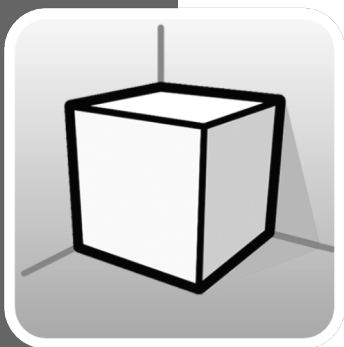




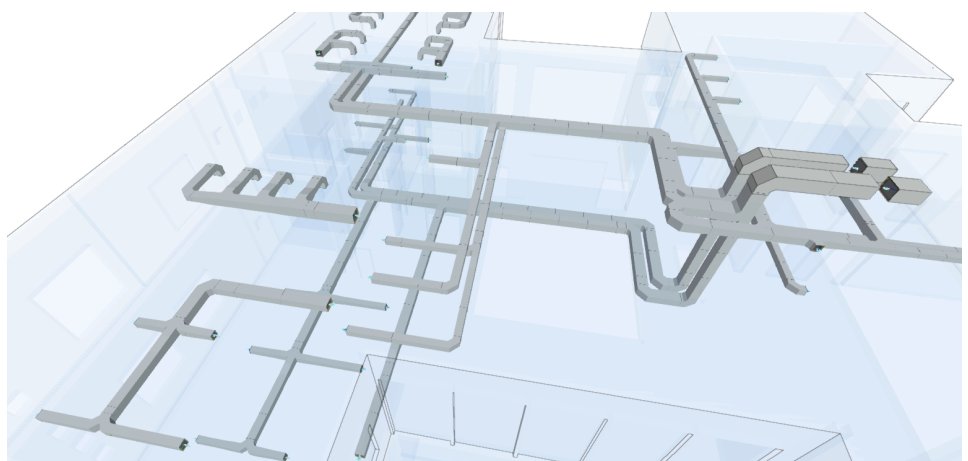
Software for Architecture,
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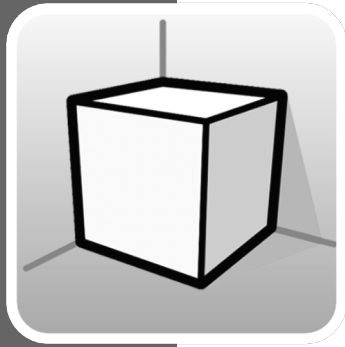


3D Environment

USER MANUAL

Guide for using the 3D work environment tools available in
CYPE applications





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1 Introduction

The aim of this document is to explain the functioning of the user interface adapted to the 3D work environment included in CYPE applications.

The availability or location of the options described in this guide may vary depending on their implementation in each application.

2 Options

The options related to the configuration of the 3D work environment of the applications can be found in the “views” and “workplanes” groups in the toolbar. They can be found together under the “view” tab.

