GRAPHISOFT BIMx Viewer
for ArchiCAD 17
User Guide

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GRAPHISOFT BIMx Viewer for ArchiCAD 17 User Guide

Trademarks

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Introduction

Using GRAPHISOFT BIMx Viewer (BIMx), you can explore the 3D building models created with GRAPHISOFT ArchiCAD in an interactive way.

BIMx provides real-time 3D navigation in an architectural design – enhanced with gravity, layer control, fly-mode, egress recognition and pre-saved walkthroughs - for the ultimate design exploration.

Element information – surface finishes, volumes, sizes and quantities – can also be displayed with a click of the mouse. Exact measurements can be taken during the real-time walkthrough to help design decisions and forecast cost related design issues.

Free BIMx models are available on the GRAPHISOFT BIMx Site: *bimx.graphisoft.com*

The BIMx Quick Reference Card gives you a quick overview of the application's keyboard shortcuts. Please download the desired language version of the PDF file from this web page:

http://www.graphisoft.com/products/bim-explorer/downloads.html

System Requirements

For system requirements, see *http://www.graphisoft.com/support/bimx/system_requirements/*.

See the following sections for information on using GRAPHISOFT BIMx Viewer:

BIMx Menu Commands

BIMx Navigation Tools and Shortcuts

BIMx Menu Commands

This section explains the commands of the BIMx menu.
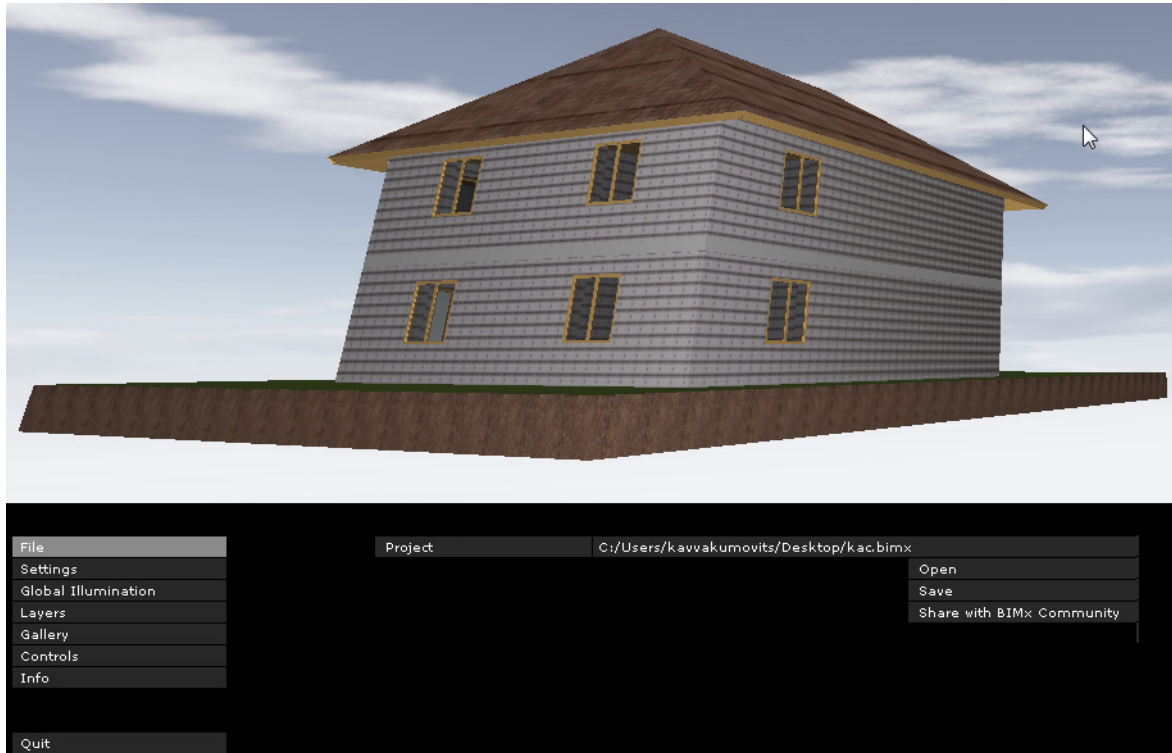
- To access the BIMx menu, press the ESC key.
- To return to the navigation window, press ESC again.
- Double-click the BIMx model to open it in the viewer, or use the **File > Open** command from the BIMx menu.

