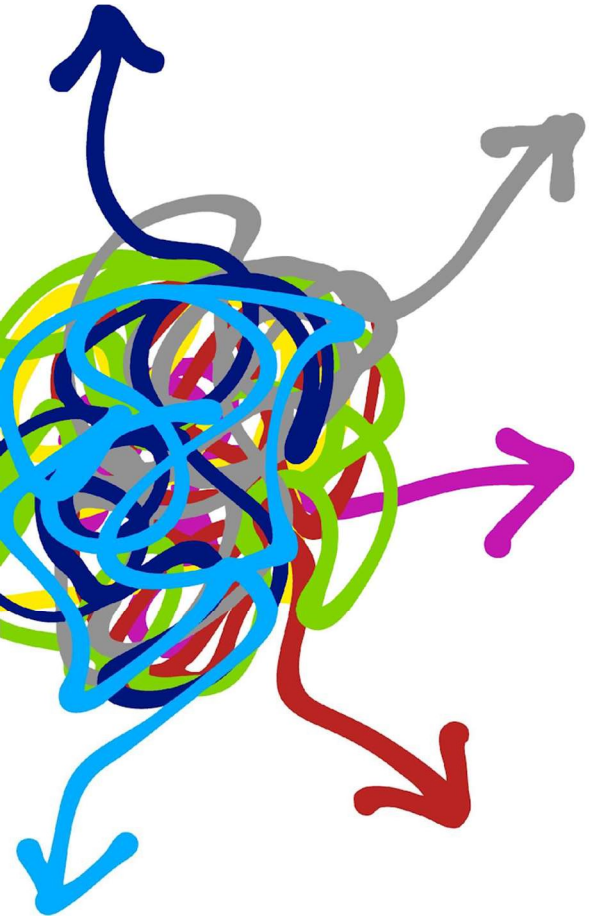
3muri Project



IFC Module

STADATA
STRUCTURAL SOFTWARE

Index

Part I IFC - BIM Module 3

Introduction 3

Export 3

Import 4

BIM INSIDE 5

- Introduction 5
- Import IFC 5
- Filter elements IFC 7
- Create section 8
  - Horizontal sections 9
  - Vertical sections 10

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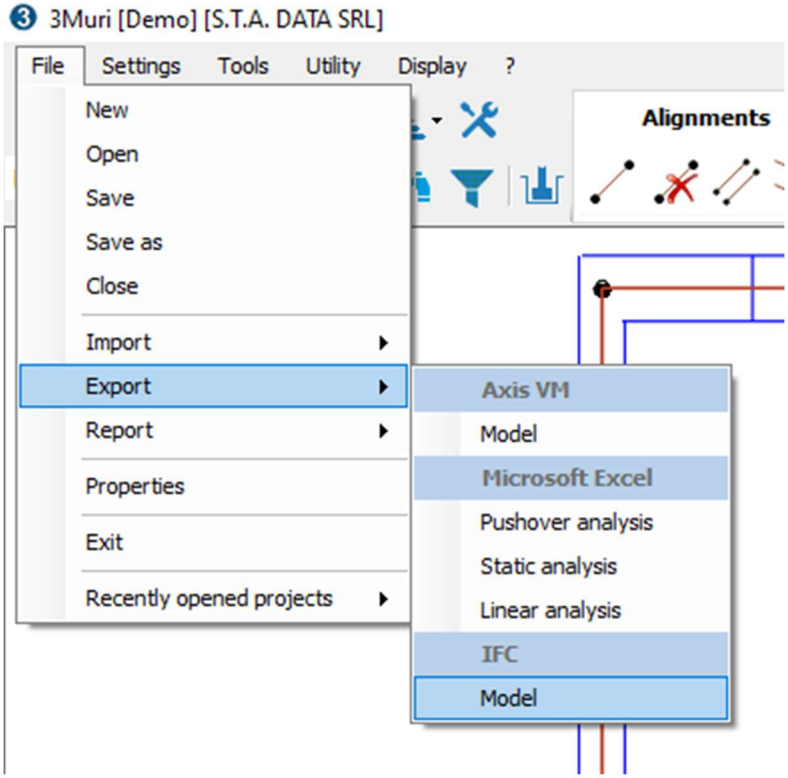
1 IFC - BIM Module