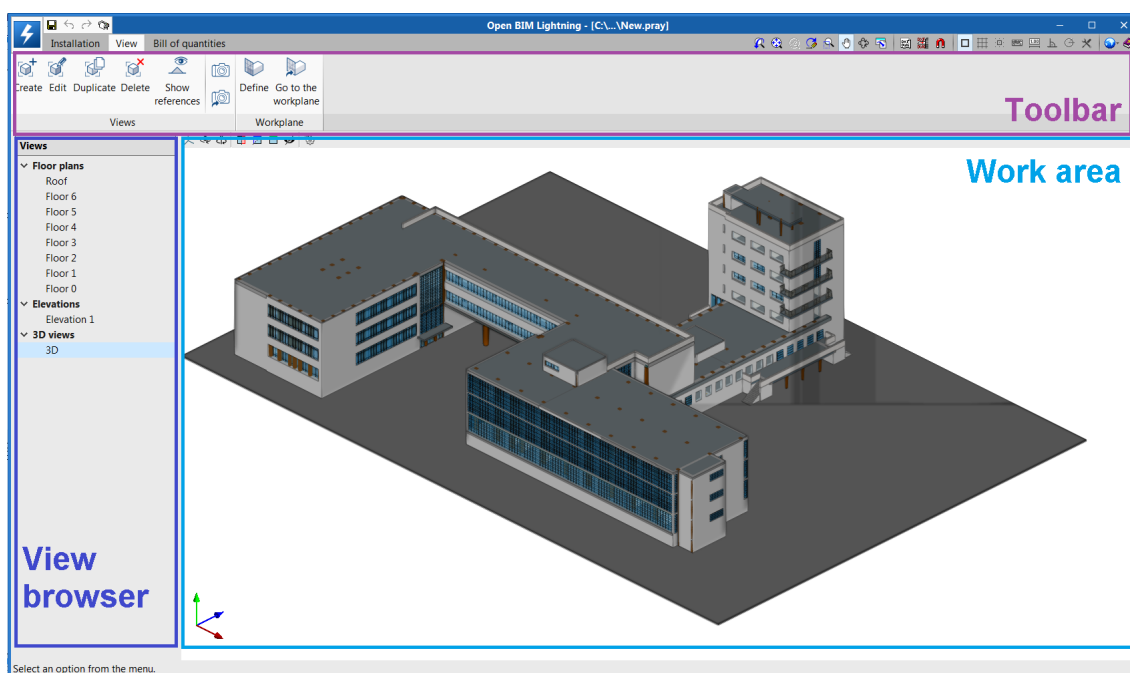


Fig. 1. User interface of the 3D work environment (Open BIM Lightning)

2.1 Views

The views are full or partial representations of the application’s design model. It is important to note that the components of the model are not linked to the views, so that they can be created, modified or deleted without affecting the underlying data structure.

The “views” group located in the toolbar of the applications contains the following options:

- **Create.** Create a new 2D or 3D view of the model.
- **Edit.** Modifies the properties of the current view.
- **Duplicate.** Copies the current view.
- **Delete.** Deletes the current view
- **Save the start scene.** Establishes the current position of the view as the start scene. This scene will be used to generate the graphical documents of the project.
- **Go to start scene.** Position the current view in the position of the start scene.
- **Show references.** Upon choosing this option, references to other views will be shown in the active view.

2.1.1 *Types of views*

It is possible to generate different types of 2D and 3D views of the project. Each one is oriented to facilitate user interaction with the model in a different way.

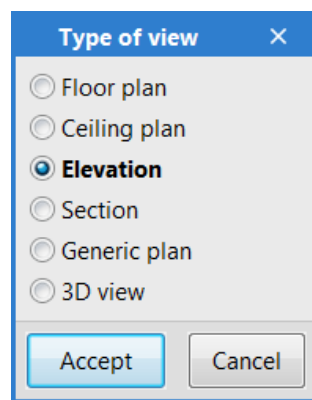


Fig. 2. Type of view selection panel

References to the views are shown in the views that intersect.

2.1.1.1 *Floor plan*

Floor plans are representations of the building on a horizontal plane seen from above.

In most applications, floor plans are automatically created when a job is linked to a project on the BIMserver.center platform that contains an architectural model. In these cases, a floor plan is generated for each floor defined in the building with its reference.

How to create a floor plan view:

- Open an existing view.
- Click on the 'View' tab (optional), then the 'Views' group. Next, select the 'Create' option and select "Floor plan" in the panel.
- Click on the model to indicate the point where the horizontal plane will be generated.
- Configure the data of the view (reference, elevation level and range of vision).



Fig. 3. Floor plan view (Open BIM Layout)

2.1.1.2 *Ceiling plan*

Ceiling plans, just like floor plans, are representations of the building on a horizontal plane, but in this case, seen from below.

How to create a ceiling plan view:

- Open an existing view
- Click on the 'View' tab (optional), then the 'Views' group. Next, select the 'Create' option and select "Ceiling plan" in the panel.
- Click on the model to indicate the point where the horizontal plane will be generated.
- Configure the data of the view (reference, elevation level and range of vision).

