

Accessing and Viewing 3D Laser Models

One of the major new capabilities offered by PRISM 3D 5.0 is the ability to view interactive photo-realistic 3D images of the as-built laser scan data. The data from all laser scans is segmented into 6-meter cubes, represented by the red squares in the Navigator View. A highly accurate 3D laser model is created using the relevant laser scan data. As mentioned previously, each group in the navigator uses the same facility layout schematic but represents a different height in the facility, such as grade, level 1, level 2, etc.

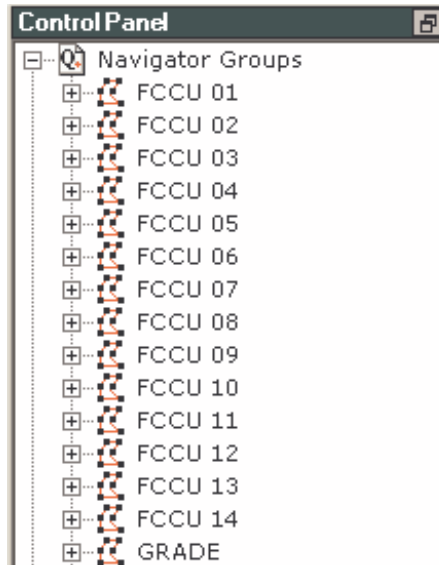


Figure 1: Navigator Groups from Grade to Level 14 of the FCCU

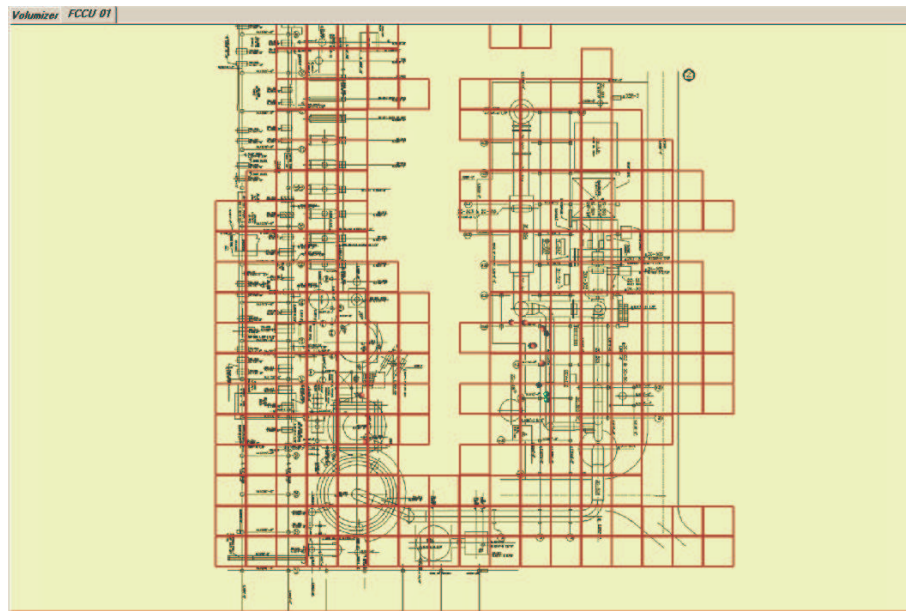


Figure 2: The Navigator View for FCCU 01

To view a 3D laser model volume, right-click on the desired square and select 'Load Volume'. This 3D laser model will load and the square will change to green when it is fully loaded. Click the 'Volumizer' tab in the viewing pane to view the 3D laser model. Multiple 3D laser model volumes can be loaded, up to the memory limits of the computer.

Note: Depending on the amount of data contained in the 3D laser model and the number of other models loaded, it may take some time to open a model.



