plexos
Lean Project Management

The 3D BIM model Viewport

The model viewport, centrally-button positioned within Plexos' main window, offers more than just a visual display of models. It integrates crucial information and interactive features, enabling a comprehensive understanding of the project (Figure 1).

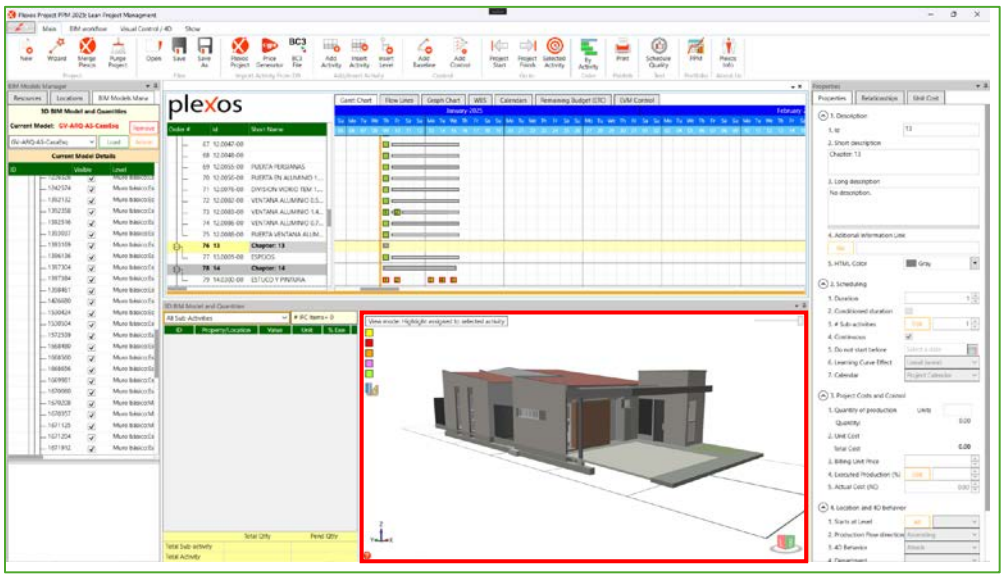

Figure 1 3D BIM model Viewport

Viewport options and functionalities

The BIM Workflow menu tab (Figure 2) provides access to viewport options. These options allow users to configure various viewport characteristics and utilize functionalities such as cutting planes

Figure 2 Viewport features

Capture screen

Capture a screenshot of the current 3D Model viewport.

Perspective / Orthographic mode

Allow users to view the model in either Perspective or Orthographic projection (Figure 4).

Grid Visible / Hidden

Hides or show the ground grid.

Zoom selected

Centers and zoom in on the selected element.

Detailed Render

This feature optimizes the update process for activities with numerous elements. **It operates on the highlighted selection mode** (Figure 10), rendering only one side of the meshes, and limiting the number to three. This significantly accelerates the update performance. **This feature does not act on the other visualization modes**.

Model Rotation

Rotates the camera position around the model centroid.

Enhanced lighting

Increases the ambient light of the scene. The intensity is modified by clicking on the button, showing the current intensity on the upper-left side of the button (Figure 3).

Figure 3 Enhanced lighting

Scene

Enables a background scene

Figure 4 Scene active in orthographic mode.

Cutting Plane

This functionality is activated by left-clicking on a BIM element in the viewport or clicking the button [Cutting Plane], appearing the dialog shown in Figure 5.