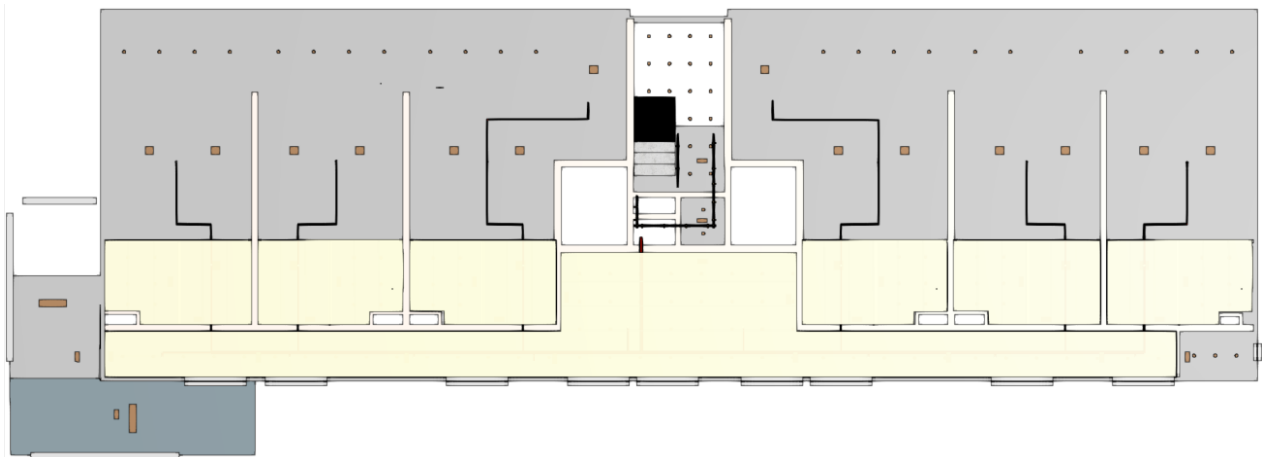


Fig. 4. Ceiling plan view (Open BIM Layout)

2.1.1.3 *Elevation*

Elevations views are representations of the building on a plane that is perpendicular to the horizontal plane of the job.

How to create an elevation view:

- Open an existing view.
- Click on the 'View' tab (optional), then the 'Views' group. Next, select the 'Create' option and select "Elevation" in the panel.
- Click on the model to indicate the point where the elevation line starts.
- Click on the model a second time to indicate the end point of the elevation line.
- A third click on the model indicates the depth of the elevation view.
- Configure the data of the view (reference and range of vision).

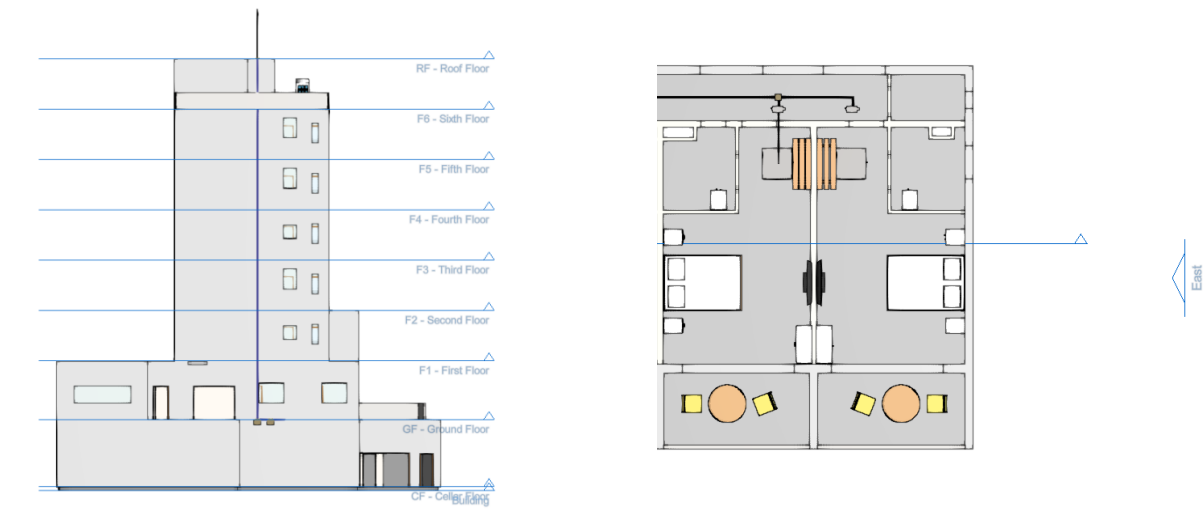


Fig. 5. Elevation view and its reference in a floor plan view (Open BIM Lightning)

2.1.1.4 *Section*

Section views are cuts of the building that are perpendicular to the horizontal plane of the job.

How to create a section view:

- Open an existing view
- Click on the 'View' tab (optional), then the 'Views' group. Next, select the 'Create' option and select "Section" in the panel.
- Click on the model to indicate the point where the section line starts.
- Click on the model a second time to indicate the end point of the section line.
- A third click on the model indicates the depth of the section view.
- Configure the data of the view (reference and range of vision).

