GRAPHISOFT BIMx Desktop Viewer User Guide

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GRAPHISOFT BIMx Desktop Viewer User Guide

Trademarks

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Introduction

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

BIMx Desktop Viewer is available free from here:

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

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

Element information, such as 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.

ARCHICAD projects can be published as BIMx models (*.bimx) using either a wizard or the Publisher function.

See the ARCHICAD Reference Guide for more information.

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. You can download this 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/.*

Start BIMx Desktop Viewer

Double-click the BIMx Desktop Viewer icon to start the application.

If you have a BIMx model file, double-click it to open it in BIMx Desktop Viewer.

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

BIMx Desktop Viewer Menu Commands
**BIMx Navigation Tools and Shortcuts**

BIMx Desktop Viewer Menu Commands

- Double-click the BIMx model to open it in the viewer, or use the **File > Open** command from the BIMx menu.
- To access the BIMx menu, press the ESC key.
- To return to the navigation window, press ESC again.
- To switch full-screen mode on and off on Windows, use F11.

Choosing among Menu Options

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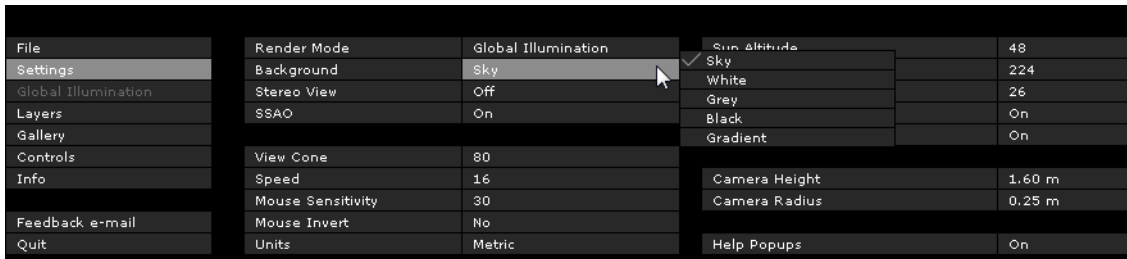
3. Move your cursor over the options.
4. When the cursor is on the desired option, let go of the cursor to enable that option.

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.
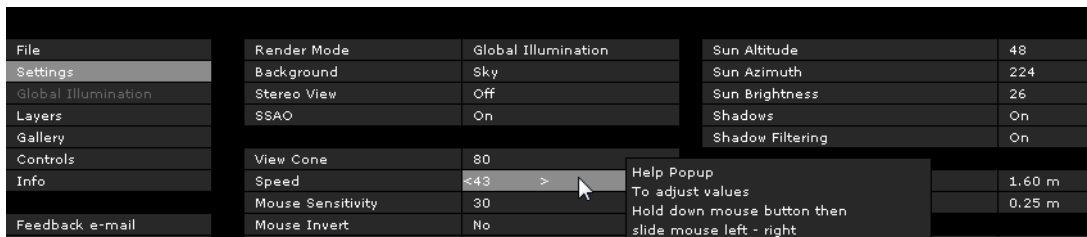
FILE Menu
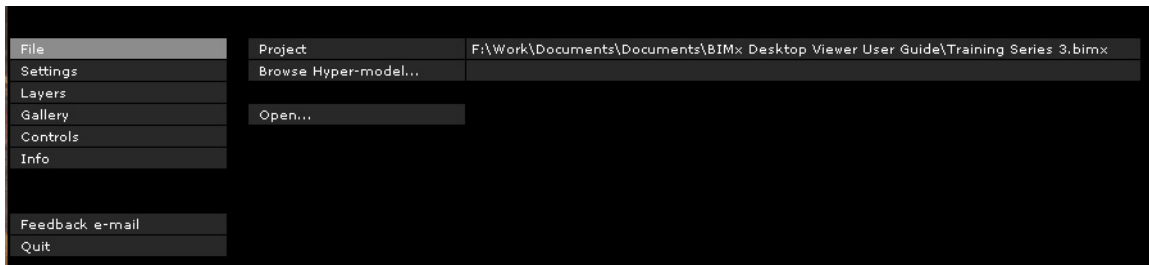
Click **Open** to browse for a BIMx model (*.bimx).

Project displays the path and name of the opened model.

After you open a BIMx model, click **Browse Hyper-model** to choose from multiple 3D views and camera positions, if the model contains them.

Choose one, then click **Open 3D Model** to open it in BIMx Desktop Viewer.

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 if there were a lamp on your head
• Global Illumination: Available for models that were calculated using Global Illumination.
• Black and White: Available for models that were calculated using Global Illumination, but only GI lightmaps will be visible, for a grayscale image.
• Simple Shading: Basic lighting with materials and contours.
• Unlit: Shows materials with ambient lighting only. You can add detail by turning on SSAO.
• Gouraud: Shows materials with simple lighting
• Metal: Similar to Headlight, but omits materials
• Hidden Line: No shading. Displays the contours 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, Global Illumination must have been calculated for the model.

  Note: The Black and White (Global Illumination) render option is also available for models calculated with Global Illumination.

- **Headlight** mode is a simpler rendering method compared to Global Illumination , 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, Unlit and Global Illumination** (provided that it was calculated) render modes are guaranteed to be available.

Background

BIMx offers the following background options for the screen:

- SKYBOX (default BIMx Sky image)
- WHITE
- GREY
- BLACK
- GRADIENT

To use custom skybox images, you have to replace the six .tga files included in the **BIMx Desktop Viewer/Data/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.)

SSAO

Turn on the SSAO effect (Screen Space Ambient Occlusion) on to give greater depth to the scene. Effective when used in conjunction with the Unlit Render mode. While not as sophisticated as Global Illumination, the effect is similar, without needing the precalculation process.

Notes:

- SSAO is only available if your graphics card supports the OpenGL 2.0 standard. Typically, older-model laptops cannot benefit from this feature.
- SSAO is not yet available on mobile devices due to hardware limitations.

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 key.

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.

By default, the model is displayed according to the default unit settings of your computer.

Additional Settings commands

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

Sun Altitude (10-80)

Sun Azimuth (0-360)

Sun Brightness (-100 - +100)

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

Camera Height (600-2000)

Camera Radius (150-400)

Help Popups

If this option is activated, a help popup window will appear over some of the Settings menu's commands. Also, an introductory help popup is shown on screen when you open a BIMx model.

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.

GALLERY Menu

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

• **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	C
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

File	Version	0.0		
Settings	License Type	Commercial version		
Layers	Source Model	TS03_complete.pla		
Gallery			Components of Video RAM Usage on Mobile Device	
Controls	Number of Triangles	30 K	Geometry	2 MB
Info	RAM Usage	2 MB	Textures	1 MB
	Video RAM Usage	9 MB	Global illumination of flat surfaces	5 MB
			Global illumination of curved surfaces	0 MB
Feedback e-mail				
Quit		GRAPHISOFT BIMx		

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
- **Check for Updates:** Click this command to see whether an updated version of GRAPHISOFT BIMx Desktop Viewer is available.
- **BIMx Online Help:** Takes you to a Help file.

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 later. (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 .png file. The image will have the same resolution as your current BIMx screenshot. The .png file will be saved with a unique name into the BIMx\Screenshots\ folder, located in your Users\User Name\ Documents folder.

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.