Choosing among Menu Options

1. Click and hold on the option you want to change.
2. The available choices will then pop up.
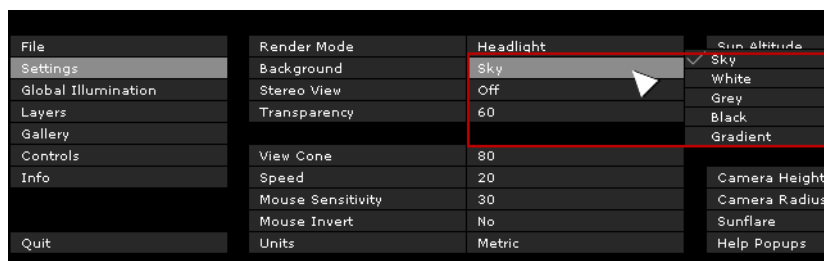
3. Move your cursor over the options.
4. When the cursor is on the desired option, let go of the cursor to enable that option.

Editing Numerical Settings

If the setting you are editing is a numerical value (such as navigation speed), you can change the value only by dragging the mouse left (to decrease the value) or right (to increase it.) You cannot enter the values directly.

FILE Menu

The file menu includes the standard I/O functions of the program.

- The **Open** command opens a BIMx project for editing.
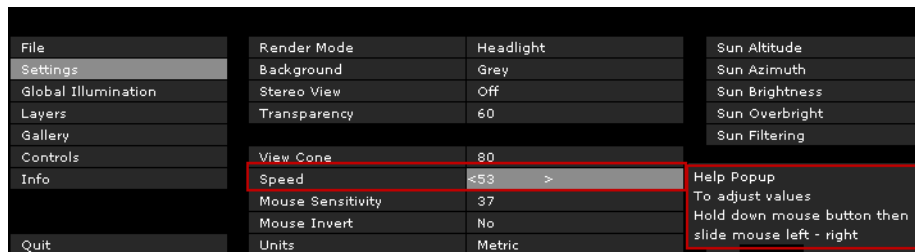
In BIMx viewer, the rest of the commands are greyed.

SETTINGS Menu

The Settings dialog stores all the parameters that are related to the BIMx model display and navigation control.
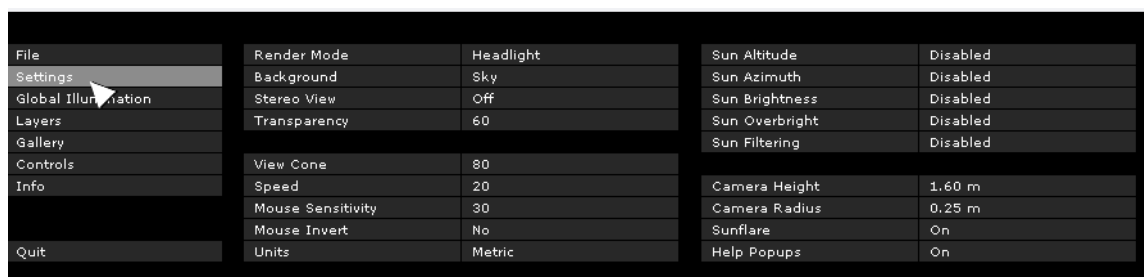
Render Mode

Choose a Render Mode to display the BIMx model.

- Headlight: View the scene as with a lamp on your head
- Global Illumination: Available if the model was calculated using Global Illumination.
- Black and White: Available if the model was calculated using Global Illumination.
- Pixel lighting with SSAO: Advanced rendering method to give greater depth to the scene
- Unlit: Shows materials without lighting
- Gouraud: Shows materials with simple lighting
- Metal: Same as Headlight, but no materials
- Hidden Line: No shading. Displays the edges of scene geometry.

Some of these methods may not be available, depending on the graphics card you are using.

Tips for Choosing a Render Mode

*   The **Global Illumination** method gives you the most realistic view of the model. To access it, the model must have been initialized using Global Illumination.
    Note: The Black and White (Global Illumination) render option is also available for models calculated with Global Illumination.
*   **Pixel Lighting with SSAO** is an advanced technique, without the calculation time required by Global Illumination on large models. While not as sophisticated as Global Illumination, the effect is similar, without needing the precalculation process. This method is not yet available on mobile devices due to hardware limitations.
*   **Pixel Lighting with SSAO** is only available if your graphics card supports the OpenGL 2.0 standard. Typically, older-model laptops cannot benefit from this feature.
*   **Headlight** mode is a simpler rendering method than either Global Illumination or Pixel Lighting, but it is available on all devices (with the possible exception of extremely old computers).
*   On very old-model computers (provided they meet the minimum system requirements), the **Gouraud** and **Unlit** render modes are guaranteed to be available.

Background

BIMx offers the following background options:

*   SKY (default BIMx Sky image)
*   WHITE
*   GREY
*   BLACK
*   GRADIENT

In case you'd like to use custom skybox images, you have to replace the six .bmp files included in the **BIMx/Textures/Skybox** folder.