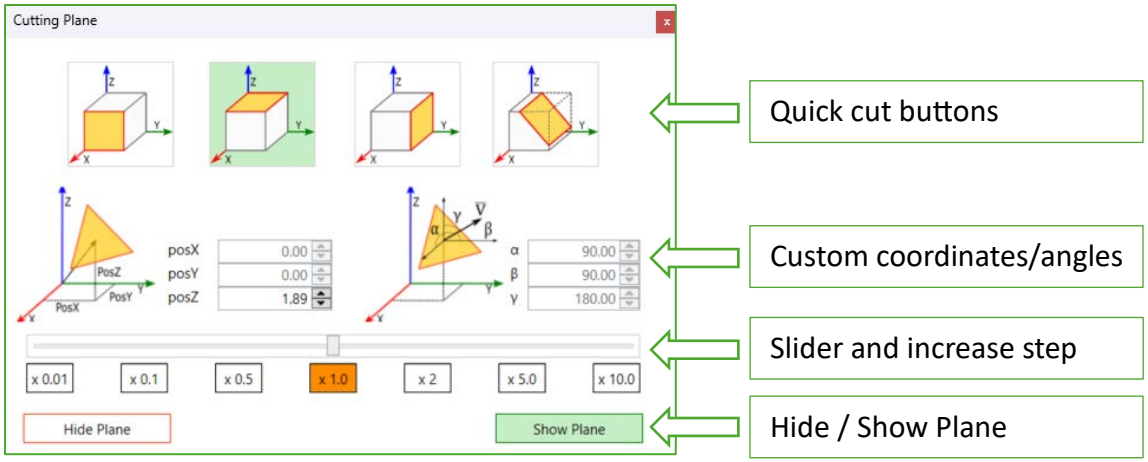

Figure 5 Cutting Plane dialog

The cutting-plane dialog offers quick cut buttons (front, top, side), and a free cutting plane that can be modified by changing the coordinates and angles.

The cutting plane by default is the top-cut, and the cutting direction is changed by clicking again.

Single / Multiple Views

This function allows users to display up to three viewports simultaneously. Viewports can be managed using splitter bars to resize or hide them as needed (Figure 6).

Figure 6 Single / Multiple Views

Transparency / Opacity slider.

Allow to control the transparency for view the hidden highlighted elements. In Figure 7, transparency enables the visualization of walls hidden by stucco elements.

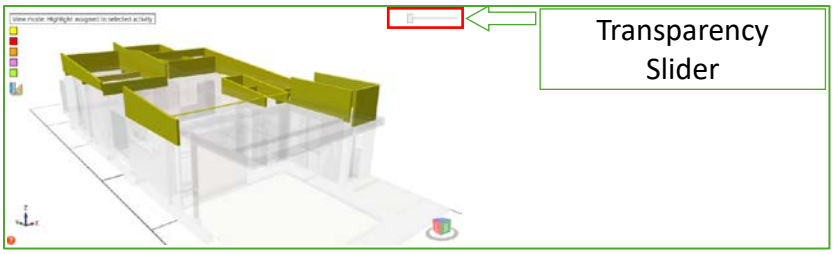

Figure 7 Transparency / Opacity slider

Visual Contexts Modes

Plexos offers several visual modes depending on the needs of the user, and organized in visual contexts: assigned elements, phase, 4D, and visual control:

Figure 8 visual contexts criteria

- Assigned elements:
  - Yellow. The elements highlighted belong to the selected activity (only in highlight mode).
  - Red. The selected elements belong to the selected activity context.
  - Orange. The selected elements do not belong to the selected activity context.
- Phase:
  - Red. The selected elements belong to the phase context.
  - Magenta. The selected elements do not belong to the phase context.
- 4D simulation:
  - Green. Work In Progress (WIP); Elements for which construction has commenced but remains incomplete.
- Visual Control.
  - Green. Work In Progress (WIP); Elements for which construction has commenced but remains incomplete.

- Red. The selected elements belong to the selected control context.
- Magenta. The selected elements do not belong to the selected control context.

Each one of the contexts are exposed in the following section.

Assigned BIM elements Context

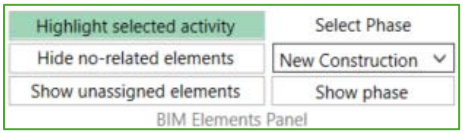

Figure 9 Assigned BIM elements Visuals

Highlight selected activity

Highlights in yellow elements that belong to:

- The selected activity,
- A selected group of activities. Select multiple activities by left-clicking while holding down the **[Ctrl]** key.
- A selected chapter. Select a chapter by left-clicking while holding down the [**Alt]** key.