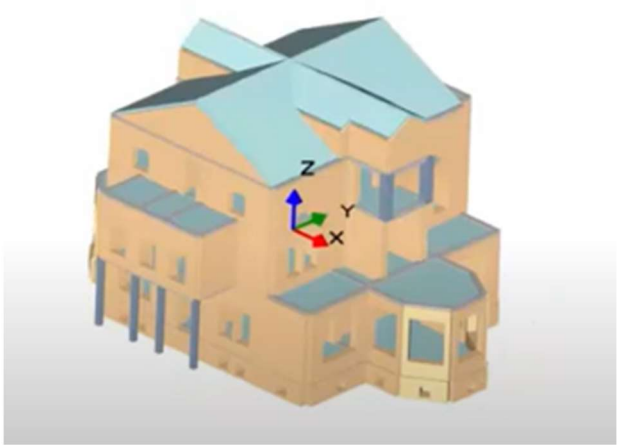
1.1 Introduction

3Muri Project allows interoperability with BIM technology through the IFC (Industry Foundation Classes) format, whose specifications are based on a neutral data format specifically designed to describe, exchange and share design information.

1.2 Export

Once the creation of the model is finished, the "export IFC" command in the file menu allows the creation of the file in IFC format. This file contains the structural objects defined with the IFC standard in order to be visible with a reader or BIM cad.