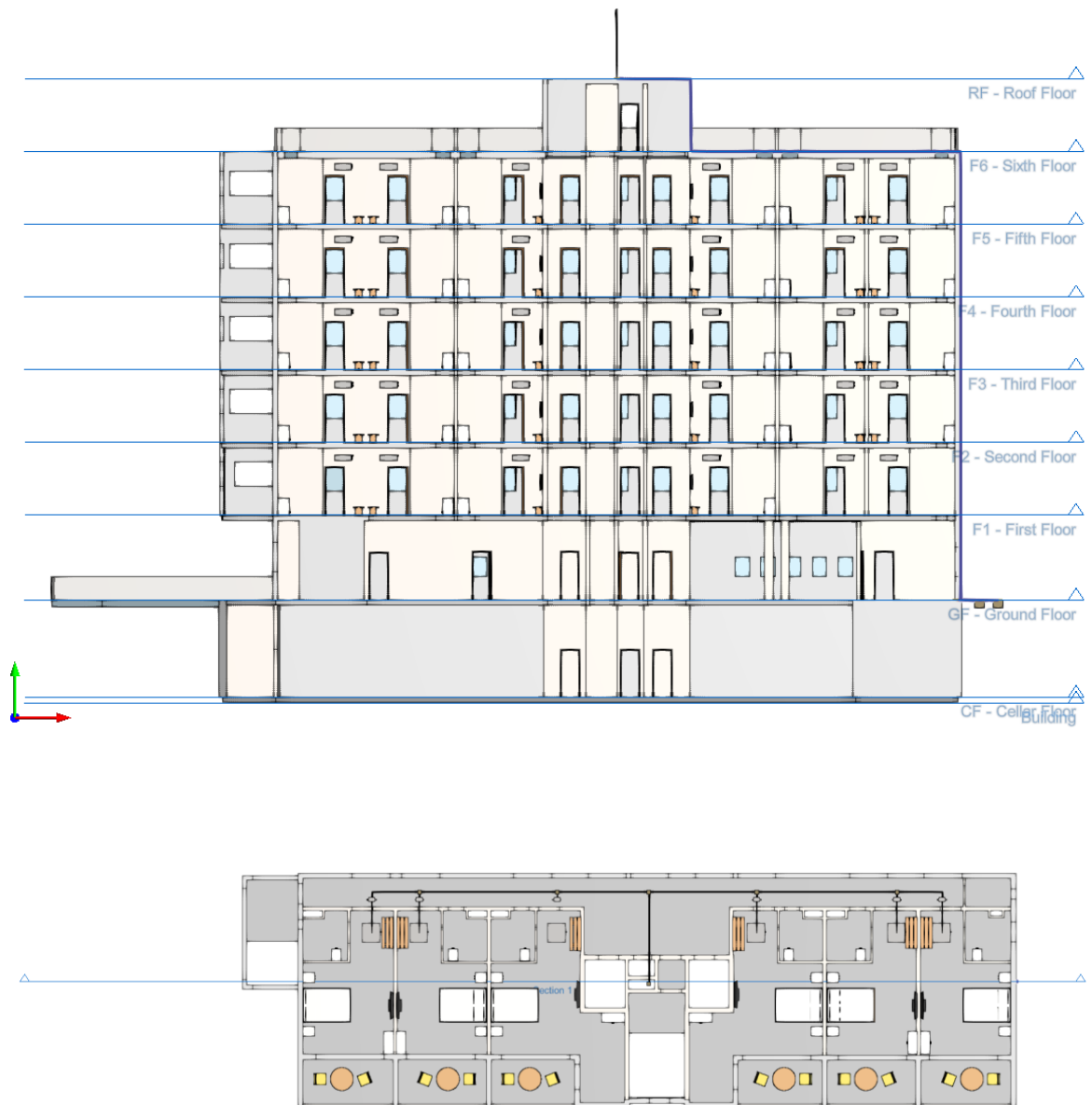


Fig. 6. Section view (Open BIM Lightning)

2.1.1.5 *Generic plan*

In a generic plan, the view is generated from a plan located anywhere in space. To create a generic plan, in the definition of the view three non-aligned points must be indicated that make up this plan.