Figure 10 Highlight selected activity with selected element in red

Hide no-related elements

Visually isolates the selected elements, as in the 'Highlight selected activity' function, by displaying only those elements.

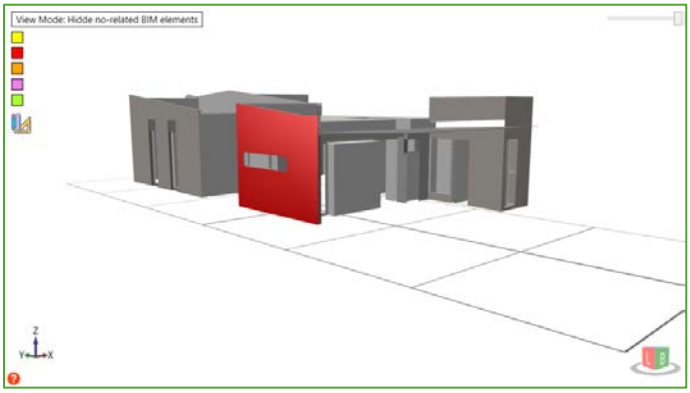

Figure 11 Hide no-related elements visual mode with selected element in red

Show unassigned elements

It shows only the elements that are not linked to any activity.

Phase Context

Shows the elements that belong to the selected phase.

Project phases can be seen in the locations panel and are of two natures:

- **Model-based**: Extracted from the BIM model and assigned to elements.
- **Manually defined:** Created and assigned to activities by users.

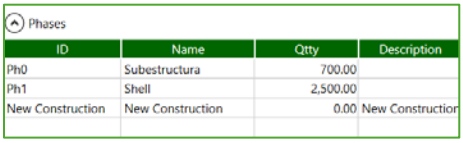

Figure 12 Project phases

Visual Control Contexts

Show baseline at control #

Displays the expected advance of the project according to the Baseline and Control established in the tab [Control] (Figure 13).

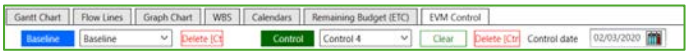

Figure 13 Baseline and Control Selection

Figure 14 presents an example of the expected project progress, with activities in execution (WIP) highlighted in green. The control date and number can be seen on the upper-left side of the viewport.

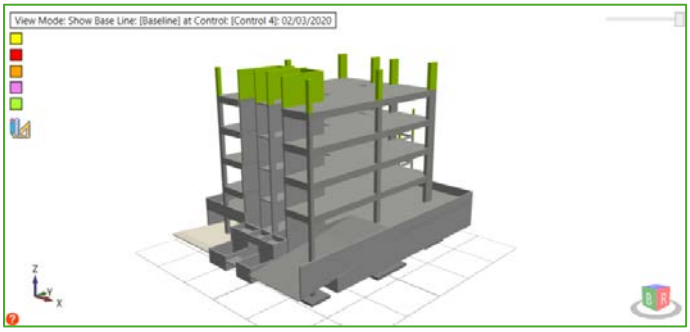

Figure 14 Expected progress at control # with WIP

Show advance at Control #

This mode shows the actual progress of the project according to the Control established in the tab [Control] (Figure 13).

Figure 15 presents an example of Actual advance at Control #, which, when compared to Figure 14 reveals a project delay.

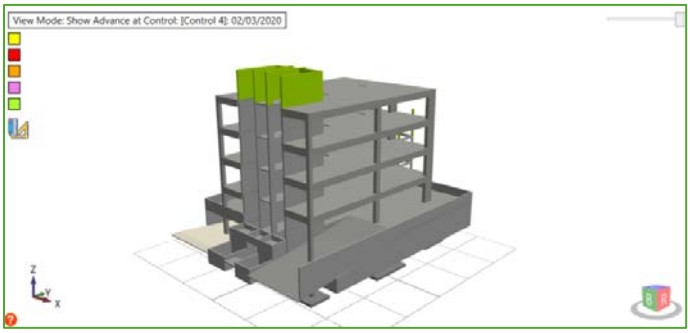

Figure 15 Actual advance at Control # with WIP

Show Current Advance

The “Show Current Advance” mode displays the current progress of the project.