Figure 3: Loading a 3D Laser Model for Square v5-4-1



Figure 4: Green Square Indicating the 3D Laser Model is Loaded

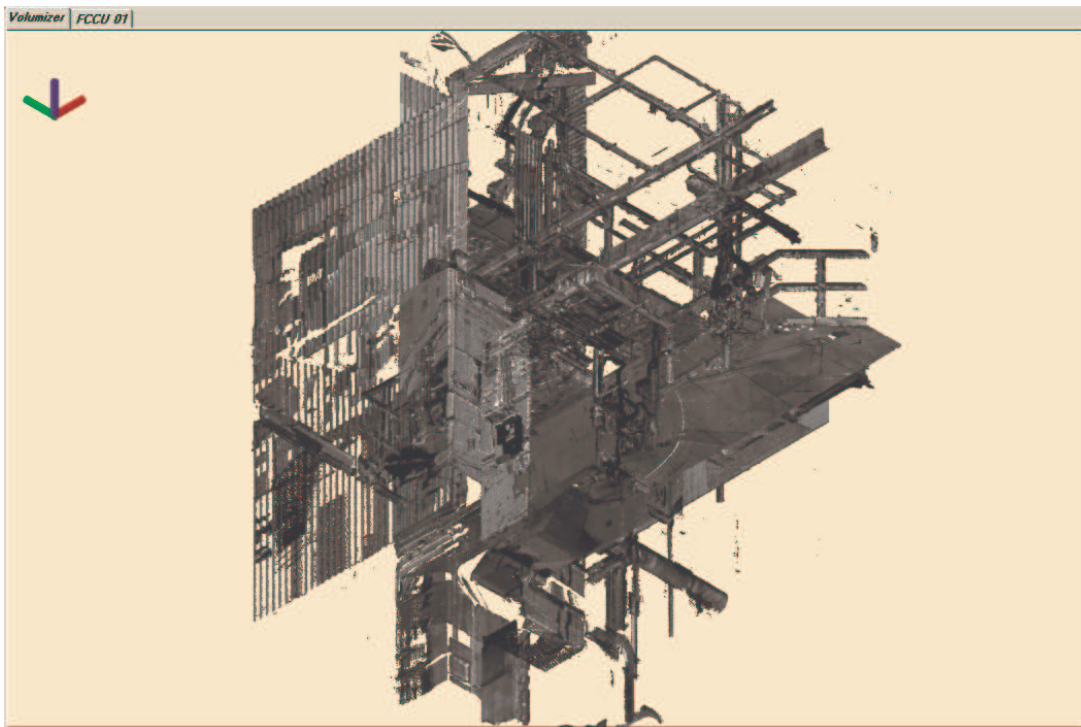


Figure 5: 3D Laser Model in the Volumizer

Zooming and Panning the 3D Laser Model

The 3D laser model can be easily zoomed or panned to focus on the desired area. To zoom in to the 3D laser model click the Zoom In button on the tool bar or use the wheel on your pointing device, if available. To zoom out of the 3D laser model click the Zoom Out button on the tool bar or use the wheel on your pointing device, if available. To pan (rotate) the 3D laser model, click the left-mouse button and move the mouse. The 3D laser model will rotate around the Z-axis.



Figure 6: Pan, Zoom In and Zoom Out Buttons on the Tool Bar

In addition to manually panning the 3D laser model, a variety of standard views can be selected from via the view selection tool on the tool bar.



Figure 7: View Selection Tool on the Tool Bar

Center-On Tool

An important navigational feature of PRISM 3D 5.0 is the Center-On Tool. This tool allows you to change the rotational center point of the 3D laser model. To use the tool, click the 'Center On Point' button on the toolbar. Then, hold down the Control (CTRL) key and click on the desired center point. The 3D laser model will now be centered on the selected point for panning.



Figure 8: Center-On Tool Button on the Tool Bar

Clipping Tool

In many instances it may be advantageous to reduce the amount of the 3D laser model that is viewed to remove obstructions, etc. For this purpose, PRISM 3D 5.0 includes a Clipping Tool. Using this tool, the amount of the 3D laser volume that is displayed can be easily modified as needed. To use the Clipping Tool, click the 'Minimize/Maximize' button in the upper-right hand corner of the Control Panel. The Clipping Control will be displayed. Each axis has a slider bar that indicating the current bounds of the model in world coordinates. Moving a slider bar along the axis changes the amount of the 3D laser model that is viewed. To restore the full view of the 3D laser model, click the 'Reset' button.