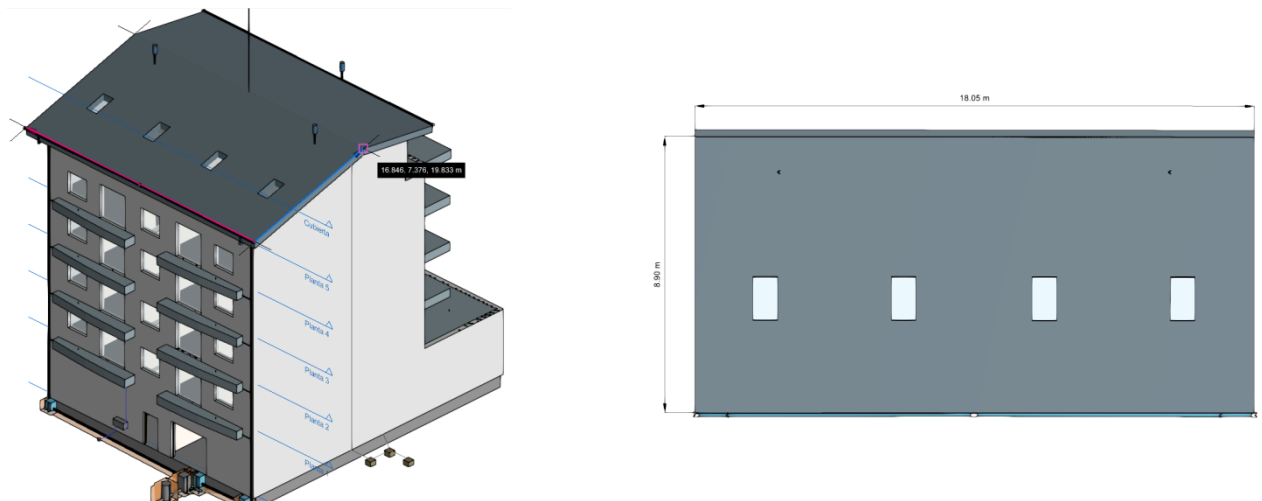


Fig. 7. Generic plan view (Open BIM Layout)

How to create a generic plan view:

- Open an existing view.
- Click on the 'View' tab (optional), then the 'Views' group. Next, select the 'Create' option and select "Generic plan" in the panel.
- Click on the model to indicate the first point of the plane.
- Click on the model a second time to indicate the second point of the plane that corresponds to the X axis of the camera position in the generated view.
- A third click on the model indicates the third point of the plane that will determine the position of the camera's Y axis in the generated view.
- Configure the data of the view (reference and range of vision).

2.1.1.6 3D view

It is possible to create several 3D representations of the model with different visibility options and camera positions.

When linking a job to a project in the BIMserver.center platform, a 3D view will be automatically generated with the reference "3D", in case it does not exist.