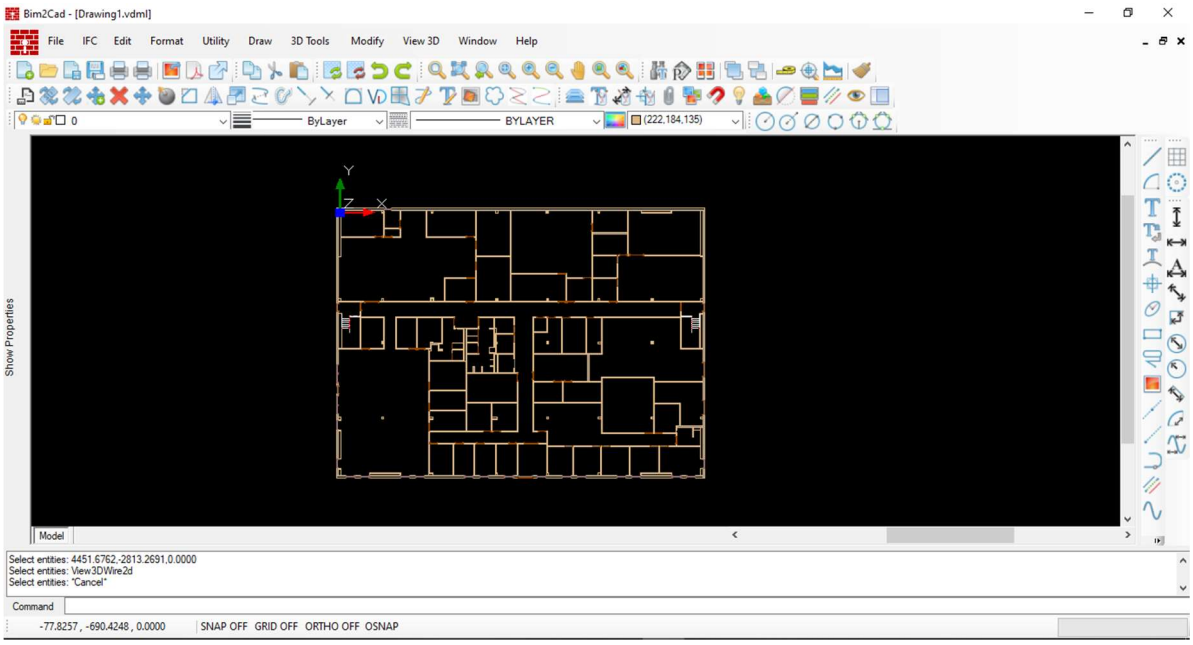




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1.3 Import

Importing from IFC models is possible thanks to the BIM INSIDE application, included in the module, which allows to directly read IFC files and automatically execute horizontal sections, producing planes in DXF format.



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1.4 BIM INSIDE

1.4.1 Introduction

The BIM INSIDE application is a CAD system that makes interoperability its strong point. Interoperability means the ability to cooperate and exchange information or services with other products with optimization of resources.
The exchange of information takes place through different graphic formats: IFC, DGN (Bentley), DXF, SKP (File Sketchup), EMF, WMF, BMP, GIF, JPG / JPEG, TIF, DWG

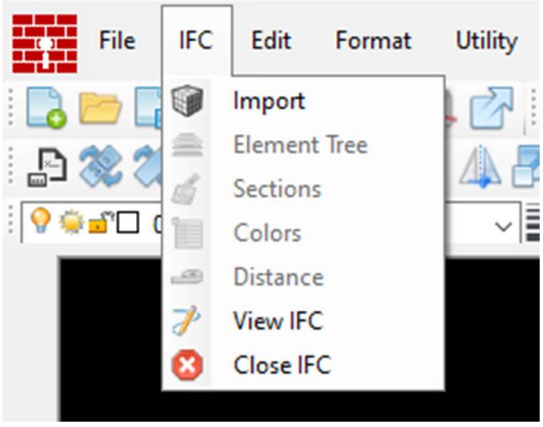
BIM INSIDE has three specific functions for managing IFC files.
The ones of IFC (Industry Foundation) class are based on a neutral data format designed specifically to describe, exchange and share information typically used in the construction industry.

IFC is the international standard for openBIM and registered with the International Standardization Organization ISO as ISO16739.
The specifications and development of the IFC technology are managed by buildingSMART International, bSI, whose official website is located at the web address: buildingsmart-tech.org. For more information on ICF technology please visit: https://en.wikipedia.org/wiki/Industry_Foundation_Classes
http://www.ifcwiki.org/index.php/Main_Page

The features included in stadataCAD allow to open an IFC file with its 3D view of the model, the management of the filters of the elements displayed and the creation of horizontal sections with possible saving in DXF format.