Stereo View

BIMx can display the model in stereo view modes. The following methods are available:

*   Left/Right
*   RED/ CYAN
    Note: You need special stereo view glasses to enjoy this BIMx feature.
*   Quad Buffer: available only with NVIDIA drivers.
*   OFF
    Note: Stereo View options are not available if you are in Parallel view. (Click F8 to toggle Parallel view.)

Transparency

Value range: 20-80

The transparency of all translucent surfaces in the model is controlled by this parameter. Higher values result in less transparent surfaces.

View Cone

Value range: 10-120

Speed

Value range: 10-1000

This parameter defines the default speed of navigation. Higher numbers result in faster movement.

> **Note** that you can temporary increase the navigation speed by holding down the 'SHIFT button.

Mouse Sensitivity

Value range: 10-50

Mouse Invert

This option inverts the mouse navigation directions.

Units

The measured distances can be displayed in Metric or Imperial units

Additional Settings commands

The following parameters are available if you have turned on Sun Shadows (click F3). The parameter value limits are shown in brackets.

Sun Altitude (10-80)

Sun Azimuth (0-360)

Sun Brightness (-100 - +100)

Sun Overbright (-100 - +100)

Sun Filtering: Turn on to improve quality of sun shadows.

Camera Height (600-2000)

Camera Radius (150-400)

Sunflare

This option displays the sun flare if the camera looks towards the sun.

Help Popups

If this option is activated, a help popup window will appear over some of the Settings menu's commands.

It also controls if the introduction help-popup is displayed at the center of the screen when opening a BIMx model.

Sample Falloff and Sample Accuracy

These options affect the length of the rendering process and the quality of the resulting images.

If your Sample Falloff is lower than 1000-2000, try setting Sample Accuracy to **LOW**. This will make shadow gradients less smooth and more pixelized, but will result in faster rendering.

> **Note:** Changing sample falloff will invalidate any previously computed light.

Lightmap quality

This parameter has three values:

- Ultra
- Default
- Low

Ultra will provide more realistic lights and shadows in the final rendered model, however the rendering process can be significantly slower in case of large models.

LAYERS Menu

The BIMx project preserves the layers of the original ArchiCAD model. Use the BIMx Layers menu to control the visibility of the model layers, by checking the desired layer name boxes.

> **Note:** Global illumination renders the current state of the model. Switching layer visibility hides and shows elements, so you'll have to recalculate the global illumination to show the correct lighted model.

GALLERY Menu

The Gallery menu includes the commands with which you can view pre-recorded walk-through clips.

Editing the Gallery

To change the order of the clips in the Gallery, press **MOVE LEFT / MOVE RIGHT**.

Using the Gallery

Click on any or all of the following three commands to set playback preferences.

- **PLAY ON START** will playback the sequence of clips as the self-executing file is started.
- **PLAY ON IDLE** will make playback start or continue "screensaver-style" - that is, after a certain amount of idle time.
- Clips will playback in sequence if **SEQUENCER** is enabled (click "Sequencer" to enable it), otherwise only the current clip will be played.

Gallery Shortcuts

- Click the image to jump into that position or to play that clip.
- Press **P** to playback the current clip.

• Press **Shift+P** to playback the sequence of clips from the top.

CONTROLS Menu

The CONTROLS menu displays the list of the basic navigation commands and their shortcuts for the international keyboard. Most of these functions are self-explanatory and commonly used in first-person shooter computer games (FPS).

Functions	Keyboard Shortcut
Menu	ESCAPE
Movement	W, S, A, D and the Arrow keys
Move Fast	SHIFT
Move Slow	CMD or CTRL
Crouch	ALT
Jump	SPACE BAR
Lift	PAGE UP
Lower	PAGE DOWN
Fly Mode	F
Info Tool	I
Measure Tool	M
Outlines	O
Sun Shadows	F3
Screenshot	F5
Parallel View	F8
Map Mode	BACKSPACE

For additional navigation shortcuts, see BIMx Navigation Tools and Shortcuts.

INFO Menu
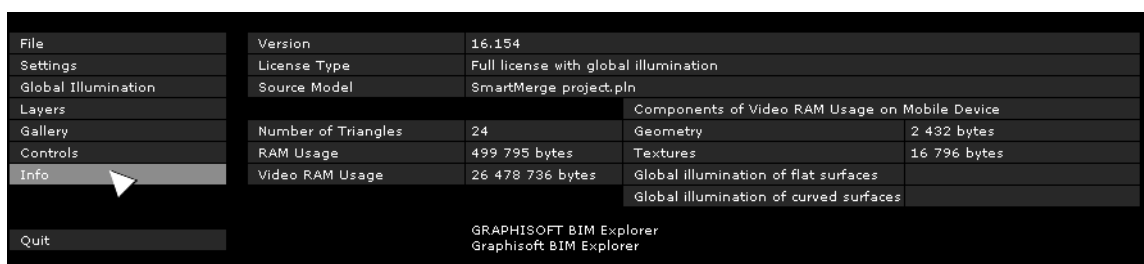
The Info Menu shows basic information about the active project and your BIMx license:

• **Version:** The version and build number of your BIMx application.
• **License Type:** Type of your BIMx license (full, educational). It also displays whether you are using the global illumination version of BIMx.