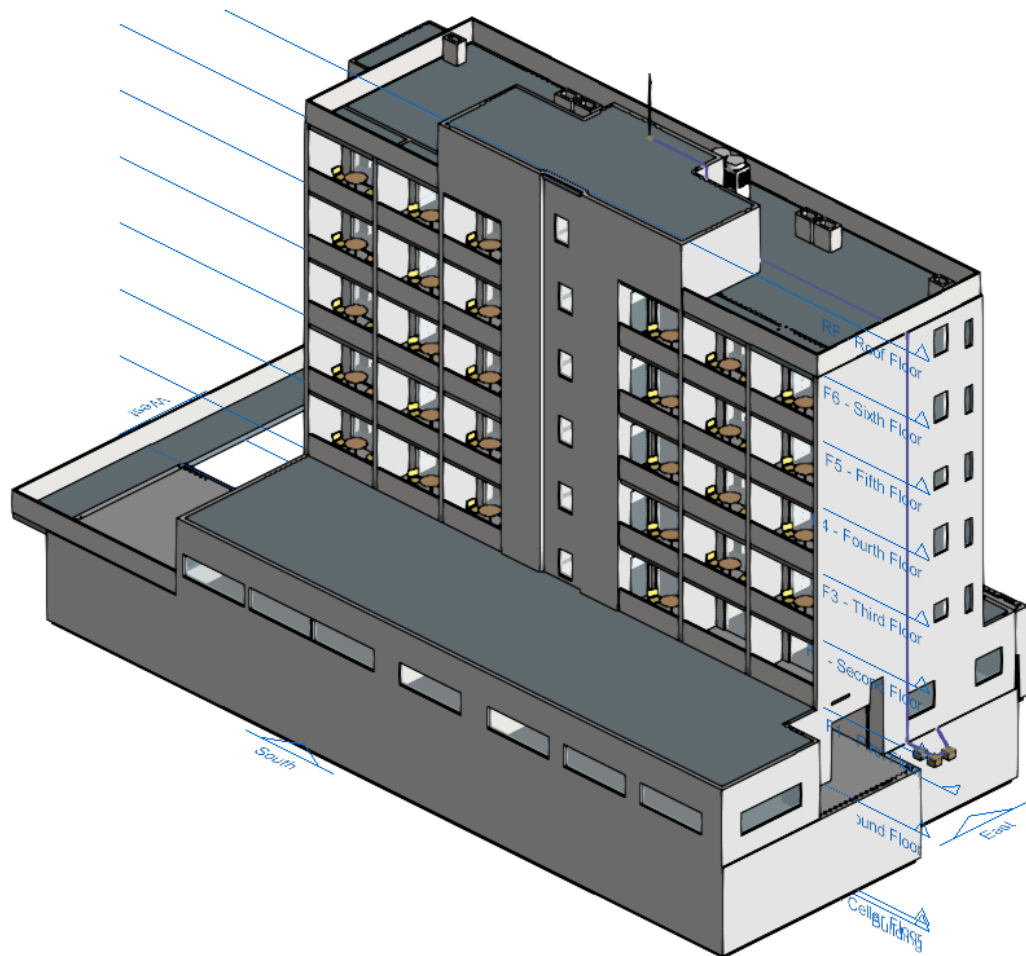


Fig. 8. 3D view (Open BIM Lightning)

How to create a 3D view:

- Click on the 'View' tab (optional), then the 'Views' group. Next, select the 'Create' option and select "3D view" in the panel.
- Enter the reference of the view.

2.1.2 *Range of vision*

All the view types, except the 3D view, are associated with an area delimited by two planes, a top and a bottom plane, which determines the elements that will be represented in the view. In the view configuration panel, it is possible to specify the distance to the top and bottom plane from the origin of the view.

In elevation, section and general plan views: the top plane is perpendicular to the direction of vision in a positive direction. The bottom plane is the same, but in a negative direction.

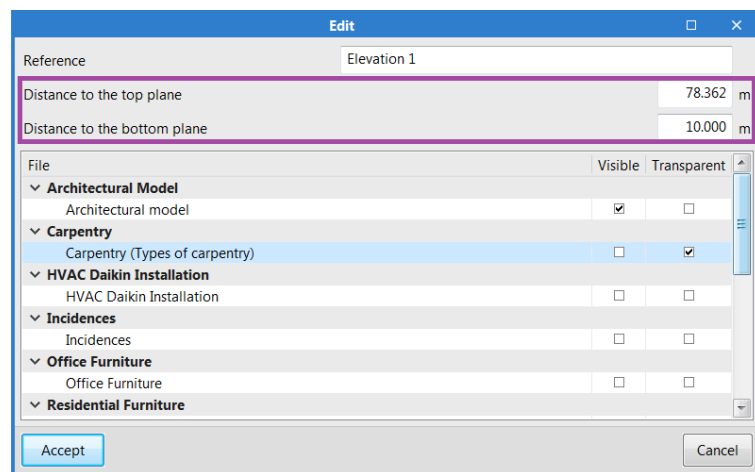


Fig. 9. Configuration of the range of vision in the edit panel of a view

2.1.3 *Visibility of model layers*

In the configuration panel of a view it is possible to indicate the layers of the digital model of the building that come from an associated BIMserver.center project, which will be drawn in the work area.

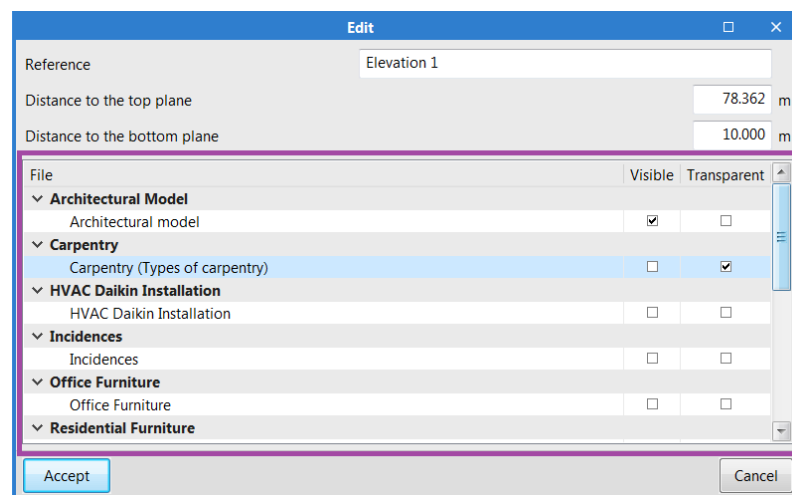


Fig. 10. Configuration of the visibility of the digital building model layers in the edit panel of a view

2.2 Workplane

The “workplane” group in the toolbar contains the following options:

- **Define.** Specifies the workplane associated with the current view. The workplane is used as a base to introduce the components of the model.
- **Go to the workplane.** Places the current view in the position of the workplane.