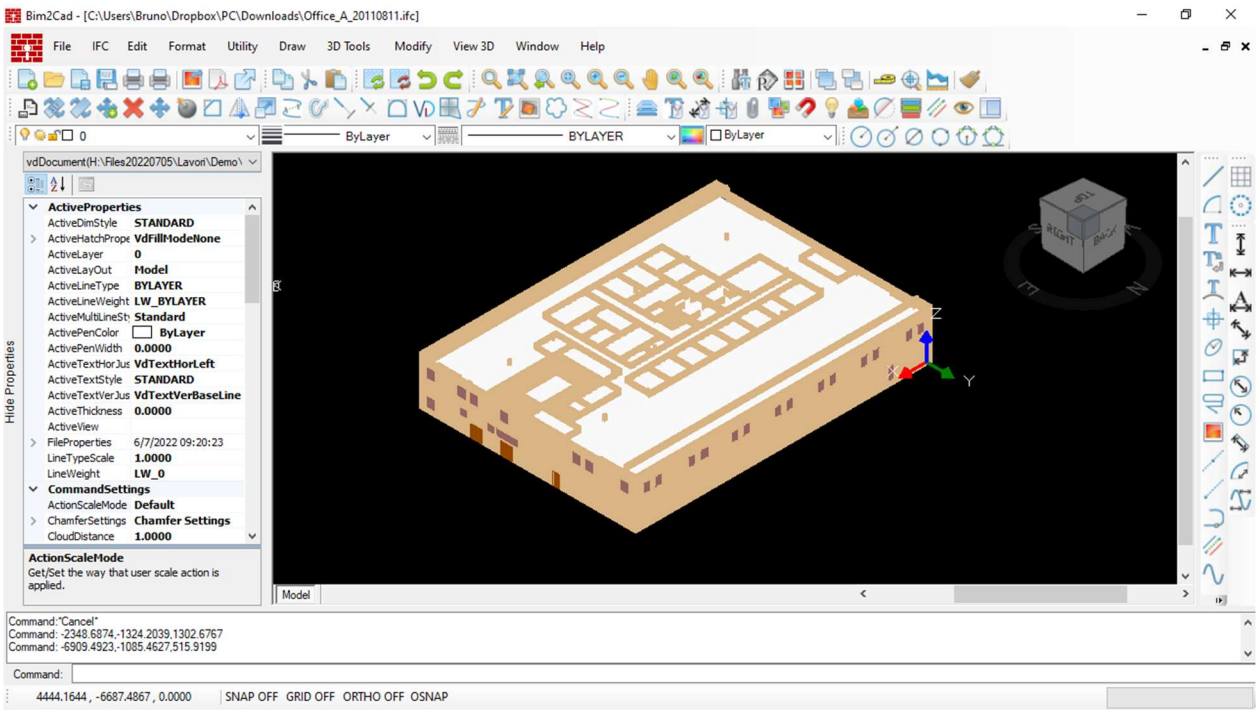
1.4.2 Import IFC

By clicking on Import under the IFC Menu, the program prompts the user to select a file with the * .ifc extension.



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The file is read, interpreted and displayed in the CAD area in 3D.



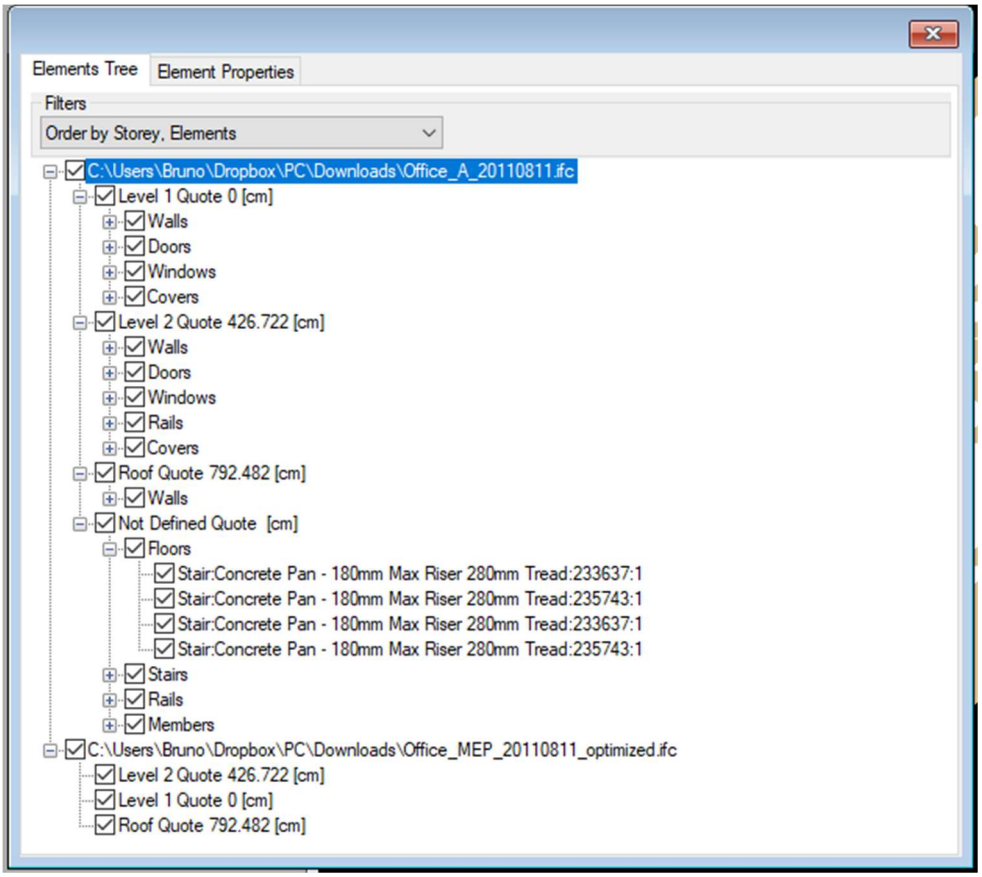
Note: the menu items Filter IFC Elements and Create Sections are disabled until a user-defined ifc file is loaded and displayed.