- **Source Model:** The name of the ArchiCAD file saved to BIMx.
- **Number of Triangles:** The models in BIMx are made of 3D triangles. The speed of the 3D navigation and the memory usage by the BIMx application are strongly affected by the number of triangles in the 3D model. Please note that this value is approximately two or three times that of the polygon count displayed in PolyCount add-on in ArchiCAD, due to the different geometry calculation algorithms used.
- **RAM Usage:** Displays the size of the RAM, in bytes, used by the project
- **Video RAM Usage:** Displays the size of the Video RAM, in bytes, used by the project

Components of Video RAM Usage on Mobile Devices

This data refers to the Video RAM memory required to view the model on the supported iOS mobile devices.

- **Geometry:** Based on the triangle count.
- **Textures:** The BIMx application for mobile devices automatically optimizes your textures to a certain degree, but if your BIMx model is too large to be run on your mobile device, you can try to reduce their size and complexity.

If the BIMx model was saved using Global Illumination, additional video RAM memory is required to handle the following two texture components:

- Global Illumination of Flat Surfaces: the illumination texture applied to flat surfaces; and
- Global Illumination of Curved Surfaces: the illumination texture applied to curved surfaces

You will notice that curved surfaces are less memory-intensive than the flat surfaces.

BIMx Navigation Tools and Shortcuts

Note: The BIMx Quick Reference Card gives you a quick overview of the application's keyboard shortcuts. Please download the desired language version of the PDF file from this web page: *http://www.graphisoft.com/products/bim-explorer/downloads.html*

Fly Mode vs. Walk Mode

The **F** key toggles between Fly Mode and Walk Mode. The Walk Mode provides you with a more realistic viewing experience including the following features:

- **Opening recognition** to distinguish the solid building structures such as walls, columns and roofs from doors and windows during navigation.
- **Gravity** to keep the camera height stable over slabs, ramps or stairs.
- Holding down **SHIFT** and **CONTROL** at the same time will activate the light speed navigation, which is ten times faster than running.
- Holding down the right mouse button while flying will make you stay on a fixed altitude. This is useful when recording a fly-over above a building, for example.
- Holding down the right mouse button while walking will lock the view horizontally for a perfectly straight perspective.

Info Tool

Pressing **I** during navigation activates the **Info Tool**. In this mode, the cursor's shape changes to a cross and the bounding box of the currently selected model element is highlighted. One click with the mouse opens the Info palette, which shows basic information about the selected model element. The following information is displayed in the **Info Tool**:

- **Type** – Element Type (e.g. Wall, Slab)
- **ID**
- **Layer** – Layer of the element in the ArchiCAD model
- **Element parameters, as applicable** – e.g. height, width, thickness, volume, structure (if composite), slant, area, pitch. These values are taken from the ArchiCAD model element parameters.
- **Library Part Name** (as applicable)
- **Tags** (inasmuch as the element has values filled out for these tags) - e.g. Position, Structural Function

  Note: These Info Tool data are only available if you are exploring a BIMx model saved from ArchiCAD 16 or 17. (BIMx models saved from earlier ArchiCAD versions show only a limited set of these data.)

Map Mode

This useful feature helps you to find your current position in the building during navigation. Press **BACKSPACE** during navigation to project the corresponding section of the floor plan over the current 3D view. Your current position and viewing direction is marked with an arrow. Use the mouse wheel to zoom the map.

Measure Tool

Press **M** to enable the measure tool. The three-dimensional distance from the camera to the world point at the center is computed and displayed as **View Distance**. To measure the distance between two three-dimensional points, click the left mouse button and pick two points. The resulting distance is computed and displayed as Measured Distance.

Screenshot

Press **F5** to print the current view to a 24-bit .bmp file. The image will have the same resolution as your current viewport (your desktop resolution). The .bmp file will be saved with a unique name into the BIMx\Screenshots\ folder, located in your User Documents folder. When screenshots are created from a stand-alone BIMx viewer application, the images will be saved into the same directory as the application.

Parallel View

Press **F8** to enable the parallel view. Use the mouse to rotate the model and the mouse wheel to zoom in/out. Hold down the right mouse button and move the mouse to pan over the model.

    Note: Stereo View options (Settings menu) are not supported in Parallel view.

Quit

Hold down **Z**, then press **ESC** to quit.