Each view of the model has an associated workplane. The workplane is automatically generated in all view types except in the 3D view. Consequently, the options for the “Workplane” group are only active when the selected view is of that type.

It is possible to define the workplane of a 3D view using one of the following options:

- **Existing view.** The workplane of the selected view will be used.
- **Define a plane.** The workplane will be generated by entering a plane on the model.
- **Select a point and generate a horizontal workplane.** A workplane will be generated horizontal to the selected elevation point.

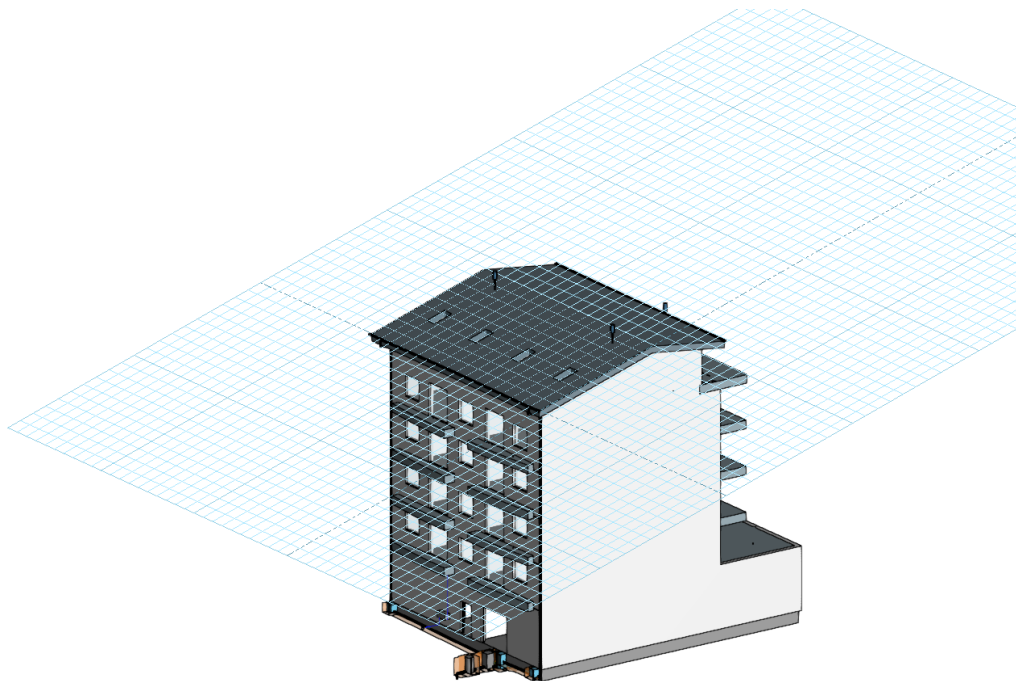


Fig. 11. Workplane generated from a generic plan

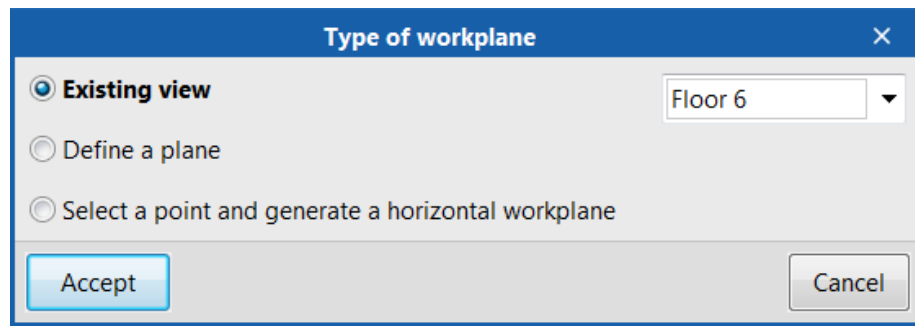


Fig. 12. Definition of a new workplane

3 Inserting components

When entering a new component of the model or editing the position of an existing one, the applications provide a series of tools to facilitate the user's interaction with the work environment.



Selection of the input mode:

- **2D mode.** When capturing a component of the model its position will be projected on the workplane, where the new element will be introduced.
- **3D mode.** When capturing a component of the model the new element will be inserted in the exact position of that component, even if it is outside the workplane.