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1.4.3 Filter IFC elements

The **Element Tree** feature allows the user to filter the elements of the open IFC model, according to specific and well-defined criteria:

- Order by Storey, Elements
- Order by Material, Storey, Elements



The first option on the drop-down list organizes the elements according to the level on which they are present and then according to the type of element. The second option, organizes the elements by material, storey and element type.

If there are no structural objects, they will appear disabled. The objects whose construction material is not defined are classified as Not defined material. Similarly, the elements without a defined height will be classified as Not defined quote.

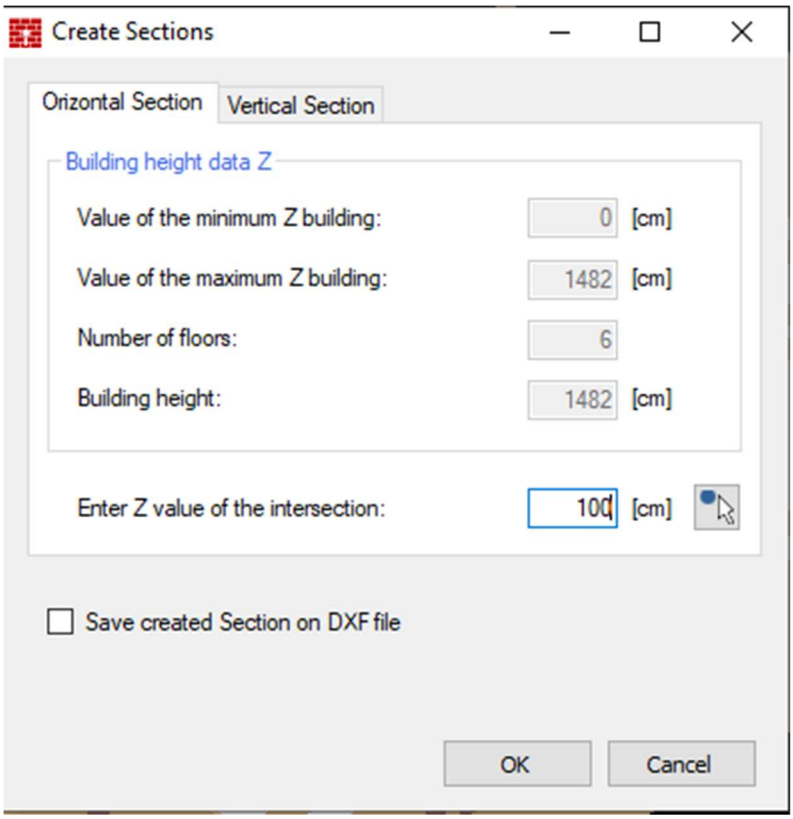
The user can disable or enable the view of elements by clicking on the checkboxes. When a level or a type of element is checked, all internal checkboxes are activated, if the check is removed, all internal checks are removed.

