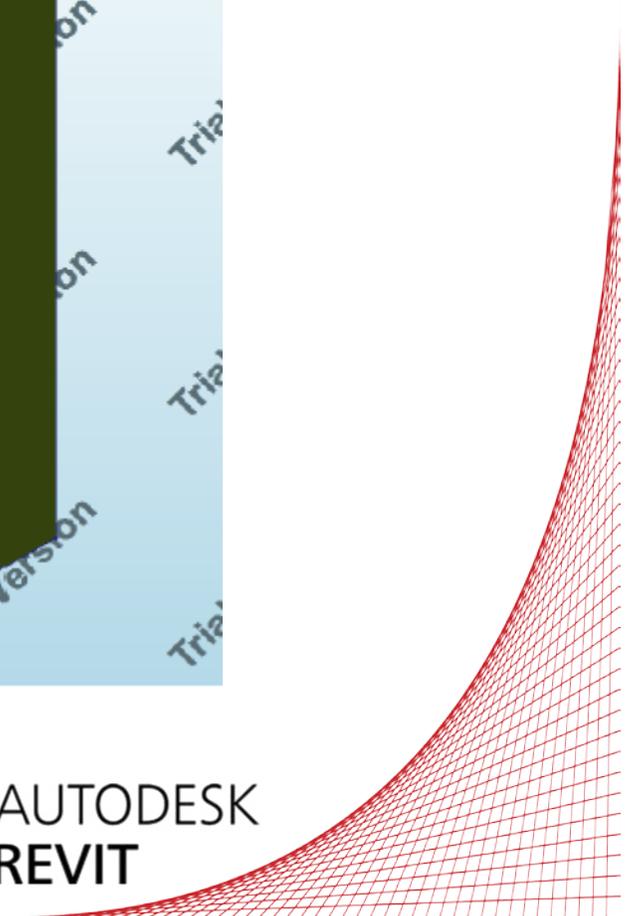
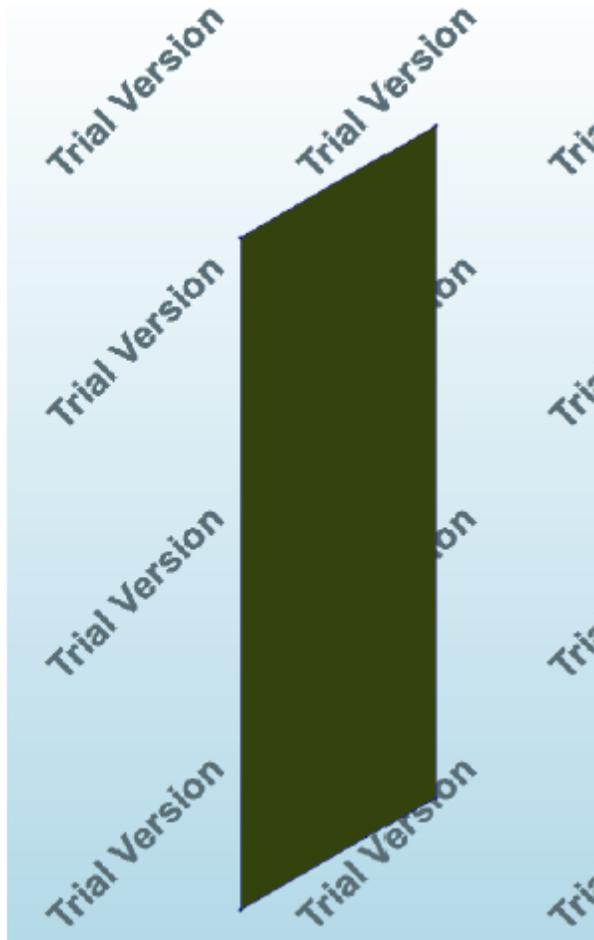
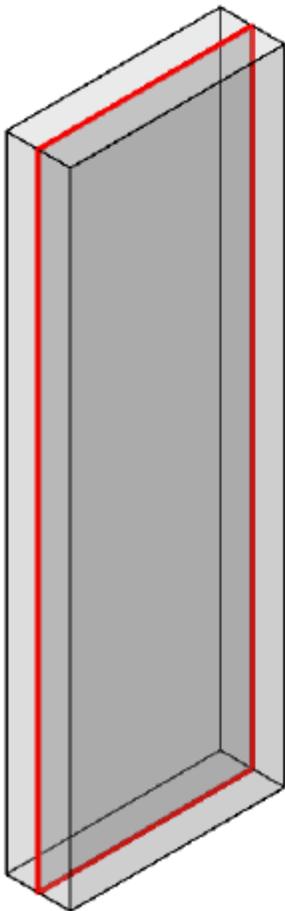
- *Slab*: For each structural slab foundation in Revit, a 'Sheet' is created in DIANA with the outline corresponding to the analytical lines of the structural slab foundation in Revit. The 'Thickness' of this sheet is the same as the thickness of the structural foundation slab in Revit.



- *Structural Framing*: For each structural framing in Revit, a 'Wire' is created in DIANA with start and end the same as the start and end point of the analytical line in Revit;



Walls: For every wall in Revit, a 'Sheet' is created in DIANA where the outline of the wall corresponds to the analytical lines of the wall in Revit. The 'thickness' of the sheet is equal to the thickness of the wall in Revit.



NAME / DESIGNATION

After loading the python script DIANA names are composed of the original text from the Revit model.

- Each shape name in DIANA comprises the Category, Type and Element elementID;
- Each material name in DIANA is taken from the material name of the element in Revit;
- Each geometry name in DIANA is a combination of Category and the TypeID of the element type.