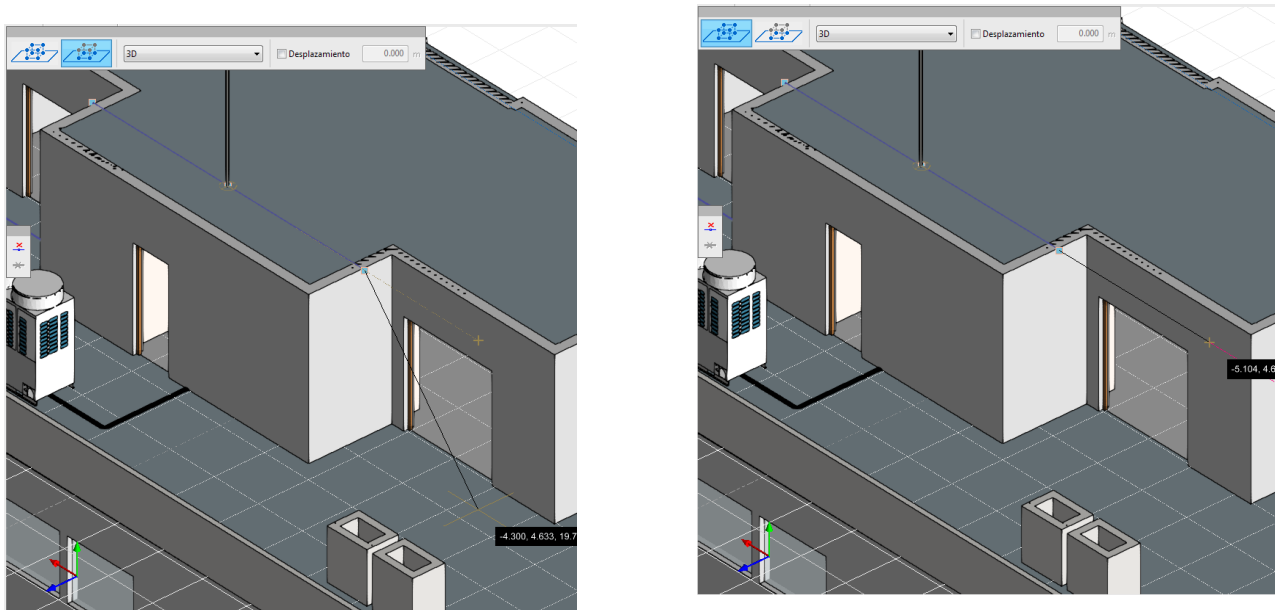


Fig. 13. Comparison of the 2D and 3D input modes (Open BIM Lightning)

Selection of the workplane:

- **Workplane.** Indicates the view whose workplane will be used as the basis for entering the new component. This option is only available in 3D views – in the rest, the workplane associated with the active view will be used.
- **Displacement.** Indicates a displacement on the workplane.

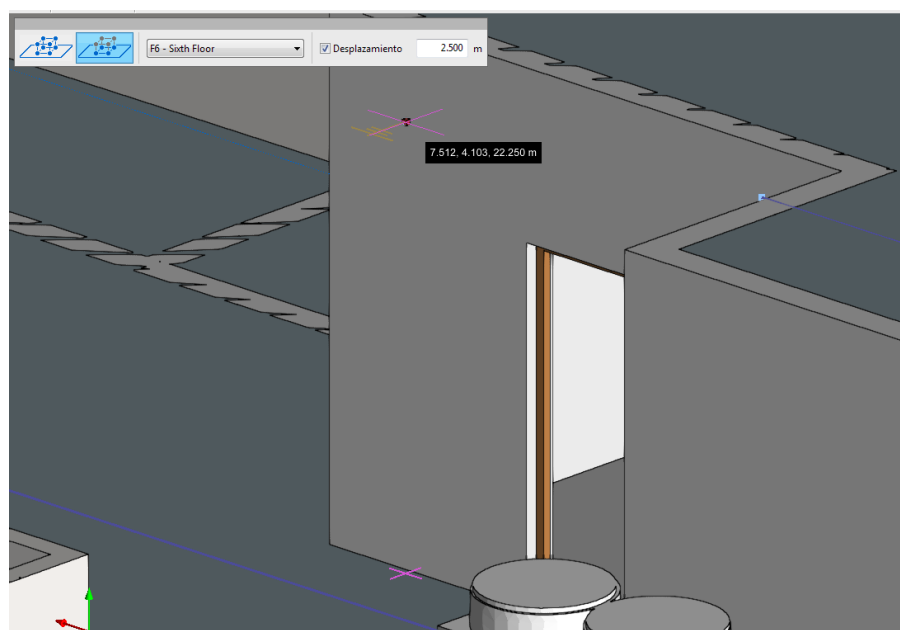


Fig. 14. Entering a component with displacement on the workplane (Open BIM Lightning)