When selecting a specific element, the tab **Element properties** will show additional information of the element such as the storey name and elevation, name of the material and the name of the layer on which it is located.
When the user selects/unselects checkboxes, the graphic area is automatically updated in relation to the choices made by the user in the Element Tree window.

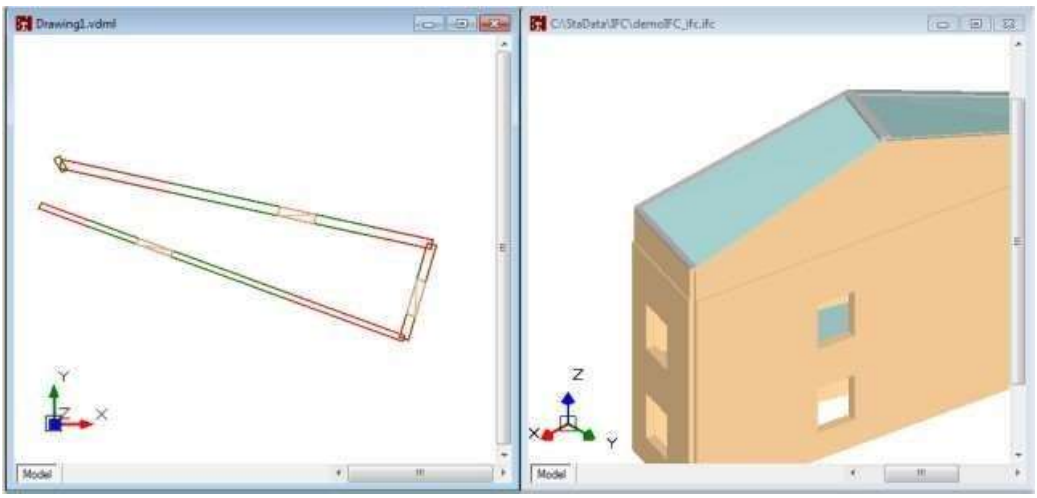
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1.4.4 Create sections

The purpose of this feature is to create horizontal and vertical sections of the project and then save them on DXF files.



The created section is displayed in a new cad area next to the original 3D model. If the Save created section on DXF file was enabled, the program displays a message that communicates the saving and displays the section. If the save command was disabled, the section name assumes a default value (drawing1.vdml). In this case, the section can be saved at a later time using the File→Save As menu command. An infinite number of sections can be created.



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It is possible to create both horizontal and vertical sections.

1.4.4.1 Horizontal sections

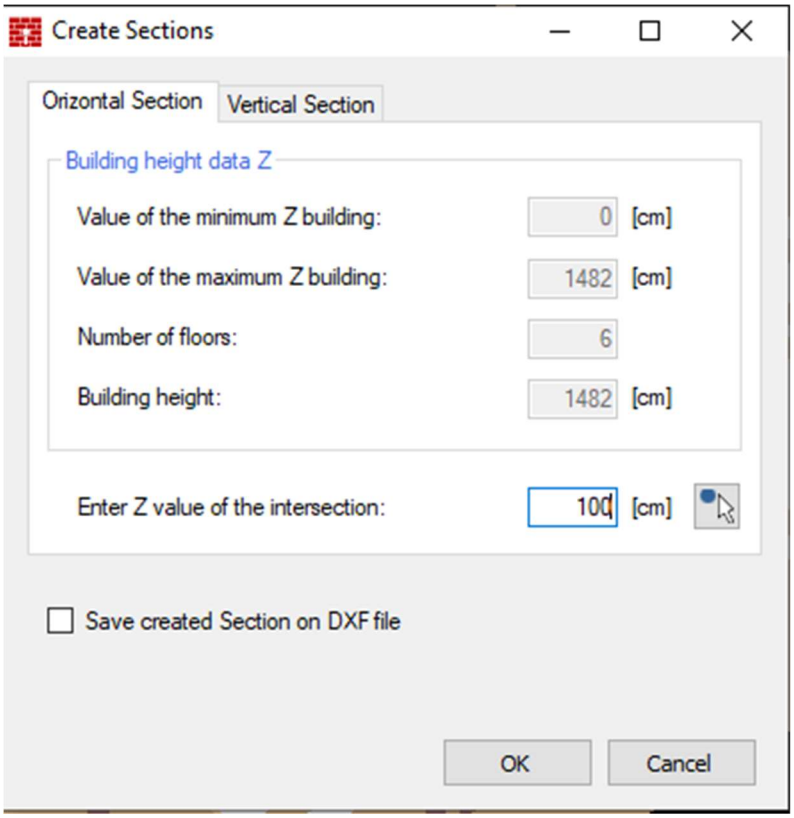
The window related to the creation of the horizontal section displays the building's height data divided into:

- Minimum value of Z
- Maximum value of Z
- Number of floors
- Building height.

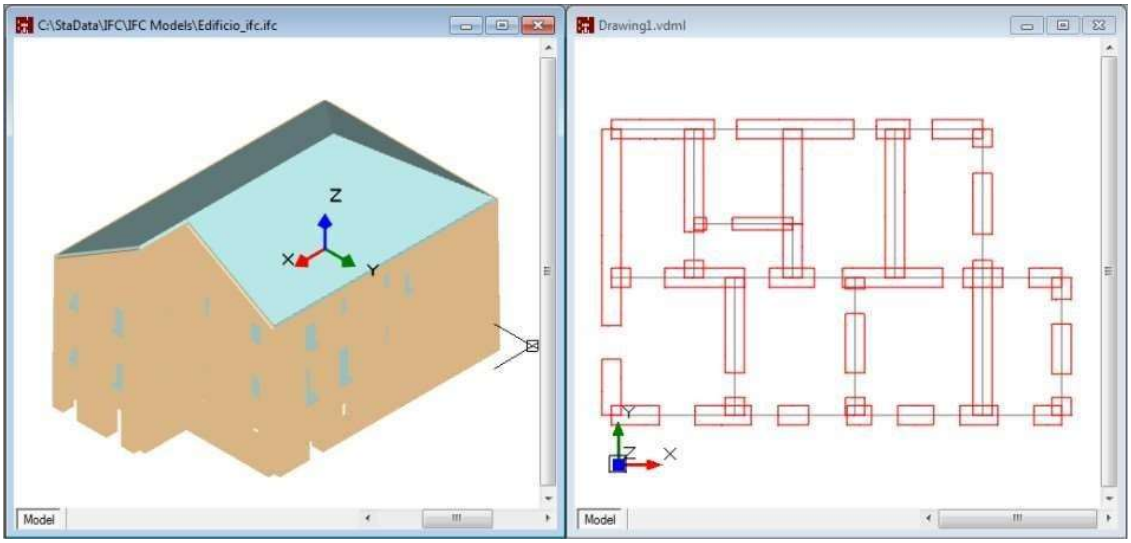
All measurements are in centimeters.

The user is required to enter the elevation Z of the intersection.
This value can be entered manually by the user or through a function that allows to select the desired z by clicking the point on the model. This function is activated by clicking on the buttons that can be seen to the right of the Z Intersection fields. 