Note: If the 3D laser model has been manually rotated, the clipping control may yield unexpected results as it always uses world coordinates.



Figure 9: Control Panel with Min-Max Button on Right-Hand Side

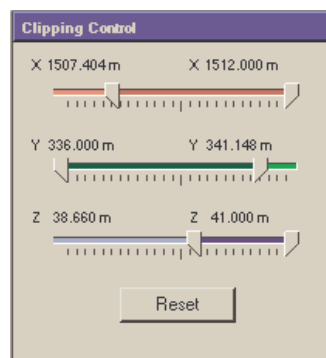


Figure 10: Clipping Control

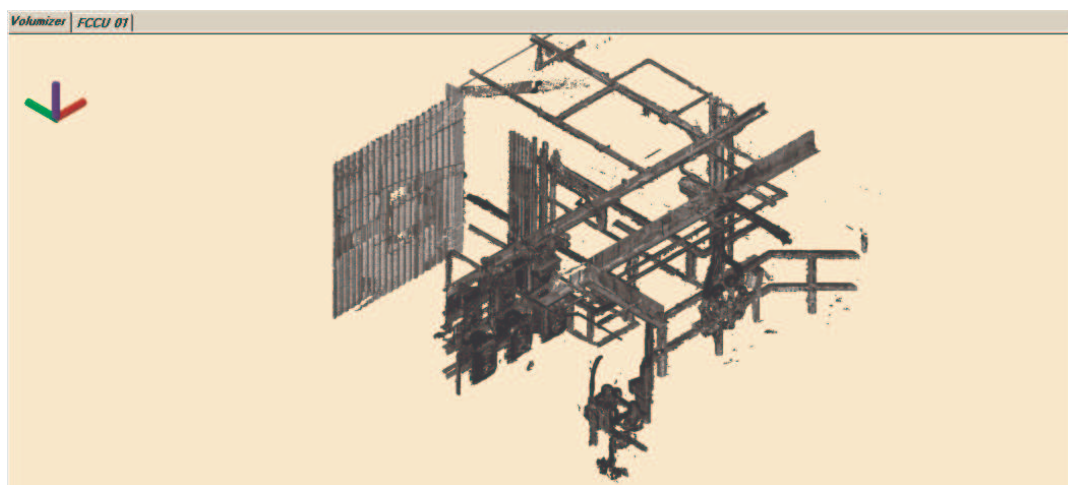


Figure 11: Clipped 3D Laser Model (Compare to Figure 7 35)

Hiding or Unloading 3D Laser Models

Individual 3D laser model volumes may also be hidden, if so desired. The model volumes remain loaded in memory, but are not displayed. To do so, right-click on a green square that has a model volume loaded and select 'Hide Volume'. The square turns yellow indicating the model is loaded, but is hidden. The model volume may be re-displayed by right-clicking on the yellow square and selecting 'Show Volume'.

Individual 3D laser model volumes may also be unloaded from memory. To do so, right-click on a green square that has a model volume loaded and select 'Unload Volume'. The square turns red indicating the model is not loaded.

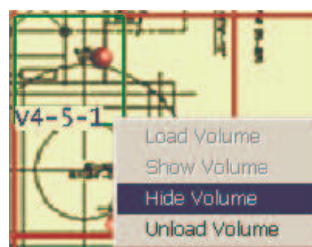


Figure 12: Hiding a 3D Laser Model Volume



Figure 13: Yellow Square Indicating a Hidden 3D Laser Model Volume

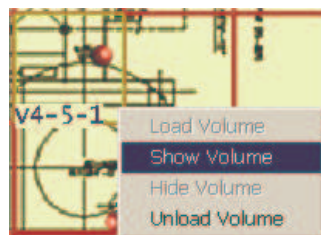


Figure 14: Showing a Hidden 3D Laser Model Volume



Figure 15: Unloading a 3D Laser Model Volume

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