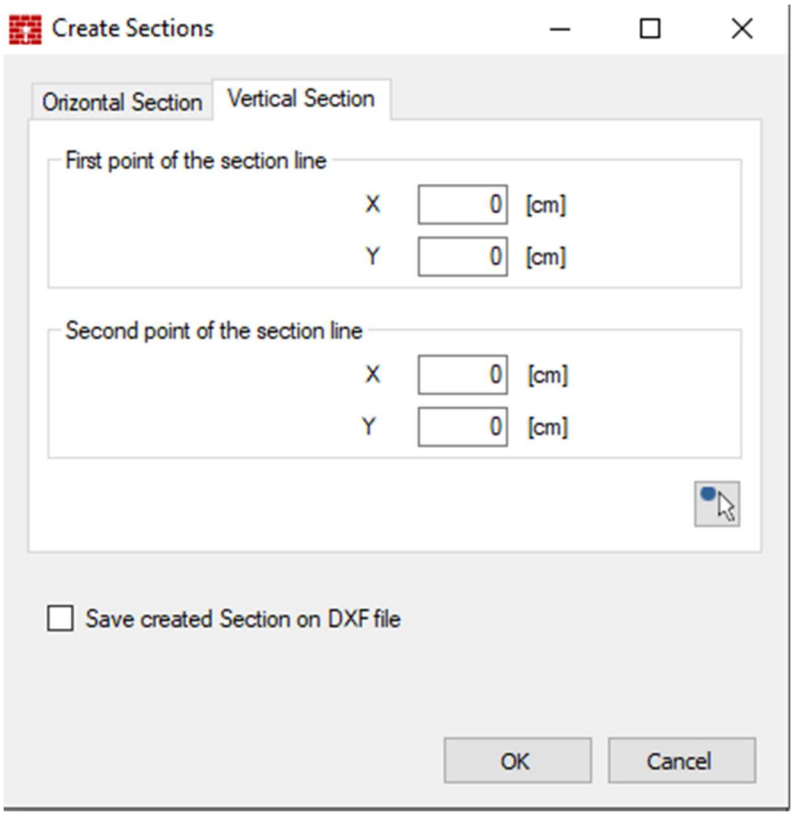
If the user chooses to click on the option "Save created section on DXF file" the drawing is saved automatically. If this parameter is selected, the user must enter the name of the DXF file to be saved.



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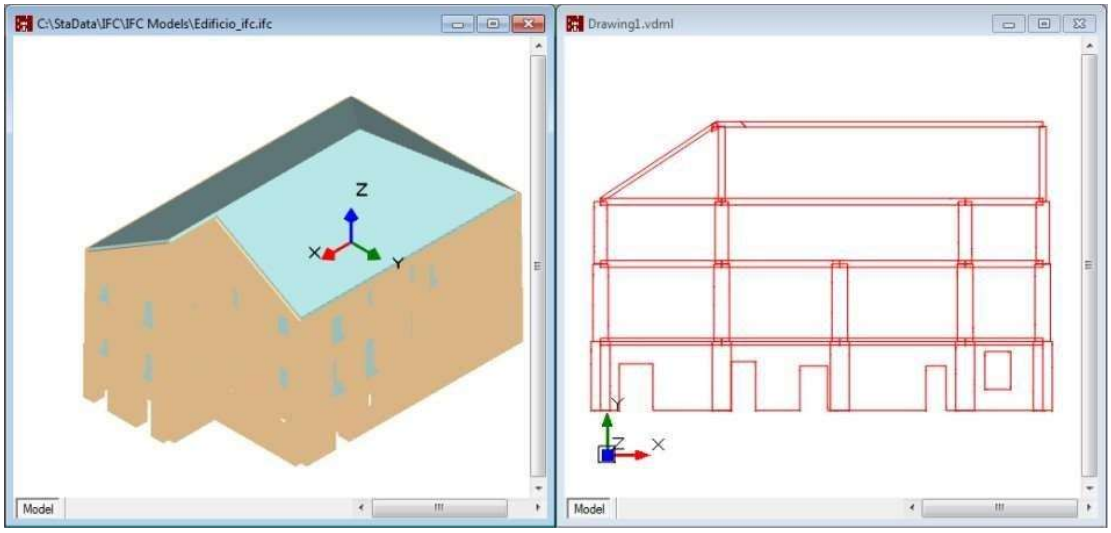


1.4.4.2 Vertical sections



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The position of the section can be entered manually entering the coordinates of the first and second point of the section line. As an alternative, the user can use the feature that allows the selection of the desired point by clicking on the model.



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